RWCD REACH 6 TR-20 HYDROLOGY

TR-20
HYDROLOGY

RWCD FLOODWAY
REACH-6

5/85

United States
Department of
Agriculture

Soil
Conservation
Service

West National Technical Center
511 N. W. Broadway, Room 547
Portland, Oregon 97209-3489

Subject: ENG - Hydrology = RWCD Floodway, Reach 6
Design Flows, Morrison County, Arizona

Date: October 21, 1985

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Phoenix, AZ 85009

File Code:

To: Harry Millsaps, Hydraulic Engineer,
SCS, Phoenix, Arizona

The documentation for the design flows for Reach 6 has been reviewed. The recommended flows are acceptable.

As we discussed by phone last week, the design flows for the end of Reach 6 should be consistent with the design of Reach 5 and the Leisure World greenway.

You have done a good job in evaluating the differing, and often conflicting, changes in watershed conditions that have occurred since the plan was prepared.

The documentation is returned.

Wendell A. Styner

WENDELL A. STYNER
Hydraulic Engineer

Attachment

cc:
Jack C. Stevenson, Head, Engineering Staff, WNTC, Portland, Oregon

9/11/85
jdm

RWCD REACH 6

INLET HYDROLOGY

SUMMARY OF PEAK DISCHARGE FOR DESIGN

Four separate alternatives were investigated during this analysis. These were as follows:

Alt. #1. Present 1985 Conditions, i.e. no channel upstream of Brown Road with present level of development and curve numbers.

Alt. #2. Year 2000 Conditions, with 1-inch storage assumed on new developments between 1985 and 2000 and with 200 and 300 cfs channel assumed upstream of Brown Road. This analysis also basically assumes a 70% to 30% split of runoff to the west and south, respect~~fully~~ively, for selected drainage areas. (See TR-20 Schematic Map).

Alt. #3. This alternate is the same as Alternate #2 described above except for subareas 3 & 4 shown on the Schematic Map, a 90% to 10% split of flows to the south and west, respectively is assumed. This latter split is an attempt to evaluate the effect of the Alta Mesa Develoment on flows originating to the north of Brown Road and east of Recker Road. The division of flows at Adobe and Higley Roads also were reversed over that assumed in Alternate #2. (See Schematic Map).

Alt. #4. This final alternate is again the same as the year 2000 conditions described above in Alternate 2 with the exception that a 100-year flood control channel is assumed upstream of Brown Road. This assumes that no flow overtops the RWCD Canal above Brown Road for any storm equal-to or less than the 100-year flood.

The results of these analyses, with reference to Peak Discharges, are shown on the attached table which compares the computed peaks to those estimated by Anderson-Nichols in their Master Drainage Plan Study and in Bob Bartel's Study which is presently being used for the design of the RWCD. There are major differences in the computed flows based on the various assumptions, especially for the RWCD and Side Inlets for the drainage areas lying north of University Drive. For instance at Brown Road, the design discharge for the RWCD Floodway itself can vary from a minimum of 460 cfs (Alt. 3) to a maximum of 1601 cfs (Alt. 4). The peaks for the side inlet at this location vary between 357 cfs and 862 cfs for the same two respective alternates.

For the Side Inlet at Brown Road it is recommended that the smaller value (i.e. 357 cfs) be used for design. This takes into account the effect of the Alta Mesa Subdivision on storm runoff originating to the east of Recker Road and north of Brown Road.

For the Floodway itself at Brown Road, it would be adequate to design the floodway for 460 cfs as computed under the assumptions of Alternate #3. However, the original design as developed by Bartel's in 1974 called for a design discharge of 1160 or 1200 cfs at this location. Based on Bartel's

data, some pre-design excavation by a developer has already occurred between Brown Road and Apache Trail; therefore, it is recommended that the 1200 cfs discharge be maintained from Brown Road downstream to the intersection of the Powerline Channel proposed by Anderson-Nichols in their Master Drainage Plan Study. The Powerline Channel is located about halfway beween Adobe Road and University Drive. The suggested discharge will also provide the needed capacity in this reach should a 100-year channel be installed upstream of Brown Road sometime in the future. The Anderson-Nichols flows for the RWCD Channel (dated 9/10/85) should then be maintained downstream until exceeded by computed flows from Alternate #3.

For the remainder of the side inlets to the south of Brown Road it is again recommended that the Alternate #3 discharges be used for design, except for the Powerline Channel Inlet. At this location, it is recommended that Anderson-Nichols discharge of 1565 cfs be used. The final recommended discharges for each location is shown in Tabular form following the peak discharge comparison table. It should be recognized, however, that once the Master Drainage Plan is completed, the Inlet Structures at University and locations to the south, will be over-designed, as will the RWCD from Higley Road downstream to Leisure World.

Note, Alternate #3 discharges instead of Alternate #1, present condition 1985 discharges, were recommended since they show the effect of the Alta Mesa Subdivision. A revised Alternate #1 would be needed if "present condition" discharges are to be used. However, by comparing Alternates #1 and #2 it can be seen that there is not much difference in the estimated "present" and "future peaks with 1-inch of storage " when the same assumptions are made with reference to Alta Mesa. Therefore, Alternate #3, gives about the same peaks as would be obtained if Alternate #1 was revised to show the effect of Alta Mesa Development on present (1985) discharges.

Az.

H. Millsaps 6-7-85

Comparison of 100 yr. peak discharges — Future Condition, year 2000 w/1-inch storage on new developments & 85 (Present) condition

RWCD Reach-6, Inlet Hydrology

Location	1974 Calc. Design Peaks (Ignoring reach 6 ext. D.A.)	1985 Calc. (w/200 & 300 CFS Chan. on Reach 6 Ext. D.A.) Alt #2	1985 Calc. (w/200 & 300 CFS Chan. on Reach 6 Ext. D.A.) Alt #3	1985 Calc. (w/100yr. Chan. on Reach-6 D.A.) Alt #4	1985 calc. of Present (85) cond. No chan. Reach-6 Ext. D.A. Alt #1	1985 Calc. by And-Nichols for yr. 2000. Rec'd 4/29/85	A-N Rev. 9/10/85
BROWN ROAD							
Reach 6 EXT.	—	297	297	874	150		
From East (109)	1160	862	357	862	741	750	365
RWCD (110)	1160	867	460	1601	891	1150	365
ADOBE Rd. (1/2 mi. S. of Br. Rd.)							
Inlet (119)		534	306	534	438	525	100
RWCD (110)	1160	1174	561	1594	1217	1500	375
3/4 mi. S. of Brown Rd.							
Inlet (121)	—	213	576	213	176	1150	1565
RWCD (120)	1160	1313	1090	1682	1347	1800	1800
UNIVERSITY DR.							
Inlet (128)	990	600	618	600	543	250	400
RWCD (122)	1965	1516	1562	1817	1539	1965	1840
1/4 mi. S. of UNVER. Dr.							
Inlet (12)	—	110	110	110	113	—	—
RWCD (129)	1965	1500	1530	1807	1510	1965	1840
APACHE TRAIL							
Inlet (133)	—	986	994	986	900	500	435
RWCD (147)	1965	1687	1876	1942	1720	2300	1900
S.E. of HIGLEY RD.							
INLET (142)	570	503	503	503	502	—	—
RWCD (148)	2290	2121	2374	2221	2158	2300	1900

COMPUTATION SHEET

SCS-ENG-323A Rev. 9-69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE Az. | BY H. Millsaps | DATE 6-7-85 | PROJECT RWCD Reach-6, Inlet Hydrology

SUBJECT Comparison of 100 yr. peak discharges — Future Condition, year 2000 w/1-inch storage on new developments & 85 (Present) condition

CHECKED BY | DATE | JOB NO. | SHEET 2 OF 2

Location	1974 Calc. Design Peaks (Ignoring reach 6 ext. D.A.)	1985 Calc. (w/200 & 300 CFS chan. on Reach 6 Ext. D.A.) Alt #2	1985 Calc. (w/200 & 300 CFS chan. on Reach 6 Ext. D.A.) Alt #3	1985 Calc. (w/ 100yr. Chan. on Reach-6 D.A.) Alt #4	1985 calc. of Present (85) cond. No chan. Reach-6 Ext. D.A. Alt #1	1985 Calc. by Andr. Nichols for yr. 2000.
BROADWAY ROAD						
INLET (17)	—	324	* 220	324	306	70
RWCD (149)	2290	2119	2361	2229	2152	—
500 Ft. S. of Broadway						
INLET (146)	750	1479	1486	1479	809	
RWCD (151)	3050	3309	3350	3310	2674	

* NOTE: D.A. decreased by 0.09 due to diversion into Broadway Rd. channel. Adjusted

$$Q = \frac{0.28 - 0.09}{0.28}(324) = 220 \text{ cfs}$$

COMPUTATION SHEET
SCS-ENG-523 Rev. 8-69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE	PROJECT			
ARIZONA	RWCD REACH 5, Inlet Hydrology			
BY: Hm	DATE: 8/15/85	CHECKED BY: Rev 9/11/85	DATE	JOB NO.
SUBJECT: RECOMMENDED PEAK DISCHARGE				SHEET ____ OF ____

FOR DESIGN OF RWCD & SIDE INLETS

LOCATION	CALC. PEAKS	RECOMMENDED DESIGN DISCHARGE 1)	SOURCE
			Really needs to be determined by MCFCD.
BROWN ROAD			
REACH 6 EXT	297	300	Reach 6 EXT. STUDY
From East (109)	357	360	Alt #3, 1985 Study
RWCD	1160	1200	Bartel's 1974 STUDY
ADOBE ROAD (1/2-Mi. S. of Br. Rd)			
Inlet (119)	306	310	Alt #3, 1985 Study
RWCD (110)	1160	1200	Bartel's 1974 Study
3/4-MILE S. OF BR. ROAD			
Inlet (121)	~~1150~~ 1565	~~1150~~ 1600	Anderson-Nichols Study (Rev 9/)
RWCD (120)	~~1160~~ 1800	~~1200~~ 1800	~~Bartel's 1974 Study~~ Anderson-Nichols (Rev 9/85)
UNIVERSITY DR			
Inlet (128)	618	620	Alt #3 1985 Study
RWCD (122)	~~1562~~ 1840	~~1550~~ 1840	~~Alt #3 1985 Study~~ Anderson-Nichols (Rev 9/85)
1/4-MILE S. OF UNIV. DR			
Inlet (12)	110	110	Alt #3, 1985 Study
RWCD (129)	~~1530~~ 1840	~~1550~~ 1840	~~Alt #3, 1985 Study~~ Anderson-Nichols (Rev 9/85)
APACHE TRAIL			
Inlet (133)	994	1000	Alt #3, 1985 Study
RWCD (147)	1876	1900	Alt #3, 1985 Study
JUST S.E. OF HIGLEY ROAD			
Inlet (142)	503	500	Alt #3 1985 Study
RWCD (148)	2374	2400	Alt #3, 1985 Study
BROADWAY ROAD			
Inlet (17)	220	220	Alt #3, 1985 Study Adj. for D.A.
RWCD (149)	2361	2400	Alt #3, 1985 Study
~~500' S. OF~~ AT BROADWAY Rd CHAN. INTERSECTION			
Inlet (146)	1486	1500	Alt #3 1985 Study
RWCD (151)	3350	3350	Alt #3, 1985 Study

1) SEE Attached write-up.

COMPUTATION SHEET
SCS–ENG–523 Rev. 8–69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE	PROJECT		
ARIZONA	RWCD REACH 5, INLET HYDROLOGY		
BY: Hem	DATE: 9/4/85	CHECKED BY:	DATE:
JOB NO.			
SUBJECT: ALT #3 10-YEAR DISCHARGES		SHEET ____ OF ____	

LOCATION	CALC 10-YEAR DISCHARGE (CFS)	
BROWN ROAD		
REACH 6 EXT.	154	
FROM EAST (109)	86	
ADOBE ROAD (1/2-MI. S. of Br. Rd)		
Inlet (119)	89	
RWCD (110)	193	
3/4-MILE S. of Br. Road		
Inlet (121)	167	
RWCD (120)	296	
UNIVERSITY DR.		
Inlet (128)	296	
RWCD (122)	460	
1/4-MILE S. of UNIVER. DR.		
Inlet (12)	55	
RWCD (129)	453	
APACHE TRAIL		
Inlet (133)	490	
RWCD (147)	721	
JUST S.E OF HIGLEY ROAD		
Inlet (142)	358	
RWCD (148)	1029	
BROADWAY ROAD		
Inlet (17)	93	(Adj for reduced D.A.)
RWCD (149)	1014	
500' S. OF BROADWAY RD.		
Inlet (146)	391	
RWCD (151)	1317	

United States Department of Agriculture
Soil Conservation Service
201 East Indianola
Suite 200
Phoenix, Arizona 85012

Subject: PDM - Inlet Hydrology for RWCD Floodway, Reach 6, E. Maricopa County, AZ

Date: September 19, 1985

To: Wendell Styner
Hydraulic Engineer
Portland, OR

File Code: 390-11-13-19

Enclosed for your review and comment is the documentation for hydrologic studies made to estimate required inlet capacities for the RWCD from the intersection of the Broadway Road channel (located about 500 to 600 feet south of Broadway Road) upstream to about 230 feet north of Brown Road. This reach is referred to as Reach 6 in the design and construction phase of the RWCD.

From the documentation it will be noted that the final recommended design discharges for both the RWCD and the side inlets are dependent to some extent on both present and future conditions. A present condition that has greatly altered the distribution of flows along the RWCD (over those used in the Work Plan) is the construction of the Alta Mesa Subdivision. This Subdivision has detention storage sufficient to store the total on-site runoff from a 50-year, 24-hour storm, but off-site runoff from drainage areas (Subareas 3 and 4) located to the east of the subdivision and north of Brown Road are diverted to the south before they can enter the RWCD Floodway.

A future condition which must be accounted for in the Final Design is the effect of a Master Drainage Plan presently being studied by Anderson-Nichols and Associates for Maricopa County Flood Control District. One proposal in the Master Drainage Plan is a flood control channel intersecting the RWCD about half way between Adobe Road and University Drive. This channel not only affects the design capacity of the side inlet but also affects the magnitude of the recommended discharges for the RWCD at this location and points downstream.

A contract has already been issued by the SCS to Greiner Engineers for the design of the subject reach; therefore, should any discrepancies be found in the documentation, please notify the State as soon as possible. Also, since the enclosed data is the original documentation for this study, please return it as soon as your review is completed.

Harry C. Millsaps for
W. Wayne Killgore
ASTC(W)

Enclosures

CC: Ralph Arrington, SCE, SCS, Phoenix, AZ
Harry C. Millsaps, Hyd. Engr., SCS, Phoenix, AZ

Greiner Engineering

MEMORANDUM

Route & File
~~Ralph A.~~ VG
~~Bill R.~~ WEP
~~Harry M.~~

To: File

From: Michael Shapiro

Subject: RWCD Floodway Reach 6
Contract No. 53-9457-00469
Pre-Hydrology Meeting
Job No. E-101-012

Date: September 4, 1985

A meeting was held September 4, 1985, at 8:00 a.m. at the Soil Conservation Service. The following were present:

Mr. Don Paulus, Soil Conservation Service
Mr. Harry Milsap, Soil Conservation Service
Mr. Michael Shapiro, Greiner Engineering

A summary of peak discharge for the RWCD Reach 6 for inlet hydrology was handed out by Mr. Milsap and discussed at length. In our discussion, it was decided that the peak flows for the channel north of Brown Road would be 300 c.f.s. The bridge at Brown Road was also discussed at length. Range in 100-year design flows for this bridge is 300-1,200 c.f.s. Mr. Milsap recommended that the bridge be designed for a peak flow of 900 c.f.s. It was decided that Mr. Paulus would get in touch with the Flood Control District and discuss all the options for this bridge design and report back to us. It was also decided that Alternate #3 would be used for our inlet and floodway design with the exception of the inlet at the powerline easement between University Drive and Adobe Road. This inlet would be designed for a peak flow of ~~1,500~~ 1,550 c.f.s. as addressed in the Anderson-Nichol's Master Drainage Plan Study. Inlets north of Apache Boulevard would be overdesigned once the Anderson-Nichol plan was constructed, but until that time these inlets would be designed to handle present conditions.

Mr. Paulus stated that the SCS would like Greiner Engineering to deliver off-site drainage into the main floodway as soon as possible and not to collect them in a minor channel east of the east maintenance road. It was also decided that Greiner Engineering would develop cross sections at all inlet locations along major streets to determine how much flow goes north and south to limit the size of the inlet structure. It was ~~also~~ decided that in some cases south of these major streets that the flow entering the inlets would be so wide that not all of it could enter into one inlet. In these cases it

Greiner Engineering

Memorandum to File
Job No. E-101-012

would be necessary to design a small collector channel and place another inlet 100-200 feet downstream if there was not enough area to let it collect in a small pounded area.

Mr. Shapiro showed some concern about intermediate points between the major inlets where existing and/or proposed subdivisions would be outletting storm runoff that was not addressed in Mr. Milsap's hydrology study. Mr. Shapiro did not want to design a collector channel using the large inlet flows because this would create a floodway outside of a floodway and cause additional maintenance problems. Mr. Shapiro suggested getting all the drainage studies done for these developments and using them as a guideline in designing a minor collector channel. This was agreed upon.

Mr. Milsap had developed a summary sheet of his recommended peak flow for the 100-year storm event for inlet designs and for the design of the main channel. Mr. Shapiro advised Mr. Milsap that the 10-year peak flows were also necessary for their backwater analysis. Mr. Milsap said that he would develop a summary sheet for the 10-year storm and would give him a copy of both summary sheets at a later date.

Mr. Shapiro advised Mr. Paulus that he had not yet received the backwater analysis done for Leisure World up to Broadway Road. He had only received this analysis up to Southern Avenue. Mr. Paulus advised him that the analysis up to Southern Avenue had not been approved by the Soil Conservation Service as of yet. As soon as this was approved, he would give us the backwater analysis up to Broadway.

Mr. Shapiro asked Mr. Paulus for bid tabulations and maintenance and operating manuals prepared for Reaches 2 and 3 so they could be evaluated during their Comparative Design Study. Mr. Shapiro also handed Mr. Paulus a detailed schedule and approach for their Comparative Design Study and asked Mr. Paulus to comment. Mr. Shapiro also recommended that they meet with the Flood Control District in the near future to get their feedback on maintenance and operating procedures for Reach 6. Access to the area north of Brown Road was discussed so that soil pits could be dug on Thursday morning, the 5th of September. Mr. Paulus said that the gate would be left open, but gave him the name and number of Michael Leonard from the RWCD just in case there were any problems.

cc: Bob Berkowitz
Don Paulus
Mustafa Chudnoff
Gary Sun

Anderson-Nichols
4120 North 20th Street
Phoenix, Arizona 85016
(602) 957-3681

Woodrow C. Scoutten, P.E.
Vice President

September 10, 1985

Ms. Kebba Buckley
Flood Control District of
Maricopa County
3335 West Durango Street
Phoenix, AZ 85009

Re: RWCD Reach 6 Hydrology
East Maricopa County Master Drainage Plan

Dear Ms. Buckley:

Enclosed is the information requested by the Soil Conservation Service's letter dated July 16, 1985 (copy attached). Their letter requested particular channel inflow design information for one location along the RWCD Reach 6.

We have remodeled the watershed for this area based on the selected alternative scheme and have enclosed a sketch displaying the new 100-year peak discharges along Reach 6.

If you have any questions or comments, please feel free to call myself or Darrel Wood.

Sincerely,

ANDERSON-NICHOLS & COMPANY, INC.

L Steve Miller

Steve Miller, P.E.
Project Engineer

SM/sld

enclosures

cc: Mr. Harry Millsaps
Soil Conservation Service

United States
Department of
Agriculture

Soil
Conservation
Service

Suite 200
201 E. Indianola Ave.
Phoenix, AZ 85012

July 16, 1985

Dan Sagramoso
Chief Engineer and General Manager
Flood Control District of Maricopa County
3335 West Durango Street
Phoenix, AZ 85012

RE: RWCD, Reach-6 Hydrology

Dear Dan:

From the results of our hydrology study of the subject area and the proposals of the Master Drainage Plan by Anderson/Nichols we propose that Greiner Engineering (our A&E design firm for this reach) design the inlets for RWCD, Reach 6 for the maximum inflow whether present or future condition.

In taking this approach, we will need additional information for the major inlet proposed in the Anderson/Nichols Master Drainage Plan which will enter 1150 cfs into the RWCD Floodway through a lined channel along the power line easement just south of Adobe Road.

The following information is requested by September 6, 1985, in order for Greiner Engineering for proceed with their design.

1. Exact channel alignment
2. Confirmed inflow rate (cfs)
3. All hydraulic characteristics of the channel (i.e., velocity, slope, depth of flow, etc.).
4. Channel invert elevations
5. Channel cross sections

If the information can not be provided by the requested date then we would propose to have Greiner Engineering design a temporary inlet to handle the present condition using a capacity of 200 cfs. Then when the Master Drainage Plan is implemented, the larger 1150 cfs inlet would be designed and installed by others.

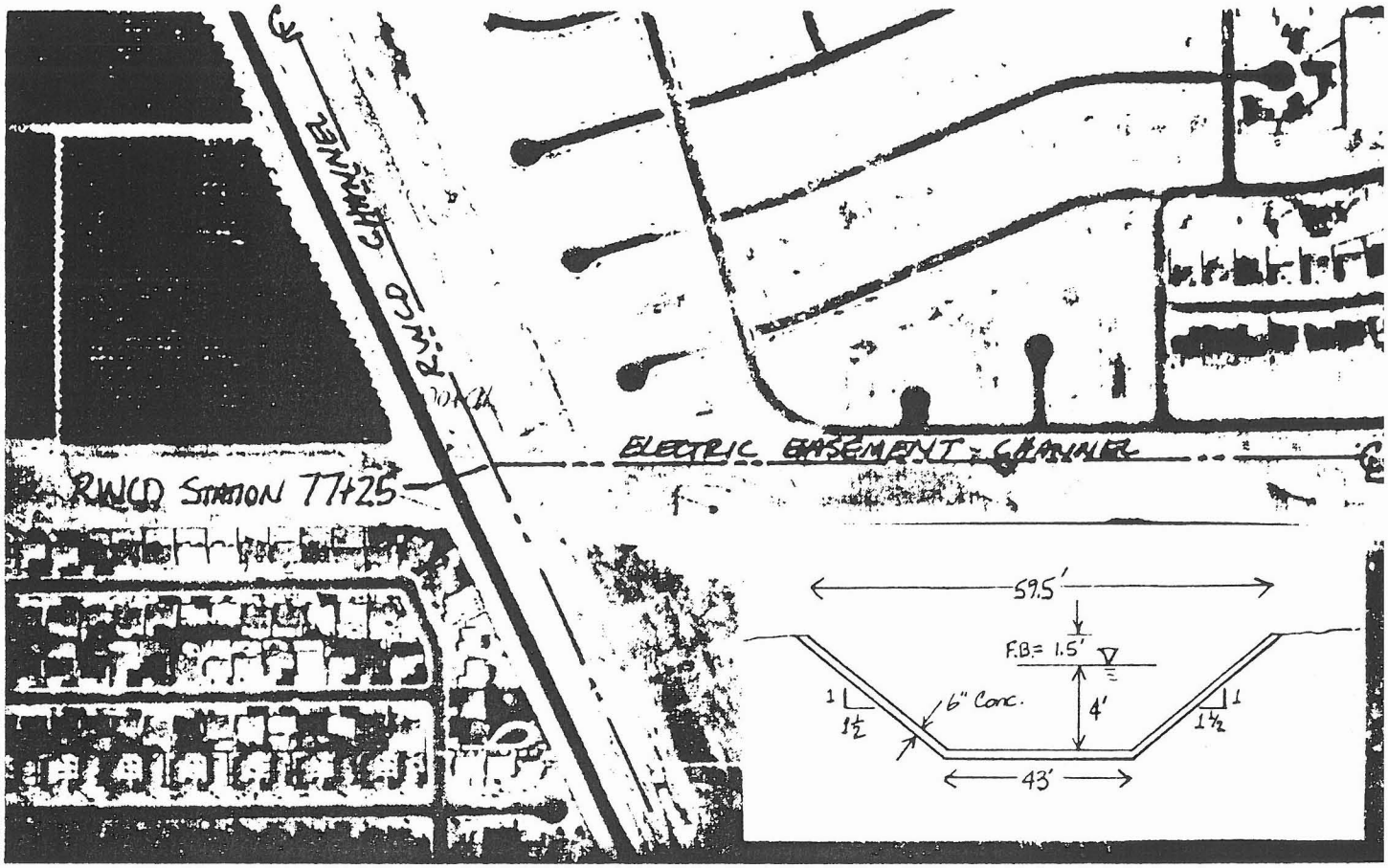
Please let me know if you will be able to supply the required information.

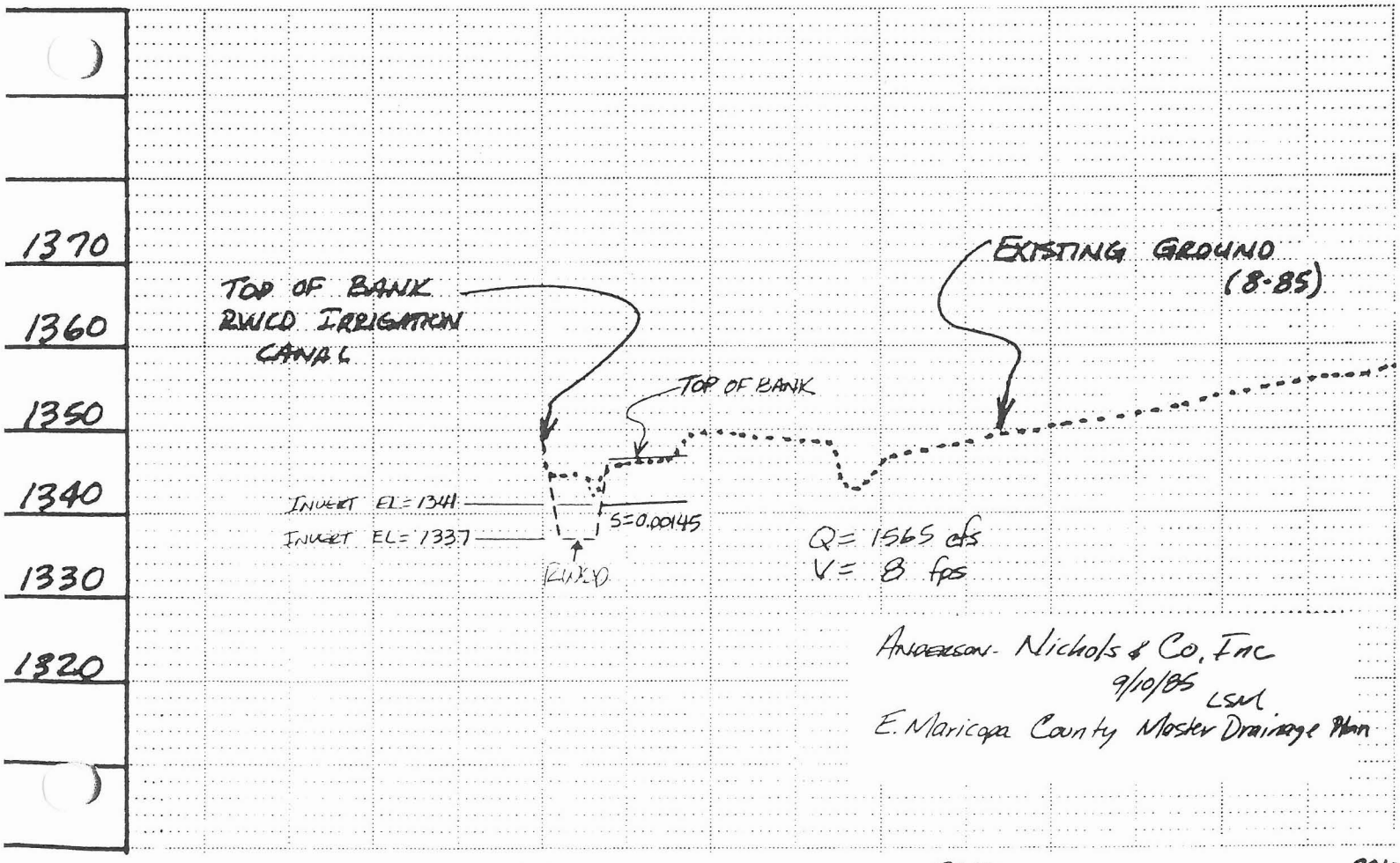
Verne M. Bathurst
State Conservationist

cc: Ralph Arrington, SCE
Bill Payne

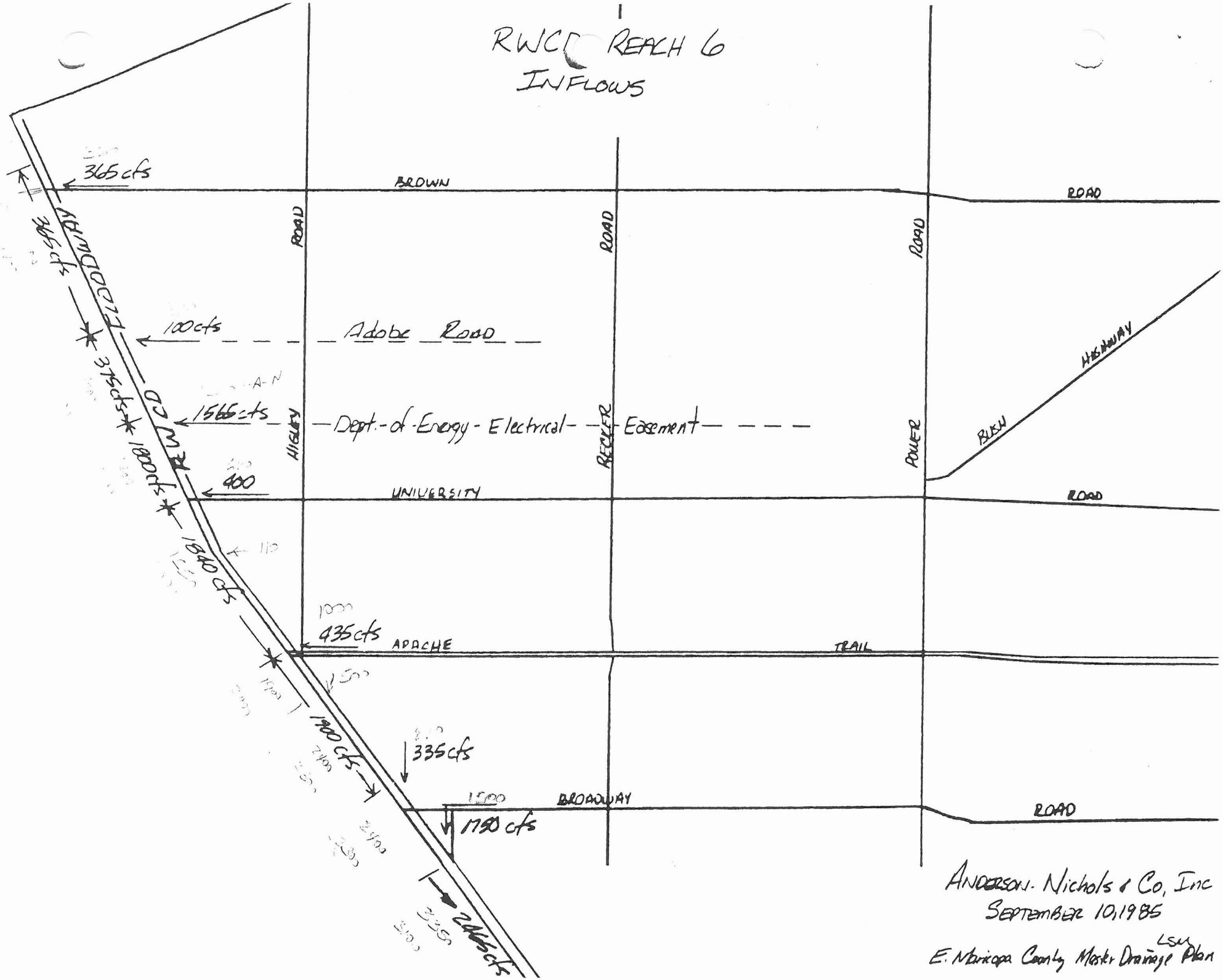
FLOOD CONTROL DISTRICT
'85
HYDRO
3 KEB KEB

The Soil Conservation Service
is an agency of the
Department of Agriculture


RWCD CHANNEL
ELECTRIC EASEMENT - CHANNEL
RWCD STATION 77+25
59.5'
F.B.= 1.5'
6" Conc.
4'
1
1½
43'


1370
1360
1350
1340
1330
1320
TOP OF BANK
RWCD IRRIGATION
CANAL
TOP OF BANK
EXISTING GROUND
(8-85)
INVERT EL= 1341
INVERT EL= 1337
S=0.00145
RWCD
Q= 1565 cfs
V= 8 fps
ANDERSON- Nichols & Co, Inc
9/10/85
LSM
E. Maricopa County Master Drainage Plan
10+00
20+00

RWCD REACH 6
INFLOWS



Anderson. Nichols & Co, Inc
September 10, 1985

E. Maricopa County Master Drainage Plan

FLOOD CONTROL DISTRICT
RECEIVED

APR 29 '85

	CH ENG		HYDRO
	ASST		LMgt
	ADMIN		SUSP
	C & O		FILE
	ENGR		DESTROY
	FINANCE		
REMARKS			

Anderson-Nichols
4120 North 20th Street
Phoenix, Arizona 85016
(602) 957-3681

Woodrow C. Scoutten, P.E.
Vice President

April 29, 1985

Flood Control District
of Maricopa County
3335 West Durango Street
Phoenix, Arizona 85009

Attn: Ms. Kebba Buckley

Re: Master Drainage Plan East
Maricopa County
Contract FCD 84-26

Dear Ms. Buckley:

As per your request, attached is a map showing proposed inflow points and preliminary estimates of 100-year peak inflows at the respective points for Reach 6 of the RWCD.

These are our best estimates at this time, however, they are preliminary and could change once the preferred alternative drainage plan is selected by the review committee.

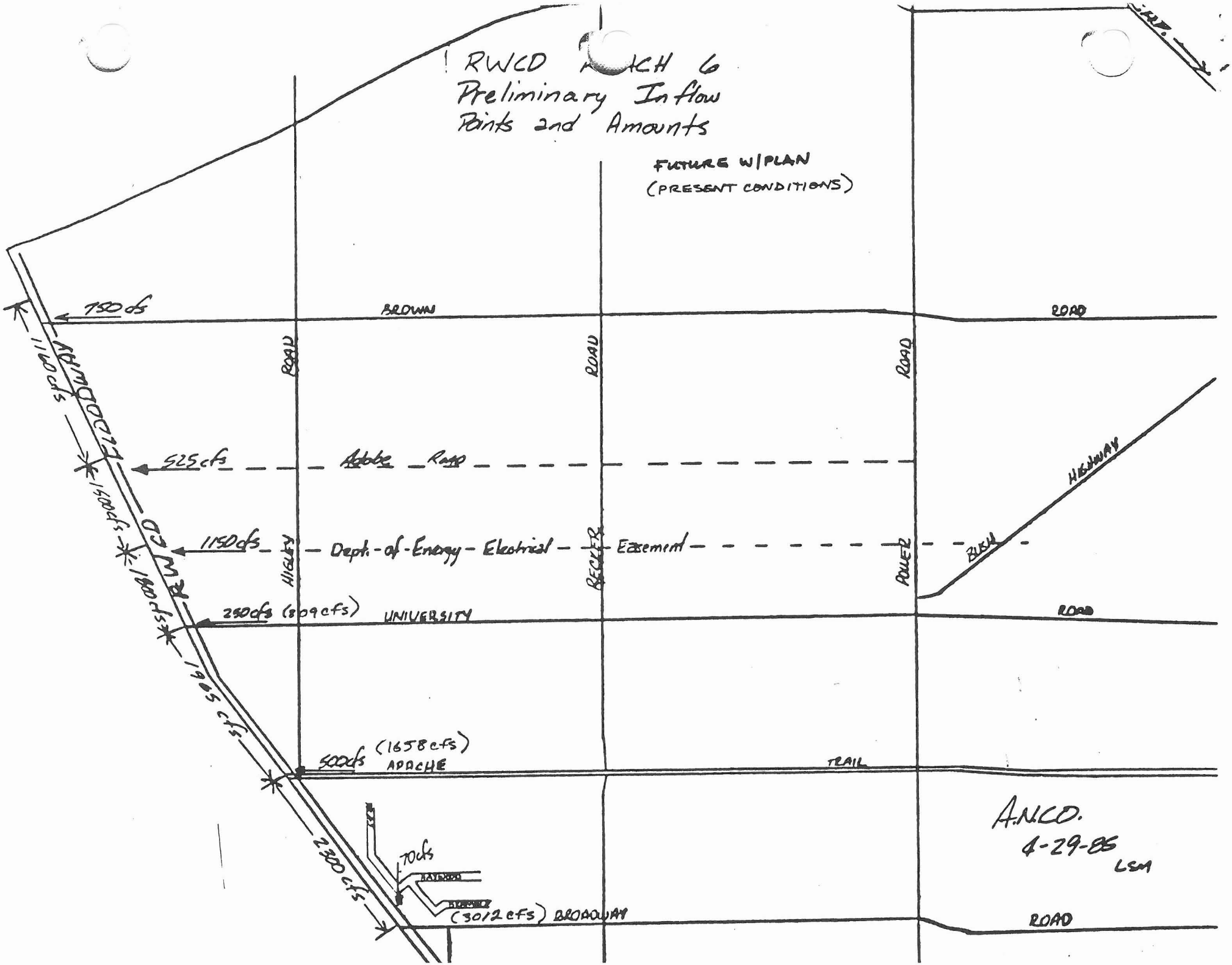
Sincerely,

ANDERSON-NICHOLS & COMPANY, INC.

Collis J. Lovely

Collis J. Lovely
Project Manager

CJL/gcb


RWCD ARCH 6
Preliminary Inflow
Points and Amounts
FUTURE W/PLAN
(PRESENT CONDITIONS)
750 cfs
BROWN
ROAD
1160 cfs
525 cfs
Adobe Road
1400 cfs
1150 cfs
Dept. of Energy Electrical Easement
1600 cfs
250 cfs (809 cfs)
UNIVERSITY
1905 cfs
500 cfs (1658 cfs)
APACHE
TRAIL
70 cfs
2300 cfs
(3012 cfs) BROADWAY
HIGHLEY
RECKER
POWER
BUSH
HIGHWAY
A.N.C.D.
4-29-85
LSM

201 E. Indianola Ave.
Suite 200
Phoenix, Arizona 85012

ENG-RWCD Reach-6 Hydrology May 8, 1985

Files 210

On 5/7/85 the following people met at Anderson/Nichols to discuss the above subject:

Attendance:	Darrel Wood	Anderson/Nichols
	Steve Miller	Anderson/Nichols
	Keeba Buckley	FCDMC
	Don Paulus	SCS
	Harry Millsaps	SCS

Harry Millsaps opened the discussion with a brief outline of what the SCS hydrology needs are at the present time. In short, SCS needs to put together a study of the existing hydrology in order for the designers, Greiner Engineering, to have adequate data to design existing and/or future side inlet structures.

The designer may pursue the following options depending on the results of present and future conditions.

1. Design inlets for present conditions and locations and have other concerned parties meet these.

2. Layout the inlets to meet future locations and design flows based on present or future conditions.

3. Locate and design all inlets that will occur in the future as well as present.

SCS asked Anderson/Nichols for any information that would help them delineate drainage areas for the Reach-6 site. Anderson/Nichols explained they did not do a detailed investigation of existing conditions in this area since their major concern is to get a final master drainage plan. They did break out the drainage to 3 areas labeled 2, 4, and 6 in this Reach, and supplied SCS with copies of CN's, computer runs and boundary areas used.

Anderson/Nichols also supplied SCS with a map showing the development of Alta Mesa Subdivision.

Donald E Paulus

Donald E. Paulus
Government Representative

cc: Harry Millsaps
Bill Payne
Ralph Arrington

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
3335 West Durango Street
PHOENIX, ARIZONA 85009

(602) 262-1501

LETTER OF TRANSMITTAL

DATE	JOB NO.
5-8-85	

ATTENTION: HARRY MILLSAPS

RE: RWCD REACH 6 HYDROLOGY
MISC. DATA

TO U.S.D.A. SOIL CONSERVATION SERVICE
201 E. INDIANOLA, SUITE 200
PHOENIX, AZ 85012

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☑ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☑ Sketch map

COPIES	DATE	NO.	DESCRIPTION
1	4-26-84		(2 SHEETS) GRADING & DRAINAGE PLANS, SUNDANCE
			GROVES
1			SKETCH MAP, EAST COUNTY STUDY AREA V. AREAL
			STEREO COVERAGE OF JULY 17-18, 1984 EVENT BY
			AREAL MAPPING COMPANY.

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☑ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS THESE ITEMS MIGHT BE HELPFUL TO YOU IN DOING YOUR HYDROLOGY STUDY FOR REACH 6. THE PLANS FOR SUNDANCE GROVES INDICATE HOW GRADING WILL BE TRENDING AT BROWN ROAD. THE SKETCH MAP SHOWS THE AREA OF STEREO COVERAGE BY ONE COMPANY LAST JULY; THAT STEREO COVERAGE MIGHT REVEAL MORE ABOUT WATERSHED DIVIDES THAN YOU ALREADY HAVE. UNFORTUNATELY, IT DOESN'T GO QUITE TO THE CANAL ITSELF.

I WONDER IF THE BUREAU'S VIDEOTAPE OF THE FLOODING WOULD BE USEFUL?

COPY TO _____

BEST WISHES,
SIGNED: Kelly Buckley PROJ. ENGR.

PRODUCT 240-3 NEBS Inc., Groton, Mass. 01471

If enclosures are not as noted, kindly notify us at once.

201 E. Indianola Ave.
Suite 200
Phoenix, Arizona 85012

ENG-RWCD Reach-6 Hydrology May 8, 1985

Files 210

On 5/7/85 the following people met at Anderson/Nichols to discuss the above subject:

Attendance:	Darrel Wood	Anderson/Nichols
	Steve Miller	Anderson/Nichols
	Keeba Buckley	FCDMC
	Don Paulus	SCS
	Harry Millsaps	SCS

Harry Millsaps opened the discussion with a brief outline of what the SCS hydrology needs are at the present time. In short, SCS needs to put together a study of the existing hydrology in order for the designers, Greiner Engineering, to have adequate data to design existing and/or future side inlet structures.

The designer may pursue the following options depending on the results of present and future conditions.

1. Design inlets for present conditions and locations and have other concerned parties meet these.

2. Layout the inlets to meet future locations and design flows based on present or future conditions.

3. Locate and design all inlets that will occur in the future as well as present.

SCS asked Anderson/Nichols for any information that would help them delineate drainage areas for the Reach-6 site. Anderson/Nichols explained they did not do a detailed investigation of existing conditions in this area since their major concern is to get a final master drainage plan. They did break out the drainage to 3 areas labeled 2, 4, and 6 in this Reach, and supplied SCS with copies of CN's, computer runs and boundary areas used.

Anderson/Nichols also supplied SCS with a map showing the development of Alta Mesa Subdivision.

Donald E. Paulus

Donald E. Paulus
Government Representative

cc: Harry Millsaps
Bill Payne
Ralph Arrington

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
3335 West Durango Street
PHOENIX, ARIZONA 85009

(602) 262-1501

LETTER OF TRANSMITTAL

DATE	JOB NO.
5-8-85	

ATTENTION: HARRY MILLSAPS

RE: RWCD REACH 6 HYDROLOGY
MISC. DATA

TO U.S.D.A. SOIL CONSERVATION SERVICE
201 E. INDIANOLA, SUITE 200
PHOENIX, AZ 85012

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☑ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☑ Sketch map

COPIES	DATE	NO.	DESCRIPTION
1	4-26-84		(2 SHEETS) GRADING & DRAINAGE PLANS, SUNDANCE
			GROVES
1			SKETCH MAP, EAST COUNTY STUDY AREA V. AREAL
			STEREO COVERAGE OF JULY 17-18, 1984 EVENT BY
			AREAL MAPPING COMPANY.

THESE ARE TRANSMITTED as checked below:

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☑ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS THESE ITEMS MIGHT BE HELPFUL TO YOU IN DOING YOUR HYDROLOGY STUDY FOR REACH 6. THE PLANS FOR SUNDANCE GROVES INDICATE HOW GRADING WILL BE TRENDING AT BROWN ROAD; THE SKETCH MAP SHOWS THE AREA OF STEREO COVERAGE BY ONE COMPANY LAST JULY; THAT STEREO COVERAGE MIGHT REVEAL MORE ABOUT WATERSHED DIVIDES THAN YOU ALREADY HAVE. UNFORTUNATELY, IT DOESN'T GO QUITE TO THE CANAL ITSELF.

I WONDER IF THE BUREAU'S VIDEOTAPE OF THE FLOODING WOULD BE USEFUL?

COPY TO _____

BEST WISHES,
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PRODUCT 240-3 NEBS Inc., Groton, Mass. 01471

If enclosures are not as noted, kindly notify us at once.

REVISED ANALYSIS AT ADOBE RD. AND 48TH ST.
RWCD REACH 6, INLET HYDROLOGY

A revised analysis of the Inlet Hydrology at the Intersection of 48th St. and Adobe Rd. became necessary when an error was detected in the assumption made in the July 1985 analysis as to the direction of flow at said intersection. The assumption made in the Alt 3, TR-20 Run, dated 7/23/85, and used in the design of the inlets at Adobe Rd., was that the total peak estimated for this location would enter the RWCD either immediately to the North or South of Adobe Rd. However, under existing conditions, Adobe Rd. has a reverse grade from the RWCD back to 48th Street. Therefore, a large portion (about 74%) of the peak that accumulates at this point from drainage areas to the north and east of the intersection, actually continues south along 48th St. (and/or Dixon St. and Rochester St.) and enters the RWCD at some point downstream. The most likely entrance is at the "Powerline Inlet" located 1/4 mile downstream of Adobe Rd.

With this information, a revised analysis was made using the Tabular Routing procedure from TR-55, dated June 1986. In the Tabular Routing procedure, Subarea 5, as used in the Alt 3, TR-20 program, was subdivided into two areas (5A & 5B) lying west and east of 48th Street, respectively. Peak inflow estimates for each subarea was developed using TR-55 Tabular Routing procedures, based on revised TCs and CNs. The revised TCs and CNs were calculated using "subdivision data" furnished by the City of Mesa. In the original analysis an on-site storage of 1/2-inch was assumed on Subarea 5B. However, subdivision plots and hydrology reports furnished by the City of Mesa for the North

Pointe Subdivision indicate that at least 1.2" of runoff is stored within the subdivision area either on-site or in retention basins. Thus, the future CN for Subarea 5B was adjusted downward from 73 to 59. The TC was also adjusted based on revised velocities calculated using selected road cross sections and slopes shown on the subdivision plots.

The "reach" hydrograph at VS-118 (Alt #3, TR-20) for the area located north and east of the Higley and Adobe Road intersection was first split at Rochester St. The assumption made at this location was that 1/6 of the total "reach" hydrograph would be diverted at Rochester St. and the remainder would continue west to 48th St. The reasoning used here was that only flows south of the Adobe Road Centerline (i.e., approximately 1/2 of the total "reach" hydrograph) could be diverted south along Rochester St. and that the actual amount of these flows would be in proportion to the respective slopes of the roads. The slope of Rochester (0.27%) is only about 1/3 of the slope of Adobe Rd. (0.68%); therefore, it was reasoned that 1/3 X 1/2 = 1/6 of the total reach hydrograph would be diverted at Rochester St.

At the Adobe Road and 48th St. intersection, the routed hydrograph was combined with the estimated hydrograph from Subarea 5B to give the total discharge for the drainage area lying north and east of the intersection. The flow was then divided using "Elevations-Discharge" rating curves for Dixon St. and for the flow entering the retention basin located on the

northwest corner of the intersection. The ratings were based on surveys performed by the SCS. The surveys became ~~neessary~~ necessary when the elevations on the subdivison plots proved to be inconsistent.

The flow entering the retention basin consists of flow through a catch basin located in the intersection, plus flow which overtops the curb along the northwest corner. The flow entering the retention basin was estimated to be about 30% the total hydrograph at the intersection. The remainder was assumed to flow south along Dixon St.

The flow entering the retention basin was combined with the runoff from Subarea 5A (the Sundance Groves ~~East~~ Subdivision), which flows directly into the basin, to give a total peak discharge of about 112 cfs. This total discharge, without reduction, should be used in the design of the RWCD Inlet, since the effect of storage in the retention basin has already been taken into account through the use of reduced curve numbers.

The flows diverted south (41 cfs and 167 cfs) along Rochester and Dixon Streets, respectively, will combine with flows entering the RWCD at the "Powerline Inlet". The peak from Alt 3, at the Powerline Inlet, was estimated at 576 cfs. Should all three of the hydrographs add "peak for "peak," which is not very likely, the total peak discharge at the Powerline Inlet would be about 784 cfs (41 cfs + 167 cfs + 576 cfs). This compares with a total discharge of 1600 CFS estimated by Anderson-Nichols for the Maricopa County Flood Control

District's Master Drainage Plan. This latter figure was used in the design of the Powerline Inlet.

Since the Powerline Inlet, as presently designed, will receive all of the additional flows from the Adobe Road intersection, there should be no affect on design of any inlet located downstream of this point.

Worksheet 5a: Basic watershed data

Project RWCD, REACH 6, INLET HYD Location MESA - ADOBE RD & 48th ST By [illegible] Date 10/1/87

Circle one: Present Developed _____ Frequency (yr) 100 Checked _____ Date _____

Subarea name	Drainage area A_m (mi^2)	Time of concentration T_c (hr)	Travel time through subarea T_t (hr)	Downstream subarea names	Travel time summation to outlet ΣT_t (hr)	24-hr Rainfall P (in)	Runoff curve number CN	Runoff Q (in)	$A_m Q$ (mi^2-in)	Initial abstraction I_a (in)	I_a/P
5A	0.10	0.27	—	—	—	3.6	w/1.0" stor. 66	0.86	0.09	1.03	0.29
5B	0.25	0.33	—	—	—	3.6	w/1.2" stor. 59	0.53	0.13	1.39	0.39

From worksheet 3 From worksheet 2 From table 5-1

4.29

CALCULATED USING REVISED CN'S & TC'S based on DIVISION DATA furnished by City of Mesa

FOR REF ONLY

VOID

Worksheet 5b: Tabulation of hydrograph discharge summary

SEE REV. CALCULATIONS FOR SUBAREA DATA FROM 8th PLACE RD INTERSECTION

Project RWCD, Reach 6, Inlet Hyd Location Mesa, Adobe Rd & 48th St By Hem Date 10/2/87

Circle one: Present (Developed) Frequency (yr) 100 yr Checked _____ Date _____

Subarea name	Basic watershed data used 1/: Subarea T_c (hr)	ΣT_t to outlet (hr)	I_a/P	$A_m Q$ (mi²-in)	Select and enter hydrograph times in hours from exhibit 5- 2/: 12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
					Discharges at selected hydrograph times 3/ (cfs)											
Contributing Area N. of Adobe Rd & East of Higley @ VS-118 4/					35	65	111	162	209	240	247	228	195	160	131	109
EST. 1/6 of Above Flows are diverted at Rochester St. This is based on assumption that only Flows in S. side of Adobe would be diverted and based on slopes only 1/3 of these would be, therefore 1/2 x 1/3 = 1/6 5/					-6	-11	-19	-27	-35	-40	-41	-38	-33	-27	-22	-18
EST. Flow @ VS-118 along Adobe From Area East of Higley Rd.					29	54	92	135	174	200	206	190	162	133	109	91
EST. 1/2 of the Above Hyd Stays N. of Adobe & 1/2 Flows south along DIXON STREET.					15	27	46	68	87	100	103	95	81	67	55	46
5B	USE 0.3 0.33	—	0.39	0.13	5	19	46	59	64	34	27	22	18	14	12	10
EST. TOT. FLOW ENTERING Retention BASIN on N.W. Corner of Adobe & 48th St. FROM EAST					20	46	92	127	151	134	130	117	99	81	67	56
5A	USE 0.3 0.27	—	0.29	0.09	6	23	47	52	41	27	20	16	13	9	8	7
EST. TOTAL FLOW INTO RWCD FROM Retention BASIN. (Note, Retention BASIN Storage Area taken into account thru Reduced CN'S)					26	69	139	179	191	161	150	133	112	90	75	63
Composite hydrograph at outlet																

1/ Worksheet 5a. Rounded as needed for use with exhibit 5.
2/ Enter rainfall distribution type used.
3/ Hydrograph discharge for selected times is $A_m Q$ multiplied by tabular discharge from appropriate exhibit 5.

4] FROM Alt #3, TR-20 Routings dated 7/23/85 @ VS-118 (Reach) & Revision of Subarea data w/Hyd output on 9/24/

5] Note Slopes on Adobe & Rochester Streets, are respectively approx 0.68% & 0.27%.

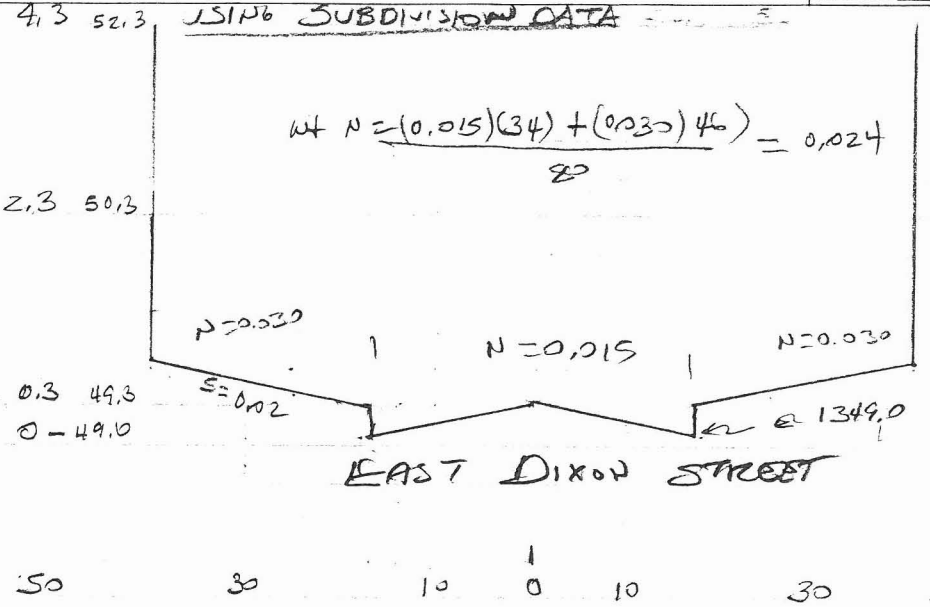
COMPUTATION SHEET
SCS–ENG–523 Rev. 8–69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE	PROJECT		
ARK	RWCD, REACH 6, FINLET ~~Hd~~		
BY: Hm	DATE: 9/30/87	CHECKED BY	DATE	JOB NO.

