FINAL TECHNICAL APPENDICES
VOLUME II

NORTH VINEYARD STATION SPECIFIC PLAN

ENVIRONMENTAL IMPACT REPORT

- ***MASTER DRAINAGE PLAN (DMP)***
- ***UNET ANALYSIS***
- ***WATER SUPPLY PLAN***
- ***GROUNDWATER IMPACTS EVALUATION***
- ***SEWER STUDY***
- ***HAZARDOUS MATERIALS ASSESSMENT***
- ***GEOTECHNICAL ENGINEERING REPORT***

County Control Number: ***93-SFB-0238***
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Sacramento County
Department of Environmental
Review and Assessment

FEBRUARY 1998

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DEPARTMENT OF ENVIRONMENTAL REVIEW AND ASSESSMENT

VOLUME II

FINAL TECHNICAL APPENDICES

NORTH VINEYARD STATION SPECIFIC PLAN

Technical Appendices Volume II for the North Vineyard Station Specific Plan EIR contains the following technical Studies: the Drainage Master Plan Analysis, the UNET Analysis, Water Supply Plan, the Groundwater Impacts Evaluation, the Sanitary Sewer Study the Hazardous Materials Assessment, and the Geotechnical Engineering Report.

These technical studies were prepared by consultants with expertise in the appropriate area. The Law Offices of George E. Phillips served as the coordinator for this work. All phases of the technical study work have been monitored by the Sacramento County Planning Department. Scoping of all technical issues and report review has been conducted by county staff of the Planning Department, Public Works Agency, Environmental Management Department, and the Department of Environmental Review and Assessment.

Technical issues were identified during the early scoping process. Administrative drafts of each technical study was prepared by consultants and reviewed by County staff. Revisions were made as needed. The technical studies contained herein are a result of this process.

Please note: Participating property owners have changed since the technical studies were originally conducted. These studies contain technical data for some properties that are no longer considered participating properties however, the technical data is not affected by these changes. The Specific Plan Proponents for the project now include: Winncrest Homes, US Home, Florin Investors, and Cal Maple Development. The Saca Properties, Morvai and East Bradshaw Gerber Associates are no longer participating owners. For a map of the current participating properties see Plate PRF-A in the Preface of the Final EIR.

VOLUME II

FINAL TECHNICAL APPENDICES

NORTH VINEYARD STATION SPECIFIC PLAN

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Appendix J	**Sanitary Sewer Study** *January 30, 1998*
Appendix K	**Hazardous Materials Assessment** *March 8, 1996*
Appendix L	**Geotechnical Engineering Report** *March 31, 1995*

7536-0

APPENDIX G

NVSSP FEIR: Final Technical Appendices Vol. II

DRAINAGE MASTER PLAN

FOR

THE NORTH VINEYARD STATION SPECIFIC PLAN

Prepared For:

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January 30, 1998

COUNTY OF SACRAMENTO
JAN 30 1998
DEPARTMENT OF
ENVIRONMENTAL REVIEW & ASSESS

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EXECUTIVE SUMMARY

INTRODUCTION

The Board of Supervisors endorsed Sacramento County's Drainage Master Plan Program in August 1991. The program addresses the long-term drainage and flood control needs of the County.

The intent of drainage master planning is to implement cost-effective drainage and flood control systems which:

- Accommodate development
- Provide the objective levels of drainage service and flood control
- Minimize continuing maintenance and operation costs
- Minimize and mitigate flooding, habitat loss, and water quality impacts.

The North Vineyard Station Specific Plan (NVSSP) Drainage Master Plan (DMP) is one element of the Drainage Master Planning Program. The NVSSP area is part of the Elder and Gerber Creeks watershed but is an independent document from the Draft Elder and Gerber Creeks Drainage Master Plan. The NVSSP DMP is linked to the Draft Elder and Gerber DMP by the common UNET Analysis that provides channel, detention and hydraulic consistency between the plans. Figure ES-1 shows the preferred Drainage Plan for the NVSSP DMP.

PURPOSE AND OBJECTIVES

This DMP report is a technical appendix to the NVSSP. The purpose of this report is to:

- Identify existing drainage facilities and predicted flooding patterns.
- Analyze alternatives and recommend preferred flood control and conveyance facilities and to mitigate for potential impacts due to development.
- Recommend Stormwater Quality Management Facilities consistent with the County's New Development Management Program.

The main objectives of this master plan are to:

- Provide 10-year gravity drainage service to developing areas within the Specific Plan Area.
- Provide 100-year flood protection to the Specific Plan Area consistent with Sacramento County's Standards.
- Provide a plan which meets the hydrologic and hydraulic criteria of: 1) no increase in the peak 100-year flow at the City line and 2) no significant out of bank 100-year flows in the existing improved channel downstream of the NVSSP area.
- Provide stormwater quality management facilities in accordance with the County's New Development Management Program.

In order to meet these objectives, WRD and MacKay and Somps met numerous times with the community. These meetings resulted in some alignment changes. Specific alignment issues will be further refined during the Specific Plan and tentative map process.

STUDY AREA

The NVSSP encompasses approximately 1,595 acres located in south Sacramento County. The planning area is bounded by Florin Road to the north, Gerber Road to the south, roughly Elder Creek to the west, and the extension of Vineyard and Knox Roads to the east.

Creek Description

Elder Creek enters the Plan Area from the north, crossing under Florin Road approximately 1,000 feet east of the California Central Traction Railroad (CCTRR) tracks, which extend diagonally across the plan area. At this point, the creek carries runoff from just over 4,400 acres. The creek travels generally in a southwest direction along the west boundary of the Plan Area for approximately 5,200 feet where it leaves the Plan Area after being joined by Gerber Creek. At its confluence with Gerber Creek, the tributary shed for Elder Creek is approximately 5,070 acres.

Gerber Creek first enters the Plan Area under Gerber Road approximately 1,700 feet east of Bradshaw Road with a tributary area of approximately 1,340 acres. The creek generally travels west through the site, temporarily leaving the Plan Area approximately 1,100 feet west of Bradshaw Road before re-entering the Plan Area just east of the CCTRR. The creek exits the Plan Area after it joins Elder Creek at the western boundary of the Plan Area.

Existing Channel

Within the Plan Area, both Elder and Gerber Creeks are relatively shallow (1 foot to 4 feet deep) and narrow (10 feet to 30 feet wide) and appear to have been realigned along property lines at several locations. Downstream of the Plan area, the creek remains relatively shallow until it joins a deeper improved channel.

Laguna Creek and Unionhouse Creek Basin Transfers

Currently, Gerber Creek experiences flow transfers, both into and out of its watershed during high flow events. High flows from Laguna Creek travel north along the CCTRR railroad into the Gerber Creek watershed and excess flows spill out of the Gerber Creek watershed by overtopping Gerber Road to the south into the Unionhouse Creek watershed. Sacramento County is currently in the reconnaissance stage of identifying a project to eliminate this interbasin transfer condition. It has been assumed for this study that this interbasin transfer project will occur as an independent project separate from the NVSSP.

LAND USE

WRD staff through field observation and analysis of 1993 aerial photographs and more recent topography determined existing land use conditions.

The ultimate condition land uses within the Specific Plan Area were determined from the NVSSP land use plan. Off-site land uses were determined by WRD using General Plan land uses. The land use designated Open Space and Agricultural lands were revised to Low Density Residential (50% impervious) for this study. The entire Elder and Gerber Creek watershed lies within the County Urban Services boundary. The design flows for the channels therefore accommodate full future urbanization of the watershed.

HYDRAULIC AND HYDROLOGIC ANALYSIS

Scoping Study

Sacramento County WRD prepared a preliminary scoping study based on HEC-1 and HEC-2 computer models. The models were calibrated using gage data from January 1982 and March 1983 storm events and verified using the January 1995 storm events. MacKay & Somps assisted WRD in refining the models in order to provide a higher level of detail within the NVSSP Area and to reflect the proposed land use conditions. MacKay & Somps created the HEC-1 models for the 10-year storm event by modifying the WRD 100-year models.

UNET Analysis

Subsequent to the scoping study, the WRD prepared a Draft Watershed Master Plan based on the report "Elder and Gerber Creeks UNET Analysis" by Doug Hamilton (January 1997). The UNET Analysis is a one-dimensional unsteady flow computer model. The UNET Analysis provides a more detailed unsteady flow analysis than HEC-1 and HEC-2. The NVSSP Drainage Master Plan encompasses the guidelines and requirements set forth by WRD in their scoping studies and UNET Analysis.

The WRD UNET Analysis developed a conceptual plan that identified shed-wide detention requirements and channel improvements that would meet the flow and water surface elevation objectives. Generally, development results in increased flow primarily due to two factors: 1) the increase of imperviousness associated with changes in land use and, 2) the more efficient and rapid conveyance of runoff due to channelization needed for development. The channelization needed for development significantly changes the "Time-to-Peak" of the flood, bringing together flood peaks from different branches of the system when they were hours apart in the existing condition.

Proposed Facilities

The DMP identifies basins and channel improvements required within and downstream of the Specific Plan area. Channel improvements are needed downstream to provide gravity flow (instead of pumping). Detention basins temporarily reduce flood peaks in order to meet Plan objectives.

Ultimate and Stand Alone Conditions Analysis

Two analyzes were conducted. The Ultimate Condition analysis assumes all ultimate facilities in the watershed are constructed. The Stand Alone conditions analysis assumes full development within the NVSSP area and existing land use conditions elsewhere. The purpose of the Stand Alone condition analysis is to determine the potential impacts of the NVSSP alone.

The ultimate condition analysis includes detention basins and channel improvements throughout the entire watershed. The Stand Alone analysis includes detention basins and channel improvements within the NVS area, and some necessary adjacent channel work. In addition, channel improvements and a detention basin downstream of the plan area are included in the Stand Alone analysis. This downstream basin is discussed below (see DETENTION BASIN E20 SUMMARY, page vi).

The cumulative result of the Stand Alone scenario assumptions is a significantly higher flow than either existing or ultimate conditions in some of the downstream reaches of the creek, up to the Gerber Road Crossing No. 2. While the potential

for this Stand Alone condition to actually occur in the future is real, it is not probable due to the significant cost of providing ultimate channel improvements off-site and upstream from the proposed development. The effects to storm sewers was not studied.

RESULTS AND RECOMMENDATIONS – THE PREFERRED ALTERNATIVE

Several alternatives were analyzed as possible methods to provide flood control within the Plan Area including levees, bypass channels, in-channel detention, improved trapezoidal channel, improved naturalized channels, linear detention, and point detention. The preferred alternative of point detention with an improved naturalized channel was selected based on its ability to satisfy the master plan goals for the watershed.

General Plan Compliance

The Conservation Element of the Sacramento County General Plan presents policies aimed at preserving and protecting the values of natural streams. The policies apply to specific urban stream corridors designated in the General Plan, including Elder Creek. Gerber Creek is not designated as an urban stream corridor, but the analysis could also be applied to Gerber Creek.

The ultimate condition Drainage Master Plan system will provide adequate capacity to attenuate and convey drainage from the entire drainage shed. To do so, it relies on a complete system of facilities, including detention throughout the shed, elimination of the Laguna Creek interbasin transfer, and channel and road crossing improvements. The ultimate flows that result are consistent with the UNET Analysis.

Phased Development

Land development within the Specific Plan Area will occur over a long period of time, possibly fifteen to twenty years. Improvements to the drainage system are necessary to serve that development as it occurs.

Initially, there is a potential that small, isolated development could occur in certain areas of the Plan by providing temporary detention basins which rely on pumping to operate. It is also possible that isolated areas in the eastern portions of the Plan Area could develop and gravity discharge to the existing channels provided they do not increase the flood risk to their immediate and downstream neighbors. This could occur in areas not constrained by the existing floodplain.

Deepening and widening those existing channels is necessary to provide a gravity outfall and to lower the ten-year water surface elevation to meet County design standards. This indicates that any phasing plan will trigger the capture of

the 100-year Laguna Creek interbasin transfer flows and retain existing flows which now exit Gerber Creek into Unionhouse Creek. The NVS Financing Plan will include a phasing strategy addressing incremental construction of facilities.

Channel Improvements

The proposed channels within the NVSSPA will have a more naturalized appearance than a straight, uniform trapezoidal channel. The naturalized channels will have a low flow channel that meanders within the main channel bottom that will also meander within the open space corridor. Bridge and culvert improvements (including some private crossings) will be required to provide the necessary depth and/or capacity for the ultimate condition.

The width of the main channel bottom for Elder Creek is fifty feet throughout the Specific Plan with an average depth of eight feet below ground. Off-site improvements will be needed for Elder Creek, both upstream and downstream of the Specific Plan Area. The average depth of the Gerber Creek channel is also approximately eight feet. Off-site improvements will occur in the reach between Gerber Road Crossing No. 3 and Gerber Road Crossing No. 4 where the creek temporarily leaves the Plan Area.

Flood Control Detention

The flood control detention proposed for the NVSSPA is point detention. Five flood control detention basins are included in the NVSSP DMP, four on site and one off-site. The off-site detention Basin E20 is a large regional basin located downstream of the confluence of Elder and Gerber Creeks. This regional basin serves as a factor of safety for the entire Elder and Gerber Creeks watershed as it will provide overall system reliability.

Detention Basin E20 Summary

Construction of Basin E20 can provide system reliability, meet the flow objectives of the DMP, and provide flexibility for timing of the NVS developments. E20 contributes to system reliability by mitigating variations in timing between peak flow and peak stage. It is the opinion of WRD that Basin E20 is required downstream of the confluence to account for variability in timing of actual floods compared to the design event, and to provide a factor of safety for the watershed-wide flood control system. Water Resources consultant Doug Hamilton has stated that " . . . Basin E20 should be part of the ultimate conditions alternative and that it can play a key role in the interim."

MacKay & Somps concurs with the shed-wide benefit of Basin E20. However, it is the opinion of MacKay & Somps that construction of the regional basin can occur at a time when a majority of the watershed has developed.

WRD and the project proponents have agreed that the acquisition of the land for Basin E20 will occur in the near future to ensure its ultimate construction. The phasing of the actual construction of Basin E20 can be deferred to a later date. A phasing plan to be included in the North Vineyard Station Specific Plan Financing Plan will address funding of Basin E20 along with other drainage facilities.

Stormwater Quality

In order to comply with Sacramento County's NPDES Permit, stormwater quality (SWQ) treatment facilities will need to be constructed in the NVSSPA. Sacramento County has identified the dry extended basin as the most appropriate method of treatment for the County. Also, use of dry extended detention basins will allow the proposed flood control basins to be dual-purpose basins that provide both flood control and water quality treatment.

Five SWQ basins are included in the NVSSP DMP. All of the SWQ basins are on-site and four of the five are dual-purpose basins with SWQ treatment and flood control volume in the same basin.

Open Space Corridor

The Open Space drainage parkway is intended to serve the purpose of conveying stormwater drainage, serving to enhance wetlands and riparian habitats, providing water quality enhancement features, and providing natural appearing linear open space for recreational use. The proposed Elder and Gerber Creek hydraulic corridor (the lowered channel) is located within an Open Space Corridor. The Open Space Corridor Plan has been prepared in response to General Plan Policies that address the preservation and protection of natural, recreation, and floodplain features of creek courses.

Through the Specific Plan planning process, various drainage parkway Open Space alternatives were analyzed. This planning process resulted in a preferred drainage parkway Open Space Corridor with varying widths from 150 feet to 350 feet, and an average width of 200 feet.

Wetlands

The proposed Elder and Gerber Creek channels will provide opportunities to mitigate for impacted wetlands. Based on the NVSSP **Technical Appendix: Biotic Resources Report**, dated May 3, 1996, prepared by Sugnet & Associates, 7.4 acres of on-site wetlands and 5.6 acres of off-site wetlands will be impacted by County Drainage Facilities.

0 700 1400 2800

SCALE: 1" = 1400'

LEGEND

SYMBOL	DESCRIPTION
- -	APPROX. LIMITS OF F.E.M.A. 100 YEAR FLOOD PLAIN
——	POSSIBLE SEWER INTERCEPTOR ALIGNMENT
——	PROPOSED CHANNEL CENTERLINE
——	BOTTOM WIDTH & AVG. TOP WIDTH OF PROPOSED CHANNEL
- - -	LIMITS OF DRAINAGE CORRIDOR

FIGURE ES-1
NORTH VINEYARD STATION SPECIFIC PLAN
PREFERRED DRAINAGE PLAN

DATE: FEBRUARY 1997
DRAWN BY: KT

MACKAY & SOMPS
CIVIL ENGINEERING AND PLANNING AND SURVEYING
SACRAMENTO, CA. 95815 (916) 929-8092

JOB NO.: 7536-0

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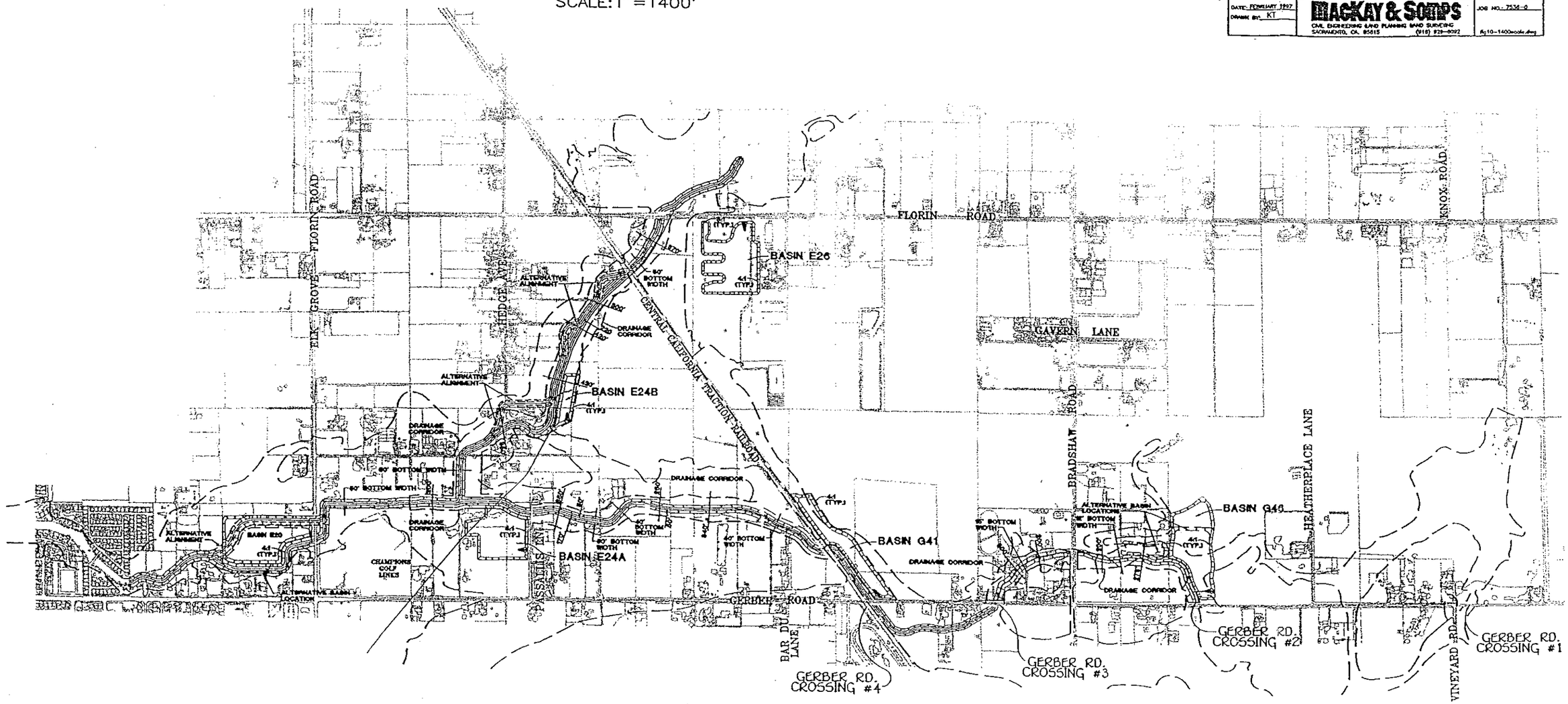

DRAINAGE MASTER PLAN FOR NORTH VINEYARD STATION SPECIFIC PLAN

I. INTRODUCTION

This drainage report is a technical appendix to the North Vineyard Station Specific Plan (NVSSP). The NVSSP encompasses approximately 1,595 acres located in south Sacramento County. The planning area is bounded by Florin Road to the North, Gerber Road to the south, Elder Creek to the west roughly, and the extension of Vineyard and Knox Roads to the east. (See Figure 1.)

The site consists mainly of moderately sloping grassland and pastures with some areas of steeper slopes (up to 10%) located in the southeast. The site contains scattered trees, single-family homes, and other structures, such as barns and sheds. The Central California Traction Railroad (CCTRR) extends diagonally across the planning area from the northwest corner of the site towards the southeast. High voltage power transmission lines cross the western portion of the site from north to south.

II. PURPOSE AND SCOPE

The purpose of this study is to develop a comprehensive Drainage Master Plan for the NVSSP Area. The Sacramento County Water Resources Division (WRD) has developed an approach to drainage basin master planning which provides both comprehensive guidance on a shed-wide basis, and flexibility for more refined and specific master planning efforts on a reach-by-reach basis. Scoping studies and Watershed Master Drainage Plans generated by WRD provide the comprehensive element to these reach-by-reach master plans. The concept of utilizing scoping studies to guide preparation of Master Drainage Plans for individual reaches of a creek is consistent with previous efforts in the County for Laguna Creek and Elk Grove Creek, and is the process utilized for the recent East Elk Grove Specific Plan. The Elder Creek and Gerber Creek Watershed Master Drainage Plan provides a more detailed plan to guide development within the shed.

Sacramento County WRD previously prepared a preliminary scoping study report based on HEC-1 and HEC-2 models. Subsequent to the scoping study, WRD has prepared a Draft Watershed Master Plan based on a UNET model. Both studies identified existing flooding conditions and developed alternative strategies and guidelines for handling ultimate condition flows. The UNET report provides a more detailed unsteady flow analysis to be used to guide future development in the watershed. The NVSSPA Drainage Master Plan encompasses the guidelines and requirements set forth by WRD in their scoping studies and Draft Watershed Master Drainage Plan for the two creeks. It is therefore comprehensive in nature, yet specific to the drainage corridors affected by the Specific Plan, both on-site and off-site. This approach allows the drainage facilities to be responsive to the developing land plan, while implementing the desired goals established in the comprehensive watershed studies.

LEGEND

- CITY OF SACRAMENTO
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- MINING RESOURCE AREA
- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- WATERSHED BOUNDARY
- SUBAREA BOUNDARY
- CREEK (OPEN CHANNEL)
- CITY–COUNTY LINE
- CG3 CONCENTRATION POINT (HEC–1)
- E8 SUBAREA NAME

KIEFER BOULEVARD
ELDER CREEK
JACKSON ROAD
EXCELSIOR ROAD
FRYE CREEK
BRADSHAW ROAD
ELDER CREEK ROAD
CE1
E1A
E1B
PROPOSED SEWER INTERCEPTOR C–E2&3
C.S.I.R.R.
HEDGE AVENUE
SOUTH WATT AVENUE
POWER INN ROAD
FLORIN PERKINS ROAD
GARDNER AVENUE
FLORIN ROAD
EAGLES NEST ROAD
CE4
GERBER CREEK
GERBER
CREEK
STOCKTON BOULEVARD
HIGHWAY 99
FLORIN CREEK
MORRISON CREEK
ELDER
CREEK
CE8
CE7
MILLBROOK CIRCLE
MCCOY AVE.
CE5
CE6
CG3
CG4
CG3A
CG3B
CG2
G2A
GERBER ROAD
CONFLUENCE OF ELDER AND GERBER CREEKS
INTERBASIN TRANSFER TO UNIONHOUSE CREEK
BAR DU LANE
LAGUNA CREEK
CE13
CE12
CE11
CE10
CE9
C–FEG ELDER CREEK
CE14
MACK ROAD
ALERT GAGE SITE 95 STORM
ELSIE AVENUE
WILBUR WAY
UNIONHOUSE CREEK
COTTONWOOD LANE
S.P.R.R.
ELK GROVE FLORIN ROAD
IONA WAY
FRANKLIN BOULEVARD
CONFLUENCE OF FLORIN, ELDER, AND GERBER CREEKS
CENTER PARKWAY
VALLEY HI DRIVE
STEVENSON AVENUE
CITY OF SACRAMENTO
VINEYARD ROAD
INTERBASIN TRANSFER FROM LAGUNA CREEK
BRADSHAW ROAD
CALVINE ROAD

FLORIN, ELDER AND GERBER CREEKS SCOPING STUDY

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY
WATER RESOURCES DIVISION

0 4000

SCALE IN FEET

FIGURE 1

Subshed Boundaries

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WRD has expressed their desire to assume responsibility for the development and implementation of the Elder and Gerber Creek Watershed Master Plan of which the scoping study and the "UNET Analysis", dated January 1997, are a part. Adhering to the framework established in WRD's Watershed Master Plan, the scope of this report covers the Drainage Master Plan for the NVSSP Area only.

The WRD UNET Analysis defines the hydrologic and hydraulic requirements for the entire watershed. The quantity and timing of run off throughout the watershed (including within the boundaries of the Specific Plan) is identified in the UNET Analysis. This Drainage master Plan refines that analysis within the boundaries of the Specific Plan.

The Drainage Master Plan for the NVSSPA does the following:

- Identifies existing drainage facilities and predicted flooding patterns.
- Analyzes alternatives and recommends preferred flood control and conveyance facilities to serve the drainage needs of the lands within the Plan Area and to mitigate for potential impacts due to development.
- Recommends Stormwater Quality Management Facilities consistent with the County's New Development Management Program.

III. MASTER PLAN OBJECTIVES

The main objectives of this master plan are to:

- Provide 10-year gravity drainage service to developing areas within the Specific Plan Area. Specifically, it will be necessary to provide a low enough 10-year water surface elevation in the creeks to allow storm drain pipes from the surrounding developed areas to meet the County's 10-year hydraulic grade line standards for pipe systems.
- Provide 100-year flood protection to the Specific Plan Area consistent with Sacramento County's Standards.
- Provide a plan that meets the hydrologic and hydraulic criteria established by the County in their scoping study for the Elder/Gerber Creek watershed. The main criteria are:
    1. no increase in the peak 100-year flow is allowed at the City line; and
    2. no significant 100-year flows are allowed out of bank in the existing improved channel downstream of the Specific Plan Area.
- Provide stormwater quality management facilities in accordance with the County's New Development Management Program.

IV. BACKGROUND

A. SHED DESCRIPTION

The NVSSPA lies within the drainage sheds of Elder and Gerber Creeks. (See Figure 1.) Elder Creek enters the Plan Area from the north, crossing under Florin Road approximately 1,000 feet east of the CCTRR tracks. At this point, the creek carries runoff from just over 4,400 acres. The creek travels generally in a southwest direction along the west boundary of the Plan Area for approximately 5,200 feet where it leaves the Plan Area after being joined by Gerber Creek. At its confluence with Gerber Creek, the tributary shed for Elder Creek is approximately 5,070 acres.

Gerber Creek first enters the Plan Area under Gerber Road approximately 1,700 feet east of Bradshaw Road with a tributary area of approximately 1,340 acres. The creek generally travels west through the site, temporarily leaving the Plan Area approximately 1,100 feet west of Bradshaw Road before re-entering the Plan Area just east of the CCTRR. The creek exits the Plan Area after it joins Elder Creek at the western boundary of the Plan Area.

Within the Plan Area, both Elder and Gerber Creeks are relatively shallow (1 foot to 4 feet deep) and narrow (10 feet to 30 feet wide) and appear to have been realigned along property lines at several locations.

B. LAGUNA CREEK AND UNIONHOUSE CREEK BASIN TRANSFERS

Currently, Gerber Creek experiences flow transfers, both into and out of its drainage shed during high flow events. High flows from Laguna Creek back up at the Central California Traction Railroad and excess flows travel north along the railroad into the Gerber Creek shed.

Downstream of the Central California Traction Railroad, excess flows spill out of the Gerber Creek shed by overtopping Gerber Road to the south into the Unionhouse Creek shed. The general locations of these interbasin transfer areas are shown on Figure 1.

Sacramento County is currently in the reconnaissance stage of identifying a project to eliminate this interbasin transfer condition. At the direction of Sacramento County WRD, it has been assumed for this study that this project will occur as an independent project separate from the Specific Plan.

V. HYDROLOGIC AND HYDRAULIC ANALYSIS

A. APPROACH

Initially, the hydrologic analysis consisted of creating HEC-1 computer models for the 10-year and 100-year events for both existing and developed land use conditions.

WRD staff created the base 100-year HEC-1 models for both land use conditions. The County developed preliminary existing condition flows with an HEC-1 model calibrated using gage data from January 1982 and March 1983 storm events and verified the model using the January 1995 storm events. MacKay & Somps assisted WRD in refining the models in order to provide a higher level of detail within the Specific Plan Area and to reflect the proposed land use conditions. MacKay & Somps created the HEC-1 models for the 10-year storm event by modifying the WRD 100-year models.

Subsequently, WRD obtained the services of a consultant, Doug Hamilton, to study the Elder and Gerber Creek shed, using a UNET model. The results of the UNET model confirmed the previous studies with the exception of the magnitude of the Laguna Creek interbasin transfer. The County calibrated their existing condition UNET model using gage data from the January 1995 storm event.

B. LAND USE ASSUMPTIONS

WRD staff through field observation and analysis of 1993 aerial photographs and more recent topography determined existing land use conditions.

The ultimate condition land uses within the Specific Plan Area were determined from the land use plan shown on Figure 3. Off-site land uses were determined by WRD using the General Plan land uses revised with lands designated as Open Space or Agricultural as Low Density Residential (50% impervious). The entire Elder and Gerber Creek watershed lies within the County Urban Services boundary. The design flows for the channels therefore accommodate full future urbanization of the shed even though that may never occur.

C. RESULTS

Based on the UNET model results, profiles of the 100-year water surface elevations, the approximate bank elevations, and the ultimate channel flowline of Elder and Gerber Creeks are shown in Figures 2A through 2D. Figures 2A and 2C show profiles of the existing condition and the ultimate condition. Figures 2B and 2D show profiles of the existing condition and the stand alone Case 2 condition with the Laguna Creek overflow.

Existing Conditions

The existing condition peak flows are shown on Tables 1 and 2. The calculated peak flows are relatively low for the size of the area being drained. This is due to the flat terrain and large amounts of floodplain storage within the shed.

Using the water surface elevations generated by UNET, the existing 100-year floodplain was estimated. As Figure 4 shows, the calculated floodplain ranges from approximately 300 to 1,600 feet in width. The regulatory 100-year floodplain developed by FEMA is also shown on Figure 4. Differences between the 100-year floodplain generated by results of the UNET model and the FEMA 100-year floodplain are due to the different levels of study, as well as the different methods of hydrologic analysis. The Florin Road bridge was found to be inadequate to pass the 100-year flow and the road will be overtopped during a 100-year event.

According to the WRD UNET Analysis, the flow currently contributed from the previously discussed Laguna Creek interbasin transfer during the 100-year storm event is 1,050 cfs. The flow currently overflowing from Gerber Creek to Unionhouse Creek during the 100-year storm event is 370 cfs.

Developed Conditions

Generally, development results in increased flood flows due to both increased imperviousness and to channelization. Increased imperviousness results in less infiltration of rainfall and a more rapid rate of runoff. Channelization results in more efficient and rapid conveyance of runoff downstream, as well as a reduction in floodplain storage, and capture of existing flows that currently escape the system as a result of high water surface elevations. In order to meet the flow criteria established by the County scoping study, it will be necessary to reduce the ultimate 100-year peak flows to levels below existing rates. This reduction can be accomplished by the construction of detention facilities. Tables 1 and 2 present calculated 10- and 100-year flows for existing conditions and ultimate conditions. These results are discussed below. Both the Laguna Creek and Unionhouse Creek interbasin transfers are eliminated in the developed ultimate condition.

Gerber Creek

Calculated peak flows for Gerber Creek are shown on Table 1.

Construction of detention basins throughout the shed will attenuate peak 10-year flows down to very near existing and 100-year flows down to well below existing. This indicates that the proposed detention facilities are appropriately designed to mitigate the increased flows due to development, as well as the reduction of natural floodplain storage due to channelization.

Elder Creek

Calculated peak flows for Elder Creek are shown on Table 2. Again, detention basins attenuate peak 100-year flows down to, or below, existing rates verifying that the proposed detention facilities are appropriately designed for reasons mentioned above.

NORTH VINEYARD STATION SPECIFIC PLAN

ELDER CREEK PROFILES

EXISTING CONDITION & ULTIMATE CONDITION

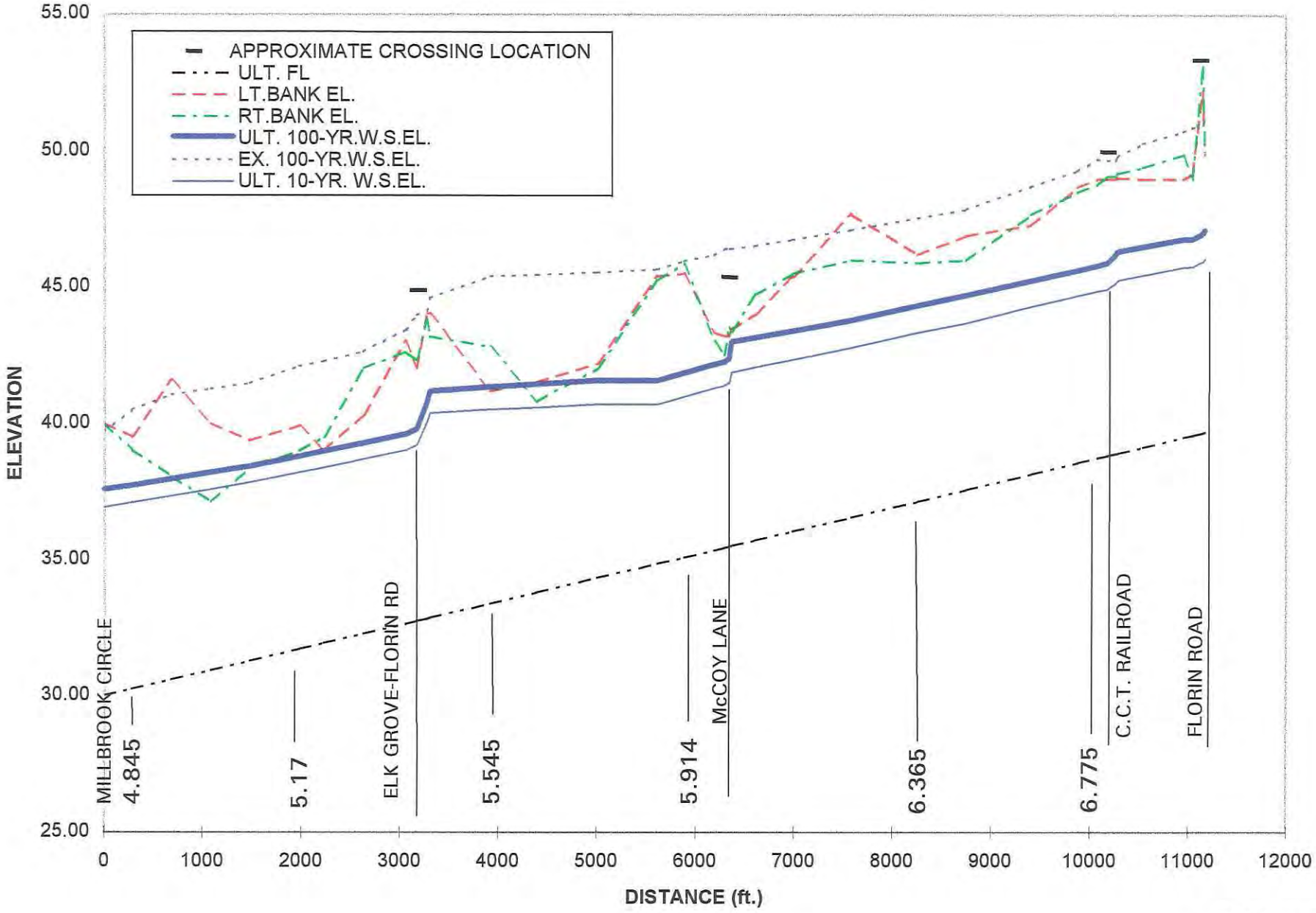


FIGURE 2 A

NORTH VINEYARD STATION SPECIFIC PLAN

ELDER CREEK PROFILES

EXISTING CONDITION & STAND ALONE CASE 2 CONDITION

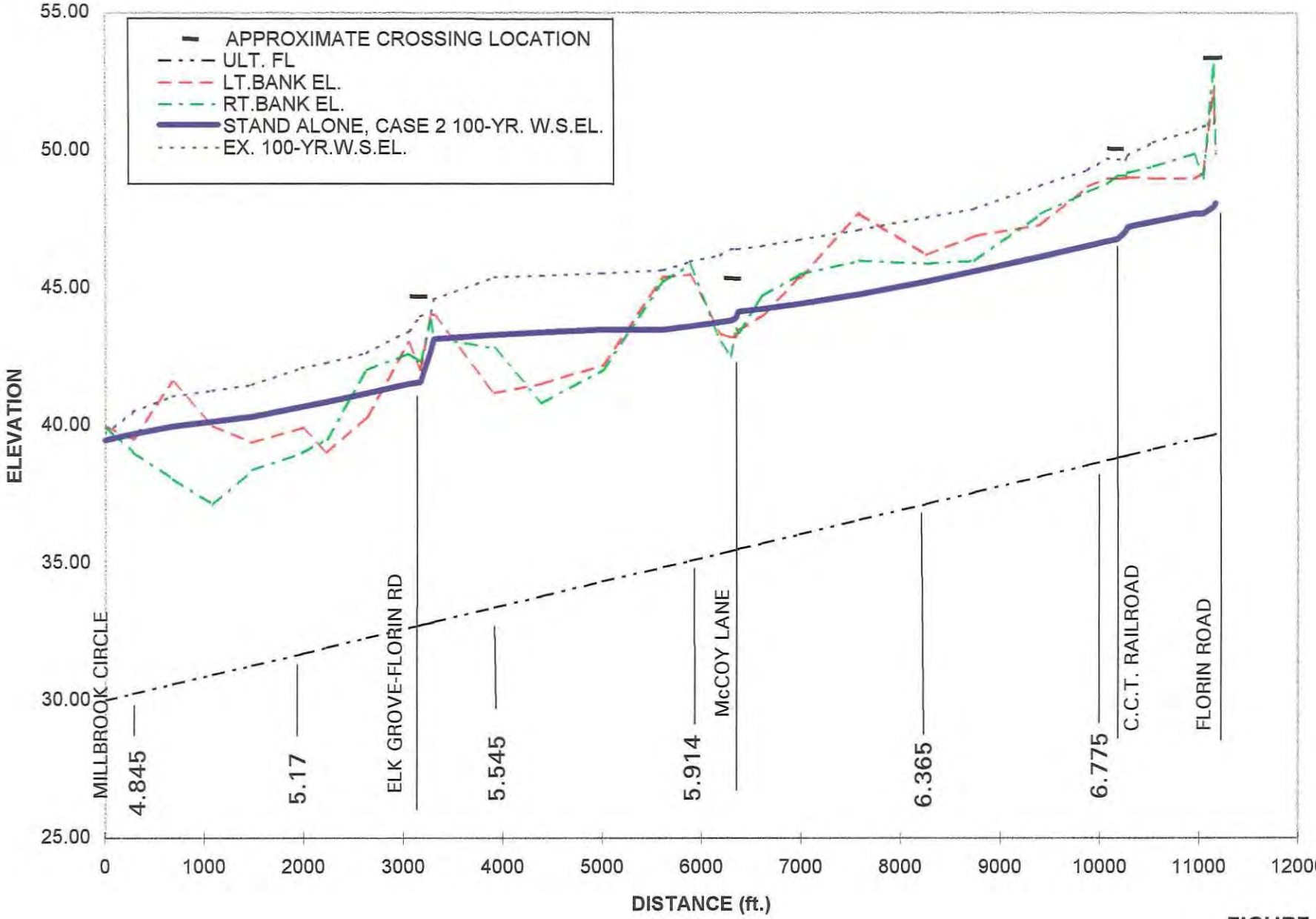


FIGURE 2 B

NORTH VINEYARD STATION SPECIFIC PLAN

GERBER CREEK PROFILES

EXISTING CONDITION & ULTIMATE CONDITION

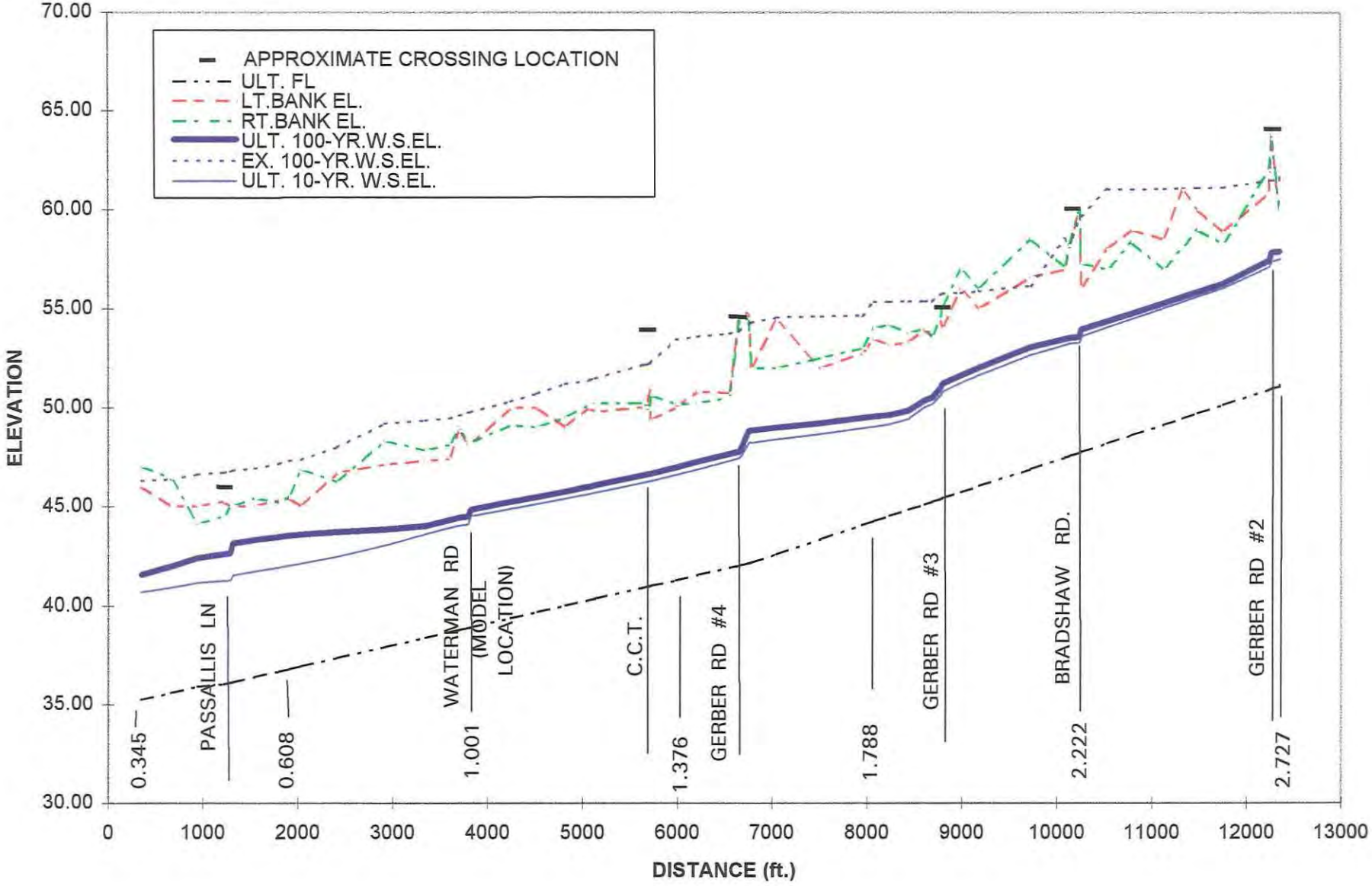


FIGURE 2 C

NORTH VINEYARD STATION SPECIFIC PLAN

GERBER CREEK PROFILES

EXISTING CONDITION & STAND ALONE CASE 2 CONDITION

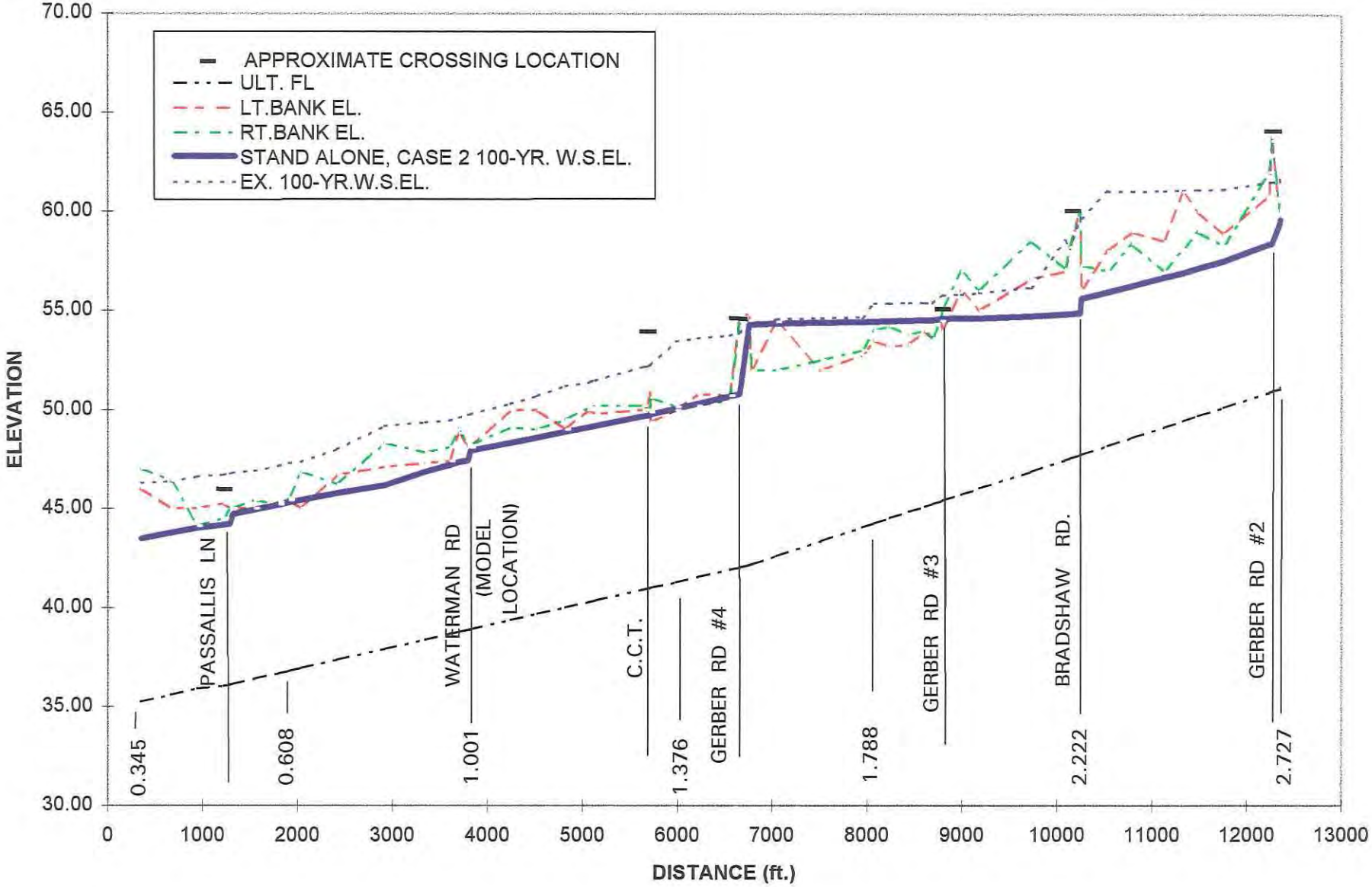


FIGURE 2 D

12/31/97
Flows.xls

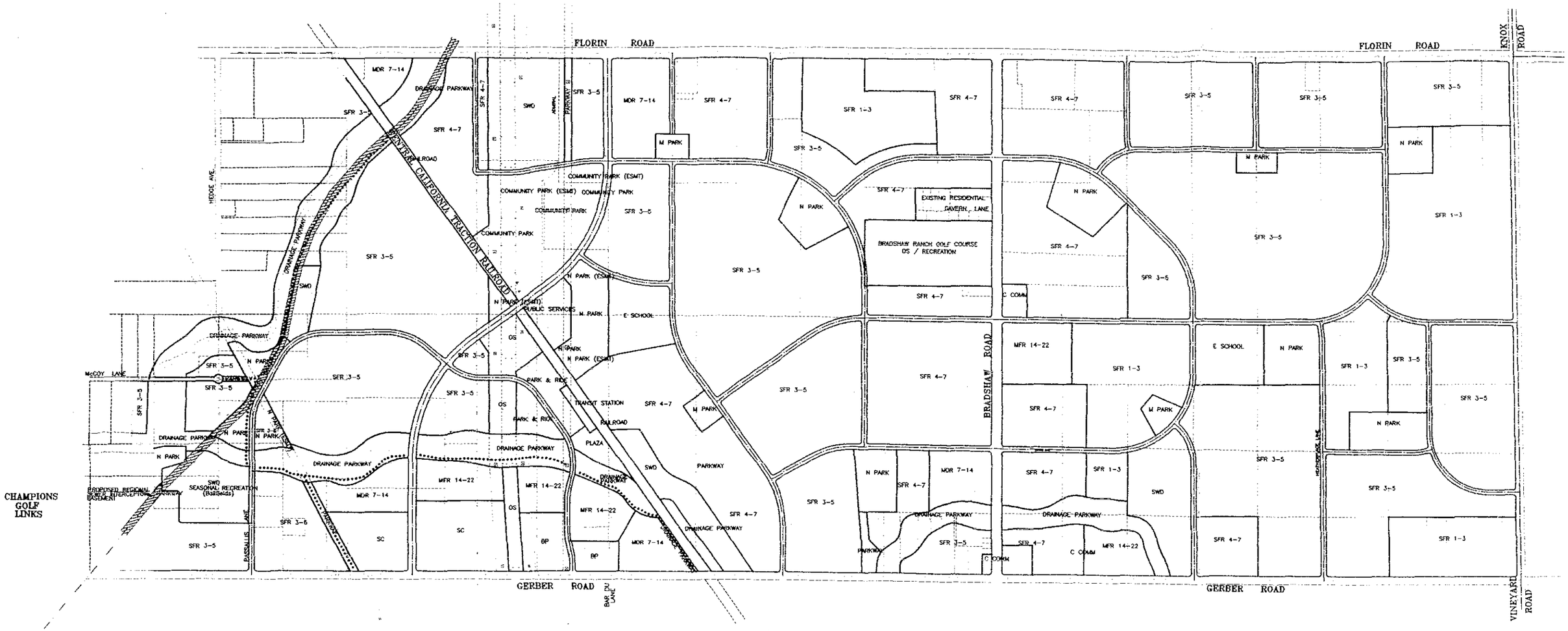
TABLE 1 - GERBER CREEK FLOWS

LOCATION	UNET SECTION (ULTIMATE)	TRIBUTARY AREA (acres)	10-YEAR FLOWS(CFS) EXISTING	10-YEAR FLOWS(CFS) ULTIMATE	100-YEAR FLOWS(CFS) EXISTING	100-YEAR FLOWS(CFS) ULTIMATE
D/S GERBER RD. CROSSING NO. 1 (300' EAST OF VINEYARD ROAD, OFFSITE)	3.933	966	60	100	70	120
U/S GERBER RD. CROSSING NO. 2 (1700' EAST OF BRADSHAW)	2.727	1,205	130	170	180	240
D/S BRADSHAW ROAD	2.169	1,681	295	100	490	290
D/S GERBER RD. CROSSING NO. 3 (1100' WEST OF BRADSHAW)	1.900	1,765	375	100	790	355
U/S GERBER RD. CROSSING NO. 4 (ADJACENT TO CCTRR)	1.544	2,697			1,475	520
D/S CCTC RAILROAD	1.274	2,843	455	410	1,440	480
U/S OF CONFLUENCE AT ELDER CREEK	0.345	3,095	510	430	1,070	500

TABLE 2 - ELDER CREEK FLOWS

LOCATION	UNET SECTION (ULTIMATE)	TRIBUTARY AREA (acres)	10-YEAR FLOWS(CFS) EXISTING	10-YEAR FLOWS(CFS) ULTIMATE	100-YEAR FLOWS(CFS) EXISTING	100-YEAR FLOWS(CFS) ULTIMATE
U/S FLORIN ROAD	7.000	4,435	495	520	940	705
U/S CCTC RAILROAD	6.820	4,857			1,035	785
U/S OF CONFLUENCE AT GERBER CREEK	5.914	5,070	525	575	1,000	780
D/S ELK GROVE - FLORIN ROAD	5.402	8,299	950	975	2,060	1,255
AT EXIST. IMPROVED CHANNEL U/S OF MILLBROOK CIRCLE	4.779	8,760	1,025	940	2,045	1,110
SACRAMENTO CITY LIMITS	1.878	9,905	1,265	995	1,985	1,700

*NOTES: Flows based on WRD UNET Analysis Report prepared by Doug Hamilton, dated July, 1996 (existing condition model revised 12-96)



0 500 1000 2000

SCALE: 1" = 1000'

Figure 3

North Vineyard Station Specific Plan

Scale: 1"=1000' Sacramento, California September, 1996

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FIGURE 4
NORTH VINEYARD STATION SPECIFIC PLAN
EXISTING CONDITION 100-YEAR FLOODPLAIN

0 700 1400 2800

SCALE: 1" = 1400'

DATE: FEBRUARY 1997
DRAWN BY: KT

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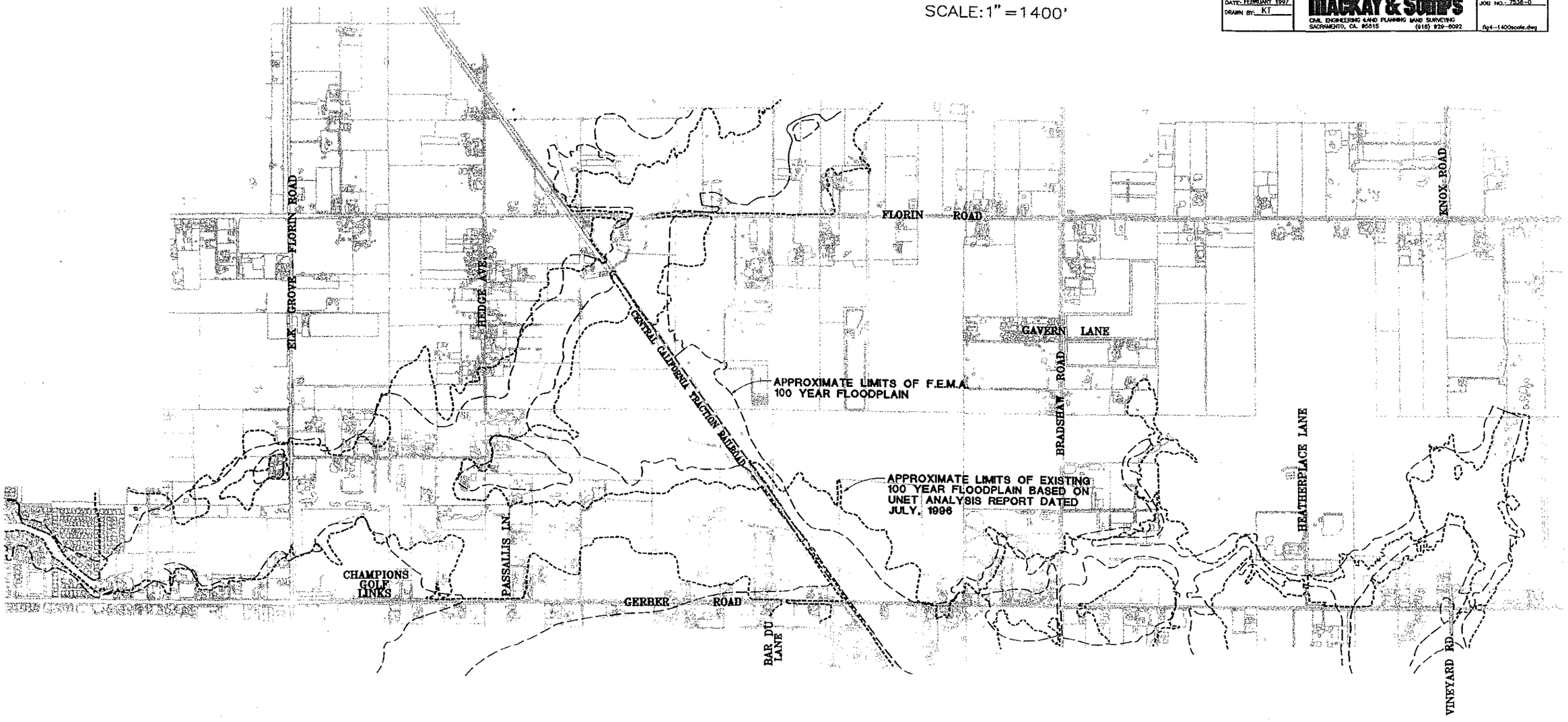


VI. FLOOD CONTROL

A. COUNTY OF SACRAMENTO SCOPING STUDY

As part of their scoping study, Sacramento County WRD has developed the following criteria for the ultimate condition Elder/Gerber Creek watershed:

1. no increase in the peak 100-year flow is allowed at the City line; and
2. no significant 100-year flows are allowed out of bank in the existing improved channel downstream of the Specific Plan Area.

The WRD UNET Analysis study developed a conceptual plan which identified shed-wide detention requirements and channel improvements which would meet the above flow limits. Both the increase of imperviousness associated with changes in land use and the more efficient and rapid conveyance of runoff due to channelization contribute to the increase in flows caused by development. The channelization needed for development significantly changes the "Time-to-Peak" of the flood, bringing together flood peaks from different branches of the system when they were hours apart in the existing condition. Detention within and upstream of the Specific Plan Area must provide attenuation of flows in amounts exceeding the increase in flows caused by development and channelization within the contributing watersheds. The two main reasons for this are:

1. limited detention sites are available downstream of the Specific Plan Area; and
2. channelization conveys flood peaks downstream more rapidly.

In fact, in order to meet the flow limits, the ultimate 100-year flow being discharged from the Plan Area will be 290-cfs (15%) less than the existing 100-year flow. Figure 5 shows the conceptual detention basin locations developed by the WRD UNET Analysis for basins outside of the Plan Area and shows the specific locations of the basins identified in the NVSSP Drainage Master Plan.

B. FLOOD CONTROL ALTERNATIVES ANALYSIS

Approach

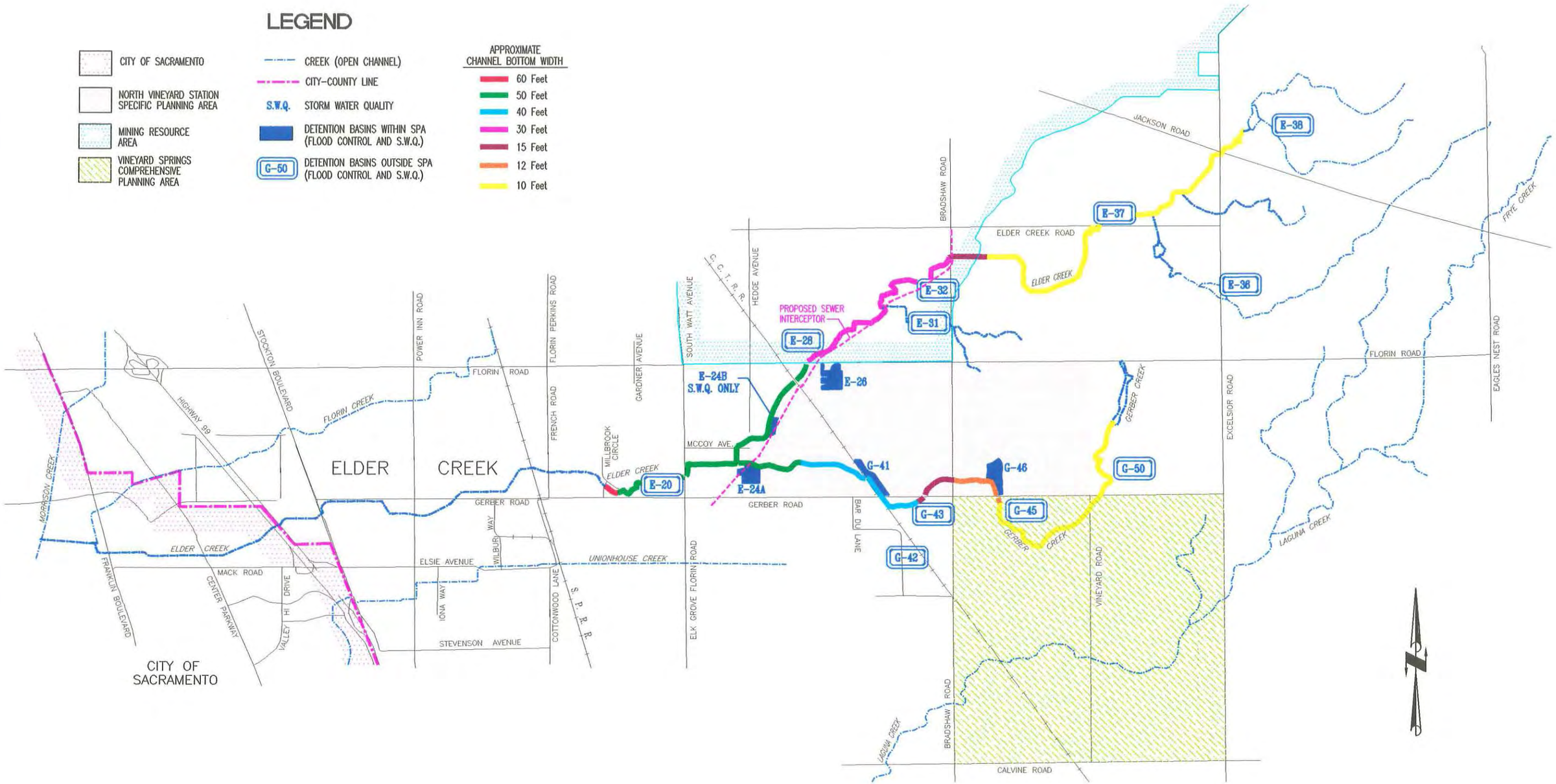
The WRD scoping study developed general guidelines for meeting the specific requirements within the Elder and Gerber Creeks shed. This section identifies and analyzes a number of alternative methods by which the objectives of the master plan could be achieved within the Specific Plan Area. The following alternatives were analyzed as possible methods to provide flood control within the Plan Area:

1. leveed channels with detention;
2. bypass channels with detention;
3. wide naturalized creek with in-channel detention;
4. improved trapezoidal channel with detention;
5. improved naturalized channels with linear detention; and
6. improved naturalized channels with point detention.

LEGEND

- CITY OF SACRAMENTO
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- MINING RESOURCE AREA
- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- CREEK (OPEN CHANNEL)
- CITY–COUNTY LINE
- S.W.Q. STORM WATER QUALITY
- DETENTION BASINS WITHIN SPA (FLOOD CONTROL AND S.W.Q.)
- G-50 DETENTION BASINS OUTSIDE SPA (FLOOD CONTROL AND S.W.Q.)

APPROXIMATE CHANNEL BOTTOM WIDTH
- 60 Feet
- 50 Feet
- 40 Feet
- 30 Feet
- 15 Feet
- 12 Feet
- 10 Feet



FLORIN, ELDER AND GERBER CREEKS SCOPING STUDY

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY
WATER RESOURCES DIVISION

0 4000

SCALE IN FEET

FIGURE 5

Conceptual Detention Locations

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Each of these alternatives are described and discussed below. The alternatives were evaluated in a qualitative way, based on the following considerations:

1. flood control effectiveness;
2. reliability (potential for failure);
3. land use efficiency;
4 costs (construction, maintenance, operational);
5. environmental impacts and benefits;
6. resulting aesthetics;
7. operational safety;
8. joint use potential;
9. compatibility with water quality facilities;
10. conformance with General Plan Policies; and
11. phasing potential.

Alternatives Descriptions

The following are descriptions of each of the analyzed flood control alternatives. Cross-sections for each of the alternatives can be seen on Figures 6, 7, and 8. In the following descriptions, there are several references to on-line detention and off-line detention. It is important to understand the differences between these two forms of detention. For an on-line detention basin, all flows are directed into the basin and then released through an outlet control structure into the downstream drainage facility, typically a channel. For an off-line basin, flows are first directed into a drainage channel. Only higher flood flows are diverted out of the channel into the detention basin. Off-line basins operate more efficiently and require less volume to achieve peak flow attenuation because they do not store any of the low flows that occur early on in a storm event. A diagram showing the operational concepts associated with off-line and on-line detention basins has been included as Figure 11 in Section VII of this report.

Alternative No 1 - Leveed Channels with Detention

A leveed channel alternative would consist of FEMA certified levees being constructed to confine the ultimate flood flows within a narrower corridor than the natural floodplain. The natural floodplain width will already be reduced in the ultimate condition due to the reduction of peak flows by detention. Levees would further restrict the floodplain to a much narrower corridor.

All runoff from surrounding lands would be directed into detention basins located adjacent to the levees and pumped over the levees into the creek. No direct piping into the channel could occur due to the need to keep the surrounding lands hydraulically separated from the high water surface elevation within the channel. The detention basins would therefore be on-line basins and would have a large land requirement.

Alternative No. 2 - Bypass Channel with Detention

The bypass channel alternative would result in deeper and wider "bypass" channels being constructed along one side of the natural creeks. In concept, lands on the creek side of the drainage corridor would drain directly into the existing creek. The creek would convey the flow downstream unless the capacity of the creek was exceeded. In this event, excess flows would be diverted into the bypass channel and conveyed downstream. The diversion would occur over wiers located between the bypass channel and the existing creek. Detention basins could be provided at various locations along the bypass channel to attenuate post development flows as required.

Alternative No. 3 - Wide Naturalized Creek with In-Channel Detention

The wide naturalized creek with in-channel detention would be designed to imitate the function of the existing natural creeks and associated floodplains. This alternative would provide a narrow low flow channel deepened enough to provide gravity service to piped drainage systems while maintaining the existing overbank area to provide flood storage. The goal of this alternative would be to create a channel corridor that provides adequate flood conveyance and detention while maintaining or re-creating the natural biological value of the existing creeks.

Alternative No. 4 - Improved Trapezoidal Channel with Detention

This alternative is the traditional flood control approach: a clean, uniform trapezoidal channel, with steep side slopes and flat bottom, constructed within a fenced, minimum width corridor.

Alternative No. 5 - Improved Naturalized Channel with Linear Detention

This alternative would consist of naturalized improved channels with linear (parallel) detention basins located adjacent to the channel. Linear basins may be practical in some areas where construction of one large point basin is impractical due to property constraints. The naturalized channels would be deeper and wider than the existing creeks in order to provide service to the piped drainage systems from developed areas within the Plan Area. The general concept for a naturalized improved channel is shown on Figure 9. As shown on the exhibit, the naturalized channels would have a low flow channel that meanders within the main channel bottom. The main bottom, which would host wetlands vegetation, would also meander within the channel corridor. The channel side slopes would vary between 3 to 1 (horizontal to vertical) and 4.5 to 1. Occasional low marsh/pool areas would be created within the channel bottom. Along the overbank areas, occasional areas of mounding would provide an additional aesthetic variation within the corridor. The end result would be a meandering, varying channel with high aesthetic and biological value. The linear detention basins would function as off-line, dual-purpose detention basins providing both flood control and water quality treatment.

Alternative No. 6 - Improved Naturalized Channel with Point Detention

This alternative would consist of a naturalized improved channel with dual-purpose detention basins, stormwater quality, and flood control, located at several points along the channel. This alternative is nearly the same as the improved naturalized channel with linear detention alternative except for the detention basin configurations. Instead of long, linear basins that run parallel to the channel, this alternative would provide several large detention basins located at discreet points along the channel.

Alternatives Analysis Results

The analysis of the above alternatives is summarized on Table 3. This table presents a matrix that allows a comparison of each of the alternatives against the listed performance criteria. Each of the alternatives is assigned a level of service rating from 1 to 6 (best to worst) for each of the performance criteria. If any of the alternatives provided equal levels of service within a criteria, then they were given the same rating within that criteria. A weighting factor was then assigned for each of the evaluation criteria based on the relative importance of the criteria in meeting the goals of the master plan. To determine the overall performance of each alternative, the base rating was multiplied by the criteria-weighting factor for each of the eleven evaluation criteria. The resultant products were then summed. The most desirable alternative was the one with the lowest overall score.

Although both the criteria weighting factors and the base ratings are somewhat subjective, the table gives a reasonable evaluation of the relative performance of each alternative and shows the reasoning behind the selection of the preferred alternative. The following is a discussion of the results for each alternative.

Results: Alternative No 1 - Leveed Channels with Detention

The leveed channels alternative was found to be the least acceptable of the alternatives. A leveed channel system is prohibitively expensive, both in terms of initial construction costs and long-term operation and maintenance costs. This is due to the cost of the required pumping facilities, levees, and road crossings. The leveed system would also have a large land requirement for detention basins since on-line basins outside of the levees would be required. A leveed system also presents the greatest possibility of a catastrophic failure with little or no warning due to the possibility of a levee breach and to the reliance on pumping.

Although this alternative would meet the General Plan Policy goals of avoiding channelization and realignment and maintaining the existing riparian habitat, the construction of the floodplain by levees would result in higher flood elevations and an unnatural appearance which is contrary to the General Plan Policies.

Results: Alternative No. 2 - Bypass Channels with Detention

The bypass channel can be an effective approach given the right circumstances. A bypass channel system would allow the existing creeks and the natural riparian vegetation within to remain mostly undisturbed. As a result, this alternative rated high in conformance with General Plan Policies. However, in this case, there would be a significant problem in maintaining low frequent flows into the natural creeks. The developed areas proposed as a part of the Specific Plan will be served by storm drainpipes which typically require 2 feet to 2.5 feet of cover (depth to top of pipe) as a minimum. The size of the outfall pipes into the future channels will range from 18 inches to 72 inches. Thus, the depth of the outfall flowlines will range from 4 feet to 9 feet deep. The flowlines of the existing channels are much too shallow to provide an outfall for these pipe systems making this alternative infeasible for this area. Reliance on flows from areas upstream of the Specific Plan Area is not feasible since these areas would likely have the same difficulty in maintaining flows into the natural creek if development were to occur. The main expected advantage of this alternative is maintaining the existing riparian ecosystem. The elimination of low flows to the existing creek does not allow for this to be achieved.

Results: Alternative No. 3 - Wide Naturalized Creek with In-Channel Detention

In terms of environmental compatibility and General Plan conformance, the wide naturalized floodplain alternative is the highest rated alternative. Although this alternative would not completely avoid channelization, it would allow the creeks to retain their natural appearance and diversity and would re-create and enhance the existing natural riparian habitat. However, flood control performance is a problem. The basic concept for this alternative is to maintain the existing creek floodplain areas in their existing state. The existing floodplains are at relatively high elevations and since these areas would be used for detention in the ultimate condition, 10-year and 100-year flood flows would spill into the existing overbank areas. This would result in a 10-year water surface elevation that would be too high to allow the storm drain pipe systems from developed areas to meet the County's hydraulic grade line standards without large volumes of imported fill material. A possible solution would be to excavate the overbank areas to a lower elevation, but by lowering such a large area, even a small amount would be extremely costly, and result in required re-creation of the ecosystem which was intended to be preserved. Therefore, also, this alternative is not viable because it does not achieve the project goals of flood control and adequate drainage.

Results: Alternative No. 4 - Improved Trapezoidal Channel with Detention

The improved trapezoidal channel alternative rated high because of its ability to provide excellent flood control performance at a relatively low cost. Its major drawback is that it would have little aesthetic or biological value and would not result in a beneficial, joint use community amenity. This alternative would not be consistent with the General Plan Policies for urban creeks.

Results: Alternative No. 5 - Improved Naturalized Channels with Linear Detention

The improved naturalized creek with linear detention alternative would provide the same excellent flood control protection as Alternative 4. This alternative would be more costly to construct due to wider channels and the linear detention basins. Linear basins are longer and narrower than the standard single point detention basins. This inefficient shape results in a larger land requirement that is estimated to be approximately 1.5 times greater than for a point detention system within the Plan Area. Existing development in the vicinity of, and downstream of, the confluence of Elder Creek and Gerber Creek is constraining.

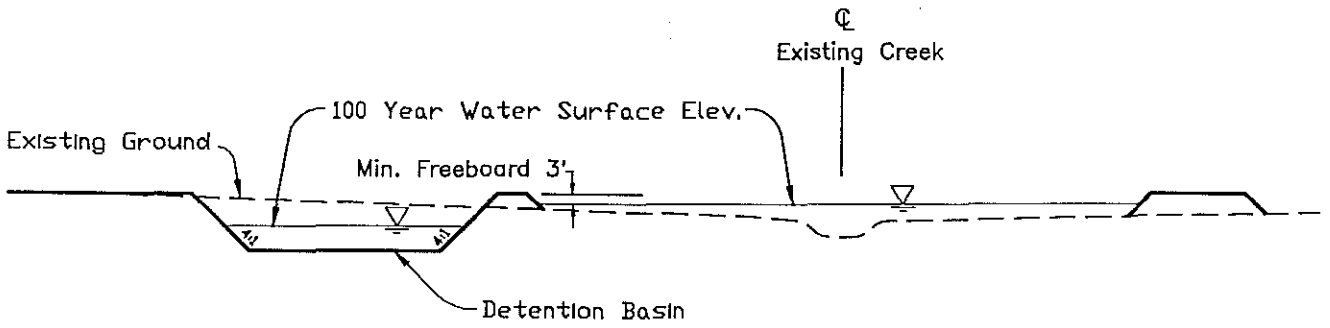
The linear system would also result in a higher number of basins being required than for a point basin system. This is due to the fact that a linear basin must be segmented wherever a storm drain outfall enters the channel on the same side as the basin. The drainpipe cannot be discharged directly into a basin since they are off-line facilities and the flood control volume must be reserved until a large flood wave is diverted out of the channel. The pipe would not be able to pass underneath the basin unless the basin bottom was raised considerably which would result in a much greater area being required to achieve the same volume. Linear basins must also be segmented in locations of significantly sloping topography as the stream gradient causes the floodplain water surface elevation to fall below that for a level pool connected to some point upstream. A greater number of basins would result in a larger number of inlet and outlet facilities resulting in higher construction and maintenance costs. However, linear basins do provide the advantage of spreading the land impacts more evenly than single point basins and providing more flexibility in finding suitable basin locations.

The naturalized channel would provide wetland habitat to mitigate for impacts and would provide enough visual variation to be aesthetically pleasing. Although this alternative does not rate as high as Alternatives 2 and 3 in these areas, it would be a significant improvement over Alternative 4.

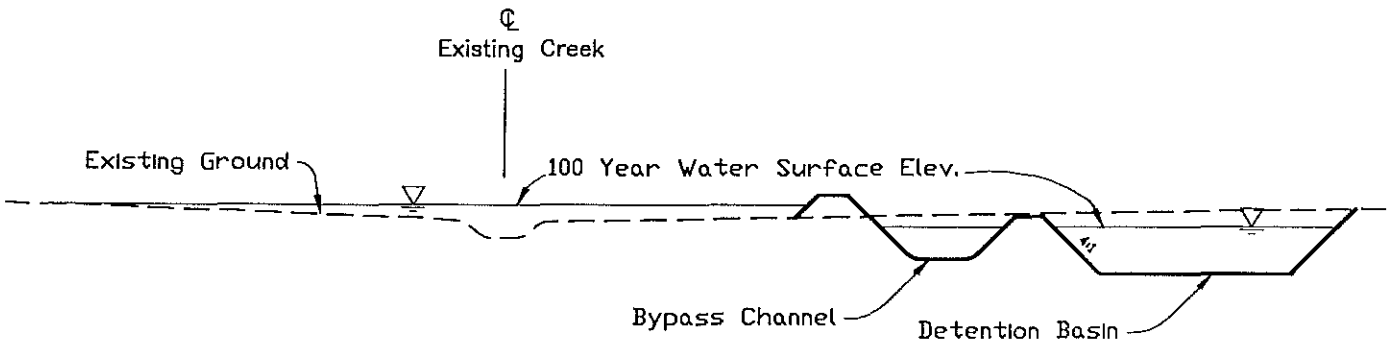
Results: Alternative No. 6 - Improved Naturalized Channels with Point Detention

The improved naturalized creek with point detention alternative rated nearly the same as Alternative 5, just slightly higher due to the different detention concept. The use of point detention basins would provide several advantages over a linear detention system including less total land required, consolidated maintenance, less complex design of outfalls, and fewer inlet and outlet structures required. The main disadvantage of this alternative is that there is a large local land impact at each basin site, whereas a linear system distributes the impact more broadly.

As indicated in the above analysis, Alternatives 5 and 6 appear to be the most appropriate alternatives for the Specific Plan Area when analyzed against the master plan objectives. Alternatives 5 and 6 rate very similarly, with Alternative 6 appearing to rate slightly higher due to its land use efficiency. However, due to difficulties in locating suitable point detention basin sights in some areas, the preferred alternative for the Plan Area is a combination of the two alternatives as described in the following section.



LEVEED CHANNEL WITH DETENTION



BYPASS CHANNEL WITH DETENTION

FIGURE 6

NORTH VINEYARD STATION
SPECIFIC PLAN

FLOOD CONTROL ALTERNATIVES

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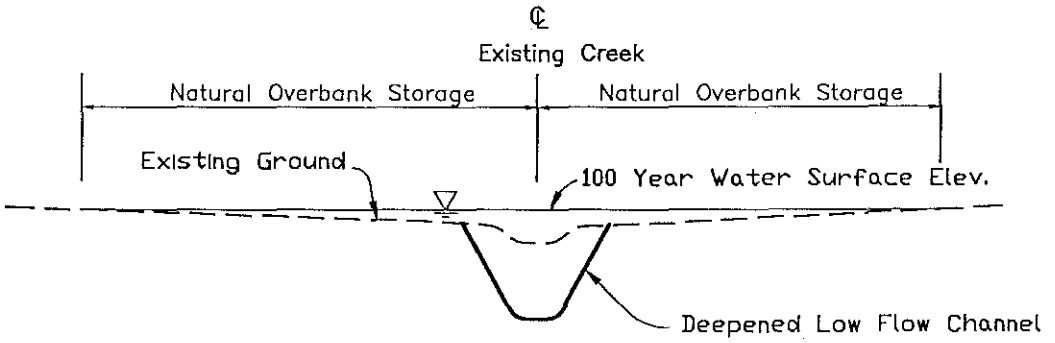
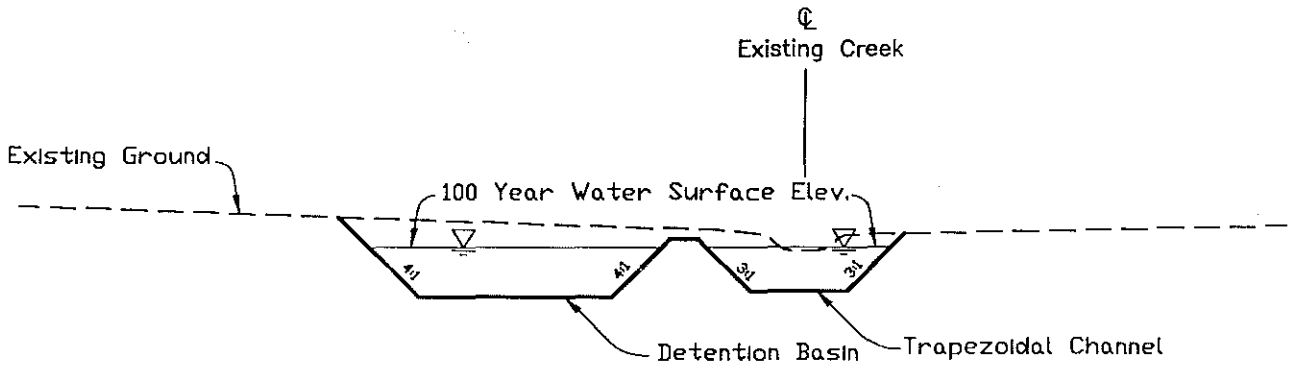


WIDE NATURALIZED CREEK WITH IN-CHANNEL DETENTION



IMPROVED TRAPEZOIDAL CHANNEL WITH DETENTION

NORTH VINEYARD STATION
SPECIFIC PLAN

FLOOD CONTROL ALTERNATIVES

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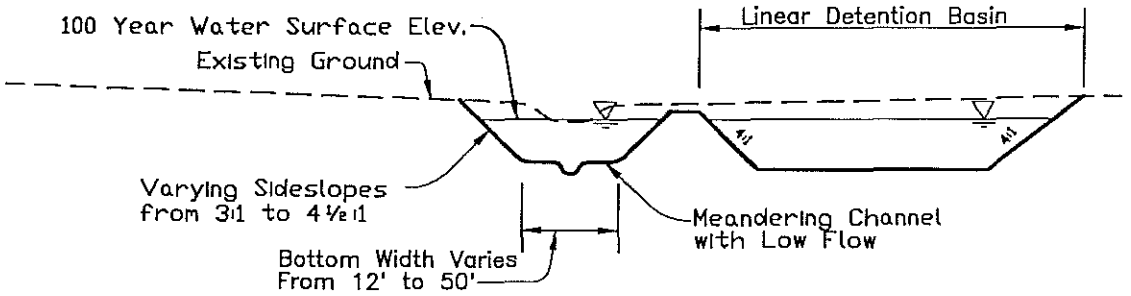
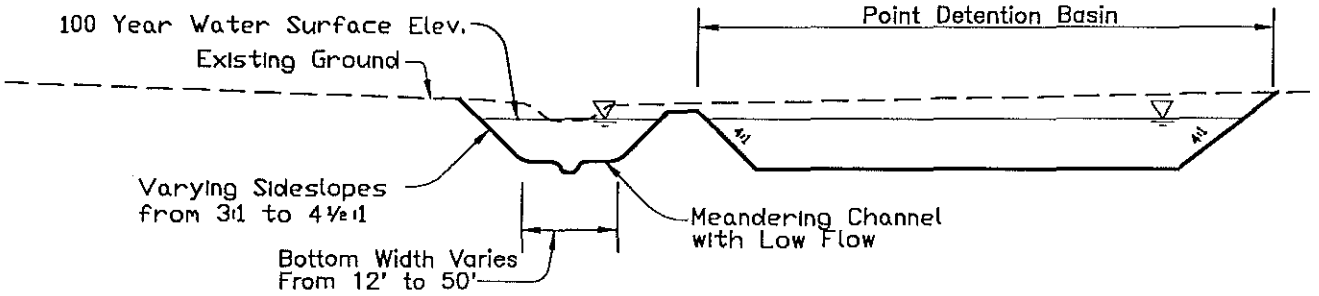
FIGURE 7



NATURALIZED CHANNEL WITH LINEAR DETENTION



NATURALIZED CHANNEL WITH POINT DETENTION

NORTH VINEYARD STATION
SPECIFIC PLAN

FLOOD CONTROL ALTERNATIVES

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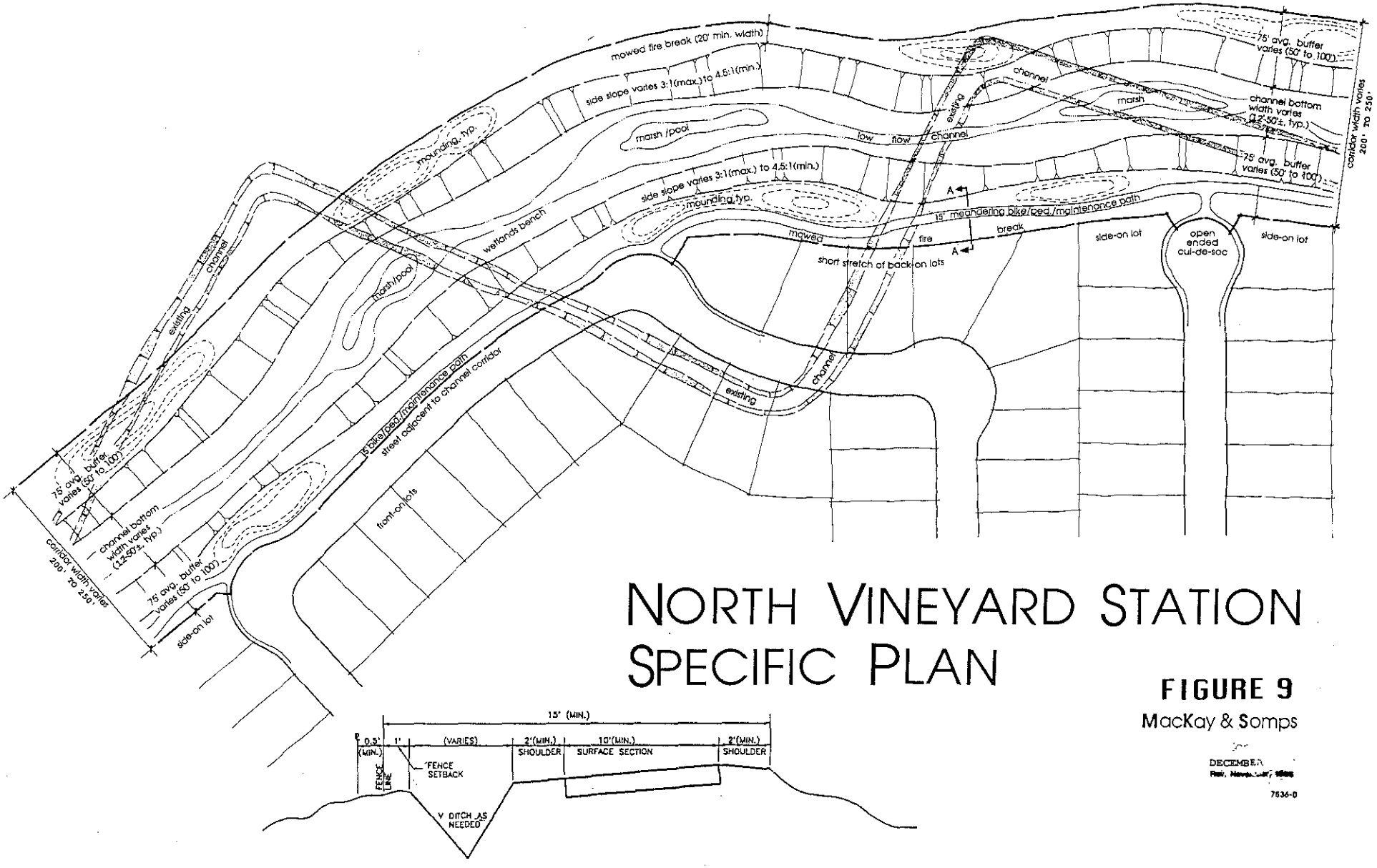
FIGURE 8

ELDER/GERBER CREEK CORRIDOR
CONCEPTUAL NATURALIZED CHANNEL



NORTH VINEYARD STATION SPECIFIC PLAN

FIGURE 9

MacKay & Somps

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7536-0
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TABLE 3
FLOOD CONTROL ALTERNATIVES MATRIX
for
ELDER and GERBER CREEKS

EVALUATION CRITERIA	Criteria Weighting Factor	ALTERNATIVE #1 Levees With Detention Construct levees roughly 6' to 10' high along both sides of existing creeks. Construct detention basins outside the levees.		ALTERNATIVE #2 Bypass Channels with Detention Leave existing creeks mostly undisturbed; Construct parallel channels to convey flood flows; Construct detention along bypass channels.		ALTERNATIVE #3 Wide Naturalized Creek with In-channel Detention Construct narrow 8' to 10' deep channel with wide overbank area to provide natural in-channel detention.		ALTERNATIVE #4 Improved Trapezoidal Channel with detention Construct minimum width channel as necessary to convey flows with associated detention; No excess land in corridor for trails or other amenities.		ALTERNATIVE #5 Improved/Naturalized Creek with Linear Detention Construct 8' to 10' deep channel with geometrical variation; Accomodate trails and other amenities; Provide longer, narrower detention basins along most of the length of the channel		ALTERNATIVE #6 Improved/Naturalized Creek with Point Detention Construct 8' to 10' deep channel with geometrical variation; Accomodate trails and other amenities; Provide several large detention basins.	
		Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating	Base Rating	Weighted Rating
1) Flood Control Adequacy													
a) Regional	20	5	100	3	60	6	120	1	20	1	20	1	20
b) Local	20	5	100	3	60	6	120	1	20	1	20	1	20
2) Operational Reliability	13	6	78	2	26	5	65	1	13	1	13	1	13
3) Land Issues													
a) Public Land Use Efficiency	2	4	8	4	8	5	10	1	2	3	6	2	4
b) Acquisition Availability	3	4	12	4	12	5	15	1	3	2	6	3	9
4) Costs													
a) Land Acquisition	5	4	20	4	20	5	25	1	5	3	15	2	10
b) Construction	5	6	30	5	25	1	5	2	10	4	20	3	15
c) Operational	4	6	24	5	20	4	16	1	4	3	12	2	8
5) Environmental Compatability													
a) Preservation	8	2	16	4	32	4	32	6	48	6	48	6	48
b) Enhancement	5	5	25	4	20	2	10	6	30	1	5	1	5
6) Resulting Aesthetics	2	5	10	2	4	1	2	6	12	3	6	3	6
7) Operational Safety (Public Interface)	3	6	18	2	6	1	3	5	15	4	12	3	9
8) Joint-Use potential	1	5	5	4	4	1	1	5	5	2	2	2	2
9) Compatability with Water Quality Facilities	2	4	8	4	8	6	12	1	2	1	2	1	2
10 Conformance with General Plan Policies	5	6	30	2	10	1	5	3	15	3	15	3	15
11 Ability to phase construction improvements	2	6	12	4	8	5	10	2	4	1	2	2	4
Total Weighted Rating	100		496		323		451		208		204		190

VII. PREFERRED ALTERNATIVE

The preferred alternative was selected based on its ability to satisfy the master plan goals for the watershed. Specifically, the preferred alternative best meets the criterion that is presented in the flood control alternatives analysis presented in Chapter VI. Initially, the preferred alternative was a mix between two of the alternatives analyzed in Chapter VI:

1. Alternative No. 5 - Improved Naturalized Channel with Linear Detention; and
2. Alternative No. 6 - Improved Naturalized Channel with Point Detention.

Upon further analysis, the linear detention concept proved to be an ineffective design. The linear basins were too sensitive to small adjustments to the weir elevations causing them to fill up before the peak flow arrived. Therefore, the preferred alternative was revised to include point detention only.

Costs associated with construction of the preferred alternative are included in the North Vineyard Station Specific Plan, Capital Improvement Program Technical Appendix.

The components of the preferred alternative are shown on Figure 10, and described below.

A. CHANNEL IMPROVEMENTS - PREFERRED ALTERNATIVE

The proposed channels within the NVSSPA will have a more naturalized appearance than a straight, uniform trapezoidal channel. The naturalized channel concept is shown on Figure 9. (See Figure 3.) As shown on the exhibit, the naturalized channels will have a low flow channel that meanders within the main channel bottom which will also meander within the open space corridor. The channel side slopes will vary between 3 to 1 (horizontal to vertical) and 4.5 to 1. Occasional low marsh/pool areas will be created within the channel bottom. Along the overbank areas, occasional areas of mounding will provide an additional aesthetic variation within the corridor. Specific elements of this Conceptual Plan will be determined during the design process. The end result will be a meandering, varying channel with high aesthetic and biological value.

In August and September of 1996, four neighborhood meetings were conducted by Sacramento County Planning Department and Water Resources Division staff to discuss the proposed drainage and open space plans for the NVSSP project. During these neighborhood meetings, several local residents suggested alternative alignments for Elder and Gerber creeks, alternative locations for detention basins, and modifications to the width of the open space corridor along the creeks. County Planning and Water Resources Division staff documented these suggested alternatives and qualitatively analyzed them in a report entitled Draft North Vineyard Station Specific Plan Open Space Plan and Drainage Master Plan Public Outreach Report (February 1997). The Public Outreach Report conceptually analyzes and lists the pros and cons or each suggested alternative from hydraulic, open space, land use and other environmental perspectives. At the direction of the Policy Planning Commission, three additional neighborhood meetings, one site meeting,

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SCALE: 1" = 1400'

LEGEND

SYMBOL	DESCRIPTION
- -	APPROX. LIMITS OF F.E.M.A. 100 YEAR FLOOD PLAIN
——	POSSIBLE SEWER INTERCEPTOR ALIGNMENT
——	PROPOSED CHANNEL CENTERLINE
——	BOTTOM WIDTH & AVG. TOP WIDTH OF PROPOSED CHANNEL
---	LIMITS OF DRAINAGE CORRIDOR

FIGURE 10
NORTH VINEYARD STATION SPECIFIC PLAN
PREFERRED DRAINAGE PLAN

DATE: FEBRUARY 1997
DRAWN BY: KT

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JOB NO.: 7538-B

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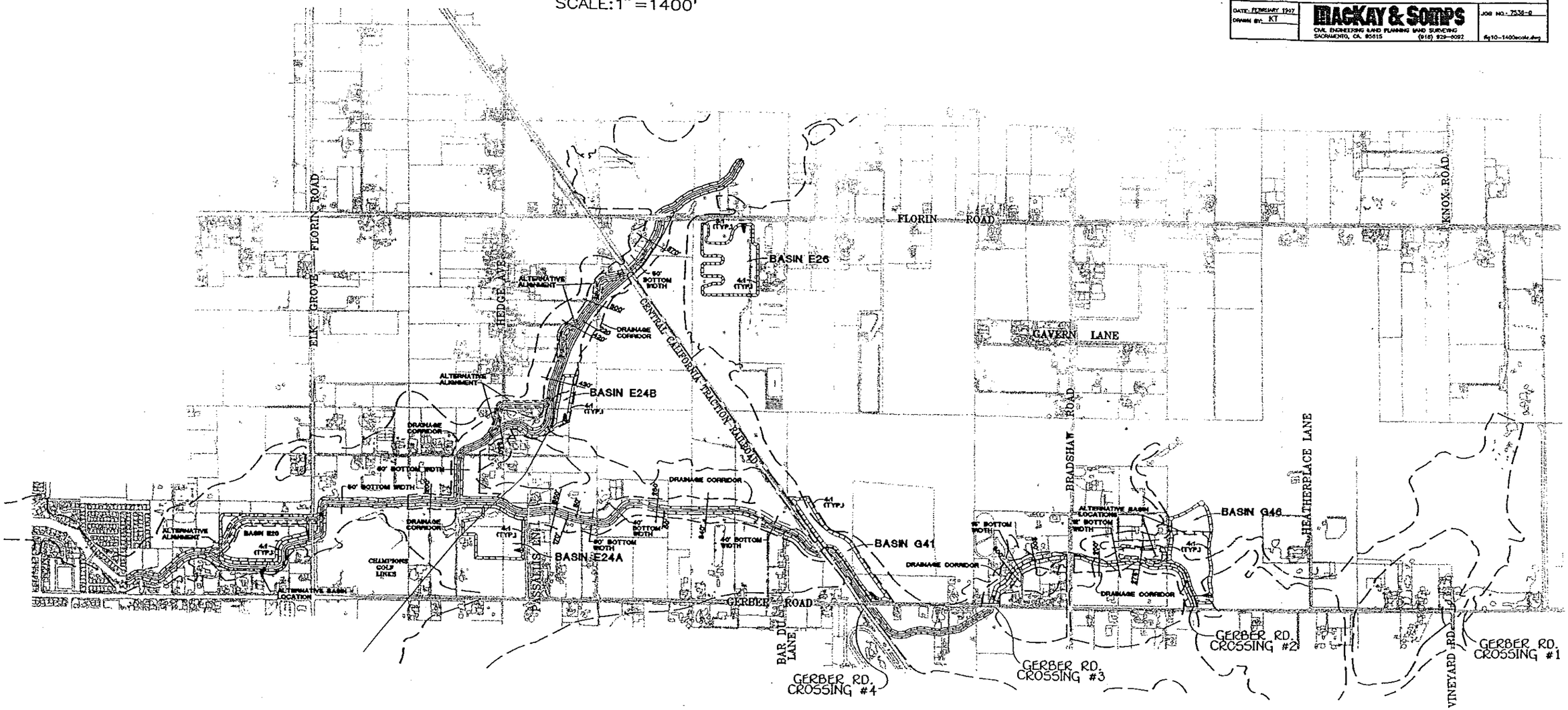


and correspondence with property owners were conducted by Sacramento County Planning Department and Water Resources Division staff in 1997.

Elder Creek Channel Improvements

The width of the main channel bottom for Elder Creek is fifty feet throughout the Specific Plan with an average depth of eight feet below ground. Off-site improvements will be needed for Elder Creek, both upstream and downstream of the Specific Plan Area. At the downstream end, it will be necessary to construct a fifty-foot bottom width channel with side slopes which vary between 3 to 1 and 4.5 to 1, from the confluence of Elder and Gerber Creeks downstream approximately 5,000 feet to the existing improved channel. The UNET model does not include a low flow channel for this downstream off-site reach of Elder Creek. For this downstream reach, construction of a low flow channel with potential benches for wetland mitigation could result in a minor increase in water surface elevations. Upstream of the Plan Area, the proposed improved channel will be continued upstream from Florin Road approximately 1,500 feet. This is needed to eliminate the existing overtopping of Florin Road during a 100-year storm event.

Gerber Creek Channel Improvements

The width of the main channel bottom for Gerber Creek varies. The following guidelines have been established for the Master Drainage Plan:

REACH	TYPICAL BOTTOM WIDTH
Confluence to Waterman Road	50 ft.
Waterman Road to Gerber Road Crossing No. 3	40 ft.
Gerber Road Crossing No. 3 to Bradshaw Road	15 ft.
Bradshaw Road to SPA Boundary at Gerber Road	12 ft.

At the time of future design, these widths can be modified provided that the ultimate goals of the Master Drainage Plan are met.

The average depth of the Gerber Creek channel is also approximately eight feet. Off-site improvements will occur in the reach between Gerber Road Crossing No. 3 and Gerber Road Crossing No. 4 where the creek temporarily leaves the Plan Area. This reach of channel will ultimately need to have a forty-foot bottom width to serve the adjacent lands and is shown following the existing creek alignment. The alignment is intended to provide a general guide for future development. Modifications to the alignment to provide increased land use efficiency or to avoid existing facilities may be necessary at the time of future design. Prior to development of these off-site areas, a narrower channel section may be constructed through this reach without adversely affecting the Specific Plan Area. However, this channel may be unreimbursed or only partially reimbursed by the County since it is not an ultimate facility.

B. FLOOD CONTROL DETENTION - PREFERRED ALTERNATIVE

Sacramento County WRD has determined the required detention volumes necessary to meet the established flow goals within the watershed. Initially, based on HEC-1 and HEC-2 studies with an off-line detention basin configuration, WRD determined that for every ten acres of developed land, approximately one acre-foot of flood control detention is required for local detention basins. With one exception, the detention volumes within the Specific Plan Area were calculated based on this formula. One detention basin was configured as an on-line basin and therefore more volume was needed for this basin in order to achieve the same attenuation. Subsequently, the UNET model was used to evaluate and confirm the adequacy of the detention basin volumes.

The flood control detention proposed for the NVSSPA is point detention. Figure 10 shows the proposed location of the detention basins. Table 4 provides a summary of data for each basin. This detention basin data provides a guideline established for the Master Drainage Plan. At the time of future design, size, depth, and weir elevations for the basins may be optimized to provide the required effective storage capacities.

The offsite detention Basin E20 is a large offline basin located downstream of the confluence of Elder and Gerber Creeks. Basin E20 is required downstream of the confluence to account for variability in timing of actual floods compared to the design event, and to provide a factor of safety for the watershed-wide flood control system. Placement of this basin downstream of the confluence of Elder and Gerber Creeks also provides flexibility for timing of the NVS developments. System reliability will be maintained with the construction of E20 because the basin can mitigate variations in timing between peak flow and peak stage.

Operating Characteristics

With the exception of Basin E26, all of the proposed flood control detention basins will operate as off-line facilities with flood flows diverted into the basins from the channels. Several site-specific circumstances, which are described below, made it more desirable to make Basin E26 an on-line basin. The general layout and operating characteristics of each type of flood control basin are described below. A diagram showing the operational concepts associated with off-line and on-line detention basins has been included as Figure 11.

Off-Line Basins

Each of the off-line detention basins will be located directly adjacent to the channel, separated by a ten-foot top width berm unless the berm will be utilized as a maintenance road in which case the width shall be designed to the satisfaction of WRD. Low flows requiring water quality treatment will be diverted into the basins by small check dams across the channel. Low flows will enter the basin until the basin has filled to the water quality design pool elevation. Additional flows will then be prevented from entering the basins by a float controlled device in order to reserve the remaining volume for flood control storage. During a large storm event, flood flows will spill over a weir constructed in the berm between the channel and the basin. Once the flood wave has passed, the storage volume will be released back into the channel through a set of outlet pipes which are flapgated on the channel side.

Each basin will be constructed with 4:1 side slopes, a minimum fifteen-foot wide clear strip around the perimeter for maintenance access (except along berms not being utilized as maintenance roads), and an access ramp down to the bottom of the basin.

On-Line Basin

Detention Basin E26 will be an on-line basin with flows from Sub-basin E4A flowing directly into the basin. The basin was sited within the existing power line corridor since this land is required to be open space. Since this location does not allow a spillway connection to the channel, an off-line basin is not feasible at this location without relocating the channel.

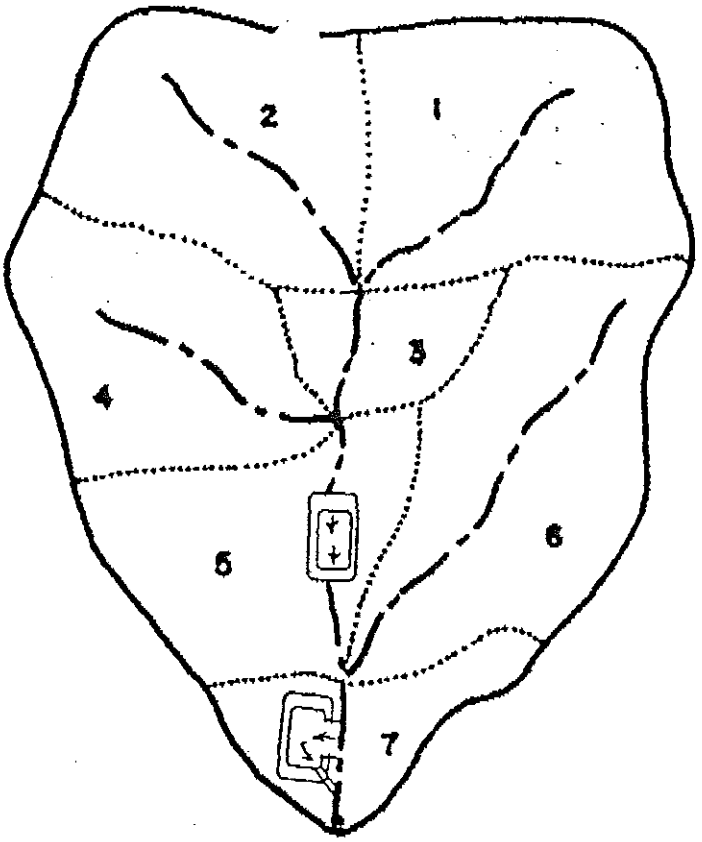
Flows from Sub-basin E4A will flow directly into the basin through storm drain pipes. Low flows will be directed into the water quality portion of the pond at the north end. During a larger storm, flows will exceed the capacity of the water quality volume and will spill into the flood control portion of the pond which will be benched approximately two feet above the water quality portion. The release of flood flows from the pond will be controlled by an outlet pipe which will discharge into the channel. As a result of this on-line basin configuration, it was necessary to increase the storage volume from 39 acre-feet to approximately 60 acre-feet.

This basin will also have 4:1 side slopes, a fifteen-foot wide maintenance access, and an access ramp to the bottom.

Main Channel

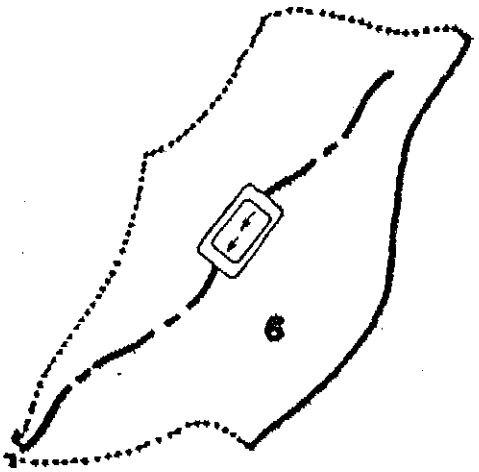
On-line
The entire flow of the main channel enters and exits a detention basin.

Off-line
The peak flow of the main channel spills over a weir into a detention basin and exits back to the main channel through a pipe.



Sub-Basin/Tributary Channel

On-line
The entire flow from the sub-basin enters and exit a detention basin before converging with the main channel.



Off-line
The peak flow of the sub-basin channel spills over a weir into a detention basin and exits back to the sub-basin channel through a pipe. This takes place upstream of the sub-basin confluence with the main channel.

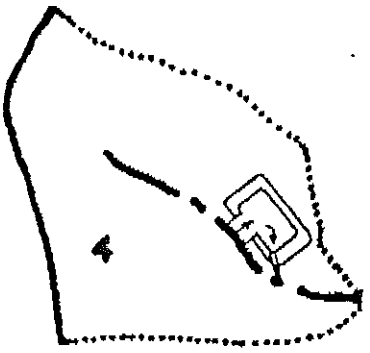


FIGURE 11

DIAGRAM OF OFF-LINE AND ON-LINE DETENTION BASIN CONCEPTS

TABLE 4

DETENTION BASIN DATA

					NPDES DATA		FLOOD CONTROL DATA	
Basin I.D.	**Subshed**	**Contri. Area (Ac) NPDES/Flood Cont.**	**Site Area (Ac.)**	**Bottom Elevation (Ft.)**	**Pool Elevation (Ft.)**	**Volume (Ac-Ft)**	**Pool Elevation (Ft.)**	**Volume (Ac-Ft)**
E24A	E5 & G5	243/465	11.8	35.0	37.5	8.0	41.8	45.0
E24B	Port. E5	130/0	4.1	38.9	41.4	4.0	---	0.0
E26	E4A	390/390	20.0	40.5	42.5	12.3	47.9	60.0
G41	G3B & G3C	262/262	10.6	41.5	42.8	8.3	47.4	24.0
G46	G3A	476/476	15.8	50.5	53.0	15.0	55.9	40.0
Off-Site E20	E6	135/135	16 AC	32.7	---	---	38.8	75.0

NPDES Basin Volume based on 0.0315 feet per acre of contributing shed area.

"Flood Control Data" refers to the peak stage for the 100-year design storm with ultimate conditions.

C. BRIDGES AND CULVERTS - PREFERRED ALTERNATIVE

Bridge and culvert improvements will be required to provide the necessary depth and/or capacity for the ultimate condition. At this time, there are numerous private bridges which provide access to individual properties. Based on the preferred land use plan, these private bridges will ultimately be eliminated and are not analyzed in detail in this study. At the time of channel construction, provisions will need to be made to provide alternative access to these properties or to replace these bridges with temporary crossings until construction of permanent future access occurs. The need for structures must be analyzed against the requirements of the County's floodplain management ordinance.

As a general rule, road widening projects which include crossings should be designed for ultimate conditions with improvements consistent with the Master Drainage Plan, rather than designed for existing conditions. WRD can be actively involved in the coordination of road widening projects in the area to facilitate the Master Drainage Plan.

The ultimate condition bridges and culverts for each creek are discussed below. The WRD UNET study modeled openings of the proposed bridges, but did not model bridge piers and low chords. When compared with our previous HEC-2 analysis, the difference in losses due to this simplification was found to be nominal in the range of 0 to 0.3 feet.

Elder Creek

Elk Grove-Florin Road

The existing crossing at Elk Grove-Florin Road is a 38-foot wide bridge with center columns. The invert of this bridge will need to be lowered by approximately five feet to match the proposed channel. The center columns will need to be lowered to allow this deepening. If this is not feasible, then the bridge will need to be replaced with a new structure or triple box culverts. In any event, widening of the bridge will be necessary to conform with the ultimate right-of-way width described in the proposed widening at Elk Grove-Florin Road.

McCoy Lane

The McCoy Lane bridge is approximately thirty feet wide with three piers. It is anticipated that this bridge will require replacement. Three 8' x 6' concrete box culverts will provide sufficient capacity.

Central California Traction Railroad (Elder Creek)

The CCTRR bridge on Elder Creek will need to be deepened by approximately 7.5 feet. It is anticipated that the design and construction of this work will be performed by CCTRR personnel.

Florin Road

The invert at the existing bridge at Florin Road will need to be deepened by approximately 7.5 feet. Plans for this bridge indicate that the existing piers were constructed deep enough to allow deepening down to an elevation of 39.4. The proposed invert at this bridge is approximately 39.6. Bridge widening must occur concurrent with road widening.

Gerber Creek

Proposed Road Crossings

Two proposed roads will cross Gerber Creek between the confluence and the CCTRR. Double 8' x 5' box culverts can provide sufficient capacity at both of these crossings.

Central California Traction Railroad (Gerber Creek)

The invert at the CCTRR bridge on Gerber Creek will need to be lowered by approximately 5.5 feet. As with the Elder Creek railroad crossing, it is anticipated that railroad personnel will perform this work.

Gerber Road Crossing No. 4 (Adjacent to CCTRR)

The existing Gerber Road bridge just east of the CCTRR does not have sufficient capacity to pass ultimate flows at acceptable elevations even if deepened. This bridge will be replaced with double 8' x 6' box culverts.

Gerber Road Crossing No. 3 (1,100 Feet West of Bradshaw Road)

The invert at this bridge will require only about three feet of lowering to accommodate the ultimate channel. Bridge widening must occur concurrent with road widening.

Bradshaw Road

The existing double 8' x 5' box culverts at Bradshaw Road are not deep enough to be used for the ultimate channel. These culverts will need to be lowered or replaced with a new set of double 8' x 5' boxes.

Gerber Road Crossing No. 2 (1,700 Feet East of Bradshaw Road)

Adequate capacity and depth can be provided at this crossing by lowering the invert approximately 6.5 feet. Plans for the bridge indicate that it was constructed to allow seven feet of lowering. Again, bridge widening will be required.

Gerber Road Crossing No. 1 (Off-Site)

Approximately 300 feet east of Vineyard Road, a 42-inch culvert crosses under Gerber Road. The existing condition 100-year peak flows from the upstream 966 acre Sub-basin G2A are restricted to 67 cfs by the in-line dams located approximately 300 feet upstream from this crossing. Flood flows back up and spill out of the creek and into the Specific Plan Area along the eastern boundary. The WRD UNET model shows overtopping of Gerber Road for the existing condition.

WRD Master Plan includes future improvements of the crossing in order to convey the ultimate condition flows of 120 cfs. Discussion regarding mitigation for phased development is included in the **Phased Conditions Analysis** section of this report.

D. STORMWATER QUALITY - PREFERRED ALTERNATIVE

Water quality facilities for the Specific Plan will be dry extended detention basins and all but one will be dual purpose facilities also serving as flood control basins. These facilities are described in detail in Chapter IIX.

