FAIRLANE TECHNOLOGY PARK

URS CONSULTANTS

MASTER DEVELOPMENT DRAINAGE REPORT AND PLAN
FAIRLANE TECHNOLOGY PARK
URS PROJECT NO. 42044

Prepared for:

FORD COLORADO PROPERTIES
One Parklane Blvd.
Suite 1500 East
Dearborn, Michigan 48126

Prepared by:

URS CONSULTANTS INC.
1040 South 8th Street
Colorado Springs, CO 80906

October 22, 1993
Revised January 6, 1994

January 6, 1994

City of Colorado Springs
Department of Public Works
Engineering Division
P.O. Box 1575
Colorado Springs, CO 80901

Re: Fairlane Technology Park
Master Subdivision Drainage Report
URS Project No. 6742044

Gentlemen:

In accordance with the requirements of the City of Colorado Springs Subdivision Ordinance, a Master Development Drainage Report and Plan has been prepared for the proposed Fairlane Technology Park. The site is located in Northern Colorado Springs. This report has been prepared under the current City of Colorado Springs Drainage Criteria. The report was reviewed by your staff in July of this year. Your commits were addressed at that time. The reason for the delay in resubmitting the report was the United States Air Force Academy staff whas been reviewing the report. The approval letter from the United States Air Force Academy stating their acceptance of the report as written has been incorporated into the report.

Five (5) complete copy of the drainage report and plan are hereby submitted for your approval.

If there are any questions or comments concerning this report, please contact me or Clyde L. Pikkaraine.

Very truly yours,

URS CONSULTANTS, INC.

Eldon R. Hurst

Enclosures

Fairlane Technology Park
Master Development Drainage Report and Plan
URS Project No. 67-42044 Drainage Report Statement

ENGINEER'S STATEMENT:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the City for drainage reports. I accept responsibility for any liability caused by the negligent acts, errors, or omissions on my part in preparing this report.

URS CONSULTANTS INC.

Clyde L. Pikkaraine, P.E. No. 20450

DEVELOPER'S STATEMENT:

The Developer has read and will comply with all the requirements specified in this drainage report and plan.

Ford Colorado Properties.

By: _____

R. J. GAGNON
Title: VICE PRESIDENT

Address: One Parklane Blvd., Suite 1500 E
Dearborn, MI 48126

CITY OF COLORADO SPRINGS:

Filed in accordance with Section 15-3-906 of the Code of the City of Colorado Springs, 1980 as amended.

_____ for
City Engineer

1/31/94
Date

FLOOD PLAIN STATEMENT

Fairlane Technology Park is situated between the Black Squirrel Creek Drainage Basin and the Kettle Creek Drainage Basin. It does not exist within the limits of a defined FEMA 100 year flood plain.

FAIRLANE TECHNOLOGY PARK
MASTER DEVELOPMENT DRAINAGE REPORT

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MASTER DEVELOPMENT DRAINAGE REPORT

I. PURPOSE AND SCOPE

The purpose of this document is to provide an update for the original Fairlane Technology Park Drainage Report completed in 1986. This report is based upon the City of Colorado Springs Drainage criteria developed in October 1987, revised November 1991. This study defines the general nature of existing historic runoff conditions and the impact of the development of the Fairlane Technology Park on existing downstream drainage facilities. This study will also determine proposed drainage facilities which will be designed to accommodate both offsite and onsite runoff across Fairlane Technology Park.

The proposed development and drainage basin is situated between the Black Squirrel Creek drainage basin to the north and Kettle Creek to the south. Although portions of this site drain to Kettle Creek, the majority of the runoff drains directly into Monument Creek across the Air Force Academy. The area involved in this study creates little or no impact on the adjacent drainage basins.

Aside from the Loral Aerospace and Ford Microelectronics Facilities, Colorado Highway 83, adjacent county roads and drainage facilities constructed, based on the 1986 report, the majority of this site is presently undeveloped. In the developed condition this site will consist mostly of commercial office buildings, warehouse, and light industrial development. Design of proposed drainage facilities is based on the concept plan for Ford Colorado Properties, as prepared by Nolan E. Schriner, Inc.

Runoff quantities and proposed drainage facilities have been calculated and designed utilizing the City of Colorado Springs current drainage design criteria.

The need to define drainage parameters and facilities addressed in this study was triggered by the need to update the 1986 report to the current drainage criteria.

II. STUDY AREA DESCRIPTION

The project study area is situated in Sections 15, 16, 20, 21, 28, and 29, Township 12 South, Range 66 West of the Sixth Principal Meridian. The Fairlane Technology Park contains approximately 644 acres or 1.01 square miles. The offsite area to the northeast contains approximately 224 acres or 0.35 square miles. The Stout Allen interchange project site includes 22 acres. The study area is bounded on the west by Interstate 25, on the north by existing Stout Allen Road and State Highway 83, on the South by Old Ranch Road and on the East by the Kettle Creek Drainage Basin. The study area is bisected by the existing Colorado Highway 83.

The topography of the site consists of moderately sloping hills which slope generally from northeast to southwest at an average of slightly greater than 2%. Existing drainage paths within the basin are not clearly defined by channels of gullies, indicating that runoff generated by this basin is generally in the form of sheet flows. The current development network of roadways within the study area appears to have had minimal effect on the historic drainage patterns.

Although the majority of the study area drains to Monument Creek to the west, a small portion of the Fairlane Technology Park, approximately 79.2 acres along the east and southeast boundary, drains directly to Kettle Creek. Portions of this area have experienced mining operations for gravel extraction.

Historically, the Fairlane Technology Park received offsite runoff from an area of about 224 acres to the northeast of the property. This area is currently undeveloped pasture land. A small ridge line along the southerly limits of the basin prevents this runoff from reaching Kettle Creek.

Vegetation within the basin boundaries consists mostly of prairie grasses with some small stands of trees and scrub oak. For the purpose of this study the area has been considered as pasture or range land.

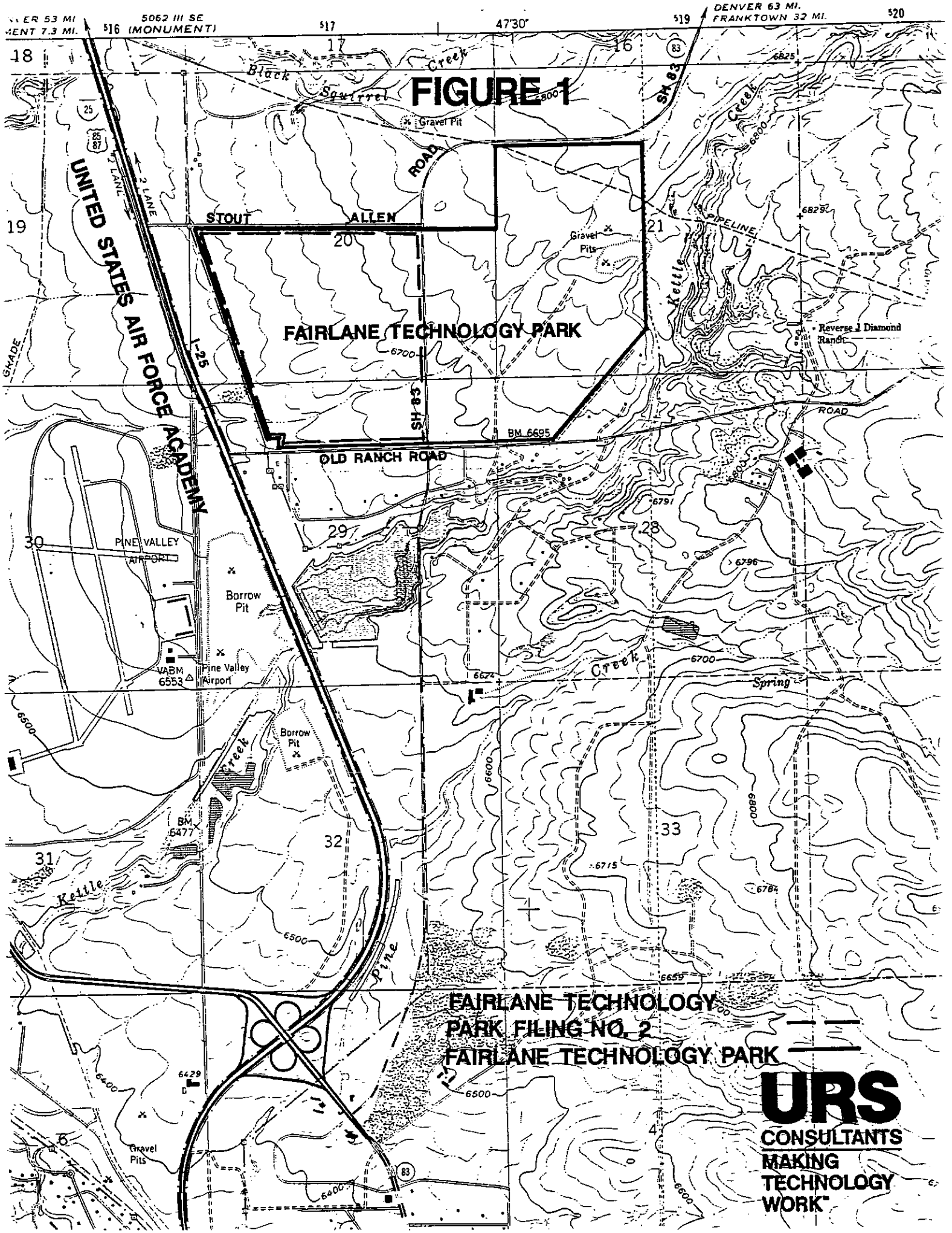
FIGURE 1
FAIRLANE TECHNOLOGY PARK
FAIRLANE TECHNOLOGY PARK FILING NO. 2
FAIRLANE TECHNOLOGY PARK
UNITED STATES AIR FORCE ACADEMY
I-25
SH 83
STOUT
ALLEN
OLD RANCH ROAD
PINE VALLEY AIRPORT
Borrow Pit
Gravel Pit
Gravel Pits
Pine Valley Airport
VABM 6553
BM 6695
BM 6477
Black Squirrel Creek
Kettle Creek
Pine Creek
Spring Creek
PIPELINE
Reverse J Diamond Ranch
DENVER 63 MI.
FRANKTOWN 32 MI.
5062 III SE
(MONUMENT)
47'30"
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MAKING TECHNOLOGY WORK

III. SPECIAL STUDY AREA CONSIDERATIONS

A. Hydrologic Constraints

The majority of the site drains to Monument Creek through the Air Force Academy (AFA) property. The Academy requires that runoff accepted at their property line be limited to historic levels. We have used the City of Colorado Springs criteria which is based on limiting flows to the historic peak runoff rates. Drainage facilities as outlined in this report are designed to transport developed runoff from the entire tributary area through Fairlane Technology Park. There are two detention ponds required for this site. Detention Pond A (previously constructed) has been sized to limit the runoff from the study area (onsite and offsite) to 10 and 100 year historic levels. At present the discharge across I-25 for Basin B is limited by an existing 24"RCP which does not have the capacity to discharge historic runoff.

Portions of Fairlane Technology Park drain directly to Kettle Creek. This basin was investigated by the U.S. Army Corp of Engineers. See the "Report on Hydrologic Investigations, Flood Insurance Study for Colorado Springs and El Paso County, Colorado", for the design of the Kettle Creek detention facility. The flood study estimated the 100 year peak runoff to be 9500 cfs. Because of its location near the downstream end of the basin, Fairlane Technology Park's peak discharge will pass through to the detention facility long before the peak runoff arrives from the remaining portion of the basin. Based on the expected runoff determined in the Corp of Engineer's Report, Kettle Creek's existing and proposed structures should adequately handle the increased runoff from this portion of Fairlane Technology Park. Engineering judgement indicates that allowing runoff from this area to pass as quickly as possible will have the least effect on the peak 100 year flows from the entire basin. Runoff from this area will therefore be discharged from Basin C (79.2 acres) under standard Colorado Springs drainage criteria. Kettle Creek does not have a current approved Drainage Basin Planning Study.

The area included in the proposed interchange at Fairlane Parkway (Stout Allen Road) and I-25 has also been included in this report since it is also an integral part of the development drainage patterns.

Development of the tributary area to Monument Creek will require preparation of other detailed subdivision drainage reports for approval by the City of Colorado Springs. Detailed drainage studies associated with these future subdivisions could identify changes to the assumptions stated in this report and should be evaluated on a case by case basis with respect to existing and/or approved drainage facilities as discussed in this report.

IV. STUDY AREA GEOLOGY AND SOILS

Basin soil classifications have been determined using the "Soil Survey of El Paso County Area, Colorado" by the Soil Conservation Service. The majority of the area comprising Fairlane Technology Park consists of either Blakeland Loamy Sand or Columbine gravelly, sandy, loam (see Figure 2 and Table 1). These are considered to be a part of the Hydrologic Soils Group A. The majority of the offsite contributing areas and a part of Fairlane Technology Park at the northwest corner of the site are classified as Peyton Pring Complex, Pring Coarse Sandy Loam, Stapleton Sandy Loam or Stapleton-Bernal-Sandy Loam. These soils have evolved from material weathered from Arkosic sedimentary rock. Arkosic sedimentary rock is considered a sandstone with granitic source for sand. The sand sized Feldspar particles are much stronger than the cementing material in the sandstone and remain as discrete particles after loss of cementation in the rock. The result is a granular soil considered to be part of the Hydrologic Soils Group B which is easily erodible by surface water runoff.

Basin soil and land use characteristics directly affect the relationship between rainfall and runoff within a basin. The U.S. Soil Conservation Service classifies soils into four hydrologic groups (A, B, C, and D) according to a soil's runoff potential. Group A soils exhibit high infiltration rates when thoroughly wetted and are considered to have low runoff potential. Group B soils exhibit moderate infiltration rates when thoroughly wetted. Group C soils exhibit slow infiltration rates when thoroughly wetted. Group D soils exhibit very slow infiltration rates when thoroughly wetted and are considered to have high runoff potential.

Soil types within this basin are listed in Table 1 and delineated in Figure 1. Approximately 50% of the basin is hydrologic soil Group B soils with the remaining 50% being Group A.

The soil types within the basin also influence the potential siting locations for reservoirs. Almost all of the soils within the basin are well drained and erode easily. Detention storage reservoirs constructed in this basin's soils may experience seepage. Final design of detention ponds and embankments should consider these problems and require detailed soils investigations. Almost all of the soils are expected to have moderate potential for frost action.

TABLE I - SOIL TYPES

Soil ID. Number	Soil Name	Slope %	Hydrologic Soil Group
8	Blakeland Loamy Sand	1-9	A
19	Columbine Gravelly Sandy Loam	0-3	A
68	Peyton - Pring Complex	3-8	B
71	Pring Coarse Sandy Loam	3-8	B
83	Stapleton Sandy Loam	3-8	B
85	Stapleton - Bernal Sandy Loams	3-20	B

Current City of Colorado Springs drainage criteria does not allow the use of group A soils where

overlot grading/fill operations have occurred, therefore, group B soils were used in runoff calculations throughout the basin.

V. EXISTING DRAINAGE FACILITIES

Several small culverts and a drainage improvement (box culvert) constructed based on the 1986 report exist under Colorado State Highway 83. The small culverts accommodate historical runoff from the northeast to the southwest. The improvement of Highway 83 and the increase in runoff generated by the development will preclude the utilization of the historical small culverts in the developed condition. The planned development and its resulting road network require a reconfigured drainage network eliminating these culverts. The box culvert and associated concrete channel along Old Ranch Road were constructed to transfer all developed flows generated in Basin A (including offsite) using the 1986 design criteria from east of State Highway 83 to the west. These facilities are no longer capable of conveying all developed flows when the new drainage criteria is used to calculate runoff.

Within the northern boundary of Basin B (Subbasin B2) a temporary drainage facility was constructed in conjunction with development of a portion of property by the New Life Church. The facility is described in the Master Drainage Plan for New Life Church and Preliminary and Final Drainage Report for New Life Church filing No. 1, April, 1991 by KLH Engineering, Inc. In general, the facilities detain runoff and discharge at historic rates. The facility will be used until State Highway 83 is realigned and Detention Pond B and associated drainage structures are constructed to convey developed flows. This development is owned by others and requires repair of one of the existing ponds by that developer/owner.

In addition other facilities were constructed based on the results of the 1986 report. These constructed facilities are shown on Figure 3. The facilities include a grated inlet, box culvert and concrete channel upstream of the Old Ranch Road box culvert, a concrete channel and Detention Pond A downstream of the Old Ranch Road box culvert and miscellaneous storm sewers and inlets west of State Highway 83 all of which drain to Detention Pond A.

Historic subbasin boundaries have been delineated on Figure 2 (Historic Drainage Map) to determine the quantity of runoff at the culverts which exist under Interstate 25. Five culverts exist along the Interstate which are affected by areas included in this report. At the extreme southwest corner of the Fairlane Technology Park, there exists 48" and 60" Reinforced Concrete Pipes (RCP). The 48" RCP drains the ditches along Old Ranch Road and the area south to the northern limits of the Kettle Creek Basin. The 60" RCP drains the major portion of the basin. Just south of the proposed Stout Allen Interchange is a 24" RCP which drains the northern portion of Fairlane Technology Park. North of the proposed Stout Allen Interchange are two 24" culverts. These drain the offsite area to the north.

The 60" RCP appears to have more than sufficient capacity to carry the flows released from detention pond A. The 24" RCP directly north of the 60" RCP appears to be somewhat undersized to carry historic flows. Historically, the excess runoff that is experienced at this point probably flowed to the 24" RCP to the north or ponded behind the interstate embankment. With the construction of the Stout Allen Interchange this will not be possible so detention facilities and a new crossing will be required to detain developed flows and discharge historic flows.

VI. STUDY AREA HYDROLOGY

Determining runoff for a particular drainage basin requires the designer to consider the effects of many different variables. In the absence of a reliable historic record of rainfall, runoff, and other pertinent variables, it is usually necessary to use a synthetic unit hydrograph method to determine the runoff that will occur for a given rainfall event. The SCS method of determining peak flood flows and hydrographs was used to estimate direct runoff by employing the HEC 1 computer model. HEC-1 was also used to determine hydrographs and flood routing for detention ponds. The 1986 study of this area used the method outlined in "Design of Small Dams" by the BUREC, which typically yields lower peak flows than the current criteria.

Present City of Colorado Springs criteria requires that the initial drainage system conveys the 10 year storm. The major drainage system is to be designed to convey the 100 year event in an attempt to prevent loss of life and major damage. There is no cutoff for transitioning between 10 year and 100 year runoff. The overall conveyance system must meet both the 10 year and 100 year design criteria. For example, a 10 year storm sewer may be built and the overflow for the 100-year storm will be contained within a street right-of-way or a drainage easement. Criteria for the major facilities will require the design to be for the greater of the peak flows determined for the 100-year, 24-hour storm and the 100-year, 2-hour storm. The 24-hour storm events result in greater peak flows. Detention ponds shall be sized using the SCS method employing HEC-1 for the 100-year, 24-hour storm with Type IIA rainfall distribution. Design of minor facilities shall be for the peak flows determined for the 10-year storm using the Rational Formula for areas less than 100 acres. Routing of the 10-year storm was determined by using the SCS Hydrograph procedure.

The drainage basin boundaries were determined from the topography on the City of Colorado Springs FIMS maps. The subbasin boundaries and design points determined for fully developed conditions are shown on Figure 3 (attached). The hydrologic soil groups were then determined for each subbasin. Ground cover and existing land use was determined for each subbasin. A historic weighted curve number was determined for each subbasin based on soil types, and type of cover. A future developed weighted curve number was selected based on soil types (acknowledging drainage criteria requirements downgrading Type A soils to B soils for developed land), type of cover, and projected development.

Time of concentration for the subbasins was determined by the following equation:

$$TC = \frac{11.9\,L^{3}}{H}^{0.385}$$

where TC = time of concentration in hours
L = length of longest watercourse in miles
H = elevation difference in feet

Intermediate times of concentration were calculated in HEC 1 using pipe flow or street velocities on channel routing cards.

Rainfall depths of 3.0 and 4.4 inches were obtained from isopluvials for the project area for the 10-year, 24-hour and 100- year, 24-hour storm events respectively. The rainfall depths of 2.0 and 2.9 inches were obtained from the aforementioned "Drainage Criteria Manual" for the 10-year, 2-hour and 100-year, 2-hour storm events, respectively.

VII. PROPOSED FACILITIES AND RECOMMENDATIONS

Based on the proposed master planning of the Fairlane Technology Park and the available contours three developed drainage basins were delineated to determine drainage and detention facilities. For purposes of description, these basins have been designated as Basins A, B, & C. (see Figure 3, Attached) All of the following described basins generally follow historic drainage patterns. All drainage channels not in a public right-of-way will be contained in a public drainage easement.

In order to realize the most economical utilization of existing facilities constructed using 1986 drainage criteria and upgrading of not yet constructed facilities several options were analyzed including inter-basin transfer of some developed flows from the northern sections of Basin A (A1 and A2) and offsite flows (Basins 01 and 02) to Basin B.

The Ford Aerospace Filing No. 1, Preliminary and Final Drainage Report included preliminary study of the impact the revised drainage criteria will have on the previously constructed facilities. The study concluded that in general, due to criteria changes, additional drainage improvements will need to be constructed. The study recommended the following 4 primary options:

1. Divert flows from Basin A to Basin B. This would require a crossing of State Highway 83, enlargement of facilities from State Highway 83 to Detention Pond B and enlargement of Detention Pond B.

2. A parallel system diverting flows from the north part of Basin A, under State Highway 83 (still in Basin A), to reduce flows at the 9' x 6' CBC at Old Ranch Road and State Highway 83 so that the culvert and downstream facilities are adequate. However, Detention Pond A would require enlargement.

3. Additional subregional detention east of State Highway 83 could reduce peak flows reaching the previously constructed facilities to designed capacities.

4. Improve the existing facilities to handle the calculated flows. This could entail enlargement of Detention Pond A, improvements to the concrete channels entering and leaving the 9' x 6' CBC and enlargement or replacement of the 9' x 6' CBC crossing under State Highway 83.

The above options were analyzed and the point at which development east of State Highway 83 triggers drainage improvement construction was determined. The capacity of the previously constructed facilities per the current drainage criteria is as follows:

DESCRIPTION	DESIGN FLOW RATE (cfs)
8' x 5' box culvert with box inlet at upstream end	460
6' wide concrete lined channel east of S.H. 83	760
6' x 9' CBC under S.H. 83 just north of Old Ranch Rd.	916
6' wide concrete lined channel west of S.H. 83	843
Detention Pond A designed outflow	188

The scenarios below represent analysis of options 1 and 4 in the 1990 Ford Aerospace Filing No. 1 report. Option 2 (diversion under State Highway 83 within Basin A) was examined but rejected because it was difficult to optimize the use of the previously constructed facilities east of State Highway 83 with a parallel diversion so close to the 6' x 9' CBC. West of State Highway 83, new facilities (including the crossing) would have to be constructed and some previously constructed facilities upgraded (Detention Pond A). Option 3 was examined and rejected because of the excessive loss of marketable property on the east side of State Highway 83 by construction of detention facilities, large enough to reduce peak flows. The different scenarios of basin development with the corresponding calculated peak flows expressed as a percentage of design flow are described below:

			PEAK FLOWS AS A % OF DESIGN CAPACITY				
SCENARIO	DEVELOPED	UNDEVELOPED	8X5 CBC	E. CHANNEL	9X6 CBC	W. CHANNEL	POND A
1	O1, O2, A3, A4 A5, A6, A7, A8 A9, A10 & A11		247%	148%	143%	155%	133%
2	A3, A4, A5, A6 A9, A10 & A11	O1, O2, A1, A2 & A7	193%	117%	97%	105%	95%
3	A3, A4, A5, A6 A7, A8, A9 & A10		144%	85%	94%	99%	90%

Scenario 1: Full development of Basin A east and west of State Highway 83 would require upgrading of all the previously constructed facilities in Basin A. This is not the most economical solution to the problem, due to the extensive modification of previously constructed facilities and the required boring under State Highway 83 for additional capacity.

Scenario 2: This scenario represents full development of Basin A west of State Highway 83 and full development of the proposed Fairlane Technology Park Filing No. 1 (subbasins A3, 4, 5 & 6) east of State Highway 83. All other subbasins on the east side in Basin A would remain undeveloped with peak flows at historic levels. The peak flow of 193% of design capacity in the 8' x 5' CBC is unacceptable. The original Master Subdivision Drainage Report anticipated excess flows that collect in Federal Drive would overtop the curb and flow south in a grass swale to the East Channel and eventually to the 9' x 6' CBC. However, the new design flow at 193% of capacity is excessive and will result in flooding into State Highway 83. Therefore,

a parallel conveyance system will be required under Federal Drive to deliver flow to the east channel. The peak flow of 117% of design capacity in the East channel, although greater than the design flow, would only reduce the channel freeboard from 1' to 0.7'. This should be acceptable to the City of Colorado Springs under the circumstances. The peak flow in the 9' x 6' CBC and West Channel is well within design limits and would require no improvement. Detention Pond A outflow is below historic limits and no further improvements would be required.

Scenario 3: This scenario represents full development of Basin A west of State Highway 83 and full development of the proposed Fairlane Technology Park Filing No. 1 (subbasins A3, A4, A5 & A6) and subbasin A7 east of State Highway 83. All other subbasins on the east side in Basin A (O1, O2, A1 & A2) would be diverted to Basin B by a storm sewer or CBC along the north side of the future realigned State Highway 83 from the low spot in subbasin A2, west through subbasin B2. At this point the flow would combine with runoff from subbasin B2 and B1 and continue west through a CBC under the present State Highway 83. The flow would continue via Basin B facilities to Detention Pond B. The above flow percentages for the Basin A facilities indicate that no further improvement would be required to the Basin A previously constructed facilities, except for the required parallel system under Federal Drive to deliver excess flow to the east channel. The flow diverted to Basin B would require an increase in capacity of all the planned facilities along the route to detention pond B, however, no additional upgrade to existing facilities would need to be constructed. None of these Basin B conveyance facilities have been constructed and would have required an increase in capacity over the 1986 planned design already due to the changes in drainage criteria, even without the Basin A transfer. In addition construction of the crossing of the present State Highway 83 alignment could probably be done when the new alignment and Fairlane Parkway Interchange are constructed and therefore could be constructed without boring and with less interference with traffic. Detention Pond B based on 1986 discharge requirements will need to increase by 17% in surface area.

The most economical solution to accommodate the new drainage criteria is to follow scenarios 2 and 3. The previously constructed facilities, except for the 8X5 CBC, are capable of conveying all runoff from the east side of State Highway 83 within the historical boundaries of Basin A (including O1 & O2) up through full development of subbasins A3, A4, A5 & A6 (presently under proposed Fairlane Technology Park Filing No. 1) no matter what is developed west of State Highway 83. When development of subbasin A1, A2 or A7 begins, the construction of facilities for diversion of flow as described in scenario 3 must be completed or other temporary measures designed and constructed to meet current design criteria. If only a portion of subbasins A3, A4, A5 & A6 is fully developed when development in subbasins A1, A2 or A7 begin, further analysis would be required at that time to determine necessary Basin transfer construction. If development occurs outside Fairlane Technology Park Filing No. 1 on the east side of State Highway 83 either onsite or offsite in the historic basin A (basins O-1, O-2, A-1, A-2 or A-7) prior to the full development of Filing No. 1, a drainage report addressing the issue of the capacity of the existing system to handle the flows will need to be approved by

the City of Colorado Springs Engineering Division.

Construction of the parallel system under Federal Drive to alleviate flooding caused by lack of capacity in the 8X5 CBC can be delayed depending upon the extent of development of Fairlane Technology Park Filing No. 1. Analysis shows that the peak flow at the 8X5 CBC is 561 cfs without the transfer. If the northern one-half of the Fairlane Technology Park Filing No. 1 site (A3 + A4) is developed, this flow could be handled in the 8X5 CBC and the existing 18" CMP without flooding onto State Highway 83. If the south one half of the Fairlane Technology Park Filing No. 1 site is developed (A5 + A6) the peak flow without the transfer would be 663 CFS and the parallel system would need to be constructed. If the interbasin transfer from basin A to basin B is constructed, any one half of the Fairlane Technology Park Filing No. 1 site can be developed without construction of the parallel system.

The proposed drainage facility construction and required modification to previously constructed facilities for each Basin is described in the following section.

BASIN A

BASIN A is the largest (composed of subbasins A1-A11) of the Basins and originally included the historical offsite contributing areas, subbasins 0-1 and 0-2 to the northeast and the historical onsite subbasins A1 and A2. However, in order to maintain developed flows at or below the capacity of the previously constructed facilities at Old Ranch Road and east to detention pond A, flows from subbasins 01, 02, A1 and A2 will be transferred to Basin B when development east of State Highway 83 provides design flows greater than the capacity of existing facilities. The storm sewer through Basin A and the remaining portions of Fairlane Technology Park is designed to carry the entire 10 year developed storm runoff. In some instances where residual capacity exists in the storm sewer pipe above that required for the 10 year storm, inlet capacity has been increased to reduce street flows for larger storms. The 100 year storm will be carried in the streets, grass swales or concrete channels through the development to the detention ponds.

For economic reasons it is requested that the diversion to basin B will be delayed as long as the existing system has the capacity to convey the developed flows to detention pond A. There are too many development scenarios to cover as to how this area might develop. Therefore, we have analyzed the maximum capacity of the existing facilities and used this as a barometer for when the diversion to basin B will be required. If development occurs on the north portion of Fairlane Technology Park Filing No. 1 prior to the diversion to Basin B a temporary ditch or berm will need to built along the north line of Fairlane Technology Park Filing No. 1 to prevent runoff from subbasins O-1, O-2, A-1 and A-2 from crossing Filing No. 1. At design point 5 we have determined, before the diversion is constructed there will be a total of 888 CFS for the 100 year storm. The existing system will carry these flows with some encroachment on the freeboard of the east and west channels. Therefore, the existing 8' x 5' CBC under Federal Drive may be supplemented by another structure to reach this capacity before the diversion to basin B is required.

At design point 3, the 10 year runoff (108.2 CFS, rational method) from Subbasin A-3 will be picked up in a proposed 42" RCP. The runoff from the streets at the intersection of Republic Drive and Road B for the 10 and 100 year storms does not exceed permissible street capacities. Therefore, the streets will carry 10 and 100 year runoff to the intersection of State Highway 83 and Republic Drive as delineated in a site specific drainage report upon development of subbasin A-3. The site specific drainage reports will be required in the future for each development due to the limited capacity of the existing facilities if development does not occur as outlined in this MDDP. The 42" RCP will proceed westerly in Republic Drive to a low point located directly east of State Highway 83 (Design Pt 4).

Design point 4 combines developed flows from subbasins A-3 and A-4. Design point 4A shows the runoff for subbasin A-4 only. Runoff from Republic Drive along with runoff from the east side of State Highway 83 will be collected in curb opening inlets located on both sides of Republic Drive near the low point. The 10 year flow of, 76.4 CFS and 100 year flow of 134.3 CFS will discharge directly to a concrete lined channel which runs parallel to State Highway 83 from the north line of Republic Drive to the south line of the realigned State Highway 83. This concrete channel will be a B=4', D=3' and Z=1.5/1 and will have the capacity under the present criteria to carry the 10 and 100 year runoff from subbasin A-4. Before the diversion to basin B is made this channel will also have the capacity in the freeboard of the channel to carry the historic flows from the northeast and offsite subbasins. The previously mentioned 42"RCP from subbasin A-3 will discharge to a proposed 8' x 5' CBC under Republic Drive. Two 15' sump inlets in Republic Drive will pickup the 10 and 100 year Street flows and discharge to the concrete box culvert.

From the south side of Republic Drive another concrete lined channel will be required to convey the runoff south to Federal Drive. This channel will be a B=6', D=3.6' and Z=1.5/1 and will have the capacity under the present drainage criteria to carry 10 and 100 year flows from subbasins A-3, A-4 and A-5.2. Again, the freeboard of the channel will be used to convey the historic runoff from the northeast until the diversion to basin B is constructed.

When subbasin A6.1 and A6.2 are combined at design point 6, flows are 10 year flow of, 146.7 CFS and 100 year flow of 256.2 CFS. There is an existing 12 inlet located at the intersection of Road B and Federal Drive and a proposed 12' inlet on the west side of Road B which will be constructed when Road B is extended north. An existing 24" RCP will carry flows from the existing and proposed 12' inlets located at the intersection of Federal Drive and Road B (pickup from existing and proposed inlets is 22.2 CFS) and convey the runoff to the existing 8' X 5' box culvert located at State Highway 83 and Federal Drive. An additional 54"RCP will be required to run easterly from the existing 8' x 5'CBC to pick up the remaining 100 year flows from subbasins A-6.1 and A-6.2, due to the limited capacity of the existing inlets at the intersection of State Highway 83. Additional inlets will have to be constructed along with the expansion of the existing inlets located at State Highway 83. There are 3 existing 10' inlets located at Federal Drive and State Highway 83, they will need to be expanded to 20' inlets. A 15' inlet will need to be constructed on State Highway 83 at the northeast curb return of Federal Drive. This inlet

will discharge to the existing grass lined swale as a temporary measure and to the proposed 8, x 4' CBC when constructed. The 100 year runoff from subbasins A-6.1 and A-6.2 consists of 206.6 CFS in the 48"RCP with the remainder being conveyed by the street and the existing 24"RCP. The improved inlet system will pick up the 10 year flows and discharge the flows to the existing 8' x 5' CBC. The 10 year flows from State Highway 83 north of Federal Drive will also be picked up in these inlets. Some of the 100 year storm will by pass the intersection and the proposed 15' inlet on State Highway 83, (3.0 CFS). This flow combined with the flows from the west side of the highway south of Federal Drive will flow in the existing east gutter of the highway to an existing 15' inlet just south of the existing 9' x 6' CBC which crosses the highway. This inlet will pickup 5.9 CFS of with a bypass of 0.6 CFS of the 10 year flows and 9.2 CFS with a bypass of 4.1 CFS of the 100 year flows.

At design point 5, 10 year flows are 387.0 CFS and the 100 year flows are 663.0 CFS. This includes subbasin A-3, A-4, A-5.1, A-5.2, A-6.1 and A-6.2. A 8' x 4' CBC will be installed under Federal Drive parallel to the existing 8' x 5' CBC to accept flow from the concrete lined channel and convey it to the east Channel. The runoff from subbasin A-5.1 is 127.4 CFS for the 10 year and 224.4 CFS for the 100 year storm. A 48"RCP will be stubbed to subbasin A-5.1 to pickup the 10 year flows and a previously constructed grated inlet (10' X 15') will accept runoff from the remaining overland 100 year developed flows from subbasin A-5.1. See the appendix for inlet capacity. The inlet is drained by the existing 8' X 5' concrete box culvert under Federal Drive parallel to State Highway 83 south to the existing east channel. In addition to the 100 year flows from subbasin A-5.1, the 8' x 5' CBC will accept flows from the proposed 54"RCP from subbasin A-6, the proposed 48"RCP from subbasin A-5.1, the existing 24"RCP from subbasin A-6 and the 3 existing sump inlets at the intersection State Highway 83 and Federal Drive. Upon the construction of the parallel 8' x 4' CBC the flows from the existing inlets will discharge to the proposed 8' x 4' CBC. All downstream facilities from design point 5 are sized to accept 100 year developed runoff.

The concrete channel south from Federal Drive along the east right-of-way line of Highway 83 will accept flows from the existing 8' x 5' CBC and proposed 8' x 4' CBC. This channel is located in an existing public easement recorded in the records of El Paso County, Colorado. This channel will flow to a 9' X 6' concrete box culvert under State Highway 83 to the south (Design Pt. 7). The box culvert will accept 100 year developed runoff from subbasins A7.1 and A7.2. The flows from the box culvert are transported to pond A by means of a concrete channel.

Subbasin A-8 is separated into 4 different areas which drain directly to the existing detention pond A. The first area is the west side of State Highway 83 which drains to an existing 15' inlet at Old Ranch Road. From the drainage report for this area, (Ford Aero space Filing No. 1), prepared by URS Consultants in 1990 the flows on the west side of State Highway 83 are 13.7 CFS of which 10.3 CFS is picked up and 3.4 CFS bypasses to the existing road side dith north of Old Ranch Road. These flows then discharge to westerly to an existing 48" RCP at Interstate 25. The flows picked up by the inlet discharge to the existing concrete channel north of Old

Ranch Road. The second area is the area tributary to the existing concrete channel, which is only 20 or so feet north and south of the channel and the full length of the channel from State Highway 83 to detention pond A. These flows discharge directly to the channel and are insignificant as far as the total flows are concerned, but the acreage is included in the overall HEC run for the flows into and out of detention pond A. The thrid area is the area just north of the existing concrete channel from State Highway 83 to detention pond A. This area has been given the designation of subbasin A-8.2 and has an area of 9.8 acres. 10 year runoff is calculted at 29.3 CFS for the 10 year storm and 51.2 CFS for the 100 year storm. This area flows westerly along the north side of the existing concrete channel but doesnot reach the channel due to a berm along the north side. Therefore, these flows reach detention pond A as a concentrated flow at the east side of pond A. Upon development flows should be pickup and discharged to the bottom of the pond due the sandy soils in this area. A 36"RCP is proposed for this at the south east corner of detention pond A. The last area is subbasin A-8.1, which contains 33.7 acres and is at this time nearly fully developed. Flow from the Ford Aerospace Filing No. 1 drainage report for the 10 year storm is 77.8 CFS and for the 100 year storm 145.6 CFS. There is an existing 48" RCP located on the east side of the pond, this should be sufficient to pickup the flows and discharge them to the bottom of detention pond A.