SUBJECT: STAGE-DISC @ Adobe Rd & 48th St — SHEET ____ OF ____

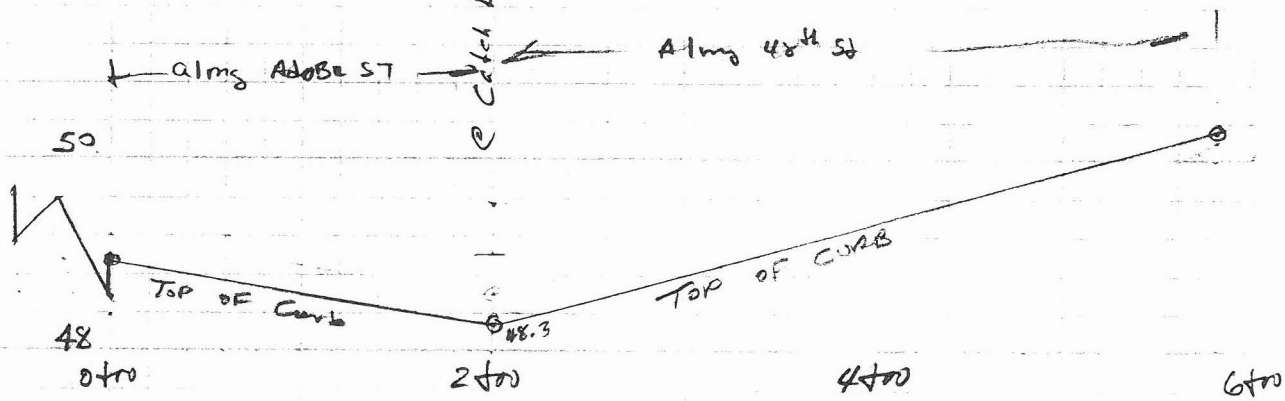
USING SUBDIVISION DATA



$$\text{wt } N = \frac{(0.015)(34) + (0.030)(46)}{80} = 0.024$$

VOID
See Revised
Calc using
Sec 3 Survey
Data @
Intersection
1/14/87
[illegible]

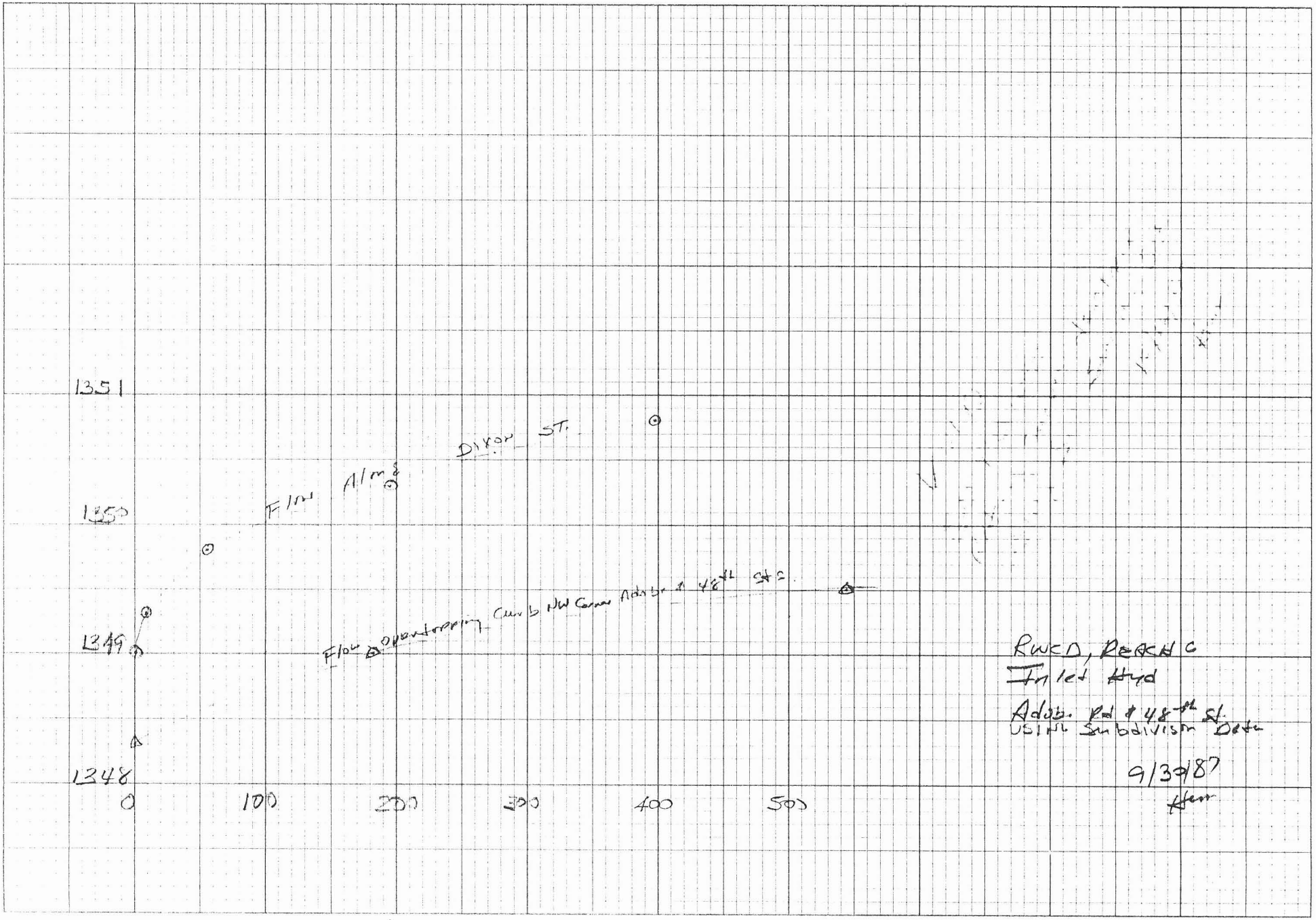
ELEV		AREA	N	R	S	V	Q
0	49.0	0		—	—	—	—
0.3	49.3	6	0.015	0.17	0.0020	0.85	8
0.8	49.8	35	0.024	0.43	"	1.57	55
1.3	50.3	75	"	0.91	"	2.60	195
1.8	50.8	115	"	1.39	"	3.45	397
2.3	51.3	155	"	1.84	"	4.16	645



ELEV	C	L	H (Avg.)	$Q = CLH^{3/2}$
1348.3	—	—	—	0
1349.0	2.6	340	0.70/2 = .35	183
1349.5	2.6	450	1.2/2 = 0.60	544
1350	2.6	560	1.7/2 = 0.85	1120

K+E 10 X 10 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 0780



SUBROUTINE DIVERT CROSS SECTION 117
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 1,6

XEQ 9/24
AH#3
Note this is same as AH#3, dated 3/23/84 except that was asked for at VS-118

SUBROUTINE REACH CROSS SECTION 118
LENGTH= 3000.00 INPUT COEFFICIENT= 0.8300 INPUT ROUTINGS= 0.0

AVERAGE WATER VELOCITY= 8.300 AVERAGE ROUTING COEFF= 0.8300 NUMBER OF ROUTINGS= 0.83

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.58	247.302	1.69
19.56	12.038	0.43
21.98	10.073	0.38
23.97	9.537	0.34

HYDROGRAPH, TZERO= 0.0 DELTA T= 0.10 DRAINAGE AREA= 0.61

TIME											
0.0	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.04
10.00	DISCHG	0.07	0.12	0.19	0.27	0.37	0.50	0.66	0.86	1.12	1.45
11.00	DISCHG	1.86	2.37	2.96	3.60	4.30	5.19	6.55	8.48	11.90	19.22
12.00	DISCHG	34.90	65.15	110.68	162.54	209.56	240.46	246.71	228.19	194.85	159.94
13.00	DISCHG	131.04	108.73	91.17	77.23	66.68	59.02	53.28	48.63	44.72	41.61
14.00	DISCHG	39.16	37.05	35.07	33.25	31.74	30.53	29.49	28.51	27.57	26.78
15.00	DISCHG	26.13	25.54	24.93	24.30	23.75	23.25	22.75	22.19	21.58	21.02
16.00	DISCHG	20.52	20.01	19.45	18.88	18.39	17.98	17.63	17.31	17.02	16.80
17.00	DISCHG	16.65	16.56	16.50	16.42	16.34	16.23	16.07	15.84	15.56	15.30
18.00	DISCHG	15.05	14.78	14.46	14.12	13.80	13.51	13.22	12.92	12.62	12.39
19.00	DISCHG	12.23	12.13	12.07	12.05	12.03	12.03	12.04	12.02	11.96	11.88
20.00	DISCHG	11.76	11.59	11.36	11.12	10.91	10.76	10.67	10.58	10.49	10.38
21.00	DISCHG	10.25	10.06	9.85	9.67	9.55	9.53	9.62	9.78	9.93	10.04
22.00	DISCHG	10.07	9.99	9.81	9.60	9.41	9.27	9.17	9.09	8.99	8.88
23.00	DISCHG	8.74	8.56	8.34	8.17	8.05	8.03	8.12	8.26	8.41	8.51
24.00	DISCHG	8.53	8.42	8.09	7.50	6.83	6.06	5.09	4.07	2.97	1.99
25.00	DISCHG	1.26	0.77	0.47	0.28	0.17	0.10	0.06	0.04	0.02	0.01
26.00	DISCHG	0.0									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.0279 CFS-HRS= 405.27 ACRE-FT= 33.49

SUBROUTINE RUNOFF CROSS SECTION 5
AREA= 0.35 INPUT RUNOFF CURVE= 71.0 TIME OF CONCENTRATION= 0.23

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.03	227.417	(RUNOFF)
16.96	10.016	(RUNOFF)
19.45	8.114	(RUNOFF)
20.45	7.173	(RUNOFF)
21.46	7.202	(RUNOFF)
22.45	6.246	(RUNOFF)
23.46	6.263	(RUNOFF)

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.1271 CFS-HRS= 254.58 ACRE-FT= 21.04

SUBROUTINE ADDHYD CROSS SECTION 119
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

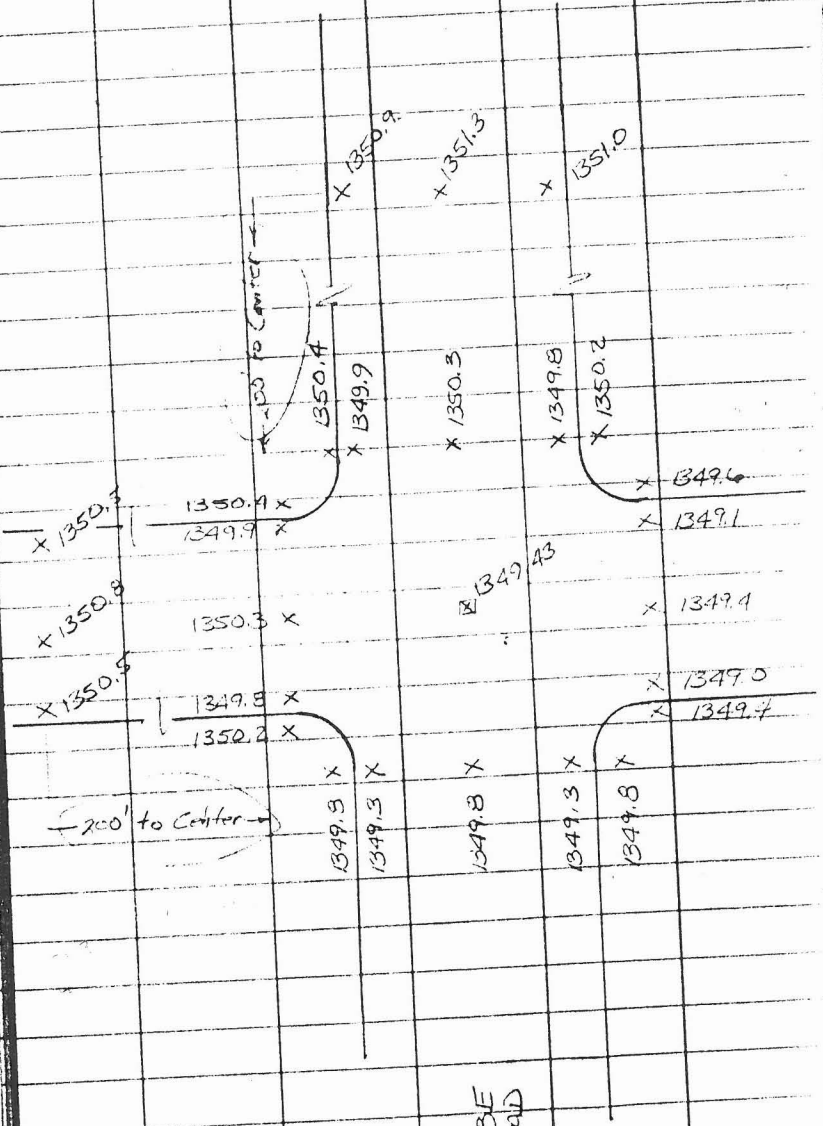
108-87

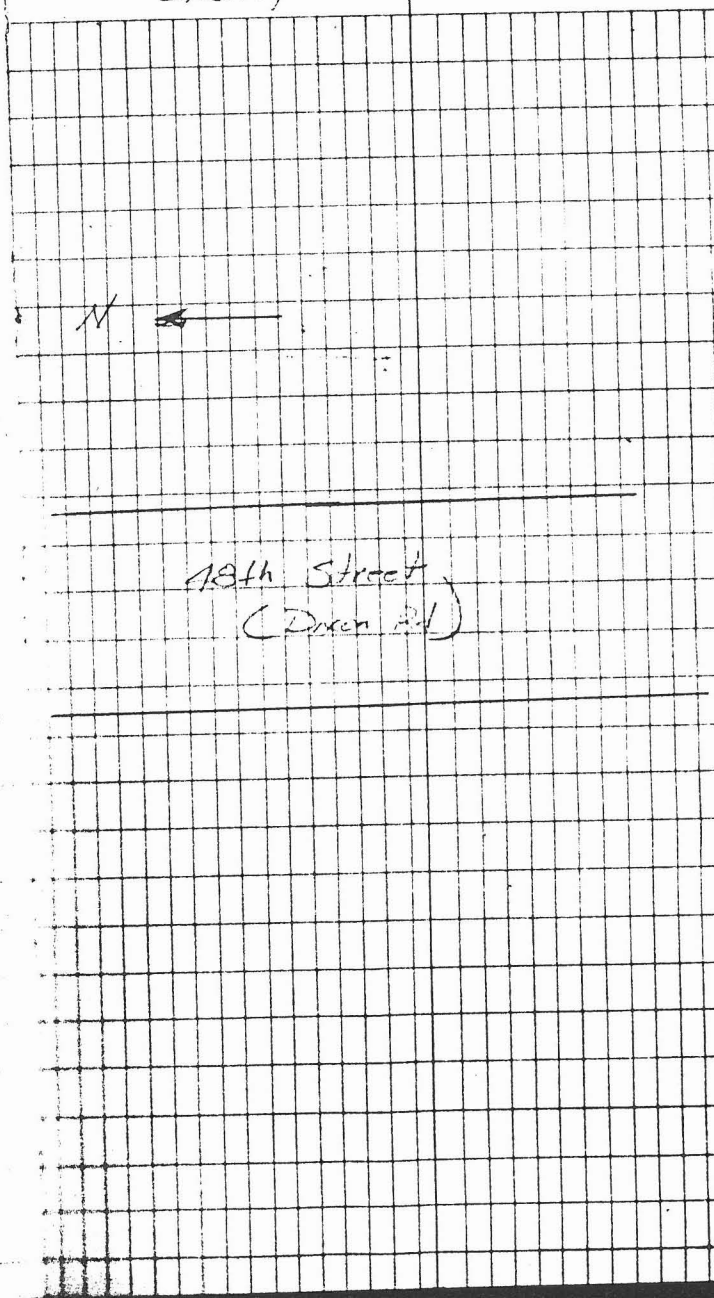
12

STA	BS	HI	FS	ELEV	
		1355.36			
			5.11	350.25	48th St, ± 40' N. of intersection
			5.57	49.79	
			5.05	50.31	
			5.50	49.86	
			5.01	50.35	
			4.88	50.48	48th St, 200' N. of intersection
			4.54	50.82	
			4.90	50.46	
			5.92	49.44	48th St (Dixon), ± 50' S. of intersection
			6.40	48.96	
			6.01	49.35	
			6.29	49.07	
			5.80	1349.56	

* See sketch, p. 10, for shot location

EAST MARICOPA FLOODWAY
REACH 6
Existing Road Elevations





REACH 6
Existing Rd. Elevations @
48th St. & Adobe Rd.

D. Clough
K. Brashear
T. Jayo

OCT. 8, 1987
CLEAR, CALM, 90°F

STA	BS	HI	FS	ELEV	
TBM	6.96	1355.36		1348.50	Top of existing manhole, rim elev = 1348.50, from sheet 4 of 24, Reach 6 PLANS
			5.93	349.43	Top of BC. HH @ Center of SEC 15 Control Pt 30"
			5.00	50.36	Adobe Rd, ± 40' E. of INTERSECTION
			5.50	49.86	
			5.09	50.27	
			5.59	49.77	
			5.12	50.24	
			4.43	50.93	Adobe Rd 200' E. of Control Pt 30'
			4.07	51.29	
			4.39	50.97	
			5.56	49.80	Adobe Rd, ± 50' W. of Intersection
			6.04	49.32	
			5.57	49.79	
			6.02	49.34	
			5.56	1349.80	

* See sketch, P.10, for pict location

COMPUTATION SHEET
SCS-ENG-523 Rev. 8-69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE	PROJECT		
ARIZ	RWCD REACH-6, INLET HYDROLOGY		
BY: Hem	DATE: 9/21/87	CHECKED BY	DATE	JOB NO.
SUBJECT: TIME OF CONCENTRATION			SHEET ____ OF ____

SUBAREAS 5A & 5B

SUBAREA -5A (WEST OF 48th St, BET. BROWN & ADOBE ROADS)

L = 2700' (Along E. FAIRBROOK CIR. Then South along N. QUAIL ST.)

N = 0.015
R = 0.50 (Not To Top of Curb R ≈ 0.29')
S = 5/2500 = 0.002
$V = \frac{1.486}{0.015}(0.5)^{2/3}(.002)^{1/2} = 2.8$ ft/sec

$T_c = \frac{2700}{(3600)(2.8)} = 0.27$ Hrs

SubAREA 5B (BET BROWN & ADOBE And 48th St. & Higley RD)

$L_1 = 2640'$ (Along E-W St South of Brown Rd)
S = 10/1100 = 0.009
N = 0.015
R = 0.50
$V = \frac{1.486}{0.015}(0.5)^{2/3}(0.009)^{1/2} = 5.9$

$T_{t_1} = \frac{2640}{(3600)(5.9)} = 0.12$ Hrs

$L_2 = 2150$ (Along 48th St.)
N = 0.015
S = 0.002
R = 0.50
$V = \frac{1.486}{0.015}(0.50)^{2/3}(.002)^{1/2} = 2.8$ ft/sec

$T_{t_2} = \frac{2150}{(3600)(2.8)} = 0.21$

$T_c = 0.12 + 0.21 = 0.33$ Hrs

Worksheet 5b: Tabu.... hydrograph discharge summary

Project RWCD Reach 6, Inlet Hyd Location Mesa - Adobe Rd & 48th St By [illegible] Date 9/24/87

Circle one: Present Developed _____ Frequency (yr) _____ Checked _____ Date _____

Subarea name	Basic watershed data used 1/: Sub-area T_c (hr)	ΣT_t to outlet (hr)	I_a/P	A_mQ (mi^2-in)	Select and enter hydrograph times in hours from exhibit 5- 2/: 12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
					Discharges at selected hydrograph times 3/ (cfs)											
Contributing Area N. of Adobe Rd & East of 48th St @ VS-118 4)					35	65	111	162	209	240	247	228	195	160	131	109
5B	USV 0.2 0.23	—	0.23	0.28	72	172	205	138	75	52	41	34	22	24	21	17
Tot Flow E of 48th St & N. of Adobe					107	237	316	300	284	292	288	262	223	184	152	128
Assume 1/2 of Tot Hyd Crosses 48th St & Remainder flow South 5)					35	79	105	100	95	97	96	87	74	61	51	43
5A	0.23	—	0.23	0.11	28	68	80	54	29	20	16	13	11	9	8	7
Tot Flow IN to RWCD Thru Detention Basin Located in N.W. Corner of Adobe Rd & 48th St.					63	147	185	154	124	117	112	100	85	70	59	50
Composite hydrograph at outlet																

1/ Worksheet 5a. Rounded as needed for use with exhibit 5.
2/ Enter rainfall distribution type used.
3/ Hydrograph discharge for selected times is A_mQ multiplied by tabular discharge from appropriate exhibit 5.

4) Hyd From Alt #3, TR-20 Routing EXD 7/23/85 @ VS-118 (Reach) & Rerun 9/24/87 asking for Hyd.

5) Assume only 1/3 of Hyd flows across 48th St. and enters Detention Basin on N.W. Corner of 48th St & Adobe Rd.

Worksheet 5a: Basic watershed data

Project RWCD, REACH 6, INLET HYD Location MOA, AK By [illegible] Date [illegible]

Circle one: Present Developed _____ Frequency (yr) 100 Checked _____ Date _____

Subarea name	Drainage area A_m (mi^2)	Time of concentration T_c (hr)	Travel time through subarea T_t (hr)	Downstream subarea names	Travel time summation to outlet ΣT_t (hr)	24-hr Rainfall P (in)	Runoff curve number CN	Runoff Q (in)	$A_m Q$ (mi^2-in)	Initial abstraction I_a (in)	I_a/P
5A	0.10	0.23	—	—	—	3.6	71	1.13	0.11	0.817	0.23
5B	0.25	0.23	—	—	—	3.6	71	1.13	0.28	0.717	0.23

From worksheet 3 From worksheet 2 From table 5-1

For Report Only

CALCULATED USING REVISED ICS BUT ORIGINAL CN'S & ASSUMING 1/3 of Flow from Area North & East of Intersection enters Detention Basin

Worksheet 5b: Tabular hydrograph discharge summary

Project RWCD, REACH-6, Inlet Hyd Location Mesa - Adobe Rd & 48th St By Hem Date 9/21/89

Circle one: Present (Developed) Frequency (yr) 100 Checked _____ Date _____

Subarea name	Basic watershed data used 1/				Select and enter hydrograph times in hours from exhibit 5- 2/											
	Sub-area T_c (hr)	ΣT_t to outlet (hr)	I_a/P	$A_m Q$ (mi²-in)	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
					Discharges at selected hydrograph times 3/ -(cfs)-											
Contributing & EAST OF	Area North of HICKLE RD			ADOBE @ VS-118 4/	35	65	111	162	209	240	247	228	195	160	131	109
SB	0.33	—	0.21	0.31	50	110	188	195	141	91	64	49	39	28	23	21
TOT. FLOW	EAST	OF 48th ST.		& N. OF ADOBE	85	176	299	357	350	331	311	277	234	188	154	130
Assume 1/3 48th St &	OF Hyd Crosses Remainder Flows South 5/				28	58	99	118	116	109	103	91	77	62	51	43
SA	0.27	—	0.29	0.09	6	23	47	52	41	27	20	16	13	9	8	7
TOTAL FLOW INTO RWCD THRU DETENTION BASIN NW					34	81	146	170	157	136	123	107	90	71	59	50
CORNER OF ADOBE RD & 48th ST.																
Composite hydrograph at outlet																

1/ Worksheet 5a. Rounded as needed for use with exhibit 5.
2/ Enter rainfall distribution type used.
3/ Hydrograph discharge for selected times is $A_m Q$ multiplied by tabular discharge from appropriate exhibit 5.
4] FROM ALT #3, TR-20 Routing Dated 7/23/85 VS-118 (REACH) based on Re Run dated 9/24/89 Asking for Hyd.
5] ASSUME only 1/3 of Hyd Flows across 48th St and Enters Detention Basin on NW Corner of 48th St & Adobe Rd.

Worksheet 5a: Basic watershed data

Project RWCD, REACH 6, INLET HYD Location MESA A2 By [illegible] Date 9/21/87

Circle one: Present (Developed) Frequency (yr) 100 Checked _____ Date _____

Subarea name	Drainage area A_m (mi^2)	Time of concentration T_c (hr)	Travel time through subarea T_t (hr)	Downstream subarea names	Travel time summation to outlet ΣT_t (hr)	24-hr Rainfall P (in)	Runoff curve number CN (yr 2000 w/1-inch storage assumed)	Runoff Q (in)	$A_m Q$ (mi^2-in)	Initial abstraction I_a (in)	I_a/P
5A	0.10	0.27	0	—	—	3.6	66	0.86	0.09	1.030	0.29
5B	0.25	0.33	0	—	—	3.6	73	1.25	0.31	0.740	0.21

↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ From worksheet 3

↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ From worksheet 2

↑ ↑ ↑ ↑ From table 5-1

.13
.33

DRAINAGE AREAS

6/10/85

RWCD REACH 6
INLET HYDROLOGY
DRAINAGE AREAS

The total drainage for the RWCD Reach 6 was originally broken into 19 subareas. This was done based on flow pattern as delineated on 1"=1200' aerial photo from field reconnaissance. As the study progressed it was determined that Subareas 7, 8 and 14 needed to be further divided into Subareas 7A & 7B; 8A & 8B and 14A & 14B. The delineations thus determined were transfer to a 7½-minute (Buckhorn, AZ.) USGS Quad Sheet from which the respective subareas were planimetered. The total drainage area, thus determined was 10.35 sq miles. Drainage areas by Subareas are shown on the table which follows.

Ar12 RWCD, REACH 6, Inlet Hydrology
~~Hm~~ 5/8/85 DEB 6-18-85
Summary of Drainage Areas

Subarea No.	D.A. (mi²)	
1	0.64	
2	0.70	
3	1.23	
4	0.67	
5	0.35	
6	0.31	
7	0.34	7A = 0.14, 7B = 0.20
8	1.34	8A = 0.94, 8B = 0.40
9	1.09	
10	0.13	
11	0.11	
12	0.07	
13	0.03	
14	0.92	14A = 0.50, 14B = .42
15	0.43	
16	1.08	
17	0.28	
18	0.33	
19	0.30	
TOTAL	10.35	

AR12 RWCH REACH 6, INLET HYDROLOGY

~~Hem~~ 5/8/85 DCP 6-19-85

DRAINAGE AREAS 1 3

Subarea #1

	23.60	28.06	~~32.37~~	36.77
✓	19.12	23.60	~~28.06~~	32.37
	4.43	4.46	~~4.31~~	4.40

$4.43^{\square''} \times .1435 = 0.64 mi^2$

Subarea #2

	41.35	45.99	50.60
✓	36.77	41.35	45.99
	4.58	4.64	4.61

$4.61^{\square''} \times .1435 = 0.66 mi^2$
$+.14$
$0.70 mi^2$

Subarea # 3

	86.10	94.66	103.35	11.95
✓	77.52	86.10	~~94.66~~	3.35
	8.58	8.56	~~8.69~~	8.60

$8.58^{\square''} \times .1435 = 1.23 mi^2$

Subarea # 4.

	16.66	21.27	~~28.78~~	33.53	38.18
✓	11.95	16.66	~~21.27~~	28.78	33.53
	4.71	4.61	~~7.51~~	4.75	4.65

$4.68^{\square''} \times .1435 = 0.67 mi^2$

Subarea # 5

	17.71	20.17	22.67
✓	15.25	17.71	20.17
	2.46	2.46	2.50

$2.47^{\square''} \times .1435 = 0.35 mi^2$

Subarea # 6

	24.84	26.99	29.18
✓	22.67	24.84	~~26.99~~
	2.17	2.15	2.19

$2.17^{\square''} \times .1435 = 0.31 mi^2$

Ann

~~Hem~~ 5/8/85 DSP 6-19-85

DRAINAGE AREAS 2 3

Subarea # 7

~~64.47~~	64.85	68.19	71.57	
~~57.96~~	61.47	64.85	68.19	3.37 □" x .1435 = 0.48 mi²
~~3.51~~	3.38	3.34	3.38	− 0.14
				0.34 mi

Subarea # 8

94.89	104.29	13.61	22.94	
✓ ~~85.90~~	94.89	4.29	13.61	9.35 □" x .1435 = 1.34 mi²
~~8.99~~	9.40	9.32	9.33	

8A = 6.57 □" x .1435 = 0.94

8B = 2.78 □" x .1435 = 0.40

Subarea # 9

30.54	38.04	45.64	53.22	
✓ 22.94	~~30.54~~	38.04	45.64	7.59 □" x .1435 = 1.09 mi²
7.60	7.50	7.60	7.58	

Subarea # 10

8.18	9.16	10.08	
✓ 7.25	8.18	9.16	0.94 □" x .1435 = 0.13 mi²
0.93	0.98	0.92	

Subarea # 11

0.89	1.68	2.45	
✓ 0.08	0.89	1.68	0.79 □" x .1435 = 0.11 mi²
0.82	0.79	0.77	

Subarea # 12

3.45	3.96	4.48	
✓ 2.92	3.45	3.96	0.52 □" x .1435 = 0.07 mi²
0.53	0.51	0.52	

ARIZ.

~~Hm~~ 5/8/85 DP 6-19-85

DRAINAGE AREAS 3 3

Subarea # 13

	4.71	4.94	5.17
✓	4.48	4.71	4.94
	0.23	0.23	0.23

$0.23^{\square''} \times .1435 = 0.03\ mi^2$

Subarea # 14

	95.74	102.22	18.56	21.55
✓	89.31	95.74	2.22	15.18
	6.43	6.38	6.34	6.37

$6.39^{\square''} \times .1435 = 0.92\ mi^2$

Subarea # 15

	24.44	27.48	30.46	33.41
✓	21.55	24.44	27.48	30.46
	2.89	3.04	2.98	2.95

$2.97^{\square''} \times .1435 = 0.43\ mi^2$

Subarea # 16

	63.11	70.56	78.26	85.64
✓	55.52	63.11	70.56	78.26
	7.59	7.45	7.70	7.38

$7.53^{\square''} \times .1435 = 1.08\ mi^2$

Subarea # 17

	4.38	6.38	8.28	10.23
✓	2.37	4.38	6.38	8.28
	2.01	2.00	1.90	1.95

$1.97^{\square''} \times .1435 = 0.28\ mi^2$

Subarea # 18

	8.68	5.01	7.33	9.84	12.16
✓	0.23	2.68	5.01	7.33	9.84
	2.45	2.32	2.33	2.51	2.32

$2.33^{\square''} \times .1435 = 0.33\ mi^2$

Subarea # 19

	88.46	91.32	94.24	97.12
✓	85.64	88.46	91.32	94.24
	2.82	2.86	2.92	2.88

$1.75 \times 1.3 = 2.21^{\square''} \times .1435 = 0.30$

~~$2.87^{\square''} \times .1435 = 0.41\ mi^2$~~

Based on Subdivision Data Furnished by the City of Mesa & Survey Data of Adobe Road & 48th Intersection By SCS on 10/8/87

Worksheet 5b: Tabular hydrograph discharge summary

Project RWCD, REACH 6 INLET HYD Location MESA - ADOBE RD & 48th ST By Hm Date 10/16/87

Circle one: Present Developed _____ Frequency (yr) 100 yr Checked _____ Date _____

Subarea name	Basic watershed data used 1/: Sub-area T_c (hr)	ΣT_t to outlet (hr)	I_a/P	$A_m Q$ (mi²-in)	Select and enter hydrograph times in hours from exhibit 5- 2/: 12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
					Discharges at selected hydrograph times 3/ (cfs)											
CONTRIBUTING AREA N. OF ADOBE RD & EAST OF HILLEY @ VS-118 4)					35	65	111	162	209	240	247	228	195	160	131	109
EST. 1/6 OF ABOVE FLOWS ARE DIVERTED AT ROCHESTER. THIS IS BASED ON ASSUMPTION THAT ONLY FLOWS S. OF E WOULD BE DIVERTED					-6	-11	-19	-27	-35	-40	-41	-38	-33	-27	-22	-18
AND BASED ON VERIFICATION SLOPES ONLY 1/3 OF THESE WOULD BE INTERCEPTED, 1/2 x 1/2 = 1/6 5) EST. FLOW @ 48th ST ALONG ADOBE RD FROM AREA EAST OF HILLEY RD.					29	54	92	135	174	200	206	190	162	133	109	91
5B	use 0.38 0.38	—	0.39	0.13	5	19	46	59	64	34	27	22	18	14	12	10
TOTAL FLOW @ ADOBE RD & 48th ST FROM AREA EAST OF 48th ST					34	73	138	194	238	234	233	212	180	147	121	101
BASED ON RATING OF DIXON ST & FLOW ACROSS TOP OF CURB, EST. 30% OF ABOVE FLOW ENTERS RET. BASIN					10	22	41	58	71	70	70	64	54	44	36	30
5A	use 0.3 0.27	—	0.29	0.09	6	23	47	52	41	27	20	16	13	9	8	7
EST. TOT. FLOW INTO RWCD FROM RETENTION BASIN. (NOTE, RET BASIN STORAGE WAS TAKEN INTO ACCOUNT THRUGH REDUCTIONS					16	45	88	110	112	97	90	80	67	53	44	37
Composite hydrograph at outlet																

1/ Worksheet 5a. Rounded as needed for use with exhibit 5.
2/ Enter rainfall distribution type used.
3/ Hydrograph discharge for selected times is $A_m Q$ multiplied by tabular discharge from appropriate exhibit 5.
4) From Alt #3, TR-20 Routings dated 7/23/85 @ VS-118 (REACH) & Rerun with same data w/Hydrograph on 9/24/87
5) Respective slopes on ADOBE RD & ROCHESTER STREET are 0.68% and 0.22%

Based on Subdivision Data Furnished by the City of Mesa & Survey Data of Adobe Road & 48th Intersection By SCS on 10/8/87

Worksheet 5b: Tabular hydrograph discharge summary

Project RWCD, REACH 6 INLET HYD Location MESA - ADOBE RD & 48th ST By [illegible] Date 10/16/87

Circle one: Present Developed _____ Frequency (yr) 100 yr Checked _____ Date _____

Subarea name	Basic watershed data used 1/: Subarea T_c (hr)	ΣT_t to outlet (hr)	I_a/P	$A_m Q$ (mi^2-in)	Select and enter hydrograph times in hours from exhibit 5- 2/: 12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	13.0	13.2	13.4
					Discharges at selected hydrograph times 3/ (cfs)											
CONTRIBUTING AREA N. OF ADOBE RD & EAST OF HALLEY @ VS-118 4/					35	65	111	162	209	240	247	228	195	160	131	109
EST. 1/6 OF ABOVE FLOWS ARE DIVERTED AT ROCHESTER ST. THIS IS BASED ON ASSUMPTION THAT ONLY FLOWS OF THE					-6	-11	-19	-27	-35	-40	-41	-38	-33	-27	-22	-18
AND BASED ON RESPECTIVE SLOPES, ONLY 1/3 OF THESE WOULD BE DIVERTED, 1/3 X 1/2 = 1/6 5) EST. FLOW @ 48th ST ALONG ADOBE					29	54	92	135	174	200	206	190	162	133	109	91
RD FROM AREA EAST OF HALLEY RD. 5B	USE 0.3 0.33	—	0.39	0.13	5	19	46	59	64	34	29	22	18	14	12	10
TOTAL FLOW @ ADOBE RD & 48th ST					34	73	138	194	238	234	233	212	180	147	121	101
FROM AREA EAST OF 48th ST																
BASED ON RATING OF DIXON ST & FLOW ACROSS TOP OF CURB. EST. 30% OF ABOVE FLOW ENTERS RET. BASIN					10	22	41	58	71	70	70	64	54	44	36	30
5A	USE 0.3 0.27	—	0.29	0.09	6	23	47	52	41	27	20	16	13	9	8	7
EST. TOT. FLOW INTO RWCD FROM RETENTION BASIN. (WITH RET BASIN STORAGE WAS TAKEN INTO ACCOUNT THROUGH REDUCTIONS					16	45	88	110	112	97	90	80	67	53	44	37
Composite hydrograph at outlet																

1/ Worksheet 5a. Rounded as needed for use with exhibit 5.
2/ Enter rainfall distribution type used.
3/ Hydrograph discharge for selected times is $A_m Q$ multiplied by tabular discharge from appropriate exhibit 5.
4) From Alt #3, TR-20 Routings dated 7/23/85 @ VS-118 (REACH) & Rerun with Sim data w/Hydrograph on 9/24/87
5) Respective slopes on ADOBE RD & ROCHESTER STREET are 0.68% and 0.29%

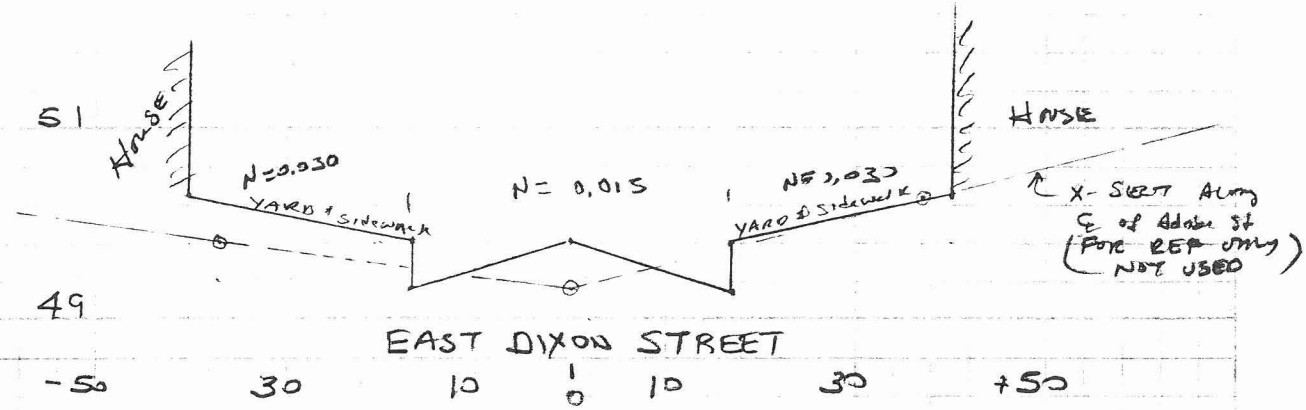
COMPUTATION SHEET
SCS-ENG-523 Rev. 8-69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

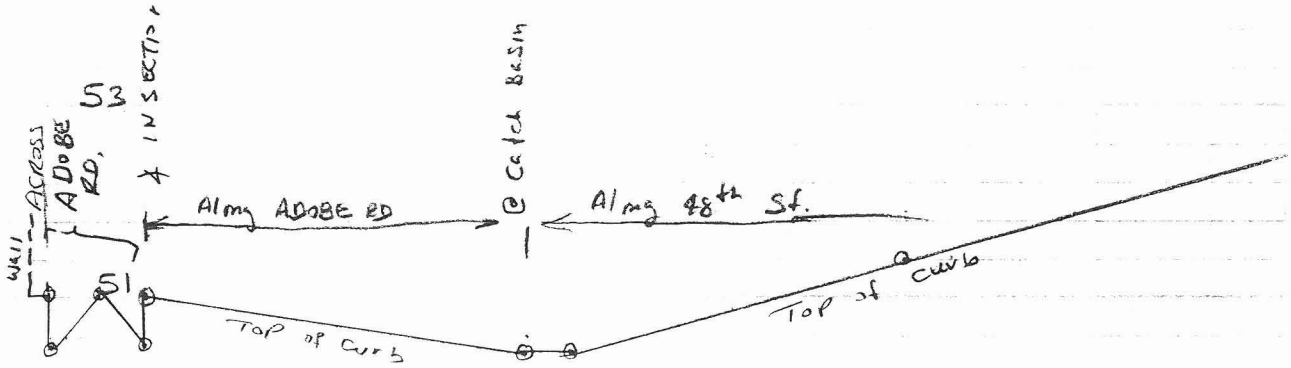
STATE	PROJECT		
AR12	RWCD, REACH 6, INLET HYDROLOGY		
BY / DATE	CHECKED BY / DATE	JOB NO.	
Hem / 10/16/87			

SUBJECT: REVISED STAGE-DISCHARGE CALC @ ADOBE RD & 48th St — SHEET ____ OF ____

BASED ON DATA SURVEYED BY SCS DATED 10/8/87
USING SCS DATUM



ELEV	AREA	N	R	$R^{2/3}$	S	V	Q
49.3	0	0.015			0.0020 (0.044)	0	0
49.8	8.5	0.024 (WH)	0.24	0.39	"	1.69	14
50.3	37	"	0.46	0.60	"	1.63	60
50.8	77	"	0.96	0.97	"	2.66	204
51.3	117	"	1.46	1.29	"	3.51	411

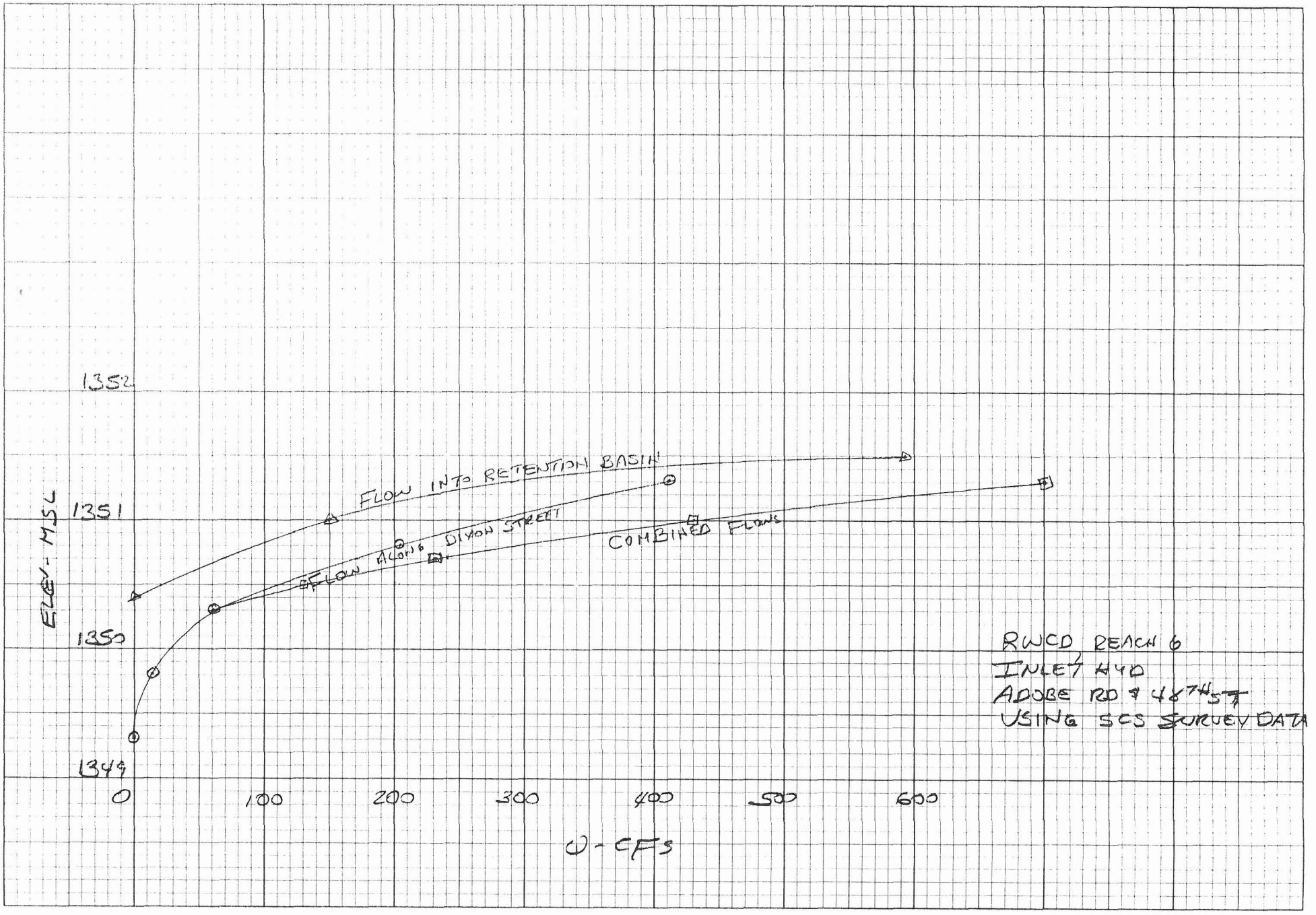


FLOW INTO RETENTION BASIN

49
0+00 2+00 4+00 6+00

ELEV	C	L	H (ft)	Q=CLH^3/2 OVERTOP CURB	ESTI PIPE FLOW	TOTAL Q
50.4	2.6	25	0	0	0	0
51.0	2.6	340	0.6/2=0.30	145	≈ 5	150
51.5	2.6	550	1.1/2=0.55	583	≈ 10	593

K+E 10 X 10 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.



SUBROUTINE DIVERT CROSS SECTION 117
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPHS= 1,6

XEROX 9/24
A/H #3
Note this is same as A/H #2, dated 7/23/96 except that was asked for at US-118

SUBROUTINE REACH CROSS SECTION 11[illegible]
LENGTH= 3000.00 INPUT COEFFICIENT= 0.8300 INPUT ROUTINGS= 0.0

AVERAGE WATER VELOCITY= 0.300 AVERAGE ROUTING COEFF= 0.8300 NUMBER OF ROUTINGS= 0.83

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.58	247.702	1.69
19.56	12.038	0.43
21.98	10.073	0.38
23.97	9.537	0.34

HYDROGRAPH, TZERO= 0.0 DELTA T= 0.10 DRAINAGE AREA= 0.61

TIME											
0.0	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9.00	DISCHG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.04
10.00	DISCHG	0.07	0.12	0.19	0.27	0.37	0.50	0.66	0.86	1.12	1.45
11.00	DISCHG	1.86	2.37	2.96	3.60	4.30	5.19	6.55	8.48	11.90	19.22
12.00	DISCHG	34.90	65.13	110.59	162.54	209.56	240.46	246.71	228.19	194.85	159.94
13.00	DISCHG	131.04	105.77	81.17	77.23	66.68	59.02	53.28	48.63	44.72	41.61
14.00	DISCHG	39.16	37.05	35.07	33.25	31.74	30.53	29.49	28.51	27.57	26.78
15.00	DISCHG	26.17	25.54	24.97	24.30	23.75	23.25	22.75	22.19	21.58	21.02
16.00	DISCHG	20.52	20.11	19.45	18.89	18.39	17.98	17.63	17.31	17.02	16.80
17.00	DISCHG	16.65	16.56	16.50	16.42	16.34	16.23	16.07	15.84	15.56	15.30
18.00	DISCHG	15.05	14.78	14.46	14.13	13.80	13.51	13.22	12.92	12.62	12.39
19.00	DISCHG	12.23	12.13	12.07	12.05	12.03	12.03	12.04	12.02	11.96	11.88
20.00	DISCHG	11.76	11.59	11.36	11.12	10.91	10.76	10.67	10.58	10.49	10.38
21.00	DISCHG	10.25	10.06	9.85	9.67	9.55	9.53	9.62	9.78	9.93	10.04
22.00	DISCHG	10.07	9.99	9.81	9.60	9.41	9.27	9.17	9.09	8.99	8.88
23.00	DISCHG	8.74	8.56	8.34	8.17	8.05	8.03	8.12	8.26	8.41	8.51
24.00	DISCHG	8.53	8.42	8.23	7.50	6.83	6.06	5.09	4.07	2.97	1.99
25.00	DISCHG	1.26	0.77	0.47	0.28	0.17	0.10	0.06	0.04	0.02	0.01
26.00	DISCHG	0.0									

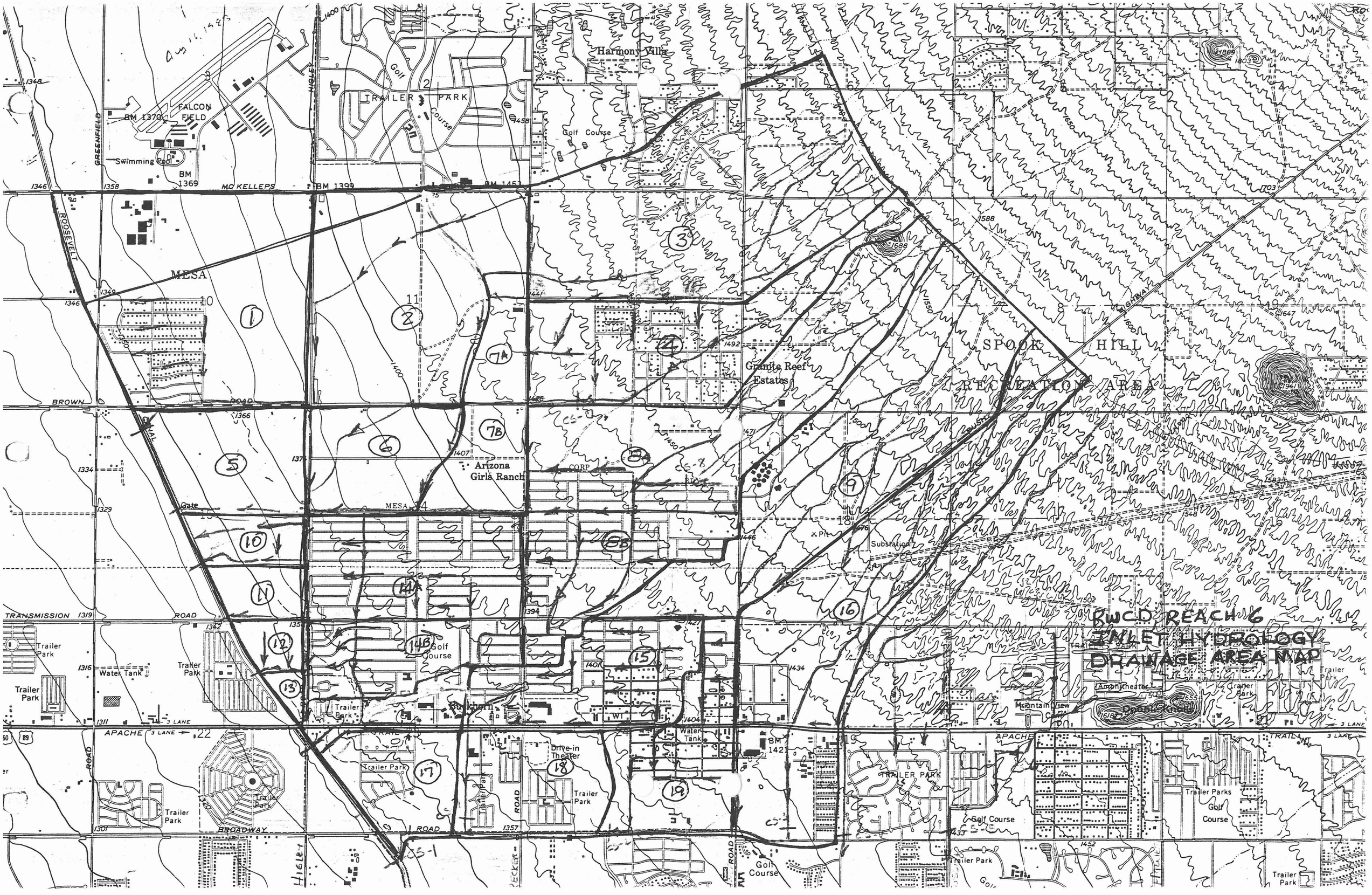
TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.0279 CFS-HRS= 405.27 ACRE-FT= 33.49

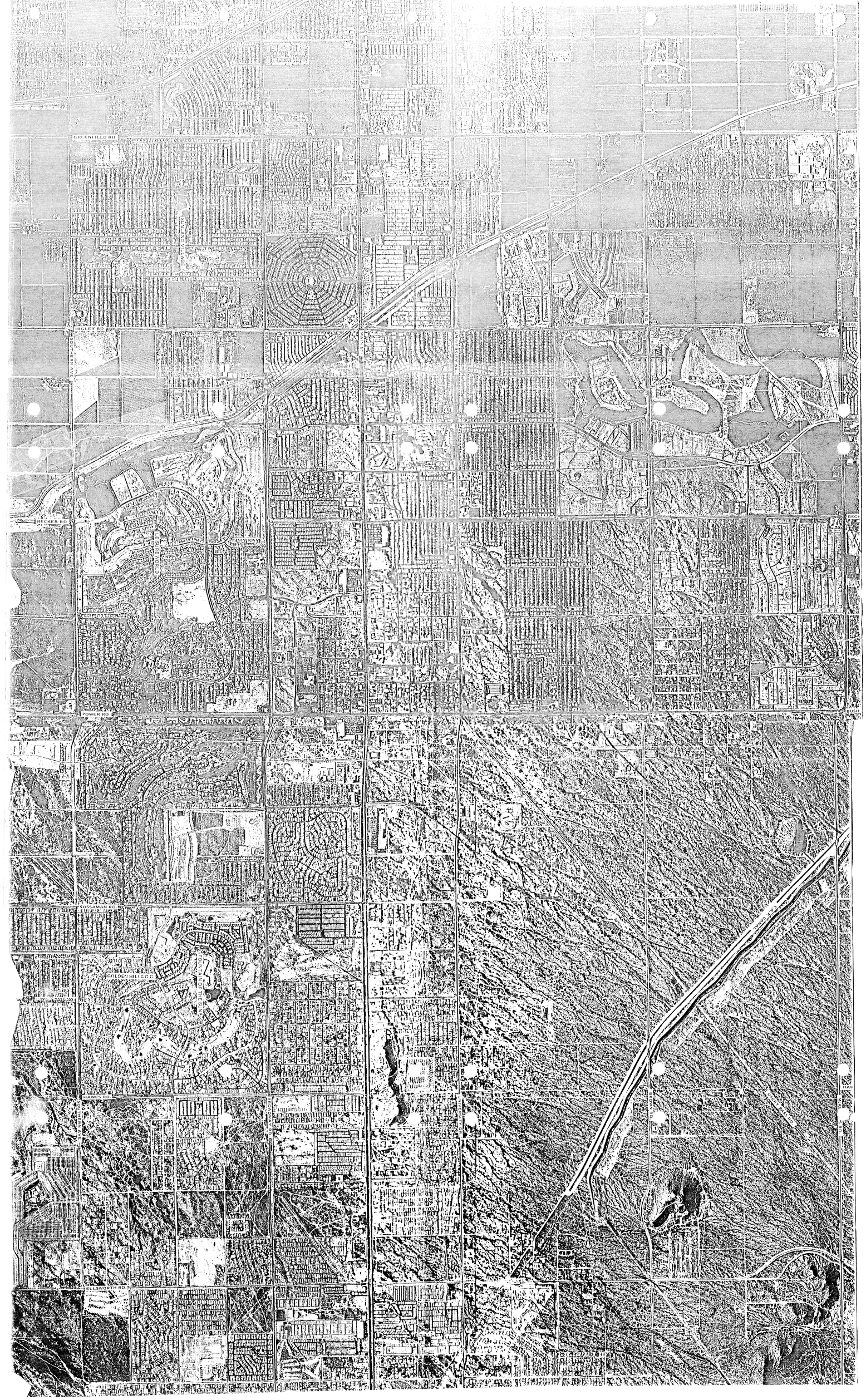
SUBROUTINE RUNOFF CROSS SECTION 6
AREA= 0.35 INPUT RUNOFF CURVE= 71.0 TIME OF CONCENTRATION= 0.23

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.03	227.417	(RUNOFF)
16.96	10.215	(RUNOFF)
19.45	8.114	(RUNOFF)
20.45	7.173	(RUNOFF)
21.46	7.202	(RUNOFF)
22.45	6.246	(RUNOFF)
23.46	5.263	(RUNOFF)

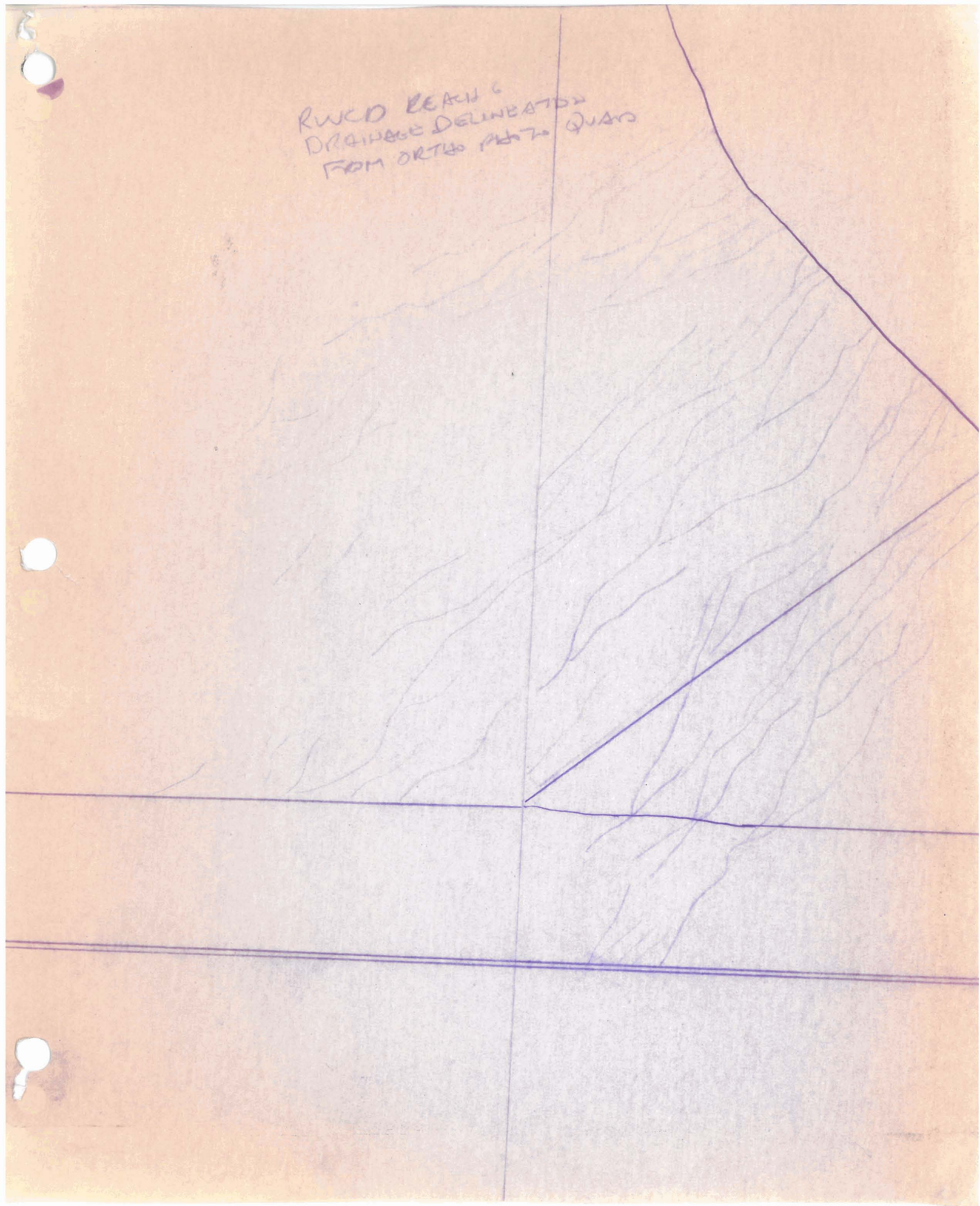
TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.1271 CFS-HRS= 254.58 ACRE-FT= 21.04

SUBROUTINE ADDHYD CROSS SECTION 119


RWCD REACH 6
INLET HYDROLOGY
DRAWAGE AREA MAP
Harmony Villa
Golf Course
TRAILER PARK
FALCON FIELD
BM 1370
Swimming Pool
BM 1369
MO KELLEPS
BM 1399
BM 1453
GREENFIELD
HIGLEY
ROOSEVELT
MESA
BROWN
ROAD
Granite Reef Estates
SPOOK HILL
RECREATION AREA
Arizona Girls Ranch
CORP
MESA
Gate
Substation
TRANSMISSION
ROAD
Trailer Park
Water Tank
Golf Course
APACHE
3 LANE
Drive-in Theater
BROADWAY
ROAD
Mountain View
Lake
Crane Park
Trailer Parks
Golf Course


GREENFIELD RD
HIGLEY RD
BECKER RD
POWER RD
GOLDEN HILLS G.C.
HAWES RD
ELLSWORTH RD

RWCD REACH 6
DRAINAGE DELINEATION
FROM ORTHO PHOTO QUAD



6/18/85
HM

RWCD REACH 6
INLET HYDROLOGY
TIMES OF CONCENTRATION

Times of concentration were estimated for each subarea based on channel hydraulics using Manning's formula. For flow along streets the hydraulic radii were first estimated using typical street cross sections as given in Yost and Gardner, Stormwater Drainage Report for the City of Mesa dated Nov 1973, assuming bank full flow. These were later modified based on estimated average depth of flow since for the larger frequency storms the capacities of the curb streets would be exceeded. In most cases a depth of 0.5' was used unless the street was known to be inverted such as Adobe and University Dr. Cross n-values of 0.015 was used for paved streets and generally 0.045 to 0.055 for natural channels and overland flow. Slopes were estimated from 7½ minute USGS quad sheets.