E. OPEN SPACE CORRIDOR - PREFERRED ALTERNATIVE

Within the NVSSPA, the proposed Elder and Gerber Creek hydraulic corridor is located within an Open Space Corridor. The Open Space drainage parkway is intended to serve the purpose of conveying stormwater drainage, serving to enhance wetlands and riparian habitats, providing water quality enhancement features, and providing natural appearing linear open space for recreational use. The Open Space Corridor Plan has been prepared in response to General Plan Policies that address the preservation and protection of natural, recreation, and floodplain features of creek courses.

Through the Specific Plan planning process, various drainage parkway Open Space alternatives were analyzed. Evaluation criteria included, but was not limited to, the following:

- public comment;
- constraints of existing structures;
- feasibility of drainage channel alignments; and
- opportunities where wetland and riparian habitat restoration/creation exist.

This planning process resulted in a drainage parkway Open Space Corridor with varying widths from 150 feet to 350 feet, and an average width of 200 feet, as shown on the Preferred Plan Land Use Exhibit (Figure 3). For further discussion of the proposed open space corridor, see the North Vineyard Station Specific Plan.

F. GENERAL PLAN COMPLIANCE - PREFERRED ALTERNATIVE

General Plan Policy Conformance

The Conservation Element of the Sacramento County General Plan presents policies aimed at preserving and protecting the values of natural streams. The policies apply to specific urban stream corridors designated in the General Plan, including Elder Creek. The following is an analysis of how the Preferred Alternative complies with the policies in the **Urban Streams** section of the Conservation Element in the General Plan. Gerber Creek is not designated as an urban stream corridor, but the following analysis could also be applied to Gerber Creek.

CO-103: The preferred alternative complies with this policy by providing a comprehensive Drainage Master Plan which specifies the parameters that provide flood protection. The floodplain will not be limited by fills along the fringe, but rather by excavation of the widened and deepened channels.

CO-104: Removal of any existing unauthorized fills that have been placed in the existing floodplain will not be necessary due to the proposed construction of the master planned facilities. These existing fills will not be within, and therefore will not adversely affect the flood elevations.

CO-105: The Specific Plan Drainage Master Plan includes a discussion of alternatives and the resulting environmental documents and hearing process provide compliance with this policy.

CO-106: Channel realignment has been kept to a minimum and is proposed only where necessary for hydraulic considerations or to correct previous realignments and to avoid existing homes and structures.

CO-107 and CO-108: The meandering and varied nature of the preferred alternative channel cross-sections are proposed specifically to address the requirements of these policies.

CO-109: The full range of alternatives considered for this project did not reveal a viable solution which allowed the channels to remain at their current elevations while providing gravity service to the Specific Plan Area.

CO-110: Minimum flows will be preserved and enhanced as the system of detention basins and development matures. The design of the channel pattern is intended to enhance riparian habitat.

CO-111: The channel cross-section has been designed with a relatively high Mannings 'n' value channel (roughness co-efficient) to allow for future vegetation and minimal maintenance.

CO-112: Channel and marsh riparian vegetation will be fully re-created and enhanced by the new facilities in comparison to the low value, degraded existing conditions.

CO-113: The channel design will not include any concrete lining or armoring. Any necessary erosion control measures will utilize more natural appearing systems, such as geotextile gabion matting.

CO-114: Revegetation of native plant species will be encouraged by cut and replace construction techniques.

CO-115: These stream courses within the urban services boundary are planned to provide adequate buffers and protection from frequent maintenance for the natural values which will be created by the project.

CO-116: While no extensive riparian vegetation exists along these channels, an alternative project which would utilize secondary flood control channels was described and evaluated. It was determined that maintaining delivery of low flows into the natural channel to sustain the existing riparian vegetation was problematic. (See discussion on the bypass channel alternative in Section VI.)

G. CONCLUSION - PREFERRED ALTERNATIVE

The ultimate condition Drainage Master Plan system will provide adequate capacity to attenuate and convey drainage from the entire drainage shed. To do so, it relies on a complete system of facilities, including detention throughout the shed, elimination of the Laguna Creek interbasin transfer, and channel and road crossing improvements. The ultimate flows which result are consistent with the Elder and Gerber Creek Watershed Master Plan UNET Analysis prepared by WRD.

VIII. STORMWATER QUALITY MANAGEMENT

In order to comply with Sacramento County's NPDES Permit, stormwater quality treatment facilities will need to be constructed in the NVSSPA. There are a number of alternative treatment methods for controlling urban stormwater pollutants. The following methods are identified in Sacramento County's new Development Managerial Program:

1. dry extended detention basins;
2. wet detention basins;
3. infiltration trenches;
4. infiltration basins; and
5. grassy swales.

Several of the alternatives can be eliminated from consideration in the NVSSPA because of the predominance of impervious soils within the area. Sacramento County has identified the dry extended basin as the most appropriate method of treatment for the County. Also, use of dry extended detention basins will allow the proposed flood control basins to be dual purpose basins that provide both flood control and water quality treatment. Therefore, the dry extended detention basin will be used for stormwater treatment within the Specific Plan Area.

As discussed in the **Flood Control** section of this report, the preferred drainage plan for the Specific Plan proposes five detention basins within the Plan Area, as shown on Figure 10. The water quality volume for each basin was calculated using Figure 2-11 from Volume 2 of the Draft Sacramento City/County Drainage Manual. Table 4 provides a summary of each facility, listing the service area, treatment volume, and pool elevations for each basin. Future design of water quality ponds shall be to the satisfaction of WRD.

Below is a general description of the operating characteristics of the treatment facilities within the Plan Area. Those basins which operate as dual purpose off-line detention basins will all have similar operating characteristics. The on-line basins will operate differently as described below. In all cases the runoff captured for treatment will be slowly released from the basins over approximately a 48-hour period.

Off-Line Basins

Basins E24A, G41, and G46 operate as off-line dual purpose basins. Small frequent flows will be diverted out of the adjacent channel into the basins by a small check dam which will direct low flows through small inlet structures which drain into the basins. When the water quality volume has been filled, in-flow into the basin will be stopped by a float activated control to reserve the flood control volume until the peak flood wave arrives.

In some instances, there may be a storm drain pipe which outfalls into a creek just downstream of a basin. In this case, low flows from the shed may be diverted into the basin directly from the pipe. This can be accomplished by constructing a small diversion weir within a manhole or junction structure located adjacent to the basin. Low flows will be diverted into a small pipe draining to the basin, while higher flows will overtop the weir and continue to the creek.

On-Line Basin

Basin E26 is an on-line basin serving 390 acres in Subshed E4A. Low flows will flow directly into the basin from the storm drains serving the shed. Low flows will be directed into the lowered water quality portion of the pond at the north end where they will be slowly released.

Basin E24B operates as an on-line water quality only basin. Small frequent flows will flow directly into the basin from the storm drains serving the shed. These flows will be detained for a sufficient amount of time to allow adequate treatment before exiting to the channel through a gravity outlet pipe. When the water quality volume has been filled, flood flows will pass through the basin to the creek through gravity flood control pipes.

IX. WETLANDS

A preliminary wetlands delineation has been prepared for the Specific Plan Area by Sugnet & Associates. The proposed Elder and Gerber Creek channels will provide opportunities to mitigate for impacted wetlands. Based on the NVSSP **Technical Appendix: Biotic Resources Report**, dated May 3, 1996, prepared by Sugnet & Associates, 7.4 acres of on-site wetlands and 5.6 acres of off-site wetlands will be impacted by County Drainage Facilities. Much of the impact will be mitigated with compensation emergent marsh constructed in the channel bottom of Gerber and Elder

Creek. Impacts to potential fairy shrimp habitat may either be mitigated on-site or with the purchase of fairy shrimp habitat preservation credits at an agency approved mitigation bank. A detailed discussion of wetlands impacts, regulatory agency requirements, and proposed mitigation measures for the Specific Plan Area is provided in the **Biological Resources** section of the Specific Plan.

X. STAND ALONE CONDITIONS ANALYSIS

A. INTRODUCTION

The Preferred Alternative Drainage Master Plan provides adequate flood control and drainage conveyance capacity to achieve the project goals in the ultimate condition. This ultimate preferred alternative has several components associated with it that will not be constructed or realized until some time in the future. Stand alone condition scenarios were therefore devised in order to analyze the potential impacts associated with land development within the Specific Plan Area and construction of drainage facilities within and downstream of the Specific Plan Area.

Ultimate system components, such as upstream detention and elimination of the Laguna Creek interbasin transfer, are not part of the stand alone conditions scenario. Since these components are integral to the ultimate design, until they are implemented, flows in the system will be higher than ultimate conditions, and in some areas, higher than existing conditions. If the system of channels, culverts, and on-site detention are to be constructed to provide ultimate capacity, the system will operate conveying higher flows than it is designed to convey. Analysis of the potential impacts under such conditions is therefore necessary.

B. DESCRIPTION

Stand Alone Case 1:

The Elder and Gerber Creeks Technical Appendix "UNET Analysis", prepared for the County of Sacramento by Douglas Hamilton, outlines a scenario for stand alone conditions utilized in that report as follows:

1. The ultimate conditions channel is present on Gerber Creek up to, and including, the first (most upstream) crossing of Gerber Road; and on Elder Creek up to, and slightly upstream of the Florin Road crossing.

2. Ultimate conditions land use is present only on the NVSSP: Sub-basins E4A, E5, G3A, G3B, G3C, and G5.

3. Flood control Detention Basins E26, G46, G41, E24A are constructed; the others are not.

4. The overflow on Gerber Creek upstream of Gerber Road Crossing No. 1 is eliminated via an adequate solution that does not significantly increase downstream flows. (The existing conditions, undetained flow hydrograph for Sub-basin G2A is used in this case because if upstream development has not occurred, basins to detain the flow are unlikely to exist.)

5. The interbasin transfer from Laguna Creek may or may not exist. (Each scenario was investigated separately.)

It is important to understand that this is a stand alone scenario. Development will progress in a more or less continuous phase over many years, presenting an ever changing interim condition which will be discussed in the **Phased Development** Section. As such, a worst case stand alone condition scenario was developed so that maximum impacts could be analyzed for their severity. In order to discuss possible alternative stand alone condition scenarios, this report identifies this previously described conservative stand alone condition scenario as the Case 1 stand alone condition. The detention basin weir elevations are set at the elevations designed for the ultimate condition flows.

Stand Alone Case 2:

The stand alone Case 2 condition is the same as the Case 1 except for the optimization of the weir elevations for Basins G41 and E24A. Optimization of the wiers is necessary for the basins to function properly under stand alone condition flows which exceed ultimate condition flows.

Stand Alone Case 3:

The stand alone Case 3 condition is the same as Case 1 except for the addition of Basin E20 with the weir elevation for only Basin E20 optimized.

C. DISCUSSION OF STAND ALONE CONDITIONS SCENARIOS

Land Use Assumptions

It is important and necessary to assume ultimate land uses within the Specific Plan boundaries to demonstrate that the proposed drainage project adequately mitigates for the impacts of that land development.

Channel Conditions

Generally, development within the Specific Plan Area will require construction of the channels downstream from that development to a location where they tie into the improved channel near Millbrook Circle, west of Elk Grove-Florin Road. This requirement is due to the relatively flat longitudinal grades of the channels and the necessity to 'daylight' them so that low flows drain downstream. In order to have construction costs fully reimbursed from Zone 11 drainage fees, the channels must be constructed to their ultimate cross-section and depth.

Detention Basins

The stand alone conditions assume construction of the on-site detention basins to mitigate for the impacts of development. While construction will be phased as required to serve development, the stand alone condition scenarios reflect conditions at a specific point in time upon full build-out of the Specific Plan Area.

In the Case 1 condition, the weir elevations are set at elevations designed for ultimate flows. Because the stand alone flows are higher than the ultimate flows, the basins fill up prior to the arrival of the peak. Therefore, the downstream flow objectives of the Master Plan are not achieved.

In order to meet the downstream flow objectives of the Master Plan, additional stand alone scenarios, Case 2 and Case 3, were analyzed. Both the Case 2 and Case 3 scenarios meet the downstream flow objectives of the Master Plan.

The Case 2 stand alone condition includes optimization of the weir elevations of Basins G41 and E24A. Optimization of the weirs is necessary for the basins to function properly under stand alone condition flows which exceed ultimate flows.

The Case 3 stand alone condition includes offsite detention Basin E20. The weir elevation of only Basin E20 was optimized so that the basin would function properly under the higher flows. The only weir elevation that is optimized in the Case 3 condition is the Basin E20 weir.

Laguna Creek Interbasin Transfer

During high flows, Laguna Creek overtops its banks and sends flows north and west along the Central Traction Railroad into Gerber Creek before it crosses Gerber Road into the Specific Plan. Based on the existing condition UNET model, the resultant shallow and broad floodplain allows flows to spill back out of the Gerber Creek water shed into the Unionhouse Creek shed over Gerber Road to the west of the railroad tracks. This reduces the flow that is translated downstream in Gerber Creek.

The stand alone conditions assume construction of the channel to ultimate depth and width. This channel modification confines the majority of the flows to the channel and its immediate overbank areas. As a direct result of the channel modifications, the outflow from Gerber Creek to Unionhouse Creek is eliminated. This results in the flows that previously jumped shed being translated downstream in Gerber Creek. The worst case scenario is then realized: interbasin transfer flows from Laguna Creek enter the Gerber/Elder system and are conveyed downstream, while flows previously released to Unionhouse Creek are contained in Gerber Creek due to the lowered channel downstream. Both the Gerber/Elder Creek system and Unionhouse Creek flow to the City at different locations.

Upstream Gerber Creek Overflow

Upstream of the first Gerber Road crossing, Gerber Creek winds through an existing pond/wetland area partially created by a low dam constructed across the flow path just upstream from Gerber Road. The existing elevations along a property line, which is the extension of Vineyard Road and forms the easterly boundary of the Specific Plan, are at the same elevation as the dam. Since this point occurs upstream of the dam, the resultant water surface elevation exceeds these ground elevations and much (approximately 70%-75%) of the flow spills overland to the west into the Specific Plan area.

The description of the Case 1 stand alone scenario indicates a worst case assumption that channel improvements are constructed to the point of overflow, eliminating it. The stand alone condition assumes the overflow is blocked by the extension of Vineyard Road (as part of the NVSSP development). In order to provide drainage to the lands east of the Specific Plan, channel improvements are continued to the point of overflow. This eliminates the current attenuation occurring just upstream of Gerber Road Crossing No. 1 and translates the full unattenuated flow of 345 cfs downstream. The existing flow at this location is 70-cfs.

This differs from the ultimate conditions model which uses an attenuated flow of 120 cfs which is nearly three times less than these unattenuated flows. Future detention basin G50 near this location will provide this attenuation. However, Basin G50 and its upstream contributing area are outside of the Urban Policy Area and are not slated for development in the next twenty years.

This basic fact that stand alone conditions flows exceed ultimate flows presents a fundamental question. In the long-term view, the basic functionality of the master planned facilities are interdependent; they rely on all the other components of the system to operate in reducing ultimate flows to a level less than exists today. If stand alone conditions are foreseen that must accommodate flows larger than the ultimate capacity of the system, then one of two conditions must occur. The first is that the ultimate condition facilities must be analyzed for their behavior when larger than ultimate flows are experienced. This first condition is relatively easy to envision, analyze, and report the findings. The second is that the facilities are not constructed to carry the capacity of the ultimate conditions, but the larger stand alone conditions. This second condition has much more significant ramifications and could result in a study of multiple stand alone conditions scenarios as development progresses in a more or less continuous phase over many years.

Construction of facilities with larger capacities than the ultimate condition may lead to ultimate flows which differ from the predicted flows. It is therefore important to limit analysis of the higher stand alone flows to the ultimate condition facilities.

The cumulative result of these stand alone scenario assumptions is a significantly higher flow than either existing or ultimate conditions in some of the downstream reaches of the creek, up to the Gerber Road Crossing No. 2. While the potential for this stand alone condition to actually occur in the future is real, it is not probable due to the significant cost of providing ultimate channel improvements off-site and upstream from the proposed development.

D. ANALYSIS OF RESULTANT IMPACTS

Because the Case 1 condition 100 year peak flows did not meet the goal of not increasing the 100 year peak flow at the City limits, additional stand alone scenarios, Case 2 and Case 3, were analyzed. Both the Case 2 and Case 3 results show no increase of 100 year peak flow at the City limits. Predicted 100-year peak flows for the existing condition and the following stand alone conditions are shown in Tables 5 and 6:

Case 1 - Stand alone conditions with Laguna interbasin transfer and without Basin E20.

Case 2 - Stand alone condition with Laguna interbasin transfer, without Basin E20, and with optimization of the weir structures in the on-site basins.

Case 3 - Stand alone condition with Laguna interbasin transfer and with Basin E20 with an optimized weir configuration.

Analysis of the potential impacts of the most conservative stand alone conditions scenarios must center around the resultant water surface elevations along the improved channels. A study of the resultant water surface elevations indicates that they will be below existing conditions water surface elevations in all cases within the NVSSP and downstream to Millbrook Circle. This is entirely due to construction of the channel and is a significant benefit to existing residences within the existing floodplain.

It is important to note that the deleted interbasin transfer from Gerber Creek to Unionhouse Creek is approximately 370 cfs. Just downstream of the identified diversion points, the Case 1 stand alone flows are approximately 220 cfs above existing conditions. Just downstream of the confluence with Elder Creek, the Case 1 stand alone flows are approximately 160 cfs higher than existing. This indicates that the NVS detention basins are designed adequately to mitigate for the impacts of increased runoff and the more rapid conveyance of storm flows due to channelization associated with development within the Specific Plan. In addition, they mitigate for approximately 210 cfs of the 370 cfs existing interbasin transfer flows captured as a result of lowering the channel. At the existing improved channel upstream of Millbrook Circle, Case 1 stand alone flows are 120 cfs higher than existing conditions.

A short section of previously improved channel from Millbrook Circle to French Road experiences existing 100-year water surface elevations that are 0.1 feet to 0.9 feet above the top-of-bank elevations used in the County hydraulic model. The increased flows predicted for the conservative Case 1 stand alone conditions scenario in this reach of channel indicate a variable increase in water surface elevations from 0.1 feet to 0.3 feet. The Case 2 and Case 3 stand alone condition scenarios indicate no increase in water surface elevations for this reach.

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TABLE 5 - STAND ALONE CONDITION GERBER CREEK FLOWS

LOCATION	UNET SECTION (ULTIMATE)	TRIBUTARY AREA (acres)	100-YEAR FLOWS(CFS) EXISTING	STAND ALONE Case 1 (w/ Laguna Overspill; w/o Basin E20)	STAND ALONE Case 2 (w/ Laguna Overspill; w/o Basin E20; w/ optim. Basins G41 & E24A)	STAND ALONE Case 3 (w/ Laguna Overspill; w/ optim. Basin E20)
D/S GERBER RD. CROSSING NO. 1 (300' EAST OF VINEYARD ROAD, OFFSITE)	3.933	966	70	345	345	345
U/S GERBER RD. CROSSING NO. 2 (1700' EAST OF BRADSHAW)	2.727	1205	180	450	450	450
D/S BRADSHAW ROAD	2.169	1681	490	470	470	470
D/S GERBER RD. CROSSING NO. 3 (1100' WEST OF BRADSHAW)	1.900	1765	790	475	475	475
U/S GERBER RD. CROSSING NO. 4 (ADJACENT TO CCTRR)	1.544	2697	1475	1345	1345	1345
D/S CCTC RAILROAD	1.274	2843	1440	1325	1325	1325
U/S OF CONFLUENCE AT ELDER CREEK	0.345	3095	1070	1290	1135	1290

TABLE 6 - STAND ALONE CONDITION ELDER CREEK FLOWS

LOCATION	UNET SECTION (ULTIMATE)	TRIBUTARY AREA (acres)	100-YEAR FLOWS(CFS) EXISTING	STAND ALONE Case 1 (w/ Laguna Overspill; w/o Basin E20)	STAND ALONE Case 2 (w/ Laguna Overspill; w/o Basin E20; w/ optim. Basins G41 & E24A)	STAND ALONE Case 3 (w/ Laguna Overspill; w/ optim. Basin E20)
U/S FLORIN ROAD	7.000	4,435	940	960	960	960
U/S CCTC RAILROAD	6.820	4,857	1,035	1,035	1,035	1,035
U/S OF CONFLUENCE AT GERBER CREEK	5.914	5,070	1,000	1,005	1,005	1,005
D/S ELK GROVE - FLORIN ROAD	5.402	8,299	2,060	2,200	2,085	2,200
AT EXIST. IMPROVED CHANNEL U/S OF MILLBROOK CIRCLE	4.779	8,760	2,045	2,165	2,055	1,950
SACRAMENTO CITY LIMITS	1.878	9,905	1,985	2,075	2,000	1,915

*NOTES: Flows based on WRD UNET Analysis Report prepared by Doug Hamilton, dated July, 1996 (existing condition model revised 12-96) and supplemental stand alone condition analysis prepared by MacKay & Somps.

In the Case 1 stand alone scenario, the reach of existing channel from French Road to Stockton Boulevard could experience increases in water surface elevations above existing conditions of approximately 0.2 feet to 0.35 feet. The effect of increased water surface elevations on city storm drains was not studied. The Case 2 and Case 3 stand alone scenarios show no increase in water surface elevation for this reach.

From Stockton Boulevard to the City limits, the Case 1 stand alone condition water surface elevations are approximately 0.2 feet higher than existing conditions. However, the Case 1 stand alone condition water surface elevations are less than the ultimate condition water surface elevations. The Case 2 and Case 3 stand alone condition scenarios show no increase in water surface elevation for this reach.

The Case 1 stand alone scenario results in a slight increase in flows at the City boundary of approximately 90 cfs. The Case 2 and Case 3 stand alone scenarios result in no increase in flows at the City boundary. Resultant water surface elevations downstream of the City boundary were not studied, nor were the effects to City Storm Sewers.

There are several locations where the Case 1 stand alone conditions flows will exceed the capacity of the ultimate system channels and culvert, causing flows to escape the banks of the improved channels. This condition occurs only within the vicinity of and downstream of the Laguna Creek interbasin transfer, where flows from Laguna Creek enter Gerber Creek, but are captured in the Gerber Creek system. This out-of-bank flow condition is a result of the Case 1 stand alone condition flows being higher than ultimate flows.

Once the Laguna Creek interbasin transfer is eliminated and upstream elements of storage which are an integral part of the ultimate condition are constructed, these out-of-bank flow conditions will no longer occur. These projects are regional flood control facilities which are part of the regional drainage master planning now being pursued by the County Water Resources Division. Their implementation may occur at a time when adequate funds are available. However, individual projects will be required (at the Tentative Map stage) to demonstrate that interim conditions operations do not cause increased flood risk.

Although the Case 2 stand alone scenario meets the previously stated flow objectives of the Drainage Master Plan, it is the opinion of WRD and their consultant that additional flood control detention is necessary to provide overall system reliability to account for variability in timing of actual floods compared to the design event. The construction of the regional detention Basin E20 will provide this desirable factor of safety for the entire watershed. Additional information provided by Mr. Douglas Hamilton, WRD's UNET consultant, regarding Basin E20 has been included in Appendix A of this report.

MacKay & Somps concurs that Basin E20 will be a benefit to the entire Gerber and Elder Creek watershed. However, it is the opinion of MacKay & Somps that the timing of the construction of Basin E20, as a factor of safety, should occur when a majority of the watershed has developed.

E. CONCLUSIONS

Increases in flows result primarily from three conditions in this system:

1. increased runoff due to increased imperviousness (land development);

2. increased efficiency of channels which convey flood flows more rapidly down stream, causing peak coincidence; and

3. capture of interbasin transfer flows by the lowered channels which otherwise exit the system in the existing condition.

The onsite North Vineyard Station Specific Plan detention basins provide enough attenuation to mitigate for most of the increased peak flow. It is very clear, therefore, that the capture of interbasin transfer flows, which results from the implementation of the channel improvements needed for development, results in the increase in downstream flows above existing levels in the Case 1 stand alone condition.

In the Case 1 stand alone condition, the 370 cfs interbasin transfer flow which is captured in the Gerber Creek system translates downstream of the Specific Plan Area, partially attenuated by excess system storage, and results in flow increases of 90 cfs to 120 cfs in the downstream system.

When these Case 1 stand alone condition flows are introduced to a system designed to convey lesser flows, the system is slightly overtaxed. In some areas, these Case 1 stand alone flows will cause increased water surface elevations. The effects of water surface elevations downstream of the City limit were not studied.

In recognition of this impact, the focus of analysis turns to whether it is significant, and if so, what solutions will reduce the potential impacts to less than significant status.

Several optional approaches to this identified unavoidable impact are:

1. Analyze the downstream impacts to determine their level of significance. The existing downstream drainage system is complex and runs through many fully urbanized areas. An analysis to determine every area where the Case 1 stand alone condition increase in water surface elevations has an impact along a three plus mile system of main channel, side channels, contributing pipe systems, and associated streets is a very time consuming and costly task.

2. Eliminate or reduce the root cause of the increased flows in Gerber Creek, which is the Laguna Creek interbasin transfer. The project envisioned to do this is a large detention basin on Laguna Creek, upstream of the Central California Traction Railroad. This is a regional project which is beyond the scope of this Drainage Master Plan.

3. Provide mitigation to eliminate or reduce the increase in downstream flows to a less than significant status. Additional detention capacity constructed along the channel, downstream from the eliminated Unionhouse Creek

interbasin transfer could provide that mitigation. This could occur with the implementation of Basin E20 just west of Elk Grove-Florin Road as indicated by the Case 3 stand alone condition scenario. It is the opinion of MacKay & Somps that another option is to optimize the weir elevations for Basins G41 and E24A as indicated by the Case 2 stand alone condition scenario.

4. Provide mitigation to eliminate or reduce the increase in downstream flows to a less than significant status. This could occur with the implementation of Basin E20 and with or without Basin E24A.

Tables 5 and 6 show that optional approach No. 3 above can result in peak flow conditions downstream of the project channel improvements which are very near or below existing peak flow conditions. These conditions are met with either optimization of the on-site basin weir configurations (Case 2 stand alone condition), or installation of Basin E20 (Case 3 stand alone condition).

In addition to meeting the flow objectives of the Master Plan, additional system reliability is needed. This system reliability can be provided by the construction of regional Basin E20. Although MacKay & Somps concurs with the shed wide benefit of Basin E20, it is the opinion of MacKay & Somps that construction of the regional basin, to provide a factor of safety for the entire Elder and Gerber Creek watershed, can occur at a time when a majority of the watershed has developed. As a compromise solution to the difference in professional opinion, WRD and the project proponents have agreed that the acquisition of the land for Basin E20 will occur in the near future to ensure its ultimate construction. The phasing of the actual construction of Basin E20 can be deferred to a later date. The North Vineyard Station Specific Plan Financing Plan will address participation of the Plan area in the funding of the regional Basin E20 facility site.

XI. PHASED DEVELOPMENT

A. INTRODUCTION

Land development within the Specific Plan Area will occur over a long period of time, possibly fifteen to twenty years. Improvements to the drainage system are necessary to serve that development as it occurs. The improvements to channels, installation of drainage detention basins, roadway culverts, and other associated aspects of the Master Drainage Plan cannot always occur in small incremental steps directly associated with the size of the land development occurring at any one time. An analysis of potential phasing of facilities is presented to underscore the regional nature of these improvements. Because there are nearly an infinite number of phasing scenarios from the standpoint of what lands will develop at what time frame, the analysis is approached from the interconnected nature of the required drainage improvements, and not from a specific phasing scenario.

B. PHASED DEVELOPMENT WITH TEMPORARY PUMPING FACILITIES

Initially, there is a potential that small, isolated development could occur in certain areas of the Plan by providing temporary detention basins which rely on pumping to

operate. It is also possible that isolated areas in the eastern portions of the Plan Area could develop and gravity discharge to the existing channels provided they do not increase the flood risk to their immediate and downstream neighbors. This could occur in areas not constrained by the existing floodplain. Detention of drainage to mitigate impacts of this development would be problematic, however, as the depth of required detention basins would require channel improvements. As with the land development, the detention basins would also have to be located outside the existing floodplain. Also, other services, such as sanitary sewer, water, and to a certain extent, roadway improvements, are focused in the western portions of the Plan Area, making such isolated development in the eastern portions of the Plan Area financially less feasible as a first phase.

C. PHASED DEVELOPMENT WITH GRAVITY FACILITIES

Land development anywhere within the Specific Plan requires drainage facilities to serve it. The relatively flat topography of the Specific Plan Area and shallow existing creeks dictate that deepening and widening those existing channels is necessary to provide a gravity outfall and to lower the ten-year water surface elevation to meet basic County design standards and good engineering design practice.

Any normal scale urban development project will require channel improvements. Development will probably occur from west to east in the Plan Area because of the proximity to other urban services, such as sanitary sewer and water, and because this scenario presents the greatest potential to reduce the initial drainage improvement needs.

The required channel improvements would be from the point of the proposed first phase development, downstream to the existing improved channel near Millbrook Circle, approximately one-half mile west of Elk Grove-Florin Road. One component of any first phase drainage improvement will include improvement of the Elder/Gerber Creek channel from the confluence of the two creeks downstream to Millbrook Circle. This improvement increases the conveyance capacity of the channel, reduces the time of flow, and would result in some small increase in flows downstream, irrespective of any increases in flow as a result of land development. Improvement of this segment alone would not provide any area within the Specific Plan with drainage service. Deepening and widening of some portion of either Elder Creek or Gerber Creek would be necessary to extend service upstream to any first phase developing properties.

D. DISCUSSION OF PHASED DEVELOPMENT RESULTS

At this time, it is necessary to briefly describe the integral nature of the drainage system and the impacts which are realized with any channel improvement. This is discussed in more detail in Section X, **Stand Alone Condition**. Basically, channel improvements cause two direct impacts to downstream flows:

1. the increased conveyance capacity results in reduced flow times, which generally increases downstream flows; and

2. the elimination of an existing drainage interbasin transfer of approximately 370 cfs (100-year, 1% chance exceedance storm) to Unionhouse Creek to the south, causing these captured overflow flows to remain in the channel and be translated downstream. This existing condition has long been recognized and was further confirmed by the detailed UNET model developed by the County Water Resources Division.

Improvements to the channels are generally necessary to serve any urban land development within the Specific Plan Area. That land development would result in increased flows which are directly related. These directly related impacts include 1.) increased runoff resulting from increased imperviousness and 2.) reduced time of concentration and reduced flow times resulting from the increased conveyance capacity of the channel. This Drainage Master Plan identifies mitigation for these direct impacts as the construction of downstream detention basins. The most westerly on-site Specific Plan detention basin is Basin E24A, just west of Pasallis Lane. First phase construction of all, or a portion, of this basin would require the construction of the lower improved Gerber Creek channel from the confluence, upstream to the basin. Construction of this basin would mitigate for the direct impacts of increased conveyance due to channel construction and of increased imperviousness due to land development for first phase projects within the western portion of the plan. Construction of this basin would not fully mitigate for the impacts of the captured Unionhouse Creek interbasin transfer flows.

The hydraulic operation of Basin E24A would require that its capacity be available at the appropriate time in the life of a storm runoff event. This timing is controlled by the inlet weir elevation in the ultimate condition. In a phased condition, it would be necessary to protect the basin from filling too early from smaller flows which produce higher water surface elevations in the absence of channel improvements. It is probable that channel improvements to lower the water surface elevations would be necessary some distance upstream of Pasallis Lane to insure adequate basin operation. These channel improvements upstream of Pasallis Lane would probably introduce an impact on the existing drainage interbasin transfer from Gerber Creek to Unionhouse Creek, reducing or eliminating the interbasin transfer. It is this impact which causes the increase in flows above existing levels downstream in the stand alone condition scenario presented in other sections of this report.

Any land development within the western-most regions of the Specific Plan Area west of the Central California Traction Railroad requires the construction of roadway access. Local roadway access to Gerber Road to the south would require a crossing of Gerber Creek. Generally, roadways are constructed approximately one to two feet below the existing elevation to allow adequate surface drainage into collection systems. To protect any roadways from inundation by frequent storms, it is probable that the channel from just upstream of any new roadway crossing would require improvement. There is only one planned access across the Railroad, Waterman Road extension, which would provide access to the north. It is highly unlikely that development would be allowed without two points of access from a safety standpoint. Construction of channel improvements along Gerber Creek upstream of Pasallis Lane would most certainly result in a reduction of the existing water surface elevations which result in the Unionhouse Creek interbasin transfer as identified in the UNET model for the 100-year storm event. This would result in reduction or, more probably,

elimination of the interbasin transfer, capturing the 370 cfs flow and translating it downstream.

Construction of the improved Elder Creek channel upstream from the confluence would provide drainage service to the area west of the Railroad, but that development would also necessitate roadway access crossing Gerber Creek to the south as described above, resulting in the same impact. Extension of the Elder Creek channel improvements further upstream to serve properties to the east becomes even less feasible from a cost standpoint.

Ultimate construction of Basin E20, to provide overall system reliability, could occur on an incremental basis as portions of the watershed develop. Individual situations will be evaluated by WRD as tentative maps are processed.

E. CONCLUSIONS

This indicates that any phasing plan for the drainage improvements necessary to provide service to any portion of the Plan Area will trigger the capture of the 100-year Laguna Creek interbasin transfer flows and retain existing flows which now exit Gerber Creek into Unionhouse Creek. This is a direct result of channel improvements, required for development, in the area of the interbasin transfer. It is obvious that these same flows would be captured in most any phasing scenario.

The impact occurs if channel improvements extend upstream to a point where they impact or eliminate the Unionhouse Creek interbasin transfer. If they do not extend upstream, then there is no drainage service to the Specific Plan Area. The order of magnitude of the flow components (Laguna Creek interbasin transfer vs. Gerber Creek flows) is such that development phasing would have only a small effect on the resultant flows.

The UNET model developed will provide an excellent base tool to analyze specific impacts at the time development projects are proposed. Several optional approaches were presented in **Section X, Stand Alone Conditions,** to address increases in flows and resultant water surface elevations above existing conditions. The possibility exists that partial depth and/or partial width channel facilities as well as incremental basin facilities could be constructed as needed for the first phases of development to occur.

As previously concluded in **Section X, Stand Alone Conditions**, a compromise solution to the difference in professional opinion regarding the timing of Basin E20 has been reached. WRD and the project proponents have agreed that the phasing of actual construction of Basin E20 can be deferred to a later date. The North Vineyard Station Specific Plan Financing Plan will address participation of the Plan area in the funding of the regional Basin E20 facility.

F. ALTERNATIVES, GERBER CREEK OVERFLOW

Numerous potential phasing scenarios exist for the development of lands located within the existing Gerber Creek overflow path previously discussed in **Section X, Stand Alone Conditions**.

The County Water Resources Division outlined the following alternative scenarios in connection with the Gerber Creek overflow upstream of the Specific Plan in an internal memorandum dated August 16, 1996:

Mitigation Alternative 1

Channel: Construct a reimbursable, ultimate channel from Gerber Road Crossing No. 2 upstream to Gerber Creek cross-section 4.392, a point approximately 1,800 feet north of Gerber Road Crossing No. 1. This would be a bypass channel drawing peak flows from the existing creek via an overflow weir at the upstream limit of the bypass. Such a bypass channel could be needed to serve ultimate development of the watershed north of Gerber Road Crossing No. 1, while avoiding impacts to existing lakes and wetlands.

Road Crossing: Construct reimbursable, ultimate-dimension culverts or bridges at crossings at Gerber Road Crossings No. 1 and No. 2, and at Vineyard Road south of Gerber Road.

Mitigation Alternative 2

Channel: Construct a partially reimbursable bypass channel at the ultimate flowline, through the eastern corner of the NVSSP Area. This channel would convey the 100-year peak overflow in the existing condition, and part of the flow in the ultimate condition.

Road Crossings: Construct a non-reimbursable crossing at the proposed extension of Vineyard Road north of Gerber Road, and at any other roads/driveways affected by the path of the bypass channel.

Mitigation Alternative 3

Channel: Construct an interim, shallow, and non-reimbursable bypass channel through the eastern corner of the NVSSP Area similar to Alternative 2. This channel flowline would not be at ultimate depth, and would not be considered an ultimate facility. The interim channel could be filled and the land developed when (and if) other development constructs the ultimate channel improvements described as Alternative 1.

Road Crossing: This alternative includes no improvement to existing County crossings. The crossing at Gerber Road Crossing No. 1 would be improved only when upstream development warrants an ultimate crossing.

The alternative favored by WRD (Alternative 1) is consistent with the initial assumptions embodied in this report, and does not, therefore, require additional discussion. The two other alternatives are variations of the same theme and deal with interim conditions.

The high cost of obtaining right-of-way for and constructing ultimate condition channel improvements for approximately 9,400 feet upstream and off-site of the Specific Plan, including ultimate road culvert crossings, as described in Alternative 1, requires that an alternative interim scenario be studied which may provide a more affordable, and therefore attainable, solution.

The high cost of obtaining right-of-way and constructing permanent ultimate bypass improvements, as described in Alternative 2, makes this alternative too costly.

Alternative 3, the alternative solution to temporarily accommodate the flows from the overflow through the southeastern portions of the Specific Plan until off-site channel improvements have been extended by development projects proximate to those channels, provides flexibility for those future developments. If development occurs in the interim time frame, it will be constrained by the overflow floodplain at that time. It must either avoid impacts to that floodplain, or provide interim channel improvements adequate to convey the overflow flows in a more confined manner. These interim improvements would be necessary until such time as ultimate Gerber Creek channel improvements consistent with the favored alternative were constructed downstream from the overflow location. At that point in time, the land constrained by these interim facilities could be reclaimed for urban land uses consistent with the Specific Plan.

APPENDIX H

NVSSP FEIR: Final Technical Appendices Vol. II

ELDER AND GERBER CREEKS

Technical Appendix:

UNET Analysis

January 1997

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ELDER AND GERBER CREEKS
Technical Appendix:
UNET Analysis

January 1997

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SUB-APPENDIX 3 UNET BOUNDARY CONDITION FILES

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Executive Summary

Background

The Water Resources Division (WRD) of the Sacramento County Department of Public Works is responsible for preparing a Drainage Master Plan (DMP) for Elder and Gerber Creeks. These streams form a complex network that both receive and contribute water to adjacent watersheds under existing-conditions. In order to accurately depict flood behavior for the design flood event, and the effect of proposed mitigative measures, the UNET computer program is used both to estimate flood water surface elevations and to include the routing effects of floodplain storage upon the stream hydrographs.

One of the goals of the Elder and Gerber Creek Drainage Master Plan is to safeguard downstream areas by ensuring that when development within the watershed is complete, the following downstream hydrologic objectives are satisfied:

1. The 100-year peak discharge for ultimate land use conditions with the preferred flood control alternative is less than the existing-condition peak flow on Elder Creek at the City-County boundary.

2. The maximum water surface in Lower Elder Creek remains below minimum bank elevation for the 100-year event with ultimate land use conditions and the preferred flood control alternative.

3. The adopted flood control alternative achieves the above objectives in a flexible and reliable manner.

Although the technical appendix focusses on alternatives which best meet the objectives as defined above, there are an important number of factors that must be considered in a master plan in addition to flood hydrology. Planning within the North Vineyard Station Specific Planning Area (NVSSP) located near the confluence of the Elder and Gerber Creeks (see Figure ES-1) is occurring during the preparation of this DMP. The technical appendix evaluates the design of drainage facilities on the NVSSP to ensure that they satisfy the objectives of the DMP. This is accomplished by analyzing the NVSSP as part of the ultimate-conditions with preferred

alternative, and in a "stand alone" context where upstream areas are undeveloped and where the potential exists for floodwaters from Laguna Creek to spill into Gerber Creek. Also, a sensitivity analysis (Sub-Appendix 5) examines the influences of basin E-20 and storm centering on the system."

Concept Alternatives

Three concept alternatives were considered in order to meet the objectives of the DMP:

1. A series of *linear* detention basins located along the stream corridor.
2. A number of small off-channel detention basins located throughout the watershed.
3. Two or three larger off-channel detention basins that serve as regional facilities.

An off-channel flood control detention basin is located adjacent to the channel and remains empty until the higher stages of the flood cause water to enter it via a side channel weir. The effect is to lower the peak flow and flatten the hydrograph shape.

Evaluations and Conclusions

These concepts were evaluated through the application of UNET for the Sacramento County 100-year hypothetical flood event. The following points summarize the conclusions drawn regarding the hydrologic effectiveness of the alternative plans.

1. The smaller the volume of the detention basin, the more its effectiveness becomes a function of the temporal pattern for the hypothetical design storm. Weir elevations for the small basins had to be set only a few tenths of a foot below peak flood stage otherwise they would fill up and have no influence on reducing the peak flow. The smaller basins are more effective in the upper parts of the watershed where hydrograph volumes are smaller.

2. Linear detention basins have small storage volumes by necessity. They must be limited in length in order to avoid leveeing as the stream gradient causes the floodplain water surface elevation to fall below that for a level pool connected to some point upstream. Although they may be suitable for the upper watershed they will not reliably mitigate peak flows for the reasons discussed above.

3. When a series of off-channel detention basins operates upon stream runoff hydrographs, the resultant hydrograph has a long, flat shape rather than a peaked shape.

This means that the window of flood stages becomes progressively narrower in the downstream direction.

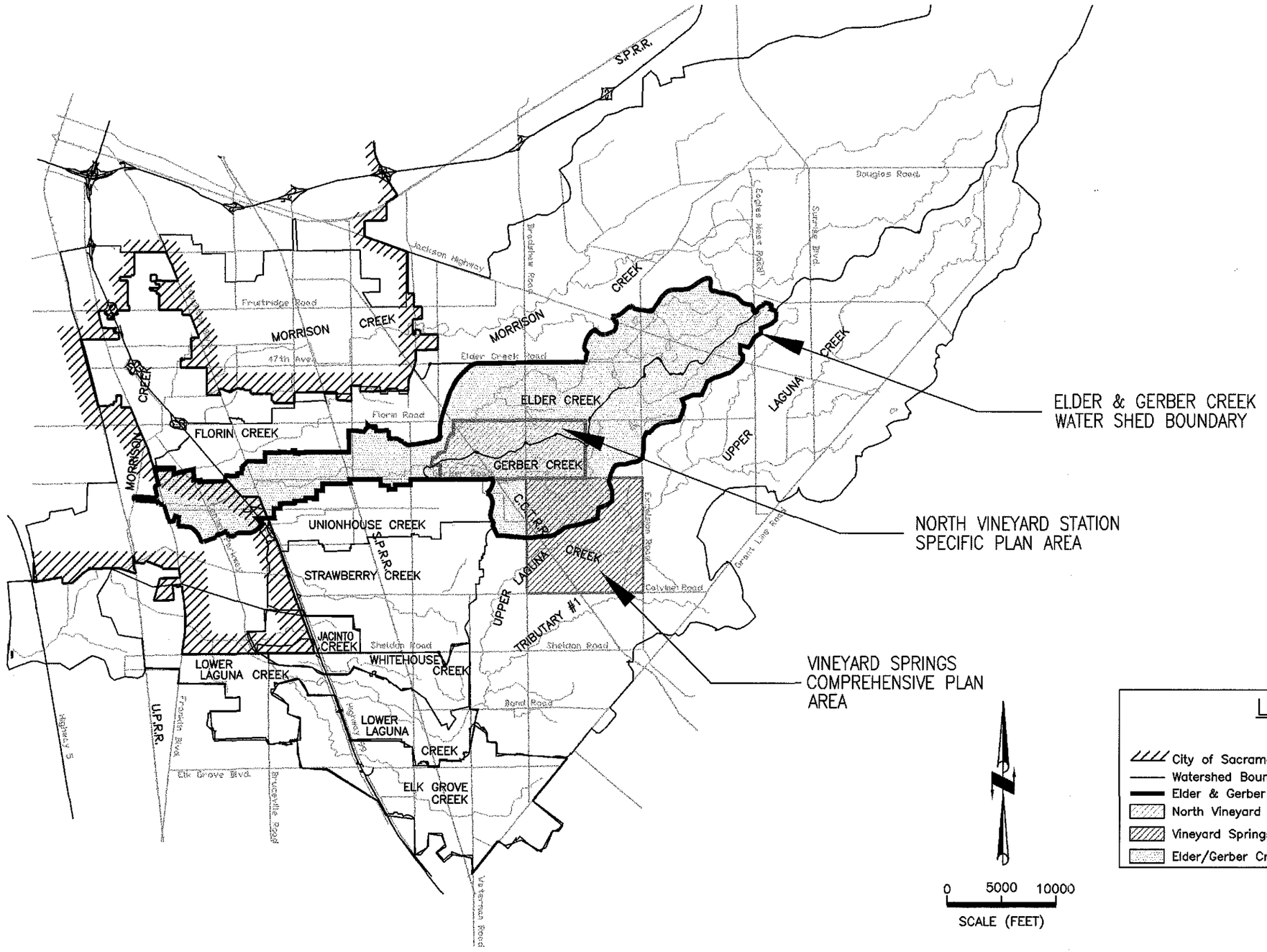
4. Small, off-channel detention basins designed for the ultimate-condition peak stage, may never be utilized during stand alone-conditions when flows are lower than for the ultimate-condition.

5. The following approach was adopted in order to deal with the factors discussed above. The preferred alternative is represented on Figure ES-2. Smaller detention basins are placed in the upper watersheds where the weirs can be set well below the peak stage and still function efficiently. At least one large basin downstream of the confluence (E-20) was adopted in order to account for the variability in timing of actual floods compared to the design event and with the effects of storm centering. Finally, for the smaller basins in the middle part of the watershed, a segmented weir concept was developed which allows it to function over a wider range of stage but still provides a significant degree of peak flow reduction.

6. Basin E-20 is required as a key factor in overall system reliability and because of stage constraints in the Stand Alone-condition of NVSSP. System reliability will be maintained with the construction of E-20 because the basin can mitigate variations in timing between peak flow and peak stage.

The basins planned for the Stand Alone and Ultimate-conditions meet the drainage plan objectives regarding flow at the City boundary without basin E-20. However, the study also finds a stage increase of approximately 0.5 feet downstream of the City boundary that will be unmitigated without the addition of basin E-20 in the Stand Alone-condition. Moreover, earlier construction of basin E-20 allows flexibility in the "interim" development stages and provides the most flexibility for phased construction of the NVSSP development.

7. With the NVSSP in place and the Laguna Creek overspill still in existence, the peak flow at the City boundary decreased for the stand alone-condition compared to the existing-condition. However, the stage downstream of the City boundary increase by approximately 0.5 feet. The channel improvements on Gerber Creek increase flow efficiency and reduce the amount of storage attenuation that occurs under existing-conditions for Laguna Creek overspill hydrograph.



S:\PROJECTS\ELDER\ACAD\FIGES-1

County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

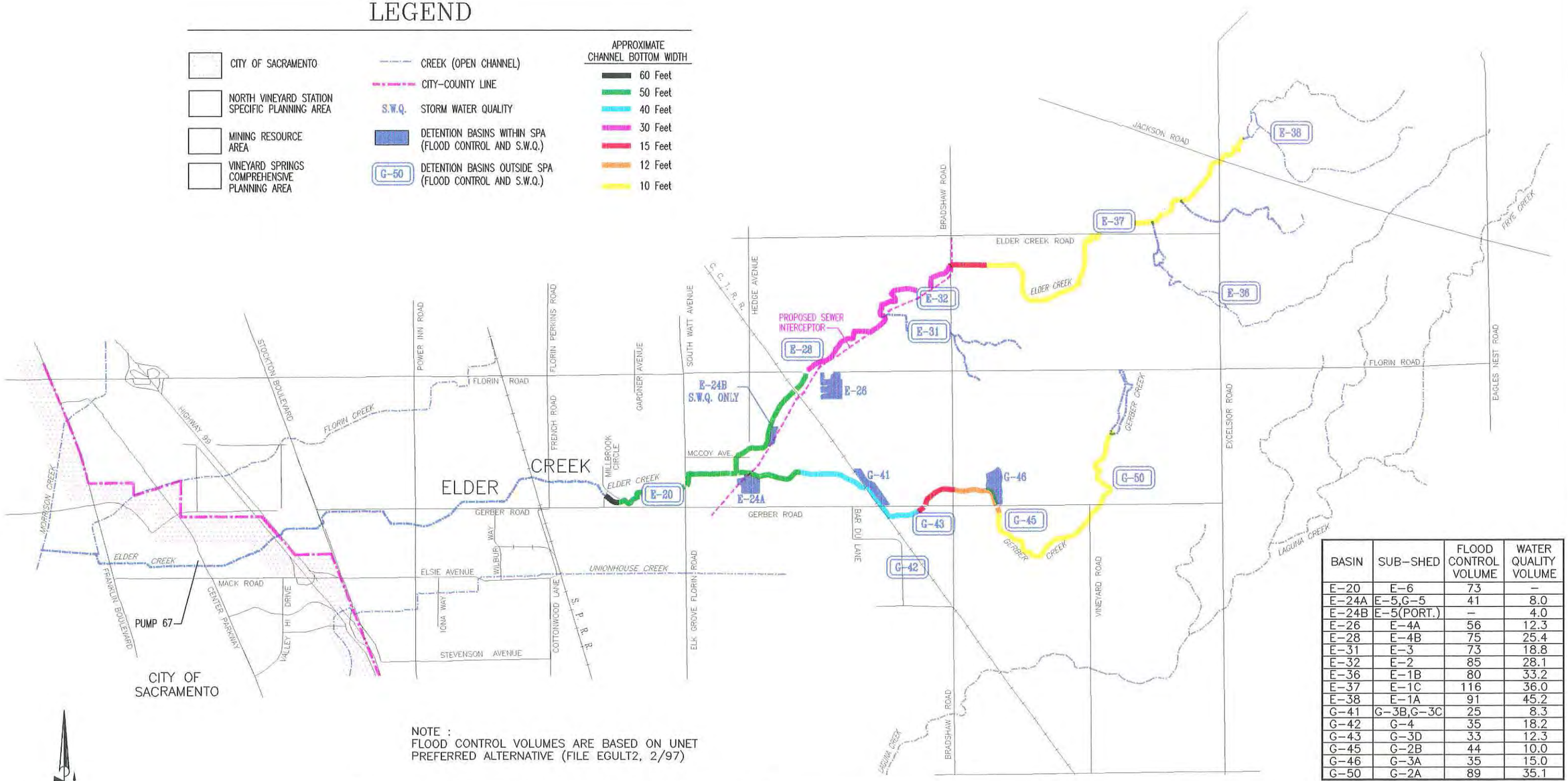
Location Map

Figure ES-1

LEGEND

- CITY OF SACRAMENTO
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- MINING RESOURCE AREA
- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- CREEK (OPEN CHANNEL)
- CITY–COUNTY LINE
- S.W.Q. STORM WATER QUALITY
- DETENTION BASINS WITHIN SPA (FLOOD CONTROL AND S.W.Q.)
- G–50 DETENTION BASINS OUTSIDE SPA (FLOOD CONTROL AND S.W.Q.)

APPROXIMATE CHANNEL BOTTOM WIDTH
- 60 Feet
- 50 Feet
- 40 Feet
- 30 Feet
- 15 Feet
- 12 Feet
- 10 Feet



BASIN	SUB–SHED	FLOOD CONTROL VOLUME	WATER QUALITY VOLUME
E–20	E–6	73	–
E–24A	E–5,G–5	41	8.0
E–24B	E–5(PORT.)	–	4.0
E–26	E–4A	56	12.3
E–28	E–4B	75	25.4
E–31	E–3	73	18.8
E–32	E–2	85	28.1
E–36	E–1B	80	33.2
E–37	E–1C	116	36.0
E–38	E–1A	91	45.2
G–41	G–3B,G–3C	25	8.3
G–42	G–4	35	18.2
G–43	G–3D	33	12.3
G–45	G–2B	44	10.0
G–46	G–3A	35	15.0
G–50	G–2A	89	35.1

NOTE :
FLOOD CONTROL VOLUMES ARE BASED ON UNET PREFERRED ALTERNATIVE (FILE EGULT2, 2/97)

0 4000
SCALE IN FEET

County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Preferred Alternative
Channel and Detention Basins
Figure ES–2

S:\PROJECTS\ELDER\ACAD\FIG8_1B2.DWG

Chapter 1

Introduction

Background and Purpose

The Water Resources Division (WRD) of the Sacramento County Department of Public Works is responsible for preparing a Drainage Master Plan (DMP) for Elder and Gerber Creeks. These streams form a complex network that both receive and contribute water to adjacent watersheds under existing-conditions. In order to accurately depict flood behavior for the design flood event, and the effect of proposed mitigative measures, the UNET computer program is used both to estimate flood water surface elevations and to include the routing effects of floodplain storage upon the stream hydrographs. UNET solves the full network equations for unsteady flow in channels. This eliminates the need for combined applications using both the U.S. Army Corps of Engineers' Flood Hydrograph package (HEC-1) and Water Surface Profiles (HEC-2) models, and it also allows the systematic evaluation of the impact that a proposed alternative will have on the conditions both upstream and downstream from its location. The inflow hydrographs for each sub-area were developed by WRD staff based on the Hydrology Standards, Volume 2 of the Sacramento City/County Drainage Manual.

The North Vineyard Station Specific Plan area (NVSSP) is located at the confluence of Elder and Gerber Creeks (see figure ES-1). This technical appendix evaluates the design of drainage facilities on the NVSSP to ensure that they satisfy the objectives of the DMP. This is accomplished by (1) analyzing the NVSSP as part of the ultimate-conditions with preferred alternative, and (2) in an stand alone context where upstream areas are undeveloped and where the potential exists for floodwaters from Laguna Creek to spill into Gerber Creek.

Chapter 2

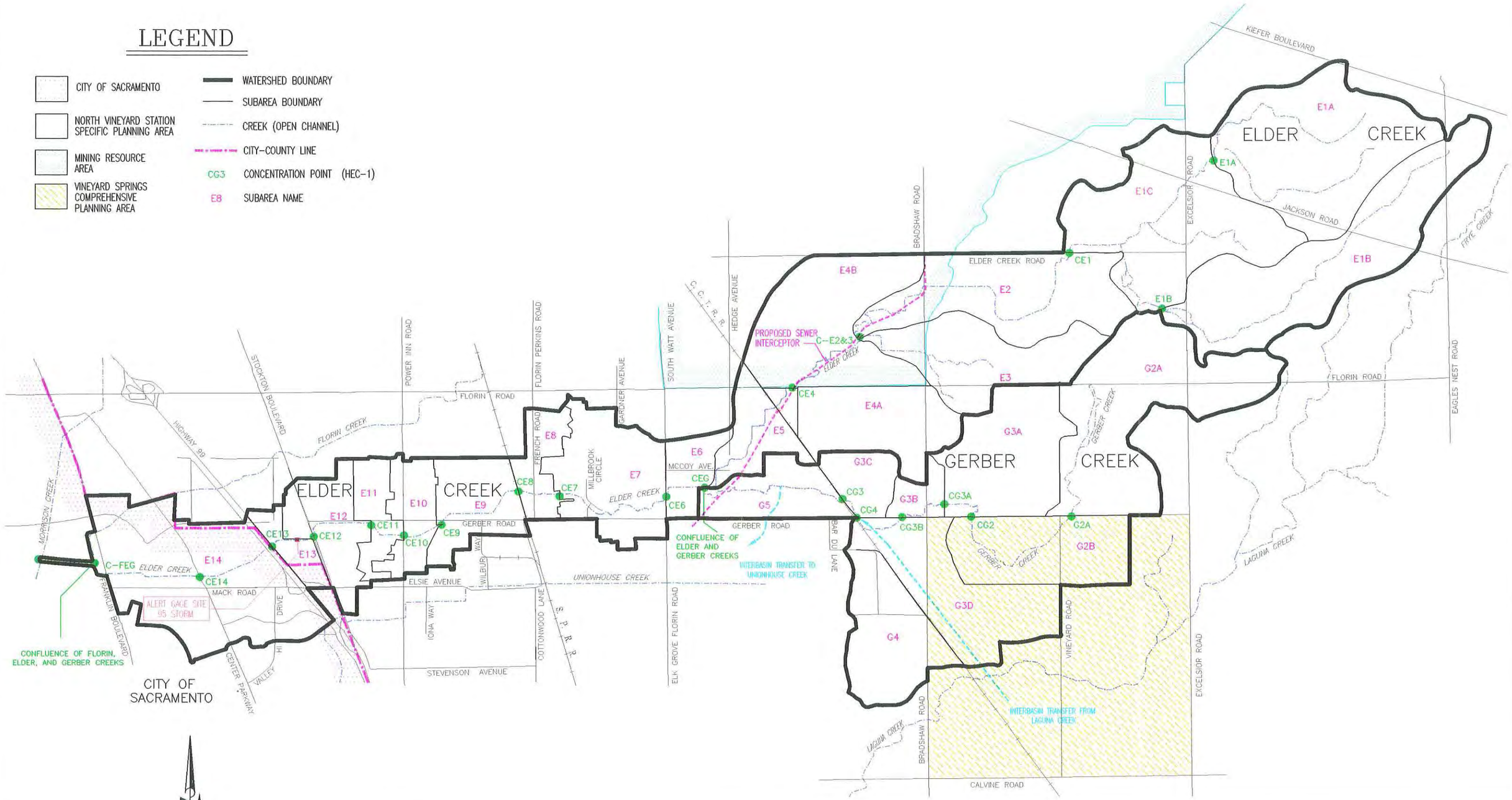
Description of Study Area

Introduction

The study area is shown in Figure 2.1. It includes the watersheds for Upper Elder Creek, Gerber Creek, and the Lower Elder Creek watershed to its terminus at Morrison Creek. Currently there exists an interbasin flow from Upper Laguna Creek to Gerber Creek, and from Lower Elder Creek to Unionhouse Creek. The effects within the Drainage Master Plan area of preventing these interbasin flows are investigated as part of this report. The boundaries of the NVSSP are outlined on Figure 2.1.

LEGEND

- CITY OF SACRAMENTO
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- MINING RESOURCE AREA
- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- WATERSHED BOUNDARY
- SUBAREA BOUNDARY
- CREEK (OPEN CHANNEL)
- CITY–COUNTY LINE
- CG3 CONCENTRATION POINT (HEC–1)
- E8 SUBAREA NAME



County of Sacramento
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Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Existing Conditions
Watershed Map

Figure 2.1

S:\PROJECTS\ELDER\ACAD\FIG2_1.DWG

Chapter 3

Existing-Conditions Geometric Model for UNET

Introduction

UNET is a one dimensional unsteady flow model developed and supported by the Hydrologic Engineering Center of the U.S. Army Corps of Engineers. The UNET computer program is used both to estimate flood water surface elevations and to include the routing effects of floodplain storage on the stream hydrographs. The existing-condition UNET application generally represents the situation as it exists prior to the establishment of any proposed channel modification projects that are expected to occur in the future. One of the purposes of the existing-condition analysis is to provide a standard against which individual projects and the ultimate drainage master plan can be compared.

Information Sources

The UNET geometric input data files are based on cross section data from existing sources of information as shown in Table 3.1

Table 3.1 Information Sources

No.	Source	File Name	Description
1	WRD	ELDSQ1B.DAT	HEC-2 file for existing-conditions on Elder Creek from 0.5 miles upstream of Morrison Creek to 1.0 mile downstream of the confluence with Gerber Creek.
2	WRD	ELDSQ2B.DAT	HEC-2 file for existing-conditions on Upper Elder Creek from 1.8 miles upstream of the confluence with Gerber Creek to the upstream study limit.

3	WRD	GERSQB.DAT	HEC-2 file for existing-conditions on Gerber Creek from 2.8 miles upstream of the confluence with Gerber Creek to the upstream study limit.
4	M&S	7536EX.DAT	HEC-2 file for existing-conditions on Elder Creek from 1.0 mile downstream of the confluence with Gerber Creek to 1.8 miles upstream; and Gerber Creek from Elder Creek to 2.8 miles upstream.
5	M&S	EDULT.DAT	HEC-2 file for ultimate channel conditions on Elder Creek from 1.0 miles downstream of the confluence with Gerber Creek to 1.8 miles upstream.
6	M&S	GDULT.DAT	HEC-2 file for ultimate channel conditions on Gerber Creek from Elder Creek to 2.8 miles upstream.
7	WRD	ELFL-LIN.DAT	HEC-2 file for ultimate channel conditions on Elder Creek from 1.8 miles upstream of the confluence with Gerber Creek to the upstream study limit; and for Gerber Creek from 2.8 miles upstream of Elder Creek to the upstream study limit.
8	WRD	ELD-EX1A.DAT	HEC-2 file for existing and ultimate-conditions on Elder Creek from Morrison Creek to 0.5 miles upstream.
9	Corps	MORR100E.CS	UNET geometric data file for existing-conditions on Laguna Creek, Reach 12 of Corps of Engineers Morrison Creek Study.

Note: WRD: Sacramento County, Water Resources Division
M&S: McKay & Somps
Corps: Sacramento District, U.S. Army Corps of Engineers

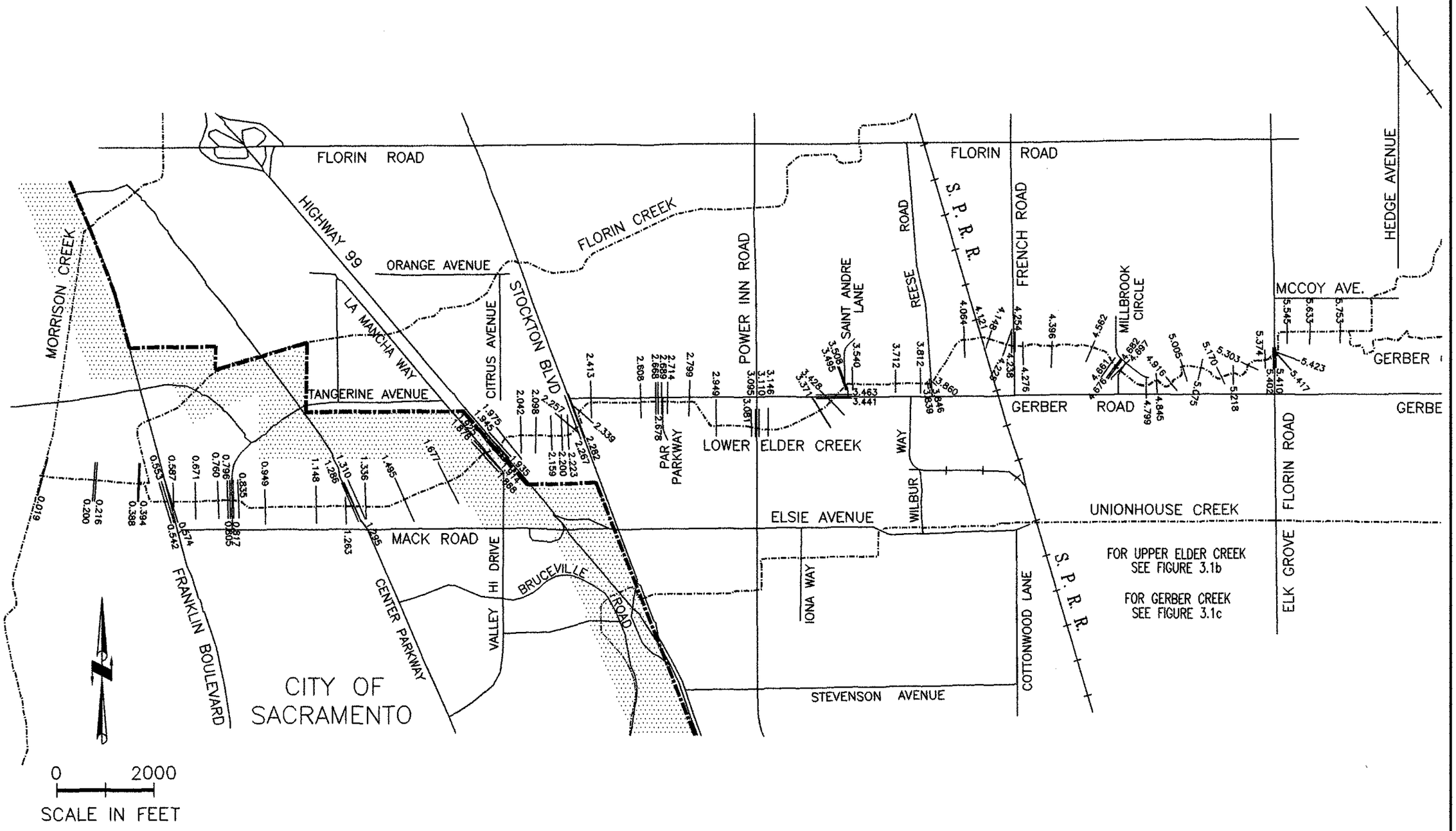
The following steps are followed in order to convert the HEC-2 files into UNET geometric files.

1. Convert all cross section numbers from 100 foot stations to river miles.
2. Rewrite the GR records to explicitly include any modifications by CI or X4 options.
3. Add GR records to those sections that use duplicate data.
4. Re-order the cross sections from upstream to downstream.
5. Modify the input format of bridge and culvert data.

The geometric data is arranged in three separate reaches:

1. Upper Elder Creek;
2. Gerber Creek; and
3. Lower Elder Creek.

Figure 3.1 a, b, and c show the cross section locations. Figure 3.2 shows how the stream network connections are organized. On Gerber Creek upstream of the first Gerber Road crossing, there is an overspill to the west that re-enters the Creek further downstream. On Lower Elder Creek, water can flow over Gerber Road to the south and enter Unionhouse Creek.



LEGEND

- CITY OF SACRAMENTO
- CREEK (OPEN CHANNEL)
- 0.019 CROSS-SECTION ID NUMBER

County of Sacramento
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Elder and Gerber Creeks
Appendix A
UNET Analysis

Lower Elder Creek Existing Conditions Cross Section Map

Figure 3.1a

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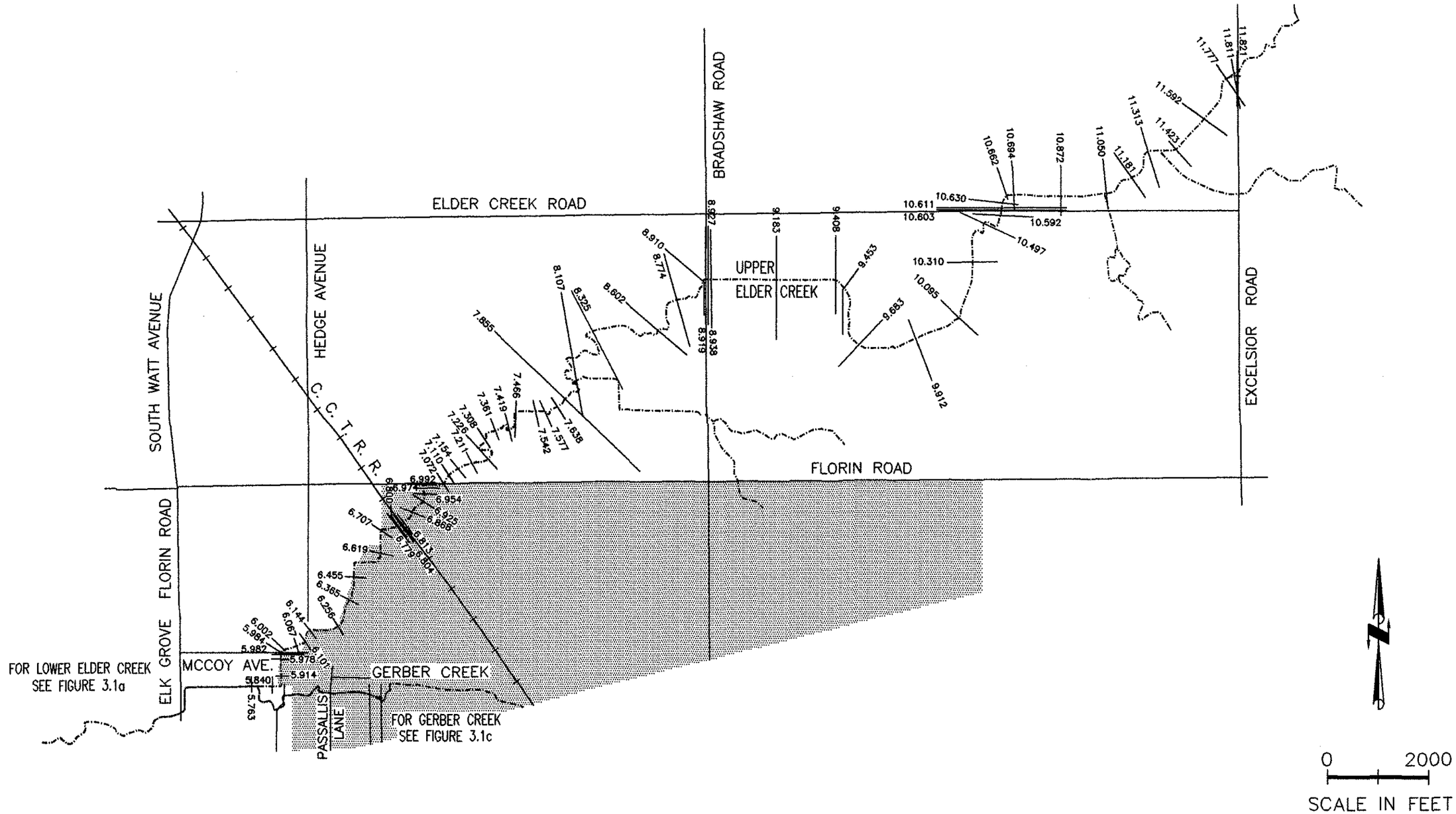

LEGEND

- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- CREEK (OPEN CHANNEL)
- 5.763 —— CROSS-SECTION ID NUMBER

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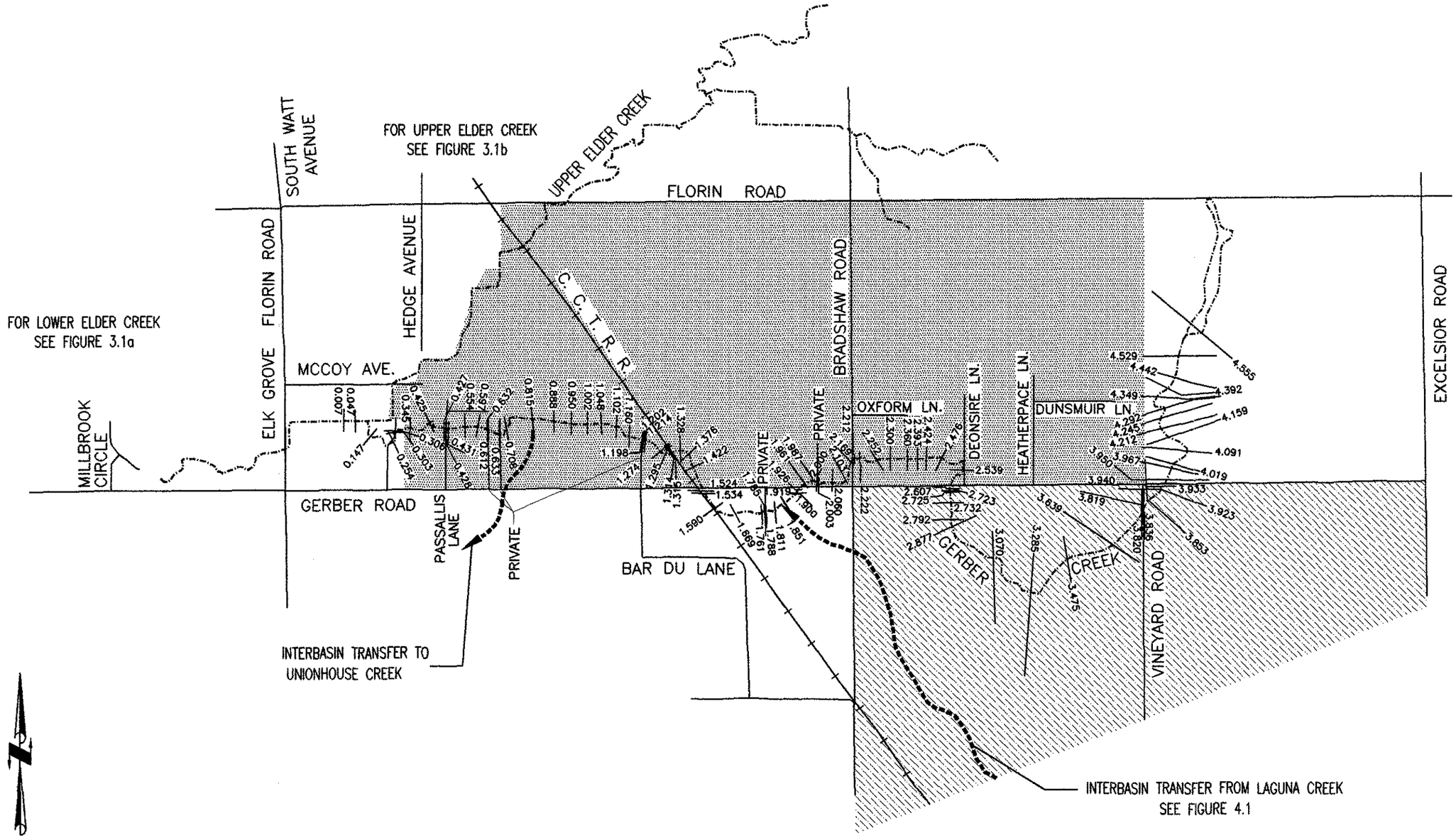
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Upper Elder Creek Existing Conditions Cross Section Map

Figure 3.1b

S:\PROJECTS\ELDER\ACAD\FIG3_1B.DWG



LEGEND

- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- CREEK (OPEN CHANNEL)
- 0.007 —— CROSS-SECTION ID NUMBER

S:\JOSE\ELDER\FIG3_1C.DWG

County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Gerber Creek
Existing Conditions
Cross Section Map

Figure 3.1c

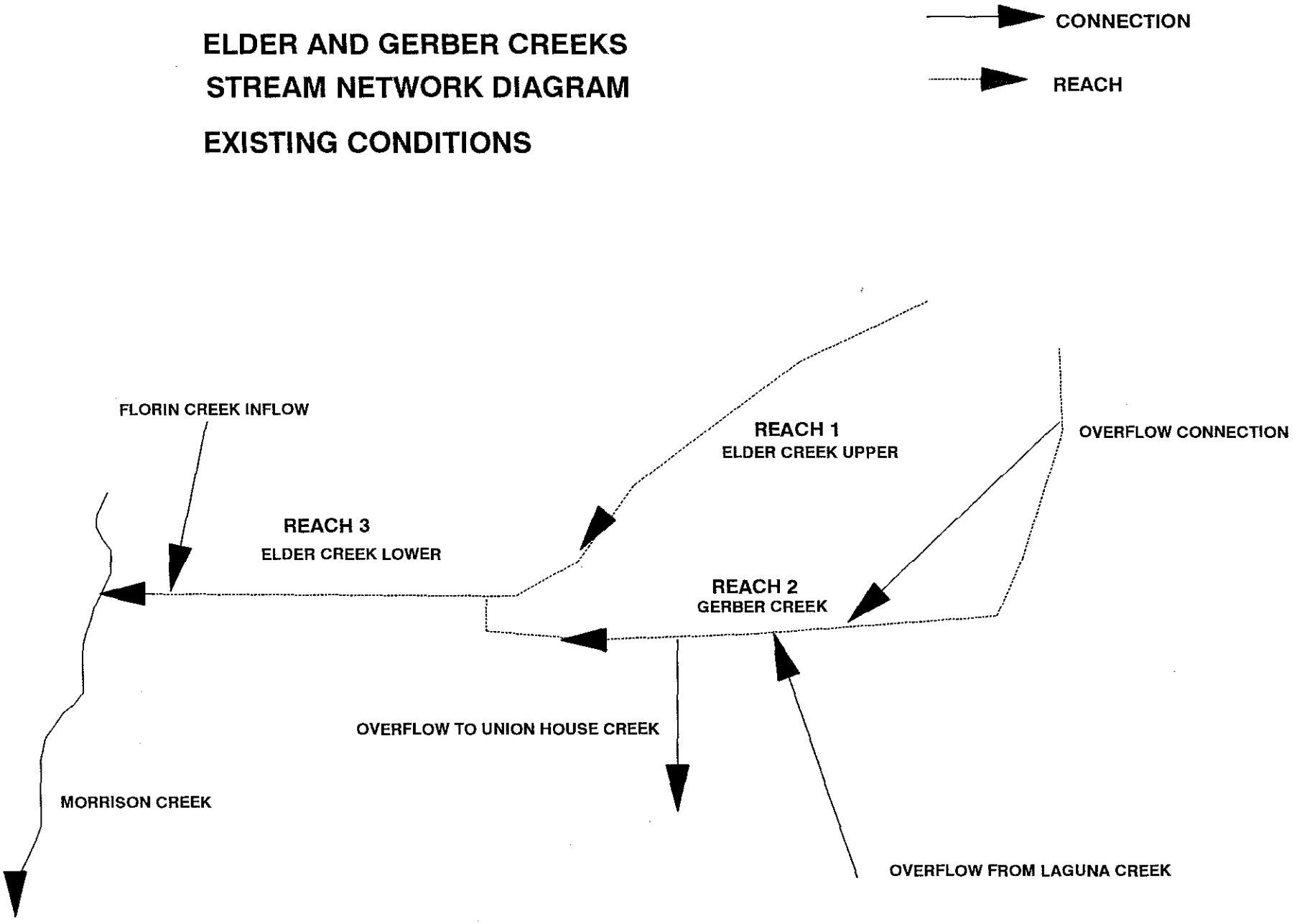


Figure 3.2 Stream network diagram for existing conditions.

Chapter 4

Interbasin Transfer from Laguna Creek

A 1995 topographic survey commissioned by WRD permitted a detailed examination of the overspill area along Laguna Creek. In July, 1985 Sacramento District, U.S. Army Corps of Engineers (Corps)performed a study entitled *Morrison Creek Stream Group, California, Hydrology* which used the diversion option in HEC-1 to analyze the overspill from Laguna Creek to Gerber Creek along the northeast side of the California Central Traction Railroad (CCTRR). This diversion relationship is shown in Table 4.1 below.

Table 4.1
U.S. Army Corps of Engineers (1985) Diversion Relationship on Laguna Creek

Total Inflow Upstream (cfs):	0	800	875	1,334	1,675	2,150	3,244
Diverted Flow to Gerber Creek (cfs):	0	0	9	177	325	575	1,477

At the time of writing of this report, the Corps is in the process of preparing another study for the Morrison Creek Stream Group. A review of the preliminary results of their new study indicates that the area between Laguna Creek and Gerber Creek is being modeled as a storage area. This is an adequate level of detail considering that the Corps' study focuses on Lower Morrison Creek rather than the upper watersheds of the tributary streams. For the purposes of the DMP, however, more detailed study is needed for this area.

The approach adopted here is to prepare a separate UNET application which includes Laguna Creek and models side-channel overflow into a parallel reach that at first flows to the west and then turns northward until it reaches Gerber Creek.

The cross section locations for Laguna Creek and for the Overspill Reach are shown in Figure 4.1. Six weir segments are used which connect Laguna Creek to the Overspill Reach. The first, upstream-most segment is located approximately 0.2 miles upstream of Vineyard Road. The sixth, downstream-most segment is located just upstream of the CCTRR bridge. The files used in this application are shown in Table 4.2.

Table 4.2 Files Used in Interbasin Transfer Analysis.

No.	Source	File Name	Description
1	This Study	LCSP1.CS	UNET geometry file for existing-conditions on Laguna Creek and the Overspill Reach.
2	This Study	LCSP1.UN	UNET boundary conditions file for the existing-conditions 100-year event on Laguna Creek and the Overspill Reach.
3	WRD	ULEXB.DAT	HEC-1 file for the 100-year event, existing-conditions sub-area hydrographs on Laguna Creek.
4	This Study	LCSP1.DSS	Results of interbasin transfer analysis.

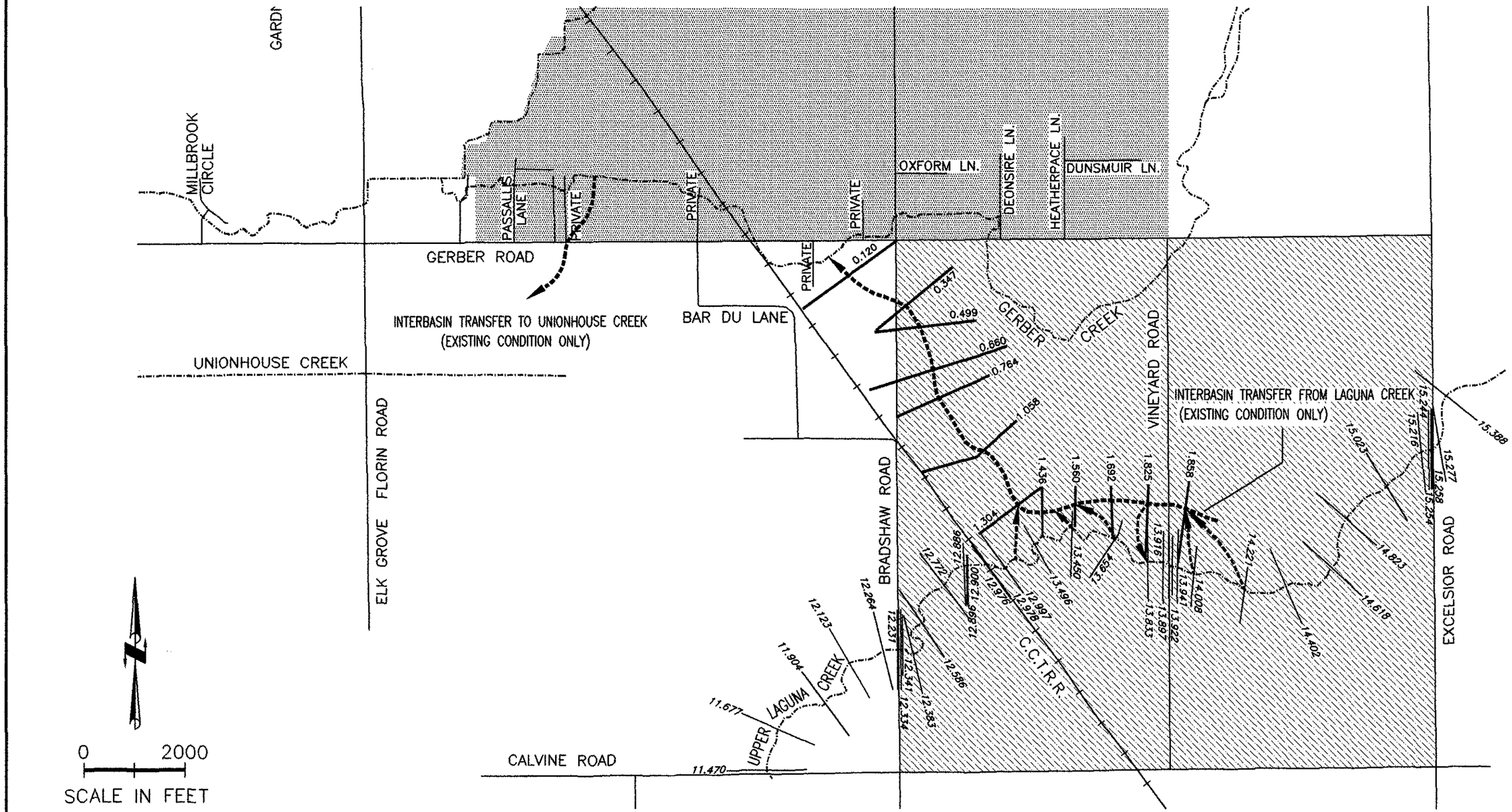
The results of the interbasin transfer analysis are shown in Figure 4.2. Under the existing-condition 100-year event, flow splits off from Laguna Creek and travels overland to the north and eventually reaches Gerber Creek. The existing 100-year event hydrograph in Laguna Creek upstream of Vineyard Road at Section 14.221 has a peak flow of approximately 2,300 cfs. After the flow split occurs, the remaining flow in Laguna Creek upstream of CCTRR is approximately 1,350 cfs. The interbasin transfer hydrograph diverted into Gerber Creek has a peak flow of approximately 1,050 cfs. The total volume of the existing-conditions overspill hydrograph is approximately 500 acre-feet.

The interbasin transfer from this study has a peak flow that is higher than that developed in the 1985 Corps of Engineers HEC-1/HEC-2 analysis (1,050 cfs compared to 650 cfs). Figure 4.3 provides part of the explanation for this. The results from UNET (plotted with a solid line in the figure) indicate that, in this case, the relationship between the flow in

the upstream channel and the transferred flow is not a single-valued function. In reality, as the backwater effect in the downstream channel builds during a flood event, more water splits off to the overspill reach even though the upstream flow in Laguna Creek is decreasing. Based on sections 1.058 and 12.997 (Upper Laguna Creek model - just upstream of the CCTRR) in the UNET model, WRD developed a revised single value rating curve for the interbasin transfer which adequately approximates the relationship between flow in Laguna Creek and flow in the overspill reach, to be used in HEC-1 models.

In addition to this looped rating curve effect, there appears to be a complex pattern of flow exchange between Laguna Creek and the Overspill Reach. Figure 4.4 shows plots of the hydrographs for the 6 connection points. Negative values of discharge mean that the net water movement is from the Overspill Reach back into Laguna Creek. This occurs primarily at cross section 13.83 where some water that left the Laguna Creek channel upstream of Vineyard Road re-enters.

The resulting 100-year event interbasin transfer hydrograph developed in this section is further discussed in Chapter 6 of this Technical Appendix.



LEGEND

- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- CREEK (OPEN CHANNEL)
- FLOW LINE
- 0.120 — CROSS-SECTION ID NUMBER (OVERSPILL REACH)
- *11.470* — CROSS-SECTION ID NUMBER (UPPER LAGUNA CREEK)

S:\PROJECTS\ELDER\ACAD\FIG4_1.DWG

County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Laguna Creek &
Interbasin Transfer
Existing Conditions
Cross Section Map
Figure 4.1

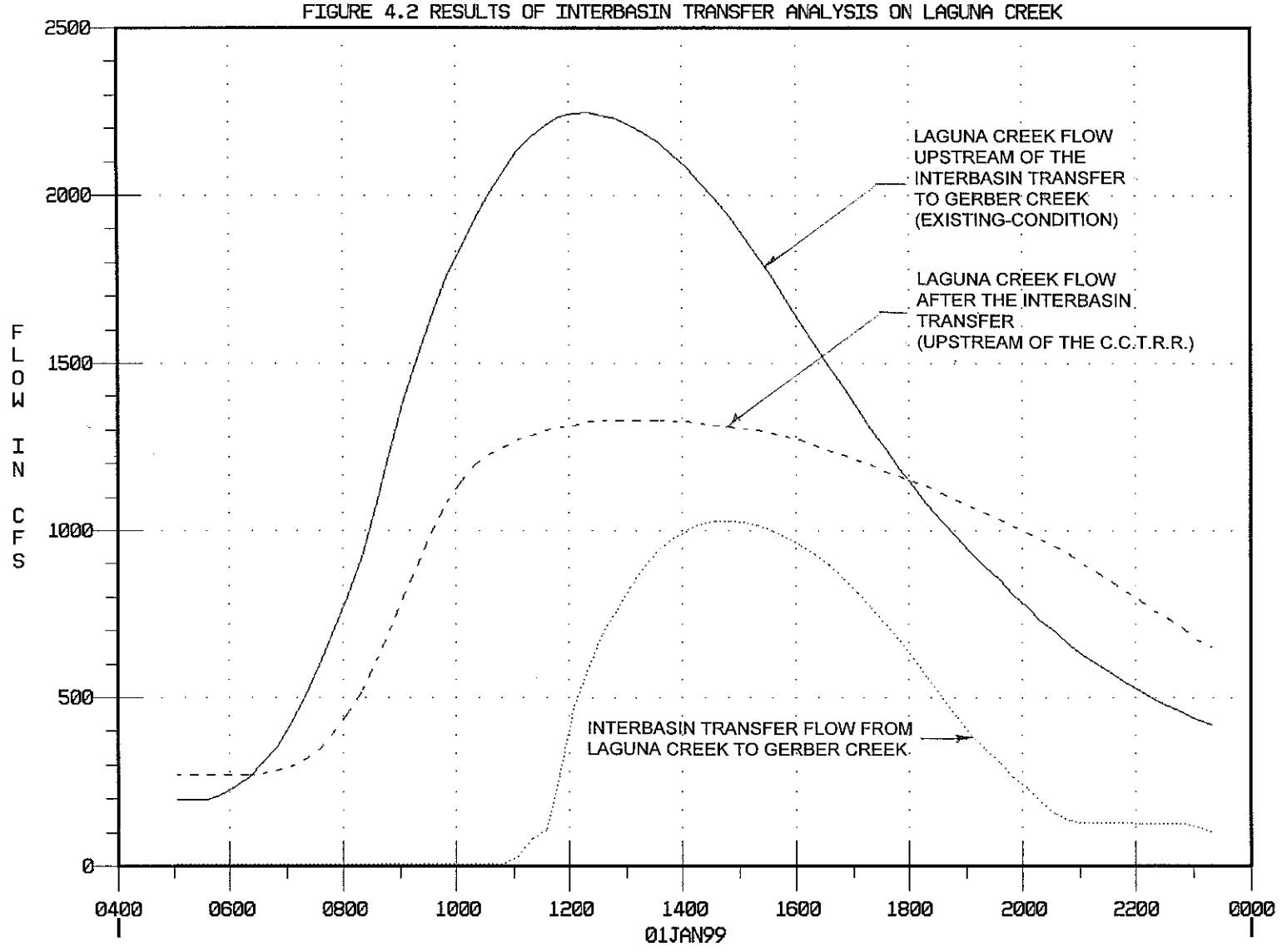


Figure 4.2 Results of Interbasin Transfer Analysis on Laguna Creek.

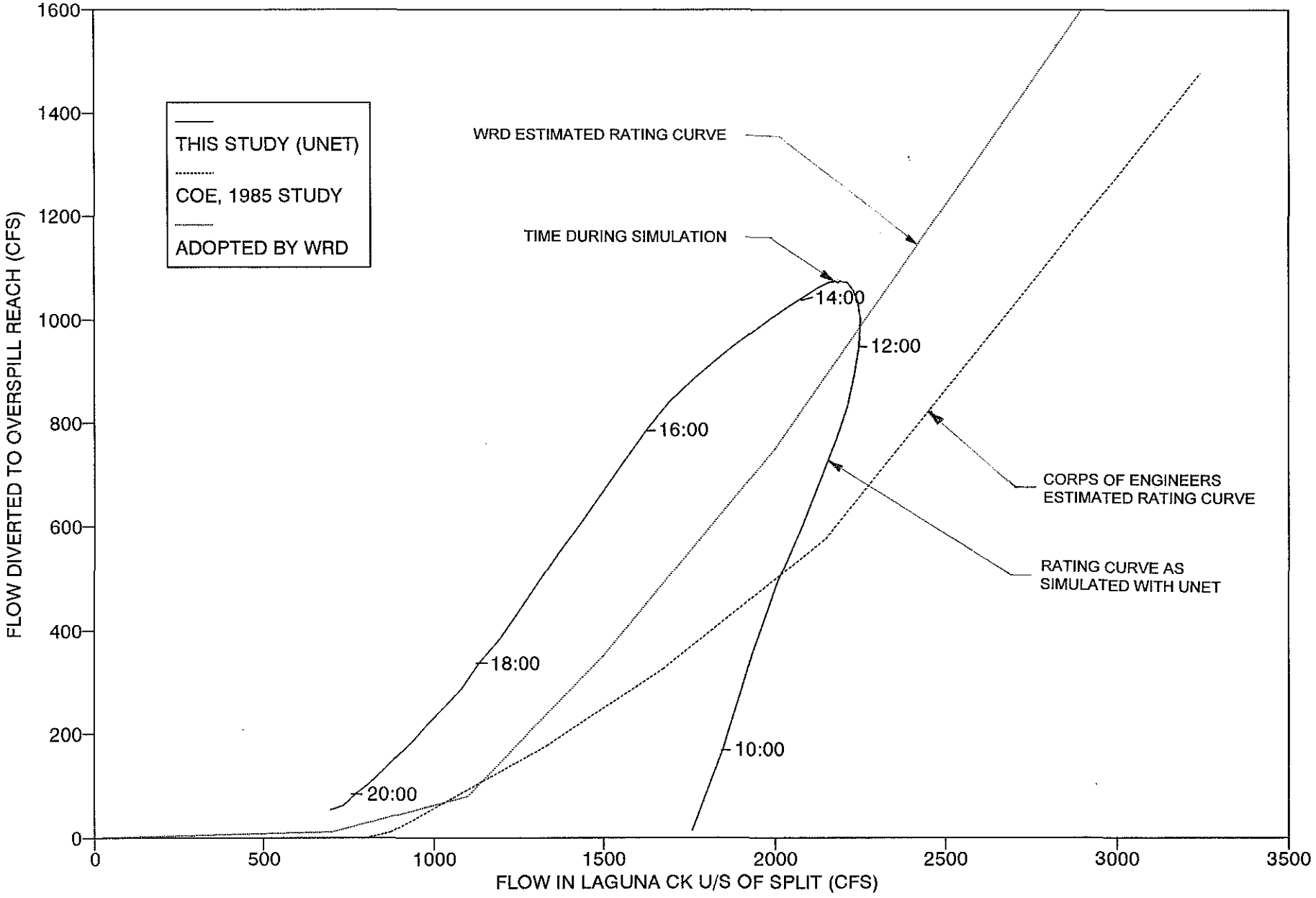


Figure 4.3 Comparison of Diversion Relationships for Laguna Creek Interbasin Transfer.

FIGURE 4.3 COMPARISON OF DIVERSION RELATIONSHIPS FOR LAGUNA CREEK OVERSPILL

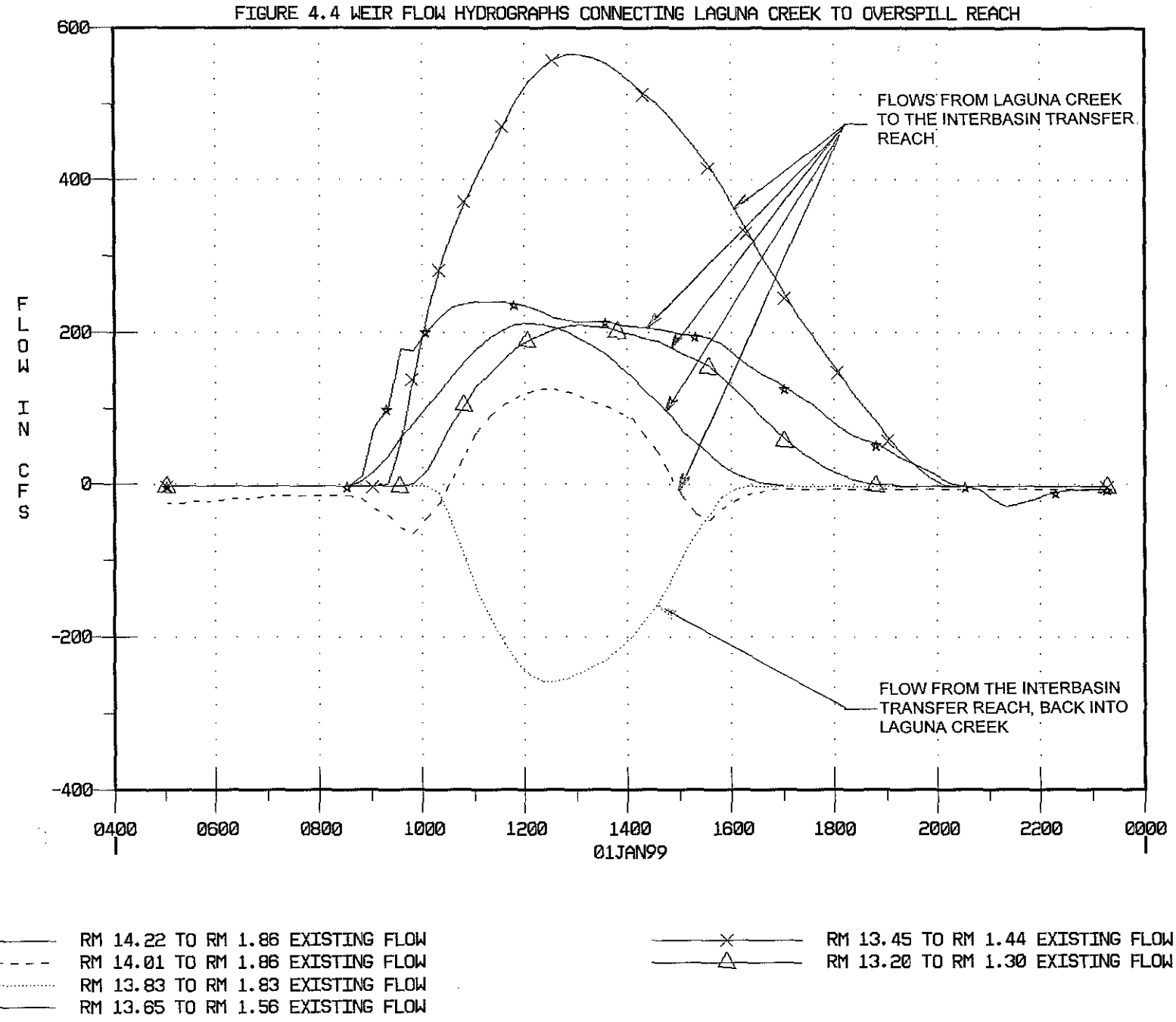


Figure 4.4 Weir Flow Hydrographs Connecting Laguna Creek to Interbasin Transfer Reach.

Chapter 5

Calibration of Base Condition to January, 1995 Flood Event

The January 10, 1995 flood event was used to calibrate the existing-conditions UNET model. A stage recorder (ALERT Gage No. 1735) located on Elder Creek approximately 800 feet downstream of Stockton Boulevard was operating during this event. Rain gage measurements and radar data were combined in order to develop input data for WRD's HEC-1 model for Elder, Gerber, and Laguna Creeks. The Laguna Creek model discussed in Chapter 4 was used to estimate the interbasin transfer hydrograph for the 1995 event (See Figure 5.1). The resulting hydrograph, which has a peak flow of approximately 500 cfs, is implemented as a boundary condition for the Elder and Gerber Creek calibration. The files used for this part of the study are listed in Table 5.1.

Table 5.1 Files Used in Calibrating UNET to the 1995 Flood Event.

No.	Source	File Name	Description
1	This Study	EGEX1.CS	UNET geometry file for existing-conditions on Elder and Gerber Creeks.
2	This Study	LCSP1.CS	UNET geometry file for existing-conditions on Laguna Creek and the Overspill Reach.
3	This Study	EG1995.UN	UNET boundary conditions file for the 1995 flood event on Elder and Gerber Creeks.
4	This Study	LC1995.UN	UNET boundary conditions file for the 1995 flood event on Laguna Creek and the Overspill Reach.

5	WRD	ELEX-95.DAT	HEC-1 file for the radar reconstruction of the 1995 flood event on Elder and Gerber Creeks.
6	WRD	ULEX-95.DAT	HEC-1 file for the radar reconstruction of the 1995 flood event on Laguna Creek.
7	This Study	LC1995.DSS	Results of the interbasin transfer analysis for the 1995 flood event.
8	This Study	EG1995.DSS	Resulting hydrographs for the 1995 flood event on Elder and Gerber Creeks.

Figure 5.2 shows the results of the calibration effort. The solid line is the recorded stage in Elder Creek at ALERT gage 1735 during January 10, 1995. The dashed line is the computed stage from UNET using the sub-basin hydrographs generated with WRD's HEC-1 rainfall reconstruction. Only minor adjustments in the numerical parameters were necessary to reach close agreement between computed stage and observed. Also shown in Figure 5.2 (as a dotted line) is the stage hydrograph calculated directly by HEC-1 using modified Puls routing. This method produces higher results than the measured stage. Figure 5.3 shows the computed flow from UNET at Gage 1735.

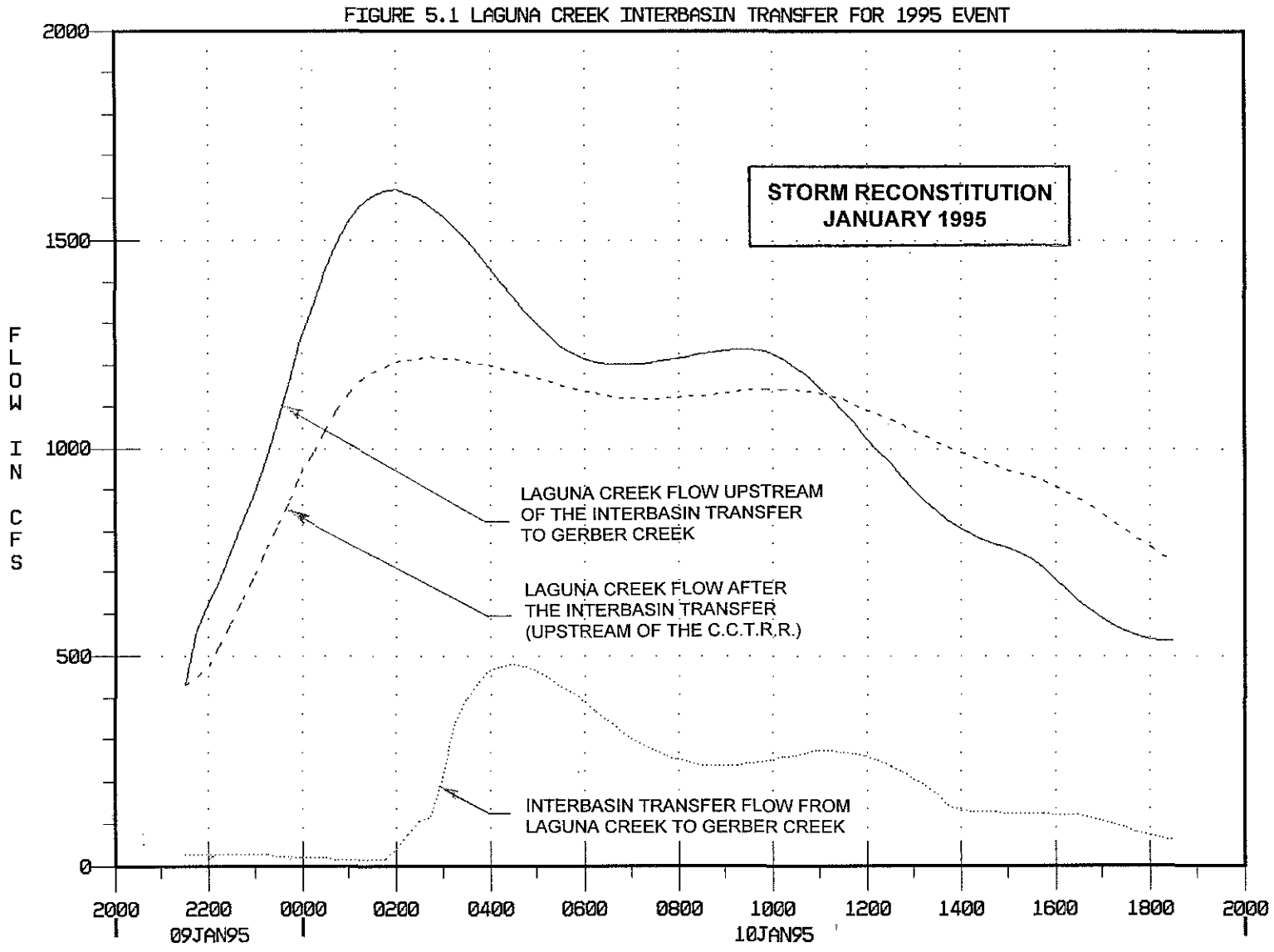


Figure 5.1 Laguna Creek Interbasin Transfer for 1995 Event.

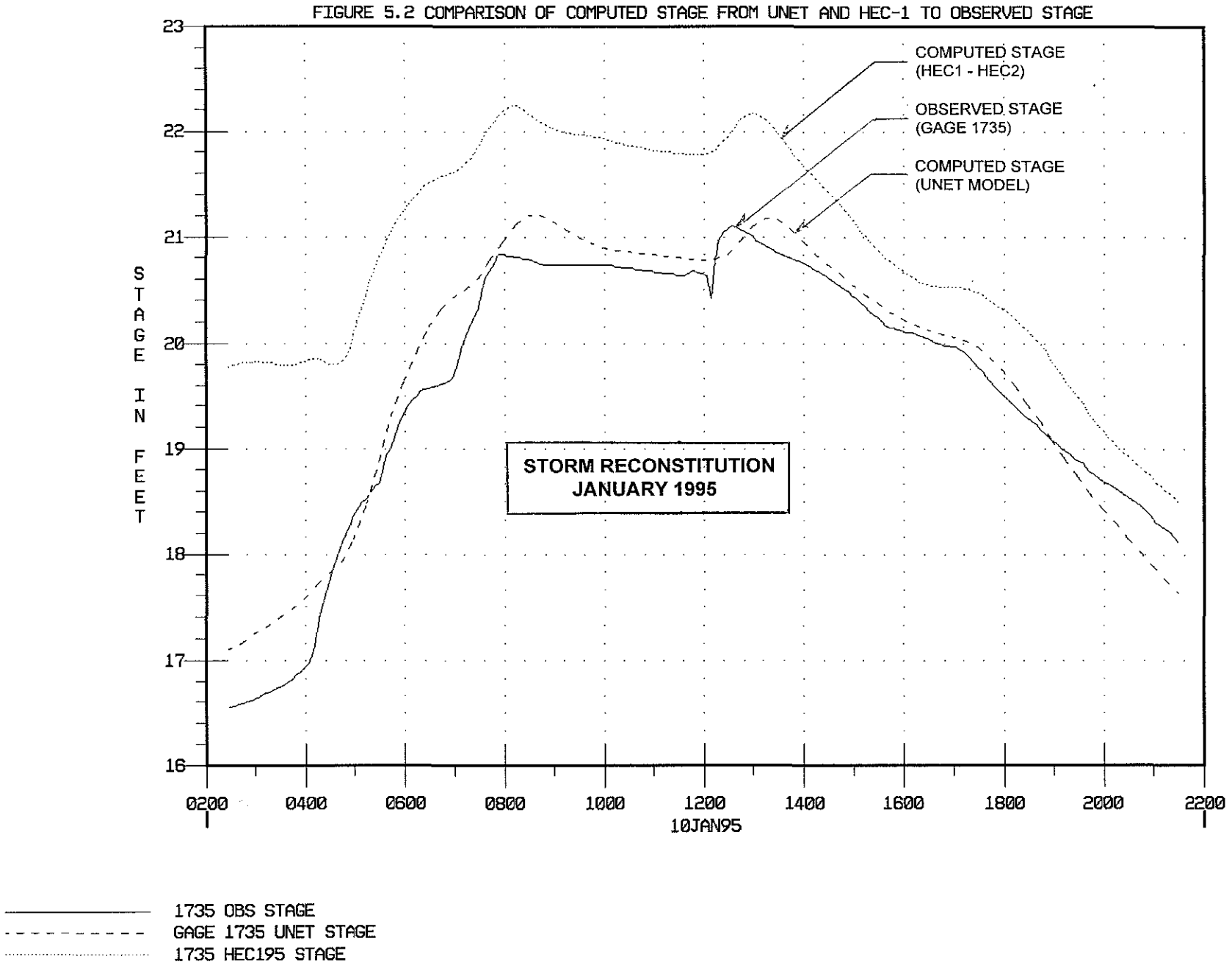


Figure 5.2 Comparison of Computed Stage from UNET and HEC-1 to Observed Stage.

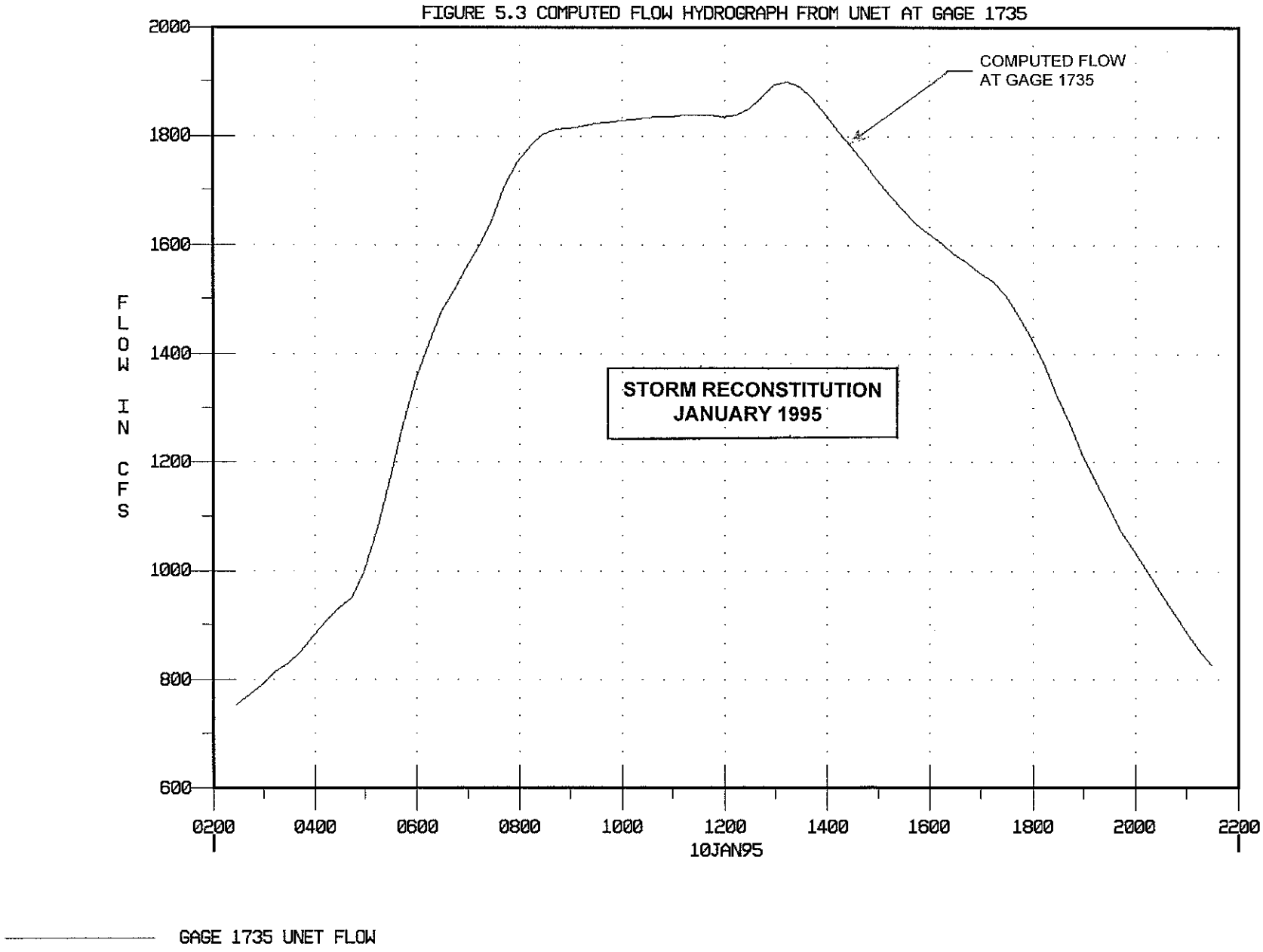


Figure 5.3 Computed Flow Hydrograph from UNET at Gage 1735.

Chapter 6

Existing-Conditions 100-year Event

Introduction

The calibration exercise in Chapter 5 confirms that the UNET geometric file adequately reproduces flood hydrographs on Lower Elder Creek. In this chapter, sub-basin runoff hydrographs from the Sacramento County 100-year design storm are routed to establish the existing water surface elevations and stages. This analysis generally represents the situation as it exists prior to the establishment of proposed channel modification projects that are expected to occur in the watershed. The existing-condition analysis provides a standard against which individual project alternatives and the ultimate drainage master plan alternative can be compared. The files used for this study are listed in Table 6.1.