Subbasin A-9 drains to Federal Drive where there is an existing storm sewer system. An existing 10' inlet approximately 1200 feet west of State Highway 83 picks up 9.1CFS of the runoff from the street. From the inlet the storm sewer is stubbed northeast to subbasin A-9 where it picks up on site flows as a private system. There are 2-10' inlets in sump condition approximately 2000 east of State Highway 83. Subbasin A-10 runoff is routed by the streets to this low point along with portions of subbasin A-9. At this point these inlets have the capacity to pickup the 10 and 100 year flows generated by the streets. The streets have the capacity to carry the 10 year flows within the curb to this low point, and the 100 year flows with in the right-of-way. From this point an existing 36" RCP runs to detention pond A. This pipe is under sized for the combined 10 year runoff from subbasins A-9 and A-10. However, at this point the excess flow will over top the curb and be conveyed to the detention pond by the 100 year overflow channel. The overflow channel will need to be B=5.0',D=3.5' and Z=1.5/1 in size to accommodate the proposed 100 year flows. The overflow channel will be constructed upon development of subbasin A-10.

Subbasin A-11 contains 12.7 acres and drains directly to detention pond A. Flows from this area for the 10 year storm are 38.9 CFS and 68.5 CFS for the 100 year storm. From past experience with the sandy soil in this area the runoff upon development of this subbasins should be collected east of the detention pond and discharged to the bottom of the existing detention pond. A 36" RCP should be sufficient to collect and discharge this area to the bottom of detention pond A.

Detention storage requirements for the previously constructed Pond A were determined by developing a storm hydrograph based on a 100-year, 24-hour storm in the method outlined in the "Design of Small Dams for all of Basin A using 1986 drainage criteria. In 1986, it was determined that 55.8 acre feet of storage was required. Upon design and construction the outlet pipe is a 24"RCP with a orifice plate 1.57' in diameter. Ponding occurs to a depth of 6.9 feet. The 100 year release rate was 188 cfs. This flow drains by means of a grated inlet in conjunction with the 24" RCP. The grate of the inlet was set at an elevation 6.9 feet above the bottom of the pond. The inlet drains by means of a 54" RCP acting under a maximum headwater depth of 10.8 feet. Due to the increased time of concentration, the downstream un-detained area flows combined with the pond discharge do not exceed the historic flows of 365 CFS.

With the new drainage criteria and the new developed Basin scenario and modeling the existing detention pond and release rates the 10 year release rate is 75 cfs and the 100 year release rate is 169 cfs. Both release rates are well below historic levels.

At the outlet of Pond A an energy dissipation system exists to limit velocities and control erosion potential. Upon leaving the energy dissipation system, the runoff flows overland through a natural swale to the existing 60" RCP at Interstate 25. Based on a headwater to diameter ratio of 1.3 to 1 (C.D.O.H. Standard) this pipe has an allowable capacity of approximately 190 cfs.

Should the outlet to the pond become plugged, prior to the construction of the diversion to basin B, a maximum discharge over the emergency spillway of 162 cfs is expected. Should the outlet to the pond become plugged, after the diversion to basin B is constructed, a maximum discharge over the emergency spillway of 72 cfs is expected. This discharge is based on the pond inflow at the point where the pond volume is exceeded. If the 60" RCP at I-25 clogs the runoff will flow to the south to the existing 48" RCP under I-25. This pipe has an available headwater depth in excess of 12 feet yielding a theoretical capacity of greater than 220 cfs. The capacity of these two pipes along with the existing natural detention storage in the highway right-of-way should be more than sufficient to prevent overtopping of northbound I-25.

BASIN B

Basin B (composed of subbasins B1-B5) is located north of Basin A. Basin B will accept transferred flow from offsite subbasins 01 and 02 and onsite subbasins A1 and A2. Developed 10 year runoff from subbasin 0-1 will be required to be collected by a proposed 42" RCP in the proposed realignment of Highway 83 and flow to design point 1. The 100 year flows will be picked up and discharged onto the A-1 site where onsite grasslined channels will convey the runoff to Federal Drive. At this point the runoff will overtop Federal Drive and be conveyed on the A-2 site west to 9' x 6' CBC under State Highway 83.
The highway limitations for carrying storm runoff is 14' from the curb face. Due to the high speed area and safety considerations the runoff will be limited to the shoulder of the road, (8'). Therefore, curb inlets will be placed at the east boundary of Fairlane Technology Park and along the highway from the east boundary of the Fairlane Technology Park to existing highway 83 to stay within these limitations.

The 10 year runoff for subbasin A-1 (125.4 CFS) will be collected on site by a proposed 42" RCP which will discharge to a proposed 48" RCP in Federal Drive. This 48" RCP extends south to a 60" RCP in the proposed realignment of State Highway 83.

The 10 year flow for subbasin O-2 is 77.0 CFS and the 100 year flow is 148.5 CFS. A 30" RCP will be constructed in Federal Drive to the north line of Fairlane Technology Park to pickup the 10 year flows. The 100 year flows will be conveyed by the street.

Two curb opening inlets along with an inlet in realigned State Highway 83 will drain the street and State Highway 83 flows and 10 year runoff from the north, subbasin O-2. A low point on Federal Drive should be considered to insure the runoff is picked up before reaching the proposed realignment of State Highway 83 and so the 100 year storm can cross Federal Drive with out running onto realigned State Highway 83. Combining these flows with the offsite 10 year developed flows for subbasins O-1 and A-1, the 10 year flows are 200 CFS, and 464 CFS 100 year. 10 year flows will be conveyed westerly in the proposed alignment of State Highway 83 in a proposed 60" RCP to the intersection of Road B (Design Pt.2).

10 year storm runoff from subbasin A-2 will be collected in a 42" RCP and discharge to the proposed 60" RCP in the proposed alignment of State Highway 83. From this point the 60" RCP will proceed westerly in realigned State Highway 83 to its intersection with present State Highway 83 (Design Point 15). The 100 year flows will be conveyed by onsite ditches and picked up by a proposed 9' x 6' CBC and discharged west of existing State Highway 83.

Subbasins B-1 and B-2 are located north of the proposed State Highway 83 realignment and east of present Highway 83. Runoff from B-1 will be picked up in a inlet at the proposed intersection of Fairlane Parkway alignment and State Highway 83 and connect to a proposed 9' x 6' box culvert under State Highway 83. Subbasin B-2 will drain to the proposed box culvert via a proposed 42" RCP from the temporary detention pond on site. The existing detention pond

should be left in place to help with the detention of the 100 year storm for subbasin B-2. The flows from 01, 02, A1, A2, B1 and B2 will combine in the proposed 9' x 6' box culvert. The box culvert will accommodate the 100 year developed storm from these subbasins. This box culvert will discharge to a concrete channel which will be situated south of proposed Fairlane Parkway. This facility will also carry runoff from Fairlane Parkway which will be picked up in inlets on each side of the street at the Federal Drive intersection. There will need to be transition from the concrete channel to another 9' x 6' CBC and back again to the channel at the intersection of Federal Drive and Fairlane Parkway. At a point just east of the proposed interchange at Interstate 25, runoff from the channel will discharge, south to Detention Pond B. Two inlets will be installed in Fairlane Parkway east of the interchange to drain the roadway.

Subbasins B-3.1 and B-3.2 flows will be picked up by inlets at Federal Drive and just east of detention pond B, respectively. They will discharge to the proposed channel or CBC through pipes crossing under Fairlane Parkway.

Subbasins B-4.1 and B-4.2 along with runoff from the west one-half of Highway 83 will drain to a low point in the intersection of Republic Drive and Federal Drive. Street capacities are sufficient to carry the 10 and 100 year storm runoff to this point. One existing 10'inlet on the north side of Republic Drive and two existing 14' curb opening inlets (sump condition) will collect the runoff at this point and discharge to an existing 36" RCP. There is not enough available head for the existing 36"RCP to accept the 102.9 CFS. Therefore, a 42" RCP should replace the 36" and run westerly to detention pond B. A temporary grass swale (Private) in the same public easement convey flows at this time and will need to be improved upon development to carry the 100 year runoff which the storm sewer system does not have the capacity to carry. A high point west of the intersection of Republic Drive and Federal Drive will need to be held so that the headwater at the inlets in sump condition can reach 1.0' at flowline to maximize the pickup of the inlets and the existing storm sewer system. The existing inlets have a capacity to pickup a total of 102.9 CFS. The 10 year runoff to this point is 109 CFS. Some of this flow will already be in the pipes due to private systems in subbasins B-4.1 and B-4.2. With the street having the capacity to carry the 100 year flows to the low point the swale running from Republic Drive to detention pond B will be required to carry to excess flow over 102.9 CFS or 79.1 CFS. A grass lined swale B=20' D=2.1' and Z=3:1 will have the capacity to carry these excess flows westerly to detention pond B. The grass lined channel will require riprap drop structures or could be handled in others ways which should be investigated upon development of the surrounding sites. However, at the detention pond a 36" RCP will be required to pickup the runoff from the grass lined swale and discharge it to a proposed 72" pipe which picks up the runoff from subbasin B-5.2.

Subbasin B5.1, 10 and 100 year storms will be picked up by a private on site system and connected to a proposed 48" RCP which will discharge the runoff to the detention pond. This system and the discharge to the pond is a cost which will be the responsiblity of the developer of the sites within subbasin B-5.1.

Subbasin B-5.2, 10 and 100 year stroms will be picked up by a private on site system and connected to a proposed 54" RCP which will discharge the runoff to a proposed 72" RCP which will discharge to detention pondB. This system and the discharge to the pond is a cost which will be the responsiblity of the developer of the sites within subbasin B-5.2. drain directly to detention pond B.

Pond B will require a storage capacity of 44.0 acre feet, approximate surface area of 13.4 acres, and a maximum release rate of 193 CFS based on the allowable historic discharge. Detention is based on a developed storm hydrograph for subbasins O1, O2, A1, A2 and B-1 through B-5. The release rate of 193 CFS occurs through a 60" RCP with a maximum headwater of 10.0 feet. Discharge from Pond B will occur through a similar energy dissipation system as that of Pond A and flow overland to an existing 24 " RCP and a proposed 54" RCP under Interstate 25 with a capacity of 193 CFS (based on allowable HW/d=1.5 for new construction). The actual capacity of the existing 24" RCP under Interstate 25, based on an available headwater depth of approximately 5.5 feet, is 42 cfs. The proposed 54" RCP will supplement the existing 24" RCP so that historic flows can be discharged. The 54"RCP will be bored under Interstate 25 so there will be no interruption to the traffic flow.

The detention pond embankment for basin B will be designed as a erosion control structure with a broad crested weir overflow spillway. The spillway at a minimum will be sized large enough to carry the peak 100 year historic runoff in the event the outlet structure becomes plugged. The bottom elevation of the weir will be set at the maximum ponding depth. The downstream side of the embankment at the overflow spillway will require erosion protection in the form of concrete or rip rap.

Should the outlet of Pond B become plugged, a discharge over the emergency spillway of approximately 199 CFS is expected. Between the natural detention in the Highway Right-of-Way the proposed 54"RCP and the existing 24" RCP, no overtopping of I-25 is expected.

BASIN C

Basin C exists at the easterly edge of the property and drains ultimately to Kettle Creek to the southeast. Since this area is not constrained by historic rate limits, detention ponding has not been provided. This basin has been divided into 4 subbasins, C-1 through C-4.

Subbasin C-1 drains to the intersection of Republic Drive and Road D. Runoff at this point does not exceed the street capacity and will proceed easterly in Republic Drive to the east property line picking up a portion of the runoff from subbasin C-2. This runoff is intercepted by a natural swale draining southerly along the east property line. Ultimately a concrete ditch along the east property line will collect runoff from subbasins C-1, C-2, and C-3. This ditch carries runoff from the Fairlane development as well as runoff from the property east of Fairlane Technology Park. With the downstream property owners concurrence, this runoff will be discharged from the site at the thalweg of the natural swale. Erosion protection will be provided at this point to limit the velocity of the runoff leaving the site.

Subbasin C-4 drains to the southeast corner of Fairlane Technology Park. The collection system for this runoff will be determined at the time of final site layout and design. This runoff historically flows to Kettle Creek. This runoff will be transported to Kettle Creek by either a roadside channel or a 36" RCP. County officials have indicated that if Old Ranch Road is upgraded to a major arterial in the future, a pipe would be required.

FAIRLANE PARKWAY INTERCHANGE

With the construction of the Fairlane Parkway Interchange, the existing pipes will probably need to be improved to discharge historic flows. This area will be studied when the interchange is planned to be constructed and recommendations for these facilities made at that time.

VIII. DRAINAGE FEES

This study area is a closed basin. Therefore, no drainage or bridge fees will be collected for this study area and subsequently, no reimbursements will be paid either. The developer is required to build the improvements listed in this MDDP to develop the individual sites. Onsite drainage facilities for each building site will also require a subdivision drainage report and possibly, onsite storm sewer systems. These will be the responsiblity of the developer of each building site.

IX. DRAINAGE IMPROVEMENTS CONSTRUCTION COST ESTIMATES

The drainage improvements required for this project have been split into 2 different areas. First the onsite improvements which is the 10 year storm sewer system for basin A and B, which the site developer will be responsible for. Secondly the offsite improvements which include the 100 year storm sewer system and the detention and discharge facilities, which Ford Colorado Properties will be responsible for. These cost estimates are for information only and will be refined at the time of site development. The following is a summary of these cost.

FORD COLORADO PROPERTIES
CONSTRUCTION COST ESTIMATE, OFFSITE, BASIN A

8' x 4' CBC, 400 L.F. @ $250/L.F.	$100,000.00
Transition from channel to inlet structure	$15,000.00
Connection to existing East channel, LS	$15,000.00
Temporary diversion channel (north line)	$10,000.00
Subtotal	$140,000.00
Engineering 10%	$14,000.00
Contingencies 10%	$14,000.00
TOTAL	**$168,000.00**

CONSTRUCTION COST ESTIMATE, OFFSITE, BASIN B

9' x 6' CBC, 440 L.F. @ $330/L.F.	$145,200.00
6'B, 5.5'D, 1.5/1Z Channel, 3130 L.F. @ $225/L.F.	$704,250.00
Transition Structures (Channel to CBC), 4, @ $10,000/EA.	$20,000.00
Energy Dissipation Structure, 1, LS	$30,000.00
Pond Excavation, 1, LS	$220,000.00
Discharge Structure, 1, LS	$30,000.00
Spillway, 1, LS	$114,000.00
54" RCP, 180 L.F. @ $500/L.F. (BORED)	$90,000.00
Subtotal	$1,409,450.00
Engineering 10%	$140,945.00
Contingencies 10%	$140,945.00
TOTAL	**$1,691,340.00**

CONSTRUCTION COST ESTIMATE, ONSITE, BASIN A

Conc channel (6' x 3.6') 1650 L.F. @ $130/L.F.	$214,500.00
Conc channel (4' X 3') 550 L.F. @ $90/L.F.	$50,600.00
Conc channel (5' x #.5") 500 L.F. @ $100/L.F.	$50,000.00
54" RCP, 1200 L.F. @ $110/L.F.	$132,000.00
48" RCP, 50 L.F. @ $90/L.F.	$4,500.00
42" RCP, 1100 L.F. @ $75/L.F.	$82,500.00
36" RCP, 350 L.F. @ $65/L.F.	$22,750.00
18" RCP, 120 L.F. @ $30/L.F.	$3,600.00
8' x 5' CBC, 160 L.F. @ $260/L.F.	$41,600.00
Dicharge of overflow (5' x 3.5' chan), L.S.	$20,000.00
Transition structures from channel to CBC, LS	$10,000.00
Manholes, 6 ea, @ $4,000	$24,000.00
Subtotal	$656,050.00
Engineering 10%	$65,605.00
Contingencies 10%	$65,605.00
TOTAL	**$787,260.00**

CONSTRUCTION COST ESTIMATE, ONSITE, BASIN B

72" RCP, 110 L.F. @ $240.00/L.F.	$26,400.00
60" RCP, 2550 L.F. @ $180.00/L.F.	$459,000.00
54" RCP, 280 L.F. @ $110.00/L.F.	$30,800.00
48" RCP, 280 L.F. @ $100.00/L.F.	$28,000.00
42" RCP, 3650 L.F. @ $80.00/L.F.	$292,000.00
36" RCP, 2120 L.F. @ $70.00/L.F.	$3,500.00
30" RCP, 1450 L.F. @ $60.00/L.F.	$87,000.00
24" RCP, 450 L.F. @ $50.00/L.F.	$22,500.00
18" RCP, 120 L.F. @ $30.00/L.F.	$3,600.00
Overflow Grass and Rip Rap Chan. to DPB, 2120 L.F. @ $50/L.F.	$106,000.00
Discharge 72" RCP to DPB	$15,000.00
Discharge 48" RCP to DPB	$10,000.00
Manholes, 19 ea, @ $4000	$76,000.00
Inlets, 13, @ $3,000.00/Ea.	$39,000.00
Subtotal	$1,198,800.00
Contingencies 10%	$119,880.00
Engineering 10%	$119,880.00
TOTAL	**$1,438,560.00**

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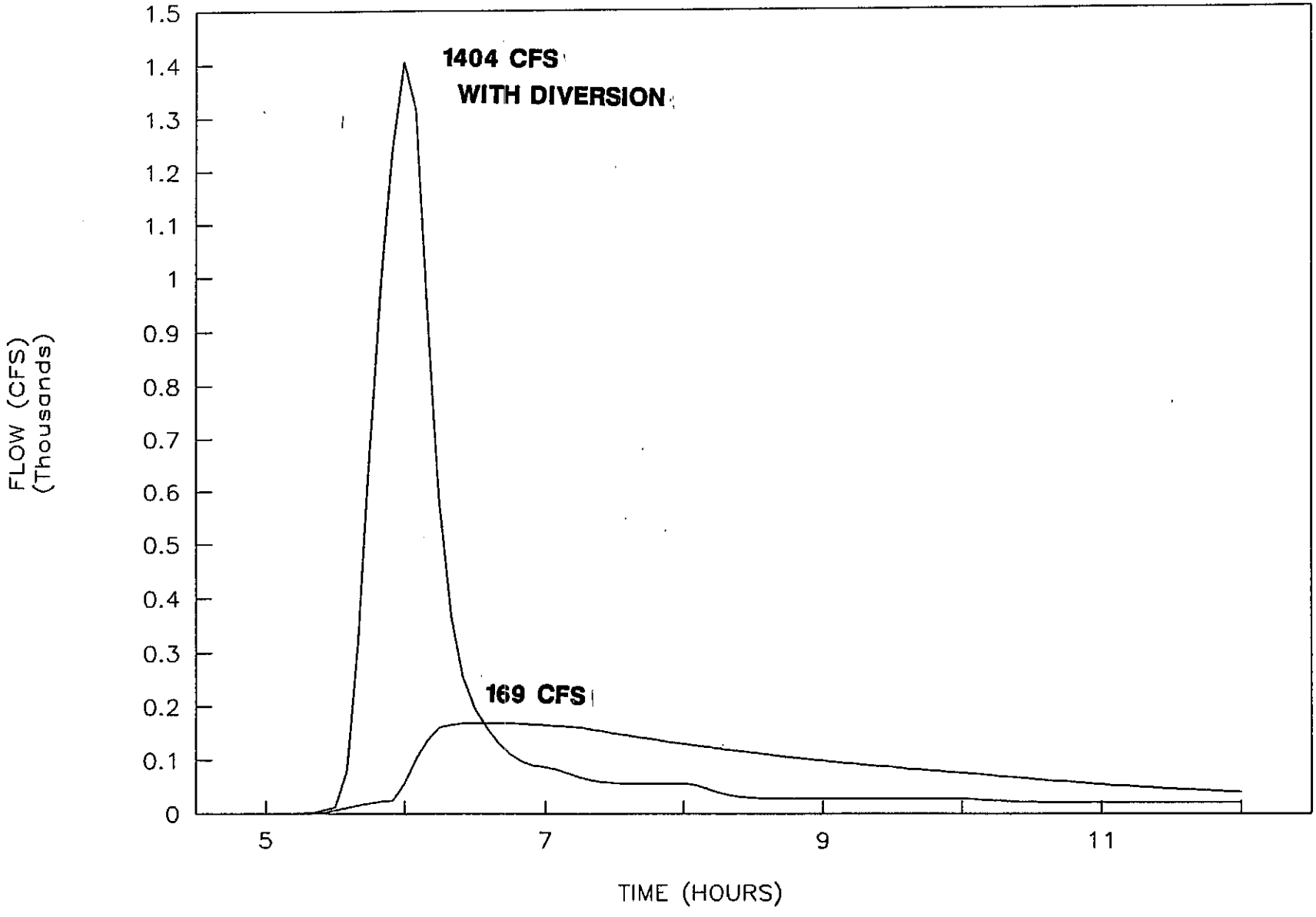
APPENDIX A

HYDROLOGIC COMPUTATIONS, BASIN A

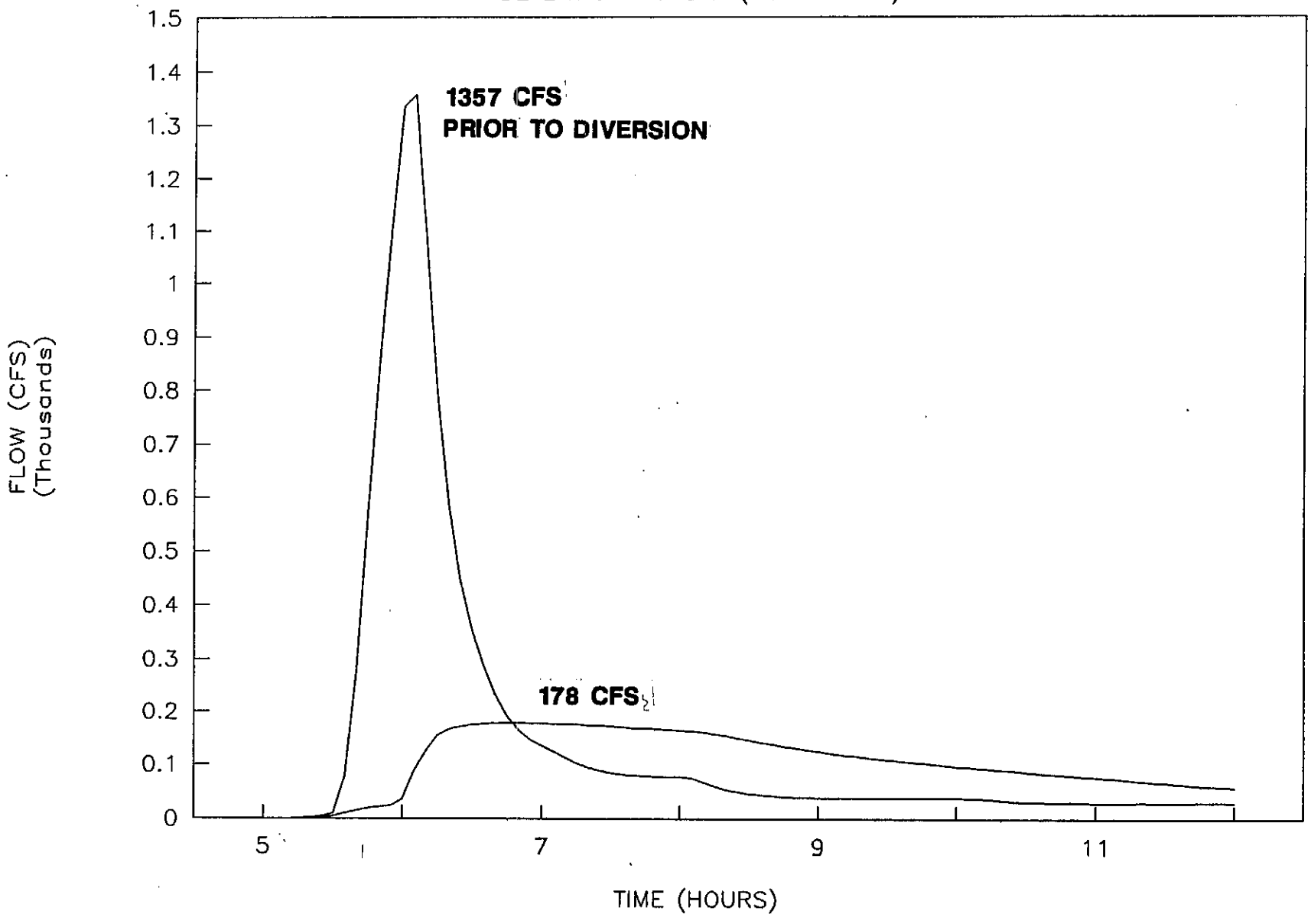
FAIRLANE TECHNOLOGY PARK

DETENTION POND A (SCENARIO 3)



FAIRLANE TECHNOLOGY PARK

DETENTION POND A (SCENARIO 2)



THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

HEC-1 INPUT

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

  1           ID         FAIRLANE TECHNOLGY PARK - URS PROJECT NO. 6742044
  2           ID         MINOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE TA9.INP
  3           ID         USING FULLY DEVELOPED WEST AND EAST OF SH 83 FOR 3M W/
  4           ID         HIST FOR BASINS O-1, O-2, A1, A2 AND A7
  5           ID         USING THE 10-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
  6           ID         RUN DATE 4-1-1993
              *DIAGRAM
  7           IT       5 01JUL90     800     300
  8           IO       5

  9           KK    1A
 10           KM         RUNOFF FROM BASIN O1
 11           BA    0.264
 12           LS        0    67.8
 13           UD    0.280
 14           UD    0.140
 15           IN       15
 16           PB        0
 17           PC    0.000   0.001   0.005   0.009   0.014   0.018   0.024   0.033   0.036   0.043
 18           PC    0.050   0.057   0.063   0.070   0.076   0.083   0.096   0.117   0.138   0.159
 19           PC    0.180   0.225   0.300   1.200   2.100   2.175   2.250   2.295   2.340   2.370
 20           PC    2.400   2.430   2.460   2.475   2.490   2.505   2.520   2.535   2.550   2.565
 21           PC    2.580   2.591   2.603   2.614   2.625   2.637   2.648   2.659   2.670   2.682
 22           PC    2.693   2.704   2.715   2.725   2.735   2.744   2.754   2.763   2.772   2.781
 23           PC    2.790   2.798   2.805   2.813   2.820   2.828   2.835   2.843   2.850   2.858
 24           PC    2.865   2.873   2.880   2.888   2.895   2.903   2.910   2.918   2.925   2.933
 25           PC    2.940   2.944   2.948   2.952   2.955   2.959   2.963   2.967   2.970   2.974
 26           PC    2.978   2.982   2.985   2.989   2.993   2.997   3.000

 27           KK    O1-1
 28           KM         ROUTE BASIN O1 TO DES PT 1
 29           RK    1250    0.02   0.013           CIRC     3.5

 30           KK      O2
 31           KM         RUNOFF FROM BASIN O2
 32           BA    0.086
 33           LS        0    59.8
 34           UD    0.170

 35           KK    O2-1
 36           KM         ROUTE BASIN O2 TO DES PT 1

 37           RK    1850    0.02   0.016           TRAP      44       3

 38           KK      A1
 39           KM         RUNOFF FROM BASIN A1
 40           BA    0.064
 41           LS        0    55.0
 42           UD    0.100

 43           KK       1
 44           KM         COMBINE O1,O2,A1
 45           HC       3
```

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

  46      KK     1-2
  47      KM        ROUTE DES PT 1 TO DES PT 2
  48      RK    1330   0.016   0.013           CIRC     3.5

  49      KK      A2
  50      KM        RUNOFF FROM BASIN A2
  51      BA   0.059
  52      LS       0    56.6
  53      UD   0.080

  54      KK       2
  55      KM        COMBINE DES PT 1, A2
  56      HC       2

  57      KK     2-4
  58      KM        ROUTE DES PT 2 TO DES PT 4
  59      RK    2000   0.018   0.013           CIRC       5

  60      KK      A3
  61      KM        RUNOFF FROM BASINS A3,A4
  62      BA   0.092
  63      LS       0    88.0

  64      KK       4
  65      KM        COMBINE DES PT 2 DES PT A3
  66      HC       2

  67      KK    A3-5
  68      KM        ROUTE BASIN A3 TO DES PT 5
  69      RK    1740   0.018   0.013           CIRC       5

  70      KK      A5
  71      KM        RUNOFF FROM BASIN A5 & A6
  72      BA   0.164
  73      LS       0    88.0
  74      UD   0.150

  75      KK       5
  76      KM        COMBINE A3 & A5 & DP 2
  77      HC       2

  78      KK     5-7
  79      KM        ROUTE DESIGN PT 5 TO DESIGN PT 7
  80      RK    1100   0.005   0.015           TRAP       6     1.5

  81      KK      A7
  82      KM        RUNOFF FROM BASIN A7
  83      BA   0.068
  84      LS       0    49.0
  85      UD   0.130
```



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

  86      KK       7
  87      KM        COMBINE DES PT 5 & A7
  88      HC       2

  89      KK    7-12
  90      KM        ROUTE DES PT 7 TO DES PT 12
  91      RK    2200    0.02   0.015           TRAP       6     1.5

  92      KK    A8.1
  93      KM        RUNOFF FROM BASIN A8.1
  94      BA   0.030
  95      LS       0    88.0
  96      UD   0.130
```

```
 97          KK      9A
 98          KM         COMBINE DES PT 7, A8.1 CONCRETE CHANNEL DESIGN FLOW
 99          HC       2

100          KK      A9
101          KM         RUNOFF FROM BASIN A9,A10
102          BA    0.096
103          LS        0    88.0
104          UD    0.100

105          KK    A9-12
106          KM         ROUTE DES PT A9 TO DES PT 12
107          RK      650    0.02   0.013            CIRC       3

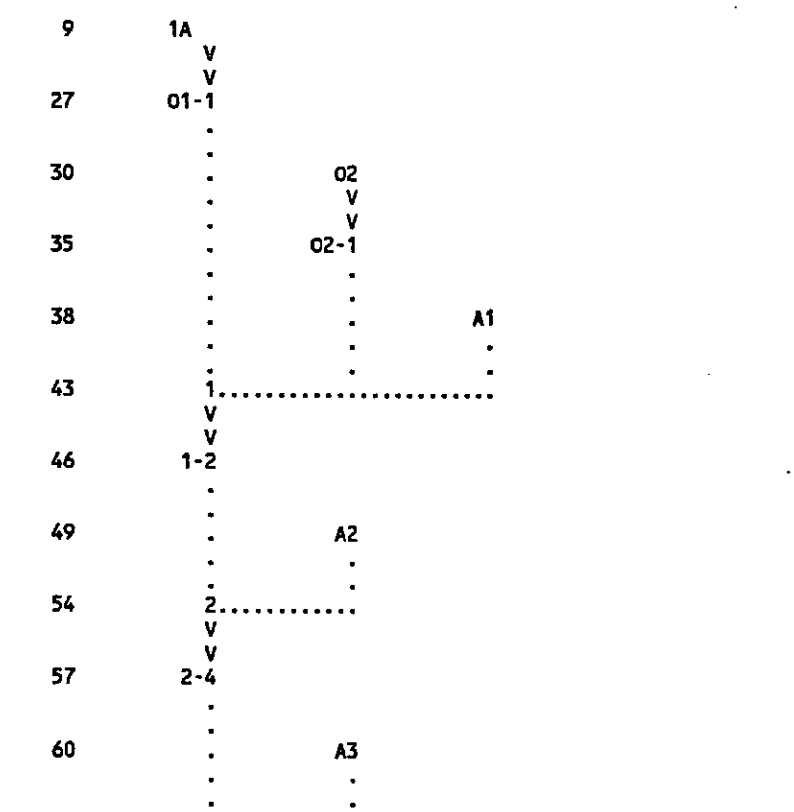
108          KK     A11
109          KM         RUNOFF FROM BASIN A8.2,A11
110          BA    0.083
111          LS        0    88.0
112          UD    0.130

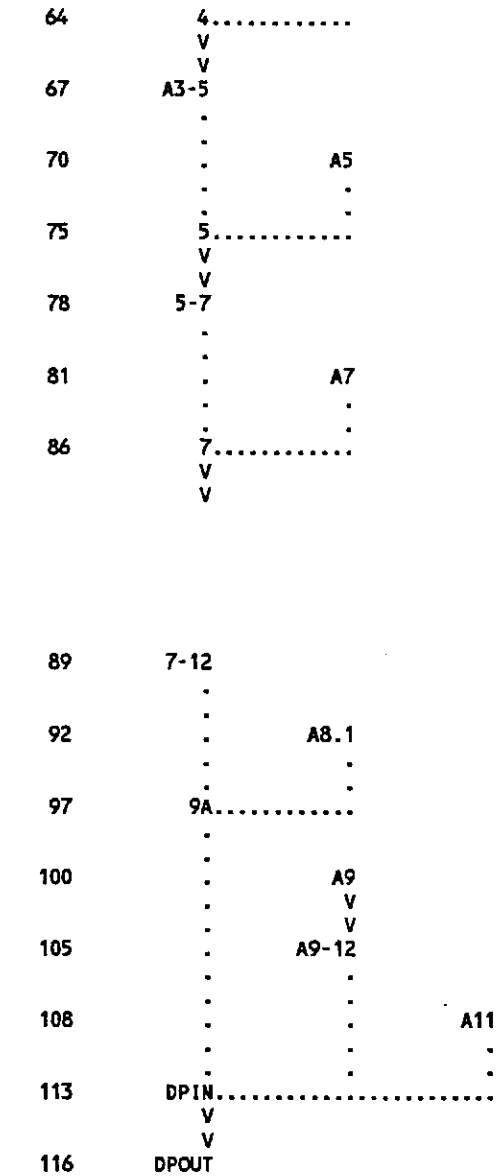
113          KK    DPIN
114          KM         COMBINE ALL FLOWS INTO POND A
115          HC       3

116          KK   DPOUT
117          KM         ROUTE THROUGH DETENTION POND A
118          SV        0     0.1     0.9     3.7     8.0    14.5    22.5    29.8    40.2    47.1
119          SV     59.9    66.6    73.5
120          SE     6611    6612    6613    6614    6615    6616    6617    6618    6619    6620
121          SE   6620.9    6622    6623
122          SQ        0      10      14      19      22      24      28      75     123     162
123          SQ      188     506    1028
124          RS        1    ELEV    6611
125          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK





(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

FAIRLANE TECHNOLGY PARK - URS PROJECT NO. 6742044
MINOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE TA9.INP
USING FULLY DEVELOPED WEST AND EAST OF SH 83 FOR 3M W/
HIST FOR BASINS O-1, O-2, A1, A2 AND A7
USING THE 10-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
RUN DATE 4-1-1993

8 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL90	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL90	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS

TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
					6-HOUR	24-HOUR	72-HOUR			
+	HYDROGRAPH AT	1A	123.	6.08	13.	4.	4.	.26		
+	ROUTED TO	01-1	120.	6.08	13.	4.	4.	.26		
+	HYDROGRAPH AT	02	14.	6.08	2.	1.	1.	.09		
+	ROUTED TO	02-1	13.	6.25	2.	1.	1.	.09		
+	HYDROGRAPH AT	A1	5.	6.08	1.	0.	0.	.06		
+	3 COMBINED AT	1	134.	6.08	15.	6.	5.	.41		
+	ROUTED TO	1-2	126.	6.08	15.	6.	5.	.41		
+	HYDROGRAPH AT	A2	7.	6.00	1.	0.	0.	.06		
+	2 COMBINED AT	2	133.	6.08	16.	6.	6.	.47		
+	ROUTED TO	2-4	122.	6.17	16.	6.	6.	.47		
+	HYDROGRAPH AT	A3	160.	6.00	15.	4.	4.	.09		
+	2 COMBINED AT	4	237.	6.00	31.	10.	10.	.56		

	ROUTED TO	A3-5	229.	6.08	31.	10.	10.	.56		
	HYDROGRAPH AT	A5	248.	6.00	26.	8.	8.	.16		
+	2 COMBINED AT	5	471.	6.00	58.	18.	18.	.73		
+	ROUTED TO	5-7	470.	6.08	58.	18.	18.	.73		
	HYDROGRAPH AT	A7	0.	8.00	0.	0.	0.	.07		
+	2 COMBINED AT	7	470.	6.08	58.	19.	18.	.80		
+	ROUTED TO	7-12	464.	6.08	58.	19.	18.	.80		
	HYDROGRAPH AT	A8.1	48.	6.00	5.	1.	1.	.03		
+	2 COMBINED AT	9A	507.	6.08	63.	20.	19.	.83		
+	HYDROGRAPH AT	A9	161.	6.00	16.	5.	5.	.10		
	ROUTED TO	A9-12	160.	6.00	16.	5.	5.	.10		
+	HYDROGRAPH AT	A11	131.	6.00	13.	4.	4.	.08		
+	3 COMBINED AT	DPIN	759.	6.00	92.	29.	28.	1.01		
	ROUTED TO	DPOUT	74.	6.83	48.	25.	25.	1.01		
									6617.98	6.83