Typical sections on some of the major cross drainage channels were also taken and used in the Tc's calculations

COMPUTATION SHEET
Sec. ENG. 522 A
Rev. 8-69

STATE: ARIZ
PROJECT: RWCH REACH 6, Inlet Hydrology
BY: Hm
DATE: 5/9/85
CHECKED BY:
DATE:
SUBJECT: SUMMARY - TIMES OF CONCENTRATION

Subarea No.	Present Tc (Hrs)		Modification Factor	Revised Tc Year 2000		
1	1.54	1.26	1.00	1.54	1.26	
2	0.54	0.4[illegible]	1.00	0.54	0.4[illegible]	
3	0.67	0.56	0.60 [1]	0.40	0.3[illegible]	
4	0.95	0.82	0.60	0.57	0.49	
5	0.45	0.37	0.60	0.26	0.2[illegible]	
6	0.35	0.25	1.00	0.35	0.25	
7 7A 7B	0.48	0.16 0.17	1.00	0.48	0.16 0.17	
8 8A 8B	1.52	1.4[illegible]	1.00 0.60 0.60	0.91	[illegible]	{8A = 0.61 8B = [illegible]}
9	1.47	1.14	0.60	0.88	[illegible]	
10	0.17	[illegible]	1.00	0.17	[illegible]	
11	0.49	[illegible]	0.60	0.29	[illegible]	
12	0.18	0.13	1.00	0.18	0.13	
13	0.11	0.06	1.00	0.11	0.06	
14A 14B	0.62	0.36	1.00	0.62	0.36	
15	0.67	0.36 0.39	0.94	0.63	[illegible]	
16	1.22	1.14	0.60	0.73	0.66	
17	0.43	0.3[illegible]	0.81	0.35	[illegible]	
18	0.31	[illegible]	1.00	0.31	[illegible]	
19	0.48	0.34	1.00	0.48	[illegible]	

[1] Note: A maximum Modification Factor = 0.6 was used to reduce future Tc's Based on Agreement between Don Woodward, WRTC Hyd, and Bob Bertels during 1974 RWCD Hyd Analysis (See 1974 Documentation)

STATE Ariz. PROJECT RWCD REACH 6, Inlet Hydrology

BY Hem DATE 5/8/85

SUBJECT TIMES OF Concentration

1 10

<u>Subarea #1</u>

$L_1 = 5280'$

$S = 30/3600 = .0083$

$R = 0.165$ (along road)

$V = \frac{1.486}{.015}(.165)^{2/3}(.0083)^{1/2} = 2.7$ ft/sec

Based on typical road section. Includes 10 cfs DOT assuming curb full flow

$T_{t_1} = \frac{5280}{(3600)(2.7)} = 0.54$ Hrs

$L_2 = 2800'$

$S = 0.0002$

$N = 0.035$ (along RWCD)

$R = 1.3$

$V = \frac{1.486}{.035}(1.3)^{2/3}(.0002)^{1/2} = 0.7$ ft/sec

$T_{t_2} = \frac{2800}{(3600)(0.7)} = 1.0$ Hrs

$T_c = 1.54$ hrs

<u>Subarea #2</u>

$L_1 = 5600'$

$S = 30/3000 = 0.01$

$R = 0.29$

$N = 0.015$

$V = \frac{1.486}{.015}(0.29)^{2/3}(.010)^{1/2} = 4.3$ ft/sec

$T_{t_1} = \frac{5600}{(3600)(4.3)} = 0.36$ hrs

$L_3 = 2500'$

$S = 10/2500 = .004$

$R = 0.50$

$N = 0.015$ (along Hughes rd)

$V = \frac{1.486}{.015}(.50)^{2/3}(.004)^{1/2} = 3.9$ ft/sec

$T_{t_2} = \frac{2500}{(3600)(3.9)} = 0.18$

$T_c = 0.36 + 0.18 = 0.54$ hr

STATE Ariz | PROJECT RWCD Reach 6, Inlet Hydrology
BY Hem | DATE 5/8/85 | CHECKED BY | DATE
SUBJECT Times of Concentration

Subarea #3

$L_1 = 3600'$

$S = 60/3600 = 0.0167$

$R = 0.7$

$N = 0.055$

$V = \frac{1.486}{.055}(.7)^{2/3}(.0167)^{1/2} = 2.7$ ft/sec

$= 9.9$

$T_{t_1} = \frac{3600}{(3600)(2.7)} = 0.37$ hrs

$T_{t_{rw}} = \frac{3600}{(3600)(9.9)} = 0.10$

$L_2 = 4500'$

$S = 40/2500 = 0.016$

$R = 0.50$

$N = 0.015$ (along McKellips Rd)

$V = \frac{1.486}{.015}(.5)^{2/3}(.016)^{1/2} = 7.9$ ft/sec

$T_{t_2} = \frac{4500}{(3600)(7.9)} = 0.16$ hrs

$L_3 = 2500$

$S = 15/2500 = .006$

$N = 0.015$ (along Recker Rd)

$R = 0.50$

$V = \frac{1.486}{.015}(0.5)^{2/3}(.006)^{1/2} = 4.8$ ft/sec

$T_{t_3} = \frac{2500}{(3600)(4.8)} = 0.14$ hrs

$T_c = 0.37 + 0.16 + 0.14 = 0.67$ hrs

Rev $T_c = 0.40$

OR MIN. Rev $T_c = (0.6)(0.67) = 0.40$

Subarea #4

$L_1 = 5200'$

$S = 60/4200 = 0.014$

$R = 0.7$

$N = 0.055$

$V = \frac{1.486}{.055}(0.7)^{2/3}(.014)^{1/2} = 2.5$ ft/sec

Rev $V = 9.9$

$T_{t_1} = \frac{5200}{(3600)(2.5)} = 0.58$ hrs

Rev $T_{t_1} = \frac{5200}{(3600)(9.9)} = 0.15$

$L_2 = 3100'$

$S = 40/3100 = .0129$

$R = 1.0$, $N = 0.055$

$V = \frac{1.486}{.055}(1)^{2/3}(.0129)^{1/2} = 3.1$ ft/sec

$T_{t_2} = \frac{3100}{(3600)(3.1)} = 0.28$ hrs

Rev $t_2 = \frac{0.015}{.055}(0.28) = 0.08$

Ariz — RWCD Reach 6, Inlet Hydrology

Hem — 5/9/85

Time of Concentration — 3 — 1P

Subarea #4 (Cont)

$L_3 = 2700'$

$S = 20/2300 = 0.0087$

$N = 0.015$ (Concrete)

$r = 0.8$ (CS-7, along Brown Rd)

$V = \frac{1.486}{.015}(0.8)^{2/3}(.0087)^{1/2} = 8.0$ ft/sec

$T_{t_3} = \frac{2700}{(3600)(8.0)} = 0.09$ hrs

$T_c = 0.58 + 0.28 + .09 = 0.95$ hrs

Rev $T_c = 0.15 + 0.08 + .09 = 0.32$

OR Min Rev $T_c = (0.95)(.6) = 0.57$ hrs

Subarea #5

$L_1 = 2500'$

$S = 10/1000 = 0.01$

$N = 0.055$

$r = 1.0$

$V = \frac{1.486}{.055}(1.0)^{2/3}(.01)^{1/2} = 2.7$ ft/sec

$T_{t_1} = \frac{2500}{(3600)(2.7)} = 0.26$ hrs

Rev $T_{t_1} = \frac{.015}{.055}(.50) = 0.07$

$L_2 = 1900'$

$S = 5/1150 = 0.0043$

$N = 0.015$ (along Quail SV)

$r = 0.29$

$V = \frac{1.486}{.015}(0.29)^{2/3}(.0043)^{1/2} = 2.8$

$T_{t_2} = \frac{1900}{(3600)(2.8)} = 0.19$ hrs

$T_c = 0.26 + 0.19 = 0.45$ hrs

Rev $T_c = 0.07 + 0.19 = 0.26$

OR Min Rev $T_c = (.6)(.45) = 0.26$

Subarea #6

$L_1 = 5200'$

$S = 10/1150 = .0087$

$N = 0.015$

$r = 0.29$ (along Rd)

$V = \frac{1.486}{.015}(.29)^{2/3}(.0087)^{1/2} = 4.1$ ft/sec

$T_c = \frac{5200}{(3600)(4.1)} = 0.35$ hrs

STATE: AR12 | PROJECT: RWCD REACH 6, Inlet Hydrology

BY: Hem | DATE: 5/9/85

SUBJECT: Times of Concentration

Subarea #7

$L_1 = 6100'$

$S = 20/3000 = .0067$

$N = 0.015$

$R = 0.29$

$V = \frac{1.486}{.015}(.29)^{2/3}(.0067)^{1/2} = 3.5$

$T_c = \frac{6100}{(3600)(3.5)} = 0.48$ hrs

7A = 0.24 hrs

7B 0.24 hrs

Subarea #8A

$L_1 = 4300$

$S = 70/4300 = 0.0163$

$R = 0.7$

$N = 0.055$

$V = \frac{1.486}{.055}(0.7)^{2/3}(.0163)^{1/2} = 2.7$ ft/sec

$T_{t_1} = \frac{4300}{(3600)(2.7)} = 0.44$ hrs

$L_2 = \cancel{5400}\ 6200'$

$S = 50/4000 = .0125$

$R = 1.0$

$N = 0.065$

$V = \frac{1.486}{.065}(1.0)^{2/3}(.0125)^{1/2} = 2.6$ ft/sec

$T_{t_2} = \frac{6200}{(3600)(2.6)} = \cancel{0.58}\ 0.66$ hrs

Subarea 8A → $T_c = 0.35 + 0.66 = 1.01$ hrs

$T_c = (0.6)(1.01) = 0.61$

Subarea #8B

$L_3 = \cancel{2000'}\ 4600'$

$S = 10/1300 = .0077$

$R = 0.50$

$N = 0.015$

$V = \frac{1.486}{.015}(0.50)(.0077)^{1/2} = 5.5$

$T_{t_3} = \frac{4600}{(3600)(5.5)} = \cancel{0.15}\ 0.23$ hrs

$L_4 = 3200$

$S = 20/2000 = .0091$

$R = 1.0$

$N = 0.065$

$V = \frac{1.486}{.065}(1)^{2/3}(.0091)^{1/2} = 2.2$ ft/sec

$T_{t_4} = \frac{3200}{(3600)(2.2)} = 0.40$ hrs

$T_c = 0.23 + 0.40 = 0.63$ hrs

STATE ARIZ. PROJECT RWCO REACH 6, Inlet Hydrology

BY Hem DATE 5/5/85 CHECKED BY

SUBJECT TIMES OF CONCENTRATION

S P

Subarea #9

$L_1 = 4100'$

$S = 60/3600 = .01667$

$R = 0.7$

$N = 0.055$

$V = \frac{1.486}{.055}(0.7)^{.788}(0.0167)^{.129} = 2.7$ ft/sec

$T_{t_1} = \frac{4100}{(3600)(2.7)} = 0.42$ hrs

$L_2 = 5800'$

$S = 60/4700 = 0.0128$

$R = 0.5$

$N = 0.055$

$V = \frac{1.486}{.055}(0.5)^{.63}(.0128)^{.113}{}^{1/2} = 1.9$ ft/sec

$T_{t_2} = \frac{5800}{(3600)(1.9)} = 0.85$ hrs

$L_3 = 2500$

$S = 10/1500 = .0067$

$R = 0.29$ (along University)

$N = 0.015$

$V = \frac{1.486}{.015}(.29)^{.438}(.0067)^{.0816}{}^{1/2} = 3.5$ ft/sec

$T_{t_3} = \frac{2500}{(3600)(3.5)} = 0.20$ hrs

$T_c = 0.42 + 0.85 + 0.20 = 1.47$ hr

MIN Rev $T_c = (0.6)(1.47) = 0.88$

Subarea #10

$L = 2700'$

$S = 10/1000 = 0.01$

$R = 0.29$

$N = 0.015$ (along streets)

$V = \frac{1.486}{.015}(0.29)^{.438}(.01)^{1/2} = 4.3$ ft/sec

$T_c = \frac{2700}{(3600)(4.3)} = 0.17$ hr

ARIZ RWCO REACH 6, Inlet Hydrology

Hm 5/9/85

TIMES of Concentration

Subarea #11

$L_1 = 2300'$

$S = 10/800 = .0125$

$R = 1.0$

$N = 0.055$

$V = \frac{1.486}{.055}(1.0)(.0125)^{1/2} = 3.0$

$T_t = \frac{2300}{(3600)(3.0)} = 0.21$ hr

$L_2 = 1300'$

$S = .0002$

$R = 2.0$

$N = 0.025$

$V = \frac{1.486}{.025}(2)^{2/3}(.0002)^{1/2} = 1.3$ ft/sec

$T_{t_1} = \frac{1300}{(3600)(1.3)} = 0.28$

$T_c = 0.21 + 0.28 = 0.49$ hrs

MIN Rec $T_c = (0.6)(0.49) = 0.29$

Subarea #12

$L = 2400'$

$S = 5/700 = .0071$

$R = 0.29$

$N = 0.015$ (along streets)

$V = \frac{1.486}{0.015}(.29)^{2/3}(.0071)^{1/2} = 3.7$ ft/sec

$T_c = \frac{2400}{(3600)(3.7)} = 0.18$ hrs

Subarea #13

$L = 1300'$

$S = 10/1800' = .0055$

$R = 0.29$

$N = 0.015$

$V = \frac{1.486}{.015}(.29)^{2/3}(.0055)^{1/2} = 3.2$

$T_c = \frac{1300}{(3600)(3.2)} = 0.11$ hrs

COMPUTATION SHEET

STATE: AR12 | PROJECT: RUICD REACH 6, Inlet Hydrology

BY: Hem | DATE: 5/9/85 | CHECKED BY:

SUBJECT: Times of Concentration

Sheet 7 of 10

Subarea #14A

$L_1 = 1200'$

$S = 10/1500 =$

$R = 0.29$

$N = 0.015$ (along st.)

$V = \frac{1.486}{.015}(.29)^{2/3}(.0067)^{1/2} = 3.6$ ft/sec

$T_t = \frac{1200}{(3600)(3.6)} = 0.09$ hrs

$L_2 = 2300'$

$S = 20/2300 = 0.0091$

$R = 0.29$

$N = 0.015$

$V = \frac{1.486}{.015}(.29)^{2/3}(.0091) = 4.1$

$T_{t_2} = \frac{2300}{(3600)(4.1)} = 0.16$ hrs

$L_3 = 3300'$

$S = 10/1700 = 0.00588$

$R = 0.50$

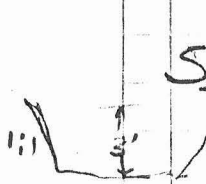
$N = 0.015$

$V = \frac{1.486}{.015}(0.50)^{2/3}(.00588)^{1/2} = 4.8$

$T_{t_3} = \frac{3300}{(3600)(4.8)} = 0.16$ hrs

Subarea 14A $T_c = 0.09 + 0.16 + 0.16 = 0.41$

Subarea 14B



$L_2 = 3100'$

$S = 10/1600 = .00625$

$R = 21/11 = 1.9$

$N = 0.035$

$V = \frac{1.486}{.035}(1.9)^{2/3}(.0063)^{1/2} = 5.1$

$T_{t_2} = \frac{3100}{(3600)(5.1)} = 0.17$ hrs

$L_1 = 3500$

$S = 20/2300 = 0.0087$

$R = 1.5$

$N = 0.035$

$V = \frac{1.486}{.035}(1.5)^{2/3}(.0087)^{1/2} = 5.2$

$T_{t_1} = \frac{3500}{(3600)(5.2)} = 0.19$ hrs

$T_c = 0.17 + 0.19 = 0.36$ hr

AR12, RWCD REACH 6, Inlet Hydrology

Hum 5/9/85

TIMES OF Concentration

8 10

Subarea #15

$L_1 = 1200'$

$S = 10/1{,}000 = 0{,}01$

$N = 0{,}030$

$R = 0{,}7$

$V = \frac{1.486}{.030}(0{,}7)^{2/3}(.01)^{1/2} = 3{,}9$ ft/sec

$T_{t_1} = \frac{1200}{(3600)(3.9)} = 0{,}09$ hrs

$L_2 = 1800'$

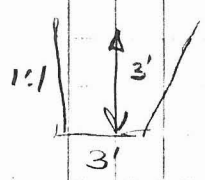
$S = 10/1{,}800 = 0{,}0055$

$N = 0{,}015$

$R = 0{,}29$

$V = \frac{1.486}{.015}(.29)(.0055) = 3{,}2$

$T_{t_2} = \frac{1800}{(3600)(3.2)} = 0{,}16$ hrs



$L_3 = 4700'$

$S = 30/4{,}000 = .0075$

$N = 0{,}030$

$R = 9/7.5 = 1{,}2$

$V = \frac{1.486}{.030}(1.2)^{2/3}(.0075)^{1/2} = 3{,}1$

$T_{t_3} = \frac{4700}{(3600)(3.1)} = 0{,}42$

$T_c = 0{,}09 + 0{,}16 + 0{,}42 = 0{,}67$

Rev T_c 0.05 + .16 + .42 = 0.63

OR Min Rev T_c = (.6)(0.67) = 0.40

Subarea #16

$L_1 = 4300'$

$S = 70/4{,}100 = .0171$

$r = 1{,}0$

$N = 0{,}055$

$V = \frac{1.486}{.055}(1)^{2/3}(.017) = 3{,}5$ ft/sec

$T_{t_1} = \frac{4300}{(3600)(3.5)} = 0{,}34$ hrs

$L_2 = 4000'$

$S = 50/4{,}200 = .0119$

$r = 1.0$, $N = 0{,}055$

$V = \frac{1.486}{.055}(1)^{2/3}(.0119)^{1/2} = 2{,}9$ ft/sec

$T_{t_2} = \frac{4000}{(3600)(2.9)} = 0{,}38$ hrs

Ariz. | RWCD REACH C, Inlet Hydrology

Hem | 5/9/85

Times of Concentration

9 10

Subarea #16 (Cont.)

$L_3 = 3300'$

$S = 20/1700 = 0.0118$

$r = 0.7$

$N = 0.055$

$V = \frac{1.486}{.055}(0.7)(.0118) = 2.3$ ft/sec

$T_{t_3} = \frac{3300}{(3600)(2.3)} = 0.40$ hrs

$L_4 = 2700'$

$S = 10/1000 = 0.010$

$N = 0.025$

$r = 1.4$ (Cs-3)

$V = \frac{1.486}{.025}(1.4)^{2/3}(.010)^{1/2} = 7.4$

$T_{t_3} = \frac{2700}{(3600)(7.4)} = 0.10$ hrs

$T_c = 0.34 + .38 + .40 + .10 = 1.22$

MIN Rev $T_c = (0.6)(1.22) = 0.73$ Hrs

Subarea #17

$L_1 = 2400'$

$S = 10/1800 = .0055$

$N = 0.020$

$r = 0.29$

$V = \frac{1.486}{.020}(.29)^{2/3}(.0055)^{1/2} = 2.4$ ft/sec

$T_{t_1} = \frac{2400}{(3600)(2.4)} = 0.28$ hrs

Rev $T_{t_1} = \frac{.015}{.020}(.28) = 0.21$

$L_2 = 1700'$

$S = 5/1000 = .005$

$N = 0.015$

$r = 0.29$

$V = \frac{1.486}{.015}(.29)^{2/3}(.005)^{1/2} = 3.1$

$T_{t_2} = \frac{1700}{(3600)(3.1)} = 0.15$ hrs

$T_c = 0.28 + 0.15 = 0.43$ hrs

Rev $T_c = 0.21 + 0.15 = 0.25$

MIN Rev $T_c = (0.6)(0.43) = 0.26$

STATE ARIZ | PROJECT RWCD REACH 6, Inlet Hydrology

BY Hem | DATE 5/9/85 | CHECKED BY

SUBJECT Times of Concentration | PAGE 10 10

Subarea # 18

$L_1 = 2600'$

$S = 10/2600' = 0.00357$

$N = 0.015$

$R = 0.29$

$V = \frac{1.486}{.015}(.29)^{2/3}(.00357)^{1/2} = 3.2 \text{ ft/sec}$

$T_{t_1} = \frac{2600}{(3600)(3.2)} = 0.23 \text{ hr}$

$L_2 = 3400$

$S = 20/2900 = .0069$

$N = 0.018$

$R = 2.2$ (CS-2)

$V = \frac{1.486}{.018}(2.2)^{2/3}(.0069) = 11.6 \text{ ft/sec}$

$T_{t_2} = \frac{3400}{(3600)(11.6)} = 0.08 \text{ hr}$

$T_c = 0.23 + .08 = 0.31 \text{ hr}$

Subarea # 19

$L = 7100'$

$S = 50/5900 = .00877$

$N = 0.015$

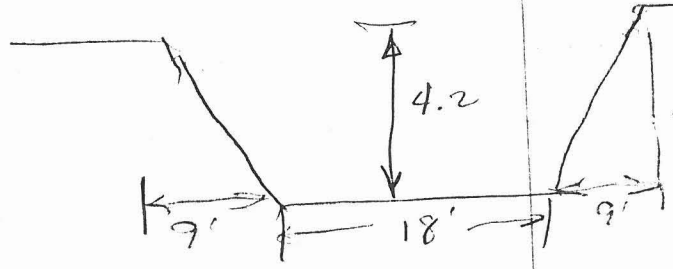
$R = 0.29$

$V = \frac{1.486}{.015}(.29)^{2/3}(.00877)^{1/2} = 4.1 \text{ ft/sec}$

$T_c = \frac{7100}{(3600)(4.1)} = 0.48 \text{ hr}$

CS-1

0	9.0	18.0	9.0
0.8	5.0	4.9	1.3



$A = (27)(4.2) = 113.4$

$R = \frac{113.4}{37.9} = 3.0$

$n = 0.018$

$S = \frac{20}{2900} = .0069$

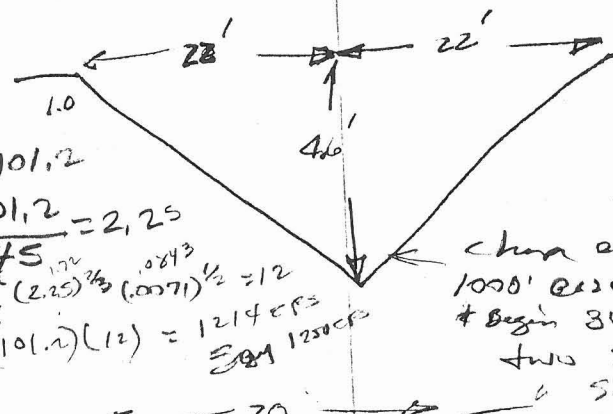
$V = \frac{1.486}{.018}(3.0)^{2/3}(.0069)^{1/2} = 14.3$

$Q = (14.3)(113.4) = 1618$ cfs

say 1,600

CS-2

(63RD Str)



$A = \frac{45}{2}(4.6) = 101.2$

$R = 101.2/45 = 2.25$

$S = 20/2800 = .0071$

$n = 0.018$

$A = 101.2$

$R = \frac{101.2}{45} = 2.25$

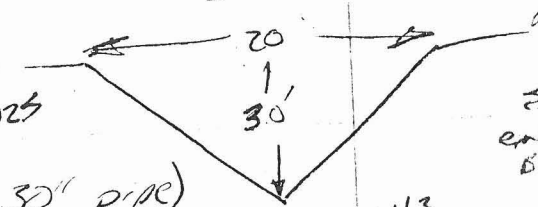
$V = \frac{1.486}{.018}(2.25)^{2/3}(.0071)^{1/2} = 12$

$Q = (101.2)(12) = 1214$ cfs

say 1250 cfs

chan ends about 1000' east of Pioneer Rd & Begin 36" pipe fed by two 30" entry pipe short dist u/s.

CS-3



$n = 0.025$

(empty into 30" pipe) Nat. Rd to 30" pipe

$R = \frac{30}{21} = 1.43$

$S = 10/1000 = .01$

$A = \frac{20}{2}(3) = 30'$

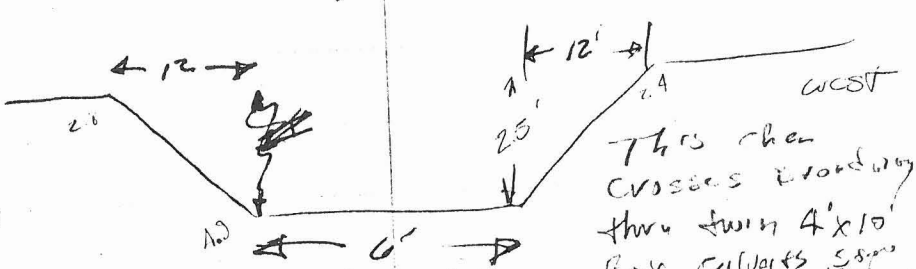
Second 30" Pipe entry above fire sta on Broadway at w end of park

$R = \frac{30}{21}$ 1.43

$V = \frac{1.486}{.025}(1.43)^{2/3}(.01)^{1/2} = 7.5$

$Q = 30(7.5) = 225$ cfs

CS-4

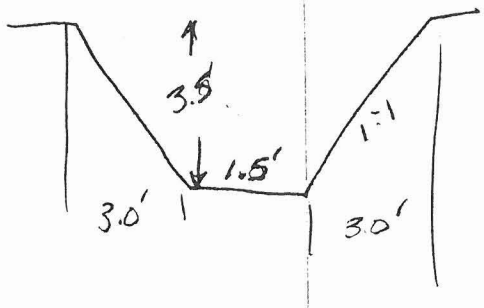


This chan crosses Broadway thru twin 4'x10' Box Culverts [illegible] Rd

$n = 0.025$

Rd on S. side of Broadway

CS-5



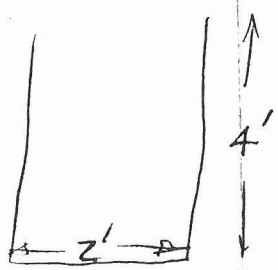
$n = 0.015$

Note Broadway (40' wide) INvert with 1' depth to top of Curb between Sassafras & Howes Roads

Side ditch (w/ drains) on N. Side of Broadway between Howes & Ellsworth Roads.

CS-6 — same as CS-5

CS-7



$A = 2 \times 4 = 8'$

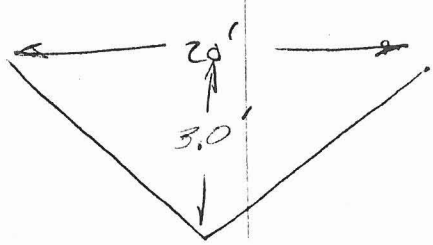
$WP = 10'$

$R = 8/10 = 0.8'$

$n = 0.015$

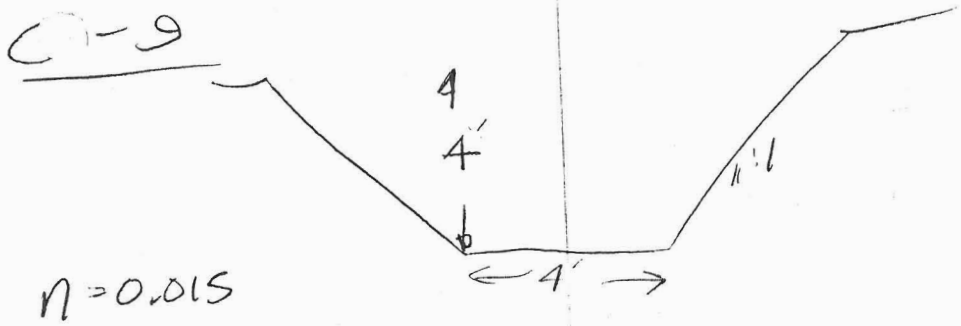
CS-8

collector channel



$n = 0.045$

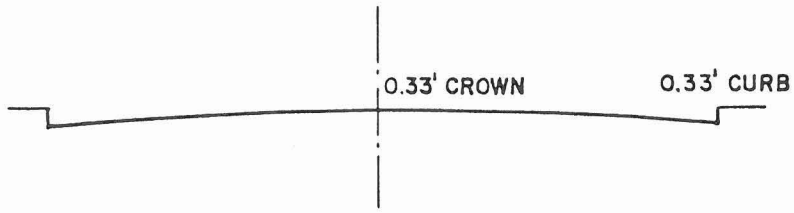
C-9



n = 0.015

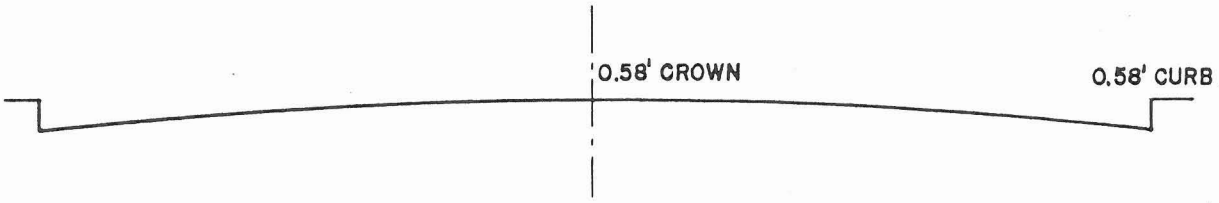
Twin 3'x4.5' at [illegible] at [illegible]

CITY OF MESA
BY
YOST And GARDNER
NOV 1973



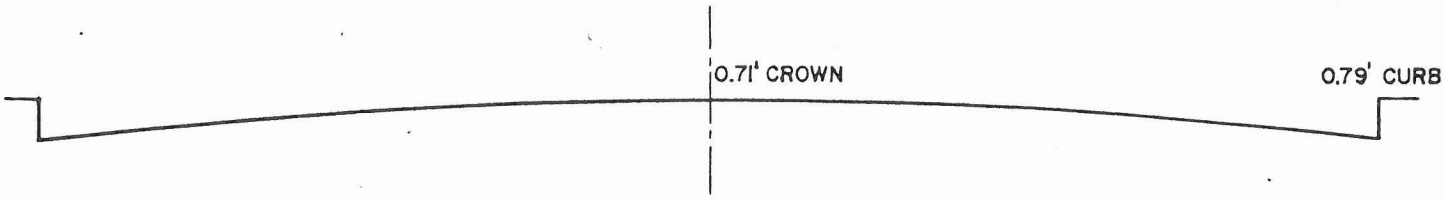
AREA TO TOP OF CURB	5.61 SQ. FT.
WETTED PERIMETER	34.01 FT.
HYDRAULIC RADIUS	0.165 FT.

35 FT. STREET



AREA TO TOP OF CURB	16.53 SQ. FT.
WETTED PERIMETER	57.01 FT.
HYDRAULIC RADIUS	0.290 FT.

58 FT. STREET



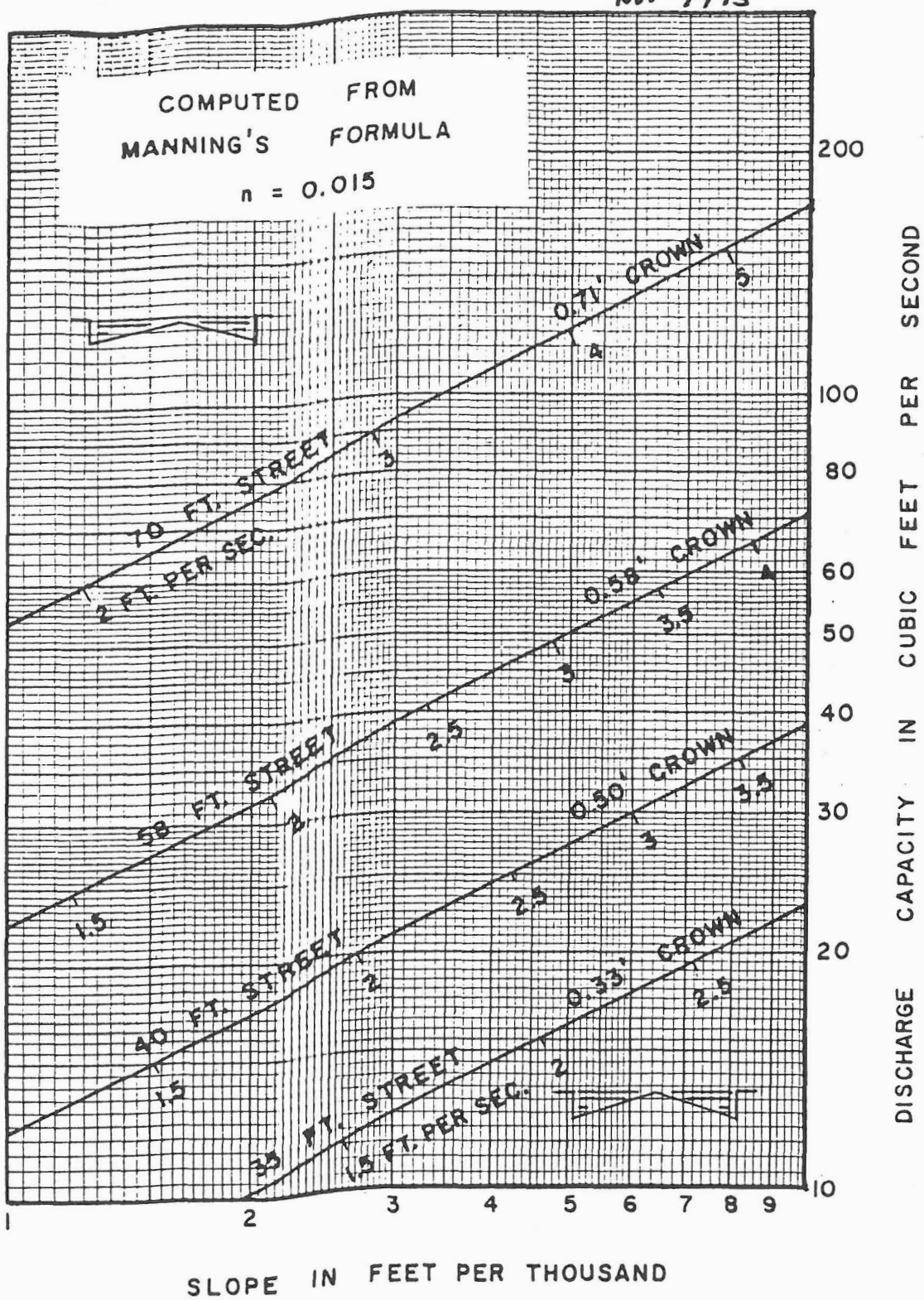
AREA TO TOP OF CURB	32.78 SQ. FT.
WETTED PERIMETER	70.60 FT.
HYDRAULIC RADIUS	0.464 FT.

70 FT. STREET

HYDRAULIC PROPERTIES OF TYPICAL STREET SECTIONS

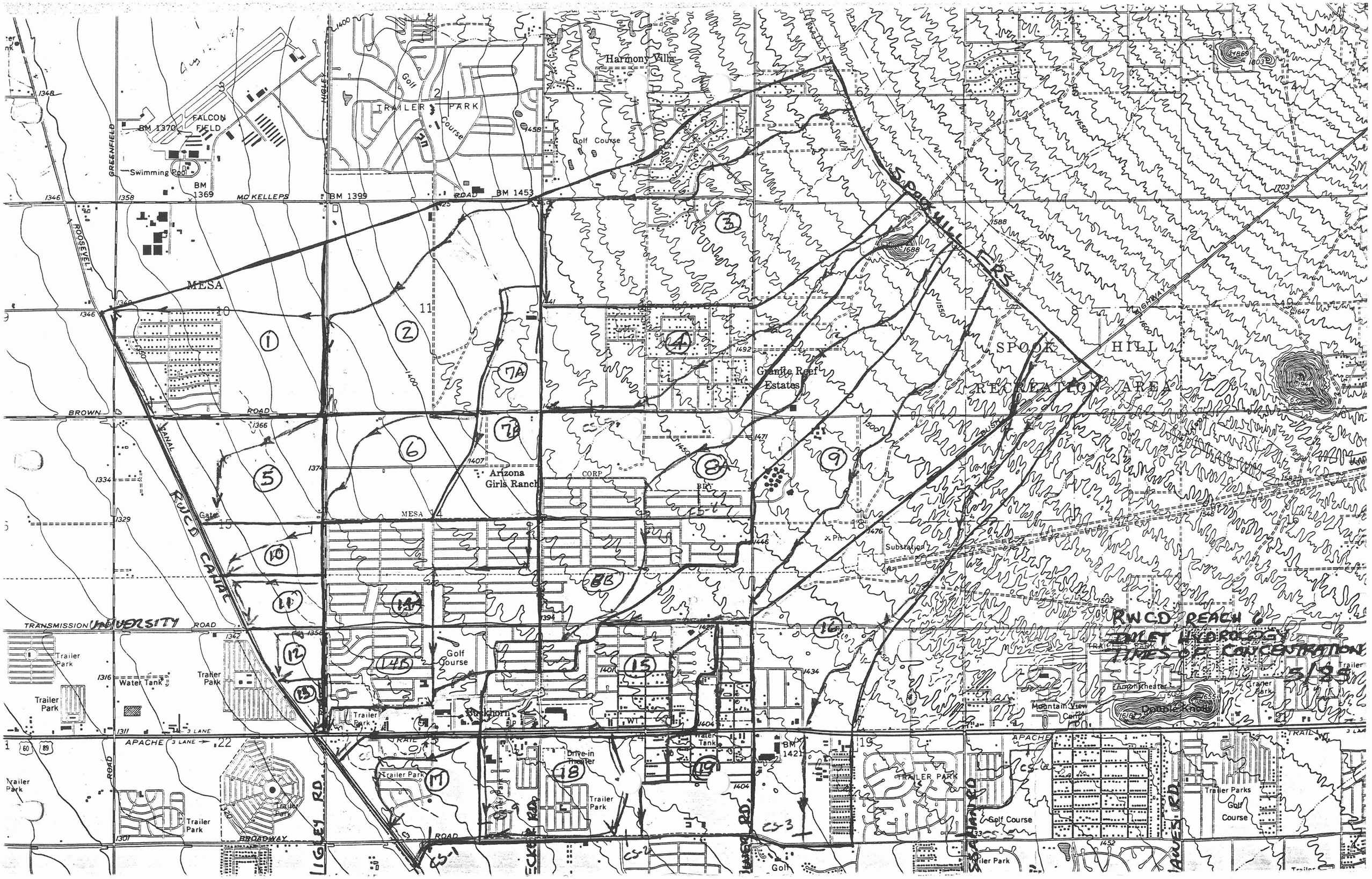
FIGURE 2.9

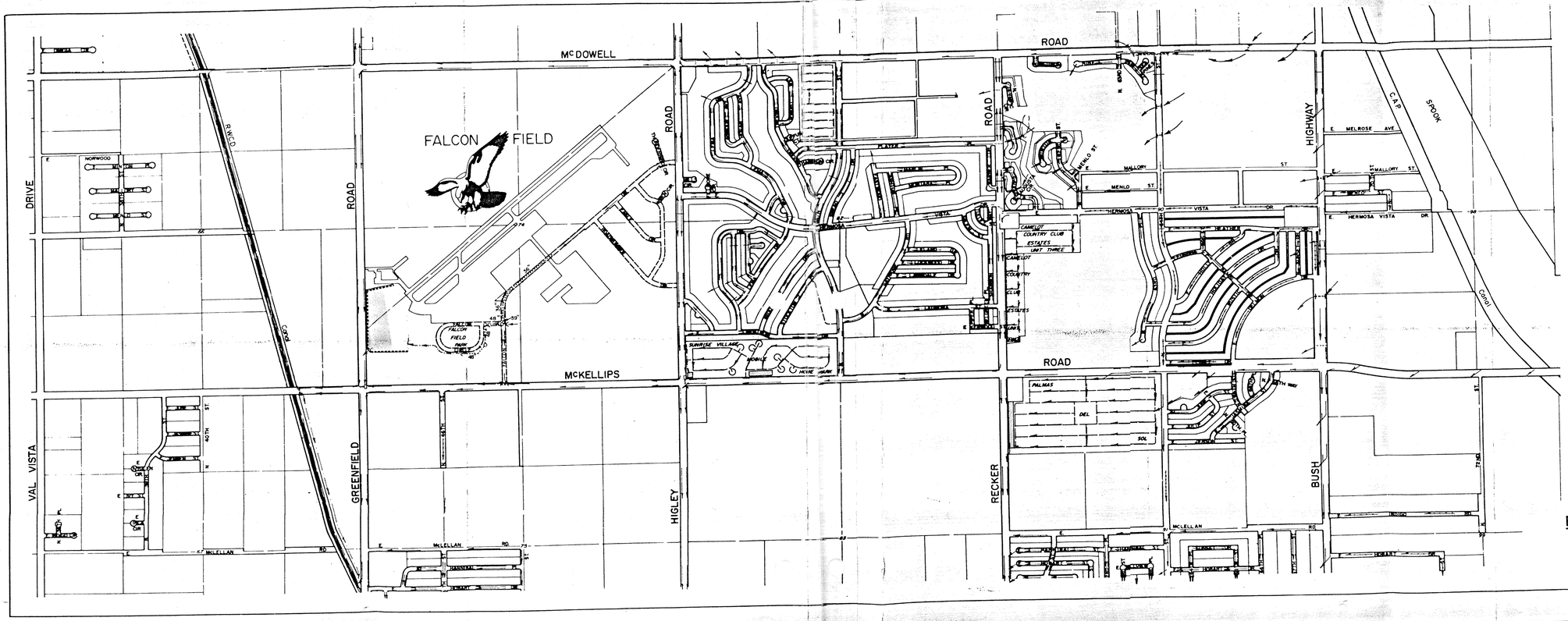
STORM DRAINAGE
FOR
CITY OF MESA
BY
YOST & GARDNER
NOV 1973



TYPICAL STREET SECTION CAPACITIES
FLOWING FULL TO TOP OF CURB

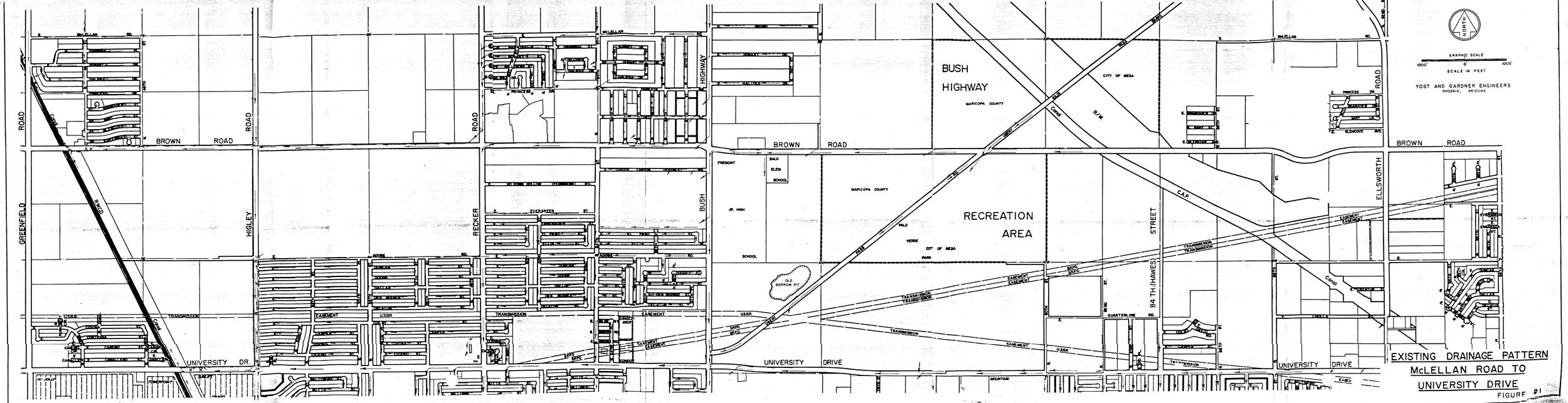
FIGURE 2.10


RWCD REACH 6
INLET HYDROGRAPH
TIMES OF CONCENTRATION
5/25
Harmony Villa
Golf Course
TRAILER PARK
FALCON FIELD
BM 1370
Swimming Pool
BM 1369
BM 1399
BM 1453
MC KELLEPS ROAD
GREENFIELD
HIGLEY
ROOSEVELT
MESA
BROWN ROAD
Spook Hill Trs
SPOOK HILL RECREATION AREA
Granite Reef Estates
Arizona Girls Ranch
RWCD CANAL
MESA
Gate
Substation
TRANSMISSION
UNIVERSITY ROAD
Trailer Park
Water Tank
Golf Course
Stockhorn
Drive-in Theater
Amph Theater
Mountain View Camp
Double Knobs
Graner Park
APACHE
3 LANE
BROADWAY ROAD
LIGLEY RD
ECKLEY RD
HAWES RD
Trailer Parks
Golf Course
CS-1
CS-2
CS-3



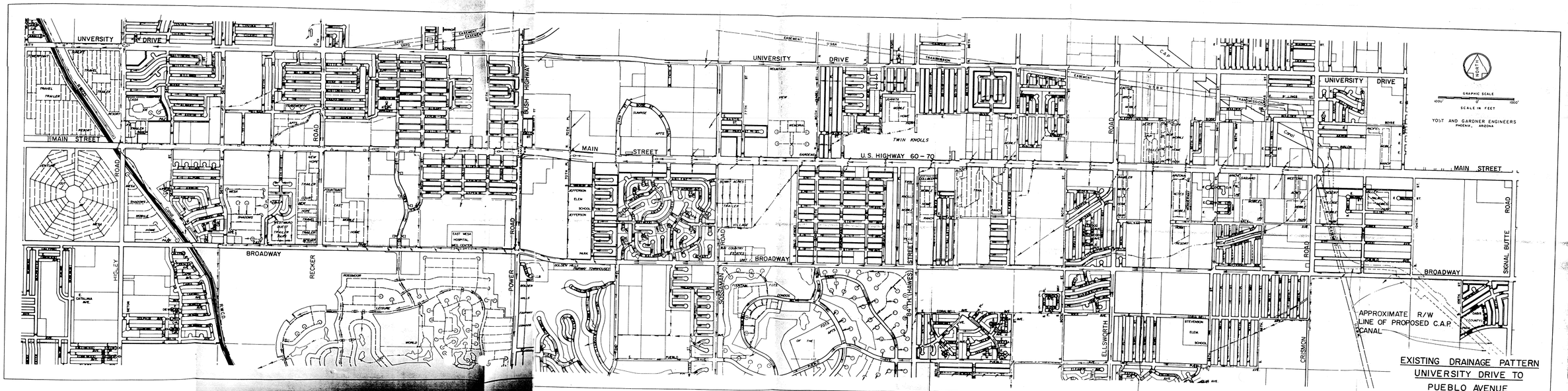
EXISTING DRAINAGE PATTERN
McDOWELL ROAD TO
McLELLAN ROAD

FIGURE 20



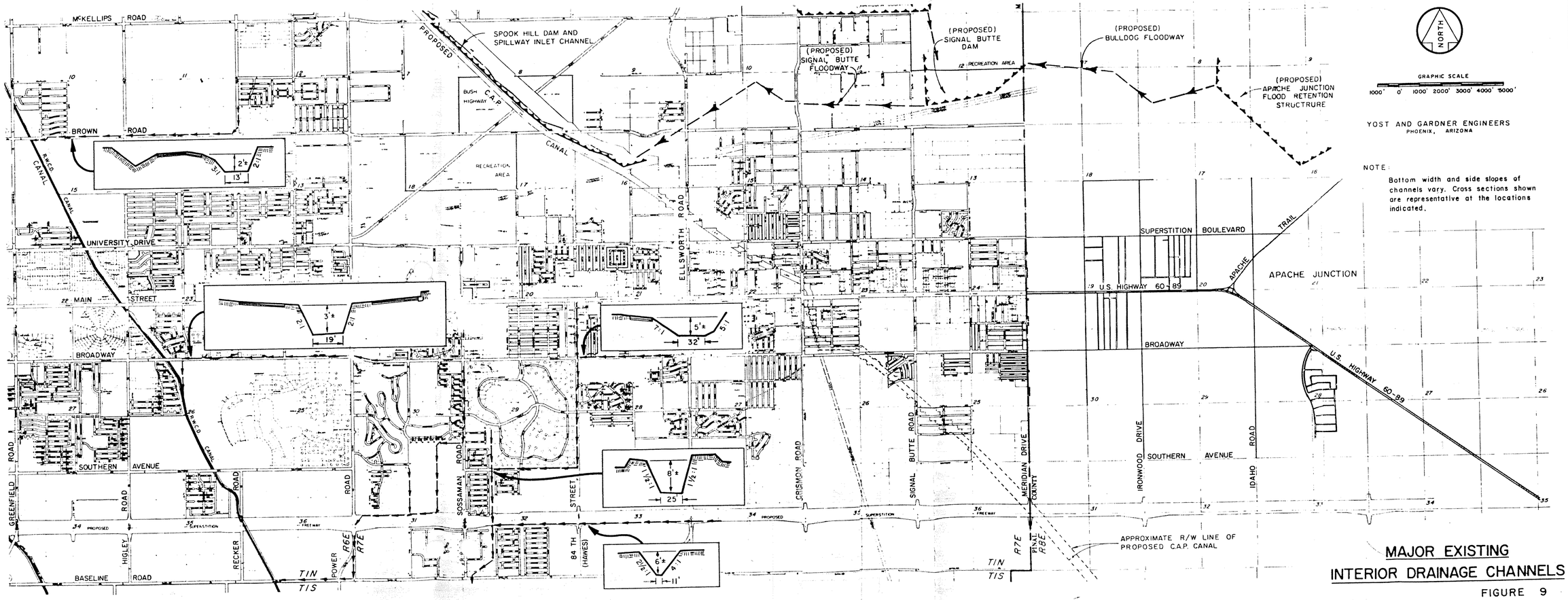
EXISTING DRAINAGE PATTERN
McLELLAN ROAD TO
UNIVERSITY DRIVE

FIGURE #1



EXISTING DRAINAGE PATTERN
UNIVERSITY DRIVE TO
PUEBLO AVENUE

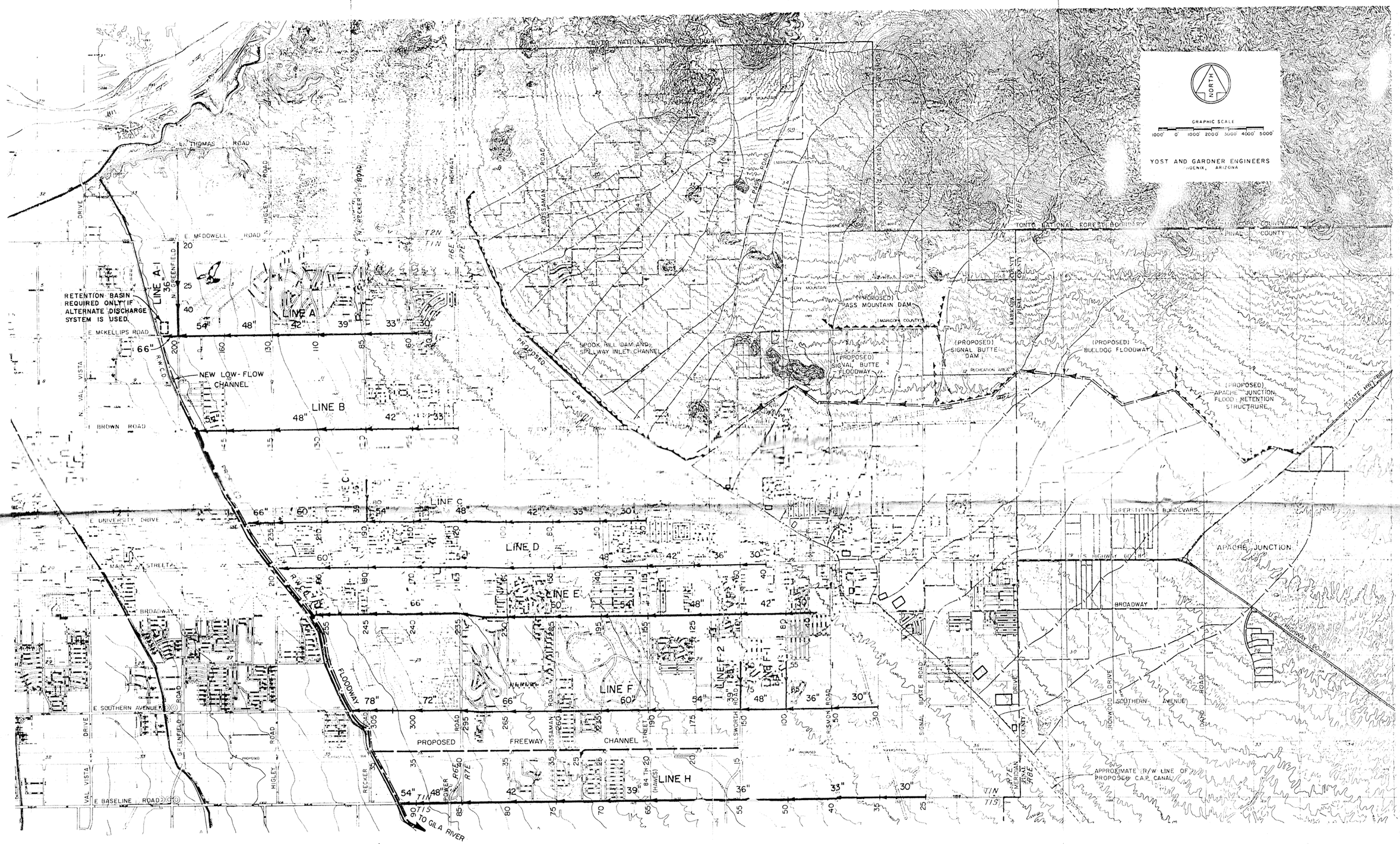
FIGURE 22



NOTE:
Bottom width and side slopes of channels vary. Cross sections shown are representative at the locations indicated.