Table 6.1 Files Used for 100-Year Existing-Conditions Hydrology on Elder and Gerber Creeks.

No.	Source	File Name	Description
1	This Study	EGEX2.CS	UNET geometry file for existing-conditions on Elder and Gerber Creeks.
2	This Study	LCSP1.CS	UNET geometry file for existing-conditions on Laguna Creek and the Overspill Reach.
3	This Study	EGEX2.UN	UNET boundary conditions file for the 100-year existing-conditions flood event on Elder/ Gerber Creeks.
4	This Study	LCSP1.UN	UNET boundary conditions file for the 100-year flood event on Laguna Creek and the Overspill Reach.
5	WRD	H1EX.DAT	HEC-1 file for the existing-conditions 100-year flood event on Elder and Gerber Creeks.
6	WRD	ULEXB.DAT	HEC-1 file for the existing-conditions 100-year flood event on Laguna Creek.

7	This Study	LCSP1.DSS	Results of the interbasin transfer analysis for the existing-conditions 100-year flood event.
8	This Study	EGEX2.DSS	Resulting hydrographs for the existing-conditions 100-year flood event on Elder and Gerber Creeks.

The results of the existing-conditions analysis are shown as a series of hydrograph and water surface profile plots at various points along Elder and Gerber Creek. These plots are described below.

Figure 6.1 Existing-Conditions 100-Year Event Hydrographs along Upper Elder Creek
Figure 6.2 Existing-Conditions 100-Year Event Hydrographs along Gerber Creek
Figure 6.3a Existing-Conditions 100-Year Event Hydrographs along Lower Elder Creek (flow).
Figure 6.3b Existing-Conditions 100-Year Event Hydrographs along Lower Elder Creek (stage).
Figure 6.4a Overspill Hydrographs on Gerber Creek Upstream of Gerber Road.
Figure 6.4b Gerber Creek Overflow Map.
Figure 6.5 Interbasin Transfer hydrographs on Gerber Creek connecting to Unionhouse Creek.
Figure 6.6 Maximum water surface profile plot for Upper Elder Creek.
Figure 6.7 Maximum water surface profile plot for Gerber Creek.
Figure 6.8 Maximum water surface profile plot for Lower Elder Creek.

Figure 6.3a indicates that the existing-conditions 100-year peak flow on Elder Creek at the City-County boundary is approximately 1,988 cfs. Figure 6.4a shows the flow hydrographs at the Gerber Creek Overflow, upstream of Vineyard Road (see map on figure 6.4b). Figure 6.8, the maximum water surface profile plot for Lower Elder Creek, indicates that flows are generally at or below the minimum bank elevation. The analysis of alternatives, which follows in Chapter 7, uses these two elements to establish the criteria which must be satisfied by a given alternative (i.e. the existing peak flow at the City boundary must be less than 1,988 cfs and the water surface must remain below bank elevation). The previous HEC-1 analysis conducted by WRD arrived at a lower estimate of the existing-conditions 100-year peak flow. The difference results from the higher flows associated with updating the interbasin transfer flow from Laguna Creek.

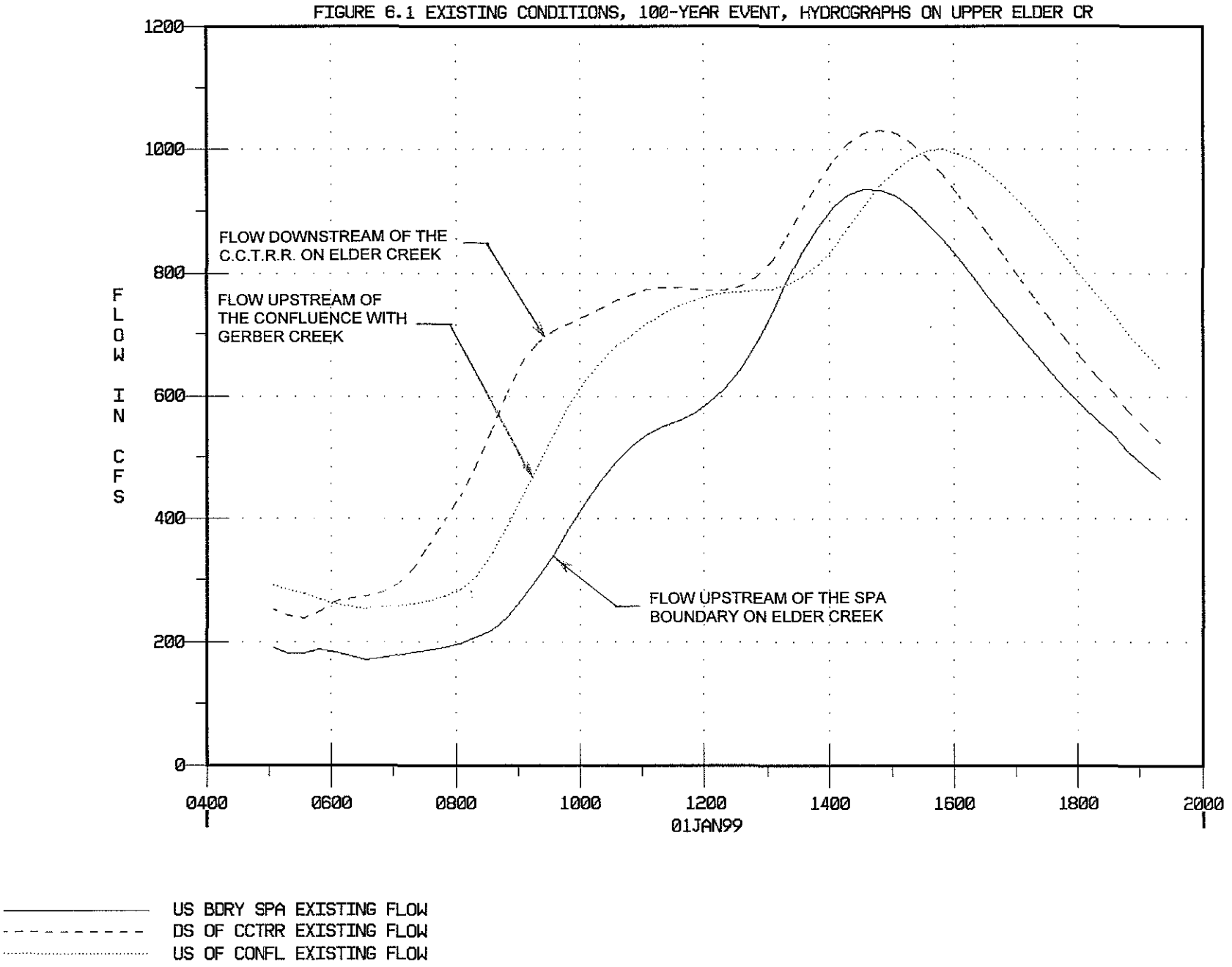


Figure 6.1 Existing-Conditions 100-Year Event Hydrographs along Upper Elder Creek.

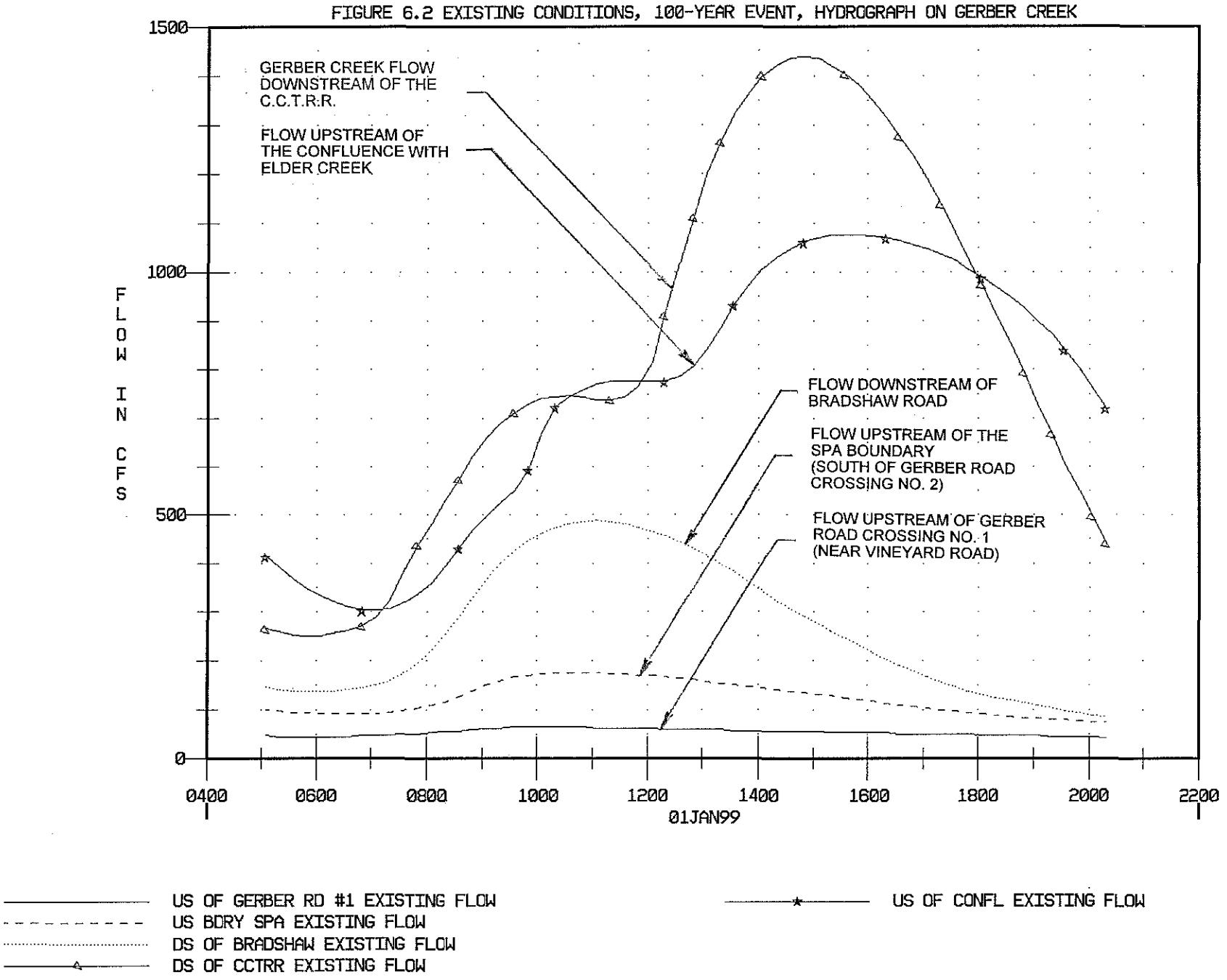


Figure 6.2 Existing-Conditions 100-Year Event Hydrographs along Gerber Creek.

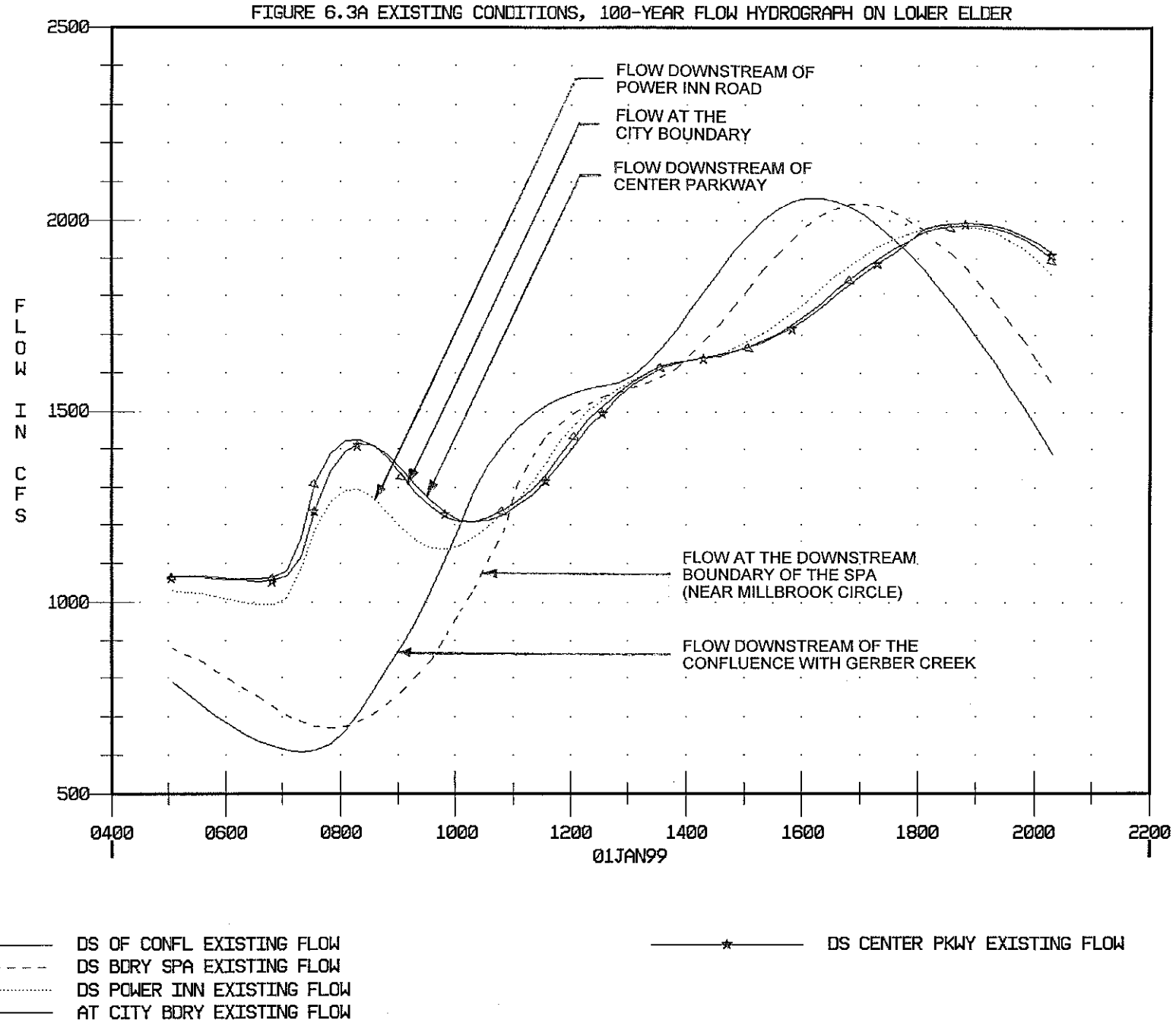


Figure 6.3a Existing-Conditions 100-Year Event Hydrographs along Lower Elder Creek

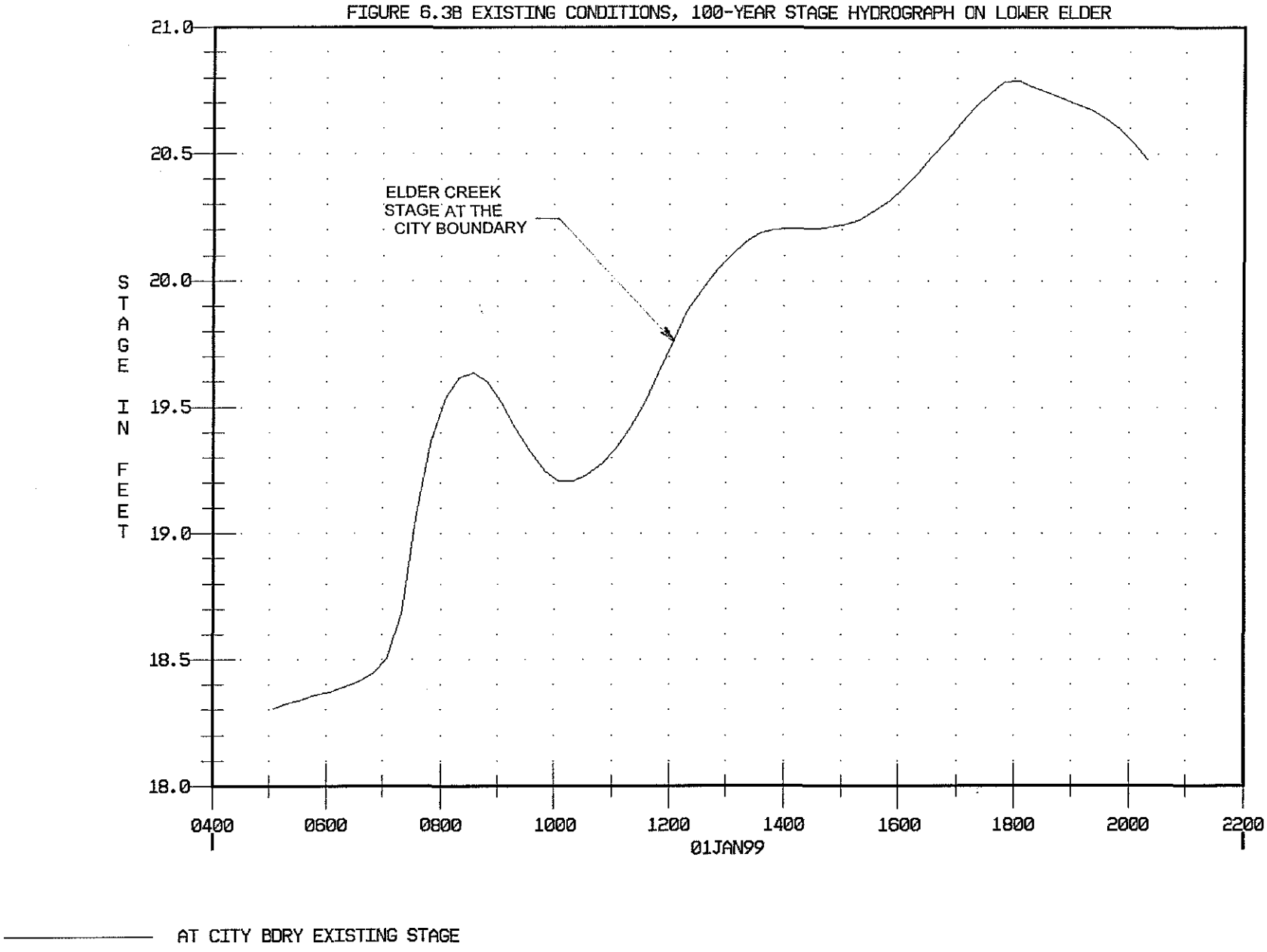


Figure 6.3b Existing-Conditions 100-Year Event Hydrographs along Lower Elder Creek

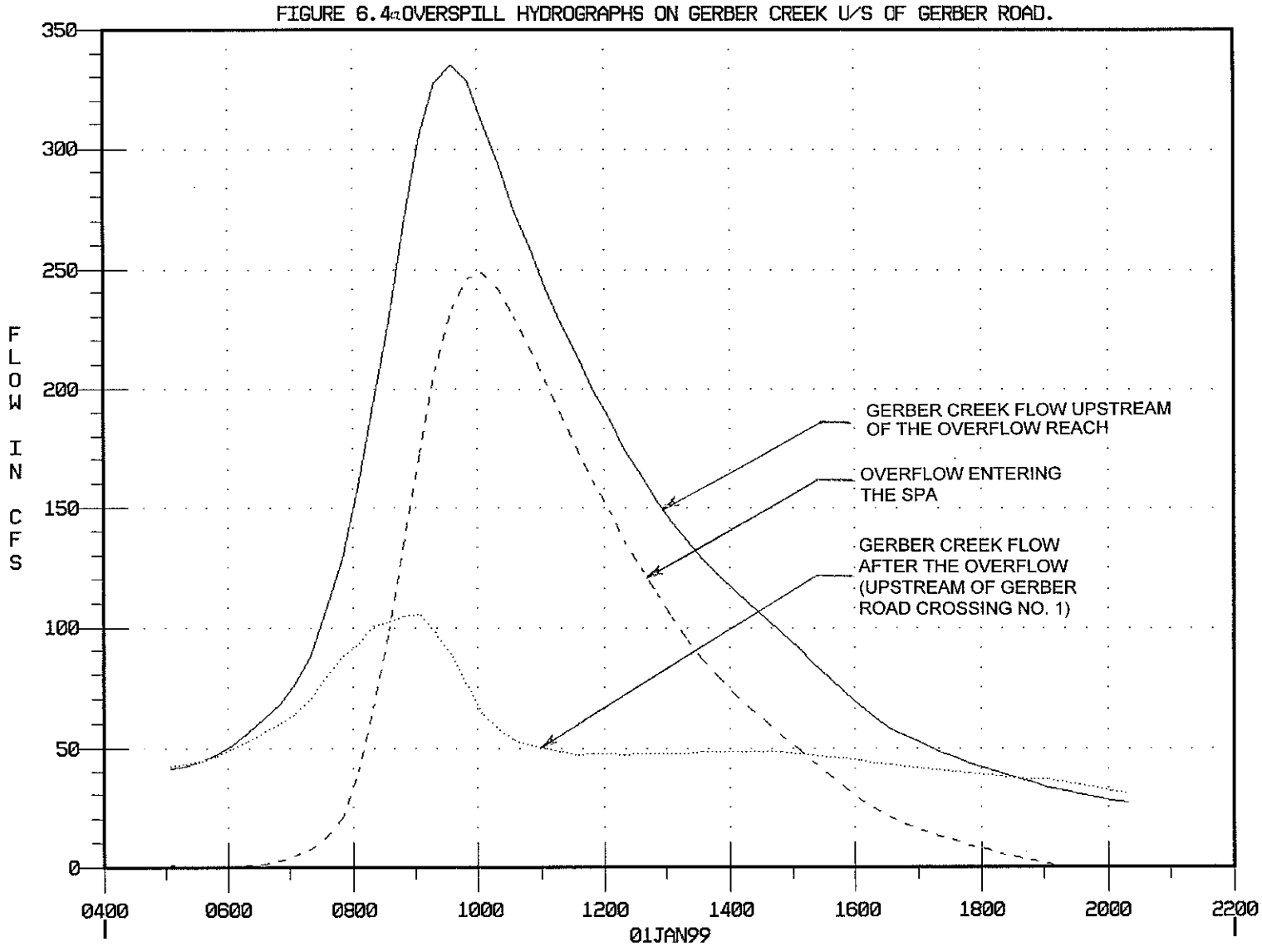
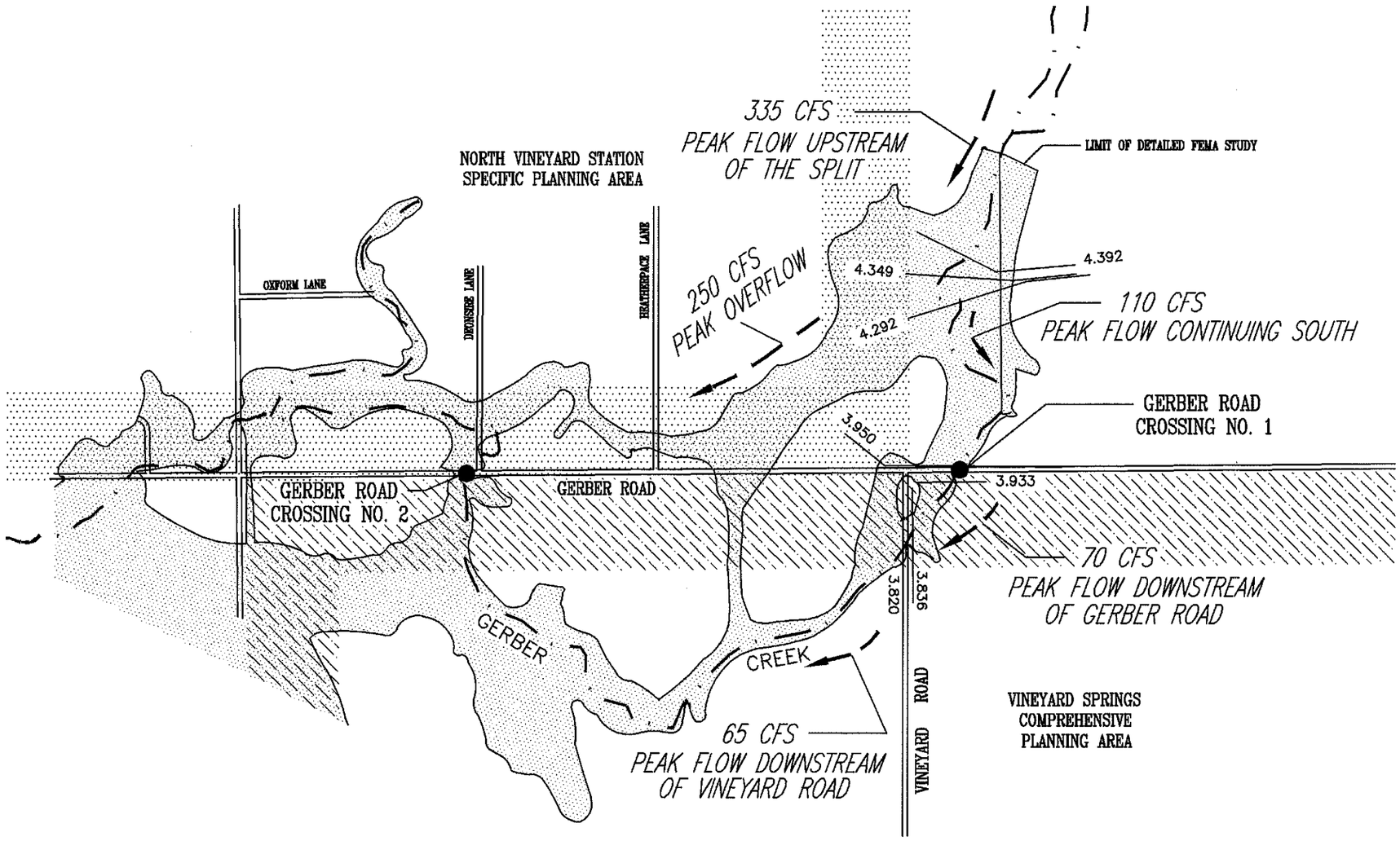


Figure 6.4a Overspill Hydrographs on Gerber Creek Upstream of Gerber Road.



LEGEND

- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- 100-YEAR FEMA FLOODPLAIN
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- CREEK (OPEN CHANNEL)
- 3.820 — UNET MODEL CROSS-SECTION ID NUMBER
- FLOW DIRECTION

NOTE : EXISTING CONDITIONS AND 100-YEAR FLOOD FLOWS

S:\PROJECTS\ELDER\ACAD\FIG3_1t

County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Gerber Creek
Overflow map

Figure 6.4b

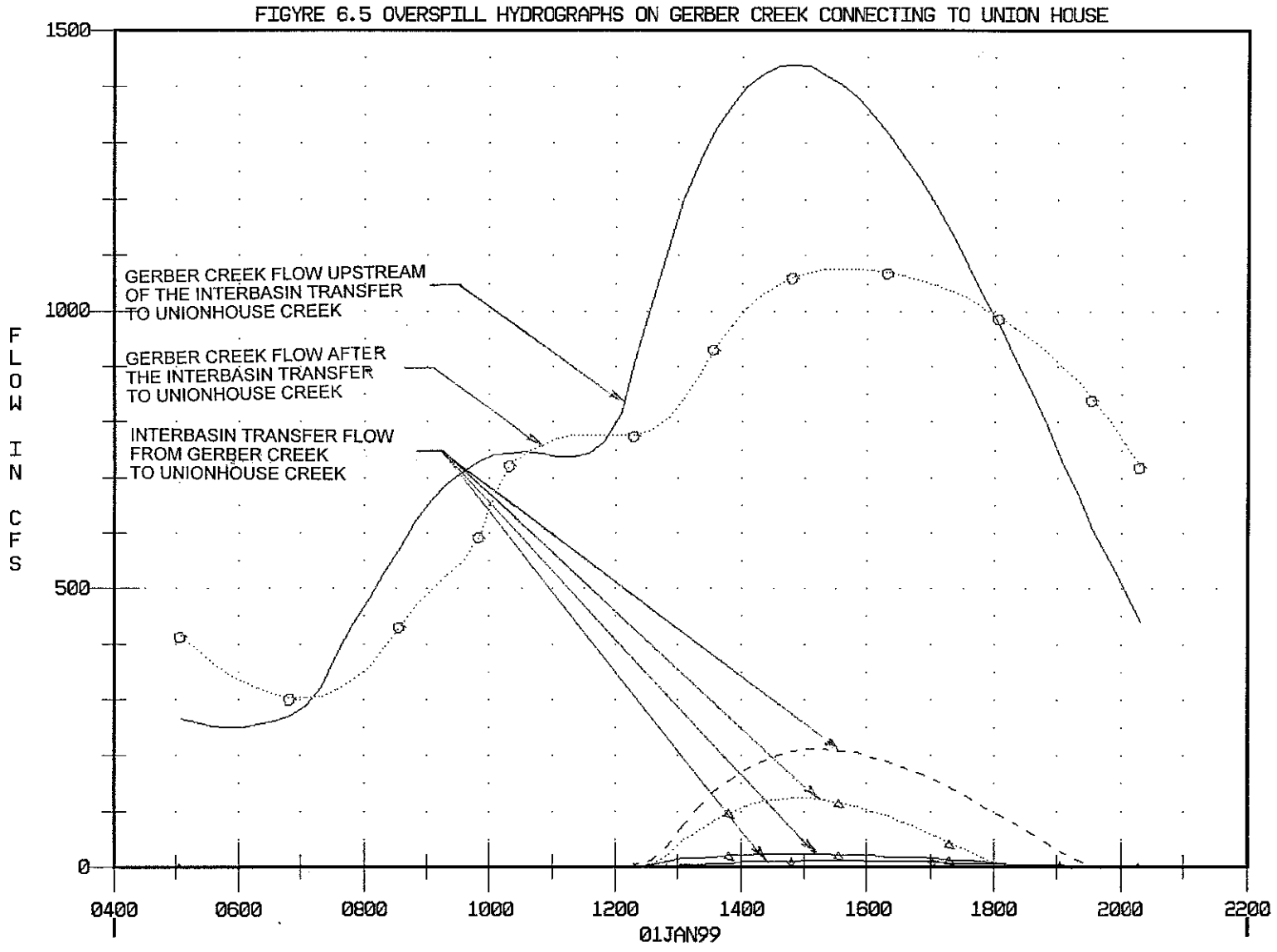


Figure 6.5 Interbasin Transfer Hydrographs on Gerber Creek connecting to Unionhouse Creek.

Figure 6.6 Maximum Water Surface Profile Plot for Upper Elder Creek.

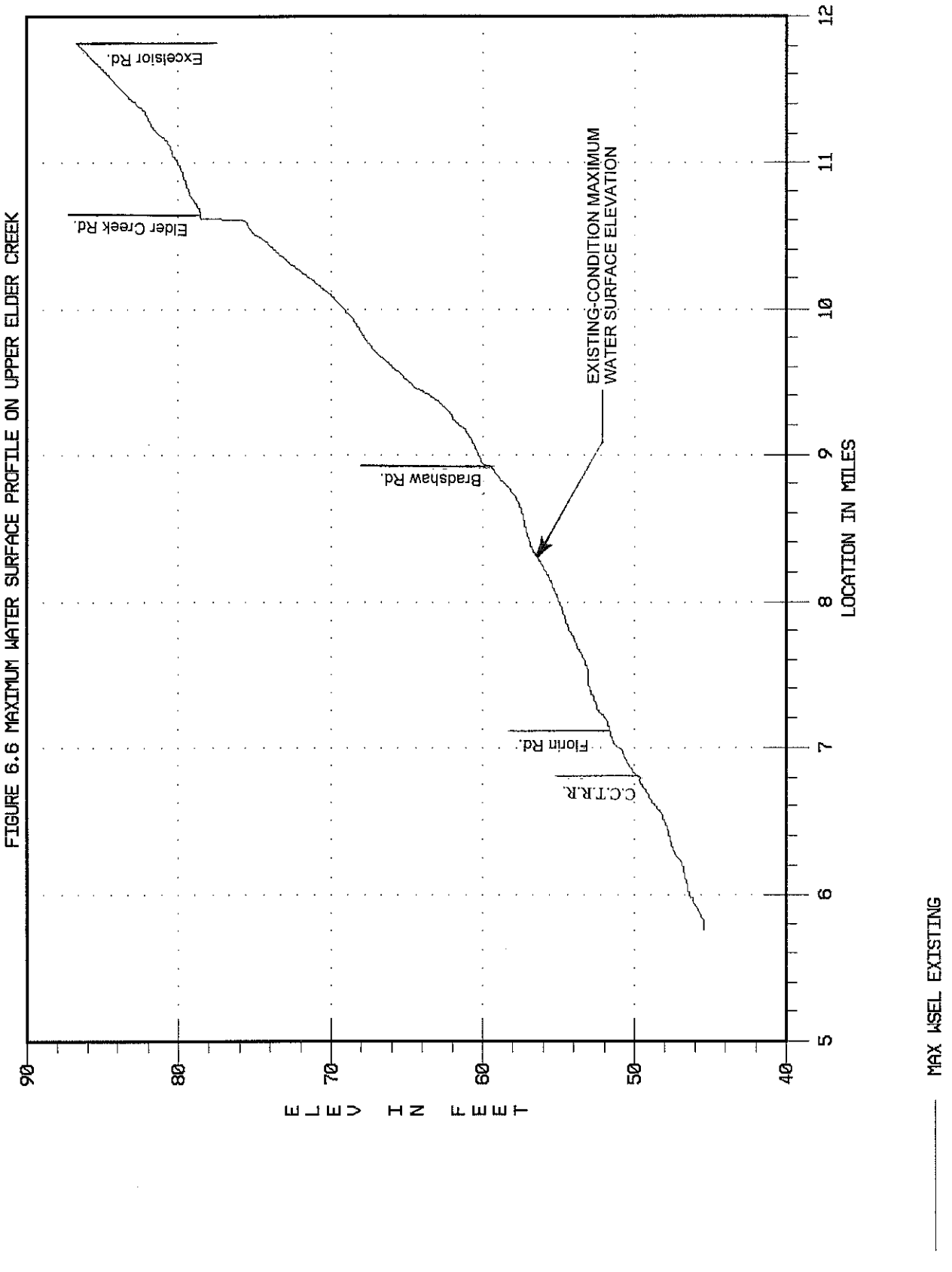
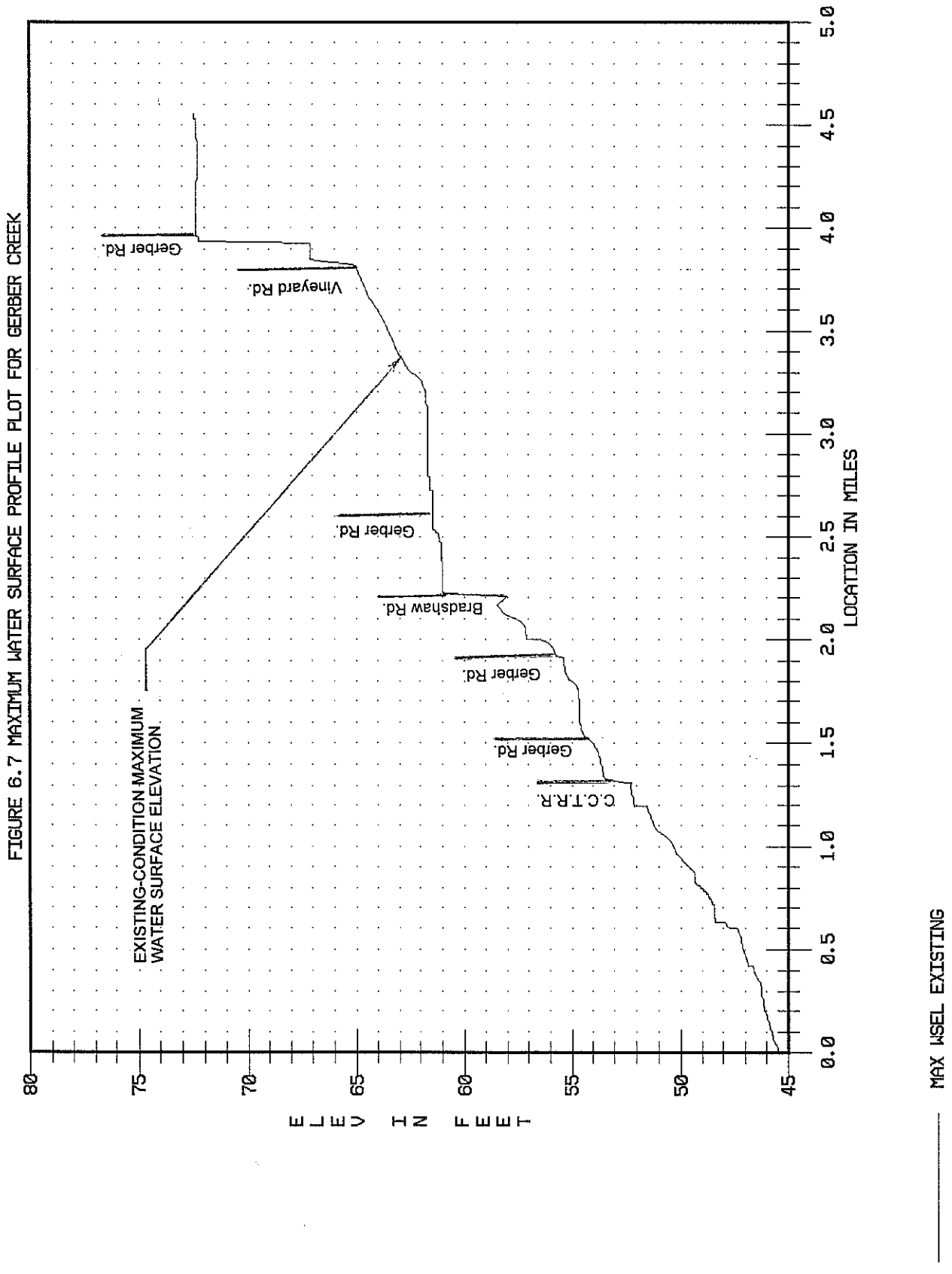


Figure 6.7 Maximum Water Surface Profile Plot for Gerber Creek.



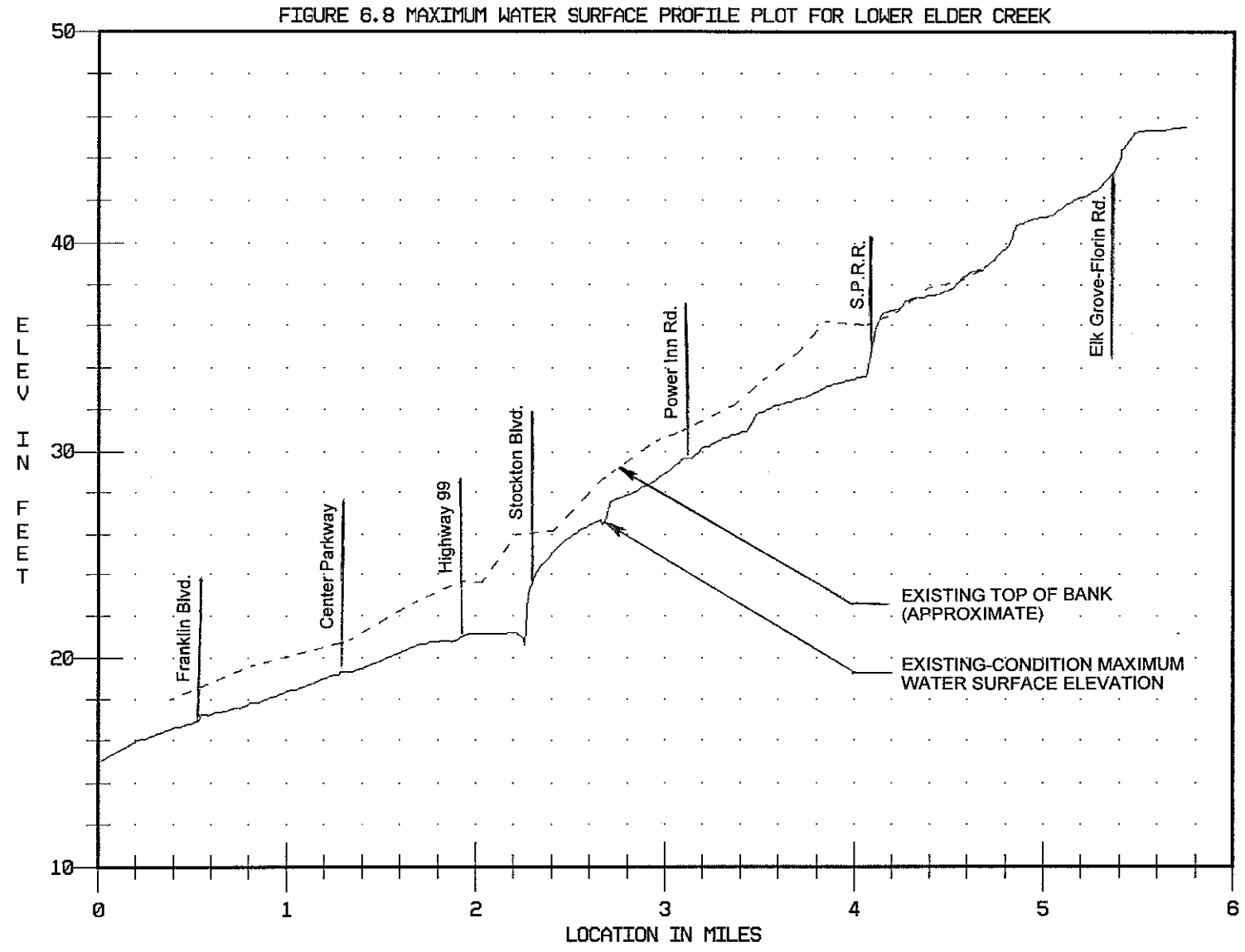


Figure 6.8 Maximum Water Surface Profile Plot for Lower Elder Creek.

Chapter 7

Analysis of Alternatives

Background

One of the goals of the Elder and Gerber Creek Drainage Master Plan (DMP) is to safeguard downstream areas by ensuring that when development within the watershed is complete, the following downstream hydrologic objectives are satisfied:

1. There is no increase from the existing-condition 100-year peak discharge of 1,988 cfs on Elder Creek at the City-County boundary for ultimate land use conditions with the preferred flood control alternative.

2. The maximum water surface in Lower Elder Creek remains below minimum bank elevation for the 100-year event with ultimate land use conditions and the preferred flood control alternative.

Although it is not necessary to formulate these hydrologic criteria prior to developing conceptual flood control alternatives, they are necessary in order to evaluate whether a given alternative meets the goals of the DMP. Figure 7.1 shows the steps that are generally taken in order to develop a DMP. There are a number of important factors that must be considered in a master plan in addition to flood hydrology. This technical appendix, however, focuses on alternatives which best meet the two objectives as defined above.

Planning for development within the North Vineyard Station Specific Planning Area (NVSSP), located at the confluence of the Elder and Gerber Creeks, is occurring during the preparation of this DMP. This technical appendix evaluates the design of drainage facilities within the NVSSP to ensure that they satisfy the objectives of the DMP. This is accomplished by analyzing the NVSSP as part of the ultimate-conditions with preferred alternative (Chapter 8), and in an stand alone context where upstream areas are undeveloped and where the potential exists for floodwaters from Laguna Creek to spill into Gerber Creek (Chapter 9).

Concept Alternatives

Three concept alternatives were considered in order to meet the objectives of the DMP:

1. A series of off-channel *linear* (long and narrow) detention basins located within the open space corridor adjacent to the stream.
2. A number of small off-channel detention basins located throughout the watershed.
3. Two or three larger off-channel detention basins that serve as regional facilities.

An off-channel flood control detention basin is located adjacent to the channel and remains empty until the higher stages of the flood cause water to enter it via a side-channel weir. The effect is to lower the peak flow and flatten the hydrograph shape.

Evaluation

These concepts were evaluated through the application of UNET for the Water Resources Division 100-year hypothetical flood event. Two primary conclusions were drawn regarding the hydrologic effectiveness of the alternative plans.

1. The smaller the volume of the detention basin, the more its effectiveness becomes a function of the temporal pattern for the hypothetical design storm. Weir elevations for the small basins had to be set only a few tenths of a foot below peak flood stage, otherwise they would fill up and have no influence on reducing the peak flow. The smaller basins are more effective in the upper parts of the watershed where hydrograph volumes are smaller.

2. Linear detention basins have small storage volumes by necessity. They must be limited in length to avoid leveeing as the stream gradient causes the floodplain water surface elevation to fall below that for a level pool connected to some point upstream. Although they may be suitable for the upper watershed they will not reliably mitigate peak flows for the reasons discussed in Conclusion 1.

An example that illustrates the above points is presented here. A linear detention basin L-24A (with an approximate storage volume of 6 acre-feet) was proposed to be located adjacent to Gerber Creek approximately 0.4 miles upstream of the confluence with Elder Creek. The stage hydrographs for the 100-year design event at points upstream from,

downstream from, and inside of the proposed basin are shown in Figure 7.3. Note that the basin starts filling at 0800 hours during the design event and is completely full by 1000 hours, prior to the occurrence of the peak stage. The weir elevation is at 41.5 feet.

Attempts to adjust the weir elevation did not improve the basin performance because, as shown in Figure 7.4, the peak flow passes through Gerber Creek before the stage gets high enough to fill the detention basin. A comparison plot of the flow and stage hydrographs (Figure 7.5) indicates that due to backwater effects from Elder Creek, the peak stage in Gerber Creek occurs approximately 3 hours after the peak flow passes through. Small basins which are intended to *cut off* the peak of the discharge hydrograph may not be very effective in this situation because their design would be based not only a hypothetical storm pattern but on a particular coincidence of flood events in the two streams.

Selection

Initial investigations conducted by WRD into the preferred flood control alternative for ultimate land use conditions were based on a general guideline that the total volume of detention for all detention basins upstream of the confluence of Elder and Gerber Creeks should be approximately 10% of the watershed area in acres multiplied by 1 foot. Based on this guideline, initial concept alternatives included two relatively large detention basins on Lower Elder Creek known as E-5 and E-20 and a series of medium size basins located both within the NVSSP and the upper parts of the watershed. To achieve compliance with the Clean Water Act, new construction in the upper parts of the watershed typically requires one water quality basin for each square mile of contributing drainage area.

Based on this layout as a starting point, flood routing analyses were conducted with UNET. The initial results indicated that the ultimate-conditions 100-year peak flow on Elder Creek at the City-County boundary was reduced to approximately 1,500 cfs. This flow was approximately 350 cfs lower than the existing-condition. This suggests that the DMP objectives for the Sacramento County 100-year event might be achieved without the implementation of basin E-5. (Since the existing-condition 100-year peak flow at the city boundary is greater than WRD estimated - due to the increased interbasin transfer from Upper Laguna Creek - the required detention is less.) Furthermore, basin E-20 might be slightly reduced in size and still meet the objectives. Alternatively there would appear to be opportunities for eliminating and/or reducing the size of the basins in the upper watersheds.

Further refinement of the initial alternative was conducted, and the following modifications were adopted by WRD:

1. Remove detention basin E-5..

2. Reduce the size of detention basin E-20 by 30%.

Figure 7.6 shows a schematic diagram of the Elder and Gerber Creek flow network for ultimate land use conditions with the preferred flood control alternative. For this case, it is assumed that there is no interbasin transfer from Laguna Creek. The analysis of the preferred alternative is discussed in the next chapter.

Sensitivity Analysis

Sub-Appendix 5 contains the "Staff Recommendation on Detention Basins." This discussion of alternatives includes:

1. The effect of storm centering on flow results at the City boundary.

2. The possibility of further reductions if the NVSSP detention volumes to bring the flow at the City boundary closer to the existing-condition flow.

3. The effect of basin E-20 on the system.

The results of this analysis are:

1. The storm centering originally used is conservative and adequate.

2. Reducing the NVSSP basin volumes to the storm water quality "footprint" is possible. There is very little difference between the reduced and un-reducing model results at the City boundary and downstream.

3. Basin E-20 is needed to mitigate stage increases downstream of the City boundary in the stand alone-condition (regardless of NVSSP volume reductions). In both the ultimate and stand alone-conditions basin E-20 provides system reliability by mitigation variations in flood timing.

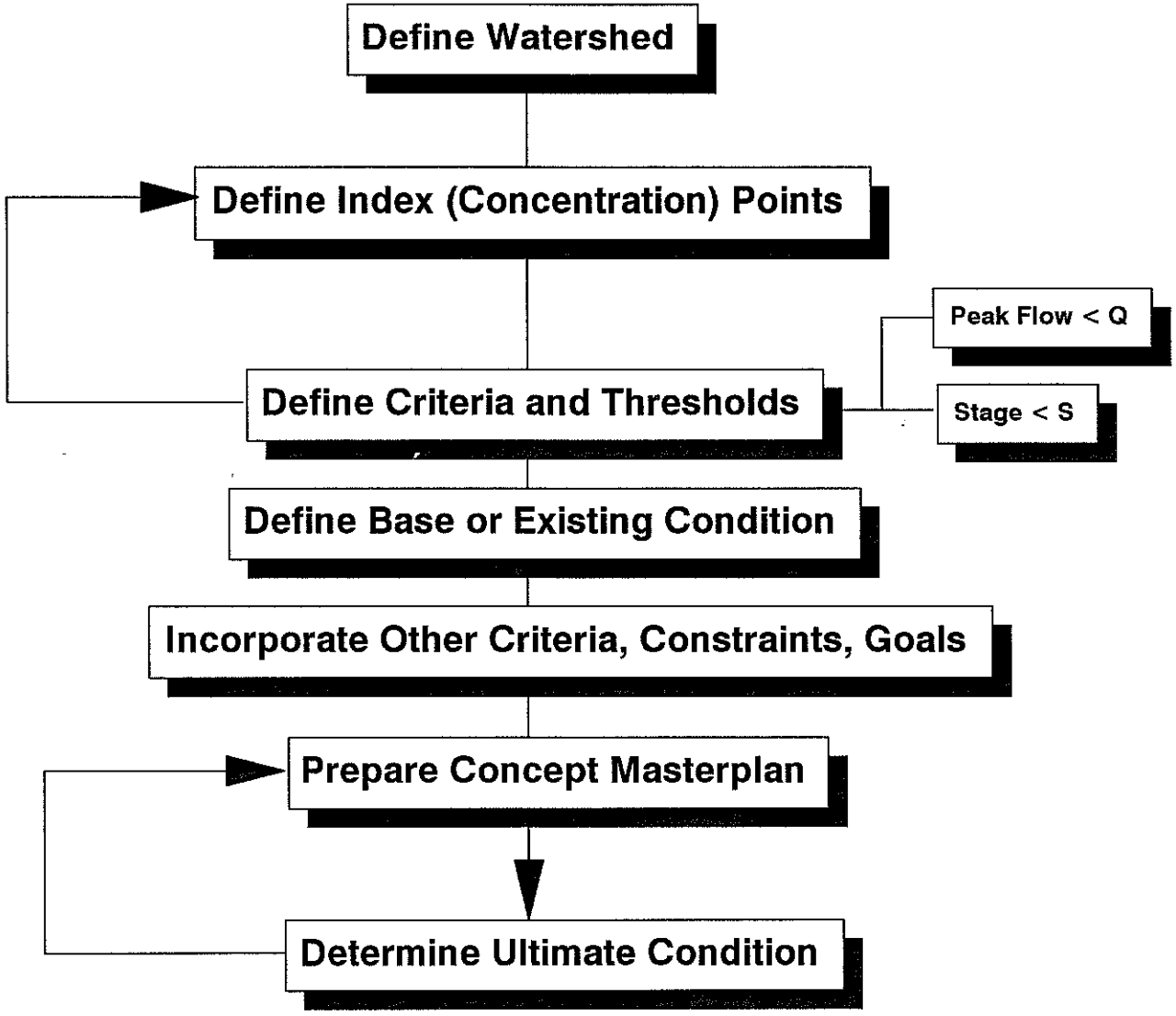


Figure 7.1 General approach to preparing a watershed masterplan.

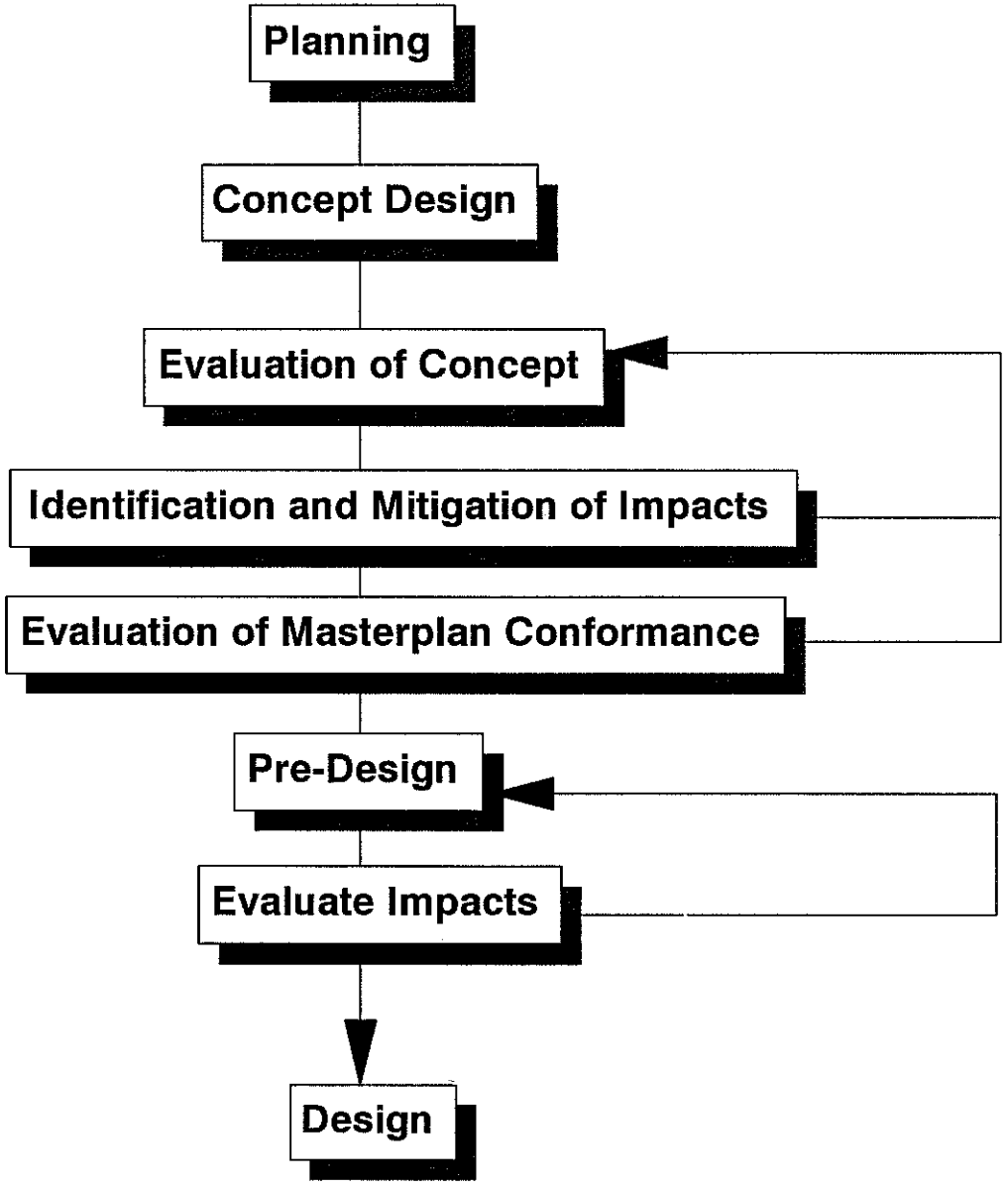


Figure 7.2 Project implementation in a masterplanned watershed.

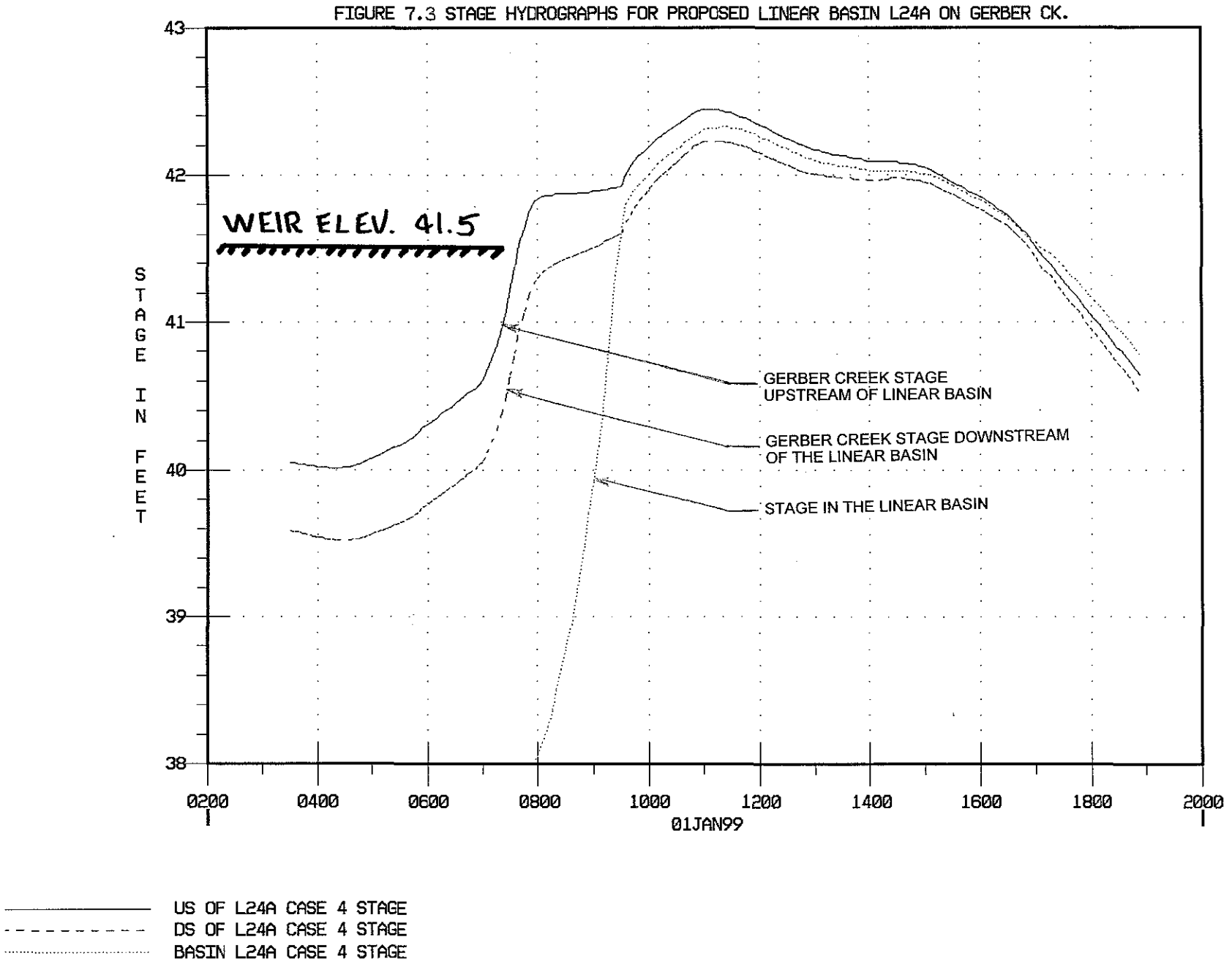


Figure 7.3 Stage Hydrographs for Proposed Linear Basin L24A on Gerber Creek.

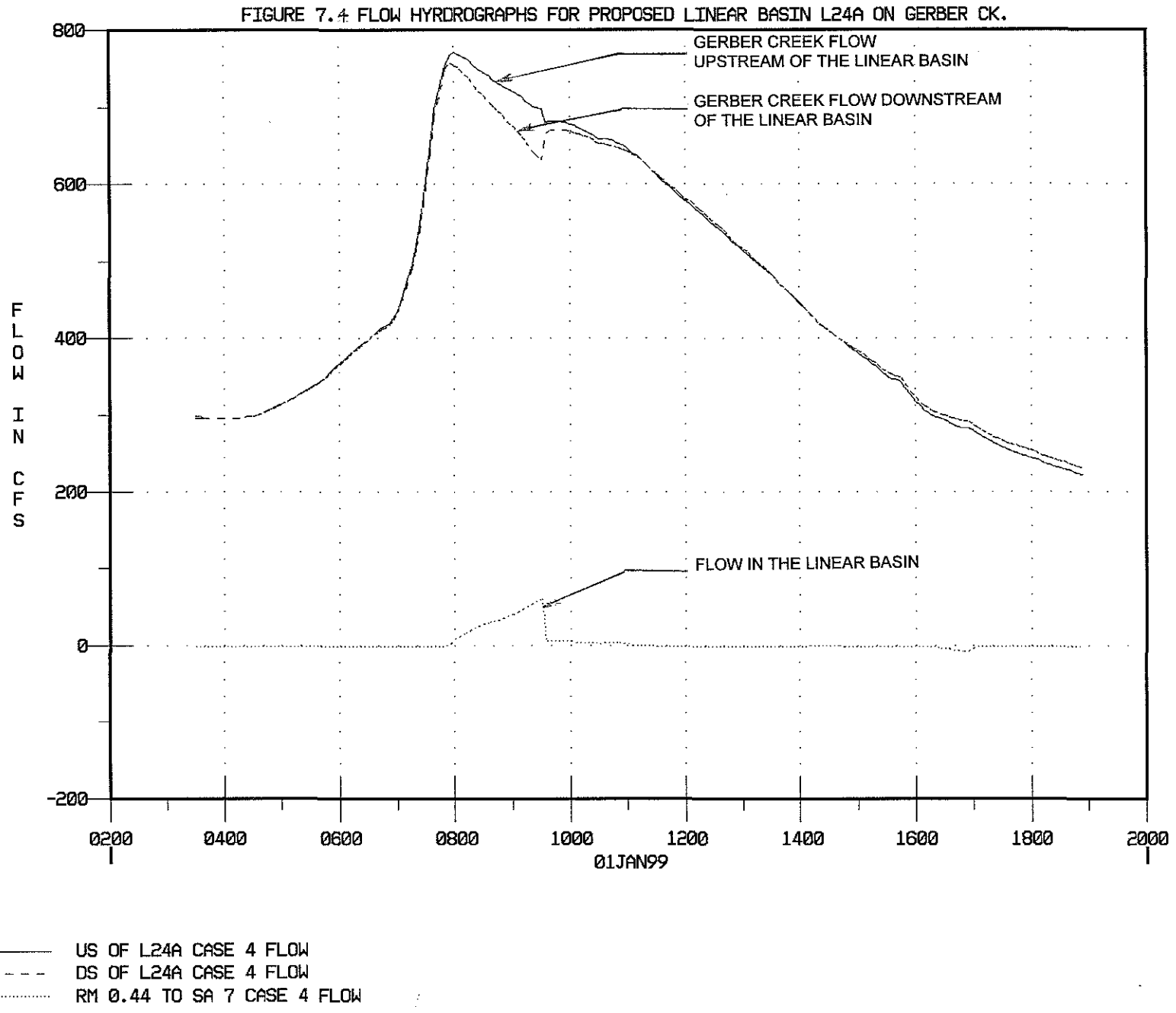


Figure 7.4 Flow Hydrographs for Proposed Linear Basin L24A on Gerber Creek.

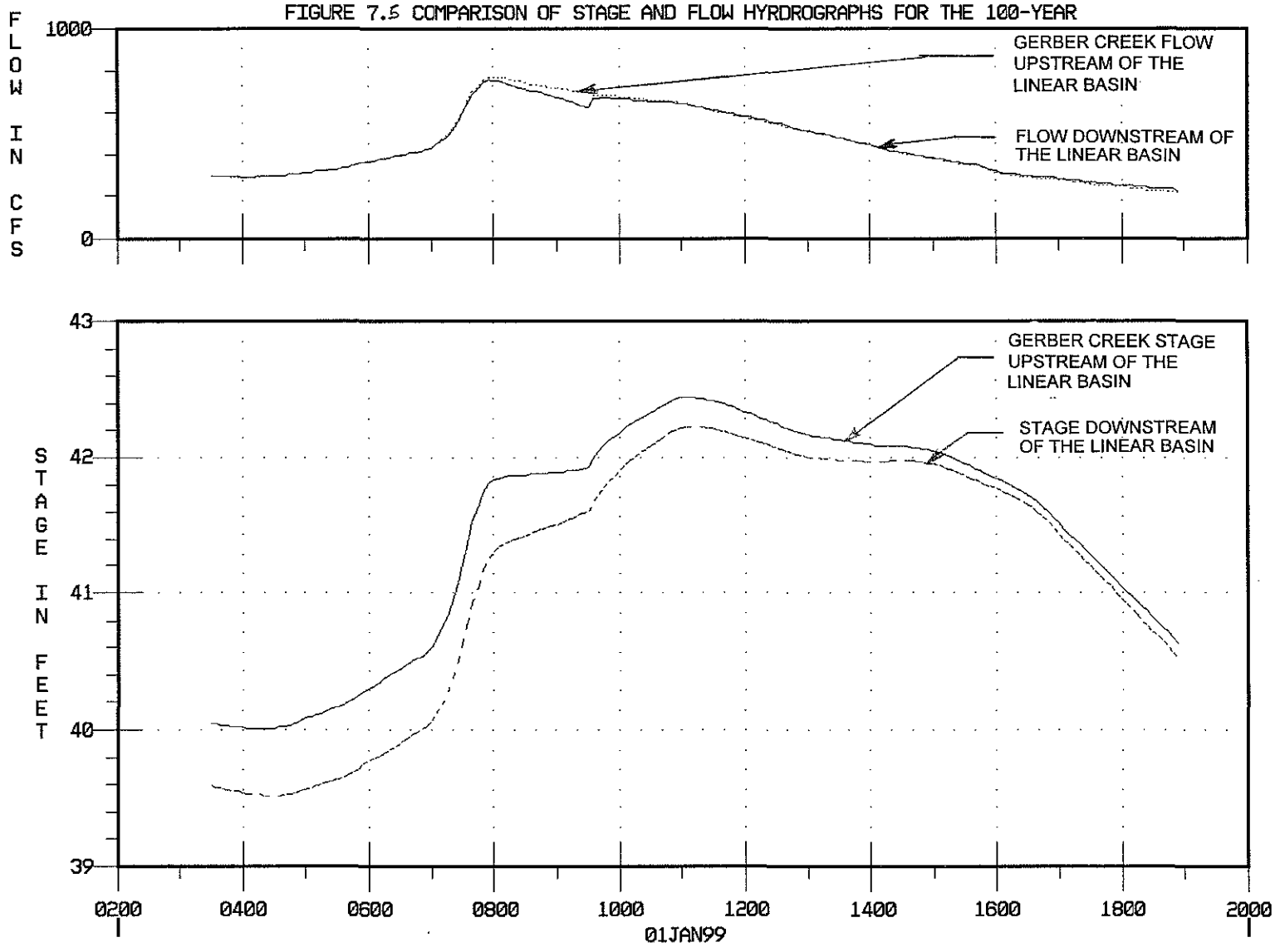


Figure 7.5 Comparison of Flow Hydrographs for the 100-Year Event.

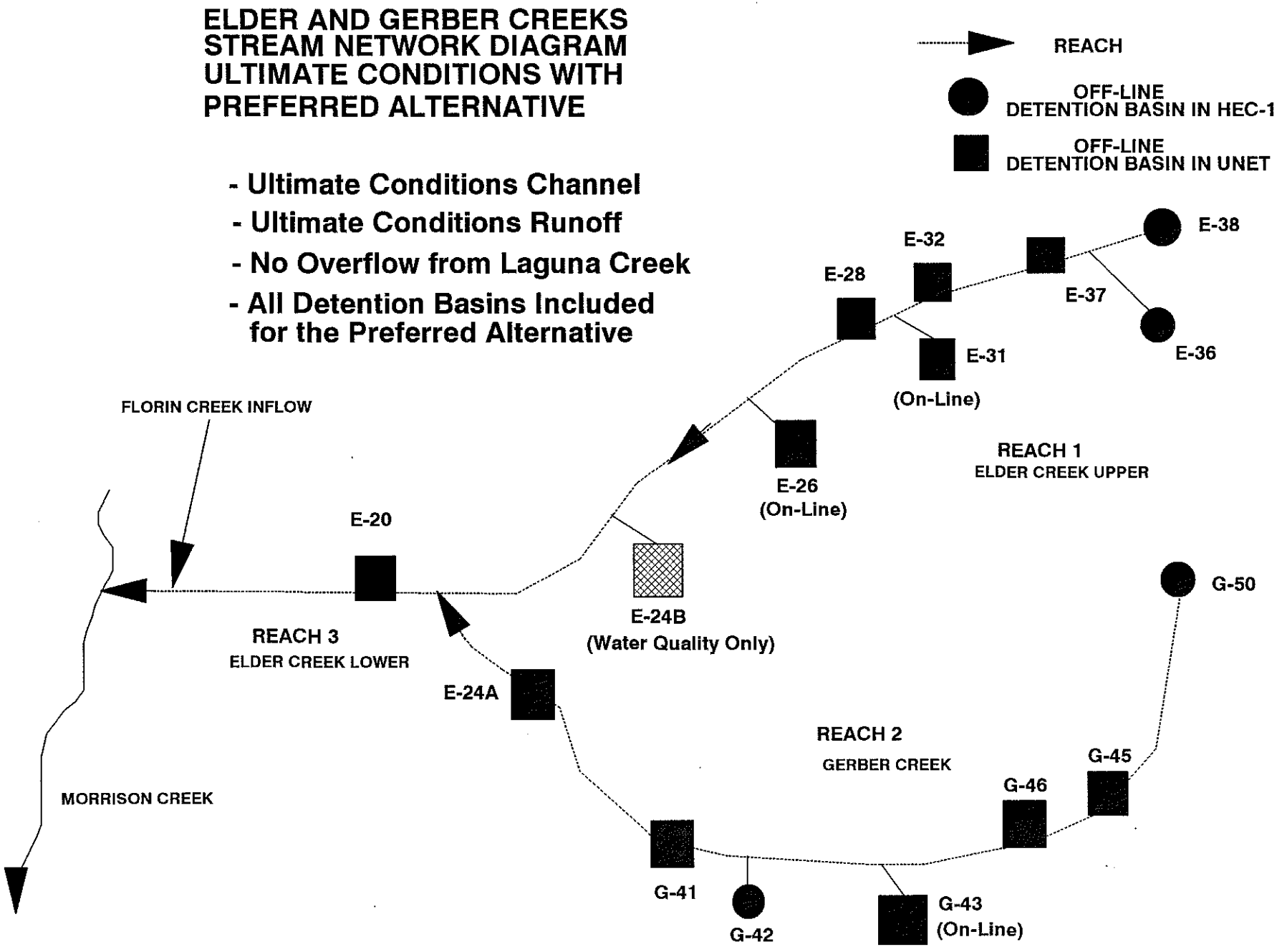


Figure 7.6 Stream network diagram for ultimate conditions with preferred alternative.

Chapter 8

Ultimate-Conditions 100-year Event with Preferred Alternative

Analysis

A UNET geometric file is developed which includes the improved channel both within the NVSSP boundaries and on the upper reaches of Elder and Gerber Creeks. The sub-basin runoff hydrographs for ultimate land use conditions from the Sacramento County 100-year design storm are routed in order to establish the ultimate-conditions with preferred flood control alternative water surface elevations. This analysis generally represents the situation as it will exist after the establishment of proposed channel modification projects and tract subdivisions that are expected to occur in the watershed. The size of the detention basins for this case have been estimated as discussed in the previous chapter. The ultimate-conditions results are analyzed to make sure they meet the objectives of the DMP as discussed in Chapter 7. The files used for this part of the study are listed in Table 8.1. The ultimate-conditions watershed map and cross section map are shown in Figures 8.1 and 8.2 respectively. The Preferred Alternative Channel and detention basins are shown in Figure ES-2.

Table 8.1 Files Used for 100-Year Ultimate-Conditions Hydrology on Elder and Gerber Creeks.

No.	Source	File Name	Description
1	This Study	EGULT2.CS	UNET geometry file for ultimate-conditions with preferred alternative on Elder and Gerber Creeks.
2	This Study	EGULT2.UN	UNET boundary conditions file for the 100-year flood event with ultimate land use on Elder and Gerber Creeks.
3	WRD	ELULB.DAT	HEC-1 file for the ultimate-conditions with preferred alternative 100-year flood event on Elder and Gerber Creeks.
4	This Study	EGULT2.DSS	Results of the 100-year flood event for ultimate land use conditions with the preferred alternative.

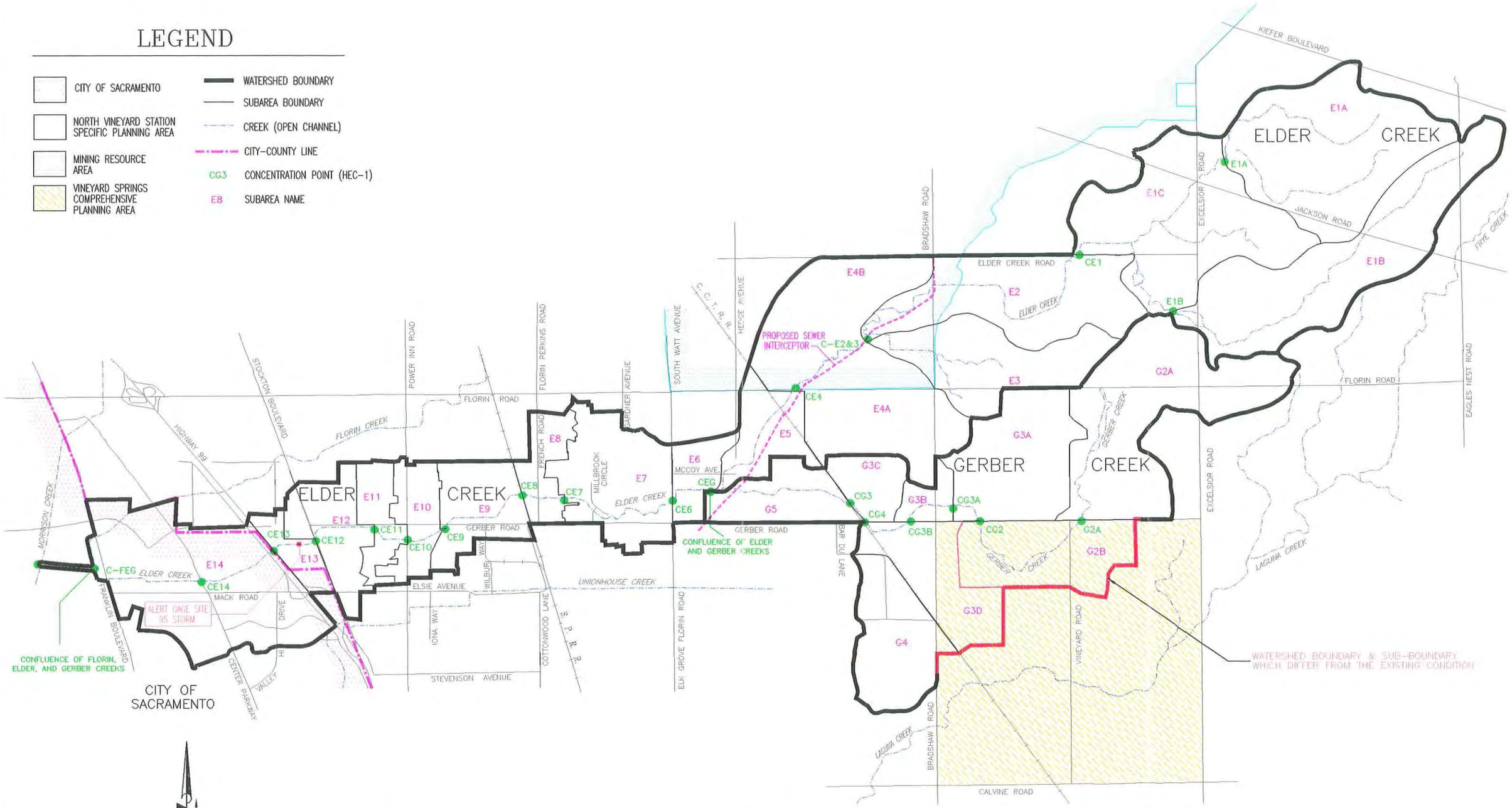
The results of the ultimate-conditions analysis are shown as a series of hydrograph and water surface profile plots at various points along Elder and Gerber Creek. These plots are described below.

Figure 8.3 Ultimate-Conditions 100-Year Event Hydrographs along Upper Elder Creek
Figure 8.4 Ultimate-Conditions 100-Year Event Hydrographs along Gerber Creek
Figure 8.5 Ultimate-Conditions 100-Year Event Hydrographs along Lower Elder Creek
Figure 8.6 Maximum Water Surface Profile Plot for Upper Elder Creek.
Figure 8.7 Maximum Water Surface Profile Plot for Gerber Creek.
Figure 8.8 Maximum Water Surface Profile Plot for Lower Elder Creek.
Figure 8.9 Detention Basin E-37 Hydrographs.
Figure 8.10 Detention Basin E-32 Hydrographs.
Figure 8.11 Detention Basin E-31 Hydrographs.
Figure 8.12 Detention Basin E-28 Hydrographs.
Figure 8.13 Detention Basin E-26 Hydrographs.
Figure 8.14 Detention Basin G-45 Hydrographs.
Figure 8.15 Detention Basin G-46 Hydrographs.
Figure 8.16 Detention Basin G-43 Hydrographs.
Figure 8.17 Detention Basin G-41 Hydrographs.
Figure 8.18 Detention Basin E-24A Hydrographs.
Figure 8.19 Detention Basin E-20 Hydrographs.

Table 8.2 shows the preliminary data for the detention basins used for the preferred plan. All but four of the basins were modeled by UNET. The remaining four basins were modeled by HEC-1 prior to inputting the subbasin hydrographs into the UNET model, because these basins were at the extreme upper reaches of the watershed and/or their exact locations were not determined. Figure 8.5 indicates that the ultimate-conditions with preferred alternative 100-year peak flow on Elder Creek at the City-County boundary is approximately 1,689 cfs. Figure 8.6, the maximum water surface profile plot for Lower Elder Creek, indicates that flows are below the minimum bank elevation. This plan therefore meets the DMP criteria.

LEGEND

- CITY OF SACRAMENTO
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- MINING RESOURCE AREA
- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- WATERSHED BOUNDARY
- SUBAREA BOUNDARY
- CREEK (OPEN CHANNEL)
- CITY-COUNTY LINE
- CG3 CONCENTRATION POINT (HEC-1)
- E8 SUBAREA NAME



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SCALE IN FEET

County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Ultimate Conditions Watershed Map

Figure 8.1

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SOUTH WATT AVENUE

FLORIN ROAD

ELK GROVE FLORIN ROAD

HEDGE AVENUE

ELDER CREEK

C.C.T.R.R.

MCCOY AVE.

GERBER CREEK

BRADSHAW ROAD

GERBER ROAD

BAR DU LANE

NOTE :
ULTIMATE CROSS SECTIONS BEYOND THE BOUNDARY OF THIS MAP ARE THE SAME LOCATION AS SHOWN ON THE EXISTING CONDITIONS CROSS SECTION MAPS

0 1000
SCALE

LEGEND

- VINEYARD SPRINGS COMPREHENSIVE PLANNING AREA
- NORTH VINEYARD STATION SPECIFIC PLANNING AREA
- CREEK (OPEN CHANNEL)
- 5.374 —— CROSS-SECTION ID NUMBER

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County of Sacramento
Public Works Agency
Water Resources Division

Elder and Gerber Creeks
Appendix A
UNET Analysis

Ultimate Conditions
Cross Section Map

Figure 8.2

Table 8.2 Preliminary detention basin data for 100-year ultimate-conditions on Elder and Gerber Creeks.

Modeled by UNET

Basin No.	Weir Segment 1 Elev (ft.)	Weir Segment 1 Length (ft.)	Weir Segment 2 Elev. (ft.)	Weir Segment 2 Length (ft.)	Peak Stage (ft.)	Volume at Peak Stage (a.f.)
E-37	69.3	160	-	-	70.2	116
E-32	58.6	100	-	-	59.9	85
E-31	54" R.C.P. (On Line)				52.8	73
E-28	46.0	25	47.0	150	48.1	75
E-26	60" R.C.P. (On Line)				47.8	56
G-45	56.5	25	57.5	100	58.0	44
G-46	56.2	100	-	-	55.9	35
G-43	48" R.C.P. (On Line)				52.9	33
G-41	46.5	50	47.5	150	47.4	25
E-24A	40.5	50	41.5	100	41.8	41
E-20	38.5	50	39.5	150	38.8	73

Modeled by HEC-1

Basin No.	Volume * (a.c.)
E-38	91
E-36	80
G-50	89
G-42	35

* Volume based on 10% of drainage area (i.e., volume E-28 = 0.1(909 acres) = 91 acre feet)

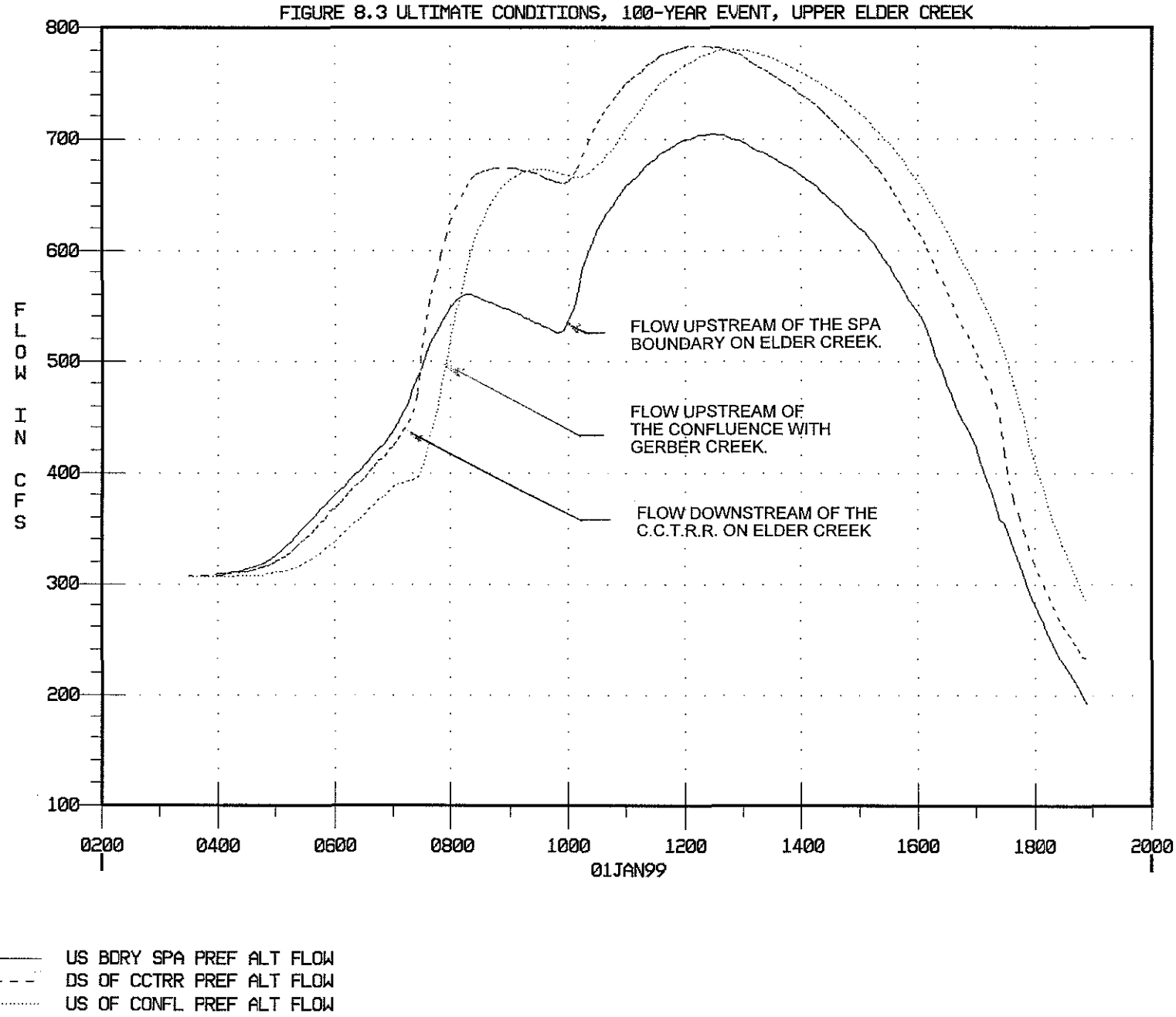


Figure 8.3 Ultimate-Conditions 100-Year Event Hydrographs along Upper Elder Creek.

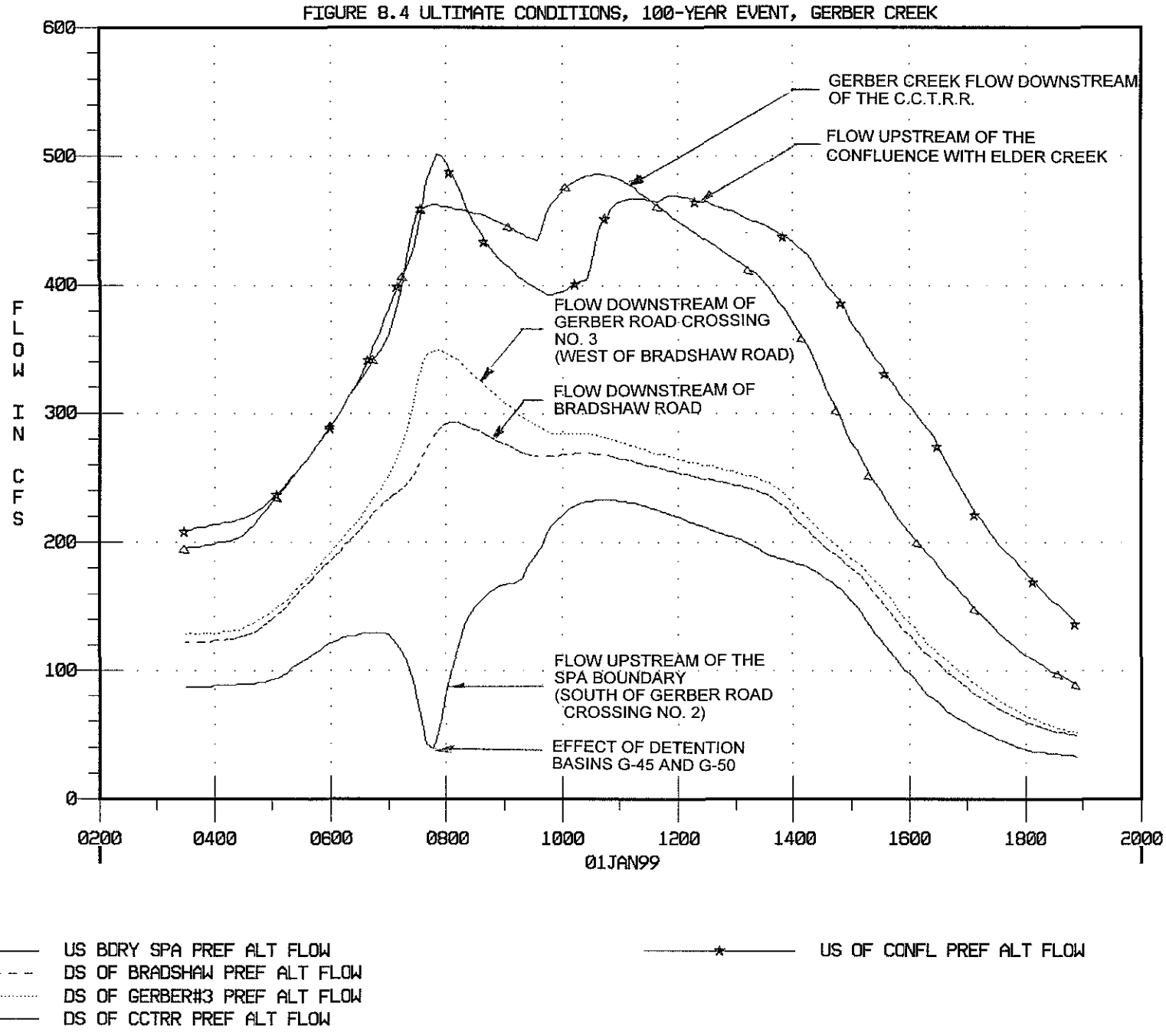


Figure 8.4 Ultimate-Conditions 100-Year Event Hydrographs along Gerber Creek.

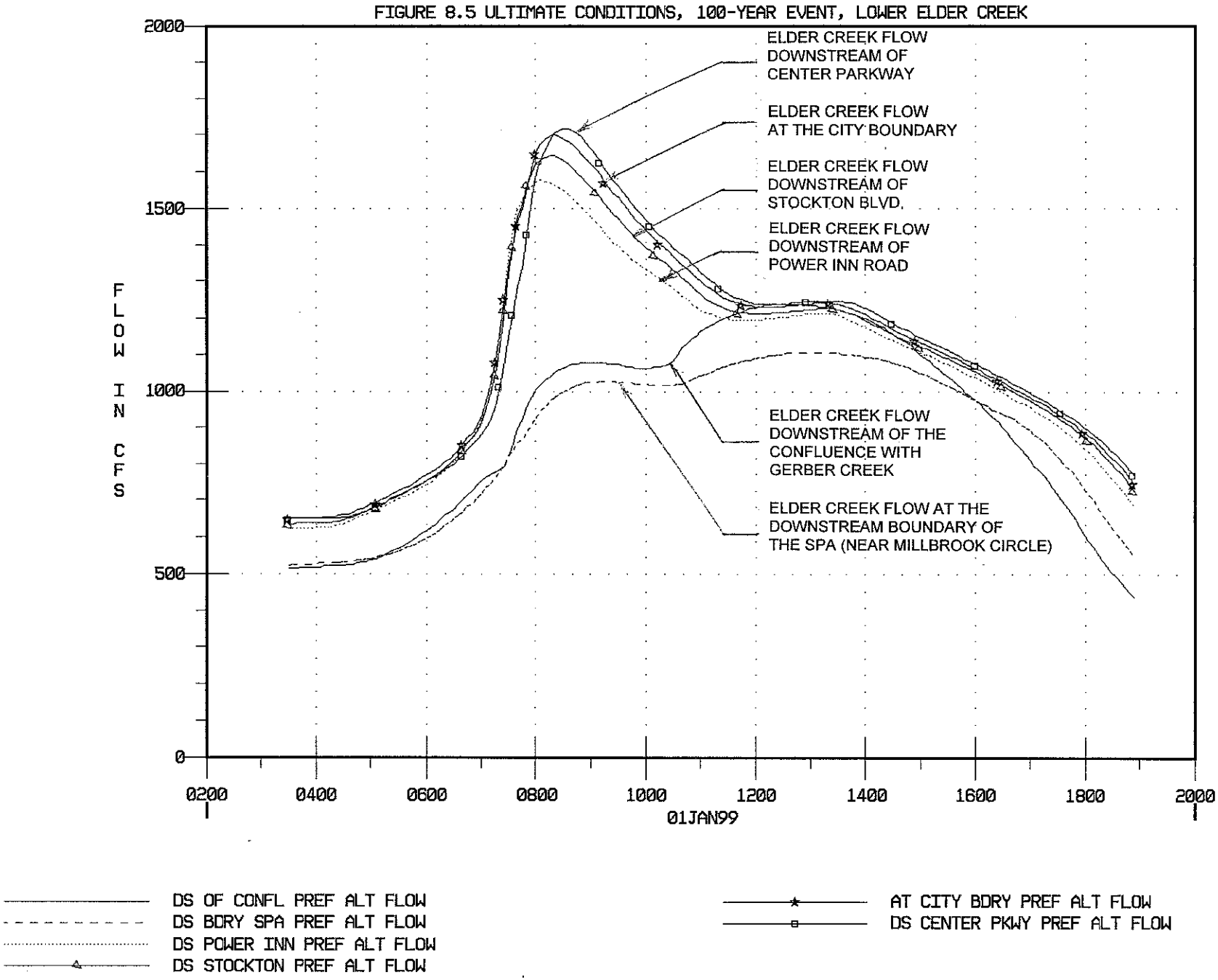


Figure 8.5 Ultimate-Conditions 100-Year Event Hydrographs along Lower Elder Creek.

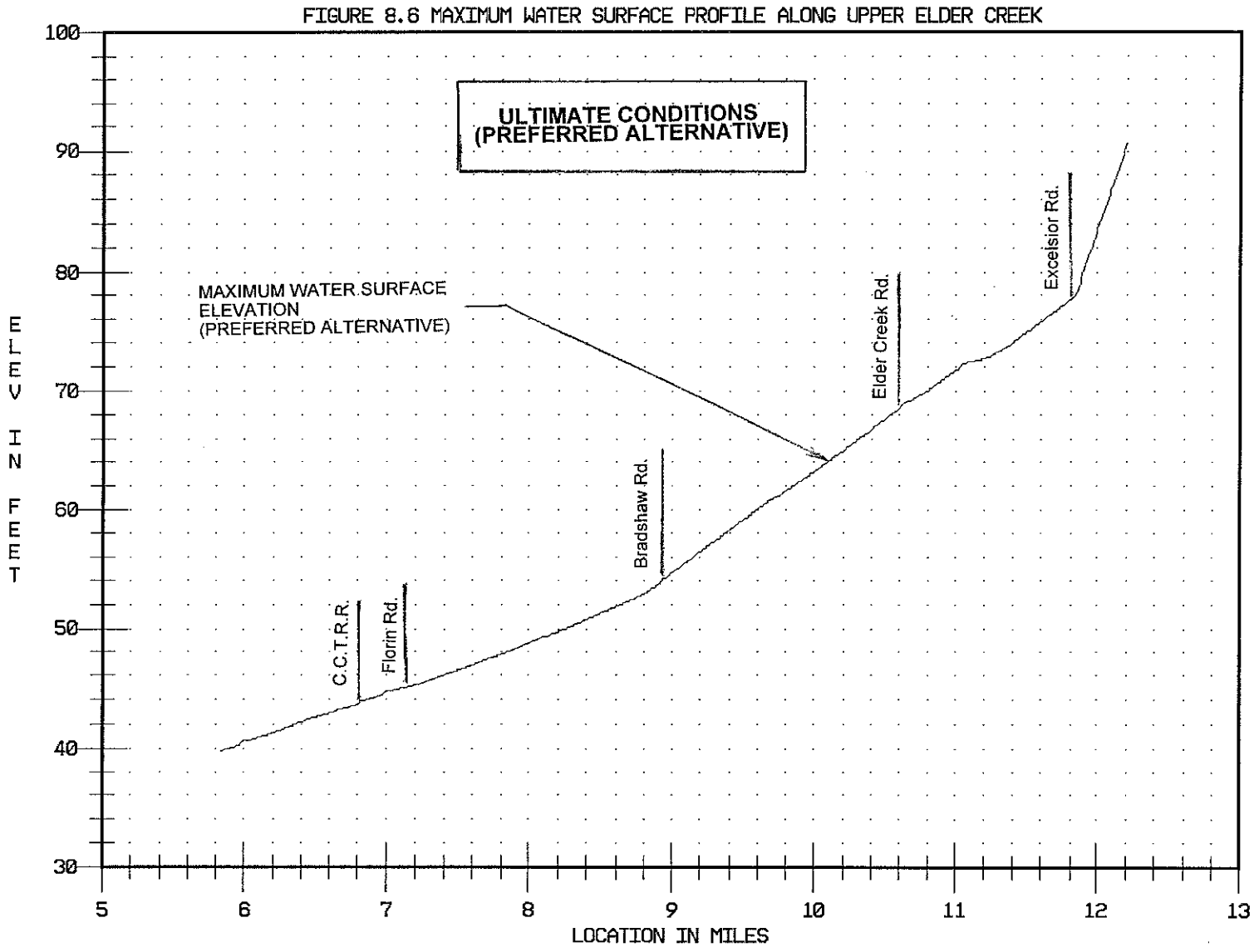


Figure 8.6 Maximum Water Surface Profile Plot for Upper Elder Creek.

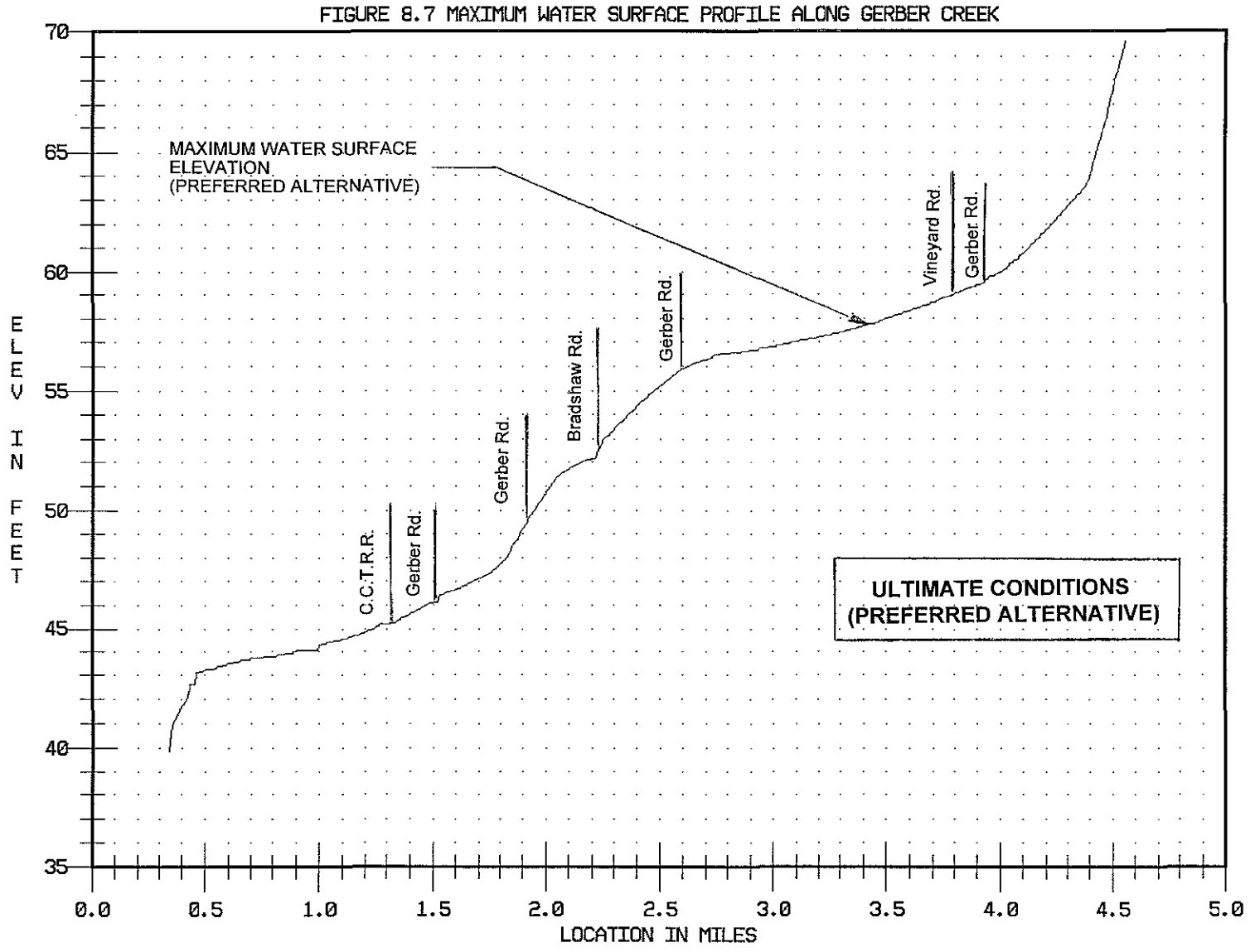
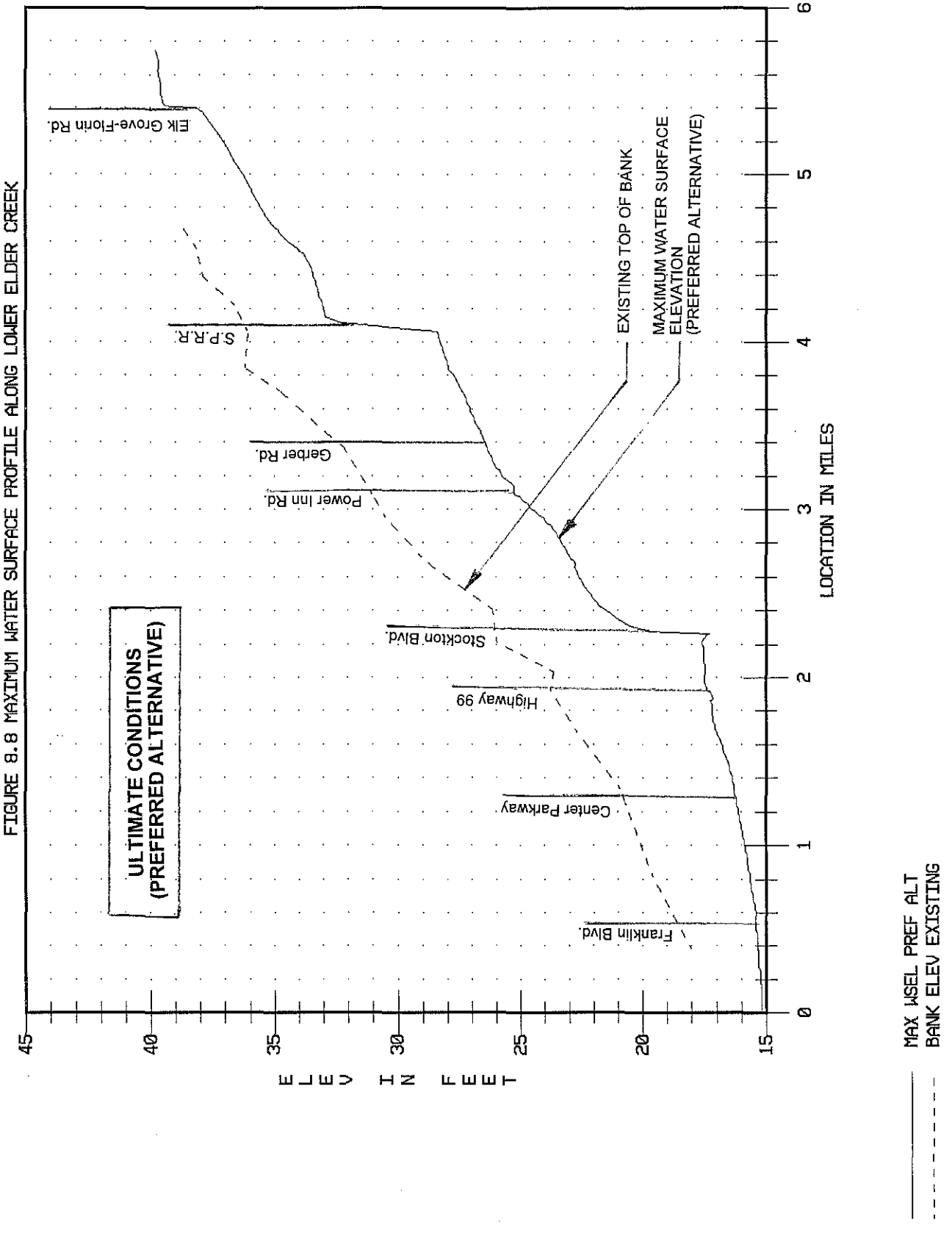


Figure 8.7 Maximum Water Surface Profile Plot for Gerber Creek.

Figure 8.8 Maximum Water Surface Profile Plot for Lower Elder Creek.



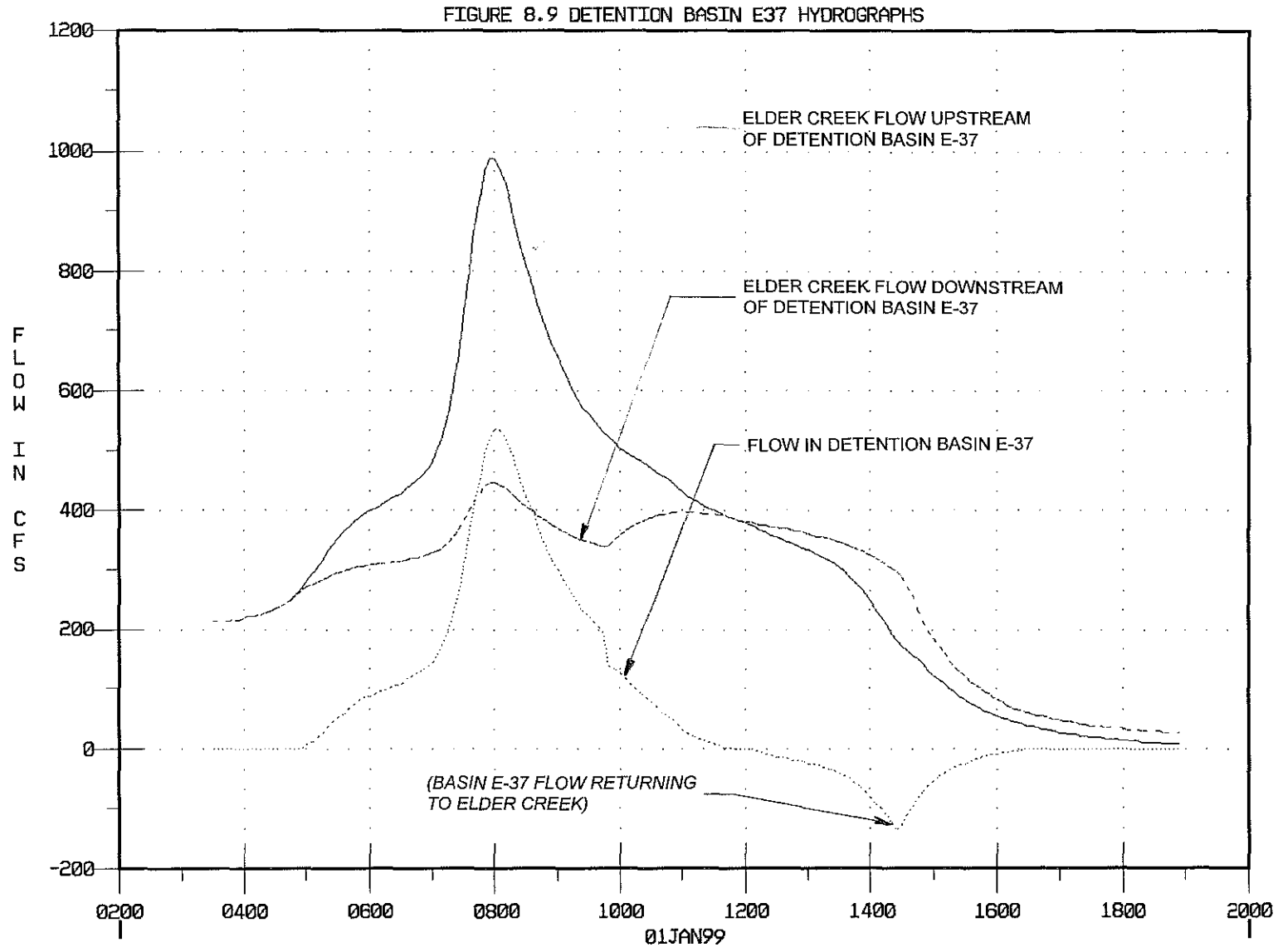


Figure 8.9 Detention Basin E-37 Elder Creek Hydrographs.

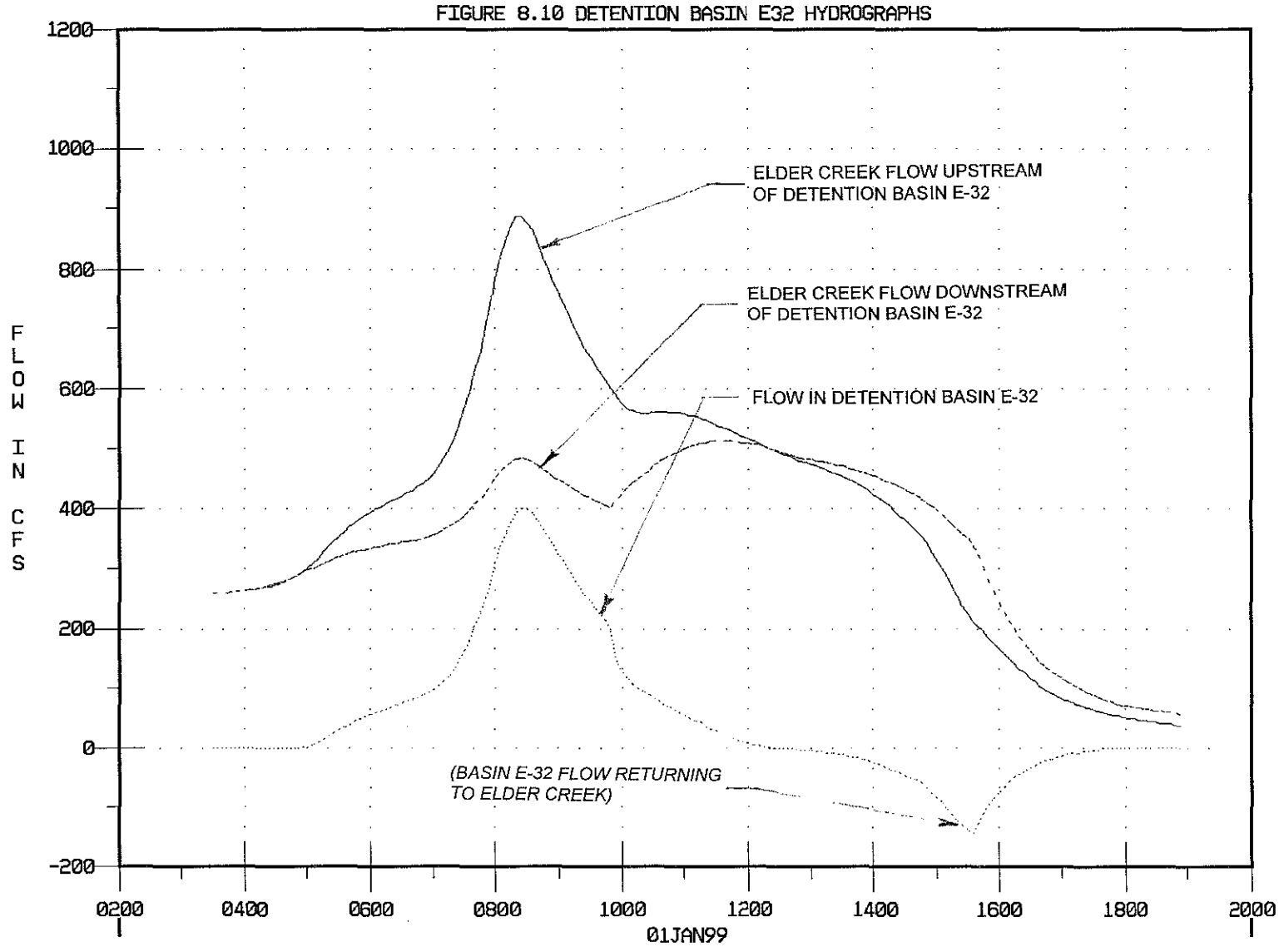


Figure 8.10 Detention Basin E- 32 Elder Creek Hydrographs.