*** NORMAL END OF HEC-1 ***

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

1 HEC-1 INPUT PAGE 1

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

   1          ID         FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
   2          ID         MAJOR SYSTEM HYDROLOGY FOR THE BASIN - INPUT FILE DVAF.INP
   3          ID         USING DEVELOPED WEST OF SH 83 AND THE 3M SITE(A3 - A6)
   4          ID         HISTORIC FOR BASINS O-1, O-2, A-1, A2 AND A7
   5          ID         USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
   6          ID         RUN DATE 4-1-1993
              *DIAGRAM
   7          IT       5 01JUL90     800     300
   8          IO       5
   9          VS    DPIN   DPOUT   DPOUT
  10          VV    2.11    2.11    6.11

  11          KK      O1
  12          KM         RUNOFF FROM BASIN O1
  13          BA   0.264
  14          LS       0    67.8
  15          UD   0.280
  16          IN      15
  17          PB       0
  18          PC   0.000   0.002   0.007   0.013   0.020   0.026   0.035   0.044   0.053   0.063
  19          PC   0.073   0.083   0.092   0.103   0.112   0.122   0.141   0.172   0.202   0.233
  20          PC   0.264   0.330   0.440   1.760   3.080   3.190   3.300   3.366   3.432   3.476
  21          PC   3.520   3.564   3.608   3.630   3.652   3.674   3.696   3.718   3.740   3.762
  22          PC   3.784   3.801   3.817   3.834   3.850   3.867   3.883   3.900   3.916   3.933
  23          PC   3.949   3.966   3.982   3.997   4.011   4.025   4.039   4.052   4.066   4.079
  24          PC   4.092   4.103   4.114   4.125   4.136   4.147   4.158   4.169   4.180   4.191
  25          PC   4.202   4.213   4.224   4.235   4.246   4.257   4.268   4.279   4.290   4.301
  26          PC   4.312   4.318   4.323   4.329   4.334   4.340   4.345   4.351   4.356   4.362
  27          PC   4.367   4.373   4.378   4.384   4.389   4.395   4.400

  28          KK    O1-1
  29          KM         ROUTE BASIN O1 TO DES PT 1
  30          RK    1250    0.02   0.013           CIRC     3.5

  31          KK      O2
  32          KM         RUNOFF FROM BASIN O2
  33          BA   0.086
  34          LS       0    59.8
  35          UD   0.170

  36          KK    O2-1

  37          KM         ROUTE BASIN O2 TO DES PT 1
  38          RK    1850    0.02   0.016           TRAP      44       3

  39          KK      A1
  40          KM         RUNOFF FROM BASIN A1
  41          BA   0.064
  42          LS       0    55.0
  43          UD   0.100
```

HEC-1 INPUT PAGE 2

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

```
 44         KK       1
 45         KM         COMBINE 01,02,A1
 46         HC       3

 47         KK     1-2
 48         KM         ROUTE DES PT 1 TO DES PT 2
 49         RK    1330   0.016    0.013              CIRC      3.5

 50         KK      A2
 51         KM         RUNOFF FROM BASIN A2
 52         BA   0.059
 53         LS       0     56.6
 54         UD   0.080

 55         KK       2
 56         KM         COMBINE DES PT 1, A2
 57         HC       2

 58         KK     2-4
 59         KM         ROUTE DES PT 2 TO DES PT 4
 60         RK    1940     0.02   0.013              CIRC        4

 61         KK      A3
 62         KM         RUNOFF FROM BASINS A3,A4
 63         BA   0.092
 64         LS       0     88.0
 65         UD   0.140

 66         KK       4
 67         KM         COMBINE DES PT 2, A3
 68         HC       2

 69         KK     4-5
 70         KM         ROUTE DES PT 4 TO DES PT 5
 71         RK    1740   0.018    0.013              CIRC        4

 72         KK      A5
 73         KM         RUNOFF FROM BASINS A5,A6
 74         BA   0.164
 75         LS       0     88.0
 76         UD   0.150

 77         KK       5
 78         KM         COMBINE DES PT 4, A5
 79         HC       2

 80         KK     5-7

 81         KM         ROUTE DES PT 5 TO DES PT 7
 82         RK    1100   0.005    0.015              TRAP        6      1.5
```



```
 83         KK      A7
 84         KM         RUNOFF FROM BASIN A7
 85         BA   0.068
 86         LS       0     49.0
 87         UD   0.130

 88         KK       7
 89         KM         COMBINE DES PT 5, A7
 90         HC       2

 91         KK    7-12
 92         KM         ROUTE DES PT 7 TO DES PT 12
 93         RK    2200     0.02   0.015              TRAP        6      1.5

 94         KK   A8.1
 95         KM         RUNOFF FROM BASIN A8.1
 96         BA   0.030
 97         LS       0     88.0
```

```
 98          UD   0.130

 99          KK     9A
100          KM        COMBINE DES PT 7, A8.1 CONCRETE CHANNEL DESIGN FLOW
101          HC      2

102          KK     A9
103          KM        RUNOFF FROM BASIN A9,A10
104          BA   0.096
105          LS      0    88.0
106          UD   0.100

107          KK   A9-12
108          KM        ROUTE BASIN A9 TO DES PT 12
109          RK    650    0.02   0.013            CIRC       3

110          KK    A11
111          KM        RUNOFF FROM BASIN A8.2,A11
112          BA   0.083
113          LS      0    88.0
114          UD   0.130

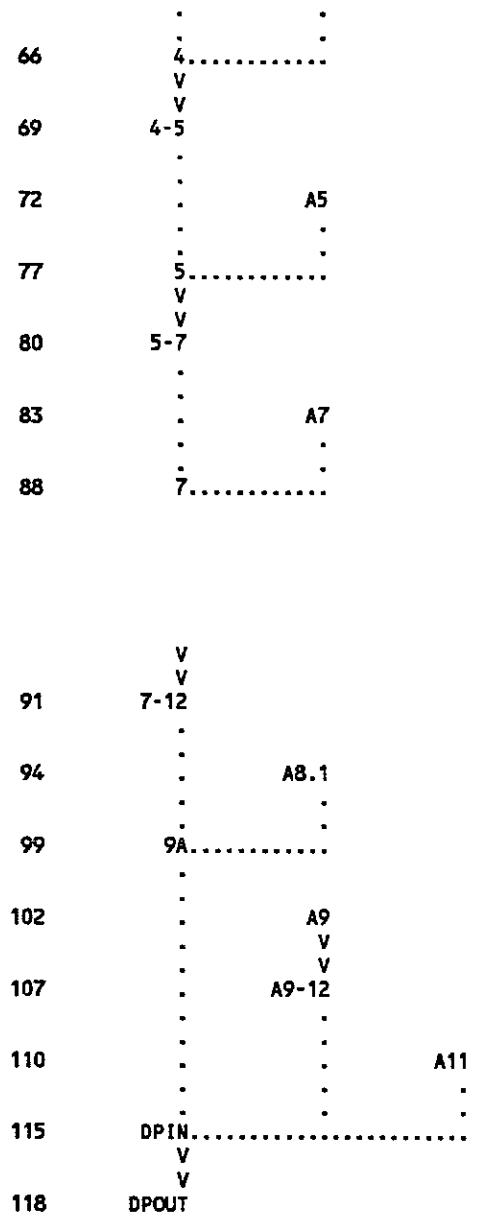
115          KK    DPIN
116          KM        COMBINE ALL FLOWS INTO POND A
117          HC      3

118          KK   DPOUT
119          KM        ROUTE THROUGH DETENTION POND A
120          SV      0     0.1     0.9     3.7     8.0    14.5    22.5    29.8    40.2    47.1
121          SV   59.9    66.6    73.5
122          SE   6611    6612    6613    6614    6615    6616    6617    6618    6619    6620
123          SE 6620.9    6622    6623
124          SQ      0      10      14      19      22      24      28      75     123     162
125          SQ    188     506    1028
126          RS      1    ELEV    6611


127          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   11          O1
               V
               V
   28        O1-1
               .
               .
   31          .          O2
               .           V
               .           V
   36          .         O2-1
               .           .
               .           .
   39          .           .          A1
               .           .           .
               .           .           .
   44          1.......................
               V
               V
   47        1-2
               .
               .
   50          .          A2
               .           .
               .           .
   55          2...........
               V
               V
   58        2-4
               .
               .
   61          .          A3
```



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
MAJOR SYSTEM HYDROLOGY FOR THE BASIN - INPUT FILE DVAF.INP
USING DEVELOPED WEST OF SH 83 AND THE 3M SITE(A3 - A6)
HISTORIC FOR BASINS 0-1, 0-2, A-1, A2 AND A7
USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
RUN DATE 4-1-1993

8 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL90	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL90	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

USER-DEFINED OUTPUT SPECIFICATIONS

TABLE 1

VS	STATION	DPIN	DPOUT	DPOUT							
VV	VARIABLE CODE	2.11	2.11	6.11	.00	.00	.00	.00	.00	.00	.00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+					6-HOUR	24-HOUR	72-HOUR			
+	HYDROGRAPH AT	01	230.	6.17	32.	10.	10.	.26		
+	ROUTED TO	01-1	226.	6.17	32.	10.	10.	.26		
+	HYDROGRAPH AT	02	58.	6.08	6.	2.	2.	.09		
+	ROUTED TO	02-1	56.	6.17	7.	2.	2.	.09		
+	HYDROGRAPH AT	A1	33.	6.00	3.	1.	1.	.06		
+	3 COMBINED AT	1	298.	6.17	41.	14.	13.	.41		
+	ROUTED TO	1-2	294.	6.17	41.	14.	13.	.41		
+	HYDROGRAPH AT	A2	41.	6.00	4.	1.	1.	.06		
+	2 COMBINED AT	2	307.	6.17	45.	15.	14.	.47		

ROUTED TO

+		2-4	303.	6.17	45.	15.	14.	.47		
	HYDROGRAPH AT									
+	A3	243.	6.00	26.	8.	7.	.09			
	2 COMBINED AT									
+	4	498.	6.08	70.	23.	22.	.56			
	ROUTED TO									
+	4-5	485.	6.08	70.	23.	22.	.56			
	HYDROGRAPH AT									
+	A5	426.	6.00	46.	14.	13.	.16			
	2 COMBINED AT									
+	5	888.	6.08	116.	36.	35.	.73			
	ROUTED TO									
+	5-7	878.	6.08	116.	36.	35.	.73			
	HYDROGRAPH AT									
+	A7	16.	6.08	2.	1.	1.	.07			
	2 COMBINED AT									
+	7	893.	6.08	118.	37.	36.	.80			
	ROUTED TO									
+	7-12	874.	6.08	118.	37.	36.	.80			
	HYDROGRAPH AT									
+	A8.1	81.	6.00	8.	3.	2.	.03			
	2 COMBINED AT									
+	9A	946.	6.08	126.	40.	38.	.83			
	HYDROGRAPH AT									
+	A9	270.	6.00	27.	8.	8.	.10			
	ROUTED TO									
+	A9-12	268.	6.00	27.	8.	8.	.10			
	HYDROGRAPH AT									
+	A11	223.	6.00	23.	7.	7.	.08			
	3 COMBINED AT									
+	DPIN	1357.	6.08	176.	55.	53.	1.01			
	ROUTED TO									
+	DPOUT	178.	6.83	123.	48.	46.	1.01			
+									6620.57	6.83

1TABLE 1 STATION

PER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
1	1	JUL	0800	.00	.00	.00
2	1	JUL	0805	.00	.00	.00
3	1	JUL	0810	.00	.00	.00
4	1	JUL	0815	.00	.00	.00
5	1	JUL	0820	.00	.00	.00
6	1	JUL	0825	.00	.00	.00
7	1	JUL	0830	.00	.00	.00
8	1	JUL	0835	.00	.00	.00
9	1	JUL	0840	.00	.00	.00
10	1	JUL	0845	.00	.00	.00
11	1	JUL	0850	.00	.00	.00
12	1	JUL	0855	.00	.00	.00
13	1	JUL	0900	.00	.00	.00
14	1	JUL	0905	.00	.00	.00
15	1	JUL	0910	.00	.00	.00
16	1	JUL	0915	.00	.00	.00
17	1	JUL	0920	.00	.00	.00
18	1	JUL	0925	.00	.00	.00

19	1	JUL	0930	.00	.00	.00
20	1	JUL	0935	.00	.00	.00
21	1	JUL	0940	.00	.00	.00
22	1	JUL	0945	.00	.00	.00
23	1	JUL	0950	.00	.00	.00
24	1	JUL	0955	.00	.00	.00
25	1	JUL	1000	.00	.00	.00
26	1	JUL	1005	.00	.00	.00
27	1	JUL	1010	.00	.00	.00
28	1	JUL	1015	.00	.00	.00
29	1	JUL	1020	.00	.00	.00
30	1	JUL	1025	.00	.00	.00
31	1	JUL	1030	.00	.00	.00
32	1	JUL	1035	.00	.00	.00
33	1	JUL	1040	.00	.00	.00
34	1	JUL	1045	.00	.00	.00
35	1	JUL	1050	.00	.00	.00
36	1	JUL	1055	.00	.00	.00
37	1	JUL	1100	.00	.00	.00
38	1	JUL	1105	.00	.00	.00
39	1	JUL	1110	.00	.00	.00
40	1	JUL	1115	.00	.00	.00
41	1	JUL	1120	.00	.00	.00
42	1	JUL	1125	.00	.00	.00
43	1	JUL	1130	.00	.00	.00
44	1	JUL	1135	.00	.00	.00
45	1	JUL	1140	.00	.00	.00
46	1	JUL	1145	.00	.00	.00
47	1	JUL	1150	.00	.00	.00
48	1	JUL	1155	.00	.00	.00
49	1	JUL	1200	.00	.00	.00
50	1	JUL	1205	.00	.00	.00

1TABLE 1 STATION

(CONT.)				DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY	MON	HRMN			
51	1	JUL	1210	.00	.00	.00
52	1	JUL	1215	.00	.00	.00
53	1	JUL	1220	.00	.00	.00
54	1	JUL	1225	.00	.00	.00
55	1	JUL	1230	.00	.00	.00
56	1	JUL	1235	.00	.00	.00
57	1	JUL	1240	.00	.00	.00
58	1	JUL	1245	.00	.00	.00
59	1	JUL	1250	.00	.00	.00
60	1	JUL	1255	.00	.00	.00
61	1	JUL	1300	.00	.00	.00
62	1	JUL	1305	.04	.01	.00
63	1	JUL	1310	.28	.09	.00
64	1	JUL	1315	.92	.35	.00
65	1	JUL	1320	2.33	1.00	.01
66	1	JUL	1325	5.16	2.41	.02
67	1	JUL	1330	10.12	5.09	.05
68	1	JUL	1335	77.36	10.98	.30
69	1	JUL	1340	271.40	14.91	1.41
70	1	JUL	1345	571.85	19.34	4.19
71	1	JUL	1350	858.64	22.30	8.98
72	1	JUL	1355	1105.53	24.54	15.58
73	1	JUL	1400	1336.28	36.23	23.78
74	1	JUL	1405	1357.05	88.04	32.63
75	1	JUL	1410	1084.34	123.58	40.30
76	1	JUL	1415	789.41	154.64	45.80
77	1	JUL	1420	583.33	166.71	49.42
78	1	JUL	1425	446.81	171.55	51.80
79	1	JUL	1430	354.74	174.73	53.37
80	1	JUL	1435	286.70	176.76	54.37
81	1	JUL	1440	232.09	177.91	54.93
82	1	JUL	1445	192.13	178.38	55.17
83	1	JUL	1450	165.14	178.39	55.17
84	1	JUL	1455	147.31	178.08	55.02
85	1	JUL	1500	135.56	177.57	54.77
86	1	JUL	1505	124.93	176.91	54.44

PER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
87	1	JUL	1510	112.91	176.11	54.05
88	1	JUL	1515	102.21	175.16	53.58
89	1	JUL	1520	94.07	174.09	53.05
90	1	JUL	1525	88.30	172.93	52.48
91	1	JUL	1530	84.25	171.73	51.89
92	1	JUL	1535	81.40	170.49	51.28
93	1	JUL	1540	79.48	169.24	50.67
94	1	JUL	1545	78.29	167.99	50.05
95	1	JUL	1550	77.63	166.74	49.43
96	1	JUL	1555	77.28	165.50	48.82
97	1	JUL	1600	77.11	164.27	48.22
98	1	JUL	1605	74.37	163.04	47.61
99	1	JUL	1610	67.80	161.35	46.98
100	1	JUL	1615	60.57	157.64	46.33

TABLE 1 (CONT.) STATION

PER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
101	1	JUL	1620	54.45	153.82	45.65
102	1	JUL	1625	49.86	149.93	44.97
103	1	JUL	1630	46.54	146.05	44.28
104	1	JUL	1635	44.08	142.20	43.60
105	1	JUL	1640	42.29	138.42	42.93
106	1	JUL	1645	41.05	134.73	42.27
107	1	JUL	1650	40.26	131.14	41.64
108	1	JUL	1655	39.76	127.66	41.02
109	1	JUL	1700	39.45	124.29	40.43
110	1	JUL	1705	39.27	121.40	39.85
111	1	JUL	1710	39.17	118.83	39.30
112	1	JUL	1715	39.11	116.34	38.76
113	1	JUL	1720	39.09	113.92	38.23
114	1	JUL	1725	39.09	111.58	37.73
115	1	JUL	1730	39.09	109.31	37.23
116	1	JUL	1735	39.11	107.11	36.76
117	1	JUL	1740	39.13	104.99	36.30
118	1	JUL	1745	39.16	102.93	35.85
119	1	JUL	1750	39.19	100.93	35.42
120	1	JUL	1755	39.22	99.00	35.00
121	1	JUL	1800	39.26	97.13	34.60
122	1	JUL	1805	38.72	95.31	34.20
123	1	JUL	1810	37.38	93.52	33.81
124	1	JUL	1815	35.82	91.74	33.43
125	1	JUL	1820	34.29	89.97	33.04
126	1	JUL	1825	32.92	88.20	32.66
127	1	JUL	1830	31.82	86.46	32.28
128	1	JUL	1835	31.03	84.73	31.91
129	1	JUL	1840	30.62	83.05	31.54
130	1	JUL	1845	30.45	81.40	31.19
131	1	JUL	1850	30.30	79.81	30.84
132	1	JUL	1855	30.04	78.25	30.51
133	1	JUL	1900	29.76	76.74	30.18
134	1	JUL	1905	29.62	75.27	29.86
135	1	JUL	1910	29.70	73.39	29.55
136	1	JUL	1915	29.89	71.50	29.26
137	1	JUL	1920	29.98	69.70	28.98
138	1	JUL	1925	29.88	67.97	28.71
139	1	JUL	1930	29.69	66.32	28.45
140	1	JUL	1935	29.61	64.73	28.20
141	1	JUL	1940	29.73	63.21	27.97
142	1	JUL	1945	29.94	61.76	27.74
143	1	JUL	1950	30.05	60.38	27.53
144	1	JUL	1955	29.96	59.06	27.32
145	1	JUL	2000	29.78	57.80	27.13
146	1	JUL	2005	29.71	56.58	26.94
147	1	JUL	2010	29.83	55.42	26.76
148	1	JUL	2015	30.05	54.31	26.59
149	1	JUL	2020	30.16	53.26	26.42
150	1	JUL	2025	30.06	52.26	26.27

ABLE 1 (CONT.) STATION

DPIN FLOW	DPOUT FLOW	DPOUT STORAGE

PER	DAY	MON	HRMN			
151	1	JUL	2030	29.88	51.29	26.12
152	1	JUL	2035	29.81	50.36	25.97
153	1	JUL	2040	29.93	49.47	25.83
154	1	JUL	2045	30.15	48.63	25.70
155	1	JUL	2050	30.26	47.83	25.58
156	1	JUL	2055	30.17	47.07	25.46
157	1	JUL	2100	29.98	46.33	25.35
158	1	JUL	2105	29.69	45.61	25.24
159	1	JUL	2110	29.28	44.91	25.13
160	1	JUL	2115	28.87	44.23	25.02
161	1	JUL	2120	28.38	43.55	24.92
162	1	JUL	2125	27.82	42.88	24.81
163	1	JUL	2130	27.30	42.21	24.71
164	1	JUL	2135	26.85	41.56	24.61
165	1	JUL	2140	26.50	40.91	24.51
166	1	JUL	2145	26.25	40.28	24.41
167	1	JUL	2150	26.07	39.67	24.31
168	1	JUL	2155	25.95	39.08	24.22
169	1	JUL	2200	25.86	38.51	24.13
170	1	JUL	2205	25.70	37.95	24.05
171	1	JUL	2210	25.41	37.42	23.96
172	1	JUL	2215	25.09	36.89	23.88
173	1	JUL	2220	24.89	36.37	23.80
174	1	JUL	2225	24.91	35.87	23.72
175	1	JUL	2230	25.05	35.40	23.65
176	1	JUL	2235	25.12	34.95	23.58
177	1	JUL	2240	25.00	34.52	23.51
178	1	JUL	2245	24.80	34.11	23.45
179	1	JUL	2250	24.59	33.70	23.39
180	1	JUL	2255	24.44	33.30	23.32
181	1	JUL	2300	24.33	32.91	23.26
182	1	JUL	2305	24.03	32.53	23.20
183	1	JUL	2310	23.44	32.15	23.15
184	1	JUL	2315	22.78	31.76	23.08
185	1	JUL	2320	22.16	31.36	23.02
186	1	JUL	2325	21.66	30.95	22.96
187	1	JUL	2330	21.30	30.54	22.89
188	1	JUL	2335	21.03	30.13	22.83
189	1	JUL	2340	20.82	29.73	22.77
190	1	JUL	2345	20.66	29.34	22.71
191	1	JUL	2350	20.56	28.96	22.65
192	1	JUL	2355	20.50	28.60	22.59
193	2	JUL	0000	20.46	28.24	22.54
194	2	JUL	0005	20.43	27.99	22.49
195	2	JUL	0010	20.42	27.97	22.43
196	2	JUL	0015	20.42	27.94	22.38
197	2	JUL	0020	20.42	27.91	22.33
198	2	JUL	0025	20.42	27.89	22.28
199	2	JUL	0030	20.42	27.86	22.23
200	2	JUL	0035	20.43	27.84	22.18

TABLE 1 (CONT.)	STATION	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE

PER	DAY	MON	HRMN			
201	2	JUL	0040	20.43	27.81	22.12
202	2	JUL	0045	20.44	27.79	22.07
203	2	JUL	0050	20.45	27.76	22.02
204	2	JUL	0055	20.45	27.74	21.97
205	2	JUL	0100	20.46	27.71	21.92
206	2	JUL	0105	20.47	27.69	21.87
207	2	JUL	0110	20.47	27.66	21.82
208	2	JUL	0115	20.48	27.64	21.77
209	2	JUL	0120	20.49	27.61	21.72
210	2	JUL	0125	20.49	27.59	21.68
211	2	JUL	0130	20.50	27.56	21.63
212	2	JUL	0135	20.51	27.54	21.58
213	2	JUL	0140	20.51	27.52	21.53
214	2	JUL	0145	20.52	27.49	21.48
215	2	JUL	0150	20.53	27.47	21.43
216	2	JUL	0155	20.53	27.44	21.39

217	2 JUL	0200	20.54	27.42	21.34
218	2 JUL	0205	20.55	27.40	21.29
219	2 JUL	0210	20.55	27.37	21.24
220	2 JUL	0215	20.56	27.35	21.20
221	2 JUL	0220	20.57	27.33	21.15
222	2 JUL	0225	20.57	27.30	21.10
223	2 JUL	0230	20.58	27.28	21.06
224	2 JUL	0235	20.59	27.26	21.01
225	2 JUL	0240	20.59	27.23	20.97
226	2 JUL	0245	20.60	27.21	20.92
227	2 JUL	0250	20.61	27.19	20.88
228	2 JUL	0255	20.61	27.17	20.83
229	2 JUL	0300	20.62	27.14	20.79
230	2 JUL	0305	20.63	27.12	20.74
231	2 JUL	0310	20.63	27.10	20.70
232	2 JUL	0315	20.64	27.08	20.65
33	2 JUL	0320	20.65	27.05	20.61
34	2 JUL	0325	20.65	27.03	20.56
235	2 JUL	0330	20.66	27.01	20.52
236	2 JUL	0335	20.67	26.99	20.48
37	2 JUL	0340	20.67	26.97	20.43
38	2 JUL	0345	20.68	26.94	20.39
239	2 JUL	0350	20.69	26.92	20.35
240	2 JUL	0355	20.69	26.90	20.30
241	2 JUL	0400	20.70	26.88	20.26
42	2 JUL	0405	20.18	26.86	20.22
43	2 JUL	0410	18.93	26.83	20.17
244	2 JUL	0415	17.45	26.80	20.11
245	2 JUL	0420	15.90	26.77	20.04
46	2 JUL	0425	14.45	26.73	19.96
47	2 JUL	0430	13.29	26.68	19.87
248	2 JUL	0435	12.41	26.64	19.77
249	2 JUL	0440	11.85	26.59	19.67
250	2 JUL	0445	11.50	26.54	19.57

ABLE 1 (CONT.) STATION

ER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
251	2	JUL	0450	11.25	26.48	19.47
252	2	JUL	0455	10.95	26.43	19.36
253	2	JUL	0500	10.65	26.38	19.25
54	2	JUL	0505	10.44	26.32	19.15
55	2	JUL	0510	10.41	26.27	19.04
256	2	JUL	0515	10.51	26.21	18.93
257	2	JUL	0520	10.58	26.16	18.82
58	2	JUL	0525	10.52	26.11	18.71
59	2	JUL	0530	10.37	26.05	18.60
260	2	JUL	0535	10.25	26.00	18.50
261	2	JUL	0540	10.29	25.94	18.39
262	2	JUL	0545	10.43	25.89	18.28
63	2	JUL	0550	10.54	25.84	18.18
64	2	JUL	0555	10.50	25.78	18.07
265	2	JUL	0600	10.36	25.73	17.96
266	2	JUL	0605	10.25	25.68	17.86
67	2	JUL	0610	10.30	25.63	17.75
68	2	JUL	0615	10.44	25.57	17.65
269	2	JUL	0620	10.55	25.52	17.54
270	2	JUL	0625	10.51	25.47	17.44
271	2	JUL	0630	10.37	25.42	17.34
72	2	JUL	0635	10.26	25.37	17.23
73	2	JUL	0640	10.31	25.31	17.13
274	2	JUL	0645	10.45	25.26	17.03
75	2	JUL	0650	10.56	25.21	16.93
76	2	JUL	0655	10.52	25.16	16.82
277	2	JUL	0700	10.37	25.11	16.72
278	2	JUL	0705	10.27	25.06	16.62

279	2 JUL	0710	10.31	25.01	16.52
280	2 JUL	0715	10.46	24.96	16.42
281	2 JUL	0720	10.57	24.91	16.32
282	2 JUL	0725	10.53	24.86	16.22
283	2 JUL	0730	10.38	24.81	16.12
284	2 JUL	0735	10.28	24.76	16.02
285	2 JUL	0740	10.32	24.71	15.92
286	2 JUL	0745	10.47	24.66	15.83
287	2 JUL	0750	10.58	24.61	15.73
288	2 JUL	0755	10.54	24.57	15.63
289	2 JUL	0800	10.39	24.52	15.53
290	2 JUL	0805	9.72	24.47	15.44
291	2 JUL	0810	8.47	24.41	15.33
292	2 JUL	0815	7.13	24.36	15.22
293	2 JUL	0820	5.12	24.29	15.09
294	2 JUL	0825	3.96	24.23	14.95
295	2 JUL	0830	3.03	24.16	14.81
296	2 JUL	0835	2.25	24.08	14.66
297	2 JUL	0840	1.75	24.01	14.51
298	2 JUL	0845	1.37	23.96	14.36
299	2 JUL	0850	1.07	23.91	14.20
300	2 JUL	0855	.84	23.86	14.04
		MAX	1357.05	178.39	55.17
		MIN	.00	.00	.00
		AVE	52.45	45.70	20.63

*** NORMAL END OF HEC-1 ***

****
FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

   1          ID         FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
   2          ID         MINOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE TA7.INP
   3          ID         USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
   4          ID         WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM 01&2,A1,& 2 TO B4
   5          ID         USING THE 10-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
   6          ID         RUN DATE 4-1-1993
              *DIAGRAM
   7          IT       5 01JUL90     800     300
   8          IO       5

   9          KK      A3
  10          KM         RUNOFF FROM BASINS A3,A4
  11          BA   0.092
  12          LS       0    88.0
  13          UD   0.140
  14          IN      15
  15          PB       0
  16          PC   0.000   0.001   0.005   0.009   0.014   0.018   0.024   0.033   0.036   0.043
  17          PC   0.050   0.057   0.063   0.070   0.076   0.083   0.096   0.117   0.138   0.159
  18          PC   0.180   0.225   0.300   1.200   2.100   2.175   2.250   2.295   2.340   2.370
  19          PC   2.400   2.430   2.460   2.475   2.490   2.505   2.520   2.535   2.550   2.565
  20          PC   2.580   2.591   2.603   2.614   2.625   2.637   2.648   2.659   2.670   2.682
  21          PC   2.693   2.704   2.715   2.725   2.735   2.744   2.754   2.763   2.772   2.781
  22          PC   2.790   2.798   2.805   2.813   2.820   2.828   2.835   2.843   2.850   2.858
  23          PC   2.865   2.873   2.880   2.888   2.895   2.903   2.910   2.918   2.925   2.933
  24          PC   2.940   2.944   2.948   2.952   2.955   2.959   2.963   2.967   2.970   2.974
  25          PC   2.978   2.982   2.985   2.989   2.993   2.997   3.000

  26          KK    A3-5
  27          KM         ROUTE BASIN A3 TO DES PT 5
  28          RK    1740   0.018   0.013            CIRC       4

  29          KK      A5
  30          KM         RUNOFF FROM BASIN A5 & A6
  31          BA   0.164
  32          LS       0    88.0
  33          UD   0.150

  34          KK       5
  35          KM         COMBINE A3 & A5
  36          HC       2

  37          KK     5-7
  38          KM         ROUTE DESIGN PT 5 TO DESIGN PT 7
  39          RK    1100   0.005   0.015            TRAP       6     1.5

  40          KK      A7
  41          KM         RUNOFF FROM BASIN A7
  42          BA   0.068
  43          LS       0    88.0
  44          UD   0.130
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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 45           KK       7
 46           KM         COMBINE DES PT 5 & A7
 47           HC       2

 48           KK    7-12
 49           KM         ROUTE DES PT 7 TO DES PT 12
 50           RK    2200    0.02   0.015            TRAP       6     1.5

 51           KK    A8.1
 52           KM         RUNOFF FROM BASIN A8.1
 53           BA   0.030
 54           LS       0    88.0
 55           UD   0.130

 56           KK      9A
 57           KM         COMBINE DES PT 7, A8.1 CONCRETE CHANNEL DESIGN FLOW
 58           HC       2

 59           KK      A9
 60           KM         RUNOFF FROM BASIN A9,A10
 61           BA   0.096
 62           LS       0    88.0
 63           UD   0.100

 64           KK    A9-12
 65           KM         ROUTE DES PT A9 TO DES PT 12
 66           RK     650    0.02   0.013            CIRC       3

 67           KK     A11
 68           KM         RUNOFF FROM BASIN A8.2,A11
 69           BA   0.083
 70           LS       0    88.0
 71           UD   0.130

 72           KK    DPIN
 73           KM         COMBINE ALL FLOWS INTO POND A
 74           HC       3

 75           KK   DPOUT
 76           KM         ROUTE THROUGH DETENTION POND A
 77           SV       0     0.1     0.9     3.7     8.0    14.5    22.5    29.8    40.2    47.1
 78           SV    59.9    66.6    73.5
 79           SE    6611    6612    6613    6614    6615    6616    6617    6618    6619    6620
 80           SE  6620.9    6622    6623
 81           SQ       0      10      14      19      22      24      28      75     123     162

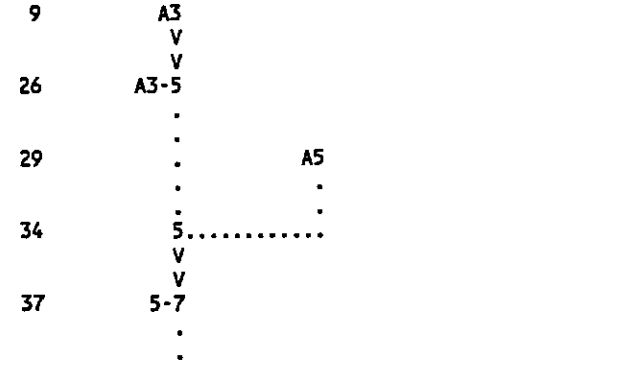
 82           SQ     188     506    1028
 83           RS       1    ELEV    6611
 84           ZZ
```

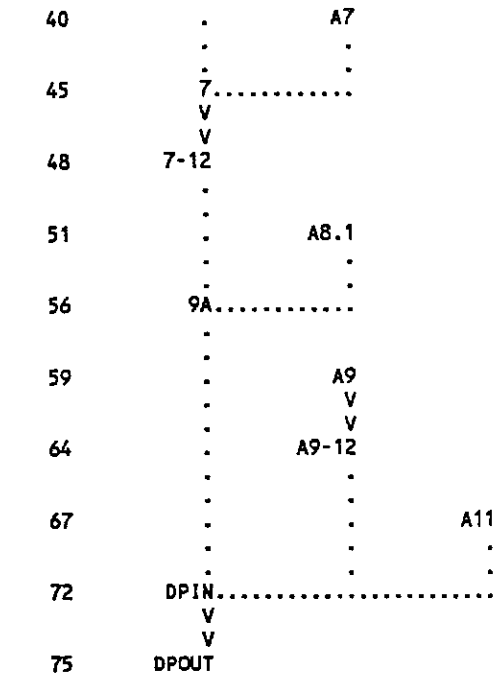
1

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

(V) ROUTING
(.) CONNECTOR
(---->) DIVERSION OR PUMP FLOW
(<----) RETURN OF DIVERTED OR PUMPED FLOW





(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
MINOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE TA7.INP
USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM O1&2,A1,& 2 TO B4
USING THE 10-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
RUN DATE 4-1-1993

8 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL90	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL90	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	A3	143.	6.00	15.	4.	4.	.09		
	ROUTED TO	A3-5	137.	6.00	15.	5.	4.	.09		
+	HYDROGRAPH AT	A5	248.	6.00	26.	8.	8.	.16		
+	2 COMBINED AT	5	385.	6.00	41.	13.	12.	.26		
+	ROUTED TO	5-7	380.	6.08	41.	13.	12.	.26		
	HYDROGRAPH AT	A7	108.	6.00	11.	3.	3.	.07		
+	2 COMBINED AT	7	479.	6.00	52.	16.	15.	.32		
+	ROUTED TO	7-12	478.	6.08	52.	16.	15.	.32		
	HYDROGRAPH AT	A8.1	48.	6.00	5.	1.	1.	.03		
+	2 COMBINED AT	9A	522.	6.08	57.	17.	17.	.35		
+	HYDROGRAPH AT	A9	161.	6.00	16.	5.	5.	.10		
	ROUTED TO	A9-12	160.	6.00	16.	5.	5.	.10		
+	HYDROGRAPH AT	A11	131.	6.00	13.	4.	4.	.08		
+	3 COMBINED AT	DPIN	795.	6.00	86.	26.	25.	.53		
	ROUTED TO	DPOUT	71.	6.75	44.	24.	23.	.53	6617.92	6.75

*** NORMAL END OF HEC-1 ***

****
FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3


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

   1          ID         FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
   2          ID         MAJOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE DA5.INP
   3          ID         USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
   4          ID         WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM O1&2,A1,& 2 TO B4
   5          ID         USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
   6          ID         RUN DATE 4-1-1993
              *DIAGRAM
   7          IT       5 01JUL90     800     300
   8          IO       5
   9          VS    DPIN   DPOUT   DPOUT
  10          VV    2.11    2.11    6.11