MAJOR EXISTING INTERIOR DRAINAGE CHANNELS

FIGURE 9



LEGEND

LINE B — LINE DESIGNATION
48" — PIPE SIZE
— NEW PIPE
30 120 — DESIGN FLOW IN C.F.S.
NOTE: FLOWS SHOWN AT JUNCTIONS ARE FOR PEAK QUANTITY LEAVING.

FUTURE RETENTION BASIN
PROPOSED DRAINAGE CHANNEL
NEW LOW-FLOW CHANNEL
DRAINAGE AREA BOUNDARY
FUTURE TRUNK DRAIN

PROPOSED STORM DRAINAGE SYSTEMS
EAST OF R.W.C.D. CANAL
CITY OF MESA

PLATE II

5/22/85

RWCD REACH-5
INLET HYDROLOGY
CURVE NUMBER CALC.

Runoff curve numbers for existing (1985) conditions was estimated for each 40 acres or portion of 40 acres which lie within the study area. This was based on maps furnished by Anderson-Nichols and AEC which gave their estimate of present condition CN's based on density of development or undeveloped conditions. Their CN's however, appeared to be somewhat high for selected conditions and low for other known conditions. For instance they used a CN=83 for undeveloped desert whereas the SCS recommends CN=77 for this situation. Also SCS used CN=50 for irrigated orchards lands whereas A-N used CN=75. On the other hand in Sections 13, 14, 23 & 24, A-N used CN=86 for some presently developed land with artificial landscape (i.e. grass yards) and SCS recommends CN=95 for this land use.

Thus, a map was developed showing A-N curve numbers and those estimated by SCS for each 40 acres based on present (1985) cover conditions. The CN's used by the SCS for urban land use are those proposed for Revised TR-55. These considered of urban development will lessen in

fair conditions and with Artificial Landscape, mobile home parks, Commercial & Industrial and undeveloped deserts (Corp. of Phoenix CN's is included in documentation.) For the developed areas under 1985 conditions when it appears that detention basins have been provided, it was assumed that 1/2-inch of runoff was controlled by the basins, for the Alta Mesa area (Sections 11 & 14) it was assumed that runoff from the 50-year, 24-hour storm (City of Mesa Regulation) was controlled. This would require about 1.3" detention storage, and gives a CN = 50 for this location, with storage taken into account.

In some areas which are presently under development it is not known exactly what type of landscape will be used on the yards. By lowering in fair condition are assumed the CN will vary between 77 and 86 depending on density of development (See Projected Land Use map). However, if artificial landscape is assumed a CN = 94 or 95 is required. The condition assumed is based strictly on judgement with regard to type of development (i.e. size and price range of homes) and the type of landscape already used in the area. For the higher priced homes, it was assumed gross lawns would be used. This judgement is reflected on the CN Map.

Under the year 2000 conditions, it was assumed that 1-inch of storage would be provided on all new lands developed between 1985 and 2000.

Most of the undeveloped area lies east of Bush Highway. In this area it was assumed, for lack of better data, that 50% of the new development would have lawns with grass in fair condition and the other 50% would have artificial landscape. Approximately 1-2 sq mi. in this area was assumed to remain in desert parks as noted on the CN-Map.

A comparison of CN by soil type, urban density and cover condition as proposed by A-N and by SCS with either natural desert or grass lawns fair condition is shown on attached sheet. Daniels CN's as used in the 1975 Hydrology are also shown.

MASTER DRAINAGE PLAN
FOR EASTERN MARICOPA COUNTY

Anderson-Nichols Job No. 4458

SCS Curve Numbers by Zoning and Soil Type

Zoning	Type 'B' Soil			Type 'C' Soil		Type 'D' Soil		
Natural Desert	83	77	77	75	89	92		
Desert Golf Course	83	77	77	75	89	92		
R1-190 4.4 Ac 145/Mi²	83	77	77	75	89	92		
R1-130 3 Ac 213/Mi²	83	79	77	75	89	92		
R1-70 1.6 Ac 400/Mi²	83	80	77	77	89	92	90	86
R1-43 1 Ac 640/Mi²	83	81	77	77	89	93	90	87
R1-35 0.8 Ac 800/Mi²	84	81	77	79	90	93	90	88
R1-18 0.4 Ac 1600/Mi²	85	82	78	80	90	93	91	89
R1-10 0.22 Ac 2900/Mi²	86	85	80	81	91	93	92	90
R1-7 0.16 Ac 4000/Mi²	87	90	88	81	91	93	92	94
Mobile Homes	88	90	88	—	91	93	Natural Desert	Fair Lawns
Multi-Family	89	90	88	—	92	94		
Commercial	91	95	94	—	94	95		
Industrial	91	92	90	—	94	95		
Golf Courses/Parks/Lawns	70	69	69	—	75	80		
Orchards	75	50	50	50	80	85		

Proposed TR-55 1985 Natural Desert — TR-55 1985 Good Fair Lawns — Bartels 1975

Artificial Landscape — 94
Housing Density 1/4 Ac
Assuming 1/2-inch stor.

ARIZONA RWCD REACH-6, INLET HYDROLOGY

~~Hm~~ 5/22/85

RUNOFF CURVE NUMBER

EXISTING CONDITIONS, EITHER 1975 OR 1985

& MILLSAPS' 2000 ECTI BASED ON 1-1/2 INCH STORM ON NEW LANDS DEV. BET 1985-2000

Subarea No.	DRAINAGE AREA	SCS-BARTELS 1975	SCS-MILLSAPS 1985	ANDERSON-MICHAELS 1985	MILLSAPS 2000
1	0.64		72	82	73
2	0.70		50	77	50
3	1.23		77	84	75
4	0.67		77	84	76
5	0.35		~~70~~ 62	75	~~71~~ 72
6	0.31		50	75	50
7	0.34		61	80	56
8	1.34		83	84	82
9	1.09		77	83	78
10	0.13		73	75	73
11	0.11		65	75	66
12	0.07		90	88	90
13	0.03		90	88	90
14	0.92		93	86	93
15	0.43		93	86	93
16	1.08		80	84	82
17	0.28		86	85	86
18	0.33		88	87	85
19	0.30		84	85	87
TOT. REACH-6	10.45	72 ‖	77	82	76 ‖

NOT CALC BY SUBAREA

‖ NOTE; BARTELS WEIGHTED CN = 74 FOR YEAR 2000 FOR TOTAL REACH.

AR12 RWCD REACH 6, Inlet Hydrology

Hem 5/15/85

RUNOFF CURVE NUMBERS 1 3

"EXISTING CONDITIONS" - 1985, SCS (See Maps which Gives Est'l CN per Each 40 Acres Included in This Documentation)

Subarea No.	% of Area	CN	Weighted CN
1 (0.64 mi²)	20	50	72
	20	73	
	26	77	
	34	80	
2 (.70 mi²)	100	50	50
3 (1.23 mi²)	3	69	77
	33	72	
	43	77	
	11	83	
	10	88	
4 (0.67 mi²)	81	77	68 ~~79~~
	19	78	
5 (0.35 mi²)	28 ~~18~~	50	70
	54	73	
	~~28~~ 18	78	
6 (0.31 mi²)	100	50	50
7 (0.34 mi²)	41	77	61
	59	50	
8A (~~1.34~~ 0.94 mi²)	~~28~~ 7	69	80 ~~83~~
	~~53~~ 67	77	
	~~14~~ 13	86	
	13 ~~30~~	95	
8B (0.40)	8%	77	92
	16%	86	
	76%	95	
9 (1.09 mi²)	93	77	77
	6	78	
	1	95	

AR12 RWCK REACH-6, Inlet Hydrology

~~Hem~~ 5/21/85

RUNOFF CURVE NUMBERS 2 3

EXISTING CONDITIONS - 1985, SCS

Subarea No.	% of Area	CN	Weighted CN
10 (0.13 mi²)	100	73	73
11 (0.11 mi²)	100	65	65
12 (0.07 mi²)	100	90	90
13 (0.03 mi²)	100	90	90
14B (0.42 mi²)	13	69	
	13	93	91
	74	95	
14A (100%) (0.50 mi²) CN=95			
15 (0.43 mi²)	29	90	
	71	95	93
16 (1.08 mi²)	70	77	
	6	83	
	12	88	80
	6	90	
	6	91	
17 (0.28 mi²)	16	77	
	21	80	
	21	88	86
	21	89	
	21	95	
18 (0.33 mi²)	43	77	
	19	90	88
	38	95	

ARIZ RWCD REACH 6 Initial Hydrology

Hem 5/21/85

RUNOFF CURVE NUMBERS 3 3

EXISTING CONDITIONS - 1985, SCS

Subarea NO.	% OF AREA	CN	Weighted CN
19 (0.30 Mi²)	10	77	84
	20	78	
	20	84	
	10	85	
	40	88	

Weighted CN for Total Area (10.45 Mi²) = $\frac{799.82}{10.45 \text{ Mi}^2}$ = 76.54

SAY 77

ARIZ. RWCD REACH 6, Inlet Hydrology

Hum 5/21/85

RUNOFF CURVE NUMBERS 1 2

PROJECTED CONDITION – YEAR 2000 W/1-INCH STORAGE ON NEW DEVELOPED LANDS EQ. 1985 & 2000

(See Map which Follows which Gives Est CN per Eal % Area)

Subarea No.	% of Area	CN	Weighted CN
1 (0.64 mi²)	41	66	
	20	73	73
	39	80	
2 (0.70 mi²)	100	50	50
3 (1.23 mi²)	3	69	
	33	71	
	30	72	
	2	77	75
	11	80	
	11	83	
	10	88	
4 (0.67 mi²)	19	66	
	38	77	76
	19	78	
	24	80	
5 (0.35 mi²)	28 ~~29~~	66	72 ~~71~~
	32 ~~31~~	73 ~~72~~	
	18		
6 (0.31 mi²)	100	50	50
7 (0.34 mi²)	41	64	
	59	50	56

AR12 RWCD REACH 6, Inlet Hydrology

~~Low~~ SCS

RUNOFF CURVE NUMBERS 2 3

Projected Conditions - Year 2000 w/1-inch Storage on New Developed Lands Lot. RES 7 2000.

Subarea No.	% of Area	CN	Weighted CN
8A (1.34 mi²) 0.94	~~21~~ 27	66	78
	~~3~~ 7	69	
	~~32~~ 40	80	~~82~~
	~~5~~ 0.[illegible]	81	
	~~9~~ 13	86	
	~~30~~ 13	95	
8B	8%	66	90
	16%	81	
	76%	95	
9 (1.09 mi²)	6	66	78
	6	71	
	20	77	
	68	80	
10 (0.13 mi²)	100	73	73
11 (0.11 mi²)	100	66	66
12 (0.07 mi²)	100	90	90
13 (0.03 mi²)	100	90	90
14A (0.~~92~~ mi²) 0.50	~~7~~ 15	69	91
	~~7~~ 15	93	~~93~~
	~~86~~ 70	95	
14B (0.42 mi²)	100%	CN = 95	
15 (0.43 mi²)	29	90	93
	71	95	

Ariz RWCD REACH 6 Inlet Hydrology

~~Hem~~ 5/21/85

RUNOFF CURVE NUMBERS 3 3

Projected Conditions – year 2000, w/1-inch storage on New Developed Lands Bet year 1985 & 2000

Subarea No.	% of Area	CN	Weighted CN
16 (1.08 Mi²)	22	77	82
	6	78	
	27	80	
	6	83	
	15	84	
	6	88	
	6	89	
	6	90	
	6	91	
17 (0.28 Mi²)	16	66	86
	21	79	
	21	88	
	42	95	
18 (0.33 Mi²)	43	74	85
	19	90	
	38	95	
19 (0.30 Mi²)	10	74	87
	10	82	
	40	88	
	40	91	

WEIGHTED CN for Total Reach-6 = $\frac{797.27}{10.45 \text{ Mi}^2}$ = 76.3

SAY 76

ARIZ RWCD REACH - 6, Inlet Hydrology

Hem 5/22/85

RUNOFF CURVE NUMBERS 1 2

PRESENT CONDITIONS - 1985, ANDERSON - NICHOLS

SUBAREA NO.	% OF AREA	CN	WEIGHTED CN
1 (0.64 mi²)	20 46 34	75 82 86	82
2 (0.70 mi²)	51 49	75 80	77
3 (1.23 mi²)	3 51 36 10	70 83 84 93	84
4 (0.67 mi²)	44 56	83 85	84
5 (0.35 mi²)	100	75	75
6 (0.31 mi²)	100	75	75
7 (0.34 mi²)	41 59	75 83	80
8 (1.34 mi²)	3 57 40	70 83 86	84
9 (1.09 mi²)	99 1	83 86	83

ARIZ RWCD REACH 6, Inlet Hydrology

Hum 5/29/85

RUNOFF CURVE NUMBERS 2 2

PRESENT CONDITIONS - 1985, ANDERSON - NICHOLS

Subarea No	% OF AREA	CN	WEIGHTED CN
10 (0.13 mi²)	100	75	75
11 (0.11 mi²)	100	75	75
12 (0.07 mi²)	100	88	88
13 (0.03 mi²)	100	88	88
14 (0.92 mi²)	13	83	86
	6	85	
	81	86	
15 (0.43 mi²)	15	83	86
	85	86	
16 (1.08 mi²)	88	83	84
	6	87	
	6	91	
17 (0.28 mi²)	38	83	85
	40	86	
	22	87	
18 (0.33 mi²)	29	83	87
	22	87	
	38	88	
	11	91	
19 (0.30 mi²)	50	83	85
	40	87	
	10	91	

7555

WEIGHTED CN FOR TOTAL REACH-6

$= \frac{857.34}{10.45 \text{ mi}^2} = 82$

AR12 RUCD REACH - 6, INLET Hydrology

Hum 5/22/85

RUNOFF CURVE NUMBERS

PRESENT (1975) AND FUTURE (2000) CONDITIONS, SCS BY BARTELS

AS USED IN DESIGN (1-INCH STORM)

Subarea No.	Drainage Area	1975 Weighted CN	2000 Weighted CN
3	3.00	66	72
8	2.58	75	74
12	1.58	78	75
17	1.42	77	75
20	1.32	69	73
26	0.66	75	74
Approx Reach 6	10.56	$\frac{764.66}{10.56} = 72.4$ SAY 72	$\frac{777.12}{10.56} = 73.6$ SAY 74

08 APR 1985

West National Technical Center
511 NW Broadway, Room 547
Portland, Oregon 97209-3489

MGT - Trip Report - Phoenix, Arizona - March 18-22, 1985

April 3, 1985

Jack C. Stevenson, Head, Engineering Staff, WNTC

Purpose of Trip. To provide direct assistance to the Arizona Staff to formalize the Runoff Curve Numbers (RCN) the SCS recommends for use in desert-range and desert-urban areas of the Southwest.

Participants.

Harry Milsaps, Hydraulic Engineer, SCS, Phoenix, Arizona
Robin McArthur, Hydraulic Engineer, SCS, Phoenix, Arizona
Wendell Styner, Hydraulic Engineer, WNTC, SCS, Portland, Oregon

General Discussion. Damaging flood events in the desert areas of the Southwest are typically caused by short duration, high intensity ranfall storms. Based on hydrologic analysis conducted during the 1960's through early 1970's, the SCS has been using a system of land use and RCN's specifically adapted for desert areas. This system, called here the AZCN method, has been adopted and used by the SCS in Arizona for evaluation and design hydrology for structural measures in Arizona. A portion of the method has been incorporated into the SCS National Engineering Handbook; i.e., Fig. 9.5 and 6. A need exists to incorporate all of the significant land use and related RCN's into national SCS documents for users outside of the SCS.

Recommendation. The SCS publication "Urban Hydrology for Small Watersheds," Technical Release 55, is being revised at this time. The opportunity exists to include urban-desert RCN's into the next version of TR 55.

Curve numbers that have been accepted by the SCS for desert areas of the Southwest have been included in a "proposed" Exhibit 2-1, TR 55 for submission to the National Office for concurrence. Attachment 1 is a copy of Exhibit 2-1. Tentative approval to use the proposed RCN should be received by April 15th.

Wendell A. Styner

WENDELL A. STYNER
Hydraulic Engineer

Attachment

cc:
R. E. Rallison, National Hydraulic Engineer, SCS, Washington, D.C.
Verne M. Bathurst, State Conservationist, SCS, Phoenix, Arizona
George C. Bluhm, Director, WNTC, SCS, Portland, Oregon

Printed on 04/03/85

Exhibit 2-1.--Continued (Average Watershed Condition, Daily Rainfall, Ia=0.2S)

Land Use	Treatment or Practice	Hydrologic Condition 9/	A	B	C	D	Proposed A
WESTERN-RANGE							
Herbaceous		poor	60	75	83	87	
(Grass-weed-brush mixture with		fair	52	70	80	85	
brush the minor element)		good	38	61	74	80	
Oak-Aspen		poor	44	65	77	82	
(Mountain brush mixture of oak, aspen, mountain		fair	15	47	65	73	
mahogany, bitter brush, maple and other brush)		good	4	40	60	69	
Juniper-grass		poor	55	72	81	86	
(Juniper or Pinon with an understory of grass)		fair	33	58	72	79	
		good	6	41	61	70	
Sage-grass		poor	47	67	78	83	
(Sage with an understory of grass)		fair	20	50	67	75	
		good	4	40	60	69	
Desert-shrub		poor	63	77	85	88	
(Major plants include Salt bush, Greasewood,		fair	55	72	81	86	
Creosote bush, Blackbrush, Bur sage,		good	49	68	79	84	
Palo Verde, Mesquite and Cactus)							

9/ Poor hydrologic condition has less than 30 percent ground cover density.
Fair hydrologic condition has between 30 and 70 percent ground cover density.
Good hydrologic condition has more than 70 percent ground cover density.

Printed on 04/03/85

Exhibit 2-1.--Continued (Average Watershed Condition, Daily Rainfall, Ia=0.2S)

Land Use Description		Proposed A	B	C	D	A
WESTERN DESERT URBAN AREAS 3/ w/ Natural Desert Landscaping	Average % Impervious					
Commercial and business areas	85	92	95	97	97	
Industrial districts	72	87	92	95	96	
Row/Town houses, mobile home parks, and residential with lot sizes 1/8 acre or less	65	84	90	93	95	
Residential						
Average lot size						
1/4 acre	38	76	85	90	92	
1/3 acre	30	73	83	89	91	
1/2 acre	25	71	82	88	91	
1 acre	20	70	81	87	90	
2 acre	12	68	80	87	90	

w/ Artifical Desert Landscaping 4/	Average % Impervious	Detention Storage 1/4"	1/2"	1"
Commercial and business areas	85	98	97	97
Industrial districts	72	98	97	96
Row/Town houses, mobile home parks, and residential with lot sizes 1/8 acre or less	65	98	96	95
Residential				
Average lot size				
1/4 acre	38	97	95	92
1/3 acre	30	96	94	91

DEVELOPING URBAN AREAS 6/ (No Vegetation Established)					
Newly graded area	78	86	91	93	77

3/ Pervious areas are considered to be equivalent to Desert-shrub in poor condition and the impervious areas to have a CN of 98.

4/ For land uses where landscaping consists of impervious weed barrier, desert shrubs with 1"-2" sand/gravel mulch and/or basin borders. The impervious areas have a CN of 98.

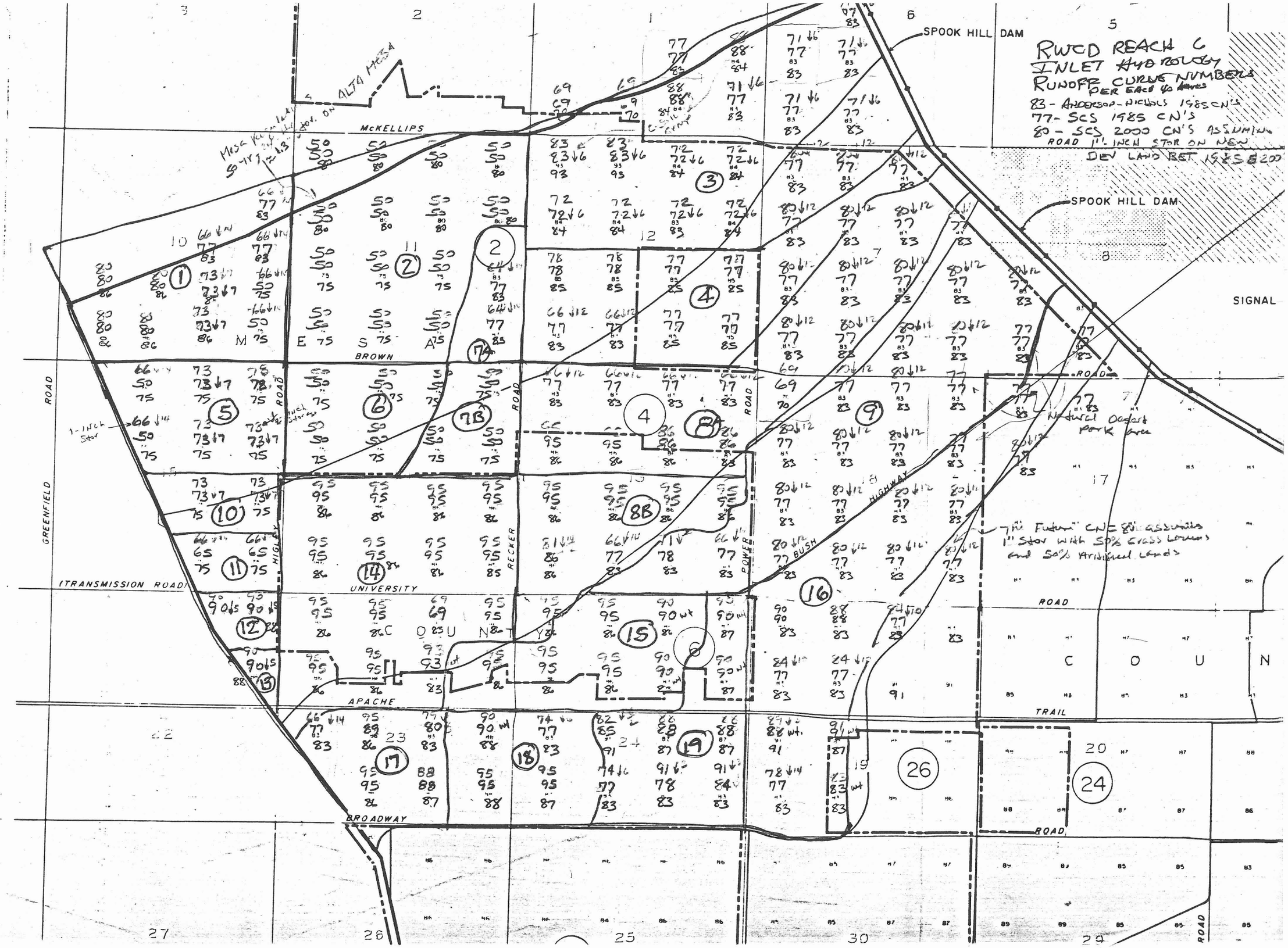
5/ Use for the design of temporary measures during grading and construction. Impervious area percent for urban areas under development vary considerabley. The user will determine the percent impervious. Then using the newly graded area CN and Figure 2-2 or Figure 2-3, the composite CN can be computed for any degree of development.

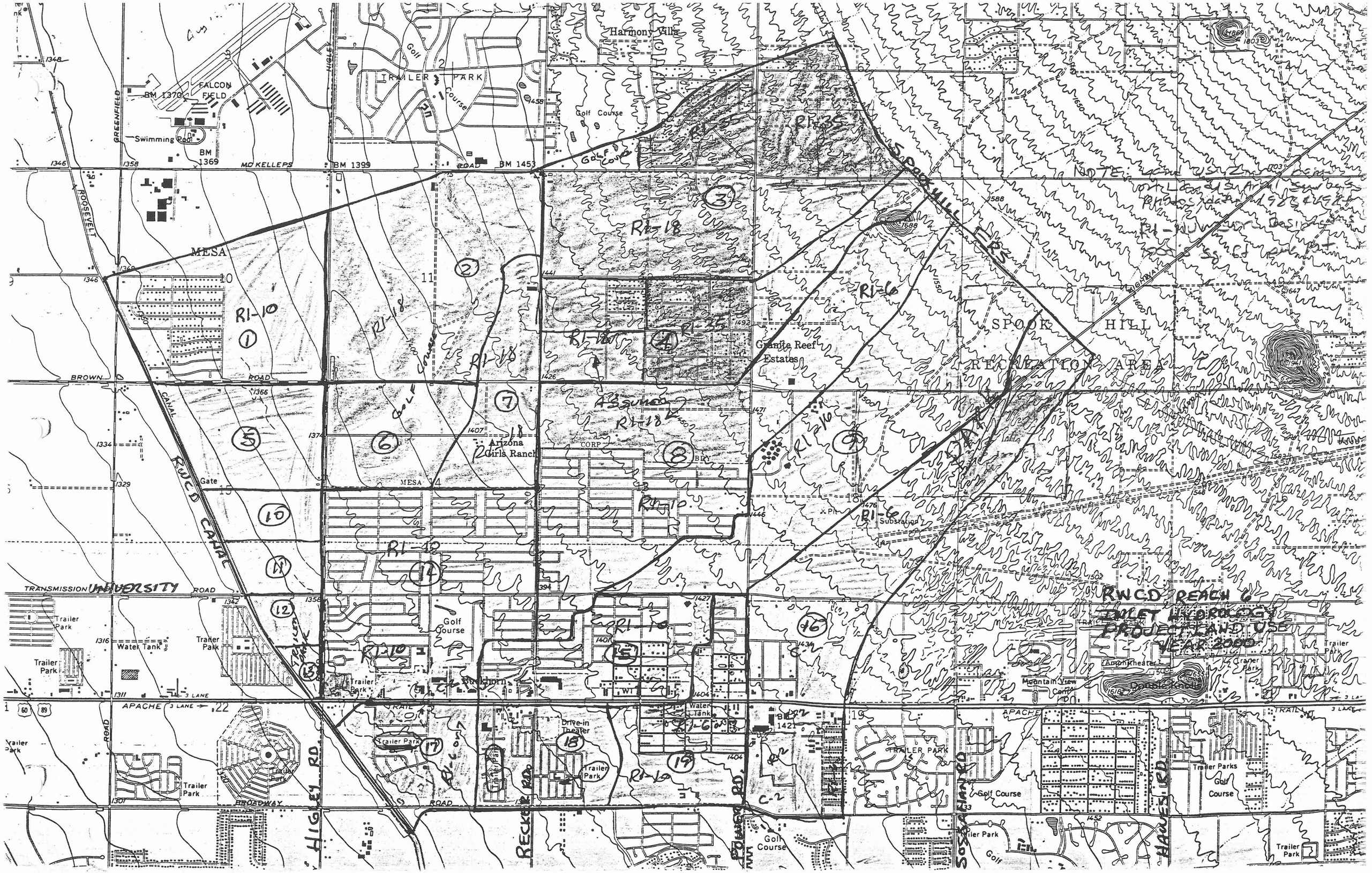
Exhibit 2-1.--Runoff Curve Numbers (Average Watershed Condition, Daily Rainfall, Ia=0.2S) Proposed

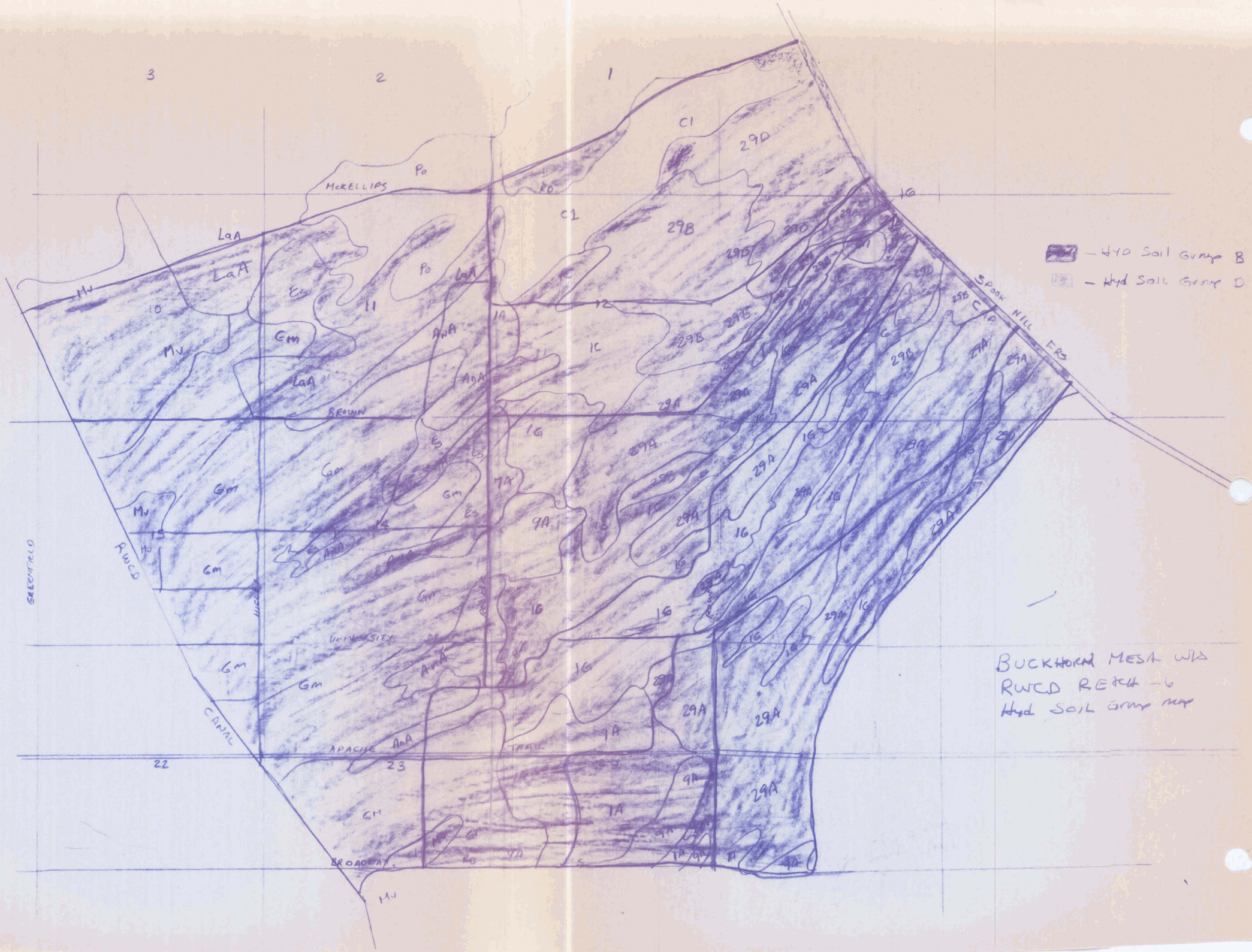
Land Use Description	Average % 2/ Impervious	Hydrologic Condition	Curve Numbers for Hydrologic soil group A	B	C	D	A
FULLY DEVELOPED URBAN AREAS 1/ (Vegetation Established)							
Lawns, open spaces, parks, golf courses, cemeteries, etc.							
good condition; grass cover on 75% or more of the area			38	61	74	80	3
fair condition; grass cover on 50% to 75% of the area			50	69	79	84	4
poor condition; grass cover on less than 50% of the area			66	79	86	89	6
Paved parking lots, roofs, driveways, etc.			97	98	99	99	9
Streets and roads:							
paved with curbs and storm sewers			97	98	99	99	9
gravel			76	85	90	92	7
dirt			71	82	88	91	7
paved with open ditches			82	89	93	94	8
Commercial and business areas	85	good	87	92	95	96	8
		fair	90	94	96	97	
Industrial districts	72	good	81	88	92	94	8
		fair	84	90	93	95	
Row/Town houses, mobile home parks, and residential with lot sizes 1/8 acre or less	65	good	76	85	90	92	7
		fair	81	88	92	94	
Residential							
Average lot size							
1/4 acre	38	good	60	75	83	87	6
		fair	68	80	87	90	
1/3 acre	30	good	55	72	81	86	5
		fair	65	78	85	89	
1/2 acre	25	good	52	70	80	85	5
		fair	62	76	84	88	
1 acre	20	good	49	68	79	84	5
		fair	60	75	83	87	
2 acre	12	good	44	65	77	82	4
		fair	55	72	81	86	

1/ For land uses with impervious areas, curve numbers are computed assuming that 100% of runoff from impervious areas is directly connected to the drainage system. Pervious areas (lawn) are considered to be equivalent to lawns in comparable hydrologic condition and the impervious areas have a CN of 98.

2/ Includes paved streets.


RWCD REACH C
INLET HYDROLOGY
RUNOFF CURVE NUMBERS
PER EACH 40 ACRES
83 - ANDERSON-NICHOLS 1985 CN'S
77 - SCS 1985 CN'S
80 - SCS 2000 CN'S ASSUMING
ROAD 1" INCH STOR ON NEW
DEV LAND BET 1985 & 2000
SPOOK HILL DAM
SPOOK HILL DAM
SIGNAL
ALTA MESA
McKELLIPS
BROWN
ROAD
GREENFIELD
HIGLEY
RECKER
POWER
HIGHWAY
BUSH
UNIVERSITY
(TRANSMISSION ROAD)
APACHE
BROADWAY
TRAIL
C O U N
Natural Oasis Park Area
1-INCH Stor
Future CN = 80 assumes 1" Stor with 50% Cross Lawns and 50% Irrigated Lands


Harmony Villa
TRAILER PARK
Golf Course
FALCON FIELD
BM 1370
Swimming Pool
BM 1369
MCKELLEPS ROAD
BM 1399
BM 1453
GREENFIELD
HIGLEY
ROOSEVELT
MESA
RI-10
RI-18
RI-35
RI-16
SPOOK HILL
SPOOK HILL RECREATION AREA
Granite Reef Estates
BROWN ROAD
CANAL
RWCD CANAL
Arizona Girls Ranch
Gate
MESA
TRANSMISSION
UNIVERSITY ROAD
Trailer Park
Water Tank
Golf Course
Substation
RWCD REACH 6
FUTURE HYDROLOGY
PROJECT LAND USE
YEAR 2000
Mountain View Center
Amphitheater
Crane Park
APACHE TRAIL
Drive-in Theater
BROADWAY ROAD
RECKER RD
POWER RD
SOSSAMAN RD
HAWES RD
Trailer Parks


3
2
1
McKELLIPS
BROWN
UNIVERSITY
APACHE
TRAIL
BROADWAY
SPOON HILL
RD
GREENFIELD
RWCD
CANAL
HWY
Hyd Soil Group B
Hyd Soil Group D
BUCKHORN MESA WLA
RWCD Reach -6
Hyd Soil Group map

AGUILA - CAREFREE ARE
MARICOPA + PINAL COUNTIES AZ

SYMBOL			
1G	115	Fremont - Avilho	B B
23 & A4	68	Grimright - Cipriano	B D
C1	110	Grimrity - Cipriano	D D
29	118	Fremont - Rillito	B B
29D	98	Pinamt - Fremont	B B
~~[illegible]~~	~~[illegible]~~		
~~[illegible]~~			
29A & 29C	113	Fremont	B B
~~[illegible]~~			
29B	112	Fremont	B B
~~[illegible]~~			
G1	63	Brun Hickenbury	D B D
1C	2	Antho	B
1A	1	"	B
33A	101	Rillito	B
9A		Gilmon Loam - B	FROM DAVIS RICHMOND 1/9/85
9A		ESTRELLA LOAM - B	

EASTERN MARICOPA AND
NORTHERN PINAL COUNTIES AREA, AZ

LaB	Lauren Loam B
LaA	Laven Loam B
Gm	Gilmon Loam B
Mv	Mohall Loam B
Po	Pinal Loam D
PnA	Pinal Gravelly Loam D
AnA	Antho Sandy Loam B
Es	Estrella loam B

SCS-ENG-535 Rev. 8-69

SOIL CONSERVATION SERVICE

STATE	PROJECT		
ARIZONA	SPOOK HILL MASTER DRAINAGE PLAN		
BY: C Blocker & R McAnthur — DATE: 1/16/85	CHECKED BY	DATE	JOB NO.
SUBJECT: HYDROLOGIC SOIL GROUPS			SHEET 1 OF 1

SOURCE: SOIL SURVEY OF AGUILA-CAREFREE AREA, ARIZONA, PARTS OF MARICOPA AND PINAL COUNTIES "DRAFT COPY"

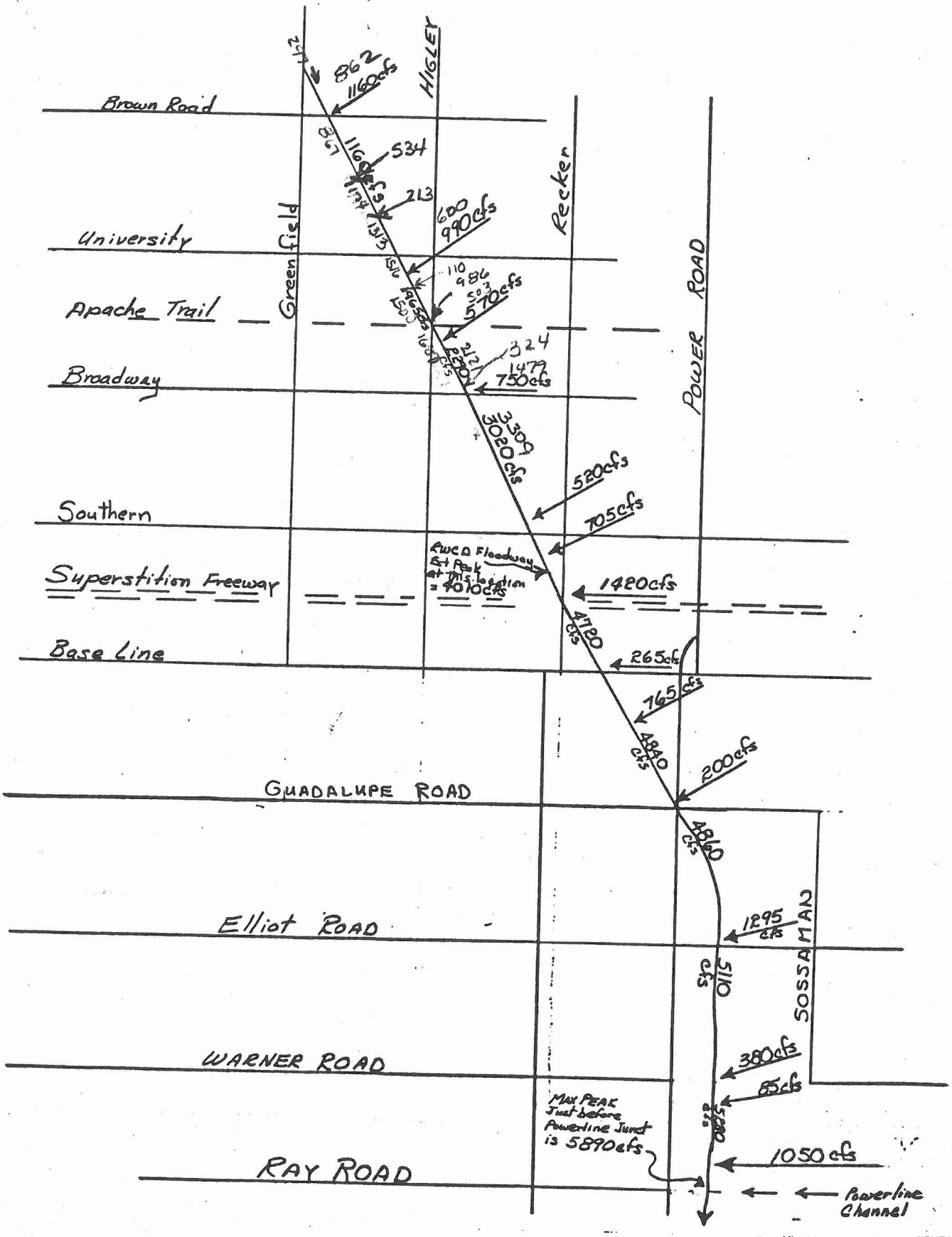
SOILS		1ST COMPONENT			2ND COMPONENT			3RD COMPONENT		
FIELD SYMBOL	NAME	NAME	HYDROL GROUP	%	NAME	HYDROL GROUP	%	NAME	HYDROL GROUP	%
1E	Anthor-Carnzo-Maripo Complex 1 to 3%	Anthro	B	40	Carnzo	A	35	Maripo	B	25
32A	Eban-Pinamt Complex 3 to 20% slope	Eban	C	55	Pinamt	B	45			
A6	Gunsight-Cipriano complex 1 to 7% slope	Gunsight	B	55	Cipriano	D	45			
A4	" "									
23	" "									
31	Gran-Wickenburg Complex 1 to 10% slope	Gran	D	55	Wickenburg	B	45			
22	Eban very gravelly loam, 1 to 8% slope	Eban	C	100						
G1	Gran-Wickenburg-Rock outcrop complex 10 to 65% slope	Gran	D	40	Wickenburg	B	30	Rockout	D	30
16	Mohall clay loam, calcareous solum	Mohall	B	100						
21C	Momoli gravelly sandy loam, 1 to 5% slope	Momoli	B	100						
59	Quilotoa-Valva-Rock outcrop complex 20 to 65% slope	Quilotoa	D	55	Valva	D	25	Rockoutcrop	D	20
33A	Rillito loam, 0 to 3% slope	Rillito	B	100						
29	Tremant-Rillito complex 1 to 3% slope	Tremant	B	60	Rillito	B	40			
29A	Tremant gravelly loams	Tremant	B	100						
29C	" "	Tremant	B	100						
29B	Tremant gravelly sandy loam	Tremant	B	100						
29D	" "									
1G	Tremant Anthro complex 1 to 5% slope	Tremant	B	55	Anthro	B	45			
1H	" "									
G1	Sunsity-Cipriano Complex 1 to 7% slope	Sunsity	D	65	Cipriano	D	35			

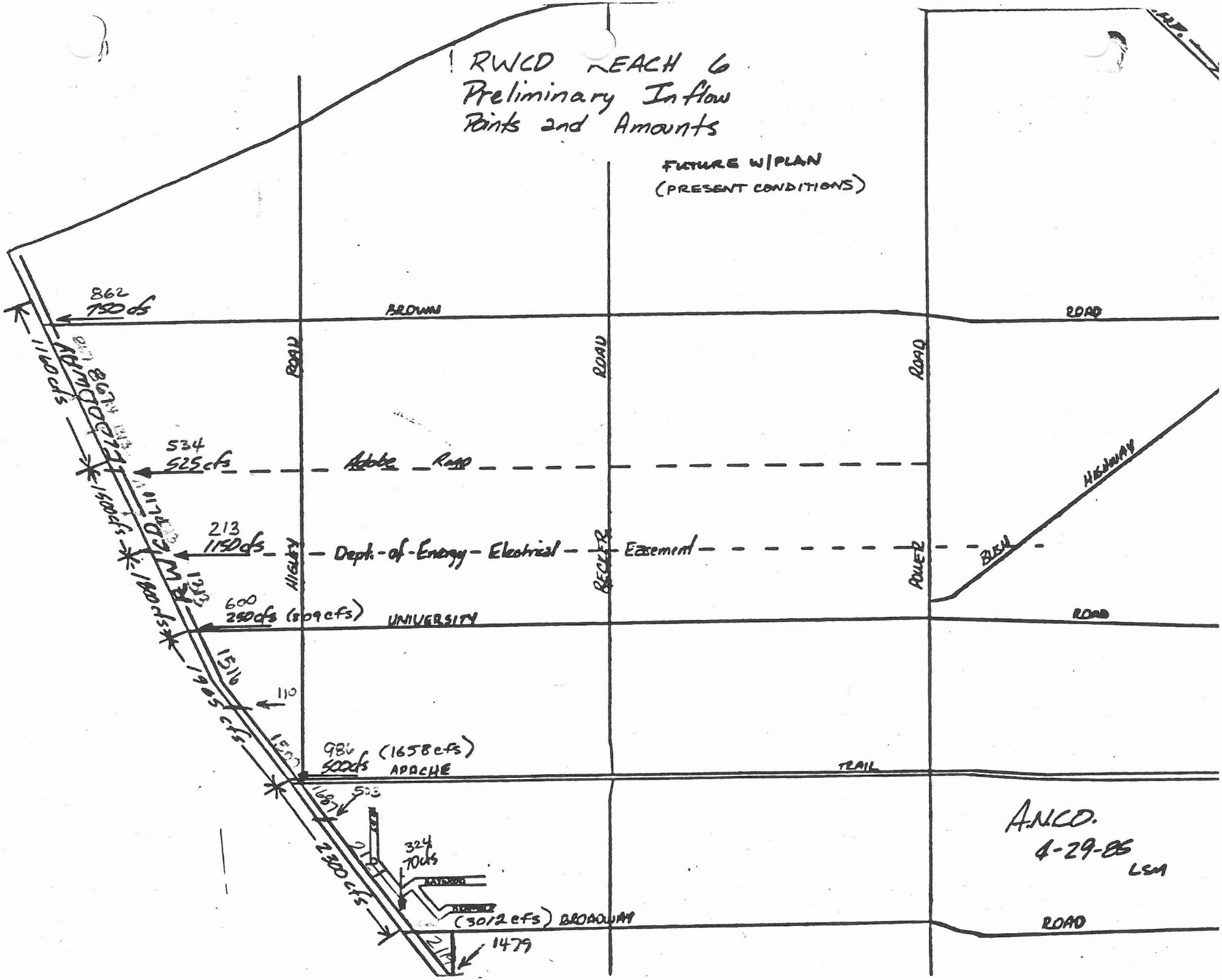
ARIZONA RWCD

R.M. BARTELS Sept 10, 74

Summary of Design Peaks (ALT 3)

100 year Storm




RWCD REACH 6
Preliminary Inflow
Points and Amounts
FUTURE W/PLAN
(PRESENT CONDITIONS)
862
750 cfs
BROWN
ROAD
ROAD
ROAD
ROAD
1160 cfs
534
525 cfs
Abbie Road
1500 cfs
213
1150 cfs
Dept. of Energy Electrical Easement
HIGHWAY
ROAD
POWER
BUSH
HIGHWAY
600
250 cfs (809 cfs)
UNIVERSITY
ROAD
1660 cfs
1516
1905 cfs
110
986
500 cfs
(1658 cfs)
APACHE
TRAIL
1687
503
2300 cfs
324
70 cfs
(3012 cfs)
BROADWAY
ROAD
1479
A.N.C.D.
4-29-85
LSM

5/31/85

Note To File:

Called Wendell Stymer on this date concerning which TYPE II, 24-Hour Storm Distribution (i.e. the one with 0.50 hour or 0.25 hour Time increment) should be used on the Side Inlet evaluation for Reach 6 of the RWCD. He said that since the original (1974) analysis was made using the 0.50 hour increment, we should be consistent and use it for Side Inlet hydrology. The Convex method of Routing will also be used.

Harry Williams.

Four ~~Three~~ Separate Alternatives were routed. They were:

1. Present (1985) Condition with no Chan U/S of Brown Road in Reach 6 Extension.
2. Year 2000, with 1-inch Storage on New Developments between 1985 and 2000 and W/200 and 300 CFS Chan U/S of Brown Road in Reach 6 Ext.

4 ~~3~~. Year 2000 with 1-inch Storage on New Developments between 1985 and 2000 and W/100-year Chan assumed U/S of Brown Road in Reach 6 Ext.

3 Same as Alt # 2 except 90% S, 10% WS to show effect of ~~a the max~~ [illegible]

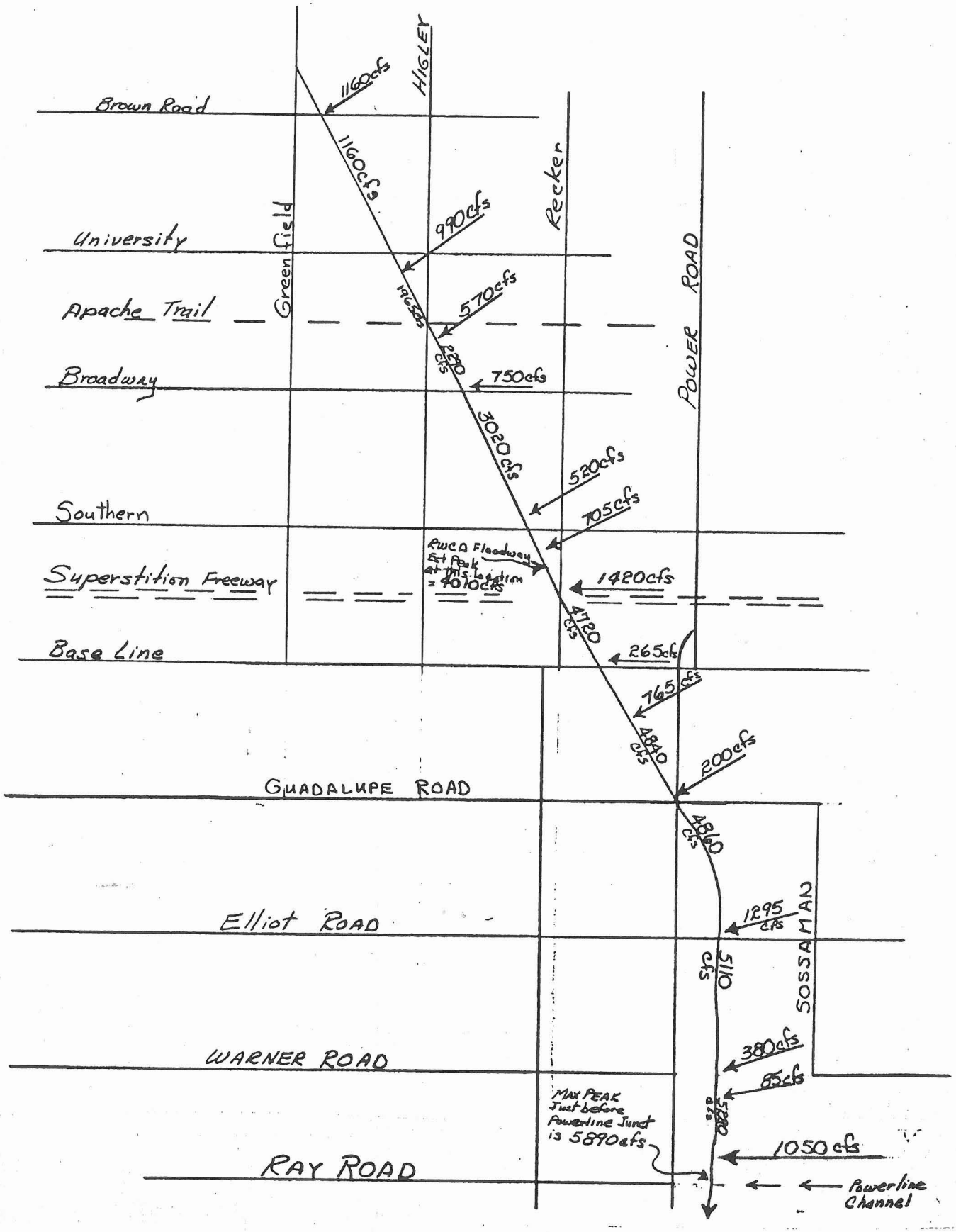
ARIZONA RWCD

R.M. BARTELS Sept 10, 74

Summary of Design Peaks (ALT 3)

100 year Storm

1 2



ARIZONA RWCD DESIGN

RMB Sept 26, 74

Summary of Alternate 3 / /

This alternate was run in conjuction with Alternate 4 & 5. On Run of 5 an error occurred which caused the computer to stop. ~~[illegible]~~ This resulted in not getting an summary table but all calc. for Alt 3 were completed.

Location	X-Sec No	100yr Peak	25yr Peak	10yr Peak
RWCD @ Brown Rd	3	1160	560	270
RWCD @ Apache Trail	10	1965	960	480
" @ Broadway	14	2290	1150	570
" @ Southern	35	3440	1760	850
" @ Superstition	82	4720	2410	1150
" " Baseline	86	4700	2410	1150
" At GUADALUPE	124	4860	2470	1170
" At Elliot	145	5110	2600	1230
" At Warner	155	5285	2700	1285
" Above Powerline	186	5890	3005	1440
" Below Powerline	338	6470	3280	1625
@ So. Pacific RR	356	6880	3470	1675
" Above Queen Creek	367	6730	3410	1675
" Below Queen Creek	467	8070	4000	1980
At Res. Boundary	470	8640	4350	2170
At Place RWCD turns West	473	8690	4400	2210

OF MARICOPA COUNTY
3335 West Durango Street
PHOENIX, ARIZONA 85009

(602) 262-1501

LETTER OF TRANSMITTAL

SOIL CONSERVATION SERVICE

DATE 4-29-85
JOB NO.
ATTENTION DON PAULUS
RE: RWCD FLOODWAY REACH 6 — INLET DATA FROM EASTERN COUNTY STUDY

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☑ Copy of letter W/DIAGRAM ☐ Change order ☐ _____

COPIES	DATE	NO.	DESCRIPTION

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☑ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☑ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS ATTACHED IS DATA ON PROPOSED INLETS TO RWCD REACH 6, LOCATIONS AND CAPACITIES. THE FIGURES ARE BEST ESTIMATES AVAILABLE TO MEET YOUR REQUESTED DEADLINE OF MAY 1, 1985.

COPY TO _____

SIGNED: Kebb Buckley PROJECT ENGR

PRODUCT 240-3 NEBS Inc., Groton, Mass. 01471.