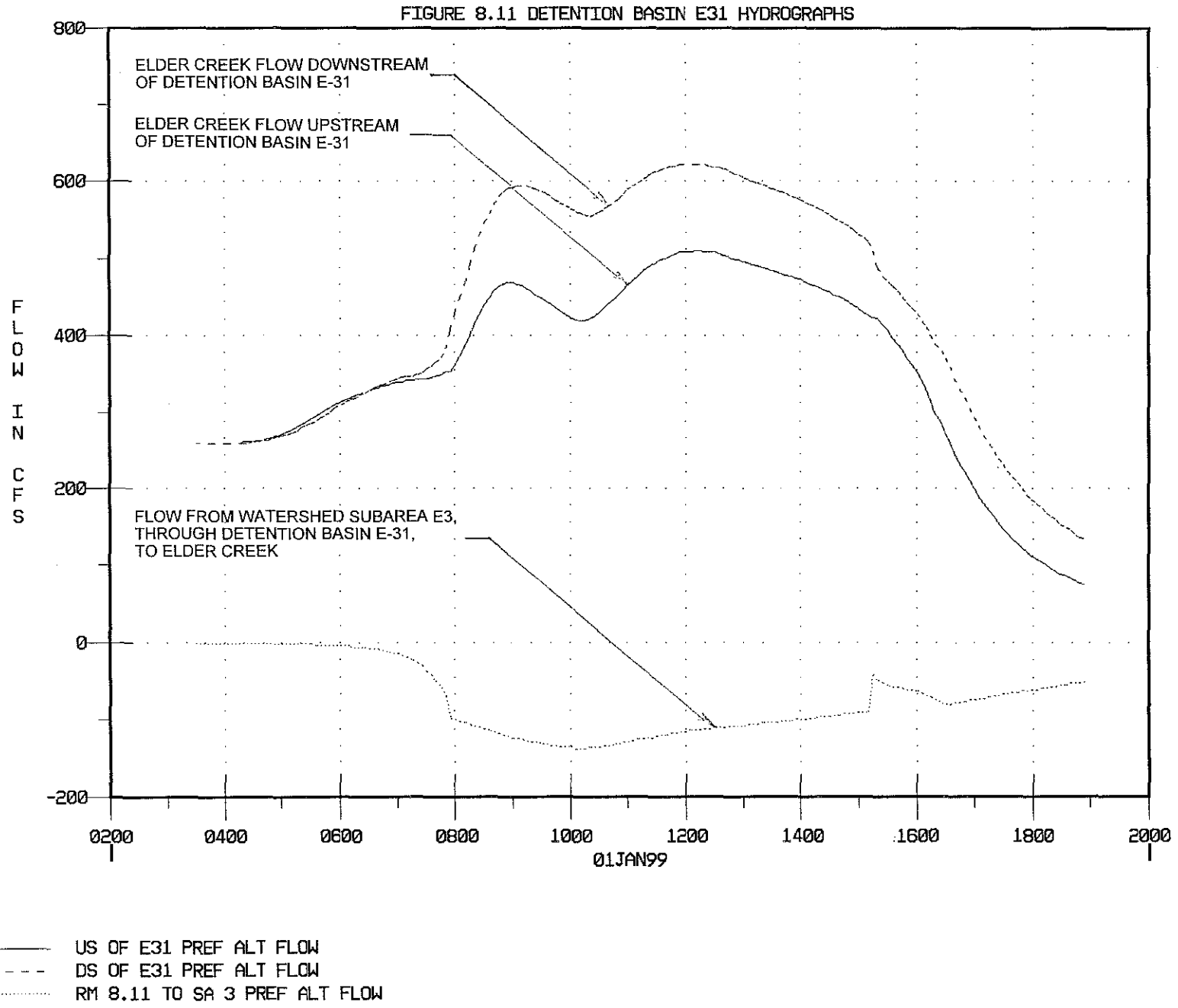


Figure 8.11 Detention Basin E-31 Elder Creek Hydrographs.

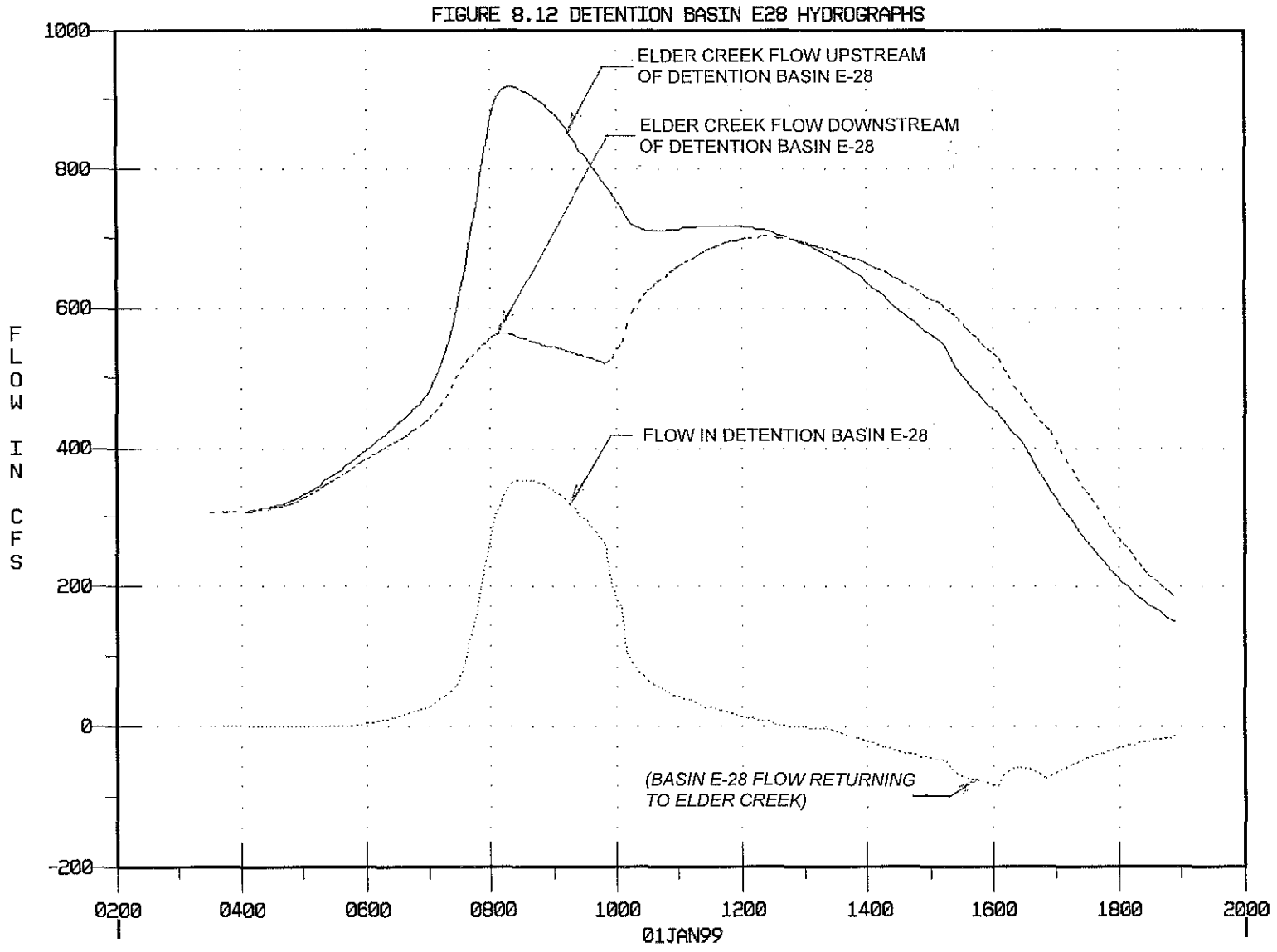


Figure 8.12 Detention Basin E-28 Elder Creek Hydrographs.

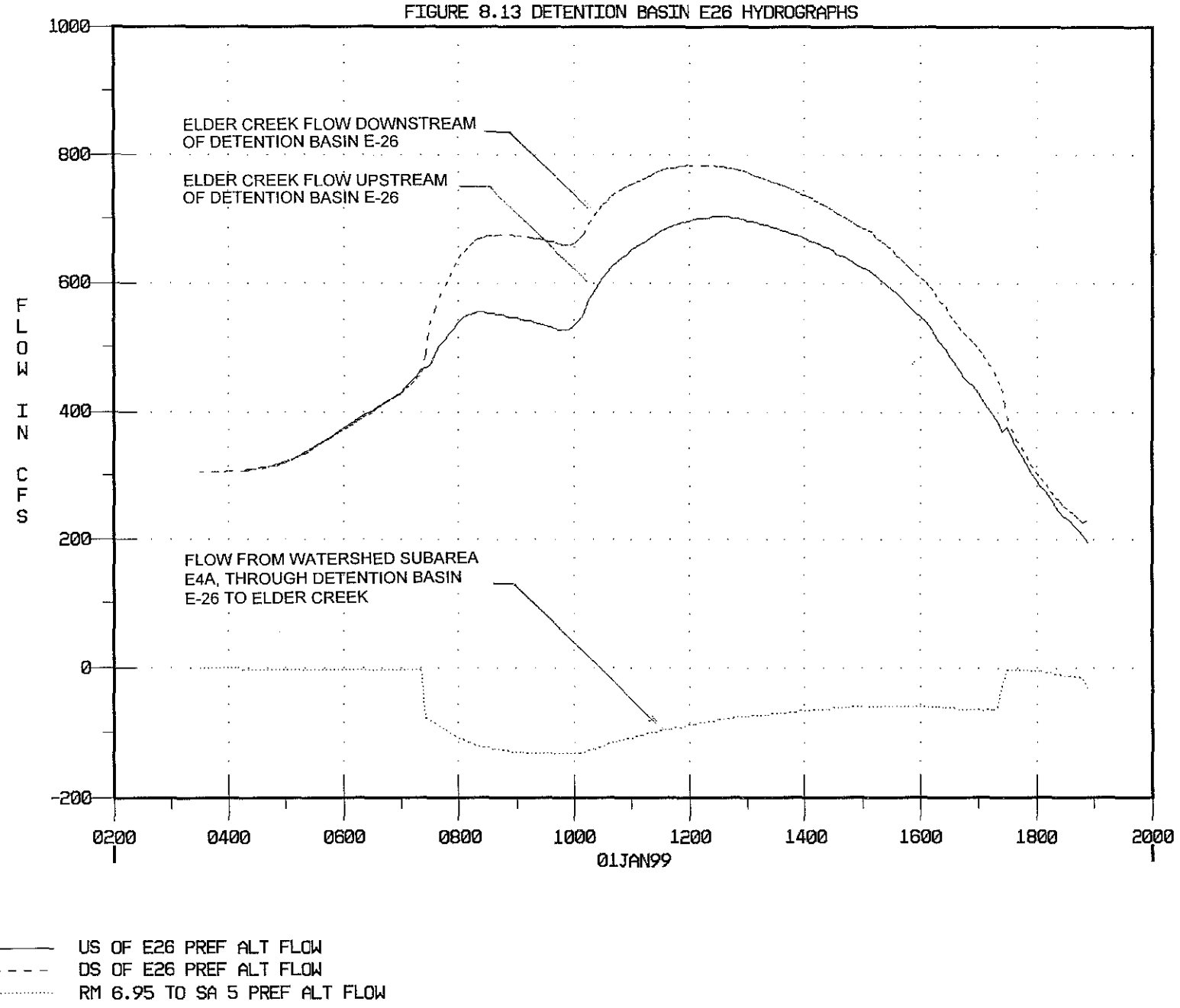


Figure 8.13 Detention Basin E-26 Elder Creek Hydrographs.

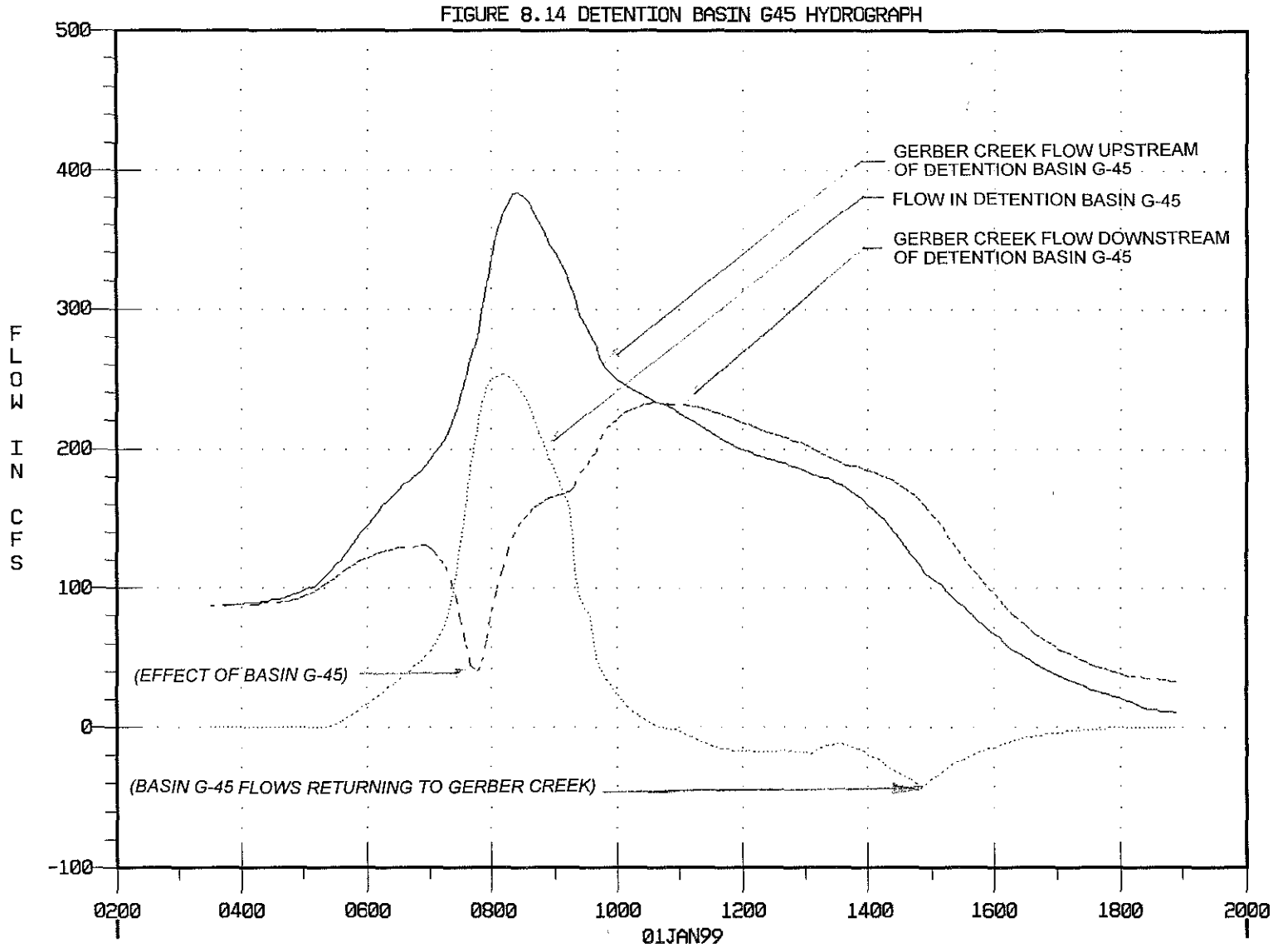


Figure 8.14 Detention Basin G-45 Gerber Creek Hydrographs.

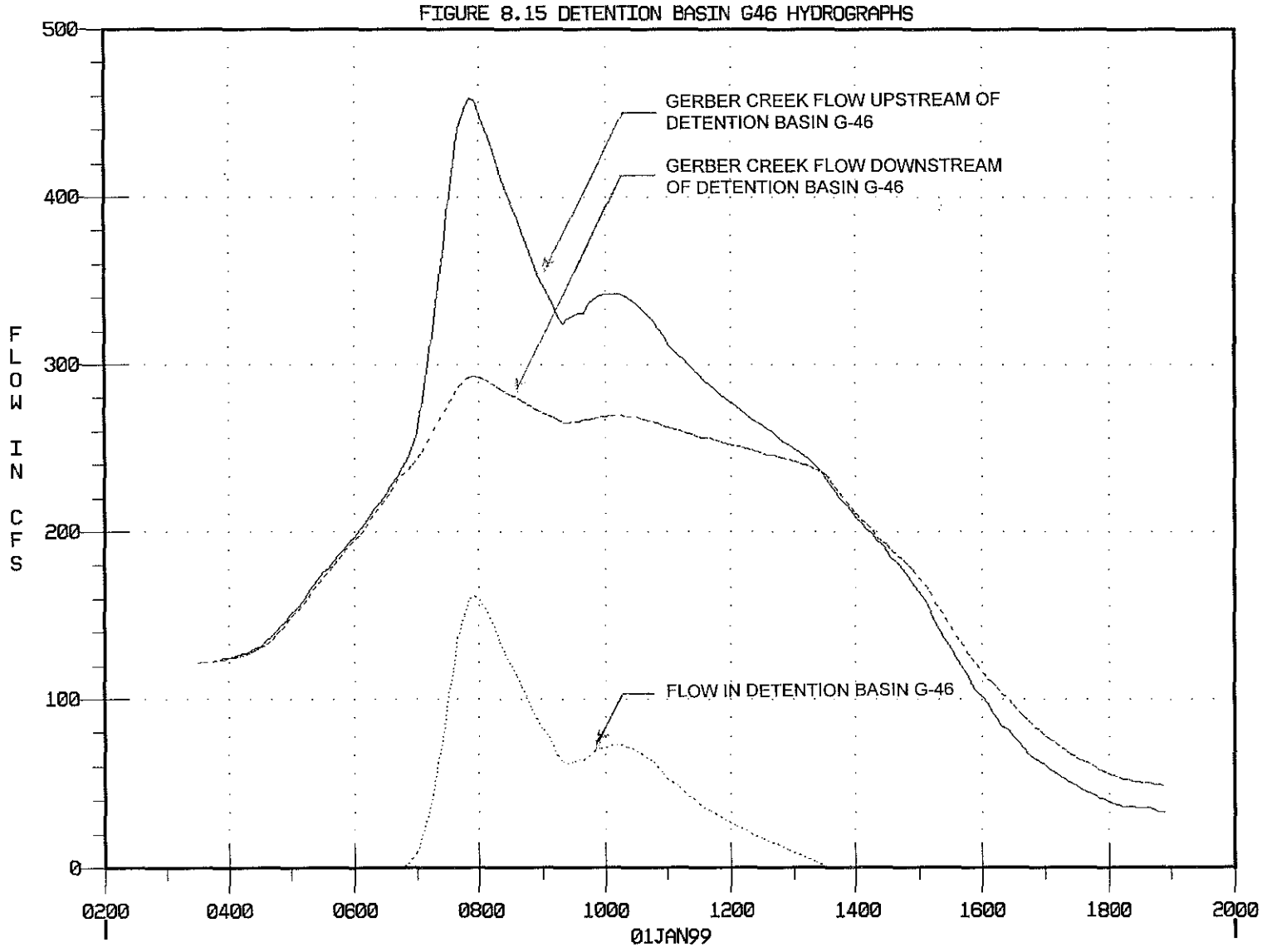


Figure 8.15 Detention Basin G-46 Gerber Creek Hydrographs.

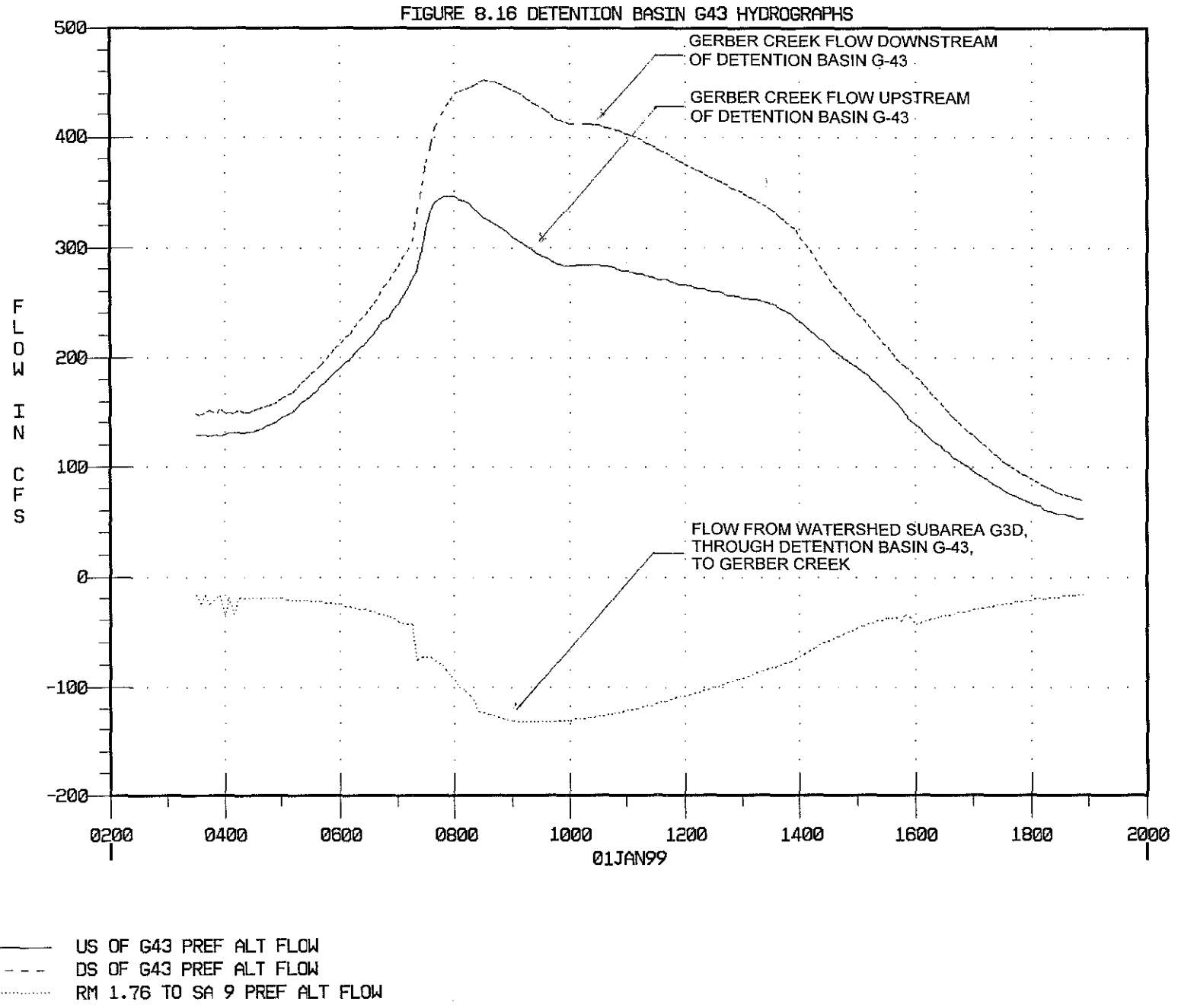


Figure 8.16 Detention Basin G-43 Gerber Creek Hydrographs.

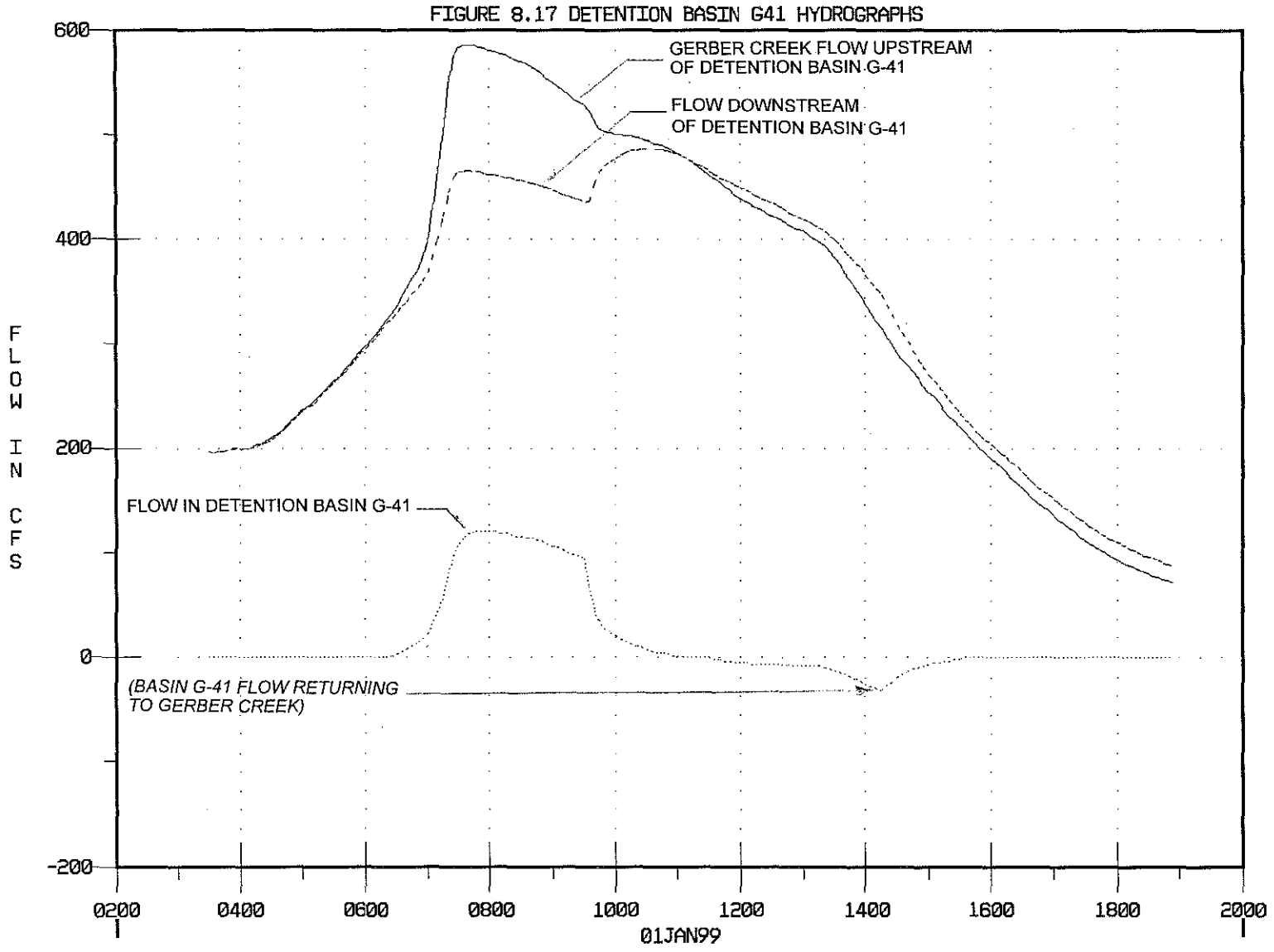


Figure 8.17 Detention Basin G-41 Gerber Creek Hydrographs.

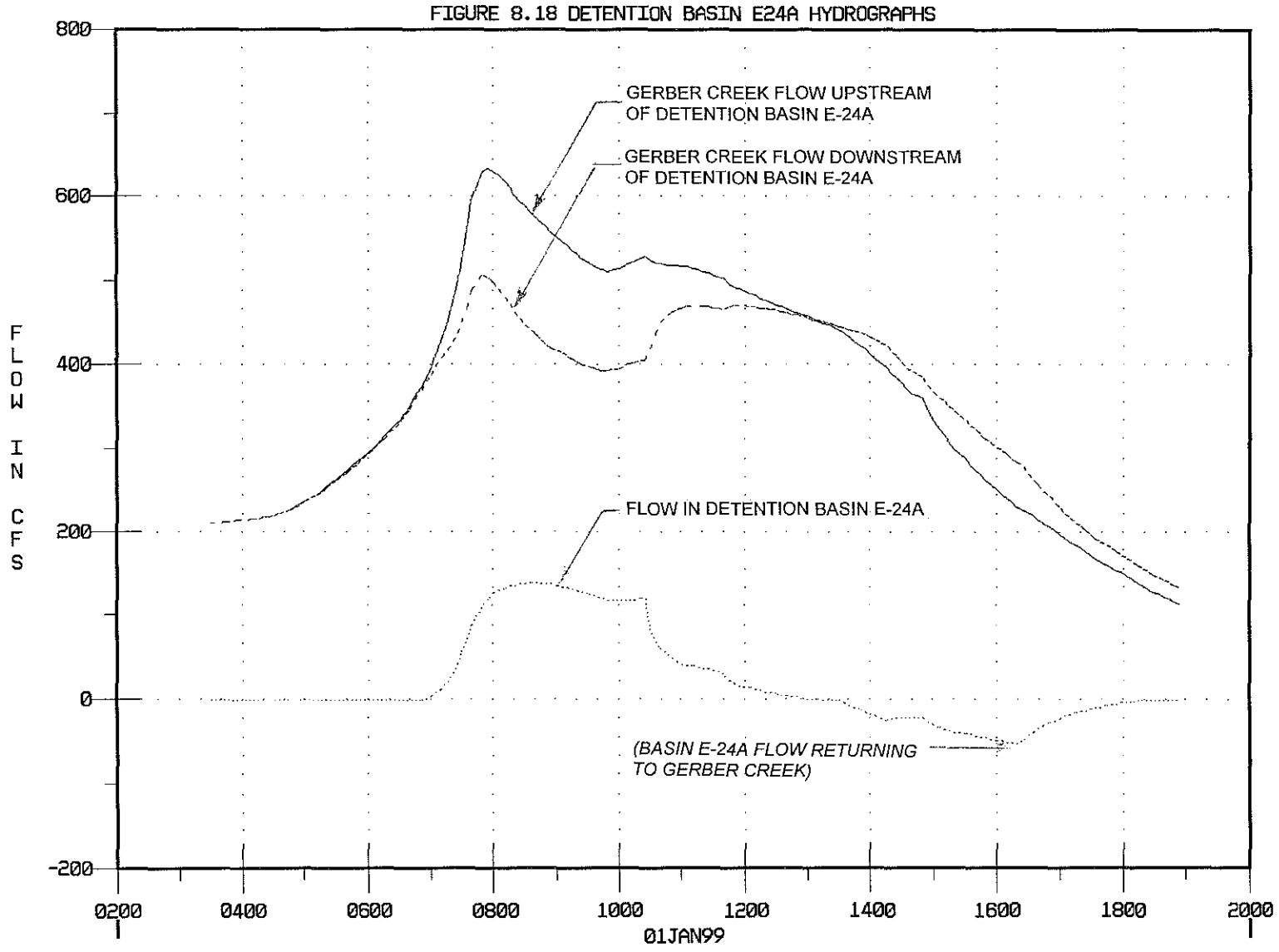


Figure 8.18 Detention Basin E-24A Gerber Creek Hydrographs.

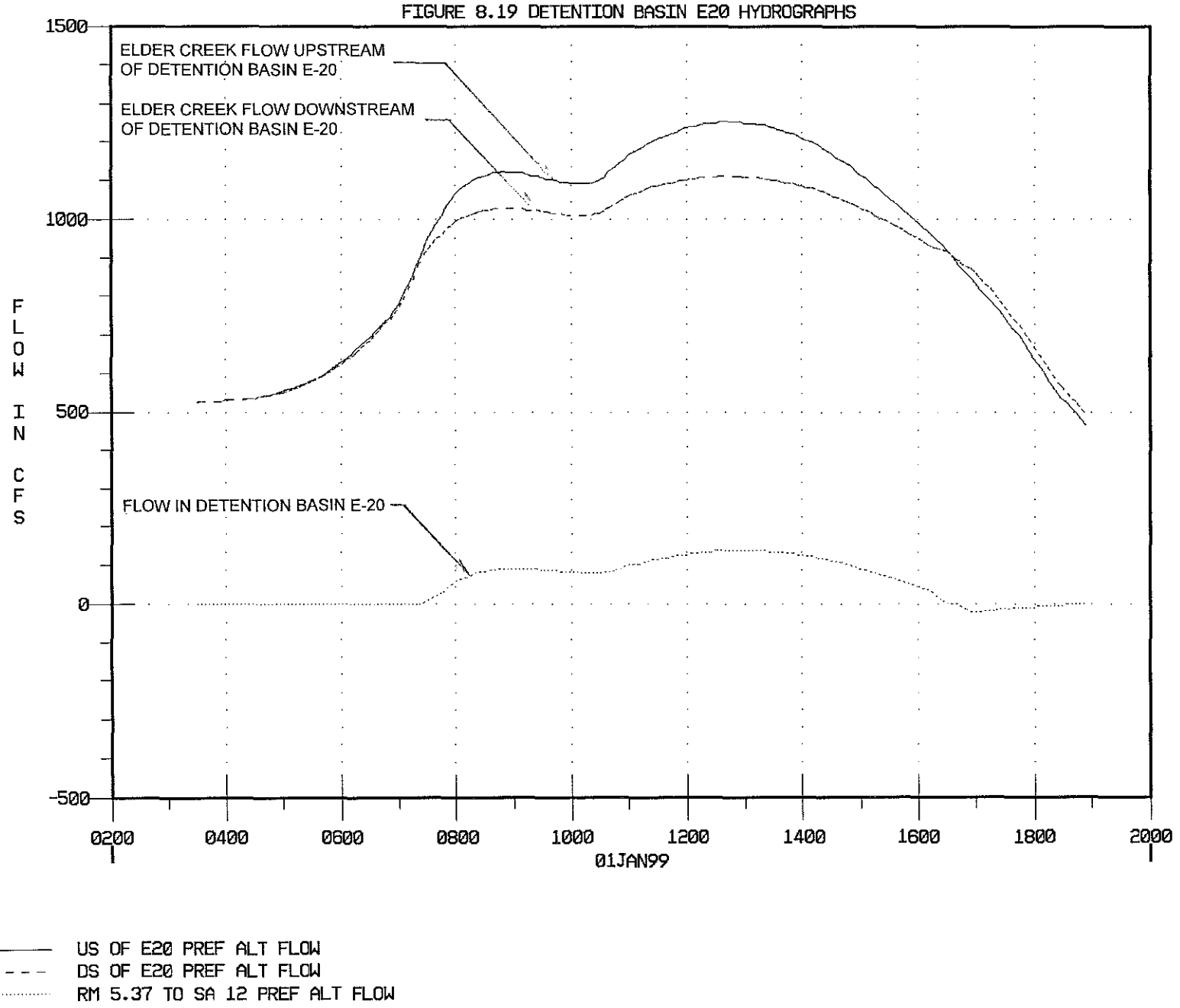


Figure 8.19 Detention Basin E-20 Elder Creek Hydrographs.

Chapter 9

Stand Alone-Conditions for Development on the NVSSP

In order to evaluate the effect of the North Vineyard Station NVSSP, for the stand alone-condition where it is developed before other drainage elements, the following preliminary scenario is considered:

1. The ultimate-conditions channel is present on Gerber Creek up to the first crossing of Gerber Road; and on Elder Creek up to the Elder Creek Road crossing.

2. Ultimate-conditions land use is present only on the NVSSP: Sub-basins E4A, E-5., G3A, G3B, G3C, and G5.

3. Detention basins E-26, G-46, G-41, E-24A, are constructed, the others are not.

4. The overflow on Gerber Creek upstream of Gerber Road Crossing No. 1 is eliminated via an adequate solution that does not significantly increase downstream flows (The existing-conditions, undetained flow hydrograph for sub-basin G2A is used in this case because if upstream development has not occurred basins to detain the flow are unlikely to exist).

5. The overspill on Laguna Creek may or may not exist (Each scenario is investigated separately herein).

As planning and design work progresses, a different interim scenario may emerge. A UNET geometric file is developed based on the diagram shown in Figure 9.1. The files used for this part of the study are listed in Table 9.1.

Table 9.1 Files Used for 100-Year Stand Alone-Conditions Hydrology on Elder and Gerber Creeks.

No.	Source	File Name	Description
1	This Study	EGSTAL2.CS	UNET geometry file for stand alone-conditions with preferred alternative on NVSSP only.
2	This Study	EGSTAL2.UN	UNET boundary conditions file for the stand alone-conditions 100-year flood event with ultimate land use on NVSSP only; with overspill from Laguna Creek.
3	This Study	EGINT2.UN	UNET boundary conditions file for the stand alone-conditions 100-year flood event with ultimate land use on NVSSP only; without overspill from Laguna Creek.
4	WRD	ELULB.DAT	HEC-1 file for the ultimate-conditions with preferred alternative 100-year flood event on Elder and Gerber Creeks.
5	WRD	H1EX.DAT	HEC-1 file for the existing-conditions 100-year flood event on Elder and Gerber Creeks.
6	WRD	ULEXB.DAT	HEC-1 file for the existing-conditions 100-year flood event on Laguna Creek.
7	This Study	LCSP1.DSS	Results of the interbasin transfer analysis for the existing-conditions 100-year flood event.
8	This Study	EGSTAL2.DSS	Results of the 100-year flood event for stand alone-conditions with the Laguna Creek overspill.
9	This Study	EGINT2.DSS	Results of the 100-year flood event for stand alone-conditions without the Laguna Creek overspill.

The results of the stand alone-conditions analysis are shown as a series of hydrograph and water surface profile plots at various points along Lower Elder Creek. These plots are described below.

Figure 9.2 Stand alone-conditions 100-year event hydrographs along Lower Elder Creek with the Laguna Creek overspill.

Figure 9.3 Stand alone-conditions 100-year event hydrographs along Lower Elder Creek without the Laguna Creek overspill.

Analysis of Figure 9.2 shows that with the NVSSP in place and the Laguna Creek interbasin transfer still in existence, the peak flow at the City boundary decreased from 1988 cfs for existing-conditions to approximately 1911 cfs. However, the stage downstream of the City boundary increased by approximately 0.5 feet. The basins planned for the Stand Alone-condition meet the drainage plan objectives regarding flow at the City boundary without basin E-20. However, the study also finds a stage increase of approximately 0.5 feet downstream of the City boundary that will be unmitigated without the addition of basin E-20 in the stand alone-condition.

Analysis of Figure 9.2 shows that with the NVSSP in place and the Laguna Creek overspill eliminated, the peak flow at the City boundary decreases from 1,988 cfs for existing-conditions to approximately 1,528 cfs for stand alone-conditions.

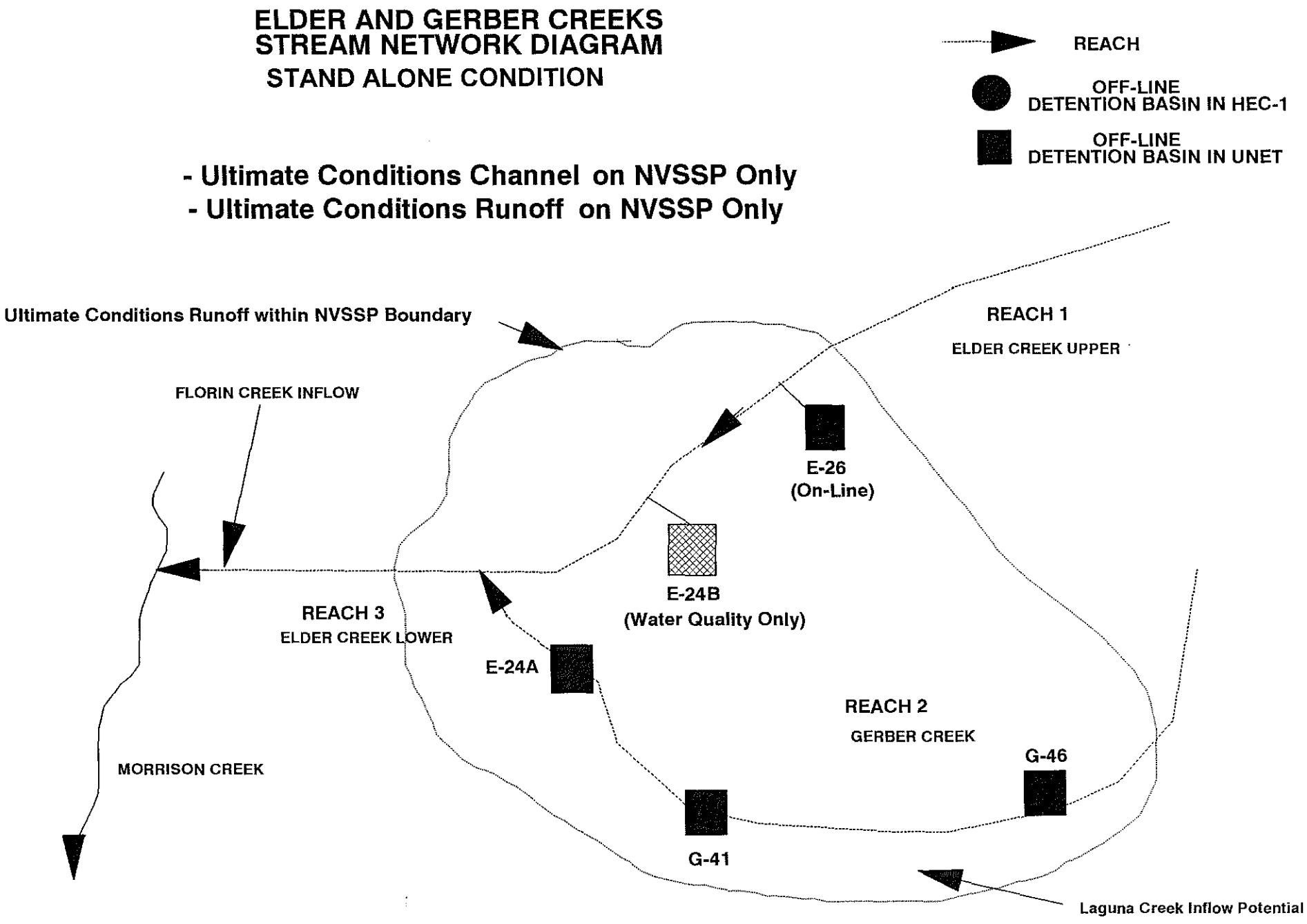


Figure 9.1 Stream Network Diagram for the Stand Alone condition

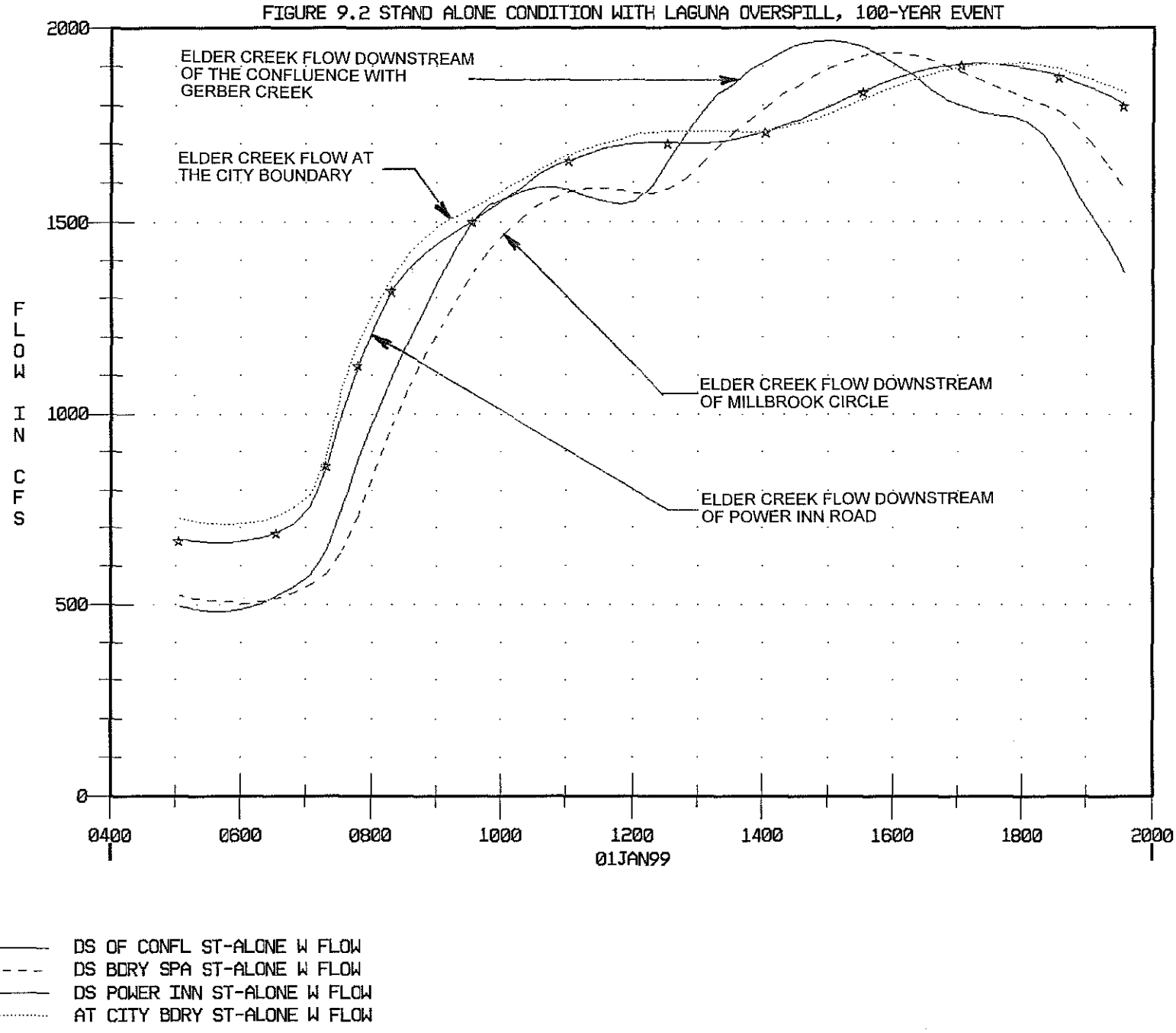


Figure 9.2 Stand Alone Condition with Laguna Overspill, 100-Year Event.

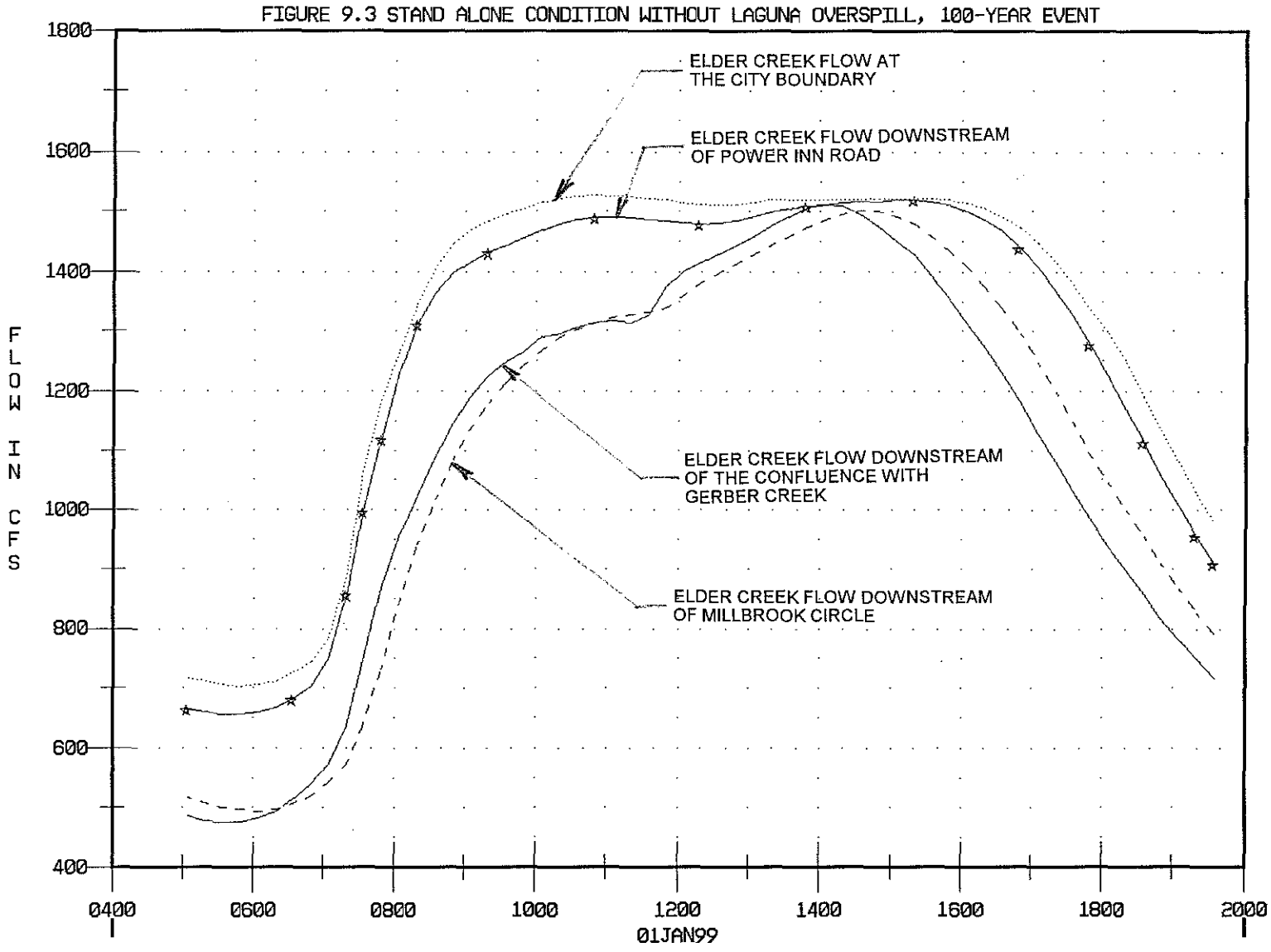


Figure 9.3 Stand Alone Condition without Laguna Overspill, 100-Year Event.

Chapter 10

Conceptual Operation and Design Issues

Operation

Three concept alternatives were considered in Chapter 7 in order to meet the objectives of the DMP:

1. *Linear* detention basins located along the stream corridor.
2. Small, off line detention basins located throughout the watershed.
3. Larger, off line detention basins that serve as regional facilities.

An off line flood control detention basin is located adjacent to the main channel and remains empty until the higher stages of the flood cause water to enter the basin via a weir in the side of the channel. The effect is to lower the peak flow and flatten the hydrograph shape.

As stated in Chapter 7, the application of UNET to various scenarios incorporating the above elements revealed the following conclusions.

1. The smaller the volume of the detention basin, the more its effectiveness becomes a function of the temporal pattern for the hypothetical design storm. Weir elevations for the small basins had to be set only a few tenths of a foot below peak flood stage otherwise they would fill up and have no influence on reducing the peak flow. The smaller basins are more effective in the upper parts of the watershed where hydrograph volumes are smaller.

2. Linear detention basins have small storage volumes by necessity. They must be limited in length to avoid leveeing as the stream gradient causes the floodplain water surface elevation to fall below that for a level pool connected to some point upstream. Although they may be suitable for the upper watershed they will not reliably mitigate peak flows for the reasons discussed in conclusion 1.

3. Small, off line detention basins designed for the ultimate-condition peak stage, may never be utilized during stand alone-conditions when flows are lower than the ultimate-condition.

The approach to dealing with the above factors was to keep the smaller detention basins in the upper watershed where the weirs can be set well below the peak stage and still function efficiently. At least one large basin (E-20) was adopted in order to account for the variability in timing of actual floods compared to the design event. Finally, for the smaller basins in the middle part of the watershed, a segmented weir concept was developed which allows it to function over a wider range of stage but still provides a significant degree of peak flow reduction.

Design

There are a number of references which describe the hydraulic analysis and design of side-channel overflow weirs[1]. The important considerations for the design of these weirs for mildly sloping channels are (1) whether the water surface profile rises or falls along the weir profile and (2) the effects of weir submergence as the detention basin fills with water. Different analytical approaches are used for the various hydraulic conditions which occur during the design flood. The UNET program has the ability to simulate these conditions for purposes of preliminary design. All detention basins in the DMP require final design studies in order to evaluate the precise size, shape, location, and orientation of the weir in order for the basin to perform as anticipated. This design effort may require additional hydraulic analysis with UNET, and, in some cases, physical model studies.

The procedure used in this study to set the preliminary design of the segmented weirs is as follows:

1. Using a single weir segment of fixed length, adjust the elevation to achieve an appropriate level of reduction in the peak flow.

2. Modify the weir configuration by reducing the length of the single weir segment by 20% to 40%.

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[1] See, for example, Hager, W.H., 1987, "Lateral outflow over side weirs," *Journal of Hydraulic Engineering*, 113 (4); or Collinge, V., 1957, "The discharge capacity of side weirs," *Proceedings of the Institute of Civil Engineers*, London, England, 6 (2).

3. Add a second weir segment that achieves the same total length as the initial fixed length of the single weir.

4. Set the elevation of this weir segment 0.5' to 2.0' lower than for the single segment.

This procedure was used to perform the conceptual weir design for the preferred alternative for all of the detention basins except the those in the uppermost part of the watersheds.

SUB-APPENDIX 1

INFORMATION SOURCE FILES

ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 1

HEC-2 MODEL FOR EXISTING CONDITIONS ON ELDER CREEK FROM 0.5 MILES UPSTREAM OF MORRISION CREEK TO 1.0 MILES DOWNSTREAM OF THE CONFLUENCE WITH GERBER CREEK

FILENAME: ELDSQ1B.DAT

```
SF      Elder Creek
TW      Centerline Elk Grove-Florin Road
WS     3   27957   28347   27367     2.7       0       0       0       0       0
WC   505    43.2     910    43.9    1330    45.0
TW      Centerline Elk Grove-Florin Road
WS     3   27552   27957   27367     2.7       0       0       0       0       0
WC     0    44.6     180    44.0     505    43.2
EE
C       ELDER CREEK - SV / SQ to confluence of Gerber
C     15
C   1748    FRANKLIN BLVD
C   3079    TANGERINE AVE
C   5666    CENTER PARKWAY
C   8742    LA MANCHA WAY & HWY 99
C  10797    STOCKTON BLVD
C  12967    PAR PARKWAY
C  15167    POWER INN ROAD
C  16997    Gerber Road
C  17352    St. Andre Lane
C  19100    Reese Road - ASSUMED CONFIGURATION FOR REPLACEMENT BRIDGE
C  20557    SPRR
C  21207    French Road
C  23517    Millbrook Circle
C  27417    Elk Grove-Florin Road
C  29357    Confluence Gerber Creek
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr - SQ / SV      File ELDSQ1a.WRD - 3/32/94
J1   -10       2                                                  15.7
J2     1              -1
J3    38      43       1       6       7     150
J4   910    5666    5666    8742    8742   10797   10797   13607   13607   15167
J4 15167   16997   16997   20557   20557   22917   22917   27367   27367   29357
NC   .06     .06     .03      .1      .3
QT    12     100     400     600     800    1000    1200    1400    1600    1800
QT  2000    2200    2400
X1   910      15   199.3   278.8     910     910     910
X3    10
X4     1   18.30  284.00
GR  13.8   150.0    14.3   179.1    18.2   188.5    18.3   199.3     6.7   218.2
GR   6.5   234.3     4.9   236.7     4.8   248.5     6.6   250.9     6.8   261.5
GR  18.0   278.8    18.1   290.9    13.3   299.1    13.0   303.7    12.9   349.0
X1  1690      15   226.4   302.1     780     780     780
X3    10
X4     1   18.35  310.00
GR  13.8     160    13.7     180    13.8   201.1    18.1   209.4    18.5   226.4
GR  10.4   235.2    10.6   248.6     6.7   257.3     6.9   270.3     5.3   272.7
GR   5.4   284.4    18.2   302.1    18.3   316.1    16.9   321.8    16.7   370.0
X1  1748      21   298.5   378.5      58      53      58
X3    10
GR  18.4   198.5    18.8   248.5    19.7   298.5    18.8   299.0    18.9     303
GR  14.8   303.9    14.7   306.0     8.0   316.6     6.4   332.5     5.6   333.3
GR   5.5   342.4     6.7   343.4     9.6   362.9    15.3   370.5    15.1   373.9
GR  18.6   374.8    18.4     378    19.6   378.5    19.0   428.5    19.0   478.5
GR  18.3   528.5
SB  1.05     1.5     2.6            28.6     2.5     610    1.78
X1  1853                             105     105     105
X2                     1    17.7    19.6
X3    10
BT     7   198.5    18.4    18.4   248.5    18.8    18.8   298.5    19.7    17.7
BT 342.4    19.6    17.7   378.5    19.6    17.7   428.5    19.0    19.0   528.5
BT  18.3    18.3
X1  1858      14   282.7  363.30       5       5       5
X3    10
GR  18.0     200    18.9   261.4    18.7   282.7     8.8   301.7     6.1   323.1
GR   5.5   325.3     5.3   338.5     6.1   339.4   18.07  363.30    18.2   363.8
GR  18.7   370.5    17.6   377.1    17.0   418.5    17.3   458.5
X1  1926       9     100   167.8      68      68      68
X3    10
X4     1   12.21  158.20
GR  17.4    50.2    18.2   100.0     6.2   134.1     5.4   135.2     5.4   146.5
GR   7.9   149.2    18.1   167.8    18.4   169.3    18.4   219.3
X1  2369      11     100   167.2     443     443     443
X3    10
X4     1   12.73  158.20
GR  17.9    50.0    18.6   100.0     9.9   114.3     7.3   123.0     6.5   133.3
GR   5.6   134.7     5.8   145.6     7.6   147.9    17.9   167.2    18.2   169.3
GR  16.7   218.2
X1  2839      11   102.0   170.3     470     470     470
X3    10
X4     1   14.87  161.90
GR  16.6    49.9    18.4   100.0    18.2   102.0     8.5   121.0     6.9   134.2
GR   5.9   135.8     5.9   146.3     8.3   148.9    18.6   170.3    17.6   174.1
GR  17.4   222.1
X1  3029      10   150.0   217.7     190     190     190
X3    10
X4     1   19.28   217.7
GR  18.4   100.7    18.9   150.0     8.8   171.8     6.8   183.6     5.9   185.3
GR   5.9   196.1     8.0   198.1    19.3   217.7    19.3   231.6    18.3   281.7
X1  3079       9     829     905      50      50      50
X3    10
X4     2       6     867       7     884
GR    18     729    19.4     829    16.7     829    16.7     833      10     846
GR  16.7     901    16.7     905    19.4     905      18    1000
SB     1     1.3     2.6            27.0       2     580    1.78       6       6
X1  3139       0       0       0      60      60      60
X2                     1    18.0      20                     1.5
X3    10
BT     6     729      18      18     829    18.2    18.2     829    20.2    18.2
BT   905    19.8    17.8     905    19.8    19.8    1000      18      18
X1  3239       9   150.0   218.8     100     100     100
X3    10                                                    18.8
X4     1   17.38   215.2
GR  16.5    97.5    18.5   150.0    10.1   165.1     6.9   184.5     6.0   185.6
GR   6.2   196.3     8.4   198.5    19.1   218.8    18.8   269.2
X1  3839      11   150.0   219.4     600     600     600
X3    10
X4     1   11.44  205.90
GR  17.0   103.9    16.6   119.9    19.4   150.0    19.0   152.1     9.0   169.7
GR   7.4   183.8     6.5   185.6     6.6   196.3     9.0   199.0    19.4   219.4
GR  18.4   269.9
X1  4889      10   150.0   219.8    1050    1050    1050
X3    10                                                    20.5    20.5
X4     1   13.14  207.00
GR  16.8    97.0    16.9     141    19.8   150.0     9.8   169.0     8.0   184.2
GR   7.0   185.7     6.9   196.4     9.8   199.2    19.9   219.8    19.8   270.0
X1  5496      11     100   191.0     607     607     607
X3    10
X4     1   18.16  104.50
GR  20.4    88.0    20.8     100    17.4   106.6    10.4   127.0     8.0   137.0
GR   7.1   138.4     7.1   150.5     8.0   152.5     9.0   160.0    20.0   179.0
GR  21.0   191.0
X1  5616      12   152.4   220.6     120     120     120
X3    10
X4     1   12.53  206.60
GR  20.6   100.0    20.8   150.0    20.2   152.4    11.7   164.6     8.0   181.0
GR   7.1   182.3     7.2   194.2     9.3   196.2    11.4   204.3    19.7   218.1
GR  20.8   220.6    21.0   270.6
X1  5666      15     760   845.1      50      50      50
X3    10                     760           845.1
GR  20.9       0    21.2     760    19.1   760.1    19.1   764.6    14.9   772.9
GR   8.2     785     6.5     787     6.6     799     8.2     801     8.2   815.5
GR  14.5     825    19.1   840.6    19.1     845    21.2   845.1    20.9    1600
SB     1     1.5     2.7     500    15.4     3.7     625   2.375     6.4     6.4
X1  5742       0       0       0      76      76      76
X2                     1    19.7    21.2
X3    10
X1  5882      12   152.5   219.4     120     160     140
X3    10                                                            21.0
X4     1   13.28  206.50
GR  21.3   110.5    20.8   150.0    20.1   152.5    11.6   167.4     8.4   184.3
GR   7.5   185.8     7.6   196.6    10.8   199.7    13.3   206.5    20.3   217.2
GR  20.4   219.4    20.3   266.5
NC   .06     .06     .04
X1  6722      24     819     887     860     815     840
X3    10                                                    21.4
GR 022.5       0   022.3   00094   020.6   00101   021.8   00112   023.3   00155
GR 021.7   00200   023.0   00222   022.6   00319   021.7   00395   023.6   00471
GR 022.0   00531   022.8   00585   020.0   00800   021.1   00819   008.5   00852
GR 008.5   00864   021.3   00887   019.0   01028   020.2   01082   021.2   01150
GR 018.6   01281   020.8   01330   022.2   01539   022.8   01600
NC  .060    .060    .040      .1      .3       0       0       0       0       0
X1  7682      10     809     882     950     970     960       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  23.8       0    23.8     357    22.6     809     8.8     843     8.8     853
GR  22.7     882    21.7     966    20.1    1016    21.1    1243    21.0    1450
X1  8692      15     814     886    1015    1005    1010       0     1.0       0
X3    10       0       0       0       0       0       0    25.1    25.1       0
X4     2    24.2     671    25.6     886       0       0       0       0       0
GR  25.2       0    25.3     166    23.3     189    24.6     238    22.3     289
GR  24.8     328    22.2     790    22.0     814    10.5     833     9.5     848
GR   9.5     861    24.6     910    24.7    1079    24.7    1231    25.8    1500
NC 0.060   0.060   0.015
X1  8742      34   824.0   888.0      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  26.6       0    25.9   814.0    25.9   824.0    21.3   824.0    13.4  830.50
GR  13.4   835.0    16.8   837.5    16.8   839.3    24.3   839.3    24.3   840.6
GR  16.8   840.6    16.8   842.5    10.8   846.0    10.8   851.0    16.8   853.5
GR  16.7   855.6    24.4   855.6    24.4   856.9    16.7   856.9    16.7   859.0
GR  10.7   862.0    10.8   868.5    16.8   870.0    16.7   871.6    24.4   871.6
GR  24.4   872.9    16.7   872.9    16.7   874.5    13.7   877.0    13.6   882.5
GR  19.7   888.0    25.9   888.0    25.9   898.0    29.2  1300.0       0       0
SB   1.0     1.5     2.7       0    41.5       0     622    0.00    10.7    10.7
X1  8932       0       0       0     190     190     190       0       0       0
X2     0       0       1    23.8    26.6       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6   814.0    25.9    25.9   824.0    25.9    25.9   824.0    27.8    24.3
BT 888.0    27.9    24.4   888.0    25.9    25.9   898.0    25.9    25.9       0
X1  8992      13     211     277      50      80      60
X3    10       0       0       0       0       0       0       0       0       0
GR  25.0      33    22.0      95    22.0     162    23.0     180    23.4     200
GR  23.3     203    23.7     211    12.3     222   12.18     263    23.7     277
GR  24.0     285    25.0     306    25.6     371
NH     5     .06   220.0     .04   241.0    .015   268.7     .04   291.9     .06
NH   324
X1  9047      14   220.0   291.9      80      30      55
X3    10       0       0       0       0       0       0       0       0       0
GR  26.0     173    26.2     191    26.0     200   25.78   204.3   22.97   220.0
GR 12.96   241.0   12.71   250.0   12.64   253.0   11.95   266.7   12.64   268.7
GR 12.76   279.4   23.28   291.9   23.99     300      25     324
NH     7     .06     205     .04   231.0    .015   240.0     .04   252.0    .015
NH 268.3     .04   291.5     .06     355
X1  9097      14     205   291.5      50      50      50
X3    10       0       0       0       0       0       0       0       0       0
GR  25.5     180    25.5     200   25.22   205.0   13.08   231.0   12.83   240.0
GR 12.84   252.0   11.92   254.5   11.87   266.8   12.77   268.3   13.13   280.2
GR 22.83   291.5   23.48   303.1      24     331      25     355
NH     7     .06     204     .04     225    .015     238     .04   253.0    .015
NH 269.2     .04   292.5     .06     326
X1  9257      14     204   292.5     130     180     160
X3    10       0       0       0       0       0       0       0       0       0
GR  25.0     146    24.0     155   22.87     200    23.1     204   13.41   225.0
GR 13.31     238   13.11   253.0   11.93   255.8   11.98   267.6   13.02   269.2
GR 14.66   283.3   22.25   292.5   23.42   308.3    23.8     326
NH     7     .06     204     .04     225    .015     239     .04   253.0    .015
NH 267.4     .04     289     .06     303
X1  9607      16     204   289.0     280     330     350
X3    10       0       0       0       0       0       0       0       0       0
GR  23.9     162    23.0     177    22.7     186   23.46     200   23.42     204
GR 13.72   225.0   13.58     239   13.30   253.0    12.4   254.3   12.36   266.1
GR 13.27   267.4   14.24   279.6    22.6     289   23.32   291.3      24     296
GR    25     303
NH     7     .06     204     .04     225    .015     239     .04   253.0    .015
NH 267.1     .04   288.5     .06     309
X1  9907      15     204   288.5     300     300     300
X3    10       0       0       0       0       0       0       0       0       0
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GR  24.0     165    23.2     185   23.95     200   24.10     204   13.81   225.0
GR 13.62     239   13.60   253.0   12.67   254.4   12.67     266   13.37   267.1
GR 15.34   280.3   23.38   288.5   23.88   290.7      25     299    25.9     309
NH     7     .06     204     .04     226    .015     240     .04   252.0    .015
NH   267     .04   287.6     .06     309
X1 10227      13     204   287.6     320     320     320
X3    10       0       0       0       0       0       0       0       0       0
GR  25.0     187   24.44     200   24.47     204   14.38   226.0   14.14     240
GR 14.20   252.0   13.09   253.8    13.1   266.1   13.81     267   14.83     279
GR 23.37   287.6   23.84   291.4    24.5     309
NH     7     .06     204     .04     225    .015     240     .04   250.0    .015
NH   267     .04   289.7     .06     323
X1 10442      18     204   289.7     215     215     215
X3    10       0       0       0       0       0       0       0       0       0
GR    24      53    23.4     114    25.0     154    25.6     181    25.2     200
GR 24.52     204   14.47   225.0   14.15     240   14.16   250.0   13.21   253.8
GR 13.08   265.7   14.08     267   15.87   271.6   16.35   280.4   25.22   289.7
GR 25.55   292.1    25.6     304      25     323
NH     7     .06     204     .04     225    .015     239     .04   254.0    .015
NH 271.1     .04   291.9     .06     321
X1 10567      15     204   291.9     115     140     125
X3    10       0       0       0       0       0       0       0       0       0
GR  24.3     121    25.0     143    26.0     158    26.1     180    26.0     200
GR 25.07     204   14.72   225.0   14.40     239   14.57   254.0   13.54   256.9
GR 13.32   269.6   14.14   271.1   17.26   284.5   25.83   291.9    25.8     321
NC 0.060   0.060   0.015
X1 10747      11   225.5   293.8     200     160     180       0     0.5       0
X3    10       0       0       0       0       0       0       0       0       0
GR  26.7     181    26.0     200   24.71   206.7   24.33   225.5   14.41   237.3
GR 13.67   249.2   13.56   260.1   14.36   261.5   14.90   276.9   25.91   293.8
GR  25.7     329
X1 10797      28   452.5   505.5      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  27.0       0    27.0   440.0    27.0   452.5    19.5   452.5    19.5   455.0
GR  14.9   458.0    14.9   464.5    19.1   467.5    19.1   469.5    25.1   469.5
GR  25.1   471.0    19.1   471.0    19.2   473.0    14.8   475.5    14.8   482.0
GR  19.4   485.5    19.0   487.5    25.1   487.5    25.1   489.0    19.0   489.0
GR  19.0   491.0    14.8   493.5    14.9   500.5    19.3   503.5    19.3   505.5
GR  27.0   505.5    27.0   518.0    27.0  1100.0       0       0       0       0
SB   1.0     1.5     2.7       0    39.7       0     436    1.14    14.8    14.8
X1 10877       0       0       0      80      80      80       0       0       0
X2     0       0       1    25.1    27.1       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4   452.5    27.0    27.0   452.5    28.0    25.1   505.5    28.0    25.1
BT 505.5    27.0    27.0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 11177      19     970    1043     350     250     300       0    -0.3       0
X3    10       0       0       0       0       0       0    26.8    26.8       0
GR  27.3       0    27.3      67    26.8     102    26.2     355    25.3     800
GR  26.0     970    15.1    1001    15.1    1014    26.5    1043    26.9    1093
GR  27.0    1141    27.0    1220    25.2    1267    27.4    1308    29.1    1531
GR  29.1    1633    28.1    1702    26.5    1738    26.5    1750       0       0
X1 11567      19     970    1043     350     430     390       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  27.3       0    27.3      67    26.8     102    26.2     355    25.3     800
GR  26.0     970    15.1    1001    15.1    1014    26.5    1043    26.9    1093
GR  27.0    1141    27.0    1220    25.2    1267    27.4    1308    29.1    1531
GR  29.1    1633    28.1    1702    26.5    1738    26.5    1750       0       0
NH     5     100     600     .06     707     .04     770     .06     821     100
NH  1600
X1 12597      17     707     770    1030    1030    1030       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  28.2       0    27.6     323    28.5     600    27.3     707    16.6     715
GR  15.9     726    15.9     739    16.2     749    27.2     770    28.4     821
GR  28.4     986    27.2    1189    26.7    1310    28.9    1338    27.4    1452
GR  28.9    1561    27.1    1600       0       0       0       0       0       0
NH     5     100     600     .06     707     .04     770     .06     821     100
NH  1600
X1 12917      17     707     770     320     320     320       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  28.2       0    27.6     323    28.5     600    27.3     707    16.6     715
GR  15.9     726    15.9     739    16.2     749    27.2     770    28.4     821
GR  28.4     986    27.2    1189    26.7    1310    28.9    1338    27.4    1452
GR  28.9    1561    27.1    1600       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 12967      12   702.8   737.2      50      50      50       0       0       0
X3    10       0       0       0       0       0       0    27.0    28.7       0
GR  29.0       0    27.6   680.0    27.6   688.0    25.1   702.8    16.5   702.8
GR  16.2   714.2    16.2   725.9    16.5   737.2    25.1   737.2    28.7   751.0
GR  29.0   767.0    29.6     867       0       0       0       0       0       0
SB   0.9     1.5     2.7       0    34.4     1.4     297       0    16.2    16.2
X1 13027       0       0       0      60      60      60       0       0       0
X2     0       0       1    25.1    27.6       0       0     1.5       0       0
X3    10       0       0       0       0       0       0    27.6    28.7       0
BT    -9     680    27.6    27.6   688.0    27.6    27.6   688.0    28.8    27.6
BT     0   702.8    28.8    25.1   737.2    28.8    25.1   751.0    28.8    28.7
BT     0   751.0    28.7    28.7     767    29.0    29.0     867    29.6    29.6
NH     5     100     704     .06    1068     .04    1143     .06    1341     100
NH  1750
X1 13157      21    1068    1143     130     130     130       0    -0.2       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    29.8     191    27.6     242    30.0     283    29.5     485
GR  30.3     704    30.0     879    29.1    1068    16.5    1100    16.5    1121
GR  27.1    1143    29.2    1182    29.5    1251    29.5    1341    28.6    1374
GR  29.5    1405    30.0    1510    29.1    1610    27.9    1646    29.4    1690
GR  29.1    1750       0       0       0       0       0       0       0       0
NH     5     100     704     .06    1068     .04    1143     .06    1341     100
NH  1750
X1 13607      21    1068    1143     450     450     450       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    29.8     191    27.6     242    30.0     283    29.5     485
GR  30.3     704    30.0     879    29.1    1068    16.5    1100    16.5    1121
GR  27.1    1143    29.2    1182    29.5    1251    29.5    1341    28.6    1374
GR  29.5    1405    30.0    1510    29.1    1610    27.9    1646    29.4    1690
GR  29.1    1750       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 14397      20     788     883     790     790     790       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    31.0     100    29.5     180    27.8     224    31.3     281
GR  30.5     604    28.0     663    30.5     715    30.1     788    17.2     824
GR  17.2     834    27.3     861    30.5     883    30.2    1046    29.3    1200
GR  30.7    1427    31.3    1470    31.1    1578    29.0    1852    29.8    2100
X1 15097      20     788     883     700     700     700       0     1.0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    31.0     100    29.5     180    27.8     224    31.3     281
GR  30.5     604    28.0     663    30.5     715    30.1     788    17.2     824
GR  17.2     834    27.3     861    30.5     883    30.2    1046    29.2    1200
GR  30.7    1427    31.3    1470    31.1    1578    29.0    1852    29.8    2100
X1 15167      10   576.2   663.7      70      70      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
X4     1    28.0   649.4       0       0       0       0       0       0       0
GR  32.5       0    31.0   576.2    28.4   581.2    28.1   589.2    19.1   599.3
GR  18.3     620    19.1     640    28.8   658.7    31.0   663.7    31.5    2000
SB   1.0     1.5     2.7       0   41.63     4.2   599.3     1.0    18.3    18.3
X1 15247       0       0       0      80      80      80       0       0       0
X2     0       0       1    30.4    31.0       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6       0    32.5    32.5   576.2    31.0    31.0   576.2    33.8    30.4
BT 663.7    33.8    30.4   663.7    31.0    31.0    2000    31.5    31.5       0
NH     4     .06     588     .04     653     .06     950     100    1750
X1 15437      10     588     653     160     220     190       0     0.5       0
X3    10       0       0       0       0     950    30.4       0       0       0
GR  32.6       0    32.6     297    29.7     588    17.8     617    17.8     626
GR  28.3     653    30.4     950    27.9    1106    31.4    1311     100    1800
NH     4     .06     801     .04     871     .06    1311     100    1800
X1 16627      19     801     871    1240    1140    1190       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  33.5       0    35.5     374    32.3     801    20.5     820    20.2     828
GR  19.2     833    19.2     843    20.5     847    20.6     858    29.6     871
GR  31.6     891    32.3    1156    32.6    1311    31.3    1355    32.8    1397
GR  34.5    1516    32.6    1619    34.8    1690    34.8    1800       0       0
NH     4     .06     801     .04     871     .06    1311     100    1800
X1 16927       0       0       0     300     300     300       0     0.3       0
X3    10       0       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 16997      33   792.5   886.4     120      20      70     0.7       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  33.2     390    32.7     540    32.4     640    32.3     740    32.2   792.5
GR  29.9   797.5    27.8   797.5    20.1     807    20.1   826.2    23.0   829.2
GR  23.0   830.5    29.9   830.5    29.9   831.9    23.0   831.9    23.0   833.2
GR  20.1   836.2    20.1   847.6    23.0   850.6    23.0   851.9    29.9   851.9
GR  29.9   853.3    23.0   853.3    23.0   854.6    20.1   857.6    20.1     866
GR  27.9   872.2    27.9   881.4    29.9   881.4    32.2   886.4    32.3     940
GR  32.3    1040    32.5    1090    32.8    1240
SB   1.0     1.5     2.7       0   49.08       0     448     0.7    20.1    20.1
X1 17112       0       0       0     115     115     115       0       0       0
X2     0       0       1    29.9    32.2       0       0     1.5     0.7       0
X3    10       0       0       0       0       0       0       0       0       0
BT    -13     390    33.2    33.2     540    32.7    32.7     640    32.4    32.4
BT     0     740    32.3    32.3   792.5    32.2    32.2   792.5    33.7    29.9
BT     0   886.4    33.7    29.9   886.4    32.2    32.2     940    32.3    32.3
BT     0    1040    32.3    32.3    1090    32.5    32.5    1090    32.5    32.5
BT     0    1240    32.8    32.8
NC   100   0.060   0.040
X1 17282       6     775     850      20     320     170       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  31.4       0    32.5     775    20.4     795    20.4     830    32.5     850
GR  34.4    2000       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 17352      14    1050  1130.0      30     110      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  31.4       0    33.3    1050    32.0    1056    26.0    1056    22.7    1065
GR  21.7  1074.6    20.6    1090    22.0    1103    23.9  1113.9    26.8    1119
GR  29.6  1123.9    32.0  1123.9    33.3    1130    34.0    2000       0       0
SB   1.0     1.5     2.7       0    37.8     2.8     592     1.4    20.6    20.6
X1 17387       0       0       0      35      35      35       0       0       0
X2     0       0       1    32.0    33.1       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6       0    31.4    31.4    1050    33.3    33.3    1050    35.7    32.0
BT  1130    35.7    32.0    1130    33.3    33.3    2000    34.0    34.0       0
NH     5     100     876     .06    1033     .04    1131     .06    1443     100
NH  1700
X1 17517      20    1033    1131     100     160     130       0       0       0
X3    10
X4     2    33.6     876    35.8    1443       0       0       0       0       0
GR  34.8       0    34.8      87    33.7     137    35.2     192    34.5     350
GR  31.3     393    33.8     440    33.7     520    31.7     661    33.0     830
GR  32.5     995    32.2    1033    30.2    1059    21.1    1070    20.6    1083
GR  20.6    1098    21.1    1108    33.1    1131    33.7    1195    35.2    1700
NC 0.060   0.060   0.040
X1 18427      16    1017    1107     910     910     910       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  35.1       0    35.5      60    34.2     220    35.3     357    35.0     808
GR  35.5     846    34.7    1017    32.3    1035    21.7    1044    21.5    1059
GR  21.5    1071    22.2    1083    33.0    1107    34.0    1402    37.8    1700
GR  37.7    1900       0       0       0       0       0       0       0       0
X1 18957      22     832     937     530     530     530       0       0       0
X3    10
GR  34.8       0    35.7     299    36.0     569    35.6     638    35.7     680
GR  34.5     724    37.8     784    38.1     832    32.1     866    22.2     877
GR  21.5     888    22.2     903    23.0     917    34.8     937    36.2    1102
GR  36.3    1216    34.5    1285    34.8    1423    36.8    1463    38.8    1751
GR  40.2    1934    39.0    2100       0       0       0       0       0       0
X1 19100       8     100     188     134     134     134       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  36.3       0    36.3     100    32.8     100    20.7     124    20.7     164
GR  32.8     188    36.3     188    36.3     288
SB  1.05     1.5     2.7       0      39       3     908       2    20.7    20.7
X1 19135       0       0       0      50      50      50       0       0       0
X2     0       0       1    34.8    36.3       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6       0    36.3    36.3     100    36.3    36.3     100    36.3    34.8
BT   188    36.3    34.8     188    36.3    36.3     288    36.3    36.3       0
X1 19207      21   830.0  937.00      96      31      66       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR 36.02     588   35.13     623   35.74     632   37.11     637   36.61     638
GR 36.61     697   37.11     700   37.11     749   36.62     750   36.20     786
GR 36.20   830.0   35.88   846.0   21.19   877.0   20.79   897.00   21.19     917
GR  33.6     937    34.0    1030    35.0    1370    36.0    1522    37.0    1611
GR  38.0    1627
X1 20287      22    1194  1297.0    1050    1130    1080       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR 36.54     137    35.5     155    36.5     180    37.0     200    38.0     240
GR  37.0     393   36.57     460   37.12     512   40.96     519   40.96     710
GR  37.0     727    35.5     915    35.9    1052    35.7    1137    35.7    1194
GR 35.28    1210   21.86    1238   21.46    1258   21.86    1278    34.5    1297
GR  37.1    1397    38.0    1492
X1 20506      23    1225    1310     240     215     219
X3    10                                                    37.1    37.1
GR  37.0     130    36.0     160    36.9     180    38.0     220    38.0     409
GR  37.0     521   36.99     548    37.0     592    37.5     668    36.1     785
GR  35.7     940    34.2    1025    35.1    1087    34.2    1147    35.7    1208
GR  35.4    1225    22.0    1259    21.6    1279    22.0    1294    33.8    1310
GR  34.0    1320    35.3    1410    37.5    1505
X1 20537      23    1228    1310      31      31      31
X3    10                                                    40.5    40.5
GR  37.0     130    36.0     160    36.9     180    38.0     220    38.0     409
GR  37.0     521    36.9     548    37.0     592    37.5     668    36.1     785
GR  35.7     940    34.2    1025    35.1    1087    34.2    1147    33.7    1200
GR  34.5    1228    31.4    1255    27.3    1265    27.2    1300    34.8    1310
GR  34.0    1320    35.3    1410    37.5    1505
X1 20557      16  878.25  921.75      90      50      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
X4     2    29.3  904.55    29.3  910.55       0       0       0       0       0
GR  41.4       0    41.5  878.25    31.7  878.25    31.7  879.25    27.8   882.4
GR  27.8   887.4    29.3  889.45    29.3  895.45    27.8   897.5    27.8   902.5
GR  27.8   912.6    27.8   917.6    31.7  920.75    31.7  921.75    41.5  921.75
GR  41.6    1800       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7       0    37.3     4.5   355.4   0.313    27.8    27.8
X1 20586       0       0       0      29      29      29       0       0       0
X2     0       0       1    37.7    41.4       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4       0    41.4    41.4  878.25    41.5    37.7  920.75    41.5    37.7
BT  1800    41.6    41.6       0       0       0       0       0       0       0
*    NH     5    100.     839    .060     984    .040    1080    .060    1270
*    NH  2050
*   Improved Channel by French Road State Subdivision
NC    .06     .06     .040
X1 20727      26     984    1080     120     160     141       0       0       0
CI    -1   27.30    0.05     2.0     2.0      60
GR  39.6       0    41.2      27    35.3      72    40.6     128    36.5     196
GR  37.5     248    34.6     766    36.7     839    34.3     902    36.3     984
GR  35.5    1028    28.1    1047    28.1    1056    38.0    1080    36.3    1097
GR  37.1    1117    37.2    1270    38.0    1409    38.2    1570    38.8    1623
GR  39.6    1713    39.6    1743    39.6    1777    38.2    1913    39.2    1987
GR  39.6    2050       0       0       0       0       0       0       0       0
*    NH     5    100.     839    .060     984    .040    1080    .060    1117
*    NH  2050
X1 21137      26     984    1080     410     410     410       0       0       0
CI     0   27.4
GR  39.6       0    41.2      27    35.3      72    40.6     128    36.5     196
GR  37.5     248    34.6     766    36.7     839    34.3     902    36.3     984
GR  35.5    1028    28.1    1047    28.1    1056    38.0    1080    36.3    1097
GR  37.1    1117    37.2    1270    38.0    1409    38.2    1570    38.8    1623
GR  39.6    1713    39.6    1743    39.6    1777    38.2    1913    39.2    1987
GR  39.6    2050       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 21207      14   962.3    1038     140       1      70       0       0       0
```

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CI    -1     27.5
X3    10        0        0        0        0        0        0     36.5     36.5        0
GR  39.5        0     37.0      955     35.7    962.3     34.4    962.3     34.4    967.8
GR  30.1      980     28.9     1000     28.1     1010     28.5     1020     31.7     1027
GR  34.7     1038     35.7     1038     37.0     1045     38.5     2000        0        0
SB   1.0      1.5      2.7        0     26.2     3.61    358.7    3.236     28.1     28.1
X1 21287        0        0        0       80       80       80        0        0        0
CI     0     27.4
X2     0        0        1     35.7     37.0        0        0      1.5        0        0
X3    10        0        0        0        0        0        0        0        0        0
BT    -6        0     39.5     39.5      955     37.0     37.0    962.3     37.0     35.7
BT     0     1038     37.0     35.7     1045     37.0     37.0     2000     38.5     38.5
*    NH       5    100.      416     .060     1000     .040     1117     .060     1245
*    NH   1950
X1 21407       25     1000     1117      120      120      120        0        0        0
CI    -1     27.5
GR  39.8        0     37.8       21     39.5       54     38.5       82     39.7      101
GR  39.3      276     39.5      416     37.0      503     34.6      863     36.6      906
GR  37.8     1000     36.2     1016     28.2     1041     28.2     1048     29.0     1054
GR  29.3     1081     35.3     1101     38.5     1117     37.3     1201     36.2     1245
GR  38.0     1295     38.2     1363     37.3     1471     38.2     1668     39.8     1950
*    NH       5    100.      416     .060     1000     .040     1117     .060     1363
*    NH   1950
X1 22037       25     1016     1101      630      630      630        0        0        0
CI    -1     28.0
GR  39.8        0     37.8       21     39.5       54     38.5       82     39.7      101
GR  39.3      276     39.5      416     37.0      503     34.6      863     36.6      906
GR  37.8     1000     36.2     1016     28.2     1041     28.2     1048     29.0     1054
GR  29.3     1081     35.3     1101     38.5     1117     37.3     1201     36.2     1245
GR  38.0     1295     38.2     1363     37.3     1471     38.2     1668     39.8     1950
*    NH       5    100.      538     .060     1089     .040     1229     .060     1585
*    NH   2150
X1 22917       27     1089     1229      880      880      880        0        0        0
CI    -1       -1                                .01
GR  39.3        0     40.0       98     40.1      143     39.6      176     40.6      192
GR  39.3      352     38.7      422     40.2      538     38.2      748     37.1      918
GR  35.0      957     38.0     1005     38.2     1089     36.8     1122     28.2     1141
GR  28.2     1159     36.2     1180     36.2     1204     38.2     1229     38.2     1299
GR  36.2     1337     38.1     1369     37.2     1515     39.1     1585     38.7     1766
GR  39.1     1992     38.8     2150        0        0        0        0        0        0
NH     5     100.     1005     .060     1089     .040     1229     .060     1299     100.
NH  2150
X1 23437        0        0        0      520      520      520        0     -0.6        0
NC   .06      .06     .040
X1 23517       11      960     1040       80       80       80        0        0        0
X3    10        0        0        0        0        0        0        0        0        0
X4     5     40.0      840     39.8      870     40.0      910     40.0     1110     40.0
X4  1210        0        0        0        0        0        0        0        0        0
GR  41.7        0     41.0      960    36.95      960     33.5    971.9     30.9    985.4
GR  29.9     1000     31.4     1013     33.8     1029     37.3     1040     41.0     1040
GR  41.0     2100        0        0        0        0        0        0        0        0
SB   1.0      1.5      2.7        0    40.72     2.81    644.6    1.754    29.85    29.85
X1 23547        0        0        0       30       30       30        0        0        0
X2     0        0        1     41.0     40.0        0        0      1.5        0        0
X3    10        0        0        0        0        0        0        0        0        0
BT     9        0     41.7     41.7      840     40.0     40.0      870     39.8     39.8
BT   910     40.0     40.0      960     42.3     41.0     1040     42.3     41.0     1110
BT  40.0     40.0     1210     40.0     40.0     2100     41.0     41.0        0        0
NH     5     100.      714     .060      755     .040      895     .060     1000     100.
NH  2200
X1 23627       22      755      895       80       80       80        0        0        0
GR  43.2        0     42.8      219     43.0      548     42.2      556     43.3      589
GR  42.6      621     43.3      633     42.3      714     38.7      755     38.1      786
GR  30.5      814     30.5      849     36.6      873     38.7      895     38.3     1000
GR  39.7     1121     39.3     1257     40.2     1517     39.7     1737     39.5     1926
GR  39.5     2083     40.1     2200        0        0        0        0        0        0
NH     5     100.      633     .060      786     .040      873     .060     1121     100.
NH  2200
X1 24167       22      786      873      530      550      540        0        0        0
X3    10
GR  43.2        0     42.8      219     43.0      548     42.2      556     43.3      589
GR  42.6      621     43.3      633     42.3      714     38.7      755     38.1      786
GR  30.5      814     30.5      849     36.6      873     38.7      895     38.3     1000
GR  39.7     1121     39.3     1257     40.2     1517     39.7     1737     39.5     1926
GR  39.5     2083     40.1     2200        0        0        0        0        0        0
NH     5     100.      634     .060      777     .040      827     .060     1307     100.
NH  1800
X1 25337       20      777      827     1080      960     1170        0        0        0
X3    10        0        0        0        0        0        0        0        0        0
GR  43.1        0     42.8       89     43.1      138     41.8      171     43.1      181
GR  40.7      370     38.5      503     39.3      634     38.8      747     38.3      777
GR  32.6      783     32.6      791     37.3      808     38.0      827     38.0     1027
GR  40.3     1130     41.1     1307     41.1     1481     40.7     1642     41.0     1800
NH     5     100.      554     .060      590     .040      624     .060     1096     100.
NH  1800
X1 26397       25      590      624     1060     1060     1060        0        0        0
GR  43.8        0     44.6       88     43.3       94     44.5      127     43.5      158
GR  45.0      169     44.1      270     42.8      339     40.5      430     39.3      506
GR  41.3      554     39.3      590     35.5      602     35.5      613     41.5      624
GR  40.3      645     39.1      780     41.6      863     42.5     1096     41.0     1231
GR  42.7     1277     42.8     1455     42.7     1688     43.6     1781     42.6     1800
NH     7     100.      790     .060      978     .040     1015     .060     1470     100.
NH  1590     .080     1970     100.     2535
X1 27227       35      978     1015      750      750      830        0        0        0
GR  45.3      460     45.0      580     44.9      640     45.0      710     45.0      790
GR  44.0      810     43.0      825     42.0      855     42.0      890     43.0      905
GR  43.8      935     43.0      960     42.0      978     36.2      992     36.2     1005
GR  42.0     1015     43.0     1140     43.0     1215     42.6     1360     43.0     1470
GR  43.3     1540     43.0     1590     42.7     1700     43.0     1775     43.5     1910
GR  44.0     1960     45.0     1970     44.4     2090     45.0     2110     44.0     2210
GR  43.0     2250     42.7     2340     43.0     2420     45.0     2530     45.9     2535
NH     7     100.      800     .060      983     .040     1020     .060     1425     100.
NH  1590     .080     1905     100.     2560
X1 27367       28      983     1020      140      140      140        0        0        0
GR  45.3      450     45.0      500     45.0      585     45.8      690     45.0      800
GR  44.0      815     43.0      950     42.0      983     36.4      996     36.4     1008
GR  42.0     1020     43.0     1170     43.0     1350     42.7     1400     43.0     1425
GR  43.0     1590     42.7     1660     43.0     1720     43.5     1870     44.0     1900
GR  45.0     1905     44.4     2050     45.0     2090     43.0     2225     42.7     2320
GR  43.0     2370     45.0     2390     45.9     2560
NC 0.060    0.060    0.040
X1 27417        7      880      914       40       60       50        0        0        0
GR  46.3       80     46.0      575     45.0      880     36.3      880     36.3      914
GR  45.0      914     44.6      990
SB   1.0      1.5      2.7        0       34        0      249        0        0        0
X1 27452        0        0        0       35       35       35        0        0        0
X2     0        0        1     43.3     44.6        0        0        0        0        0
BT    -6      575     46.0     46.0      880     45.0     45.0      880     45.0     43.3
BT     0      914     45.0     43.3      914     45.0     45.0      990     44.6     44.6
*
* SECTIONS AT FIS LOCATIONS MODIFIED USING MACKAY & SOMPS TOPO
*
NH     4     100.      900     .060      970     .040     1030     .060     1070        0
X1 27552       13      970     1030      200       60      100        0        0        0
* RIGHT END OF SECTION IS CENTERLINE OF ELK GROVE-FLORIN RD.
*  ANTICIPATE SPLIT FLOW MODEL HERE
GR  47.0      660     46.0      670     45.0      690     44.0      770     43.0      810
GR  43.0      900     42.0      945     42.0      970     36.6      988     36.6     1011
GR  43.0     1030     44.0     1050     44.6     1070        0        0        0        0
*
*  SECNO 27657 DELETED AND REPLACED BY 27957
*
NH     4     100.      665     .060      970     .040     1023     .060     1140        0
X1 27957       20      970     1023      300      440      405        0        0        0
* RIGHT END OF SECTION IS CENTERLINE OF ELK GROVE-FLORIN RD.
GR  47.0      190     46.0      250     46.0      325     45.1      365     45.0      400
GR  44.0      485     43.0      505     42.0      550     41.4      625     42.0      665
GR  42.0      920     43.0      925     43.0      970     36.8      990     36.6     1010
GR  43.0     1023     43.0     1030     42.0     1065     43.0     1100     43.2     1140
```

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*
* FOLLOWING IS MOST UPSTREAM SECTION FOR SPLIT FLOW AT THIS LOCATION
* ROAD CENTERLINE IS NOT INCLUDED IN THIS SECTION GEOMETRY
*
NH     5     100.      750     .060      985     .040     1008     .060     1380     100.
NH  2085        0        0        0        0        0        0        0        0        0
X1 28347       24      985     1008      220      400      390        0        0        0
GR  48.0      430     46.0      455     45.0      590     44.0      685     43.0      750
GR  42.0      785     41.0      910     41.0      985     37.2      995     37.2     1005
GR  40.0     1008     41.0     1075     41.3     1130     42.0     1190     42.4     1380
GR  42.9     1540     43.0     1690     43.0     1715     44.0     1720     44.1     1820
GR  45.0     1890     46.0     1980     46.0     2080     47.0     2085        0        0
NH     5     100.      520     .060      990     .040     1018     .060     1320     100.
NH  2190        0        0        0        0        0        0        0        0        0
X1 29357       21      990     1018      980     1010     1010        0        0        0
GR  47.0      310     46.7      400     46.0      520     45.0      690     44.0      770
GR  43.0      910     42.0      990     38.5      997     38.5     1005     43.0     1018
GR  43.0     1025     42.0     1040     41.1     1100     42.0     1150     42.3     1320
GR  43.0     1450     44.0     1530     45.0     1720     45.9     1980     46.0     2110
GR  46.8     2190        0        0        0        0        0        0        0        0
NH     5     100.      870     .060      985     .040     1010     .060     1500     100.
NH  2150        0        0        0        0        0        0        0        0        0
X1 30187       21      985     1010     1100      350      910        0        0        0
GR  48.0      640     46.0      720     45.0      870     44.6      985     39.1      995
GR  39.1     1005     43.5     1010     44.0     1195     44.0     1210     43.4     1300
GR  44.0     1380     45.0     1400     46.0     1415     47.3     1500     46.0     1545
GR  45.0     1550     44.3     1630     44.3     1650     45.0     1705     46.0     2040
GR  46.8     2150        0        0        0        0        0        0        0        0
EJ
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              3                                                 15.7
J2      2             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              4                                                 15.7
J2      3             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              5                                                 15.7
J2      4             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              6                                                 15.7
J2      5             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              7                                                 15.7
J2      6             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              8                                                 15.7
J2      7             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1              9                                                 15.7
J2      8             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1             10                                                 15.7
J2      9             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1             11                                                 15.7
J2     10             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1             12                                                 15.7
J2     11             -1
T1        Sacramento County - Water Resources Division
T2        Drainage Master Plan - Existing Condition
T3        Elder Cr
J1             13                                                 15.7
J2     15             -1

ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 2

HEC-2 MODEL FOR EXISTING CONDITIONS ON UPPER ELDER CREEK FROM 1.8 MILES UPSTREAM OF THE CONFLUENCE WITH GERBER CREEK TO THE UPSTREAM STUDY LIMIT

FILENAME: ELDSQ2B.DAT