  11          KK      A3
  12          KM         RUNOFF FROM BASINS A3, A4
  13          BA   0.092
  14          LS       0    88.0
  15          UD   0.140
  16          IN      15
  17          PB       0
  18          PC   0.000   0.002   0.007   0.013   0.020   0.026   0.035   0.044   0.053   0.063
  19          PC   0.073   0.083   0.092   0.103   0.112   0.122   0.141   0.172   0.202   0.233
  20          PC   0.264   0.330   0.440   1.760   3.080   3.190   3.300   3.366   3.432   3.476
  21          PC   3.520   3.564   3.608   3.630   3.652   3.674   3.696   3.718   3.740   3.762
  22          PC   3.784   3.801   3.817   3.834   3.850   3.867   3.883   3.900   3.916   3.933
  23          PC   3.949   3.966   3.982   3.997   4.011   4.025   4.039   4.052   4.066   4.079
  24          PC   4.092   4.103   4.114   4.125   4.136   4.147   4.158   4.169   4.180   4.191
  25          PC   4.202   4.213   4.224   4.235   4.246   4.257   4.268   4.279   4.290   4.301
  26          PC   4.312   4.318   4.323   4.329   4.334   4.340   4.345   4.351   4.356   4.362
  27          PC   4.367   4.373   4.378   4.384   4.389   4.395   4.400

  28          KK    A3-5
  29          KM         ROUTE BASIN A3 TO DES PT 5
  30          RK    1740   0.018   0.013            CIRC       4

  31          KK      A5
  32          KM         RUNOFF FROM BASIN A5 & A6
  33          BA   0.164
  34          LS       0    88.0
  35          UD   0.150

  36          KK       5

  37          KM         COMBINE A3 & A5
  38          HC       2

  39          KK     5-7
  40          KM         ROUTE DESIGN PT 5 TO DES PT 7
  41          RK    1100   0.005   0.015            TRAP       6     1.5

  42          KK      A7
  43          KM         RUNOFF FROM BASIN A7
  44          BA   0.078
  45          LS       0    88.0
```

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

   46         UD   0.130
   47         KK       7
   48         KM         COMBINE DES PT 5 & A7
   49         HC       2

   50         KK    7-12
   51         KM         ROUTE DES PT 7 TO DES PT 12
   52         RK    2200    0.02   0.015            TRAP       6     1.5

   53         KK    A8.1
   54         KM         RUNOFF FROM BASIN A8.1
   55         BA   0.030
   56         LS       0    88.0
   57         UD   0.130

   58         KK      9A
   59         KM         COMBINE DES PT 7, A8.1 CONCRETE CHANNEL DESIGN FLOW
   60         HC       2

   61         KK      A9
   62         KM         RUNOFF FROM BASIN A9,A10
   63         BA   0.096
   64         LS       0    88.0
   65         UD   0.100

   66         KK    A9-12
   67         KM         ROUTE DES PT A9 TO DES PT 12
   68         RK     650    0.02   0.013            CIRC       3

   69         KK     A11
   70         KM         RUNOFF FROM BASIN A8.2,A11
   71         BA   0.083
   72         LS       0    88.0
   73         UD   0.130

   74         KK    DPIN
   75         KM         COMBINE ALL FLOWS INTO POND A
   76         HC       3

   77         KK   DPOUT
   78         KM          ROUTE THROUGH DETENTION POND A
   79         SV       0     0.1     0.9     3.7     8.0    14.5    22.5    29.8    40.2    47.1
   80         SV    59.9    66.6    73.5
   81         SE    6611    6612    6613    6614    6615    6616    6617    6618    6619    6620

   82         SE  6620.9    6622    6623
   83         SQ       0      10      14      19      22      24      28      75     123     162
   84         SQ     188     506    1028
   85         RS       1    ELEV    6611
   86         ZZ
```

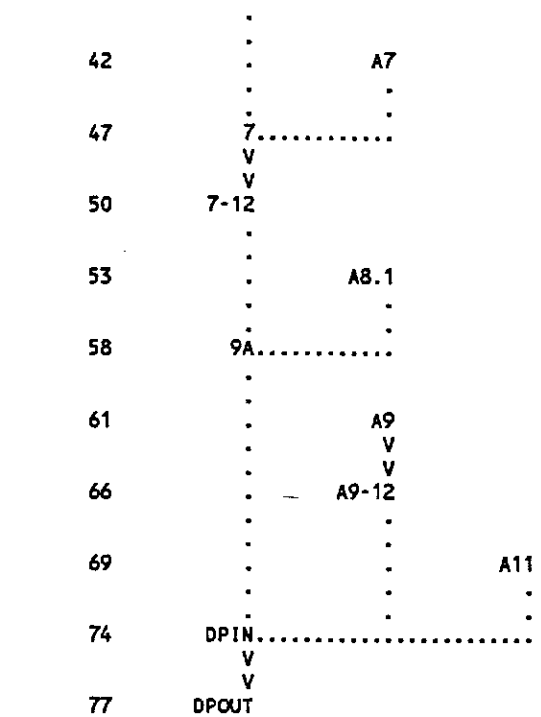
1

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   11        A3
             V
             V
   28       A3-5
             .
             .
   31        .          A5
             .           .
             .           .
   36        5.............
             V
             V
   39       5-7
```



***) RUNOFF ALSO COMPUTED AT THIS LOCATION

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
MAJOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE DA5.INP
USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM O1&2,A1,& 2 TO B4
USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
RUN DATE 4-1-1993

8 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL90	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL90	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

USER-DEFINED OUTPUT SPECIFICATIONS

TABLE 1

VS	STATION	DPIN	DPOUT	DPOUT							
VV	VARIABLE CODE	2.11	2.11	6.11	.00	.00	.00	.00	.00	.00	.00

RNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	A3	243.	6.00	26.	8.	7.	.09		
	ROUTED TO	A3-5	237.	6.00	26.	8.	7.	.09		
+	HYDROGRAPH AT	A5	426.	6.00	46.	14.	13.	.16		
+	2 COMBINED AT	5	663.	6.00	72.	21.	21.	.26		
	ROUTED TO	5-7	647.	6.00	72.	21.	21.	.26		
+	HYDROGRAPH AT	A7	210.	6.00	22.	7.	6.	.08		
+	2 COMBINED AT	7	857.	6.00	94.	28.	27.	.33		
	ROUTED TO	7-12	833.	6.08	94.	28.	27.	.33		
+	HYDROGRAPH AT	A8.1	81.	6.00	8.	3.	2.	.03		
+	2 COMBINED AT	9A	913.	6.00	102.	30.	29.	.36		
	HYDROGRAPH AT	A9	270.	6.00	27.	8.	8.	.10		
+	ROUTED TO	A9-12	268.	6.00	27.	8.	8.	.10		
+	HYDROGRAPH AT	A11	223.	6.00	23.	7.	7.	.08		
	3 COMBINED AT	DPIN	1404.	6.00	152.	45.	44.	.54		
+	ROUTED TO	DPOUT	169.	6.58	103.	40.	39.	.54	6620.24	6.58

1TABLE 1 STATION DPIN FLOW, DPOUT FLOW, DPOUT STORAGE

PER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
1	1	JUL	0800	.00	.00	.00
2	1	JUL	0805	.00	.00	.00
3	1	JUL	0810	.00	.00	.00
4	1	JUL	0815	.00	.00	.00
5	1	JUL	0820	.00	.00	.00
6	1	JUL	0825	.00	.00	.00

7	1 JUL	0830	.00	.00	.00
8	1 JUL	0835	.00	.00	.00
9	1 JUL	0840	.00	.00	.00
10	1 JUL	0845	.00	.00	.00
11	1 JUL	0850	.00	.00	.00
12	1 JUL	0855	.00	.00	.00
13	1 JUL	0900	.00	.00	.00
14	1 JUL	0905	.00	.00	.00
15	1 JUL	0910	.00	.00	.00
16	1 JUL	0915	.00	.00	.00
17	1 JUL	0920	.00	.00	.00
18	1 JUL	0925	.00	.00	.00
19	1 JUL	0930	.00	.00	.00
20	1 JUL	0935	.00	.00	.00
21	1 JUL	0940	.00	.00	.00
22	1 JUL	0945	.00	.00	.00
23	1 JUL	0950	.00	.00	.00
24	1 JUL	0955	.00	.00	.00
25	1 JUL	1000	.00	.00	.00
26	1 JUL	1005	.00	.00	.00
27	1 JUL	1010	.00	.00	.00
28	1 JUL	1015	.00	.00	.00
29	1 JUL	1020	.00	.00	.00
30	1 JUL	1025	.00	.00	.00
31	1 JUL	1030	.00	.00	.00
32	1 JUL	1035	.00	.00	.00
33	1 JUL	1040	.00	.00	.00
34	1 JUL	1045	.00	.00	.00
35	1 JUL	1050	.00	.00	.00
36	1 JUL	1055	.00	.00	.00
37	1 JUL	1100	.00	.00	.00
38	1 JUL	1105	.00	.00	.00
39	1 JUL	1110	.00	.00	.00
40	1 JUL	1115	.00	.00	.00
41	1 JUL	1120	.00	.00	.00
42	1 JUL	1125	.00	.00	.00
43	1 JUL	1130	.00	.00	.00
44	1 JUL	1135	.00	.00	.00
45	1 JUL	1140	.00	.00	.00
46	1 JUL	1145	.00	.00	.00
47	1 JUL	1150	.00	.00	.00
48	1 JUL	1155	.00	.00	.00
49	1 JUL	1200	.00	.00	.00
50	1 JUL	1205	.00	.00	.00

1TABLE 1 STATION

(CONT.)			DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY MON	HRMN			
51	1 JUL	1210	.00	.00	.00
52	1 JUL	1215	.00	.00	.00
53	1 JUL	1220	.00	.00	.00
54	1 JUL	1225	.00	.00	.00
55	1 JUL	1230	.00	.00	.00
56	1 JUL	1235	.00	.00	.00
57	1 JUL	1240	.00	.00	.00
58	1 JUL	1245	.00	.00	.00
59	1 JUL	1250	.00	.00	.00
60	1 JUL	1255	.00	.00	.00
61	1 JUL	1300	.00	.00	.00
62	1 JUL	1305	.04	.01	.00
63	1 JUL	1310	.28	.09	.00
64	1 JUL	1315	.93	.35	.00
65	1 JUL	1320	2.52	1.06	.01
66	1 JUL	1325	6.35	2.79	.03
67	1 JUL	1330	12.70	6.24	.06
68	1 JUL	1335	79.26	11.10	.32

69	1 JUL	1340	324.00	15.28	1.62
70	1 JUL	1345	678.26	19.87	4.95
71	1 JUL	1350	999.84	22.79	10.58
72	1 JUL	1355	1238.77	25.81	18.12
73	1 JUL	1400	1404.29	56.57	26.94
74	1 JUL	1405	1316.71	102.51	35.76
75	1 JUL	1410	936.24	137.09	42.69
76	1 JUL	1415	582.63	160.86	46.90
77	1 JUL	1420	368.37	165.95	49.05
78	1 JUL	1425	254.06	167.97	50.04
79	1 JUL	1430	195.74	168.76	50.43
80	1 JUL	1435	160.41	168.89	50.49
81	1 JUL	1440	131.78	168.58	50.34
82	1 JUL	1445	110.55	167.92	50.01
83	1 JUL	1450	97.27	167.03	49.58
84	1 JUL	1455	90.04	166.01	49.07
85	1 JUL	1500	86.62	164.93	48.54
86	1 JUL	1505	82.39	163.81	47.99
87	1 JUL	1510	75.06	162.63	47.41
88	1 JUL	1515	67.76	160.25	46.79
89	1 JUL	1520	62.41	156.62	46.15
90	1 JUL	1525	59.23	152.96	45.50
91	1 JUL	1530	57.63	149.35	44.86
92	1 JUL	1535	56.89	145.83	44.24
93	1 JUL	1540	56.56	142.43	43.64
94	1 JUL	1545	56.41	139.15	43.06
95	1 JUL	1550	56.37	135.99	42.50
96	1 JUL	1555	56.37	132.95	41.96
97	1 JUL	1600	56.39	130.02	41.44
98	1 JUL	1605	53.76	127.16	40.94
99	1 JUL	1610	47.37	124.24	40.42
00	1 JUL	1615	40.54	121.50	39.88

1TABLE 1 STATION

(CONT.)

ER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
101	1	JUL	1620	35.18	118.89	39.31
102	1	JUL	1625	31.76	116.21	38.73
03	1	JUL	1630	29.96	113.54	38.15
04	1	JUL	1635	29.07	110.91	37.58
105	1	JUL	1640	28.65	108.35	37.02
106	1	JUL	1645	28.45	105.85	36.48
07	1	JUL	1650	28.36	103.43	35.96
08	1	JUL	1655	28.33	101.08	35.45
.09	1	JUL	1700	28.31	98.80	34.96
110	1	JUL	1705	28.32	96.59	34.48
111	1	JUL	1710	28.33	94.46	34.02
12	1	JUL	1715	28.33	92.39	33.57
13	1	JUL	1720	28.34	90.39	33.13
114	1	JUL	1725	28.35	88.44	32.71
115	1	JUL	1730	28.36	86.56	32.31
16	1	JUL	1735	28.36	84.74	31.91
17	1	JUL	1740	28.37	82.98	31.53
.18	1	JUL	1745	28.38	81.27	31.16
119	1	JUL	1750	28.39	79.62	30.80
120	1	JUL	1755	28.39	78.01	30.45
21	1	JUL	1800	28.40	76.46	30.12
122	1	JUL	1805	27.86	74.93	29.79
123	1	JUL	1810	26.52	72.86	29.47
24	1	JUL	1815	25.01	70.81	29.15
25	1	JUL	1820	23.61	68.80	28.84
126	1	JUL	1825	22.48	66.81	28.53
127	1	JUL	1830	21.73	64.87	28.23
28	1	JUL	1835	21.35	62.99	27.94
29	1	JUL	1840	21.33	61.19	27.65
.30	1	JUL	1845	21.48	59.46	27.39
131	1	JUL	1850	21.58	57.82	27.13
132	1	JUL	1855	21.48	56.24	26.89
33	1	JUL	1900	21.26	54.73	26.65
34	1	JUL	1905	21.14	53.27	26.43
135	1	JUL	1910	21.24	51.88	26.21
136	1	JUL	1915	21.46	50.56	26.00

137	1	JUL	1920	21.59	49.30	25.81
138	1	JUL	1925	21.49	48.09	25.62
139	1	JUL	1930	21.28	46.94	25.44
140	1	JUL	1935	21.17	45.82	25.27
141	1	JUL	1940	21.27	44.75	25.10
142	1	JUL	1945	21.48	43.74	24.94
143	1	JUL	1950	21.61	42.78	24.80
144	1	JUL	1955	21.52	41.86	24.65
145	1	JUL	2000	21.30	40.97	24.51
146	1	JUL	2005	21.19	40.11	24.38
147	1	JUL	2010	21.29	39.29	24.25
148	1	JUL	2015	21.51	38.52	24.13
149	1	JUL	2020	21.63	37.78	24.02
50	1	JUL	2025	21.54	37.08	23.91

TABLE 1 (CONT.)			STATION	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
ER	DAY	MON	HRMN			
151	1	JUL	2030	21.33	36.40	23.80
152	1	JUL	2035	21.21	35.75	23.70
53	1	JUL	2040	21.31	35.12	23.61
54	1	JUL	2045	21.53	34.52	23.51
155	1	JUL	2050	21.65	33.96	23.43
156	1	JUL	2055	21.56	33.43	23.34
57	1	JUL	2100	21.35	32.91	23.26
58	1	JUL	2105	21.02	32.40	23.18
159	1	JUL	2110	20.60	31.90	23.11
160	1	JUL	2115	20.22	31.40	23.03
161	1	JUL	2120	19.81	30.90	22.95
62	1	JUL	2125	19.35	30.41	22.87
63	1	JUL	2130	18.95	29.92	22.80
164	1	JUL	2135	18.64	29.44	22.72
165	1	JUL	2140	18.43	28.97	22.65
66	1	JUL	2145	18.32	28.51	22.58
67	1	JUL	2150	18.27	28.07	22.51
168	1	JUL	2155	18.25	27.97	22.44
169	1	JUL	2200	18.24	27.94	22.38
170	1	JUL	2205	18.13	27.90	22.31
71	1	JUL	2210	17.88	27.87	22.24
72	1	JUL	2215	17.59	27.84	22.17
173	1	JUL	2220	17.42	27.80	22.10
174	1	JUL	2225	17.48	27.76	22.03
75	1	JUL	2230	17.68	27.73	21.96
176	1	JUL	2235	17.80	27.70	21.89
177	1	JUL	2240	17.72	27.66	21.82
78	1	JUL	2245	17.52	27.63	21.75
79	1	JUL	2250	17.29	27.59	21.68
180	1	JUL	2255	17.13	27.56	21.61
181	1	JUL	2300	17.04	27.52	21.54
182	1	JUL	2305	16.79	27.48	21.47
83	1	JUL	2310	16.27	27.45	21.39
84	1	JUL	2315	15.69	27.41	21.31
185	1	JUL	2320	15.14	27.36	21.23
186	1	JUL	2325	14.75	27.32	21.14
87	1	JUL	2330	14.55	27.28	21.06
88	1	JUL	2335	14.45	27.23	20.97
189	1	JUL	2340	14.40	27.19	20.88
190	1	JUL	2345	14.38	27.15	20.79
191	1	JUL	2350	14.37	27.10	20.71
92	1	JUL	2355	14.37	27.06	20.62
93	2	JUL	0000	14.36	27.02	20.53
194	2	JUL	0005	14.37	26.97	20.44
195	2	JUL	0010	14.37	26.93	20.36
96	2	JUL	0015	14.37	26.89	20.27
97	2	JUL	0020	14.37	26.84	20.18
198	2	JUL	0025	14.37	26.80	20.10
199	2	JUL	0030	14.37	26.76	20.01
200	2	JUL	0035	14.37	26.71	19.93

ABLE 1 (CONT.)	STATION	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE

PER	DAY	MON	HRMN			
201	2	JUL	0040	14.38	26.67	19.84
202	2	JUL	0045	14.38	26.63	19.76
203	2	JUL	0050	14.38	26.59	19.67
204	2	JUL	0055	14.38	26.55	19.59
205	2	JUL	0100	14.38	26.50	19.51
206	2	JUL	0105	14.38	26.46	19.42
207	2	JUL	0110	14.38	26.42	19.34
208	2	JUL	0115	14.39	26.38	19.26
209	2	JUL	0120	14.39	26.34	19.18
210	2	JUL	0125	14.39	26.30	19.09
211	2	JUL	0130	14.39	26.26	19.01
212	2	JUL	0135	14.39	26.21	18.93
213	2	JUL	0140	14.39	26.17	18.85
214	2	JUL	0145	14.39	26.13	18.77
215	2	JUL	0150	14.40	26.09	18.69
216	2	JUL	0155	14.40	26.05	18.61
217	2	JUL	0200	14.40	26.01	18.53
218	2	JUL	0205	14.40	25.97	18.45
219	2	JUL	0210	14.40	25.93	18.37
220	2	JUL	0215	14.40	25.89	18.29
221	2	JUL	0220	14.40	25.85	18.21
222	2	JUL	0225	14.41	25.82	18.13
223	2	JUL	0230	14.41	25.78	18.05
224	2	JUL	0235	14.41	25.74	17.97
225	2	JUL	0240	14.41	25.70	17.90
226	2	JUL	0245	14.41	25.66	17.82
227	2	JUL	0250	14.41	25.62	17.74
228	2	JUL	0255	14.41	25.58	17.66
229	2	JUL	0300	14.42	25.54	17.59
230	2	JUL	0305	14.42	25.51	17.51
231	2	JUL	0310	14.42	25.47	17.43
232	2	JUL	0315	14.42	25.43	17.36
233	2	JUL	0320	14.42	25.39	17.28
234	2	JUL	0325	14.42	25.35	17.21
235	2	JUL	0330	14.42	25.32	17.13
236	2	JUL	0335	14.42	25.28	17.06
237	2	JUL	0340	14.43	25.24	16.98
238	2	JUL	0345	14.43	25.20	16.91
239	2	JUL	0350	14.43	25.17	16.83
240	2	JUL	0355	14.43	25.13	16.76
241	2	JUL	0400	14.43	25.09	16.69
242	2	JUL	0405	13.93	25.06	16.61
243	2	JUL	0410	12.73	25.02	16.53
244	2	JUL	0415	11.34	24.97	16.44
245	2	JUL	0420	9.94	24.92	16.34
246	2	JUL	0425	8.69	24.87	16.24
247	2	JUL	0430	7.63	24.81	16.12
248	2	JUL	0435	7.26	24.75	16.00
249	2	JUL	0440	7.22	24.69	15.88
250	2	JUL	0445	7.36	24.63	15.76

TABLE 1 (CONT.)

PER	DAY	MON	HRMN	STATION DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
251	2	JUL	0450	7.45	24.57	15.64
252	2	JUL	0455	7.34	24.51	15.53
253	2	JUL	0500	7.13	24.45	15.41
254	2	JUL	0505	7.02	24.39	15.29
255	2	JUL	0510	7.11	24.33	15.17
256	2	JUL	0515	7.31	24.27	15.05
257	2	JUL	0520	7.43	24.22	14.93
258	2	JUL	0525	7.34	24.16	14.82
259	2	JUL	0530	7.13	24.10	14.70
260	2	JUL	0535	7.02	24.04	14.58
261	2	JUL	0540	7.11	23.99	14.47
262	2	JUL	0545	7.31	23.95	14.35
263	2	JUL	0550	7.43	23.92	14.24
264	2	JUL	0555	7.34	23.88	14.12
265	2	JUL	0600	7.13	23.85	14.01
266	2	JUL	0605	7.02	23.81	13.89

267	2 JUL	0610	7.11	23.78	13.78
268	2 JUL	0615	7.32	23.74	13.67
269	2 JUL	0620	7.43	23.71	13.55
270	2 JUL	0625	7.34	23.67	13.44
271	2 JUL	0630	7.13	23.64	13.33
272	2 JUL	0635	7.02	23.60	13.21
273	2 JUL	0640	7.11	23.57	13.10
274	2 JUL	0645	7.32	23.53	12.99
275	2 JUL	0650	7.44	23.50	12.88
276	2 JUL	0655	7.34	23.47	12.77
277	2 JUL	0700	7.14	23.43	12.65
278	2 JUL	0705	7.02	23.40	12.54
279	2 JUL	0710	7.12	23.36	12.43
280	2 JUL	0715	7.32	23.33	12.32
281	2 JUL	0720	7.44	23.29	12.21
282	2 JUL	0725	7.34	23.26	12.10
283	2 JUL	0730	7.14	23.23	11.99
284	2 JUL	0735	7.02	23.19	11.88
285	2 JUL	0740	7.12	23.16	11.77
286	2 JUL	0745	7.32	23.13	11.66
287	2 JUL	0750	7.44	23.09	11.55
288	2 JUL	0755	7.35	23.06	11.44
289	2 JUL	0800	7.14	23.03	11.33
290	2 JUL	0805	6.39	22.99	11.22
291	2 JUL	0810	4.97	22.95	11.10
292	2 JUL	0815	3.40	22.91	10.97
293	2 JUL	0820	2.06	22.87	10.83
294	2 JUL	0825	1.29	22.83	10.69
295	2 JUL	0830	.83	22.78	10.54
296	2 JUL	0835	.55	22.73	10.38
297	2 JUL	0840	.37	22.69	10.23
298	2 JUL	0845	.25	22.64	10.08
299	2 JUL	0850	.18	22.59	9.92
300	2 JUL	0855	.13	22.54	9.77
		MAX	1404.29	168.89	50.49
		MIN	.00	.00	.00
		AVE	43.54	38.84	18.01

*** NORMAL END OF HEC-1 ***

****
FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3


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

    1         ID         FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
    2         ID         MAJOR SYSTEM HYDROLOGY FOR THE BASIN - INPUT FILE HISA.INP
    3         ID         USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
    4         ID         ROUTED THROUGH DETENTION POND A
    5         ID         HISTORIC CONDITIONS THROUGHOUT THE BASIN
    6         ID         RUN DATE 4-1-1993
              *DIAGRAM
    7         IT       5 01JUL90     800     300
    8         IO       5

    9         KK      O1
   10         KM         RUNOFF FROM BASIN O1
   11         BA   0.264
   12         LS       0    67.8
   13         UD   0.280
   14         IN      15
   15         PB       0
   16         PC   0.000   0.002   0.007   0.013   0.020   0.026   0.035   0.044   0.053   0.063
   17         PC   0.073   0.083   0.092   0.103   0.112   0.122   0.141   0.172   0.202   0.233
   18         PC   0.264   0.330   0.440   1.760   3.080   3.190   3.300   3.366   3.432   3.476
   19         PC   3.520   3.564   3.608   3.630   3.652   3.674   3.696   3.718   3.740   3.762
   20         PC   3.784   3.801   3.817   3.834   3.850   3.867   3.883   3.900   3.916   3.933
   21         PC   3.949   3.966   3.982   3.997   4.011   4.025   4.039   4.052   4.066   4.079
   22         PC   4.092   4.103   4.114   4.125   4.136   4.147   4.158   4.169   4.180   4.191
   23         PC   4.202   4.213   4.224   4.235   4.246   4.257   4.268   4.279   4.290   4.301
   24         PC   4.312   4.318   4.323   4.329   4.334   4.340   4.345   4.351   4.356   4.362
   25         PC   4.367   4.373   4.378   4.384   4.389   4.395   4.400

   26         KK    O1-1
   27         KM         ROUTE BASIN O1 TO DES PT 1
   28         RK    1250    0.02   0.013            CIRC     3.5

   29         KK      O2
   30         KM         RUNOFF FROM BASIN O2
   31         BA   0.086
   32         LS       0    59.8
   33         UD   0.170

   34         KK    O2-1
   35         KM         ROUTE BASIN O2 TO DES PT 1
   36         RK    1850    0.02   0.016            TRAP      44       3

   37         KK      A1
   38         KM         RUNOFF FROM BASIN A1
   39         BA   0.064
   40         LS       0    55.0
   41         UD   0.100

   42         KK       1
   43         KM         COMBINE O1,O2,A1
   44         HC       3
```

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

  45      KK     1-2
  46      KM        ROUTE DES PT 1 TO DES PT 2
  47      RK    1330   0.016   0.013            CIRC     3.5

  48      KK      A2
  49      KM        RUNOFF FROM BASIN A2
  50      BA   0.059
  51      LS       0    56.6
  52      UD   0.080

  53      KK       2
  54      KM        COMBINE DES PT 1, A2
  55      HC       2

  56      KK     2-4
  57      KM        ROUTE DES PT 2 TO DES PT 4
  58      RK    1940    0.02   0.013            CIRC       4

  59      KK      A3
  60      KM        RUNOFF FROM BASINS A3,A4
  61      BA   0.092
  62      LS       0    49.5
  63      UD   0.140

  64      KK       4
  65      KM        COMBINE DES PT 2, A3
  66      HC       2

  67      KK     4-5
  68      KM        ROUTE DES PT 4 TO DES PT 5
  69      RK    1740   0.018   0.013            CIRC       4

  70      KK      A5
  71      KM        RUNOFF FROM BASINS A5,A6
  72      BA   0.165
  73      LS       0    49.0
  74      UD   0.150

  75      KK       5
  76      KM        COMBINE DES PT 4, A5
  77      HC       2

  78      KK     5-7
  79      KM        ROUTE DES PT 5 TO DES PT 7
  80      RK    1100   0.005   0.015            TRAP       6     1.5