If enclosures are not as noted, kindly notify us at once.

FLOOD CONTROL DISTRICT
RECEIVED
APR 29 '85

	CH ENG		HYDRO
	ASST		LMgt
	ADMIN		SUSP
	C & O		FILE
	ENGR		DESTROY
	FINANCE		
REMARKS			

Anderson-Nichols
4120 North 20th Street
Phoenix, Arizona 85016
(602) 957-3681

Woodrow C. Scoutten, P.E.
Vice President

April 29, 1985

Flood Control District
of Maricopa County
3335 West Durango Street
Phoenix, Arizona 85009

Attn: Ms. Kebba Buckley

Re: Master Drainage Plan East
Maricopa County
Contract FCD 84-26

Dear Ms. Buckley:

As per your request, attached is a map showing proposed inflow points and preliminary estimates of 100-year peak inflows at the respective points for Reach 6 of the RWCD.

These are our best estimates at this time, however, they are preliminary and could change once the preferred alternative drainage plan is selected by the review committee.

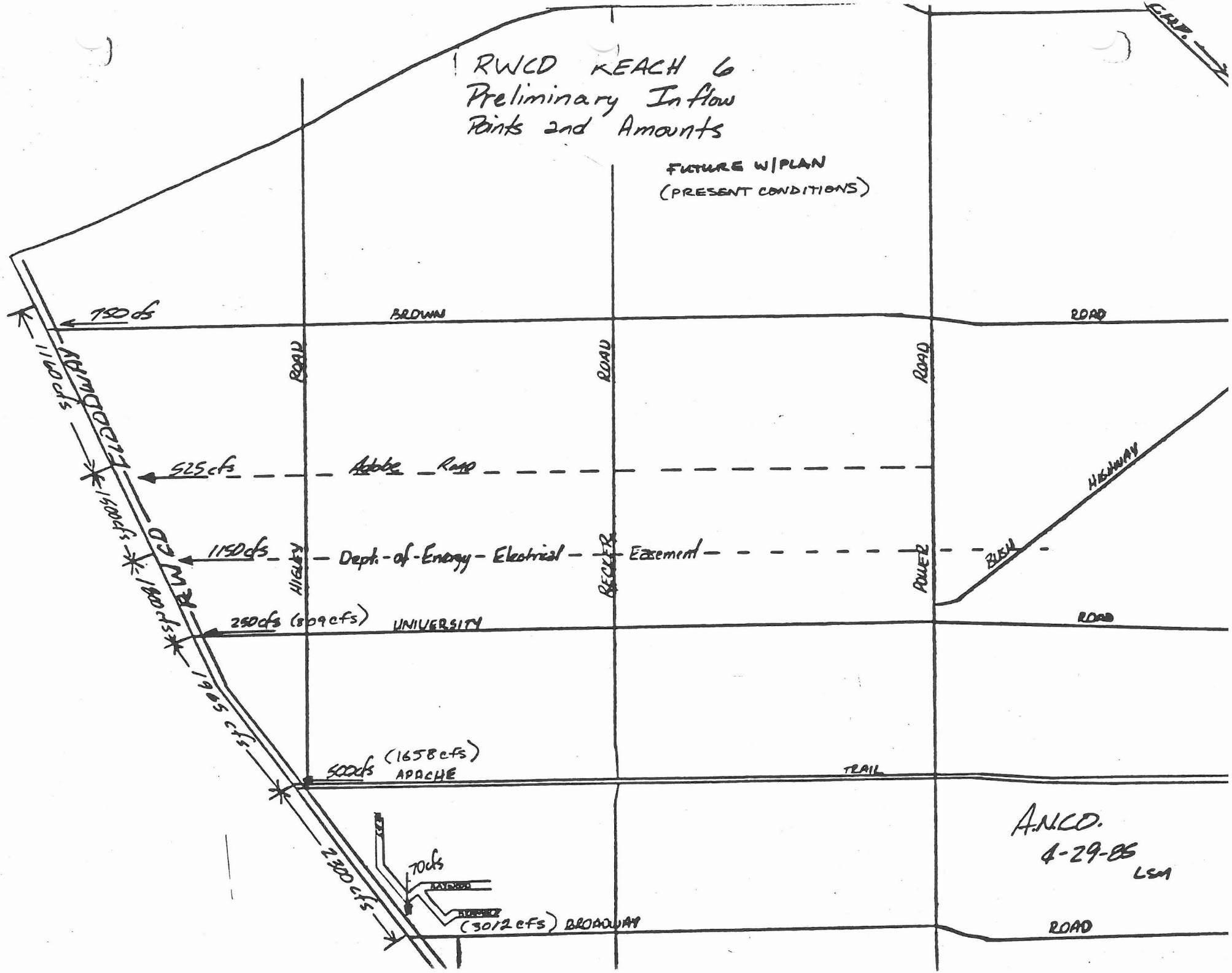
Sincerely,

ANDERSON-NICHOLS & COMPANY, INC.

Collis J. Lovely

Collis J. Lovely
Project Manager

CJL/gcb


RWCD REACH 6
Preliminary Inflow
Points and Amounts
FUTURE W/PLAN
(PRESENT CONDITIONS)
750 cfs
BROWN
ROAD
1160 cfs
ROAD
ROAD
ROAD
525 cfs
Adobe Road
1500 cfs
1150 cfs
Dept. of Energy Electrical Easement
HIGHWAY
BUSH
HIGHWAY
RECLAIM CO
1400 cfs
250 cfs (809 cfs)
UNIVERSITY
ROAD
1905 cfs
500 cfs (1658 cfs)
APACHE
TRAIL
2300 cfs
70 cfs
(3012 cfs) BROADWAY
ROAD
A.N.C.D.
4-29-85
LSM

OF MARICOPA COUNTY
3335 West Durango Street
PHOENIX, ARIZONA 85009

(602) 262-1501

LETTER OF TRANSMITTAL

DATE 4-29-85	JOB NO.
ATTENTION DON PAULUS	
RE: RWCD FLOODWAY REACH 6 — INLET DATA FROM EASTERN COUNTY STUDY	

SOIL CONSERVATION SERVICE

WE ARE SENDING YOU ☑ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☑ Copy of letter W/DIAGRAM ☐ Change order ☐ _____

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☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

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COPY TO _____

SIGNED: Debbie Buckley PROJECT ENGR

PRODUCT 240-3 NEBS Inc., Groton, Mass. 01471

If enclosures are not as noted, kindly notify us at once.

FLOOD CONTROL DISTRICT
RECEIVED

APR 29 '85

	CH ENG		HYDRO
	ASST		LMgt
	ADMIN		SUSP
	C & O		FILE
	ENGR		DESTROY
	FINANCE		
REMARKS			

Anderson-Nichols
4120 North 20th Street
Phoenix, Arizona 85016
(602) 957-3681

Woodrow C. Scoutten, P.E.
Vice President

April 29, 1985

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of Maricopa County
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Collis J. Lovely

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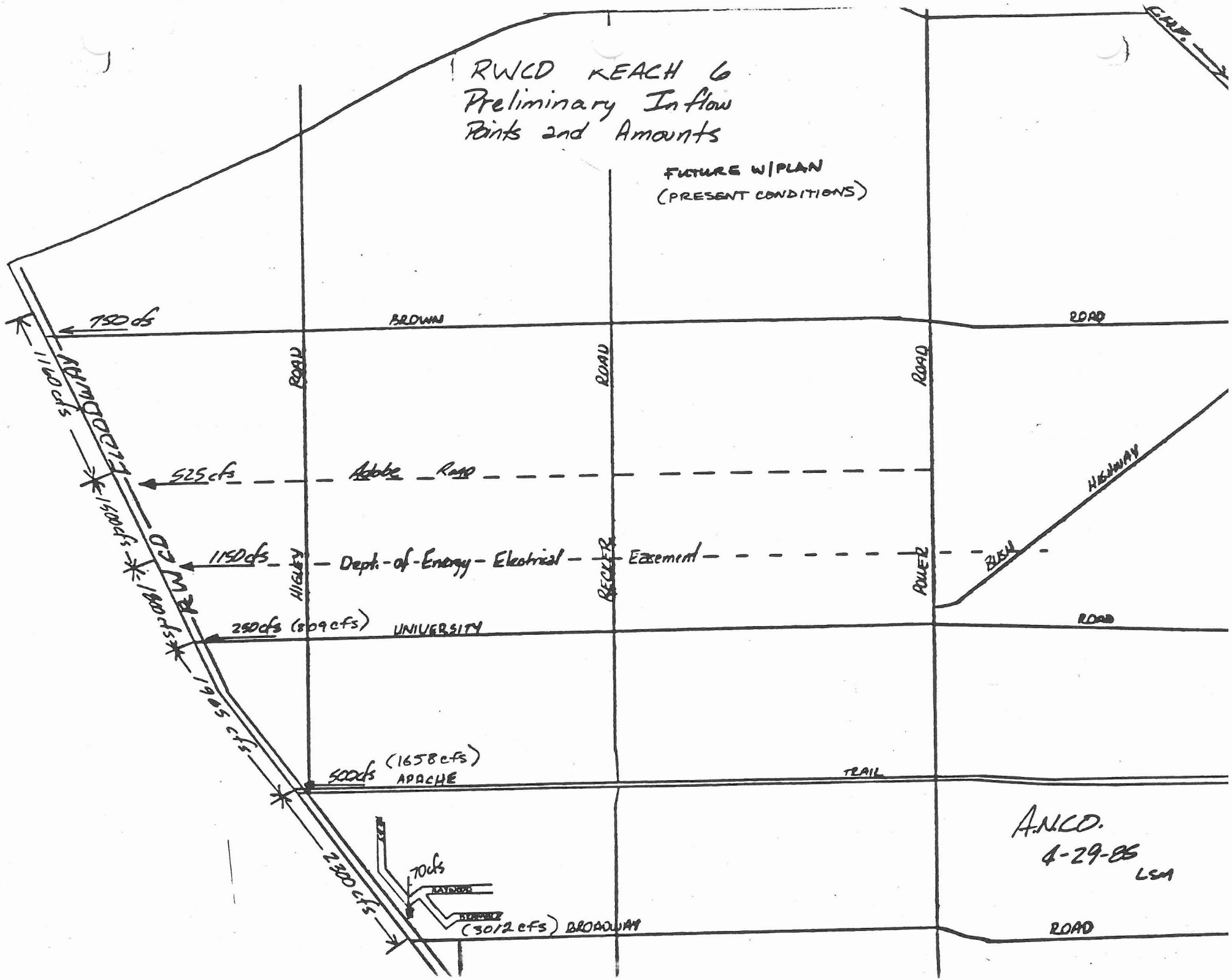
Project Manager

CJL/gcb


RWCD REACH 6
Preliminary Inflow
Points and Amounts
FUTURE W/PLAN
(PRESENT CONDITIONS)
750 cfs
BROWN
ROAD
1160 cfs
RIMROCK
525 cfs
Adobe Road
1500 cfs
1150 cfs
Dept. of Energy Electrical Easement
1800 cfs
RWCD
250 cfs (809 cfs)
UNIVERSITY
1905 cfs
500 cfs (1658 cfs)
APACHE
TRAIL
2300 cfs
70 cfs
(3012 cfs) BROADWAY
HIGLEY
RECKER
POWER
BUSH
HIGHWAY
A.N.C.D.
4-29-85
LSM

COMPUTATION SHEET
SCS ENG 522A
Rev. 8 69

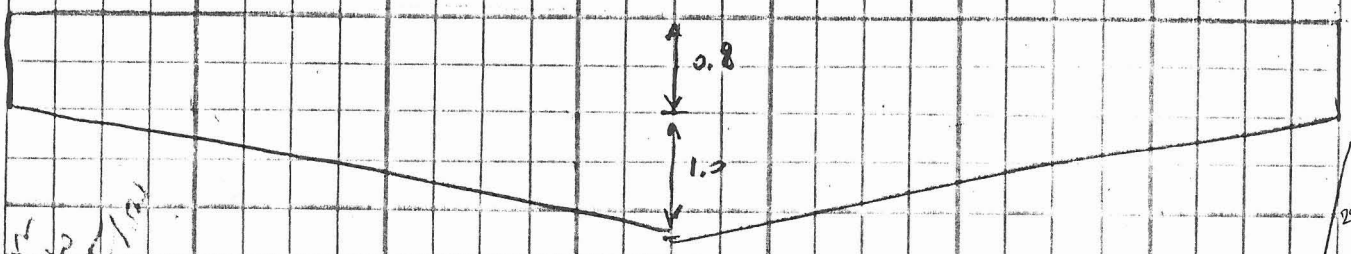
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
GPO 1978 0-725-713

STATE	PROJECT	
ARK	RWCO REACH 6, Initial Hydrology	
BY: Hem	DATE: 5/30/85	CHECKED BY: / DATE: /

SUBJECT: EST' INVERTED STREET CAPACITY

SHEET ___ OF ___

W = 70', Curb Height 0.8', INVERTED DEPTH = 1.0', N = 0.015
S = .008. NOTE!! This is not an actual SECTION
But was used ONLY TO SPLIT FLOWS.



Sadness
Split 8
Split Flow

Elev 1.0

$A = \frac{70}{2}(1) = 35$

$WP = 70$, $N = 0.015$

$R = 0.50$, $S = 0.008$

$V = \frac{1.486}{.015}(.5)^{2/3}(.008)^{1/2} = 5.6$ (.63, .089)

$Q = (35)(5.6) = 195$ cfs

Elev 1.8

$A = 35 + (.8)(70) = 91$

$WP = 72$

$R = \frac{91}{72} = 1.26$

$V = \frac{1.486}{.015}(1.26)^{2/3}(.008)^{1/2} = 10.3$ (1.17)

$Q = (91)(10.3) = 940$ cfs

Elev 2.8

$A = 91 + (1)(70) = 161$

$WP = 70$

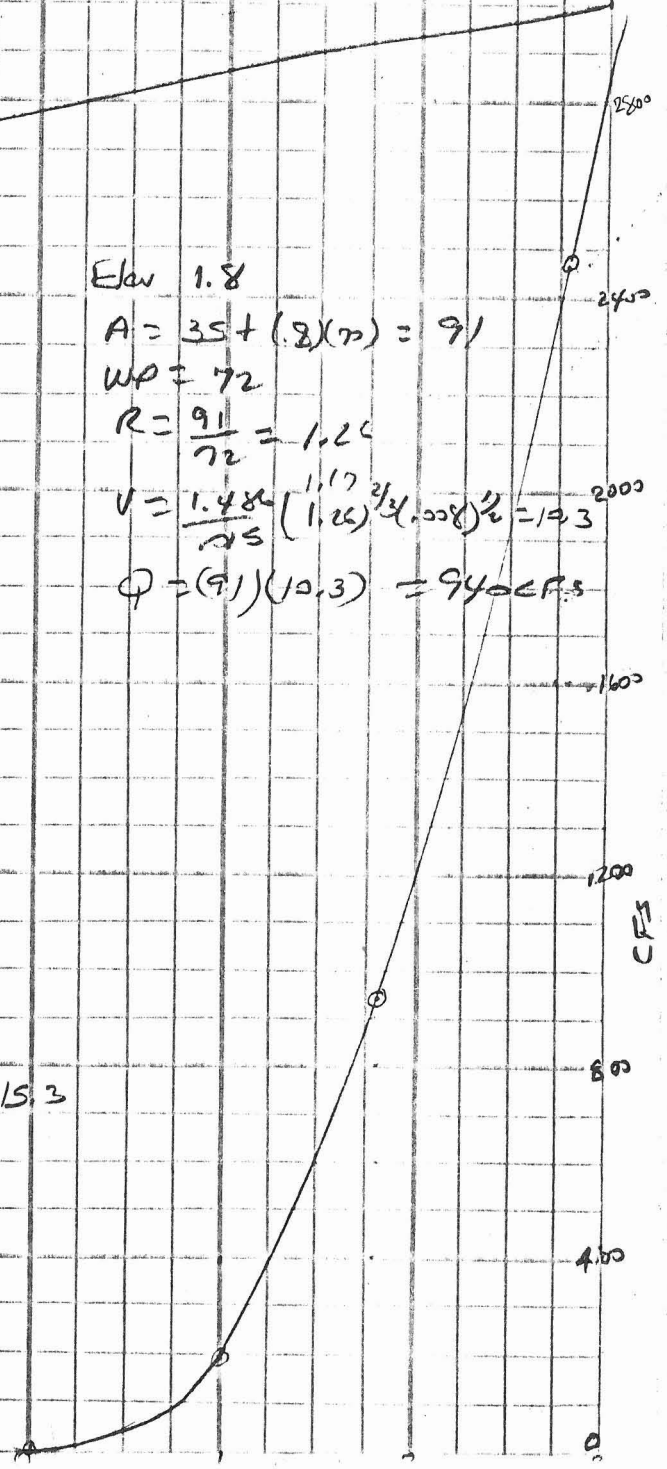
$R = \frac{161}{70} = 2.3$

$S = .008$

$N = 0.015$

$V = \frac{1.486}{.015}(2.3)^{2/3}(.008)^{1/2} = 15.3$ (1.74, .089)

$Q = (161)(15.3) = 2463$



COMPUTATION SHEET
SCS-ENG 522A
Rev. 8 69

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
GPO 1976 O 725 733

STATE: ARIZ. | PROJECT: RWCD REACH G, INLET HYDROLOGY
BY: Hem | DATE: 6/7/85 | CHECKED BY: | DATE: | JOB NO:
SUBJECT: COMPARISON OF 100-YR PEAK DISCHARGES | SHEET ___ OF ___

FUTURE COND, YEAR 2000, W/1-INCH STORAGE ON NEW DEVELOPMENTS AND 1985 (PRESENT) CONDITIONS

LOCATION	1974 Calc. Design Peaks (W/200# (IGNORING Reach G EXT Dv. Area)	1985 Calc. 300CFS Chan on Reach G EXT. D.A)	1985 Calc W/100-YR Design Chan on Reach G EXT. D.A.)	1985 Calc OF PRESENT (1985) CONDIT 100AS (No Chan on Reach G EXT)	1985 CALC By ANDERSON NICHOLS for YEAR 2000
BROWN ROAD					
Reach G EXT	—	LD/40 split & single culvert ↓ 297	297 +297	874 +874	150
From East (109)	1160	707 862	862 -298	862 -298	741	750
RWCD (110)	1160	702 867	867 -293	1601 +441	891
1/2-MILE S. of Br. ROAD (ADOBE ROAD)					
INLET (119)	—	360 534	534 +534	534 +534	438	525
RWCD (110)	1160	918 1174	1174 +14	1594 +434	1217
3/4-MILE S. of Br. ROAD					
INLET (121)	—	143 213	213 +213	213 +213	176	150
RWCD (120)	1160	1026 1313	1313 +153	1682 +522	1347
UNIVERSITY DR.					
INLET (128)	990	473 600	600 -390	600 -390	543	250
RWCD (122)	1965	1122 1516	1516 -449	1817 -148	1539
1/4 MILE S. of U. DR.					
INLET (12)	—	106 110	110 +110	110 +110	113
RWCD (129)	1965	1112 1500	1500 -465	1807 -158	1510
APACHE TRAIL					
INLET (133)	—	928 986	986 +986	986 +986	900	500
RWCD (147)	1965	1409 1687	1687 -278	1942 -23	1720
JUST SE of HIGLEY ROAD					
INLET (142)	570	500 503	503 -68	503 -68	502
RWCD (148)	2290	1954 2121	2121 -169	2221 -169	2158

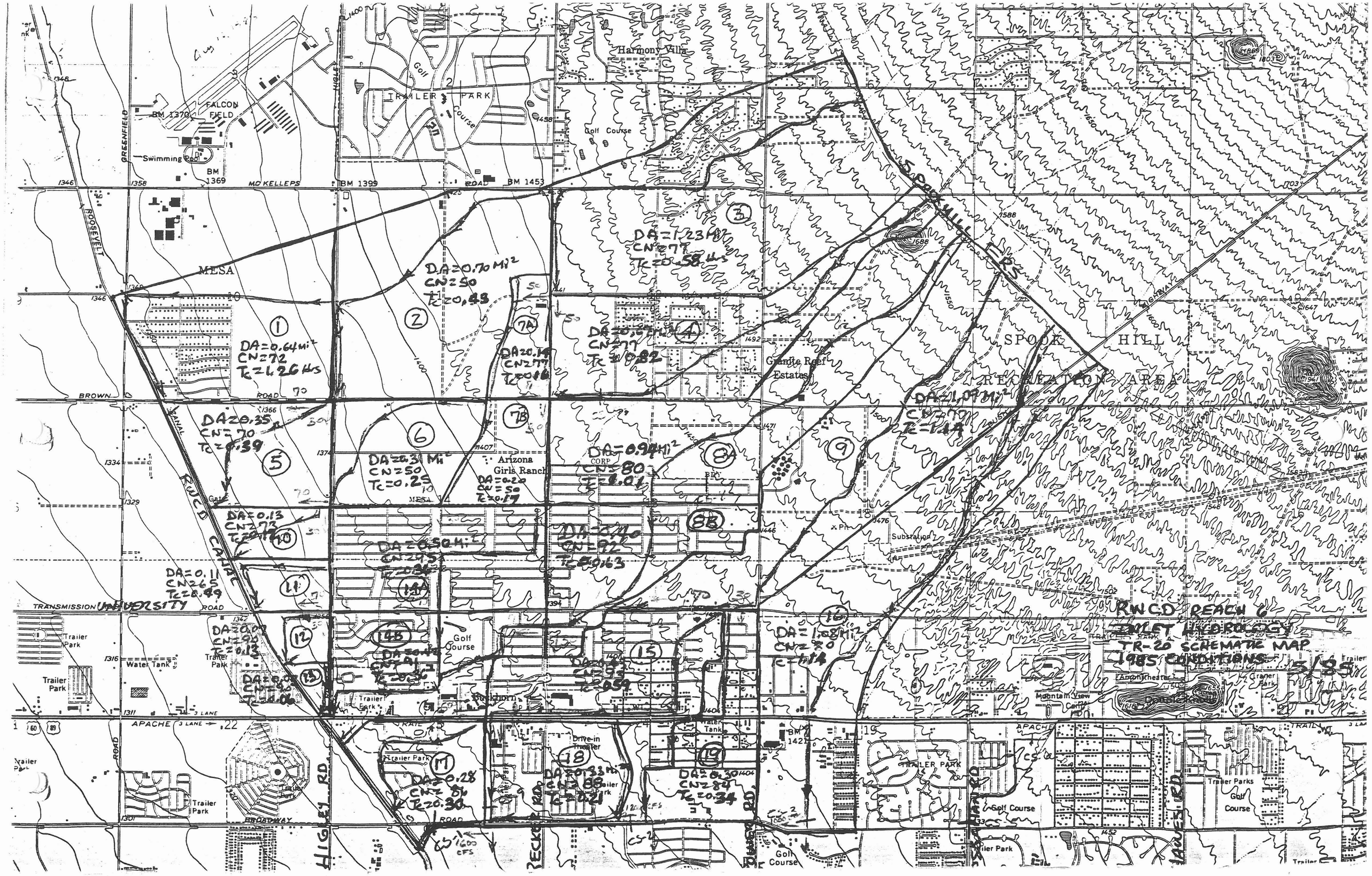
COMPUTATION SHEET
SCS-ENG 522A
Rev. 8 69

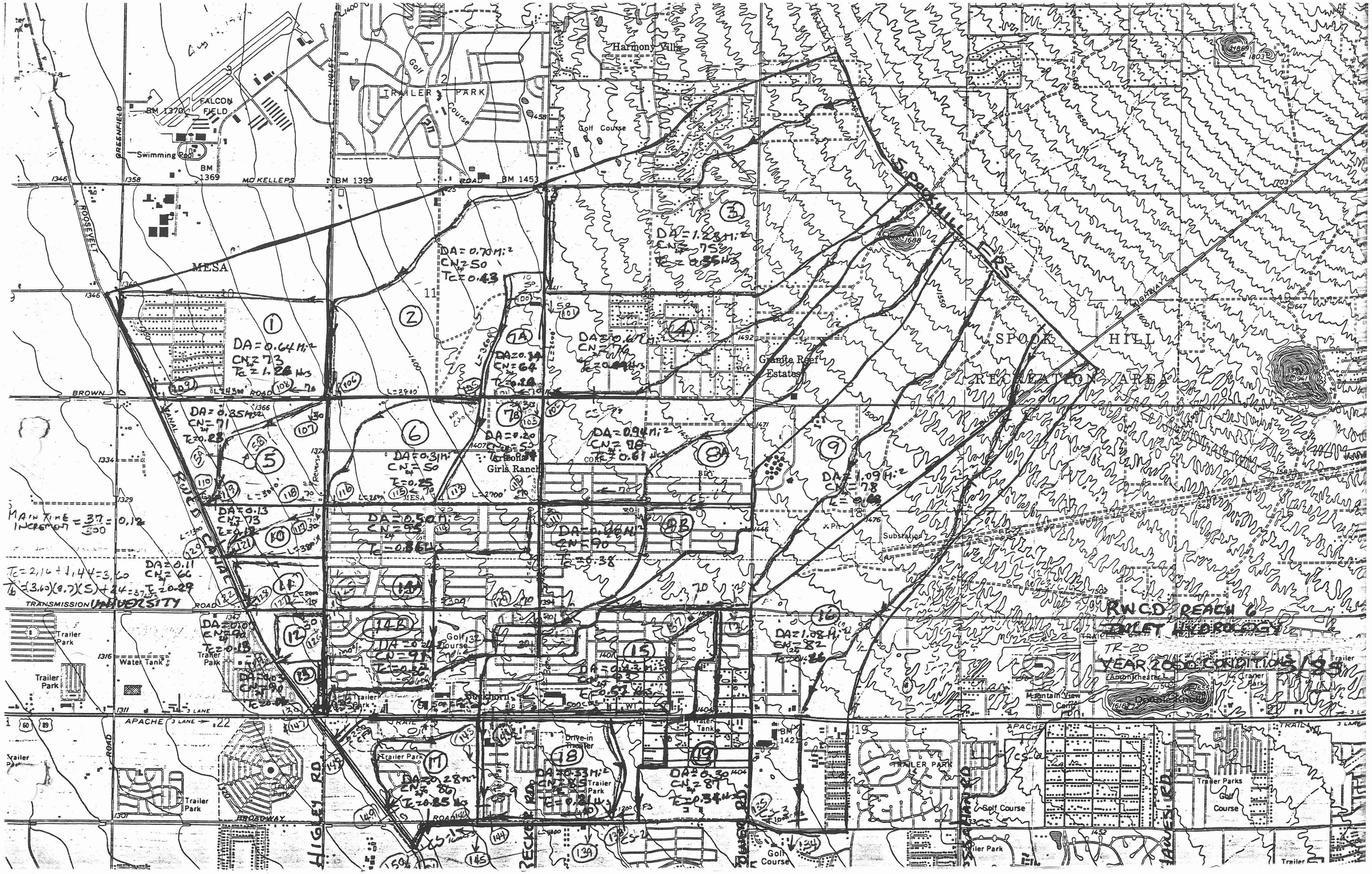
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE: ARIZ
PROJECT: RWCD REACH 6, INLET HYDROLOGY
BY: Hem
DATE: 6/7/85
CHECKED BY:
DATE:
JOB NO:
SUBJECT: COMPARISON OF 100-YR PEAK DISCHARGES
SHEET ___ OF ___

FUTURE COND., YEAR 2000, W/1-INCH STORAGE ON NEW DEVELOPMENTS

LOCATION	1974 Calc Design Peak (Ignoring Reach 6 Ext D. Area)	1985 Calc (W/200 # 300 CFS Chan on Reach 6 Ext D. A.)	1985 Calc (W/100-YR Design Chan on Reach 6 Ext D. A.)	1985 Calc Of Present (1985) Cond- 14 ins (No Chan on Reach 6 Ext)	1985 Calc By Anderson-Nichols For Year 2000
BROADWAY ROAD					
INLET (17)	1[illegible] 301	324 +324	324 +324	306	70
RWCD (149)	2290 1960	2119 +171	2229 -6	2152	
500' S. of BROADWAY RD					
INLET (146)	750 1369	1479 +729	1479 +729	809	
RWCD. (151)	3050 3202	3309 +259	3310 +260	2674	


RWCD REACH 6
INLET HYDROLOGY
TR-20 SCHEMATIC MAP
1985 CONDITIONS
5/35
DA=1.23 Mi²
CN=77
Tc=0.58 Hrs
DA=0.70 Mi²
CN=50
Tc=0.43
DA=0.64 Mi²
CN=72
Tc=1.26 Hrs
DA=0.35
CN=70
Tc=0.39
DA=0.13
CN=72
DA=0.11
CN=65
Tc=0.49
DA=0.94 Mi²
CN=80
Tc=1.01
DA=1.08 Mi²
CN=80
Tc=1.14
DA=0.28
CN=86
Tc=0.30
DA=0.30
CN=84
Tc=0.34
SPOOK HILL RECREATION AREA
S. POOK HILLS
Harmony Villa
Golf Course
IRMLER PARK
FALCON FIELD
Swimming Pool
BM 1370
BM 1369
BM 1399
BM 1453
MO KELLEPS ROAD
GREENFIELD
ROOSEVELT
HIGLEY
MESA
BROWN ROAD
CANAL
RWCD CANAL
TRANSMISSION
UNIVERSITY ROAD
APACHE TRAIL
BROADWAY ROAD
Arizona Girls Ranch
Granite Reef Estates
Substation
Trailer Park
Water Tank
Drive-in Theater
Golf Course
Mountain View Camp
Trailer Parks


Harmony Villa
TRAILER PARK
Golf Course
FALCON FIELD
BM 1370
Swimming Pool
BM 1369
MC KELLEPS
BM 1399
BM 1453
GREENFIELD
ROOSEVELT
MESA
BROWN
ROAD
CANAL
RURAL
Arizona Girls Ranch
MESA
Granite Reef Estates
SPOOK HILL
RECREATION AREA
Substation
UNIVERSITY
TRANSMISSION
Trailer Park
Water Tank
Golf Course
Drive-in Theater
APACHE
TRAILER PARK
BROADWAY
HIGLEY RD
RECKER RD
ALMA SCHOOL RD
RWCD REACH 6
INLET HYDROLOGY
TR-20
YEAR 2050 CONDITIONS
MAIN TIME INCREMENT = 37/300 = 0.12
Tc = 2.16 + 1.44 = 3.60
Tc = (3.60)(0.7)(S) + 24 = 37 Tc = 0.29
DA = 0.64 mi²
CN = 73
Tc = 1.28 hrs
DA = 0.70 mi²
CN = 50
Tc = 0.43
DA = 0.35 mi²
CN = 71
Tc = 0.23
DA = 0.31 mi²
CN = 50
Tc = 0.25
DA = 0.50 mi²
CN = 85
Tc = 0.36 hrs
DA = 0.11
CN = 66
DA = 0.13
CN = 73
DA = 0.94 mi²
CN = 98
Tc = 0.61 hrs
DA = 1.09 mi²
CN = 78
DA = 0.46 mi²
CN = 90
Tc = 0.38
DA = 1.08 mi²
CN = 82
DA = 0.28 mi²
CN = 86
Tc = 0.25 hrs
DA = 0.30
CN = 87
Tc = 0.34 hrs

```
JOB        TR20                    FULLPRINT                                          1071
TITLE        06/04/85 RWCD REACH-6,INLET HYD.,YR-2000 COND.,1-IN. STO                 1072
 2 XSECTN   100          1.0  100-YR     CHAN ~~[illegible]~~ Brown Rd IN Road 6 EXT   2079
 8                       0.0          0.0                                             3080
 8                       0.25         10.                                             4080
 8                       0.50         25.                                             5080
 8                       0.75         50.                                             6080
 8                       1.00         100.                                            7080
 8                       1.50         300.                                            8080
 8                       2.00         600.                                            9080
 8                       2.50         950.                                           10080
 8                       3.00         1420.                                          11080
 9 ENDTBL                                                                            12081
 2 XSECTN   101          1.0                                                         13079
 8                       0.0          0.0                                            14080
 8                       0.25         10.                                            15080
 8                       0.50         25.                                            16080
 8                       0.75         50.                                            17080
 8                       1.00         100.                                           18080
 8                       1.50         300.                                           19080
 8                       2.00         600.                                           20080
 8                       2.50         950.                                           21080
 8                       3.00         1420.                                          22080
 9 ENDTBL                                                                            23081
 2 XSECTN   104          1.0                                                         24079
 8                       0.0          0.0                                            25080
 8                       0.25         15.                                            26080
 8                       0.50         35.                                            27080
 8                       0.75         70.                                            28080
 8                       1.00         140.                                           29080
 8                       1.50         420.                                           30080
 8                       2.00         840.                                           31080
 8                       2.50         1350.                                          32080
 8                       3.00         2000.                                          33080
 9 ENDTBL                                                                            34081
 2 XSECTN   103          1.0                                                         35079
 8                       0.0          0.0                                            36080
 8                       0.25         5.0                                            37080
 8                       0.5          15.                                            38080
 8                       0.75         ~~40.~~ 30.                                    39080
 8                       1.00         60.                                            40080
 8                       1.50         180.                                           41080
 8                       2.00         ~~485.~~ 360.                                  42080
 8                       2.50         580.                                           43080
 8                       3.00         ~~930.~~ 850.                                  44003
 9 ENDTBL                                                                            45081
 2 XSECTN   107          1.0                                                         46079
 8                       0.0          0.0                                            47080
 8                       0.25         5.                                             48080
 8                       0.50         15.                                            49080
 8                       0.75         30.                                            50080
 8                       1.00         60.                                            51080
 8                       1.50         180.                                           52080
 8                       2.00         360.                                           53080
 8                       2.50         580.                                           54080
 8                       3.00         850.                                           55003
 9 ENDTBL                                                                            56081
 2 XSECTN   108          1.0                                                         57079
 8                       0.0          0.0                                            58080
 8                       0.25         15.                                            59080
```

AH # 4

70/30 split
w/ Rw TC's &
DA = 8A 18B

1

```
8                       0.50        35.                    61080
8                       0.75        70.                    62080
8                       1.00        140.                   63080
8                       1.50        420.                   64080
8                       2.00        840.                   65080
8                       2.50        1350.                  66080
8                       3.00        2000.                  66A081
9 ENDTBL                                                   68079
2 XSECTN    111         1.0                                69080
8                       0.0         0.0                    70080
8                       0.25        5.                     71080
8                       0.50        15.                    72080
8                       0.75        30.                    73080
8                       1.00        60.                    74080
8                       1.50        180.                   75080
8                       2.00        350.                   76080
8                       2.50        580.                   77080
8                       3.00        850.                   78081
9 ENDTBL                                                   79079
2 XSECTN    112         1.0                                80080
8                       0.0         0.0                    81080
8                       0.25        15.                    82080
8                       0.50        35.                    83080
8                       0.75        70.                    84080
8                       1.00        140.                   85080
8                       1.50        420.                   86080
8                       2.00        840.                   87080
8                       2.50        1350.                  88080
8                       3.00        2000.                  89081
9 ENDTBL                                                   90079
2 XSECTN    114         1.0                                91080
8                       0.0         0.0                    92080
8                       0.25        5.                     93080
8                       0.50        15.                    94080
8                       0.75        30.                    95080
8                       1.00        60.                    96080
8                       1.50        180.                   97080
8                       2.00        360.                   98080
8                       2.50        580.                   99080
8                       3.00        850.                   100081
9 ENDTBL                                                   101079
2 XSECTN    115         1.0                                102080
8                       0.0         0.0                    103080
8                       0.25        15.                    104080
8                       0.50        35.                    105080
8                       0.75        70.                    106080
8                       1.00        140.                   107080
8                       1.50        420.                   108080
8                       2.00        840.                   109080
8                       2.50        1350.                  110080
8                       3.00        2000.                  111081
9 ENDTBL                                                   112079
2 XSECTN    117         1.0                                113080
8                       0.0         0.0                    114080
8                       0.25        5.                     115080
8                       0.50        15.                    116080
8                       0.75        30.                    117080
8                       1.00        60.                    118080
8                       1.50        180.                   119080
8                       2.00        360.
```

2

```
8                       2.50        580.                    120080
8                       3.00        850.                    121080
9 ENDTBL                                                    122081
2 XSECTN   118          1.0                                 123079
8                       0.0         0.0                     124080
8                       0.25        15.                     125080
8                       0.50        35.                     126080
8                       0.75        70.                     127080
8                       1.00        140.                    128080
8                       1.50        420.                    129080
8                       2.00        840.                    130080
8                       2.50        1350.                   131080
8                       3.00        2000.                   132080
9 ENDTBL                                                    133081
2 XSECTN   123          1.0                                 134079
8                       0.0         0.0                     135080
8                       0.25        5.                      136080
8                       0.50        15.                     137080
8                       0.75        30.                     138080
8                       1.00        60.                     139080
8                       1.50        180.                    140080
8                       2.00        360.                    141080
8                       2.50        580.                    142080
8                       3.00        850.                    143003
9 ENDTBL                                                    144081
2 XSECTN   124          1.0                                 145079
8                       0.0         0.0                     146080
8                       0.25        15.                     147080
8                       0.50        35.                     148080
8                       0.75        70.                     149080
8                       1.00        140.                    150080
8                       1.50        420.                    151080
8                       2.00        840.                    152080
8                       2.50        1350.                   153080
8                       3.00        2000.                   154080
9 ENDTBL                                                    155081
2 XSECTN   126          1.0                                 156079
8                       0.0         0.0                     157080
8                       0.25        5.                      158080
8                       0.50        15.                     159080
8                       0.75        30.                     160080
8                       1.00        60.                     161080
8                       1.50        180.                    162080
8                       2.00        360.                    163080
8                       2.50        580.                    164080
8                       3.00        850.                    165003
9 ENDTBL                                                    166081
2 XSECTN   127          1.0                                 167079
8                       0.0         0.0                     168080
8                       0.25        15.                     169080
8                       0.50        35.                     170080
8                       0.75        70.                     171080
8                       1.00        140.                    172080
8                       1.50        420.                    173080
8                       2.00        840.                    174080
8                       1350.       2000.                   F080
8                       3.00        1700.                   176080
9 ENDTBL                                                    177081
2 XSECTN   131          1.0                                 178079
8                       0.0         0.0                     179080
```

3

```
8                       0.25        5.                                                  181080
8                       0.50        15.                                                 182080
8                       0.75        30.                                                 183080
8                       1.00        60.                                                 184080
8                       1.50        180.                                                185080
8                       2.00        360.                                                186080
8                       2.50        580.                                                187003
8                       3.00        850.                                                188081
9 ENDTBL                                                                                189079
2 XSECTN   132          1.0                                                             190080
8                       0.0         0.0                                                 191080
8                       0.25        15.                                                 192080
8                       0.50        35.                                                 193080
8                       0.75        70.                                                 194080
8                       1.00        140.                                                195080
8                       1.50        420.                                                196080
8                       2.00        840.                                                197080
8                       2.50        1350.                                               198080
8                       3.00        2000.                                               199081
9 ENDTBL                                                                                200079
2 XSECTN   136          1.0                                                             201080
8                       0.0         0.0                                                 202080
8                       0.25        5.                                                  203080
8                       0.50        15.                                                 204080
8                       0.75        30.                                                 205080
8                       1.00        60.                                                 206080
8                       1.50        180.                                                207080
8                       2.00        360.                                                208080
8                       2.50        580.                                                209080
8                       3.00        850.                                                210081
9 ENDTBL                                                                                211079
2 XSECTN   137          1.0                                                             212080
8                       0.0         0.0                                                 213080
8                       0.25        15.                                                 214080
8                       0.50        35.                                                 215080
8                       0.75        70.                                                 216080
8                       1.00        140.                                                217080
8                       1.50        420.                                                218080
8                       2.00        840.                                                219080
8                       2.50        1350.                                               220080
8                       3.00        2000.                                               221081
9 ENDTBL                                                                                222089
6 RUNOFF 1 003        6 1.23        75.         0.35      1     1   1                 223089
6 DIVERT 6 100   6 7 2              0.50        101.                                    224089
6 REACH  3 100   7   1 3600.        0.75                    1     1   1                 225089
6 REACH  3 101   2   5 2600.        0.75                    1     1   1                 226089
6 RUNOFF 1 004        6 0.67        76.         0.49      1     1   1                 226A089
6 ADDHYD 4 102   5 6 7                                      1     1   1                 227089
6 DIVERT 6 103   7 2 3              0.30        104.                                    228089
6 REACH  3 104   3   5 1500.        0.83                    1     1   1                 229089
6 RUNOFF 1 007        6 0.14        64.         0.16      1     1   1                 230089
6 ADDHYD 4 105   5 6 7                                      1     1   1                 231089
6 ADDHYD 4 105   7 1 3                                                                  232089
6 REACH  3 106   3   5 3800.        0.83                    1     1   1                 233089
6 RUNOFF 1 002        6 0.70        50.         0.43      1     1   1                 234089
6 ADDHYD 4 106   5 6 7              0.30        108.                                    235089
6 DIVERT 6 107   7 1 4                                      1     1   1                 236089
6 REACH  3 108   4   5 4300.        0.75                    1     1   1                 237089
6 RUNOFF 1 001        6 0.64        73.         1.26      1 1   1   1                 238089
6 ADDHYD 4 109   5 6 7
```

(4)

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6 SAVMOV 5 109   7   5                                                    238A089
6 ADDHYD 4 110   5 6 7                                   1 1   1   1      238B089
6 REACH  3 110   7   4 2900.      0.60                                     238C089
6 REACH  3 103   2   5 2600.      0.75                   1     1   1       240089
6 RUNOFF 1 008       6 0.94       78.        0.61       1     1   1       240A089
6 ADDHYD 4 008   5 6 7                                   1     1   1       240B089
6 SAVMOV 5 008   7   5                                                    240C089
6 DIVERT 6 111   5 2 3            0.30       112.                         241089
6 REACH  3 112   3   5 2700.      0.83                   1     1   1       242089
6 RUNOFF 1 113       6 0.20       50.        0.17       1     1   1       243089
6 ADDHYD 4 113   5 6 7                                   1     1   1       244089
6 DIVERT 6 114   7 3 6            0.30       115.                         245089
6 REACH  3 115   6   5 2600.      0.83                   1     1   1       246089
6 RUNOFF 1 006       6 0.31       50.        0.25       1     1   1       247089
6 ADDHYD 4 116   5 6 7                                                    248089
6 SAVMOV 5 116   7   6                                                    249089
6 REACH  3 107   1   5 2600.      0.70                   1     1   1       250089
6 ADDHYD 4 116   5 6 7                                   1     1   1       251089
6 DIVERT 6 117   7 1 6            0.30       118.                         252089
6 REACH  3 118   6   5 3000.      0.83                   1     1   1       253089
6 RUNOFF 1 005       6 0.35       71.        0.23       1     1   1       254089
6 ADDHYD 4 119   5 6 7                                   1 1   1   1       255089
6 ADDHYD 4 110   7 4 6                                   1 1   1   1       256089
6 REACH  3 120   6   4 1400.      0.60                                     257089
6 REACH  3 117   1   5 3800.      0.75                   1     1   1       258089
6 RUNOFF 1 010       6 0.13       73.        0.12       1     1   1       259089
6 ADDHYD 4 121   5 6 7                                   1 1   1   1       260089
6 SAVMOV 5 121   7   6                                                    261089
6 ADDHYD 4 120   6 4 7                                   1 1   1   1       262089
6 REACH  3 122   7   4 1400.      0.60                                     263089
6 REACH  3 111   2   5 2600.      0.75                   1     1   1       264089
6 DIVERT 6 123   5 1 2            0.30       124.                         265089
6 REACH  3 124   2   5 5300.      0.80                   1     1   1       266089
6 RUNOFF 1 014       6 0.50       95.        0.36       1     1   1       267089
6 ADDHYD 4 125   5 6 7                                                    268089
6 SAVMOV 5 125   7   6                                                    269089
6 REACH  3 114   3   5 5300.      0.75                   1     1   1       270089
6 ADDHYD 4 125   5 6 7                                   1     1   1       271089
6 DIVERT 6 126   7 2 6            0.30       127.                         272089
6 REACH  3 127   6   5 2000.      0.90                   1     1   1       273089
6 RUNOFF 1 011       6 0.11       66.        0.29       1     1   1       274089
6 ADDHYD 4 128   5 6 7                                   1 1   1   1       275089
6 SAVMOV 5 128   7   6                                                    276089
6 ADDHYD 4 122   4 6 7                                   1 1   1   1       277089
6 REACH  3 129   7   5 1500.      0.60                                     278089
6 RUNOFF 1 012       6 0.07       90.        0.13       1 1   1   1       279089
6 ADDHYD 4 129   5 6 7                                   1 1   1   1       280089
6 REACH  3 130   7   4 1600.      0.60                                     281089
6 REACH  3 123   1   5 400.       0.75                   1     1   1       282089
6 RUNOFF 1 080       6 0.40       90.        0.38       1     1   1       283089
6 ADDHYD 4 123   5 6 7                                   1     1   1       284089
6 DIVERT 6 131   7 1 3            0.30       132.                         285089
6 REACH  3 132   3   5 6600.      0.75                   1     1   1       286089
6 RUNOFF 1 133       6 0.42       91.        0.36       1     1   1       287089
6 ADDHYD 4 133   5 6 7                                                    288089
6 SAVMOV 5 133   7   6                                                    289089
6 REACH  3 126   2   5 2600.      0.75                   1     1   1       290089
6 ADDHYD 4 133   5 6 7                                                    291089
6 SAVMOV 5 133   7   5                                                    292089
6 RUNOFF 1 013       6 0.03       90.        0.06       1     1   1       293089
```

5

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6 SAVMOV 5 133    7   6                                                    293089
6 ADDHYD 4 147    4 6 7                                   1 1    1    1    296089
6 SAVMOV 5 147    7   4                                                    297089
6 RUNOFF 1 016        6 1.08        82.         0.66      1      1    1    298089
6 REACH  3 135    6   2 4000.       0.85                  1      1    1    299089
6 RUNOFF 1 009        6 1.09        78.         0.68      1      1    1    300089
6 DIVERT 6 136    6 7 3             0.30        137.                       301089
6 REACH  3 136    7   5 7100.       0.78                  1      1    1    302089
6 RUNOFF 1 019        6 0.30        87.         0.34      1      1    1    303089
6 ADDHYD 4 138    5 6 7                                                    304089
6 SAVMOV 5 138    7   6                                                    305089
6 ADDHYD 4 138    2 6 7                                   1      1    1    306089
6 DIVERT 6 140    7 6 2 1200.       1.00        139.                       307089
6 REACH  3 137    3   5 7700.       0.85                  1      1    1    308089
6 RUNOFF 1 015        3 0.43        93.         0.57      1      1    1    309089
6 ADDHYD 4 141    5 3 7                                                    310089
6 SAVMOV 5 141    7   3                                                    311089
6 REACH  3 131    1   5 3600.       0.75                  1      1    1    312089
6 ADDHYD 4 141    5 3 7                                   1      1    1    313089
6 DIVERT 6 142    7 3 1 500.        1.00        143.                       314089
6 REACH  3 143    1   5 2600.       0.75                  1      1    1    315089
6 RUNOFF 1 018        1 0.33        85.         0.21      1      1    1    316089
6 ADDHYD 4 144    5 1 7                                                    317089
6 SAVMOV 5 144    7   1                                                    318089
6 REACH  3 140    6   5 4000.       0.85                  1      1    1    319089
6 ADDHYD 4 144    5 1 7                                   1      1    1    320089
6 DIVERT 6 146    7 6 1 1600.       1.00        145.                       321089
6 REACH  3 142    3   5 3700.       0.65                  1      1    1    322089
6 ADDHYD 4 148    5 4 7                                   1 1    1    1    323089
6 REACH  3 149    7   5 2800.       0.60                                   324089
6 RUNOFF 1 017        4 0.28        86.         0.25      1      1    1    325089
6 ADDHYD 4 149    5 4 7                                   1 1    1    1    326089
6 REACH  3 150    7   5 1200.       0.65                                   327089
6 REACH  3 146    6   4 2000.       0.85                  1      1    1    328089
6 ADDHYD 4 151    5 4 7                                   1 1    1    1    329089
  ENDATA                                                                   330070
7 LIST                                                                     331068
7 INCREM 6            0.10                                                 332068
7 COMPUT 7 003   109  0.0           3.60        1.0       2 2   01   01   333068
7 READHD 8     6                                                           334085
7 READHD 9 12.00      0.20          4.03                                   335086
8          0.0        0.3           42.         436.      703.             336087
8          836.       874.          851.        791.      711.             337087
8          626.       546.          476.        417.      370.             338087
8          332.       302.          279.        261.      246.             339087
8          234.       223.          214.        205.      198.             340087
8          191.       185.          180.        176.      171.             341087
8          167.       164.          160.        156.      152.             342087
8          148.       145.          141.        138.      136.             343087
8          133.       130.          128.        126.      123.             344087
8          121.       118.          116.        113.      111.             345087
8          110.       108.          107.        105.      103.             346087
8          102.       100.          98.         96.       94.              347087
8          93.        92.           89.         86.       81.              348087
8          76.        69.           62.         55.       49.              349087
8          43.        39.           35.         32.       29.              350087
8          29.        27.           26.         25.       24.              351087
8          23.        22.           21.         20.       19.              352087
8          19.        18.           17.         17.       16.              353087
```

6

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9 ENDTBL                                                                356088
7 COMPUT 7 110   147   0.0        3.60       1.0        2 2  01  01     357068
7 COMPUT 7 016   151   0.0        3.40       1.0        2 2  01  01     358068
  ENDCMP 1                                                              359070
7 ENDJOB 2                                                             359A068
7 COMPUT 7 003   109   0.0        2.70       1.0        2 2  01  02     360068
7 READHD 8     6                                                        361085
7 READHD 9 12.00       0.20       4.03                                  362086
8          0.0         0.1        0.2        0.3        102.           363087
8          320.        419.       443.       427.       390.           364087
8          345.        300.       258.       223.       194.           365087
8          170.        152.       139.       128.       119.           366087
8          111.        104.       97.        92.        88.            367087
8          84.         82.        80.        78.        77.            368087
8          76.         75.        74.        72.        71.            369087
8          70.         69.        68.        67.        66.            370087
8          65.         65.        64.        64.        63.            371087
8          62.         61.        61.        60.        59.            372087
8          59.         59.        58.        58.        58.            373087
8          57.         56.        56.        55.        55.            374087
8          54.         54.        53.        51.        48.            375087
8          45.         41.        36.        32.        29.            376087
8          26.         24.        22.        21.        19.            377087
8          17.         16.        15.        14.        13.            378087
8          13.         12.        12.        11.        11.            379087
8          10.         10.        9.         9.         9.             380087
8          8.          8.         8.         8.         7.             381087
8          7.          7.         7.         6.         0.0            382087
9 ENDTBL                                                                383088
7 COMPUT 7 110   147   0.0        2.70       1.0        2 2  01  02     384068
7 COMPUT 7 016   151   0.0        2.60       1.0        2 2  01  02     385068
  ENDCMP 1                                                              386070
7 COMPUT 7 003   109   0.0        2.15       1.0        2 2  01  03     387068
7 READHD 8     6                                                        388085
8          12.00       0.20       4.03                                  389087
8          0.0         0.1        0.1        0.2        0.3            390087
8          0.4         37.        136.       193.       206.           391087
8          74.         70.        66.        63.        60.            392087
8          57.         54.        52.        51.        49.            393087
8          48.         46.        45.        44.        42.            394087
8          41.         40.        39.        38.        37.            395087
8          36.         36.        35.        34.        34.            396087
8          33.         32.        32.        31.        31.            397087
8          30.         30.        30.        30.        29.            398087
8          29.         29.        28.        28.        27.            399087
8          27.         27.        26.        25.        24.            400087
8          22.         20.        17.        15.        13.            401087
8          10.         8.         7.         6.         4.             402087
8          3.          3.         2.         2.         1.             403087
8          1.          1.         0.8        0.7        0.0            404087
9 ENDTBL                                                                410084
7 COMPUT 7 110   147   0.0        2.15       1.0        2 2  01  03     411068
7 COMPUT 7 016   151   0.0        2.00       1.0        2 2  01  03     412068
  ENDCMP 1                                                              413070
  ENDJOB 2                                                              414070
```

7

```
FILENAME =(DES/TR20.RH6B)                                   Date:  6/10/85     Time: 11: 0: 8

JOB        TR20                    FULLPRINT                                          1071
TITLE        06/04/85 RWCD REACH-6,INLET HYD.,1985 CONDITIONS                        1A072
 2 XSECTN   100          1.0                                                          2079
 8                       0.0          0.0                                             3080
 8                       0.25         10.                                             4080
 8                       0.50         25.                                             5080
 8                       0.75         50.                                             6080
 8                       1.00         100.                                            7080
 8                       1.50         300.                                            8080
 8                       2.00         600.                                            9080
 8                       2.50         950.                                           10080
 8                       3.00         1420.                                          11080
 9 ENDTBL                                                                            12081
 2 XSECTN   101          1.0                                                         13079
 8                       0.0          0.0                                            14080
 8                       0.25         10.                                            15080
 8                       0.50         25.                                            16080
 8                       0.75         50.                                            17080
 8                       1.00         100.                                           18080
 8                       1.50         300.                                           19080
 8                       2.00         600.                                           20080
 8                       2.50         950.                                           21080
 8                       3.00         1420.                                          22080
 9 ENDTBL                                                                            23081
 2 XSECTN   104          1.0                                                         24079
 8                       0.0          0.0                                            25080
 8                       0.25         15.                                            26080
 8                       0.50         35.                                            27080
 8                       0.75         70.                                            28080
 8                       1.00         140.                                           29080
 8                       1.50         420.                                           30080
 8                       2.00         840.                                           31080
 8                       2.50         1350.                                          32080
 8                       3.00         2000.                                          33080
 9 ENDTBL                                                                            34081
 2 XSECTN   103          1.0                                                         35079
 8                       0.0          0.0                                            36080
 8                       0.25         5.                                             37080
 8                       0.5          15.                                            38080
 8                       0.75         30.                                            39080
 8                       1.00         60.                                            40080
 8                       1.50         180.                                           41080
 8                       2.00         360.                                           42080
 8                       2.50         580.                                           43080
 8                       3.00         850.                                           44080
 9 ENDTBL                                                                            45081
 2 XSECTN   107          1.0                                                         46079
 8                       0.0          0.0                                            47080
 8                       0.25         5.                                             48080
 8                       0.50         15.                                            49080
 8                       0.75         30.                                            50080
 8                       1.00         60.                                            51080
 8                       1.50         180.                                           52080
 8                       2.00         360.                                           53080
 8                       2.50         580.                                           54080
 8                       3.00         850.                                           55080
 9 ENDTBL                                                                            56081
 2 XSECTN   108          1.0                                                         57079
 8                       0.0          0.0                                            58080
 8                       0.25         15.                                            59080
```

Alt #1

70/30 Split
W/RW TCS
DA ZA #2B

1