```
SF      Elder Creek
TW      Centerline Florin Road
WS    4   37002   36182   35607     2.7       0       0       0       0       0
WC 1030    52.0    1630    52.6    1725    53.0    1860    53.5
TW      Centerline Florin Road
WS    3   36302   37002   35607     2.7       0       0       0       0       0
WC  515    51.9     940    51.8    1030    52.0
TW      Centerline Florin Road
WS    5   35842   36302   35607     2.7       0       0       0       0       0
WC    0    53.5     120    53.0     360    52.2     460    52.0     515    51.9
EE
C       ELDER CREEK - SV / SQ confluence of Gerber to end
C     9
C  29357     Confluence Gerber Creek
C  30427     McCoy Ave
C  31530     Private Ped. Bridge
C  31950     Private Crossing - Dbl. 45" metal pipes
C  34757     CCTRR
C  35677     Florin Road
C  45922     Bradshaw Road
C  54812     Elder Creek Road
C  61242     Excelsior Road/Jackson Highway
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr - SQ / SV      File ELDSQ2a.WRD - 3/23/94
J1   -10       2                  13                              39.78
JR   100   39.78     400   42.31     600   43.06     800   43.59    1000   43.89
JR  1200   44.06    1400   44.19    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800   44.9
J2     1        -1
J3    38       43       1        6        7      150
*      J4 29357   34757   34757   40302   40302   54812
J4  29357   35607   35607   40302   40302   54812   54812   57172   57172   63292
NC    .06     .06     .03       1       3
QT     14     200     600     700     800    1000    1200    1400    1600    1800
QT   2000    2200    2400    2600    2800
NH      5     100.     750    .060     985    .040    1008    .060    1380    100.
NH   2085       0       0       0       0       0       0       0       0       0
X1  28347      24     985    1008     220     400     390       0       0       0
GR   48.0     430    46.0     455    45.0     590    44.0     685    43.0     750
GR   42.0     785    41.0     910    41.0     985    37.2     995    37.2    1005
GR   40.0    1008    41.0    1075    41.3    1130    42.0    1190    42.4    1380
GR   42.9    1540    43.0    1690    43.0    1715    44.0    1720    44.1    1820
GR   45.0    1890    46.0    1980    46.0    2080    47.0    2085       0       0
NH      5     100.     520    .060     990    .040    1018    .060    1320    100.
NH   2190       0       0       0       0       0       0       0       0       0
X1  29357      21     990    1018     980    1010    1010       0       0       0
GR   47.0     310    46.7     400    46.0     520    45.0     690    44.0     770
GR   43.0     910    42.0     990    38.5     997    38.5    1005    43.0    1018
GR   43.0    1025    42.0    1040    41.1    1100    42.0    1150    42.3    1320
GR   43.0    1450    44.0    1530    45.0    1720    45.9    1980    46.0    2110
GR   46.8    2190       0       0       0       0       0       0       0       0
QT     14     100     300     350     400     500     600     700     800     900
QT   1000    1100    1200    1300    1400
NH      5     100.     870    .060     985    .040    1010    .060    1500    100.
NH   2150       0       0       0       0       0       0       0       0       0
X1  30187      21     985    1010    1100     350     910       0       0       0
GR   48.0     640    46.0     720    45.0     870    44.6     985    39.1     995
GR   39.1    1005    43.5    1010    44.0    1195    44.0    1210    43.4    1300
GR   44.0    1380    45.0    1400    46.0    1415    47.3    1500    46.0    1545
GR   45.0    1550    44.3    1630    44.3    1650    45.0    1705    46.0    2040
GR   46.8    2150       0       0       0       0       0       0       0       0
NH      5     100.     840    .060     988    .040    1010    .060    1210    100.
NH   2160       0       0       0       0       0       0       0       0       0
X1  30377      18     988    1010     150     170     190       0       0       0
GR   48.0     600    46.0     690    45.0     715    44.0     740    43.3     840
GR   43.0     988    39.1     995    39.1    1005    43.0    1010    44.0    1180
GR   44.0    1210    43.6    1270    44.0    1370    45.0    1440    45.3    1710
GR   45.7    1910    46.0    1960    46.2    2160       0       0       0       0
NH      5     100.     480    .060     985    .040    1016    .060    1280    100.
NH   2200       0       0       0       0       0       0       0       0       0
X1  30427      18     985    1016      40      80      50
GR   48.0     220    47.0     290    46.0     295    45.2     320    45.5     480
GR   45.0     750    44.7     985    40.1     985    39.7    1000    39.4    1003
GR   39.1    1007    39.2    1016    44.7    1016    45.4    1180    45.5    1280
GR   45.1    1470    45.7    1940    46.0    2200
SB    1.0       1     1.5     2.6       0      24      .8     107       1
NH      5     100.     480    .060     985    .040    1016    .060    1280    100.
NH   2200       0       0       0       0       0       0       0       0       0
X1  30447       0       0       0      20      20      20
X2     0       0       1    43.1    44.7
X3    10
BT    -6     750    45.0    45.0     985    44.7    44.7     985    44.7    43.1
BT     0    1016    44.7    43.1    1016    44.7    44.7    1180    45.4    45.4
NH      5     100.     570    .060     990    .040    1015    .060    1500    100.
NH   2260       0       0       0       0       0       0       0       0       0
X1  30547      19     990    1015      50     200     100       0       0       0
GR   47.0     310    46.0     340    45.0     570    44.0     710    43.4     870
GR   43.0     990    40.5     995    40.5    1010    43.0    1015    44.0    1080
GR   45.0    1110    45.5    1220    46.0    1330    46.5    1500    46.0    1660
GR   45.3    1925    46.0    2120    47.0    2160    47.8    2260       0       0
*
*   SECNO 30627 DELETED AND REPLACED BY 31127
*
NH      5     100.     765    .060     990    .040    1010    .060    1350    100.
NH   1625       0       0       0       0       0       0       0       0       0
X1  31127      16     990    1010     350     450     580       0       0       0
GR   48.0     705    47.0     725    46.0     770    45.0     780    45.0     785
GR   44.0     825    44.0     950    43.0     990    40.8     996    40.8    1004
GR   44.0    1010    45.0    1060    46.0    1200    46.2    1350    46.7    1490
GR   47.0    1625       0       0       0       0       0       0       0       0
NH      5     100.     890    .060     987    .040    1020    .060    1150    100.
NH   1820       0       0       0       0       0       0       0       0       0
X1  31470      17     987    1020     220     430     343
GR   49.0     705    48.0     730    47.0     760    46.0     830    45.0     890
GR   44.5     987    41.5     992    41.4    1005    45.0    1020    46.0    1090
GR   46.5    1150    46.0    1210    46.0    1380    47.0    1610    48.0    1690
GR   49.0    1815    50.0    1820
NH      6     100.     840    .060     991    .040    1010    .060    1035    .080
NH   1150     100.    1715       0       0       0       0       0       0       0
X1  31530      27     991    1010      60      60      60
GR   49.0     710    48.2     720    48.0     750    47.0     770    47.0     840
GR   46.0     885    45.0     930    45.0     970    47.1     988    47.1     991
GR   45.2     991    42.4     996    41.7    1000    42.3    1004    45.7    1010
GR   47.1    1010    47.1    1013    45.0    1025    45.0    1035    46.0    1070
GR   46.5    1150    46.0    1210    46.0    1300    46.6    1375    47.0    1430
GR   48.0    1695    49.0    1715
NH      6     100.     840    .060     991    .040    1010    .060    1035    .080
NH   1150     100.    1715       0       0       0       0       0       0       0
X1  31540       0       0       0      10      10      10
NH      5     100.     830    .060     988    .040    1014    .060    1205    100.
NH   1740
X1  31620      18     988    1014      80      80      80
GR   49.0     730    48.0     755    47.0     830    46.0     885    45.0     920
GR   44.6     940    45.0     988    41.8     995    41.8    1005    45.0    1014
GR   46.0    1040    46.0    1205    45.8    1350    46.0    1400    46.5    1530
GR   47.0    1670    48.0    1720    49.0    1740
NH      5     100.     955    .060     983    .040    1010    .060    1075    100.
NH   1865
X1  31880      21     983    1010     300     220     260
GR   50.0     460    49.0     600    48.3     640    48.0     745    47.0     870
GR   47.0     885    49.0     890    49.0     955    47.0     965    46.0     983
GR   42.0     993    42.0    1007    46.0    1010    46.6    1075    46.0    1145
GR   45.8    1360    46.0    1430    47.0    1660    48.0    1710    49.0    1845
GR   50.0    1865
NH      5     100.     765    .060    995.75    .040  1004.25    .060    1040    100.
NH   1760
* Dbl 45" culverts at S end Hedge Ave.
X1  31950      58  995.75  1004.25     120      60      70     .00     .00     .00
X3     10.    .00     .00     .00     .00     .00     .00   44.30   45.80     .00
BT    -44.  900.00   44.30   44.30  950.00   45.10   45.10  975.00   46.20   46.20
BT     0.  990.00   46.80   46.80  995.74   46.80   46.80  995.75   46.80   46.08
BT     0.  995.88   46.80   44.75  996.13   46.80   45.20  996.38   46.80   45.47
BT     0.  996.63   46.80   45.66  996.88   46.80   45.79  997.13   46.80   45.88
BT     0.  997.38   46.80   45.93  997.63   46.80   45.95  997.88   46.80   45.93
BT     0.  998.13   46.80   45.88  998.38   46.80   45.79  998.63   46.80   45.66
BT     0.  998.88   46.80   45.47  999.13   46.80   45.20  999.38   46.80   44.75
BT     0.  999.50   46.80   44.08  999.51   46.80   46.80 1000.49   46.80   46.80
BT     0. 1000.50   46.80   44.08 1000.63   46.80   44.75 1000.88   46.80   45.20
BT     0. 1001.13   46.80   45.47 1001.38   46.80   45.66 1001.63   46.80   45.79
BT     0. 1001.88   46.80   45.88 1002.13   46.80   45.93 1002.38   46.80   45.95
BT     0. 1002.63   46.80   45.93 1002.88   46.80   45.88 1003.13   46.80   45.79
BT     0. 1003.38   46.80   45.66 1003.63   46.80   45.47 1003.88   46.80   45.20
BT     0. 1004.13   46.80   44.75 1004.25   46.80   44.08 1004.26   46.80   46.80
BT     0. 1010.00   46.80   46.80 1020.00   46.90   46.90
GR   48.0     640    47.5     670    47.0     765    46.0     770    46.0     850
GR 44.30  900.00   45.10  950.00   46.20  975.00   46.80  990.00   46.80  995.74
GR 44.08  995.75   43.40  995.88   42.95  996.13   42.68  996.38   42.49  996.63
GR 42.36  996.88   42.27  997.13   42.22  997.38   42.20  997.63   42.22  997.88
GR 42.27  998.13   42.36  998.38   42.49  998.63   42.68  998.88   42.95  999.13
GR 43.40  999.38   44.08  999.50   46.80  999.51   46.80 1000.49   44.08 1000.50
GR 43.40 1000.63   42.95 1000.88   42.68 1001.13   42.49 1001.38   42.36 1001.63
GR 42.27 1001.88   42.22 1002.13   42.20 1002.38   42.22 1002.63   42.27 1002.88
GR 42.36 1003.13   42.49 1003.38   42.68 1003.63   42.95 1003.88   43.40 1004.13
GR 44.08 1004.25   46.80 1004.26   46.80 1010.00   46.90 1020.00   46.90 1040.00
GR 46.50 1095.00   46.00 1100.00   45.80 1350.00   46.0     1405    46.5     1440
GR   47.0    1620    47.2    1690    48.0    1760
NH      5     100.     765    .060    995.75    .040  1004.25    .060    1040    100.
NH   1760
X1  31980       0     .00     .00      30      30      30     .00     .00     .00
X2     .00    .00       0       0       0     .00       1     .00     .00     .00
X3     10.    .00     .00     .00     .00     .00     .00   44.30   45.80     .00
NH      5     100.     740    .060     982    .040    1015    .060    1210    100.
NH   1930       0       0       0       0       0       0       0       0       0
X1  32080      18     982    1015     150      80     100
GR   50.0     290    49.0     315    48.0     605    47.0     675    46.0     740
GR   45.1     920    45.0     982    44.0     986    42.4     990    42.4    1008
GR   45.0    1015    45.2    1210    46.0    1360    46.5    1400    47.0    1680
GR   48.0    1710    49.0    1800    50.0    1930
NH      5     100.    1000    .060    1485    .040    1512    .060    1760    100.
NH   2065       0       0       0       0       0       0       0       0       0
X1  32977      18    1485    1512    1100     900    1000       0       0       0
GR   49.0     300    48.5     450    48.5     890    48.0    1000    47.8    1070
GR   47.2    1350    47.0    1415    46.0    1485    44.3    1495    44.3    1508
GR   45.5    1512    46.0    1535    46.3    1570    47.0    1705    47.3    1760
GR   48.0    1895    49.0    2010    50.0    2065       0       0       0       0
NH      5     100.     660    .060     985    .040    1020    .060    1510    100.
NH   1630       0       0       0       0       0       0       0       0       0
X1  33517      13     985    1020     350     650     540       0       0       0
GR   49.0     290    48.7     490    48.3     660    48.0     830    47.5     925
GR   47.0     985    44.8     993    44.8    1008    47.0    1020    48.0    1290
GR   48.4    1510    49.0    1550    50.0    1630       0       0       0       0
NH      5     100.    1030    .060    1480    .040    1520    .060    2000    100.
NH   2340       0       0       0       0       0       0       0       0       0
X1  34017      20    1480    1520     450     300     500       0       0       0
GR   52.5     410    50.0     430    50.0     510    50.1     590    50.0     695
GR   49.1     845    49.0     890    48.8    1030    48.5    1300    48.0    1440
GR   48.0    1455    47.0    1480    45.0    1485    45.0    1510    47.0    1520
GR   47.8    1675    48.0    1680    49.0    2000    50.0    2185    51.0    2340
NH      5     100.    1325    .060    1490    .040    1515    .060    1522    100.
NH   2070       0       0       0       0       0       0       0       0       0
X1  34677      13    1490    1515     450     750     660       0       0       0
GR   52.5     450    50.0     460    49.0     750    49.1    1325    49.0    1385
GR   49.0    1460    48.0    1490    45.2    1493    45.2    1507    48.0    1515
GR   49.0    1522    50.0    1880    51.0    2070       0       0       0       0
NC 0.060  0.060   0.040
X1  34757      39    1959    2041      80      60      80
GR   53.8       0    53.1     600    53.0    1100    53.6    1400    54.0    1959
GR   46.5    1959    46.4    1968    46.4    1969    51.6    1969    51.6    1971
GR   46.4    1971    46.5    1976    45.4  1983.5    51.6  1983.5    51.6  1985.5
GR   45.4  1985.5    45.6    1990    45.8    1998    51.6    1998    51.6    2000
GR   46.0    2000    46.9    2004    47.1    2013    51.6    2013    51.6    2015
GR   47.1    2015    47.1    2016    46.9    2019    47.8    2026    47.8    2028
GR   51.6    2028    51.6    2030    47.8    2030    47.8    2033    46.9    2037
GR   47.3    2041    54.0    2041    53.6    2550    54.2    2930
SB    1.0     1.5     2.7       0      82       0     357
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X1 34777       0       0       0      20      20      20
X2     0       0       1    51.6    53.0
X3    10
BT   -10       0    53.8    53.8     600    53.1    53.1    1100    53.0    53.0
BT     0    1400    53.6    53.6    1959    54.0    54.0    1959    54.0    51.6
BT     0    2041    54.0    51.6    2041    54.0    54.0    2550    53.6    53.6
BT     0    2930    54.2    54.2
NH     5    100.    1860    .060    1970    .040    2030    .060    2240    100.
NH  2795       0       0       0       0       0       0       0       0       0
X1 34927      24    1970    2030     150     150     150       0       0       0
GR  52.0     330    51.2     570    51.0     660    51.0     800    50.7     865
GR  50.0    1090    49.4    1140    49.5    1430    49.2    1860    49.0    1970
GR  48.0    1975    45.9    1990    45.7    2010    48.0    2015    49.0    2030
GR  49.3    2140    50.0    2170    51.0    2240    51.0    2320    50.0    2390
GR  50.0    2550    51.0    2555    51.0    2760    53.0    2795       0       0
NH     5    100.    1400    .060    1980    .040    2025    .060    2270    100.
NH  2470       0       0       0       0       0       0       0       0       0
X1 35307      26    1980    2025     400     350     380       0       0       0
GR  53.0     325    52.8     380    52.0     690    51.1     950    51.0     980
GR  50.3    1120    50.0    1290    50.0    1300    50.8    1400    50.0    1530
GR  49.4    1680    49.0    1870    48.9    1895    49.0    1935    49.0    1980
GR  48.0    1987    45.7    1990    45.7    2010    48.0    2018    49.0    2025
GR  50.0    2155    51.0    2195    51.7    2270    51.0    2390    51.0    2415
GR  52.5    2470       0       0       0       0       0       0       0       0
NH     5    100.    1660    .060    1970    .040    2015    .060    2020    100.
NH  2370       0       0       0       0       0       0       0       0       0
X1 35607      24    1970    2015     500     180     300       0       0       0
GR  53.0     130    52.0     200    51.9     240    51.7     650    51.1     860
GR  51.0    1020    50.8    1050    50.3    1240    50.1    1460    50.0    1540
GR  50.1    1660    50.0    1695    49.6    1850    49.0    1970    45.7    1988
GR  45.7    2008    49.0    2015    50.0    2020    50.0    2060    49.6    2100
GR  50.0    2145    51.0    2215    51.0    2320    53.0    2370       0       0
NC 0.060   0.060   0.040
*
* FLORIN ROAD - Flow topping road left of STA 920 is "Split Flow"
* Piers coded on GR & omitted from SB to force use of actual bridge
*  geometry, instead of "trap. approximation, for "low flow" situations
X1 35677      22     972    1029      50      70      70
GR  53.4     920    53.4     972    50.4     972    49.1     978    48.1     984
GR  47.4   989.7    52.4   989.7    52.4     991    47.3     991    46.8     995
GR  46.2    1007    45.7    1010    52.4    1010    52.4  1011.3    45.7  1011.3
GR  45.6    1015    45.9    1020    47.6    1023    51.0    1029    53.4    1029
GR  53.4    1545    54.0    1790
SB   1.0     1.5     2.6       0      30       0     261       3
X1 35722       0       0       0      45      45      45
X2     0       0       1    52.4    53.4
X3    10
BT    -7     920    53.4    53.4     972    53.4    53.4     972    53.4    52.4
BT     0    1029    53.4    52.4    1029    53.4    53.4    1545    53.4    53.4
BT     0    1790    54.0    54.0
* LEFT END OF SECTION IS CENTERLINE OF FLORIN RD.
NH     4    .060     487    .040     510    .060     750    100.    2200
X1 35842      21     487     510      60     350     120       0       0       0
GR  53.5     450    51.0     470    50.0     487    46.8     495    46.8     507
GR  50.0     510    51.0     516    51.8     525    51.0     538    50.0     540
GR  50.0     675    50.5     750    51.0     910    51.2    1040    51.0    1120
GR  51.0    1180    51.2    1230    51.7    1670    51.2    1920    52.0    2040
GR  52.6    2200       0       0       0       0       0       0       0       0
NH     4    .060     475    .040     510    .060    1440    100.    1690
X1 36302      17     475     510     500     400     460       0       0       0
GR  51.9     275    51.0     290    50.4     335    50.0     410    50.0     475
GR  46.8     490    46.8     505    51.0     510    51.0     520    50.0     535
GR  49.7     620    50.0     710    51.0     780    52.0    1200    52.4    1260
GR  52.4    1440    53.0    1690       0       0       0       0       0       0
NH     5    100.     250    .060     480    .040     510    .060     890    100.
NH  1560       0       0       0       0       0       0       0       0       0
X1 37002      16     480     510     550     750     700       0       0       0
GR  52.0      15    51.3     250    51.0     305    50.4     430    50.0     480
GR  47.0     490    47.0     505    51.0     510    51.2     710    51.3     890
GR  51.0    1180    50.8    1190    51.0    1210    52.0    1250    53.0    1370
GR  54.0    1560       0       0       0       0       0       0       0       0
*    LAST SECTION OF SPLIT FLOW AT FLORIN RD
NH     5    100.    1020    .060    1482    .040    1520    .060    1695    100.
NH  1950       0       0       0       0       0       0       0       0       0
X1 38182      19    1482    1520     600     600    1180       0       0       0
GR  53.5     275    52.1     330    52.0     340    51.7     460    51.4     560
GR  51.0     760    51.0     785    51.6    1020    51.3    1210    52.0    1460
GR  52.5    1470    52.0    1482    47.5    1492    47.5    1505    53.0    1520
GR  53.8    1695    53.0    1735    53.0    1930    53.9    1950       0       0
*
*    END OF USABLE TOPO FROM MACKAY & SOMPS
*
NH     5    100.    1456    .060    2087    .040    2128    .060    2381    100.
NH  3600       0       0       0       0       0       0       0       0       0
X1 39262      37    2087    2128     800     920    1080       0       0       0
GR  53.1       0    54.1     341    53.7     649    52.8     667    52.7     673
GR  52.6     682    52.7     998    52.6    1298    52.7    1456    52.0    1686
GR  51.5    2011    51.8    2076    53.1    2087    49.5    2098    49.5    2111
GR  51.0    2115    52.8    2128    51.8    2171    52.6    2181    50.2    2237
GR  52.0    2328    51.0    2358    53.0    2381    52.6    2521    52.6    2596
GR  51.5    2615    53.7    2653    53.7    2773    52.7    2830    54.2    2873
GR  54.2    3050    54.2    3161    56.3    3322    54.7    3332    54.7    3374
GR  55.0    3515    55.1    3600       0       0       0       0       0       0
NH     5    100.    1505    .060    2038    .040    2071    .060    2457    100.
NH  4100       0       0       0       0       0       0       0       0       0
X1 40302      38    2038    2071    1050    1000    1040       0       0       0
GR  55.3       0    54.3      90    56.1     107    56.2     132    54.0     138
GR  56.1     149    56.1     433    56.7     708    56.8     955    55.6    1250
GR  55.5    1444    56.8    1505    53.6    1855    52.6    1972    53.7    2019
GR  54.6    2038    50.1    2047    50.1    2062    53.6    2071    52.8    2169
GR  53.3    2222    54.6    2310    54.6    2457    54.5    2655    52.8    2800
GR  54.1    2830    54.3    3015    53.5    3116    54.7    3207    53.0    3245
GR  53.8    3276    55.0    3478    55.2    3597    55.2    3674    57.0    3771
GR  57.1    3869    55.5    3973    55.6    4100       0       0       0       0
NH     5    100.     448    .060    1148    .040    1177    .060    1582    100.
NH  2500       0       0       0       0       0       0       0       0       0
X1 41632      17    1148    1177    1050     950    1330       0       0       0
GR  55.3       0    54.3     415    51.7     422    56.1     448    54.1     510
GR  55.6     679    56.0    1148    51.0    1154    51.0    1167    55.5    1177
GR  53.2    1327    54.6    1400    55.0    1582    53.1    1716    54.5    2043
GR  56.7    2363    58.0    2500       0       0       0       0       0       0
NH     5    100.     712    .060    1293    .040    1322    .060    1981    100.
NH  2200       0       0       0       0       0       0       0       0       0
X1 42782      12    1293    1322     800     840    1150       0       0       0
GR  56.5       0    55.7     354    56.1     712    55.1    1017    55.6    1250
GR  56.3    1293    51.8    1303    51.8    1315    56.0    1322    56.2    1583
GR  56.6    1981    56.3    2200       0       0       0       0       0       0
NH     5    100.     184    .060     753    .040     781    .060    1540    100.
NH  1600       0       0       0       0       0       0       0       0       0
X1 44247      19     753     781    1200    1000    1465       0       0       0
GR  57.1       0    56.1     122    58.2     184    56.7     476    53.0     495
GR  54.2     515    56.2     613    56.2     729    59.0     753    52.2     763
GR  52.2     773    56.6     781    55.8     969    57.2    1029    57.3    1299
GR  56.0    1340    57.8    1402    58.0    1540    57.1    1600       0       0
NH     5    100.     214    .060     936    .040     966    .060    1281    100.
NH  1900       0       0       0       0       0       0       0       0       0
X1 45152      18     936     966     800     800     905       0       0       0
GR  60.7       0    59.2     102    59.7     214    57.2     466    58.3     645
GR  57.0     838    54.7     851    58.8     936    53.0     950    53.0     958
GR  57.8     966    59.0    1281    58.2    1571    59.3    1639    57.7    1678
GR  59.6    1767    57.7    1861    59.1    1900       0       0       0       0
NH     5    100.     795    .060     933    .040     990    .060    1271    100.
NH  1950       0       0       0       0       0       0       0       0       0
X1 45872      11     933     990     720     720     720       0       0       0
GR  62.3       0    62.0     280    61.5     531    60.6     795    61.1     933
GR  54.2     950    54.2     980    58.6     990    59.0    1271    60.2    1624
GR  61.7    1950       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 45922       6     875     925       1     100      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  62.3       0    60.1     875    54.9     875    54.9     925    60.1     925
GR  61.7    1950       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7     500      50     1.5   189.2       0    54.9    54.9
X1 45962       0       0       0      40      40      40       0       0       0
X2     0       0       1    58.8    60.1       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
NH     5    100.     933    .060     933    .040     990    .060    1271    100.
NH  1950       0       0       0       0       0       0       0       0       0
X1 46022      11     933     990      60      60      60       0       0       0
GR  62.3       0    62.0     280    61.5     531    60.6     795    61.1     933
GR  55.0     950    55.0     980    58.6     990    59.0    1271    60.2    1624
GR  61.7    1950       0       0       0       0       0       0       0       0
NH     5    100.     786    .060    1152    .040    1205    .060    1485    100.
NH  2050       0       0       0       0       0       0       0       0       0
X1 47312      13    1152    1205    1290    1290    1290       0       0       0
GR  64.8       0    64.3     281    63.8     501    62.5     786    62.6    1152
GR  55.6    1167    55.6    1189    61.8    1205    62.2    1485    60.8    1500
GR  62.1    1520    63.7    1800    64.6    2050       0       0       0       0
NH     5    100.     537    .060     620    .040     694    .060    1293    100.
NH  1550       0       0       0       0       0       0       0       0       0
X1 48502      14     620     694    1190    1190    1190       0       0       0
GR  65.0       0    63.0     500    61.6     537    64.1     620    63.3     642
GR  59.8     652    59.8     676    64.1     694    62.1     714    62.8     911
GR  63.5    1103    65.3    1293    65.5    1460    66.3    1550
NH     5    100.     388    .060     904    .040     934    .060    1137    100.
NH  1400       0       0       0       0       0       0       0       0       0
X1 48742      18     904     934     230     250     240       0       0       0
GR  64.1       0    65.1     123    63.6     186    65.0     252    63.7     320
GR  65.1     388    63.7     453    63.8     520    62.2     588    63.7     656
GR  63.2     720    64.2     791    63.6     904    61.3     918    62.8     934
GR  64.8    1137    65.7    1296    66.7    1400       0       0       0       0
NH     5    100.      25    .060     559    .040     601    .060     938    100.
NH  1250       0       0       0       0       0       0       0       0       0
X1 49952      12     559     601    1200    1200    1210       0       0       0
GR  66.0       0    67.8      25    67.7     174    67.5     321    64.8     495
GR  66.6     520    65.6     559    63.1     577    64.7     601    67.2     824
GR  68.8     938    73.1    1250       0       0       0       0       0       0
NH     5    100.     572    .060     789    .040     811    .060    1169    100.
NH  1300       0       0       0       0       0       0       0       0       0
X1 51162      12     789     811    1230    1000    1210       0       0       0
GR  82.6       0    82.6     192    78.2     507    71.8     572    67.2     685
GR  67.5     789    65.5     793    65.5     801    66.7     811    66.5     979
GR  68.1    1169    69.1    1300       0       0       0       0       0       0
NH     5    100.     232    .060     485    .040     517    .060     784    100.
NH  1000       0       0       0       0       0       0       0       0       0
X1 52132      14     485     517     980     960     970       0       0       0
GR  77.8       0    76.3      54    77.3      94    77.3     232    75.7     389
GR  71.8     452    69.0     485    66.8     492    66.8     506    68.1     517
GR  69.0     567    68.5     688    68.7     784    72.0    1000       0       0
NH     5    100.     245    .060     480    .040     504    .060     772    100.
NH  1000       0       0       0       0       0       0       0       0       0
X1 53262      15     480     504    1250    1040    1130       0       0       0
GR  76.3       0    72.8     245    70.5     355    71.6     397    72.2     439
GR  72.2     473    73.3     480    70.2     489    70.2     500    71.5     504
GR  70.6     528    70.8     632    72.7     772    74.0     896    74.6    1000
NH     5    100.     300    .060     665    .040     697    .060     800    100.
NH  1200       0       0       0       0       0       0       0       0       0
X1 54252      11     665     697     920    1120     990       0       0       0
X4     1    74.0     500       0       0       0       0       0       0       0
GR  80.0       0    76.0     300    73.4     627    73.2     665    70.6     670
GR  70.6     690    74.1     697    75.1     776    76.0     800    76.0    1000
GR  79.0    1200       0       0       0       0       0       0       0       0
NH     5    100.     500    .060     627    .040     697    .060     776    100.
NH  1200       0       0       0       0       0       0       0       0       0
X1 54752       0       0       0     555     555     500       0    -0.5       0
NC 0.060   0.060   0.040
X1 54812      52  994.50 1005.50      70      50      60     .00     .00     .00
X3    10     .00     .00     .00     .00     .00     .00     .00   77.00   76.00
GR 79.80  850.00   78.60  900.00   78.00  950.00   73.00  994.50   72.62  994.55
GR 72.17  994.75   71.88  995.00   71.70  995.25   71.59  995.50   71.52  995.75
GR 71.50  996.00   71.52  996.25   71.59  996.50   71.70  996.75   71.88  997.00
GR 72.17  997.25   72.62  997.45   73.00  997.50   73.00  998.50   72.62  998.55
GR 72.17  998.75   71.88  999.00   71.70  999.25   71.59  999.50   71.52  999.75
GR 71.50 1000.00   71.52 1000.25   71.59 1000.50   71.70 1000.75   71.88 1001.00
GR 72.17 1001.25   72.62 1001.45   73.00 1001.50   73.00 1002.50   72.62 1002.55
GR 72.17 1002.75   71.88 1003.00   71.70 1003.25   71.59 1003.50   71.52 1003.75
GR 71.50 1004.00   71.52 1004.25   71.59 1004.50   71.70 1004.75   71.88 1005.00
GR 72.17 1005.25   72.62 1005.45   73.00 1005.50   77.20 1050.00   77.20 1100.00
GR 77.30 1150.00   77.00 1200.00     .00     .00     .00     .00     .00     .00
SB   .00    2.48    2.60     .00    7.07     .00   21.21    .000   71.50   71.50
X1 54852       0     .00     .00   40.00   40.00   40.00     .00     .00     .00
X2   .00     .00       1   74.50   77.00     .00     .00     .00     .00     .00
X3    10     .00     .00     .00     .00     .00     .00   78.14   77.00     .00
BT   -52.  850.00   79.80   79.80  900.00   79.10   78.60  950.00   78.50   78.00
BT     0.  994.50   78.14   73.00  994.55   78.14   73.38  994.75   78.14   73.83
BT     0.  995.00   78.14   74.12  995.25   78.14   74.30  995.50   78.14   74.41
BT     0.  995.75   78.13   74.48  996.00   78.13   74.50  996.25   78.13   74.48
BT     0.  996.50   78.13   74.41  996.75   78.13   74.30  997.00   78.12   74.12
BT     0.  997.25   78.12   73.83  997.45   78.12   73.38  997.50   78.12   73.00
BT     0.  998.50   78.11   73.00  998.55   78.11   73.38  998.75   78.11   73.83
BT     0.  999.00   78.11   74.12  999.25   78.11   74.30  999.50   78.10   74.41
BT     0. 999.75   78.10   74.48 1000.00   78.10   74.50 1000.25   78.10   74.48
BT     0. 1000.50  78.10   74.41 1000.75   78.09   74.30 1001.00   78.09   74.12
BT     0. 1001.25  78.09   73.83 1001.45   78.09   73.38 1001.50   78.09   73.00
BT     0. 1002.50  78.08   73.00 1002.55   78.08   73.38 1002.75   78.08   73.83
BT     0. 1003.00  78.08   74.12 1003.25   78.07   74.30 1003.50   78.07   74.41
BT     0. 1003.75  78.07   74.48 1004.00   78.07   74.50 1004.25   78.07   74.48
BT     0. 1004.50  78.06   74.41 1004.75   78.06   74.30 1005.00   78.06   74.12
BT     0. 1005.25  78.06   73.83 1005.45   78.06   73.38 1005.50   78.06   73.00
BT     0. 1050.00  77.70   77.20 1100.00   77.50   77.20 1150.00   77.30   77.30
BT     0. 1200.00  77.00   77.00     .00     .00     .00     .00     .00     .00
NH     5    100.     619    .060     756    .040     784    .060     881    100.
NH  1450       0       0       0       0       0       0       0       0       0
X1 54952      18     756     784      25     175     100       0       0       0
X4     1    79.8     706       0       0       0       0       0       0       0
GR  81.1     464    77.1     474    79.3     496    79.0     527    79.8     619
GR  78.5     740    78.3     756    74.3     765    74.7     777    76.2     784
GR  76.2     800    75.0     881    76.1     922    77.1    1031    81.7    1212
GR  83.6    1320    84.2    1365    84.2    1450       0       0       0       0
NH     5    100.     740    .060     756    .040     784    .060     881    100.
NH  1450       0       0       0       0       0       0       0       0       0
X1 55122       0       0       0       1     320     170       0       0       0
NC   100.    100.    .040
X1 55172       6   594.2   605.8      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  80.0       0    79.5   594.2    74.8   594.2    74.8   605.8    79.5   605.8
GR  84.0    1200       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7       0    11.6       0   48.72       0    74.8    74.8
X1 55192       0       0       0      20      20      20       0       0       0
X2     0       0       1    79.0    79.5       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4       0    80.0    80.0   594.2    79.5    79.0   605.8    79.5    79.0
BT  1200    84.0    84.0       0       0       0       0       0       0       0
NH     5    100.     706    .060     756    .040     784    .060     881    100.
NH  1450       0       0       0       0       0       0       0       0       0
X1 55292      18     756     784     100     100     100       0     0.5       0
GR  81.1     464    77.1     474    79.3     496    79.0     527    79.8     619
GR  79.8     706    78.3     756    74.7     765    74.7     777    76.2     784
GR  76.2     800    75.0     881    76.1     922    77.1    1031    81.7    1212
GR  83.6    1320    84.2    1365    84.2    1450       0       0       0       0
NH     5    100.     143    .060     362    .040     390    .060     581    100.
NH  1030       0       0       0       0       0       0       0       0       0
X1 56232      19     362     390     940     940     940       0     1.0       0
GR  81.5       0    80.1      10    80.6      78    79.1      90    81.1     114
GR  78.6     136    80.7     143    78.0     270    76.5     362    74.7     365
GR  74.7     378    76.8     390    76.0     424    75.3     501    77.1     581
GR  82.2     729    85.7     812    84.8     885    85.2    1000       0       0
NH     5    100.      33    .060     292    .040     330    .060     883    100.
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NH  1000       0       0       0       0       0       0       0       0       0
X1 57172      13     292     330     940     940     940       0       0       0
GR   84.1       0    79.3      26    80.5      33    79.5     216    78.6     292
GR   76.7     302    76.7     312    78.7     330    79.1     400    79.1     523
GR   80.0     721    81.7     883    82.5    1000       0       0       0       0
NH     5    100.     216    .060     466    .040     497    .060     912    100.
NH  1100       0       0       0       0       0       0       0       0       0
X1 57862      16     466     497     710     670     690       0       0       0
GR   86.3       0    87.8      99    88.0     216    86.1     372    84.8     413
GR   80.3     466    77.7     481    77.7     486    79.7     497    80.1     536
GR   81.1     624    81.8     718    82.6     785    87.0     912    87.1    1046
GR   86.8    1100       0       0       0       0       0       0       0       0
NH     5    100.     367    .060     730    .040     762    .060    1042    100.
NH  1250       0       0       0       0       0       0       0       0       0
X1 58562      20     730     762     680     720     700       0       0       0
GR   84.0       0    84.7      34    82.2     148    83.5     212    84.5     263
GR   85.0     367    84.7     462    82.1     569    81.1     648    80.3     730
GR   78.7     737    78.7     742    81.0     762    80.5     873    85.6     911
GR   88.8     988    90.0    1042    89.3    1097    88.2    1202    88.0    1250
NH     5    100.     244    .060     439    .040     450    .060     603    100.
NH   676       0       0       0       0       0       0       0       0       0
X1 59142      12     439     450     600     560     580       0       0       0
GR   82.6       0    87.0      59    84.0     244    82.0     369    81.0     439
GR   79.7     442    79.7     445    81.5     450    81.5     484    83.8     547
GR   84.3     603    84.0     676       0       0       0       0       0       0
NH     5    100.     338    .060     555    .040     579    .060     678    100.
NH  1100       0       0       0       0       0       0       0       0       0
X1 60032      20     555     579     890     890     890       0       0       0
GR  108.2       0   108.7      15   108.8      54   102.3      90    94.6     161
GR   90.5     233    85.2     338    83.3     427    83.0     519    83.0     555
GR   81.3     560    81.3     569    83.8     579    86.0     678    89.7     736
GR   94.0     803    95.0     845    94.1     902    91.2     970    87.1    1100
NH     5    100.     479    .060     626    .040     689    .060     892    100.
NH  1000       0       0       0       0       0       0       0       0       0
X1 61012      18     626     689     980     980     980       0       0       0
X4     1    85.0     585       0       0       0       0       0       0       0
GR  107.5       0   103.0      85   101.7      95   101.7     142   105.5     151
GR   99.5     168    93.2     277    90.2     385    89.3     438    90.7     479
GR   88.0     504    84.5     626    84.0     666    86.8     689    86.8     796
GR   89.8     892    90.0     969    90.1    1000       0       0       0       0
NH     5    100.     585    .060     626    .040     689    .060     796    100.
NH  1000       0       0       0       0       0       0       0       0       0
X1 61192       0       0       0     180     180     180       0       0       0
NC   100.    100.    .040
X1 61242       6   594.3   605.7      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR 100.0       0    90.1   594.3    83.2   594.3    83.2   605.7    90.1   605.7
GR   90.6    1100       0       0       0       0       0       0       0       0
SB    1.0     1.5     2.7       0    11.4     0.6   45.36       0    83.2    83.2
X1 61322       0       0       0      80      80      80       0       0       0
X2     0       0       1    87.4    90.1       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4       0   100.0   100.0   594.3    90.1    87.4   605.7    90.1    87.4
BT  1100    90.6    90.6       0       0       0       0       0       0       0
NH     5    100.      71    .060     470    .040     550    .060     884    100.
NH  1300       0       0       0       0       0       0       0       0       0
X1 61422      12     470     550     100     100     100       0       0       0
X4     2    90.0     334    87.2     741       0       0       0       0       0
GR 113.3       0   114.6      71   110.5     168    90.0     334    88.0     470
GR   85.5     520    87.6     550    87.5     580    94.1     884    92.6    1091
GR   92.2    1180    95.7    1300       0       0       0       0       0       0
NH     5    100.      71    .060     506    .040     550    .060     884    100.
NH  1300       0       0       0       0       0       0       0       0       0
X1 61982      12     506     550     560     560     560       0       0       0
GR 113.3       0   114.6      71   110.5     168    90.0     334    87.5     506
GR   85.5     520    87.6     550    87.2     741    94.1     884    92.6    1091
GR   92.2    1180    95.7    1300       0       0       0       0       0       0
NC   .060    .060    .040
X1 63292       8     399     650     840     830    1310       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR 111.2       0   111.6     110    95.1     399    89.5     522    95.6     650
GR   95.8     903    96.5    1024    96.5    1200       0       0       0       0
EJ
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             3                       13                              40.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     2              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             4                       13                              40.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     3              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             5                       13                              40.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     4              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             6                       13                              41.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     5              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             7                       13                              42.7
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     6              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             8                       13                              43.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     7              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1             9                       13                              43.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     8              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1            10                       13                              43.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2     9              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1            11                       13                              43.8
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2    10              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1            12                       13                              44.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2    11              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1            13                       13                              44.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2    12              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1            14                       13                              44.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2    13              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr
J1            15                       13                              44.0
JR   100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR  1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
JR  2200   44.57    2400   44.66    2800    44.9
J2    15              -1

ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 3

HEC-2 MODEL FOR EXISTING CONDITIONS ON GERBER CREEK FROM 2.8 MILES UPSTREAM OF ELDER CREEK TO UPSTREAM STUDY LIMIT

FILENAME: GERSQB.DAT

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C       GERBER CREEK - for old version HEC-2 without NH cards
C     17
C      0 Elder Creek at Confluence Gerber Creek
C   2265 PASSALIS LANE - Dbl. 48" CP
C   3020 PRIVATE ROAD - 96" CP
C   3280 PRIVATE ROAD - 2-60", 54",27"
C   3330 Pond
C   6329 PRIVATE ROAD - PIS model
C   6970 CENTRAL CALIFORNIA TRACTION
C   8052 GERBER ROAD #4 - Conc. bridge
C   9431 PRIVATE ROAD (Hayse Rd.) - Bridge
C   9646 Foot Bridge - Pet Cemetery
C  10135 GERBER ROAD #3 - Conc. bridge
C  10565 PRIVATE ROAD - Bridge
C  11682 BRADSHAW ROAD - Dbl. 8' span box
C  14381 GERBER ROAD #2 - Conc. bridge
C  14471 Last X-sec on MacKay & Somps topo
C  20212 VINEYARD ROAD - Wooden bridge
C  20765 GERBER ROAD #1 - 42" CP
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.              GERSQ.WRD
J1    0       2       0       0      10       0       0       0   45.95       0
JR  100   39.78     400   42.31     600   43.06     800   43.58    1000   43.89
JR 1200   44.06    1400   44.18    1600   44.29    1800   44.39    2000   44.48
J2    1       0      -1       0       0       0       0       0       0       0
J3   38      43       1       6       7     150
J4    1      60       7       0    6979    9051   10135   12622   14421   20765
NC  .06     .06     .03      .1      .3
QT   14     100     200     300     400     500     600     700     800    1000
QT 1200    1400    1600    1800    2000
NH    5    100.     750    .060     985    .040    1008    .060    1380    100.
NH 2085       0       0       0       0       0       0       0       0       0
X1 28347      24     985    1008     220     400     390       0       0       0
GR  48.0     430    46.0     455    45.0     590    44.0     685    43.0     750
GR  42.0     785    41.0     910    41.0     985    37.2     995    37.2    1005
GR  40.0    1008    41.0    1075    41.3    1130    42.0    1190    42.4    1380
GR  42.9    1540    43.0    1690    43.0    1715    44.0    1720    44.1    1820
GR  45.0    1890    46.0    1980    46.0    2080    47.0    2085       0       0
NH    5    100.     520    .060     990    .040    1018    .060    1320    100.
NH 2190       0       0       0       0       0       0       0       0       0
X1    0      21     990    1018     980    1010    1010       0       0       0
GR  47.0     310    46.7     400    46.0     520    45.0     690    44.0     770
GR  43.0     910    42.0     990    38.5     997    38.5    1005    43.0    1018
GR  43.0    1025    42.0    1040    41.1    1100    42.0    1150    42.3    1320
GR  43.0    1450    44.0    1530    45.0    1720    45.9    1980    46.0    2110
GR  46.8    2190       0       0       0       0       0       0       0       0
QT   14      50     100     150     200     250     300     350     400     500
QT  600     700     800     900    1000
NC .050    .050    .050      .1      .3       0       0       0       0       0
X1  520      31    1194    1225     600     480     520       0       0       0
GR  47.1     175    47.0     205    46.3     240    46.7     370    47.0     460
GR  47.2     560    47.0     600    46.7     750    46.0     890    45.2     950
GR  45.0    1070    44.0    1110    43.3    1150    44.0    1190    43.7    1194
GR  39.5    1208    39.5    1213    43.5    1225    44.0    1330    45.0    1350
GR  45.2    1450    45.0    1530    45.0    1560    46.0    1695    46.0    1740
GR  45.0    1760    44.0    1800    44.0    1990    45.4    2190    46.0    2430
GR  46.5    2630       0       0       0       0       0       0       0       0
X1  1141      30    1485    1515     350     250     621       0       0       0
GR  47.2     340    46.0     360    46.0     405    46.5     510    46.7     920
GR  46.0    1160    45.0    1305    44.0    1340    44.0    1460    43.5    1495
GR  41.0    1495    41.0    1505    45.0    1515    45.6    1800    45.7    1990
GR  45.0    2050    44.0    2165    43.3    2240    43.0    2315    43.0    2335
GR  43.4    2375    43.0    2420    43.0    2440    43.2    2540    44.0    2620
GR  45.0    2645    46.0    2680    46.1    2770    46.7    2970    47.0    3150
X1  2105      14    1485    1515     520     800     964       0       0       0
GR  47.0     300    46.0     325    46.0    1020    45.0    1360    45.0    1485
GR  41.5    1495    41.5    1507    44.0    1515    44.1    1560    45.0    1690
GR  45.0    1760    46.0    1845    47.0    1920    48.0    1970       0       0
X1  2215      20    1482    1522     100     140     110       0       0       0
GR  47.0     300    47.0     315    46.2     470    46.3     670    46.1     870
GR  46.0    1040    45.8    1075    45.0    1330    45.0    1410    45.2    1450
GR  45.0    1482    41.5    1495    41.5    1505    44.0    1515    45.0    1522
GR  46.0    1630    47.0    1675    48.0    1680    48.0    1900    49.0    1980
NC     0       0       0       .3      .5       0       0       0       0       0
NH    5    100.    1180    .050  1495.5    .050  1504.5    .050    1660    100.
NH 1690
X1 2265      39 1495.50 1504.50      50      20      50    .00     .00     .00
X3   10.
GR 47.00  300.00   47.00  315.00   46.20  470.00   46.30  670.00   46.10  870.00
GR 46.00 1180.00   45.0    1260    45.0    1385    45.3    1485    45.0 1495.48
GR 43.50 1495.50   42.53 1495.75   42.18 1496.00   41.77 1496.50   41.56 1497.00
GR 41.50 1497.50   41.56 1498.00   41.77 1498.50   42.18 1499.00   42.53 1499.25
GR 43.50 1499.50   46.10 1499.51   46.10 1500.49   43.50 1500.50   42.53 1500.75
GR 42.18 1501.00   41.77 1501.50   41.56 1502.00   41.50 1502.50   41.56 1503.00
GR 41.77 1503.50   42.18 1504.00   42.53 1504.25   43.50 1504.50   45.00 1504.51
GR  45.4 1515.00   46.00 1560.00   47.00 1660.00   48.00 1690.00
SB     0   1.604     2.6       0    6.28       0   25.13       0    41.5    41.5
NH    5    100.    1180    .050  1495.5    .050  1504.5    .050    1660    100.
NH 1690
X1 2281       0     .00     .00   16.00   16.00   16.00     .00     .00     .00
X2  .00     .00       1   45.50   45.60     .00       0     .00     .00     .00
X3   10.
BT  -33 1180.00   46.00   46.00    1260    45.8    45.0 1385.00   45.60   45.00
BT    0. 1485.00   46.10    45.3 1495.49   46.10    45.0 1495.50   46.10   43.50
BT    0. 1495.75   46.10   44.47 1496.00   46.10   44.82 1496.50   46.10   45.23
BT    0. 1497.00   46.10   45.44 1497.50   46.10   45.50 1498.00   46.10   45.44
BT    0. 1498.50   46.10   45.23 1499.00   46.10   44.82 1499.25   46.10   44.47
BT    0. 1499.50   46.10   43.50 1499.51   46.10   46.10 1500.49   46.10   46.10
BT    0. 1500.50   46.10   43.50 1500.75   46.10   44.47 1501.00   46.10   44.82
BT    0. 1501.50   46.10   45.23 1502.00   46.10   45.44 1502.50   46.10   45.50
BT    0. 1503.00   46.10   45.44 1503.50   46.10   45.23 1504.00   46.10   44.82
BT    0. 1504.25   46.10   44.47 1504.50   46.10   43.50 1504.51   46.10    45.0
BT    0. 1515.00   46.10    45.4 1560.00   46.00   46.00 1660.00   47.00   47.00
NC    .05     .05     .05      .3      .5       0       0       0       0       0
X1  2331      20    1485    1510      50      50      50       0       0       0
GR  47.2     115    47.0     340    47.0     380    46.7     500    47.0     660
GR  47.0     760    46.5     880    46.0    1055    45.3    1340    45.0    1470
GR  45.0    1485    41.5    1495    41.5    1505    45.0    1510    45.0    1520
GR  44.0    1555    45.0    1580    46.0    1610    47.0    1655    48.0    1700
NC     0       0       0      .1      .3       0       0       0       0       0
X1  2681      15    1490    1518     350     350     350       0       0       0
GR  47.7     280    47.0     305    47.6     460    47.0     900    46.0    1210
GR  45.0    1370    45.0    1415    45.2    1450    45.0    1490    41.7    1495
GR  41.7    1505    45.0    1518    46.0    1615    47.0    1645    48.0    1720
X1  2936      17    1480    1515     210     275     255       0       0       0
GR  48.0     300    47.8     480    47.6     670    47.0     800    46.4     870
GR  46.0     910    45.7    1060    45.0    1300    45.0    1335    46.0    1465
GR  46.0    1480    41.9    1495    41.9    1505    46.0    1515    47.0    1590
GR  48.0    1670    49.0    1710       0       0       0       0       0       0
NC  .060       0       0      .3      .5       0       0       0       0       0
X1  3019      26 1496.00 1504.00     119      69      80     .00     .00     .00
X3   10.
GR 48.40  325.00   48.00  420.00   48.00  750.00   47.00  930.00   46.00 1040.00
GR 46.90 1300.00   46.90 1350.00   47.20 1400.00   48.00 1450.00   49.90 1495.00
GR 49.90 1495.99   44.70 1496.00   42.76 1496.50   42.05 1497.00   41.24 1498.00
GR 40.83 1499.00   40.70 1500.00   40.83 1501.00   41.24 1502.00   42.05 1503.00
GR 42.76 1503.50   44.70 1504.00   49.90 1504.01   49.90 1505.00   48.90 1550.00
GR 50.00 1770.00     .00     .00     .00     .00     .00     .00     .00     .00
X1  3020       0       0       0       1       1       1     .00     .00     .00
X1    10.
BT   -21 1300.00   46.90   46.90 1350.00   46.90   46.90 1400.00   47.20   47.20
BT     0. 1450.00   48.00   48.00 1495.00   49.90   49.90 1495.99   49.90   49.90
BT     0. 1496.00   49.90   44.70 1496.50   49.90   46.64 1497.00   49.90   47.35
BT     0. 1498.00   49.90   48.16 1499.00   49.90   48.57 1500.00   49.90   48.70
BT     0. 1501.00   49.90   48.57 1502.00   49.90   48.16 1503.00   49.90   47.35
BT     0. 1503.50   49.90   46.64 1504.00   49.90   44.70 1504.01   49.90   49.90
BT     0. 1505.00   49.90   49.90 1550.00   48.90   48.90 1770.00   50.00   50.00
X1  3040       0     .00     .00   20.00   20.00   20.00     .00     .00     .00
X2   .00     .00       0   48.70   46.00     .00       1     .00     .00     .00
X3   10.
X1  3041       0     .00     .00       1       1       1     .00     .00     .00
X3   10.
X1  3140      18    1480    1515      90     120     100       0       0       0
GR  48.4     370    48.0     495    48.4     550    48.0     650    47.0     980
GR  46.4    1160    46.4    1330    46.0    1400    46.0    1480    42.4    1495
GR  42.4    1505    45.0    1515    46.0    1545    46.8    1555    47.0    1595
GR  48.0    1750    49.0    1770    50.0    1878       0       0       0       0
NC     0    .060       0       0       0       0       0       0       0       0
X1  3280      66 1494.00 1506.00     150      90     140     .00     .00     .00
X3   10       0       0       0       0       0       0    47.5    47.5
GR 48.40  370.00   48.30  920.00   48.0    1070    47.0    1280   47.50 1370.00
GR  47.0 1435.00   47.0  1437.74  44.45  1437.75  43.42  1438.00  42.77  1438.50
GR 42.43 1439.00   42.26 1439.50   42.20 1440.00   42.26 1440.50   42.43 1441.00
GR 42.77 1441.50   43.42 1442.00   44.45 1442.25   48.0  1442.26   48.0  1453.86
GR 46.53 1453.88   46.01 1454.00   45.69 1454.25   45.52 1454.50   45.43 1454.75
GR 45.40 1455.00   45.43 1455.25   45.52 1455.50   45.69 1455.75   46.01 1456.00
GR 46.53 1456.13   48.0  1456.14   48.0  1493.99   44.80 1494.00   43.71 1494.25
GR 43.30 1494.50   42.80 1495.00   42.51 1495.50   42.35 1496.00   42.30 1496.50
GR 42.35 1497.00   42.51 1497.50   42.80 1498.00   43.30 1498.50   43.71 1498.75
GR 44.80 1499.00   48.80 1499.01   48.80 1500.99   44.80 1501.00   43.71 1501.25
GR 43.30 1501.50   42.80 1502.00   42.51 1502.50   42.35 1503.00   42.30 1503.50
GR 42.35 1504.00   42.51 1504.50   42.80 1505.00   43.30 1505.50   43.71 1505.75
GR 44.80 1506.00   48.0  1506.01   47.0  1507.00   48.0  1620.00   49.00 1695.00
GR 50.00 1780.00
SB   .00   1.597   2.600     .00    7.85     .00   39.27    .000   42.30   42.30
X1 3300       0     .00     .00   20.00   20.00   20.00     .00     .00     .00
X2   .00     .00       1   47.30   48.30     .00     .00     .00     .00     .00
X3   10       0       0       0       0       0       0    48.3    48.4
BT  -65.    920    48.3    48.3    1070    48.3    48.0    1280    48.4    47.0
BT     0 1370.00   48.50   47.50 1435.00   48.70    47.0 1437.74   48.70    47.0
BT     0. 1437.75   48.70   44.45 1438.00   48.70   45.48 1438.50   48.70   46.13
BT     0. 1439.00   48.70   46.47 1439.50   48.70   46.64 1440.00   48.70   46.70
BT     0. 1440.50   48.70   46.64 1441.00   48.70   46.47 1441.50   48.70   46.13
BT     0. 1442.00   48.70   45.48 1442.25   48.70   44.45 1442.26   48.70    48.0
BT     0. 1453.86   48.70    48.0 1453.88   48.70   46.53 1454.00   48.70   47.04
BT     0. 1454.25   48.70   47.36 1454.50   48.70   47.53 1454.75   48.70   47.62
BT     0. 1455.00   48.70   47.65 1455.25   48.70   47.62 1455.50   48.70   47.53
BT     0. 1455.75   48.70   47.36 1456.00   48.70   47.04 1456.13   48.70   46.53
BT     0. 1456.14   48.70    48.0 1493.99   48.80    48.0 1494.00   48.80   44.80
BT     0. 1494.25   48.80   45.89 1494.50   48.80   46.30 1495.00   48.80   46.80
BT     0. 1495.50   48.80   47.09 1496.00   48.80   47.25 1496.50   48.80   47.30
BT     0. 1497.00   48.80   47.25 1497.50   48.80   47.09 1498.00   48.80   46.80
BT     0. 1498.50   48.80   46.30 1498.75   48.80   45.89 1499.00   48.80   44.80
BT     0. 1499.01   48.80   48.80 1500.99   48.80   48.80 1501.00   48.80   44.80
BT     0. 1501.25   48.80   45.89 1501.50   48.80   46.30 1502.00   48.80   46.80
BT     0. 1502.50   48.80   47.09 1503.00   48.80   47.25 1503.50   48.80   47.30
BT     0. 1504.00   48.80   47.25 1504.50   48.80   47.09 1505.00   48.80   46.80
BT     0. 1505.50   48.80   46.30 1505.75   48.80   45.89 1506.00   48.80   44.80
BT     0. 1506.01   48.80    48.0 1507.00   48.80    47.0 1620.00   48.40    48.0
BT     0. 1695.00   49.00   49.00 1780.00   50.00   50.00
NC   .050    .050    .040      .1      .3       0       0       0       0       0
X1  3330      17    1395    1645      30      30      30       0       0       0
GR  48.4     370    48.0     390    47.0     470    47.2     540    47.7     740
GR  48.0     940    48.2    1140    48.0    1180    47.0    1265    47.0    1395
GR  46.0    1400    42.0    1420    42.0    1460    42.0    1540    42.0    1615
GR  49.0    1645    50.0    1705       0       0       0       0       0       0
NC  .050    .050    .040      .1      .3       0       0       0       0       0
X1  3465      17    1475    1535     140      50     135
GR  48.5     250    48.0     270    47.0     280    47.2     410    47.7     610
GR  48.0     820    48.2    1020    48.0    1170    47.5    1220    47.0    1250
GR  46.2    1415    49.0    1475    42.0    1485    42.0    1520    50.0    1535
GR  50.0    1550    50.8    1875
NC  .050    .050    .050      .1      .3       0       0       0       0       0
X1  4005      17    1467    1520     280     430     410       0       0       0
GR  48.0     135    47.3     170    48.0     320    49.0     875    49.0     980
GR  48.0    1080    47.0    1420    46.0    1487    43.7    1495    43.7    1507
GR  47.0    1520    48.0    1610    49.0    1655    50.0    1710    50.0    1825
GR  49.6    1830    50.0    1910       0       0       0       0       0       0
X1  5057      22    1485    1510    1030    1040    1052       0       0       0
GR  50.5     225    50.0     270    51.0     280    51.0     440    50.0     625
GR  49.8     655    49.5     840    49.0     970    48.8    1050    48.7    1245
GR  48.1    1410    48.0    1465    48.0    1485    44.7    1492    44.7    1507
GR  48.0    1510    48.0    1670    49.0    1700    49.7    1840    50.0    1870
GR  51.0    2060    52.0    2220       0       0       0       0       0       0
NC  .060    .050    .060      .1      .3       0       0       0       0       0
X1  6009      17    1485    1525     850     900     952       0       0       0
GR  51.8     450    51.6     650    50.0     840    50.7    1065    50.4    1260
GR  50.0    1340    49.7    1455    49.0    1485    45.3    1492    45.3    1508
GR  49.0    1525    49.7    1650    50.0    1760    50.6    1890    51.0    1975
GR  51.0    2080    52.0    2090       0       0       0       0       0       0
NC  .070    .060    .070      .1      .3       0       0       0       0       0
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X1	6279	18	1482	1515	270	300	270	0	0	0
GR	51.9	510	51.0	745	50.3	810	51.0	840	50.8	1110
GR	50.3	1310	50.0	1390	49.0	1482	45.4	1495	45.4	1505
GR	49.0	1515	49.3	1570	50.0	1640	50.8	1730	50.0	1810
GR	50.0	1825	51.0	1835	53.4	1840	0	0	0	0
NC	.080	.060	.080	.3	.5	0	0	0	0	0
X1	6329	16	1496.5	1503.5	50	50	50	0	0	0
GR	52.1	540	51.9	730	51.0	1040	50.8	1100	50.1	1310
GR	49.5	1485	49.5	1496.5	45.5	1496.5	45.5	1503.5	49.5	1503.5
GR	49.5	1525	50.4	1630	50.0	1710	50.0	1725	51.0	1735
GR	53.8	1740								
SB	0	1.5	2.6	0	7	0	25.1	0	0	0
X1	6349	0	0	0	20	20	20	0	0	0
X2	0	0	1	49.5	50.0	0	0	0	0	0
BT	-8	1310	50.1	50.1	1485	50.0	49.5	1496.5	50.0	49.5
BT	0	1496.5	50.0	49.5	1503.5	50.0	49.5	1503.5	50.0	49.5
BT	0	1525	50.0	49.5	1630	50.4	50.4			
NC	.060	.060	.060	.3	.5	0	0	0	0	0
X1	6399	16	1485	1525	50	50	50	0	0	0
GR	52.1	540	51.9	730	51.0	1040	50.8	1100	50.1	1310
GR	50.0	1380	49.3	1460	49.0	1485	45.6	1490	45.6	1515
GR	50.0	1825	50.4	1630	50.0	1710	50.0	1725	51.0	1735
GR	53.8	1740	0	0	0	0	0	0	0	0
NC	.060	.060	.050	.1	.3	0	0	0	0	0
X1	6860	12	1480	1520	380	450	461	0	0	0
GR	52.6	805	52.0	850	51.9	910	51.3	1160	51.0	1215
GR	50.5	1340	50.0	1480	46.0	1495	46.0	1510	50.0	1520
GR	50.0	1590	55.0	1595	0	0	0	0	0	0
NC	0	0	0	.3	.5					
X1	6970	32	1466	1534	175	60	110	0	0	0
GR	54.9	630	54.0	790	53.9	1010	54.0	1290	55.1	1466
GR	48.9	1466	48.7	1476.3	52.6	1476.5	52.6	1477.5	48.7	1477.7
GR	48.4	1491.8	52.6	1492	52.6	1493	48.4	1493.2	48.1	1505.3
GR	52.6	1505.5	52.6	1506.5	48.1	1506.7	47.9	1511	46.8	1512
GR	46.5	1516	46.7	1521.3	52.6	1521.5	52.6	1522.5	46.7	1522.7
GR	46.8	1525	47.2	1534	55.1	1534	54.0	1870	53.8	2300
GR	53.8	4100	54.0	4300						
SB	0	1.5	2.7	0	68	0	320	0	0	0
X1	6979	0	0	0	9	9	9	0	0	0
X2	0	0	1	52.6	53.8	0	0	0	0	0
X3	10	0	0	0	0	0	0	0	0	0
BT	-12	630	54.9	54.9	790	54.0	54.0	1010	53.9	53.9
BT	0	1290	54.0	54.0	1466	55.1	55.1	1466	55.1	52.6
BT	0	1534	55.1	52.6	1534	55.1	55.1	1870	54.0	54.0
BT	0	2300	53.8	53.8	4100	53.8	53.8	4300	54.0	54.0
X1	7029	15	1485	1520	50	50	50	0	0	0
GR	55.2	1410	50.0	1425	49.0	1428	49.0	1485	46.2	1488
GR	46.2	1510	50.0	1520	51.0	1540	51.7	1740	51.5	2190
GR	51.8	2380	51.8	2610	52.0	2640	54.0	2655	54.1	2800
NC	.060	.060	.050	.1	.3					
X1	7259	18	478	512	120	850	230	0	0	0
GR	54.0	260	50.0	270	50.0	300	50.3	340	50.0	410
GR	49.8	420	50.0	450	50.0	478	46.3	490	46.3	505
GR	51.0	512	51.8	575	52.0	650	52.0	800	52.6	835
GR	52.7	1000	53.0	1080	54.0	1295	0	0	0	0
X1	7992	13	488	520	680	750	733	0	0	0
GR	54.8	410	51.0	420	50.0	488	46.7	495	46.7	505
GR	51.0	520	51.8	680	52.0	795	52.2	880	53.0	935
GR	53.1	1060	54.0	1320	54.7	1340	0	0	0	0
NC	.06	.06	.05	.3	.5					
X1	8052	16	490	515	40	90	60	0	0	0
GR	55.4	410	55.4	490	49.4	490	48.4	496	47.4	502
GR	53.8	502	53.8	503	47.3	503	47.4	506	47.7	508
GR	46.9	515	54.0	515	53.5	690	52.5	885	54.0	1100
GR	55.0	1570								
SB	1.3	1.5	2.6	0	21	1.4	150	0.47	47.0	47.0
X1	8102	0	0	0	50	50	50	0	0	0
X2	0	0	1	53.8	53.7	0	0	0	0	0
X3	10	0	0	0	0	0	0	53.7	0	0
BT	-9	410	55.4	55.4	490	55.4	55.4	490	55.4	53.8
BT	0	515	55.4	53.8	515	55.4	54.0	690	54.0	53.5
BT	0	885	53.7	52.5	1100	54.0	54.0	1570	55.0	55.0
X1	8159	12	485	518	80	20	57	0	0	0
GR	54.5	445	50.0	460	50.0	485	47.1	494	47.1	505
GR	52.0	518	52.0	560	51.5	585	52.0	640	52.9	770
GR	53.0	990	54.0	1110	0	0	0	0	0	0
NC	.060	.060	.050	.1	.3					
X1	9051	16	1485	1515	950	700	892	0	0	0
GR	55.0	1230	54.0	1250	53.0	1285	52.0	1350	53.0	1460
GR	54.0	1465	54.0	1475	53.0	1477	52.0	1485	48.2	1492
GR	48.2	1505	52.0	1515	52.9	1555	53.0	1615	54.0	1660
GR	54.4	1870	0	0	0	0	0	0	0	0
X1	9361	17	1485	1510	300	290	330	0	0	0
GR	55.0	1020	54.7	1170	54.0	1270	53.9	1315	53.0	1420
GR	52.0	1485	48.3	1498	48.3	1505	51.5	1510	52.0	1525
GR	53.0	1570	54.0	1610	54.2	1770	54.9	1890	56.0	1910
GR	57.0	1920	58.0	1940	0	0	0	0	0	0
NC	0	0	0	.3	.5					
X1	9431	25	990	1009	30	110	50	0	0	0
GR	55.0	500	54.7	645	54.0	740	53.0	880	53.4	900
GR	53.7	950	55.5	990	50.4	990	49.4	991	49.3	994
GR	49.5	996	49.9	999	50.4	1002	51.7	1003	51.9	1005
GR	53.3	1009	55.5	1009	54.3	1050	54.4	1100	55.0	1240
GR	55.0	1320	55.3	1340	55.0	1360	57.0	1370	59.0	12375
SB	1.3	1.5	2.7	0	0.8	0.8	57	1.34	49.5	49.5
X1	9446	0	0	0	15	15	15	0	0	0
X2	0	0	1	53.6	53.0	0	0	0	0	0
BT	-11	740	54.0	54.0	880	53.0	53.0	900	53.4	53.4
BT	0	950	53.7	53.7	990	55.5	55.5	990	55.5	53.6
BT	0	1009	55.5	53.6	1009	55.5	55.5	1050	54.3	54.3
BT	0	1100	54.4	54.4	1240	55.0	55.0	0	0	0
X1	9496	16	990	1020	50	30	50	0	0	0
GR	55.0	540	54.7	650	54.0	740	53.9	800	53.0	940
GR	52.0	990	49.5	993	49.5	1006	53.0	1020	54.0	1130
GR	55.0	1200	55.3	1250	55.3	1350	56.0	1370	58.0	1375
GR	59.0	1395	0	0	0	0	0	0	0	0
X1	9646	24	990	1010	200	120	150	0	0	0
GR	55.1	450	55.0	585	54.7	640	54.0	820	53.2	935
GR	54.6	985	54.6	990	52.7	990	49.4	995	49.1	999
GR	49.1	1000	49.5	1004	50.4	1005	51.4	1010	54.6	1010
GR	54.6	1016	54.0	1025	55.0	1110	55.3	1230	55.5	1340
GR	55.3	1355	56.0	1360	57.0	1390	58.0	1395	0	0
SB	0	1.5	2.6	0	20	0	61	0	0	0
X1	9661	0	0	0	15	15	15	0	0	0
X2	0	0	1	53.2	54.6	0	0	0	0	0
X3	10	0	0	0	0	0	0	0	0	0
BT	-10	820	54.0	54.0	935	53.2	53.2	985	54.6	54.6
BT	0	990	54.6	54.6	990	54.6	53.2	1010	54.6	53.2
BT	0	1010	54.6	54.6	1016	54.6	54.6	1025	54.0	54.0
BT	0	1110	55.0	55.0						
X1	9761	19	990	1012	100	80	100	0	0	0
GR	55.1	450	55.0	560	54.7	730	54.0	830	54.0	955
GR	53.0	990	49.2	997	49.2	1004	53.0	1012	54.0	1025
GR	55.0	1075	55.0	1170	54.7	1220	55.0	1255	55.3	1270
GR	55.0	1285	56.0	1305	56.0	1330	57.0	1380	0	0
X1	10025	15	990	1012	290	260	290	0	0	0
GR	56.0	505	55.7	580	55.0	680	54.0	750	54.0	990
GR	50.0	995	50.0	1005	54.0	1012	54.0	1040	55.4	1125
GR	55.0	1135	55.4	1300	56.0	1350	57.0	1430	59.0	1490
NC	.06	.06	.05	.3	.5					
X1	10135	11	990	1010	60	150	110	0	0	0
X3	10	0	0	0	0	0	0	55.2	55.2	0
GR	56.0	700	55.4	900	55.0	990	50.4	990	50.1	995
GR	50.1	1003	50.9	1007	52.1	1010	55.0	1010	55.4	1100
GR	55.6	1200	0	0	0	0	0	0	0	0
SB	0	1.5	2.6	0	20	0	63	0	0	0
X1	10175	0	0	0	40	40	40	0	0	0
X2	0	0	1	53.6	55.4	0	0	0	0	0
X3	10	0	0	0	0	0	0	55.4	55.4	0

BT	-8	700	56.0	56.0	900	55.4	55.4	990	55.6	55.0
BT	0	990	55.6	53.6	1010	55.6	53.6	1010	55.6	55.0
BT	0	1100	55.4	55.4	1200	55.6	55.6	0	0	0
X1	10225	19	980	1010	30	60	50	0	0	0
GR	56.3	400	56.0	730	55.0	760	55.0	900	55.3	920
GR	55.0	940	54.0	960	54.2	970	54.0	980	51.0	992
GR	51.0	1005	54.0	1010	55.0	1030	56.0	1120	57.0	1230
GR	58.0	1280	59.0	1310	60.0	1340	60.8	1400	0	0
X1	10515	17	985	1015	240	270	290	0	0	0
GR	56.3	370	56.0	730	55.0	760	55.0	775	55.9	790
GR	55.0	810	55.0	890	54.0	985	51.4	995	51.4	1005
GR	55.0	1015	55.0	1105	56.0	1185	57.0	1240	58.0	1280
GR	59.0	1310	59.6	1460	0	0	0	0	0	0
NC	.06	.08	.05	.3	.5					
X1	10565	31	986	1014	40	75	50	0	0	0
GR	56.3	370	56.0	730	55.0	760	55.0	775	55.5	790
GR	55.4	815	55.4	885	55.4	905	56.3	935	57.3	985
GR	57.3	986	53.5	986	52.4	988	51.4	991	51.6	993
GR	53.0	995	53.4	999	55.9	999	55.9	1001.5	52.7	1001.5
GR	52.1	1007	52.5	1011	53.9	1014	57.3	1014	57.3	1015
GR	57.2	1065	57.0	1115	56.5	1165	56.4	1215	57.0	1310
GR	57.0	1450								
SB	0	1.5	2.6	0	28	0	93	0	0	0
X1	10577	0	0	0	12	12	12	0	0	0
X2	0	0	1	55.9	56.3	0	0	0	0	0
BT	-8	935	56.3	56.3	985	57.3	57.3	986	57.3	57.3
BT	0	986	57.3	55.9	1014	57.3	55.9	1014	57.3	57.3
BT	0	1015	57.3	57.3	1065	57.2	57.2	0	0	0
NC	.07	.07	.05	.3	.5					
X1	10627	22	990	1030	40	60	50	0	0	0
GR	56.3	410	56.0	570	55.5	650	56.0	775	56.0	820
GR	55.0	830	55.0	990	52.1	1000	53.0	1005	54.0	1020
GR	55.0	1022	56.0	1030	57.0	1085	57.5	1095	59.0	1100
GR	59.0	1368	58.0	1370	58.0	1475	57.0	1480	56.0	1490
GR	57.0	1680	59.0	1700	0	0	0	0	0	0
NC	.07	.06	.05	.1	.3					
X1	11122	24	990	1008	490	495	495	0	0	0
GR	57.5	370	57.0	490	56.0	515	57.0	620	56.0	805
GR	56.0	820	57.0	825	57.5	835	57.0	840	56.0	860
GR	56.0	990	52.6	995	52.6	1005	55.0	1008	56.0	1040
GR	57.0	1100	57.4	1210	58.0	1250	59.0	1330	59.0	1550
GR	58.1	1590	59.0	1680	59.2	1740	60.0	1870	0	0
NC	.06	.06	.05	.1	.3					
X1	11632	20	990	1010	450	450	510	0	0	0
GR	58.8	170	58.0	240	58.0	425	58.0	530	57.2	635
GR	57.0	710	57.0	750	58.0	765	58.0	890	57.0	900
GR	56.0	990	53.3	995	53.3	1005	56.0	1010	57.0	1025
GR	58.0	1080	58.0	1260	59.0	1290	59.4	1390	60.0	1470
NC	0	0	0	.3	.5					
X1	11682	18	992	1008	40	60	50	0	0	0
X3	10	0	0	0	0	0	0	57.4	57.4	
GR	59.8	110	59.5	390	59.0	470	58.0	520	57.0	710
GR	57.0	740	58.0	750	58.0	870	57.0	875	57.0	992
GR	54.3	992	54.0	1000	54.5	1008	57.0	1008	58.0	1040
GR	59.0	1120	61.0	1330	61.4	1440				
SB	0.9	1.5	2.7	0	17	1	72	0	54.2	54.2
X1	11732	0	0	0	50	50	50	0	0	0
X2	0	0	1	58.7	59.5	0	0	0	0	0
X3	10	0	0	0	0	0	0	59.5	60.3	0
BT	-17	110	59.8	59.8	390	59.5	59.5	470	59.5	59.0
BT	0	520	59.5	58.0	710	59.6	57.0	740	59.6	57.0
BT	0	750	59.6	58.0	870	59.9	58.0	875	59.9	57.0
BT	0	992	60.3	57.0	992	60.3	58.7	1008	60.3	58.7
BT	0	1008	60.3	57.0	1040	60.3	58.0	1120	60.5	59.0
BT	0	1330	61.0	61.0	1440	61.4	61.4			
X1	11782	20	987	1015	50	50	50	0	0	0
GR	59.0	70	58.5	150	59.0	285	59.0	385	60.0	390
GR	59.0	420	58.0	500	57.0	525	57.0	620	56.0	710
GR	56.0	910	56.0	987	54.0	995	54.0	1010	56.0	1015
GR	57.0	1020	58.0	1060	59.0	1120	60.0	1150	61.0	1405
NC	0	0	0	.1	.3					
X1	12027	18	990	1012	215	215	245	0	0	0
GR	62.0	475	61.0	510	60.0	530	59.0	590	58.0	770
GR	57.0	975	56.0	990	54.2	995	54.2	1005	57.0	1012
GR	57.0	1030	56.5	1050	57.0	1080	58.0	1150	59.0	1210
GR	60.0	1280	61.0	1370	62.0	1450	0	0	0	0
X1	12622	23	492	510	590	590	595	0	0	0
GR	63.0	125	62.0	195	61.0	240	60.0	290	59.0	355
GR	58.3	440	58.0	492	55.0	497	55.0	503	58.0	510
GR	58.2	520	58.0	530	57.0	550	57.0	560	57.8	670
GR	57.0	785	56.2	790	57.0	800	58.0	840	60.0	885
GR	61.0	895	62.0	915	63.0	930	0	0	0	0
X1	13022	28	494	510	400	400	400	0	0	0
GR	65.0	388	63.0	405	61.0	425	60.0	430	59.0	445
GR	58.3	494	55.8	500	59.0	510	59.0	520	58.0	544
GR	57.0	545	57.0	550	58.0	570	58.1	590	58.0	605
GR	57.0	620	57.0	720	56.0	732	56.0	740	57.0	741
GR	58.0	749	59.0	820	60.0	835	60.0	925	60.6	990
GR	61.0	1070	62.0	1200	62.1	1310	0	0	0	0
NC	.060	.060	.050	.1	.3					
X1	13757	19	990	1012	640	740	735	0	0	0
GR	65.0	420	63.0	460	62.0	470	61.0	500	60.0	510
GR	59.5	610	59.0	890	58.0	990	56.0	995	56.0	1005
GR	60.0	1012	60.0	1025	59.0	1028	59.0	1038	60.0	1040
GR	61.0	1060	62.0	1100	63.0	1135	65.0	1175	0	0
X1	14211	23	488	514	220	580	454	0	0	0
GR	65.0	220	64.0	250	63.0	260	62.0	300	61.0	365
GR	61.0	395	60.0	430	59.0	488	56.5	492	56.5	507
GR	61.0	514	62.0	522	62.0	530	60.0	540	59.0	560
GR	58.1	585	59.0	600	60.0	655	61.0	745	62.0	840
GR	63.0	880	64.0	900	65.0	925	0	0	0	0
NC	.06	.06	.050	.3	.5					
X1	14381	16	480	519	170	140	170	0	0	0
X3	10	0	0	0	0	0	0	62.5	62.0	0
GR	65.0	405	63.0	480	60.6	480	58.0	492	56.9	498.8
GR	62.6	498.8	62.6	500.2	56.9	500.2	57.9	507	60.6	519
GR	63.0	519	63.0	620	62.0	750	63.0	840	64.7	950
GR	66.0	1130								
SB	1.05	1.5	2.7	0	15	1.4	150	2.1	56.9	56.9
X1	14421	0	0	0	40	40	40	0	0	0
X2	0	0	1	62.6	63.5	0	0	0	0	0
X3	10	0	0	0	0	0	0	64.1	63.5	0
BT	-9	405	65.0	65.0	480	64.1	63.0	480	64.1	62.6
BT	0	519	64.1	62.6	519	64.1	63.0	620	63.5	63.0
BT	0	750	63.5	62.0	840	63.9	63.0	950	64.7	64.7
X1	14471	21	485	512	50	50	50	0	0	0
GR	65.0	180	64.0	190	63.0	260	62.0	315	61.0	365
GR	61.0	425	60.0	485	57.2	492	57.2	506	60.0	512
GR	60.0	535	59.0	538	59.0	550	59.2	640	59.1	765
GR	60.0	820	61.0	840	62.0	860	63.0	910	64.0	950
GR	65.0	990	0	0	0	0	0	0	0	0
NC	.060	.060	.050	.1	.3					
X1	15191	12	315	336	823	542	720	0	0	0
X3	0	0	0	0	0	539	66.3	0	0	0
GR	59.6	0	59.6	304	62.7	315	57.7	322	57.7	331
GR	60.3	336	61.1	386	65.5	500	66.3	539	62.8	689
GR	61.6	819	61.8	850	0	0	0	0	0	0
X1	16210	20	2615	2631	1556	724	1019	0	0	0
GR	60.3	0	60.6	320	61.7	642	64.2	652	66.8	1030
GR	63.8	1322	63.2	1342	62.3	1772	61.5	2204	60.6	2230
GR	60.3	2468	60.3	2615	59.1	2623	60.7	2631	60.8	2672
GR	59.2	2678	62.2	2691	61.5	2712	62.2	2924	63.8	3100
X1	17345	17	1496	1632	718	656	1135	0	0	0
GR	62.7	0	64.0	304	65.2	818	64.8	843	63.2	848
GR	62.7	1295	62.2	1496	60.5	1540	61.8	1559	63.0	1632
GR	62.0	1681	62.3	1761	63.2	1799	63.8	1976	63.5	2115
GR	65.8	2208	65.1	2300	0	0	0	0	0	0
X1	18346	13	436	504	1061	646	1001	0	0	0
X3	0	0	0	0	0	631	69.7	0	0	0

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GR  71.5      0    72.5    161    66.3    311    63.8    378    62.8    436
GR  61.3    496    62.0    504    61.3    513    69.7    631    68.0    692
GR  65.8    749    65.3    808    65.6    850      0      0      0      0
X1 19212     15    606     670    832     841    866      0      0      0
X3     0     0      0       0      0    1310   69.0      0      0      0
GR  74.6      0    72.8    158    72.0    293    66.8    485    64.5    606
GR  62.7    654    64.0    670    64.1    897    65.2   1216    66.3   1233
GR  65.7   1249    69.0   1310    65.7   1417    65.7   1537    66.0   1700
X1 20162      0      0       0    840     983    950      1    0.5      0
X3     0      0      0       0      0    1310   69.0      0      0      0
X1 20212     11    340   356.2     50      50     50      0      0      0
X3    10
GR  72.0      0   67.5     180    66.4    340    63.6    340    63.3   343.9
GR  63.6  347.8   64.6   352.4    64.8   356.2    66.4   356.2    66.8    390
GR  72.0    620      0       0      0       0      0      0      0      0
SB  1.25    1.5    2.7       0    8.8     0.8     38   1.12      0      0
X1 20252      0      0       0     40      40     40      0      0      0
X2     0      0      1    66.4   67.9       0      0      0      0      0
X3    10
BT     6      0   72.0    72.0    180    68.0   67.5    340   67.9   66.4
BT 356.2   67.9   66.4     390   68.0   66.8    620   72.0    72.0      0
X1 20345     20    897     957    230     10     93      0      0      0
X4     2   64.1    847    66.7    977      0      0      0      0      0
GR  73.6      0   70.5     107   72.1    197   69.7    330   68.3    509
GR  66.2    671   63.3     897   62.8    927   66.1    957   68.3   1032
GR  68.5   1094   70.8    1109   67.3   1134   66.8   1250   70.0   1263
GR  72.9   1294   73.0    1541   73.2   1597   74.5   1613   75.5   1704
X1 20715      0      0       0    500     100    370      1      0      0
QT    14     50    100     130    130     130    130    130    130    130
QT   130    130    130     130    130
NC     0      0    .03      .5     .8
X1 20765     25  288.25  291.75     50      50     50    .00    .00    .00
X3    10.    .00    .00     .00    .00     .00    .00  75.10  75.10    .00
GR 80.00    .00  76.00  160.00  75.10  288.00  75.10  288.24  67.75  288.25
GR 67.33 288.30  66.85  288.50  66.53  288.75  66.31  289.00  66.17  289.25
GR 66.07 289.50  66.02  289.75  66.00  290.00  66.02  290.25  66.07  290.50
GR 66.17 290.75  66.31  291.00  66.53  291.25  66.85  291.50  67.33  291.70
GR 67.75 291.75  75.10  291.76  75.10  292.00  75.10  490.00  76.00  560.00
SB   .00  1.512  2.700     .00   2.75     .00   9.62    .000   66.00   66.00
QT    14     50    100     150    200     250    300    350    400    500
QT   600    700    800     900   1000
X1 20805      0    .00     .00   40.00   40.00  40.00    .00    .00    .00
X2   .00    .00      1   69.50   75.10     .00    .00    .00    .00    .00
X3    10.    .00    .00     .00    .00     .00    .00  75.10  75.10    .00
BT   -25.    .00  80.00   80.00  160.00   76.00  76.00  288.00  75.10  75.10
BT     0.  288.24  75.10   75.10  288.25   75.10  67.75  288.30  75.10  68.17
BT     0.  288.50  75.10   68.65  288.75   75.10  68.97  289.00  75.10  69.19
BT     0.  289.25  75.10   69.33  289.50   75.10  69.43  289.75  75.10  69.48
BT     0.  290.00  75.10   69.50  290.25   75.10  69.48  290.50  75.10  69.43
BT     0.  290.75  75.10   69.33  291.00   75.10  69.19  291.25  75.10  68.97
BT     0.  291.50  75.10   68.65  291.70   75.10  68.17  291.75  75.10  67.75
BT     0.  291.76  75.10   75.10  292.00   75.10  75.10  490.00  75.10  75.10
BT     0.  560.00  76.00   76.00    .00     .00    .00    .00    .00    .00
NC     0      0    .05
X1 20855      9    559     619     50      50     50      1    0.5      0
X4     2   68.2    497    70.2    689       0      0      0      0      0
GR  90.3      0   82.0     232   72.6     435   66.1     559   65.3    589
GR  66.6    619   73.7     860   79.5    1116   69.1    1450      0      0
NC     0      0      0      .1     .3
X1 21222      0      0       0    334     456    367      0   -0.5      0
X1 22381     12    518     546    964     552   1159      0      0      0
GR  70.1      0   69.0     194   66.8     213   69.0     253   69.8    371
GR  67.3    518   65.5     532   67.6     546   71.6     653   70.1    779
GR  69.1    909   68.1    1050      0       0      0      0      0      0
X1 23003     14    615     637    419     815    622      0      0      0
GR  71.7      0   70.0     215   69.1     408   67.6     615   66.0    622
GR  68.0    637   70.5     765   69.8     845   71.2     890   71.0   1025
GR  69.2   1055   71.6    1191   69.6    1246   70.8    1400      0      0
X1 24052     12    845     989   1023     964   1049      0      0      0
GR  98.7      0   86.0     199   80.5     261   71.3     543   69.2    695
GR  70.0    845   68.5     865   76.6     989   79.6    1061   76.5   1292
GR  73.8   1407   78.7    1550      0       0      0      0      0      0
EJ
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0      3      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     2      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0      5      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     3      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0      7      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     4      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0      9      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     5      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0     10      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     6      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0     11      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     7      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0     12      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     8      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0     13      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2     9      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.
J1     0     14      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2    10      0     -1      0      0       0      0      0      0      0
T1      *** MORRISON CREEK STREAM GROUP STUDY ***
T2      GERBER CREEK - existing channel conditions data
T3      GERBER CR.

J1     0     15      0      0     10      0      0      0  45.95      0
JR   100  39.78    400  42.31    600  43.06    800  43.58   1000  43.89
JR  1200  44.06   1400  44.18   1600  44.29   1800  44.39   2000  44.48
J2    15      0     -1      0      0       0      0      0      0      0

ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 4

HEC-2 MODEL FOR EXISTING CONDITIONS ON ELDER CREEK FROM 1.0 MILE DOWNSTREAM OF THE CONFLUENCE WITH GERBER CREEK TO 1.8 MILES UPSTREAM AND GERBER CREEK FROM ELDER CREEK TO 2.8 MILES UPSTREAM (PREPARED BY MCKAY & SOMPS)

FILENAME: 7536EX.DAT

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T1 NORTH VINEYARD STATION SPECIFIC PLAN
T2 EXISTING CONDITION 10-YR FLOWS AND CHANNEL SECTIONS
T3 FLOWS BASED ON SAC. CO. HEC-1 FILE ELEXN10.DAT
T4 FILE:7536EX.DAT  7-11-95
J1      0       2       0       0       0       0       0       0   34.40
J2      1       0      -1                               0
J5    -10     -10
NC   .045    .045    .065      .1      .3
*  FLOWS FROM CONCENTRATION POINT CE6
QT      2     774    1575
X1 4.799      43     914  1036.2       0       0       0
GR   43.6   519.0   41.87   521.1   41.64   534.4   43.00   541.4   42.98   541.6
GR   43.0   541.7   43.00   778.5   43.74   792.6   43.21   837.0   43.00   837.8
GR   43.0   839.3   42.02   856.4   42.00   857.7   41.07   870.3   41.00   871.0
GR   40.0   912.5   40.00   914.0   38.19   921.1   38.11   926.7   38.00   927.4
GR   37.9   927.4   37.62   927.7   35.60   935.1   34.00   939.7   32.39   946.5
GR   32.0   947.1   31.72   948.7   30.00   954.2   30.00   981.5   31.93   983.1
GR   32.0   983.2   32.09   983.3   32.83   994.0   34.00  1000.2   35.13  1003.3
GR   36.0  1006.9   37.04  1013.8   38.00  1017.4   38.54  1023.4   38.62  1023.5
GR   38.6  1024.3   39.00  1036.2   40.48  1500.0
X1 4.845      41    1028  1090.1   283.0   283.0   283.0
GR   44.0   501.5   42.32   503.5   41.98   523.8   43.00   529.0   42.54   534.9
GR   43.0   535.0   42.52   535.0   42.00   535.6   42.00   667.1   42.89   703.5
GR   43.0   705.2   43.00   858.3   42.98   858.5   42.00   862.7   41.16   874.5
GR   41.0   879.5   41.00   887.0   40.59   892.2   40.00   969.5   38.93  1028.0
GR   38.0  1051.2   37.05  1053.2   34.00  1055.8   34.99  1055.8   34.48  1056.0
GR   32.0  1058.5   32.00  1061.3   33.16  1063.3   34.00  1068.6   33.12  1068.6
GR   34.2  1070.5   36.00  1076.0   37.77  1084.8   37.85  1086.1   38.00  1086.6
GR   38.2  1087.2   38.62  1088.5   39.00  1090.1   39.33  1343.6   40.00  1370.0
GR   40.0  1500.0
X1 4.916      27     919.9   970.8     700     650     675
GR   43.1   500.0   43.00   804.7   42.23   864.7   42.37   865.7   41.71   874.9
GR   41.0   882.9   41.00   883.0   40.36   919.9   40.00   925.4   39.07   927.3
GR   39.3   927.5   39.00   931.1   39.00   932.4   38.00   938.8   35.12   942.1
GR   34.0   943.4   34.00   944.4   34.00   950.7   34.00   959.6   35.23   962.9
GR   36.0   967.2   37.00   970.0   38.00   970.8   39.00  1408.8   39.70  1425.2
GR   40.0  1439.7   40.00  1500.0
X1 5.005      30    1116  1160.7     350     500     470
GR   43.0   500.0   43.00   507.3   42.03   531.1   38.74   964.8   39.00  1045.0
GR   39.5  1051.1   40.00  1064.5   40.00  1083.9   39.64  1106.2   39.00  1113.2
GR   39.0  1114.8   38.89  1116.0   38.72  1116.9   36.91  1121.3   36.00  1123.3
GR   35.0  1124.9   34.00  1132.0   34.00  1148.9   35.47  1155.9   36.00  1156.2
GR   36.7  1158.0   36.78  1160.1   37.00  1160.7   38.00  1378.9   38.50  1393.9
GR   39.0  1403.6   39.00  1456.5   39.05  1458.4   40.00  1458.9   40.02  1500.0
X1 5.075      31  1082.8  1136.4     370     370     370
GR   43.0   500.0   43.00   517.1   42.93   518.6   42.00   550.0   41.58   599.1
GR   42.0   619.7   42.00   698.0   41.54   708.1   41.45   946.5   41.00   974.0
GR   41.0   975.8   40.00   999.1   39.00  1082.8   38.52  1084.9   38.22  1086.9
GR   38.2  1087.1   38.00  1090.4   36.63  1093.2   36.47  1094.1   35.67  1097.9
GR   34.0  1111.4   35.78  1124.7   36.00  1125.0   36.24  1126.6   36.67  1127.4
GR   38.0  1136.4   38.93  1199.9   39.08  1232.6   39.78  1262.6   39.87  1264.6
GR   40.9  1500.0
X1 5.170      32  1061.0  1086.4     555     500     505
GR   43.8   500.0   44.00   676.3   43.51   678.3   43.62   678.7   44.00   680.3
GR   44.0   755.7   43.00   808.0   43.00   843.2   41.00   898.4   41.00   898.9
GR   40.0   906.5   39.07   933.3   39.00   933.4   39.00  1061.0   36.07  1069.2
GR   36.1  1069.2   36.00  1069.3   36.00  1069.3   34.00  1069.6   34.00  1076.1
GR   35.1  1078.0   35.57  1081.1   36.49  1081.9   40.00  1085.4   40.28  1096.4
GR   40.0  1105.7   40.00  1119.2   39.00  1293.3   40.14  1315.4   40.48  1327.7
GR   41.0  1339.7   41.16  1500.0
X1 5.218      33  1058.2  1126.9     250     250     250
GR   43.9   500.0   44.00   818.6   43.86   821.2   43.00   832.7   42.25   852.7
GR   41.9   859.6   41.86   863.6   41.00   889.9   41.00   907.4   40.00   957.1
GR   40.0   985.6   39.03  1003.8   39.00  1058.2   38.25  1073.5   38.00  1076.4
GR   38.0  1082.7   37.66  1082.8   36.00  1085.4   35.49  1086.8   34.00  1087.6
GR   33.1  1092.3   34.00  1093.9   34.00  1099.2   35.21  1101.5   36.00  1102.6
GR   36.8  1104.6   38.00  1106.3   39.00  1112.7   40.00  1126.9   40.00  1338.8
GR   41.0  1398.8   41.00  1409.7   41.76  1500.0
X1 5.303      32  1090.4  1148.0     500     400     450
X3                                           1148    42.2
GR   45.9   500.0   45.08   517.7   45.01   518.5   45.00   518.8   45.00   711.9
GR   44.9   717.0   44.00   732.1   43.00   757.5   43.00   759.7   42.00   839.1
GR   41.0   871.5   39.81  1028.7   38.00  1090.4   36.80  1096.4   34.86  1099.2
GR   34.0  1100.0   34.00  1114.6   34.33  1115.8   36.00  1119.5   36.39  1120.1
GR   38.0  1126.0   40.19  1135.1   41.00  1139.2   41.31  1143.6   42.00  1148.0
GR   42.0  1273.2   42.00  1273.3   42.00  1374.2   41.37  1401.6   41.01  1489.8
GR   41.0  1492.0   41.07  1500.0
X1 5.374      42  1033.2  1068.6     350     400     375
X3                       765.2
GR   45.1   500.0   45.00   583.6   44.93   584.5   45.00   624.0   44.74   627.2
GR   44.7   647.8   44.29   688.6   44.77   765.2   44.89   765.8   45.00   770.3
GR   45.0   796.7   44.58   822.0   44.12   826.7   44.08   827.2   44.07   827.4
GR   44.0   828.6   43.14   865.2   43.00   867.8   42.96   868.5   42.95   870.3
GR   42.3   901.6   42.00   908.8   41.86   938.6   42.00   948.2   42.30   951.0
GR   42.5   953.9   43.00   959.3   43.00  1015.4   42.00  1033.2   36.95  1040.5
GR   39.3  1041.6   37.36  1047.2   38.00  1047.3   37.30  1048.4   36.00  1049.7
GR   35.9  1050.7   36.00  1051.2   36.42  1052.7   38.00  1062.3   41.06  1067.8
GR   42.0  1068.6   42.84  1500.0
X1 5.402      20  1071.6  1116.6     140     140     140
GR   45.2   500.0   45.00   857.4   44.46   860.7   44.05   936.4   44.00   937.4
GR   44.0   940.2   43.00  1005.0   43.00  1017.4   42.75  1032.6   42.47  1036.7
GR   42.1  1040.3   42.12  1040.4   42.01  1071.6   41.89  1072.4   37.59  1104.8
GR 38.00  1107.1   42.00  1116.6   42.4   1276.1      43  1302.1      43  1500
* ELK GROVE-FLORIN RD 5.410 RIVER MILE
X1 5.410       0       0       0      50      50      50
X3      10
SB   1.25    1.05    2.63       0    39.5     1.4   228.6       0    37.8       0
X1 5.417      22    1012  1065.2      35      35      35
X2       0       0       1    43.8    43.2       0
X3      10
BT   -20     180    46.3    46.3     200    46.3      45     280   46.25      45
BT           300   46.15    44.2     675      46    44.2     970      45      44
BT           988      45      43     992      45   42.65     996      45    42.2
BT          1012      45   42.43    1013    48.3    43.8    1045    48.3    43.8
BT        1052.5    48.3    43.8  1052.6    45.0    41.4  1065.2    44.9   43.13
BT          1067   44.85    43.2    1270      44    43.2    1374    44.7      42
BT          1690    43.2    43.2    2100    43.9    43.9
GR   46.3    180      45     200      45     280    44.2     300    44.2     675
GR     44    970      43     988   42.65     992    42.2     996   42.43    1012
GR  40.22   1014      38  1019.8      38    1045    40.5    1045    41.4  1052.6
GR  43.13  1065.2    43.2    1067    43.2    1270      42    1374      43    1500
GR   43.2   1690    43.9    2100
X1 5.423      27  1112.0  1165.2      30      30      30
X3                       990             1285
GR   44.9   500.0   44.72   649.8   45.00   845.1   44.02   887.1   43.61  1060.7
GR   44.0  1062.7   44.00  1070.1   43.00  1088.1   43.00  1088.4   42.65  1092.4
GR   42.2  1096.1   42.43  1112.0   40.22  1114.0   38.00  1119.8   38.00  1144.9
GR   40.5  1150.3   42.00  1156.8   42.87  1164.5   43.00  1165.0   43.13  1165.2
GR   43.2  1167.2   43.00  1459.3   42.46  1461.1   42.00  1461.7   42.00  1472.4
GR   42.4  1476.9   42.99  1500.0
*  FLOWS FROM CONCENTRATION POINT CE6
QT      2     786    1595
X1 5.545      22  1021.4  1056.5     520     520     520
GR   44.2   500.0   44.18   503.8   44.00   508.9   43.77   511.7   43.26   534.3
GR   43.0   537.9   41.00  1021.4   40.64  1023.3   40.54  1024.8   38.00  1036.6
GR   38.0  1049.5   40.14  1052.3   40.92  1053.9   42.00  1056.5   43.00  1086.7
GR   43.0  1112.2   42.64  1115.9   42.00  1127.4   42.00  1167.7   42.92  1171.8
GR   43.0  1172.2   42.92  1500.0
X1 5.633      17   865.6    1433     465     465     465
GR   46.5   500.0   46.73   535.9   46.00   555.1   44.00   832.3   43.01   865.0
GR   43.0   865.1   43.00   865.6   41.68   913.2   41.35   976.9   41.35   977.1
GR   41.0  1178.8   41.60  1204.4   41.65  1205.5   41.85  1208.8   43.00  1433.0
GR   44.0  1440.6   43.83  1500.0
X1 5.753      29  1005.2  1072.8     465.0   465.0   465.0
GR   46.0   500.0   45.00   734.1   44.99   734.2   44.96   735.3   44.00   753.8
GR   44.0   768.1   43.13   817.0   43.00   937.0   42.00  1000.2   42.00  1005.2
GR   41.6  1009.3   38.00  1058.0   36.00  1061.9   39.15  1065.4   39.50  1066.8
GR   39.6  1066.9   39.66  1066.9   39.82  1067.4   39.86  1067.6   40.06  1068.5
GR   40.7  1070.0   42.23  1072.8   42.41  1076.7   42.00  1087.1   43.00  1500.0
GR   44.0  1550.0    45.0  1750.0    46.0  2030.0    46.8  2200.0
*  FLOWS FROM CONCENTRATION POINT CE5
QT      2     440     832
X1 5.840      25  1043.8  1077.7     460     300     460
X3                       900             1550
GR   45.5   500.0   45.00   618.8   44.74   620.2   44.23   642.2   43.15   652.9
GR   42.1   674.3   42.00   674.5   42.00   674.5   42.00   718.1   42.07   718.8
GR   42.1   719.9   43.00   727.3   44.00   844.3   45.00   861.7   45.00  1043.8
GR 41.83  1066.9   42.09  1067.4   45.00  1077.7      46    1200      45    1290
GR     44    1300      43    1460      43    1550      44    1620      46    1640
X1 5.914      20  1013.7  1048.9     425     140     390
X3                                           1450
GR   48.2   500.0   47.74   704.8   46.00   767.5   45.00  1013.7   44.77  1014.9
GR   44.3  1016.1   42.38  1020.1   42.00  1023.2   42.00  1035.3   42.09  1035.4
GR   44.8  1040.4   44.97  1042.4   45.87  1048.9   46.00  1074.8    45.0    1150
GR     45    1300      44    1320    43.4    1450      44    1500      46    1550
X1 5.978      32  1014.8  1037.7     340     180     340
X3                       709.5      46    1250
GR   46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.5   46.00   516.6
GR   44.0   518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR   45.0   756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.00  1014.8
GR   42.7  1018.1   42.00  1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7
GR   43.1  1094.3   43.81  1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2
GR   44.2  1236.3   44.00  1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4
GR   47.1  1497.9   47.06  1500.0
* McCOY AVE.
X1 5.982       9    1000    1034      90      90      90
X3      10
GR   45.2   330    45.5     500   45.43    1000    39.1  1000.5    39.1    1027
GR   41.3  1033.5   45.43    1034    45.4    1200      45    1500
SB   1.25    1.05    2.63       0      31       2     150       0    39.1    39.1
X1 5.984       0       0       0      40      40      40
X2                       1    43.9   45.43
X3      10
BT    -8     500    45.5    45.5    1000   45.43   45.43  1000.5   45.43    43.9
BT          1027   45.43    43.9  1033.5   45.43    43.9    1034   45.43   45.43
BT          1200    45.4    45.4    1500      45      45
X1 6.002      28  1027.9  1054.5      85     110      95
X3                       970.5
GR   45.9   500.0   43.36   949.4   43.79   953.1   43.90   953.3   44.08   954.0
GR   44.4   955.5   45.00   957.8   45.00   970.5   44.71   971.7   44.61   971.9
GR   44.3   972.5   44.23   972.9   44.22   973.0   44.00   974.5   43.54  1004.4
GR   43.0  1008.1   43.00  1027.9   42.96  1028.0   42.62  1028.6   42.00  1030.4
GR   42.0  1041.4   42.99  1051.3   43.00  1051.4   43.08  1053.5   43.36  1054.5
GR   44.0  1158.2   45.00  1182.1   46.01  1500.0
X1 6.067      19  1021.2  1040.8     270     270     270
GR   48.2   500.0   48.00   663.2   47.31   675.2   46.00   839.6   44.44   895.0
GR   43.0   928.4   43.00  1021.2   42.90  1024.1   42.00  1027.0   42.00  1035.9
GR   43.0  1038.0   44.00  1040.8   44.78  1090.4   44.56  1105.0   44.67  1105.9
GR   44.9  1110.0   44.90  1183.8   45.00  1187.7   46.59  1500.0
X1 6.101      16  1007.7  1091.4     180     180     180
GR   47.0   500.0   45.96   738.6   45.33   761.8   45.00  1007.7   44.39  1008.8
GR   44.4  1008.8   44.00  1010.1   44.00  1010.2   43.66  1012.7   43.00  1015.3
GR   42.9  1015.5   42.00  1019.2   42.00  1023.7   44.00  1055.0   45.00  1091.4
GR   46.5  1500.0
X1 6.144      27  1036.8  1094.3     225     225     225
GR   49.0   500.0   49.00   547.9   48.92   549.8   48.83   601.8   49.00   680.5
GR   48.6   687.4   47.00   791.1   46.18   808.3   46.14   808.6   46.00   812.7
GR   46.0   823.3   45.00   864.2   45.00   882.1   44.15   891.3   44.13   893.4
GR   44.3   920.4   44.23   924.6   44.41   930.6   44.00   951.1   44.00  1036.8
GR   43.5  1048.6   42.00  1060.0   42.00  1074.1   44.00  1094.3   45.35  1200.4
GR   46.0  1218.6   46.29  1500.0
*  FLOWS FROM CONCENTRATION POINT CE4
QT      2     454     866
X1 6.256      22  1035.5  1063.3     590     590     590
X3                       990      46
GR   49.7   500.0   48.00   765.8   47.92   767.5   47.83   768.2   47.75   773.2
GR   47.8   775.9   47.00   917.3   45.24   921.2   44.41   927.1   44.00   929.2
GR   44.0   977.9   45.70   987.3   46.00   990.0   46.00  1035.5   45.76  1036.5
GR   44.0  1038.4      44    1055   45.84  1058.8   45.49  1059.5    45.3  1063.3
GR 46.00  1065.3   46.24  1500.0
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X1 6.365       10  1094.6  1131.1     580     580     580
GR  48.6    500.0   47.07   816.6   47.00   819.0   45.00  1094.6   44.28  1097.0
GR  44.0   1099.9    44.0  1125.1   44.43  1126.2   45.00  1131.1   46.97  1500.0
X1 6.455       12  1030.7  1089.8     475     475     475
GR  48.4    500.0   46.50   997.2   46.00  1030.7   45.55  1031.4   44.00  1044.0
GR  43.6   1045.5   43.58  1048.3   43.75  1063.5   44.05  1063.9   44.11  1064.3
GR  46.0   1089.8   48.10  1500.0
X1 6.619       13  1022.9  1056.3     400     400     400
GR  49.0    500.0   48.00  1022.9   46.34  1024.8   46.00  1025.0   46.0   1054.7
GR 46.97   1055.0    47.1  1055.3   47.21  1056.3   47.18  1058.8   47.20  1059.6
GR 47.13   1085.1    47.0  1088.0   48.00  1500.0
X1 6.707       15  1134.2  1176.9     450     475     465
X3                         800
GR  49.0    500.0   48.00  1134.2   46.00  1142.6   45.7   1147    45.98  1174.8
GR 46.29   1175.5   48.16  1176.9   48.22  1177.1   48.2   1177.2   48.34  1178.3
GR 48.87   1180.9   49.00  1181.3   49.20  1378.4   49.6   1389.5   49.99  1500
X1 6.779       32   991.6  1048.6     380     380     380
X3                         956              1083.1
GR  49.0    500.0   49.00   991.6   48.65   997.0   48.59   997.6   48.39   998.6
GR  48.3    998.8   48.26   998.9   48.00  1001.0   48.29  1003.2   48.69  1019.2
GR  47.1   1020.0   46.00  1021.5   46.00  1031.1   46.78  1032.1   47.21  1033.0
GR  47.2   1033.1   49.00  1048.6   49.00  1083.1   48.21  1089.4   48.16  1093.3
GR  48.3   1102.3   46.67  1143.7   47.36  1276.4   47.40  1277.4   47.53  1312.9
GR  47.6   1316.1   48.90  1335.2   51.24  1385.0   52.00  1394.2   53.00  1434.3
GR  53.0   1499.4   52.97  1500.0
* CCTRXR  @ RIVER MILE 6.800
X1 6.800       20  1000.  1081.2    34.8    34.8    34.8
X3                         1000             1081.1
GR  49.9    140    49.9     425    49.9     740    49.5     880      49    1000
GR  45.6   1000.1   45.6  1009.6   45.6    1011    45.6  1024.6    45.4    1026
GR  45.4   1039.8   45.4    1041   46.9  1054.6   46.9  1055.8    46.9  1069.4
GR  47.8   1070.6   47.8  1081.1     49  1081.2     49    1570    53.6    1600
SB  1.25     1.05   2.63       0   81.1     6.4   459.4       0    45.4    45.4
X1 6.804        0      0       0   43.0    43.0    43.0
X2                     1   51.95   52.7
X3                             1000             1081.1
BT   -30     140   52.9    49.9     425    52.9    49.9     740    52.7    49.9
BT           880     52    49.5    1000    53.8      49   1000.1    53.8   51.55
BT        1009.6   53.8   51.55  1009.6    53.8    45.6     1011    53.8    45.6
BT          1011   53.8   51.55  1024.6    53.8   51.55  1024.6    53.8    45.6
BT          1026   53.8    45.4    1026    53.8   51.55  1039.8    53.8   51.55
BT        1039.8   53.8    45.4    1041    53.8    45.5     1041    53.8   51.55
BT        1054.6   53.8   51.55  1054.6    53.8    46.9  1055.8    53.8    46.9
BT        1055.8   53.8   51.55  1069.4    53.8   51.55  1069.4    53.8    46.9
BT        1070.6   53.8    47.8  1070.6    53.8   51.55  1081.1    53.8   51.55
BT        1081.2   53.8      49    1570    53.6      49    1600    53.6    53.6
X1 6.813       12  970.3    1072    88.6    88.6    88.6
X3                         970.3            1072
GR  49.5    500.0   49.00   970.3      49     975   48.00   999.5   47.86  1003.8
GR  46.7   1019.2   47.51  1025.4   47.84  1029.0   48.25  1032.0   48.57  1059.9
GR  49.0   1072.0   49.00  1500.0
X1 6.868       24   956.2     987     280     280     280
X3                                       1298.3    51.0
GR  50.0    500.0   49.00   956.2   48.94   958.1   48.00   962.4   47.55   965.5
GR  47.4    965.9   46.70   976.7   46.72   976.7   47.86   977.7   48.00   979.2
GR  48.9    986.8   49.00   987.0   50.00  1093.7   51.00  1118.5   51.00  1298.3
GR  50.0   1334.4   48.30  1477.3   48.29  1477.4   48.22  1477.9   48.16  1478.8
GR  48.1   1479.0   48.10  1479.6   48.00  1480.3   48.00  1500.0
X1 6.925       43   914.5   965.7     300     300     300
X3                                       1337.3   51.72
GR  50.0    500.0   50.00   501.4   49.99   501.5   49.00   914.5   48.23   915.5
GR  48.2    917.3   48.15   917.4   48.13   917.5   48.00   918.0   47.68   918.5
GR  46.9    922.5   46.93   923.0   46.76   925.2   46.20   931.0   45.71   943.8
GR  47.0    950.1   47.11   951.0   47.16   951.1   47.30   951.3   47.38   951.5
GR  48.0    954.4   48.28   957.3   48.32   957.9   49.00   965.7   50.39  1137.7
GR  50.5   1139.3   51.00  1158.3   51.72  1337.3   51.00  1357.4   50.29  1440.7
GR  50.5   1441.9   50.61  1447.7   50.39  1448.8   50.41  1450.1   50.68  1457.0
GR  50.8   1480.9   51.00  1487.2   51.00  1487.5   51.25  1490.3   51.70  1490.6
GR  52.0   1490.6   51.38  1491.5   51.71  1500.0
*   FLOWS FROM CONCENTRATION POINT CE4B
QT       2      446     845
X1 6.954       24   931.2   969.6     155     155     155
X3                                       1361.4    51.2
GR  50.2    500.0   50.51   512.3   49.00   931.2   48.72   933.2   48.62   933.6
GR  48.4    934.8   48.34   934.9   48.00   936.7   47.16   954.3   47.10   955.9
GR  47.2    956.0   48.00   967.0   48.56   969.1   48.92   969.4   49.00   969.6
GR  49.6    982.9   50.00   999.9   50.14  1134.3   51.00  1169.5   51.22  1361.4
GR  51.0   1368.1   51.00  1370.1   50.00  1410.6   50.03  1500.0
* FLORIN RD 6.974 RIVER MILE
X1 6.974        0      0       0     110     110     110
X3    10                                 1361.4    51.2
SB  1.25     1.05   2.63     300      20       2     144     1.5      46      46
* U/S FACE FLORIN RD
X1 6.992       28     950   988.9      50      50      50
X2                     1    51.4    51.8
X3    10
BT   -14        0    51.8    51.8       5    51.8      50     470    52.0      50
BT             500    52.1    50.0   509.8   52.15   49.99     520    52.2      50
BT          627.2    52.3    52.0   941.9    53.5      52     950    53.5   52.38
BT          999.3    53.5   52.23    1500    52.4   51.45  988.9    53.5   48.77
GR  51.8        0      50       5      50     200      50     300      50     470
GR  50.0    500.0   49.99   509.8   49.99   509.9   50.00   520.0   50.10   529.7
GR  52.0    615.4   51.14   623.9   52.00   627.2   52.53   642.8   52.56   643.4
GR  53.0    936.0   52.15   938.9   52.00   941.9   52.38   950.0   50.76   960.4
GR  49.2    965.4   49.19   978.6   48.48   987.6   48.77   988.9   52.23   999.3
GR  53.1   1004.3   52.25  1377.1   51.45  1500.0
X1 7.072       18   831.5     878     460     460     460
X3                         797.3
GR  49.9    500.0   50.00   783.7   50.21   784.0   52.01   795.1   51.48   795.8
GR  52.0    796.1   52.27   797.1   52.31   797.3    50.0   831.5    49.3   839.1
GR  48.0    863.0    47.9   872.1      50     878    51.0   886.9      51    898.2
GR 50.93    898.5    50.0   901.9   51.49    1500
X1 7.110       25   938.6   981.6     205     205     205
X3                         712.2
GR  50.2    500.0   50.00   667.2   50.66   669.6   50.96   673.2   51.00   673.6
GR  51.0    712.2   50.82   713.0   50.00   713.1   50.70   713.6   50.00   720.6
GR  49.0    938.6   48.76   940.5   48.42   941.4   48.71   942.0   47.97   952.0
GR  47.5    954.5   47.48   954.7   47.49   955.0   47.98   955.2   48.00   955.7
GR  49.2    962.3   50.00   981.6   51.00  1241.1   51.09  1241.7   51.92  1500.0
X1 7.154       19   948.1     966.1     230     230     230
GR  51.0    500.0   50.00   778.0   48.18   784.3   48.14   784.7   48.78   787.0
GR  48.8    787.3   48.77   787.3   48.57   789.2   49.89   795.3   50.00   796.1
GR  50.0    948.1      48     954.1   47.81   956.7   47.21   958.9   47.63   959.5
GR  51.0    966.1    50.8  1131.5    51.0  1137.6      52    1500
X1 7.211       22   921.9   977.1     300     300     300
GR  51.6    500.0   51.49   501.3   50.35   871.3   50.29   873.2   50.00   921.9
GR  49.3    931.7   49.00   938.3   49.39   941.5   49.25   946.0   48.63   948.3
GR  48.3    950.3   48.21   952.4   47.99   954.0   47.91   958.3   48.28   958.7
GR  48.4    962.5   49.33   967.2   50.00   975.1   50.66   977.1   51.25   986.7
GR  51.2    989.9   51.06  1500.0
X1 7.226       23   893.2   925.7     310     310     310
GR  51.2    500.0   50.80   893.2   50.00   898.2   49.56   900.6   49.48   900.8
GR  49.4    900.8   49.34   902.1   47.97   912.3   48.04   912.4   48.00   912.5
GR  50.0    922.1   51.78   924.8   52.00   925.7   52.00   951.0   51.64   954.4
GR  51.3   1063.4   51.29  1063.8   52.00  1173.7   51.47  1179.2   52.00  1183.0
GR  52.0   1211.6   52.18  1215.8   51.88  1500.0
X1 7.308       31  1214.6  1253.5     205     205     205
X3                                       969     51.0
GR  50.8    500.0   51.00   509.0   51.00   969.0   50.90   969.4   50.36   976.5
GR  50.1    983.6   49.90   984.8   49.86   985.4   49.84   986.1   49.91   996.1
GR  50.0    997.7   50.00  1001.7   51.00  1025.0   51.00  1214.6   50.00  1219.9
GR  49.5   1220.7   49.41  1220.2   49.19  1220.5   49.19  1220.6   50.39  1241.9
GR  50.4   1242.0   50.20  1244.4   50.03  1247.3   50.00  1247.5   50.21  1247.9
GR  52.0   1253.5   53.00  1294.8   52.99  1294.9   52.00  1312.8   52.00  1406.0
GR  53.0   1500.0
X1 7.361       25  1073.4  1110.4     267.9     280     280
GR  51.3    500.0   51.91  1050.3   52.00  1054.0   52.00  1073.4   51.79  1074.0
GR  50.0   1078.8   49.41  1084.6   49.33  1084.9   48.97  1088.9   48.97  1089.4