  81      KK      A7
  82      KM        RUNOFF FROM BASIN A7
  83      BA   0.068
  84      LS       0    49.0
  85      UD   0.130
```



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

  86      KK       7
  87      KM        COMBINE DES PT 5, A7
  88      HC       2

  89      KK    7-12
  90      KM        ROUTE DES PT 7 TO DES PT 12
  91      RK    2200    0.02   0.015            TRAP       6     1.5

  92      KK    A8.1
  93      KM        RUNOFF FROM BASIN A8.1
  94      BA   0.030
  95      LS       0    49.0
  96      UD   0.130
```

```
 97          KK      9A
 98          KM         COMBINE DES PT 7, A8.1 CONCRETE CHANNEL DESIGN FLOW
 99          HC       2

100          KK      A9
101          KM         RUNOFF FROM BASIN A9,A10
102          BA   0.091
103          LS       0    49.0
104          UD   0.100

105          KK   A9-12
106          KM         ROUTE BASIN A9 TO DES PT 12
107          RK     650    0.02   0.013            CIRC       3

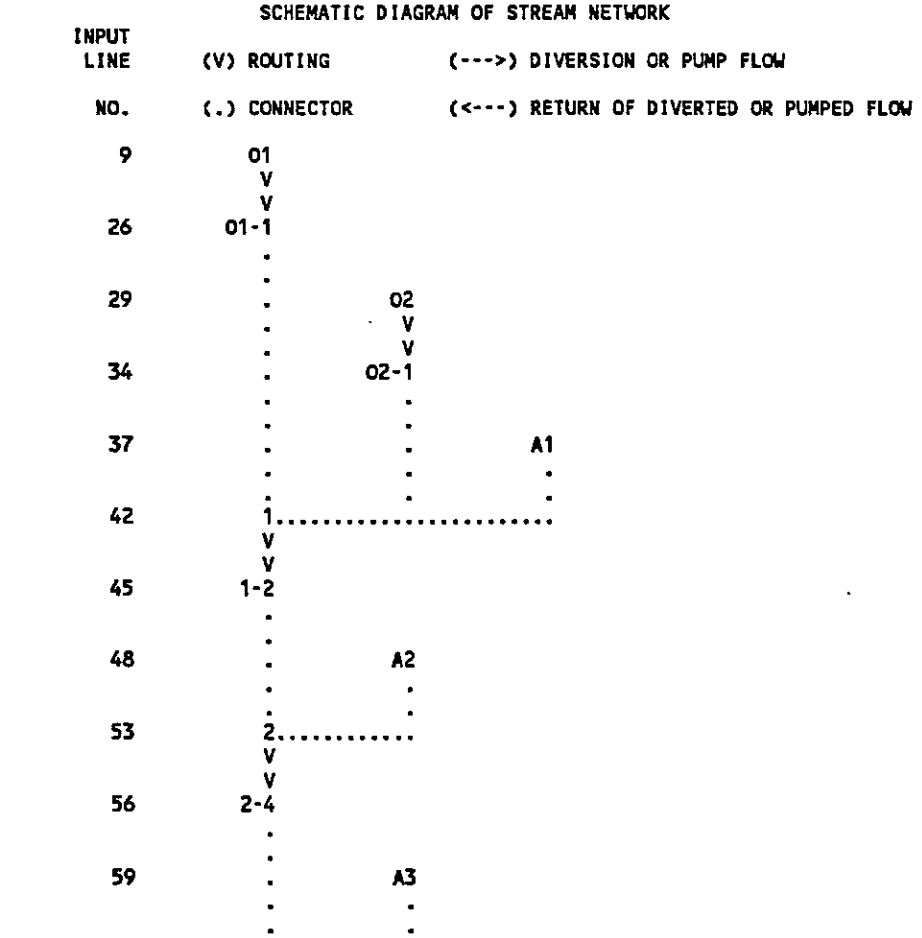
108          KK     A11
109          KM         RUNOFF FROM BASIN A8.2,A11
110          BA   0.089
111          LS       0    49.0
112          UD   0.130

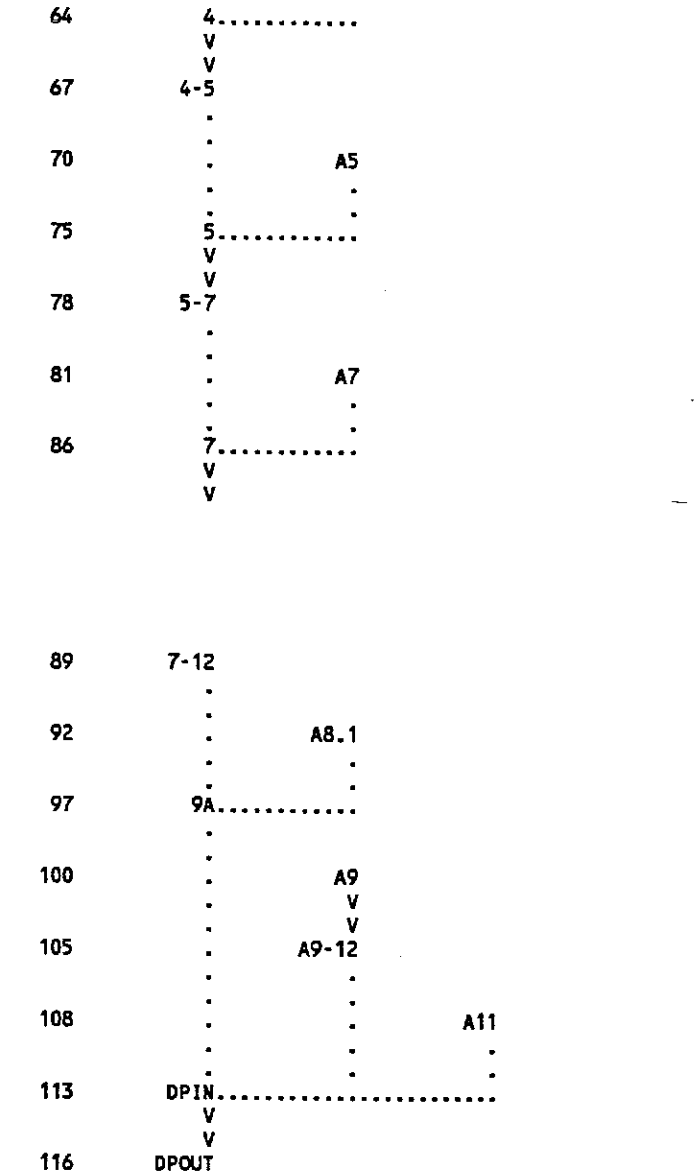
113          KK    DPIN
114          KM         COMBINE ALL FLOWS INTO POND A
115          HC       3

116          KK   DPOUT
117          KM         ROUTE THROUGH DETENTION POND A
118          SV       0     0.1     1.2     5.0    10.8    19.6    30.4    40.2    54.3    63.6
119          SV    80.9    89.9    99.2
120          SE    6611    6612    6613    6614    6615    6616    6617    6618    6619    6620
121          SE  6620.9    6622    6623
122          SQ       0      10      14      19      22      24      28      75     123     162
123          SQ     188     506    1028
124          RS       1    ELEV    6611
125          ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK





(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
MAJOR SYSTEM HYDROLOGY FOR THE BASIN - INPUT FILE HISA.INP
USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
ROUTED THROUGH DETENTION POND A
HISTORIC CONDITIONS THROUGHOUT THE BASIN
RUN DATE 4-1-1993

8 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL90	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL90	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS

TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
	HYDROGRAPH AT	01	230.	6.17	32.	10.	10.	.26		
+	ROUTED TO	01-1	226.	6.17	32.	10.	10.	.26		
	HYDROGRAPH AT	02	58.	6.08	6.	2.	2.	.09		
	ROUTED TO	02-1	56.	6.17	7.	2.	2.	.09		
+	HYDROGRAPH AT	A1	33.	6.00	3.	1.	1.	.06		
	3 COMBINED AT	1	298.	6.17	41.	14.	13.	.41		
	ROUTED TO	1-2	294.	6.17	41.	14.	13.	.41		
+	HYDROGRAPH AT	A2	41.	6.00	4.	1.	1.	.06		
	2 COMBINED AT	2	307.	6.17	45.	15.	14.	.47		
	ROUTED TO	2-4	303.	6.17	45.	15.	14.	.47		
+	HYDROGRAPH AT	A3	22.	6.08	3.	1.	1.	.09		
	2 COMBINED AT	4	321.	6.17	48.	16.	16.	.56		

	ROUTED TO								
+		4-5	315.	6.17	48.	16.	16.	.56	
	HYDROGRAPH AT								
.		A5	35.	6.08	5.	2.	2.	.17	
	2 COMBINED AT								
+		5	345.	6.17	52.	18.	17.	.73	
	ROUTED TO								
+		5-7	336.	6.17	53.	18.	17.	.73	
	HYDROGRAPH AT								
.		A7	16.	6.08	2.	1.	1.	.07	
	2 COMBINED AT								
+		7	348.	6.17	54.	19.	18.	.80	
	ROUTED TO								
+		7-12	339.	6.25	54.	19.	18.	.80	
	HYDROGRAPH AT								
.		A8.1	7.	6.08	1.	0.	0.	.03	
	2 COMBINED AT								
+		9A	342.	6.25	55.	19.	18.	.83	
	HYDROGRAPH AT								
+		A9	22.	6.08	3.	1.	1.	.09	
	ROUTED TO								
.		A9-12	22.	6.08	3.	1.	1.	.09	
	HYDROGRAPH AT								
+		A11	21.	6.08	3.	1.	1.	.09	
	3 COMBINED AT								
+		DPIN	365.	6.17	60.	21.	20.	1.01	
	ROUTED TO								
.		DPOUT	24.	8.67	24.	18.	17.	1.01	
.									6616.01 8.67

*** NORMAL END OF HEC-1 ***

107	1 JUL	1650	28.36	31.78	60.57
108	1 JUL	1655	28.33	30.81	60.55
109	1 JUL	1700	28.31	30.11	60.53
110	1 JUL	1705	28.32	29.61	60.52
111	1 JUL	1710	28.33	29.24	60.52
112	1 JUL	1715	28.33	28.99	60.51
113	1 JUL	1720	28.34	28.80	60.51
114	1 JUL	1725	28.35	28.68	60.50
115	1 JUL	1730	28.36	28.58	60.50
116	1 JUL	1735	28.36	28.52	60.50
117	1 JUL	1740	28.37	28.48	60.50
118	1 JUL	1745	28.38	28.45	60.50
119	1 JUL	1750	28.39	28.43	60.50
120	1 JUL	1755	28.39	28.42	60.50
121	1 JUL	1800	28.40	28.41	60.50
122	1 JUL	1805	27.86	28.33	60.50
123	1 JUL	1810	26.52	28.01	60.49
124	1 JUL	1815	25.01	27.38	60.48
125	1 JUL	1820	23.61	26.52	60.46
126	1 JUL	1825	22.48	25.54	60.44
127	1 JUL	1830	21.73	24.58	60.42
128	1 JUL	1835	21.35	23.72	60.40
129	1 JUL	1840	21.33	23.05	60.39
130	1 JUL	1845	21.48	22.59	60.38
131	1 JUL	1850	21.58	22.29	60.37
132	1 JUL	1855	21.48	22.08	60.36
133	1 JUL	1900	21.26	21.88	60.36
134	1 JUL	1905	21.14	21.69	60.36

135	1	JUL	1910	21.24	21.55	60.35
136	1	JUL	1915	21.46	21.49	60.35
137	1	JUL	1920	21.59	21.50	60.35
138	1	JUL	1925	21.49	21.51	60.35
139	1	JUL	1930	21.28	21.48	60.35
140	1	JUL	1935	21.17	21.41	60.35
141	1	JUL	1940	21.27	21.35	60.35
142	1	JUL	1945	21.48	21.36	60.35
143	1	JUL	1950	21.61	21.41	60.35
144	1	JUL	1955	21.52	21.45	60.35
145	1	JUL	2000	21.30	21.44	60.35
146	1	JUL	2005	21.19	21.39	60.35
147	1	JUL	2010	21.29	21.34	60.35
148	1	JUL	2015	21.51	21.36	60.35
149	1	JUL	2020	21.63	21.42	60.35
150	1	JUL	2025	21.54	21.47	60.35

1TABLE 1 (CONT.)			STATION	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY	MON	HRMN			
151	1	JUL	2030	21.33	21.46	60.35
152	1	JUL	2035	21.21	21.40	60.35
153	1	JUL	2040	21.31	21.36	60.35
154	1	JUL	2045	21.53	21.38	60.35
155	1	JUL	2050	21.65	21.44	60.35
156	1	JUL	2055	21.56	21.49	60.35
157	1	JUL	2100	21.35	21.48	60.35
158	1	JUL	2105	21.02	21.40	60.35
159	1	JUL	2110	20.60	21.23	60.35
160	1	JUL	2115	20.22	21.00	60.34
161	1	JUL	2120	19.81	20.72	60.34
162	1	JUL	2125	19.35	20.40	60.33
163	1	JUL	2130	18.95	20.05	60.32
164	1	JUL	2135	18.64	19.70	60.31
165	1	JUL	2140	18.43	19.37	60.31
166	1	JUL	2145	18.32	19.09	60.30
167	1	JUL	2150	18.27	18.87	60.30
168	1	JUL	2155	18.25	18.69	60.29
169	1	JUL	2200	18.24	18.57	60.29
170	1	JUL	2205	18.13	18.46	60.29
171	1	JUL	2210	17.88	18.33	60.29
172	1	JUL	2215	17.59	18.16	60.28
173	1	JUL	2220	17.42	17.98	60.28
174	1	JUL	2225	17.48	17.83	60.28
175	1	JUL	2230	17.68	17.76	60.27
176	1	JUL	2235	17.80	17.75	60.27
177	1	JUL	2240	17.72	17.76	60.27
178	1	JUL	2245	17.52	17.72	60.27
179	1	JUL	2250	17.29	17.63	60.27
180	1	JUL	2255	17.13	17.51	60.27
181	1	JUL	2300	17.04	17.39	60.27
182	1	JUL	2305	16.79	17.26	60.26
183	1	JUL	2310	16.27	17.05	60.26
184	1	JUL	2315	15.69	16.75	60.25
185	1	JUL	2320	15.14	16.37	60.24
186	1	JUL	2325	14.75	15.97	60.24
187	1	JUL	2330	14.55	15.60	60.23
188	1	JUL	2335	14.45	15.29	60.22
189	1	JUL	2340	14.40	15.05	60.22
190	1	JUL	2345	14.38	14.86	60.21
191	1	JUL	2350	14.37	14.72	60.21
192	1	JUL	2355	14.37	14.62	60.21
193	2	JUL	0000	14.36	14.55	60.21
194	2	JUL	0005	14.37	14.50	60.21
195	2	JUL	0010	14.37	14.46	60.20
196	2	JUL	0015	14.37	14.44	60.20
197	2	JUL	0020	14.37	14.42	60.20
198	2	JUL	0025	14.37	14.40	60.20
199	2	JUL	0030	14.37	14.39	60.20
200	2	JUL	0035	14.37	14.39	60.20

1TABLE 1			STATION	DPIN	DPOUT	DPOUT

(CONT.)				FLOW	FLOW	STORAGE
PER	DAY	MON	HRMN			
201	2	JUL	0040	14.38	14.39	60.20
202	2	JUL	0045	14.38	14.38	60.20
203	2	JUL	0050	14.38	14.38	60.20
204	2	JUL	0055	14.38	14.38	60.20
205	2	JUL	0100	14.38	14.38	60.20
206	2	JUL	0105	14.38	14.38	60.20
207	2	JUL	0110	14.38	14.38	60.20
208	2	JUL	0115	14.39	14.38	60.20
209	2	JUL	0120	14.39	14.38	60.20
210	2	JUL	0125	14.39	14.39	60.20
211	2	JUL	0130	14.39	14.39	60.20
212	2	JUL	0135	14.39	14.39	60.20
213	2	JUL	0140	14.39	14.39	60.20
214	2	JUL	0145	14.39	14.39	60.20
215	2	JUL	0150	14.40	14.39	60.20
216	2	JUL	0155	14.40	14.39	60.20
217	2	JUL	0200	14.40	14.39	60.20
218	2	JUL	0205	14.40	14.40	60.20
219	2	JUL	0210	14.40	14.40	60.20
220	2	JUL	0215	14.40	14.40	60.20
221	2	JUL	0220	14.40	14.40	60.20
222	2	JUL	0225	14.41	14.40	60.20
223	2	JUL	0230	14.41	14.40	60.20
224	2	JUL	0235	14.41	14.40	60.20
225	2	JUL	0240	14.41	14.41	60.20
226	2	JUL	0245	14.41	14.41	60.20
227	2	JUL	0250	14.41	14.41	60.20
228	2	JUL	0255	14.41	14.41	60.20
229	2	JUL	0300	14.42	14.41	60.20
230	2	JUL	0305	14.42	14.41	60.20
231	2	JUL	0310	14.42	14.41	60.20
232	2	JUL	0315	14.42	14.42	60.20
233	2	JUL	0320	14.42	14.42	60.20
234	2	JUL	0325	14.42	14.42	60.20
235	2	JUL	0330	14.42	14.42	60.20
236	2	JUL	0335	14.42	14.42	60.20
237	2	JUL	0340	14.43	14.42	60.20
238	2	JUL	0345	14.43	14.42	60.20
239	2	JUL	0350	14.43	14.42	60.20
240	2	JUL	0355	14.43	14.43	60.20
241	2	JUL	0400	14.43	14.43	60.20
242	2	JUL	0405	13.93	14.36	60.20
243	2	JUL	0410	12.73	14.07	60.20
244	2	JUL	0415	11.34	13.50	60.18
245	2	JUL	0420	9.94	12.69	60.17
246	2	JUL	0425	8.69	11.74	60.15
247	2	JUL	0430	7.63	10.74	60.13
248	2	JUL	0435	7.26	9.81	60.11
249	2	JUL	0440	7.22	9.09	60.09
250	2	JUL	0445	7.36	8.58	60.08

1TABLE 1 (CONT.)		STATION		DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY	MON	HRMN			
251	2	JUL	0450	7.45	8.25	60.07
252	2	JUL	0455	7.34	8.01	60.07
253	2	JUL	0500	7.13	7.79	60.06
254	2	JUL	0505	7.02	7.59	60.06
255	2	JUL	0510	7.11	7.44	60.06
256	2	JUL	0515	7.31	7.38	60.06
257	2	JUL	0520	7.43	7.37	60.06
258	2	JUL	0525	7.34	7.38	60.06
259	2	JUL	0530	7.13	7.34	60.05
260	2	JUL	0535	7.02	7.26	60.05
261	2	JUL	0540	7.11	7.21	60.05
262	2	JUL	0545	7.31	7.21	60.05
263	2	JUL	0550	7.43	7.25	60.05
264	2	JUL	0555	7.34	7.29	60.05

265	2 JUL	0600	7.13	7.28	60.05
266	2 JUL	0605	7.02	7.22	60.05
267	2 JUL	0610	7.11	7.18	60.05
268	2 JUL	0615	7.32	7.19	60.05
269	2 JUL	0620	7.43	7.24	60.05
270	2 JUL	0625	7.34	7.28	60.05
271	2 JUL	0630	7.13	7.27	60.05
272	2 JUL	0635	7.02	7.21	60.05
273	2 JUL	0640	7.11	7.17	60.05
274	2 JUL	0645	7.32	7.19	60.05
275	2 JUL	0650	7.44	7.24	60.05
276	2 JUL	0655	7.34	7.28	60.05
277	2 JUL	0700	7.14	7.27	60.05
278	2 JUL	0705	7.02	7.22	60.05
279	2 JUL	0710	7.12	7.17	60.05
280	2 JUL	0715	7.32	7.19	60.05
281	2 JUL	0720	7.44	7.24	60.05

282	2 JUL	0725	7.34	7.28	60.05
283	2 JUL	0730	7.14	7.27	60.05
284	2 JUL	0735	7.02	7.22	60.05
285	2 JUL	0740	7.12	7.18	60.05
286	2 JUL	0745	7.32	7.19	60.05
287	2 JUL	0750	7.44	7.24	60.05
288	2 JUL	0755	7.35	7.29	60.05
289	2 JUL	0800	7.14	7.27	60.05
290	2 JUL	0805	6.39	7.13	60.05
291	2 JUL	0810	4.97	6.72	60.04
292	2 JUL	0815	3.40	6.01	60.03
293	2 JUL	0820	2.06	5.09	60.01
294	2 JUL	0825	1.29	4.13	59.99
295	2 JUL	0830	.83	3.26	59.97
296	2 JUL	0835	.55	2.54	59.95
297	2 JUL	0840	.37	1.95	59.94
298	2 JUL	0845	.25	1.49	59.93
299	2 JUL	0850	.18	1.13	59.92
300	2 JUL	0855	.13	.86	59.92
		MAX	1404.29	72.39	61.42
		MIN	.00	.00	.00
		AVE	43.54	14.54	45.64

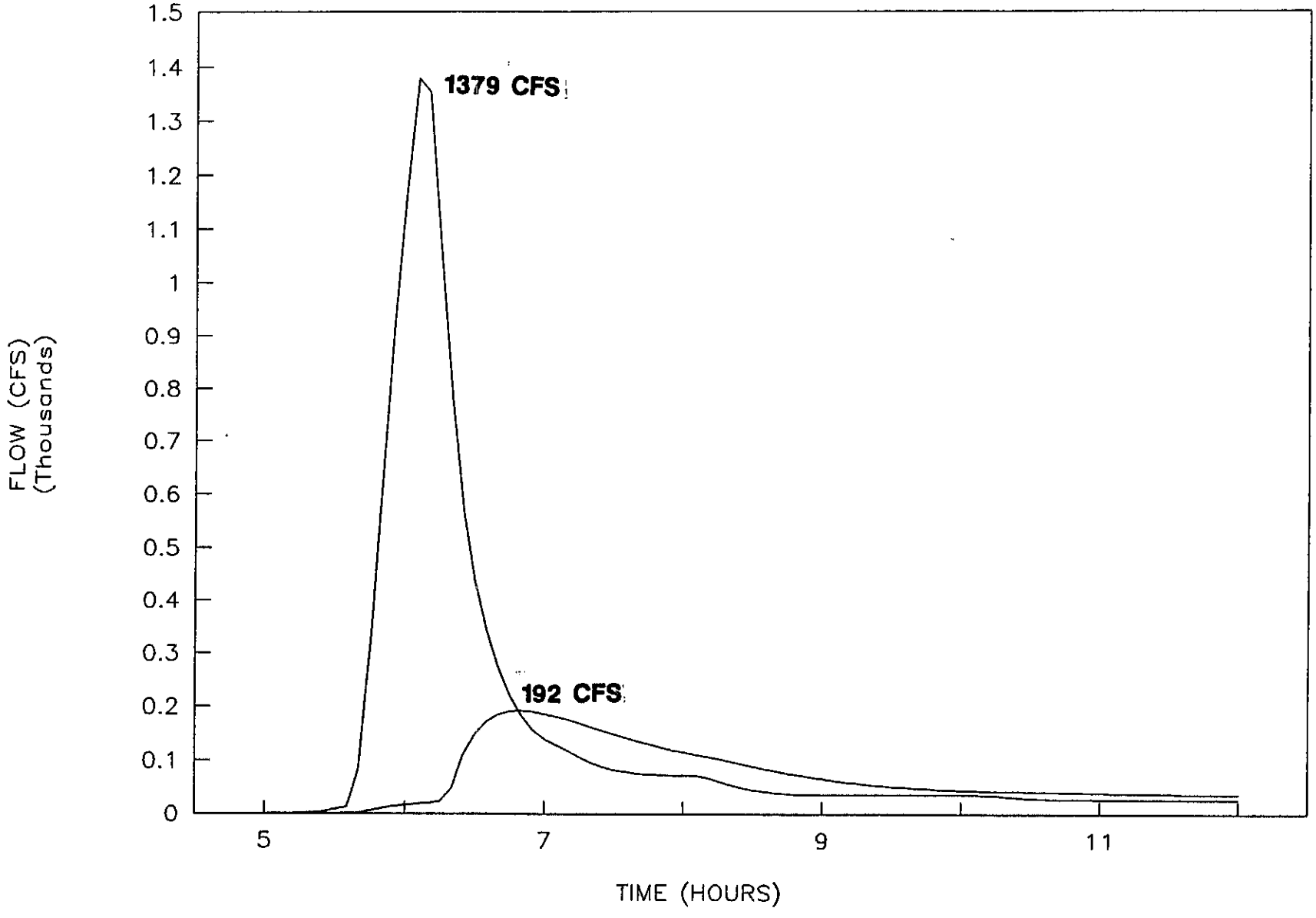
*** NORMAL END OF HEC-1 ***

APPENDIX B

HYDROLOGIC COMPUTATIONS, BASIN B

FAIRLANE TECHNOLOGY PARK

DETENTION POND B



1

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FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3


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

  1           ID          FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
  2           ID          MAJOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE DAB8.INP
  3           ID          USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
  4           ID          WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM O1&2,A1,& 2 TO B4
  5           ID          INCREASE POND B BY 17%
  6           ID          USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
  7           ID          RUN DATE 4-1-1993
              *DIAGRAM
  8           IT       5 01JUL90     800     300
  9           IO       5
 10           VS    DPIN   DPOUT   DPOUT
 11           VV    2.11    2.11    6.11

 12           KK      B1
 13           KM          RUNOFF FROM BASIN B1
 14           BA   0.003
 15           LS       0    98.0
 16           UD   0.060
 17           IN      15
 18           PS       0
 19           PC   0.000   0.002   0.007   0.013   0.020   0.026   0.035   0.044   0.053   0.063
 20           PC   0.073   0.083   0.092   0.103   0.112   0.122   0.141   0.172   0.202   0.233
 21           PC   0.264   0.330   0.440   1.760   3.080   3.190   3.300   3.366   3.432   3.476
 22           PC   3.520   3.564   3.608   3.630   3.652   3.674   3.696   3.718   3.740   3.762
 23           PC   3.784   3.801   3.817   3.834   3.850   3.867   3.883   3.900   3.916   3.933
 24           PC   3.949   3.966   3.982   3.997   4.011   4.025   4.039   4.052   4.066   4.079
 25           PC   4.092   4.103   4.114   4.125   4.136   4.147   4.158   4.169   4.180   4.191
 26           PC   4.202   4.213   4.224   4.235   4.246   4.257   4.268   4.279   4.290   4.301
 27           PC   4.312   4.318   4.323   4.329   4.334   4.340   4.345   4.351   4.356   4.362
 28           PC   4.367   4.373   4.378   4.384   4.389   4.395   4.400

 29           KK   B1-15
 30           KM          ROUTE BASIN B1 TO DES PT 15
 31           RK      50    0.02   0.013            CIRC     2.0

 32           KK      B2
 33           KM          RUNOFF FROM BASIN B2
 34           BA   0.071
 35           LS       0    88.0
 36           UD   0.144

 37           KK      O1
 38           KM          RUNOFF FROM BASIN O1
 39           BA   0.264
 40           LS       0    70.0
 41           UD   0.280

 42           KK    O1-1
 43           KM          ROUTE BASIN O1 TO DES PT 1
 44           RK    1250    0.02   0.013            CIRC     3.5
```

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

  45      KK      02
  46      KM         RUNOFF FROM BASIN 02
  47      BA   0.086
  48      LS       0    70.0
  49      UD   0.170

  50      KK    02-1
  51      KM         ROUTE BASIN 02 TO DES PT 1
  52      RK    1850    0.02   0.016            TRAP      44       3

  53      KK      A1
  54      KM         RUNOFF FROM BASIN A1
  55      BA   0.064
  56      LS       0    88.0
  57      UD   0.100

  58      KK       1
  59      KM         COMBINE 01,02,A1
  60      HC       3

  61      KK     1-2
  62      KM         ROUTE DES PT 1 TO DES PT 2
  63      RK    1330   0.016   0.013            CIRC     3.5

  64      KK      A2
  65      KM         RUNOFF FROM BASIN A2
  66      BA   0.059
  67      LS       0    88.0
  68      UD   0.080

  69      KK       2
  70      KM         COMBINE DES PT 1, A2
  71      HC       2

  72      KK    2-15
  73      KM         ROUTE DES PT 2 TO DES PT 15
  74      RK    1450    0.02   0.013            CIRC       4

  75      KK      15
  76      KM         COMBINE BASIN B1, B2 AND DES PT 2 AT DES PT 15
  77      HC       3

  78      KK   15-S1
  79      KM         ROUTE DES PT15 TO DES PTS1
  80      RK     200   0.015   0.013            CIRC     4.5

  81      KK   S1-16
  82      KM         ROUTE DES PTS1 TO DES PT16
  83      RK    1440   0.025   0.013            TRAP       6       3
```



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

  84      KK    B3.1
  85      KM         RUNOFF FROM BASIN B3.1
  86      BA   0.007
  87      LS       0    98.0
  88      UD   0.144

  89      KK      16
  90      KM         COMBINE DES PT15, B3.1
  91      HC       2

  92      KK   16-S2
  93      KM         ROUTE DES PT16 TO DES PT S2
  94      RK     150   0.025   0.013            DEEP     8.0

  95      KK   S2-17
  96      KM         ROUTE DES PTS2 TO DES PT17
  97      RK    1880   0.025   0.013            TRAP     6.0       3
```

```
 98          KK    B3.2
 99          KM          RUNOFF FROM BASIN B3.2
100          BA   0.009
101          LS       0     98.0
102          UD    0.18

103          KK      17
104          KM          COMBINE DES PT 16, B3.2
105          HC       2

106          KK   17-19
107          KM          ROUTE DES PT17 TO DES PT19
108          RK     600    0.02   0.013            CIRC     6.0

109          KK    B4.1
110          KM          RUNOFF FROM BASIN B4.1
111          BA   0.046
112          LS       0       88
113          UD    0.09

114          KK  4.1-18
115          KM          ROUTE BASIN B4.1 TO DES PT18
116          RK      50    0.01   0.013            TRAP      44       3

117          KK    B4.2
118          KM          RUNOFF FROM BASIN B4.2
119          BA   0.018
120          LS       0    88.0
121          UD    0.09

122          KK  4.2-18
123          KM          ROUTE BASIN B4.2 TO DES PT18
124          RK      44    0.01   0.013            CIRC       2
```



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

125          KK      18
126          KM          COMBINE BASINS B4.1 & B4.2
127          HC       2

128          KK  18-19B
129          KM          ROUTE FROM DES PT18 TO DES PT19B
130          RK    1872    0.03   0.013            CIRC     2.5

131          KK     B5.2
132          KM          RUNOFF FROM BASIN B5.2
133          BA   0.099
134          LS       0    88.0
135          UD    0.18

136          KK     19B
137          KM          COMBINE DES PT 18, B5.2
138          HC       2

139          KK    B5.1
140          KM          RUNOFF FROM BASIN B5.1
141          BA   0.082
142          LS       0    88.0
143          UD   0.108

144          KK    DPIN
145          KM          COMBINE DES PT 17, 19B, AND B5.1 INTO POND B
146          HC       3

147          KK   DPOUT
148          KM          ROUTE THROUGH DETENTION POND B
149          SV       0     0.1     0.8     2.7     6.1    12.2    19.1    28.7    38.6    44.0
150          SV    49.3    60.6    72.8
151          SE  6603.1    6604    6605    6606    6607    6608    6609    6610    6611  6611.8
152          SE    6612    6613    6614
153          SQ       0       1       4     8.8    12.9    16.0    18.2    20.3    22.3    23.7
```

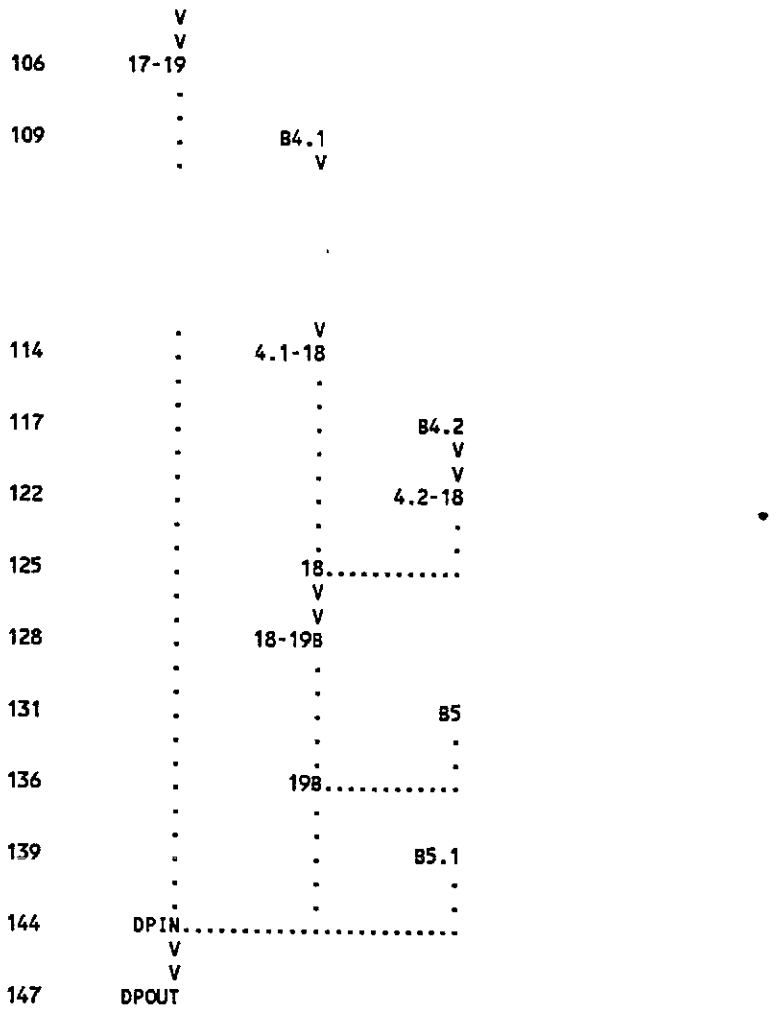
```
            154           SQ    44.1   212.3   478.2
            155           RS       1    ELEV  6603.1
            156           ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

   NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    12          B1
                 V
                 V
    29       B1-15
                 .
                 .
    32           .          B2
                 .           .
                 .           .
    37           .           .          01
                 .           .           V