```
8                    1.00        140.                    62080
8                    1.50        420.                    63080
8                    2.00        840.                    64080
8                    2.50        1350.                   65080
8                    3.00        2000.                   66080
9 ENDTBL                                                 67081
2 XSECTN    111      1.0                                 68079
8                    0.0         0.0                     69080
8                    0.25        5.                      70080
8                    0.50        15.                     71080
8                    0.75        30.                     72080
8                    1.00        60.                     73080
8                    1.50        180.                    74080
8                    2.00        350.                    75080
8                    2.50        580.                    76080
8                    3.00        850.                    77080
9 ENDTBL                                                 78081
2 XSECTN    112      1.0                                 79079
8                    0.0         0.0                     80080
8                    0.25        15.                     81080
8                    0.50        35.                     82080
8                    0.75        70.                     83080
8                    1.00        140.                    84080
8                    1.50        420.                    85080
8                    2.00        840.                    86080
8                    2.50        1350.                   87080
8                    3.00        2000.                   88080
9 ENDTBL                                                 89081
2 XSECTN    114      1.0                                 90079
8                    0.0         0.0                     91080
8                    0.25        5.                      92080
8                    0.50        15.                     93080
8                    0.75        30.                     94080
8                    1.00        60.                     95080
8                    1.50        180.                    96080
8                    2.00        360.                    97080
8                    2.50        580.                    98080
8                    3.00        850.                    99080
9 ENDTBL                                                100081
2 XSECTN    115      1.0                                 101079
8                    0.0         0.0                     102080
8                    0.25        15.                     103080
8                    0.50        35.                     104080
8                    0.75        70.                     105080
8                    1.00        140.                    106080
8                    1.50        420.                    107080
8                    2.00        840.                    108080
8                    2.50        1350.                   109080
8                    3.00        2000.                   110080
9 ENDTBL                                                111081
2 XSECTN    117      1.0                                 112079
8                    0.0         0.0                     113080
8                    0.25        5.                      114080
8                    0.50        15.                     115080
8                    0.75        30.                     116080
8                    1.00        60.                     117080
8                    1.50        180.                    118080
8                    2.00        360.                    119080
```

2

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8                       2.50        580.                    120080
8                       3.00        850.                    121080
9 ENDTBL                                                    122081
2 XSECTN   118          1.0                                 123079
8                       0.0         0.0                     124080
8                       0.25        15.                     125080
8                       0.50        35.                     126080
8                       0.75        70.                     127080
8                       1.00        140.                    128080
8                       1.50        420.                    129080
8                       2.00        840.                    130080
8                       2.50        1350.                   131080
8                       3.00        2000.                   132080
9 ENDTBL                                                    133081
2 XSECTN   123          1.0                                 134079
8                       0.0         0.0                     135080
8                       0.25        5.                      136080
8                       0.50        15.                     137080
8                       0.75        30.                     138080
8                       1.00        60.                     139080
8                       1.50        180.                    140080
8                       2.00        360.                    141080
8                       2.50        580.                    142080
8                       3.00        850.                    143080
9 ENDTBL                                                    144081
2 XSECTN   124          1.0                                 145079
8                       0.0         0.0                     146080
8                       0.25        ~~10.~~ 15.             147080
8                       0.50        ~~30.~~ 35.             148080
8                       0.75        ~~60.~~ 70.             149080
8                       1.00        ~~120.~~ [illegible]    150080
8                       1.50        ~~360.~~ 420.           151080
8                       2.00        ~~720.~~ 840.           152080
8                       2.50        ~~1160.~~ 1350.         153080
8                       3.00        ~~1700.~~ 2000.         154080
9 ENDTBL                                                    155081
2 XSECTN   126          1.0                                 156079
8                       0.0         0.0                     157080
8                       0.25        5.                      158080
8                       0.50        15.                     159080
8                       0.75        30.                     160080
8                       1.00        60.                     161080
8                       1.50        180.                    162080
8                       2.00        360.                    163080
8                       2.50        580.                    164080
8                       3.00        850.                    165080
9 ENDTBL                                                    166081
2 XSECTN   127          1.0                                 167079
8                       0.0         0.0                     168080
8                       0.25        15.                     169080
8                       0.50        35.                     170080
8                       0.75        70.                     171080
8                       1.00        140.                    172080
8                       1.50        420.                    173080
8                       2.00        840.                    174080
8                       2.50        1350.                   175080
8                       3.00        2000.                   176080
9 ENDTBL                                                    177081
2 XSECTN   131          1.0                                 178079
8                       0.0         0.0                     179080
```

corrected in red

3

```
8                       0.25        5.                                      180080
8                       0.50        15.                                     181080
8                       0.75        30.                                     182080
8                       1.00        60.                                     183080
8                       1.50        180.                                    184080
8                       2.00        360.                                    185080
8                       2.50        580.                                    186080
8                       3.00        850.                                    187080
9 ENDTBL                                                                    188081
2 XSECTN   132          1.0                                                 189079
8                       0.0         0.0                                     190080
8                       0.25        15.                                     191080
8                       0.50        35.                                     192080
8                       0.75        70.                                     193080
8                       1.00        140.                                    194080
8                       1.50        420.                                    195080
8                       2.00        840.                                    196080
8                       2.50        1350.                                   197080
8                       3.00        2000.                                   198080
9 ENDTBL                                                                    199081
2 XSECTN   136          1.0                                                 200079
8                       0.0         0.0                                     201080
8                       0.25        5.                                      202080
8                       0.50        15.                                     203080
8                       0.75        30.                                     204080
8                       1.00        60.                                     205080
8                       1.50        180.                                    206080
8                       2.00        360.                                    207080
8                       2.50        580.                                    208080
8                       3.00        850.                                    209080
9 ENDTBL                                                                    210081
2 XSECTN   137          1.0                                                 211079
8                       0.0         0.0                                     212080
8                       0.25        15.                                     213080
8                       0.50        35.                                     214080
8                       0.75        70.                                     215080
8                       1.00        140.                                    216080
8                       1.50        420.                                    217080
8                       2.00        840.                                    218080
8                       2.50        1350.                                   219080
8                       3.00        2000.                                   220080
9 ENDTBL                                                                    221081  1000,T  T655
6 RUNOFF 1 003       6 1.23         77.        0.58      1     1    1       222089  769     854     1.5"
6 DIVERT 6 100    6 7 2             0.50       101.                         223089
6 REACH  3 100    7   1 3600.       0.75                 1     1    1       224089
6 REACH  3 101    2   5 2600.       0.75                 1     1    1       225089
6 RUNOFF 1 004       6 0.67         77.        0.82      1     1    1       226089  349     382
6 ADDHYD 4 102    5 6 7                                  1     1    1      226A089
6 DIVERT 6 103    7 2 3             0.30       104.                         227089
6 REACH  3 104    3   5 1500.       0.83                 1     1    1       228089
6 RUNOFF 1 007       6 0.14         77.        0.16      1     1    1       229089  182
6 ADDHYD 4 105    5 6 7                                                     230089
6 ADDHYD 4 105    7 1 3                                  1     1    1       231089
6 REACH  3 106    3   5 3800.       0.83                                    232089
6 RUNOFF 1 002       6 0.70         50.        0.43      1     1    1       233089 — 25 cfs
6 ADDHYD 4 106    5 6 7                                  1     1    1       234089
6 DIVERT 6 107    7 1 4             0.30       108.                         235089
6 REACH  3 108    4   5 4300.       0.75                 1     1    1       236089
6 RUNOFF 1 001       6 0.64         72.        1.26      1     1    1       237089
6 ADDHYD 4 109    5 6 7                                  1 1   1    1       238089
```

4

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6 SAVMOV 5 109   7   5                                                    238A089
6 ADDHYD 4 110   5 6 7                                   1 1   1   1      238B089
6 REACH  3 110   7   4 2900.      0.60                                     239089
6 REACH  3 103   2   5 2600.      0.75                   1     1   1       240089
6 RUNOFF 1 008       6 0.94       80.        1.01        1     1   1      240A089
6 ADDHYD 4 008   5 6 7                                   1     1   1      240B089
6 SAVMOV 5 008   7   5                                                    240C089
6 DIVERT 6 111   5 2 3            0.30       112.                         241089
6 REACH  3 112   3   5 2700.      0.83                   1     1   1       242089
6 RUNOFF 1 113       6 0.20       50.        0.17        1     1   1      243089
6 ADDHYD 4 113   5 6 7                                   1     1   1      244089
6 DIVERT 6 114   7 3 6            0.30       115.                         245089
6 REACH  3 115   6   5 2600.      0.83                   1     1   1       246089
6 RUNOFF 1 006       6 0.31       50.        0.25        1     1   1      247089
6 ADDHYD 4 116   5 6 7                                                    248089
6 SAVMOV 5 116   7   6                                                    249089
6 REACH  3 107   1   5 2600.      0.70                   1     1   1       250089
6 ADDHYD 4 116   5 6 7                                   1     1   1      251089
6 DIVERT 6 117   7 1 6            0.30       118.                         252089
6 REACH  3 118   6   5 3000.      0.83                   1     1   1       253089
6 RUNOFF 1 005       6 0.35       70.        0.39        1     1   1      254089
6 ADDHYD 4 119   5 6 7                                   1 1   1   1      255089
6 ADDHYD 4 110   7 4 6                                   1 1   1   1      256089
6 REACH  3 120   6   4 1400.      0.60                                     257089
6 REACH  3 117   1   5 3800.      0.75                   1     1   1       258089
6 RUNOFF 1 010       6 0.13       73.        0.12        1     1   1      259089
6 ADDHYD 4 121   5 6 7                                   1 1   1   1      260089
6 SAVMOV 5 121   7   6                                                    261089
6 ADDHYD 4 120   6 4 7                                   1 1   1   1      262089
6 REACH  3 122   7   4 1400.      0.60                                     263089
6 REACH  3 111   2   5 2600.      0.75                   1     1   1       264089
6 DIVERT 6 123   5 1 2            0.30       124.                         265089
6 REACH  3 124   2   5 5300.      0.80                   1     1   1       266089
6 RUNOFF 1 014       6 0.50       95.        0.36        1     1   1      267089
6 ADDHYD 4 125   5 6 7                                                    268089
6 SAVMOV 5 125   7   6                                                    269089
6 REACH  3 114   3   5 5300.      0.75                   1     1   1       270089
6 ADDHYD 4 125   5 6 7                                   1     1   1      271089
6 DIVERT 6 126   7 2 6            0.30       127.                         272089
6 REACH  3 127   6   5 2000.      0.80                   1     1   1       273089
6 RUNOFF 1 011       6 0.11       65.        0.49        1     1   1      274089
6 ADDHYD 4 128   5 6 7                                   1 1   1   1      275089
6 SAVMOV 5 128   7   6                                                    276089
6 ADDHYD 4 122   4 6 7                                   1 1   1   1      277089
6 REACH  3 129   7   5 1500.      0.60                                     278089
6 RUNOFF 1 012       6 0.07       90.        0.13        1 1   1   1      279089
6 ADDHYD 4 129   5 6 7                                   1 1   1   1      280089
6 REACH  3 130   7   4 1600.      0.60                                     281089
6 REACH  3 123   1   5 400.       0.75                   1     1   1       282089
6 RUNOFF 1 080       6 0.40       90.        0.63        1     1   1      283089
6 ADDHYD 4 123   5 6 7                                   1     1   1      284089
6 DIVERT 6 131   7 1 3            0.30       132.                         285089
6 REACH  3 132   3   5 6600.      0.75                   1     1   1       286089
6 RUNOFF 1 133       6 0.42       91.        0.36        1     1   1      287089
6 ADDHYD 4 133   5 6 7                                                    288089
6 SAVMOV 5 133   7   6                                                    289089
6 REACH  3 126   2   5 2600.      0.75                   1     1   1       290089
6 ADDHYD 4 133   5 6 7                                                    291089
6 SAVMOV 5 133   7   5                                                    292089
6 RUNOFF 1 013       6 0.03       90.        0.06        1     1   1      293089
```

5

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6 ADDHYD 4 133    5 6 7                                   1 1    1    1      294089
6 SAVMOV 5 133    7   6                                                      295089
6 ADDHYD 4 14     4 6 7                                   1 1    1           296089
6 SAVMOV 5 14     7   4                                                      297089
6 RUNOFF 1 016        6 1.08        80.          1.14     1      1    1      298089
6 REACH  3 135    6   2 4000.       0.85                  1      1    1      299089
6 RUNOFF 1 009        6 1.09        77.          1.14     1      1    1      300089
6 DIVERT 6 136    6 7 3             0.30         137.                        301089
6 REACH  3 136    7   5 7100.       0.78                  1      1    1      302089
6 RUNOFF 1 019        6 0.30        84.          0.34     1      1    1      303089
6 ADDHYD 4 138    5 6 7                                                      304089
6 SAVMOV 5 138    7   6                                                      305089
6 ADDHYD 4 138    2 6 7                                   1      1    1      306089
6 DIVERT 6 140    7 6 2 1200.       1.00         139.                        307089
6 REACH  3 137    3   5 7700.       0.85                  1      1    1      308089
6 RUNOFF 1 015        3 0.43        93.          0.59     1      1    1      309089
6 ADDHYD 4 141    5 3 7                                                      310089
6 SAVMOV 5 141    7   3                                                      311089
6 REACH  3 131    1   5 3600.       0.75                  1      1    1      312089
6 ADDHYD 4 141    5 3 7                                   1      1    1      313089
6 DIVERT 6 142    7 3 1 500.        1.00         143.                        314089
6 REACH  3 143    1   5 2600.       0.75                  1      1    1      315089
6 RUNOFF 1 018        1 0.33        88.          0.21     1      1    1      316089
6 ADDHYD 4 144    5 1 7                                                      317089
6 SAVMOV 5 144    7   1                                                      318089
6 REACH  3 140    6   5 4000.       0.85                  1      1    1      319089
6 ADDHYD 4 144    5 1 7                                   1      1    1      320089
6 DIVERT 6 146    7 6 1 1600.       1.00         145.                        321089
6 REACH  3 142    3   5 3700.       0.65                  1      1    1      322089
6 ADDHYD 4 148    5 4 7                                   1 1    1    1      323089
6 REACH  3 149    7   5 2800.       0.60                                     324089
6 RUNOFF 1 017        4 0.28        86.          0.30     1      1    1      325089
6 ADDHYD 4 149    5 4 7                                   1 1    1    1      326089
6 REACH  3 150    7   5 1200.       0.65                                     327089
6 REACH  3 146    6   4 2000.       0.85                  1      1    1      328089
6 ADDHYD 4 151    5 4 7                                   1 1    1    1      329089
  ENDATA                                                                     330070
7 LIST                                                                       331068
7 INCREM 6            0.20                                                   332068
7 COMPUT 7 003    109 0.0           3.60         1.0      2 2  01   01      333068
7 READHD 8      6                                                            334085
7 READHD 9 10.00      0.20          2.39                                     335086
8          0.0        0.1           0.4          1.0      2.0               336087
8          4.         7.            12.          23.      58.               337087
8          130.       150.          150.         150.     150.              338087
8          150.       150.          150.         150.     150.              339087
8          150.       146.          137.         131.     126.              340087
8          121.       118.          115.         112.     110.              341087
8          108.       106.          104.         103.     102.              342087
8          101.       100.          100.         99.      98.               343087
8          97.        96.           96.          95.      94.               344087
8          93.        93.           92.          92.      92.               345087
8          91.        91.           90.          90.      90.               346087
8          89.        89.           88.          88.      88.               347087
8          88.        88.           88.          87.      87.               348087
8          86.        86.           86.          85.      85.               349087
8          84.        83.           81.          78.      74.               350087
8          70.        65.           62.          58.      55.               351087
8          52.        49.           47.          44.      42.               352087
8          40.        38.           36.          34.      32.               353087
```

6

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8          30.        29.        27.        26.        25.                354087
8          23.        22.        21.        20.        0.0                355087
9 ENDTBL                                                                   356088
7 COMPUT 7 110   147  0.0        3.60       1.0        2 2  01  01        357068
7 COMPUT 7 016   151  0.0        3.40       1.0        2 2  01  01        358068
  ENDCMP 1                                                                 359070
  ENDJOB 2                                                                359A070
7 COMPUT 7 003   109  0.0        2.70       1.0        2 2  01  02        360068
7 READHD 8     6                                                           361085
8          11.00      0.20       2.39                                      362087
8          0.0        0.1        0.6        4.         19.                363087
8          54.        107.       150.       150.       150.               364087
8          150.       150.       141.       130.       122.               365087
8          116.       111.       107.       104.       102.               366087
8          100.       98.        97.        95.        94.                367087
8          92.        90.        88.        85.        83.                368087
8          80.        78.        76.        73.        71.                369087
8          68.        66.        63.        61.        60.                370087
8          58.        57.        55.        54.        54.                371087
8          53.        52.        51.        51.        50.                372087
8          49.        49.        48.        48.        48.                373087
8          47.        47.        47.        46.        46.                374087
8          46.        45.        45.        45.        44.                375087
8          44.        44.        42.        40.        38.                376087
8          36.        34.        32.        30.        28.                377087
8          26.        25.        24.        22.        21.                378087
8          20.        19.        18.        17.        16.                379087
8          15.        14.        14.        13.        12.                380087
8          11.        11.        10.        10.        9.                 381087
8          9.         8.         8.         7.         0.0                382087
9 ENDTBL                                                                   383088
7 COMPUT 7 110   147  0.0        2.70       1.0        2 2  01  02        384068
7 COMPUT 7 016   151  0.0        2.60       1.0        2 2  01  02        385068
  ENDCMP 1                                                                 386070
7 COMPUT 7 003   109  0.0        2.15       1.0        2 2  01  03        387068
7 READHD 8     6                                                           388085
7 READHD 9 11.00      0.20       2.39                                      389086
8          0.0        0.0        0.0        0.9        7.                 390087
8          23.        52.        82.        103.       112.               391087
8          110.       105.       101.       97.        93.                392087
8          88.        84.        79.        74.        70.                393087
8          67.        64.        61.        59.        57.                394087
8          55.        53.        51.        49.        48.                395087
8          46.        45.        44.        43.        41.                396087
8          40.        39.        37.        36.        35.                397087
8          34.        33.        32.        31.        30.                398087
8          29.        29.        28.        27.        27.                399087
8          26.        25.        25.        24.        24.                400087
8          24.        23.        23.        23.        22.                401087
8          22.        21.        21.        21.        20.                402087
8          20.        20.        19.        18.        16.                403087
8          14.        13.        12.        10.        9.                 404087
8          8.         7.         7.         6.         5.                 405087
8          5.         5.         4.         4.         3.                 406087
8          3.         3.         2.         2.         0.                 407087
9 ENDTBL                                                                   410084
7 COMPUT 7 110   147  0.0        2.15       1.0        2 2  01  03        411068
7 COMPUT 7 016   151  0.0        2.00       1.0        2 2  01  03        412068
  ENDCMP 1                                                                 413070
  ENDJOB 2                                                                 414070
```

7

50%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 101

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed Rosco 6 Hydrologist Hom Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	101	1.0					13
		(Use 1.0 unless discharge in CSM.) NOTE: Maximum of 20 data records allowed.						
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			14
8			0.25	10.				15
8			0.50	25.				16
8			0.75	50.				17
8			1.00	100.				18
8			1.50	300.				19
8			2.00	600.				20
8			2.50	950.				21
8			3.00	1420.				22
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					23

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

CROSS SECTION NO. 103

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed Rwcd 6 Hydrologist Hem Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	102	1.0					24
			(Use 1.0 unless discharge in CSM.) NOTE: Maximum of 20 data records allowed.					
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			25
8			0.25	10.				26
8			0.50	30.				27
8			0.75	60.				28
8			1.00	120.				29
8			1.50	360.				30
8			2.00	720.				31
8			2.50	1160.				32
8			3.00	1700.				33
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					34

40%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 104

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed Rwco 6 Hydrologist Hm Date 5/30/85 SHEET ____ OF ____

1-10		11-20		21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME			DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)		IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	104		1.0					35
				(Use 1.0 unless discharge in CSM.) NOTE: Maximum of 20 data records allowed.					
				Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8				0.0	0.0	0.0			36
8				0.25	7.				37
8				0.50	20.				38
8				0.75	40.				39
8				1.00	80.				40
8				1.50	240.				41
8				2.00	480.				42
8				2.50	770.				43
8				3.00	1130.				44
8									
8									
8									
8									
8									
8									
9	ENDTBL			NOTE: This record must be the last record of this table.					45

40%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 107

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCO 6 Hydrologist Hem Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	107	1.0					46
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			47
8			0.25	7.				48
8			0.50	20.				49
8			0.75	40.				50
8			1.00	80.				51
8			1.50	240.				52
8			2.00	480.				53
8			2.50	770.				54
8			3.00	1130.				55
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					56

60%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 108

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RUNCO 6 Hydrologist Hem Date 5/30/85 SHEET ___ OF ___

1-10		11-20		21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME			DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
			X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.	Data fields require decimal points.			
2	X SECTN		108	1.0					57
				(Use 1.0 unless discharge in CSM.)					
				NOTE: Maximum of 20 data records allowed.					
				Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8				0.0	0.0	0.0			58
8				0.25	10.				59
8				0.50	30.				60
8				0.75	60.				61
8				1.00	120.				62
8				1.50	360.				63
8				2.00	720.				64
8				2.50	1160.				65
8				3.00	1700.				66
8									
8									
8									
8									
8									
0									
9	ENDTBL			NOTE: This record must be the last record of this table.					67

FILENAME = (DES/TR20.RH6) Date: 7/10/85 Time: 13:47:13

```
JOB        TR20                    FULLPRINT
TITLE        06/04/85 RWCD REACH-6,INLET HYD.,YR-2000 COND.,1-IN. STO
 2 XSECTN   100          1.0                                                1071
 8                       0.0          0.0                                   1072
 8                       0.25         2.                                    2079
 8                       0.50         5.                                    3080
 8                       0.75         10.                                   4080
 8                       1.00         20.                                   5080
 8                       1.50         60.                                   6080
 8                       2.00         120.                                  7080
 8                       2.50         190.                                  8080
 8                       3.00         280.                                  9080
 9 ENDTBL                                                                   10080
 2 XSECTN   101          1.0                                                11080
 8                       0.0          0.0                                   12081
 8                       0.25         18.                                   13079
 8                       0.50         45.                                   14080
 8                       0.75         90.                                   15080
 8                       1.00         180.                                  16080
 8                       1.50         540.                                  17080
 8                       2.00         1020.                                 18080
 8                       2.50         1710.                                 19080
 8                       3.00         2560.                                 20080
 9 ENDTBL                                                                   21080
 2 XSECTN   104          1.0                                                22080
 8                       0.0          0.0                                   23081
 8                       0.25         2.                                    24079
 8                       0.50         5.                                    25080
 8                       0.75         10.                                   26080
 8                       1.00         20.                                   27080
 8                       1.50         60.                                   28080
 8                       2.00         120.                                  29080
 8                       2.50         190.                                  30080
 8                       3.00         280.                                  31080
 9 ENDTBL                                                                   32080
 2 XSECTN   103          1.0                                                33080
 8                       0.0          0.0                                   34081
 8                       0.25         18.                                   35079
 8                       0.50         45.                                   36080
 8                       0.75         90.                                   37080
 8                       1.00         180.                                  38080
 8                       1.50         540.                                  39080
 8                       2.00         1020.                                 40080
 8                       2.50         1710.                                 41080
 8                       3.00         2560.                                 42080
 9 ENDTBL                                                                   43080
 2 XSECTN   107          1.0                                                44080
 8                       0.0          0.0                                   45081
 8                       0.25         5.                                    46079
 8                       0.50         15.                                   47080
 8                       .75          30.                                   48080
 8                       1.00         60.                                   49080
 8                       1.50         180.                                  50080
 8                       2.00         360.                                  51080
 8                       2.50         580.                                  52080
 8                       3.00         850.                                  53080
 9 ENDTBL                                                                   54080
 2 XSECTN   108          1.0                                                55080
 8                       0.0          0.0                                   56081
 8                       0.25         15.                                   57079
                                                                            58080
                                                                            59080
```

w/ 200 & 300 cfs Chan Storm Drain Rd in Reach 6 Ext.

ALT #3

i.e. 90% S. } Subarea
10% W } #3+4

A-

```
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN   111       1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        350.
8                    2.50        580.
8                    3.00        850.
9 ENDTBL
2 XSECTN   112       1.0
8                    0.0         0.0
8                    0.25        15.
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN   114       1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        360.
8                    2.50        580.
8                    3.00        850.
9 ENDTBL
2 XSECTN   115       1.0
8                    0.0         0.0
8                    0.25        15.
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN   118       1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        360.
```

```
61080
62080
63080
64080
65080
66080
67081
68079
69080
70080
71080
72080
73080
74080
75080
76080
77080
78081
79079
80080
81080
82080
83080
84080
85080
86080
87080
88080
89081
90079
91080
92080
93080
94080
95080
96080
97080
98080
99080
100081
101079
102080
103080
104080
105080
106080
107080
108080
109080
110080
111081
112079
113080
114080
115080
116080
117080
118080
119080
```

```
8                    2.50      580.
8                    3.00      850.
9 ENDTBL
2 XSECTN   117       1.0
8                    0.0       0.0
8                    0.25      15.
8                    0.50      35.
8                    0.75      70.
8                    1.00      140.
8                    1.50      420.
8                    2.00      840.
8                    2.50      1350.
8                    3.00      2000.
9 ENDTBL
2 XSECTN   123       1.0
8                    0.0       0.0
8                    0.25      5.
8                    0.50      15.
8                    0.75      30.
8                    1.00      60.
8                    1.50      180.
8                    2.00      360.
8                    2.50      580.
8                    3.00      850.0
9 ENDTBL
2 XSECTN   124       1.0
8                    0.0       0.0
8                    0.25      15.
8                    0.50      35.
8                    0.75      70.
8                    1.00      140.
8                    1.50      420.
8                    2.00      840.
8                    2.50      1350.
8                    3.00      2000.
9 ENDTBL
2 XSECTN   126       1.0
8                    0.0       0.0
8                    0.25      5.
8                    0.50      15.
8                    0.75      30.
8                    1.00      60.
8                    1.50      180.
8                    2.00      360.
8                    2.50      580.
8                    3.00      850.0
9 ENDTBL
2 XSECTN   127       1.0
8                    0.0       0.0
8                    0.25      15.
8                    0.50      35.
8                    0.75      70.
8                    1.00      140.
8                    1.50      420.
8                    2.00      840.
8                    2.50      1350.
8                    3.00      2000.
9 ENDTBL
2 XSECTN   131       1.0
8                    0.0       0.0
```

```
120080
121080
122081
123079
124080
125080
126080
127080
128080
129080
130080
131080
132080
133081
134079
135080
136080
137080
138080
139080
140080
141080
142080
143080
144081
145079
146080
147080
148080
149080
150080
151080
152080
153080
154080
155081
156079
157080
158080
159080
160080
161080
162080
163080
164080
165080
166081
167079
168080
169080
170080
171080
172080
173080
174080
175080
176080
177081
178079
179080
```

```
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        360.
8                    2.50        580.
8                    3.00        850.
9 ENDTBL
2 XSECTN   132       1.0
8                    0.0         0.0
8                    0.25        15.
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN   136       1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        360.
8                    2.50        580.
8                    3.00        850.
9 ENDTBL
2 XSECTN   137       1.0
8                    0.0         0.0
8                    0.25        15.
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
6 RUNOFF 1 003          6 1.23   75.       0.35      1     1     1
6 DIVERT 6 100   6 7 2           0.10      101.
6 REACH  3 100   7       1 3600. 0.75                1     1     1
6 REACH  3 101   2       5 2600. 0.75                1     1     1
6 RUNOFF 1 004          6 0.67   76.       0.49      1     1     1
6 ADDHYD 4 102   5 6 7                                1     1     1
6 DIVERT 6 103   7 2 3           0.90      104.
6 REACH  3 104   3       5 1500. 0.83                1     1     1
6 RUNOFF 1 007          6 0.14   64.       0.16      1     1     1
6 ADDHYD 4 105   5 6 7                                1     1     1
6 ADDHYD 4 105   7 1 3           0.83
6 REACH  3 106   3       5 3800. 0.83                1     1     1
6 RUNOFF 1 002          6 0.70   50.       0.43      1     1     1
6 ADDHYD 4 106   5 6 7                                1     1     1
6 DIVERT 6 107   7 1 4           0.30      108.
6 REACH  3 108   4       5 4300. 0.75                1     1     1
6 RUNOFF 1 001          6 0.64   73.       1.26      1     1     1
6 ADDHYD 4 109   5 6 7                                1 1   1     1
```

```
181080
182080
183080
184080
185080
186080
187080
188081
189079
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191080
192080
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212080
213080
214080
215080
216080
217080
218080
219080
220080
221081
222089
223089
224089
225089
226089
226A089
227089
228089
229089
230089
231089
232089
233089
234089
235089
236089
237089
238089
```

```
6 SAVMOV 5 109   7   5                                                238A089
6 ADDHYD 4 110   5 6 7                                 1 1   1   1    238B089
6 REACH  3 110   7   4 2900.     0.60                                  239089
6 REACH  3 103   2   5 2600.     0.75                  1     1   1     240089
6 RUNOFF 1 008       6 0.94      78.       0.61        1     1   1     240A089
6 ADDHYD 4 008   5 6 7                                 1     1   1     240B089
6 SAVMOV 5 008   7   5                                                240C089
6 DIVERT 6 111   5 2 3           0.30      112.                       241089
6 REACH  3 112   3   5 2700.     0.83                  1     1   1     242089
6 RUNOFF 1 113       6 0.20      50.       0.17        1     1   1     243089
6 ADDHYD 4 113   5 6 7                                 1     1   1     244089
6 DIVERT 6 114   7 3 6           0.30      115.                       245089
6 REACH  3 115   6   5 2600.     0.83                  1     1   1     246089
6 RUNOFF 1 006       6 0.31      50.       0.25        1     1   1     247089
6 ADDHYD 4 116   5 6 7                                                248089
6 SAVMOV 5 116   7   6                                                249089
6 REACH  3 107   1   5 2600.     0.70                  1     1   1     250089
6 ADDHYD 4 116   5 6 7                                 1     1   1     251089
6 DIVERT 6 117   7 1 6           0.70      118.                       252089
6 REACH  3 118   6   5 3000.     0.83                  1     1   1     253089
6 RUNOFF 1 005       6 0.35      71.       0.23        1     1   1     254089
6 ADDHYD 4 119   5 6 7                                 1 1   1   1     255089
6 ADDHYD 4 110   7 4 6                                 1 1   1   1     256089
6 REACH  3 120   6   4 1400.     0.60                                  257089
6 REACH  3 117   1   5 3800.     0.75                  1     1   1     258089
6 RUNOFF 1 010       6 0.13      73.       0.12        1     1   1     259089
6 ADDHYD 4 121   5 6 7                                 1 1   1   1     260089
6 SAVMOV 5 121   7   6                                                261089
6 ADDHYD 4 120   6 4 7                                 1 1   1   1     262089
6 REACH  3 122   7   4 1400.     0.60                                  263089
6 REACH  3 111   2   5 2600.     0.75                  1     1   1     264089
6 DIVERT 6 123   5 1 2           0.30      124.                       265089
6 REACH  3 124   2   5 5300.     0.80                  1     1   1     266089
6 RUNOFF 1 014       6 0.50      95.       0.36        1     1   1     267089
6 ADDHYD 4 125   5 6 7                                                268089
6 SAVMOV 5 125   7   6                                                269089
6 REACH  3 114   3   5 5300.     0.75                  1     1   1     270089
6 ADDHYD 4 125   5 6 7                                 1     1   1     271089
6 DIVERT 6 126   7 2 6           0.30      127.                       272089
6 REACH  3 127   6   5 2000.     0.80                  1     1   1     273089
6 RUNOFF 1 011       6 0.11      66.       0.29        1     1   1     274089
6 ADDHYD 4 128   5 6 7                                 1 1   1   1     275089
6 SAVMOV 5 128   7   6                                                276089
6 ADDHYD 4 122   4 6 7                                 1 1   1   1     277089
6 REACH  3 129   7   5 1500.     0.60                                  278089
6 RUNOFF 1 012       6 0.07      90.       0.13        1 1   1   1     279089
6 ADDHYD 4 129   5 6 7                                 1 1   1   1     280089
6 REACH  3 130   7   4 1600.     0.60                                  281089
6 REACH  3 123   1   5 400.      0.75                  1     1   1     282089
6 RUNOFF 1 080       6 0.40      90.       0.38        1     1   1     283089
6 ADDHYD 4 123   5 6 7                                 1     1   1     284089
6 DIVERT 6 131   7 1 3           0.30      132.                       285089
6 REACH  3 132   3   5 6600.     0.75                  1     1   1     286089
6 RUNOFF 1 133       6 0.42      91.       0.36        1     1   1     287089
6 ADDHYD 4 133   5 6 7                                                288089
6 SAVMOV 5 133   7   6                                                289089
6 REACH  3 126   2   5 2600.     0.75                  1     1   1     290089
6 ADDHYD 4 133   5 6 7                                                291089
6 SAVMOV 5 133   7   5                                                292089
6 RUNOFF 1 013       6 0.03      90.       0.06        1     1   1     293089
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6 SAVMOV 5 133   7   6                                                    289089
6 ADDHYD 4 147   4 6 7                                   1 1   1   1      296089
6 SAVMOV 5 147   7   4                                                    297089
6 RUNOFF 1 016       6 1.08        82.        0.66      1     1   1      298089
6 REACH  3 135   6   2 4000.       0.85                  1     1   1      299089
6 RUNOFF 1 009       6 1.09        78.        0.68      1     1   1      300089
6 DIVERT 6 136   6 7 3             0.30       137.                       301089
6 REACH  3 136   7   5 7100.       0.78                  1     1   1      302089
6 RUNOFF 1 019       6 0.30        87.        0.34      1     1   1      303089
6 ADDHYD 4 138   5 6 7                                                    304089
6 SAVMOV 5 138   7   6                                                    305089
6 ADDHYD 4 138   2 6 7                                   1     1   1      306089
6 DIVERT 6 140   7 6 2 1200.       1.00       139.                       307089
6 REACH  3 137   3   5 7700.       0.85                  1     1   1      308089
6 RUNOFF 1 015       3 0.43        93.        0.57      1     1   1      309089
6 ADDHYD 4 141   5 3 7                                                    310089
6 SAVMOV 5 141   7   3                                                    311089
6 REACH  3 131   1   5 3600.       0.75                  1     1   1      312089
6 ADDHYD 4 141   5 3 7                                   1     1   1      313089
6 DIVERT 6 142   7 3 1 500.        1.00       143.                       314089
6 REACH  3 143   1   5 2600.       0.75                  1     1   1      315089
6 RUNOFF 1 018       1 0.33        85.        0.21      1     1   1      316089
6 ADDHYD 4 144   5 1 7                                                    317089
6 SAVMOV 5 144   7   1                                                    318089
6 REACH  3 140   6   5 4000.       0.85                  1     1   1      319089
6 ADDHYD 4 144   5 1 7                                   1     1   1      320089
6 DIVERT 6 146   7 6 1 1600.       1.00       145.                       321089
6 REACH  3 142   3   5 3700.       0.65                  1     1   1      322089
6 ADDHYD 4 148   5 4 7                                   1 1   1   1      323089
6 REACH  3 149   7   5 2800.       0.60                                   324089
6 RUNOFF 1 017       4 0.28        86.        0.25      1     1   1      325089
6 ADDHYD 4 149   5 4 7                                   1 1   1   1      326089
6 REACH  3 150   7   5 1200.       0.65                                   327089
6 REACH  3 146   6   4 2000.       0.85                  1     1   1      328089
6 ADDHYD 4 151   5 4 7                                   1 1   1   1      329089
  ENDATA                                                                  330070
7 LIST                                                                    331068
7 INCREM 6               0.10                                             332068
7 COMPUT 7 003   105     0.0        3.60       1.0       2 2  01  01     333068
7 READHD 8     6                                                          334085
7 READHD 9 12.00         0.20       3.20                                 335086
8          0.0           0.2        0.3        0.4       87.             336087
8          192.          252.       279.       291.      295.            337087
8          297.          294.       286.       279.      272.            338087
8          266.          261.       257.       253.      250.            339087
8          247.          243.       238.       232.      225.            340087
8          218.          210.       204.       197.      191.            341087
8          185.          179.       174.       169.      164.            342087
8          159.          155.       152.       148.      145.            343087
8          142.          139.       136.       133.      130.            344087
8          127.          125.       122.       120.      117.            345087
8          115.          114.       112.       110.      108.            346087
8          106.          104.       102.       100.      99.             347087
8          97.           95.        93.        90.       86.             348087
8          81.           77.        72.        67.       62.             349087
8          57.           53.        49.        45.       42.             350087
8          38.           35.        32.        30.       29.             351087
8          28.           26.        25.        24.       23.             352087
8          22.           21.        20.        19.       18.             353087
```

```
          14.          14.          13.          13.          0.0                    355087
9 ENDTBL                                                                              356088
7 COMPUT 7 110   147   0.0          3.60         1.0          2 2  01  01            357068
7 COMPUT 7 016   151   0.0          3.40         1.0          2 2  01  01            358068
  ENDCMP 1                                                                            359070
7 COMPUT 7 003   109   0.0          2.70         1.0          2 2  01  02            360068
7 READHD 8       6                                                                    361085
7 READHD 9 12.00       0.20         3.20                                             362086
8          0.0         0.0          0.1          0.2          0.3                    363087
8          0.3         34.          119.         196.         239.                   364087
8          256.        260.         257.         251.         243.                   365087
8          233.        221.         209.         196.         182.                   366087
8          169.        157.         147.         137.         127.                   367087
8          119.        111.         104.         99.          94.                    368087
8          90.         87.          84.          82.          79.                    369087
8          77.         76.          74.          73.          71.                    370087
8          70.         69.          68.          67.          66.                    371087
8          66.         65.          64.          63.          62.                    372087
8          62.         61.          61.          60.          60.                    373087
8          59.         59.          58.          57.          57.                    374087
8          56.         56.          55.          55.          53.                    375087
8          51.         49.          46.          43.          40.                    376087
8          37.         35.          32.          30.          28.                    377087
8          26.         25.          23.          22.          20.                    378087
8          19.         17.          16.          15.          14.                    379087
8          13.         13.          12.          11.          11.                    380087
8          10.         10.          9.           9.           9.                     381087
8          8.          8.           8.           7.           0.0                    382087
9 ENDTBL                                                                              383088
7 COMPUT 7 110   147   0.0          2.70         1.0          2 2  01  02            384068
7 COMPUT 7 016   151   0.0          2.60         1.0          2 2  01  02            385068
  ENDCMP 1                                                                            386070
7 COMPUT 7 003   109   0.0          2.15         1.0          2 2  01  03            387068
7 READHD 8       6                                                                    388085
7 READHD 9 12.00       0.20         3.20                                             389086
8          0.0         0.0          0.1          0.2          0.2                    390087
8          0.3         0.3          0.4          41.          98.                    391087
8          133.        149.         154.         153.         149.                   392087
8          143.        135.         127.         118.         110.                   393087
8          102.        95.          88.          82.          77.                    394087
8          72.         68.          64.          61.          58.                    395087
8          56.         53.          51.          49.          47.                    396087
8          46.         44.          43.          42.          40.                    397087
8          39.         39.          38.          37.          36.                    398087
8          35.         34.          34.          33.          32.                    399087
8          32.         32.          31.          31.          30.                    400087
8          30.         29.          29.          29.          28.                    401087
8          28.         28.          27.          26.          25.                    402087
8          24.         22.          20.          18.          17.                    403087
8          15.         13.          12.          10.          9.                     404087
8          8.          7.           6.           5.           4.                     405087
8          3.          3.           2.           2.           2.                     406087
8          1.          1.           1.           .8           .7                     407087
8          0.6         0.5          0.5          0.4          0.4                    408087
8          0.4         0.4          0.4          0.4          0.0                    409087
9 ENDTBL                                                                              410084
7 COMPUT 7 110   147   0.0          2.15         1.0          2 2  01  03            411068
7 COMPUT 7 016   151   0.0          2.00         1.0          2 2  01  03            412068
  ENDCMP 1                                                                            413070
```

FILENAME = (DES/TR20.RH6) Date: 6/10/85 Time: 11: 3:56

```
JOB        TR20                    FULLPRINT                                          1071
TITLE      06/04/85 RWCD REACH-6,INLET HYD.,YR-2000 COND.,1-IN. STO                   1072
 2 XSECTN   100          1.0                                                          2079
 8                       0.0          0.0                                             3080
 8                       0.25         ~~10.~~ 2.                                      4080
 8                       0.50         ~~25.~~ 5.                                      5080
 8                       0.75         ~~50.~~ 10.                                     6080
 8                       1.00         ~~100.~~ 20.                                    7080
 8                       1.50         ~~300.~~ 60.                                    8080
 8                       2.00         ~~600.~~ 120.                                   9080
 8                       2.50         ~~950.~~ 190.                                   10080
 8                       3.00         ~~1420.~~ 280.                                  11080
 9 ENDTBL                                                                             12081
 2 XSECTN   101          1.0                                                          13079
 8                       0.0          0.0                                             14080
 8                       0.25         ~~10.~~ 18.                                     15080
 8                       0.50         ~~25.~~ 45.                                     16080
 8                       0.75         ~~50.~~ 90.                                     17080
 8                       1.00         ~~100.~~ 180.                                   18080
 8                       1.50         ~~300.~~ 540.                                   19080
 8                       2.00         ~~600.~~ 1020.                                  20080
 8                       2.50         ~~956.~~ 1710.                                  21080
 8                       3.00         ~~1426.~~ 2560.                                 22080
 9 ENDTBL                                                                             23081
 2 XSECTN   104          1.0                                                          24079
 8                       0.0          0.0                                             25080
 8                       0.25         15. 2.                                          26080
 8                       0.50         35. 5.                                          27080
 8                       0.75         70. 10.                                         28080
 8                       1.00         140. 20.                                        29080
 8                       1.50         420. 60.                                        30080
 8                       2.00         840. 120.                                       31080
 8                       2.50         1350. 190.                                      32080
 8                       3.00         2000. 280.                                      33080
 9 ENDTBL                                                                             34081
 2 XSECTN   103          1.0                                                          35079
 8                       0.0          0.0                                             36080
 8                       0.25         5.0 18.                                         37080
 8                       0.50         15. 45.                                         38080
 8                       0.75         30. 90.                                         39080
 8                       1.00         60. 180.                                        40080
 8                       1.50         180. 540.                                       41080
 8                       2.00         360. 1020.                                      42080
 8                       2.50         580. 1710.                                      43080
 8                       3.00         850. 2560.                                      44080
 9 ENDTBL                                                                             45081
 2 XSECTN   107          1.0                                                          46079
 8                       0.0          0.0                                             47080
 8                       0.25         5.                                              48080
 8                       0.50         15.                                             49080
 8                       .75          30.                                             50080
 8                       1.00         60.                                             51080
 8                       1.50         180.                                            52080
 8                       2.00         360.                                            53080
 8                       2.50         580.                                            54080
 8                       3.00         850.                                            55080
 9 ENDTBL                                                                             56081
 2 XSECTN   108          1.0                                                          57079
 8                       0.0          0.0                                             58080
 8                       0.25         15.                                             59080
```

2009 30 ... NW RCW DEMAN Rd IN Reach 6 EXT.

As Run for 90% - 10% split for Subareas 3 & 4

70/30 Split W/RW Tc's & D.A. 8A & 8B

To Be Used in Future runs w/ error in D.A split at Divert Routings Corrected.

Alt #2 As Originally Run i.e. w/o Red figure

```
8                       3.00        850.                                121080
9 ENDTBL   117                                                          122081
2 XSECTN   ~~116~~      1.0                                             123079
8                       0.0         0.0                                 124080
8                       0.25        15.                                 125080
8                       0.50        35.                                 126080
8                       0.75        70.                                 127080
8                       1.00        140.                                128080
8                       1.50        420.                                129080
8                       2.00        840.                                130080
8                       2.50        1350.                               131080
8                       3.00        2000.                               132080
9 ENDTBL                                                                133081
2 XSECTN   123          1.0                                             134079
8                       0.0         0.0                                 135080
8                       0.25        5.                                  136080
8                       0.50        15.                                 137080
8                       0.75        30.                                 138080
8                       1.00        60.                                 139080
8                       1.50        180.                                140080
8                       2.00        360.                                141080
8                       2.50        580.                                142080
8                       3.00        850.0                               143080
9 ENDTBL                                                                144081
2 XSECTN   124          1.0                                             145079
8                       0.0         0.0                                 146080
8                       0.25        15.                                 147080
8                       0.50        35.                                 148080
8                       0.75        70.                                 149080
8                       1.00        140.                                150080
8                       1.50        420.                                151080
8                       2.00        840.                                152080
8                       2.50        1350.                               153080
8                       3.00        2000.                               154080
9 ENDTBL                                                                155081
2 XSECTN   126          1.0                                             156079
8                       0.0         0.0                                 157080
8                       0.25        5.                                  158080
8                       0.50        15.                                 159080
8                       0.75        30.                                 160080
8                       1.00        60.                                 161080
8                       1.50        180.                                162080
8                       2.00        360.                                163080
8                       2.50        580.                                164080
8                       3.00        850.0                               165080
9 ENDTBL                                                                166081
2 XSECTN   127          1.0                                             167079
8                       0.0         0.0                                 168080
8                       0.25        15.                                 169080
8                       0.50        35.                                 170080
8                       0.75        70.                                 171080
8                       1.00        140.                                172080
8                       1.50        420.                                173080
8                       2.00        840.                                174080
8                       2.50        1350.                               175080
8                       3.00        2000.                               176080
9 ENDTBL                                                                177081
2 XSECTN   131          1.0                                             178079
8                       0.0         0.0                                 179080
```

113

```
8                       0.50        35.        60080
8                       0.75        70.        61080
8                       1.00        140.       62080
8                       1.50        420.       63080
8                       2.00        840.       64080
8                       2.50        1350.      65080
8                       3.00        2000.      66080
8                                              67081
9 ENDTBL                                       68079
2 XSECTN   111          1.0                    69080
8                       0.0         0.0        70080
8                       0.25        5.         71080
8                       0.50        15.        72080
8                       0.75        30.        73080
8                       1.00        60.        74080
8                       1.50        180.       75080
8                       2.00        350.       76080
8                       2.50        580.       77080
8                       3.00        850.       78081
8                                              79079
9 ENDTBL                                       80080
2 XSECTN   112          1.0                    81080
8                       0.0         0.0        82080
8                       0.25        15.        83080
8                       0.50        35.        84080
8                       0.75        70.        85080
8                       1.00        140.       86080
8                       1.50        420.       87080
8                       2.00        840.       88080
8                       2.50        1350.      89081
8                       3.00        2000.      90079
9 ENDTBL                                       91080
2 XSECTN   114          1.0                    92080
8                       0.0         0.0        93080
8                       0.25        5.         94080
8                       0.50        15.        95080
8                       0.75        30.        96080
8                       1.00        60.        97080
8                       1.50        180.       98080
8                       2.00        360.       99080
8                       2.50        580.       100081
8                       3.00        850.       101079
9 ENDTBL                                       102080
2 XSECTN   115          1.0                    103080
8                       0.0         0.0        104080
8                       0.25        15.        105080
8                       0.50        35.        106080
8                       0.75        70.        107080
8                       1.00        140.       108080
8                       1.50        420.       109080
8                       2.00        840.       110080
8                       2.50        1350.      111081
8                       3.00        2000.      112079
9 ENDTBL   118                                 113080
2 XSECTN   ~~117~~      1.0                    114080
8                       0.0         0.0        115080
8                       0.25        5.         116080
8                       0.50        15.        117080
8                       0.75        30.        118080
8                       1.00        60.        119080
8                       1.50        180.
8                       2.00        360.
```

```
6 SAVMOV 5 133    7   6                                                    296089
6 ADDHYD 4 147    4 6 7                                   1 1    1    1    297089
6 SAVMOV 5 147    7   4                                                    298089
6 RUNOFF 1 016        6 1.08        82.        0.66       1      1    1    299089
6 REACH  3 135    6   2 4000.       0.65                  1      1    1    300089
6 RUNOFF 1 009        6 1.09        78.        0.68       1      1    1    301089
6 DIVERT 6 136    6 7 3             0.30       137.                       302089
6 REACH  3 136    7   5 7100.       0.78                  1      1    1    303089
6 RUNOFF 1 019        6 0.30        87.        0.34       1      1    1    304089
6 ADDHYD 4 138    5 6 7                                                    305089
6 SAVMOV 5 138    7   6                                                    306089
6 ADDHYD 4 138    2 6 7                                   1      1    1    307089
6 DIVERT 6 140    7 6 2 1200.       1.00       139.                       308089
6 REACH  3 137    3   5 7700.       0.85                  1      1    1    309089
6 RUNOFF 1 015        3 0.43        93.        0.57       1      1    1    310089
6 ADDHYD 4 141    5 3 7                                                    311089
6 SAVMOV 5 141    7   3                                                    312089
6 REACH  3 131    1   5 3600.       0.75                  1      1    1    313089
6 ADDHYD 4 141    5 3 7                                   1      1    1    314089
6 DIVERT 6 142    7 3 1 500.        1.00       143.                       315089
6 REACH  3 143    1   5 2600.       0.75                  1      1    1    316089
6 RUNOFF 1 018        1 0.33        85.        0.21       1      1    1    317089
6 ADDHYD 4 144    5 1 7                                                    318089
6 SAVMOV 5 144    7   1                                                    319089
6 REACH  3 140    6   5 4000.       0.85                  1      1    1    320089
6 ADDHYD 4 144    5 1 7                                   1      1    1    321089
6 DIVERT 6 146    7 6 1 1600.       1.00       145.                       322089
6 REACH  3 142    3   5 3700.       0.65                  1      1    1    323089
6 ADDHYD 4 148    5 4 7                                   1 1    1    1    324089
6 REACH  3 149    7   5 2800.       0.60                                   325089
6 RUNOFF 1 017        4 0.28        86.        0.25       1      1    1    326089
6 ADDHYD 4 149    5 4 7                                   1 1    1    1    327089
6 REACH  3 150    7   5 1200.       0.65                                   328089
6 REACH  3 146    6   4 2000.       0.85                  1      1    1    329089
6 ADDHYD 4 151    5 4 7                                   1 1    1    1    330070
  ENDATA                                                                   331068
7 LIST                                                                     332068
7 INCREM 6            0.10                                        03       333068
7 COMPUT 7 003    109 0.0           3.60       1.0        2 2   01   01   334085
7 READHD 8      6                                                          335086
7 READHD 9 12.00      0.20          3.20                                   336087
8          0.0        0.2           0.3        0.4        87.             337087
8          192.       252.          279.       291.       295.            338087
8          297.       294.          286.       279.       272.            339087
8          266.       261.          257.       253.       250.            340087
8          247.       243.          238.       232.       225.            341087
8          218.       210.          204.       197.       191.            342087
8          185.       179.          174.       169.       164.            343087
8          159.       155.          152.       148.       145.            344087
8          142.       139.          136.       133.       130.            345087
8          127.       125.          122.       120.       117.            346087
8          115.       114.          112.       110.       108.            347087
8          106.       104.          102.       100.       99.             348087
8          97.        95.           93.        90.        86.             349087
8          81.        77.           72.        67.        62.             350087
8          57.        53.           49.        45.        42.             351087
8          38.        35.           32.        30.        29.             352087
8          28.        26.           25.        24.        23.             353087
8          22.        21.           20.        19.        18.             353087
```

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8          17.        17.        16.        16.        15.                  354087
8          14.        14.        13.        13.        0.0                  355087
9 ENDTBL                                                                     356088
7 COMPUT 7 110   147  0.0        3.60       1.0        2 2  01  01          357068
7 COMPUT 7 016   151  0.0        3.40       1.0        2 2  01  01          358068
  ENDCMP 1                                                                   359070
7 COMPUT 7 003   109  0.0        2.70       1.0        2 2  01  02          360069
7 READHD 8     6                                                             361085
7 READHD 9 12.00     0.20       3.20                                         362086
8          0.0        0.0        0.1        0.2        0.3                  363087
8          0.3        34.        119.       196.       239.                 364087
8          256.       260.       257.       251.       243.                 365087
8          233.       221.       209.       196.       182.                 366087
8          169.       157.       147.       137.       127.                 367087
8          119.       111.       104.       99.        94.                  368087
8          90.        87.        84.        82.        79.                  369087
8          77.        76.        74.        73.        71.                  370087
8          70.        69.        68.        67.        66.                  371087
8          66.        65.        64.        63.        62.                  372087
8          62.        61.        61.        60.        60.                  373087
8          59.        59.        58.        57.        57.                  374087
8          56.        56.        55.        55.        53.                  375087
8          51.        49.        46.        43.        40.                  376087
8          37.        35.        32.        30.        28.                  377087
8          26.        25.        23.        22.        20.                  378087
8          19.        17.        16.        15.        14.                  379087
8          13.        13.        12.        11.        11.                  380087
8          10.        10.        9.         9.         9.                   381087
8          8.         8.         8.         7.         0.0                  382087
9 ENDTBL                                                                     383088
7 COMPUT 7 110   147  0.0        2.70       1.0        2 2  01  02          384068
7 COMPUT 7 016   151  0.0        2.60       1.0        2 2  01  02          385068
  ENDCMP 1                                                                   386070
7 COMPUT 7 003   109  0.0        2.15       1.0        2 2  01  03          387068
7 READHD 8     6                                                             388085
7 READHD 9 12.00     0.20       3.20                                         389086
8          0.0        0.0        0.1        0.2        0.2                  390087
8          0.3        0.3        0.4        41.        98.                  391087
8          133.       149.       154.       153.       149.                 392087
8          143.       135.       127.       118.       110.                 393087
8          102.       95.        88.        82.        77.                  394087
8          72.        68.        64.        61.        58.                  395087
8          56.        53.        51.        49.        47.                  396087
8          46.        44.        43.        42.        40.                  397087
8          39.        39.        38.        37.        36.                  398087
8          35.        34.        34.        33.        32.                  399087
8          32.        32.        31.        31.        30.                  400087
8          30.        29.        29.        29.        28.                  401087
8          23.        28.        27.        26.        25.                  402087
8          24.        22.        20.        18.        17.                  403087
8          15.        13.        12.        10.        9.                   404087
8          8.         7.         6.         5.         4.                   405087
8          3.         3.         2.         2.         2.                   406087
8          1.         1.         1.         .8         .7                   407087
8          0.6        0.5        0.5        0.4        0.4                  408087
8          0.4        0.4        0.4        0.4        0.0                  409087
9 ENDTBL                                                                     410084
7 COMPUT 7 110   147  0.0        2.15       1.0        2 2  01  03          411068
7 COMPUT 7 016   151  0.0        2.00       1.0        2 2  01  03          412068
  ENDCMP 1                                                                   413070
```

```
6 SAVMOV 5 109    7   5                                                  238B089
6 ADDHYD 4 110    5 6 7                                  1 1   1   1     239089
6 REACH  3 110    7   4 2900.     0.60                                   240089
6 REACH  3 103    2   5 2600.     0.75                   1     1   1     240A089
6 RUNOFF 1 008        6 0.94      78.        0.61        1     1   1     240B089
6 ADDHYD 4 008    5 6 7                                  1     1   1     240C089
6 SAVMOV 5 008    7   5                                                  241089
6 DIVERT 6 111    5 2 3           0.30       112.                       242089
6 REACH  3 112    3   5 2700.     0.83                   1     1   1     243089
6 RUNOFF 1 113        6 0.20      50.        0.17        1     1   1     244089
6 ADDHYD 4 113    5 6 7                                  1     1   1     245089
6 DIVERT 6 114    7 3 6           0.30       115.                       246089
6 REACH  3 115    6   5 2600.     0.83                   1     1   1     247089
6 RUNOFF 1 006        6 0.31      50.        0.25        1     1   1     248089
6 ADDHYD 4 116    5 6 7                                                  249089
6 SAVMOV 5 116    7   6                                                  250089
6 REACH  3 107    1   5 2600.     0.70                   1     1   1     251089
6 ADDHYD 4 116    5 6 7                                  1     1   1     252089
6 DIVERT 6 117    7 1 6           ~~0.30~~ 0.70  118.                   253089
6 REACH  3 118    6   5 3000.     0.83                   1     1   1     254089
6 RUNOFF 1 005        6 0.35      71.        0.23        1     1   1     255089
6 ADDHYD 4 119    5 6 7                                  1 1   1   1     256089
6 ADDHYD 4 110    7 4 6                                  1 1   1   1     257089
6 REACH  3 120    6   4 1400.     0.60                                   258089
6 REACH  3 117    1   5 3800.     0.75                   1     1   1     259089
6 RUNOFF 1 010        6 0.13      73.        0.12        1     1   1     260089
6 ADDHYD 4 121    5 6 7                                  1 1   1   1     261089
6 SAVMOV 5 121    7   6                                                  262089
6 ADDHYD 4 120    6 4 7                                  1 1   1   1     263089
6 REACH  3 122    7   4 1400.     0.60                                   264089
6 REACH  3 111    2   5 2600.     0.75                   1     1   1     265089
6 DIVERT 6 123    5 1 2           0.30       124.                       266089
6 REACH  3 124    2   5 5300.     0.60                   1     1   1     267089
6 RUNOFF 1 014        6 0.50      95.        0.36        1     1   1     268089
6 ADDHYD 4 125    5 6 7                                                  269089
6 SAVMOV 5 125    7   6                                                  270089
6 REACH  3 114    3   5 5300.     0.75                   1     1   1     271089
6 ADDHYD 4 125    5 6 7                                  1     1   1     272089
6 DIVERT 6 126    7 2 6           0.30       127.                       273089
6 REACH  3 127    6   5 2000.     0.80                   1     1   1     274089
6 RUNOFF 1 011        6 0.11      66.        0.29        1     1   1     275089
6 ADDHYD 4 128    5 6 7                                  1 1   1   1     276089
6 SAVMOV 5 128    7   6                                                  277089
6 ADDHYD 4 122    4 6 7                                  1 1   1   1     278089
6 REACH  3 129    7   5 1500.     0.60                                   279089
6 RUNOFF 1 012        6 0.07      90.        0.13        1 1   1   1     280089
6 ADDHYD 4 129    5 6 7                                  1 1   1   1     281089
6 REACH  3 130    7   4 1600.     0.60                                   282089
6 REACH  3 123    1   5 400.      0.75                   1     1   1     283089
6 RUNOFF 1 080        6 0.40      90.        0.38        1     1   1     284089
6 ADDHYD 4 123    5 6 7                                  1     1   1     285089
6 DIVERT 6 131    7 1 3           0.30       132.                       286089
6 REACH  3 132    3   5 6600.     0.75                   1     1   1     287089
6 RUNOFF 1 133        6 0.42      91.        0.36        1     1   1     288089
6 ADDHYD 4 133    5 6 7                                                  289089
6 SAVMOV 5 133    7   6                                                  290089
6 REACH  3 126    2   5 2600.     0.75                   1     1   1     291089
6 ADDHYD 4 133    5 6 7                                                  292089
6 SAVMOV 5 133    7   5                                                  293089
6 RUNOFF 1 013        6 0.03      90.        0.06        1     1   1
```