GR  48.7   1093.7   48.72  1093.7   48.72  1093.8   48.72  1093.8   48.70  1095.3
GR  48.8   1095.3   49.66  1100.9   50.00  1101.6   50.23  1102.2   52.00  1108.1
GR  52.8   1109.5   53.00  1110.4   53.88  1281.5   53.00  1321.9   53.00  1500.0
*   FLOWS FROM CONCENTRATION POINT R-CE23
QT       2      430     806
X1 7.419       19  1051.1  1114.9     555     555     555
GR    52        0      52      75    51.4     130    51.4     250    51.4     390
GR  51.4    500.0   52.24   997.2   52.00  1006.8   52.50  1012.8   52.58  1051.1
GR  52.0   1064.9   50.00  1067.3    49.2  1077.9    50.0  1080.9    50.5  1083.4
GR 51.00   1088.3   51.71  1113.3   52.00  1114.9   53.17  1500.0
X1 7.466       16   500.0  1500.0      40      40      40
GR  51.4    500.0   52.00  1073.2   50.98  1077.8   50.00  1078.2   50.39  1082.6
GR  50.8   1083.8   49.84  1087.4   48.97  1098.3   49.03  1098.6   49.35  1307.2
GR  49.9   1322.5   51.01  1340.1   51.97  1395.7   51.98  1395.8   53.00  1442.9
GR  53.0   1500.0
X1 7.542       16  1082.1  1097.5   400.0   400.0   400.0
GR  52.5    500.0   52.00  1024.5   51.40  1029.6   51.33  1029.8   50.85  1031.2
GR  50.9   1031.2   51.00  1082.1   50.18  1090.5   50.17  1090.6   50.15  1090.8
GR  50.1   1091.0   50.15  1091.2   50.17  1091.4   51.00  1097.5   51.00  1108.1
GR    52   1500
X1 7.577       26   956.6  975.50      585     585     585
GR  52.9    500.0   52.00   901.8   52.03   902.7   52.00   903.5   52.00   937.2
GR  50.1    943.2   50.76   944.0   52.37   945.2   52.37   955.0   52.25   956.6
GR  51.0    962.9   50.60   963.3   50.00   968.5   50.61   973.6   50.93   975.3
GR  51.0    975.5   51.02   976.0   51.02  1021.6   51.00  1021.6   51.21  1029.6
GR  51.0   1044.6   51.51  1055.9   51.77  1058.6   52.00  1063.3   52.00  1072.0
GR  52.5   1500
X1 7.638       16  1001.1  1122.0     182     182     182
GR  53.1    605.3   52.49   699.2   52.43   700.9   53.00   710.3   52.98  1000.0
GR  53.0   1001.1   52.00  1013.6   51.44  1020.5    50.9  1032.4    50.0  1033.1
GR 50.81   1033.2    51.0  1105.5   51.24  1111.3   51.87  1121.0   52.00  1122
GR  55.0   1253.1
* ************************************
* BEGINNING AT CONFLUENCE WITH ELDER CK *
*  GERBER CREEK                         *
* ************************************
*   FLOWS FROM CONCENTRATION POINT CG5
QT       2      414     781
X1-5.753       30  1005.2  1076.7       0       0       0
GR  46.0    500.0   45.00   734.1   44.99   734.2   44.96   735.3   44.00   753.8
GR  44.0    768.1   43.13   817.0   43.00   937.0   42.00  1000.2   42.00  1005.2
GR  41.6   1009.3   38.00  1058.0   38.00  1061.9   39.15  1065.4   39.50  1066.8
GR  39.6   1066.9   39.66  1066.9   39.82  1067.4   39.86  1067.6   40.06  1068.5
GR  40.7   1070.0   42.23  1072.8   42.24  1073.0   42.25  1073.1   42.31  1073.6
GR  42.3   1073.9   42.36  1074.0   42.41  1076.7   42.00  1087.1   43.00  1500.0
* ECC5 @ CCTRXR
X1  .147       26  1061.0  1093.1      390     590     490
GR  47.1    500.0   47.00   590.2   46.00   622.2   46.00   749.9   45.98   750.8
GR  45.2    913.3   44.41   933.2   44.00   939.4   43.72   942.0   43.67   943.4
GR  43.0   1061.0   42.82  1061.4   42.34  1062.0   42.00  1066.3   42.00  1089.4
GR  42.8   1092.7   43.00  1093.1   43.00  1147.0   43.92  1203.6   43.92  1203.6
GR  44.8   1278.6   45.00  1283.3   45.00  1455.8   44.66  1459.2   45.00  1462.4
GR  45.0   1500.0
X1  .254       19  1008.6  1072.2     500     350     565
GR  46.0    500.0      46     930      45  1008.6   44.24  1016.0   44.00  1018.0
GR  42.5   1037.8   42.10  1045.3   42.00  1045.5   42.00  1061.9   42.18  1062.7
GR  42.2   1063.2   42.57  1066.4   43.00  1072.2   44.00  1285.1   44.83  1299.0
GR  45.0   1302.7   45.00  1302.8    45.5    1440   43.97  1500.0
*  0.203 *** PRIVATE BRIDGE ***
NC                    .055      .3      .5
X1 0.203       10  1255.4  1260.1     200     200     200       0       0       0
X3    10        0       0       0       0       0       0       0       0       0
GR  45.6     800    42.8  1255.4    37.9  1255.5    37.9  1255.9    37.9    1256
GR  37.9  1256.1    37.9  1256.2    37.9    1260    42.8  1260.1    45.0    1400
SB  1.25     1.5     2.7       0     4.6     0.2    16.5       0       0       0
X1 0.206        0       0       0      16      16      16       1       0       0
X2      0       0       1    41.6    42.8       0       0       0       0       0
X3     10       0       0       0       0       0       0       0       0       0
BT      4     800    45.6      40  1255.4    42.8    41.6    1260    42.8    41.6
BT   1400    45.0      40       0       0       0       0       0       0       0
NC                    .065      .1      .3
X1  .345      12    1050    1145     200     210     280
GR  46.4   500.0   46.00     720      45     860      44     900      44    1050
GR    43    1070      42    1075      42    1088      43    1090   45.00    1145
GR  46.0    1230    47.6    1320
X1  .425      16  1167.6  1244.1     425     425     425
GR  46.2   500.0   44.12  1167.6   44.00  1169.8   42.37  1186.5   42.20  1190.7
GR  42.0  1191.3   42.00  1210.5   42.99  1211.0   44.00  1220.6   45.00  1244.1
GR  45.0  1246.9   46.00  1279.5   46.00  1289.1   47.97  1384.1   48.00  1384.7
GR  48.2  1500.0
X1  .427      15     585     615     320     320     320
GR    46     135      46     265      45     375    44.8     450      45     515
GR  45.3     550      45     585      42     600      42     610      44     615
GR    45     635      45     690      46     740      48     760      48    1000
*  0.428 *** PASSALIS LANE ***
NC                    .050      .3      .5
X1 0.428       11     810     830      40      40      40       0       0       0
X3    10
* ALL X5 cards disabled - 3/92, JMM:
* X5      5    46.7    47.3    47.5    47.8       0       0       0       0
GR  46.3        0    46.0     360      46     480      45     580      45     720
GR    44      810    41.5     815    41.5     823      45     830      46     950
GR    47     1010
SB  1.25      1.5     2.7     700       8     1.7      25       0       0       0
X1 0.431        0       0       0      16      16      16       0       0       0
X2      0       0       1    45.5    46.5       0       0       0       0       0
X3     10       0       0       0       0       0       0       0       0       0
*
NC                    .065      .1      .3
X1  .554      31  1055.3  1084.1     300     300     300
GR  47.0   500.0   46.28   579.0   46.27   579.5   45.27   858.0   45.00   875.6
GR  45.0   889.1   44.27   924.8   44.22   936.8   44.40   947.3   45.00   963.7
GR  45.0  1055.3   43.52  1059.8   43.39  1060.4   42.75  1062.6      42  1070.1
GR  43.9  1079.3   44.00  1079.3   44.20  1081.1   44.22  1081.2   44.40  1082.7
GR  44.5  1082.9   45.00  1084.1   45.00  1123.3   45.54  1165.3   46.00  1172.9
GR  47.0  1198.7   47.00  1198.7   47.67  1216.6   48.00  1246.6   47.55  1265.3
GR  49.2  1500.0
X1  .597      36  1057.7  1145.6     230     230     230
GR    47     480   46.00   863.0   45.00   922.2   45.00   949.1   45.92   952.8
GR  46.0   953.2   46.00   954.3   45.38   958.4   45.84   970.4   45.54  1054.1
GR  45.6  1057.7   45.74  1058.3   44.34  1072.6   45.00  1072.6   45.00  1085.3
GR  42.3  1093.8   42.07  1094.5   42.05  1094.5   42.04  1094.5   42.00  1095.7
GR  41.9  1102.8   42.00  1104.1   43.97  1111.3   44.14  1112.3   44.16  1112.5
GR  45.0  1115.3   45.73  1145.6   46.00  1182.0   47.00  1214.1   47.00  1214.4
GR  47.4  1234.5   48.00  1246.8   49.00  1301.1   49.00  1301.3   50.00  1323.7
GR  50.5  1500.0
X1 0.607        0       0       0     110     110     100
*  0.608 *** PRIVATE ROAD #1 ***
* BRIDGE SECTION INPUT DIRECTLY FROM JMM MODEL CAUSES  3.59' INCREASE IN WS ELEV
NC                    .05      .3      .5
X1 0.608       10     750   756.7      50      50      50       0       0       0
* X3    10  REMOVED X3 MS
X4      1    46.1     620       0       0       0       0       0       0       0
* X5      5       0    47.9   48.15    48.6       0       0       0       0       0
GR  47.5        0    47.3     350    47.1     700    51.3     750    42.3     750
GR  42.3    756.7    51.3   756.7    46.3     900    48.0     970    49.0    1250
SB     0      1.5     2.7       0     6.7       0   56.75       0       0       0
X1 0.612        0       0       0      18      18      18       0       0       0
X2      0       0       1    50.8    46.3       0       0       0       0       0
*  X3    10     REMOVED X3 MS
* CHANGED XLCEL ON BT RECORDS FROM 0 TO 40
BT      9       0    47.5      42     350    47.1      42     620    46.1      42
BT    700    47.1      42     750    51.3    50.8   756.7    51.3    50.8     900
BT   46.3      42     970    48.0      42    1250    49.0      42       0       0
NC                    .065      .1      .3
X1  .632      26   500.0  1057.7      10      10      10
X3                                               1124.3    49.1
GR  46.4   500.0   46.31   537.8   46.00   555.3   45.95   845.9   45.98   847.2
GR  46.0  1020.4   47.53  1037.9   48.00  1038.1   49.00  1057.7   49.00  1124.3
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GR  48.6  1134.5   48.45  1137.5   48.92  1144.2   49.00  1232.6   48.24  1234.5
GR  48.0  1237.3   48.26  1238.2   48.27  1238.7   48.35  1241.1   48.39  1241.1
GR  48.0  1260.3   49.00  1312.0   49.00  1342.3   49.57  1348.5   49.91  1350.7
GR  50.0  1353.5
*  0.633 *** PRIVATE ROAD #2 ***      FIS/JMM
NC                  .055      .3      .5
X1 0.633       9    1000  1003.6     230     230     230       0       0       0
* CHG'D X3 CARD REMOVED 10 IN FIELD X3.1 USED STENCL & STENCR WITH LOW OVER BANK
* ELEV. M&S
X3    10                    1000    46.8  1003.6    46.8
* X5      5    47.9   48.45    48.7       0       0       0       0       0
GR  46.8       0    47.2     800    46.8     950    48.9    1000    42.4    1000
GR  42.4  1003.6    48.9  1003.6    46.8    1050      48    1250
SB     0     1.5     2.7       0     3.6       0   16.56       0       0       0
X1 0.636       0       0       0      20      20      20       0       0       0
X2     0       0       1    47.0    46.8       0       0       0       0       0
* CHG'D X3 CARD REMOVED 10 IN FIELD X3.1 USED STENCL & STENCR WITH LOW OVER BANK
* ELEV. M&S
X3    10                    1000    46.8  1003.6    46.8
BT     7       0    46.8      42     800    47.2      42     950    46.8      42
BT  1000    48.9    47.0  1003.6    48.9    47.0    1050    46.8      42    1250
BT  48.0      42       0       0       0       0       0       0       0       0
NC                  .065      .1      .3
X1  .708       8     950    1020     120      70     165
GR    49   500.0      48     630      47     720      46     940      45     950
GR    42     980      42    1000      50    1020
*  FLOWS FROM CONCENTRATION POINT R-CG3
QT     2     391     775
X1  .815       8     930     958     510     520     565
GR  49.0   500.0   48.00     780    47.0     930      44     935      44     950
GR    46     958      48     990      50    1100
X1  .888      15  1088.8  1114.8     385     385     385
GR  49.1   500.0   47.00  1085.1   47.00  1088.8   46.75  1093.2   46.70  1094.0
GR  46.4  1099.8   46.30  1100.8   45.54  1104.3   46.00  1105.9   47.34  1109.1
GR  47.8  1114.8   48.00  1116.4   48.77  1152.1   49.00  1154.4   50.01  1500.0
X1  .950      23    1045  1130.2     325     325     325
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1025.1   49.00  1025.6   49.00  1045.0   48.17  1070.2
GR  48.0  1071.7   48.00  1074.3   47.96  1074.3   47.12  1080.4   46.71  1081.0
GR  46.0  1081.3   46.00  1094.4   46.22  1095.1   47.00  1102.2   47.00  1121.5
GR  47.6  1127.3   48.00  1130.2   50.00  1500.0
X1 1.002      14  1059.3  1100.5     265     265     265
GR  49.7   500.0   48.00  1059.3   47.97  1059.4   46.00  1072.6   46.00  1094.3
GR  46.1  1094.6   46.06  1095.2   46.00  1095.6   46.07  1096.0   46.62  1096.6
GR  48.0  1100.5   49.94  1420.6   49.98  1422.4   50.05  1500.0
X1 1.048      18  1043.7    1089     245     245     245
GR  50.0   500.0   50.00  1043.7   47.69  1068.7   47.69  1069.1   47.83  1069.1
GR  48.0  1069.3   47.86  1077.4   47.89  1082.1   47.93  1083.3   48.00  1083.6
GR  48.0  1083.8   48.26  1086.2   48.42  1086.4   48.48  1086.6   49.00  1089.0
GR  50.0  1406.1   50.23  1409.7   50.67  1500.0
X1 1.102      17  1042.1  1090.8     285     285     285
GR  50.5   500.0   49.89   652.6   50.00   653.5   50.00  1042.1   49.02  1051.7
GR  48.0  1056.5   47.76  1060.8   47.72  1061.2   47.69  1062.2   47.72  1082.9
GR  48.0  1085.5   48.00  1085.6   48.22  1086.3   49.00  1090.8   49.03  1172.5
GR  50.0  1232.5   51.00  1500.0
X1 1.160      11  1076.8  1112.5     305     305     305
GR  51.0   500.0   49.00  1076.8   48.97  1076.8   48.96  1076.9   47.84  1083.8
GR  47.7  1104.5   47.86  1108.1   48.00  1109.1   48.92  1111.9   49.00  1112.5
GR  50.8  1500.0
*  1.198 *** PRIVATE ROAD #3 ***
NC                  .055      .3      .5
X1 1.198      10     780     800     230     230     230       0       0       0
X3    10       0       0       0       0       0       0    49.5    49.5       0
GR  51.8       0      51     390      50     700      50     770    45.5     780
GR  45.5     788    49.3     800      50     920      50    1040      51    1200
SB  1.25     1.5     2.7     600     6.9     0.7    25.1       0       0       0
X1 1.202       0       0       0      20      20      20       0       0       0
X2     0       0       1    49.5    51.5       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
NC                  .065      .1      .3
X1 1.214      33    1030  1065.8      55      55      55
X3                                        1408.9
GR  51.3   500.0   49.27  1015.8   49.00  1030.0   49.00  1030.4   48.78  1031.3
GR  47.7  1035.7   47.55  1039.4   47.55  1040.4   47.19  1041.7   46.88  1052.2
GR  48.0  1062.3   48.00  1062.3   48.01  1062.4   50.00  1065.8   50.00  1342.5
GR  50.0  1344.0   49.94  1376.2   50.00  1376.7   50.91  1387.4   51.09  1388.2
GR  52.0  1391.3   52.78  1394.1   53.82  1407.8   53.82  1408.9   51.40  1426.8
GR  51.4  1427.2   51.41  1428.6   51.09  1429.8   51.11  1434.7   50.64  1438.4
GR  50.8  1456.4   51.00  1460.7   51.10  1500.0
*  FLOWS FROM CONCENTRATION POINT CG3
QT     2     442    1030
X1 1.274      20   971.7  1057.5     320     320     320
X3                                          1176
GR  51.0   500.0   50.00   971.7   48.00  1020.5   47.85  1023.1   47.06  1034.1
GR  47.0  1035.3   46.63  1043.3   47.45  1045.4   47.57  1046.3   47.75  1047.0
GR  48.5  1049.4   50.00  1057.5   50.00  1130.5   49.00  1149.7   49.00  1160.0
GR  50.0  1166.4   50.18  1167.8   51.81  1173.0   52.00  1173.5   53.01  1176.0
X1 1.295      25   990.9  1058.7     110     110     110
X3                                        1173.6
GR  51.1   500.0   50.00   990.9   48.32  1015.9   48.00  1023.4   47.67  1029.1
GR  46.7  1042.9   46.63  1044.5   47.87  1047.7   47.90  1047.9   47.94  1048.1
GR  48.1  1048.6   50.00  1058.7   50.00  1128.1   49.00  1147.6   49.00  1159.0
GR  49.2  1159.4   49.19  1159.4   50.00  1164.6   50.15  1165.8   51.84  1171.2
GR  52.0  1171.5   52.82  1173.6   52.83  1188.5   51.85  1191.0   51.85  1191.6
* CCTRXR  M&S
NC                  .055      .3      .5
X1 1.314      14    1000  1068.1      40      40      40
X3    10
GR    54     990      54    1000    47.6  1000.1    47.4  1010.8    47.4    1012
GR  46.7  1025.8    46.7  1027.5    45.7  1040.8    45.7  1042.5    45.7  1056.1
GR  45.7  1057.3    46.2    1068      54  1068.1      54    1100
SB  1.05     1.5     2.7       0    67.9     5.8   310.2       0
X1 1.315       0       0       0      15      15      15
X2                     1    51.7      54       0       0
X3    10
BT   -22     990      54      54    1000      54      54    1000      54    51.7
BT        1010.8      54    51.7  1010.8      54    47.4    1012      54    47.4
BT          1012      54    51.7  1025.8      54    51.7  1025.8      54    46.7
BT        1027.5      54    46.7  1027.5      54    51.7  1040.8      54    51.7
BT        1040.8      54    45.7  1042.5      54    45.7  1042.5      54    51.7
BT        1056.1      54    51.7  1056.1      54    45.7  1057.3      54    45.7
BT        1057.3      54    51.7  1068.1      54    51.7  1068.1      54      54
BT          1100      54      54
NC                  .065      .1      .3
X1 1.328      20   980.6  1012.7      80      80      80
X3                           880            1110
GR  50.1   500.0   50.63   646.9   50.08   649.3   49.54   864.7   50.00   897.8
GR  49.5   905.7   49.51   941.5   49.00   971.6   49.00   980.6   48.97   981.3
GR  48.0   986.6   47.13   990.5   47.09  1009.1   47.79  1009.7   48.00  1010.4
GR  48.9  1012.7   48.99  1013.4   50.30  1029.8   51.00  1070.7   50.77  1500.0
X1 1.376      29     941   975.2     100     400     250
X3                                          1280
GR  54.0   715.7   50.33   731.8   50.00   732.7   49.72   733.2   49.64   733.2
GR  49.0   733.4   49.00   746.6   49.60   767.4   50.17   864.3   50.00   941.0
GR  48.9   948.2   48.00   950.2   47.76   951.1   47.69   955.8   47.63   956.8
GR  47.1   962.9   47.09   964.3   47.19   964.4   48.00   964.4   47.13   964.8
GR  47.4   965.5   49.12   968.5   50.64   974.2   51.00   975.2   52.38  1276.4
GR  52.5  1279.8   52.54  1280.0   52.00  1422.8   52.91  1500.0
*  FLOWS FROM CONCENTRATION POINT CG4
QT     2     429    1042
X1 1.422      24   867.8     892     265     265     265
X3                         707.0
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.94   782.1
GR  50.7   782.5   51.21   801.7   50.00   867.8   49.43   868.9   48.00   871.5
GR  47.4   874.4   46.99   874.6   47.09   885.5   47.62   888.1   47.65   888.2
GR  48.0   888.4      50     892      52    1085      53    1550
X1 1.524      43   842.9   876.1      40      40      40
X3                         764.3
GR  52.1   500.0   52.98   528.6   53.00   609.9   53.36   618.7   53.03   644.8
GR  53.0   645.6   53.00   646.1   52.00   717.4   51.96   717.9   51.96   717.9
GR  52.0   718.4   51.95   718.5   51.95   718.5   51.94   718.9   51.94   719.2
GR  52.0   719.2   51.90   737.5   52.00   738.0   52.36   740.0   54.00   745.6
GR  54.0   764.3   52.48   771.5   52.00   774.0   51.91   774.4   51.83   831.5
GR  51.5   842.9   50.00   846.0   49.42   847.1   48.00   849.3   47.54   850.7
GR  47.5   850.8   47.49   850.8   47.46   850.8   47.45   850.9   47.42   851.0
GR  47.0   853.2   47.09   863.3   47.12   863.6   48.00   872.3   49.50   875.4
GR  50.9   875.6   51.00   876.1   53.74  1500.0
* GERBER RD. CROSSING #4 ADJACENT TO AND EAST OF CCTRXR - D/S SECT.
NC                  .050      .3      .5
X1 1.528       9     180   206.2      20      20      20
GR  54.9     100    54.5     180      47   180.1      47   192.4      47   193.8
GR    47   206.1    54.3   206.2      54     380    53.7     580
SB   1.3     1.5     2.7       0      26     1.4     160       0
X1 1.534       0       0       0      30      30      30
X2                     1    53.5    54.5
X3    10
BT   -11     100    54.9    54.9     180    54.5    54.5     180    54.5    53.5
BT         192.4    54.5    53.5   192.4    54.5      47   193.8    54.5      47
BT         193.8    54.5    53.5   206.2    54.5    53.5   206.2    54.5    54.5
BT           380      54      54     580    53.7    53.7
NC                  .065      .1      .3
QT     2     351    1020
X1 1.590      57   932.6  1008.3     280     280     280
X3                           893          1464.4
GR  56.3   500.0   56.00   752.0   58.00   800.7   58.01   838.8   58.00   839.4
GR  56.0   847.2   55.85   847.7   55.56   849.0   54.64   849.6   54.00   852.5
GR  53.0   856.3   52.68   858.4   52.56   860.7   52.24   861.4   52.00   861.9
GR  50.9   866.6   52.00   870.7   52.42   887.2   54.00   887.9   54.58   892.8
GR  54.6   893.0   54.67   898.0   54.68   898.2   54.69   898.3   54.70   902.4
GR  54.6   905.2   54.45   906.5   54.45   914.3   54.44   914.6   54.00   914.9
GR  52.4   914.9   52.38   916.4   52.00   919.1   52.00   932.6   50.44   940.5
GR  50.0   942.5   50.00   946.1   49.58   949.3   49.34   950.3   49.19   950.9
GR  47.9   955.1   48.32   958.6   49.60   967.5   49.60   967.5   49.62   967.6
GR  50.0   970.5   50.53   974.0   50.63   974.4   50.65   974.7   50.84   978.4
GR  51.0   980.2   52.00  1008.3   52.00  1153.6   53.00  1215.6   53.86  1464.4
GR  53.0  1484.5   53.01  1500.0
X1 1.669      37  1036.4  1095.6     500     300     405
X3                           867          1476.8
GR  54.0   508.3   54.00   584.3   54.06   587.2   54.13   587.8   54.18   588.8
GR  55.0   600.8   54.55   672.9   55.00   867.0   54.00   894.6   54.00   951.7
GR  53.0  1001.8   53.00  1036.4   53.05  1037.4   52.94  1037.7   52.00  1057.6
GR  51.1  1058.5   50.00  1062.7   49.54  1064.1   48.77  1067.9   48.77  1068.2
GR  48.8  1068.2   50.27  1076.8   50.21  1077.6   50.00  1078.0   51.85  1093.6
GR  52.0  1095.6   52.93  1326.7   53.00  1326.9   53.00  1476.8   52.27  1483.6
GR  52.1  1492.6   52.00  1492.8   52.00  1497.1   51.95  1497.4   51.94  1497.6
GR  52.0  1497.8   52.00  1500.0
*  FLOWS FROM CONCENTRATION POINT CG3D
QT     2     351     606
X1 1.761      34     971  1062.3     495     495     495
GR  54.3   591.1   54.69   657.4   52.74   971.0   50.63  1011.3   49.63  1013.5
GR  50.0  1015.3   49.70  1016.0   49.69  1016.1   49.10  1017.0   49.13  1017.1
GR  49.1  1017.1   49.17  1017.3   49.23  1017.5   49.53  1022.1   49.76  1023.5
GR  50.0  1027.6   51.72  1038.0   52.36  1058.2   52.86  1061.3   53.00  1062.3
GR  53.0  1077.9   54.00  1127.9   55.64  1411.3   56.57  1425.4   56.00  1425.7
GR  56.3  1426.2   56.84  1427.4   57.00  1437.5   57.00  1442.8   57.11  1444.8
GR  58.2  1483.1   58.23  1487.9   58.79  1500.0   58.80  1500.0
*  1.785 *** PRIVATE ROAD ***
NC                  .055      .3      .5
X1 1.785      10     488     505      70      70      70       0       0       0
X3    10
GR  55.0       0      54     250      53     390      52     488    50.6     492
GR  50.6     505      52     510      53     511      54     620      55     820
SB   1.3     1.5     2.7       0     8.8     0.8    59.1    1.34       0       0
X1 1.788       0       0       0      15      15      15       0       0       0
X2     0       0       1    54.0    55.3       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     3     488      52      52     499    55.3    54.0     510      52      52
NC                  .065      .1      .3
X1 1.811      31  1046.4  1090.9     175     175     175
GR  54.7   695.4   54.67   695.8   54.00   910.6   53.59   925.5   53.07  1044.0
GR  53.0  1046.1   53.00  1046.4   51.49  1048.0   50.41  1049.0   50.74  1055.1
GR  51.3  1061.4   52.29  1065.2   52.53  1067.8   53.00  1068.7   53.37  1075.8
GR  53.6  1084.2   53.79  1086.8   53.85  1087.4   54.00  1090.9   56.39  1411.9
GR  57.3  1415.7   56.00  1416.4   56.73  1417.6   56.79  1433.2   56.23  1437.4
GR  56.3  1438.2   56.37  1439.1   56.40  1446.6   57.00  1475.6   57.00  1476.1
GR  57.5  1500.0
*  FLOWS FROM CONCENTRATION POINT CG3B
QT     2     255     453
X1 1.851      34  1053.3  1097.8     210     200     210
GR  54.9   500.0   54.00   896.9   53.21   944.7   53.65  1025.4   53.00  1053.3
GR  50.5  1058.3   50.42  1058.6   50.81  1059.0   50.79  1059.1   50.60  1059.5
GR  50.6  1066.7   50.95  1068.5   52.00  1073.0   53.00  1073.1   53.00  1073.1
GR  53.7  1097.8   53.70  1097.9   54.00  1164.7   54.25  1169.6   54.38  1283.3
GR  55.4  1330.6   56.86  1337.8   56.00  1338.3   56.50  1339.3   56.59  1352.9
GR  56.0  1358.7   55.91  1372.4   56.00  1373.1   56.00  1381.1   57.00  1413.4
GR  57.0  1413.5   59.00  1479.6   59.00  1479.7   59.88  1500.0
X1 1.900      29   960.3  1001.6     280     250     260
GR  56.7   500.0   56.70   503.1   56.43   514.1   56.57   559.4   56.00   565.5
GR  54.0   908.0   53.95   909.3   53.86   910.2   53.48   911.9   53.02   913.0
GR  53.0   913.4   53.00   929.5   53.86   941.2   54.00   944.5   54.00   960.3
GR  53.5   960.9   52.00   970.2   51.77   970.4   50.80   981.8   51.47   990.6
GR  51.9   992.8   52.00   994.6   52.12   994.9   53.53  1000.0   54.00  1001.6
GR  54.2  1259.0   54.00  1270.6   57.09  1446.4   56.13  1500.0
* GERBER ROAD CROSSING #3 WEST OF BRADSHAW RD
NC                  .050      .3      .5
X1 1.919       6     475   495.2      50      50      50
X3    10
GR 55.25     200    55.2     475      48   475.1    47.8   495.1    55.2   495.2
GR    56     800
SB     0     1.5     2.7              20       0     118       0
X1 1.925       0       0       0    30.3    30.3    30.3
X2                     1    53.8    55.2
X3    10
BT    -6     200   55.25   55.25     475    55.2    55.2     475    58.6    53.8
BT         495.2    58.6    53.8   495.2    55.2    55.2     800      56      56
* GERBER ROAD CROSSING #3 U/S SECTION
NC                  .060      .1      .3
X1 1.926      26   939.7   974.1      14      14      14
GR  55.8   500.0   53.58   939.7   52.40   941.5   52.00   942.5   51.90   944.0
GR  51.9   944.5   51.83   944.8   50.88   949.7   50.53   959.8   51.71   964.2
GR  51.8   964.2   52.00   964.5   51.73   965.5   51.71   966.0   51.71   966.0
GR  51.7   966.2   52.37   970.2   54.00   974.1   54.26  1191.1   55.95  1258.1
GR  56.0  1331.0   57.00  1426.2   57.52  1430.7   58.22  1443.8   59.00  1492.3
GR  59.0  1500.0
X1 1.961      33   870.5   905.7     170     170     170
GR  56.0   500.0   56.00   637.8   55.96   638.1   54.00   870.5   52.00   883.9
GR  51.3   890.2   51.12   890.6   50.69   891.8   50.53   891.9   50.51   892.0
GR  50.7   892.6   51.43   895.7   51.59   896.4   51.98   897.7   52.00   897.7
GR  52.0   897.8   52.16   898.5   54.00   905.7   54.00   907.3   56.00   996.6
GR  56.0  1000.1   57.00  1053.3   57.00  1053.9   59.00  1128.5   59.00  1130.2
GR  59.9  1174.1   60.00  1176.7   60.00  1185.9   60.77  1237.1   60.19  1285.4
GR  60.8  1363.3   60.71  1370.0   61.00  1500.0
X1 1.987      26   956.7   990.7     100     150     135
X3                         633.5   56.73  1440.8   57.00
GR  56.0   500.0   56.73   633.5   56.00   704.0   55.89   704.9   54.00   956.7
GR  53.6   957.4   52.00   968.6   52.01   968.6   51.97   968.7   51.59   969.6
GR  52.0   979.7   52.00   979.9   52.22   981.0   53.16   983.2   55.86   990.7
GR  56.0   991.3   56.34  1201.8   56.63  1211.2   56.70  1230.3   57.00  1245.8
GR  57.0  1281.4   57.79  1286.6   57.00  1323.3   57.00  1440.8   56.49  1452.2
GR  56.0  1500.0
*  2.000 *** PRIVATE ROAD ***   FIS/JMM
NC                  .055      .3      .5
X1 2.000      12     180     208      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  56.5       0    56.5     180    53.1     180    51.7   186.5    52.3     193
GR  52.3     193    52.0   195.2    52.0   195.2    51.7   201.6    51.8     208
GR  56.5     208    56.5     658       0       0       0       0       0       0
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SB   1.3      1.5      2.7      600      23.7      2.2       85       0.6        0        0
X1 2.002        0        0        0        12       12       12         0        0        0
X2     0        0        1     55.3      56.5        0        0         0        0        0
X3    10        0        0        0         0        0        0         0        0        0
NC                     .065       .1        .3
*  SECNO 1.991 = 2.003
X1 2.003       41      960    998.1        25       25       25
X3                            698.8              1319.9
GR   56.0    500.0    56.00    685.9     55.71    697.2    55.53     698.8    54.00    960.0
GR   52.3    962.5    52.03    963.6     52.02    963.7    52.00     963.7    52.89    967.6
GR   52.0    969.1    52.06    969.5     54.00    987.2    54.16     988.8    55.10    994.4
GR   56.0    998.1    56.00   1016.3     56.53   1030.0    56.85    1031.2    57.00   1034.0
GR   57.3   1203.5    57.17   1207.0     57.10   1313.3    57.64    1318.1    58.00   1319.9
GR   58.0   1422.8    57.72   1427.8     57.60   1428.2    56.00    1426.9    56.88   1429.0
GR   57.0   1429.1    57.00   1429.3     56.06   1438.9    56.05    1439.0    56.00   1439.2
GR   56.0   1439.5    56.00   1440.7     55.33   1445.5    55.65    1456.9    55.49   1460.1
GR   55.8   1500.0
*  FLOWS FROM CONCENTRATION POINT CG3A
QT      2      256      471
X1 2.060       33    889.7   1018.4       365      365      365
GR   56.3    500.0    56.72    717.6     57.00    729.5    57.00     730.0    56.95    731.2
GR   56.9    732.3    56.77    733.2     56.65    736.4    56.61     737.1    56.60    737.1
GR   56.5    737.4    56.00    739.0     56.47    740.9    56.48     741.3    56.00    751.0
GR   56.7    759.4    56.76    760.0     56.67    764.0    56.72     764.1    56.73    764.1
GR   56.8    764.2    56.84    775.0     56.72    778.5    56.00     783.4    56.00    889.7
GR   54.0    936.3    52.27    940.4     53.94    948.4    54.00     948.7    56.00   1018.4
GR   56.0   1241.7       57     1380     58.00     1430
X1 2.103       16      735      768       225      225      225
GR     58     500       58      535        57      536       57       545     57.8      575
GR     57     680       56      735      53.3      747     52.8       753       54      758
GR     56     765       57      768      57.4      920       58       975       59     1040
GR     59    1100
X1 2.169       30    909.5   1025.4       360      340      350
X3                            799.4
GR   57.5    780.0    58.77    795.9     58.78    796.3    58.87     799.4    58.71    842.3
GR   58.0    848.3    57.36    849.1     57.26    849.7    57.24     850.0    57.00    851.1
GR   57.0    863.1    57.17    866.0     57.37    880.2    57.00     882.5    57.00    909.5
GR   56.0    956.1    55.44    961.0     54.64    970.0    54.66     970.7    54.68    971.4
GR   54.7    971.4    54.61    976.3     55.50    982.5    55.97     988.0    55.97    988.0
GR   57.0   1008.7    57.31   1017.8     58.00   1025.4    58.00    1036.4    58.65   1091.8
*  BRADSHAW ROAD TWIN 5'X 8' RCBC L=35'
NC                     .05        .3        .5
X1 2.212       24    975.4    996.8        25       25       25
X3    10                                                    59.8     59.8
GR 59.52    500.0    58.60    500.6     57.52    513.1    57.19     530.4    57.00    532.3
GR   57.0    613.5    57.15    621.3     56.00    975.4    55.24     980.2    55.13    983.9
GR   54.1    984.7     54.1    991.9     55.60    994.4    57.35     996.8    58.32    999.6
GR   59.0   1023.8    59.05   1068.4     60.00   1104.7    60.30    1111.7    60.33   1111.8
GR   60.5   1299.4    60.66   1302.7     61.00   1392.5    61.95    1500.0
SC 2.020      0.40     2.63        0       5.0      8.0       35       8.1     54.1     54.1
X1 2.222         0        0        0        35       35       35
X2                       2     59.1     59.52
X3    10                                                    59.8     59.8
X4     1    58.32   1000.7
BT   -24      500    59.52    59.52     500.6    59.52      58.6     513.1    59.52    57.52
BT           530.4    59.53    57.19     532.3    59.53        57     613.5    59.55       57
BT           621.3    59.55    57.15     975.4     60.1        56     980.2     60.1    55.24
BT           983.9     60.1    55.13     983.9     60.1     55.13     984.7     63.4     59.1
BT           994.4     63.4     59.1     999.6     63.4      59.1    1000.7     60.1    58.32
BT          1023.8    60.12       59    1068.4    60.16     59.05    1104.7    60.20       60
BT          1111.7     60.3     60.3    1111.8    60.33     60.33    1299.4     60.5     60.5
BT          1302.7    60.66    60.66    1392.5       61        61      1500    61.95    61.95
NC                     .05        .1        .3
X1 2.252       24    959.2   1008.3       345      345      345
GR   61.4    500.0    61.00    522.5     61.00    536.3    60.00     592.6    59.07    672.9
GR   59.0    673.2    59.00    959.2     58.00    977.9    54.99     994.5    54.99   1004.2
GR   56.5   1006.7    56.32   1007.4     56.00   1007.7    56.95    1008.3    57.00   1008.5
GR   57.0   1108.0    58.00   1152.0     58.00   1153.8    59.00    1208.8    59.00   1227.2
GR   60.0   1269.6    61.05   1475.6     61.08   1476.6    61.25    1500.0
X1 2.300       35    954.1    984.7       255      255      255
GR   61.6    500.0    61.00    539.8     59.00    927.8    58.60     936.7    58.57    936.9
GR   59.0    954.1    58.76    963.9     57.44    965.4       56       966     55.6      967
GR   55.5    974.2    58.00    983.8     58.86    984.7    58.79     986.1    58.78    990.3
GR   58.4   1007.6    58.37   1009.0     58.36   1009.1    58.31    1009.2    58.00   1018.9
GR   58.0   1033.5    57.00   1050.0     57.04   1184.3    57.00    1187.0    57.00   1243.2
GR   56.0   1246.0    56.00   1257.4     56.70   1259.1    58.64    1271.2    58.84   1272.7
GR   58.9   1273.5    58.00   1275.4     58.79   1277.1    59.66    1279.4    60.00   1279.8
X1 2.360       60      970      988       325      325      325
GR   62.2    695.4    62.00    702.9     62.00    707.0    61.00     761.1    61.00    766.9
GR   59.0    912.9    58.84    916.3     58.55    925.2    59.00     939.9    59.00    940.1
GR   58.3    970.0    58.00    970.2     56.49    972.1    56.00     972.4    55.15    974.2
GR   55.0    975.0    55.12    975.2     55.14    975.3    55.18     975.5    55.22    975.8
GR   55.4    978.1    55.46    978.1     57.05    981.7    56.00     982.7    57.63    982.7
GR   57.9    986.5    58.00    986.6     58.06    987.0    58.07     987.1    58.09    987.2
GR   58.1    987.5    58.14    988.0     58.00    993.6    58.00    1002.0    57.00   1020.7
GR   57.0   1048.9    56.98   1049.4     56.68   1070.5    56.59    1072.7    56.31   1076.1
GR   56.2   1078.1    56.17   1214.3     57.00   1238.4    57.00    1258.2    57.24   1265.6
GR   58.0   1309.7    58.16   1310.4     58.30   1311.2    58.36    1311.7    59.00   1315.9
GR   59.2   1316.4    59.27   1316.7     59.50   1316.9    60.00    1320.1    60.66   1322.8
GR   60.7   1323.1    61.00   1323.9     62.00   1374.3    62.00    1421.2    62.94   1500.0
X1 2.393       55    969.2      989       185      185      185
GR   61.0    908.0    60.49    911.7     60.41    912.2    60.23     912.4    60.15    913.8
GR   60.1    913.9    60.11    914.1     60.10    914.1    60.09     914.5    60.08    914.6
GR   60.1    914.6    59.85    916.2     59.79    916.5    59.77     916.8    59.00    930.2
GR   58.1    969.2    58.05    969.4     58.04    972.7    58.04     972.7    57.93    973.0
GR   56.0    975.4    56.00    981.9     56.11    982.1    56.36     982.5    58.00    986.3
GR   58.7    988.0    59.00    989.0     59.00   1004.3    58.82    1008.4    58.00   1021.7
GR   57.6   1023.4    57.53   1024.7     57.53   1041.6    58.00    1052.1    57.92   1157.1
GR   57.8   1161.7    57.90   1181.9     57.00   1209.6    57.00    1223.7    57.55   1225.8
GR   57.6   1226.0    57.85   1227.7     57.86   1227.8    57.90    1227.9    58.00   1228.3
GR   58.4   1230.0    58.44   1230.3     59.00   1232.3    60.00    1252.1    60.79   1404.9
GR   60.8   1405.3    61.00   1409.8     61.00   1435.0    60.94    1437.5    61.00   1500.0
X1 2.424       30    971.4    988.6       165      165      165
GR   61.0    896.7    60.82    899.0     60.00    904.3    59.80     905.7    59.74    907.3
GR   59.0    919.9    58.77    922.9     58.62    970.6    58.51     971.3    58.51    971.4
GR   57.1    974.8     56.0    976.2      56.0    983.6    57.59     985.6     58.0    986.4
GR   58.8    988.6    58.87    988.7     59.00    988.9    59.00     999.1    58.49   1005.6
GR   57.0   1033.7    57.00   1033.9     57.10   1034.1    57.00      1037    57.00   1141.7
GR   57.1   1217.7     58.2   1223.3     59.00   1320.9    59.00    1409.5    60.87   1500.0
X1 2.476       42    961.6   1009.6       250      285      275
GR   63.0    729.0    63.00    729.3     62.67    736.1    62.00     745.3    61.50    761.5
GR   61.0    767.3    61.00    767.6     60.01    780.6    60.01     780.6    60.00    780.7
GR   60.0    780.9    59.00    826.7     58.22    913.8    58.58     937.6    59.00    950.7
GR   58.3    956.6    58.44    957.8     58.45    961.6    58.00     962.5    56.74    967.7
GR   56.3    971.8    56.00    977.7     56.00    983.5    56.88     987.8    57.83   1007.8
GR   58.0   1009.6    58.03   1010.0     58.07   1014.1    58.78    1043.0    59.00   1133.7
GR   59.0   1134.6    59.46   1144.3     60.68   1161.7    61.00    1170.5    61.74   1181.3
GR   61.9   1184.4    62.00   1185.2     62.99   1215.8    63.00    1215.9    64.00   1244.3
GR   64.0   1367.9    63.66   1372.4
X1 2.539       26    935.3    963.7       300      350      330
GR   61.1    500.0    60.84    507.0     60.00    541.5    59.00     562.5    59.00    933.2
GR   59.0    934.9    58.85    935.3     58.68    939.7    58.00     941.8    56.26    948.4
GR   58.8    949.5    60.00    963.7     59.83   1049.5    59.96    1056.5    61.00   1238.4
GR   61.3   1244.6    62.00   1266.5     62.51   1274.2    64.00    1313.4    64.98   1323.0
GR   65.0   1323.0    65.00   1323.5     66.00   1366.5    66.00    1466.4    65.55   1477.4
GR   65.0   1500.0
*  FLOWS FROM CONCENTRATION POINT CG2
QT      2      190      340
X1 2.607       49    892.2    940.1       360      360      360
X3                                                  960.5    62.81
GR   63.0    710.8    62.77    717.9     62.46    781.5    62.00     798.4    61.42    805.2
GR   61.2    807.3    60.85    834.0     60.86    892.2    60.20     903.3    60.00    905.1
GR   59.9    905.5    59.82    906.0     59.00    909.4    59.00     911.7    58.36    915.3
GR   58.0    916.5    58.00    930.7     61.35    936.2    61.49     936.2    62.00    938.8
GR   62.0    940.1    62.81    960.5     62.29    969.1    62.19     975.1    62.00    979.8
GR   61.2    983.5    60.95    986.5     60.45   1000.5    60.31    1010.5    60.45   1018.0
GR   60.4   1020.3    59.97   1046.6     59.00   1072.9    59.00    1089.3    59.41   1100.6
GR   59.5   1101.2    59.83   1105.4     60.00   1114.1    60.00    1134.6    61.00   1188.0
GR   61.0   1211.6    61.08   1215.4     61.46   1225.4    61.51    1226.1    62.00   1238.4
GR   62.0   1263.0    62.63   1296.5     63.00   1308.4    63.27    1324.3
*  GERBER ROAD CROSSING #2 EAST OF BRADSHAW RD M&S
NC                     .05        .3        .5
X1 2.723       16    889.4    975.9       31.5     31.5     31.5
X3    10
GR   64.6    682.8    64.00    688.9     63.48    876.6    63.00     889.4    63.00    900.1
GR 57.46    908.4    60.26    939.8     63.20    954.2    63.78     975.9    63.65   1288.3
GR 64.00   1325.7    64.30   1331.5      65.0   1477.7    65.27    1485.5    65.28   1495.4
GR 65.20   1500
SB  1.05     1.56     2.63        0        15     1.33      128         2     57.5    57.46
X1 2.725       10    938.3    972.7        41       41       41
X2                       1     62.8     63.6
X3    10                                                    63.6     63.6
BT   -15    573.2     63.4     63.4     573.2       68     63.4     633.2     67.3     62.0
BT            707     66.1    61.75     938.3     64.4       60       948     64.3     59.3
BT            948     64.3     62.8       963     64.1     62.8       963     64.1    59.15
BT          972.7     64.1       60      1280     63.6    60.73      1393     64.9       61
BT         1447.2    65.15     62.5    1499.9     65.4     62.8      1500     62.8     62.8
GR   63.4    573.2     62.0    633.2     61.75    707.0     60.0     938.3    58.38    947.7
GR   58.6    958.6    60.00    972.7     61.00   1393.0     62.5    1447.2    62.86     1500
NC                     .05        .1        .3
X1 2.732       10    938.3    972.7       185      185
GR   63.4    573.2     62.0    633.2     61.75    707.0     60.0     938.3     58.6    958.6
GR   58.6    958.6    60.00    972.7     61.00   1393.0     62.5    1447.2    62.86     1500
X1 2.792       35    921.7    981.9       320      320      320
X3                                                 1092.4
GR   61.0    500.0    61.00    898.4     61.08    898.8    61.50     900.9    61.54    901.1
GR   62.0    902.9    62.90    904.9     64.00    907.5    64.71     909.7    65.00    910.6
GR   65.0    921.7    64.00    924.4     63.01    925.4    62.00     927.0    60.36    928.8
GR   60.2    928.8    60.00    929.6     59.83    929.6    59.82     929.7    59.32    932.4
GR   59.0    933.1    59.00    960.3     59.48    961.8    60.00     962.8    59.65    963.0
GR   61.0    968.6    61.24    970.1     62.00    973.6    62.64     978.5    62.73    979.0
GR   63.0    981.9    66.00   1044.3     66.00   1058.1    66.72    1092.4    66.00   1134.2
EJ
T1 NORTH VINEYARD STATION SPECIFIC PLAN
T2 EXISTING CONDITION 100-YR FLOWS AND CHANNEL SECTIONS
T3 FLOWS BASED ON SAC. CO. HEC-1 FILE ELEXN.DAT
J1         0        3        0        0        0        0         0        0     36.8
J2         2        0       -1                                    0                15
ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 5

HEC-2 MODEL FOR ULTIMATE CHANNEL CONDITIONS ON ELDER CREEK FROM 1.0 MILE DOWNSTREAM OF THE CONFLUENCE WITH GERBER CREEK TO 1.8 MILES UPSTREAM (PREPARED BY MCKAY & SOMPS)

FILENAME: EDULT.DAT

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T1 NORTH VINEYARD STATION SPECIFIC PLAN
T2 ELDER CREEK DEVELOPED CONDITION
T3  M&S FILE EDULT.DAT 11-14-95
T4  10-YR ULT FLOWS. 50' BOTTOM WIDTH
*  CHANNEL SLOPE SET AT 0.000868 MEET REQUIRED FLOW-LINE AT FLORIN ROAD
*  1.5' LOW FLOW FROM SEC. 5.753 UPSTREAM
J1     0       2       0       0                       0       0       0    35.8
J2     1       0      -1                               0       6
J5   -10     -10
NC   .045    .045    .06      .1      .3
* FLOWS FROM CONCENTRATION POINT CE7
QT       2    1184    1468
X1 4.799       43     914  1036.2       0       0       0
CI    -1       30               4       4      50
GR  43.6   519.0   41.87   521.1   41.64   534.4   43.00   541.4   42.98   541.6
GR  43.0   541.7   43.00   778.5   43.74   792.6   43.21   837.0   43.00   837.8
GR  43.0   839.3   42.02   855.4   42.00   857.7   41.07   870.3   41.00   871.0
GR  40.0   912.5   40.00   914.0   38.19   921.1   38.11   926.7   38.00   927.4
GR  37.9   927.4   37.62   927.7   35.60   935.1   34.00   939.7   32.39   946.5
GR  32.0   947.1   31.72   948.7   30.00   954.2   30.00   981.5   31.93   983.1
GR  32.0   983.2   32.09   983.3   32.83   994.0   34.00  1000.2   35.13  1003.3
GR  36.0  1006.9   37.04  1013.8   38.00  1017.4   38.54  1023.4   38.62  1023.5
GR  38.6  1024.3   39.00  1036.2   40.48  1500.0
X1 4.845       41    1028  1090.1   283.0   283.0   283.0
CI          .000868
GR  44.0   501.5   42.32   503.5   41.98   523.8   43.00   529.0   42.54   534.9
GR  43.0   535.0   42.52   535.0   42.00   535.6   42.00   667.1   42.89   703.5
GR  43.0   705.2   43.00   858.3   42.98   858.5   42.00   862.7   41.16   874.5
GR  41.0   879.5   41.00   887.0   40.59   892.2   40.00   969.5   38.93  1028.0
GR  38.0  1051.2   37.05  1053.2   34.00  1055.8   34.99  1055.8   34.48  1056.0
GR  32.0  1058.5   32.00  1061.3   33.16  1063.3   34.00  1068.6   33.12  1068.6
GR  34.2  1070.5   36.00  1076.0   37.77  1084.8   37.85  1086.1   38.00  1086.6
GR  38.2  1087.2   38.62  1088.5   39.00  1090.1   39.33  1343.6   40.00  1370.0
GR  40.0  1500.0
X1 4.916       27   919.9   970.8     400     400     400
GR  43.1   500.0   43.00   804.7   42.23   864.7   42.37   865.7   41.71   874.9
GR  41.0   882.9   41.00   883.0   40.36   919.9   40.00   925.4   39.07   927.3
GR  39.3   927.5   39.00   931.1   39.00   932.4   38.00   938.8   35.12   942.1
GR  34.0   943.4   34.00   944.4   34.00   950.7   34.00   959.6   35.23   962.9
GR  36.0   967.2   37.00   970.0   38.00   970.8   39.00  1408.8   39.70  1425.2
GR  40.0  1439.7   40.00  1500.0
* FLOWS FROM CONCENTRATION POINT BASN20
QT       2    1000    1000
X1 5.005       30    1116  1160.7     400     400     400
GR  43.0   500.0   43.00   507.3   42.03   531.1   38.74   964.8   39.00  1045.0
GR  39.5  1051.1   40.00  1064.5   40.00  1083.9   39.64  1106.2   39.00  1113.2
GR  39.0  1114.8   38.89  1116.0   38.72  1116.9   36.91  1121.3   36.00  1123.3
GR  35.0  1124.9   34.00  1132.0   34.00  1148.9   35.47  1155.9   36.00  1156.2
GR  36.7  1158.0   36.78  1160.1   37.00  1160.7   38.00  1378.9   38.50  1393.9
GR  39.0  1403.6   39.00  1456.5   39.65  1458.4   40.00  1458.9   40.02  1500.0
X1 5.075       31  1082.8  1136.4     400     400     400
GR  43.0   500.0   43.00   517.1   42.93   518.6   42.00   550.0   41.58   599.1
GR  42.0   619.7   42.00   698.0   41.54   708.1   41.45   946.5   41.00   974.0
GR  41.0   975.8   40.00   999.1   39.00  1082.8   38.52  1084.9   38.22  1086.9
GR  38.2  1087.1   38.00  1090.4   36.63  1093.2   36.47  1094.1   35.67  1097.9
GR  34.0  1111.4   35.78  1124.7   36.00  1125.0   36.24  1126.6   36.67  1127.4
GR  38.0  1136.4   38.93  1199.9   39.08  1232.6   39.78  1262.6   39.87  1264.6
GR  40.9  1500.0
X1 5.170       32  1061.0  1085.4     500     500     500
X3    10
GR  43.8   500.0   44.00   676.3   43.51   678.3   43.62   678.7   44.00   680.3
GR  44.0   755.7   43.00   808.0   43.00   843.2   41.00   898.4   41.00   898.9
GR  40.0   906.5   39.07   933.3   39.00   933.4   39.00  1061.0   36.07  1069.2
GR  36.1  1069.2   36.00  1069.3   36.00  1069.3   34.00  1069.6   34.00  1076.1
GR  35.1  1078.0   35.57  1081.1   36.49  1081.9   40.00  1085.4   40.28  1096.4
GR  40.0  1105.7   40.00  1119.2   39.00  1293.3   40.14  1315.4   40.48  1327.7
GR  41.0  1339.7   41.16  1500.0
X1 5.218       33  1058.2  1126.9     250     250     250
GR  43.9   500.0   44.00   818.6   43.86   821.2   43.00   832.7   42.25   852.7
GR  41.9   859.6   41.86   863.6   41.00   889.9   41.00   907.4   40.00   957.1
GR  40.0   985.6   39.03  1003.8   39.00  1058.2   38.25  1073.5   38.00  1076.4
GR  38.0  1082.7   37.86  1082.8   36.00  1085.4   35.49  1086.8   34.00  1087.6
GR  33.1  1092.3   34.00  1093.9   34.00  1099.2   35.21  1101.5   36.00  1102.6
GR  36.8  1104.6   38.00  1106.3   39.00  1112.7   40.00  1126.9   40.00  1338.8
GR  41.0  1398.8   41.00  1409.7   41.76  1500.0
X1 5.303       32  1090.4  1148.0     400     400     400
X3                                          1374.2      42
GR  45.9   500.0   45.08   517.7   45.01   518.5   45.00   518.8   45.00   711.9
GR  44.9   717.0   44.00   732.1   43.00   757.5   43.00   759.7   42.00   839.1
GR  41.0   871.5   39.81  1028.7   38.00  1090.4   36.80  1096.4   34.86  1099.2
GR  34.0  1100.0   34.00  1114.6   34.33  1115.8   36.00  1119.5   36.39  1120.1
GR  38.0  1126.0   40.19  1135.1   41.00  1139.2   41.31  1143.6   42.00  1148.0
GR  42.0  1273.2   42.00  1273.3   42.00  1374.2   41.37  1401.6   41.01  1489.8
GR  41.0  1492.0   41.07  1500.0
* FLOWS FROM CONCENTRATION POINT CE6
QT       2    1190    1330
X1 5.374       42  1033.2  1068.6     429     429     429
X3    10                  765.2
GR  45.1   500.0   45.00   583.6   44.93   584.5   45.00   624.0   44.74   627.2
GR  44.7   647.8   44.29   688.6   44.77   765.2   44.89   765.8   45.00   770.3
GR  45.0   796.7   44.58   822.0   44.12   826.7   44.08   827.2   44.07   827.4
GR  44.0   828.6   43.14   865.2   43.00   867.8   42.96   868.5   42.95   870.3
GR  42.3   901.6   42.00   908.8   41.86   938.6   42.00   948.2   42.30   951.0
GR  42.5   953.9   43.00   959.3   43.00  1015.4   42.00  1033.2   36.95  1040.5
GR  39.3  1041.6   37.36  1047.2   38.00  1047.3   37.30  1048.4   36.00  1049.7
GR  35.9  1050.7   36.00  1051.2   36.42  1052.7   38.00  1062.3   41.06  1067.8
GR  42.0  1068.6   42.84  1500.0
* ELK GROVE-FLORIN RD 5.402 RIVER MILE
NC                              .3      .5
X1 5.402       11   980.5  1019.5     112     112     112
CI    -1                        2       2    13.5
X3                             980.5          1019.5
GR  45.2   500.0   44.90   980.5    37.8   980.5    37.8    1000    37.8  1019.5
GR  44.9  1019.5      45  1040.4   42.01  1071.6    42.4  1276.1      43  1302.1
GR    43    1500
SB  1.05    1.56    2.63                    13.5     1.4     317       2   32.86   32.74
X1 5.410        0       0       0     104     104     104
CI    -1                        2       2    13.5
X2                              1    43.4    44.6
X3                                  980.5          1019.5
BT    -7     500   46.07    44.2   980.5      45      43    1000    45.0    42.3
BT          1040.4      45    41.4  1276.1      44    43.2  1302.1   44.22   42.83
BT          1500    44.1   42.48
NC                                  .1      .3
X1 5.423       27  1112.0  1165.2      28      28      28
CI    -1                        4       4      50
X3                                  990            1285
GR  44.9   500.0   44.72   649.8   45.00   845.1   44.02   887.1   43.61  1060.7
GR  44.0  1062.7   44.00  1070.1   43.00  1088.1   43.00  1088.4   42.65  1092.4
GR  42.2  1096.1   42.43  1112.0   40.22  1114.0   38.00  1119.8   38.00  1144.9
GR  40.5  1150.3   42.00  1156.8   42.87  1164.5   43.00  1165.0   43.13  1165.2
GR  43.2  1167.2   43.00  1459.3   42.46  1461.1   42.00  1461.7   42.00  1472.4
GR  42.4  1476.9   42.99  1500.0
X1 5.545       22  1021.4  1056.5     611     611     611
GR  44.2   500.0   44.18   503.8   44.00   508.9   43.77   511.7   43.26   534.3
GR  43.0   537.9   41.00  1021.4   40.64  1023.3   40.54  1024.8   38.00  1036.6
GR  38.0  1049.5   40.14  1052.3   40.92  1053.9   42.00  1056.5   43.00  1086.7
GR  43.0  1112.2   42.64  1115.9   42.00  1127.4   42.00  1167.7   42.92  1171.8
GR  43.0  1172.2   42.92  1500.0
* FLOWS FROM CONCENTRATION POINT BASEGS
QT       2    1162    1162
X1 5.633       17   865.6    1433     475     475     475
X3                              1095
GR  46.5   500.0   46.73   535.9   46.00   555.1   44.00   832.3   43.01   865.0
GR  43.0   865.1   43.00   865.6   41.68   913.2   41.35   976.9   41.35   977.1
GR  41.0  1178.8   41.60  1204.4   41.65  1205.5   41.85  1208.8   43.00  1433.0
GR  44.0  1440.6   43.83  1500.0
X1 5.753       25  1005.2  1072.8     610     610     610
CI    -1    35.84               4       4      50
CI    -1    34.34               2       2       6
GR  46.0   500.0   45.00   734.1   44.99   734.2   44.96   735.3   44.00   753.8
GR  44.0   768.1   43.13   817.0   43.00   937.0   42.00  1000.2   42.00  1005.2
GR  41.6  1009.3   38.00  1058.0   38.00  1061.9   39.15  1065.4   39.50  1066.8
GR  39.6  1066.9   39.66  1066.9   39.82  1067.4   39.86  1067.6   40.06  1068.5
GR  40.7  1070.0   42.23  1072.8   42.41  1076.7   42.00  1087.1   43.00  1500.0
* FLOWS FROM CONCENTRATION POINT CE5
QT       2     725     813
X1 5.840       29  1043.8  1077.7     615     615     615
CI    -1    36.37               4       4      50
CI          34.87               2       2       6
X3                              1000            1434.8
GR  45.5   500.0   45.00   618.8   44.74   620.2   44.23   642.2   43.15   652.9
GR  42.1   674.3   42.01   674.5   42.00   674.5   42.00   718.1   42.07   718.8
GR  42.1   719.9   43.00   727.3   44.00   844.3   45.00   861.7   45.00  1043.8
GR 41.83  1066.9   42.09  1067.4   45.00  1077.7    45.8  1221.9   45.85  1222.5
GR 45.88  1223.1   45.82  1227.0   45.99  1235.6    45.0  1273.8   45.00  1299.5
GR 44.60  1306.9   45.00  1326.0   45.00  1434.8    44.0  1500.0
X1 5.914       26  1013.7  1048.9     270     270     270
CI    986    36.60               4       4      50
CI          35.10               2       2       6
GR  48.2   500.0   47.74   704.8   46.00   767.5   45.00  1013.7   44.77  1014.9
GR  44.3  1016.1   42.38  1020.1   42.00  1023.2   42.00  1035.3   42.09  1035.4
GR  44.8  1040.4   44.97  1042.4   45.87  1048.9   46.00  1074.8   45.85  1181.5
GR  45.3  1209.4   45.14  1212.4   45.14  1252.4   45.09  1253.4   45.07  1282.4
GR  45.1  1282.5   45.06  1282.6   45.00  1325.5   44.53  1327.8   44.00  1337.3
GR  42.4  1500.0
X1 5.970       32  1014.8  1037.7     305     305     305
CI    981    36.86               4       4     -50
CI    981    35.36               2       2       6
GR  46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.5   46.00   516.6
GR  44.0   518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0   756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.00  1014.8
GR  42.7  1018.1   42.00  1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7
GR  43.1  1094.3   43.81  1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2
GR  44.2  1236.3   44.00  1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4
GR  47.1  1497.9   47.06  1500.0
NC                              .3      .5
X1 5.978       32  1014.8  1037.7     100     100     100
CI    970    35.45               4       4      50
X3                              955      46     985      46
GR  46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.6   46.00   516.7
GR  44.0   518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0   756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.00  1014.8
GR  42.7  1018.1   42.00  1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7
GR  43.1  1094.3   43.81  1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2
GR  44.2  1236.3   44.00  1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4
GR  47.1  1497.9   47.06  1500.0
* McCOY AVE. (3)  6 x 8 BOX CULVERTS
SC 3.015       .4     2.7                     6       8      50    10.1   35.49   35.45
X1 5.984        0       0       0      50      50      50
CI    970    35.49               4       4      50
X2                              2    41.5   45.43
X3                                  956      46     984      46
BT    -3     500    45.5    45.5    1000   45.43   45.43  1000.5   45.43    43.9
NC                                  .1      .3
X1 6.002       28  1027.9  1054.5      25      25      25
CI    986    37.02               4       4      50
CI    986    35.52               2       2       6
X3                              930
GR  45.9   500.0   43.36   949.4   43.79   953.1   43.90   953.3   44.08   954.0
GR  44.4   955.5   45.00   957.8   45.00   970.5   44.71   971.7   44.61   971.9
GR  44.3   972.5   44.23   972.9   44.22   973.0   44.00   974.5   43.54  1004.4
GR  43.0  1008.1   43.00  1027.9   42.96  1028.0   42.62  1028.6   42.00  1030.4
GR  42.0  1041.6   42.99  1051.3   43.00  1051.4   43.08  1053.5   43.36  1054.5
GR  44.0  1158.2   45.00  1182.1   46.01  1500.0
X1 6.067       19  1021.2  1040.8     243     243     243
CI    - 1   37.23               4       4      50
CI    -1    35.73               2       2       6
X3                              985      53
GR  48.2   500.0   48.00   663.2   47.31   675.2   46.00   839.6   44.44   895.0
GR  43.0   928.4   43.00  1021.2   42.90  1024.1   42.00  1027.0   42.00  1035.9
GR  43.0  1038.0   44.00  1040.8   44.78  1090.4   44.56  1105.0   44.67  1105.9
GR  44.9  1110.0   44.90  1183.8   45.00  1187.7   46.59  1500.0
X1 6.144       27  1036.8  1094.3     375     375     375
CI   905    37.56               4       4      50
CI   905    36.06               2       2       6
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X3                                                  955       53
GR  49.0   500.0   49.00   547.9   48.92   549.8   48.83   601.8   49.00   680.5
GR  48.6   687.4   47.00   791.1   46.18   808.3   46.14   808.6   46.00   812.7
GR  46.0   823.3   45.00   864.2   45.00   882.1   44.15   893.3   44.13   893.4
GR  44.3   920.4   44.23   924.6   44.41   930.6   44.00   951.1   44.00  1036.8
GR  43.5  1048.6   42.00  1060.0   42.00  1074.1   44.00  1094.3   45.35  1200.4
GR  46.0  1218.6   46.29  1500.0
X1 6.256      22  1035.5  1063.3      600      600      600
CI   854   38.08                4        4       50
CI   854   36.58                2        2        6
X3                                                  915
GR  49.7   500.0   48.00   765.8   47.92   767.5   47.83   768.2   47.75   773.2
GR  47.8   775.9   47.00   917.3   45.24   921.2   44.41   927.1   44.00   929.2
GR  44.0   977.9   45.70   987.3   46.00   990.0   46.00  1035.5   45.76  1036.5
GR  44.0  1038.4      44  1055.   45.84  1058.8   45.49  1059.5    45.3  1063.3
GR 46.00  1065.3   46.24  1500.0
* FLOWS FROM CONCENTRATION POINT CE4
QT     2      702      704
X1 6.365       10  1094.6  1131.1      675      675      675
CI  1073   38.66                4        4       50
CI  1073   37.16                2        2        6
GR  48.6   500.0   47.07   816.6   47.00   819.0   45.00  1094.6   44.28  1097.0
GR  44.0  1099.9    44.0  1125.1   44.43  1126.2   45.00  1131.1   46.97  1500.0
X1 6.455       12  1030.7  1089.8      485      485      485
CI    -1   39.09                4        4       50
CI    -1   37.59                2        2        6
GR  48.4   500.0   46.50   997.2   46.00  1030.7   45.55  1031.4   44.00  1044.0
GR  43.6  1045.5   43.58  1048.3   43.75  1063.5   44.05  1063.9   44.11  1064.3
GR  46.0  1089.8   48.10  1500.0
X1 6.619       13  1022.9  1056.3      660      660      660
CI  1190   39.66                4        4       50
CI  1190   38.16                2        2        6
GR  49.0   500.0   48.00  1022.9   46.34  1024.8   46.00  1025.0    46.0  1054.7
GR 46.97  1055.0    47.1  1055.3   47.21  1056.3   47.18  1058.8   47.20  1059.6
GR 47.13  1085.1    47.0  1088.0   48.00  1500.0
X1 6.707       15  1134.2  1176.9      475      475      475
CI   976   40.07                4        4       50
CI   976   38.57                2        2        6
GR  49.0   500.0   48.00  1134.2   46.00  1142.6   45.7    1147   45.98  1174.8
GR 46.29  1175.5   48.16  1176.9   48.22  1177.1   48.2  1177.2   48.34  1178.3
GR 48.87  1180.9   49.00  1181.3   49.20  1378.4   49.6  1389.5   49.99    1500
X1 6.775       32  991.6  1048.6      197      197      197
CI   960   40.24                4        4       50
CI   960   38.74                2        2        6
X3                                  900             1020
GR  49.0   500.0   49.00   991.6   48.65   997.0   48.59   997.6   48.39   998.6
GR  48.3   998.8   48.26   998.9   48.00  1001.0   48.29  1003.2   48.69  1019.2
GR  47.1  1020.0   46.00  1021.5   46.00  1031.1   46.78  1032.1   47.21  1033.0
GR  47.2  1033.1   49.00  1048.6   49.00  1083.1   48.21  1089.4   48.16  1093.3
GR  48.3  1102.3   46.67  1143.7   47.36  1276.4   47.40  1277.4   47.53  1312.9
GR  47.6  1316.1   48.90  1335.2   51.24  1385.0   52.00  1394.2   53.00  1434.3
GR  53.0  1499.4   52.97  1500.0
* CCTRXR  @ RIVER MILE 6.800
NC                                  .3       .5
X1 6.800       20    1000  1081.1      100      100      100
CI    -1   38.83                2        2       18
X3                            1000     53.8  1081.1     53.8
GR  49.9      140    49.9     425     49.9      740     49.5      880       49     1000
GR  45.6     1000    45.6  1009.6     45.6     1011     45.6  1024.6     45.4     1026
GR  45.4  1039.8     45.4     1041     46.9  1054.6     46.9  1055.8     46.9  1069.4
GR  47.8  1070.6     47.8  1081.1       49  1081.1       49     1570     53.6     1600
SB  1.25     1.05     2.63        0       18      6.4      584        2    38.90    38.83
X1 6.813        0        0        0       84       84       84
CI    -1   38.90                2        2       18
X2                       1   51.55     52.7
X3                            1000     53.8  1081.1     53.8
BT   -30      140     52.9     49.9     425     52.9     49.9      740     52.7     49.9
BT            880       52     49.5    1000     53.8       49   1000.1     53.8    51.85
BT         1009.6     53.8    51.55  1009.6     53.8     45.6     1011     53.8     45.6
BT           1011     53.8    51.55  1024.6     53.8    51.55  1024.6     53.8     45.6
BT           1026     53.8     45.4    1026     53.8    51.55  1039.8     53.8    51.55
BT         1039.8     53.8     45.4    1041     53.8     45.5     1041     53.8    51.55
BT         1054.6     53.8    51.55  1054.6     53.8     46.9  1055.8     53.8     46.9
BT         1055.8     53.8    51.55  1069.4     53.8    51.55  1069.4     53.8     46.9
BT         1070.6     53.8     47.8  1070.6     53.8    51.55  1081.1     53.8    51.55
BT         1081.2     53.8       49    1570     53.6       49     1600     53.6     53.6
NC                                  .1       .3
X1 6.820       12    970.3     1072       25       25       25
CI   986   40.42                4        4       50
CI   986   38.92                2        2        6
X3                                  925     53.8     1046     53.8
GR  49.5   500.0   49.00   970.3     49      975   48.00    999.5   47.86  1003.8
GR  46.7  1019.2   47.51  1025.4   47.84  1029.0   48.25  1032.0   48.57  1059.9
GR  49.0  1072.0   49.00  1500.0
NC                                  .1       .3
X1 6.868       24    956.2      987      258      258      258
CI    -1   40.65                4        4       50
CI    -1   39.15                2        2        6
X3                                                 1298.3     51.0
GR  50.0   500.0   49.00   956.2   48.94   958.1   48.00   962.4   47.55   965.5
GR  47.4   965.9   46.70   976.7   46.72   976.7   47.86   977.7   48.00   979.2
GR  48.9   986.8   49.00   987.0   50.00  1093.7   51.00  1116.5   51.00  1298.3
GR  50.0  1334.4   48.30  1477.3   48.29  1477.4   48.22  1477.9   48.16  1478.8
GR  48.1  1479.0   48.10  1479.6   48.00  1480.3   48.00  1500.0
X1 6.954       24    931.2      969.6      411      411      411
CI  1011   40.91                4        4       50
CI  1011   39.51                2        2        6
X3                                                 1361.4    51.22
GR  50.2   500.0   50.51   512.3   49.00   931.2   48.72   933.2   48.62   933.6
GR  48.4   934.8   48.34   934.9   48.00   936.7   47.16   954.3   47.10   955.9
GR  47.2   956.0   48.00   967.0   48.56   969.1   48.92   969.4   49.00   969.6
GR  49.6   982.9   50.00   999.9   50.14  1134.3   51.00  1169.5   51.22  1361.4
GR  51.0  1368.1   51.00  1370.1   50.00  1410.6   50.03  1500.0
* FLOWS FROM CONCENTRATION POINT CE4B
QT     2      647      648
* FLORIN RD 6.974 RIVER MILE
NC                                  .3       .5
X1 6.974                                       88       88       88
CI    -1   39.58                1.5      1.5       20
X3                                  920.4       53      980.4       53
SB  1.25     1.05     2.63      300       20        2      428      1.5    39.67    39.58
* U/S FACE FLORIN RD
X1 6.992       23      950   999.3      104      104      104
CI    -1   39.67                1.5      1.5       20
X2                       1    51.4     53.1
X3                            944.65       53  1004.65       53
GR  50.0   500.0   49.99   509.8   49.99   509.9   50.00   528.3   50.10   529.7
GR  52.0   615.4   51.14   623.9   52.00   627.2   52.53   642.8   52.56   643.4
GR  53.0   936.0   52.15   938.9   52.00   941.9   52.38   950.0   50.76   960.4
GR  49.2   965.4   49.19   978.6   48.48   987.6   48.77   988.9   52.23   999.3
GR  53.1  1004.3   52.25  1377.1   51.45  1500.0
NC                                  .1       .3
X1 7.000       18    831.5      878       22       22       22
CI    -1   39.69                4        4       50
X3                                  797.3
GR  49.9   500.0   50.00   783.7   50.21   784.0   52.01   795.1   51.48   795.8
GR  52.0   796.1   52.27   797.1   52.31   797.3    50.0   831.5    49.3   839.1
GR  48.0   863.0    47.9   872.1      50     878     51.0   886.9      51   898.2
GR 50.93   898.5    50.0   901.9   51.49    1500
EJ
T1 NORTH VINEYARD STATION SPECIFIC PLAN
T2 ELDER CREEK DEVELOPED CONDITION
T3  M&S FILE EDULT.DAT NOVEMBER 1995
T4  100-YR ULTIMATE FLOWS 50' BOTTOM WIDTH
J1     0        3        0        0        0        0        0        0     36.8
J2     2        0       -1                                 0        6
ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 6

HEC-2 MODEL FOR ULTIMATE CHANNEL CONDITIONS ON GERBER CREEK FROM ELDER CREEK TO 2.8 MILES UPSTREAM (PREPARED BY MCKAY & SOMPS)

FILENAME: GDULT.DAT

```
T1 NORTH VINEYARD STATION SPECIFIC PLAN
T2 GERBER CREEK
T3 M&S FILE GDULT.DAT   11-14-95
T5 CHANNEL SLOPE AT 0.0011 FROM CONFLUENCE TO SEC. 1.534
*  CHANNEL SLOPE AT 0.0016 FROM SEC. 1.534 TO SEC. 2.607
*  BASED ON GDEX.DAT FROM SAC. CO. & MODIFIED FOR IMPROVEMENTS
*  1.5' LOW FLOW CHANNEL
J1     0       2       0       0               0       0      41.91
J2     1       0      -1                       0       6
J5   -10     -10
NC    .06     .06     .06      .1      .3
*  USE FLOWS FROM CONCENTRATION POINT CG5
QT     2     549     654
*  GERBER CREEK @ CONFLUENCE WITH ELDER CREEK
*  CHANNEL SLOPE SET @ S=0.0011
X1  5.840      29  1043.8  1077.7     615     615     615
CI  1058   36.37             4       4      50
CI  1058   34.87             2       2       6
X3                         900            1434.8      45
GR  45.5     500.0    45.0   618.8    44.7   620.2    44.2   642.2    43.2   652.9
GR  42.1     674.3    42.0   674.5    42.0   674.5    42.0   718.1    42.1   718.8
GR  42.1     719.9    43.0   727.3    44.0   844.3    45.0   861.7    45.0  1043.8
GR  41.8    1066.9    42.1  1067.4    45.0  1077.7    45.8  1221.9    45.9  1222.5
GR  45.9    1223.1    45.8  1227.0    46.0  1235.6    45.0  1273.8    45.00 1299.5
GR  44.6    1306.9    45.0  1326.0    45.0  1434.8    44.0  1500.0
X1   .345       13  1098.8  1139.8     350     350     350
CI  1280   36.75             4       4      50
CI  1280   35.25             2       2       6
X3                        1200
GR  46.4     500.0    44.00  1098.8   43.92  1098.9   42.00  1102.9   42.00  1116.7
GR  42.0    1116.9    42.13  1117.4   44.00  1120.7   44.67  1124.7   45.00  1139.8
GR  46.0    1296.8    46.97  1325.5   47.46  1500.0
X1   .425       16  1167.6  1244.1     315     315     315
CI  1270   37.10             4       4      50
CI  1270   35.60             2       2       6
X3                        1215
GR  46.2     500.0    44.12  1167.6   44.00  1169.8   42.37  1186.5   42.20  1190.7
GR  42.0    1191.3    42.00  1210.5   42.99  1211.0   44.00  1220.6   45.00  1244.1
GR  45.0    1246.9    46.00  1279.5   46.00  1289.1   47.97  1384.1   48.00  1384.7
GR  48.2    1500.0
X1   .435       15     585     615     278     278     278
CI    -1   37.41             4       4      50
CI    -1   35.91             2       2       6
GR    46      135      46     265     45     375    44.8     450     45     515
GR  45.3      550      45     585     42     600     42     610     44     615
GR    45      635      45     690     46     740     48     760     48    1000
*  0.440  *PROP. CROSSING PER LAND PLAN* - (3) 6' x 8' BOX CULVERTS
NC                         .3      .5
X1  0.440       10     300     308     120     120     120
CI    -1   36.04             4       4      50
X3                         290            320
GR  46.5        0    46.5     300    41.5     300    41.5  303.14    41.5  303.14
GR  41.5   304.84    41.5  304.84    41.5     308    46.5     308    46.5     700
SC  3.015      .4     2.7                      6       8      66    10.1   36.11   36.04
X1  0.460                                      66      66      66
CI    -1   36.11             4       4      50
X2                       2    45.5    46.5
X3                         290            320
NC                         .1      .3
X1  0.470                                      30      30      30
CI    -1   37.64             4       4      50
CI    -1   36.14             2       2       6
X1   .554       31  1055.3  1084.1     232     232     232
CI  1100   37.90             4       4      50
CI  1100   36.40             2       2       6
X3                        1043
GR  47.0     500.0    46.28   579.0   46.27   579.5   45.27   858.0   45.00   875.6
GR  45.0     889.1    44.27   924.8   44.22   936.8   44.40   947.3   45.00   963.7
GR  45.0    1055.3    43.52  1059.8   43.39  1060.4   42.75  1062.6      42  1070.1
GR  43.9    1079.3    44.00  1079.3   44.20  1081.1   44.22  1081.2   44.40  1082.7
GR  44.5    1082.9    45.00  1084.1   45.00  1123.3   45.54  1165.3   46.00  1172.9
GR  47.0    1198.7    47.00  1198.7   47.67  1216.6   48.00  1246.6   47.55  1265.3
GR  49.2    1500.0
X1   .597       36  1057.7  1145.6     255     255     255
CI  1067   38.18             4       4      50
CI  1067   36.68             2       2       6
GR  46.8     500.0    46.00   863.0   45.00   922.2   45.00   949.1   45.92   952.8
GR  46.0     953.2    46.00   954.3   45.38   958.4   45.84   970.4   45.54  1054.1
GR  45.5    1057.7    45.74  1058.3   44.34  1072.6   45.00  1072.6   45.00  1085.3
GR  42.3    1093.8    42.07  1094.5   42.05  1094.5   42.04  1094.5   42.00  1095.7
GR  41.9    1102.8    42.00  1104.1   43.97  1111.3   44.14  1112.3   44.16  1112.5
GR  45.0    1115.3    45.73  1145.6   46.00  1182.0   47.00  1214.1   47.00  1214.4
GR  47.4    1234.5    48.00  1246.8   49.00  1301.1   49.00  1301.3   50.00  1323.7
GR  50.5    1500.0
X1  0.608       12     750     756.7     110     110     110       0       0       0
CI  1062   38.30             4       4      50
CI  1062   36.80             2       2       6
X3                         990
X4     1     46.1     620       0       0       0       0       0       0       0
GR  47.5        0    47.3     350    47.1     700    51.3     750    42.3     750
GR  42.3      756.7  51.3     756.7   46.3     900    48.0     970    49.0    1250
GR  50.0    1353.5    50.01  1500.0
X1  0.633        9    1000  1003.6     125     125     125       0       0       0
CI    -1   38.44             4       4      50
CI    -1   36.94             2       2       6
GR  46.8        0    47.2     800    46.8     950    48.9    1000    42.4    1000
GR  42.4   1003.6    48.9    1003.6   46.8    1050    48.0    1250       0       0
X1   .708       13    1028  1113.7     380     380     380
CI   896   38.86             4       4      50
CI   896   37.36             2       2       6
X3                         960
GR  48.1     500.0    47.50   811.9   47.50   812.0   46.87   876.4   46.58   886.9
GR  46.0    1028.0    45.93  1028.2   42.00  1031.2   42.00  1096.4   43.10  1097.1
GR  49.2    1111.3    50.00  1113.7   50.41  1500.0
*  USE FLOWS FROM CONCENTRATION POINT BASG3C
QT     2     428     428
X1   .815       25  1128.4  1199.1     500     500     500
CI    -1   39.42             4       4      40
CI    -1   37.92             2       2       6
GR  49.0     500.0    48.00   986.0   47.00  1127.3   46.47  1128.4   45.93  1137.0
GR  44.8    1139.8    44.08  1142.6   44.07  1142.7   44.00  1143.0   44.00  1150.3
GR  44.8    1152.2    46.00  1163.4   47.67  1196.2   48.00  1199.1   48.03  1205.0
GR  49.0    1252.9    49.00  1270.4   49.48  1292.3   50.00  1306.0   50.50  1380.4
GR  50.0    1383.7    50.33  1415.3   50.00  1423.5   50.12  1428.2   50.00  1500.0
X1   .888       15  1088.8  1114.8     430     430     430
CI  1052   39.89             4       4      40
CI  1052   38.39             2       2       6
GR  49.1     500.0    47.00  1085.1   47.00  1088.8   46.75  1093.2   46.70  1094.0
GR  46.4    1099.8    46.30  1100.8   45.54  1104.3   46.00  1105.9   47.34  1109.1
GR  47.8    1114.8    48.00  1116.4   48.77  1152.1   49.00  1154.4   50.01  1500.0
X1   .900       23     1045  1130.2     253     253     253
CI  1078   40.18             4       4      40
CI  1078   38.68             2       2       6
GR  49.5     500.0    48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0     998.6    49.05  1025.1   49.00  1025.6   49.00  1045.0   48.17  1070.2
GR  48.0    1071.7    48.00  1074.3   47.96  1074.3   47.12  1080.4   46.71  1081.0
GR  46.0    1081.3    46.00  1094.4   46.22  1095.1   47.00  1102.2   47.00  1121.5
GR  47.6    1127.3    48.00  1130.2   50.00  1500.0
*  .950 PROPOSED CROSSING PER LAND PLAN * DBL. 6' x 8' RCP BOX CULVERTS
NC                         .3      .5
X1   .950                                     100     100     100
CI    -1   38.78             4       4      40
X3                        1078            1097
SC  2.015      .4     2.7      94       6       8      94    10.1   38.88   38.78
X1   .999                                     94      94      94
CI    -1   38.88             4       4      40
X2                       2    47.5      46
X3                        1068            1107
NC                         .1      .3
X1  1.001       14  1059.3  1100.5      25      25      25
CI    -1   40.41             4       4      40
CI    -1   38.91             2       2       6
GR  49.7     500.0    48.00  1059.3   47.97  1059.4   46.00  1072.6   46.00  1094.3
GR  46.1    1094.6    46.06  1095.2   46.00  1095.6   46.07  1096.0   46.62  1096.6
GR  48.0    1100.5    49.94  1420.6   49.98  1422.4   50.05  1500.0
X1  1.048       18  1043.7    1089     422     422     422
CI    -1   40.88             4       4      40
CI    -1   39.38             2       2       6
GR  50.0     500.0    50.00  1043.7   47.69  1068.7   47.69  1069.1   47.83  1069.1
GR  48.0    1069.3    47.86  1077.4   47.89  1082.1   47.93  1083.3   48.00  1083.6
GR  48.0    1083.8    48.26  1086.2   48.42  1086.4   48.48  1086.6   49.00  1089.0
GR  50.0    1406.1    50.23  1409.7   50.67  1500.0
X1  1.102       17  1042.1  1090.8     285     285     285
CI    -1   41.19             4       4      40
CI    -1   39.69             2       2       6
GR  50.5     500.0    49.89   652.6   50.00   653.5   50.00  1042.1   49.02  1051.7
GR  48.0    1056.5    47.76  1060.8   47.72  1061.2   47.69  1062.2   47.72  1082.9
GR  48.0    1085.5    48.00  1085.6   48.22  1086.3   49.00  1090.8   49.03  1172.5
GR  50.0    1232.5    51.00  1500.0
X1  1.160       11  1076.8  1112.5     295     295     295
CI  1125   41.51             4       4      40
CI  1125   40.01             2       2       6
GR  51.0     500.0    49.00  1076.8   48.97  1076.8   48.96  1076.9   47.84  1083.8
GR  47.7    1104.5    47.86  1108.1   48.00  1109.1   48.92  1111.9   49.00  1112.5
GR  50.8    1500.0
X1  1.198       20     280   286.9     240     240     240       0       0       0
CI   298   41.78             4       4      40
CI   298   40.28             2       2       6
X3    10       0       0       0       0       0       0    49.5    49.5       0
GR  51.6        0    51.5     280    45.5     280    45.5   283.1    45.5   283.1
GR  45.5    283.8    45.5   283.8    45.5   286.9    51.5   286.9    51.2     600
X1  1.202        0       0       0      20      20      20       0       0       0
CI   298   41.80             4       4      40
CI   298   40.30             2       2       6
X3    10       0       0       0       0       0       0       0       0       0
X1  1.214       33    1030  1065.8      55      55      55
CI    -1   41.86             4       4      40
CI    -1   40.36             2       2       6
X3                                      1408.9
GR  51.3     500.0    49.27  1015.8   49.00  1030.0   49.00  1030.4   48.78  1031.3
GR  47.7    1035.7    47.55  1039.4   47.55  1040.4   47.19  1041.7   46.88  1052.2
GR  48.0    1062.3    48.00  1062.3   48.01  1062.4   50.00  1065.8   50.00  1342.5
GR  50.0    1344.0    49.94  1376.2   50.00  1376.7   50.91  1387.4   51.09  1388.2
GR  52.0    1391.3    52.78  1394.1   53.82  1407.8   53.82  1408.9   51.40  1426.8
GR  51.4    1427.2    51.41  1428.6   51.09  1428.8   51.11  1434.7   50.64  1438.4
GR  50.8    1456.4    51.00  1460.7   51.10  1500.0
X1  1.274       29     971.7  1057.5     500     500     500
CI    -1   42.41             4       4      40
CI    -1   40.91             2       2       6
X3                                      1112
GR  51.0     500.0    50.00   971.7   48.00  1020.5   47.85  1023.1   47.06  1034.1
GR  47.0    1035.3    46.63  1043.3   47.45  1045.4   47.57  1046.3   47.75  1047.0
GR  48.5    1049.4    50.00  1057.5   50.00  1130.5   49.00  1149.7   49.00  1160.0
GR  50.0    1166.4    50.18  1167.8   51.81  1173.0   52.00  1173.5   53.01  1176.0
GR  53.0   1190.2    51.81  1193.3   51.82  1193.9   51.26  1196.9   49.88  1200.7
GR  50.0    1206.4    50.05  1207.5   51.00  1229.5   51.80  1500.0
*  CCTRXR
NC                        .055      .3      .5
X1  1.314       14    1000  1068.1      44      44      44
CI    -1   40.96             2       2      36
X3                             1000      54  1068.1      54
GR    54      990      54    1000    47.6  1000.1    47.4  1010.8    47.4    1012
GR  46.7   1025.8    46.7  1027.5    45.7  1040.8    45.7  1042.5    45.7  1056.1
GR  45.7   1057.3    46.2    1068      54  1068.1      54    1100
SB  1.05       1.5     2.7       0      36     5.8     541       2   40.98   40.96
X1  1.315        0       0       0      25      25      25
CI    -1   40.99             2       2      36
X2                       1    51.7      54       0       0
X3                             1000      54  1068.1      54
BT   -22      990      54      54    1000      54      54    1000      54    51.7
BT          1010.8     54    51.7  1010.8      54    47.4    1012      54    47.4
BT             1012     54    51.7  1025.8      54    51.7  1025.8      54    46.7
BT          1027.5     54    46.7  1027.5      54    51.7  1040.8      54    51.7
BT          1040.8     54    45.7  1042.5      54    45.7  1042.5      54    51.7
BT          1056.1     54    51.7  1056.1      54    45.7  1057.3      54    45.7
BT          1057.3     54    51.7  1068.1      54    51.7  1068.1      54      54
BT             1100     54      54
NC                        .06      .1      .3
X1  1.324       20   980.6  1012.7      11      11      11
CI    -1   42.50             4       4      40
CI    -1   41.00             2       2       6
GR  50.1     500.0    50.63   646.9   50.08   649.3   49.54   864.7   50.00   897.8
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GR  49.5   905.7   49.51   941.5   49.00   971.6   49.00   980.6   48.97   981.3
GR  48.0   986.6   47.13   990.5   47.09  1009.1   47.79  1009.7   48.00  1010.4
GR  48.9  1012.7   48.99  1013.4   50.30  1029.8   51.00  1070.7   50.77  1500.0
X1 1.376       44      941   975.2     270     270     270
CI   823    42.79              4       4      40
CI   823    41.29              2       2       6
X3                           705.7
GR  51.2   500.0   51.00   664.0   50.77   666.2   50.55   669.9   51.24   672.9
GR  51.5   682.9   51.58   685.1   51.63   696.3   52.00   699.6   53.98   705.7
GR  54.0   705.7   54.00   715.7   53.93   715.7   52.69   719.1   52.49   721.8
GR  52.0   724.2   50.33   731.8   50.00   732.7   49.72   733.2   49.64   733.2
GR  49.0   733.4   49.00   746.6   49.60   767.4   50.17   864.3   50.00   941.0
GR  48.9   948.2   48.00   950.2   47.76   951.1   47.69   955.8   47.63   956.8
GR  47.1   962.9   47.09   964.3   47.19   964.4   48.00   964.4   47.13   964.8
GR  47.4   965.5   49.12   968.5   50.64   974.2   51.00   975.2   52.38  1276.4
GR  52.5  1279.8   52.54  1280.0   52.00  1422.8   52.91  1500.0
X1 1.422       28     867.8   904.5     225     225     225
CI   822    43.04              4       4      40
CI   822    41.54              2       2       6
X3                           707.0             870
GR  51.8   500.0   51.00   661.7   51.15   664.6   51.24   686.8   52.00   693.5
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.94   782.1
GR  50.7   782.5   51.21   801.7   50.00   867.8   49.43   868.9   48.00   871.5
GR  47.4   874.4   46.99   874.6   47.09   885.5   47.62   888.1   47.65   888.2
GR  48.0   888.4   50.75   904.5   52.96  1500.0
X1 1.487                             342     342     342
CI   877    43.42              4       4      40
CI   877    41.92              2       2       6
* GERBER RD. CROSSING #4 ADJACENT TO AND EAST OF CCTRXR-DBL. 5 x 8 BOX CULVERTS
NC                           .3      .5
X1 1.524       9      180   206.1     100     100     100
CI    -1    42.03              4       4      40
X3                           184.1    54.5   202.1    54.5
GR  54.9     100    54.5     180      47   184.1      47   192.4      47   193.8
GR    47   202.1    54.3   206.1    54.1     380    53.7     580
SC 2.015      .4     2.7       0       5       8     100    10.1   42.14   42.03
X1 1.534       0       0       0     100     100     100
CI    -1    42.14              4       4      40
X2                       2    48.2    54.5
X3                           184.1    54.5   202.1    54.5
BT   -11     100    54.9    54.9     180    54.5    54.5     180    54.5    53.5
BT           192.4    54.5    53.5   192.4    54.5      47   193.8    54.5      47
BT           193.8    54.5    53.5   206.2    54.5    53.5   206.2    54.5    54.5
BT             380      54      54     580    53.7    53.7
NC                           .1      .3
X1 1.544                             25      25      25
CI    -1    43.67              4       4      40
CI    -1    42.17              2       2       6
*  CHANNEL GRADE BREAK.  SLOPE SET @ 0.0016
*  USE FLOWS FROM CONCENTRATION POINT CG3D
QT     2      569     738
X1 1.590       57   932.6  1008.3     262     262     262
CI    -1    44.10              4       4      40
CI    -1    42.60              2       2       6
GR  56.3   500.0   56.00   752.0   58.00   800.7   58.01   838.8   58.00   839.4
GR  56.0   847.2   55.85   847.7   55.56   849.0   54.64   849.6   54.00   852.5
GR  53.0   856.3   52.68   858.4   52.56   860.7   52.24   861.4   52.00   861.9
GR  50.9   866.6   52.00   870.7   52.42   887.2   54.00   887.9   54.58   892.8
GR  54.6   893.0   54.67   898.0   54.68   898.2   54.69   898.3   54.70   902.4
GR  54.6   905.2   54.45   906.5   54.45   914.3   54.44   914.6   54.00   914.9
GR  52.4   914.9   52.38   916.4   52.00   919.1   52.00   932.6   50.44   940.5
GR  50.0   942.5   50.00   946.1   49.58   949.3   49.34   950.3   49.19   950.9
GR  47.9   955.1   48.32   958.6   49.60   967.5   49.60   967.5   49.62   967.6
GR  50.0   970.5   50.53   974.0   50.63   974.4   50.65   974.7   50.84   978.4
GR  51.0   980.2   52.00  1008.3   52.00  1153.6   53.00  1215.6   53.86  1464.4
GR  53.0  1484.5   53.01  1500.0
X1 1.669       37  1036.4  1095.6     470     470     470
CI    -1    44.85              4       4      40
CI    -1    43.35              2       2       6
X3                           867            1476.8
GR  54.0   508.3   54.00   584.3   54.06   587.2   54.13   587.8   54.18   588.8
GR  55.0   600.8   54.55   672.9   55.00   867.0   54.00   894.6   54.00   951.7
GR  53.0  1001.8   53.00  1036.4   53.05  1037.4   52.94  1037.7   52.00  1057.6
GR  51.1  1058.5   50.00  1062.7   49.54  1064.1   48.77  1067.9   48.77  1068.2
GR  48.8  1068.2   50.27  1076.8   50.21  1077.6   50.00  1078.0   51.85  1093.6
GR  52.0  1095.6   52.93  1326.7   53.00  1326.9   53.00  1476.8   52.27  1483.6
GR  52.1  1492.6   52.00  1492.8   52.00  1497.1   51.95  1497.4   51.94  1497.6
GR  52.0  1497.8   52.00  1500.0
X1 1.761       34      971  1062.3     435     435     435
CI    -1    45.55              4       4      40
CI    -1    44.05              2       2       6
GR  54.3   591.1   54.69   657.4   52.74   971.0   50.63  1011.3   49.63  1013.5
GR  50.0  1015.3   49.70  1016.0   49.69  1016.1   49.10  1017.0   49.13  1017.1
GR  49.1  1017.1   49.17  1017.3   49.21  1017.5   49.53  1022.1   49.76  1023.5
GR  50.0  1027.6   51.72  1038.0   52.36  1058.2   52.86  1061.3   53.00  1062.3
GR  53.0  1077.9   54.00  1127.9   55.64  1411.3   56.57  1425.4   56.00  1425.7
GR  56.3  1426.2   56.84  1427.4   57.00  1437.5   57.00  1442.8   57.11  1444.8
GR  58.2  1483.1   58.23  1487.9   58.79  1500.0   58.80  1500.0
X1 1.788       11      200   219.5     125     125     125       0       0       0
CI    -1    45.75              4       4      40
CI    -1    44.25              2       2       6
X3    10       0       0       0       0       0       0       0       0       0
GR  55.8       0    55.8     200    50.2     200    49.7   204.9    50.6     210
GR  50.6     210    50.6   210.8    50.6   210.8    53.1   219.5    55.8   219.5
GR  56.0   579.5
X1 1.811       31  1046.4  1090.9     165     165     165
CI    -1    46.01              4       4      40
CI    -1    44.51              2       2       6
GR  54.7   695.4   54.67   695.8   54.00   910.6   53.59   925.5   53.07  1044.0
GR  53.0  1046.1   53.00  1046.4   51.49  1048.0   50.41  1049.0   50.74  1055.1
GR  51.3  1061.4   52.29  1065.2   52.53  1067.8   53.00  1068.7   53.37  1075.8
GR  53.6  1084.2   53.79  1086.8   53.85  1087.4   54.00  1090.9   56.39  1411.9
GR  57.3  1415.7   56.00  1416.4   56.73  1417.6   56.79  1433.2   56.23  1437.4
GR  56.3  1438.2   56.37  1439.1   56.40  1446.6   57.00  1475.6   57.00  1476.1
GR  57.5  1500.0
*  USE FLOWS FROM CONCENTRATION POINT CG3B
QT     2      915     355
X1 1.851       34  1053.3  1097.8     200     200     200
CI    -1    46.33              4       4      15
CI    -1    44.83              1       1       3
GR  54.9   500.0   54.00   896.9   53.21   944.7   53.65  1025.4   53.00  1053.3
GR  50.5  1058.3   50.42  1058.6   50.81  1059.0   50.79  1059.1   50.60  1059.5
GR  50.6  1066.7   50.95  1068.5   52.00  1073.0   53.00  1073.1   53.00  1073.1
GR  53.7  1097.8   53.70  1097.9   54.00  1164.7   54.25  1169.6   54.38  1283.3
GR  55.4  1330.6   56.86  1337.8   56.00  1338.3   56.50  1339.3   56.59  1352.9
GR  56.0  1358.7   55.91  1372.4   56.00  1373.1   56.00  1381.1   57.00  1413.4
GR  57.0  1413.5   59.00  1479.6   59.00  1479.7   59.88  1500.0
X1 1.891       29  960.3  1001.6     170     170     170
CI    -1    46.6               4       4      15
CI    -1    45.1               1       1       3
GR  56.7   500.0   56.70   503.1   56.43   514.1   56.57   559.4   56.00   565.5
GR  54.0   908.0   53.95   909.3   53.86   910.2   53.48   911.9   53.02   913.0
GR  53.0   913.4   53.00   929.5   53.86   941.2   54.00   944.5   54.00   960.3
GR  53.5   960.9   52.00   970.2   51.77   970.4   50.80   981.8   51.47   990.6
GR  51.9   992.8   52.00   994.6   52.12   994.9   53.53  1000.0   54.00  1001.6
GR  54.2  1259.0   54.00  1270.6   57.09  1446.4   56.13  1500.0
NC                    .05      .3      .5
* GERBER ROAD CROSSING #3 WEST OF BRADSHAW RD
X1 1.900       6     475   495.2      80      80      80
CI    -1    45.23              1       1     8.6
X3                           475    59.3   495.2    59.3
GR 55.25     200    55.2     475      48   475.1    47.8   495.1    55.2   495.2
GR    56     800
SB     0     1.5     2.7       1     8.6       0     105       1   45.36   45.23
X1 1.925       0       0      84      84      84
CI    -1   45.36              1       1     8.6
X2                       1   51.55    55.2
X3                           475    59.3   495.2    59.3

BT    -6     200   55.25   55.25     475    55.2    55.2     475    58.6    53.8
BT          495.2    58.6    53.8   495.2    55.2    55.2     800      56      56
NC                    .060      .1      .3
X1 1.926       26   939.7   974.1      20      20      20
CI  1027   46.90              4       4      15
CI  1027   45.40              1       1       3
X3                           990
GR  55.8   500.0   53.58   939.7   52.40   941.5   52.00   942.5   51.90   944.0
GR  51.9   944.5   51.83   944.8   50.88   949.7   50.53   959.8   51.71   964.2
GR  51.8   964.2   52.00   964.5   51.73   965.5   51.71   966.0   51.71   966.0
GR  51.7   966.2   52.37   970.2   54.00   974.1   54.26  1191.1   55.95  1258.1
GR  56.0  1331.0   57.00  1426.2   57.52  1430.7   58.22  1443.8   59.00  1492.3
GR  59.0  1500.0
X1 1.961       33   870.5   905.7     195     195     195
CI  1074   47.21              4       4      15
CI  1074   45.71              1       1       3
X3                           1034
GR  56.0   500.0   56.00   637.8   55.96   638.1   54.00   870.5   52.00   883.9
GR  51.3   890.2   51.12   890.6   50.69   891.8   50.53   891.9   50.51   892.0
GR  50.7   892.6   51.43   895.7   51.59   896.4   51.98   897.7   52.00   897.7
GR  52.0   897.8   52.16   898.5   54.00   905.7   54.00   907.3   56.00   996.6
GR  56.0  1000.1   57.00  1053.3   57.00  1053.9   59.00  1128.5   59.00  1130.2
GR  59.9  1174.1   60.00  1176.7   60.00  1185.9   60.77  1237.1   60.19  1285.4
GR  60.8  1363.3   60.71  1370.0   61.00  1500.0
X1 1.987       26   956.7   990.7     195     195     195
CI  1200   47.52              4       4      15
CI  1200   46.02              1       1       3
X3                           1160            1440.8      57
GR  56.0   500.0   56.73   633.5   56.00   704.0   55.89   704.9   54.00   956.7
GR  53.6   957.4   52.00   968.6   52.01   968.6   51.97   968.7   51.59   969.6
GR  52.0   979.7   52.00   979.9   52.22   981.0   53.16   983.2   55.86   990.7
GR  56.0   991.3   56.34  1201.8   56.63  1211.2   56.70  1230.3   57.00  1245.8
GR  57.0  1281.4   57.79  1286.6   57.00  1323.3   57.00  1440.8   56.49  1452.2
GR  56.0  1500.0
X1 2.060       39   889.7  1018.4     540     540     540
CI  1444   48.38              4       4      15
CI  1444   46.88              1       1       3
X3                           1395
GR  56.3   500.0   56.72   717.6   57.00   729.5   57.00   730.0   56.95   731.2
GR  56.9   732.3   56.77   733.2   56.65   736.4   56.61   737.1   56.60   737.1
GR  56.5   737.4   56.00   739.0   56.47   740.9   56.48   741.3   56.00   751.0
GR  56.7   759.4   56.76   760.0   56.67   764.0   56.72   764.1   56.73   764.1
GR  56.8   764.2   56.84   775.0   56.72   778.5   56.00   783.4   56.00   889.7
GR  54.0   936.3   52.27   940.4   53.94   948.4   54.00   948.7   56.00  1018.4
GR  56.0  1241.7   55.86  1248.0   58.00  1401.8   58.59  1415.4   58.72  1432.9
GR  58.7  1436.1   58.39  1439.8   58.36  1440.1   58.57  1500.0
X1 2.169       47   909.5  1025.4     364     364     364
CI  1118   48.96              4       4      15
CI  1118   47.46              1       1       3
X3                           799.4
GR  58.0   500.0   58.00   514.0   57.85   522.0   57.00   542.0   56.00   728.7
GR  56.2   738.8   56.15   741.1   56.51   770.4   57.42   772.4   58.00   779.5
GR  57.5   780.0   56.77   795.9   58.78   796.3   58.87   799.4   58.71   842.3
GR  58.0   848.3   57.36   849.1   57.26   849.7   57.24   850.0   57.00   851.1
GR  57.0   863.1   57.17   866.0   57.37   880.2   57.00   882.5   57.00   909.5
GR  56.0   956.1   55.44   961.0   54.64   970.0   54.66   970.7   54.68   971.4
GR  54.7   971.4   54.61   975.3   55.50   982.5   55.97   988.0   55.97   988.0
GR  56.0   988.1   55.96   988.1   56.04   988.4   56.05   988.6   56.08   990.3
GR  57.0  1008.7   57.31  1017.8   58.00  1025.4   58.00  1036.4   58.65  1091.8
GR  59.0  1098.4   60.00  1500.0
NC                           .3      .5
* BRADSHAW ROAD EX. TWIN 5'X 8' RCBC EX. L = 35'
X1 2.212       24   975.4   996.8      44      44      44
CI    -1    47.53              4       4      15
X3                           977    60.1     995    60.1
GR 59.52   500.0   58.60   500.6   57.52   513.1   57.19   530.4   57.00   532.3
GR  57.0   613.5   57.15   621.3   56.00   975.4   55.24     977   55.13   983.9
GR  54.1   984.7    54.1   991.9   55.60     995   57.35   996.8   58.32   999.6
GR  59.0  1023.8   59.05  1068.4    59.1  1104.7    59.1  1111.7   60.33  1111.8
GR  60.5  1299.4   60.66  1302.7   61.00  1392.5   61.95  1500.0
SC 2.015       0.4    2.63       0     5.0     8.0     114    10.1   47.72   47.54
X1 2.222          0       0       0     114     114     114
CI    -1    47.72              4       4      12
X2                       2    59.1    60.1
X3                           977    60.1     995    60.1
X4     1    58.32  1000.7
BT   -24     500   59.52   59.52   500.6   59.52    59.1   513.1   59.52    59.1
BT           530.4   59.53    59.1   532.3   59.53    59.1   613.5   59.55    59.1
BT           621.3   59.55    59.1   975.4    60.1    59.1     977    60.1    59.1
BT           983.9    60.1    59.1   983.9    60.1    59.1   984.7    63.4    59.1
BT           994.7    63.4    59.1   999.6    63.4    59.1   999.6    60.1    59.1
BT          1023.8   60.12    59.1  1068.4   60.16    59.1  1104.7   60.20    59.1
BT          1111.7    60.3    59.1  1111.8   60.33    59.1  1299.4    60.5    59.1
BT          1302.7   60.66    59.1  1392.5      61      61    1500   61.95   61.95
NC                           .1      .3
X1 2.225       32   990.6  1029.6      11      11      11
CI    -1    49.23              4       4      12
CI    -1    47.73              1       1       2
GR  58.7   500.0   57.78   510.4   57.28   531.9   57.00   534.6   57.00   636.0
GR  56.0   990.6   55.61   995.5   55.36   997.8   54.99   999.7   54.99  1014.6
GR  55.3  1017.0   55.65  1018.2   56.00  1023.6   56.19  1024.3   57.00  1029.6
GR  57.0  1036.8   57.69  1061.9   58.00  1065.5   58.42  1076.3   58.46  1082.2
GR  59.0  1103.2   59.00  1125.4   59.39  1131.0   60.00  1155.1   61.00  1414.7
GR  61.1  1415.4   62.00  1426.3   63.00  1452.7   63.00  1454.4   63.56  1465.5
GR  64.0  1487.9   64.00  1500.0
X1 2.252       24   959.2  1008.3     276     276     276
CI  1034   49.67              4       4      12
CI  1034   48.17              1       1       2
GR  61.4   500.0   61.00   522.5   61.00   536.3   60.00   592.6   59.07   672.9
GR  59.0   673.2   59.00   959.2   58.00   977.9   54.99   994.5   54.99  1004.2
GR  56.5  1006.7   56.32  1007.4   56.00  1007.7   56.95  1008.3   57.00  1008.5
GR  57.0  1108.0   58.00  1152.0   58.00  1153.8   59.00  1208.8   59.00  1227.2
GR  60.0  1269.6   61.05  1475.6   61.08  1476.6   61.25  1500.0
X1 2.300       35   954.1   984.7     260     260     260
CI    -1    50.09              4       4      12
CI    -1    48.59              1       1       2
GR  61.6   500.0   61.00   539.8   59.00   927.8   58.60   936.7   58.57   936.9
GR  59.0   954.1   58.76   963.9   57.44   965.4      56     966    55.6     967
GR  55.5   974.2   58.00   983.8   58.86   984.7   58.79   986.1   58.78   990.3
GR  58.4  1007.6   58.37  1009.0   58.36  1009.1   58.31  1009.2   58.00  1018.9
GR  56.0  1033.5   57.00  1050.0   57.04  1184.3   57.00  1187.0   57.00  1243.2
GR  56.0  1246.0   56.00  1257.4   56.70  1259.1   58.64  1271.2   58.84  1272.7
GR  58.9  1273.5   58.00  1275.4   58.79  1277.1   59.66  1279.4   60.00  1279.8
X1 2.360       60      970     988     335     335     335
CI  1019   50.63              4       4      12
CI  1019   49.13              1       1       2
X3                           985
GR  62.2   695.4   62.00   702.9   62.00   707.0   61.00   761.1   61.00   766.9
GR  59.0   912.9   58.84   916.3   58.65   925.2   59.00   939.9   59.00   940.1
GR  58.3   970.0   58.00   970.2   56.49   972.1   56.00   972.4   55.15   974.2
GR  55.0   975.0   55.12   975.2   55.14   975.3   55.18   975.5   55.22   975.8
GR  55.4   978.1   55.46   978.1   57.05   981.7   56.00   982.7   57.63   982.7
GR  57.9   986.5   58.00   986.8   58.06   987.0   58.07   987.1   58.09   987.2
GR  58.1   987.5   58.14   988.0   58.00   993.6   58.00  1002.0   57.00  1020.7
GR  57.0  1048.9   56.98  1049.4   56.68  1070.5   56.59  1072.7   56.31  1076.1
GR  56.2  1078.1   56.17  1214.3   57.00  1238.4   57.00  1258.2   57.24  1265.6
GR  58.0  1309.7   58.16  1310.4   58.30  1311.2   58.36  1311.7   59.00  1315.9
GR  59.2  1316.4   59.27  1316.7   59.50  1316.9   60.00  1320.1   60.66  1322.8
GR  60.7  1323.1   61.00  1323.9   62.00  1374.3   62.00  1421.2   62.94  1500.0
X1 2.393       55   969.2     989     200     200     200
CI   945    50.95              4       4      12
CI   945    49.45              1       1       2
X3                           960
GR  61.0   908.0   60.49   911.7   60.41   912.2   60.23   912.4   60.15   913.8
GR  60.1   913.9   60.11   914.1   60.10   914.1   60.09   914.5   60.08   914.6
GR  60.1   914.6   59.85   916.2   59.79   916.5   59.77   916.8   59.00   930.2
GR  58.1   969.2   58.05   969.4   58.04   972.7   58.04   972.7   57.93   973.0
GR  56.0   975.4   56.00   981.9   56.11   982.1   56.36   982.5   58.00   986.3
GR  58.7   988.0   59.00   989.0   59.00  1004.3   58.82  1008.4   58.00  1021.7
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ATTACHMENT 5D

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GR  57.6  1023.4  57.53  1024.7  57.53  1041.6  58.00  1052.1  57.92  1157.1
GR  57.8  1161.7  57.90  1181.9  57.00  1209.6  57.00  1223.7  57.55  1225.8
GR  57.6  1226.0  57.85  1227.7  57.86  1227.8  57.90  1227.9  58.00  1228.3
GR  58.4  1230.0  58.44  1230.3  59.00  1232.3  60.00  1252.1  60.79  1404.9
GR  60.8  1405.3  61.00  1409.8  61.00  1435.0  60.94  1437.5  61.00  1500.0
X1 2.424      30  971.4   988.6    160     160    160
CI   955   51.21                4       4     12
CI   955   49.71                1       1      2
GR  61.0   896.7  60.82   899.0  60.00   904.3  59.80   905.7  59.74   907.3
GR  59.0   919.9  58.77   922.9  58.62   970.6  58.51   971.3  58.51   971.4
GR  57.1   974.8   56.0   976.2   56.0   983.6  57.59   985.6   58.0   986.4
GR  58.8   988.6  58.87   988.7  59.00   988.9  59.00   999.1  58.49  1005.6
GR  57.0  1033.7  57.00  1033.9  57.10  1034.1  57.00    1037  57.00  1141.7
GR  57.1  1217.7   58.2  1223.3  59.00  1320.9  59.00  1409.5  60.87  1500.0
X1 2.476      42  961.6  1009.6    265     265    265
CI   876   51.63                4       4     12
CI   876   50.13                1       1      2
X3                                          943
GR  63.0   729.0  63.00   729.3  62.67   736.1  62.00   745.3  61.50   761.5
GR  61.0   767.3  61.00   767.6  60.01   780.6  60.01   780.6  60.00   780.7
GR  60.0   780.9  59.00   826.7  58.22   913.8  58.58   937.6  59.00   950.7
GR  58.3   956.6  58.44   957.8  58.45   961.6  58.00   962.5  56.74   967.7
GR  56.3   971.8  56.00   977.7  56.00   983.5  56.88   987.8  57.83  1007.8
GR  58.0  1009.6  58.03  1010.0  58.07  1014.1  58.78  1043.0  59.00  1133.7
GR  59.0  1134.6  59.46  1144.3  60.68  1161.7  61.00  1170.5  61.74  1181.3
GR  61.9  1184.4  62.00  1185.2  62.99  1215.8  63.00  1215.9  64.00  1244.3
GR  64.0  1367.9  63.66  1372.4
X1 2.598      49  892.2   940.1    487     487    487
CI   896   52.91                4       4     12
CI   896   50.91                1       1      2
X3                                          960.5  62.81
GR  63.0   710.8  62.77   717.9  62.46   781.5  62.00   798.4  61.42   805.2
GR  61.2   807.3  60.85   834.0  60.86   892.2  60.20   903.3  60.00   905.1
GR  59.9   905.5  59.82   906.0  59.00   909.4  59.00   911.7  58.36   915.3
GR  58.0   916.5  58.00   930.7  61.35   936.2  61.49   936.2  62.00   938.8
GR  62.0   940.1  62.81   960.5  62.29   969.1  62.19   975.1  62.00   979.8
GR  61.2   983.5  60.95   986.5  60.45  1000.5  60.31  1010.5  60.45  1018.0
GR  60.4  1020.3  59.97  1046.6  59.00  1072.9  59.00  1089.3  59.41  1100.6
GR  59.5  1101.2  59.83  1105.4  60.00  1114.1  60.00  1134.6  61.00  1188.0
GR  61.0  1211.6  61.08  1215.4  61.46  1225.4  61.51  1226.1  62.00  1238.4
GR  62.0  1263.0  62.63  1296.5  63.00  1308.4  63.27  1324.3
NC                              .3      .5
*  GERBER ROAD CROSSING - EAST OF BRADSHAW
X1 2.607      16  889.4   975.9      24      24     24
CI    -1   50.95                1       1      5
X3                                  920    63.6  975.9   63.6
GR  64.6   682.8  64.00   688.9  63.48   876.6  63.00   889.4  63.00   900.1
GR 57.46   908.4  60.26   939.8  63.20   954.2  63.78   975.9  63.65  1288.3
GR 64.00  1325.7  64.30  1331.5   65.0  1477.7  65.27  1485.5  65.28  1495.4
GR 65.20    1500
SB  1.05    1.56   2.63       0       5    1.33     181       1   51.08   50.95
X1 2.725      10  938.3   972.7      84      84     84
CI    -1   51.08                1       1      5
X2                      1   62.8    63.6
X3                          889.4    63.6  975.9   63.6
BT   -11   573.2   63.4    63.4   573.2      68    63.4   633.2    67.3     62
BT          707   66.1   61.75   938.3    64.4      60     948    64.3     59
BT          948   64.3    62.8     963    64.1    62.8     963    64.1   59.1
BT         972.7   64.1      60    1280    63.6   60.73
GR  63.4   573.2  62.00   633.2  61.75   707.0    60.0   938.3  58.38   947.7
GR  58.6   958.6  60.00   972.7  61.00  1393.0    62.5  1447.2  62.86    1500
X1 2.727                                    6       6      6
CI    -1   52.59                4       4     12
CI    -1   51.09                1       1      2
EJ
T1 NORTH VINEYARD STATION SPECIFIC PLAN
T2 GERBER CREEK DEVELOPED CONDITION
T3 M&S FILE ED50.DAT
J1     0       3       0       0       0       0       0       0   42.17
J2     2       0      -1       0       0       0       0       0       0
ER
```

ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 7

HEC-2 MODEL FOR ULTIMATE CHANNEL CONDITIONS ON ELDER CREEK FROM 1.8 MILES UPSTREAM OF CONFLUENCE WITH GERBER CREEK TO UPSTREAM STUDY LIMIT AND FOR GERBER CREEK FROM 2.8 MILES UPSTREAM OF ELDER CREEK TO UPSTREAM STUDY LIMIT (PREPARED BY SACRAMENTO COUNTY)

FILENAME: ELFL-LIN.DAT

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C       ELDER CREEK -
C    40
C  1748      FRANKLIN BLVD
C  3079      TANGERINE AVE
C  5666      CENTER PARKWAY
C  8742      LA MANCHA WAY & HWY 99
C 10797      STOCKTON BLVD
C 12967      PAR PARKWAY
C 15167      POWER INN ROAD
C 16997      Gerber Road
C 17352      St. Andre Lane
C 19100      Reese Road  (removed)
C 20557      SPRR
C 21207      French Road
C 23517      Millbrook Circle
C 27417      Elk Grove-Florin Road
C 29357      Confluence Gerber Creek
C 30427      McCoy Ave
C 31530      Private Ped. Bridge
C 31950      Private Crossing - Dbl. 45" metal pipes
C 34757      CCTRR
C 35677      Florin Road
C 45922      Bradshaw Road
C 54812      Elder Creek Road
C 61242      Excelsior Road/Jackson Highway
C       0 Elder Creek at Confluence Gerber Creek
C    2265 PASSALIS LANE - Dbl. 48" CP
C    3020 PRIVATE ROAD - 96" CP
C    3280 PRIVATE ROAD - 2-60", 54",27"
C    3330 Pond
C    6329 PRIVATE ROAD - FIS model
C    6970 CENTRAL CALIFORNIA TRACTION
C    8052 GERBER ROAD #4 - Conc. bridge
C    9431 PRIVATE ROAD (Hayes Rd.) - Bridge
C    9646 Foot Bridge - Pet Cemetery
C   10135 GERBER ROAD #3 - Conc. bridge
C   10565 PRIVATE ROAD - Bridge
C   11682 BRADSHAW ROAD - Dbl. 8' span box
C   14381 GERBER ROAD #2 - Conc. bridge
C   14471 Last X-sec on MacKay & Somps topo
C   20212 VINEYARD ROAD - Wooden bridge
C   20765 GERBER ROAD #1 - 42" CP
T1      Sac Co - WRD Scoping Study - Elder/Gerber Creeks combined
T2      NH and NV cards removed,  channel improvements U/S SPRR
T3      200/200' Floodplain Elder & Gerber Creeks ==> ALTERNATIVE BC-V-02  <==
J1   -10       2                                                      15.7
J2     1              -1                                        -6
J3    38      43       1       6       7     120
NC   .06     .06     .03      .1      .3
**********************************************************************
*   This file created for channel improvement (flow line and channel size)
*   from cross section 35842 (Florin Road) with flow line elevation 39.78 FT
*   to cross section 63292 (upstream of Elder Creek) and also channel improvement
*   (flow line and Channel size) from cross section 14211 (Gerber Road) with
*   with flow line elevation 51.08 FT to cross section 24052 (upstream of Gerber
Creek)
*   revised On 12-1-95 by fred dastmalchi for UNET Model
**********************************************************************
*
*       Existing channelization from S.P.R.R. to Millbrook Circle
*       Channel improvement parameters
*               channel depth: 10'
*               bottom width: varies from 10'to 60'
*               floodplain width Elder Creek: 200'
*               floodplain width Gerber Creek: 200'
*               bridge structures: zero loss (U/S CCTRR)
*               channel improvements start U/S Elk Grove Florin Road
*
*       use flows from HEC-1 model at concentration point R-CE14
QT     1    1743
X1   910      15   199.3   278.8     910     910     910
X3    10
X4     1   18.30  284.00
GR  13.8   150.0    14.3   179.1    18.2   188.5    18.3   199.3     6.7   218.2
GR   6.5   234.3     4.9   236.7     4.8   248.5     6.6   250.9     6.8   261.5
GR  18.0   278.8    18.1   290.9    13.3   299.1    13.0   303.7    12.9   349.0
X1  1690      15   226.4   302.1     780     780     780
X3    10
X4     1   18.35  310.00
GR  13.8     160    13.7     180    13.8   201.1    18.1   209.4    18.5   226.4
GR  10.4   235.2    10.6   248.6     6.7   257.3     6.9   270.3     5.3   272.7
GR   5.4   284.4    18.2   302.1    18.3   316.1    16.9   321.8    16.7   370.0
X1  1748      21   298.5   378.5      58      53      58
X3    10
GR  18.4   198.5    18.8   248.5    19.7   298.5    18.8   299.0    18.9     303
GR  14.8   303.9    14.7   306.0     8.0   316.6     6.4   332.5     5.6   333.3
GR   5.5   342.4     6.7   343.4     9.6   362.9    15.3   370.5    15.1   373.9
GR  18.6   374.8    18.4     378    19.6   378.5    19.0   428.5    19.0   478.5
GR  18.3   528.5
SB  1.05     1.5     2.6            28.6     2.5     610    1.78
X1  1853                             105     105     105
X2                     1    17.7    19.6
X3    10
BT     7   198.5    18.4    18.4   248.5    18.8    18.8   298.5    19.7    17.7
BT 342.4    19.6    17.7   378.5    19.6    17.7   428.5    19.0    19.0   528.5
BT  18.3    18.3
X1  1858      14   282.7  363.30       5       5       5
X3    10
GR  18.0     200    18.9   261.4    18.7   282.7     8.8   301.7     6.1   323.1
GR   5.5   325.3     5.3   338.5     6.1   339.4   18.07  363.30    18.2   363.8
GR  18.7   370.5    17.6   377.1    17.0   418.5    17.3   458.5
X1  1926       9     100   167.8      68      68      68
X3    10
X4     1   12.21  158.20
GR  17.4    50.2    18.2   100.0     6.2   134.1     5.4   135.2     5.4   146.5
GR   7.9   149.2    18.1   167.8    18.4   169.3    18.4   219.3
X1  2369      11     100   167.2     443     443     443
X3    10
X4     1   12.73  158.20
GR  17.9    50.0    18.6   100.0     9.9   114.3     7.3   123.0     6.5   133.3
GR   5.6   134.7     5.8   145.6     7.6   147.9    17.9   167.2    18.2   169.3
GR  16.7   218.2
X1  2839      11   102.0   170.3     470     470     470
X3    10
X4     1   14.87  161.90
GR  16.6    49.9    18.4   100.0    18.2   102.0     8.5   121.0     6.9   134.2
GR   5.9   135.8     5.9   146.3     8.3   148.9    18.6   170.3    17.6   174.1
GR  17.4   222.1
X1  3029      10   150.0   217.7     190     190     190
X3    10
X4     1   19.28   217.7
GR  18.4   100.7    18.9   150.0     8.8   171.8     6.8   183.6     5.9   185.3
GR   5.9   196.1     8.0   198.1    19.3   217.7    19.3   231.6    18.3   281.7
X1  3079       9     829     905      50      50      50
X3    10
X4     2       6     867       7     884
GR    18     729    19.4     829    16.7     829    16.7     833      10     846
GR  16.7     901    16.7     905    19.4     905      18    1000
SB     1     1.3     2.6            27.0       2     580    1.78       6       6
X1  3139       0       0       0      60      60      60
X2                     1    18.0      20                     1.5
X3    10
BT     6     729      18      18     829    18.2    18.2     829    20.2    18.2
BT   905    19.8    17.8     905    19.8    19.8    1000      18      18
X1  3239       9   150.0   218.8     100     100     100
X3    10                                                    18.8
X4     1   17.38   215.2
GR  16.5    97.5    18.5   150.0    10.1   165.1     6.9   184.5     6.0   185.6
GR   6.2   196.3     8.4   198.5    19.1   218.8    18.8   269.2
X1  3839      11   150.0   219.4     600     600     600
X3    10
X4     1   11.44  205.90
GR  17.0   103.9    16.6   119.9    19.4   150.0    19.0   152.1     9.0   169.7
GR   7.4   183.8     6.5   185.6     6.6   196.3     9.0   199.0    19.4   219.4
GR  18.4   269.9
X1  4889      10   150.0   219.8    1050    1050    1050
X3    10                                                    20.5    20.5
X4     1   13.14  207.00
GR  16.8    97.0    16.9     141    19.8   150.0     9.8   169.0     8.0   184.2
GR   7.0   185.7     6.9   196.4     9.8   199.2    19.9   219.8    19.8   270.0
X1  5496      11     100   191.0     607     607     607
X3    10
X4     1   18.16  104.50
GR  20.4    88.0    20.8     100    17.4   106.6    10.4   127.0     8.0   137.0
GR   7.1   138.4     7.1   150.5     8.0   152.5     9.0   160.0    20.0   179.0
GR  21.0   191.0
*       Center Parkway use flows from concentration point CE14
QT     1    1743
X1  5616      12   152.4   220.6     120     120     120
X3    10
X4     1   12.53  206.60
GR  20.6   100.0    20.8   150.0    20.2   152.4    11.7   164.6     8.0   181.0
GR   7.1   182.3     7.2   194.2     9.3   196.2    11.4   204.3    19.7   218.1
GR  20.8   220.6    21.0   270.6
X1  5666      15     760   845.1      50      50      50
X3    10             760           845.1
GR  20.9       0    21.2     760    19.1   760.1    19.1   764.6    14.9   772.9
GR   8.2     785     6.5     787     6.6     799     8.2     801     8.2   815.5
GR  14.5     825    19.1   840.6    19.1     845    21.2   845.1    20.9    1600
SB     1     1.5     2.7     500    15.4     3.7     625   2.375     6.4     6.4
X1  5742       0       0       0      76      76      76
X2                     1    19.7    21.2
X3    10
X1  5882      12   152.5   219.4     120     160     140
X3    10                                                            21.0
X4     1   13.28  206.50
GR  21.3   110.5    20.8   150.0    20.1   152.5    11.6   167.4     8.4   184.3
GR   7.5   185.8     7.6   196.6    10.8   199.7    13.3   206.5    20.3   217.2
GR  20.4   219.4    20.3   266.5
NC   .06     .06     .04
X1  6722      24     819     887     860     815     840
X3    10                                                    21.4
GR 022.5       0   022.3   00094   020.6   00101   021.8   00112   023.3   00155
GR 021.7   00200   023.0   00222   022.6   00319   021.7   00395   023.6   00471
GR 022.0   00531   022.8   00585   020.0   00800   021.1   00819   008.5   00852
GR 008.5   00864   021.3   00887   019.0   01028   020.2   01082   021.2   01150
GR 018.6   01281   020.8   01330   022.2   01539   022.8   01600
NC  .060    .060    .040      .1      .3       0       0       0       0       0
X1  7682      10     809     882     950     970     960       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  23.8       0    23.8     357    22.6     809     8.8     843     8.8     853
GR  22.7     882    21.7     966    20.1    1016    21.1    1243    21.0    1450
*       Highway-99 use flows from concentration point CE13
*       approximate D/S location of Basin 05
QT     1    1570
X1  8692      15     814     886    1015    1005    1010       0     1.0       0
X3    10       0       0       0       0       0       0    25.1    25.1       0
X4     2    24.2     671    25.6     886       0       0       0       0       0
GR  25.2       0    25.3     166    23.3     189    24.6     238    22.3     289
GR  24.8     328    22.2     790    22.0     814    10.5     833     9.5     848
GR   9.5     861    24.6     910    24.7    1079    24.7    1231    25.8    1500
NC 0.060   0.060   0.015
X1  8742      34   824.0   888.0      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  26.6       0    25.9   814.0    25.9   824.0    21.3   824.0    13.4  830.50
GR  13.4   835.0    16.8   837.5    16.8   839.3    24.3   839.3    24.3   840.6
GR  16.8   840.6    16.8   842.5    10.8   846.0    10.8   851.0    16.8   853.5
GR  16.7   855.6    24.4   855.6    24.4   856.9    16.7   856.9    16.7   859.0
GR  10.7   862.0    10.8   868.5    16.8   870.0    16.7   871.6    24.4   871.6
GR  24.4   872.9    16.7   872.9    16.7   874.5    13.7   877.0    13.6   882.5
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GR  19.7   888.0    25.9   888.0    25.9   898.0    29.2  1300.0     0       0
SB   1.0     1.5     2.7     0      41.5     0      622    0.00    10.7    10.7
X1  8932      0       0      0      190     190     190     0       0       0
X2     0      0       1    23.8     26.6     0       0     1.5     0       0
X3    10      0       0      0       0       0       0     0       0       0
BT     6   814.0    25.9    25.9   824.0    25.9    25.9   824.0   27.8    24.3
BT 888.0    27.9    24.4   888.0    25.9    25.9   898.0    25.9    25.9     0
X1  8992     13     211     277      50      80      60
X3    10      0       0      0       0       0       0     0       0       0
GR  25.0     33    22.0      95    22.0     162    23.0     180   23.4     200
GR  23.3    203    23.7     211    12.3     222    12.18    263   23.7     277
GR  24.0    285    25.0     306    25.6     371
*       approximate U/S location of Basin 05
QT     1   2167
X1  9047     14   220.0   291.9      80      30      55
X3    10      0       0      0       0       0       0     0       0       0
GR  26.0    173    26.2     191    26.0     200    25.78    204.3   22.97   220.0
GR 12.96   241.0   12.71   250.0   12.64   253.0   11.95    266.7   12.64   268.7
GR 12.76   279.4   23.28   291.9   23.99     300      25      324
X1  9097     14     205     291.5      50      50      50
X3    10      0       0      0       0       0       0     0       0       0
GR  25.5    180    25.5     200    25.22   205.0   13.08    231.0   12.83   240.0
GR 12.84   252.0   11.92   254.5   11.87   266.8   12.77    268.3   13.13   280.2
GR 22.83   291.5   23.48   303.1      24     331      25      355
X1  9257     14     204     292.5     130     180     160
X3    10      0       0      0       0       0       0     0       0       0
GR  25.0    146    24.0     155    22.87     200    23.1     204   13.41   225.0
GR 13.31    238    13.11   253.0   11.93   255.8   11.98    267.6   13.02   269.2
GR 14.66   283.3   22.25   292.5   23.42   308.3    23.8     326
X1  9607     16     204     289.0     280     330     350
X3    10      0       0      0       0       0       0     0       0       0
GR  23.9    162    23.0     177    22.7     186    23.46    200   23.42     204
GR 13.72   225.0   13.58     239   13.30   253.0    12.4    254.3   12.36   266.1
GR 13.27   267.4   14.24   279.6    22.6     289    23.32    291.3     24     296
GR    25     303
X1  9907     15     204   288.5      300     300     300
X3    10      0       0      0       0       0       0     0       0       0
GR  24.0    165    23.2     185    23.95     200    24.10    204   13.81   225.0
GR 13.62    239   13.60   253.0   12.67   254.4   12.67     266   13.37   267.1
GR 15.34   280.3   23.38   288.5   23.88   290.7      25     299    25.9     309
X1 10227     13     204   287.6     320     320     320
X3    10      0       0      0       0       0       0     0       0       0
GR  25.0    187    24.4     200    24.7     206    24.33    225.5   14.41   237.3
GR 13.67   249.2   13.56   260.1   14.36   261.5   14.90    276.9   25.91   293.8
GR  25.7     329
X1 10797     28   452.5   505.5      50      50      50     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  27.0      0    27.0   440.0    27.0   452.5    19.5   452.5    19.5   455.0
GR  14.9    458.0   14.9   464.5    19.1   467.5    19.1   469.5    25.1   469.5
GR  25.1    471.0   19.1   471.0    19.2   473.0    14.8   475.5    14.8   482.0
GR  19.4    485.5   19.0   487.5    25.1   487.5    25.1   489.0    19.0   489.0
GR  19.0    491.0   14.8   493.5    14.9   500.5    19.3   503.5    19.3   505.5
GR  27.0    505.5   27.0   518.0    27.0  1100.0     0       0       0       0
SB   1.0     1.5     2.7     0      39.7     0      436    1.14    14.8    14.8
X1 10877      0       0      0       80      80      80     0       0       0
X2     0      0       1    25.1     27.1     0       0     1.5     0       0
X3    10      0       0      0       0       0       0     0       0       0
BT     4   452.5    27.0    27.0   452.5    28.0    25.1   505.5   28.0    25.1
BT 505.5    27.0    27.0      0       0       0       0     0       0       0
NC 0.060   0.060   0.040
X1 11177     19     970    1043     350     250     300     0      -0.3     0
X3    10      0       0      0       0       0       0    26.8    26.8     0
GR  27.3      0    27.3      67    26.8     102    26.2     355    25.3     800
GR  26.0    970    15.1    1001    15.1    1014    26.5    1043    26.9    1093
GR  27.0   1141    27.0    1220    25.2    1267    27.4    1308    29.1    1531
GR  29.1   1633    28.1    1702    26.5    1738    26.5    1750       0       0
X1 11567     19     970    1043     350     430     390     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  27.3      0    27.3      67    26.8     102    26.2     355    25.3     800
GR  26.0    970    15.1    1001    15.1    1014    26.5    1043    26.9    1093
GR  27.0   1141    27.0    1220    25.2    1267    27.4    1308    29.1    1531
GR  29.1   1633    28.1    1702    26.5    1738    26.5    1750       0       0
X1 12597     17     707     770    1030    1030    1030     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  28.2      0    27.6     323    28.5     600    27.3     707    16.6     715
GR  15.9    726    15.9     739    16.2     749    27.2     770    28.4     821
GR  28.4    986    27.2    1189    26.7    1310    28.9    1338    27.4    1452
GR  28.9   1561    27.1    1600       0       0       0     0       0       0
X1 12917     17     707     770     320     320     320     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  28.2      0    27.6     323    28.5     600    27.3     707    16.6     715
GR  15.9    726    15.9     739    16.2     749    27.2     770    28.4     821
GR  28.4    986    27.2    1189    26.7    1310    28.9    1338    27.4    1452
GR  28.9   1561    27.1    1600       0       0       0     0       0       0
NC 0.060   0.060   0.040
X1 12967     12   702.8   737.2      50      50      50     0       0       0
X3    10      0       0      0       0       0       0    27.0    28.7     0
GR  29.0      0    27.6   680.0    27.6   688.0    25.1   702.8    16.5   702.8
GR  16.2    714.2   16.2   725.9    16.5   737.2    25.1   737.2    28.7   751.0
GR  29.0    767.0   29.6     867       0       0       0     0       0       0
SB   0.9     1.5     2.7      0      34.4     1.4     297     0      16.2    16.2
X1 13027      0       0      0       60      60      60     0       0       0
X2     0      0       1    25.1     27.6     0       0     1.5     0       0
X3    10      0       0      0       0       0       0    27.6    28.7     0
BT    -9    680    27.6    27.6   688.0    27.6    27.6   688.0   28.8    27.6
BT     0  702.8    28.8    25.1   737.2    28.8    25.1   751.0   28.8    28.7
BT     0  751.0    28.7    28.7     767    29.0    29.0     867   29.6    29.6
X1 13157     21    1068    1143     130     130     130     0      -0.2     0
X3    10      0       0      0       0       0       0     0       0       0
GR  29.2      0    29.8     191    27.6     242    30.0     283    29.5     485
GR  30.3    704    30.0     879    29.1    1068    16.5    1100    16.5    1121
GR  27.1   1143    29.2    1182    29.5    1251    29.5    1341    28.6    1374
GR  29.5   1405    30.0    1510    29.1    1610    27.9    1646    29.4    1690
GR  29.1   1750       0       0       0       0       0     0       0       0
*       Palmerhouse Drive use flows from concentration point CE11
QT     1   1954
X1 13607     21    1068    1143     450     450     450     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  29.2      0    29.8     191    27.6     242    30.0     283    29.5     485
GR  30.3    704    30.0     879    29.1    1068    16.5    1100    16.5    1121
GR  27.1   1143    29.2    1182    29.5    1251    29.5    1341    28.6    1374
GR  29.5   1405    30.0    1510    29.1    1610    27.9    1646    29.4    1690
GR  29.1   1750       0       0       0       0       0     0       0       0
NC 0.060   0.060   0.040
X1 14397     20     788     883     790     790     790     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  29.2      0    31.0     100    29.5     180    27.8     224    31.3     281
GR  30.5    604    28.0     663    30.5     715    30.1     788    17.2     824
GR  17.2    834    27.3     861    30.5     883    30.2    1046    29.3    1200
GR  30.7   1427    31.3    1470    31.1    1578    29.0    1852    29.8    2100