                 .           .           V
    42           .           .        01-1
                 .           .           .
                 .           .           .
    45           .           .           .          02
                 .           .           .           V
                 .           .           .           V
    50           .           .           .        02-1
                 .           .           .           .
                 .           .           .           .
    53           .           .           .           .          A1
                 .           .           .           .           .
                 .           .           .           .           .
    58           .           .           1........................
                 .           .           V
                 .           .           V
    61           .           .         1-2
                 .           .           .
                 .           .           .
    64           .           .           .          A2
                 .           .           .           .
                 .           .           .           .
    69           .           .           2............
                 .           .           V
                 .           .           V
    72           .           .        2-15
                 .           .           .
                 .           .           .
    75          15........................
                 V
                 V
    78       15-S1
                 V
                 V
    81       S1-16
                 .
                 .
    84           .        B3.1
                 .           .
                 .           .
    89          16............
                 V
                 V
    92       16-S2
                 V
                 V
    95       S2-17
                 .
                 .
    98           .        B3.2
                 .           .
                 .           .
   103          17............
```



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
MAJOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE DAB8.INP
USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM O1&2,A1,& 2 TO B4
INCREASE POND B BY 17%
USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
RUN DATE 4-1-1993

9 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL90	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL90	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS

TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

USER-DEFINED OUTPUT SPECIFICATIONS

TABLE 1

VS	STATION	DPIN	DPOUT	DPOUT							
VV	VARIABLE CODE	2.11	2.11	6.11	.00	.00	.00	.00	.00	.00	.00

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	B1	10.	6.00	1.	0.	0.	.00		
	ROUTED TO	B1-15	10.	6.00	1.	0.	0.	.00		
	HYDROGRAPH AT	B2	186.	6.00	20.	6.	6.	.07		
+	HYDROGRAPH AT	O1	261.	6.17	35.	11.	11.	.26		
	ROUTED TO	O1-1	256.	6.17	35.	11.	11.	.26		
	HYDROGRAPH AT	O2	108.	6.08	12.	4.	4.	.09		
	ROUTED TO	O2-1	101.	6.08	12.	4.	4.	.09		
+	HYDROGRAPH AT	A1	180.	6.00	18.	5.	5.	.06		
	3 COMBINED AT	1	464.	6.08	64.	20.	20.	.41		
	ROUTED TO	1-2	456.	6.08	64.	20.	20.	.41		
+	HYDROGRAPH AT	A2	170.	6.00	17.	5.	5.	.06		

	2 COMBINED AT							
+		2	567.	6.00	81.	25.	24.	.47
	ROUTED TO							
		2-15	566.	6.08	81.	25.	24.	.47
	3 COMBINED AT							
		15	745.	6.08	102.	32.	30.	.55
	ROUTED TO							
+		15-S1	745.	6.08	102.	32.	30.	.55
	ROUTED TO							
		S1-16	744.	6.08	102.	32.	31.	.55
	HYDROGRAPH AT							
		B3.1	23.	6.00	3.	1.	1.	.01
	2 COMBINED AT							
+		16	765.	6.08	105.	32.	31.	.55
	ROUTED TO							
		16-S2	764.	6.08	105.	32.	31.	.55
	ROUTED TO							
		S2-17	759.	6.08	105.	32.	31.	.55
	HYDROGRAPH AT							
+		B3.2	29.	6.00	3.	1.	1.	.01
	2 COMBINED AT							
		17	787.	6.08	108.	33.	32.	.56
	ROUTED TO							
		17-19	784.	6.08	108.	33.	32.	.56
	HYDROGRAPH AT							
+		B4.1	131.	6.00	13.	4.	4.	.05
	ROUTED TO							
		4.1-18	131.	6.00	13.	4.	4.	.05
	HYDROGRAPH AT							
		B4.2	51.	6.00	5.	2.	1.	.02
	ROUTED TO							
		4.2-18	51.	6.00	5.	2.	1.	.02
	2 COMBINED AT							
+		18	182.	6.00	18.	5.	5.	.06
	ROUTED TO							
		18-19B	179.	6.00	18.	5.	5.	.06
	HYDROGRAPH AT							
		B5	243.	6.08	28.	8.	8.	.10
	2 COMBINED AT							
+		19B	421.	6.00	46.	14.	13.	.16
	HYDROGRAPH AT							
		B5.1	228.	6.00	23.	7.	7.	.08
	3 COMBINED AT							
		DPIN	1379.	6.00	176.	54.	52.	.81
	ROUTED TO							
+		DPOUT	192.	6.75	83.	35.	34.	.81
+								6612.88 6.75

BLE 1	STATION	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE

PER	DAY	MON	HRMN			
1	1	JUL	0800	.00	.00	.00
2	1	JUL	0805	.00	.00	.00
3	1	JUL	0810	.00	.00	.00
4	1	JUL	0815	.00	.00	.00
5	1	JUL	0820	.00	.00	.00
6	1	JUL	0825	.00	.00	.00
7	1	JUL	0830	.00	.00	.00
8	1	JUL	0835	.00	.00	.00
9	1	JUL	0840	.00	.00	.00
10	1	JUL	0845	.00	.00	.00
11	1	JUL	0850	.00	.00	.00
12	1	JUL	0855	.00	.00	.00
13	1	JUL	0900	.00	.00	.00
14	1	JUL	0905	.00	.00	.00
15	1	JUL	0910	.00	.00	.00
16	1	JUL	0915	.00	.00	.00
17	1	JUL	0920	.00	.00	.00
18	1	JUL	0925	.00	.00	.00
19	1	JUL	0930	.00	.00	.00
20	1	JUL	0935	.00	.00	.00
21	1	JUL	0940	.00	.00	.00
22	1	JUL	0945	.00	.00	.00
23	1	JUL	0950	.00	.00	.00
24	1	JUL	0955	.00	.00	.00
25	1	JUL	1000	.01	.00	.00
26	1	JUL	1005	.01	.00	.00
27	1	JUL	1010	.02	.00	.00
28	1	JUL	1015	.03	.00	.00
29	1	JUL	1020	.04	.01	.00
30	1	JUL	1025	.05	.01	.00
31	1	JUL	1030	.06	.01	.00
32	1	JUL	1035	.08	.01	.00
33	1	JUL	1040	.09	.02	.00
34	1	JUL	1045	.10	.02	.00
35	1	JUL	1050	.12	.03	.00
36	1	JUL	1055	.13	.04	.00
37	1	JUL	1100	.13	.04	.00
38	1	JUL	1105	.14	.05	.00
39	1	JUL	1110	.15	.05	.01
40	1	JUL	1115	.16	.06	.01
41	1	JUL	1120	.18	.07	.01
42	1	JUL	1125	.19	.08	.01
43	1	JUL	1130	.19	.08	.01
44	1	JUL	1135	.19	.09	.01
45	1	JUL	1140	.20	.10	.01
46	1	JUL	1145	.21	.11	.01
47	1	JUL	1150	.22	.11	.01
48	1	JUL	1155	.26	.12	.01
49	1	JUL	1200	.31	.13	.01
50	1	JUL	1205	.39	.15	.01

'ABLE 1 (CONT.) STATION

ER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
51	1	JUL	1210	.49	.17	.02
52	1	JUL	1215	.62	.19	.02
53	1	JUL	1220	.74	.22	.02
54	1	JUL	1225	.83	.26	.03
55	1	JUL	1230	.89	.30	.03
56	1	JUL	1235	.94	.34	.03
57	1	JUL	1240	.97	.38	.04
58	1	JUL	1245	1.01	.42	.04
59	1	JUL	1250	1.05	.46	.05
60	1	JUL	1255	1.08	.50	.05
61	1	JUL	1300	1.10	.54	.05
62	1	JUL	1305	1.21	.58	.06
63	1	JUL	1310	1.72	.64	.06
64	1	JUL	1315	2.94	.75	.08
65	1	JUL	1320	5.00	.97	.10
66	1	JUL	1325	8.96	1.16	.14

67	1 JUL	1330	13.57	1.46	.21
68	1 JUL	1335	85.48	2.85	.53
69	1 JUL	1340	321.84	6.78	1.90
70	1 JUL	1345	634.78	11.73	5.13
71	1 JUL	1350	923.81	15.09	10.41
72	1 JUL	1355	1166.92	17.69	17.49
73	1 JUL	1400	1378.95	19.74	26.13
74	1 JUL	1405	1353.74	21.65	35.40
75	1 JUL	1410	1062.94	23.59	43.57
76	1 JUL	1415	776.18	49.27	49.65
77	1 JUL	1420	571.06	110.15	53.74
78	1 JUL	1425	435.56	148.49	56.31
79	1 JUL	1430	342.98	171.97	57.89
80	1 JUL	1435	274.98	185.33	58.79
81	1 JUL	1440	221.18	191.45	59.20
82	1 JUL	1445	182.77	192.48	59.27
83	1 JUL	1450	156.92	190.27	59.12
84	1 JUL	1455	139.81	186.18	58.85
85	1 JUL	1500	128.36	181.10	58.50
86	1 JUL	1505	117.96	175.45	58.12
87	1 JUL	1510	106.19	169.27	57.71
88	1 JUL	1515	96.00	162.62	57.26
89	1 JUL	1520	88.44	155.76	56.80
90	1 JUL	1525	83.09	148.93	56.34
91	1 JUL	1530	79.25	142.33	55.90
92	1 JUL	1535	76.59	136.04	55.48
93	1 JUL	1540	74.87	130.16	55.08
94	1 JUL	1545	73.86	124.72	54.72
95	1 JUL	1550	73.28	119.73	54.38
96	1 JUL	1555	72.96	115.19	54.08
97	1 JUL	1600	72.79	111.06	53.80
98	1 JUL	1605	69.97	107.19	53.54
99	1 JUL	1610	63.25	103.23	53.27
100	1 JUL	1615	56.21	98.99	52.99

TABLE 1 (CONT.)		STATION	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY MON	HRMN			
101	1 JUL	1620	50.58	94.55	52.69
102	1 JUL	1625	46.44	90.06	52.39
103	1 JUL	1630	43.33	85.65	52.09
104	1 JUL	1635	41.04	81.41	51.81
105	1 JUL	1640	39.43	77.40	51.54
106	1 JUL	1645	38.38	73.64	51.28
107	1 JUL	1650	37.71	70.17	51.05
108	1 JUL	1655	37.29	66.99	50.84
109	1 JUL	1700	37.03	64.08	50.64
110	1 JUL	1705	36.88	61.43	50.46
111	1 JUL	1710	36.79	59.03	50.30
112	1 JUL	1715	36.74	56.86	50.16
113	1 JUL	1720	36.71	54.90	50.03
114	1 JUL	1725	36.70	53.12	49.91
115	1 JUL	1730	36.70	51.52	49.80
116	1 JUL	1735	36.71	50.08	49.70
117	1 JUL	1740	36.73	48.78	49.61
118	1 JUL	1745	36.74	47.60	49.54
119	1 JUL	1750	36.76	46.54	49.46
120	1 JUL	1755	36.78	45.59	49.40
121	1 JUL	1800	36.80	44.73	49.34
122	1 JUL	1805	36.26	44.06	49.29
123	1 JUL	1810	34.84	43.83	49.23
124	1 JUL	1815	33.30	43.58	49.16
125	1 JUL	1820	31.90	43.29	49.09
126	1 JUL	1825	30.65	42.98	49.01
127	1 JUL	1830	29.60	42.64	48.92
128	1 JUL	1835	28.88	42.29	48.83
129	1 JUL	1840	28.56	41.93	48.74
130	1 JUL	1845	28.44	41.58	48.65
131	1 JUL	1850	28.31	41.24	48.56
132	1 JUL	1855	28.03	40.90	48.47
133	1 JUL	1900	27.76	40.56	48.38
134	1 JUL	1905	27.65	40.22	48.29

135	1 JUL	1910	27.78	39.89	48.21
136	1 JUL	1915	27.97	39.58	48.13
137	1 JUL	1920	28.03	39.27	48.05
138	1 JUL	1925	27.89	38.98	47.97
139	1 JUL	1930	27.69	38.69	47.89
140	1 JUL	1935	27.63	38.40	47.82
141	1 JUL	1940	27.79	38.12	47.75
142	1 JUL	1945	28.00	37.85	47.68
143	1 JUL	1950	28.08	37.59	47.61
144	1 JUL	1955	27.94	37.34	47.54
145	1 JUL	2000	27.75	37.09	47.48
146	1 JUL	2005	27.69	36.85	47.42
147	1 JUL	2010	27.85	36.61	47.35
148	1 JUL	2015	28.07	36.39	47.30
149	1 JUL	2020	28.14	36.17	47.24
150	1 JUL	2025	28.00	35.96	47.18

TABLE 1 (CONT.) STATION

PER	DAY	MON	HRMN	DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
151	1	JUL	2030	27.81	35.75	47.13
152	1	JUL	2035	27.76	35.54	47.08
153	1	JUL	2040	27.92	35.34	47.02
154	1	JUL	2045	28.13	35.15	46.97
155	1	JUL	2050	28.20	34.96	46.93
156	1	JUL	2055	28.07	34.78	46.88
157	1	JUL	2100	27.87	34.61	46.83
158	1	JUL	2105	27.60	34.43	46.79
159	1	JUL	2110	27.20	34.24	46.74
160	1	JUL	2115	26.79	34.05	46.69
161	1	JUL	2120	26.34	33.86	46.64
162	1	JUL	2125	25.80	33.65	46.59
163	1	JUL	2130	25.29	33.44	46.53
164	1	JUL	2135	24.89	33.22	46.47
165	1	JUL	2140	24.58	33.00	46.42
166	1	JUL	2145	24.36	32.78	46.36
167	1	JUL	2150	24.20	32.56	46.30
168	1	JUL	2155	24.08	32.34	46.24
169	1	JUL	2200	24.01	32.12	46.19
170	1	JUL	2205	23.86	31.90	46.13
171	1	JUL	2210	23.56	31.69	46.08
172	1	JUL	2215	23.24	31.47	46.02
173	1	JUL	2220	23.07	31.26	45.96
174	1	JUL	2225	23.14	31.04	45.91
175	1	JUL	2230	23.29	30.84	45.85
176	1	JUL	2235	23.33	30.64	45.80
177	1	JUL	2240	23.17	30.45	45.75
178	1	JUL	2245	22.96	30.25	45.70
179	1	JUL	2250	22.79	30.06	45.65
180	1	JUL	2255	22.66	29.87	45.60
181	1	JUL	2300	22.55	29.68	45.55
182	1	JUL	2305	22.26	29.49	45.50
183	1	JUL	2310	21.64	29.29	45.45
184	1	JUL	2315	20.99	29.08	45.40
185	1	JUL	2320	20.43	28.86	45.34
186	1	JUL	2325	20.01	28.64	45.28
187	1	JUL	2330	19.69	28.41	45.22
188	1	JUL	2335	19.43	28.18	45.16
189	1	JUL	2340	19.24	27.95	45.10
190	1	JUL	2345	19.11	27.72	45.04
191	1	JUL	2350	19.02	27.49	44.98
192	1	JUL	2355	18.97	27.27	44.93
193	2	JUL	0000	18.94	27.05	44.87
194	2	JUL	0005	18.92	26.84	44.82
195	2	JUL	0010	18.91	26.63	44.76
196	2	JUL	0015	18.91	26.43	44.71

197	2 JUL	0020	18.90	26.23	44.66
198	2 JUL	0025	18.91	26.04	44.61
199	2 JUL	0030	18.91	25.85	44.56
200	2 JUL	0035	18.91	25.67	44.51

TABLE 1 (CONT.)	STATION		DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY	MON	HRMN		
201	2	JUL	0040	18.91	25.49	44.47
202	2	JUL	0045	18.92	25.32	44.42
203	2	JUL	0050	18.92	25.15	44.38
204	2	JUL	0055	18.93	24.99	44.34
205	2	JUL	0100	18.93	24.83	44.29
206	2	JUL	0105	18.93	24.68	44.25
207	2	JUL	0110	18.94	24.53	44.22
208	2	JUL	0115	18.94	24.38	44.18
209	2	JUL	0120	18.95	24.24	44.14
210	2	JUL	0125	18.95	24.10	44.10
211	2	JUL	0130	18.96	23.97	44.07
212	2	JUL	0135	18.96	23.84	44.04
213	2	JUL	0140	18.96	23.71	44.00
214	2	JUL	0145	18.97	23.69	43.97
215	2	JUL	0150	18.97	23.68	43.94
216	2	JUL	0155	18.98	23.68	43.90
217	2	JUL	0200	18.98	23.67	43.87
218	2	JUL	0205	18.98	23.66	43.84
219	2	JUL	0210	18.99	23.65	43.81
220	2	JUL	0215	18.99	23.64	43.78
221	2	JUL	0220	19.00	23.63	43.74
222	2	JUL	0225	19.00	23.63	43.71
223	2	JUL	0230	19.00	23.62	43.68
224	2	JUL	0235	19.01	23.61	43.65
225	2	JUL	0240	19.01	23.60	43.62
226	2	JUL	0245	19.02	23.59	43.59
227	2	JUL	0250	19.02	23.58	43.55
228	2	JUL	0255	19.03	23.58	43.52
229	2	JUL	0300	19.03	23.57	43.49
230	2	JUL	0305	19.03	23.56	43.46
231	2	JUL	0310	19.04	23.55	43.43
232	2	JUL	0315	19.04	23.54	43.40
233	2	JUL	0320	19.05	23.54	43.37
234	2	JUL	0325	19.05	23.53	43.34
235	2	JUL	0330	19.05	23.52	43.31
236	2	JUL	0335	19.06	23.51	43.27
237	2	JUL	0340	19.06	23.50	43.24
238	2	JUL	0345	19.07	23.50	43.21
239	2	JUL	0350	19.07	23.49	43.18
240	2	JUL	0355	19.07	23.48	43.15
241	2	JUL	0400	19.08	23.47	43.12
242	2	JUL	0405	18.57	23.46	43.09
243	2	JUL	0410	17.24	23.45	43.05
244	2	JUL	0415	15.74	23.44	43.00
245	2	JUL	0420	14.35	23.43	42.95

246	2 JUL	0425	13.09	23.41	42.88
247	2 JUL	0430	12.01	23.39	42.80
248	2 JUL	0435	11.21	23.37	42.72
249	2 JUL	0440	10.76	23.35	42.64
250	2 JUL	0445	10.53	23.32	42.55

ABLE 1 CONT.)	STATION		DPIN FLOW	DPOUT FLOW	DPOUT STORAGE
PER	DAY	MON	HRMN		
51	2	JUL	0450	10.31	23.30	42.46
52	2	JUL	0455	9.99	23.28	42.37
253	2	JUL	0500	9.68	23.25	42.28
254	2	JUL	0505	9.52	23.23	42.19
55	2	JUL	0510	9.59	23.21	42.09
56	2	JUL	0515	9.73	23.18	42.00
257	2	JUL	0520	9.79	23.16	41.91
258	2	JUL	0525	9.65	23.13	41.81

259	2	JUL	0530	9.46	23.11	41.72
260	2	JUL	0535	9.38	23.08	41.63
261	2	JUL	0540	9.50	23.06	41.53
262	2	JUL	0545	9.68	23.04	41.44
263	2	JUL	0550	9.75	23.01	41.35
264	2	JUL	0555	9.64	22.99	41.26
265	2	JUL	0600	9.46	22.96	41.16
266	2	JUL	0605	9.38	22.94	41.07
267	2	JUL	0610	9.50	22.92	40.98
268	2	JUL	0615	9.68	22.89	40.89
269	2	JUL	0620	9.76	22.87	40.79
270	2	JUL	0625	9.64	22.85	40.70
271	2	JUL	0630	9.46	22.82	40.61
272	2	JUL	0635	9.39	22.80	40.52
273	2	JUL	0640	9.51	22.77	40.43
274	2	JUL	0645	9.69	22.75	40.34
275	2	JUL	0650	9.77	22.73	40.25
276	2	JUL	0655	9.65	22.70	40.16
277	2	JUL	0700	9.47	22.68	40.07
278	2	JUL	0705	9.39	22.66	39.98
279	2	JUL	0710	9.51	22.63	39.89
280	2	JUL	0715	9.69	22.61	39.80
281	2	JUL	0720	9.77	22.59	39.71
282	2	JUL	0725	9.65	22.56	39.62
283	2	JUL	0730	9.47	22.54	39.53
284	2	JUL	0735	9.40	22.52	39.44
285	2	JUL	0740	9.52	22.49	39.35
286	2	JUL	0745	9.70	22.47	39.26
287	2	JUL	0750	9.78	22.45	39.17
288	2	JUL	0755	9.66	22.43	39.09
289	2	JUL	0800	9.48	22.40	39.00
290	2	JUL	0805	8.87	22.38	38.91
291	2	JUL	0810	7.56	22.35	38.81
292	2	JUL	0815	6.11	22.33	38.70
293	2	JUL	0820	4.80	22.30	38.59
294	2	JUL	0825	3.76	22.27	38.46
295	2	JUL	0830	2.96	22.25	38.33
296	2	JUL	0835	2.31	22.22	38.20
297	2	JUL	0840	1.62	22.19	38.06
298	2	JUL	0845	1.20	22.16	37.91
299	2	JUL	0850	.90	22.13	37.77

300	2	JUL	0855	.66	22.10	37.62
		MAX		1378.95	192.48	59.27
		MIN		.00	.00	.00
		AVE		51.77	33.60	34.94

*** NORMAL END OF HEC-1 ***

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FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

HEC-1 INPUT


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

  1       ID         FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
  2       ID         MINOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE TAB7.INP
  3       ID         USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
  4       ID         WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM O1&2,A1,& 2 TO B4
  5       ID         USING THE 10-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
  6       ID         RUN DATE 4-1-1993
          *DIAGRAM
  7       IT       5 01JUL90     800     300
  8       IO       5

  9       KK      B1
 10       KM         RUNOFF FROM BASIN B1
 11       BA   0.003
 12       LS       0    98.0
 13       UD   0.060
 14       IN      15
 15       PB       0
 16       PC   0.000   0.001   0.005   0.009   0.014   0.018   0.024   0.033   0.036   0.043
 17       PC   0.050   0.057   0.063   0.070   0.076   0.083   0.096   0.117   0.138   0.159
 18       PC   0.180   0.225   0.300   1.200   2.100   2.175   2.250   2.295   2.340   2.370
 19       PC   2.400   2.430   2.460   2.475   2.490   2.505   2.520   2.535   2.550   2.565
 20       PC   2.580   2.591   2.603   2.614   2.625   2.637   2.648   2.659   2.670   2.682
 21       PC   2.693   2.704   2.715   2.725   2.735   2.744   2.754   2.763   2.772   2.781
 22       PC   2.790   2.798   2.805   2.813   2.820   2.828   2.835   2.843   2.850   2.858
 23       PC   2.865   2.873   2.880   2.888   2.895   2.903   2.910   2.918   2.925   2.933
 24       PC   2.940   2.944   2.948   2.952   2.955   2.959   2.963   2.967   2.970   2.974
 25       PC   2.978   2.982   2.985   2.989   2.993   2.997   3.000

 26       KK   B1-15
 27       KM         ROUTE BASIN B1 TO DES PT 15
 28       RK      50    0.02   0.013            CIRC     2.0

 29       KK      B2
 30       KM         RUNOFF FROM BASIN B2
 31       BA   0.070
 32       LS       0    88.0
 33       UD   0.144

 34       KK      O1
 35       KM         RUNOFF FROM BASIN O1
 36       BA   0.264

 37       LS       0    70.0
 38       UD   0.280

 39       KK    O1-1
 40       KM         ROUTE BASIN O1 TO DES PT 1
 41       RK    1250    0.02   0.013            CIRC     3.5

 42       KK      O2
 43       KM         RUNOFF FROM BASIN O2
 44       BA   0.086
 45       LS       0    70.0
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 46          UD   0.170
                                          HEC-1 INPUT                                                PAGE  2

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


 47          KK    O2-1
 48          KM         ROUTE BASIN O2 TO DES PT 1
 49          RK    1850    0.02   0.016            TRAP      44       3

 50          KK      A1
 51          KM         RUNOFF FROM BASIN A1
 52          BA   0.064
 53          LS       0    88.0
 54          UD   0.100

 55          KK       1
 56          KM         COMBINE O1,O2,A1
 57          HC       3

 58          KK     1-2
 59          KM         ROUTE DES PT 1 TO DES PT 2
 60          RK    1330   0.016   0.013            CIRC     3.5

 61          KK      A2
 62          KM         RUNOFF FROM BASIN A2
 63          BA   0.059
 64          LS       0    88.0
 65          UD   0.080

 66          KK       2
 67          KM         COMBINE DES PT 1, A2
 68          HC       2

 69          KK    2-15
 70          KM         ROUTE DES PT 2 TO DES PT 15
 71          RK    1450    0.02   0.013            CIRC       4

 72          KK      15
 73          KM         COMBINE BASIN B1, B2 AND DES PT 2 AT DES PT 15
 74          HC       3

 75          KK   15-S1
 76          KM         ROUTE DES PT15 TO DES PTS1
 77          RK     200   0.015   0.013            CIRC     4.5

 78          KK   S1-16
 79          KM         ROUTE DES PTS1 TO DES PT16
 80          RK    1440   0.025   0.013            TRAP       6       3




 81          KK    B3.1
 82          KM         RUNOFF FROM BASIN B3.1
 83          BA   0.006
 84          LS       0    98.0
 85          UD   0.144
1                                         HEC-1 INPUT                                                PAGE  3

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


 86          KK      16
 87          KM         COMBINE DES PT15, B3.1
 88          HC       2

 89          KK   16-S2
 90          KM         ROUTE DES PT16 TO DES PT S2
 91          RK     150   0.025   0.013            DEEP     8.0

 92          KK   S2-17
 93          KM         ROUTE DES PTS2 TO DES PT17
 94          RK    1880   0.025   0.013            TRAP     6.0       3

 95          KK    B3.2
 96          KM         RUNOFF FROM BASIN B3.2
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 97          BA   0.009
 98          LS      0    98.0
 99          UD   0.18

100          KK     17
101          KM        COMBINE DES PT 16, B3.2
102          HC      2

103          KK   17-19
104          KM        ROUTE DES PT17 TO DES PT19
105          RK    600    0.02   0.013            CIRC     6.0

106          KK    B4.1
107          KM        RUNOFF FROM BASIN B4.1
108          BA   0.046
109          LS      0      88
110          UD   0.09

111          KK  4.1-18
112          KM        ROUTE BASIN B4.1 TO DES PT18
113          RK     50    0.01   0.013            TRAP      44       3

114          KK    B4.2
115          KM        RUNOFF FROM BASIN B4.2
116          BA   0.018
117          LS      0    88.0
118          UD   0.09

119          KK  4.2-18
120          KM        ROUTE BASIN B4.2 TO DES PT18
121          RK     44    0.01   0.013            CIRC      2

122          KK     18
123          KM        COMBINE BASINS B4.1 & B4.2
124          HC      2
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

125          KK  18-19B
126          KM        ROUTE FROM DES PT18 TO DES PT19B
127          RK   1872    0.03   0.013            CIRC     2.5

128          KK     B5
129          KM        RUNOFF FROM BASIN B5
130          BA   0.099
131          LS      0    88.0
132          UD   0.18

133          KK    19B
134          KM        COMBINE DES PT 18, B5
135          HC      2

136          KK    B5.1
137          KM        RUNOFF FROM BASIN B5.1
138          BA   0.082
139          LS      0    88.0
140          UD  0.108

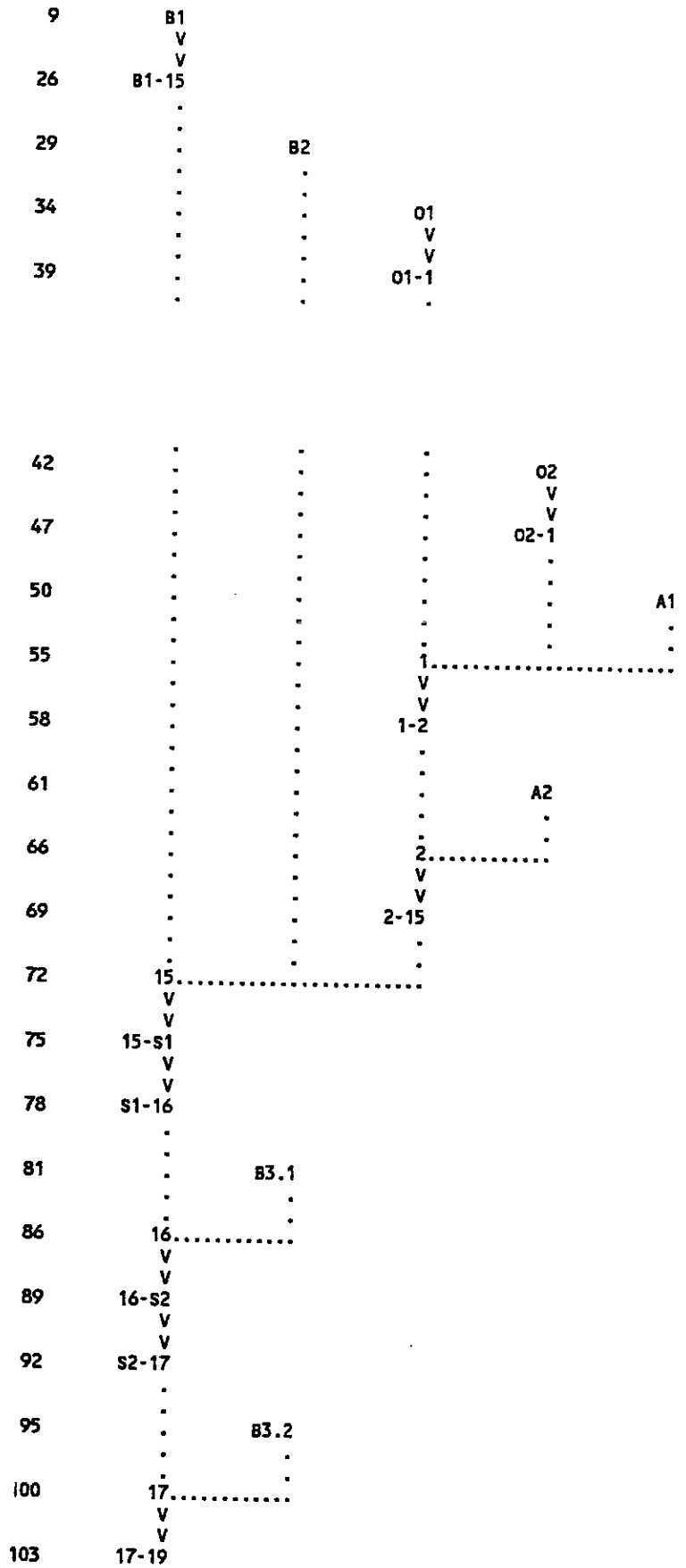
141          KK   DPIN
142          KM        COMBINE DES PT 17, 19B, AND B5.1 INTO POND B
143          HC      3

144          KK  DPOUT
145          KM        ROUTE THROUGH DETENTION POND B
146          SV      0   0.25    1.7    5.6   12.7   25.5   39.9   60.0   80.9   92.9
147          SV  103.1  126.9  152.4
148          SE 6603.1   6604   6605   6606   6607   6608   6609   6610   6611 6611.8
149          SE   6612   6613   6614
150          SQ      0      1      4    8.8   12.9   16.0   18.2   20.3   22.3   23.7
151          SQ   44.1  212.3  478.2
152          RS      1   ELEV 6603.1
153          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

(V) ROUTING (---->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW



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                   .
                   .
 106               .          B4.1
                   .             V
                   .             V
 111               .        4.1-18
                   .             .



 114               .          .           B4.2
                   .          .              V
                   .          .              V
 119               .          .         4.2-18
                   .          .              .
                   .          .              .
 122               .         18...............
                   .          V
                   .          V
 125               .      18-19B
                   .          .
                   .          .
 128               .          .             B5
                   .          .              .
                   .          .              .
 133               .        19B...............
                   .          .
                   .          .
 136               .          .           B5.1
                   .          .              .
                   .          .              .
 141           DPIN...........................
                  V
                  V
 144          DPOUT

***) RUNOFF ALSO COMPUTED AT THIS LOCATION
```

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                                                   ****
                        FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
           U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                                   ****



                        FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
                        MINOR SYSTEM HYDROLOGY FOR BASIN A & B - INPUT FILE TAB7.INP
                        USING FULLY DEVELOPED WEST AND EAST OF SH 83 WITHIN THE FORD DEVELOPMEN
                        WITH A DIV UNDER HWY 83 FROM BAS A2 TO DIV FLOW FROM 01&2,A1,& 2 TO B4
                        USING THE 10-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
                        RUN DATE 4-1-1993

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

   IT           HYDROGRAPH TIME DATA
                       NMIN            5  MINUTES IN COMPUTATION INTERVAL
                      IDATE       1JUL90  STARTING DATE
                      ITIME         0800  STARTING TIME
                         NQ          300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE       2JUL90  ENDING DATE
                     NDTIME         0855  ENDING TIME

                COMPUTATION INTERVAL     .08 HOURS
                     TOTAL TIME BASE   24.92 HOURS

        ENGLISH UNITS
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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

+	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	B1	7.	6.00	1.	0.	0.	.00		
	ROUTED TO	B1-15	7.	6.00	1.	0.	0.	.00		
+	HYDROGRAPH AT	B2	107.	6.00	11.	3.	3.	.07		
+	HYDROGRAPH AT	01	102.	6.17	15.	5.	5.	.26		
	ROUTED TO	01-1	99.	6.17	15.	5.	5.	.26		
+	HYDROGRAPH AT	02	45.	6.08	5.	2.	2.	.09		
+	ROUTED TO	02-1	43.	6.17	5.	2.	2.	.09		
	HYDROGRAPH AT	A1	108.	6.00	10.	3.	3.	.06		
+	3 COMBINED AT	1	200.	6.08	30.	10.	10.	.41		
+	ROUTED TO	1-2	196.	6.08	30.	10.	10.	.41		
+	HYDROGRAPH AT	A2	102.	6.00	10.	3.	3.	.06		
	2 COMBINED AT	2	273.	6.00	39.	13.	12.	.47		
+	ROUTED TO	2-15	265.	6.08	39.	13.	12.	.47		
+	3 COMBINED AT	15	375.	6.00	51.	16.	16.	.55		

	ROUTED TO	15-S1	373.	6.00	52.	16.	16.	.55	
+	ROUTED TO	S1-16	372.	6.08	52.	16.	16.	.55	
+	HYDROGRAPH AT	B3.1	13.	6.00	2.	0.	0.	.01	
	2 COMBINED AT	16	384.	6.08	53.	17.	16.	.55	
+	ROUTED TO	16-S2	383.	6.08	53.	17.	16.	.55	
+	ROUTED TO	S2-17	380.	6.08	53.	17.	16.	.55	
	HYDROGRAPH AT	B3.2	19.	6.00	2.	1.	1.	.01	
+	2 COMBINED AT	17	399.	6.08	55.	18.	17.	.56	
+	ROUTED TO	17-19	397.	6.08	55.	18.	17.	.56	
	HYDROGRAPH AT	B4.1	79.	6.00	7.	2.	2.	.05	
+	ROUTED TO	4.1-18	79.	6.00	7.	2.	2.	.05	
+	HYDROGRAPH AT	B4.2	31.	6.00	3.	1.	1.	.02	
	ROUTED TO	4.2-18	31.	6.00	3.	1.	1.	.02	
+	2 COMBINED AT	18	109.	6.00	10.	3.	3.	.06	
+	ROUTED TO	18-19B	106.	6.00	10.	3.	3.	.06	
+	HYDROGRAPH AT	B5	144.	6.08	16.	5.	5.	.10	
	2 COMBINED AT	19B	245.	6.00	26.	8.	8.	.16	
+	HYDROGRAPH AT	B5.1	136.	6.00	13.	4.	4.	.08	
+	3 COMBINED AT	DPIN	746.	6.00	95.	30.	29.	.81	
	ROUTED TO	DPOUT	18.	10.33	18.	14.	13.	.81	
									6608.93 10.33

*** NORMAL END OF HEC-1 ***

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FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

1 HEC-1 INPUT PAGE 1

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

  1           ID         FAIRLANE TECHNOLOGY PARK  - URS PROJECT NO. 6742044
  2           ID         MAJOR SYSTEM HYDROLOGY FOR BASIN B - INPUT FILE HISB.INP
  3           ID         USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
  4           ID         HISTORIC UNDEVELOPED CONDITIONS THROUGHOUT THE BASIN
  5           ID         RUN DATE 4-1-1993
              *DIAGRAM
  6           IT       5 01JUL92     800     300
  7           IO       5

  8           KK      B1
  9           KM         RUNOFF FROM BASIN B1
 10           BA    0.003
 11           LS        0    51.8
 12           UD    0.060
 13           IN       15
 14           PB        0
 15           PC    0.000   0.002   0.007   0.013   0.020   0.026   0.035   0.044   0.053   0.063
 16           PC    0.073   0.083   0.092   0.103   0.112   0.122   0.141   0.172   0.202   0.233
 17           PC    0.264   0.330   0.440   1.760   3.080   3.190   3.300   3.366   3.432   3.476
 18           PC    3.520   3.564   3.608   3.630   3.652   3.674   3.696   3.718   3.740   3.762
 19           PC    3.784   3.801   3.817   3.834   3.850   3.867   3.883   3.900   3.916   3.933
 20           PC    3.949   3.966   3.982   3.997   4.011   4.025   4.039   4.052   4.066   4.079
 21           PC    4.092   4.103   4.114   4.125   4.136   4.147   4.158   4.169   4.180   4.191
 22           PC    4.202   4.213   4.224   4.235   4.246   4.257   4.268   4.279   4.290   4.301
 23           PC    4.312   4.318   4.323   4.329   4.334   4.340   4.345   4.351   4.356   4.362
 24           PC    4.367   4.373   4.378   4.384   4.389   4.395   4.400

 25           KK    B1-15
 26           KM         ROUTE BASIN B1 TO DES PT 15
 27           RK       50    0.02   0.013           CIRC     2.0

 28           KK      B2
 29           KM         RUNOFF FROM BASIN B2
 30           BA    0.070
 31           LS        0    51.8
 32           UD    0.144

 33           KK       15
 34           KM         COMBINE BASIN B1 AND B2 AT DES PT 15
 35           HC        2

 36           KK    15-S1
 37           KM         ROUTE DES PT15 TO DES PTS1
 38           RK      200   0.015   0.013           CIRC     4.5

 39           KK    S1-16
 40           KM         ROUTE DES PTS1 TO DES PT16
 41           RK     1440   0.025   0.013           TRAP       6       3

 42           KK     B3.1
 43           KM         RUNOFF FROM BASIN B3.1
 44           BA    0.006
```

```
     45          LS       0       49
     46          UD   0.144
1                                       HEC-1 INPUT                                       PAGE  2

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


     47          KK      16
     48          KM          COMBINE DES PT15, B3.1
     49          HC       2

     50          KK   16-S2
     51          KM          ROUTE DES PT16 TO DES PT S2
     52          RK     150   0.025   0.013             DEEP     8.0

     53          KK   S2-17
     54          KM          ROUTE DES PTS2 TO DES PT17
     55          RK    1880   0.025   0.013             TRAP     6.0       3

     56          KK    B3.2
     57          KM          RUNOFF FROM BASIN B3.2
     58          BA   0.009
     59          LS       0       67
     60          UD    0.18

     61          KK      17
     62          KM          COMBINE DES PT 16, B3.2
     63          HC       2

     64          KK   17-19
     65          KM          ROUTE DES PT17 TO DES PT19
     66          RK     600    0.02   0.013             CIRC     6.0

     67          KK    B4.1
     68          KM          RUNOFF FROM BASIN B4.1
     69          BA   0.046
     70          LS       0       49
     71          UD    0.09

     72          KK  B4.118
     73          KM          ROUTE BASIN B4.1 TO DES PT18
     74          RK      50    0.01   0.013             TRAP      44       3

     75          KK    B4.2
     76          KM          RUNOFF FROM BASIN B4.2
     77          BA   0.018
     78          LS       0     49.0
     79          UD    0.09




     80          KK  B4.218
     81          KM          ROUTE BASIN B4.2 TO DES PT18
     82          RK      44    0.01   0.013             CIRC       2

     83          KK      18
     84          KM          COMBINE BASINS B4.1, B4.2
     85          HC       2
                                        HEC-1 INPUT                                       PAGE  3

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


     86          KK  18-19B
     87          KM          ROUTE FROM DES PT18 TO DES PT19B
     88          RK    1872    0.03   0.013             CIRC     2.5

     89          KK      B5.2
     90          KM          RUNOFF FROM BASIN B5.2
     91          BA   0.099
     92          LS       0       67
     93          UD    0.18

     94          KK     19B
     95          KM          COMBINE DES PT 18, B5.2
     96          HC       2
```

```
 97          KK    B5.1
 98          KM          RUNOFF FROM BASIN B5.1
 99          BA   0.082
100          LS      0       57
101          UD   0.108