223
143
80

```
8                       0.25        5.                                                  182080
8                       0.50        15.                                                 183080
8                       0.75        30.                                                 184080
8                       1.00        60.                                                 185080
8                       1.50        180.                                                186080
8                       2.00        360.                                                187080
8                       2.50        580.                                                188081
8                       3.00        850.                                                189079
9 ENDTBL                                                                                190080
2 XSECTN   132          1.0                                                             191080
8                       0.0         0.0                                                 192080
8                       0.25        15.                                                 193080
8                       0.50        35.                                                 194080
8                       0.75        70.                                                 195080
8                       1.00        140.                                                196080
8                       1.50        420.                                                197080
8                       2.00        840.                                                198080
8                       2.50        1350.                                               199081
8                       3.00        2000.                                               200079
9 ENDTBL                                                                                201080
2 XSECTN   136          1.0                                                             202080
8                       0.0         0.0                                                 203080
8                       0.25        5.                                                  204080
8                       0.50        15.                                                 205080
8                       0.75        30.                                                 206080
8                       1.00        60.                                                 207080
8                       1.50        180.                                                208080
8                       2.00        360.                                                209080
8                       2.50        580.                                                210081
8                       3.00        850.                                                211079
9 ENDTBL                                                                                212080
2 XSECTN   137          1.0                                                             213080
8                       0.0         0.0                                                 214080
8                       0.25        15.                                                 215080
8                       0.50        35.                                                 216080
8                       0.75        70.                                                 217080
8                       1.00        140.                                                218080
8                       1.50        420.                                                219080
8                       2.00        840.                                                220080
8                       2.50        1350.                                               221081
8                       3.00        2000.                                               222089
9 ENDTBL                                                                                223089
6 RUNOFF 1 003          6 1.23      75.          0.35      1     1   1                 224089
6 DIVERT 6 100    6 7 2             ~~0.50~~0.10 101.                                   225089
6 REACH  3 100    7     1 3600.     0.75                   1     1   1                 226089
6 REACH  3 101    2     5 2600.     0.75                   1     1   1                 226A089
6 RUNOFF 1 004          6 0.67      76.          0.49      1     1   1                 227089
6 ADDHYD 4 102    5 6 7                                    1     1   1                 228089
6 DIVERT 6 103    7 2 3             ~~0.30~~ 0.90 104.                                  229089
6 REACH  3 104    3     5 1500.     0.83                   1     1   1                 230089
6 RUNOFF 1 007          6 0.14      64.          0.16      1     1   1                 231089
6 ADDHYD 4 105    5 6 7                                    1     1   1                 232089
6 ADDHYD 4 105    7 1 3             0.83                                                233089
6 REACH  3 106    3     5 3800.     50.                    1     1   1                 234089
6 RUNOFF 1 002          6 0.70                   0.43      1     1   1                 235089
6 ADDHYD 4 106    5 6 7             0.30         108.                                  236089
6 DIVERT 6 107    7 1 4                                    1     1   1                 237089
6 REACH  3 108    4     5 4300.     0.75                   1     1   1                 238089
6 RUNOFF 1 001          6 0.64      73.          1.26      1 1   1   1
6 ADDHYD 4 109    5 6 7
```

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JOB        TR20                    FULLPRINT                                    1071
TITLE        06/04/85 RWCD REACH-6.INLET HYD..YR-2000 COND..1-IN. STO           1072
 2 XSECTN   100          1.0   200+ 300 CFS FROM ABOVE BROWN ROAD IN REACH 6 EXT  2079
 8                       0.0          0.0                                       3080
 8                       0.25         10.                                       4080
 8                       0.50         25.                                       5080
 8                       0.75         50.                                       6080
 8                       1.00         100.                                      7080
 8                       1.50         300.                                      8080
 8                       2.00         600.                                      9080
 8                       2.50         950.                                     10080
 8                       3.00         1420.                                    11080
 9 ENDTBL                                                                      12081
 2 XSECTN   101          1.0                                                   13079
 8                       0.0          0.0                                      14080
 8                       0.25         10.                                      15080
 8                       0.50         25.                                      16080
 8                       0.75         50.                                      17080
 8                       1.00         100.                                     18080
 8                       1.50         300.                                     19080
 8                       2.00         600.                                     20080
 8                       2.50         950.                                     21080
 8                       3.00         1420.                                    22080
 9 ENDTBL                                                                      23081
 2 XSECTN   104          1.0                                                   24079
 8                       0.0          0.0                                      25080
 8                       0.25         15.                                      26080
 8                       0.50         35.                                      27080
 8                       0.75         70.                                      28080
 8                       1.00         140.                                     29080
 8                       1.50         420.                                     30080
 8                       2.00         840.                                     31080
 8                       2.50         1350.                                    32080
 8                       3.00         2000.                                    33080
 9 ENDTBL                                                                      34081
 2 XSECTN   103          1.0                                                   35079
 8                       0.0          0.0                                      36080
 8                       0.25         5.0                                      37080
 8                       0.5          15.                                      38080
 8                       0.75         30.                                      39080
 8                       1.00         60.                                      40080
 8                       1.50         180.                                     41080
 8                       2.00         360.                                     42080
 8                       2.50         580.                                     43080
 8                       3.00         850.                                     44080
 9 ENDTBL                                                                      45081
 2 XSECTN   107          1.0                                                   46079
 8                       0.0          0.0                                      47080
 8                       0.25         5.                                       48080
 8                       0.50         15.                                      49080
 8                       .75          30.                                      50080
 8                       1.00         60.                                      51080
 8                       1.50         180.                                     52080
 8                       2.00         360.                                     53080
 8                       2.50         580.                                     54080
 8                       3.00         850.                                     55080
 9 ENDTBL                                                                      56081
 2 XSECTN   108          1.0                                                   57079
 8                       0.0          0.0                                      58080
 8                       0.25         15.                                      59080
```

VOID

72/30 SPLIT

W/RW T.S.

4 DA 84 TSE

(1)

AS USED IN RW but
W/ RW IN D.A SPLIT
at DIVER ROUTING

```
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN    111      1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        350.
8                    2.50        580.
8                    3.00        850.
9 ENDTBL
2 XSECTN    112      1.0
8                    0.0         0.0
8                    0.25        15.
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN    114      1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        360.
8                    2.50        580.
8                    3.00        850.
9 ENDTBL
2 XSECTN    115      1.0
8                    0.0         0.0
8                    0.25        15.
8                    0.50        35.
8                    0.75        70.
8                    1.00        140.
8                    1.50        420.
8                    2.00        840.
8                    2.50        1350.
8                    3.00        2000.
9 ENDTBL
2 XSECTN    117      1.0
8                    0.0         0.0
8                    0.25        5.
8                    0.50        15.
8                    0.75        30.
8                    1.00        60.
8                    1.50        180.
8                    2.00        360.
```

```
60080
61080
62080
63080
64080
65080
66080
67081
68079
69080
70080
71080
72080
73080
74080
75080
76080
77080
78081
79079
80080
81080
82080
83080
84080
85080
86080
87080
88080
89081
90079
91080
92080
93080
94080
95080
96080
97080
98080
99080
100081
101079
102080
103080
104080
105080
106080
107080
108080
109080
110080
111081
112079
113080
114080
115080
116080
117080
118080
119080
```

2

```
8                       3.00        850.                    121080
9 ENDTBL                                                    122081
2 XSECTN    118         1.0                                 123079
8                       0.0         0.0                     124080
8                       0.25        15.                     125080
8                       0.50        35.                     126080
8                       0.75        70.                     127080
8                       1.00        140.                    128080
8                       1.50        420.                    129080
8                       2.00        840.                    130080
8                       2.50        1350.                   131080
8                       3.00        2000.                   132080
9 ENDTBL                                                    133081
2 XSECTN    123         1.0                                 134079
8                       0.0         0.0                     135080
8                       0.25        5.                      136080
8                       0.50        15.                     137080
8                       0.75        30.                     138080
8                       1.00        60.                     139080
8                       1.50        180.                    140080
8                       2.00        360.                    141080
8                       2.50        580.                    142080
8                       3.00        850.0                   143080
9 ENDTBL                                                    144081
2 XSECTN    124         1.0                                 145079
8                       0.0         0.0                     146080
8                       0.25        15.                     147080
8                       0.50        35.                     148080
8                       0.75        70.                     149080
8                       1.00        140.                    150080
8                       1.50        420.                    151080
8                       2.00        840.                    152080
8                       2.50        1350.                   153080
8                       3.00        2000.                   154080
9 ENDTBL                                                    155081
2 XSECTN    126         1.0                                 156079
8                       0.0         0.0                     157080
8                       0.25        5.                      158080
8                       0.50        15.                     159080
8                       0.75        30.                     160080
8                       1.00        60.                     161080
8                       1.50        180.                    162080
8                       2.00        360.                    163080
8                       2.50        580.                    164080
8                       3.00        850.0                   165080
9 ENDTBL                                                    166081
2 XSECTN    127         1.0                                 167079
8                       0.0         0.0                     168080
8                       0.25        15.                     169080
8                       0.50        35.                     170080
8                       0.75        70.                     171080
8                       1.00        140.                    172080
8                       1.50        420.                    173080
8                       2.00        840.                    174080
8                       2.50        1350.                   175080
8                       3.00        2000.                   176080
9 ENDTBL                                                    177081
2 XSECTN    131         1.0                                 178079
8                       0.0         0.0                     179080
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3

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8                       0.25        5.                                          180080
8                       0.50        15.                                         181080
8                       0.75        30.                                         182080
8                       1.00        60.                                         183080
8                       1.50        180.                                        184080
8                       2.00        360.                                        185080
8                       2.50        580.                                        186080
8                       3.00        850.                                        187080
9 ENDTBL                                                                        188081
2 XSECTN   132          1.0                                                     189079
8                       0.0         0.0                                         190080
8                       0.25        15.                                         191080
8                       0.50        35.                                         192080
8                       0.75        70.                                         193080
8                       1.00        140.                                        194080
8                       1.50        420.                                        195080
8                       2.00        840.                                        196080
8                       2.50        1350.                                       197080
8                       3.00        2000.                                       198080
9 ENDTBL                                                                        199081
2 XSECTN   136          1.0                                                     200079
8                       0.0         0.0                                         201080
8                       0.25        5.                                          202080
8                       0.50        15.                                         203080
8                       0.75        30.                                         204080
8                       1.00        60.                                         205080
8                       1.50        180.                                        206080
8                       2.00        360.                                        207080
8                       2.50        580.                                        208080
8                       3.00        850.                                        209080
9 ENDTBL                                                                        210081
2 XSECTN   137          1.0                                                     211079
8                       0.0         0.0                                         212080
8                       0.25        15.                                         213080
8                       0.50        35.                                         214080
8                       0.75        70.                                         215080
8                       1.00        140.                                        216080
8                       1.50        420.                                        217080
8                       2.00        840.                                        218080
8                       2.50        1350.                                       219080
8                       3.00        2000.                                       220080
9 ENDTBL                                                                        221081
6 RUNOFF 1 003        6 1.23        75.         0.35        1     1    1       222089
6 DIVERT 6 100   6 7 2              0.50        101.                            223089
6 REACH  3 100   7   1 3600.        0.75                    1     1    1       224089
6 REACH  3 101   2   5 2600.        0.75                    1     1    1       225089
6 RUNOFF 1 004        6 0.67        76.         0.49        1     1    1       226089
6 ADDHYD 4 102   5 6 7                                      1     1    1      226A089
6 DIVERT 6 103   7 2 3              ~~0.60~~0.30  104.                          227089
6 REACH  3 104   3   5 1500.        0.83                    1     1    1       228089
6 RUNOFF 1 007        6 0.14        64.         0.16        1     1    1       229089
6 ADDHYD 4 105   5 6 7                                                          230089
6 ADDHYD 4 105   7 1 3                                      1     1    1       231089
6 REACH  3 106   3   5 3800.        0.83                                        232089
6 RUNOFF 1 002        6 0.70        50.         0.43        1     1    1       233089
6 ADDHYD 4 106   5 6 7                                      1     1    1       234089
6 DIVERT 6 107   7 1 4              ~~6.40~~0.32  108.                          235089
6 REACH  3 108   4   5 4300.        0.75                    1     1    1       236089
6 RUNOFF 1 001        6 0.64        73.         1.26        1     1    1       237089
6 ADDHYD 4 109   5 6 7                                      1 1   1    1       238089
```

4

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8          17.        17.        16.        16.        15.                354087
8          14.        14.        13.        13.        0.0                355087
9 ENDTBL                                                                   356088
7 COMPUT 7 110   147  0.0        3.60       1.0        2 2  01  01       357068
7 COMPUT 7 016   151  0.0        3.40       1.0        2 2  01  01       358068
  ENDCMP 1                                                                 359070
7 COMPUT 7 003   109  0.0        2.70       1.0        2 2  01  02       360068
7 READHD 8      6                                                          361085
7 READHD 9 12.00      0.20       3.20                                      362086
8          0.0        0.0        0.1        0.2        0.3                363087
8          0.3        34.        119.       196.       239.               364087
8          256.       260.       257.       251.       243.               365087
8          233.       221.       209.       196.       182.               366087
8          169.       157.       147.       137.       127.               367087
8          119.       111.       104.       99.        94.                368087
8          90.        87.        84.        82.        79.                369087
8          77.        76.        74.        73.        71.                370087
8          70.        69.        68.        67.        66.                371087
8          66.        65.        64.        63.        62.                372087
8          62.        61.        61.        60.        60.                373087
8          59.        59.        58.        57.        57.                374087
8          56.        56.        55.        55.        53.                375087
8          51.        49.        46.        43.        40.                376087
8          37.        35.        32.        30.        28.                377087
8          26.        25.        23.        22.        20.                378087
8          19.        17.        16.        15.        14.                379087
8          13.        13.        12.        11.        11.                380087
8          10.        10.        9.         9.         9.                 381087
8          8.         8.         8.         7.         0.0                382087
9 ENDTBL                                                                   383088
7 COMPUT 7 110   147  0.0        2.70       1.0        2 2  01  02       384068
7 COMPUT 7 016   151  0.0        2.60       1.0        2 2  01  02       385068
  ENDCMP 1                                                                 386070
7 COMPUT 7 003   109  0.0        2.15       1.0        2 2  01  03       387068
7 READHD 8      5                                                          388085
7 READHD 9 12.00      0.20       3.20                                      389086
8          0.0        0.0        0.1        0.2        0.2                390087
8          0.3        0.3        0.4        41.        98.                391087
8          133.       149.       154.       153.       149.               392087
8          143.       135.       127.       118.       110.               393087
8          102.       95.        88.        82.        77.                394087
8          72.        68.        64.        61.        58.                395087
8          56.        53.        51.        49.        47.                396087
8          46.        44.        43.        42.        40.                397087
8          39.        39.        38.        37.        36.                398087
8          35.        34.        34.        33.        32.                399087
8          32.        32.        31.        31.        30.                400087
8          30.        29.        29.        29.        28.                401087
8          28.        28.        27.        26.        25.                402087
8          24.        22.        20.        18.        17.                403087
8          15.        13.        12.        10.        9.                 404087
8          8.         7.         6.         5.         4.                 405087
8          3.         3.         2.         2.         2.                 406087
8          1.         1.         1.         .8         .7                 407087
8          0.6        0.5        0.5        0.4        0.4                408087
8          0.4        0.4        0.4        0.4        0.0                409087
9 ENDTBL                                                                   410084
7 COMPUT 7 110   147  0.0        2.15       1.0        2 2  01  03       411068
7 COMPUT 7 016   151  0.0        2.00       1.0        2 2  01  03       412068
  ENDCMP 1                                                                 413070
```

5

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6 ADDHYD 4 110    5 6 7
6 REACH  3 110    7   4 2900.      0.60                                239089
6 REACH  3 103    2   5 2600.      0.75                1     1   1     240089
6 RUNOFF 1 008        6 0.94       78.         0.61    1     1   1     240A089
6 ADDHYD 4 008    5 6 7                               1     1   1     240B089
6 SAVMOV 5 008    7   5                                               240C089
6 DIVERT 6 111    5 2 3          ~~0.40~~ 0.30  112.                  241089
6 REACH  3 112    3   5 2700.      0.83                1     1   1     242089
6 RUNOFF 1 113        6 0.20       50.         0.17    1     1   1     243089
6 ADDHYD 4 113    5 6 7                               1     1   1     244089
6 DIVERT 6 114    7 3 6          0.30        115.                     245089
6 REACH  3 115    6   5 2600.      0.83                1     1   1     246089
6 RUNOFF 1 006        6 0.31       50.         0.25    1     1   1     247089
6 ADDHYD 4 116    5 6 7                                               248089
6 SAVMOV 5 116    7   6                                               249089
6 REACH  3 107    1   5 2600.      0.70                1     1   1     250089
6 ADDHYD 4 116    5 6 7                               1     1   1     251089
6 DIVERT 6 117    7 1 6          0.30        118.                     252089
6 REACH  3 118    6   5 3000.      0.83                1     1   1     253089
6 RUNOFF 1 005        6 0.35       71.         0.23    1     1   1     254089
6 ADDHYD 4 119    5 6 7                               1 1   1   1     255089
6 ADDHYD 4 110    7 4 6                               1 1   1   1     256089
6 REACH  3 120    6   4 1400.      0.60                                257089
6 REACH  3 117    1   5 3800.      0.75                1     1   1     258089
6 RUNOFF 1 010        6 0.13       73.         0.12    1     1   1     259089
6 ADDHYD 4 121    5 6 7                               1 1   1   1     260089
6 SAVMOV 5 121    7   6                                               261089
6 ADDHYD 4 120    6 4 7                               1 1   1   1     262089
6 REACH  3 122    7   4 1400.      0.60                                263089
6 REACH  3 111    2   5 2600.      0.75                1     1   1     264089
6 DIVERT 6 123    5 1 2          ~~0.40~~ 0.30  124.                  265089
6 REACH  3 124    2   5 5300.      0.80                1     1   1     266089
6 RUNOFF 1 014        6 0.50       95.         0.36    1     1   1     267089
6 ADDHYD 4 125    5 6 7                                               268089
6 SAVMOV 5 125    7   6                                               269089
6 REACH  3 114    3   5 5300.      0.75                1     1   1     270089
6 ADDHYD 4 125    5 6 7                               1     1   1     271089
6 DIVERT 6 126    7 2 6          ~~0.40~~ 0.30  127.                  272089
6 REACH  3 127    6   5 2000.      0.80                1     1   1     273089
6 RUNOFF 1 011        6 0.11       66.         0.29    1     1   1     274089
6 ADDHYD 4 128    5 6 7                               1 1   1   1     275089
6 SAVMOV 5 128    7   6                                               276089
6 ADDHYD 4 122    4 6 7                               1 1   1   1     277089
6 REACH  3 129    7   5 1500.      0.60                                278089
6 RUNOFF 1 012        6 0.07       90.         0.13    1 1   1   1     279089
6 ADDHYD 4 129    5 6 7                               1 1   1   1     280089
6 REACH  3 130    7   4 1600.      0.60                                281089
6 REACH  3 123    1   5 400.       0.75                1     1   1     282089
6 RUNOFF 1 090        6 0.40       90.         0.38    1     1   1     283089
6 ADDHYD 4 123    5 6 7                               1     1   1     284089
6 DIVERT 6 131    7 1 3          ~~0.40~~ 0.30  132.                  285089
6 REACH  3 132    3   5 6600.      0.75                1     1   1     286089
6 RUNOFF 1 133        6 0.42       91.         0.36    1     1   1     287089
6 ADDHYD 4 133    5 6 7                                               288089
6 SAVMOV 5 133    7   6                                               289089
6 REACH  3 126    2   5 2600.      0.75                1     1   1     290089
6 ADDHYD 4 133    5 6 7                                               291089
6 SAVMOV 5 133    7   5                                               292089
6 RUNOFF 1 013        6 0.03       90.         0.06    1     1   1     293089
```

6

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6 ADDHYD 4 133   5 6 7                                   1 1   1   1     294089
6 SAVMOV 5 133   7   6                                                   295089
6 ADDHYD 4 147   4 6 7                                   1 1   1   1     296089
6 SAVMOV 5 147   7   4                                                   297089
6 RUNOFF 1 016       6 1.08        82.         0.66      1     1   1     298089
6 REACH  3 135   6   2 4000.       0.85                  1     1   1     299089
6 RUNOFF 1 009       6 1.09        78.         0.68      1     1   1     300089
6 DIVERT 6 136   6 7 3             0.30        137.                      301089
6 REACH  3 136   7   5 7100.       0.78                  1     1   1     302089
6 RUNOFF 1 019       6 0.30        87.         0.34      1     1   1     303089
6 ADDHYD 4 138   5 6 7                                                   304089
6 SAVMOV 5 138   7   6                                                   305089
6 ADDHYD 4 138   2 6 7                                   1     1   1     306089
6 DIVERT 6 140   7 6 2 1200.       1.00        139.                      307089
6 REACH  3 137   3   5 7700.       0.85                  1     1   1     308089
6 RUNOFF 1 015       3 0.43        93.         0.57      1     1   1     309089
6 ADDHYD 4 141   5 3 7                                                   310089
6 SAVMOV 5 141   7   3                                                   311089
6 REACH  3 131   1   5 3600.       0.75                  1     1   1     312089
6 ADDHYD 4 141   5 3 7                                   1     1   1     313089
6 DIVERT 6 142   7 3 1 500.        1.00        143.                      314089
6 REACH  3 143   1   5 2600.       0.75                  1     1   1     315089
6 RUNOFF 1 018       1 0.33        85.         0.21      1     1   1     316089
6 ADDHYD 4 144   5 1 7                                                   317089
6 SAVMOV 5 144   7   1                                                   318089
6 REACH  3 140   6   5 4000.       0.85                  1     1   1     319089
6 ADDHYD 4 144   5 1 7                                   1     1   1     320089
6 DIVERT 6 146   7 6 1 1600.       1.00        145.                      321089
6 REACH  3 142   3   5 3700.       0.65                  1     1   1     322089
6 ADDHYD 4 148   5 4 7                                   1 1   1   1     323089
6 REACH  3 149   7   5 2800.       0.60                                  324089
6 RUNOFF 1 017       4 0.28        86.         0.25      1     1   1     325089
6 ADDHYD 4 149   5 4 7                                   1 1   1   1     326089
6 REACH  3 150   7   5 1200.       0.65                                  327089
6 REACH  3 146   6   4 2000.       0.85                  1     1   1     328089
6 ADDHYD 4 151   5 4 7                                   1 1   1   1     329089
  ENDATA                                                                 330070
7 LIST                                                                   331068
7 INCREM 6           0.10                                                332068
7 COMPUT 7 003   109 0.0           3.60        1.0       2 2  01  01    333068
7 READHD 8     6                                                         334085
7 READHD 9 12.00     0.20          3.20                                335086
8          0.0       0.2           0.3         0.4       87.           336087
8          192.      252.          279.        291.      295.          337087
8          297.      294.          286.        279.      272.          338087
8          266.      261.          257.        253.      250.          339087
8          247.      243.          238.        232.      225.          340087
8          218.      210.          204.        197.      191.          341087
8          185.      179.          174.        169.      164.          342087
8          159.      155.          152.        148.      145.          343087
8          142.      139.          136.        133.      130.          344087
8          127.      125.          122.        120.      117.          345087
8          115.      114.          112.        110.      108.          346087
8          106.      104.          102.        100.      99.           347087
8          97.       95.           93.         90.       86.           348087
8          81.       77.           72.         67.       62.           349087
8          57.       53.           49.         45.       42.           350087
8          38.       35.           32.         30.       29.           351087
8          28.       26.           25.         24.       23.           352087
8          22.       21.           20.         19.       18.           353087
```

7

```
JOB        TR20                    FULLPRINT                                    1071
TITLE        06/04/85 RWCD REACH-6,INLET HYD..YP-2000 COND..1-IN. STO           1072
 2 XSECTN   100          1.0                                                    2079
 8                       0.0          0.0                                       3080
 8                       0.25         2.                                        4080
 8                       0.50         5.                                        5080
 8                       0.75        10.                                        6080
 8                       1.00        20.                                        7080
 8                       1.50        60.                                        8080
 8                       2.00       120.                                        9080
 8                       2.50       190.                                       10080
 8                       3.00       280.                                       11080
 9 ENDTBL                                                                      12081
 2 XSECTN   101          1.0                                                    13079
 8                       0.0          0.0                                       14080
 8                       0.25        18.                                        15080
 8                       0.50        45.                                        16080
 8                       0.75        90.                                        17080
 8                       1.00       180.                                        18080
 8                       1.50       540.                                        19080
 8                       2.00      1020.                                        20080
 8                       2.50      1710.                                        21080
 8                       3.00      2560.                                        22080
 9 ENDTBL                                                                      23081
 2 XSECTN   104          1.0                                                    24079
 8                       0.0          0.0                                       25080
 8                       0.25         2.                                        26080
 8                       0.50         5.                                        27080
 8                       0.75        10.                                        28080
 8                       1.00        20.                                        29080
 8                       1.50        60.                                        30080
 8                       2.00       120.                                        31080
 8                       2.50       190.                                        32080
 8                       3.00       280.                                        33080
 9 ENDTBL                                                                      34081
 2 XSECTN   103          1.0                                                    35079
 8                       0.0          0.0                                       36080
 8                                   18.                                        37080
 8                       0.50        45.                                        38080
 8                       0.75        90.                                        39080
 8                       1.00       180.                                        40080
 8                       1.50       540.                                        41080
 8                       2.00      1020.                                        42080
 8                       2.50      1710.                                        43080
 8                       3.00      2560.                                        44080
 9 ENDTBL                                                                      45081
 2 XSECTN   107          1.0                                                    46079
 8                       0.0          0.0                                       47080
 8                       0.25         5.                                        48080
 8                       0.50        15.                                        49080
 8                       .75         30.                                        50080
 8                       1.00        60.                                        51080
 8                       1.50       190.                                        52080
 8                       2.00       360.                                        53080
 8                       2.50       580.                                        54080
 8                       3.00       850.                                        55080
 9 ENDTBL                                                                      56081
 2 XSECTN   108          1.0                                                    57079
 8                       0.0          0.0                                       58080
 8                       0.25        15.                                        59080
```

W/203 1300 cfs Chan Ahm Ermin Rd in Reach 6 Ext.

Alt #3

Alt. 90% South } Subareas
10% West } = 4

Return 9/22/87 to obtain hydrograph for routed Reach at VS-118 to be used in Tabular Routed hydrograph for Revised Peak flow Estimate at VS-119 Chan Adobe Rd.

9/22/87

```
8                       0.75        70.                     61080
8                       1.00        140.                    62080
8                       1.50        420.                    63080
8                       2.00        840.                    64080
8                       2.50        1350.                   65080
8                       3.00        2000.                   66080
9 ENDTBL                                                    67081
2 XSECTN    111         1.0                                 68079
8                       0.0         0.0                     69080
8                       0.25        5.                      70080
8                       0.50        15.                     71080
8                       0.75        30.                     72080
8                       1.00        60.                     73080
8                       1.50        180.                    74080
8                       2.00        350.                    75080
8                       2.50        580.                    76080
8                       3.00        850.                    77080
9 ENDTBL                                                    78081
2 XSECTN    112         1.0                                 79079
8                       0.0         0.0                     80080
8                       0.25        15.                     81080
8                       0.50        35.                     82080
8                       0.75        70.                     83080
8                       1.00        140.                    84080
8                       1.50        420.                    85080
8                       2.00        840.                    86080
8                       2.50        1350.                   87080
8                       3.00        2000.                   88080
9 ENDTBL                                                    89081
2 XSECTN    114         1.0                                 90079
8                       0.0         0.0                     91080
8                       0.25        5.                      92080
8                       0.50        15.                     93080
8                       0.75        30.                     94080
8                       1.00        60.                     95080
8                       1.50        180.                    96080
8                       2.00        360.                    97080
8                       2.50        580.                    98080
8                       3.00        850.                    99080
9 ENDTBL                                                   100081
2 XSECTN    115         1.0                                101079
8                       0.0         0.0                    102080
8                       0.25        15.                    103080
8                       0.50        35.                    104080
8                       0.75        70.                    105080
8                       1.00        140.                   106080
8                       1.50        420.                   107080
8                       2.00        840.                   108080
8                       2.50        1350.                  109080
8                       3.00        2000.                  110080
9 ENDTBL                                                   111081
2 XSECTN    118         1.0                                112079
8                       0.0         0.0                    113080
8                       0.25        5.                     114080
8                       0.50        15.                    115080
8                       0.75        30.                    116080
8                       1.00        60.                    117080
8                       1.50        180.                   118080
8                       2.00        360.                   119080
```

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9 ENDTBL                                                        122081
2 XSECTN   117        1.0                                       123079
8                     0.0          0.0                          124080
8                     0.25         15.                          125080
8                     0.50         35.                          126080
8                     0.75         70.                          127080
8                     1.00         140.                         128080
8                     1.50         420.                         129080
8                     2.00         840.                         130080
8                     2.50         1350.                        131080
8                     3.00         2000.                        132080
9 ENDTBL                                                        133081
2 XSECTN   123        1.0                                       134079
8                     0.0          0.0                          135080
8                     0.25         5.                           136080
8                     0.50         15.                          137080
8                     0.75         30.                          138080
8                     1.00         60.                          139080
8                     1.50         180.                         140080
8                     2.00         360.                         141080
8                     2.50         580.                         142080
8                     3.00         850.                         143080
9 ENDTBL                                                        144081
2 XSECTN   124        1.0                                       145079
8                     0.0          0.0                          146080
8                     0.25         15.                          147080
8                     0.50         35.                          148080
8                     0.75         70.                          149080
8                     1.00         140.                         150080
8                     1.50         420.                         151080
8                     2.00         840.                         152080
8                     2.50         1350.                        153080
8                     3.00         2000.                        154080
9 ENDTBL                                                        155081
2 XSECTN   126        1.0                                       156079
8                     0.0          0.0                          157080
8                     0.25         5.                           158080
8                     0.50         15.                          159080
8                     0.75         30.                          160080
8                     1.00         60.                          161080
8                     1.50         180.                         162080
8                     2.00         360.                         163080
8                     2.50         580.                         164080
8                     3.00         850.0                        165080
9 ENDTBL                                                        166081
2 XSECTN   127        1.0                                       167079
8                     0.0          0.0                          168080
8                     0.25         15.                          169080
8                     0.50         35.                          170080
8                     0.75         70.                          171080
8                     1.00         140.                         172080
8                     1.50         420.                         173080
8                     2.00         840.                         174080
8                     2.50         1350.                        175080
8                     3.00         2000.                        176080
9 ENDTBL                                                        177081
2 XSECTN   131        1.0                                       178079
8                     0.0          0.0                          179080
```

```
8                       0.50        15.                                     181080
8                       0.75        30.                                     182080
8                       1.00        60.                                     183080
8                       1.50        180.                                    184080
8                       2.00        360.                                    185080
8                       2.50        580.                                    186080
8                       3.00        850.                                    187080
9 ENDTBL                                                                    188081
2 XSECTN   132          1.0                                                 189079
8                       0.0         0.0                                     190080
8                       0.25        15.                                     191080
8                       0.50        35.                                     192080
8                       0.75        70.                                     193080
8                       1.00        140.                                    194080
8                       1.50        420.                                    195080
8                       2.00        840.                                    196080
8                       2.50        1350.                                   197080
8                       3.00        2000.                                   198080
9 ENDTBL                                                                    199081
2 XSECTN   136          1.0                                                 200079
8                       0.0         0.0                                     201080
8                       0.25        5.                                      202080
8                       0.50        15.                                     203080
8                       0.75        30.                                     204080
8                       1.00        60.                                     205080
8                       1.50        180.                                    206080
8                       2.00        360.                                    207080
8                       2.50        580.                                    208080
8                       3.00        850.                                    209080
9 ENDTBL                                                                    210081
2 XSECTN   137          1.0                                                 211079
8                       0.0         0.0                                     212080
8                       0.25        15.                                     213080
8                       0.50        35.                                     214080
8                       0.75        70.                                     215080
8                       1.00        140.                                    216080
8                       1.50        420.                                    217080
8                       2.00        840.                                    218080
8                       2.50        1350.                                   219080
8                       3.00        2000.                                   220080
9 ENDTBL                                                                    221081
6 RUNOFF 1 003       6 1.23         75.         0.35      1     1   1       222089
6 DIVERT 6 100   6 7 2              0.10        101.                        223089
6 REACH  3 100   7   1 3600.        0.75                  1     1   1       224089
6 REACH  3 101   2   5 2600.        0.75                  1     1   1       225089
6 RUNOFF 1 004       6 0.67         76.         0.49      1     1   1       226089
6 ADDHYD 4 102   5 6 7              0.10                  1     1   1       226A089
6 DIVERT 6 103   7 2 3              0.70        104.                        227089
6 REACH  3 104   3   5 1500.        0.83                  1     1   1       228089
6 RUNOFF 1 007       6 0.14         64.         0.16      1     1   1       229089
6 ADDHYD 4 105   5 6 7                                                      230089
6 ADDHYD 4 105   7 1 3                                     1     1   1       231089
6 REACH  3 106   3   5 3800.        0.83                                    232089
6 RUNOFF 1 002       6 0.70         50.         0.43      1     1   1       233089
6 ADDHYD 4 106   5 6 7                                     1     1   1       234089
6 DIVERT 6 107   7 1 4              0.30        108.                        235089
6 REACH  3 108   4   5 4300.        0.75                  1     1   1       236089
6 RUNOFF 1 001       6 0.64         73.         1.26      1     1   1       237089
6 ADDHYD 4 109   5 6 7                                     1 1   1   1       238089
```

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6 SAVMOV 5 107    7   5                                                                  
6 ADDHYD 4 110    5 6 7                                          1 1    1    1    2388089
6 REACH  3 110    7   4 2900.      0.60                                                  239089
6 REACH  3 103    2   5 2600.      0.75                           1      1    1    240089
6 RUNOFF 1 008        6 0.94       78.          0.61              1      1    1    240A089
6 ADDHYD 4 008    5 6 7                                          1      1    1    240B089
6 SAVMOV 5 008    7   5                                                                  240C089
6 DIVERT 6 111    5 2 3            0.30         112.                                    241089
6 REACH  3 112    3   5 2700.      0.83                           1      1    1    242089
6 RUNOFF 1 113        6 0.20       50.          0.17              1      1    1    243089
6 ADDHYD 4 113    5 6 7                                          1      1    1    244089
6 DIVERT 6 114    7 3 6            0.30         115.                                    245089
6 REACH  3 115    6   5 2600.      0.83                           1      1    1    246089
6 RUNOFF 1 006        6 0.31       50.          0.25              1      1    1    247089
6 ADDHYD 4 116    5 6 7                                                                  248089
6 SAVMOV 5 116    7   6                                                                  249089
6 REACH  3 107    1   5 2600.      0.70                           1      1    1    250089
6 ADDHYD 4 116    5 6 7                                          1      1    1    251089
6 DIVERT 6 117    7 1 6            0.70         118.                                    252089
6 REACH  3 118    6   5 3000.      0.83                           1 1    1    1    253089
6 RUNOFF 1 005        6 0.35       71.          0.23              1      1    1    254089
6 ADDHYD 4 119    5 6 7                                          1 1    1    1    255089
6 ADDHYD 4 110    7 4 6                                          1 1    1    1    256089
6 REACH  3 120    6   4 1400.      0.60                                                  257089
6 REACH  3 117    1   5 3800.      0.75                           1      1    1    258089
6 RUNOFF 1 010        6 0.13       73.          0.12              1      1    1    259089
6 ADDHYD 4 121    5 6 7                                          1 1    1    1    260089
6 SAVMOV 5 121    7   6                                                                  261089
6 ADDHYD 4 120    6 4 7                                          1 1    1    1    262089
6 REACH  3 122    7   4 1400.      0.60                                                  263089
6 REACH  3 111    2   5 2600.      0.75                           1      1    1    264089
6 DIVERT 6 123    5 1 2            0.30         124.                                    265089
6 REACH  3 124    2   5 5300.      0.80                           1      1    1    266089
6 RUNOFF 1 014        6 0.50       95.          0.36              1      1    1    267089
6 ADDHYD 4 125    5 6 7                                                                  268089
6 SAVMOV 5 125    7   6                                                                  269089
6 REACH  3 114    3   5 5300.      0.75                           1      1    1    270089
6 ADDHYD 4 125    5 6 7                                          1      1    1    271089
6 DIVERT 6 126    7 2 6            0.30         127.                                    272089
6 REACH  3 127    6   5 2000.      0.20                           1      1    1    273089
6 RUNOFF 1 011        6 0.11       66.          0.29              1      1    1    274089
6 ADDHYD 4 128    5 6 7                                          1 1    1    1    275089
6 SAVMOV 5 128    7   6                                                                  276089
6 ADDHYD 4 122    4 6 7                                          1 1    1    1    277089
6 REACH  3 129    7   5 1500.      0.60                                                  278089
6 RUNOFF 1 012        6 0.07       90.          0.13              1 1    1    1    279089
6 ADDHYD 4 129    5 6 7                                          1 1    1    1    280089
6 REACH  3 130    7   4 1600.      0.60                                                  281089
6 REACH  3 123    1   5 400.       0.75                           1      1    1    282089
6 RUNOFF 1 080        6 0.40       90.          0.38              1      1    1    283089
6 ADDHYD 4 123    5 6 7                                          1      1    1    284089
6 DIVERT 6 131    7 1 3            0.30         132.                                    285089
6 REACH  3 132    3   5 6600.      0.75                           1      1    1    286089
6 RUNOFF 1 133        6 0.42       91.          0.36              1      1    1    287089
6 ADDHYD 4 133    5 6 7                                                                  288089
6 SAVMOV 5 133    7   6                                                                  289089
6 REACH  3 126    2   5 2600.      0.75                           1      1    1    290089
6 ADDHYD 4 133    5 6 7                                                                  291089
6 SAVMOV 5 133    7   5                                                                  292089
6 RUNOFF 1 013        6 0.03       90.          0.06              1      1    1    293089
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6 SAVMOV 5 133   7   6                                                295089
6 ADDHYD 4 147   4 6 7                                 1 1   1   1    296089
6 SAVMOV 5 147   7   4                                                297089
6 RUNOFF 1 016       6 1.08        82.        0.66     1     1   1    298089
6 REACH  3 135   6   2 4000.       0.85                1     1   1    299089
6 RUNOFF 1 009       6 1.09        78.        0.68     1     1   1    300089
6 DIVERT 6 136   6 7 3             0.30       137.                    301089
6 REACH  3 136   7   5 7100.       0.78                1     1   1    302089
6 RUNOFF 1 019       6 0.30        87.        0.34     1     1   1    303089
6 ADDHYD 4 138   5 6 7                                                304089
6 SAVMOV 5 138   7   6                                                305089
6 ADDHYD 4 138   2 6 7                                 1     1   1    306089
6 DIVERT 6 140   7 6 2 1200.       1.00       139.                    307089
6 REACH  3 137   3   5 7700.       0.85                1     1   1    308089
6 RUNOFF 1 015       3 0.43        93.        0.57     1     1   1    309089
6 ADDHYD 4 141   5 3 7                                                310089
6 SAVMOV 5 141   7   3                                                311089
6 REACH  3 131   1   5 3600.       0.75                1     1   1    312089
6 ADDHYD 4 141   5 3 7                                 1     1   1    313089
6 DIVERT 6 142   7 3 1 500.        1.00       143.                    314089
6 REACH  3 143   1   5 2600.       0.75                1     1   1    315089
6 RUNOFF 1 018       1 0.33        85.        0.21     1     1   1    316089
6 ADDHYD 4 144   5 1 7                                                317089
6 SAVMOV 5 144   7   1                                                318089
6 REACH  3 140   6   5 4000.       0.85                1     1   1    319089
6 ADDHYD 4 144   5 1 7                                 1     1   1    320089
6 DIVERT 6 146   7 6 1 1600.       1.00       145.                    321089
6 REACH  3 142   3   5 3700.       0.65                1     1   1    322089
6 ADDHYD 4 148   5 4 7                                 1 1   1   1    323089
6 REACH  3 149   7   5 2800.       0.60                              324089
6 RUNOFF 1 017       4 0.28        86.        0.25     1     1   1    325089
6 ADDHYD 4 149   5 4 7                                 1 1   1   1    326089
6 REACH  3 150   7   5 1200.       0.65                              327089
6 REACH  3 146   6   4 2000.       0.85                1     1   1    328089
6 ADDHYD 4 151   5 4 7                                 1 1   1   1    329089
  ENDATA                                                              330070
7 LIST                                                                331068
7 INCREM 6                 0.10                                       332068
7 COMPUT 7 003   109       0.0       3.60       1.0      2 2  03  01  333068
7 READHD 8       6                                                    334085
7 READHD 9 12.00           0.20      3.20                            335086
8          0.0             0.2       0.3        0.4      87.         336087
8          192.            252.      279.       291.     295.        337087
8          297.            294.      286.       279.     272.        338087
8          266.            261.      257.       253.     250.        339087
8          247.            243.      239.       232.     225.        340087
8          218.            210.      204.       197.     191.        341087
8          185.            179.      174.       169.     164.        342087
8          159.            155.      152.       148.     145.        343087
8          142.            139.      136.       133.     130.        344087
8          127.            125.      122.       120.     117.        345087
8          115.            114.      112.       110.     108.        346087
8          106.            104.      102.       100.     99.         347087
8          97.             95.       93.        90.      86.         348087
8          81.             77.       72.        67.      62.         349087
8          57.             53.       49.        45.      42.         350087
8          38.             35.       32.        30.      28.         351087
8          26.             26.       25.        24.      23.         352087
8          22.             21.       20.        19.      18.         353087
```

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8          14.        14.        13.        13.        0.0                  355087
9 ENDTBL                                                                     356088
7 COMPUT 7 110   147  0.0        3.60       1.0        2 2  03  01          357068
7 COMPUT 7 016   151  0.0        3.40       1.0        2 2  03  01          358068
  ENDCMP 1                                                                   359070
7 COMPUT 7 003   109  0.0        2.70       1.0        2 2  03  02          360068
7 READHD 8      6                                                            361085
7 READHD 9 12.00      0.20       3.20                                        362086
8          0.0        0.0        0.1        0.2        0.3                  363087
8          0.3        34.        119.       196.       239.                 364087
8          256.       260.       257.       251.       243.                 365087
8          233.       221.       209.       196.       182.                 366087
8          169.       157.       147.       137.       127.                 367087
8          119.       111.       104.       99.        94.                  368087
8          90.        87.        84.        82.        79.                  369087
8          77.        76.        74.        73.        71.                  370087
8          70.        69.        68.        67.        66.                  371087
8          66.        65.        64.        63.        62.                  372087
8          62.        61.        61.        60.        60.                  373087
8          59.        59.        58.        57.        57.                  374087
8          56.        56.        55.        55.        53.                  375087
8          51.        49.        46.        43.        40.                  376087
8          37.        35.        32.        30.        28.                  377087
8          26.        25.        23.        22.        20.                  378087
8          19.        17.        16.        15.        14.                  379087
8          13.        13.        12.        11.        11.                  380087
8          10.        10.        9.         9.         9.                   381087
8          8.         8.         8.         7.         0.0                  382087
9 ENDTBL                                                                     383088
7 COMPUT 7 110   147  0.0        2.70       1.0        2 2  03  02          384068
7 COMPUT 7 016   151  0.0        2.60       1.0        2 2  03  02          385068
  ENDCMP 1                                                                   386070
7 COMPUT 7 003   109  0.0        2.15       1.0        2 2  03  03          387068
7 READHD 8      6                                                            388085
7 READHD 9 12.00      0.20       3.20                                        389086
8          0.0        0.0        0.1        0.2        0.2                  390087
8          0.3        0.3        0.4        41.        98.                  391087
8          133.       149.       154.       153.       149.                 392087
8          143.       135.       127.       118.       110.                 393087
8          102.       95.        88.        82.        77.                  394087
8          72.        68.        64.        61.        58.                  395087
8          56.        53.        51.        49.        47.                  396087
8          46.        44.        43.        42.        40.                  397087
8          39.        39.        39.        37.        36.                  398087
8          35.        34.        34.        33.        32.                  399087
8          32.        32.        31.        31.        30.                  400087
8          30.        29.        29.        29.        28.                  401087
8          28.        28.        27.        26.        25.                  402087
8          24.        22.        20.        18.        17.                  403087
8          15.        13.        12.        10.        9.                   404087
8          8.         7.         6.         5.         4.                   405087
8          3.         3.         2.         2.         2.                   406087
8          1.         1.         1.         .8         .7                   407087
8          0.6        0.5        0.5        0.4        0.4                  408087
8          0.4        0.4        0.4        0.4        0.0                  409087
9 ENDTBL                                                                     410084
7 COMPUT 7 110   147  0.0        2.15       1.0        2 2  03  03          411068
7 COMPUT 7 016   151  0.0        2.00       1.0        2 2  03  03          412068
  ENDCMP 1                                                                   413070
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30%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

CROSS SECTION No. L36

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hem Date 5/30/85 SHEET ____ OF ____

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	136	1.0					202
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			201
8			0.25	5.				202
8			0.50	15.				203
8			0.75	30.				204
8			1.00	60.				205
8			1.50	180.				206
8			2.00	360.				207
8			2.50	580.				208
8			3.00	850.				209
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					210

70%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

CROSS SECTION No. 137

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hem Date 5/30/85 SHEET ____ OF ____

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	137	1.0					211
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
8			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			212
8			0.25	15.				213
8			0.50	35.				214
8			0.75	70.				215
8			1.00	140.				216
8			1.50	420.				217
8			2.00	840.				218
8			2.50	1350.				219
8			3.00	2000.				220
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					221

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

RWCO REACH 6

Watershed Inlet Hydrology Hydrologist Hcm Date 5/28/83

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	003				6	1.23	75.	0.40	1			1		1	222
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	100		6	7	2	—	0.50	101.							223
			50%							50%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	100		7		4	3600.	0.67		1			1		1	224
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	101		X		5	2600.	0.75		1			1		1	225
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	004				6	0.67	76.	0.57	1			1		1	226
6	ADDHYD	4	102		5	6	7				1			1		1	226 A
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	103		7	2	3	—	0.60	104.							227
			60%							10%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					3			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	104		X		5	1500.	0.83		1			1	1		228
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	007				6	0.14	64.	0.24	1			1	1		229
						6											
6	ADDHYD	4	105		5	6	7										23
6	SAVMOV	5															
6	SAVMOV	5															
					7	1	3										
6	ADDHYD	4	105		X	X	X				1			1	1		231
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards									

7-1

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	106		3		5	3800	0.83								232
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	002				6	0.70	50.	0.54							233
6	ADDHYD	4	106		5	6	7										234
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	107		7	1	4	—	0.40	108.							235
			40%							60%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					4			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	108		X		5	4300.	0.75					1		1	237
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	001				6	0.64	73.	1.54				1		1	237
6	ADDHYD	4	109		5	6	7										238
6	SAYMOV	5															
6	SAYMOV	5	109		7		5										238A
6	ADDHYD	4	110		5	6	7										238B
6	SAYMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE X SECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	7			6		7										
							4	LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	110		7		X	2900.	0.60								239
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
ENDATA								NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					2			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	103		X		5	2600.	0.67					1		1	240
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	111		5	2	3	—	0.40	112.							241
			40%							60%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH. FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	008				6	0.94	78.	0.61	1			1		1	
6	ADDHYD	4	008		5	6	7				1			1		1	
6	SAVMOV	5	008		7		5										
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
					3			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	112		X		5	2700.	0.83		1			1	1		242
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	113				6	0.20	50.	0.24	1			1	1		243
6	ADDHYD	4	113		5	6	7				1			1	1		244
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	114		7	3	6	—	0.30	115.							245
			30%							70%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

(78)

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	115		X		5	2600.	0.83		1			1		1	248
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	006				6	0.31	50.	0.35	1			1		1	247
6	ADDHYD	4	116		5	6	7										248
6	SAVMOV	5	116		7		6										249
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															

ENDATA — NOTE: This card is to be used only at end of all standard control cards.

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	107		X		5	2600.	0.70		1			1		1	250
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4	116		5	6	7				1			1		1	251
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	117		7	1	6	—	0.30	118.							252
			30%							70%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

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DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2					7										
					6			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	118		X		5	3000.	0.83		1			1		1	253
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	005				6	0.35	71.	0.26	1			1		1	257
6	ADDHYD	4	119		5	6	7				1	1		1		1	255
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4	110		7 X	4 X	6 X				1	1		1		1	256
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

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DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					6		4	LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	120		X		X	1400.	0.60								257
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															

ENDATA	NOTE: This card is to be used only at end of all standard control cards.

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

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DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	117		X		5	3800.	0.67		1			1		1	258
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	010				6	0.13	73.	0.17	1			1		1	259
6	ADDHYD	4	121		5	6	7				1	1		1		1	260
6	SAVMOV	5	121		7		6										261
6	SAVMOV	5															
					6	4											
6	ADDHYD	4	120		X	X	7				1	1		1		1	262
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

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DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	122		7		4	1400.	0.60								263
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

40%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CROSS SECTION No. 111

Watershed RWCD 6 Hydrologist Hum Date 5/30/85 SHEET ___ OF ___

1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME	DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.

IMPORTANT: Line out unused lines. Data fields require decimal points.

		X SECTION ID. (001-200)	Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.			
2	XSECTN	111	1.0				68

(Use 1.0 unless discharge in CSM.)

NOTE: Maximum of 20 data records allowed.

	Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8	0.0	0.0	0.0		69
8	0.25	7.			70
8	0.50	20.			71
8	0.75	40.			72
8	1.00	80.			73
8	1.50	240.			74
8	2.00	480.			75
8	2.50	770.			76
8	3.00	1130.			77
8					
8					
8					
8					
8					
8					

9	ENDTBL	NOTE: This record must be the last record of this table.	78

F-6

60%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 112

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hum Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points.					
2	XSECTN	112	1.0					75
			Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			80
8			0.25	10.				81
8			0.50	30.				82
8			0.75	60.				83
8			1.00	120.				84
8			1.50	360.				85
8			2.00	720.				86
8			2.50	1160.				87
8			3.00	1700.				88
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					89

E-6

30%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

CROSS SECTION No. 114

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD6 Hydrologist Hum Date 5/30/85 SHEET ____ OF ____

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	114	1.0					90
		(Use 1.0 unless discharge in CSM.) NOTE: Maximum of 20 data records allowed.						
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			91
8			0.25	5.				92
8			0.50	15.				93
8			0.75	30.				94
8			1.00	60.				95
8			1.50	180.				96
8			2.00	360.				97
8			2.50	580.				98
8			3.00	850.				99
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					100

F-6

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 115

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD6 Hydrologist Hum Date 5/30/85 SHEET ____ OF ____

DATA CODE	TABLE NAME			DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3		RECORD IDENT.
			X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.			
2	XSECTN		115	1.0				01
				(Use 1.0 unless discharge in CSM.)				
				NOTE: Maximum of 20 data records allowed.				
				Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8				0.0	0.0	0.0		02
8				0.25	15.			03
8				0.50	35.			04
8				0.75	70.			05
8				1.00	140.			06
8				1.50	420.			07
8				2.00	840.			08
8				2.50	1350.			09
8				3.00	2000.			10
8								
8								
8								
8								
8								
8								
9	ENDTBL			NOTE: This record must be the last record of this table.				

30%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

CROSS SECTION No. 117

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCO 6 Hydrologist Hem Date 5/30/85 SHEET ____ OF ____

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	117	1.0					112
		(Use 1.0 unless discharge in CSM.) NOTE: Maximum of 20 data records allowed.						
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			113
8			0.25	5.				114
8			0.50	15.				115
8			0.75	30.				116
8			1.00	60.				117
8			1.50	180.				118
8			2.00	360.				119
8			2.50	580.				120
8			3.00	850.				121
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					122

10%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 118

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed Rwcn 6 Hydrologist Hm Date 5/30/85 SHEET ____ OF ____

1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME	DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.

IMPORTANT: Line out unused lines. Data fields require decimal points.

		X SECTION ID. (001-200)	Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.			
2	XSECTN	118	1.0				123

(Use 1.0 unless discharge in CSM.)

NOTE: Maximum of 20 data records allowed.

	Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8	0.0	0.0	0.0		124
8	0.25	15.			125
8	0.50	35.			126
8	0.75	70.			127
8	1.00	140.			128
8	1.50	420.			129
8	2.00	840.			130
8	2.50	1350.			131
8	3.00	2000.			132
8					
8					
8					
8					
8					
8					

9	ENDTBL	NOTE: This record must be the last record of this table. 133

40%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 123

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed Ruco 6 Hydrologist Hem Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.

IMPORTANT: Line out unused lines. Data fields require decimal points.

			X SECTION ID. (001-200)	Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.			
2	X SECTN		123	1.0				134

CHANGE → 3rd FILE WRITING COPY

(Use 1.0 unless discharge in CSM.)

NOTE: Maximum of 20 data records allowed.

		Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8		0.0	0.0	0.0		135
8		0.25	7.			136
8		0.50	20.			137
8		0.75	40.			138
8		1.00	80.			139
8		1.50	240.			140
8		2.00	480.			141
8		2.50	770.			142
8		3.00	1130.			143
8						
8						
8						
8						
8						
8						

9	ENDTBL	NOTE: This record must be the last record of this table.	144

60%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CROSS SECTION No. 124

Watershed RWCD 6 Hydrologist Hem Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	124	1.0					145
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
				Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8				0.0	0.0	0.0		146
8				0.25	10.			147
8				0.50	30.			148
8				0.75	60.			149
8				1.00	120.			150
8				1.50	360.			151
8				2.00	720.			152
8				2.50	1160.			153
8				3.00	1700.			154
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					155

40%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 126

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hom Date 5/30/85 SHEET ___ OF ___

DATA CODE	TABLE NAME			DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3		RECORD IDENT.
			X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.			
2	XSECTN		126	1.0				156
			(Use 1.0 unless discharge in CSM.) NOTE: Maximum of 20 data records allowed.					
				Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8				0.0	0.0	0.0		157
8				0.25	7.			158
8				0.50	20.			159
8				0.75	40.			160
8				1.00	80.			161
8				1.50	240.			162
8				2.00	480.			163
8				2.50	770.			164
8				3.00	1130.			165
8								
8								
8								
8								
8								
0								
9	ENDTBL			NOTE: This record must be the last record of this table.				166

60%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 127

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hans Date 5/30/85 SHEET ____ OF ____

1-10		11-20		21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME			DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
			X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN		127	1.0					167
				(Use 1.0 unless discharge in CSM.)					
				NOTE: Maximum of 20 data records allowed.					
				Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8				0.0	0.0	0.0			168
8				0.25	10.				169
8				0.50	30.				170
8				0.75	60.				171
8				1.00	120.				172
8				1.50	360.				173
8				2.00	720.				174
8				2.50	1160.				175
8				3.00	1700.				176
8									
8									
8									
8									
8									
9	ENDTBL			NOTE: This record must be the last record of this table.					177

40%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CROSS SECTION No. 131

Watershed Rwcd 6 Hydrologist Hum Date 5/30/85 SHEET ____ OF ____

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	131	1.0					178
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			179
8			0.25	7.				180
8			0.50	20.				181
8			0.75	40.				182
8			1.00	80.				183
8			1.50	240.				184
8			2.00	480.				185
8			2.50	770.				186
8			3.00	1130.				187
8								
8								
8								
8								
8								
8								
9	ENDTBL		NOTE: This record must be the last record of this table.					188

60%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA
CROSS SECTION No. 132

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hem Date 5/30/85 SHEET ___ OF ___

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.
		X SECTION ID. (001-200)	IMPORTANT: Line out unused lines. Data fields require decimal points. Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.				
2	XSECTN	132	1.0					189
			(Use 1.0 unless discharge in CSM.)					
			NOTE: Maximum of 20 data records allowed.					
			Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.			
8			0.0	0.0	0.0			190
8			0.25	10.				191
8			0.50	30.				192
8			0.75	60.				193
8			1.00	120.				194
8			1.50	360.				195
8			2.00	720.				196
8			2.50	1160.				197
8			3.00	1700.				198
8								
8								
8								
8								
8								
0								
9	ENDTBL		NOTE: This record must be the last record of this table.					199

F-6

(DES/TR20. RHGB)

SCS-ENG-2
Rev. 2-75

RWCD REACH 6 EXT
100-yr Storm, 1985 Cond
@ Proposed Detention Basin

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION
		IMPORTANT: Line out unused cards. Date fields require decimal points. KEYPUNCHER: Left justify date fields.					
		LOCATION					
7	READHD 8	6					334
		STARTING TIME, HRS.	TIME INCREMENT, HRS.	DRAINAGE AREA, SQ. MI.	BASE FLOW, CFS		
7	READHD 9	10.	0.20	2.39			335
		Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8		0.0	0.1	0.4	1.0	2.0	336
8		4.	7.	12.	23.	58.	337
8		130.	150.	150.	150.	150.	338
8		150.	150.	150.	150.	150.	339
8		150.	146.	137.	131.	126.	340
8		121.	118.	115.	112.	110.	341
8		108.	106.	104.	103.	102.	342
8		101.	100.	100.	99.	98.	343
8		97.	96	96.	95.	94.	344
8		93.	93.	92.	92.	92.	345
8		91.	91.	90.	90.	90.	346
8		89.	89.	88.	88.	88.	347
8		88.	88.	88.	87.	87.	348
8		86.	86.	86.	85.	85.	349
8		84.	83.	81.	78.	74.	350
8		70.	65.	62.	58.	55.	351
8		52.	49.	47.	44.	42.	352
8		40.	38.	36.	34.	32.	353
8		30.	29.	27.	26.	25.	354
8		23.	22.	21.	20.	0.0	355
9	ENDTBL		NOTE: This card must be the last card of this table.				356

415
388
336
19

SCS-ENG-21
REV. 2-75

RWCD REACH 6 EXT
25-YR STORM, 1985 Cond
@ Proposed Detention Basin

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION
		IMPORTANT: Line out unused cards. Date fields require decimal points. KEYPUNCHER: Left justify date fields.					
		LOCATION					
7	READHD 8	6					361
		STARTING TIME, HRS.	TIME INCREMENT, HRS.	DRAINAGE AREA, SQ. MI.	BASE FLOW, CFS		
7	READHD 9	11.00	0.20	2.39			362
		Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8		0.0	0.1	0.6	4.	19.	363
8		54.	107.	150.	150.	150.	364
8		150.	150.	141	136.	122.	365
8		116.	111.	107.	104.	102.	366
8		100.	98.	97.	95.	94.	367
8		92	90.	88.	85.	83.	368
8		80.	78.	76.	73.	71.	369
8		68.	66.	63.	61.	60.	370
8		58.	57.	55.	54.	54.	371
8		53.	52.	51.	51.	50.	372
8		49.	49.	48.	48.	48.	373
8		47.	47.	47.	46.	46.	374
8		46.	45.	45.	45.	44.	375
8		44.	44.	42.	40	38.	376
8		36.	34.	32.	30.	28.	377
8		26.	25.	24.	22.	21.	378
8		20.	19.	18.	17.	16.	379
8		15.	14.	14.	13.	12.	380
8		11.	11.	10.	10.	9.	381
8		9.	8.	8.	7.	0.0	382
9	ENDTBL		NOTE: This card must be the last card of this table.				383

7 c
SBR
363
19

SCS-ENG-2
REV. 2-75

RWCD REACH 6 EXT
10 - YR STORM, 1985 Cond
@ Proposed Detention Basin

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist Hm Date 5/31/85

DATA CODE	TABLE NAME		DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION
			IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.					
7	READHD	8	LOCATION 6					388
			STARTING TIME, HRS.	TIME INCREMENT, HRS.	DRAINAGE AREA, SQ. MI.	BASE FLOW, CFS		
7	READHD	9	11.00	0.20	2.39			389
			Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8			0.0	0.0	0.0	0.9	7.0	390
8			23.	52.	82.	103.	112.	391
8			110.	105.	101.	97.	93.	392
8			88.	84.	79.	74.	70.	393
8			67.	64.	61.	59.	57.	394
8			55.	53.	51.	49.	48.	395
8			46.	45.	44.	43.	41.	396
8			40.	39.	37.	36.	35.	397
8			34.	33.	32.	31.	30.	398
8			29.	29.	28.	27.	27.	399
8			26.	25.	25.	24.	24.	400
8			24.	23.	23.	23.	22.	401
8			22.	21.	21.	21.	20.	402
8			20.	20.	19.	18.	16.	403
8			14.	13.	12.	10.	9.	404
8			8.	7.	7.	6.	5.	405
8			5.	5.	4.	4.	3.	406
8			3.	3.	2.	2.	0.	407
8								
8								
9	ENDTBL		NOTE: This card must be the last card of this table.					408

4.5
3.0
1.7

(DES/ TR20. RH6)

TR - 20
JOB & TITLE

SCS-ENG.-264 DRAFT
REV. May 1982

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed Ranch, Kearns Field Hydrology Hydrologist [illegible] Date 5/30/85 SHEET ____ OF ____

1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0
	HOLDOUT	ECON	FULLPRINT	PASS=XXX	SUMMARY	NOPLOT ENDPLOT	RECORD ID
JOB TR-20			FULLPRINT		SUMMARY		
TITLE	SMALL BEACHING INLET HYDROLOGY, YEAR 2000 CONDITION, 11-INCH STORM, 5/30/85						
TITLE							

JOB Record (required)

Columns 1-3 — JOB

Columns 5-9 — TR-20

Columns 11-17 — HOLDOUT
Use only if a holdout hydrograph is desired.

Columns 21-24 — ECON
Use only if peak discharge output for ECON2/URB1 is desired. Locations for this output must be selected for inclusion in Summary Tables 1 and 3 also. Such designation can be made using summary option explained below (columns 51-57) or on Standard Control (column 71).

Columns 31-39 — FULLPRINT
Use only if FULLPRINT option is desired.

Columns 41-48 — PASS=XXX
Use only if PASS number, XXX, is greater than 1. XXX is an integer, right justified.

Columns 51-57 — SUMMARY
Use only if Summary Tables 1 and 3 are to include all Standard Control operations (except SAVMOV).

Columns 61-67 — NOPLOTS
Use if no cross section rating plots are desired. Default - Plots

ENDPLOT
Use if only cross section rating plots are desired with no routings.

Columns 73-80 — Optional user information, printed at top of input listing.

TITLE Records (one required, second is optional)

Columns 1-5 — TITLE

Columns 7-9 — XXX (first TITLE record only).
An optional user file number, XXX, is an integer, right justified.

Columns 11-80 — Both titles may be any characters desired.

50%

SCS-ENG.-270 DRAFT
REV. May 1982

TR-20
STREAM CROSS SECTION DATA

CROSS SECTION NO. 100

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD 6 Hydrologist Hem: Date 5/30/85 SHEET ____ OF ____

1-10		11-20	21-30	31-40	41-50	51-60	61-70	71-80
DATA CODE	TABLE NAME		DATA FIELD NO. 1	DATA FIELD NO. 2	DATA FIELD NO. 3			RECORD IDENT.

IMPORTANT: Line out unused lines. Data fields require decimal points.

			X SECTION ID. (001-200)	Drainage Area, Sq. Mi.	Bankfull Elevation, Ft.			
2	XSECTN		100	1.0				2

(Use 1.0 unless discharge in CSM.)

NOTE: Maximum of 20 data records allowed.

		Elevation, Ft.	Discharge, CFS	End Area, Sq. Ft.		
8		0.0	0.0	0.0		3
8		0.25	10.			4
8		0.50	25.			5
8		0.75	50.			6
8		1.00	100.			7
8		1.50	300.			8
8		2.00	600.			9
8		2.50	950.			10
8		3.00	1420.			11
8						
8						
8						
8						
8						
8						

9	ENDTBL	NOTE: This record must be the last record of this table.	12

Format 79

STANDARD CON[illegible] FOR WATERSHED

Page 25A of ___

SCS - 273
Rev. 2 - 68

INLET HYDROLOGY

Watershed RWCD REACH 6 Hydrologist Hem Date 5/28/85

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	013				6	0.03	90.	0.11	1			1		1	293
6	ADDHYD	4	133		5	6	7				1	1		1		1	294
6	SAVMOV	5	133		7		6										295
6	SAVMOV	5															
6	ADDHYD	4	147		14	6	7				1	1		1		1	296
6	SAVMOV	5	147		7		4										297
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	01	1			6	1.08	82.	0.73	1			1	1		298
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 27 of ___

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
					16		2	LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	125		X		X	4000.	0.85								299
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	007				6	1.09	78.	0.88							300
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	136		6	7	3	—	0.30	137.							301
			30%							70%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	136		7		5	7100.	0.71		1			1		1	302
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	019				6	0.30	87.	0.48	1			1		1	303
6	ADDHYD	4	138		5	6	7										304
6	SAVMOV	5	138		7		6										305
6	SAVMOV	5															
6	ADDHYD	4	138		12 X	6	7				1			1		1	306
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	140		7	6	2	1200.	100	139.							307
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.											Put "1" in space						
6	RUNOFF	1					6	AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RESVOR	2					7	SURF. ELEV. AT T = 0, FT.									
6	REACH	3	137		3		5	LENGTH, FT. 7700.	(OPTIONAL) ROUTING COEFFICIENT (C) 0.85				1		1		308
6	RUNOFF	1	015				3	AREA, SQ. MI. 0.43	RUNOFF CURVE NO. 93.	TIME OF CONCENTRATION, HRS. 0.63			1		1		309
6	ADDHYD	4	141		5	3	7										310
6	SAVMOV	5	141		7		3										311
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	DIVERT	6			IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
	ENDATA							NOTE: This card to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 29 of ____

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	131		X		5	3600.	0.67		1			1		1	312
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4	141		5	3 X	7				1			1		1	313
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	142		7	3	1	500.	1.00	143.							314
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	143		X		5	2600.			1			1		1	315
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	018				X	0.33	85.	0.31	1			1		1	316
6	ADDHYD	4	144		5	X	7										317
6	SAVMOV	5	144		7		1										318
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA																

NOTE: This card is to be used only at end of all standard control cards.

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE X SECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	RUNOFF	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.											Put "1" in space						
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	140		X		5	4000.	0.85		1			1			319
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4	144		5	X	7				1			1			320
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	146		7	6	1	1600.	1.00	145.							321
	ENDATA							NOTE: This card to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 32 of ____

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.											Put "1" in space						
6	RUNOFF	1					6	AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RESVOR	2			6		7	SURF. ELEV. AT T = 0, FT.									
6	REACH	3	142		3 X		5	LENGTH, FT. 3700.	(OPTIONAL) ROUTING COEFFICIENT (C) 0.65		1			1		1	322
6	RUNOFF	1					6	AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	ADDHYD	4	148		5	4 X	7				1	1		1		1	323
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	DIVERT	6			IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					2			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	1 1 1		X		5	2600.	0.67		1			1		1	264
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	123		5	1	2	—	0.40	124.							265
			40%							60%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

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DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					2			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	124		X		5	5300.	0.80		1			1	1		266
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
(14A) 6	RUNOFF	1	014				6	0.50	95.	0.41	1			1			267
6	ADDHYD	4	125		5	6	7										268
6	SAVMOV	5	125		7		6										269
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	1														
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					3			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	114		X		5	5300.	0.67		1		1		1		270
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4	125		5	6	7				1		1		1		271
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	126		7	2	6	—	0.40	127.							272
			40%							60%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					6			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	127		X		5	2000.	0.80		1			1		1	273
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	011				6	0.11	66.	0.29	1			1		1	274
6	ADDHYD	4	128		5	6	7				1	1		1		1	275
6	SAVMOV	5	128		7		6										276
6	SAVMOV	5															
					4												
6	ADDHYD	4	122		X	6	7				1	1		1		1	277
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 21 of ____

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.										Put "1" in space						
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	129		7		5	1500.	0.60								278
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	012				6	0.07	90.	0.18	1	1		1		1	279
6	ADDHYD	4	129		5	6	7				1	1		1		1	280
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
							4	LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	130		7		X	1600.	0.60								281
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	1														
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 23 of ___

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
					1			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	123		X		5	400.	0.67		1			1		1	282
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	002				6	1.34	82.	0.91	1			1		1	283
6	ADDHYD	4	123		5	6	7				1			1		1	284
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6	131		7	1	3	—	0.40	132.							285
			40%							60%							
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 24 of ____

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2				6	7										
					13			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	132		7		5	6600.	0.75		1			1		1	286
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	133				6	0.42	91.	0.36	1			1		1	287
6	ADDHYD	4	133		5	6	7										288
6	SAVMOV	5	133		7		6										289
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															

ENDATA — NOTE: This card to be used only at end of all standard control cards.

AREA 14B

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Page 25 of ____

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
					2			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	126		X		5	2600.	0.67		1		1		1		290
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4	133		5	6	7										291
6	SAVMOV	5	133		7		5										292
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

RWCD REACH 6. EXT. (PES/TR20. RH6A)
100-YR STORM, YEAR 2000
W/1-INCH STOR & 100 YR CHAN
@ PRIVISW DETENTION BASIN
STR 2

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.

7	READHD	8	LOCATION 6				334
7	READHD	9	STARTING TIME, HRS. 12.00	TIME INCREMENT, HRS. 0.20	DRAINAGE AREA, SQ. MI. 4.03	BASE FLOW, CFS.	335

Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.

8		0.0	0.3	42.	436.	703.	336
8		836.	874.	851.	791.	711.	337
8		626.	546.	476.	417.	370.	338
8		332.	302	279.	261.	246.	339
8		234.	223.	214.	205.	198.	340
8		191.	185.	180.	176.	171.	341
8		167.	164.	160.	156.	152.	342
8		148.	145.	141.	138.	136.	343
8		133.	130.	128.	126.	123.	344
8		121.	118.	116.	113	111.	345
8		110.	108.	107.	105.	103.	346
8		102.	100.	98.	96.	94.	347
8		93.	92.	89.	86.	81.	348
8		76.	69.	62.	55.	49.	349
8		43.	39.	35.	32.	29.	350
8		28.	27.	26.	25.	24.	351
8		23.	22.	21.	20.	19.	352
8		19.	18.	17.	17.	16	353
8		16.	15.	15.	14.	14.	354
8		14.	13.	13.	12.	0.0	355
9	ENDTBL		NOTE: This card must be the last card of this table.				356

RWCD REACH 6 EXT.
25-YEAR Storm, YEAR 2000 Cond.
W/1-inch Stor & 100-yr Chan
@ Proposed Detention Basin (Stn 2)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION
		IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.					
7	READHD 8	LOCATION 6					361
7	READHD 9	STARTING TIME, HRS. 12.00	TIME INCREMENT, HRS. 0.20	DRAINAGE AREA, SQ. MI. 4.03	BASE FLOW, CFS		362
		Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8		0.0	0.1	0.2	0.3	102.	363
8		320.	419.	443.	427.	390.	364
8		345.	300.	258.	223.	194.	365
8		170.	152.	139.	128.	119.	366
8		111.	104.	97.	92.	88.	367
8		84.	82.	80.	78.	77.	368
8		76.	75.	74.	72.	71.	369
8		70.	69.	68.	67.	66.	370
8		65.	65.	64.	64.	63.	371
8		62.	61.	61.	60.	59.	372
8		59.	59.	58.	58.	58.	373
8		57.	56.	56.	55.	55.	374
8		54.	54.	53.	51.	48.	375
8		45	41.	36.	32.	29.	376
8		26.	24.	22.	21.	19.	377
8		17.	16.	15.	14.	13.	378
8		13.	12.	12.	11.	11.	379
8		10.	10.	9.	9.	9.	380
8		8.	8.	8.	8.	7.	381
8		7.	7.	7.	6.	0.0	382
9	ENDTBL	NOTE: This card must be the last card of this table.					383

86
87
88

383
362
21

RWCD REACH 6 EVT
10-YEAR STORM, 4 YEAR 2000 CFS
W/ 1-INCH STORAGE, 100 yr chan.
@ PROPOSED DETENTION BASIN (Sta 2)

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.

7	READHD	8	LOCATION 6				388
			STARTING TIME, HRS.	TIME INCREMENT, HRS.	DRAINAGE AREA, SQ. MI.	BASE FLOW, CFS	
7	READHD	9	12.00	0.20	4.03		389

Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.

8		0.0	0.1	0.1	0.2	0.3	390
8		0.4	37.	136.	193.	206.	391
8		74.	70.	66.	63.	60.	392
8		57.	54.	52.	51.	48.	393
8		48.	46.	45	44.	42.	394
8		41.	40.	39.	38.	37.	395
8		36.	36.	35.	34.	34.	396
8		33.	32.	32.	31.	31.	397
8		30.	30.	30.	30.	29.	398
8		29.	29.	28.	28.	27.	399
8		27.	27.	26.	25.	24.	400
8		22.	20.	17.	15.	13.	401
8		10.	8.	7.	6.	4.	402
8		3.	3.	2.	2.	1.	403
8		1.	1.	0.8	0.7	0.0	404
8							
8							
8							
8							
8							
9	ENDTBL						405

NOTE: This card must be the last card of this table.

87

PA 4
OUT OF
TUSER

404
390
14

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE X SECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space																	
6	RUNOFF	1					6	AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RESVOR	2			6		7	SURF. ELEV. AT T = 0, FT.									
6	REACH	3	149		7		5	LENGTH, FT. 2800.	(OPTIONAL) ROUTING COEFFICIENT (C) 0.60								324
6	RUNOFF	1	017				4	AREA, SQ. MI. 0.28	RUNOFF CURVE NO. 86.	TIME OF CONCENTRATION, HRS. 0.35	1			1	1		325
6	ADDHYD	4	149		5	4	7				1	1		1	1		324
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	DIVERT	6			IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
ENDATA								NOTE: This card is to be used only at end of all standard control cards									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	150		7		5	1200.	0.65								327
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

SCS-ENG-273
Rev. 5-73

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STANDARD CONTROL FOR WATERSHED

Watershed _____ Hydrologist _____ Date _____

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESYOR	2			6		7										
					6		4	LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	146		X		X	2000.	0.85		1			1		1	328
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
6	ADDHYD	4	151		5	4	7				1	1		1		1	329
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS	OUTPUT 1 Percent D. A. Split	OUTPUT 2 Diversion Table ID							
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									330

SCS - 275
Rev. 2 - 68

MODIFY STANDARD CONTROL

Watershed RWCD 6 Hydrologist Hm Date 5/30/85

DATA CODE	OPERATION NAME	OPERATION NO.	XSECTN / STRUCTURE XSECTN NO.	XSECTN / STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO. / IDENTIFICATION

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.

IMPORTANT: Modifications must be given in the order that they appear on the standard control list.

DATA CODE	OPERATION NAME	OPERATION NO.	XSECTN / STRUCTURE XSECTN NO.	XSECTN / STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO. / IDENTIFICATION
7	INSERT	2						NOTE: The following cards are inserted following the XSECTN / STRUCTURE specified.									
6																	
6																	
6																	
6																	
7	ALTER	3						NOTE: Data given in columns 1 to 18 must be identical with standard control card to be altered.									
6																	
6																	
6																	
6																	
7	DELETE	4						NOTE: Data given in columns 1 to 18 must be identical with standard control card to be deleted.									
6																	
6																	
6																	
6																	
7	LIST							NOTE: This card is used for printout of tabular data and standard control list that are currently effective.									331
7	UPDATE	1						NOTE: This card is used to make permanent changes of the library tape. Printout of library tape follows changes.									
7	BASFLO	5						NEW BASE FLOW, CFS	NOTE: This card normally precedes a COMPUT card.								

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN. 20, 1964

EXECUTIVE CONTROL FOR WATERSHED

SCS - 274
Rev. 2-68

Watershed: RWCD 6 Hydrologist: Hem Date: 5/3/85

DATA CODE	OPERATION NAME	OPERATION NO.	FROM XSECTN OR STRUCT	THRU (1) XSECTN OR STRUCT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	RAIN TABLE NO.	AMC	ALTERNATE NO.	STORM NO.	CARD NO./ IDENTIFICATION
					IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							
					MAIN TIME INCREMENT, HRS.	(This increment is required for initial computations. Remains in force until new increment is entered or permanent data changed.)						
7	INCREM	6			0.20							332
					STARTING TIME, HRS.	RAINFALL DEPTH, INCHES (Set depth and duration to 1.0 for actual rainfall)	RAINFALL DURATION, HRS.					
7	COMPUT	7	003	109	0.0	10 p-yr 3.60	1.0	1	2	01	01	333
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
7	COMPUT	7	110	147	0.0	100-yr 3.60	1.0	1	2	01	01	357
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
7	COMPUT	7	016	151	0.0	100-yr 3.40	1.0	1	2	01	01	358
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							357
7	COMPUT	7	003	109	0.0	25-yr 2.70	1.0	1	2	01	02	360
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
	ENDJOB	2			NOTE: This card terminates the entire watershed program.							

(1) Starting from the beginning or from the end of the preceding COMPUT card, the program will start with the 1st operation on the standard control list having the XSECTN/STRUCT under FROM and will perform all operations through the 1st appearance of the XSECTN/STRUCT under THRU. Two or more COMPUT cards in series will normally cover successive parts of the standard control list.

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN. 20, 1964

SCS-ENG-2
REV. 2-75

RWCD Reach C EXT
100-YR STORM, YEAR 2 Cond.
1-INCH STORAGE, 200CFS Chan @ PROPOSED DETENTION BASIN
Res NO. K1

READ DISCHARGE HYDROGRAPH

U. S. DEPARTMENT OF AGRICULTU
SOIL CONSERVATION SERVICE

Watershed 1 Hydrologist Hm Date 5/31/85

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO. / IDENTIFICATION
		IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.					
		LOCATION					
7	READHD 8	6					334
		STARTING TIME, HRS.	TIME INCREMENT, HRS.	DRAINAGE AREA, SQ. MI.	BASE FLOW, CFS		
7	READHD 9	12.00	0.20	3.20	—		335
		Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8		0.0	0.2	0.3	0.4	87.	336
8		192.	252.	279.	291.	295.	337
8		297.	294.	286.	279.	272.	338
8		266.	261.	257.	253.	250.	339
8		247.	243.	238.	232.	225.	340
8		218.	210.	204.	197.	191.	341
8		185.	179.	174.	169.	164.	342
8		159.	155.	152.	148.	145.	343
8		142.	139.	136.	133.	130.	344
8		127.	125.	122.	120.	117.	345
8		115.	114.	112.	110.	108.	346
8		106.	104.	102.	100.	99.	347
8		97.	95.	93.	90.	86.	348
8		81.	77.	72.	67.	62.	349
8		57.	53.	49.	45.	42.	350
8		38.	35.	32.	30.	29.	351
8		28.	26.	25.	24.	23.	352
8		22.	21.	20.	19.	18.	353
8		17.	17.	16.	16.	15.	354
8		14.	14.	13.	13.	0.0.	355
9	ENDTBL	NOTE: This card must be the last card of this table.					356

EXECUTIVE CONTROL FOR WATERSHED

SCS - 274
Rev. 2-68

Watershed RWCD 6 Hydrologist Hum Date 5/31/85

DATA CODE	OPERATION NAME	OPERATION NO.	FROM XSECTN OR STRUCT	THRU (1) XSECTN OR STRUCT	STARTING TIME, HRS.	RAINFALL DEPTH, INCHES (Set depth and duration to 1.0 for actual rainfall)	RAINFALL DURATION, HRS.	RAIN TABLE NO.	AMC	ALTERNATE NO.	STORM NO.	CARD NO./ IDENTIFICATION
IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.												
					MAIN TIME INCREMENT, HRS.	(This increment is required for initial computations. Remains in force until new increment is entered or permanent data changed.)						
7	INCREM	6										
7	COMPUT	7	110	147	0.0	25-YR 2.70	1.0	1	2	01	02	384
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
7	COMPUT	7	016	151	0.0	25-YR 2.60	1.0	1	2	01	02	385
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							386
7	COMPUT	7	003	109	0.0	10-YR 2.15	1.0	1	2	01	03	387
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
7	COMPUT	7	110	147	0.0	10-YR 2.15	1.0	1	2	01	03	411
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
	ENDJOB	2			NOTE: This card terminates the entire watershed program.							

READ DISCHARGE INSERT Rgd for 25-YR

INSERT READ DISCHARGE Rgd for 10-YR

(1) Starting from the beginning or from the end of the preceding COMPUT card, the program will start with the 1st operation on the standard control list having the XSECTN / STRUCT under FROM and will perform all operations through the 1st appearance of the XSECTN / STRUCT under THRU. Two or more COMPUT cards in series will normally cover successive parts of the standard control list.

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN. 20, 1964

SCS-ENG-210
REV. 2-75

RWCD REACH 6 EXT
25-year Storm, year 2000 cond
w/1-inch stor & 250 CFS chan
@ Proposed Detention Bsn
RESVOR Rd.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME		DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION
			IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.					
7	READHD	8	LOCATION 6					361
7	READHD	9	STARTING TIME, HRS. 12.00	TIME INCREMENT, HRS. 0.20	DRAINAGE AREA, SQ. MI. 3.20	BASE FLOW, CFS		362
			Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8			0.0	0.0	0.1	0.2	0.3	363
8			0.3	34.	119.	196.	238.	364
8			256.	260.	257.	251.	243.	365
8			233.	221.	209.	196.	182.	366
8			169.	157.	147.	132.	127.	367
8			119.	111.	104.	99.	94.	368
8			90.	87.	84.	82.	79.	369
8			77.	76.	74.	73.	71.	370
8			70.	69.	68.	67.	66.	371
8			66.	65.	64.	63.	62.	372
8			62.	61.	61.	60.	60.	373
8			59.	59.	58.	57.	57.	374
8			56.	56.	55.	55.	53.	375
8			51.	49.	46.	43.	40.	376
8			37.	35.	32.	30.	28.	377
8			26.	25.	23.	22.	20.	378
8			19.	17.	16.	15.	14.	379
8			13.	13.	12.	11.	11.	380
8			10.	10.	9.	9.	9.	381
8			8.	8.	8.	7	0.0	382
9	ENDTBL		NOTE: This card must be the last card of this table.					383

RWCD REACH 5 EXT
10-YEAR ~~STORM~~, year 2004 cond.
W/1-Inch Stor & 200 CFS chan.
@ proposed Detention BASIN
Resvor Routing.

SCS-ENG-2
REV. 2-75

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

READ DISCHARGE HYDROGRAPH

Watershed _____ Hydrologist _____ Date _____

DATA CODE	TABLE NAME	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	DATA FIELD #4	DATA FIELD #5	CARD NO./ IDENTIFICATION
		IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.					
7	READHD 8	LOCATION 6					388
7	READHD 9	STARTING TIME, HRS. 12.00	TIME INCREMENT, HRS. 0.20	DRAINAGE AREA, SQ. MI. 3.20	BASE FLOW, CFS		389
		Enter successive entries left to right with first entry for starting time. Fill last row of data with last entry of table.					
8		0.0	0.0	0.1	0.2	0.2	390
8		0.3	0.3	0.4	41.	98.	391
8		133.	149.	154.	153.	149.	392
8		143.	135.	127.	118.	110.	393
8		102.	95.	88.	82.	77.	394
8		72.	68.	64.	61.	58.	395
8		56.	53.	51.	49.	47.	396
8		46.	44.	43.	42.	40.	397
8		39.	39.	38.	37.	36.	398
8		35.	34.	34.	33.	32.	399
8		32.	32.	31.	31.	30.	400
8		30.	29.	29.	29.	28.	401
8		28.	28.	27.	26.	25.	402
8		24.	22.	20.	18.	17.	403
8		15.	13.	12.	10.	9.	404
8		8.	7.	6.	5.	4.	405
8		3.	3.	2.	2.	2.	406
8		1.	1.	1.	0.8	0.7	407
8		0.6	0.5	0.5	0.4	0.4	408
8		0.4	0.4	0.4	0.4	0.0	409
9	ENDTBL	NOTE: This card must be the last card of this table.					410

EXECUTIVE CONTROL FOR WATERSHED

SCS - 274
Rev. 2-68

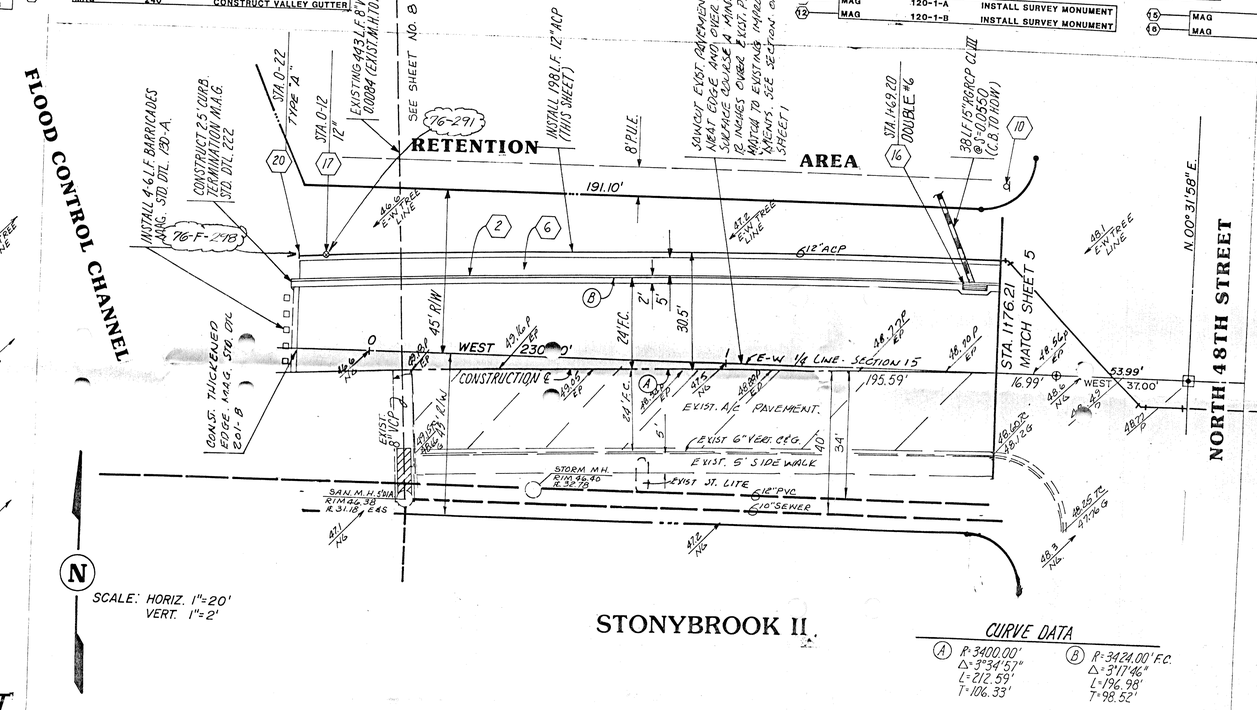
Watershed: Ruch 6 Hydrologist: Hm Date: 5/31/85

DATA CODE	OPERATION NAME	OPERATION NO.	FROM XSECTN OR STRUCT	THRU (1) XSECTN OR STRUCT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	RAIN TABLE NO.	AMC	ALTERNATE NO.	STORM NO.	CARD NO./ IDENTIFICATION
					IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							
					MAIN TIME INCREMENT, HRS.	(This increment is required for initial computations. Remains in force until new increment is entered or permanent data changed.)						
7	INCREM	6										
					STARTING TIME, HRS.	RAINFALL DEPTH, INCHES (Set depth and duration to 1.0 for actual rainfall)	RAINFALL DURATION, HRS.					
7	COMPUT	7	016	151	0.0	2.00	1.0	1	2	01	03	412
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							413
7	COMPUT	7										
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
7	COMPUT	7										
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
7	COMPUT	7										
	ENDCMP	1			NOTE: This card is required at "end" of a watershed; it may follow a series of COMPUT cards.							
	ENDJOB	2			NOTE: This card terminates the entire watershed program.							414

(1) Starting from the beginning or from the end of the preceding COMPUT card, the program will start with the 1st operation on the standard control list having the XSECTN / STRUCT under FROM and will perform all operations through the 1st appearance of the XSECTN / STRUCT under THRU. Two or more COMPUT cards in series will normally cover successive parts of the standard control list.

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN. 20, 1964

SYMBOL	AGENCY	DTL #	DESCRIPTION
1	MAG	220-A	CONSTRUCT 4" VERT. CURB
2	MAG	220-A	CONSTRUCT 6" VERT. CURB
3	MAG	220-B	CONSTRUCT RIBBON CURB
4	MAG	220-C	CONSTRUCT ROLL CURB
5	MAG	230	CONSTRUCT 4' SIDEWALK
6	MAG	230	CONSTRUCT 5' SIDEWALK
7	MAG	231-1	CONSTRUCT SIDEWALK RAMP
8	MAG	240	CONSTRUCT VALLEY GUTTER
9	MAG	250	CONSTRUCT DRIVEWAY
10	MAG	131-1-C	CONSTRUCT STREET SIGN BASE
11	MAG	120-1-A	INSTALL SURVEY MONUMENT
12	MAG	120-1-B	INSTALL SURVEY MONUMENT
13	MAG	420	INSTALL MANHOLE
14	MAG	441	INSTALL CLEANOUT
15	MAG	522	INSTALL STORM MANHOLE
16	MAG	534-1	INSTALL CATCH BASIN
17	MAG	391-1-C	INSTALL V.R. & C.
18	MAG	340	INSTALL TAPPING SLEEVE
19	MAG	360	INSTALL FIRE HYDRANT
19	C.O.M.	E-438	
20	MAG	390-B	TAP CAP & CORP STOP



EAST ADOBE STREET

STONYBROOK II

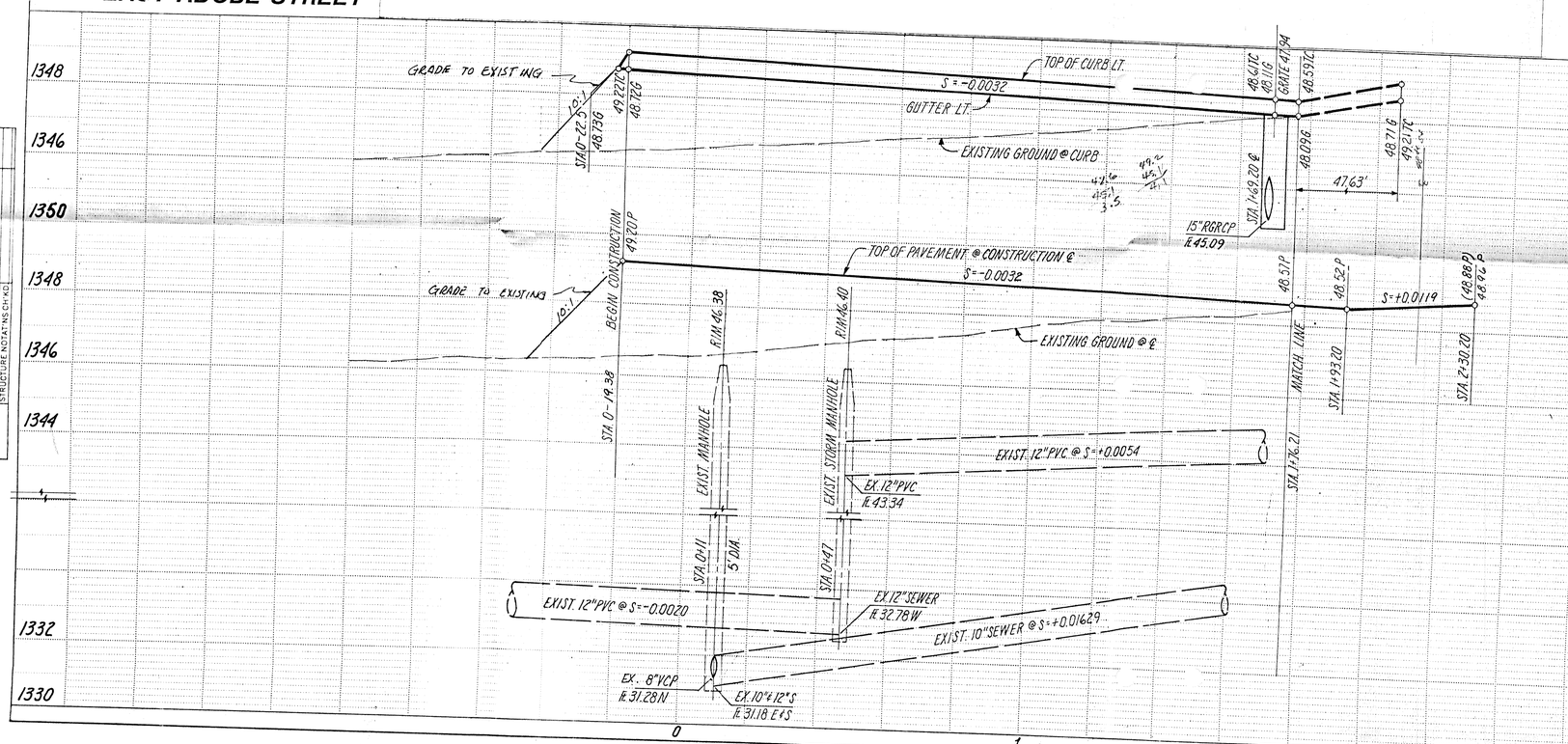
CURVE DATA

(A) R=3400.00' Δ=3°34'57" L=212.59' T=106.33'

(B) R=3424.00' F.C. Δ=3°17'46" L=196.98' T=98.52'

NOTE: LOWER ALL ELEVATIONS ON THESE PLANS BY 0.33' TO AGREE WITH C.O.M. DATUM

PLAN — SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, NOTE BOOK NO., BY, DATE



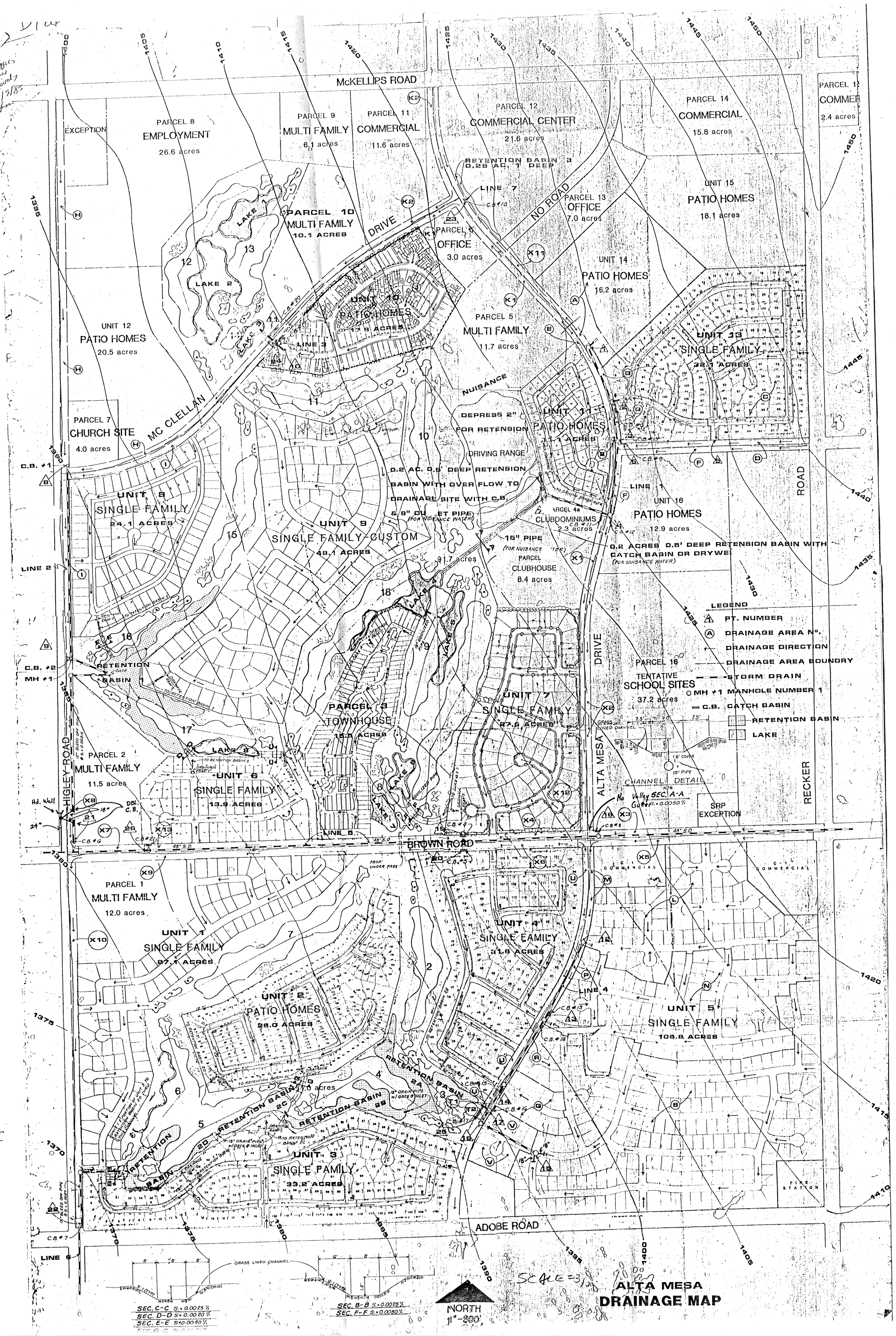
PROFILE — SURVEYED, PLOTTED, GRADES CHECKED, BY, DATE, STRUCTURE NOTATNS CH'KD, NOTE BOOK NO., BY, DATE

AS-BUILT

By Victor Leale Date 8/11/87

HIGHWAY FEDERAL AID SHEET
PLATE 1-SINGLE PLAN AND PROFILE-FULL DOT
TELEDYNE
PRINTED IN U.S.A.

SUNDANCE GROVES JOB# 840607


McKELLIPS ROAD
PARCEL 8
EMPLOYMENT
26.6 acres
EXCEPTION
PARCEL 9
MULTI FAMILY
6.1 acres
PARCEL 11
COMMERCIAL
11.6 acres
PARCEL 12
COMMERCIAL CENTER
21.6 acres
PARCEL 14
COMMERCIAL
15.8 acres
PARCEL 13
COMMER
2.4 acres
RETENTION BASIN 3
0.25 AC. 1' DEEP
LINE 7
NO ROAD
PARCEL 13
OFFICE
7.0 acres
UNIT 15
PATIO HOMES
18.1 acres
PARCEL 10
MULTI FAMILY
10.1 ACRES
DRIVE
PARCEL 6
OFFICE
3.0 acres
UNIT 14
PATIO HOMES
16.2 acres
LAKE 1
LAKE 2
LAKE 3
UNIT 10
PATIO HOMES
17.8 ACRES
LINE 3
PARCEL 5
MULTI FAMILY
11.7 acres
UNIT 12
PATIO HOMES
20.5 acres
UNIT 13
SINGLE FAMILY
22.1 ACRES
NUISANCE
DEPRESS 2"
FOR RETENSION
DRIVING RANGE
UNIT 11
PATIO HOMES
11.1 ACRES
PARCEL 7
CHURCH SITE
4.0 acres
MC CLELLAN
0.2 AC. 0.5' DEEP RETENSION
BASIN WITH OVER FLOW TO
DRAINAGE SITE WITH C.B.
& 8" OUTLET PIPE
(FOR NUISANCE WATER)
UNIT 8
SINGLE FAMILY
24.1 ACRES
UNIT 9
SINGLE FAMILY-CUSTOM
48.1 ACRES
91.7 acres
PARCEL 4a
CLUBDOMINIUMS
2.3 acres
15" PIPE
(FOR NUISANCE WATER)
PARCEL
CLUBHOUSE
8.4 acres
UNIT 16
PATIO HOMES
12.9 acres
0.2 ACRES 0.5' DEEP RETENSION BASIN WITH
CATCH BASIN OR DRYWELL
(FOR NUISANCE WATER)
LINE 1
LINE 2
LAKE 4
LAKE 5
RETENTION
BASIN 1
PARCEL 16
TENTATIVE
SCHOOL SITES
37.2 acres
LEGEND
PT. NUMBER
DRAINAGE AREA No.
DRAINAGE DIRECTION
DRAINAGE AREA BOUNDRY
STORM DRAIN
MH #1 MANHOLE NUMBER 1
C.B. CATCH BASIN
RETENTION BASIN
LAKE
PARCEL 3
TOWNHOUSE
15.5 ACRES
UNIT 7
SINGLE FAMILY
87.6 ACRES
ALTA MESA
DRIVE
HIGLEY ROAD
PARCEL 2
MULTI FAMILY
11.5 acres
LAKE 8
LAKE 9
UNIT 6
SINGLE FAMILY
13.9 ACRES
CHANNEL DETAIL
SRP
EXCERTION
RECKER
ROAD
LINE 5
BROWN ROAD
PARCEL 1
MULTI FAMILY
12.0 acres
UNIT 1
SINGLE FAMILY
87.1 ACRES
UNIT 4
SINGLE FAMILY
31.6 ACRES
LINE 4
UNIT 5
SINGLE FAMILY
105.8 ACRES
UNIT 2
PATIO HOMES
26.0 ACRES
RETENTION BASIN 2A
RETENTION BASIN 2B
RETENTION BASIN 2C
RETENTION BASIN 2D
UNIT 3
SINGLE FAMILY
33.2 ACRES
FIRE STATION
ADOBE ROAD
LINE 6
GRASS LINED CHANNEL
SEC. C-C S.=0.0025%
SEC. D-D S.=0.0020%
SEC. E-E S.=0.0040%
SEC. B-B S.=0.0025%
SEC. F-F S.=0.0080%
NORTH
1"=200'
SCALE=1"=200'
ALTA MESA
DRAINAGE MAP

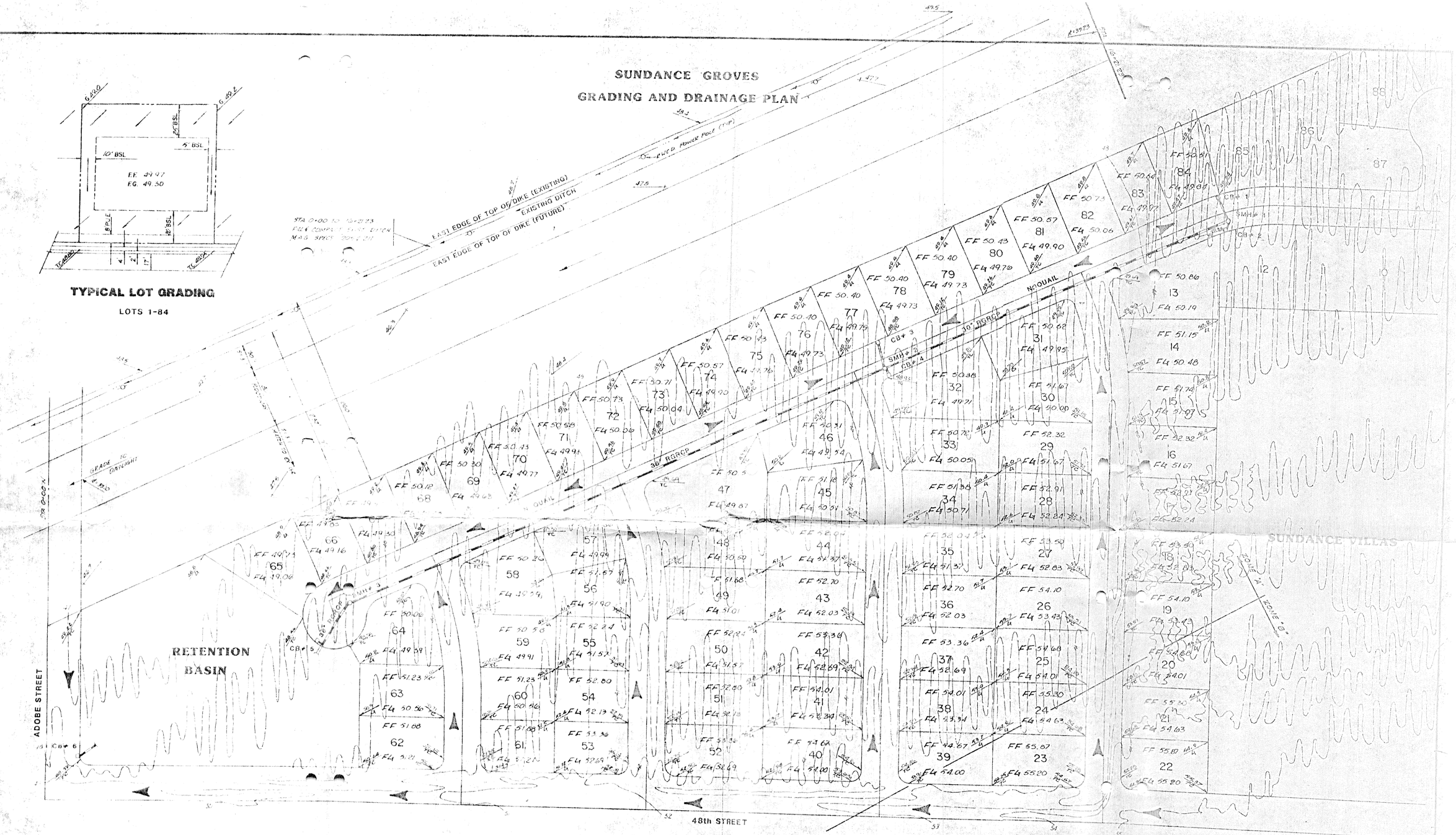
BROWN ROAD
GUNNITE CHANNEL
END CHANNEL
REMOVE EXIST. RIP-RAP, REGRADE DITCH INTO FLOODWAY TO ALLOW FOR FLOW FROM NORTH.
CONST. DRAINAGE DITCH SEE SECTION BELOW
E. FAIRBROOK CIR.
E. FOX CIR.
E. FOUNTAIN CIR.
N. QUAIL
E. ENCANTO ST.
EAST EDGE OF TOP OF DIKE (FUTURE)
EXISTING DITCH
EAST EDGE OF TOP OF DIKE
80' FLOODWAY
MATCH TO EXIST. GRD.
TYPICAL LOT GRADING
LOTS 85-110
SUNDANCE VILLAS
I certify to the best of my knowledge, information and belief that the boundary of the 100 year floodplain, and the zone designations shown on the plat and on the approved grading plans for this subdivision are
I will for each lot in the flood zone are at or above the minimum required elevations indicated by the Federal Insurance Administration flood zone map. I also certify that the compacted pad elevations shown are no greater that eight (8)-inches below the finished floor elevations.
ENGINEERING FIRM:
ENGINEER'S NAME:
TITLE:
SIGNATURE:
DATE:
LIMITS OF FLOOD PLAIN DERIVED FROM U.S. DEPT OF H.U.D. COMMUNITY PANEL # 040038 0010 B. MAY 15, 1980
SUNDANCE GROVES
DRAINAGE AND GRADING PLAN
TYPICAL FLOODWAY SECTION
NOTE; GRADES SHOWN ARE 1.0' ABOVE PLAN GRADES
DESIGNED BY U.S.D.A.-S.C.S. PLANS
TYPICAL DITCH SECTION
SCALE 1"=60'
ENGINEERING AND SURVEYING OF ARIZONA INC.
SUNDANCE GROVES

SUNDANCE GROVES

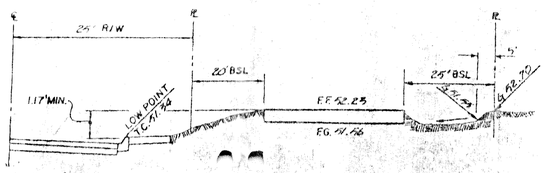
GRADING AND DRAINAGE PLAN

TYPICAL LOT GRADING

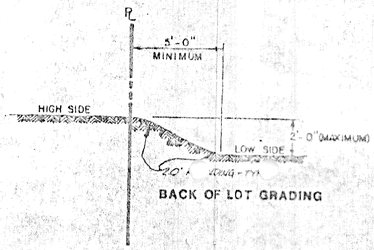
LOTS 1-84



SCALE 1" = 60'



TYPICAL LOT CROSS SECTION



BACK OF LOT GRADING

LEGEND

- TOP OF CURB ELEVATION
- DENOTES FINISH YARD GRADE
- F.F. DENOTES FINISH FLOOR ELEVATION
- 1410 DENOTES EXISTING GROUND CONTOUR
- DENOTES DIRECTION OF FLOW

NOTE:

1. a) FINISH FLOOR ELEVATIONS SHOWN ARE A MINIMUM OF 14" ABOVE THE LOWEST POINT ON CURB AT THE FRONT OF THE LOT OR 18" ABOVE THE LOW BANK ON CANNAL WHICHEVER IS HIGHER.

   b) FINISH FLOORS ARE SHOWN AT A MINIMUM ELEVATION AND MAY BE EXCEEDED.

2. ALL FINISH GRADES UNDER CONCRETE ARE 0.67' BELOW FINISH FLOOR ELEVATIONS.

REGISTERED PROFESSIONAL ENGINEER (CIVIL) 10013 ROBERT E. GRUTSMACHER STATE OF ARIZONA

REV. 1-29-85 RJT

ENGINEERING and SURVEYING of ARIZONA, INC.
CIVIL ENGINEERS - LAND PLANNERS - SURVEYORS
110 SOUTH MESA DRIVE - SUITE 4 - MESA, ARIZONA 85202 (602) 969-3000

JOB TITLE: SUNDANCE GROVES

DATE	DESIGN'D BY	DRAWN BY	CHK'D BY	JOB NO.	SHEET
DEC. 1984	D.C.	RSW			