102          KK      19
103          KM          COMBINE DES PT 17, 198, AND B5.1
104          HC       3
105          ZZ
```

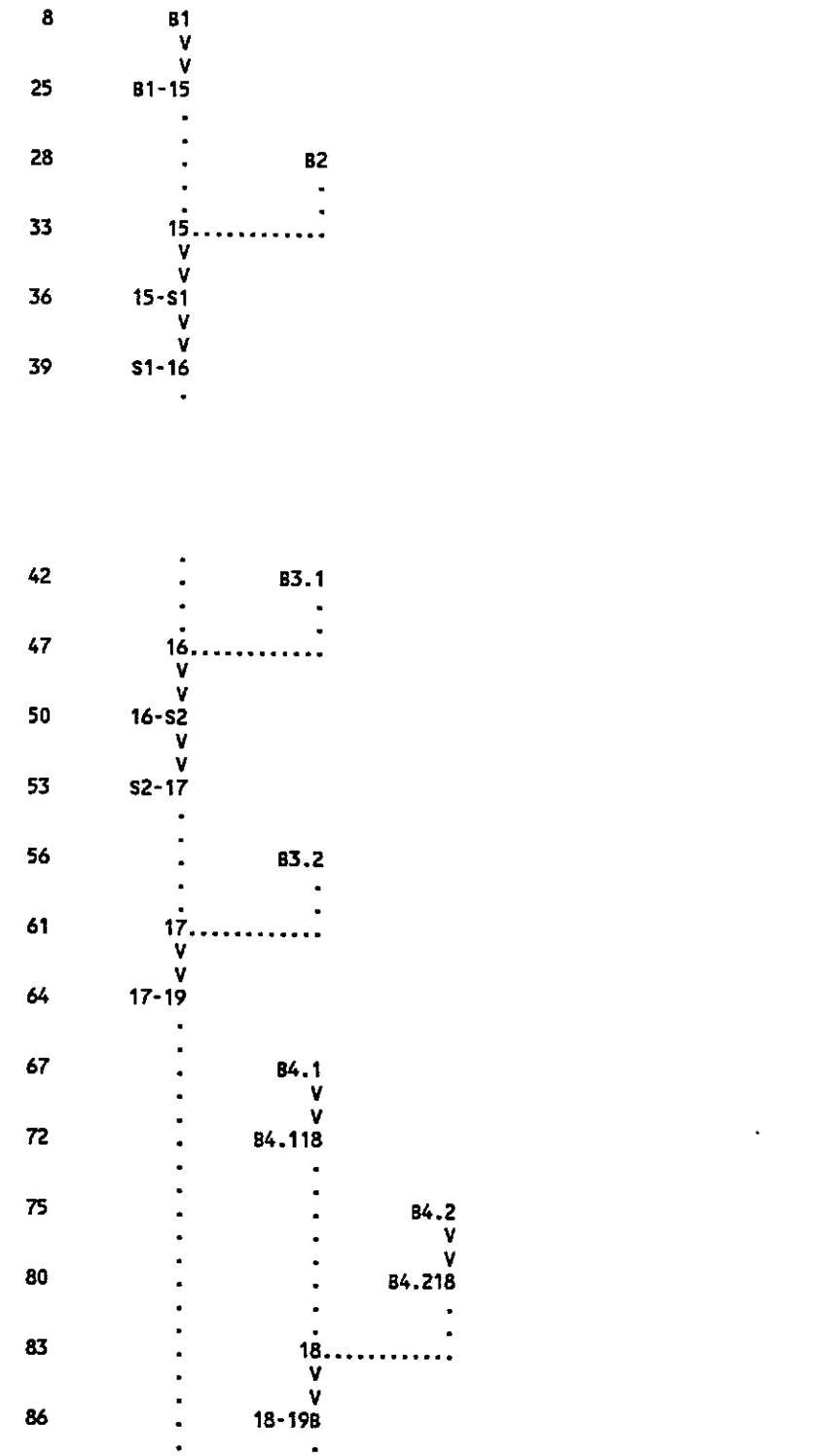
1

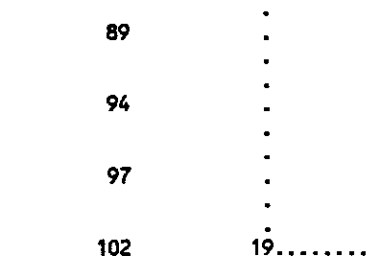
SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

(V) ROUTING (---->) DIVERSION OR PUMP FLOW

(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW





(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

FAIRLANE TECHNOLOGY PARK - URS PROJECT NO. 6742044
MAJOR SYSTEM HYDROLOGY FOR BASIN B - INPUT FILE HISB.INP
USING THE 100-YEAR 24-HOUR STORM IN THE CITY/COUNTY CRITERIA
HISTORIC UNDEVELOPED CONDITIONS THROUGHOUT THE BASIN
RUN DATE 4-1-1993

7 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	5	MINUTES IN COMPUTATION INTERVAL
IDATE	1JUL92	STARTING DATE
ITIME	0800	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2JUL92	ENDING DATE
NDTIME	0855	ENDING TIME

COMPUTATION INTERVAL .08 HOURS
TOTAL TIME BASE 24.92 HOURS

ENGLISH UNITS

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

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WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	B1	1.	6.00	0.	0.	0.	.00		
+	ROUTED TO	B1-15	1.	6.00	0.	0.	0.	.00		

HYDROGRAPH AT	B2	23.	6.08	3.	1.	1.	.07
2 COMBINED AT	15	24.	6.08	3.	1.	1.	.07
ROUTED TO	15-S1	24.	6.08	3.	1.	1.	.07
ROUTED TO	S1-16	21.	6.08	3.	1.	1.	.07
HYDROGRAPH AT	B3.1	1.	6.08	0.	0.	0.	.01
2 COMBINED AT	16	22.	6.08	3.	1.	1.	.08
ROUTED TO	16-S2	22.	6.08	3.	1.	1.	.08
ROUTED TO	S2-17	22.	6.17	3.	1.	1.	.08
HYDROGRAPH AT	B3.2	9.	6.08	1.	0.	0.	.01
2 COMBINED AT	17	30.	6.17	4.	1.	1.	.09
ROUTED TO	17-19	30.	6.17	4.	1.	1.	.09
HYDROGRAPH AT	B4.1	11.	6.00	1.	1.	1.	.05
ROUTED TO	B4.118	11.	6.08	1.	1.	1.	.05
HYDROGRAPH AT	B4.2	4.	6.00	1.	0.	0.	.02
ROUTED TO	B4.218	4.	6.08	1.	0.	0.	.02
2 COMBINED AT	18	15.	6.08	2.	1.	1.	.06
ROUTED TO	18-19B	15.	6.08	2.	1.	1.	.06
HYDROGRAPH AT	B5	104.	6.08	11.	4.	4.	.10
2 COMBINED AT	19B	120.	6.08	13.	4.	4.	.16
HYDROGRAPH AT	B5.1	49.	6.00	5.	2.	2.	.08
3 COMBINED AT	19	193.	6.08	22.	8.	7.	.33

** NORMAL END OF HEC-1 ***

NDTIME 0855 ENDING TIME

APPENDIX C

MISCELLANEOUS CALCULATIONS AND SUBBASIN HYDROLOGY

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URS JOB NO. 42044 PAGE ____ OF ____
DATE 1-26-93 BY FJ CHECKED BY ____ (date)
CLIENT FORD LAND DEV CO
PROJECT FAIRLANE TECHNOLOGY PARK

SUBJECT STREET CAPACITY. STATE HIGHWAY 83 @ EAST LINE.

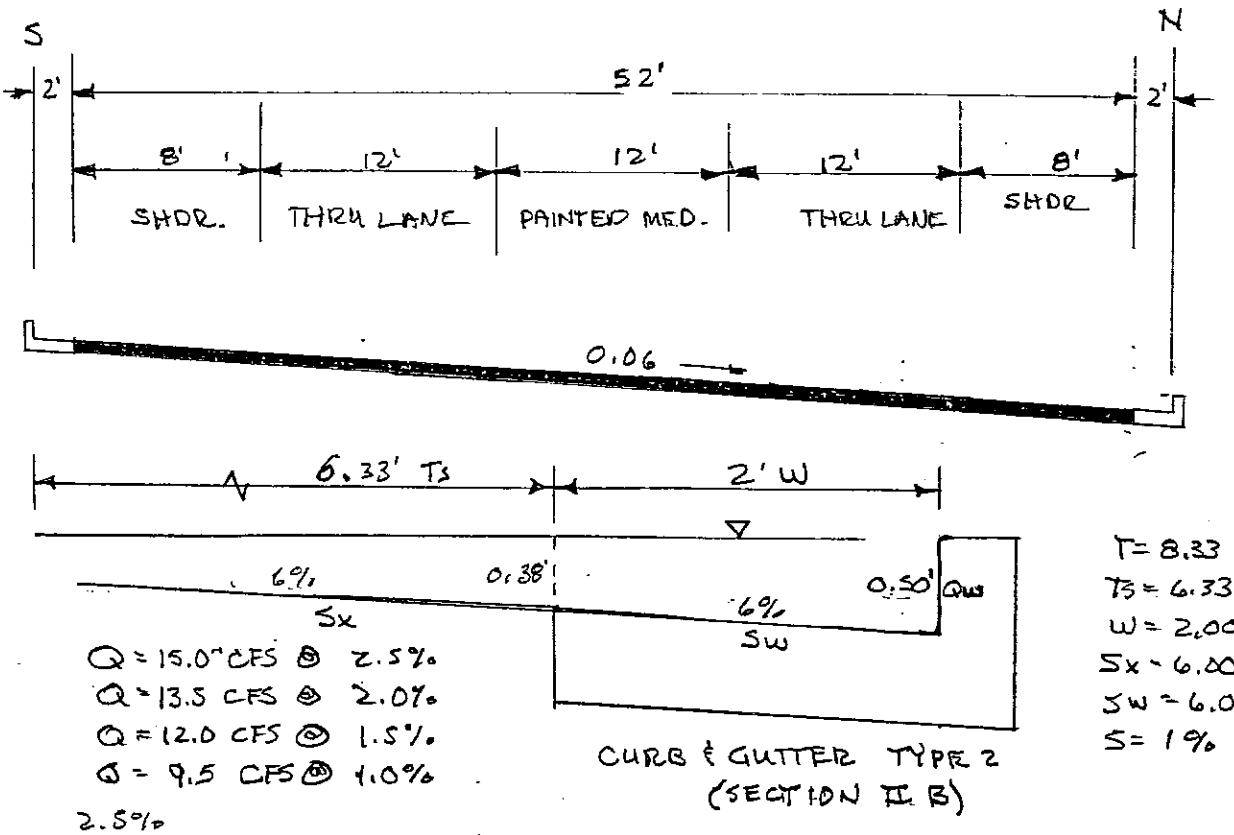
PROPOSED X-SEC FROM PROJECT NO. CC-04-0083-38

℄ RADIUS ≈ 1500 FT
DESIGN SPEED 55
M-203.12 SUPERELEVATION OF OF CURVE STREETS

$e_{MAX} = 0.06$

D = 3.82° USE 4° SUPERELEVATION = 0.059 USE 0.06

WIDTH = 55' 100YR DESIGN.



Q = 15.0 CFS @ 2.5%
Q = 13.5 CFS @ 2.0%
Q = 12.0 CFS @ 1.5%
Q = 9.5 CFS @ 1.0%

CURB & GUTTER TYPE 2
(SECTION II B)

T = 8.33
Ts = 6.33
W = 2.00
Sx = 6.00%
Sw = 6.00%
S = 1% TO 2.5

2.5%
$Q = C\ I\ A$

$A = Q / C\ I$

A = 15.0 / 0.95 (9.0) 13.5 / 0.95 (9.0) 12.0 / 0.95 (9.0) 9.5 / 0.90 (9.

A = 1.75 AC A = 1.58 A = 1.40 A = 1.11

1.75 x 43560 = 76 230 / 56 = 1361 LF

1.58 x 43560 = 68,825 / 56 = 1229 LF

1.40 x 43560 = 60 984 / 56 = 1089 LF

1.11 x 43560 = 48352 / 56 = 863 LF

INLET INTERVAL

DOUBLE INTERVAL ON STRAIGHT SECTION OF ROAD.

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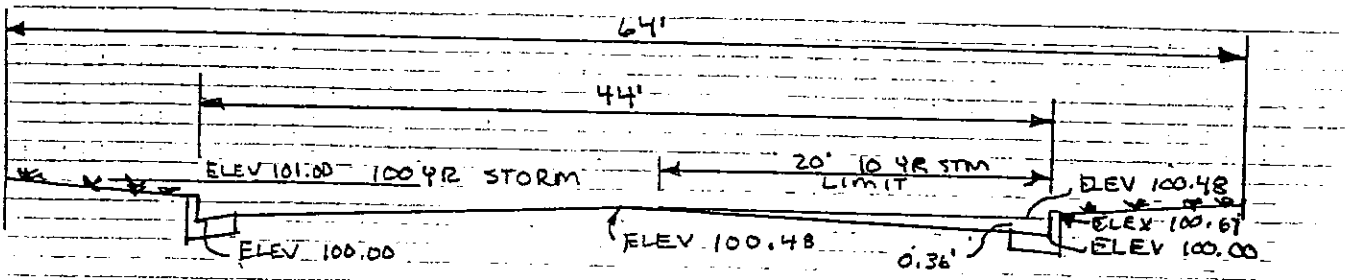
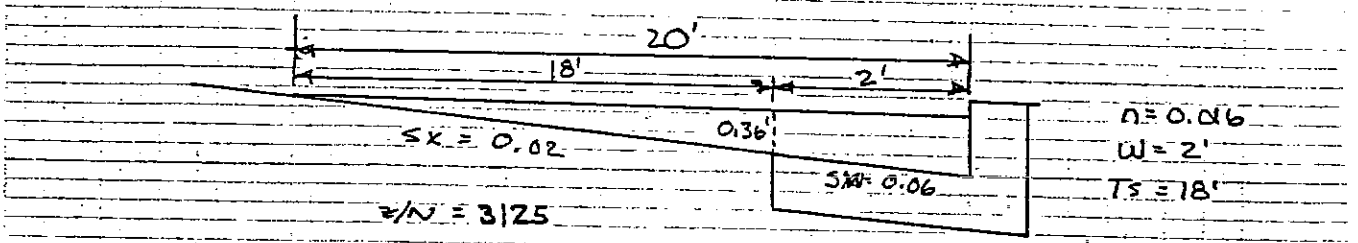
URS JOB NO. 42044 PAGE ____ OF ____
DATE 1-28-93 BY CH CHECKED BY ____ (date)
CLIENT FORD MOTOR LAND DEV. CORP.
PROJECT FAIRLANE TECHNOLOGY PARK, 3M
SUBJECT STREET CAPACITY.



10 YR CAPACITY. LIMITS STREET FLOW TO 20' FROM CURB FACE



SLOPE %	Qs	Eo	Qw	Q 1/2	Q
1	11.5	0.28	4.5	16.0	32.0
1.5	14.5	"	5.6	20.1	40.2
2.0	17.0	"	6.6	23.6	47.2
2.5	19.0	"	7.4	26.4	52.8
3.0	20.5	"	8.0	28.5	57.0
3.5	22.0	"	8.6	30.6	61.2
4.0	24.0	"	9.3	33.3	66.6
4.5	25.5	"	9.9	35.4	70.8
5.0	26.5	"	10.3	36.8	73.6
5.5	27.5	"	10.7	38.2	76.4
6.0	28.5	"	11.1	39.6	79.2

100 YEAR CAPACITY ALLOW 12" DEPTH AT FLOWLINE

$Q = 1.49/n \cdot R^{2/3} S^{1/2} A$ $n = 0.022$ $A = 35.06$

$Q = 1.49/0.022 (0.54)^{2/3} (35.06) S^{1/2}$ $R = 0.54$ $S =$

$Q = 1254.9 (S)^{1/2}$

1% =	125.5 CFS	3.5% =	234.8 CFS	6.0% =	307.4
1.5% =	153.7 CFS	4.0% =	251.0 CFS		
2.0% =	177.5 CFS	4.5% =	266.2 CFS		
2.5% =	198.4 CFS	5.0% =	280.6 CFS		
3.0% =	217.4 CFS	5.5% =	294.3 CFS		

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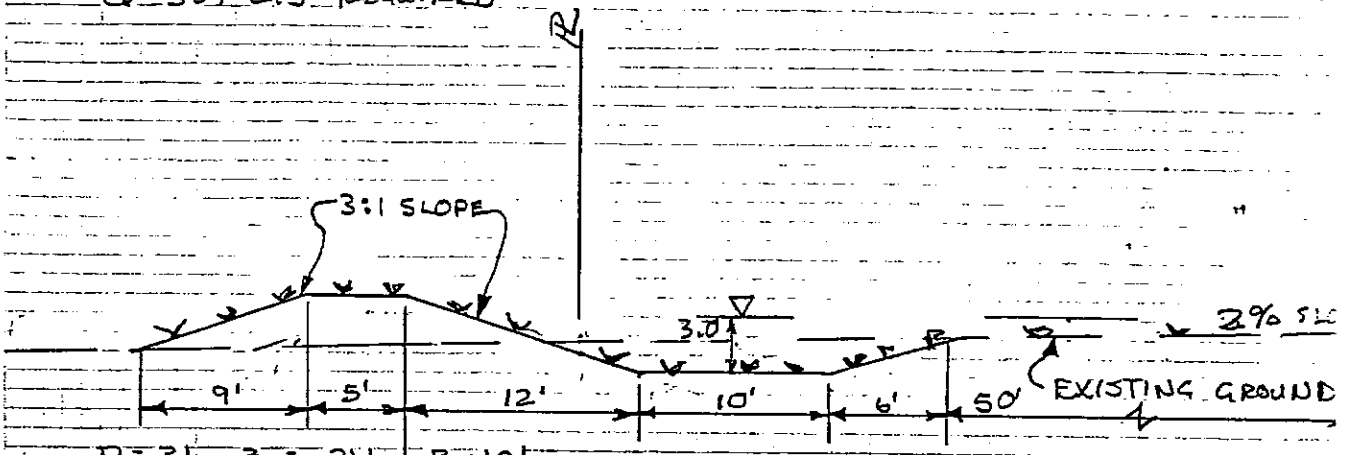
URS JOB NO. 42044 PAGE ____ OF ____
DATE 1-28-93 BY EH CHECKED BY ____ (date)
CLIENT FORD MOTOR LAND DEV. CORP.
PROJECT FAIRLANE TECHNOLOGY PARK, 3M

SUBJECT TEMPORARY DITCH CROSS SECTIONS ALONG THE NORTH LINE OF FAIRLANE TECHNOLOGY PARK FILING NO. 1.

Q = 307 CFS REQUIRED



D = 3' Z = 3:1 B = 10'

AREA = 60.4 S.F.

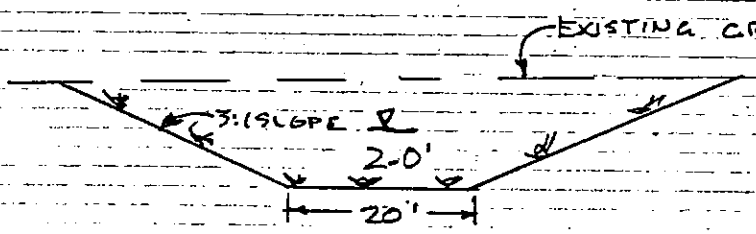
n = 0.035

$Q = 1.49/n\ AR^{2/3} S^{1/2}$

$Q = 1.49/0.035\ (80.5)(1.06)^{2/3}(0.01)^{1/2}$

$Q = 42.7\ (80.5)(1.04)(0.1)$

Q = 356.6 CFS
V = 4.4 FPS.



$Q = 1.49/0.035\ (520)(1.37)(0.1)$

Q = 302 CFS V = 5.8 FPS

FREEBOARD = $1.0 \times 0.025\ (V)(D^{0.33})$

= 1.18'

USE 3.2' CHANNEL OR BERM, MINIMUM.

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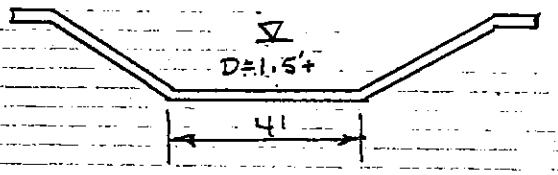
URS JOB NO. 42044 PAGE ____ OF ____
DATE 3-5-93 BY CH CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK #1
SUBJECT CHANNEL CAPACITY FROM NORTH LINE FLUNC #1 TO REPUBLIC DRIVE.

Q = 134 CFS REQUIRED.

INTERIM CAPACITY = 307 CFS USING A PORTION OF THE FREEBOARD

S = 1.5%
N = 0.013
B = 4'
Z = 1.5/1



D = 3'

$Q = \frac{1.49}{0.013} \times A \times R^{2/3} \times S^{1/2}$

$Q = \frac{1.49}{0.013} \times 25.5 \times (1.72)^{2/3} \times 0.1225$

Q = 515 V = 20.2'

D = 1.5'

$Q = \frac{1.49}{0.013} \times A \times R^{2/3} \times S^{1/2}$

$Q = \frac{1.49}{0.013} \times 9.38 \times (1.00)^{2/3} (0.015)^{1/2}$

$Q = 114.62 \times 9.38 \times 1.00 \times 0.1225$

Q = 131.7 CFS
V = 14.0 FPS

FREEBOARD = $1.0 + 0.025 (V)(d^{0.33})$

$1.0 + 0.025 (14.0)(1.5^{0.33})$

$1.0 + 0.40' = 1.4 + 1.5 = 2.9$ USE 3.0' = D

FREEBOARD FOR HISTORIC FLOWS Q = 307 CFS + 134 = 441 CFS
3' D = 515 CFS
1.5' D = 131.7 CFS
FREEBOARD AT REPUBLIC = 0.3'

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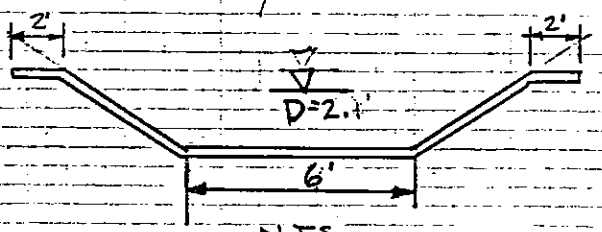
URS JOB NO. 42044 PAGE ____ OF ____
DATE 3-5-93 BY CN CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK #1
SUBJECT CHANNEL CAPACITY FROM REPUBLIC DRIVE TO FEDERAL DRIVE.

Q REQ = 243 CFS FROM A-3 & A-4 + 79.8 CFS FROM BASIN A-5.2 Q REQ = 322.8 CFS INTERIM CAPACITY IS 533 CFS AT DESIGN POINT 5

S = 1.5%
n = 0.013
B = 4'
z = 1.5 / 1

CONCRETE CHANNEL X-SECTION



N.T.S.

D = 3'

$Q = \frac{1.49}{0.013} \times A \times R^{2/3} \times S^{1/2}$

$Q = 114.62 \times 31.5 \times 1.87^{2/3} \times 0.015^{1/2}$

$Q = 114.62 \times 31.5 \times 1.57 \times 0.1225$

672 CFS V = 21.3 FPS

BEFORE DIVERSION

BY INTERPOLATION D = 2.62' 0.98' FB.

D = 2.1

$Q = 114.62 \times 19.22 \times 1.42^{2/3} \times 0.1225$

Q = 341.3 CFS

V = 17.8 FPS

D = 2.0

$Q = 114.62 \times 18 \times 1.36^{2/3} \times 0.1225$

$Q = 114.62 \times 18 \times 1.23 \times 0.1225$

Q = 310.9 CFS

V = 17.3 FPS

DEVELOPED

D = 2.06' V = 17.5 FPS.

FREEBOARD = $1.0 + 0.025 (V)(d^{0.33})$

$= 1.0 + 0.025 (17.5)(2.06'^{0.33})$

= 1.56'

2.06 + 1.56 = 3.62' USE 3.6'

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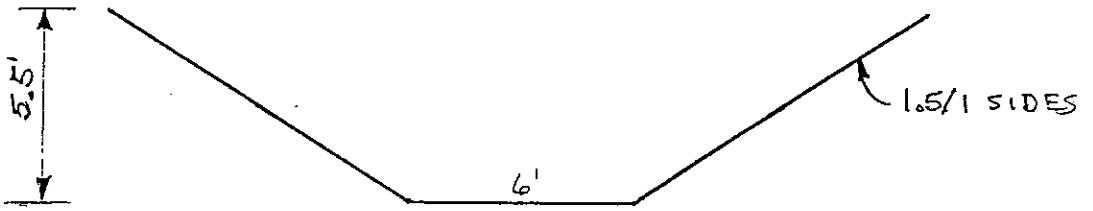
URS JOB NO. 42044 PAGE ____ OF ____
DATE 2-19-03 BY EN CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT CHANNEL FROM SH 82 TO POND B CAPACITY.



$S = 1.0\%$
$n = 0.015$
$D = 3.8'$

$$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$$

$$Q = \frac{1.49}{0.015}(44.48)(2.25)^{2/3}(0.01)^{1/2}$$

$Q = 762$ CFS $\quad V = 17.14$ FPS $\quad F = \frac{17.14}{\sqrt{32.2(3.8)}}$ $F = 1.55$ SUPERCRITICAL.

$$\text{FREEBOARD} = 1.0' + 0.025(V)(d^{0.33})$$

$$\text{FREEBOARD} = 1.0 + 0.025(17.14)(3.8^{0.33})$$

$$= 1.66' \quad \text{USE } 1.7$$

$3.8 + 1.7 = 5.5$ D

SUPERELEVATION $\quad H = \frac{C V^2 W}{g R}$

$R = 100'$
$C = 1.00$
$V = 17.14$
$W = 17.4'$
$g = 32.2$

$$H = \frac{(1.00)(17.14)^2(17.40}{32.2(100)}$$

$H = 1.59'$ USE $1.6'$

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URS JOB NO. 42044 PAGE ____ OF ____
DATE 7-6-92 BY CN CHECKED BY ____ (date)
CLIENT Ford Colorado Properties
PROJECT Fairlane Technology Park #2
SUBJECT Channel Overflow Capacity from Federal Drive to Detention Pond A for Basin A-9 & A-10

USING THE RATIONAL METHOD THE FLOWS ARE

	10 YR	100 YR
A-9	98.1	172.6
A-10	81.2	143.0
	179.3 CFS	315.6 CFS

CAPACITY OF THE EXISTING 36" RCP IS LIMITED TO THE CAPACITY OF THE INLETS TO DELIVER STORM RUNOFF TO THE PIPE.

3 - 10' INLETS PICKUP WATER FOR THIS PIPE.

INLET NUMBER 1 PICKUP IN 100 YR EVENT 9.1 CFS
" " 2 & 3 (SUMP) PICKUP IN 100 YR EVENT WITH 1 FOOT DEPTH @ CURB 36 CFS EACH 72.0 CFS
81.1 CFS

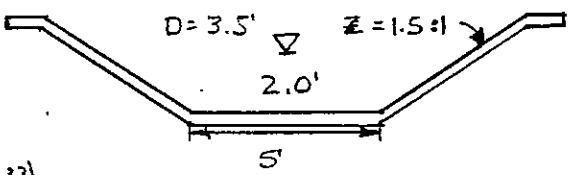
315.6 CFS - 81.1 CFS = 234.5 CFS REQ. CAP. FOR OVERFLOW CHANNEL.

S = 1.5%
D = 2'

$Q = \frac{1.49}{0.013} \times A \times R^{2/3} \times S^{1/2}$

$Q = \frac{1.49}{0.013} \times 16 \times 1.14 \times 0.1225$

Q = 256.1 CFS V = 16.0 FPS



FREEBOARD

$= 1.0 + 0.025 (V) (d^{0.33})$

$1.0 + 0.025 (16) (2.0^{0.33})$

$1.0 + 0.50 = 1.5 + 2.0 = 3.5' = D$

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URS JOB NO. 42044 PAGE ____ OF ____
DATE 7-8-93 BY CH CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK # 2

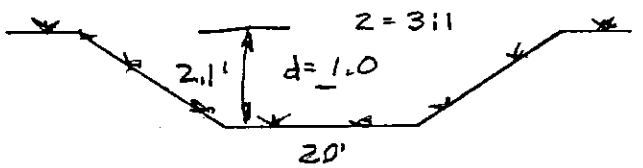
SUBJECT REQUIRED CHANNEL CAPACITY REPUBLIC DR. TO DETENTION POND B.

TOTAL 10 YR FLOW AT REPUBLIC & FEDERAL DRIVE. 10° INLET CAPACITY = 102.9 CFS.

TOTAL 100 YR FLOW = 182 CFS.

OVERFLOW REQUIRED CAPACITY = 79.1 CFS.

$S = 1\%$ $n = 0.033$



D = 1.0'

$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$

$Q = \frac{1.49}{0.033}(23)(0.91)(0.10)$

Q = 94.5 CFS

V = 4.1 FPS

FREEBOARD = $1.0 + 0.025(V)(d^{0.33})$

$= 1.0 + 0.025(4.1)(1^{0.33})$

$= 1.0 + 0.10$

$= 1.1 + 1 = 2.1$ FEET

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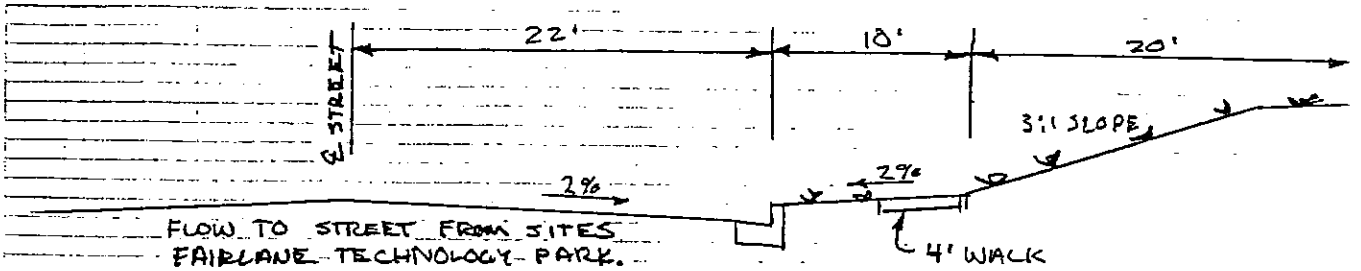
URS JOB NO. 42044 PAGE ____ OF ____
DATE 2-24-93 BY GN CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT STREET RUNOFF BASINS A-5 & A-6
SH 83 & FEDERAL.



FLOW TO STREET FROM SITES FAIRLANE TECHNOLOGY PARK.

$V = 1.49/0.016\ (0.5)^{4/3}\ (0.02)^{1/2}$

$V = 8.3$ FPS $\times 60 \times 5$ MIN $= 2490$ LF

USE 6.0 & 9.0 FOR INTENSITY. UNDER 2500 LF OF STREET
USE 0.30 & 0.55 FOR ROADSIDE
USE 0.90 & 0.95 FOR STREET

$C_{N10} = 0.30 \times \left[\frac{1}{2}\right] + 0.90 \times \left[\frac{1}{2}\right] = 0.60$

$C_{N100} = 0.55 \times \left[\frac{1}{2}\right] + 0.95 \times \left[\frac{1}{2}\right] = 0.75$

SOUTHEAST SIDE OF FEDERAL EAST OF SH 83.

5700 LF = 4.4 AC

5700/8.3 = 446 = 7.4 MIN USE 8

$I_{10} = 5.0$ $I_{100} = 7.5$

$Q = (0.60)(5.0)(4.4) = 13.2$ CFS $Q_{100} = (0.75)(7.5)(4.4) = 24.8$ CFS

NORTHWEST SIDE OF FEDERAL EAST OF SH 83 FROM REPUBLIC TO ROAD

2400 LF = 2.9 AC

$Q_{10} = (0.60)(6.0)(2.9) = 10.4$ CFS $Q_{100} = (0.75)(9.0)(2.9) = 19.6$ CFS

WEST SIDE ROAD B FROM REPUBLIC TO FEDERAL

1800 LF = 2.1 AC $Q_{10} = (0.60)(6.0)(2.1) = 7.6$ CFS $Q_{100} = (0.75)(9.0)(2.1) = 14.2$ CFS

NORTH SIDE OF FEDERAL FROM ROAD B TO SH 83

1200 LF = 3.5 AC USE 6.0 & 9.0 = I_{10} & I_{100}

$Q_{10} = (0.60)(6.0)(3.5) = 15.4$ CFS $Q_{100} = (0.75)(9.0)(3.5) = 10.1$ CFS

SOUTH SIDE OF REPUBLIC FROM FEDERAL TO ROAD B & EAST SIDE OF ROAD B FROM REPUBLIC TO FEDERAL.

3800 LF = 4.5 AC
3800/8.3 = 457 = 7.6 MIN USE 8
$I_{10} = 5.0$ $I_{100} = 7.5$
$Q = (0.60)(5.0)(4.5)$ 13.5 CFS $Q_{100} = (0.75)(7.5)(4.5) = 25.3$ CFS

COMBINED FLOWS NORTH SIDE OF FEDERAL DR AND SH 83

AREA = 13.3 AC Tc 5000 LF @ 8.3 602 SEC = 10 MIN
$I_{10} = 4.7$ $I_{100} = 7.0$ $Q_{10} = (0.60)(4.7)(13.3)$ - INLET PICKUP 17.5 = 20.0 CFS
$Q_{100} = (0.75)(7.0)(13.3) - 22.2 = 47.6$ CFS

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URS JOB NO. 42044 PAGE ____ OF ____
DATE 2-24-93 BY GN CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT INLET CAPACITIES

PROP. 12' INLET NE CORNER ROAD B & FEDERAL, NORTH INLET.

Q_{10} = 13.5 CFS T = 19.1'
Q_{100} = 25.3 CFS T = 24.2 USE CROWN = 22'

0.65 + 0.11 = 0.76 × 13.5 = 10.3 CFS
0.50 + 0.05 = 0.55 × 25.3 = 13.9 CFS

EXIST 12' INLET / SOUTH

Q_{10} = 10.4 T = 15.2
Q_{100} = 16.3 T = 18.0

0.56 + 0.13 = 0.69 = 7.2 CFS
0.43 + 0.08 = 0.51 = 8.3 CFS

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URS JOB NO. 42044 PAGE ____ OF ____
DATE 2-24-93 BY GN CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT STREET RUNOFF BASINS A-3 & A-4

NORTH SIDE OF REPUBLIC FROM FEDERAL TO ROAD B,

1000 LF = 2.1 AC 3.6 MIN USE 4

$Q_{10} = (0.60)(6.0)(2.1) = 7.6$ CFS $Q_{100} = (0.75)(9.0)(2.1) = 14.2$ CFS

① WEST ②EAST SIDE OF ROAD B FROM REALIGN B3 TO REPUBLIC,
③NORTH SIDE OF REPUBLIC FROM ROAD B TO SH 83, FLOW FOR EACH AREA

900 LF = 1.6 AC

$Q_{10} = (0.60)(6.0)(1.1) = 4.0$ CFS $Q_{100} = (0.75)(9.0)(1.1) = 7.4$ CFS

SOUTH SIDE OF REPUBLIC FROM ROAD B TO SH 83

1300 LF = 2.6 MIN 1.6 AC

$Q_{10} = (0.60)(6.0)(1.6) = 5.8$ CFS $Q_{100} = (0.75)(9.0)(1.6) = 10.8$ CFS

SH 83 FROM FUTURE REALIGNED B3 TO REPUBLIC EAST SIDE

800 LF = 1.0 AC

$Q_{10} = (0.90)(6.0)(1.0) = 5.4$ CFS $Q_{100} = (0.95)(9.0)(1.0) = 8.6$ CFS

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URS JOB NO. 42044 PAGE ____ OF ____
DATE 2-26-93 BY EJH CHECKED BY ____ (date)
CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT STREET FLOWS TO EXISTING INLETS, BASINS A8 THRU F11

SH 83, WEST SIDE, NORTH OF FEDERAL DR., NORTH SIDE OF FEDERAL DR TO FIRST INLET 1200' WEST 3000 LF

AREA = 3.7 AC

$V = 1.49/0.016\ (0.5)^{2/3}\ (0.02)^{1/2}$
$V = 8.3$ FPS 361 SEC = 6 MIN

$i_{10} = 5.6$ $i_{100} = 8.4$

$Q_{10} = (0.60)(5.6)(3.7) = \underline{12.4\ CFS}$ $Q_{100} = (0.75)(8.4)(3.7) = \underline{23.3\ CFS}$

FEDERAL DRIVE, NORTH SIDE @ LOW POINT

t_c = 6 MIN + 800 @ 8.3 FPS = 1.6 MIN USE 2
2 MIN AREA 3.7 AC
8 MIN AREA = 3.0 AC
$i_{10} = 5.0$ $i_{100} = 7.5$ TOTAL = 6.7 AC

$Q = (0.60)(5.0)(6.7) = \underline{20.1\ CFS}$ $Q_{100} = (0.75)(7.5)(6.7) = \underline{37.7\ CFS}$

FEDERAL DRIVE SOUTH SIDE @ LOW POINT
AREA = 4.4 AC

$Q_{10} = (0.60)(6.0)(4.4) = \underline{15.8\ CFS}$ $Q_{100} = (0.75)(9.0)(4.4) = \underline{29.7\ CFS}$

EXISTING 10' INLET 1200' WEST OF SH 83.
$T_{10} = 15.4$ $T_{100} = 19.5$

PICKUP 10 = 0.38 + 0.13 = 0.51 × 12.4 = 6.3 CFS
PICKUP 100 = 0.32 + 0.07 = 0.39 × 23.3 = 9.1 CFS

10' INLETS @ LOWPOINT NE

20.1 - 6.3 PICKUP = 13.8 CFS 100% PICKUP @ 1' DEPTH @ FLOWLINE

37.7 - 9.1 " = 28.6 CFS " " " " "

10' INLET @ LOWPOINT SW

15.8 CFS 100% PICKUP @ 1' DEPTH @ FLOWLINE

29.7 CFS " " " " " "

PIPE FLOW = 81.1 CFS

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CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT STREET FLOWS FOR B-4

WEST SIDE S.H. 83 NORTH OF REPUBLIC & NORTH SIDE REPUBLIC.

AREA = 2.7 ACRES

$C_{N10} = 0.60$ $C_{N100} = 0.75$

$I_{10} = 6.0$ $I_{100} = 9.0$

$Q_{10} = (0.60)(6.0)(2.7) = \underline{9.7 \text{ CFS}}$ $Q_{100} = (0.75)(9.0)(2.7) = \underline{18.2 \text{ CFS}}$.

FEDERAL DRIVE NORTH & SOUTH OF REPUBLIC & SOUTH SIDE OF REPUBLIC D

AREA = 5.0 CFS

$C_{N10} = 0.60$ $C_{N100} = 0.75$
$I_{10} = 6.0$ $I_{100} = 9.0$

$Q_{10} = (0.60)(6.0)(5.0) = \underline{18.0 \text{ CFS}}$ $Q_{100} = (0.75)(9.0)(5.0)$ $\underline{33.8 \text{ CFS}}$.

CAPACITY OF EXISTING 10' INLET ON 4% GRADE ON REPUBLIC & FEDE

$T_{10} = 13.0'$ $T = 16.5$

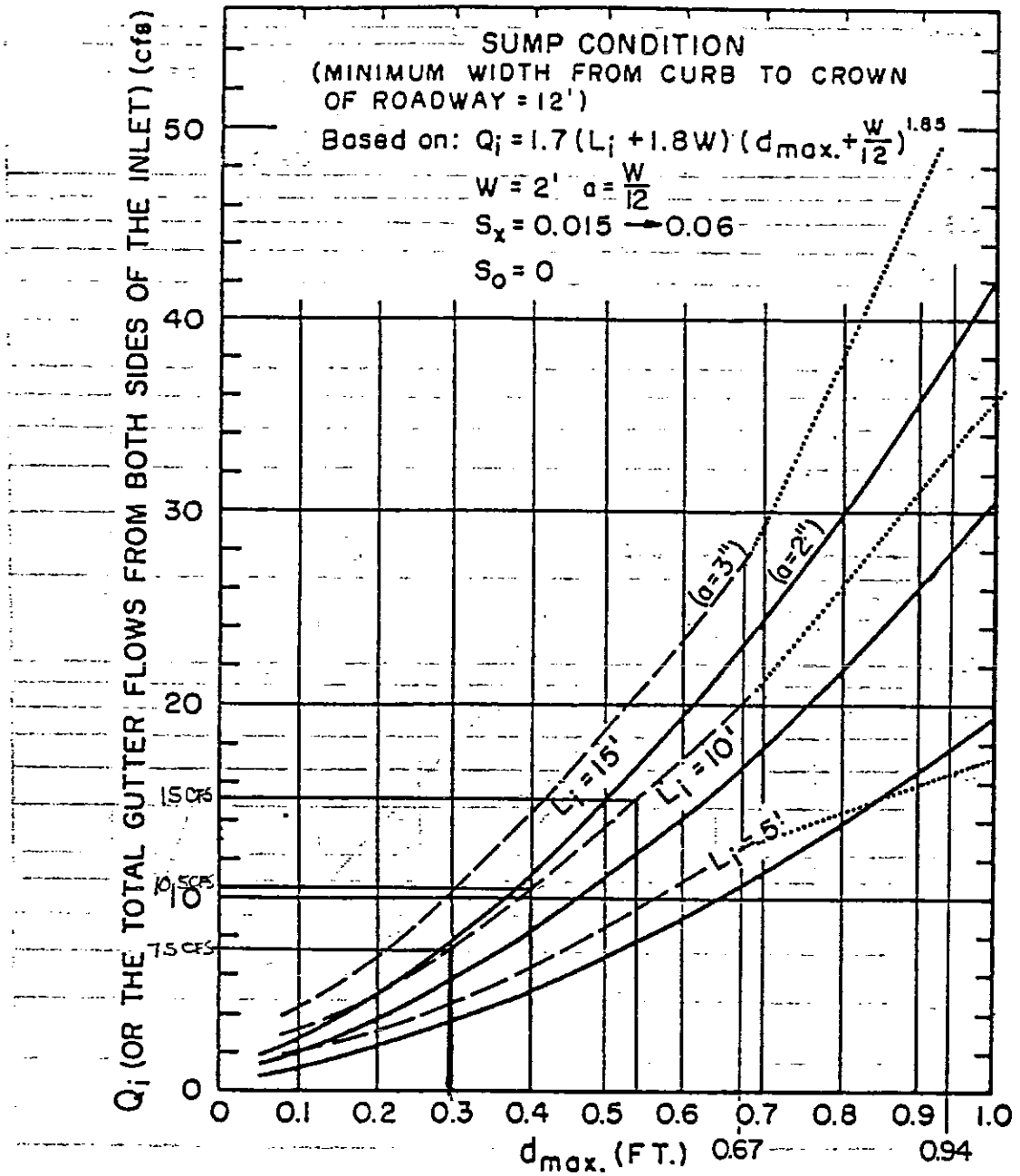
PICKUP 10 = 0.37 + 0.18 = 0.55 × 9.7 = 5.3 CFS
PICKUP 100 = 0.28 + 0.10 = 0.38 × 18.2 = 6.9 CFS

14' SUMP CONDITION INLETS REPUBLIC AND FEDERAL

18.0 + 4.4 BYPASS = 22.4 CFS PICKUP 100% @ 1' DEPTH @ FLOWLINE

33.8 + 11.3 BYPASS = 45.1 CFS " 100% " " " " "

INLET CAPACITY IS LIMITED FOR THE 10' INLET (6.9 CFS)
BUT EA 14' SUMP INLET CAN PICKUP APPROXIMATELY
48 CFS. FOR AN APPROXIMATE TOTAL OF 102.9 CFS.
A TOTAL OF



REFERENCE : Izzard, Carl. f., Report presented at the Annual Meeting of the National Transportation Board, January 1977; Simplified Method For Design of Curb-opening Inlets
——— (As Modified by El Paso County, per Type R Inlet)

Note: Depth of ponding measured at curb above depressed area ; a = 3", For $d \leq .67$

$Q_i = (1.7 L_i + 6.12)(d_{max} + .25)^{1.85}$; $Q_i = 3.60 L_i (d - .08)^{.5}$ For $d \geq .94$; Note : No Clogging Factor

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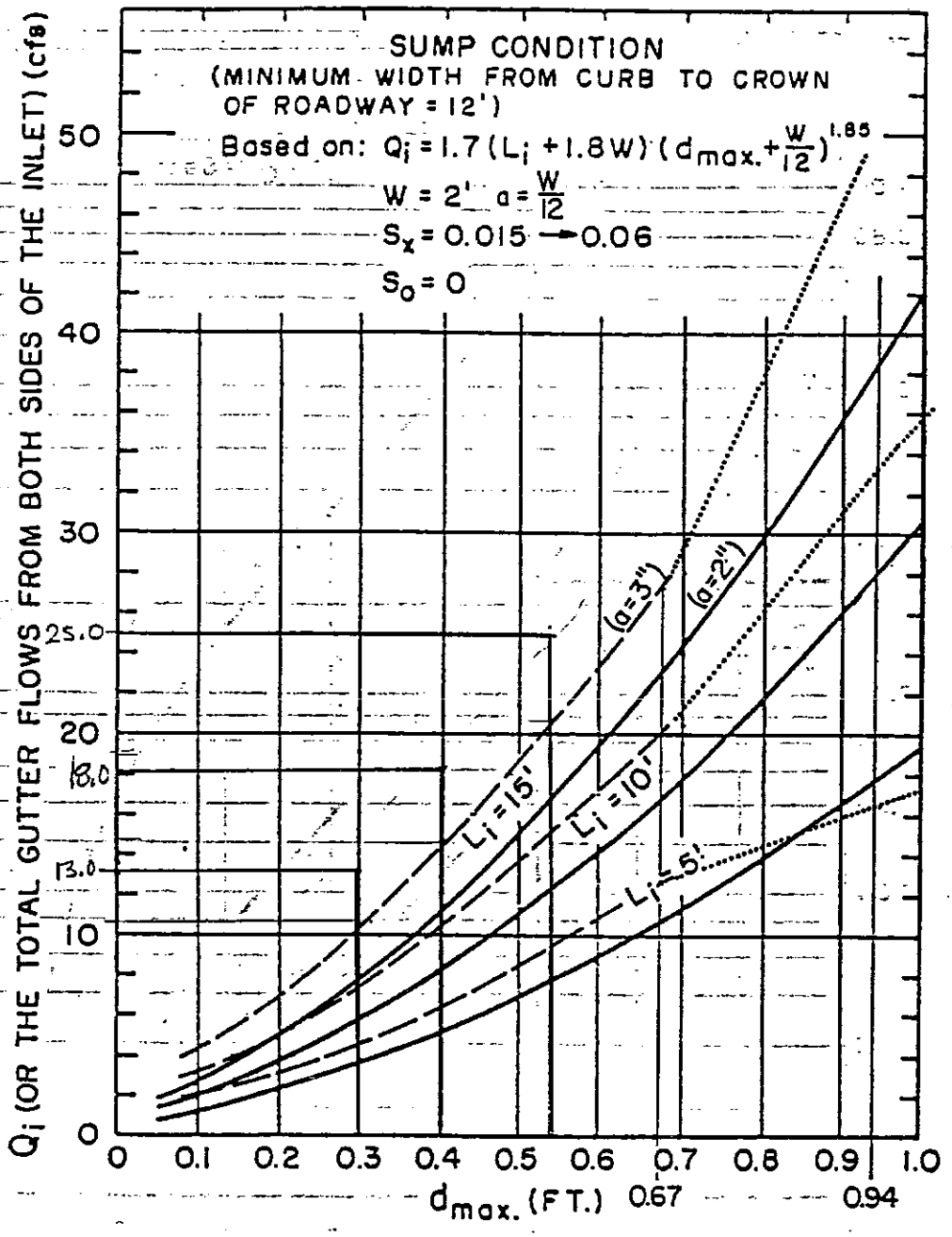
The City of Colorado Springs / El Paso County
Drainage Criteria Manual

Date: OCT. 1987

PICKUP OF INLET AT SH 83 & FEDERAL

Sump Capacity for Curb-opening Inlets

Figure: 7-11



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Note: Depth of ponding measured at curb above depressed area ; a = 3", For $d \leq .67$

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APPROXIMATE 20' INLET CAPACITIES BY INTERPOLATION.

Sump Capacity for Curb-opening Inlets

Date: OCT. 1987

Figure: 7-11

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CLIENT FORD COLORADO PROPERTIES
PROJECT FAIRLANE TECHNOLOGY PARK FILING No 1
SUBJECT GRATE INLET CAPACITY. 10' X 15'

HEAD WATER = 2'
GRATE AREA = 150 S.F. 30% = 45 S.F.
REQ CAP = 97 CFS
FROM NEENAH GRATE CAPACITY CHART
10 SF & 2' DEPTH CAPACITY = 68 CFS.
45/10 = 4.5 X 68 = 306 CFS.

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CLIENT FORD LAND DEV. CO.

PROJECT FAIRLANE TECHNOLOGY PARK

SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR.

BASIN O-1

AREA = 169.1

SOILS B

LAND USE 1/2 ACRE LOTS

OVER 100 ACRES SEE 10 YR HECT RUN FOR FLOW

$C\bar{N}$ =

TIME OF CONCENTRATION

L = H =

OVERLAND TC ( ) =

STREET FLOW ( ) =

I =

$Q_{10} = C I A$

Q_{10} =

BASIN O-2

AREA 55.0

SOILS B

LAND USE 1/2 ACRE LOTS

$C\bar{N}$ = 0.35 CN_{100} = 0.45

TIME OF CONCENTRATION

L = 3608 H = 87 SLOPE 2.4%

OVERLAND TC (300) = 9 9 MINS

STREET FLOW (1000) $V = 1.49/0.016 (0.5)^{2/3} (0.24)^{1/2}$

V = 9.1 FPS = 110 SEC 2 MINS

PIPE FLOW (2300) $V = 1.49/0.013 (2.5/4)^{2/3} (0.24)^{1/2}$

V = 13.0 FPS = 177 SEC 3 MINS

14 MINS

I = 4.0

$Q_{10} = C I A$

$Q_{10} = (0.35)(4.0)(55.0) = 77.0$ CFS. $Q_{100} = (0.45)(6.0)(55.0) = 148.5$ CFS

BASIN A-1

AREA = 40.9 ✓

SOILS B

LAND USE IND.

CN = 85% 0.70 (IND) 15% 0.90 (STR) = 0.73 C_{N100} = 0.83

TIME OF CONCENTRATION

L = 1750 H = 44 SLOPE = 2.5%

OVERLAND TC (300) = 9. MINS

STREET FLOW (1450) $V = 1.49/0.016\ (0.5)^{2/3}(0.025)^{1/2}$

$V = 9.2$ FPS = 156 SEC 3 MINS

12 MINS.

$I = 4.2$ $I_{100} = 6.5$

$Q_{10} = C\,I\,A$

$Q_{10} = (0.73)(4.2)(40.9) = 125.4$ CFS. $Q_{100} = (0.83)(6.5)(40.9) = 220.6$ CFS

BASIN A-2 ✓

AREA 37.6 = 37.6 (DUE TO NEW LIFE CHURCH GRADING PLAN).

SOILS B

LAND USE IND.

CN = 0.73

TIME OF CONCENTRATION

L = 1300 H = 45 SLOPE = 3.5%

OVERLAND TC (300) = 9. MIN

STREET FLOW (1000) $V = 1.49/0.016\ (0.5)^{2/3}(0.035)^{1/2}$

$V = 10.9$ FPS = 91 SEC 2 MIN

11 MIN

$I = 4.4$ $I_{100} = 6.8$

$Q_{10} = C\,I\,A$

$Q_{10} = (0.73)(4.4)(37.8) = 120.8$ CFS $Q_{100} = (0.83)(6.8)(37.6) = 212.2$ CFS

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SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN A-3.

AREA = 35.3 ✓

SOILS B

LAND USE IND.

CN_{10} 0.73 CN_{100} = 0.83

TIME OF CONCENTRATION

L = 1850 H = 34 SLOPE = 1.84%

OVERLAND TC (300) = 9 MIN

STREET FLOW (1550) $V = 1.49/0.016\ (0.5)^{2/3}\ (.0184)^{1/2}$

$V = 7.9$ FPS = 195 SEC 3 MIN

12 MIN

$I_{10} = 4.2$ $I_{100} = 6.5$

$Q_{10} = C\ I\ A$

$Q_{10} = (0.73)(4.2)(35.3) = 108.2$ CFS $Q_{100} = (0.83)(6.5)(35.3) = 190.4$ CFS

BASIN A-4

AREA 23.8 ✓

SOILS B

LAND USE IND.

$CN = 0.73$ $C_{N100} = 0.83$

TIME OF CONCENTRATION

L = 1500 H = 32 SLOPE = 2.1 %

OVERLAND TC (300) = 9 MINS

STREET FLOW (1200) $V = 1.49/0.016\ (0.5)^{2/3}\ (0.021)^{1/2}$

$V = 8.5 = 141$ SEC 2 MINS

11 MINS

$I = 4.4$

$Q_{10} = C\ I\ A$

$Q_{10} = (0.73)(4.4)(23.8) = 76.4$ CFS $Q_{100} = (0.83)(6.8)(23.8) = 134.3$ CFS

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PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR.

BASIN A-5.1
AREA = 41.6
SOILS B
LAND USE IND.
CN = 0.73
TIME OF CONCENTRATION
L = 2,000 H = 52 SLOPE = 2.60%
OVERLAND TC (300) = 9 MINS
STREET FLOW (1700) V = 1.49/0.016 (0.5)^2/3 (0.026)^1/2
V = 9.4 FPS 180 SEC 3 MINS
12 MINS

I = 4.2 I_{100} = 6.5
Q_{10} = C I A
Q_{10} = (0.73)(4.2)(41.6) = 127.4 CFS Q_{100} = (0.83)(6.5)(41.6) = 224.4 CF

BASIN A-5.2
AREA 14.8
SOILS B
LAND USE IND
CN = 0.73
TIME OF CONCENTRATION
L = 1700 H = 38 SLOPE = 2.24%
OVERLAND TC (300) =
STREET FLOW (1400) V = 1.49/0.016 (0.5)^2/3 (2.24)^1/2 9 MINS
V = 8.8 FPS 160 SEC 3 MINS
12 MINS

I = 4.2 I_{100} = 6.5
Q_{10} = C I A
Q_{10} = (0.73)(4.2)(14.8) = 45.4 CFS Q_{100} (0.83)(6.5)(14.8) = 79.8 CF
COMBINE A-5.1 & A-5.2 Q_{10} = 172.8 Q_{100} = 304.20

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PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN A-6.1
AREA = 30.6 ✓
SOILS B
LAND USE IND.
$C\bar{N}$ = 0.73 $C\bar{N}_{100}$ = 0.83
TIME OF CONCENTRATION
L = 2400 H = 50 SLOPE 2.08%
OVERLAND TC (300) = 9 MIN
STREET FLOW (2100) = $1.49/0.016\ (0.5)^{2/3}(0.0208)^{1/2}$
V = 8.4 4 MIN
13 MIN

I_{10} = 4.1 I_{100} = 6.3
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.1)(30.6) = 91.6$ CFS $Q_{100} = (0.83)(6.3)(30.6) = 160.0$ CF

BASIN A-6.2
AREA 18.4 ✓
SOILS B
LAND USE IND
CN = 0.73
TIME OF CONCENTRATION
L = 2400 H = 50 SLOPE = 2.08%
OVERLAND TC (300) = 9 MIN
STREET FLOW (2100) V = $1.49/0.016\ (0.5)^{2/3}(0.0208)^{1/2}$ 4 MIN
V = 8.4 FPS = 249 SECS
13 MIN

I = 4.1 I_{100} = 6.3
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.1)(18.4) = 55.1$ CFS $Q_{100} = (0.83)(6.3)(18.4) = 96.2$ CFS
COMBINE A-6.1 & A-6.2 Q_{10} = 146.7 Q_{100} = 256.2 CF

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SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN A-6.3
AREA = 4.6 ✓
SOILS B
LAND USE IND
$C\bar{N}$ = 0.73 $C\bar{N}_{100}$ = 0.83
TIME OF CONCENTRATION
L = 800 H = 20 SLOPE = 2.50%
OVERLAND TC (300) = 9 MINS
STREET FLOW (500) $V = 1.49/0.016\ (0.5)^{2/3}(0.025)^{1/2}$
$V = 9.3$ FPS = 54 SEC 1 MIN
10 MINS

$I = 4.7$ $I_{100} = 9.0$
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.7)(4.6) = 15.8$ CFS $Q_{100} = (0.83)(9.0)(4.6) = 26.7$ CFS

BASIN A-7.1
AREA 25.8 ✓
SOILS B
LAND USE IND,
$C\bar{N}$ = 0.73 $C_{N\,100}$ = 0.83
TIME OF CONCENTRATION
L = 2100 H = 39 SLOPE = 1.86%
OVERLAND TC (300) = 10 MINS
STREET FLOW (1800) $V = 1.49/0.016\ (0.5)^{2/3}(0.0186)^{1/2}$
$V = 8.0$ FPS 226 SEC 4 MINS
14 MINS

$I = 4.0$ $I_{100} = 6.0$
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.0)(25.8) = 75.3$ CFS $Q_{100} = (0.83)(6.0)(25.8) = 128.5$

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PROJECT FAIRLANE TECHNOLOGY PARK

SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR.

BASIN A-7.2
AREA = 16.4
SOILS B
LAND USE IND
$\overline{CN}$ = 0.73 $\overline{CN}_{100}$ = 0.93
TIME OF CONCENTRATION
L = 2100 H = 39 1.86%
OVERLAND TC (300) = 10 MINS
STREET FLOW (1800) $V = 1.49/0.016\,(0.5)^{2/3}(0.0186)^{1/2}$
$V = 8.0$ FPS = 226 SEC 4 MINS
14 MINS

$I = 4.0$ $I_{100} = 6.0$
$Q_{10} = C\,I\,A$
$Q_{10} = (0.73)(4.0)(16.4) = 47.9$ CFS $Q_{100} = (0.83)(6.0)(16.4) = 81.7$ CFS

COMBINE ~~A7.1~~ A7.2 Q_{10} (0.73)(40)(42.2) = 123.2 CFS $Q_{100} = (0.83)(6.0)(42.2) = 210.2$ CF

BASIN A-7.3
AREA 1.3
SOILS B
LAND USE ROADWAY
$\overline{CN}$ = 0.90 $\overline{CN}_{100}$ = 0.95
TIME OF CONCENTRATION
L = 1000 H = 10 SLOPE = 1.0%
OVERLAND TC (0) = 0 MINS
STREET FLOW (1000) $V = 1.49/0.016\,(0.5)^{2/3}(0.01)^{1/2}$
$V = 5.9$ FPS 170 SEC 3 MINS
3 MINS
USE 5 MINS

$I = 6.0$ $I = 9.0$
$Q_{10} = C\,I\,A$
$Q_{10} = (0.90)(6.0)(1.3) = 7.0$ CFS Q_{100} $(0.95)(9.0)(1.3) = 11.1$ CFS

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SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN A-8.2
AREA = 9.8
SOILS B
LAND USE IND.
$C\bar{N}$ = 0.73 $C\bar{N}_{100}$ = 0.83
TIME OF CONCENTRATION
L = 2100 H = 50 SLOPE = 2.38%
OVERLAND TC (800) = 16 MINS
STREET FLOW (0) = 0 MINS
CHANNEL FLOW (1600) = SLOPE = 1.00%
V = 22.4 (FROM DESIGN PLANS)
= 71 SEC 1 MIN
17 MIN

I = 3.7 I_{100} = 5.6
$Q_{10} = C I A$
$Q_{10} = (0.73)(3.7)(9.8) = 26.5$ CFS $Q_{100} = (0.83)(5.6)(9.8) = 45.6$ CFS

BASIN A-8.1
AREA 33.7
SOILS B
LAND USE IND.
$C\bar{N}$ = 0.73 $C\bar{N}_{100}$ = 0.83
TIME OF CONCENTRATION
L = 2600 H = 58 SLOPE (OVERLAND) 6.7% SLOPE (STR) = 1.0%
SLOPE (CHANNEL) = 2%
OVERLAND TC (300) = 8 MINS
STREET FLOW (800) $V = 1.49/0.016\ (0.5)^{2/3}(0.01)^{1/2}$
$V = 5.85$ FPS 137 SEC 2 MINS
CHANNEL FLOW (1500) $V = 1.49/0.016\ (0.5)^{2/3}(0.02)^{1/2}$
$V = 8.3$ FPS = 181 SECS 3 MINS
13 MINS

SEE FORD AEROSPACE FILING NO 1 DRAINAGE REPORT FOR FLOWS

I = 4.1 I_{100} = 6.3
$Q_{10} = C I A$
$Q_{10} = (0.73)(4.1)(33.7) = 100.9$ CFS $Q_{100} = (0.83)(6.3)(33.7) = 176.2$ CFS

BASIN A - 8.3

AREA 1.8

SOILS B

LAND USE, STREET & NATURAL VEG.

FROM PREVIOUS DRN RPT
FLOWS = 13.7 CFS, 100 YR.

CN = 0.80 CN 100 = 0.85

TIME OF CONCENTRATION > 5 MIN

L'_{10} = 6.0 L'_{100} = 9.0

Q_{10} = CIA

Q_{10} = (0.80)(6.0)(1.8) = 8.6 CFS Q_{100} = (0.85)(9.0)(1.8) = 13.8 CFS.

BASIN A - 8.4

AREA = 3.4

SOILS = B

LAND USE, CHANNEL & NATURAL VEGETATION.

CN_{10} = 0.60 CN_{100} = 0.67

TIME OF CONSENTRATION > 5 MIN

L'_{10} = 6.0 L'_{100} = 9.0

Q_{10} = CIA

Q_{10} = (0.60)(6.0)(3.4) = 12.2 CFS Q_{100} = (0.67)(9.0)(3.4 = 20.5 CFS

BASIN A-9

AREA = 32.0

SOILS B

LAND USE IND

$C\bar{N}$ = 0.73 CN_{100} = 0.83

TIME OF CONCENTRATION

L = 2100 H = 74 SLOPE 3.5%

OVERLAND TC (300) = 9 MINS

STREET FLOW (1800) $V = 1.49/0.016 (0.5)^{2/3}(0.035)^{1/2}$ 3 MINS

$V = 10.9$ FPS 164 SEC

12 MINS

$I = 4.2$ $I_{100} = 6.5$

$Q_{10} = C I A$

$Q_{10} = (0.73)(4.2)(32.0) = 98.1$ CFS $Q_{100} = (0.83)(6.5)(32.0) = 172.6$ CFS

BASIN A-10

AREA 26.5

SOILS B

LAND USE IND

$C\bar{N}$ = 0.73 $C_{N\,100} = 0.83$

TIME OF CONCENTRATION

L = 2100 H = 74 SLOPE = 3.5%

OVERLAND TC (300) = 9 MIN

STREET FLOW (1800) $V = 1.49/0.016)(0.5)^{2/3}(0.035)^{1/2}$ 3 MIN

$V = 10.9$ FPS 164 SEC

12 MINS

$I = 4.2$ $I_{100} = 6.5$

$Q_{10} = C I A$

$Q_{10} = (0.73)(4.2)(26.5) = 81.20$ CFS $Q = (0.83)(6.5)(26.5) = 143.0$ CFS

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PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN A.11
AREA = 12.7
SOILS B
LAND USE IND
CN = 0.73 CN 100 = 0.89
TIME OF CONCENTRATION
L = 1900 H = 55 SLOPE = 2.9%
OVERLAND TC (300) = 9 MINS
STREET FLOW (1600) V = 1.49/0.016 (0.5)^2/3 (0.029)^1/2
V=10 FPS 160 SECS 3 MINS
12 MINS

I = 4.2 I = 6.5
$Q_{10} = C I A$
$Q_{10} = (0.73)(4.2)(12.7) = 38.9$ CFS $Q_{100} = (0.89)(6.5)(12.7) = 68.5$ CFS

BASIN
AREA
SOILS
LAND USE
CN =
TIME OF CONCENTRATION
L= H=
OVERLAND TC ( ) =
STREET FLOW ( ) =

I =
$Q_{10} = C I A$
$Q_{10} =$

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PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN B-1
AREA = 1.81
SOILS B
LAND USE IND.
CN = 0.90 $CN_{100} = 0.95$
TIME OF CONCENTRATION
L = 1000 H = 10 SLOPE = 1.0%
OVERLAND TC (0) = 0 MIN
STREET FLOW (1000) V = 3 MIN
V = 5.85 FPS 170 SEC
3 MIN
USE 5 MIN

I = 6.0 $I_{100} = 9.0$
$Q_{10} = C I A$
$Q_{10} = (0.90)(6.0)(1.8) = 9.7$ CFS. $Q_{100} = (0.95)(9.0)(1.8) = 15.4$ CFS

BASIN B-2
AREA = 45.1
SOILS B
LAND USE IND
CN =
TIME OF CONCENTRATION
L = H =
OVERLAND TC ( ) =
STREET FLOW ( ) =
FROM MASTER DRAINAGE PLAN FOR NEW LIFE CHURCH
Q 10 = 114 CFS Q 100 = 178 CFS
I =
$Q_{10} = C I A$
$Q_{10} =$

14.3

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PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN B = 3.1
AREA = 4.1
SOILS = B
LAND USE ROADWAY
CN = 0.90 $10^{0}CN$ = 0.95
TIME OF CONCENTRATION
L = 1600 H = 40 SLOPE = 2.5%
OVERLAND TC (0) = 0 MINS
STREET FLOW (1600) $V = 1.49/0.016\ (.05)^{2/3}(0.25)^{1/2}$
V = 14.6 FPS = 108 SEC 2 MINS
2 MINS
USE 5 MINS

I = 6.0 I_{100} = 9.0
$Q_{10} = CIA$
$Q_{10} = (0.90)(6.0)(4.1)$ = 22.1 CFS $Q_{100} = (0.95)(9.0)(4.1)$ = 35.1 CFS

BASIN B = 3.2
AREA 5.8
SOILS B
LAND USE ROADWAY
CN = 0.90 CN_{100} = 0.95
TIME OF CONCENTRATION
L = 2200 H = 54 2.5%
OVERLAND TC ( ) = 0 MINS
STREET FLOW (2200) $V = 1.49/0.016\ (0.5)^{2/3}(0.025)^{1/2}$ c
V = 14.6 FPS 150 SEC 2 MINS
2 MINS
USE 5 MINS

I = 6.0 I_{100} = 9.0
$Q_{10} = CIA$
$Q_{10} = (0.90)(6.0)(5.8)$ = 31.3 CFS $Q_{100} = (0.95)(9.0)(5.8)$ = 49.6 CFS

URS CONSULTANTS, INC.
MAKING TECHNOLOGY WORK™

DATE 1-15-93 BY EH CHECKED BY _____ (date)
CLIENT FORD LAND DEV. CO.
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN B-4.1
AREA = 29.1
SOILS B
LAND USE IND.
C_N = 0.73 $C_{N,100}$ = 0.83
TIME OF CONCENTRATION
L = 1600 H = 40 SLOPE 2.5%
OVERLAND TC (300) = 9. MIN
STREET FLOW (1300) $V = 1.49/0.016\ (0.5)^{2/3}\ (0.025)^{1/2}$
$V = 9.3$ FPS = 140 SEC 3 MIN
12 MIN

$I = 4.2$ $I_{100} = 6.5$
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.2)(29.1) = 89.2$ CFS $Q_{100} = (0.83)(6.5)(29.1) = 157.0$ CFS

BASIN B-4.2
AREA 11.6
SOILS B
LAND USE IND
C_N = 0.73 $C_{N,100}$ = 0.83
TIME OF CONCENTRATION
L = 1200 H = 35 SLOPE = 2.9%
OVERLAND TC (300) = 9 MIN
STREET FLOW (900) $V = 1.49/0.016\ (0.5)^{2/3}(0.029)^{1/2}$
$V = 10.0$ FPS 90 SEC 2 MIN
11 MIN

$I = 4.4$ $I_{100} = 6.8$
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.4)(11.6) = 37.3$ CFS $Q_{100} = (0.83)(6.8)(11.6) = 65.5$ CFS

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URS JOB NO. _____ PAGE 15 OF 17
DATE 1-15-93 BY EH CHECKED BY _____ (date)
CLIENT FORD LAND DEV. CO.
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR. & 100 YR

BASIN B-5.1
AREA = 44.3
SOILS B
LAND USE IND
CN = 0.73 C_{N100} = 0.83
TIME OF CONCENTRATION
L = 2200 H = 55 SLOPE = 2.5 %
OVERLAND TC (300) = 9 MINS
STREET FLOW (1900) V = 1.49/0.016 $(0.5)^{2/3}(0.025)^{1/2}$
V = 9.3 FPS 205 SEC 4 MINS
13 MINS

I = 4.1 I_{100} = 6.3
Q_{10} = C I A
$Q_{10} = (0.73)(4.1)(44.3) = 132.6$ CFS $Q_{100} = (0.83)(6.3)(44.3) = 231.6$ CFS

BASIN B-5.2
AREA 54.3
SOILS B
LAND USE IND
CN = 0.73 C_{N100} = 0.83
TIME OF CONCENTRATION
L = 2200 H = 60' SLOPE = 2.7 %
OVERLAND TC (300) = 7 MINS
STREET FLOW (1900) V = 1.49/0.016 $(0.5)^{2/3}(0.027)^{1/2}$
V = 9.6 FPS 197 SEC 3 MINS
12 MINS

I = 4.2 I_{100} = 6.5
Q_{10} = C I A
$Q_{10} = (0.73)(4.2)(54.3) = 166.5$ CFS $Q_{100} = (0.83)(6.5)(54.3) = 292.9$ CFS

URS CONSULTANTS, INC.
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SUBJECT RUNOFF CALCULATIONS 10 YR.

BASIN C-1

AREA = 17.0

SOILS A, USE B

LAND USE IND.

C_N = 0.73 C_{N100} = 0.83

TIME OF CONCENTRATION

L = 1200 H = 35 SLOPE = 3.0%

OVERLAND TC (300) = 9 MIN

STREET FLOW (900) = $V = 1.49/0.016 (0.5)^{2/3} (0.3)^{1/2}$

$V = 10.1$ FPS = 88 SEC = 1.5 MIN 2 MIN

11 MIN

I = 4.4 I_{100} = 6.8

$Q_{10} = C I A$

$Q_{10} = (0.73)(4.4)(17.0) = 54.6$ CFS $Q_{100} = (0.83)(6.8)(17.0) = 95.9$ CFS

BASIN C-2

AREA 13.1

SOILS A, USE B

LAND USE = IND.

C_N = 0.73 C_{N100} = 0.83

TIME OF CONCENTRATION

L = 1300 H = 60 SLOPE = 4.6%

OVERLAND TC (300) = 7 MIN

STREET FLOW (1000) = $V = 1.49/0.016 (0.5)^{2/3} (0.046)^{1/2}$

$V = 12.6$ FPS = 80 SEC 1 MIN

8 MIN

I = 5.0 I_{100} = 7.5

$Q_{10} = C I A$

$Q_{10} = (0.73)(5.0)(13.1) = 47.8$ CFS $Q_{100} = (0.83)(7.5)(13.1) = 81.5$ CFS

URS CONSULTANTS, INC.
MAKING TECHNOLOGY WORK™

DATE 1-15-93 BY EJH CHECKED BY _____ (date)
CLIENT FORD LAND DEV. CO.
PROJECT FAIRLANE TECHNOLOGY PARK
SUBJECT RUNOFF CALCULATIONS 10 YR.

BASIN C-3
AREA = 8.0
SOILS = A, USE B
LAND USE
CN =
TIME OF CONCENTRATION
L = 1300 H = 35 SLOPE = 2.7%
OVERLAND TC (300) = 9 MIN
STREET FLOW (1000) = $V = 1.49/0.016\ (0.5)^{2/3}(0.027)^{1/2}$
$V = 9.6$ FPS = 103 SEC 2 MIN
11 MIN

$I = 4.4$ $I_{100} = 6.8$
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.4)(8.0) = 25.7$ CFS $Q_{100} = (0.83)(6.8)(8.0) = 45.2$ CFS

BASIN C-4
AREA 41.1
SOILS A, USE B
LAND USE
CN =
TIME OF CONCENTRATION
L = 2300 H = 55 SLOPE = 2.4%
OVERLAND TC (300) = 9 MIN
STREET FLOW (2000) = $V = 1.49/0.016\ (0.5)^{2/3}(0.024)^{1/2}$
$V = 9.1$ FPS = 221 SEC 4 MIN
13 MIN

$I = 4.1$ $I_{100} = 6.3$
$Q_{10} = C\ I\ A$
$Q_{10} = (0.73)(4.1)(41.1) = 123.0$ CFS $Q_{100} = (0.83)(6.3)(41.1) = 214.9$ CFS

APPENDIX D

ANNEXATION AGREEMENT

ANNEXATION AGREEMENT

This Annexation Agreement dated the 26th day of October 1982, is between the City of Colorado Springs, a municipal corporation ("City"), and Ford Colorado Properties, Inc. and Ford Aerospace & Communications Corporation ("Owners").

I.

PRELIMINARY STATEMENT

Owners own real property located in El Paso County, Colorado, described in Exhibit A ("Property"). The property is presently zoned in El Paso County as PID and a Sketch Plan, Drainage Study, Preliminary Plan and a Plat (for a portion of the Property) have been filed and approved in El Paso County. The Property is presently served by Chapel Hills Water and Sanitation District, by Mountain View Electric and by Colorado Springs Public Utilities for natural gas service. The City and the Owners believe that it will be advantageous to orderly development of the City for the Property to be annexed to the City, and the Owners believe acquisition of City services and other benefits through annexation to the City will be of substantial benefit to the Owners. Therefore, in consideration of the mutual promises, covenants and agreements contained in this Annexation Agreement, the City and the Owners agree as follows:

II.

ANNEXATION

Owners have petitioned the City for annexation of the Property in accordance with the Constitution and Statutes of the State of Colorado and the Ordinance of the City of Colorado Springs. Annexation will be effective only following approval and execution of this Annexation Agreement by all parties and upon final approval of the Petition for Annexation after proper procedures have been followed and necessary findings have been determined.

III.

LAND USE ZONING AND PLATTING

Owners acknowledge that a Master Plan and a Phasing Plan for the Property should be developed and submitted to the City for approval similar to the Sketch Plan previously approved by El Paso County but modified to conform to requirements as set forth in Ordinances of the City of Colorado Springs. Such Master Plan and Phasing Plan should be prepared and submitted within ninety (90) days after the effective date of annexation. The Phasing Plan shall be updated at least annually. Zoning of the Property as approved by El Paso County is acknowledged to be PID. The parties agree the appropriate similar zoning category in the City of Colorado Springs is either PIP-1 or PIP-2 and that such zoning is appropriate for the Property. A portion of the Property has been platted as Elkhorn Acres No. 2. Such plat is acknowledged and accepted by the City. The Preliminary Plan and Elkhorn Acres No. 2 Plat as

CC Agenda ... Item No. 8

filed and approved provided for construction of buildings not to exceed 450,000 square feet (Phase I). Owners agree they shall not develop the Property to any extent beyond that approval for Phase I without first obtaining approval of the City. Owners state that it is their present intention to develop the Property and ultimately construct additional improvements within PIP-1 or PIP-2 capacities. Owners agree they shall seek no approvals for development beyond Phase I until the City shall have approved a road improvement construction schedule and phasing plan including a method for assessing and allocating transportation construction costs. Should such road improvement schedule require any land presently a part of the Property, Owners agree to dedicate the same for use as a public right-of-way and thoroughfare. Development and construction beyond Phase I may be approved without requirement of a new interchange at Stout Allen Road provided traffic studies demonstrate unused capacities in the Briargate Interchange to be constructed. Owners acknowledge an interchange at Stout Allen Road will be necessary to accomodate traffic when both Briargate and the Owners' Property are built to capacity.

IV

DRAINAGE

Owners have submitted a Drainage Study for the Property to El Paso County.

Promptly after annexation, the Owners will submit to the City a similar overall drainage concept for the Property. This will be a conceptual plan prepared in conformation with a plan to be submitted by Briargate to determine whether drainage on the Property can be handled as an integrated basin without materially increasing historic offsite flows. If such an integrated basin approach is practicable, and the City approves the overall drainage concept, the Owners, at their sole cost and expense and without any reimbursement, will provide drainage facilities in accordance with the drainage plan as approved by the City. No portion of the Property shall be submited to City drainage fees.

V.

UTILITY SERVICE

A. Gas. The City presently supplies gas to the site and shall continue to provide such service all in accordance with City ordinances and policies generally applicable to such service and to Colorado Public Utility Commission regulations, orders and tariffs, as same may exist or may subsequently be amended.

B. Electric Service. The City proposes to acquire certain facilities, installations and equipment from Mountain View Electric. Immediately following the effective date of annexation, the Owners will escrow with the City the sum of or letter of credit in such sum as may be determined and verified associated with the City's acquisition of such facilities, installations and equipment. Such escrow shall be for a period of five years provided that the Electric Division of the City

shall annually review accounts and pay-back made on a yearly or a five-year basis if expectations of development are realized. If useage has not reached the proposed levels used in the cost benefit ratio analysis, the monies paid into escrow will be retained by the City as necessary to make up the deficit. This repayment process has been approved under existing electric tariffs approved by the Colorado Public Utilities Commission for any area requesting service.

The City agrees to serve the Property when such facilities, installation and equipment shall have been acquired from Mountain View Electric and when the Property shall have been annexed under tariffs, ordinances and regulations then effective.

C. Water. Through a complex series of agreements among Briargate, JVRC, Chapel Hills Water and Sanitation District, the City and others, the City proposes to acquire rights to use Chapel Hills Water distribution systems presently serving the Property. Following annexation and after acquisition of such rights, the City shall provide water service to the Property in accordance with its ordinances, regulations and tariffs as the same now exist or may be amended in the future. Such service for construction through Phase 1 shall be without requirement for tap fees. Owners shall pay applicable developer costs as required pursuant to City ordinances and policies. The Owners shall pay tap fees and necessary line extension costs for development beyond Phase I. Upon annexation, Owners shall abandon any right they now have to any specific allocation or quantity of water from Chapel Hills Water and Sanitation District. Owners shall receive back from JVRC those rights to underground water which were conveyed to Chapel Hills Water and Sanitation District in return for the specific allocation.

D. Wastewater. The City proposes to acquire wastewater facilities including a sewage lagoon presently operated by Chapel Hills Water and Sanitation District in the complex series of agreements referred to in paragraph V (C). The Owners and the City acknowledge that it is not the purpose of the City to operate the lagoon over a long term but rather to operate it only temporarily and then only after certain repairs and improvements have been made.

The Owners have committed at their sole cost to install a wastewater line of appropriate size and sufficient to provide service for construction through Phase I from the Property to the lagoon.

The Owners and Briargate have agreed to share in costs of a new wastewater line thereby eliminating the lagoon. It is required such construction shall be completed by July 1, 1986 and the lagoon shall then be abandoned and no longer used. In the event of environmentally detrimental discharge, seepage or otherwise, as determined by the City, or as a result of requirements by another governmental entity, Owners agree to repair the lagoon as required, or Owners shall cease use of the lagoon and commence construction of the sewer line. Owners and Briargate shall be entitled to cost recovery from third parties seeking to use said new line. In the event development of the Property prior to July 1, 1986 threatens lagoon is then operating a BJ BOD) to exceed Colorado Department of Health permit limitations of the lagoon, or shall create any discharge

from the lagoon, it shall be the responsibility of the Owners to justify and provide a means of wastewater disposition to the end that in no event shall any State permission for lagoon expansion be sought or requested.

VI.

FIRE PROTECTION

The Owners acknowledge that presently and for some reasonable future time, the City cannot fully provide such metropolitan services as police and fire protection within City response parameters because of the distance of the property from existing City services. The Owners acknowledge fire protection may be diminished for a reasonable time because of lack of water availability and sufficient pressures to adequately provide such protection. The Owners acknowledge and accept such temporarily limited City services.

VII

COMPLIANCE WITH ORDINANCES

The Owners will comply with ordinances of the City concerning subdivision and development of the Property beyond Phase I except as the requirements of otherwise applicable ordinances are expressly modified by this Annexation Agreement. Owners will also comply with zoning uses as set forth in zoning ordinances applicable to the Property.

VIII.

ASSIGNS

The term Owner shall also mean transferees, successors and assigns of any Owner and all such persons shall have obligations hereunder and the right to enforce the terms of this Annexation Agreement as if they were original parties hereto.

IX.

EFFECT OF ANNEXATION AGREEMENT

This Annexation Agreement shall be recorded in the records of El Paso County and shall be deemed to be covenants running with the land binding upon all persons who now or hereafter shall have any interest in the Property.

CITY OF COLORADO SPRINGS

By: _____

APPROVED AS TO FORM:

_____
CITY ATTORNEY

FORD COLORADO PROPERTIES INC.

ATTEST:

BY: _____
President

_____
City Clerk

FORD AEROSPACE & COMMUNICATIONS CORPORATION

By: R.W. Kruber
Vice President

STATE OF Michigan)
) ss.
COUNTY OF Wayne)

The foregoing instrument was acknowledged before me this 8th day of October, 1982, by J. Robert Anderson President of Ford Colorado Properties, Inc.

WITNESS MY HAND AND OFFICIAL SEAL.

Notary Public

One Parklane Boulevard
Dearborn, Michigan 48126
(Address)

My Commission expires: 10-13-84

STATE OF)
) ss.
COUNTY OF)

The foregoing instrument was acknowledged before me this 25th day of October, 1982, by R.W. Kruber Vice President of Ford Aerospace & Communications Corporation.

WITNESS MY HAND AND OFFICIAL SEAL.

Notary Public

My Commission Expires:
October 21, 1985

DEPARTMENT OF THE AIR FORCE

HEADQUARTERS UNITED STATES AIR FORCE ACADEMY

USAF ACADEMY COLORADO

FROM: HQ USAFA/CEP
8120 Edgerton Drive, Suite 40
USAF Academy CO 80840-2400

19 OCT 1993
RECD 10-22-93
EH

SUBJ: Fairlane Technology Park Master Drainage Development Plan

TO: Mr Eldon Hurst
URS Consultants
1040 South Eighth Street
Colorado Springs CO 80906

1. We have reviewed the rewrite of your drainage plan and approve the plan as written. We know that your calculations, stating that historic flow will not be exceeded, are based on certain assumptions. Therefore, we will hold Ford Colorado Properties responsible for any erosion occurring to Academy property as a result of these detention pond's outfall.

2. No Academy boundary markers or fencing will be disturbed during construction of these drainage facilities. Our point of contact for this action is Ms Jan Slavens, 472-2072

ROLLAND N. OLSON, GM-13
Chief, Programs Division
Civil Engineering