*       Power Inn Road use flows from concentration point CE10
QT     1   1875
X1 15097     20     788     883     700     700     700     0       1.0     0
X3    10      0       0      0       0       0       0     0       0       0
GR  29.2      0    31.0     100    29.5     180    27.8     224    31.3     281
GR  30.5    604    28.0     663    30.5     715    30.1     788    17.2     824
GR  17.2    834    27.3     861    30.5     883    30.2    1046    29.2    1200
GR  30.7   1427    31.3    1470    31.1    1578    29.0    1852    29.8    2100
X1 15167     10   576.2   663.7      70      70      70     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
X4     1     28.0   649.4      0       0       0       0     0       0       0
GR  32.5      0    31.0   576.2    28.4   581.2    28.1   589.2    19.1   599.3
GR  18.3    620    19.1     640    28.8     658    31.0   663.7    31.5    2000
SB   1.0     1.5     2.7      0     41.63    4.2     599.3   1.0     18.3    18.3
X1 15247      0       0      0       80      80      80     0       0       0
X2     0      0       1    30.4     31.0     0       0     1.5     0       0
X3    10      0       0      0       0       0       0     0       0       0
BT     6      0    32.5    32.5   576.2    31.0    31.0   576.2   33.8    30.4
BT 663.7   33.8    30.4   663.7    31.0    31.0    2000    31.5    31.5     0
X1 15437     10     588     653     160     220     190     0      0.5      0
X3    10      0       0      0       0       0     950     10.4    0       0
GR  32.6      0    32.6     297    29.7     588    17.8     617    17.8     626
GR  28.3    653    30.4     950    27.9    1106    31.4    1311    32.1    1750
*       approximate D/S location of Basin 10
*      QT     1
X1 16627     19     801     871    1240    1140    1190     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  33.5      0    35.5     374    32.3     801    20.5     820    20.2     828
GR  19.2    833    19.2     843    20.5     847    20.6     858    29.6     871
GR  31.6    891    32.3    1156    32.6    1311    31.3    1355    32.8    1397
GR  34.5   1516    32.6    1619    34.8    1690    34.8    1800       0       0
*       Gerber Road use flows from concentration point CE9
*       approximate U/S location of Basin 10
QT     1   1772
X1 16927      0       0      0     300     300     300     0      0.3      0
X3    10      0       0      0       0       0       0     0       0       0
NC 0.060   0.060   0.040
X1 16997     33   792.5   886.4     120      20      70    0.7      0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  33.2    390    32.7     540    32.4     640    32.3     740   32.2    792.5
GR  29.9   797.5    27.8   797.5    20.1     807    20.1   826.2   23.0    829.2
GR  23.0   830.5    29.9   830.5    29.9   831.9    23.0   831.9   23.0    833.2
GR  20.1   836.2    20.1   847.6    23.0   850.6    23.0   851.9   29.9    851.9
GR  29.9   853.3    23.0   853.3    23.0   854.6    20.1   857.6   20.1     866
GR  27.9   872.2    27.9   881.4    29.9   881.4    32.2   886.4   32.3     940
GR  32.3    1040    32.5    1090    32.8    1240
SB   1.0     1.5     2.7      0     49.08     0      448    0.7     20.1    20.1
X1 17112      0       0      0     115     115     115     0       0       0
X2     0      0       1    29.9     32.2     0       0     1.5     0.7      0
X3    10      0       0      0       0       0       0     0       0       0
BT   -13    390    33.2    33.2     540    32.7    32.7     640   32.4    32.4
BT     0    740    32.3    32.3   792.5    32.2    32.2   792.5   33.7    29.9
BT     0  886.4    33.7    29.9   886.4    32.2    32.2     940   32.3    32.3
BT     0   1040    32.3    32.3    1090    32.5    32.5    1090   32.5    32.5
BT     0   1240    32.8    32.8
NC   100  0.060   0.040
X1 17282      6     775     850      20     320     170     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  31.4      0    32.5     775    20.4     795    20.4     830   32.5     850
GR  34.0   2000       0      0       0       0       0     0       0       0
NC 0.060   0.060   0.040
X1 17352     14    1050  1130.0      30     110      70    0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  31.4      0    33.3    1050    32.0    1056    26.0    1056   22.7    1065
GR  21.7  1074.6   20.6    1090    22.0    1103    23.9  1113.9   26.8    1119
GR  29.6  1123.9   32.0  1123.9    33.3    1130    34.0    2000       0       0
SB   1.0     1.5     2.7      0     37.8     2.8     592    1.4     20.6    20.6
X1 17387      0       0      0      35      35      35     0       0       0
X2     0      0       1    32.0     33.1     0       0     1.5     0       0
X3    10      0       0      0       0       0       0     0       0       0
BT     6      0    31.4    31.4    1050    33.3    33.3    1050   35.7    32.0
BT  1130   35.7    32.0    1130    33.3    33.3    2000    34.0   34.0       0
X1 17517     20    1033    1131     100     160     130     0       0       0
X3    10
X4     2   33.6     876    35.8    1443      0       0     0       0       0
GR  34.8      0    34.8      87    33.7     137    35.2     192   34.5     350
GR  31.3    393    33.8     440    33.7     520    31.7     661   33.0     830
GR  32.5    995    32.2    1033    30.2    1059    21.1    1070   20.6    1083
GR  20.6   1098    21.1    1108    33.1    1131    33.7    1195   35.2    1700
NC 0.060   0.060   0.040
X1 18427     16    1017    1107     910     910     910     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR  35.1      0    35.5      60    34.2     220    35.3     357   35.0     808
GR  35.5    846    34.7    1017    32.3    1035    21.7    1044   21.5    1059
GR  21.5   1071    22.2    1083    33.0    1107    34.0    1402   37.8    1700
GR  37.7   1900       0      0       0       0       0     0       0       0
X1 18957     22     832     937     530     530     530     0       0       0
X3    10
GR  34.8      0    35.7     299    36.0     569    35.6     638   35.7     680
GR  34.5    724    37.8     784    38.1     832    32.1     866   22.2     877
GR  21.5    888    22.2     903    23.0     917    34.8     937   36.2    1102
GR  36.3   1216    34.5    1285    34.8    1423    36.8    1463   38.8    1751
GR  40.2   1934    39.0    2100       0       0       0     0       0       0
X1 19093      9     865   933.6   136.5   136.5   136.5     0       0       0
X3    10      0       0      0       0       0       0    34.8    34.8     0
GR  36.3      0    36.0     865    34.2   866.4    21.6   872.7   21.5   892.7
GR  21.5    901.2   21.6   921.2    32.9    933.6    35.5    1800       0       0
*
*       Reese Road bridge removed from this model due to upcoming replacement
*
* X1 19100     14   866.4   933.6       7       7       7     0       0       0
* X3    10      0       0      0       0       0       0     0       0       0
* GR  36.0      0    36.3   866.4    34.2   866.4    26.3   870.4   25.8     880
* GR  25.6    889    25.3     900    25.9     908    25.7   917.5   26.0     922
* GR  26.3  926.5    32.9   933.6    36.3   933.6    35.5    1800       0       0
* SB   1.0     1.5     2.7      0     48.4     2.4     506.4   1.22    25.3    25.3
* X1 19135      0       0      0      35      35      35     0       0       0
* X2     0      0       1    34.8     35.5     0       0     0       0       0
* X3    10      0       0      0       0       0       0     0       0       0
* BT     4      0    36.0    36.0   866.4    36.3    34.2   933.6   36.3    34.2
* BT  1800   35.5    35.5       0       0       0       0     0       0       0
* X1 19142      7     865   933.6     6.5     6.5     6.5     0       0       0
* X3    10      0       0      0       0       0       0    34.8    34.8     0
* GR  36.3      0    36.0     865    34.2   866.4    25.3    871   25.3   926.5
* GR  32.9  933.6    35.5    1800       0       0       0     0       0       0
* X1 19207     21   830.0  937.00      95      30      65     0       0       0
X1 19207     21   830.0  937.00   143.5    78.5   113.5     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR 36.02    588   35.13     623   35.74     632   37.11     637   36.61     638
GR 36.61    697   37.11     700   37.11     749   36.62     750   36.20     786
GR 36.20  830.0   35.88     845.0   21.19   877.0   20.79  897.00   21.19     917
GR  33.6    937    34.0    1030    35.0    1370    36.0    1522    37.0    1611
GR  38.0   1627
*       SPRR bridge use flows from concentration point CE8
*       approximate D/S location of basin 15
QT     1   1597
X1 20287     22    1194  1297.0    1050    1130    1080     0       0       0
X3    10      0       0      0       0       0       0     0       0       0
GR 36.54    137    35.5     155    36.5     180    37.0     200   38.0     240
GR  37.0    393   36.57     460   37.12     512   40.96     519   40.96     710
GR  37.0    727    35.5     915    35.9    1052    35.7    1137   35.7    1194
GR 35.28   1210   21.86    1238   21.46    1258   21.86    1278   34.5    1297
GR  37.1   1397    38.0    1492
X1 20506     23    1225    1310     240     215     219
*       channel improvements from U/S of SPRR to D/S of Millbrook Cir with 60 FT
*       Bottom Wide AND 2:1 side slopes assumed due to limited space U/S French
*       RD and Channel top width should be carefully reviewed from SPRR to
*       Elk Grove Florin Rd.  Some backyards are very close to the creek
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*       Improved Channel (S.P.R.R. to U/S of French Rd) is from French Road
*       Estates Subdivision
*
*       Channel Improvement starts from U/S of French Rd (east side of French
*       Road Estates Subdivision-Approximately 1500 feet U/S of French Road )
*
X3    10                                                  37.1    37.1
GR  37.0     130    36.0     160    36.9     180    38.0     220    38.0     409
GR  37.0     521    36.9     548    37.0     592    37.5     668    36.1     785
GR  35.7     940    34.2    1025    35.1    1087    34.2    1147    35.7    1208
GR  35.4    1225    22.0    1259    21.6    1279    22.0    1294    33.8    1310
GR  34.0    1320    35.3    1410    37.5    1505
X1 20537      23    1228    1310      31      31      31
X3    10                                          40.5    40.5
GR  37.0     130    36.0     160    36.9     180    38.0     220    38.0     409
GR  37.0     521    36.9     548    37.0     592    37.5     668    36.1     785
GR  35.7     940    34.2    1025    35.1    1087    34.2    1147    33.7    1200
GR  34.5    1228    31.4    1255    27.3    1265    27.2    1300    34.8    1310
GR  34.0    1320    35.3    1410    37.5    1505
*    approximate U/S location of basin 15
*    QT       1
X1 20557      16  878.25  921.75      90      50      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
X4     2    29.3  904.55    29.3  910.55       0       0       0       0       0
GR  41.4       0    41.5  878.25    31.7  878.25    31.7  879.25    27.8  882.4
GR  27.8   887.4    29.3  889.45    29.3  895.45    27.8   897.5    27.8   902.5
GR  27.8   912.6    27.8   917.6    31.7   920.75   31.7  921.75    41.5  921.75
GR  41.6    1800       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7       0    37.3     4.5   355.4   0.313    27.8    27.8
X1 20586        0       0       0      29      29      29       0       0       0
X2     0       0       1    37.7    41.4       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4       0    41.4    41.4  878.25    41.5    37.7  920.75    41.5    37.7
BT  1800    41.6    41.6       0       0       0       0       0       0       0
X1 20727      26     984    1080     120     160     141       0       0       0
CI    -1   27.38    0.05     2.0     2.0      60
X3    10       0       0       0       0       0       0       0       0       0
GR  39.6       0    41.2      27    35.3      72    40.6     128    36.5     196
GR  37.5     248    34.6     766    36.7     839    34.3     902    36.3     984
GR  35.5    1028    28.1    1047    28.1    1056    38.0    1080    36.3    1097
GR  37.1    1117    37.2    1270    38.0    1409    38.2    1570    38.8    1623
GR  39.6    1713    39.6    1743    39.6    1777    38.2    1913    39.2    1987
GR  39.6    2050       0       0       0       0       0       0       0       0
X1 21137      26     984    1080     410     410     410       0       0       0
CI       0   27.4
X3    10       0       0       0       0       0       0       0       0       0
GR  39.6       0    41.2      27    35.3      72    40.6     128    36.5     196
GR  37.5     248    34.6     766    36.7     839    34.3     902    36.3     984
GR  35.5    1028    28.1    1047    28.1    1056    38.0    1080    36.3    1097
GR  37.1    1117    37.2    1270    38.0    1409    38.2    1570    38.8    1623
GR  39.6    1713    39.6    1743    39.6    1777    38.2    1913    39.2    1987
GR  39.6    2050       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 21207      14   962.3    1038     140       1      70       0       0       0
CI    -1   27.5
X3    10       0       0       0       0       0       0    36.5    36.5       0
GR  39.5       0    37.0     955    35.7   962.3    34.4   962.3    34.4   967.8
GR  30.1     980    28.9    1000    28.1    1010    28.5    1020    31.7    1027
GR  34.7    1038    35.7    1038    37.0    1045    38.5    2000       0       0
SB   1.0     1.5     2.7       0    26.2    3.61   358.7   3.236    28.1    28.1
X1 21287        0       0       0      80      80      80       0       0       0
CI       0   27.4
X2     0       0       1    35.7    37.0       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT    -6       0    39.5    39.5     955    37.0    37.0   962.3    37.0    35.7
BT     0    1038    37.0    35.7    1045    37.0    37.0    2000    38.5    38.5
X1 21407      25    1000    1117     120     120     120       0       0       0
CI    -1   27.5
X3    10       0       0       0       0       0       0       0       0       0
GR  39.8       0    37.8      21    39.5      54    38.5      82    39.7     101
GR  39.3     276    39.5     416    37.0     503    34.6     863    36.6     906
GR  37.8    1000    36.2    1016    28.2    1041    28.2    1048    29.0    1054
GR  29.3    1081    35.3    1101    38.5    1117    37.3    1201    36.2    1245
GR  38.0    1295    36.2    1363    37.3    1471    38.2    1668    39.8    1950
X1 22037      25    1000    1117     630     630     630       0       0       0
CI    -1   28.0
X3    10       0       0       0       0       0       0       0       0       0
GR  39.8       0    37.8      21    39.5      54    38.5      82    39.7     101
GR  39.3     276    39.5     416    37.0     503    34.6     863    36.6     906
GR  37.8    1000    36.2    1016    28.2    1041    28.2    1048    29.0    1054
GR  29.3    1081    35.3    1101    38.5    1117    37.3    1201    36.2    1245
GR  38.0    1295    36.2    1363    37.3    1471    38.2    1668    39.8    1950
*       Trailer Park use flows from concentration point CB7
QT       1    1467
X1 22917      27    1089    1229     880     880     880       0       0       0
CI       -1   -1
X3    10       0       0       0       0       0       0       0       0       0
GR  39.3       0    40.0      98    40.1     143    39.6     176    40.6     192
GR  39.3     352    38.7     422    40.2     538    38.2     748    37.1     918
GR  35.0     957    38.0    1005    38.2    1089    36.8    1122    28.2    1141
GR  28.2    1159    36.2    1180    36.2    1204    38.2    1229    38.2    1299
GR  36.2    1337    38.1    1369    37.2    1515    39.1    1585    38.7    1766
GR  39.1    1992    38.8    2150       0       0       0       0       0       0
X1 23437       0       0       0     520     520     520       0    -0.6       0
X3    10       0     140       0       0       0       0       0       0       0
CI     0       0
NC   .06     .06    .040
X1 23517      11     960    1040      80      60      80       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
CI    -1      -1
X4     5    40.0     840    39.8     870    40.0     910    40.0    1110    40.0
X4  1210       0       0       0       0       0       0       0       0       0
GR  41.7       0    41.0     960   36.95     960    33.5   971.9    30.9   985.4
GR  29.9    1000    31.4    1013    33.8    1029    37.3    1040    41.0    1040
GR  41.0    2100       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7       0   40.72    2.81   644.6   1.754   29.85   29.85
X1 23547       0       0       0      30      30      30       0       0       0
X2     0       0       1    41.0    40.0       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     9       0    41.7    41.7     840    40.0    40.0     870    39.8    39.8
BT   910    40.0    40.0     960    42.3    41.0    1040    42.3    41.0    1110
BT  40.0    40.0    1210    40.0    40.0    2100    41.0    41.0       0       0
X1 23627      22     755     895      80      80      80       0       0       0
CI    -1      -1    0.05     2.0     2.0      60
GR  43.2       0    42.8     219    43.0     548    42.2     556    43.3     589
GR  42.6     621    43.3     633    42.3     714    38.7     755    38.1     786
GR  30.5     814    30.5     849    36.6     873    38.7     895    38.3    1000
GR  39.7    1121    39.3    1257    40.2    1517    39.7    1737    39.5    1926
GR  39.5    2083    40.1    2200       0       0       0       0       0       0
X1 24167      22     786     873     530     550     540       0       0       0
CI    -1      -1    0.05     2.0     2.0      60
X3    10             600
GR  43.2       0    42.8     219    43.0     548    42.2     556    43.3     589
GR  42.6     621    43.3     633    42.3     714    38.7     755    38.1     786
GR  30.5     814    30.5     849    36.6     873    38.7     895    38.3    1000
GR  39.7    1121    39.3    1257    40.2    1517    39.7    1737    39.5    1926
GR  39.5    2083    40.1    2200       0       0       0       0       0       0
*    flow from concentration point basin20 (d/s basin 20)
QT       1    1000
X1 25337      20     777     827    1080     960    1170       0       0       0
CI    -1   .0002             4.0     4.0      40
X3    10       0     600       0       0       0       0       0       0       0
GR  43.1       0    42.8      89    43.1     138    41.8     171    43.1     181
GR  40.7     370    38.5     503    39.3     634    38.8     747    38.3     777
GR  32.6     783    32.6     791    37.3     808    38.0     827    38.0    1027
GR  40.3    1130    41.1    1307    41.1    1481    40.7    1642    41.0    1800
X1 26397      25     590     624    1060    1060    1060       0       0       0
CI    -1                     4.0     4.0      40
GR  43.8       0    44.6      88    43.3      94    44.5     127    43.5     158
GR  45.0     169    44.1     270    42.8     339    40.5     430    39.3     506
GR  41.3     554    39.3     590    35.5     602    35.5     613    41.5     624
GR  40.3     645    39.1     780    41.6     863    42.5    1096    41.0    1231
GR  42.7    1277    42.8    1455    42.7    1688    43.6    1781    42.6    1800
*       Elk-Grove Florin Road use flows from Concentration point CB6
QT       1    1232
X1 27227      35     978    1015     750     750     830       0       0       0
CI       -1                4.0     4.0      40
GR  45.3     460    45.0     580    44.9     640    45.0     710    45.0     790
GR  44.0     810    43.0     825    42.0     855    42.0     890    43.0     905
GR  43.8     935    43.0     960    42.0     978    36.2     992    36.2    1005
GR  42.0    1015    43.0    1140    43.0    1215    42.6    1360    43.0    1470
GR  43.3    1540    43.0    1590    42.7    1700    43.0    1775    43.5    1910
GR  44.0    1960    45.0    1970    44.4    2090    45.0    2110    44.0    2210
GR  43.0    2250    42.7    2340    43.0    2420    45.0    2530    45.9    2535
X1 27367      28     983    1020     140     140     140       0       0       0
CI       -1
GR  45.3     450    45.0     500    45.0     585    45.8     690    45.0     800
GR  44.0     815    43.0     950    42.0     983    36.4     996    36.4    1008
GR  42.0    1020    43.0    1170    43.0    1350    42.7    1400    43.0    1425
GR  43.0    1590    42.7    1660    43.0    1720    43.5    1870    44.0    1900
GR  45.0    1905    44.4    2050    45.0    2090    43.0    2225    42.7    2320
GR  43.0    2370    45.0    2390    45.9    2560
NC 0.060   0.060   0.040
X1 27417       7     880     914      40      60      50       0       0       0
GR  46.3      80    46.0     575    45.0     880    36.3     880    36.3     914
GR  45.0     914    44.6     990
* SB   1.0     1.5     2.7       0      34       0     249       0       0
X1 27452       0       0       0      35      35      35       0       0       0
* X2     0       0       1    43.3    44.6       0       0       0       0
* BT    -6     575    46.0    46.0     880    45.0    45.0     880    45.0      43
* BT     0     914    45.0    43.3     914    45.0    45.0     990    44.6      44
*
* SECTIONS AT FIS LOCATIONS MODIFIED USING MACKAY & SOMPS TOPO
*
X1 27552      13     970    1030     200      60     100       0       0       0
* RIGHT END OF SECTION IS CENTERLINE OF ELK GROVE-FLORIN RD.
*  ANTICIPATE SPLIT FLOW MODEL HERE
GR  47.0     660    46.0     670    45.0     690    44.0     770    43.0     810
GR  43.0     900    42.0     945    42.0     970    36.6     988    36.6    1011
GR  43.0    1030    44.0    1050    44.6    1070       0       0       0       0
*
*  SECNO 27657 DELETED AND REPLACED BY 27957
*
X1 27957      20     970    1023     300     440     405       0       0       0
* RIGHT END OF SECTION IS CENTERLINE OF ELK GROVE-FLORIN RD.
GR  47.0     190    46.0     250    46.0     325    45.1     365    45.0     400
GR  44.0     485    43.0     505    42.0     550    41.4     625    42.0     665
GR  42.0     920    43.0     925    43.0     970    36.8     990    36.6    1010
GR  43.0    1023    43.0    1030    42.0    1065    43.0    1100    43.2    1140
*
* FOLLOWING IS MOST UPSTREAM SECTION FOR SPLIT FLOW AT THIS LOCATION
* ROAD CENTERLINE IS NOT INCLUDED IN THIS SECTION GEOMETRY
*
*       **************************************************
*       *  Conf of Elder/Gerber Creeks, Elder Creek continues U/S  *
*       *  Gerber Creek is run later using -X1 card                *
*       **************************************************
*
NC   .06     .06    .04      .1      .3
X1 28347      24     985    1008     220     400     390       0       0       0
X3    10             600
GR  48.0     430    46.0     455    45.0     590    44.0     685    43.0     750
GR  42.0     785    41.0     910    41.0     985    37.2     995    37.2    1005
GR  40.0    1008    41.0    1075    41.3    1130    42.0    1190    42.4    1380
GR  42.9    1540    43.0    1690    43.0    1715    44.0    1720    44.1    1820
GR  45.0    1890    46.0    1980    46.0    2080    47.0    2085       0       0
*       confluence of Elder and Gerger Creeks use flows from R-CB4
QT       1     704
X1 29357      21     990    1018     980    1010    1010       0       0       0
X3    10
CI    -1   31.56                3       3      40
GR  47.0     310    46.7     400    46.0     520    45.0     690    44.0     770
GR  43.0     910    42.0     990    38.5     997    38.5    1005    43.0    1018
GR  43.0    1025    42.0    1040    41.1    1100    42.0    1150    42.3    1320
GR  43.0    1450    44.0    1530    45.0    1720    45.9    1980    46.0    2110
GR  46.8    2190       0       0       0       0       0       0       0       0
X1 30187      21     985    1010    1100     350     910       0       0       0
X3    10
CI    -1  0.0011
GR  48.0     640    46.0     720    45.0     870    44.6     985    39.1     995
GR  39.1    1005    43.5    1010    44.0    1195    44.0    1210    43.4    1300
GR  44.0    1380    45.0    1400    46.0    1415    47.3    1500    46.0    1545
GR  45.0    1550    44.3    1630    44.3    1650    45.0    1705    46.0    2040
GR  46.8    2150       0       0       0       0       0       0       0       0
X1 30377      18     988    1010     150     170     190       0       0       0
X3    10
GR  48.0     600    46.0     690    45.0     715    44.0     740    43.3     840
GR  43.0     988    39.1     995    39.1    1005    43.0    1010    44.0    1180
GR  44.0    1210    43.6    1270    44.0    1370    45.0    1440    45.3    1710
GR  45.7    1910    46.0    1960    46.2    2160       0       0       0       0
X1 30427      18     985    1016      40      80      50
GR  48.0     220    47.0     290    46.0     295    45.2     320    45.5     480
GR  45.0     750    44.7     985    40.1     985    39.7    1000    39.4    1003
GR  39.1    1007    39.2    1016    44.7    1016    45.4    1180    45.5    1280
GR  45.1    1470    45.7    1940    46.0    2200
* SB   1.0     1.5     2.6       0      24      .8     107       1
X1 30447       0       0       0      20      20      20
* X2     0       0       1    43.1    44.7
X3    10
* BT    -6     750    45.0    45.0     985    44.7    44.7     985    44.7      43
* BT     0    1016    44.7    43.1    1016    44.7    44.7    1180    45.4      45
X1 30547      19     990    1015      50     200     100       0       0       0
X3    10
GR  47.0     310    46.0     340    45.0     570    44.0     710    43.4     870
GR  43.0     990    40.5     995    40.5    1010    43.0    1015    44.0    1080
GR  45.0    1110    45.5    1220    46.0    1330    46.5    1500    46.0    1660
GR  45.3    1925    46.0    2120    47.0    2160    47.8    2260       0       0
*
*  SECNO 30827 DELETED AND REPLACED BY 31127
*
X1 31127      16     990    1010     350     450     580       0       0       0
X3    10
GR  48.0     705    47.0     725    46.0     770    45.0     780    45.0     785
GR  44.0     825    44.0     950    43.0     990    40.8     996    40.8    1004
GR  44.0    1010    45.0    1060    46.0    1200    46.2    1350    46.7    1490
GR  47.0    1625       0       0       0       0       0       0       0       0
X1 31470      17     987    1020     220     430     343
CI                        3       3      30
GR  49.0     705    48.0     730    47.0     760    46.0     830    45.0     890
GR  44.5     987    41.5     992    41.4    1005    45.0    1020    46.0    1090
GR  46.5    1150    46.0    1210    46.0    1380    47.0    1610    48.0    1690
GR  49.0    1815    50.0    1820
X1 31530      27     991    1010      60      60      60
GR  49.0     710    48.2     720    48.0     750    47.0     770    47.0     840
GR  46.0     885    45.0     930    45.0     970    47.1     988    47.1     991
GR  45.2     991    42.4     996    41.7    1000    42.3    1004    45.7    1010
GR  47.1    1010    47.1    1013    45.0    1025    45.0    1035    46.0    1070
GR  46.5    1150    46.0    1210    46.0    1300    46.6    1375    47.0    1430
GR  48.0    1695    49.0    1715
X1 31540       0       0       0      10      10      10
X1 31620      18     988    1014      80      80      80
GR  49.0     730    48.0     755    47.0     830    46.0     885    45.0     920
GR  44.6     940    45.0     988    41.8     995    41.8    1005    45.0    1014
GR  46.0    1040    46.0    1205    45.8    1350    46.0    1400    46.5    1530
GR  47.0    1670    48.0    1720    49.0    1740
X1 31880      21     983    1010     300     220     260
GR  50.0     460    49.0     600    48.3     640    48.0     745    47.0     870
GR  47.0     885    49.0     890    49.0     955    47.0     965    46.0     983
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GR  42.0     993    42.0    1007    46.0    1010    46.6    1075    46.0    1145
GR  45.8    1360    46.0    1430    47.0    1660    48.0    1710    49.0    1845
GR  50.0    1865
* Dbl 45° culverts at S end Hedge Ave.
X1 31950      58  995.75 1004.25     120      60      70     .00     .00     .00
X3    10.     .00     600     .00     .00     .00     .00   45.80   45.80     .00
* BT  -44.  900.00   44.30   44.30  950.00   45.10   45.10  975.00   46.20   46.
* BT    0.  990.00   46.80   46.80  995.74   46.80   46.80  995.75   46.80   44.
* BT    0.  995.88   46.80   44.75  996.13   46.80   45.20  996.38   46.80   45.
* BT    0.  996.63   46.80   45.66  996.88   46.80   45.79  997.13   46.80   45.
* BT    0.  997.38   46.80   45.93  997.63   46.80   45.95  997.88   46.80   45.
* BT    0.  998.13   46.80   45.88  998.38   46.80   45.79  998.63   46.80   45.
* BT    0.  998.88   46.80   45.47  999.13   46.80   45.20  999.38   46.80   44.
* BT    0.  999.50   46.80   44.08  999.51   46.80   46.80 1000.49   46.80   46.
* BT    0. 1000.50   46.80   44.08 1000.63   46.80   44.75 1000.88   46.80   45.
* BT    0. 1001.13   46.80   45.47 1001.38   46.80   45.66 1001.63   46.80   45.
* BT    0. 1001.88   46.80   45.88 1002.13   46.80   45.93 1002.38   46.80   45.
* BT    0. 1002.63   46.80   45.93 1002.88   46.80   45.88 1003.13   46.80   45.
* BT    0. 1003.38   46.80   45.66 1003.63   46.80   45.47 1003.88   46.80   45.
* BT    0. 1004.13   46.80   44.75 1004.25   46.80   44.08 1004.26   46.80   46.
* BT    0. 1010.00   46.80   46.80 1020.00   46.90   46.90
GR  48.0     540    47.5     670    47.0     765    46.0     770    46.0     850
GR 44.30  900.00   45.10  950.00   46.20  975.00   46.80  990.00   46.80  995.74
GR 44.08  995.75   43.40  995.88   42.95  996.13   42.68  996.38   42.49  996.63
GR 42.36  996.88   42.27  997.13   42.22  997.38   42.20  997.63   42.22  997.88
GR 42.27  998.13   42.36  998.38   42.49  998.63   42.68  998.88   42.95  999.13
GR 43.40  999.38   44.08  999.50   46.80  999.51   46.80 1000.49   44.08 1000.50
GR 43.40 1000.63   42.95 1001.88   42.68 1001.13   42.49 1001.38   42.36 1001.63
GR 42.27 1001.88   42.22 1002.13   42.20 1002.38   42.22 1002.63   42.27 1002.88
GR 42.36 1003.13   42.49 1003.38   42.68 1003.63   42.95 1003.88   43.40 1004.13
GR 44.08 1004.25   46.80 1004.26   46.80 1010.00   46.90 1020.00   46.90 1040.00
GR 46.50 1095.00   46.00 1100.00   45.80 1350.00   46.0     1405    46.5     1440
GR  47.0    1620    47.2    1690    48.0    1760
X1 31980       0     .00     .00      30      30     .00     .00     .00     .00
*      X2   .00     .00       0       0       0     .00       1     .00     .00
X3    10.     .00     600     .00     .00     .00     .00   45.80   45.80     .00
X1 32080      18     982    1015     150      80     100
GR  50.0     290    49.0     315    48.0     605    47.0     675    46.0     740
GR  45.1     920    45.0     982    44.0     986    42.4     990    42.4    1008
GR  45.0    1015    45.2    1210    46.0    1360    46.5    1400    47.0    1680
GR  48.0    1710    49.0    1800    50.0    1930
X1 32977      18    1485    1512    1100     900    1000       0       0       0
GR  49.0     300    48.5     450    48.5     890    48.0    1000    47.8    1070
GR  47.2    1350    47.0    1415    46.0    1485    44.3    1495    44.3    1508
GR  45.5    1512    46.0    1535    46.3    1570    47.0    1705    47.3    1760
GR  48.0    1895    49.0    2010    50.0    2065       0       0       0       0
X1 33517      13     985    1020     350     650     540       0       0       0
GR  49.0     290    48.7     490    48.3     660    48.0     830    47.5     925
GR  47.0     995    44.8     993    44.8    1008    47.0    1020    48.0    1290
GR  48.4    1510    49.0    1550    50.0    1630       0       0       0       0
X1 34017      20    1480    1520     450     300     500       0       0       0
GR  52.5     410    50.0     430    50.0     510    50.1     590    50.0     695
GR  49.1     845    49.0     890    48.8    1030    48.5    1300    48.0    1440
GR  48.0    1455    47.0    1480    45.0    1485    45.0    1510    47.0    1520
GR  47.8    1675    48.0    1680    49.0    2000    50.0    2185    51.0    2340
*       CCTRR bridge crossing use flows from concentration point CE4
*       approximate D/S location of local detention basin
QT     1     704
X1 34677      13    1490    1515     450     750     660       0       0       0
GR  52.5     450    50.0     460    49.0     750    49.1    1325    49.0    1385
GR  49.0    1460    48.0    1490    45.2    1493    45.2    1507    48.0    1515
GR  49.0    1522    50.0    1880    51.0    2070       0       0       0       0
NC 0.060   0.060   0.040
X1 34757      39    1959    2041      80      60      80
GR  53.8       0    53.1     600    53.0    1100    53.6    1400    54.0    1959
GR  46.5    1959    46.4    1968    46.4    1969    51.6    1969    51.6    1971
GR  46.4    1971    46.5    1976    45.4  1983.5    51.6  1983.5    51.6  1985.5
GR  45.4  1985.5    45.6    1990    45.8    1998    51.6    1998    51.6    2000
GR  46.0    2000    46.9    2004    47.1    2013    51.6    2013    51.6    2015
GR  47.1    2015    47.1    2016    46.9    2019    47.8    2026    47.8    2028
GR  51.6    2028    51.6    2030    47.8    2030    47.8    2033    46.9    2037
GR  47.3    2041    54.0    2041    53.6    2550    54.2    2930
* SB   1.0     1.5     2.7       0      82       0     357
X1 34777       0       0       0      20      20      20
* X2     0       0       1    51.6    53.0
X3    10
* BT   -10       0    53.8    53.8     600    53.1    53.1    1100    53.0      53
* BT     0    1400    53.6    53.6    1959    54.0    54.0    1959    54.0      51
* BT     0    2041    54.0    51.6    2041    54.0    54.0    2550    53.6      53
* BT     0    2930    54.2    54.2
*     flow from concentration point CE23
QT     1     556
X1 34927      24    1970    2030     150     150     150       0       0       0
GR  52.0     330    51.2     570    51.0     660    51.0     800    50.7     865
GR  50.0    1090    49.4    1140    49.5    1430    49.2    1860    49.0    1970
GR  48.0    1975    45.9    1990    45.7    2010    48.0    2015    49.0    2030
GR  49.3    2140    50.0    2170    51.0    2240    51.0    2320    50.0    2390
GR  50.0    2550    51.0    2555    51.0    2780    53.0    2795       0       0
X1 35307      20    1980    2025     400     350     380       0       0       0
GR  53.0     325    52.8     380    52.0     690    51.1     950    51.0     980
GR  50.3    1120    50.0    1290    50.0    1300    50.8    1400    50.0    1530
GR  49.4    1680    49.0    1870    48.9    1895    49.0    1935    49.0    1980
GR  48.0    1987    45.7    1990    45.7    2010    48.0    2018    49.0    2025
GR  50.0    2155    51.0    2195    51.7    2270    51.0    2390    51.0    2415
GR  52.5    2470       0       0       0       0       0       0       0       0
X1 35607      24    1970    2015     500     180     300       0       0       0
GR  53.0     130    52.0     200    51.9     240    51.7     650    51.1     860
GR  51.0    1020    50.8    1050    50.3    1240    50.1    1460    50.0    1540
GR  50.1    1660    50.0    1695    49.6    1850    49.0    1970    45.7    1988
GR  45.7    2008    49.0    2015    50.0    2020    50.0    2060    49.6    2100
GR  50.0    2145    51.0    2215    51.0    2320    53.0    2370       0       0
NC 0.060   0.060   0.040
*
* FLORIN ROAD - Flow topping road left of STA 920 is "Split Flow"
*   Piers coded on GR & omitted from * SB to force use of actual bridge
*   geometry, instead of "trap. approximation, for "low flow" situations
X1 35677      22     972    1029      50      70      70
GR  53.4     920    53.4     972    50.4     972    49.1     978    48.1     984
GR  47.4  989.7    52.4  989.7    52.4     991    47.3     991    46.8     995
GR  46.2    1007    45.7    1010    52.4    1010    52.4  1011.3    45.7  1011.3
GR  45.6    1015    45.9    1020    47.6    1023    51.0    1029    53.4    1029
GR  53.4    1545    54.0    1790
* SB   1.0     1.5     2.6       0      30       0     261       3
X1 35722       0       0       0      45      45      45
* X2     0       0       1    52.4    53.4
X3    10
* BT    -7     920    53.4    53.4     972    53.4    53.4     972    53.4      52
* BT     0    1029    53.4    52.4    1029    53.4    53.4    1545    53.4      53
* BT     0    1790    54.0    54.0
* LEFT END OF SECTION IS CENTERLINE OF FLORIN RD.
X1 35842      21     487     510      60     350     120       0       0       0
CI        39.78
GR  53.5     450    51.0     470    50.0     487    46.8     495    46.8     507
GR  50.0     510    51.0     516    51.8     525    51.0     538    50.0     540
GR  50.0     675    50.5     750    51.0     910    51.2    1040    51.0    1120
GR  51.0    1180    51.2    1230    51.7    1670    51.2    1920    52.0    2040
GR  52.6    2200       0       0       0       0       0       0       0       0
X1 36302      17     475     510     500     400     460       0       0       0
CI       0.0010
GR  51.9     275    51.0     290    50.4     335    50.0     410    50.0     475
GR  46.8     490    46.8     505    51.0     510    51.0     520    50.0     535
GR  49.7     620    50.0     710    51.0     780    52.0    1200    52.4    1260
GR  52.4    1440    53.0    1690       0       0       0       0       0       0
X1 37002      16     480     510     550     750     700       0       0       0
GR  52.0      15    51.3     250    51.0     305    50.4     430    50.0     480
GR  47.0     490    47.0     505    51.0     510    51.2     710    51.3     890
GR  51.0    1180    50.8    1190    51.0    1210    52.0    1250    53.0    1370
GR  54.0    1560       0       0       0       0       0       0       0       0
*   LAST SECTION OF SPLIT FLOW AT FLORIN RD
X1 38182      19    1482    1520     600     600    1180       0       0       0
GR  53.5     275    52.1     330    52.0     340    51.7     460    51.4     560
GR  51.0     760    51.0     785    51.6    1020    51.3    1210    52.0    1460
GR  52.5    1470    52.0    1482    47.5    1492    47.5    1505    53.0    1520
GR  53.8    1695    53.0    1735    53.0    1930    53.9    1950       0       0
*
*     END OF USABLE TOPO FROM MACKAY & SOMPS
*
X1 39262      37    2087    2128     800     920    1080       0       0       0
X3    10
GR  53.1       0    54.1     341    53.7     649    52.8     667    52.7     673
GR  52.6     682    52.7     998    52.6    1298    52.7    1456    52.0    1686
GR  51.5    2011    51.8    2076    53.1    2087    49.5    2098    49.5    2111
GR  51.0    2115    52.8    2128    51.8    2171    52.6    2181    50.2    2237
GR  52.0    2328    51.0    2358    53.0    2381    52.6    2521    52.6    2596
GR  51.5    2615    53.7    2653    53.7    2773    52.7    2830    54.2    2873
GR  54.2    3050    54.2    3161    56.3    3322    54.7    3332    54.7    3374
GR  55.0    3515    55.1    3600       0       0       0       0       0       0
X1 40302      38    2038    2071    1050    1000    1040       0       0       0
GR  55.3       0    54.3      90    56.1     107    56.2     132    54.0     138
GR  56.1     149    56.1     433    56.7     708    56.8     955    55.6    1250
GR  55.5    1444    56.8    1505    53.6    1855    52.6    1972    53.7    2019
GR  54.6    2038    50.1    2047    50.1    2062    53.6    2071    52.8    2169
GR  53.3    2222    54.6    2310    54.6    2457    54.5    2655    52.8    2800
GR  54.1    2830    54.3    3015    53.5    3116    54.7    3207    53.0    3245
GR  53.8    3275    55.0    3478    55.2    3597    55.2    3674    57.0    3771
GR  57.1    3869    55.5    3973    55.6    4100       0       0       0       0
*       use flows from concentration point CE1&2
QT     1     486
X1 41632      17    1148    1177    1050     950    1330       0       0       0
GR  55.3       0    54.3     415    51.7     422    56.1     448    54.1     510
GR  55.6     679    56.0    1148    51.0    1154    51.0    1167    55.5    1177
GR  53.2    1327    54.6    1400    55.0    1582    53.1    1716    54.5    2043
GR  56.7    2363    58.0    2500       0       0       0       0       0       0
X1 42782      12    1293    1322     800     840    1150       0       0       0
GR  56.5       0    55.7     354    56.1     712    55.1    1017    55.6    1250
GR  56.3    1293    51.8    1303    51.8    1315    56.0    1322    56.2    1583
GR  56.6    1981    56.3    2200       0       0       0       0       0       0
X1 44247      19     753     781    1200    1000    1465       0       0       0
X3    10
GR  57.1       0    56.1     122    58.2     184    56.7     476    53.0     495
GR  54.2     515    56.2     613    56.2     729    59.0     753    52.2     763
GR  52.2     773    56.6     781    55.8     969    57.2    1029    57.3    1299
GR  56.0    1340    57.8    1402    58.0    1540    57.1    1600       0       0
X1 45152      18     936     966     800     800     905       0       0       0
X3    10
GR  60.7       0    59.2     102    59.7     214    57.2     466    58.3     645
GR  57.0     838    54.7     851    58.8     936    53.0     950    53.0     958
GR  57.8     966    59.0    1281    58.2    1571    59.3    1639    57.7    1678
GR  59.6    1767    57.7    1861    59.1    1900       0       0       0       0
X1 45872      11     933     990     720     720     720       0       0       0
CI                                    15
GR  62.3       0    62.0     280    61.5     531    60.6     795    61.1     933
GR  54.2     950    54.2     980    58.6     990    59.0    1271    60.2    1624
GR  61.7    1950       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 45922       6     875     925       1     100      50       0       0       0
X3    10       0     600       0       0       0       0       0       0       0
GR  62.3       0    60.1     875    54.9     875    54.9     925    60.1     925
GR  61.7    1950       0       0       0       0       0       0       0       0
* SB   1.0     1.5     2.7     500      50     1.5   189.2       0    54.9      54
X1 45962       0       0       0      40      40      40       0       0       0
* X2     0       0       1    58.8    60.1       0       0       0       0
X3    10       0     600       0       0       0       0       0       0       0
X1 46002      11     933     990      60      60      60       0       0       0
GR  62.3       0    62.0     280    61.5     531    60.6     795    61.1     933
GR  55.0     950    55.0     980    58.6     990    59.0    1271    60.2    1624
GR  61.7    1950       0       0       0       0       0       0       0       0
X1 47312      13    1152    1205    1290    1290    1290       0       0       0
CI            51.6                                  10
GR  64.8       0    64.3     281    63.8     501    62.5     786    62.6    1152
GR  55.6    1167    55.6    1189    61.8    1205    62.2    1485    60.8    1500
GR  62.1    1520    63.7    1800    64.6    2050       0       0       0       0
X1 48502      14     620     694    1190    1190    1190       0       0       0
CI          .0017                                 10
GR  65.0       0    63.0     500    61.6     537    64.1     620    63.3     642
GR  59.8     652    59.8     676    64.1     694    62.1     714    62.8     911
GR  63.5    1103    65.3    1293    65.5    1460    66.3    1550
X1 48742      18     904     934     230     250     240       0       0       0
GR  64.1       0    65.1     123    63.6     186    65.0     252    63.7     320
GR  65.1     388    63.7     453    63.8     520    62.2     588    63.7     656
GR  63.2     720    64.2     791    63.6     904    61.3     918    62.8     934
GR  64.8    1137    65.7    1296    66.7    1400       0       0       0       0
X1 49952      12     559     601    1200    1200    1210       0       0       0
GR  66.0       0    67.8      25    67.7     174    67.5     321    64.8     495
GR  66.6     520    65.6     559    63.1     577    64.7     601    67.2     824
GR  68.8     938    73.1    1250       0       0       0       0       0       0
X1 51162      12     769     811    1230    1000    1210       0       0       0
GR  82.6       0    82.6     192    78.2     507    71.8     572    67.2     685
GR  67.5     789    65.5     793    65.5     801    66.7     811    66.5     979
GR  68.1    1169    69.1    1300       0       0       0       0       0       0
X1 52132      14     485     517     980     960     970       0       0       0
GR  77.8       0    76.3      54    77.3      94    77.3     232    75.7     389
GR  71.8     452    69.0     485    66.8     492    66.8     506    68.1     517
GR  69.0     567    68.5     688    68.7     784    72.0    1000       0       0
X1 53262      15     480     504    1250    1040    1130       0       0       0
GR  76.3       0    72.8     245    70.5     355    71.6     397    72.2     439
GR  72.2     473    73.3     480    70.2     489    70.2     500    71.5     504
GR  70.6     528    70.8     632    72.7     772    74.0     896    74.6    1000
*       Elder Creek Road use flows from concentration point CE1
*       approximate D/S location of Local Detention Basin
QT     1     390
X1 54252      11     665     697     920    1120     990       0       0       0
X4     1    74.0     500       0       0       0       0       0       0       0
GR  80.0       0    76.0     300    73.4     627    73.2     665    70.6     679
GR  70.6     690    74.1     697    75.1     776    76.0     800    76.0    1000
GR  79.0    1200       0       0       0       0       0       0       0       0
X1 54752       0       0       0       0     555     555     500       0    -0.5       0
NC 0.060   0.060   0.040
X1 54812      52  994.50 1005.50      70      50      60     .00     .00     .00
X3    10.     .00     600     .00     .00     .00     .00   77.00   76.00     .00
GR 79.80  850.00   78.60  900.00   78.00  950.00   73.00  994.50   72.62  994.55
GR 72.17  994.75   71.88  995.00   71.70  995.25   71.59  995.50   71.52  995.75
GR 71.50  996.00   71.52  996.25   71.59  996.50   71.70  996.75   71.88  997.00
GR 72.17  997.25   72.62  997.45   73.00  997.50   73.00  998.50   72.62  998.55
GR 72.17  998.75   71.88  999.00   71.70  999.25   71.59  999.50   71.52  999.75
GR 71.50 1000.00   71.52 1000.25   71.59 1000.50   71.70 1000.75   71.88 1001.00
GR 72.17 1001.25   72.62 1001.45   73.00 1001.50   73.00 1002.50   72.62 1002.55
GR 72.17 1002.75   71.88 1003.00   71.70 1003.25   71.59 1003.50   71.52 1003.75
GR 71.50 1004.00   71.52 1004.25   71.59 1004.50   71.70 1004.75   71.88 1005.00
GR 72.17 1005.25   72.62 1005.45   73.00 1005.50   77.20 1050.00   77.20 1100.00
GR 77.30 1150.00   77.00 1200.00     .00     .00     .00     .00     .00     .00
* SB   .00   2.481   2.600     .00    7.07     .00   21.21    .000   71.50   71.
X1 54852       0     .00     .00   40.00   40.00   40.00     .00     .00     .00
* X2   .00     .00       1   74.50   77.00     .00     .00     .00     .00     .00
X3    10.     .00     600     .00     .00     .00     .00   78.14   77.00     .00
* BT  -52.  850.00   79.80   79.80  900.00   79.10   78.60  950.00   78.50   78.
* BT    0.  994.50   78.14   73.00  994.55   78.14   73.38  994.75   78.14   73.
* BT    0.  995.00   78.14   74.12  995.25   78.14   74.30  995.50   78.14   74.
* BT    0.  995.75   78.13   74.48  996.00   78.13   74.50  996.25   78.13   74.
* BT    0.  996.50   78.13   74.41  996.75   78.13   74.30  997.00   78.12   74.
* BT    0.  997.25   78.12   73.83  997.45   78.12   73.38  997.50   78.12   73.
* BT    0.  998.50   78.11   73.00  998.55   78.11   73.38  998.75   78.11   73.
* BT    0.  999.00   78.11   74.12  999.25   78.11   74.30  999.50   78.10   74.
* BT    0.  999.75   78.10   74.48 1000.00   78.10   74.50 1000.25   78.10   74.
* BT    0. 1000.50   78.10   74.41 1000.75   78.09   74.30 1001.00   78.09   74.
* BT    0. 1001.25   78.09   73.83 1001.45   78.09   73.38 1001.50   78.09   73.
* BT    0. 1002.50   78.08   73.00 1002.55   78.08   73.38 1002.75   78.08   73.
* BT    0. 1003.00   78.08   74.12 1003.25   78.07   74.30 1003.50   78.07   74.
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* BT     0. 1003.75   78.07   74.48 1004.00   78.07   74.50 1004.25   78.07   74.
* BT     0. 1004.50   78.06   74.41 1004.75   78.06   74.30 1005.00   78.06   74.
* BT     0. 1005.25   78.06   73.83 1005.45   78.06   73.38 1005.50   78.06   73.
* BT     0. 1050.00   77.70   77.20 1100.00   77.50   77.20 1150.00   77.30   77.
* BT     0. 1200.00   77.00   77.00     .00     .00     .00     .00     .00     .
X1 54952       18     756     784      25     175     100       0       0       0
X4     1     79.8     706       0       0       0       0       0       0       0
GR  81.1      464    77.1     474    79.3     496    79.0     527    79.8     619
GR  78.5      740    78.3     756    74.3     765    74.7     777    76.2     784
GR  76.2      800    75.0     881    76.1     922    77.1    1031    81.7    1212
GR  83.6     1320    84.2    1365    84.2    1450       0       0       0       0
X1 55122        0       0       0       1     320     170       0       0       0
NC  100.     100.    .040
X1 55172        6   594.2   605.8      50      50      50       0       0       0
X3    10        0     600       0       0       0       0       0       0       0
GR  80.0        0    79.5   594.2    74.8   594.2    74.8   605.8    79.5   605.8
GR  84.0     1200       0       0       0       0       0       0       0       0
* SB   1.0    1.5     2.7       0    11.6       0   48.72       0    74.8      74
X1 55192        0       0       0      20      20      20       0       0       0
* X2     0      0       1    79.0    79.5       0       0     1.5       0
X3    10        0     600       0       0       0       0       0       0       0
* BT     4      0    80.0    80.0   594.2    79.5    79.0   605.8    79.5      79
* BT  1200   84.0    84.0       0       0       0       0       0       0
X1 55292       18     756     784     100     100     100       0     0.5       0
GR  81.1      464    77.1     474    79.3     496    79.0     527    79.8     619
GR  79.8      706    78.3     756    74.7     765    74.7     777    76.2     784
GR  76.2      800    75.0     881    76.1     922    77.1    1031    81.7    1212
GR  83.6     1320    84.2    1365    84.2    1450       0       0       0       0
X1 56232       19     362     390     940     940     940       0     1.0       0
GR  81.5        0    80.1      30    80.6      78    79.1      90    81.1     114
GR  78.6      136    80.7     143    78.0     270    76.5     362    74.7     365
GR  74.7      378    76.8     390    76.0     424    75.3     501    77.1     581
GR  82.2      729    85.7     812    84.8     885    85.2    1000       0       0
*        use flows from concentration point E1A&C
QT     1      278
X1 57172       13     292     330     940     940     940       0       0       0
GR  84.1        0    79.3      26    80.5      33    79.5     216    78.6     292
GR  76.7      302    76.7     312    78.7     330    79.1     400    79.1     523
GR  80.0      721    81.7     883    82.5    1000       0       0       0       0
X1 57862       16     466     497     710     670     690       0       0       0
GR  86.3        0    87.8      99    88.0     216    86.1     372    84.8     413
GR  80.3      466    77.7     481    77.7     486    79.7     497    80.1     536
GR  81.1      624    81.8     718    82.6     785    87.0     912    87.1    1046
GR  86.8     1100       0       0       0       0       0       0       0       0
X1 58562       20     730     762     680     720     700       0       0       0
GR  84.0        0    84.7      34    82.2     148    83.5     212    84.5     263
GR  85.0      367    84.7     462    82.1     569    81.1     648    80.3     730
GR  78.7      737    78.7     742    81.0     762    80.5     873    85.6     911
GR  88.8      988    90.0    1042    89.3    1097    88.2    1202    88.0    1250
X1 59142       12     439     450     600     560     580       0       0       0
GR  88.6        0    87.0      59    84.0     244    82.0     369    81.0     439
GR  79.7      442    79.7     445    81.5     450    81.5     484    83.8     547
GR  84.3      603    84.0     676       0       0       0       0       0       0
X1 60032       20     555     579     890     890     890       0       0       0
GR 108.2        0   108.7      15   108.8      54   102.3      90    94.6     161
GR  90.5      233    85.2     338    83.3     427    83.0     519    83.0     555
GR  81.3      560    81.3     569    83.8     579    86.0     678    89.7     736
GR  94.0      803    95.0     845    94.1     902    91.2     970    87.1    1100
X1 61012       18     626     689     980     980     980       0       0       0
X4     1     85.0     585       0       0       0       0       0       0       0
GR 107.5        0   103.0      85   101.7      95   101.7     142   105.5     151
GR  99.5      168    93.2     277    90.2     385    89.3     438    90.7     479
GR  88.0      504    84.5     626    84.0     666    86.8     689    86.8     796
GR  89.8      892    90.0     969    90.1    1000       0       0       0       0
*      Excelsior Road use flows from concentration point E1A
QT     1      143
X1 61192        0       0       0     180     180     180       0       0       0
NC  100.     100.    .040
X1 61242        6   594.3   605.7      50      50      50       0       0       0
X3    10        0     600       0       0       0       0       0       0       0
GR 100.0        0    90.1   594.3    83.2   594.3    83.2   605.7    90.1   605.7
GR  90.6     1100       0       0       0       0       0       0       0       0
* SB   1.0    1.5     2.7       0    11.4     0.6   45.36       0    83.2      83
X1 61322        0       0       0      80      80      80       0       0       0
CI          .0071
* X2     0      0       1    87.4    90.1       0       0     1.5       0
X3    10        0     600       0       0       0       0       0       0       0
* BT     4      0   100.0   100.0   594.3    90.1    87.4   605.7    90.1      87
* BT  1100   90.6    90.6       0       0       0       0       0       0
X1 61422       12     470     550     100     100     100       0       0       0
X4     2     90.0     334    87.2     741       0       0       0       0       0
GR 113.3        0   114.6      71   110.5     168    90.0     334    88.0     470
GR  85.5      520    87.6     550    87.5     580    94.1     884    92.6    1091
GR  92.2     1180    95.7    1300       0       0       0       0       0       0
X1 61982       12     506     550     560     560     560       0       0       0
GR 113.3        0   114.6      71   110.5     168    90.0     334    87.5     506
GR  85.5      520    87.6     550    87.2     741    94.1     884    92.6    1091
GR  92.2     1180    95.7    1300       0       0       0       0       0       0
NC  .060     .060    .040
X1 63292        8     399     650     840     830    1310       0       0       0
CI           89.0                             0.01
X3    10        0     600       0       0       0       0       0       0       0
GR 111.2        0   111.6     110    95.1     399    89.5     522    95.6     650
GR  95.8      903    96.5    1024    96.5    1200       0       0       0       0
*        **************************************************************
*        *  Start Gerber Creek model U/S of Elder/Gerber confluence  *
*        **************************************************************
NC   .06      .06     .03      .1      .3
*        Gerber Creek at the confluence  use flows from concentration point R-CG3
QT     1      436
X1-28347       24     985    1008     220     400     390       0       0       0
CI    -1    30.45    0.05     4.0     4.0      40
X3    10              600
GR  48.0      430    46.0     455    45.0     590    44.0     685    43.0     750
GR  42.0      785    41.0     910    41.0     985    37.2     995    37.2    1005
GR  40.0     1008    41.0    1075    41.3    1130    42.0    1190    42.4    1380
GR  42.9     1540    43.0    1690    43.0    1715    44.0    1720    44.1    1820
GR  45.0     1890    46.0    1980    46.0    2080    47.0    2085       0       0
X1     0       21     990    1018     980    1010    1010       0       0       0
CI         .00105               3       3      40
X3    10              600     935    45.0    1065    45.0
GR  47.0      310    46.7     400    46.0     520    45.0     690    44.0     770
GR  43.0      910    42.0     990    38.5     997    38.5    1005    43.0    1018
GR  43.0     1025    42.0    1040    41.1    1100    42.0    1150    42.3    1320
GR  43.0     1450    44.0    1530    45.0    1720    45.9    1980    46.0    2110
GR  46.8     2190       0       0       0       0       0       0       0       0
NC  .050     .050    .050      .1      .3       0       0       0       0       0
X1   520       31    1194    1225     600     480     520       0       0       0
X3    10              600    1150    46.0    1270    46.0
GR  47.1      175    47.0     205    46.3     240    46.7     370    47.0     460
GR  47.2      560    47.0     600    46.7     750    46.0     890    45.2     950
GR  45.0     1070    44.0    1110    43.3    1150    44.0    1190    43.7    1194
GR  39.5     1208    39.5    1213    43.5    1225    44.0    1330    45.0    1350
GR  45.2     1450    45.0    1530    45.0    1560    46.0    1695    46.0    1740
GR  45.0     1760    44.0    1800    44.0    1990    45.4    2190    46.0    2430
GR  46.5     2630       0       0       0       0       0       0       0       0
X1  1141       30    1485    1515     350     250     621       0       0       0
CI                              3       3      30
X3    10
GR  47.2      340    46.0     360    46.0     405    46.5     510    46.7     920
GR  46.0     1180    45.0    1305    44.0    1340    44.0    1460    43.5    1485
GR  41.0     1495    41.0    1505    45.0    1515    45.6    1800    45.7    1990
GR  45.0     2050    44.0    2165    43.3    2240    43.0    2315    43.0    2335
GR  43.4     2375    43.0    2420    43.0    2440    43.2    2540    44.0    2620
GR  45.0     2645    46.0    2680    46.1    2770    46.7    2970    47.0    3150
X1  2105       14    1485    1515     520     800     964       0       0       0
X3    10
GR  47.0      300    46.0     325    46.0    1020    45.0    1360    45.0    1485
GR  41.5     1495    41.5    1507    44.0    1515    44.1    1560    45.0    1690
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GR  45.0     1760    46.0    1845    47.0    1920    48.0    1970       0       0
X1  2215       20    1482    1522     100     140     110       0       0       0
X3    10
GR  47.0      300    47.0     315    46.2     470    46.3     670    46.1     870
GR  46.0     1040    45.8    1075    45.0    1330    45.0    1410    45.2    1450
GR  45.0     1482    41.5    1495    41.5    1505    44.0    1515    45.0    1522
GR  46.0     1630    47.0    1675    48.0    1680    48.0    1900    49.0    1980
NC     0        0       0      .3      .5       0       0       0       0       0
X1  2265       39 1495.50 1504.50      50      20      50     .00     .00     .00
X3   10.              600
GR 47.00   300.00   47.00  315.00   46.20  470.00   46.30  670.00   46.10  870.00
GR 46.00  1180.00    45.0    1260    45.0    1385    45.3    1485    45.0 1495.49
GR 43.50  1495.50   42.53 1495.75   42.18 1496.00   41.77 1496.50   41.56 1497.00
GR 41.50  1497.50   41.56 1498.00   41.77 1498.50   42.18 1499.00   42.53 1499.25
GR 43.50  1499.50   46.10 1499.51   46.10 1500.49   43.50 1500.50   42.53 1500.75
GR 42.18  1501.00   41.77 1501.50   41.56 1502.00   41.50 1502.50   41.56 1503.00
GR 41.77  1503.50   42.18 1504.00   42.53 1504.25   43.50 1504.50   45.00 1504.51
GR  45.4  1515.00   46.00 1560.00   47.00 1660.00   48.00 1690.00
* SB     0  1.604     2.6       0    6.28       0   25.13       0    41.5      41
X1  2281        0     .00     .00   16.00   16.00   16.00     .00     .00     .00
* X2   .00    .00       1   45.50   45.60     .00       0     .00     .00       .
X3   10.              600
* BT   -33 1180.00   46.00   46.00    1260    45.8    45.0 1385.00   45.60     45.
* BT    0. 1485.00   46.10    45.3 1495.49   46.10    45.0 1495.50   46.10     43.
* BT    0. 1495.75   46.10   44.47 1496.00   46.10   44.82 1496.50   46.10     45.
* BT    0. 1497.00   46.10   45.44 1497.50   46.10   45.50 1498.00   46.10     45.
* BT    0. 1498.50   46.10   45.23 1499.00   46.10   44.82 1499.25   46.10     44.
* BT    0. 1499.50   46.10   43.50 1499.51   46.10   46.10 1500.49   46.10     46.
* BT    0. 1500.50   46.10   43.50 1500.75   46.10   44.47 1501.00   46.10     44.
* BT    0. 1501.50   46.10   45.23 1502.00   46.10   45.44 1502.50   46.10     45.
* BT    0. 1503.00   46.10   45.44 1503.50   46.10   45.23 1504.00   46.10     44.
* BT    0. 1504.25   46.10   44.47 1504.50   46.10   43.50 1504.51   46.10      45
* BT    0. 1515.00   46.10    45.4 1560.00   46.00   46.00 1660.00   47.00     47.
NC   .05      .05     .05      .3      .5       0       0       0       0       0
X1  2331       20    1485    1510      50      50      50       0       0       0
CI                              3       3      20
X3    10
GR  47.2      315    47.0     340    47.0     380    46.7     500    47.0     660
GR  47.0      760    46.5     880    46.0    1055    45.3    1340    45.0    1470
GR  45.0     1485    41.5    1495    41.5    1505    45.0    1510    45.0    1520
GR  44.0     1555    45.0    1580    46.0    1610    47.0    1655    48.0    1700
NC     0        0       0      .1      .3       0       0       0       0       0
X1  2681       15    1490    1518     350     350     350       0       0       0
CI                              3       3      10
GR  47.7      280    47.0     306    47.6     460    47.0     900    46.0    1210
GR  45.0     1370    45.0    1415    45.2    1450    45.0    1490    41.7    1495
GR  41.7     1505    45.0    1518    46.0    1615    47.0    1645    48.0    1720
X1  2936       17    1480    1515     210     275     255       0       0       0
GR  48.0      300    47.8     480    47.6     670    47.0     800    46.4     870
GR  46.0      910    45.7    1060    45.0    1300    45.0    1335    46.0    1465
GR  46.0     1480    41.9    1495    41.9    1505    46.0    1515    47.0    1590
GR  48.0     1670    49.0    1710       0       0       0       0       0       0
NC  .060        0       0      .3      .5       0       0       0       0       0
X1  3019       26 1496.00 1504.00     119      69      80     .00     .00     .00
X3   10.              600
GR 48.40   325.00   48.00  420.00   48.00  750.00   47.00  930.00   46.00 1040.00
GR 46.90  1300.00   46.90 1350.00   47.20 1400.00   48.00 1450.00   49.90 1495.00
GR 49.90  1495.99   44.70 1496.00   42.76 1496.50   42.05 1497.00   41.24 1498.00
GR 40.83  1499.00   40.70 1500.00   40.83 1501.00   41.24 1502.00   42.05 1503.00
GR 42.76  1503.50   44.70 1504.00   49.90 1504.01   49.90 1505.00   48.90 1550.00
GR 50.00  1770.00     .00     .00     .00     .00     .00     .00     .00     .00
X1  3020        0       0       0       1       1       1     .00     .00     .00
X3   10.              600
* BT   -21 1300.00   46.90   46.90 1350.00   46.90   46.90 1400.00   47.20     47.
* BT    0. 1450.00   48.00   48.00 1495.00   49.90   49.90 1495.99   49.90     49.
* BT    0. 1496.00   49.90   44.70 1496.50   49.90   46.64 1497.00   49.90     47.
* BT    0. 1498.00   49.90   48.16 1499.00   49.90   48.57 1500.00   49.90     48.
* BT    0. 1501.00   49.90   48.57 1502.00   49.90   48.16 1503.00   49.90     47.
* BT    0. 1503.50   49.90   46.64 1504.00   49.90   44.70 1504.01   49.90     49.
* BT    0. 1505.00   49.90   49.90 1550.00   48.90   48.90 1770.00   50.00     50.
X1  3040        0     .00     .00   20.00   20.00   20.00     .00     .00     .00
* X2   .00    .00       0   48.70   46.00     .00       1     .00     .00       .
X3    10              600
X1  3041        0     .00     .00       1       1       1     .00     .00     .00
X3   10.              600
X1  3140       18    1480    1515      90     120     100       0       0       0
GR  48.4      370    48.0     495    48.4     550    48.0     650    47.0     980
GR  46.4     1160    46.4    1330    46.0    1400    46.0    1480    42.4    1495
GR  42.4     1505    45.0    1515    46.0    1545    46.8    1555    47.0    1595
GR  48.0     1750    49.0    1770    50.0    1870       0       0       0       0
NC     0     .060       0       0       0       0       0       0       0       0
X1  3280       66 1494.00 1506.00     150      90     140     .00     .00     .00
X3    10        0     600       0       0       0       0    47.5    47.5
GR 48.40   370.00   48.30  920.00    48.0    1070    47.0    1280   47.50 1370.00.
GR  47.0  1435.00    47.0 1437.74   44.45 1437.75   43.42 1438.00   42.77 1438.50
GR 42.43  1439.00   42.26 1439.50   42.20 1440.00   42.26 1440.50   42.43 1441.00
GR 42.77  1441.50   43.42 1442.00   44.45 1442.25    48.0 1442.26    48.0 1453.86
GR 46.53  1453.88   46.01 1454.00   45.69 1454.25   45.52 1454.50   45.43 1454.75
GR 45.40  1455.00   45.43 1455.25   45.52 1455.50   45.69 1455.75   46.01 1456.00
GR 46.53  1456.13    48.0 1456.14    48.0 1493.99   44.80 1494.00   43.71 1494.25
GR 43.30  1494.50   42.80 1495.00   42.51 1495.50   42.35 1496.00   42.30 1496.50
GR 42.35  1497.00   42.51 1497.50   42.80 1498.00   43.30 1498.50   43.71 1498.75
GR 44.80  1499.00   48.80 1499.01   48.80 1500.99   44.80 1501.00   43.71 1501.25
GR 43.30  1501.50   42.80 1502.00   42.51 1502.50   42.35 1503.00   42.30 1503.50
GR 42.35  1504.00   42.51 1504.50   42.80 1505.00   43.30 1505.50   43.71 1505.75
GR 44.80  1506.00    48.0 1506.01    47.0 1507.00    48.0 1620.00   49.00 1695.00
GR 50.00  1780.00
* SB   .00  1.597   2.600     .00    7.85     .00   39.27    .000   42.30     42.
X1  3300        0     .00     .00   20.00   20.00   20.00     .00     .00     .00
* X2   .00    .00       1   47.30   48.30     .00     .00     .00     .00       .
X3    10        0     600       0       0       0       0    48.3    48.4
* BT  -65.    920    48.3    48.3    1070    48.3    48.0    1280    48.4      47
* BT     0 1370.00   48.50   47.50 1435.00   48.70    47.0 1437.74   48.70      47
* BT    0. 1437.75   48.70   44.45 1438.00   48.70   45.48 1438.50   48.70     46.
* BT    0. 1439.00   48.70   46.47 1439.50   48.70   46.64 1440.00   48.70     46.
* BT    0. 1440.50   48.70   46.64 1441.00   48.70   46.47 1441.50   48.70     46.
* BT    0. 1442.00   48.70   45.48 1442.25   48.70   44.45 1442.26   48.70      48
* BT    0. 1453.86   48.70    48.0 1453.88   48.70   46.53 1454.00   48.70     47.
* BT    0. 1454.25   48.70   47.36 1454.50   48.70   47.53 1454.75   48.70     47.
* BT    0. 1455.00   48.70   47.65 1455.25   48.70   47.62 1455.50   48.70     47.
* BT    0. 1455.75   48.70   47.36 1456.00   48.70   47.04 1456.13   48.70     46.
* BT    0. 1456.14   48.70    48.0 1493.99   48.80    48.0 1494.00   48.80     44.
* BT    0. 1494.25   48.80   45.89 1494.50   48.80   46.30 1495.00   48.80     46.
* BT    0. 1495.50   48.80   47.09 1496.00   48.80   47.25 1496.50   48.80     47.
* BT    0. 1497.00   48.80   47.25 1497.50   48.80   47.09 1498.00   48.80     46.
* BT    0. 1498.50   48.80   46.30 1498.75   48.80   45.89 1499.00   48.80     44.
* BT    0. 1499.01   48.80   48.80 1500.99   48.80   48.80 1501.00   48.80     44.
* BT    0. 1501.25   48.80   45.89 1501.50   48.80   46.30 1502.00   48.80     46.
* BT    0. 1502.50   48.80   47.09 1503.00   48.80   47.25 1503.50   48.80     47.
* BT    0. 1504.00   48.80   47.25 1504.50   48.80   47.09 1505.00   48.80     46.
* BT    0. 1505.50   48.80   46.30 1505.75   48.80   45.89 1506.00   48.80     44.
* BT    0. 1506.01   48.80    48.0 1507.00   48.80    47.0 1620.00   48.40      48
* BT    0. 1695.00   49.00   49.00 1780.00   50.00   50.00
NC  .050     .050    .040       0       0       0       0       0       0       0
X1  3330       17    1395    1645      30      30      30       0       0       0
GR  48.4      370    48.0     390    47.0     470    47.2     540    47.7     740
GR  48.0      940    48.2    1140    48.0    1180    47.0    1265    47.0    1395
GR  46.0     1400    42.0    1420    42.0    1460    42.0    1540    42.0    1615
GR  49.0     1645    50.0    1705       0       0       0       0       0       0
NC  .050     .050    .040      .1      .3       0       0       0       0       0
X1  3465       17    1475    1535     140      50     135
GR  48.5      250    48.0     270    47.0     280    47.2     410    47.7     610
GR  48.0      820    48.2    1020    48.0    1170    47.5    1220    47.0    1250
GR  46.2     1415    49.0    1475    42.0    1485    42.0    1520    50.0    1535
GR  50.0     1550    50.8    1875
NC  .050     .050    .050      .1      .3       0       0       0       0       0
X1  4005       17    1487    1520     280     430     410       0       0       0
GR  48.0      135    47.3     170    48.0     320    49.0     875    49.0     980
GR  48.0     1080    47.0    1420    46.0    1487    43.7    1495    43.7    1507
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GR  47.0   1520   48.0   1610   49.0   1655   50.0   1710   50.0   1825
GR  49.6   1830   50.0   1910      0      0      0      0      0      0
X1  5057     22   1485   1510   1030   1040   1052      0      0      0
GR  50.5    225   50.0    270   51.0    280   51.0    440   50.0    625
GR  49.8    655   49.5    840   49.0    970   48.8   1050   48.7   1245
GR  48.1   1410   48.0   1465   48.0   1485   44.7   1492   44.7   1507
GR  48.0   1510   48.0   1670   49.0   1700   49.7   1840   50.0   1870
GR  51.0   2060   52.0   2220      0      0      0      0      0      0
NC  .060   .050   .060     .1     .3      0      0      0      0      0
X1  6009     17   1485   1525    850    900    952      0      0      0
GR  51.8    450   51.6    650   50.0    840   50.7   1065   50.4   1260
GR  50.0   1340   49.7   1455   49.0   1485   45.3   1492   45.3   1508
GR  49.0   1525   49.7   1650   50.0   1760   50.6   1890   51.0   1975
GR  51.0   2080   52.0   2090      0      0      0      0      0      0
NC  .070   .060   .070     .1     .3      0      0      0      0      0
X1  6279     18   1482   1515    270    300    270      0      0      0
GR  51.9    510   51.0    745   50.3    810   51.0    840   50.8   1110
GR  50.3   1310   50.0   1390   49.0   1482   45.4   1495   45.4   1505
GR  49.0   1515   49.3   1570   50.0   1640   50.8   1730   50.0   1810
GR  50.0   1825   51.0   1835   53.4   1840      0      0      0      0
NC  .080   .060   .080     .3      .5      0      0      0      0      0
X1  6329     16 1496.5 1503.5      50     50     50      0      0      0
GR  52.1    540   51.9    730   51.0   1040   50.8   1100   50.1   1310
GR  49.5   1485   49.5 1496.5   45.5 1496.5   45.5 1503.5   49.5 1503.5
GR  49.5   1525   50.4   1630   50.0   1710   50.0   1725   51.0   1735
GR  53.8   1740
* SB     0    1.5    2.6      0      7      0   25.1      0      0
X1  6349      0      0      0     20     20     20      0      0      0
* X2     0      0      1   49.5   50.0      0      0      0      0
* BT    -8   1310   50.1   50.1   1485   50.0   49.5 1496.5   50.0     49
* BT     0 1496.5   50.0   49.5 1503.5   50.0   49.5 1503.5   50.0     49
* BT     0   1525   50.0   49.5   1630   50.4   50.4
NC  .060   .060   .060     .3      .5      0      0      0      0      0
*       CCTRR bridge crossing  use flows from point CG3
*       approximate D/S location of Local Detention Basin
QT      1    436
X1  6399     16   1485   1525     50     50     50      0      0      0
GR  52.1    540   51.9    730   51.0   1040   50.8   1100   50.1   1310
GR  50.0   1380   49.3   1460   49.0   1485   45.6   1490   45.6   1515
GR  50.0   1525   50.4   1630   50.0   1710   50.0   1725   51.0   1735
GR  53.8   1740      0      0      0      0      0      0      0      0
NC  .060   .060   .050     .1     .3      0      0      0      0      0
X1  6660     12   1480   1520    380    450    461      0      0      0
GR  52.6    805   52.0    850   51.9    910   51.3   1160   51.0   1215
GR  50.5   1340   50.0   1480   46.0   1495   46.0   1510   50.0   1520
GR  50.0   1590   55.0   1595      0      0      0      0      0      0
NC     0      0      0     .3      .5
X1  6970     32   1466   1534    175     60    110      0      0      0
GR  54.9    630   54.0    790   53.9   1010   54.0   1290   55.1   1466
GR  48.9   1466   48.7 1476.3   52.6 1476.5   52.6 1477.5   48.7 1477.7
GR  48.4 1491.8   52.6   1492   52.6   1493   48.4 1493.2   48.1 1505.3
GR  52.6 1505.5   52.6 1506.5   48.1 1506.7   47.9   1511   46.8   1512
GR  46.5   1516   46.7 1521.3   52.6 1521.5   52.6 1522.5   46.7 1522.7
GR  46.8   1525   47.2   1534   55.1   1534   54.0   1870   53.8   2300
GR  53.8   4100   54.0   4300
* SB     0    1.5    2.7      0     68      0    320      0      0
X1  6979      0      0      0      9      9      9      0      0      0
* X2     0      0      1   52.6   53.8      0      0      0      0
X3     10      0    600      0      0      0      0      0      0      0
* BT   -12    630   54.9   54.9    790   54.0   54.0   1010   53.9     53
* BT     0   1290   54.0   54.0   1466   55.1   55.1   1466   55.1     52
* BT     0   1534   55.1   52.6   1534   55.1   55.1   1870   54.0     54
* BT     0   2300   53.8   53.8   4100   53.8   53.8   4300   54.0     54
X1  7029     15   1485   1520     50     50     50      0      0      0
CI       .00115
GR  55.2   1410   50.0   1425   49.0   1428   49.0   1485   46.2   1488
GR  46.2   1510   50.0   1520   51.0   1540   51.7   1740   51.5   2190
GR  51.8   2380   51.8   2610   52.0   2640   54.0   2655   54.1   2800
NC  .060   .060   .050     .1     .3
X1  7259     18    478    512    120    850    230      0      0      0
GR  54.0    260   50.0    270   50.0    300   50.3    340   50.0    410
GR  49.8    420   50.0    450   50.0    478   46.3    490   46.3    505
GR  51.0    512   51.8    575   52.0    650   52.0    800   52.6    835
GR  52.7   1000   53.0   1080   54.0   1295      0      0      0      0
*       Gerber Road use flows from concentration point CG4
QT      1    414
X1  7992     13    488    520    680    750    733      0      0      0
GR  54.8    410   51.0    420   50.0    488   46.7    495   46.7    505
GR  51.0    520   51.8    680   52.0    795   52.2    880   53.0    935
GR  53.1   1060   54.0   1320   54.7   1340      0      0      0      0
NC  .06    .06    .05     .3     .5
X1  8052     16    490    515     40     90     60      0      0      0
GR  55.4    410   55.4    490   49.4    490   48.4    496   47.4    502
GR  51.8    502   53.6    503   47.3    503   47.4    506   47.7    508
GR  46.9    515   54.0    515   53.5    690   52.5    885   54.0   1100
GR  55.0   1570
* SB   1.3    1.5    2.6      0     21    1.4    150   0.47   47.0     47
X1  8102      0      0      0     50     50     50      0      0      0
* X2     0      0      1   53.8   53.7      0      0      0      0
X3     10      0    600      0      0      0      0      0   53.7      0
* BT    -9    410   55.4   55.4    490   55.4   55.4    490   55.4     53
* BT     0    515   55.4   53.8    515   55.4   54.0    690   54.0     53
* BT     0    885   53.7   52.5   1100   54.0   54.0   1570   55.0     55
X1  8159     12    485    518     80     20     57      0      0      0
CI       .00113                         10
GR  54.5    445   50.0    460   50.0    485   47.1    494   47.1    505
GR  52.0    518   52.0    560   51.5    585   52.0    640   52.9    770
GR  53.0    990   54.0   1110      0      0      0      0      0      0
NC  .060   .060   .050     .1     .3
*   flow from concentration point CG3D
QT      1    350
X1  9051     16   1485   1515    950    700    892      0      0      0
CI       .00142
GR  55.0   1230   54.0   1250   53.0   1285   52.0   1350   53.0   1460
GR  54.0   1465   54.0   1475   53.0   1477   52.0   1485   48.2   1492
GR  48.2   1505   52.0   1515   52.9   1555   53.0   1615   54.0   1660
GR  54.4   1870      0      0      0      0      0      0      0      0
X1  9381     17   1485   1510    300    290    330      0      0      0
GR  55.0   1020   54.7   1170   54.0   1270   53.9   1315   53.0   1420
GR  52.0   1485   48.3   1498   48.3   1505   51.5   1510   52.0   1525
GR  53.0   1570   54.0   1610   54.2   1770   54.9   1890   56.0   1910
GR  57.0   1920   58.0   1940      0      0      0      0      0      0
NC     0      0      0     .3     .5
X1  9431     25    990   1009     30    110     50      0      0      0
GR  55.0    500   54.7    645   54.0    740   53.0    880   53.4    900
GR  53.7    950   55.5    990   50.4    990   49.4    991   49.3    994
GR  49.5    996   49.9    999   50.4   1002   51.7   1003   51.9   1005
GR  53.3   1009   55.5   1009   54.3   1050   54.4   1100   55.0   1240
GR  55.0   1320   55.3   1340   55.0   1360   57.0   1370   59.0   1375
* SB   1.3    1.5    2.7      0    6.8    0.8     57   1.34   49.5     49
X1  9446      0      0      0     15     15     15      0      0      0
* X2     0      0      1   53.6   53.0      0      0      0      0
* BT   -11    740   54.0   54.0    880   53.0   53.0    900   53.4     53
* BT     0    950   53.7   53.7    990   55.5   55.5    990   55.5     53
* BT     0   1009   55.5   53.6   1009   55.5   55.5   1050   54.3     54
* BT     0   1100   54.4   54.4   1240   55.0   55.0      0      0
X1  9496     16    990   1020     50     30     50      0      0      0
GR  55.0    540   54.7    650   54.0    740   53.9    800   53.0    940
GR  52.0    990   49.5    993   49.5   1006   53.0   1020   54.0   1130
GR  55.0   1200   55.3   1250   55.3   1350   56.0   1370   58.0   1375
GR  59.0   1395      0      0      0      0      0      0      0      0
X1  9646     24    990   1010    200    120    150      0      0      0
GR  55.1    450   55.0    585   54.7    640   54.0    820   53.2    935
GR  54.6    985   54.6    990   52.7    990   49.4    995   49.1    999
GR  49.1   1000   49.5   1004   50.4   1005   51.4   1010   54.6   1010
GR  54.6   1016   54.0   1025   55.0   1110   55.3   1230   55.5   1340
GR  55.3   1355   56.0   1360   57.0   1390   58.0   1395      0      0
* SB     0    1.5    2.6      0     20      0     61      0      0
X1  9661      0      0      0     15     15     15      0      0      0
* X2     0      0      1   53.2   54.6      0      0      0      0
X3     10      0    600      0      0      0      0      0      0      0
* BT   -10    820   54.0   54.0    935   53.2   53.2    985   54.6     54
* BT     0    990   54.6   54.6    990   54.6   53.2   1010   54.6     53
* BT     0   1010   54.6   54.6   1016   54.6   54.6   1025   54.0     54
* BT     0   1110   55.0   55.0
X1  9761     19    990   1012    100     80    100      0      0      0
GR  55.1    450   55.0    560   54.7    730   54.0    830   54.0    955
GR  53.0    990   49.2    997   49.2   1004   53.0   1012   54.0   1025
GR  55.0   1075   55.0   1170   54.7   1220   55.0   1255   55.3   1270
GR  55.0   1285   56.0   1305   56.0   1330   57.0   1380      0      0
*   flow from concentration point CG3B
QT      1    273
X1 10025     15    990   1012    290    260    290      0      0      0
GR  56.0    505   55.7    580   55.0    680   54.0    750   54.0    990
GR  50.0    995   50.0   1005   54.0   1012   54.0   1040   55.4   1125
GR  55.0   1135   55.4   1300   56.0   1350   57.0   1430   59.0   1490
NC  .06    .06    .05     .3     .5
X1 10135     11    990   1010     60    150    110      0      0      0
X2     10      0    600      0      0      0      0   55.2   55.2      0
GR  56.0    700   55.4    900   55.0    990   50.4    990   50.1    995
GR  50.1   1003   50.9   1007   52.1   1010   55.0   1010   55.4   1100
GR  55.6   1200      0      0      0      0      0      0      0      0
* SB     0    1.5    2.6      0     20      0     63      0      0
X1 10175     0      0      0      0     40     40     40      0      0      0
* X2     0      0      1   53.6   55.4      0      0      0      0
X3     10      0    600      0      0      0      0   55.4   55.4      0
* BT    -8    700   56.0   56.0    900   55.4   55.4    990   55.6     55
* BT     0    990   55.6   53.6   1010   55.6   53.6   1010   55.6     55
* BT     0   1100   55.4   55.4   1200   55.6   55.6      0      0
X1 10225     19    980   1010     30     60     50      0      0      0
GR  56.3    400   56.0    730   55.0    760   55.0    900   55.3    920
GR  55.0    940   54.0    960   54.2    970   54.0    980   51.0    992
GR  51.0   1005   54.0   1010   55.0   1030   56.0   1120   57.0   1230
GR  58.0   1280   59.0   1310   60.0   1340   60.8   1400      0      0
X1 10515     17    985   1015    240    270    290      0      0      0
GR  56.3    370   56.0    730   55.0    760   55.0    775   55.9    790
GR  55.0    810   55.0    890   54.0    985   51.4    995   51.4   1005
GR  55.0   1015   55.0   1105   56.0   1185   57.0   1240   58.0   1280
GR  59.0   1310   59.6   1460      0      0      0      0      0      0
NC  .06    .08    .05     .3     .5
X1 10565     31    986   1014     40     75     50      0      0      0
GR  56.3    370   56.0    730   55.0    760   55.0    775   55.5    790
GR  55.4    815   55.4    885   55.4    905   56.3    935   57.3    985
GR  57.3    986   53.5    986   52.4    988   51.4    991   51.6    993
GR  53.0    995   53.4    999   55.9    999   55.9 1001.5   52.7 1001.5
GR  52.1   1007   52.5   1011   53.9   1014   57.3   1014   57.3   1015
GR  57.2   1065   57.0   1115   56.5   1165   56.4   1215   57.0   1310
GR  57.0   1450
* SB     0    1.5    2.6      0     28      0     93      0      0
X1 10577     0      0      0      0     12     12     12      0      0      0
* X2     0      0      1   55.9   56.3      0      0      0      0
* BT    -8    935   56.3   56.3    985   57.3   57.3    986   57.3     57
* BT     0    986   57.3   55.9   1014   57.3   55.9   1014   57.3     57
* BT     0   1015   57.3   57.3   1065   57.2   57.2      0      0
NC  .07    .07    .05     .3     .5
X1 10627     22    990   1030     40     60     50      0      0      0
GR  56.3    410   56.0    570   55.5    650   56.0    775   56.0    820
GR  55.0    830   55.0    990   52.1   1000   53.0   1005   54.0   1020
GR  55.0   1022   56.0   1030   57.0   1085   57.5   1095   59.0   1100
GR  59.0   1368   58.0   1370   58.0   1475   57.0   1480   56.0   1490
GR  57.0   1680   59.0   1700      0      0      0      0      0      0
NC  .07    .06    .05     .1     .3
X1 11122     24    990   1008    490    495    495      0      0      0
GR  57.5    370   57.0    490   56.0    515   57.0    620   56.0    805
GR  56.0    820   57.0    825   57.5    835   57.0    840   56.0    860
GR  56.0    990   52.6    995   52.6   1005   55.0   1008   56.0   1040
GR  57.0   1100   57.4   1210   58.0   1250   59.0   1330   59.0   1550
GR  58.1   1590   59.0   1680   59.2   1740   60.0   1870      0      0
NC  .06    .06    .05     .1     .3
X1 11632     20    990   1010    450    450    510      0      0      0
GR  58.8    170   58.0    240   58.0    425   58.0    530   57.2    635
GR  57.0    710   57.0    750   58.0    765   58.0    890   57.0    900
GR  56.0    990   53.3    995   53.3   1005   56.0   1010   57.0   1025
GR  58.0   1080   58.0   1260   59.0   1290   59.4   1390   60.0   1470
NC     0      0      0     .3     .5
X1 11682     18    992   1008     40     60     50      0      0      0
X3     10      0    600      0      0      0      0   57.4   57.4
GR  59.8    110   59.5    390   59.0    470   58.0    520   57.0    710
GR  57.0    740   58.0    750   58.0    870   57.0    875   57.0    992
GR  54.3    992   54.0   1050   54.5   1008   57.0   1008   58.0   1040
GR  59.0   1120   61.0   1330   61.4   1440
* SB   0.9    1.5    2.7      0     17      1     72      0   54.2     54
X1 11732     0      0      0      0     50     50     50      0      0      0
* X2     0      0      1   58.7   59.5      0      0      0      0
X3     10      0    600      0      0      0      0   59.5   60.3      0
* BT   -17    110   59.8   59.8    390   59.5   59.5    470   59.5     59
* BT     0    520   59.5   58.0    710   59.6   57.0    740   59.6     57
* BT     0    750   59.6   58.0    870   59.9   58.0    875   59.9     57
* BT     0    992   60.3   57.0    992   60.3   58.7   1008   60.3     58
* BT     0   1008   60.3   57.0   1040   60.3   58.0   1120   60.5     59
* BT     0   1330   61.0   61.0   1440   61.4   61.4
X1 11782     20    987   1015     50     50     50      0      0      0
GR  59.0     70   58.5    150   59.0    285   59.0    385   60.0    390
GR  59.0    420   58.0    500   57.0    525   57.0    620   56.0    710
GR  56.0    910   56.0    987   54.0    995   54.0   1010   56.0   1015
GR  57.0   1020   58.0   1060   59.0   1120   60.0   1150   61.0   1405
NC     0      0      0     .1     .3
X1 12027     18    990   1012    215    215    245      0      0      0
GR  62.0    475   61.0    510   60.0    530   59.0    590   58.0    770
GR  57.0    975   56.0    990   54.2    995   54.2   1005   57.0   1012
GR  57.0   1030   56.5   1050   57.0   1080   58.0   1150   59.0   1210
GR  60.0   1280   61.0   1370   62.0   1450      0      0      0      0
*   flow from concentretion point CG3A
QT      1    260
X1 12622     23    492    510    590    595      0      0      0
GR  63.0    125   62.0    195   61.0    240   60.0    290   59.0    355
GR  58.3    440   58.0    492   55.0    497   55.0    503   58.0    510
GR  58.2    520   58.0    530   57.0    550   57.0    560   57.8    670
GR  57.0    785   56.2    790   57.0    800   58.0    840   60.0    885
GR  61.0    895   62.0    915   63.0    930      0      0      0      0
X1 13022     28    494    510    400    400    400      0      0      0
GR  65.0    388   63.0    405   61.0    425   60.0    430   59.0    445
GR  58.3    494   55.8    500   59.0    510   59.0    520   58.0    544
GR  57.0    545   57.0    550   58.0    570   58.1    590   58.0    605
GR  57.0    620   57.0    720   56.0    732   56.0    740   57.0    741
GR  58.0    749   59.0    820   60.0    835   60.0    925   60.6    990
GR  61.0   1070   62.0   1200   62.1   1310      0      0      0      0
NC  .060   .060   .050     .1     .3
X1 13757     19    990   1012    640    740    735      0      0      0
CI       .00142
GR  65.0    420   63.0    460   62.0    470   61.0    500   60.0    510
GR  59.5    510   59.0    890   58.0    990   56.0    995   56.0   1005
GR  60.0   1012   60.0   1025   59.0   1028   59.0   1038   60.0   1040
GR  61.0   1060   62.0   1100   63.0   1135   65.0   1175      0      0
*       Gerber Road use flows from concentration point CG2
*       approximate D/S location of Local Detention Basin
QT      1    194
X1 14211     23    488    514    220    580    454      0      0      0
CI       51.08
GR  65.0    220   64.0    250   63.0    260   62.0    300   61.0    365
GR  61.0    395   60.0    430   59.0    488   56.5    492   56.5    507
GR  61.0    514   62.0    522   62.0    530   60.0    540   59.0    560
GR  58.1    585   59.0    600   60.0    655   61.0    745   62.0    840
GR  63.0    880   64.0    900   65.0    925      0      0      0      0
NC  .06    .06    .050     .3     .5
X1 14381     16    480    519    170    140    170      0      0      0
CI       0.00076
X3     10      0    600      0      0      0      0   62.5   62.0      0
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GR  65.0     405     63.0     480     60.6     480     58.0     492     56.9    498.8
GR  62.6   498.8     62.6   500.2     56.9   500.2     57.9     507     60.6      519
GR  63.0     519     63.0     620     62.0     750     63.0     840     64.7      950
GR  66.0    1130
* SB  1.05     1.5      2.7        0       15      1.4      150      2.1     56.9      56
X1 14421       0        0        0       40       40       40        0        0        0
* X2     0        0        1     62.6     63.5        0        0        0        0
X3    10.       0      600        0        0        0        0     64.1     63.5        0
* BT    -9     405     65.0     65.0      460     64.1     63.0      480     64.1       62
* BT     0     519     64.1     62.6      519     64.1     63.0      620     63.5       63
* BT     0     750     63.5     62.0      840     63.9     63.0      950     64.7       64
X1 14471      21      485      512.       50       50       50        0        0        0
GR  65.0     180     64.0      190     63.0      260     62.0      315     61.0      365
GR  61.0     425     60.0      485     57.2      492     57.2      506     60.0      512
GR  60.0     535     59.0      538     59.0      550     59.2      640     59.1      765
GR  50.0     820     61.0      840     62.0      860     63.0      910     64.0      950
GR  65.0     990        0        0        0        0        0        0        0        0
NC   .060    .060     .050       .1       .3
X1 15191      12      315      336      823      542      720        0        0        0
X3     0       0      600        0        0      539     66.3        0        0        0
GR  59.6       0     59.6      304     62.7      315     57.7      322     57.7      331
GR  60.3     336     61.1      386     65.5      500     66.3      539     62.8      689
GR  61.6     819     61.8      850        0        0        0        0        0        0
X1 16210      20     2615     2631     1556      724     1019        0        0        0
GR  60.3       0     60.6      320     61.7      642     64.2      652     66.8     1030
GR  63.8    1322     63.2     1342     62.3     1772     61.5     2204     60.6     2230
GR  60.3    2468     60.3     2615     59.1     2623     60.7     2631     60.8     2672
GR  59.2    2678     62.2     2691     61.5     2712     62.2     2924     63.8     3100
X1 17345      17     1498     1632      718      656     1135        0        0        0
GR  62.7       0     64.0      304     65.2      818     64.8      843     63.2      848
GR  62.7    1295     62.2     1496     60.5     1540     61.8     1559     63.0     1632
GR  62.0    1681     62.3     1761     63.2     1799     63.8     1976     63.5     2115
GR  65.8    2208     65.1     2300        0        0        0        0        0        0
X1 18346      13      436      504     1061      646     1001        0        0        0
X3     0       0      600        0        0      631     69.7        0        0        0
GR  71.5       0     72.5      161     66.3      311     63.8      378     62.8      436
GR  61.3     496     62.0      504     61.3      513     69.7      631     68.0      692
GR  65.8     749     65.3      808     65.6      850        0        0        0        0
X1 19212      15      606      670      832      841      866        0        0        0
X3     0       0      600        0        0     1310     69.0        0        0        0
GR  74.6       0     72.8      158     72.0      293     66.8      485     64.5      606
GR  62.7     654     64.0      670     64.1      897     65.2     1216     66.3     1233
GR  65.7    1249     69.0     1310     65.7     1417     65.7     1537     66.0     1700
X1 20162       0        0        0      840      983      950        1      0.5        0
X3     0       0      600        0        0     1310     69.0        0        0        0
X1 20212      11      340    356.2       50       50       50        0        0        0
X3    10              600
GR  72.0       0     67.5      180     66.4      340     63.6      340     63.3    343.9
GR  63.6   347.8     64.6    352.4     64.8    356.2     66.4    356.2     66.8      390
GR  72.0     620        0        0        0        0        0        0        0        0
* SB  1.25     1.5      2.7        0      8.8      0.8       38     1.12        0
X1 20252       0        0        0       40       40       40        0        0        0
* X2     0        0        1     66.4     67.9        0        0        0        0
X3    10              600
* BT     6        0     72.0     72.0      180     68.0     67.5      340     67.9       66
* BT 356.2     67.9     66.4      390     68.0     66.8      620     72.0     72.0
*       Gerber Road use flows from concentration point G2A
*       approximate D/S location of Local Detention Basin
QT      1      126
X1 20345      20      897      957      230       10       93        0        0        0
X4      2    64.1      847     66.7      977        0        0        0        0        0
GR  73.6       0     70.5      107     72.1      197     69.7      330     68.3      509
GR  66.2     671     63.3      897     62.8      927     66.1      957     68.3     1032
GR  68.5    1094     70.8     1109     67.3     1134     66.8     1250     70.0     1263
GR  72.9    1294     73.0     1541     73.2     1597     74.5     1613     75.5     1704
X1 20715       0        0        0      500      100      370        1        0        0
NC     0       0      .03       .5       .8
X1 20765      25   288.25   291.75       50       50       50      .00      .00      .00
CI          .0020
X3    10.      .00      600      .00      .00      .00      .00    75.10    75.10      .00
GR 80.00      .00    76.00   160.00    75.10   288.00    75.10   288.24    67.75   288.25
GR 67.33   288.30    66.85   288.50    66.53   288.75    66.31   289.00    66.17   289.25
GR 66.07   289.50    66.02   289.75    66.00   290.00    66.02   290.25    66.07   290.50
GR 66.17   290.75    66.31   291.00    66.53   291.25    66.85   291.50    67.33   291.70
GR 67.75   291.75    75.10   291.76    75.10   292.00    75.10   490.00    76.00   560.00
* SB    .00     1.512    2.700      .00     2.75      .00     9.62      .000    66.00      66.
X1 20805       0      .00      .00    40.00    40.00    40.00      .00      .00      .00
* X2    .00      .00        1    69.50    75.10      .00      .00      .00      .00        .
X3    10.      .00      600      .00      .00      .00      .00    75.10    75.10      .00
* BT   -25.     .00    80.00    80.00   160.00    76.00    76.00   288.00    75.10      75.
* BT     0.  288.24    75.10    75.10   288.25    75.10    67.75   288.30    75.10      68.
* BT     0.  288.50    75.10    68.65   288.75    75.10    68.97   289.00    75.10      69.
* BT     0.  289.25    75.10    69.33   289.50    75.10    69.43   289.75    75.10      69.
* BT     0.  290.00    75.10    69.50   290.25    75.10    69.48   290.50    75.10      69.
* BT     0.  290.75    75.10    69.33   291.00    75.10    69.19   291.25    75.10      68.
* BT     0.  291.50    75.10    68.65   291.70    75.10    68.17   291.75    75.10      67.
* BT     0.  291.76    75.10    75.10   292.00    75.10    75.10   490.00    75.10      75.
* BT     0.  560.00    76.00    76.00      .00      .00      .00      .00      .00        .
NC     0       0      .05
X1 20855       9      559      619       50       50       50        1      0.5        0
X4      2    68.2      497     70.2      689        0        0        0        0        0
GR  90.3       0     82.0      232     72.6      435     66.1      559     65.3      589
GR  66.6     619     73.7      860     79.5     1116     69.1     1450        0        0
NC     0       0        0       .1       .3
X1 21222       0        0        0      334      456      367        0     -0.5        0
X1 22381      12      518      546      964      552     1159        0        0        0
GR  70.1       0     69.0      194     66.8      213     69.0      253     69.8      371
GR  67.3     518     65.5      532     67.6      546     71.6      653     70.1      779
GR  69.1     909     68.1     1050        0        0        0        0        0        0
X1 23003      14      615      637      419      815      622        0        0        0
GR  71.7       0     70.0      215     69.1      408     67.6      615     66.0      622
GR  68.0     637     70.5      765     69.8      845     71.2      890     71.0     1025
GR  69.2    1065     71.6     1191     69.6     1246     70.8     1400        0        0
X1 24052      12      845      989     1023      964     1049        0        0        0
CI                                              .01
GR  98.7       0     86.0      199     80.5      261     71.3      543     69.2      695
GR  70.0     845     68.5      865     76.6      989     79.6     1061     76.5     1292
GR  73.8    1407     78.7     1550        0        0        0        0        0        0
EJ


ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 8

HEC-2 MODEL FOR EXISTING AND ULTIMATE CONDITIONS ON ELDER CREEK FROM MORRISON CREEK TO 0.5 MILES UPSTREAM

FILENAME: ELD-EX1A.DAT

```
SF      Elder Creek
TW      Centerline Elk Grove-Florin Road
WS     3  27957   28347   27367     2.7       0       0       0       0       0
WC   505    43.2     910    43.9    1330    45.0
TW      Centerline Elk Grove-Florin Road
WS     3  27552   27957   27367     2.7       0       0       0       0       0
WC     0    44.6     180    44.0     505    43.2
EE
C       ELDER CREEK  to confluence of Gerber
C     15
C   1748      FRANKLIN BLVD
C   3079      TANGERINE AVE
C   5666      CENTER PARKWAY
C   8742      LA MANCHA WAY & HWY 99
C  10797      STOCKTON BLVD
C  12967      PAR PARKWAY
C  15167      POWER INN ROAD
C  16997      Gerber Road
C  17352      St. Andre Lane
C  19100      Reese Road - ASSUMED CONFIGURATION FOR REPLACEMENT BRIDGE
C  20557      SPRR
C  21207      French Road
C  23517      Millbrook Circle
C  27417      Elk Grove-Florin Road
C  29357      Confluence Gerber Creek
*       Adding cross-section @ begining from file ELDEE-93.DAT (FROM CITY)
*       New cross section are 0.019, 0200, 0.216, 870(.388), .536, .537, .538,
.539
*       Flows from J M M 3/92 for 2, 5, 10, 25, 50, 100, 200, 500 years
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       2                                                10.36
J2     1              -1
J3    38      43       1       6       7     150
NC   .06     .06     .03      .1      .3
*       use flows from HEC-1 model at concentration point R-CE14
QT     8     767    1234    1471    1758    2017    2246    2505    2918
X1 0.019      12   196.8   278.7       0       0       0
X3    10                   177.0           300.0
GR  15.5   176.2    14.0   177.0    17.4   186.2    17.6   196.8     5.8   216.2
GR   5.6   229.7     5.8   247.6     5.5   257.6    17.5   278.7    17.5   289.6
GR  13.1   300.0    14.1   301.2
X1 0.200      15   215.7   294.6    1200    1200    1200
X3    10                   194.2           318.3
X4     1   18.10  300.00
GR  13.0     145    13.2   194.2    18.0   203.6    18.0   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    17.9   305.8    12.8   314.7    12.8   318.3    12.7   360.0
X1 0.216      15   215.7   294.6      70      70      70
X3    10                   194.2
X4     1   18.10  300.00
GR  13.0     145    13.2   194.2    18.0   203.6    18.0   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    17.9   305.8    12.8   314.7    12.8   318.3    12.7   360.0
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAF 5/93
X1   870      15   199.3   278.8     910     910     910                      X1
        053
X3    10                   179.1
X4     1   18.30  284.00                                                      X4
        056
GR  13.8     150    14.3   179.1    18.2   188.5    18.3   199.3     6.7  218.2GR
        015
GR   6.5   234.3     4.9   236.7     4.8   248.5     6.6   250.9     6.8  261.5GR
        015
GR    18   278.8    18.1   290.9    13.3   299.1      13   303.7    12.9    349GR
        015
* CONFLUENCE OF FLORIN CREEK, A.K.A. NORTH FORK ELDER CREEK    - MAF 5/93
FLORIN CREEK
X1  1276      15   226.4   302.1     406     406     406                      X1
        053
X3    10                   201.1
X4     1   18.35  310.00                                                      X4
        056
GR  13.8     160    13.7     180    13.8   201.1    18.1   209.4    18.5  226.4GR
        015
GR  10.4   235.2    10.6   248.6     6.7   257.3     6.9   270.3     5.3  272.7GR
        015
GR   5.4   284.4    18.2   302.1    18.3   316.1    16.9   321.8    16.7    370GR
        015
X1  1426                             150     150     150
X3    10                   201.1
X1  1490                              64      64      64
X3    10
X1  1690                             200     200     200
X3    10
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.37,52                  - MAF 5/93
* FRANKLIN BLVD.  BRIDGE
FRANKLIN ST.
X1  1748      21   298.5   378.5      58      53      58
X3    10
GR  18.4   198.5    18.8   248.5    19.7   298.5    18.8   299.0    18.9     303
GR  14.8   303.9    14.7   306.0     8.0   316.6     6.4   332.5     5.6   333.3
GR   5.5   342.4     6.7   343.4     9.6   362.9    15.3   370.5    15.1   373.9
GR  18.6   374.8    18.4     378    19.6   378.5    19.0   428.5    19.0   478.5
GR  18.3   528.5
SB  1.05     1.5     2.6            28.6     2.5     610    1.78
X1  1853                             105     105     105
X2                     1    17.7    19.6
X3    10
BT     7   198.5    18.4    18.4   248.5    18.8    18.8   298.5    19.7    17.7
BT 342.4    19.6    17.7   378.5    19.6    17.7   428.5    19.0    19.0   528.5
BT  18.3    18.3
X1  1858      14   282.7  363.30       5       5       5
X3    10
GR  18.0     200    18.9   261.4    18.7   282.7     8.8   301.7     6.1   323.1
GR   5.5   325.3     5.3   338.5     6.1   339.4   18.07  363.30    18.2   363.8
GR  18.7   370.5    17.6   377.1    17.0   418.5    17.3   458.5
X1  1926       9     100   167.8      68      68      68
X3    10
X4     1   12.21  158.20
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GR  17.4    50.2    18.2   100.0     6.2   134.1     5.4   135.2     5.4   146.5
GR   7.9   149.2    18.1   167.8    18.4   169.3    18.4   219.3
X1  2369      11     100   167.2     443     443     443
X3    10
X4     1   12.73  158.20
GR  17.9    50.0    18.6   100.0     9.9   114.3     7.3   123.0     6.5   133.3
GR   5.6   134.7     5.8   145.6     7.6   147.9    17.9   167.2    18.2   169.3
GR  16.7   218.2
X1  2839      11   102.0   170.3     470     470     470
X3    10
X4     1   14.87  161.90
GR  16.6    49.9    18.4   100.0    18.2   102.0     8.5   121.0     6.9   134.2
GR   5.9   135.8     5.9   146.3     8.3   148.9    18.6   170.3    17.6   174.1
GR  17.4   222.1
X1  3029      10   150.0   217.7     190     190     190
X3    10
X4     1   19.28   217.7
GR  18.4   100.7    18.9   150.0     8.8   171.8     6.8   183.6     5.9   185.3
GR   5.9   196.1     8.0   198.1    19.3   217.7    19.3   231.6    18.3   281.7
X1  3079       9     829     905      50      50      50
X3    10
X4     2       6     867       7     884
GR    18     729    19.4     829    16.7     829    16.7     833      10     846
GR  16.7     901    16.7     905    19.4     905      18    1000
SB     1     1.3     2.6            27.0       2     580    1.78       6       6
X1  3139       0       0       0      60      60      60
X2                     1    18.0      20                     1.5
X3    10
BT     6     729      18      18     829    18.2    18.2     829    20.2    18.2
BT   905    19.8    17.8     905    19.8    19.8    1000      18      18
X1  3239       9   150.0   218.8     100     100     100
X3    10                                                    18.8
X4     1   17.38   215.2
GR  16.5    97.5    18.5   150.0    10.1   165.1     6.9   184.5     6.0   185.6
GR   6.2   196.3     8.4   198.5    19.1   218.8    18.8   269.2
X1  3839      11   150.0   219.4     600     600     600
X3    10
X4     1   11.44  205.90
GR  17.0   103.9    16.6   119.9    19.4   150.0    19.0   152.1     9.0   169.7
GR   7.4   183.8     6.5   185.6     6.6   196.3     9.0   199.0    19.4   219.4
GR  18.4   269.9
X1  4889      10   150.0   219.8    1050    1050    1050
X3    10                                                    20.5    20.5
X4     1   13.14  207.00
GR  16.8    97.0    16.9     141    19.8   150.0     9.8   169.0     8.0   184.2
GR   7.0   185.7     6.9   196.4     9.8   199.2    19.9   219.8    19.8   270.0
X1  5496      11     100   191.0     607     607     607
X3    10
X4    1.   18.16  104.50
GR  20.4    88.0    20.8     100    17.4   106.6    10.4   127.0     8.0   137.0
GR   7.1   138.4     7.1   150.5     8.0   152.5     9.0   160.0    20.0   179.0
GR  21.0   191.0
*       Center Parkway use flows from concentration point CE14
*     QT       1    1605
X1  5616      12   152.4   220.6     120     120     120
X3    10
X4     1   12.53  206.60
GR  20.6   100.0    20.8   150.0    20.2   152.4    11.7   164.6     8.0   181.0
GR   7.1   182.3     7.2   194.2     9.3   196.2    11.4   204.3    19.7   218.1
GR  20.8   220.6    21.0   270.6
X1  5666      15     760   845.1      50      50      50
X3    10                     760           845.1
GR  20.9       0    21.2     760    19.1   760.1    19.1   764.6    14.9   772.9
GR   8.2     785     6.5     787     6.6     799     8.2     801     8.2   815.5
GR  14.5     825    19.1   840.6    19.1     845    21.2   845.1    20.9    1600
SB     1     1.5     2.7     500    15.4     3.7     625   2.375     6.4     6.4
X1  5742       0       0       0      76      76      76
X2                     1    19.7    21.2
X3    10
X1  5882      12   152.5   219.4     120     160     140
X3    10                                                    21.0
X4     1   13.28  206.50
GR  21.3   110.5    20.8   150.0    20.1   152.5    11.6   167.4     8.4   184.3
GR   7.5   185.8     7.6   196.6    10.8   199.7    13.3   206.5    20.3   217.2
GR  20.4   219.4    20.3   266.5
NC   .06     .06     .04
X1  6722      24     819     887     860     815     840
X3    10                                                    21.4
GR 022.5       0   022.3   00094   020.6   00101   021.8   00112   023.3   00155
GR 021.7   00200   023.0   00222   022.6   00319   021.7   00395   023.6   00471
GR 022.0   00531   022.8   00585   020.0   00800   021.1   00819   008.5   00852
GR 008.5   00864   021.3   00887   019.0   01028   020.2   01082   021.2   01150
GR 018.6   01281   020.8   01330   022.2   01539   022.8   01600
NC  .060    .060    .040      .1      .3       0       0       0       0       0
X1  7682      10     809     882     950     970     960       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  23.8       0    23.8     357    22.6     809     8.8     843     8.8     853
GR  22.7     882    21.7     966    20.1    1016    21.1    1243    21.0    1450
*       Highway-99 use flows from concentration point CE13
*     QT       1    1568
X1  8692      15     814     886    1015    1005    1010       0     1.0       0
X3    10       0       0       0       0       0       0    25.1    25.1       0
X4     2    24.2     671    25.6     886       0       0       0       0       0
GR  25.2       0    25.3     166    23.3     189    24.6     238    22.3     289
GR  24.8     328    22.2     790    22.0     814    10.5     833     9.5     848
GR   9.5     861    24.6     910    24.7    1079    24.7    1231    25.8    1500
NC 0.060   0.060   0.015
X1  8742      34   824.0   888.0      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  26.6       0    25.9   814.0    25.9   824.0    21.3   824.0    13.4  830.50
GR  13.4   835.0    16.8   837.5    16.8   839.3    24.3   839.3    24.3   840.6
GR  16.8   840.6    16.8   842.5    10.8   846.0    10.8   851.0    16.8   853.5
GR  16.7   855.6    24.4   855.6    24.4   856.9    16.7   856.9    16.7   859.0
GR  10.7   862.0    10.8   868.5    16.8   870.0    16.7   871.6    24.4   871.6
GR  24.4   872.9    16.7   872.9    16.7   874.5    13.7   877.0    13.6   882.5
GR  19.7   888.0    25.9   888.0    25.9   898.0    29.2  1300.0       0       0
SB   1.0     1.5     2.7       0    41.5       0     622    0.00    10.7    10.7
X1  8932       0       0       0     190     190     190       0       0       0
X2     0       0       1    23.8    26.6       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6   814.0    25.9    25.9   824.0    25.9    25.9   824.0    27.8    24.3
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BT 888.0    27.9    24.4   888.0    25.9    25.9   898.0    25.9    25.9       0
X1  8992      13     211     277      50      80      60
X3    10       0       0       0       0       0       0       0       0       0
GR  25.0      33    22.0      95    22.0     162    23.0     180    23.4     200
GR  23.3     203    23.7     211    12.3     222   12.18     263    23.7     277
GR  24.0     285    25.0     306    25.6     371
NH     5     .06   220.0     .04   241.0    .015   268.7     .04   291.9     .06
NH   324
X1  9047      14   220.0   291.9      80      30      55
X3    10       0       0       0       0       0       0       0       0       0
GR  26.0     173    26.2     191    26.0     200   25.78   204.3   22.97   220.0
GR 12.96   241.0   12.71   250.0   12.64   253.0   11.95   266.7   12.64   268.7
GR 12.76   279.4   23.28   291.9   23.99     300      25     324
NH     7     .06     205     .04   231.0    .015   240.0     .04   252.0    .015
NH 268.3     .04   291.5     .06     355
X1  9097      14     205   291.5      50      50      50
X3    10       0       0       0       0       0       0       0       0       0
GR  25.5     180    25.5     200   25.22   205.0   13.08   231.0   12.83   240.0
GR 12.84   252.0   11.92   254.5   11.87   266.8   12.77   268.3   13.13   280.2
GR 22.83   291.5   23.48   303.1      24     331      25     355
NH     7     .06     204     .04     225    .015     238     .04   253.0    .015
NH 269.2     .04   292.5     .06     326
X1  9257      14     204   292.5     130     180     160
X3    10       0       0       0       0       0       0       0       0       0
GR  25.0     146    24.0     155   22.87     200    23.1     204   13.41   225.0
GR 13.31     238   13.11   253.0   11.93   255.8   11.98   267.6   13.02   269.2
GR 14.66   283.3   22.25   292.5   23.42   308.3    23.8     326
NH     7     .06     204     .04     225    .015     239     .04   253.0    .015
NH 267.4     .04     289     .06     303
X1  9607      16     204   289.0     280     330     350
X3    10       0       0       0       0       0       0       0       0       0
GR  23.9     162    23.0     177    22.7     186   23.46     200   23.42     204
GR 13.72   225.0   13.58     239   13.30   253.0    12.4   254.3   12.36   266.1
GR 13.27   267.4   14.24   279.6    22.6     289   23.32   291.3      24     296
GR    25     303
NH     7     .06     204     .04     225    .015     239     .04   253.0    .015
NH 267.1     .04   288.5     .06     309
X1  9907      15     204   288.5     300     300     300
X3    10       0       0       0       0       0       0       0       0       0
GR  24.0     165    23.2     185   23.95     200   24.10     204   13.81   225.0
GR 13.62     239   13.60   253.0   12.67   254.4   12.67     266   13.37   267.1
GR 15.34   280.3   23.38   288.5   23.88   290.7      25     299    25.9     309
NH     7     .06     204     .04     226    .015     240     .04   252.0    .015
NH   267     .04   287.6     .06     309
X1 10227      13     204   287.6     320     320     320
X3    10       0       0       0       0       0       0       0       0       0
GR  25.0     187   24.44     200   24.47     204   14.38   226.0   14.14     240
GR 14.20   252.0   13.09   253.8    13.1   266.1   13.81     267   14.83     279
GR 23.37   287.6   23.84   291.4    24.5     309
NH     7     .06     204     .04     225    .015     240     .04   250.0    .015
NH   267     .04   289.7     .06     323
X1 10442      18     204   289.7     215     215     215
X3    10       0       0       0       0       0       0       0       0       0
GR    24      53    23.4     114    25.0     154    25.6     181    25.2     200
GR 24.52     204   14.47   225.0   14.15     240   14.16   250.0   13.21   253.8
GR 13.08   265.7   14.08     267   15.87   271.6   16.35   280.4   25.22   289.7
GR 25.55   292.1    25.6     304      25     323
NH     7     .06     204     .04     225    .015     239     .04   254.0    .015
NH 271.1     .04   291.9     .06     321
*       Stockton Blvd.  use flows from concentration point CB12
*     QT       1    1569
X1 10567      15     204   291.9     115     140     125
X3    10       0       0       0       0       0       0       0       0       0
GR  24.3     121    25.0     143    26.0     158    26.1     180    26.0     200
GR 25.07     204   14.72   225.0   14.40     239   14.57   254.0   13.54   256.9
GR 13.32   269.6   14.14   271.1   17.26   284.5   25.83   291.9    25.8     321
NC 0.060   0.060   0.015
X1 10747      11   225.5   293.8     200     160     180       0     0.5       0
X3    10       0       0       0       0       0       0       0       0       0
GR  26.7     181    26.0     200   24.71   206.7   24.33   225.5   14.41   237.3
GR 13.67   249.2   13.56   260.1   14.36   261.5   14.90   276.9   25.91   293.8
GR  25.7     329
X1 10797      28   452.5   505.5      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  27.0       0    27.0   440.0    27.0   452.5    19.5   452.5    19.5   455.0
GR  14.9   458.0    14.9   464.5    19.1   467.5    19.1   469.5    25.1   469.5
GR  25.1   471.0    19.1   471.0    19.2   473.0    14.8   475.5    14.8   482.0
GR  19.4   485.5    19.0   487.5    25.1   487.5    25.1   489.0    19.0   489.0
GR  19.0   491.0    14.8   493.5    14.9   500.5    19.3   503.5    19.3   505.5
GR  27.0   505.5    27.0   518.0    27.0  1100.0       0       0       0       0
SB   1.0     1.5     2.7       0    39.7       0     436    1.14    14.8    14.8
X1 10877       0       0       0      80      80      80       0       0       0
X2     0       0       1    25.1    27.1       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4   452.5    27.0    27.0   452.5    28.0    25.1   505.5    28.0    25.1
BT 505.5    27.0    27.0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 11177      19     970    1043     350    .250     300       0    -0.3       0
X3    10       0       0       0       0       0       0    26.8    26.8       0
GR  27.3       0    27.3      67    26.8     102    26.2     355    25.3     800
GR  26.0     970    15.1    1001    15.1    1014    26.5    1043    26.9    1093
GR  27.0    1141    27.0    1220    25.2    1267    27.4    1308    29.1    1531
GR  29.1    1633    28.1    1702    26.5    1738    26.5    1750       0       0
X1 11567      19     970    1043     350     430     390       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  27.3       0    27.3      67    26.8     102    26.2     355    25.3     800
GR  26.0     970    15.1    1001    15.1    1014    26.5    1043    26.9    1093
GR  27.0    1141    27.0    1220    25.2    1267    27.4    1308    29.1    1531
GR  29.1    1633    28.1    1702    26.5    1738    26.5    1750       0       0
NH     5     100     600     .06     707     .04     770     .06     821     100
NH  1600
X1 12597      17     707     770    1030    1030    1030       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  28.2       0    27.6     323    28.5     600    27.3     707    16.6     715
GR  15.9     726    15.9     739    16.2     749    27.2     770    28.4     821
GR  28.4     986    27.2    1189    26.7    1310    28.9    1338    27.4    1452
GR  28.9    1561    27.1    1600       0       0       0       0       0       0
NH     5     100     600     .06     707     .04     770     .06     821     100
NH  1600
X1 12917      17     707     770     320     320     320       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  28.2       0    27.6     323    28.5     600    27.3     707    16.6     715
GR  15.9     726    15.9     739    16.2     749    27.2     770    28.4     821
GR  28.4     986    27.2    1189    26.7    1310    28.9    1338    27.4    1452
GR  28.9    1561    27.1    1600       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 12967      12   702.8   737.2      50      50      50       0       0       0
X3    10       0       0       0       0       0       0    27.0    28.7       0
GR  29.0       0    27.6   680.0    27.6   688.0    25.1   702.8    16.5   702.8
GR  16.2   714.2    16.2   725.9    16.5   737.2    25.1   737.2    28.7   751.0
GR  29.0   767.0    29.6     867       0       0       0       0       0       0
SB   0.9     1.5     2.7       0    34.4     1.4     297       0    16.2    16.2
X1 13027       0       0       0      60      60      60       0       0       0
X2     0       0       1    25.1    27.6       0       0     1.5       0       0
X3    10       0       0       0       0       0       0    27.6    28.7       0
BT    -9     680    27.6    27.6   688.0    27.6    27.6   688.0    28.8    27.6
BT     0   702.8    28.8    25.1   737.2    28.8    25.1   751.0    28.8    28.7
BT     0   751.0    28.7    28.7     767    29.0    29.0     867    29.6    29.6
NH     5     100     704     .06    1068     .04    1143     .06    1341     100
NH  1750
X1 13157      21    1068    1143     130     130     130       0    -0.2       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    29.8     191    27.6     242    30.0     283    29.5     485
GR  30.3     704    30.0     879    29.1    1068    16.5    1100    16.5    1121
GR  27.1    1143    29.2    1182    29.5    1251    29.5    1341    28.6    1374
GR  29.5    1405    30.0    1510    29.1    1610    27.9    1646    29.4    1690
GR  29.1    1750       0       0       0       0       0       0       0       0
NH     5     100     704     .06    1068     .04    1143     .06    1341     100
NH  1750
*       Palmerhouse Drive use flows from concentration point CB11
*     QT       1    1569
X1 13607      21    1068    1143     450     450     450       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    29.8     191    27.6     242    30.0     283    29.5     485
GR  30.3     704    30.0     879    29.1    1068    16.5    1100    16.5    1121
GR  27.1    1143    29.2    1182    29.5    1251    29.5    1341    28.6    1374
GR  29.5    1405    30.0    1510    29.1    1610    27.9    1646    29.4    1690
GR  29.1    1750       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 14397      20     788     883     790     790     790       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    31.0     100    29.5     180    27.8     224    31.3     281
GR  30.5     604    28.0     663    30.5     715    30.1     788    17.2     824
GR  17.2     834    27.3     861    30.5     883    30.2    1046    29.3    1200
GR  30.7    1427    31.3    1470    31.1    1578    29.0    1852    29.8    2100
*       Power Inn Road use flows from concentration point CB10
*     QT       1    1569
X1 15097      20     788     883     700     700     700       0     1.0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  29.2       0    31.0     100    29.5     180    27.8     224    31.3     281
GR  30.5     604    28.0     663    30.5     715    30.1     788    17.2     824
GR  17.2     834    27.3     861    30.5     883    30.2    1046    29.2    1200
GR  30.7    1427    31.3    1470    31.1    1578    29.0    1852    29.8    2100
X1 15167      10   576.2   663.7      70      70      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
X4     1    28.0   649.4       0       0       0       0       0       0       0
GR  32.5       0    31.0   576.2    28.4   581.2    28.1   589.2    19.1   599.3
GR  18.3     620    19.1     640    28.8   658.7    31.0   663.7    31.5    2000
SB   1.0     1.5     2.7       0   41.63     4.2   599.3     1.0    18.3    18.3
X1 15247       0       0       0      80      80      80       0       0       0
X2     0       0       1    30.4    31.0       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6       0    32.5    32.5   576.2    31.0    31.0   576.2    33.8    30.4
BT 663.7    33.8    30.4   663.7    31.0    31.0    2000    31.5    31.5       0
NH     4     .06     588     .04     653     .06     950     100    1750
X1 15437      10     588     653     160     220     190       0     0.5       0
X3    10       0       0       0       0     950    30.4       0       0       0
GR  32.6       0    32.6     297    29.7     588    17.8     617    17.8     626
GR  28.3     653    30.4     950    27.9    1106    31.4    1311    32.1    1750
NH     4     .06     801     .04     871     .06    1311     100    1800
X1 16627      19     801     871    1240    1140    1190       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  33.5       0    35.5     374    32.3     801    20.5     820    20.2     828
GR  19.2     833    19.2     843    20.5     847    20.6     858    29.6     871
GR  31.6     891    32.3    1156    32.6    1311    31.3    1355    32.8    1397
GR  34.5    1516    32.6    1619    34.8    1690    34.8    1800       0       0
NH     4     .06     801     .04     871     .06    1311     100    1800
*       Gerber Road use flows from concentration point CB9
*     QT       1    1570
X1 16927       0       0       0     300     300     300       0     0.3       0
X3    10       0       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 16997      33   792.5   886.4     120      20      70     0.7       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  33.2     390    32.7     540    32.4     640    32.3     740    32.2   792.5
GR  29.9   797.5    27.8   797.5    20.1     807    20.1   826.2    23.0   829.2
GR  23.0   830.5    29.9   830.5    29.9   831.9    23.0   831.9    23.0   833.2
GR  20.1   836.2    20.1   847.6    23.0   850.6    23.0   851.9    29.9   851.9
GR  29.9   853.3    23.0   853.3    23.0   854.6    20.1   857.6    20.1     866
GR  27.9   872.2    27.9   881.4    29.9   881.4    32.2   886.4    32.3     940
GR  32.3    1040    32.5    1090    32.8    1240
SB   1.0     1.5     2.7       0   49.08       0     448     0.7    20.1    20.1
X1 17112       0       0       0     115     115     115       0       0       0
X2     0       0       1    29.9    32.2       0       0     1.5     0.7       0
X3    10       0       0       0       0       0       0       0       0       0
BT   -13     390    33.2    33.2     540    32.7    32.7     640    32.4    32.4
BT     0     740    32.3    32.3   792.5    32.2    32.2   792.5    33.7    29.9
BT     0   886.4    33.7    29.9   886.4    32.2    32.2     940    32.3    32.3
BT     0    1040    32.3    32.3    1090    32.5    32.5    1090    32.5    32.5
BT     0    1240    32.8    32.8
NC   100   0.060   0.040
X1 17282       6     775     850      20     320     170       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  31.4       0    32.5     775    20.4     795    20.4     830    32.5     850
GR  34.0    2000       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 17352      14    1050  1130.0      30     110      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  31.4       0    33.3    1050    32.0    1056    26.0    1056    22.7    1065
GR  21.7  1074.6    20.6    1090    22.0    1103    23.9  1113.9    26.8    1119
GR  29.6  1123.9    32.0  1123.9    33.3    1130    34.0    2000       0       0
SB   1.0     1.5     2.7       0    37.8     2.8     592     1.4    20.6    20.6
X1 17387       0       0       0      35      35      35       0       0       0
X2     0       0       1    32.0    33.1       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6       0    31.4    31.4    1050    33.3    33.3    1050    35.7    32.0
BT  1130    35.7    32.0    1130    33.3    33.3    2000    34.0    34.0       0
NH     5     100     876     .06    1033     .04    1131     .06    1443     100
NH  1700
X1 17517      20    1033    1131     100     160     130       0       0       0
X3    10
X4     2    33.6     876    35.8    1443       0       0       0       0       0
GR  34.8       0    34.8      87    33.7     137    35.2     192    34.5     350
GR  31.3     393    33.8     440    33.7     520    31.7     661    33.0     830
GR  32.5     995    32.2    1033    30.2    1059    21.1    1070    20.6    1083
GR  20.6    1098    21.1    1108    33.1    1131    33.7    1195    35.2    1700
NC 0.060   0.060   0.040
X1 18427      16    1017    1107     910     910     910       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  35.1       0    35.5      60    34.2     220    35.3     357    35.0     808
GR  35.5     846    34.7    1017    32.3    1035    21.7    1044    21.5    1059
GR  21.5    1071    22.2    1083    33.0    1107    34.0    1402    37.8    1700
GR  37.7    1900       0       0       0       0       0       0       0       0
X1 18957      22     832     937     530     530     530       0       0       0
X3    10
GR  34.8       0    35.7     299    36.0     569    35.6     638    35.7     680
GR  34.5     724    37.8     784    38.1     832    32.1     866    22.2     877
GR  21.5     888    22.2     903    23.0     917    34.8     937    36.2    1102
GR  36.3    1216    34.5    1285    34.8    1423    36.8    1463    38.8    1751
GR  40.2    1934    39.0    2100       0       0       0       0       0       0
X1 19100       8     100     188     134     134     134       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  36.3       0    36.3     100    32.8     100    20.7     124    20.7     164
GR  32.8     188    36.3     188    36.3     288
SB  1.05     1.5     2.7       0      39       3     908       2    20.7    20.7
X1 19135       0       0       0      50      50      50       0       0       0
X2     0       0       1    34.8    36.3       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     6       0    36.3    36.3     100    36.3    36.3     100    36.3    34.8
BT   188    36.3    34.8     188    36.3    36.3     288    36.3    36.3       0
X1 19207      21   830.0  937.00      96      31      66       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR 36.02     588   35.13     623   35.74     632   37.11     637   36.61     638
GR 36.61     697   37.11     700   37.11     749   36.62     750   36.20     786
GR 36.20   830.0   35.88   846.0   21.19   877.0   20.79  897.00   21.19     917
GR  33.6     937    34.0    1030    35.0    1370    36.0    1522    37.0    1611
GR  38.0    1627
*       SPRR bridge use flows from concentration point CB8
*     QT       1    1571
X1 20287      22    1194  1297.0    1050    1130    1080       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR 36.54     137    35.5     155    36.5     180    37.0     200    38.0     240
GR  37.0     393   36.57     460   37.12     512   40.96     519   40.96     710
GR  37.0     727    35.5     915    35.9    1052    35.7    1137    35.7    1194
GR 35.28    1210   21.86    1238   21.46    1258   21.86    1278    34.5    1297
GR  37.1    1397    38.0    1492
X1 20506      23    1225    1310     240     215     219
X3    10                                                    37.1    37.1
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GR  37.0     130    36.0     160    36.9     180    38.0     220    38.0     409
GR  37.0     521    36.9     548    37.0     592    37.5     668    36.1     785
GR  35.7     940    34.2    1025    35.1    1087    34.2    1147    35.7    1208
GR  35.4    1228    22.0    1259    21.6    1279    22.0    1294    33.8    1310
GR  34.0    1320    35.3    1410    37.5    1505
X1 20537      23    1228    1310      31      31      31
X3    10                                            40.5    40.5
GR  37.0     130    36.0     160    36.9     180    38.0     220    38.0     409
GR  37.0     521    36.9     548    37.0     592    37.5     668    36.1     785
GR  35.7     940    34.2    1025    35.1    1087    34.2    1147    33.7    1200
GR  34.5    1228    31.4    1255    27.3    1265    27.2    1300    34.8    1310
GR  34.0    1320    35.3    1410    37.5    1505
X1 20557      16  878.25  921.75      90      50      70       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
X4     2    29.3  904.55    29.3  910.55       0       0       0       0       0
GR  41.4       0    41.5  878.25    31.7  878.25    31.7  879.25    27.8  882.4
GR  27.8   887.4    29.3  889.45    29.3  895.45    27.8   897.5    27.8   902.5
GR  27.8   912.6    27.8   917.6    31.7  920.75    31.7  921.75    41.5  921.75
GR  41.6    1800       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7       0    37.3     4.5   355.4   0.313    27.8    27.8
X1 20586       0       0       0      29      29      29       0       0       0
X2     0       0       1    37.7    41.4       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4       0    41.4    41.4  878.25    41.5    37.7  920.75    41.5    37.7
BT  1800    41.6    41.6       0       0       0       0       0       0       0
*     NH       5   100.     839    .060     984    .040    1080    .060    1270
*     NH    2050
*     Improved Channel by French Road State Subdivision
NC     .06     .06    .040
X1 20727      26     984    1080     120     160     141       0       0       0
CI      -1   27.30    0.05     2.0     2.0      60
GR  39.6       0    41.2      27    35.3      72    40.6     128    36.5     196
GR  37.5     248    34.6     766    36.7     839    34.3     902    36.3     984
GR  35.5    1028    28.1    1047    28.1    1056    38.0    1080    36.3    1097
GR  37.1    1117    37.2    1270    38.0    1409    38.2    1570    38.8    1623
GR  39.6    1713    39.6    1743    39.6    1777    38.2    1913    39.2    1987
GR  39.6    2050       0       0       0       0       0       0       0       0
*     NH       5   100.     839    .060     984    .040    1080    .060    1117
*     NH    2050
X1 21137      26     984    1080     410     410     410       0       0       0
CI     0    27.4
GR  39.6       0    41.2      27    35.3      72    40.6     128    36.5     196
GR  37.5     248    34.6     766    36.7     839    34.3     902    36.3     984
GR  35.5    1028    28.1    1047    28.1    1056    38.0    1080    36.3    1097
GR  37.1    1117    37.2    1270    38.0    1409    38.2    1570    38.8    1623
GR  39.6    1713    39.6    1743    39.6    1777    38.2    1913    39.2    1987
GR  39.6    2050       0       0       0       0       0       0       0       0
NC 0.060   0.060   0.040
X1 21207      14   962.3    1038     140       1      70       0       0       0
CI     -1   27.5
X3     10       0       0       0       0       0       0    36.5    36.5       0
GR  39.5       0    37.0     955    35.7   962.3    34.4   962.3    34.4   967.8
GR  30.1     980    28.9    1000    28.1    1010    28.5    1020    31.7    1027
GR  34.7    1038    35.7    1038    37.0    1045    38.5    2000       0       0
SB   1.0     1.5     2.7       0    26.2    3.61   358.7   3.236    28.1    28.1
X1 21287       0       0       0      80      80      80       0       0       0
CI     0    27.4
X2     0       0       1    35.7    37.0       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT    -6       0    39.5    39.5     955    37.0    37.0   962.3    37.0    35.7
BT     0    1038    37.0    35.7    1045    37.0    37.0    2000    38.5    38.5
*     NH       5   100.     416    .060    1000    .040    1117    .060    1245
*     NH    1950
X1 21407      25    1000    1117     120     120     120       0       0       0
CI     -1   27.5
GR  39.8       0    37.8      21    39.5      54    38.5      82    39.7     101
GR  39.3     276    39.5     416    37.0     503    34.6     863    36.6     906
GR  37.8    1000    36.2    1016    28.2    1041    28.2    1048    29.0    1054
GR  29.3    1081    35.3    1101    38.5    1117    37.3    1201    36.2    1245
GR  38.0    1295    38.2    1363    37.3    1471    38.2    1668    39.8    1950
*     NH       5   100.     416    .060    1000    .040    1117    .060    1363
*     NH    1950
X1 22037      25    1016    1101     630     630     630       0       0       0
CI     -1   28.0
GR  39.8       0    37.8      21    39.5      54    38.5      82    39.7     101
GR  39.3     276    39.5     416    37.0     503    34.6     863    36.6     906
GR  37.8    1000    36.2    1016    28.2    1041    28.2    1048    29.0    1054
GR  29.3    1081    35.3    1101    38.5    1117    37.3    1201    36.2    1245
GR  38.0    1295    38.2    1363    37.3    1471    38.2    1668    39.8    1950
*     NH       5   100.     538    .060    1089    .040    1229    .060    1585
*     NH    2150
*        Trailer Park use flows from concentration point CE7
*        QT       1    1575
X1 22917      27    1089    1229     880     880     880       0       0       0
CI     -1      -1                    .01
GR  39.3       0    40.0      98    40.1     143    39.6     176    40.6     192
GR  39.3     352    38.7     422    40.2     538    38.2     748    37.1     918
GR  35.0     957    38.0    1005    38.2    1089    36.8    1122    28.2    1141
GR  28.2    1159    36.2    1180    36.2    1204    38.2    1229    38.2    1299
GR  36.2    1337    38.1    1369    37.2    1515    39.1    1585    38.7    1766
GR  39.1    1992    38.8    2150       0       0       0       0       0       0
NH     5   100.    1005    .060    1089    .040    1229    .060    1299   100.
NH  2150
X1 23437       0       0       0     520     520     520       0    -0.6       0
NC     .06     .06    .040
X1 23517      11     960    1040      80      80      80       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
X4     5    40.0     840    39.8     870    40.0     910    40.0    1110    40.0
X4  1210       0       0       0       0       0       0       0       0       0
GR  41.7       0    41.0     960   36.95     960    33.5   971.9    30.9   985.4
GR  29.9    1000    31.4    1013    33.8    1029    37.3    1040    41.0    1040
GR  41.0    2100       0       0       0       0       0       0       0       0
SB   1.0     1.5     2.7       0   40.72    2.81   644.6   1.754   29.85   29.85
X1 23547       0       0       0      30      30      30       0       0       0
X2     0       0       1    41.0    40.0       0       0     1.5       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     9       0    41.7    41.7     840    40.0    40.0     870    39.8    39.8
BT   910    40.0    40.0     960    42.3    41.0    1040    42.3    41.0    1110
BT  40.0    40.0    1210    40.0    40.0    2100    41.0    41.0       0       0
NH     5   100.     714    .060     755    .040     895    .060    1000   100.
NH  2200
X1 23627      22     755     895      80      80      80       0       0       0
GR  43.2       0    42.8     219    43.0     548    42.2     556    43.3     589
GR  42.6     621    43.3     633    42.3     714    38.7     755    38.1     786
GR  30.5     814    30.5     849    36.6     873    38.7     895    38.3    1000
GR  39.7    1121    39.3    1257    40.2    1517    39.7    1737    39.5    1926
GR  39.5    2083    40.1    2200       0       0       0       0       0       0
NH     5   100.     633    .060     786    .040     873    .060    1121   100.
NH  2200
X1 24167      22     786     873     530     550     540       0       0       0
X3    10
GR  43.2       0    42.8     219    43.0     548    42.2     556    43.3     589
GR  42.6     621    43.3     633    42.3     714    38.7     755    38.1     786
GR  30.5     814    30.5     849    36.6     873    38.7     895    38.3    1000
GR  39.7    1121    39.3    1257    40.2    1517    39.7    1737    39.5    1926
GR  39.5    2083    40.1    2200       0       0       0       0       0       0
NH     5   100.     634    .060     777    .040     827    .060    1307   100.
NH  1800
X1 25337      20     777     827    1080     960    1170       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  43.1       0    42.8      89    43.1     138    41.8     171    43.1     181
GR  40.7     370    38.5     503    39.3     634    38.8     747    38.3     777
GR  32.6     783    32.6     791    37.3     808    38.0     827    38.0    1027
GR  40.3    1130    41.1    1307    41.1    1481    40.7    1642    41.0    1800
NH     5   100.     554    .060     590    .040     624    .060    1096   100.
NH  1800
X1 26397      25     590     624    1060    1060    1060       0       0       0
GR  43.8       0    44.6      88    43.3      94    44.5     127    43.5     158
GR  45.0     169    44.1     270    42.8     339    40.5     430    39.3     506
GR  41.3     554    39.3     590    35.5     602    35.5     613    41.5     624
GR  40.3     645    39.1     780    41.6     863    42.5    1096    41.0    1231
GR  42.7    1277    42.8    1455    42.7    1688    43.6    1781    42.6    1800
NH     7   100.     790    .060     978    .040    1015    .060    1470   100.
NH  1590    .080    1970   100.    2535
*        Elk-Grove Florin Road use flows from Concentration point CE6
*        QT       1    1594
X1 27227      35     978    1015     750     750     830       0       0       0
GR  45.3     460    45.0     580    44.9     640    45.0     710    45.0     790
GR  44.0     810    43.0     825    42.0     855    42.0     890    43.0     905
GR  43.8     935    43.0     960    42.0     978    36.2     992    36.2    1005
GR  42.8    1015    43.0    1140    43.0    1215    42.6    1360    43.0    1470
GR  43.3    1540    43.0    1590    42.7    1700    43.0    1775    43.5    1910
GR  44.0    1960    45.0    1970    44.4    2090    45.0    2110    44.0    2210
GR  43.0    2250    42.7    2340    43.0    2420    45.0    2530    45.9    2535
NH     7   100.     800    .060     983    .040    1020    .060    1425   100.
NH  1590    .080    1905   100.    2560
X1 27367      28     983    1020     140     140     140       0       0       0
GR  45.3     450    45.0     500    45.0     585    45.8     690    45.0     800
GR  44.0     815    43.0     950    42.0     983    36.4     996    36.4    1008
GR  42.0    1020    43.0    1170    43.0    1350    42.7    1400    43.0    1425
GR  43.0    1590    42.7    1660    43.0    1720    43.5    1870    44.0    1900
GR  45.0    1905    44.4    2050    45.0    2090    43.0    2225    42.7    2320
GR  43.0    2370    45.0    2390    45.9    2560
NC 0.060   0.060   0.040
X1 27417       7     880     914      40      60      50       0       0       0
GR  46.3      80    46.0     575    45.0     880    36.3     880    36.3     914
GR  45.0     914    44.6     990
SB   1.0     1.5     2.7       0      34       0     249       0       0       0
X1 27452       0       0       0      35      35      35       0       0       0
X2     0       0       1    43.3    44.6       0       0       0       0       0
BT    -6     575    46.0    46.0     880    45.0    45.0     880    45.0    43.3
BT     0     914    45.0    43.3     914    45.0    45.0     990    44.6    44.6
*
* SECTIONS AT FIS LOCATIONS MODIFIED USING MACKAY & SOMPS TOPO
*
NH     4   100.     900    .060     970    .040    1030    .060    1070       0
X1 27552      13     970    1030     200      60     100       0       0       0
* RIGHT END OF SECTION IS CENTERLINE OF ELK GROVE-FLORIN RD.
*  ANTICIPATE SPLIT FLOW MODEL HERE
GR  47.0     660    46.0     670    45.0     690    44.0     770    43.0     810
GR  43.0     900    42.0     945    42.0     970    36.6     988    36.6    1011
GR  43.0    1030    44.0    1050    44.6    1070       0       0       0       0
*
*  SECNO 27657 DELETED AND REPLACED BY 27957
*
NH     4   100.     665    .060     970    .040    1023    .060    1140       0
X1 27957      20     970    1023     300     440     405       0       0       0
* RIGHT END OF SECTION IS CENTERLINE OF ELK GROVE-FLORIN RD.
GR  47.0     190    46.0     350    46.0     325    45.1     365    45.0     400
GR  44.0     485    43.0     505    42.0     550    41.4     625    42.0     665
GR  42.0     920    43.0     925    43.0     970    36.8     990    36.6    1010
GR  43.0    1023    43.0    1030    42.0    1065    43.0    1100    43.2    1140
*
* FOLLOWING IS MOST UPSTREAM SECTION FOR SPLIT FLOW AT THIS LOCATION
* ROAD CENTERLINE IS NOT INCLUDED IN THIS SECTION GEOMETRY
*
NH     5   100.     750    .060     985    .040    1008    .060    1380   100.
NH  2085       0       0       0       0       0       0       0       0       0
X1 28347      24     985    1008     220     400     390       0       0       0
GR  48.0     430    46.0     455    45.0     590    44.0     685    43.0     750
GR  42.0     785    41.0     910    41.0     985    37.2     995    37.2    1005
GR  40.0    1008    41.0    1075    41.3    1130    42.0    1190    42.4    1380
GR  42.9    1540    43.0    1690    43.0    1715    44.0    1720    44.1    1820
GR  45.0    1890    46.0    1980    46.0    2080    47.0    2085       0       0
NH     5   100.     520    .060     990    .040    1018    .060    1320   100.
NH  2190       0       0       0       0       0       0       0       0       0
*        confluence of Elder & Gerber Creeks from CE5
*        QT       1     832
X1 29357      21     990    1018     980    1010    1010       0       0       0
GR  47.0     310    46.7     400    46.0     520    45.0     690    44.0     770
GR  43.0     910    42.0     990    38.5     997    38.5    1005    43.0    1018
GR  43.0    1025    42.0    1040    41.1    1100    42.0    1150    42.3    1320
GR  43.0    1450    44.0    1530    45.0    1720    45.9    1980    46.0    2110
GR  46.8    2190       0       0       0       0       0       0       0       0
NH     5   100.     870    .060     985    .040    1010    .060    1500   100.
NH 2150       0       0       0       0       0       0       0       0       0
X1 30187      21     985    1010    1100     350     910       0       0       0
GR  48.0     640    46.0     720    45.0     870    44.6     985    39.1     995
GR  39.1    1005    43.5    1010    44.0    1195    44.0    1210    43.4    1300
GR  44.0    1380    45.0    1400    46.0    1415    47.3    1500    46.0    1545
GR  45.0    1550    44.3    1630    44.3    1650    45.0    1705    46.0    2040
GR  46.8    2150       0       0       0       0       0       0       0       0
EJ
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       3                                                      12.08
J2     2              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       4                                                      13.17
J2     3              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       5                                                      14.35
J2     4              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       6                                                      15.33
J2     5              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       7                                                      16.11
J2     6              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       8                                                      17.21
J2     7              -1
T1      Sacramento County - Water Resources Division
T2      Drainage Master Plan - Existing Condition
T3      Elder Cr        File ELDSQ1a.WRD - 3/32/94
J1   -10       9                                                      18.13
J2    15              -1

ER
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ELDER AND GERBER CREEKS
INFORMATION SOURCE FILE NO. 9

UNET GEOMETRIC MODEL FOR EXISTING CONDITIONS ON LAGUNA CREEK, REACH 12 OF CORPS OF ENGINEERS MORRISON CREEK STUDY (FROM SACRAMENTO DISTRICT, CORPS OF ENGINEERS)

FILENAME: MORR100E.CS

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**************************************************************************
T1 Laguna Creek Reach 12
T2 From Laguna2.dat HEC-2 Deck
T3 UNET file created by John Wiest 19 Dec 1995
UB
NC .0800    .0800    .0450
X115.388       14      555      677      843      204      590        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR  88.7        0     89.6      131     84.8      312     80.5      414     83.0      454
GR  80.7      565     78.3      576     78.3      643     81.6      677     81.2      788
GR  82.2      805     82.2      834     81.5      971     82.2     1150        0        0
NC .0800    .0800    .0450
X115.277       25      466      497      160        1      100        0        0        0
X3      0        0        0        0        0        0        0        0        0        0
GR  82.6        0     83.0       35     81.1       46     83.3       61     84.0       87
GR  83.2      117     81.0      132     84.1      146     81.7      325     79.0      410
GR  76.3      426     76.3      466     75.0      471     75.0      485     76.0      497
GR  75.3      537     81.1      559     81.2      781     80.2      817     81.1      945
GR  80.6     1024     77.8     1045     80.1     1066     89.5     1296     93.0     1400
NC .0800    .0800    .0450
X115.258       22    460.0    541.0       20       20       20        0        0        0
*HY Excelsior Road
BT      4       50     83.0        0      460     84.0     82.1      541     84.0     82.1
BT   1120     82.2        0        0        0        0        0        0        0        0
GR  83.0       50     84.0      460     80.9      460     77.5      470     75.2      472
GR  74.6      478     73.6      481     73.6      482     73.6   486.33     82.1   486.33
GR  82.1   487.66     73.6   487.66     73.9      507    74.97   513.34     82.1   513.34
GR  82.1   514.67    75.19   514.67     76.6      523     81.2      532     81.2      541
GR  84.0      541     82.2     1120
NC .0800    .0800    .0450
C *** Excelsior Road ***
X115.254       22      460      541        1       50       50        0        0        0
X5      5     80.6     81.3     81.4     81.7        0        0        0        0        0
BT      4       50     83.0        0      460     84.0     82.1      541     84.0     82.1
BT   1120     82.2        0        0        0        0        0        0        0        0
GR  83.0       50     84.0      460     80.9      460     77.5      470     75.2      472
GR  74.6      478     73.6      481     73.6      482     73.6   486.33     82.1   486.33
GR  82.1   487.66     73.6   487.66     73.9      507    74.97   513.34     82.1   513.34
GR  82.1   514.67    75.19   514.67     76.6      523     81.2      532     81.2      541
GR  84.0      541     82.2     1120
NC .0800    .0800    .0450
X115.244       25      466    497.0        1      250      150        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR  82.6        0     83.0       35     81.1       46     83.3       61     84.0       87
GR  83.2      117     81.0      132     84.1      146     81.7      325     79.0      410
GR  76.5      426     76.3      466     75.0      471     75.0      485     76.0      497
GR  75.3      537     81.1      559     81.2      781     80.2      817     81.1      945
GR  80.6     1024     77.8     1045     80.1     1066     89.5     1296     93.0     1400
NC .0800    .0800    .0450
X115.216       25      466      497      969     1124     1022        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR  82.6        0     83.0       35     81.1       46     83.3       61     84.0       87
GR  83.2      117     81.0      132     84.1      146     81.7      325     79.0      410
GR  76.5      426     76.3      466     75.0      471     75.0      485     76.0      497
GR  75.3      537     81.1      559     81.2      781     80.2      817     81.1      945
GR  80.6     1024     77.8     1045     80.1     1066     89.5     1296     93.0     1400
NC .0800    .0800    .0450
X115.023       28      847      919      928     1068     1053        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR  80.2        0     80.5      122     78.5      239     78.7      277     77.5      322
GR  79.2      397     77.6      422     79.6      438     79.3      540     75.2      561
GR  78.1      594     78.7      702     74.2      724     77.2      763     76.2      847
GR  73.2      866     73.2      892     77.3      919     78.1      992     79.1     1098
GR  76.2     1125     78.7     1150     78.3     1243     75.7     1276     78.3     1301
GR  77.0     1396     81.8     1485     92.1     1600        0        0        0        0
NC .0800    .0800    .0450
X114.823       12     1139     1253     1006     1053     1084        0        0        0
GR  77.2      445     77.5      673     76.5      678     77.6      685     76.0      950
GR  74.0     1139     71.0     1173     71.0     1215     82.1     1253     88.5     1341
GR  91.7     1465     87.1     1676        0        0        0        0        0        0
NC .0800    .0800    .0550
NC .0800    .0800    .0600
X114.618       15      723      798     1186      768     1138
GR 074.0      200    074.0  00207    072.5  00211    074.2  00216    072.2  00400
GR 069.0  00679    071.5  00695    072.0  00723    067.7  00737    067.3  00752
GR 067.8  00776    072.1  00798    070.5  00981    072.0  01160    072.5  01369
NC .0800    .0800    .0600
X114.402        9      729      819     1250      640      960
GR 072.1        0    071.8  00374    067.8  00729    064.3  00771    064.3  00805
GR 069.6  00819    072.2  01059    073.2  01320    074.1  01550
NC .0800    .0800    .0600
X114.221        9      777      869      987     1127     1122
GR 069.3        0    069.0  00367    067.2  00777    062.7  00791    062.7  00812
GR 066.0  00869    068.5  01114    072.1  01430    074.6  01650
NC .0800    .0800    .0600
X114.008       20.    803.0    892.0      244      499      356        1      0.7
GR 070.2        0    070.8  00142    072.3  00181    069.8  00252    066.4  00357
GR  64.6      525       64      500       64      650       64      790     65.9      803
GR 059.4  00819    059.4  00830    063.2  00863    066.8  00892    065.2  00900
GR 067.1  00910    068.2  01132    070.9  01365    073.9  01396    078.7  01498
NC .0800    .0800    .0600
X113.941       20      803      892      100      100      100     -0.7
GR 070.2        0    070.8  00142    072.3  00181    069.8  00252    066.4  00357
GR  64.6      525       64      600       64      650       64      790     65.9      803
GR 059.4  00819    059.4  00830    063.2  00863    066.8  00892    065.2  00900
GR 067.1  00910    068.2  01132    070.9  01365    073.9  01396    078.7  01498
NC .0800    .0800    .0600
X113.922       20    610.5    709.5       29       29       29
*HY Vineyard Road
X3     10        0        0        0        0        0        0     67.0     67.0
BT      4        0     68.4     68.4    610.5     67.0     65.5    709.5     67.0     65.5
BT   3000     68.2     68.2
GR  69.6        0     67.9    610.5       65    610.5       63    620.5     60.5    630.4
GR 59.67      643     65.5      643     65.5      644     59.6      644     59.8    659.7
GR  61.8    672.9    61.92      676     65.5      676     65.5      677    61.96      677
GR  62.4    688.2     63.2    698.5     65.9    709.5     67.9    709.5     69.4     3000
NC .0800    .0800    .0600
C 13.916*** VINEYARD RD ***
X113.916       20    610.5    709.5      100      100      100     -1.2
X3     10
BT      4        0     68.4     68.4    610.5     67.0     65.5    709.5     67.0     65.5
BT   3000     68.2     68.2
GR  69.6        0     67.9    610.5       65    610.5       63    620.5     60.5    630.4
GR 59.67      643     65.5      643     65.5      644     59.6      644     59.8    659.7
GR  61.8    672.9    61.92      676     65.5      676     65.5      677    61.96      677
GR  62.4    688.2     63.2    698.5     65.9    709.5     67.9    709.5     69.4     3000
NC .0800    .0800    .0600
X113.897       18     4972     5040      300      330      290
X3     10
GR    69     4420    67.45     4510     67.5     4555     68.6     4620     68.6     4720
GR  67.7     4870     64.2     4888       63     4941    61.85     4972     56.8     4995
GR  56.8     5010       62     5040       62     5190       65     5200       67     5230
GR    66     5370       66     5570       65     5800
NC .0800    .0800    .0600
X113.833       17     4968     5045      960      830      960
X3     10
GR  67.5     4540     67.5     4630     66.0     4778     64.0     4792     63.0     4820
GR  62.1     4875     61.9     4915     62.5     4922     63.9     4928     63.7     4968
GR  60.1     4982     56.0     4995     56.5     5005       60     5015       64     5045
GR    64     5160       65     5720
NC .0800    .0800    .0600
*
* Left
****LA      ?    65.05
***WD       1        2    65.05      945
* Right
LA      53    64.00
WD       1        2    64.00      945
*
X113.654       23     4974     5020      600     1000     1020
X3     10                       4974     -200     5020     -200
GR  65.4     3970     65.3     4180     61.4     4235     60.6     4290     60.4     4345
GR  59.9     4398     59.8     4456     60.1     4512     59.7     4570     60.0     4628
GR 60.25     4685     60.3     4744     59.8     4802    59.15     4860     59.1     4915
GR    60     4963     62.6     4974    62.25     4980     55.0     4995     55.6     5005
GR    63     5020       64     5045     64.7     5345
NC .0800    .0800    .0600
*
* Left
****LA      ?    62.55
***WD       1        2    62.55     1077
* Right
LA      53    62.50
WD       1        2    62.50     1077
*
X113.450       30     4980     5020      700     1100     1470
X3     10                       4980     -200     5020     -200
GR  66.3     3900     66.4     3920     66.7     3980     66.7     4080     64.4     4180
GR  64.4     4181     60.2     4212     59.9     4266     59.3     4378     59.7     4435
GR  59.9     4491     60.2     4548     60.0     4608     60.2     4665     60.3     4722
GR  60.9     4780     60.7     4840     62.5     4895     57.8     4980    54.75     4995
GR  55.0     5005       62     5020       62     5050       61     5065       63     5665
GR    64     5775       65     5795       65     5805       64     5815     63.8     5925
NC .0800    .0800    .0600
*
* Left
****LA      ?    61.75
***WD       1        2    61.75     1341
* Right
LA      53    61.00
WD       1        2    61.00     1341
*
X113.196       18     4980     5035      800      800     1010
X3     10                       4980     -200     5035     -200
GR  65.2     4560     64.9     4580     65.2     4590     65.5     4670     65.4     4705
GR  65.7     4720     65.7     4830     64.8     4870     62.5     4895     61.5     4915
GR    61     4980     53.6     4995       54     5010       60     5035       62     5255
GR  63.2     5450       62     5750       62     5850
NC .0800    .0800    .0600
*
* Left
****LA      ?    60.85
***WD       1        2    60.85     1051
* Right
LA      53    60.75
WD       1        2    60.75     1051
*
X112.997       33     1551     1675      754      245      445        0        0        0
X3     10        0        0     1551     -200     1675     -200     67.4     67.4        0
GR  65.0        0     64.6      320     63.3      488     64.2      548     62.1      703
GR  63.0      754     61.2      807     62.0      843     60.5      892     61.7      970
GR  60.1     1020     61.1     1087     64.8     1253     64.7     1299     61.8     1395
GR  60.3     1471     60.1     1522     60.7     1551     60.2     1574     59.1     1600
GR  59.6     1626     55.3     1638     55.3     1660     61.5     1675     61.0     1700
GR  59.7     1838     60.0     2012     61.8     2049     63.3     2161     64.3     2293
GR  65.2     2325     65.2     2434     65.3     2511        0        0        0        0
NC .0800    .0800    .0600
*
* Left
****LA      ?    64.20
***WD       1        2    64.20      100
* Right
LA      53    64.60
WD       1        2    64.60      100
*
*112.978       35   1226.7   1301.1       10       10       10
*Y 12.978
*3      10        0        0                 0                 0        0        0        0
*T       4        0     67.4     67.4   1226.7     67.7     65.4   1301.1     67.7     65.4
*T    2030     66.4     66.4        0        0        0        0        0        0        0
*R    67.4        0     67.7   1226.7     57.7   1226.7     56.0   1235.4     55.9   1236.7
*R    65.4   1236.7     65.4   1237.7    55.82   1237.7     55.1   1246.9     55.1   1247.2
*R    65.4   1247.2     65.4   1248.2    55.12   1248.2    55.29   1257.7     65.4   1257.7
*R    65.4   1258.7    55.28   1258.7    54.96   1268.2     65.4   1268.2     65.4   1269.2
*R   54.92   1269.2     54.9   1269.9     55.2   1278.7     65.4   1278.7     65.4   1279.7
*R   55.24   1279.7     55.3   1281.6    56.43   1289.7     65.4   1289.7     65.4   1290.7
*R   56.57   1290.7     56.9   1293.1     58.3   1301.1     67.7   1301.1     66.4     2030
```

```
*C *** CCTRR ***
*X112.976      35  1226.7  1301.1     170      80      90       0       0       0
**HY 12.976
*X3    10       0       0               0               0       0       0       0
*BT     4       0    67.4    67.4  1226.7    67.7    65.4  1301.1    67.7    65.4
*BT  2030    66.4    66.4       0       0       0       0       0       0       0
*GR  67.4       0    67.7  1226.7    57.7  1226.7    56.0  1235.4    55.9  1236.7
*GR  65.4  1236.7    65.4  1237.7   55.82  1237.7    55.1  1246.9    55.1  1247.2
*GR  65.4  1247.2    65.4  1248.2   55.12  1248.2   55.29  1257.7    65.4  1257.7
*GR  65.4  1258.7   55.28  1258.7   54.96  1268.2    65.4  1268.2    65.4  1269.2
*GR 54.92  1269.2    54.9  1269.9    55.2  1278.7    65.4  1278.7    65.4  1279.7
*GR 55.24  1279.7    55.3  1281.6   56.43  1289.7    65.4  1289.7    65.4  1290.7
*GR 56.57  1290.7    56.9  1293.1    58.3  1301.1    67.7  1301.1    66.4    2030

*X112.959      33    1551    1675     400      80     245   0.766       0       0
**HY 12.959
*X3    10       0       0    1551       0    1675       0    67.4    67.4       0
*GR  65.0       0    64.6     320    63.3     488    64.2     548    62.1     703
*GR  63.0     754    61.2     807    62.0     843    60.5     892    61.7     970
*GR  60.1    1020    61.1    1087    64.8    1253    64.7    1299    61.8    1395
*GR  60.3    1471    60.1    1522    60.7    1551    60.2    1574    59.1    1600
*GR  59.6    1626    55.3    1638    55.3    1660    61.5    1675    61.0    1700
*GR  59.7    1838    60.0    2012    61.6    2049    63.3    2161    64.3    2293
*GR  65.2    2325    65.2    2434    65.3    2511       0       0       0       0

X112.913      18     870     905     239     953     745       0       0       0
X3    10       0       0     870       0     905               0       0       0
GR  63.3       0    62.6      95    59.6     373    59.2     619    60.3     750
GR  60.1     857    59.2     870    54.3     876    54.3     887    60.1     905
GR  61.7     922    64.1    1000    64.8    1180    65.6    1242    64.1    1263
GR  64.6    1286    64.0    1306    65.7    1350       0       0       0       0

*X112.900      22   851.4   928.6      20      20      20       0       0       0
**HY 12.900
*X3    10       0       0               0               0       0       0       0
*BT     6       0    63.3    63.3   851.4    65.9    65.9   851.4    65.9    63.9
*BT 928.6    65.9    63.9   928.6    65.9    65.9    1350    65.7    65.7
*GR  63.3       0    65.9   851.4    61.8   851.4    59.0     861   59.49   869.9
*GR  63.9   869.9    63.9   870.9   59.32   870.9    57.2   880.3    55.3   889.5
*GR  63.9   889.5    63.9   890.5   55.12   890.5    54.4     895   58.15   909.1
*GR  63.9   909.1    63.9   910.1   58.44   910.1    61.1     919    62.7   928.6
*GR  65.9   928.6    65.7    1350
*
*C 12.896    CARMENCITA AVENUE
*X112.896      22   851.4   928.6      55      55      55       0       0       0
**HY 12.896
*X3    10       0       0               0               0       0       0       0
*BT     6       0    63.3    63.3   851.4    65.9    65.9   851.4    65.9    63.9
*BT 928.6    65.9    63.9   928.6    65.9    65.9    1350    65.7    65.7
*GR  63.3       0    65.9   851.4    61.8   851.4    59.0     861   59.49   869.9
*GR  63.9   869.9    63.9   870.9   59.32   870.9    57.2   880.3    55.3   889.5
*GR  63.9   889.5    63.9   890.5   55.12   890.5    54.4     895   58.15   909.1
*GR  63.9   909.1    63.9   910.1   58.44   910.1    61.1     919    62.7   928.6
*GR  65.9   928.6    65.7    1350

*X112.886      18     870     905      90     800     600       0       0       0
**HY 12.886
*X3    10       0       0     870       0     905               0       0       0
*GR  63.3       0    62.6      95    59.6     373    59.2     619    60.3     750
*GR  60.1     857    59.2     870    54.3     876    54.3     887    60.1     905
*GR  61.7     922    64.1    1000    64.8    1180    65.6    1242    64.1    1263
*GR  64.6    1286    64.0    1306    65.7    1350       0       0       0       0

X112.772      18     653     719     948     760    1075       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  64.6       0    62.5      16    64.6      26    62.5     157    61.2     295
GR  59.2     603    58.8     653    53.8     665    53.8     699    60.1     719
GR  60.1     791    63.0     845    61.2     981    62.6    1094    63.3    1208
GR  62.5    1382    62.6    1635    62.6    1800       0       0       0       0

XK    99                              1.5      .3
X112.568      17    1026    1075     692     444     981       0       0       0
X3    10       0       0       0       0       0               0       0       0
GR  63.6       0    62.7     297    60.7     751    60.1    1026    53.0    1039
GR  53.0    1062    58.6    1075    58.9    1303    59.3    1473    58.4    1667
GR  56.5    1687    60.5    1702    60.7    1759    57.0    1772    59.3    1788
GR  61.7    2001    60.7    2150       0       0       0       0       0       0

X112.383      10     645     685     170     100     220       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  61.5       0    60.3     400    58.5     645    52.2     650    52.2     673
GR  58.5     685    57.4     712    58.1     950    59.0    1750    60.5    1850

X112.341      11   869.0   931.0      34      34      34       0       0       0
*HY Bradshaw Road
X3    10       0       0               0               0       0       0       0
*BT     4       0    63.5    63.5     869    63.9    60.6     931    63.9    60.6
*BT  1900    60.5    60.5       0       0       0       0       0       0       0
GR  63.5       0    63.5     869    57.1     869    55.0  884.5    53.2  898.6
GR  60.6  898.6    60.6   900.1   53.15   900.1    55.2     931    63.5     931
GR  60.5    1900

C 12.334    BRADSHAW ROAD
X112.334      11     869     931      20      90      70       0       0       0
X3    10       0       0               0               0       0       0       0
*BT     4       0    63.5    63.5     869    63.9    60.6     931    63.9    60.6
*BT  1900    60.5    60.5       0       0       0       0       0       0       0
GR  63.5       0    63.5     869    57.1     869    55.0  884.5    53.2  898.6
GR  60.6  898.6    60.6   900.1   53.15   900.1    55.2     931    63.5     931
GR  60.5    1900

X112.321      18.   886.0   934.0      50     360     300       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  60.7       0    61.5      89    60.6     303    59.2     427    55.6     477
GR  57.5     550    56.7     740    57.6     886    51.4     894    51.4     918
GR  57.9     934    58.9    1200    56.2    1211    58.2    1222    61.8    1461
GR  62.2    1692    60.5    1852    60.2    2050       0       0       0       0

X112.264      18     886     934     564     835     745       0       0       0
X3    10       0       0       0       0               0       0       0       0
GR  60.7       0    61.5      89    60.6     303    59.2     427    55.6     477
GR  57.5     550    56.7     740    57.6     886    51.4     894    51.4     918
GR  57.9     934    58.9    1200    56.2    1211    58.2    1222    61.8    1461
GR  62.2    1692    60.5    1852    60.2    2050       0       0       0       0

X112.123      17    1078    1121     976     865    1157       0       0       0
X3    10       0       0               0               0       0       0       0
GR  60.3       0    58.2     137    56.7     406    56.6     585    53.8     636
GR  57.4     718    56.2    1078    51.0    1086    51.0    1103    59.1    1121
GR  60.1    1366    60.5    1596    62.2    1773    59.5    1876    62.7    1964
GR  62.1    2027    65.3    2200       0       0       0       0       0       0

X111.904      16     913     942     711    1299    1199       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  59.1       0    57.9     379    55.4     749    54.8     913    49.6     917
GR  49.6     933    55.0     942    54.1    1014    55.9    1276    55.8    1428
GR  58.4    1447    63.2    1724    68.6    2036    72.9    2215    65.7    2405
GR  67.5    2450       0       0       0       0       0       0       0       0

X111.677      15    1365    1404     892     892     892       0       0       0
X3    10       0       0               0               0       0       0       0
GR  58.5       0    57.2     363    55.3     781    55.5    1072    53.8    1326
GR  52.7    1365    49.3    1371    49.3    1390    55.5    1404    59.2    1544
GR  60.2    1779    58.4    1807    60.6    1825    67.0    2120    75.6    2400

X111.470      13    1059    1206    1130     530    1080       0       0       0
X3    10       0       0               0               0       0       0       0
GR  58.7       0    56.4     381    56.2     799    54.6    1059    49.0    1067
GR  49.0    1092    51.3    1097    54.8    1206    53.1    1529    53.4    1819
GR  57.9    1913    61.5    2077    68.2    2250       0       0       0       0

X111.290      27    1224    1288     755     968    1023       0       0       0
X3    10       0       0               0               0       0       0       0
GR  56.4       0    57.9      93    56.0     175    57.9     235    54.6     304
GR  57.0     340    55.6     455    54.6     734    54.6     997    52.3    1125
GR  53.6    1224    48.8    1235    48.8    1261    56.9    1288    56.0    1298
GR  56.0    1338    56.0    1351    56.0    1377    56.0    1389    56.0    1407
GR  59.0    1588    65.1    1796    69.3    2016    67.8    2042    69.1    2061
GR  67.2    2085    68.6    2150       0       0       0       0       0       0

X111.097      17     847     897     950     786    1452       0       0       0
X3    10       0       0               0               0       0       0       0
GR  57.0       0    57.7      97    56.4     204    56.4     430    54.4     613
GR  51.4     675    53.0     847    48.7     853    48.7     876    52.8     897
GR  53.9    1209    59.3    1517    62.0    1689    64.4    1703    70.9    1900
GR  74.2    2069    71.5    2200       0       0       0       0       0       0

X110.822      18    1003    1039     852     869    1056       0       0       0
X3    10       0       0               0               0       0       0       0
GR  52.7       0    52.5     174    51.2     192    54.4     217    54.1     465
GR  55.4     726    50.0     902    51.5     946    50.5    1003    48.6    1007
GR  48.6    1032    52.4    1039    53.6    1222    55.5    1523    58.7    1898
GR  61.8    2192    63.4    2351    61.8    2400       0       0       0       0

X110.622      23    1252    1307    1056    1056    1056       0       0       0
X3    10       0       0               0               0       0       0       0
GR  55.1       0    53.9     347    52.8     586    52.9     826    52.7    1050
GR  51.4    1242    54.0    1252    48.4    1262    48.4    1299    52.7    1307
GR  49.7    1337    52.2    1396    51.9    1659    52.8    1897    52.0    1911
GR  53.6    1953    55.5    2111    54.8    2130    57.4    2267    56.1    2379
GR  57.5    2418    61.2    2617    63.2    2700       0       0       0       0

X110.404      20    1720    1756     933    1061    1055       0       0       0
X3    10       0               0               0       0       0       0       0
GR  55.1       0    56.4      59    55.1     296    55.9     510    55.4     780
GR  54.4    1133    53.1    1341    51.2    1579    49.1    1622    48.8    1705
GR  49.6    1720    46.6    1726    46.6    1742    51.5    1756    53.6    1849
GR  56.9    2061    56.6    2176    61.7    2310    65.8    2530    67.2    2700

X110.172      13     986    1036     750     780     872       0       0       0
X3    10       0       0               0               0       0       0       0
GR  54.8       0    54.5     386    52.3     796    49.3     986    45.8    1000
GR  45.8    1022    49.1    1036    57.6    1286    62.1    1431    67.3    1496
GR  69.0    1668    66.3    1833    66.5    2000       0       0       0       0

X110.007      17    1002    1105     263     903    1115       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  52.8       0    51.7     295    50.0     550    48.4     970    47.3    1002
GR  45.2    1008    45.2    1036    52.7    1105    58.4    1222    56.4    1228
GR  64.2    1270    66.0    1341    53.4    1463    61.6    1595    60.1    1612
GR  65.5    1773    67.3    1850       0       0       0       0       0       0

X1 9.796      11    1452    1610     412     550    1318       0       0       0
X3    10       0       0               0               0       0       0       0
GR  53.4       0    51.9     377    50.3     753    49.1    1011    48.2    1300
GR  46.3    1452    44.2    1458    44.2    1484    53.1    1610    57.9    1873
GR  64.8    2150       0       0       0       0       0       0       0       0

X1 9.546      13    1007    1057    1118     200     850       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  53.8       0    53.0     341    51.2     839    48.7    1007    43.7    1027
GR  43.7    1057    45.2    1065    47.2    1201    48.0    1500    52.0    1760
GR  56.0    2030    56.0    2160    60.0    2330       0       0       0       0

C  9.385    *LAGUNA TRIB #1 CONFLUENCE BETWEEN 3052 + 3053
X1 9.385      17    1609    1669     997     438     872       0       0       0
GR  53.2       0    54.9     215    54.4     467    50.2     680    49.4     787
GR  49.9     938    46.9    1181    49.0    1317    45.4    1408    44.7    1609
GR  43.4    1615    43.4    1658    46.9    1669    47.9    1885    55.3    2229
GR  58.3    2406    59.0    2500       0       0       0       0       0       0

X1 9.220      24    2228    2355    1133    1156    1050       0       0       0
X3    10       0       0       0       0       0               0       0       0
GR  57.6       0    57.2     332    56.1     757    52.8    1003    52.3    1268
GR  52.0    1700    48.0    1950    47.0    2050    46.7    2150    46.5    2228
GR  44.7    2276    42.7    2284    42.7    2324    45.2    2355    45.4    2481
GR  48.7    2534    47.7    2697    47.5    2857    46.3    2889    53.4    3017
GR  54.2    3128    52.8    3215    58.3    3389    60.7    3500       0       0

X1 9.021      18    1622    1764     600     336     720       0       0       0
X3    10       0       0                               0       0       0       0
GR  53.0       0    53.5     270    53.3     527    52.0     808    51.7    1106
GR  48.8    1336    43.8    1622    42.6    1626    42.6    1675    44.0    1764
GR  49.8    1815    48.2    1830    51.2    1889    50.6    1970    53.5    2025
GR  60.5    2267    63.1    2408    69.0    2600       0       0       0       0

X1 8.885      23    2383    2767     490     372     504       0       0       0
X3    10       0       0               0               0       0       0       0
GR  49.7       0    48.7     369    50.3     747    48.6    1097    47.8    1592
GR  44.6    1606    46.5    1630    48.0    1660    47.6    1693    45.5    1705
GR  45.8    1940    44.0    2023    44.7    2096    44.5    2380    45.5    2383
GR  42.5    2447    43.7    2457    45.0    2767    51.7    2874    52.3    3086
GR  60.5    3364    66.0    3636    70.2    3800       0       0       0       0
NC .0600   .0600   .0450
X1 8.790      13     493     756     500     500     500       0       0       0
X3    10       0       0               0               0       0       0       0
GR  48.8       0    50.7      43    55.8     493    42.1     633    42.1     724
GR  45.6     756    47.0     886    51.8     950    54.7    1038    58.6    1154
GR  63.5    1409    65.7    1568    64.1    1800       0       0       0       0

X1 8.693      15     325     600     130     400     250       0       0       0
GR  68.0       0    64.0     100    64.0     130    60.0     260    56.0     325
GR  48.0     390    44.0     420    41.0     430    41.0     500    43.0     510
GR  43.0     560    52.0     600    56.0     630    60.0     690    61.4    1000
*
NC .0500   .0500   .0400

X1 8.638     17.      .0   168.0      10      10      10     1.0       0       0
GR  59.2       0    55.0       0    50.8      16    44.7      27    42.5      29
GR  38.8      55    38.8      57    38.8      83    38.8      85    38.8      91
GR  38.8      93    40.5     139    41.8     141    45.7     151    52.5     159
GR  53.3     168    56.7     168       0       0       0       0       0       0

X1 8.636     17.      .0   168.0      37      37      37     1.0       0       0
*HY Bond Road
BT    22       0    59.2    57.4      27    58.8    57.0      27    58.8    44.7
BT    29    58.8    42.5      29    58.8    57.0      55    58.4    56.6      55
BT  58.4    38.8      57    58.4    38.8      57    58.4    56.6      83    58.0
BT  56.2      83    58.0    38.8      85    58.0    38.8      85    58.0    56.2
BT   111    57.6    55.8     111    57.6    38.8     113    57.6    38.8     113
BT  57.6    55.8     139    57.2    55.4     139    57.2    40.5     141    57.2
BT  41.8     141    57.2    55.4     168    56.7    54.9       0       0       0
GR  59.2       0    55.0       0    50.8      16    44.7      27    42.5      29
GR  38.8      55    38.8      57    38.8      83    38.8      85    38.8     111
GR  38.8     113    40.5     139    41.8     141    45.7     151    52.5     159
GR  53.3     168    56.7     168

C  8.629    BOND ROAD / NORMAL BRIDGE ROUTINE
X1 8.629     17.      .0   168.0      10      10      10     1.0       0       0
BT    22       0    59.2    57.4      27    58.8    57.0      27    58.8    44.7
BT    29    58.8    42.5      29    58.8    57.0      55    58.4    56.6      55
BT  58.4    38.8      57    58.4    38.8      57    58.4    56.6      83    58.0
BT  56.2      83    58.0    38.8      85    58.0    38.8      85    58.0    56.2
BT   111    57.6    55.8     111    57.6    38.8     113    57.6    38.8     113
BT  57.6    55.8     139    57.2    55.4     139    57.2    40.5     141    57.2
BT  41.8     141    57.2    55.4     168    56.7    54.9       0       0       0
GR  59.2       0    55.0       0    50.8      16    44.7      27    42.5      29
GR  38.8      55    38.8      57    38.8      83    38.8      85    38.8     111
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GR  38.8     113    40.5     139    41.8     141    45.7     151    52.5     159
GR  53.3     168    56.7     168

X1 8.627     17.      .0   168.0     240     120     160     1.0     0.5       0
GR  59.2       0    55.0       0    50.8      16    44.7      27    42.5      29
GR  38.8      55    38.8      57    38.8      83    38.8      85    38.8      91
GR  38.8      93    40.5     139    41.8     141    45.7     151    52.5     159
GR  53.3     168    56.7     168       0       0       0       0       0       0
*
X1 8.597     18.      .0   155.0     230     135     180     1.0     1.4       0
GR  53.5       0    50.0       0    50.0       5    42.0      13    42.0      20
GR  38.2      30    38.2      32    38.4      61    38.4      63    38.5      92
GR  38.5      94    38.7     123    38.7     125    42.0     135    42.0     142
GR  50.0     150    50.0     155    54.1     155       0       0       0       0

X1 8.563     18.      .0   155.0      10      10      10       0       0       0
GR  53.5       0    50.0       0    50.0       5    42.0      13    42.0      20
GR  38.2      30    38.2      32    38.4      61    38.4      63    38.5      92
GR  38.5      94    38.7     123    38.7     125    42.0     135    42.0     142
GR  50.0     150    50.0     155    54.1     155       0       0       0       0

X1 8.561     18.      .0   155.0      37      37      37       0       0       0
*HY Waterman Road
BT    18       0    53.5    51.7      30    53.6    51.8      30    53.6    38.2
BT    32    53.6    38.2      32    53.6    51.8      61    53.7    51.9      61
BT  53.7    38.4      63    53.7    38.4      63    53.7    51.9      92    53.8
BT  52.0      92    53.8    38.5      94    53.8    38.5      94    53.8    52.0
BT   123    54.0    52.2     123    54.0    38.7     125    54.0    38.7     125
BT  54.0    52.2     155    54.1    52.3       0       0       0       0       0
GR  53.5       0    50.0       0    50.0       5    42.0      13    42.0      20
GR  38.2      30    38.2      32    38.4      61    38.4      63    38.5      92
GR  38.5      94    38.7     123    38.7     125    42.0     135    42.0     142
GR  50.0     150    50.0     155    54.1     155

C  8.554     WATERMAN ROAD / NORMAL BRIDGE ROUTINE
X1 8.554     18.      .0   155.0      10      10      10       0       0       0
*X1 8.554     18.      .0   155.0     330     470     400       0       0       0
BT    18       0    53.5    51.7      30    53.6    51.8      30    53.6    38.2
BT    32    53.6    38.2      32    53.6    51.8      61    53.7    51.9      61
BT  53.7    38.4      63    53.7    38.4      63    53.7    51.9      92    53.8
BT  52.0      92    53.8    38.5      94    53.8    38.5      94    53.8    52.0
BT   123    54.0    52.2     123    54.0    38.7     125    54.0    38.7     125
BT  54.0    52.2     155    54.1    52.3       0       0       0       0       0
GR  53.5       0    50.0       0    50.0       5    42.0      13    42.0      20
GR  38.2      30    38.2      32    38.4      61    38.4      63    38.5      92
GR  38.5      94    38.7     123    38.7     125    42.0     135    42.0     142
GR  50.0     150    50.0     155    54.1     155

*X1 8.552     18.      .0   155.0      40      40      40       0       0       0
*Added new X1 because of remarked out
X1 8.552     18.      .0   155.0     640     780     710       0       0       0
GR  53.5       0    50.0       0    50.0       5    42.0      13    42.0      20
GR  38.2      30    38.2      32    38.4      61    38.4      63    38.5      92
GR  38.5      94    38.7     123    38.7     125    42.0     135    42.0     142
GR  50.0     150    50.0     155    54.1     155       0       0       0       0
NC .0600   .0600   .0400
*
SP  38.5
WD     4       2    38.5      95      40     105      42     115      45     135
*
*  FLOW FROM HEC1 STATION LCC13 - WATERMAN AND BOND ROADS

X1 8.462      22     184     244     686     686     686       0       0       0
X3          37.2
GR  50.0     150    45.0     157    44.0     160    43.0     163    42.0     169
GR  41.0     175    40.0     181      39     184      38     187    32.5     192
GR  32.5     238      38     244      39     246      40     248      41     250
GR    42     252      43     255      44     258      45     260      46     265
GR    47     272    50.2     280

X1 8.332      27     206     273     310     375     355
GR  50.0     054    45.0     061    44.0     063    43.0     065    42.0     068
GR  41.0     085    40.5     090    40.0     105    40.0     135    40.5     145
GR    41     150    41.2     158      41     163      40     206      39     234
GR    38     249    37.2     251    37.2     260      38     262      39     265
GR    40     273      41     280      42     295      43     301      44     304
GR  44.2     307    47.2     320

*X1 8.209      31     110     233     150     130     145
* new x1 for reach length
X1 8.209      31     110     233     270     225     265
X3          35.8
GR    48      32      47      38      46      46      45      52      44      65
GR    43      82      42      99      41     103      40     110      39     116
GR    38     141    37.5     148    37.3     168      37     172      36     175
GR    35     182      35     191      36     198      37     202      38     205
GR    39     209      40     220    40.7     233      40     251    39.5     266
GR  39.5     278      40     284      41     289      42     293      43     303
GR  47.5     313
*X1 8.159      30     182     365     112      91     111
*new x1 for reach length
X1 8.159      30     182     365     292     236     281
GR  48.0     136    47.0     147    46.0     157    45.0     164    44.0     171
GR    40     182      39     185      38     190      37     239      36     242
GR  35.8     243    35.8     247      36     248      37     251    37.5     254
GR  37.5     255      38     257      39     275      40     290    40.3     300
GR    40     308    39.5     318    39.5     330      40     339      41     365
GR    42     391      43     440      44     460    44.2     470    46.4     481
X1 8.106      27     207     385     140     110     116
X4     1    37.5     242
GR    46      96      45     181      44     192      43     200      42     203
GR    41     205    40.5     207      40     218      39     222      38     241
GR  37.3     269      37     271      36     280    35.5     282    35.5     295
GR    36     299      37     302    37.5     304      38     330      39     352
GR    40     362      41     385      42     428      43     476      44     487
GR    45     498    45.2     502
X1 8.084      26     363     560     185     190     190       0       0       0
GR  46.0     192    45.0     223    44.0     290    43.0     328    42.0     332
GR  41.0     340    40.0     363      39     381     38.     442   37.75     461
GR  37.2     480      37     482      36     486      35     488      35     491
GR    36     493    37.3     497    37.5     530      38     534      39     545
GR    40     560      41     608      42     634      43     668    43.2     682
GR  45.2     690

X1 8.048     43.   338.5   368.0       6       6       6
GR  45.0     042    44.0     084    43.0     114    42.0     118    41.0     123
GR  40.5     160      40     165      39     174    38.5     234    38.5     335
GR  38.5   338.5    36.0   343.5    36.0   346.5   35.17  346.75    34.7  347.25
GR  34.5     348    34.7  348.75   35.17  349.25    36.0   349.5    36.0   350.5
GR 35.17  350.75    34.7  351.25    34.5     352    34.7  352.75   35.17  353.25
GR  36.0   353.5    36.0   354.5   35.17  354.75    34.7  355.25    34.5     356
GR  34.7  356.75   35.17  357.25    36.0   357.5    36.0   360.5    36.0   365.5
GR    38     368      39     373      40     382      41     411      42     432
GR    43     449    43.8     500    45.6     506
NC .0600   .0600   .0150
X1 8.047     43.   338.5   368.0      21      11      16
BT   -43      42      45      45      84      44      44     114      43      43
BT           118      42      42     123      41      41     160    40.5    40.5
BT           165      40      40     174      39      39     234    38.5    38.5
BT           335    38.5    38.5   338.5    38.5    38.5   343.5    38.5    36.0
BT         346.5    38.5    36.0  346.75    38.5   36.83  347.25    38.5    37.3
BT         348.0    38.5    37.5  348.75    38.5    37.3  349.25    38.5   36.83
BT         349.5    38.5    36.0   350.5    38.5    36.0  350.75    38.5   36.83
BT        351.25    38.5    37.3     352    38.5    37.5  352.75    38.5    37.3
BT        353.25    38.5   36.83   353.5    38.5    36.0   354.5    38.5    36.0
BT        354.75    38.5   36.83  355.25    38.5    37.3     356    38.5    37.5
BT        356.75    38.5    37.3  357.25    38.5   36.83   357.5    38.5    36.0
BT         360.5    38.5    36.0   365.5    38.5    37.5     368    38.5    38.0
BT           373    39.0    39.0     382    40.0    40.0     411    41.0    41.0
BT           432    42.0    42.0     449    43.0    43.0     500    43.8    43.8
BT           506    45.6    45.6
GR  45.0     042    44.0     084    43.0     114    42.0     118    41.0     123
GR  40.5     160      40     165      39     174    38.5     234    38.5     335
GR  38.5   338.5    36.0   343.5    36.0   346.5   35.17  346.75    34.7  347.25
GR  34.5     348    34.7  348.75   35.17  349.25    36.0   349.5    36.0   350.5
GR 35.17  350.75    34.7  351.25    34.5     352    34.7  352.75   35.17  353.25
GR  36.0   353.5    36.0   354.5   35.17  354.75    34.7  355.25    34.5     356
GR  34.7  356.75   35.17  357.25    36.0   357.5    36.0   360.5    36.0   365.5
GR    38     368      39     373      40     382      41     411      42     432
GR    43     449    43.8     500    45.6     506
*

NC .0600   .0600   .0150
X1 8.044      43   338.5     368       6       6       6
BT   -43      42      45      45      84      44      44     114      43      43
BT           118      42      42     123      41      41     160    40.5    40.5
BT           165      40      40     174      39      39     234    38.5    38.5
BT           335    38.5    38.5   338.5    38.5    38.5   343.5    38.5    36.0
BT         346.5    38.5    36.0  346.75    38.5   36.83  347.25    38.5    37.3
BT         348.0    38.5    37.5  348.75    38.5    37.3  349.25    38.5   36.83
BT         349.5    38.5    36.0   350.5    38.5    36.0  350.75    38.5   36.83
BT        351.25    38.5    37.3     352    38.5    37.5  352.75    38.5    37.3
BT        353.25    38.5   36.83   353.5    38.5    36.0   354.5    38.5    36.0
BT        354.75    38.5   36.83  355.25    38.5    37.3     356    38.5    37.5
BT        356.75    38.5    37.3  357.25    38.5   36.83   357.5    38.5    36.0
BT         360.5    38.5    36.0   365.5    38.5    37.5     368    38.5    38.0
BT           373    39.0    39.0     382    40.0    40.0     411    41.0    41.0
BT           432    42.0    42.0     449    43.0    43.0     500    43.8    43.8
BT           506    45.6    45.6
GR  45.0     042    44.0     084    43.0     114    42.0     118    41.0     123
GR  40.5     160      40     165      39     174    38.5     234    38.5     335
GR  38.5   338.5    36.0   343.5    36.0   346.5   35.17  346.75    34.7  347.25
GR  34.5     348    34.7  348.75   35.17  349.25    36.0   349.5    36.0   350.5
GR 35.17  350.75    34.7  351.25    34.5     352    34.7  352.75   35.17  353.25
GR  36.0   353.5    36.0   354.5   35.17  354.75    34.7  355.25    34.5     356
GR  34.7  356.75   35.17  357.25    36.0   357.5    36.0   360.5    36.0   365.5
GR    38     368      39     373      40     382      41     411      42     432
GR    43     449    43.8     500    45.6     506
NH     4     .06     234     .08     340     .04     360     .06     506
X1 8.043     .25     165     382     185     190     185
X4     1    34.5     353
GR  45.0     042    44.0     084    43.0     114    42.0     118    41.0     123
GR  40.5     160      40     165      39     174      38     234    37.5     340
GR    37     342      36     344      35     346    34.5     347      35     354
GR    36     356      37     360      38     368      39     373      40     382
GR    41     411    42.0     432    43.0     449    43.8     500    45.6     506
NH     5     .06     220      .1     280     .04     307      .1     332     .06
NH   493
X1 8.007      29     210     356     185     182     185
X3
GR  45.0     037    44.0     043    43.0     080    42.0     111    41.0     137
GR    40     162      40     185    40.2     200    40.0     210      39     217
GR    38     220      37     236      37     280      36     294      35     296
GR  34.1     300    34.1     304      35     305      36     307      37     332
GR    38     336      39     342      40     356      41     371      42     383
GR    43     400    43.3     450    43.2     485    44.6     493
NH     4     .06     436     .10     483     .04     496     .06     753
X1 7.972      29     430     557     228     235     242       0       0       0
X3
GR  45.0     240    44.0     281    43.0     300    42.0     317    41.0     330
GR  40.0     350    39.0     430      38     434      37     436      37     483
GR    36     485      35     487      34     488   33.75     489   33.75     493
GR    34     494      35     496      36     499      37     533      38     540
GR    39     549      40     557      41     566      42     580      43     623
GR    43     665    42.3     700    42.4     740    46.8     753
NH     7     .10     124     .06     211     .04     274     .08     283     .04
NH   367     .08     386     .06     664
X1 7.927      39     223     367     260     185     230
X3          33.7
GR  45.0      65    44.0     073    43.0     108    42.0     124    41.0     146
GR  40.0     183    39.0     209    38.0     211    37.0     214      36     223
GR  35.0     225    34.0     228    33.0     229    28.5     232    28.5     261
GR  28.5     263    28.5     267    28.5     274    28.5     280    28.5     283
GR  28.5     289    28.5     294    28.5     297    28.5     320    32.5     322
GR    32     335      32     360      33     364      34     366      35     367
GR    36     386      37     392      38     400      39     414      40     427
GR  41.0     434    42.0     442    42.7     647    47.1     664
NH     5     .10     208     .06     283     .06     313     .04     326     .06
NH   726
X1 7.883      27     283     403     200     140     180       0       0       0
X4     1      35     303
GR  45.0     111    44.0     193    43.0     208    42.0     214    41.0     216
GR  40.0     219    39.0     240    38.0     283    37.0     295    36.0     299
GR  35.0     313     34.     315    33.7     317    33.7     323      34     324
GR    35     326      36     376      37     397      38     403      39     427
GR    40     450      41     461      42     479    42.3     540      42     580
GR  42.7     713      47     726
NH     5     .06     140     .07     189     .04     211     .07     284     .06
NH   572
X1 7.849      30     189     220     180     155     203
X3          33.0
GR  45.0     010    44.0     038    43.0     084    42.0     130    41.0     136
GR  40.0     140    39.0     143    38.0     145    37.0     147    36.0     148
GR  35.0     189    34.0     191    33.0     198    32.0     200    32.0     206
GR  33.0     208    34.0     211    35.0     220    35.5     277      36     280
GR    37     284      38     288      39     293      40     327      41     358
GR  41.5     417      41     468      42     526      43     560    46.9     572
*  FLOW FROM HEC1 STATION 23675 - 2000' FT U/S OF SPRR
NH     5     .06     160     .07     199     .04     240     .06     280     .06
NH   496
X1 7.811      34     199     240     180     155     170
X3          33.0
X4     2    36.2     164    36.3     197
GR  45.0     005    44.0     023    43.0     049    42.0     076    41.0     118
GR  40.0     138    39.0     144    38.0     155    37.0     160    36.0     199
GR  35.0     202     34.     204    33.0     206    32.0     208      31     211
GR    30     215      29     220      30     227      31     231      32     233
GR    33     235      34     237      35     240    35.3     260      36     265
GR    37     270      38     280      39     292      40     309      41     324
GR  41.2     340      41     358    40.7     475    46.9     496
NH     6     .08     312     .06     352     .06     376     .04     452     .07
NH   496     .06     730
X1 7.778      30     374     456     110     100     105       0       0       0
X3          33.0
X4     1    36.2     490
GR  44.0     189    43.0     218    42.0     236    41.0     260    40.0     300
GR  39.0     312    38.0     348    37.0     352    36.0     374    35.0     376
GR    34     379    33.0     381      30     385    28.5     387    28.5     440
GR    30     442      33     446      34     448      35     452      36     456
GR    37     496      38     502      39     512      40     535    40.6     580
GR    40     605      41     654      41     657    40.5     711    46.8     730
NH     5     .06     147     .10     191     .04     214     .07     295     .06
NH   570
X1 7.758      27     171     332     200     160     190
X4     3    35.7     292    39.7     340    39.2     380
GR  44.0     001      43      28      42      69      41     103      40     138
GR    39     142      38     147      37     154    36.6     161      37     167
GR    38     171    38.2     175      38     179      37     191      36     195
GR    35     197      34     200      33     207      34     212      35     214
GR    36     295      37     302      38     317      39     332      40     468
GR  40.5     549    46.8     570
NH     4     .06     301     .04     317     .07     339     .06     656
X1 7.722      27     255     352     140     195     185
X4     1    35.2     336
GR  45.0     044    44.0     060    43.0     095    42.0     118    41.0     123
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GR  40.0     182       39      255       38      265       37      273       36      287
GR    35     301       34      303       33      305     32.7      307       33      309
GR    34     315       35      317       36      339       37      342       38      346
GR    39     352       39      383     38.5      435       39      473       40      578
GR  40.6     639     46.2      656
NM     4     .08      076      .06      350      .10      372      .06      530
X1 7.687      28      350      395      160      240      220
X4     1    35.4      307
GR  45.0      08       44       19       43       45       42       76       41       80
GR    40      83       39      184       38      238       37      258       36      287
GR    35     350       34      352     32.2      357     32.2      360     32.2      363
GR    34     369       35      372       36      375       37      378       38      382
GR    39     386       40      391       41      395       42      403       43      414
GR    44     458       44      495     44.8      530
NH     5     .06      302       .1      312      .04      383       .1      403      .06
NH   506
*X1 7.646      30      302      403      190      220      210
* New x1 for reach length
X1 7.646       30      302      403      225      359      408
X3            32.0
GR  45.0      019     44.0      029     43.0      048     42.0      087     41.0      092
GR  40.0      107     39.0      127     38.0      160     37.0      186     36.0      213
GR  35.0      243     34.0      302     33.0      304     32.0      305     31.0      312
GR  30.0      320       28      321       27      325       27      380       28      381
GR    29      382       30      383       31      384       32      385       37      392
GR    40      399       42      403       43      476       44      500     44.4      506
NH     5     .06      232      .10      246      .04      343       .1      358      .06
NH   579
*X1 7.606      41      212      372      215      139      198
*X3           32.0
*GR    45      35       44       46       43       78       42      140       42      157
*GR    42     212       41      216       40      219       39      221       38      226
*GR    37     229       36      232       35      240       34      244       33      246
*GR    32     249       31      251       30      254       29      256       27      257
*GR    27     330       29      334       30      343       31      352       32      354
*GR    33     356       34      358       35      362       36      370       37      372
*GR    38     382       39      389       40      404       41      418       42      428
*GR  42.1     450       42      460     41.8      500       42      520       43      560
*GR  44.3     579
NC .0600    .0600    .0400
X1 7.568       30      142      185        6        6        6
GR  43.8        0     43.0      100     42.0      105     41.0      110     40.0      114
GR  39.0      118     38.0      121     37.0      131     36.0      142     35.0      160
GR  34.0      162     33.0      164     32.0      166     32.0      179     33.0      181
GR  34.0      183     35.0      185     36.0      190     35.0      242     34.6      270
GR  35.0      320     36.0      363     37.0      382     38.0      400     39.0      418
GR  40.0      445     41.0      490     42.0      504     43.0      519     44.0      525
NC .0600    .0600    .0150
X1 7.567      51.     164.5    192.0       18       13       13
X2                                                   1
GR  44.0       08     43.7       20     43.6       55       44       60     43.0      101
GR  42.0      106     41.0      114     40.0      121     39.0      124     38.0      126
GR  37.0      139     36.0    164.5     33.5    169.5     33.5    172.5    32.67    172.75
GR  32.2   173.25       32      174     32.2   174.75    32.67   175.25     33.5    175.5
GR  33.5    176.5    32.67   176.75     32.2   177.25       32      178     32.2   178.75
GR 32.67   179.25     33.5    179.5     33.5    180.5    32.67   180.75     32.2   181.25
GR  32.0      182     32.2   182.75    32.67   183.25     33.5    183.5     33.5    186.5
GR  34.0    191.5     34.5      192     35.0      220     35.1      234     35.1      250
GR  34.5      280     35.0      325     36.0      375       37      391       38      415
GR  39.0      434       40      460       41      503       42      512       43      527
GR    44      540
NC .0600    .0600    .0150
X1 7.565       51    164.5      192        6        6        6
BT  -.51       08       44       44       20     43.7     43.7       55     43.6     43.6
BT             60       44       44      101       43       43      106       42       42
BT            114       41       41      121       40       40      124       39       39
BT            126       38       38      139       37       37    164.5       36       36
BT         169.5       36     33.5    172.5       36     33.5   172.75       36    34.33
BT         173.25      36     34.8    174.0       36       35   174.75       36     34.8
BT         175.25      36    34.33    175.5       36     33.5    176.5       36     33.5
BT         176.75      36    34.33   177.25       36     34.8      178       36       35
BT         178.75      36     34.8    179.25      36    34.33    179.5       36     33.5
BT          180.5      36     33.5   180.75       36    34.33   181.25       36     34.8
BT          182.0      36       35   182.75       36     34.8   183.25       36    34.33
BT          183.5      36     33.5    186.5       36     33.5    191.5       36       34
BT            192      36     34.5      220     35.7     35.0      234     35.3     35.1
BT            250    35.1     35.1      280     34.5     34.5      325       35       35
BT            375    36.0     36.0      391       37       37      415       38       38
BT            434      39       39      460       40       40      503       41       41
BT            512      42       42      527       43       43      540       44       44
GR  44.0       08     43.7       20     43.6       55       44       60     43.0      101
GR  42.0      106     41.0      114     40.0      121     39.0      124     38.0      126
GR  37.0      139     36.0    164.5     33.5    169.5     33.5    172.5    32.67    172.75
GR  32.2   173.25       32      174     32.2   174.75    32.67   175.25     33.5    175.5
GR  33.5    176.5    32.67   176.75     32.2   177.25       32      178     32.2   178.75
GR 32.67   179.25     33.5    179.5     33.5    180.5    32.67   180.75     32.2   181.25
GR  32.0      182     32.2   182.75    32.67   183.25     33.5    183.5     33.5    186.5
GR  34.0    191.5     34.5      192     35.0      220     35.1      234     35.1      250
GR  34.5      280     35.0      325     36.0      375       37      391       38      415
GR  39.0      434       40      460       41      503       42      512       43      527
GR    44      540
NC .0600    .0600    .0400
X1 7.564       33      168      320       33       20       33
GR  44.0       08     43.7       20     43.6       55       44       60     43.0      101
GR  42.0      106     41.0      114     40.0      121     39.0      124     38.0      126
GR  37.0      139     36.0      168     35.0      170     34.0      172     31.9      176
GR  31.9      187     34.0      192     34.5      212     34.0      234     33.5      250
GR  34.0      268     35.0      287     36.0      320     36.6      354     36.4      375
GR  37.0      389     38.0      411     39.0      430     40.0      451     41.0      488
GR  42.0      495     43.0      510     44.0      525
NH     4      .06      170      .04      199      .08      262      .06      528
X1 7.557       40      170      300      170      122      160
X3
GR  44.5       30     44.0       70     43.5      090     43.0      107       42      111
GR    41      117       40      121       39      124       38      129       37      131
GR    36      140       35      155     35.5      170       35      177       34      180
GR    33      182       32      184     31.8      188       32      191       33      194
GR    34      199     34.2      214       34      228     33.9      248       34      262
GR    35      273       36      300       37      337       38      346       38      356
GR    37      367     36.6      380       37      389       38      415       39      440
GR    40      453       41      490       42      492       43      510       44      528
NH     6      .06      178      .04      235      .08      280      .06      324      .08
NH   402      .06      542
X1 7.527       45      173      241      101       76       96
X3            31.5
GR  43.0      128     42.0      140     41.0      144     40.0      147       35      164
GR    34      166       33      173       32      176       31      178       30      182
GR    29      183       28      184       27      207       27      220       28      230
GR    29      231       30      233       31      235       32      238       33      241
GR    34      280       35      286       36      290       37      295       38      302
GR    39      324       40      346       41      353       42      363       43      370
GR    42      382       41      387       40      396       39      402       38      409
GR    37      420     36.6      432       37      440       38      455       39      469
GR    40      485       41      516       42      523       43      530     43.8      542
NH     6      .06      326      .04      361       .1      383      .06      450      .08
NH   519      .06      627
X1 7.509       35      315      383      100      100      100
X3            31.5
X4     1     33.4      386
GR  43.0      197     42.0      282     41.0      285     40.0      287       35      310
GR    34      313       33      315       32      318       31      326       30      336
GR  28.5      346       30      355       31      361       32      380       33      383
GR    34      425       35      430       36      433       37      440       38      450
GR    39      460       40      480       41      490       40      500       39      510
GR    38      519       37      530     36.3      550       37      563       38      570
GR    39      580       40      600       41      616       42      623       43      627
NH     5      .06      302       .1      340      .04      381       .1      427      .06
NH   611
X1 7.490       46      331      388      100      100      100

X3            31.5
GR  46.0      100     45.0      104     44.0      111     44.0      123     44.5      130
GR  44.0      137     43.0      150     41.0      160     42.0      164     42.0      270
GR  41.0      277     40.0      282     39.0      287     38.0      291     37.0      295
GR  36.0      298     35.0      302     34.0      309     33.0      331     32.0      336
GR  31.0      339     30.0      340     27.5      341     27.0      350     27.0      370
GR  27.5      379       30      380       31      381       32      384       33      388
GR    34      427       35      460       36      465       37      472     37.1      477
GR    37      484       36      495       35      515       36      531       37      543
GR    38      554       39      567       40      585       41      596       42      600
GR  43.8      611
NH     5      .10      291      .06      361      .04      427      .10      432      .06
NH   640
X1 7.471       36      346      432      110      335      250
X3            31.5
GR  46.0      201     45.0      206     44.0      212     43.0      217     42.7      220
GR  43.0      228     43.5      242     43.0      258     42.0      263     41.0      273
GR  40.0      283       39      291       38      306       37      323       36      346
GR    35      348       34      351       33      358       32      361       31      364
GR    30      366       27      375       27      405       30      425       31      427
GR    32      430       33      432       34      489       35      531       36      541
GR    37      553       38      566       39      586       40      604       41      628
GR  41.7      640
NC .0600    .0600    .0400
NC .0600    .0600    .0400
X1 7.419       78.     200.0    451.0       16       16       16
X2                                43.7     46.8        1      1.5     .559
*       SEDIMENT OPTION USED TO REMOVE PONDS WITHIN CHANNEL AS FLOW AREA
*       BETWEEN SPRR AND WATERMAN ROAD CROSSING
GR  43.7      200     36.0      200     35.0      207     34.7      210     43.7      210
GR  43.7      212     34.5      212     34.0      217     33.0      224     32.8      225
GR  43.7      225     43.7      227     32.7      227     32.5      228     32.3      239
GR  43.7      239     43.7      241     32.3      241     32.1      254     43.7      254
GR  43.7      256     32.1      256     31.9      269     43.7      269     43.7      271
GR  31.9      271     31.8      284     43.7      284     43.7      286     31.8      286
GR  31.5      299     43.7      299     43.7      301     31.5      301     31.5      303
GR  31.7      314     43.7      314     43.7      316     31.2      316     31.9      329
GR  43.7      329     43.7      331     31.9      331     32.1      344     43.7      344
GR  43.7      346     32.1      346     32.3      359     43.7      359     43.7      361
GR  32.3      361     32.5      374     43.7      375     43.7      375     32.5      376
GR  32.5      380     33.0      386     33.3      389     43.7      389     43.7      391
GR  33.3      391     34.0      401     34.3      404     43.7      404     43.7      406
GR  34.3      406     35.0      416     36.0      419     43.7      419     43.7      421
GR  36.0      421     37.0      435     43.7      435     43.7      437     37.0      437
GR  38.0      450     39.0      451     43.7      451
NC .0600    .0600    .0400
X1 7.416       78      200      451      220      220      220    0.559
BT    -2      200     46.8     43.7      451     46.8     43.7
GR  43.7      200     36.0      200     35.0      207     34.7      210     43.7      210
GR  43.7      212     34.5      212     34.0      217     33.0      224     32.8      225
GR  43.7      225     43.7      227     32.7      227     32.5      228     32.3      239
GR  43.7      239     43.7      241     32.3      241     32.1      254     43.7      254
GR  43.7      256     32.1      256     31.9      269     43.7      269     43.7      271
GR  31.9      271     31.8      284     43.7      284     43.7      286     31.8      286
GR  31.5      299     43.7      299     43.7      301     31.5      301     31.5      303
GR  31.7      314     43.7      314     43.7      316     31.2      316     31.9      329
GR  43.7      329     43.7      331     31.9      331     32.1      344     43.7      344
GR  43.7      346     32.1      346     32.3      359     43.7      359     43.7      361
GR  32.3      361     32.5      374     43.7      375     43.7      375     32.5      376
GR  32.5      380     33.0      386     33.3      389     43.7      389     43.7      391
GR  33.3      391     34.0      401     34.3      404     43.7      404     43.7      406
GR  34.3      406     35.0      416     36.0      419     43.7      419     43.7      421
GR  36.0      421     37.0      435     43.7      435     43.7      437     37.0      437
GR  38.0      450     39.0      451     43.7      451
*  FLOW FROM HEC1 STATION 23635 - SPRR
NH     5      .04     1062      .06     1069      .08     1085      .06     1116      .04
NH  1237
X1 7.375       24     1035     1205      250      193      220
X3            10                                1205
GR    58    974.9    41.75      975    41.75      995       43     1000       43     1020
GR  42.5     1035     40.6     1044     37.7     1047     36.8     1053     34.5     1058
GR  34.5     1062     31.3     1069     30.7     1080     31.7     1085       32     1097
GR  34.4     1116       34     1126       34     1140     34.5     1146     33.8     1162
GR  34.5     1174       45     1205       45     1225       40     1237
NH     5      .04     1093      .04     1180      .08     1222      .06     1242      .04
NH  1374
X1 7.333       23     1080     1310      175      150      160
X3            10                                1352
GR    61    949.9       43      950       43     1000       41     1040       40     1055
GR    40     1069       39     1080       31     1093     27.2     1112     27.2     1118
GR  29.6     1124       29     1126     29.6     1180       30     1222     33.3     1231
GR  33.5     1242       34     1273     38.5     1310       35     1323       40     1340
GR    45     1352       45     1366       40     1374
NH     9      .04     1040      .04     1088      .04     1130      .06     1134      .08
NH  1140      .04     1179      .08     1196      .06     1204      .04     1322
X1 7.303       29     1023     1246      282      282      282
X3            10                                1300
GR    58    967.9       42      968       42      988       41     1000       40     1023
GR  31.2     1040     25.3     1051       25     1056       27     1073     31.3     1088
GR  34.5     1100     38.3     1110       33     1130       31     1134       30     1140
GR    29     1146       30     1179       31     1196       33     1204       35     1210
GR  36.8     1239     37.7     1246       36     1262       36     1269     36.7     1273
GR    40     1280       45     1300       45     1314       40     1322
NH     9      .04     1048      .04     1083      .06     1093      .04     1121      .06
NH  1126      .08     1137      .04     1155      .06     1197      .04     1298
X1 7.249       31     1030     1228      125      160      145
GR    58    956.9     42.0      957       42      982     40.7     1000       39     1009
GR    38     1030       35     1038       32     1045       31     1048     28.7     1058
GR  28.5     1068       30     1076       31     1083       32     1085       34     1093
GR    37     1102     37.4     1105       37     1110       33     1121     31.5     1125
GR    29     1137     29.4     1148     32.3     1155     31.5     1162       33     1197
GR    35     1228       35     1244       36     1250       40     1262       45     1272
GR    45     1298
NH    12      .04     1057      .06     1060      .08     1072      .04     1102      .08
NH  1118      .04     1131      .08     1147      .04     1158      .08     1192      .06
NH  1197      .04     1250      .04     1339
X1 7.222       28     1030     1217       50       60       68
X3            10
GR    58    977.9     41.2      978     42.0      981       42      988     38.5     1000
GR  37.5     1013     39.5     1030     39.2     1040       37     1050       34     1057
GR    32     1060       29     1072     26.5     1082     28.5     1098       29     1102
GR  31.5     1118       31     1131     29.2     1147     29.5     1158       30     1180
GR  31.3     1192       33     1197       38     1217     38.5     1250       39     1268
GR  39.0     1292       46     1311       45     1339
NH     8      .04     1066      .06     1070      .08     1082      .04     1134      .08
NH  1165      .06     1176      .04     1234      .04     1373
X1 7.209       29     1044     1234      179      210      199
X3            10
GR  58.0    969.9     42.0      970       42      985       39     1000     37.7     1009
GR  39.5     1044       39     1054       34     1066     31.3     1070       31     1075
GR  29.5     1082     28.6     1088     28.5     1094     29.5     1134       30     1158
GR  30.8     1165     32.5     1170       33     1176     33.5     1182       38     1202
GR  40.0     1234     43.5   1234.1     43.5   1234.6     38.5   1234.7     39.0     1275
GR  40.0     1280     40.0     1310     45.0     1345     45.0     1373
NH     8      .04     1034      .06     1040      .08     1071      .04     1115      .08
NH  1121      .06     1130      .04     1202      .04     1402
X1 7.171       25     1000   1202.1      180      180      180
X3            10
GR  58.1      979     42.1      980     41.0     1000     33.0     1034     31.0     1040
GR  30.5     1045     31.5     1055     29.5     1071     29.3     1084     29.5     1115
GR  31.0     1121     33.5     1130     34.0     1145     36.0     1152     39.3     1175
GR  39.5     1202     43.5   1202.1     43.5   1202.6    40.24     1207    40.74     1225
GR 40.24   1225.1    41.35     1261     40.0     1351     45.0     1388     45.0     1402
NH     7      .04     1046      .06     1060     0.04     1120      .06     1146      .08
NH  1153      .04     1202      .04   1209.8
X1 7.137       23     1000   1202.1      150      150      150        0        0        0
X3            10                1000
GR  38.0      695     39.0      910     41.0     1000     36.5     1013     35.5     1035
GR  35.0     1040     35.0     1046     32.5     1054     32.5     1060     29.0     1068
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GR  29.0    1098    29.6    1120    30.0    1134    31.5    1146    33.0    1153
GR  34.0    1165    35.0    1195    34.7    1202    43.5  1202.1    43.5  1202.6
GR 41.49  1202.7   41.93  1209.7   57.93  1209.8
NH     9     .04    1143     .06    1153    0.04    1176     .08    1203     .04
NH  1242     .08    1255     .06    1262     .04    1295     .04  1303.1
X1 7.109      25    1100  1295.1     137     243     212       0       0       0
X3    10
GR  40.0     890    46.0     950    46.0    1000    39.0    1059    38.0    1100
GR  37.0    1108    36.3    1137    33.6    1143    33.5    1153    28.0    1168
GR  29.5    1176    30.3    1182    30.0    1195    29.5    1203    29.5    1211
GR  29.5    1242    31.5    1255    33.0    1262    34.0    1268    40.0    1295
GR  43.5  1295.1    43.5  1295.6   41.05  1295.7   41.17    1303    57.2  1303.1
NH     8     .04    1127     .06    1134     .08    1166    0.04    1189     .08
NH  1207     .06    1214     .04    1233     .04  1243.1
X1 7.068      24    1033  1233.1      76      76      76       0       0       0
X3    10
GR  46.0    1006    43.0    1033    37.0    1046    35.7    1067    35.4    1085
GR  34.0    1094    32.0    1104    32.0    1127    32.0    1134    31.5    1139
GR  30.0    1166    28.6    1180    28.6    1184    30.0    1189    31.5    1195
GR  31.5    1207    33.0    1214    36.5    1230    36.5    1233    43.5  1233.1
GR  43.5  1233.6   41.15  1233.7   41.34    1243    58.0  1243.1
NC .0600   .0600   .0400
X1 7.054      22    1028    1205      24      24      24       0       0       0
X3    10                                            40.2    40.2
GR  44.0     835    40.0    1000    40.0    1028    39.0    1041    38.0    1047
GR  37.0    1050    36.0    1056    35.0    1059    34.0    1066    32.0    1077
GR  31.4    1079    30.8    1085    30.0    1155    29.5    1170    29.5    1176
GR  30.0    1181    31.0    1183    31.4    1190    34.0    1194    39.0    1205
GR  40.0    1765    46.0    2137       0       0       0       0       0       0
NC .0600   .0600   .0400
X1 7.050      42  1068.0  1192.0      35      35      35       0       0       0
*HY Elk Grove-Florin Road
X3    10       0       0       0       0       0       0       0       0       0
BT    10     200    42.4       0    1068    40.2       0    1070    41.3    37.5
BT  1190    41.3    37.5    1192    40.2       0    1500    39.5       0    1850
BT    38.5      0    2000    40.0       0    2370    43.0       0    2375    46.4
BT       0      0       0       0       0       0       0       0       0       0
GR  42.4     200    40.2    1068    41.3    1070    33.6    1070    33.4    1080
GR  32.4    1086   32.52  1089.42   37.5  1089.42   37.5  1090.58   32.57  1090.58
GR  32.8    1097    32.9    1108   32.85  1109.42   37.5  1109.42   37.5  1110.58
GR 32.81  1110.58    32.5    1119   32.41  1129.42   37.5  1129.42   37.5  1130.58
GR 32.47  1130.58    33.8    1141    32.8  1149.42   37.5  1149.42   37.5  1150.58
GR 32.67  1150.58   31.12  1169.42   37.5  1169.42   37.5  1170.58   31.09  1170.58
GR  32.5    1171    31.3    1172    31.0    1174    31.3    1181    31.8    1190
GR  41.3    1190    40.2    1192    39.0    1500    38.5    1850    40.0    2000
GR  43.0    2370    46.4    2375
NC .0600   .0600   .0400
C  7.043   ELK GROVE - FLORIN ROAD
X1 7.043      42    1068    1192     100     100     100       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT    10     200    42.4       0    1068    40.2       0    1070    41.3    37.5
BT  1190    41.3    37.5    1192    40.2       0    1500    39.5       0    1850
BT    38.5      0    2000    40.0       0    2370    43.0       0    2375    46.4
BT       0      0       0       0       0       0       0       0       0       0
GR  42.4     200    40.2    1068    41.3    1070    33.6    1070    33.4    1080
GR  32.4    1086   32.52  1089.42   37.5  1089.42   37.5  1090.58   32.57  1090.58
GR  32.8    1097    32.9    1108   32.85  1109.42   37.5  1109.42   37.5  1110.58
GR 32.81  1110.58    32.5    1119   32.41  1129.42   37.5  1129.42   37.5  1130.58
GR 32.47  1130.58    33.8    1141    32.8  1149.42   37.5  1149.42   37.5  1150.58
GR 32.67  1150.58   31.12  1169.42   37.5  1169.42   37.5  1170.58   31.09  1170.58
GR  32.5    1171    31.3    1172    31.0    1174    31.3    1181    31.8    1190
GR  41.3    1190    40.2    1192    39.0    1500    38.5    1850    40.0    2000
GR  43.0    2370    46.4    2375
NC .0600   .0600   .0400
X1 7.024      31     991  1117.0     100     100     100       0       0       0
X3    10       0       0       0       0       0       0    40.0    40.0       0
GR  42.6       0    42.8     107    41.1     137    41.0     186    42.5     366
GR  42.8     486    36.2     520    35.5     546    36.1     563    36.0     572
GR  33.8     575    33.8     652    36.7     659    40.0     693    40.0     897
GR  39.8     991    33.8    1004    33.8    1103    36.3    1117    36.4    1250
GR  35.8    1704    36.3    1796    39.0    1816    39.3    1846    38.3    1884
GR  40.0    1935    39.5    2032    42.6    2124    42.7    2294    42.5    2424
GR  45.3    2440       0       0       0       0       0       0       0       0
NC .0600   .0600   .0400
X1 7.005      31     991    1117    1324     504     750       0       0       0
X3     0       0       0       0       0       0       0       0       0       0
X4     2    36.6    1500    37.5    1906       0       0       0       0       0
GR  42.6       0    42.8     107    41.1     137    41.0     186    42.5     366
GR  42.8     486    36.2     520    35.5     546    36.1     563    36.0     572
GR  33.8     575    33.8     652    36.7     659    40.0     693    40.0     897
GR  39.8     991    33.8    1004    33.8    1103    36.3    1117    36.4    1250
GR  35.8    1704    36.3    1796    39.0    1816    39.3    1846    38.3    1884
GR  40.0    1935    39.5    2032    42.6    2124    42.7    2294    42.5    2424
GR  45.3    2440       0       0       0       0       0       0       0       0
NC .0600   .0600   .0400
X1 6.863      15     694     810     253     253     253       0       0       0
X3     0       0       0       0       0       0       0       0       0       0
GR  40.0       0    40.7     450    41.0     611    41.3     677    41.3     694
GR  33.1     715    32.8     742    33.0     782    36.3     810    36.7     941
GR  37.7    1050    36.0    1260    40.0    1280    40.0    1780    41.5    2000
NC .0600   .0600   .0400
X1 6.815      10     720     830     100     100     100       0       0       0
X5     5       0    37.1    37.4    38.0       0       0       0       0       0
GR  40.0       0    41.3     720    32.1     740    31.7     767    32.0     800
GR  36.0     830    40.5     870    40.5     935    40.0    1650    41.5    1850
NC .0600   .0600   .0400
X1 6.796      32   800.0   930.0      35      35      35
*HY Bond Road
BT     5       0    41.6                    800    43.1    38.4     930    43.1    38.4
BT  1725      40                    1925    41.5
GR  41.6       0    40.9     800    35.9     800    32.3   813.8      32   822.5
GR  32.1  825.42    39.1  825.42    39.1  826.58   32.14  826.58    32.5  837.2
GR  30.1   850.9   30.13  851.42    39.1  851.42    39.1  852.58   30.21  852.58
GR    31   864.8   30.75  877.42    39.1  877.42    39.1  878.58   30.73  878.58
GR  30.7   880.1    31.6   893.2   31.66  903.42    39.1  903.42    39.1  904.58
GR 31.67  904.58    31.7     909    33.2   920.4    34.7     930    40.9     930
GR    40    1745    41.5    1925
NC .0600   .0600   .0400
C  6.790   BOND ROAD
X1 6.790      32     800     930       0     300     100
BT     5       0    41.6                    800    43.1    38.4     930    43.1    38.4
BT  1725      40                    1925    41.5
GR  41.6       0    40.9     800    35.9     800    32.3   813.8      32   822.5
GR  32.1  825.42    39.1  825.42    39.1  826.58   32.14  826.58    32.5  837.2
GR  30.1   850.9   30.13  851.42    39.1  851.42    39.1  852.58   30.21  852.58
GR    31   864.8   30.75  877.42    39.1  877.42    39.1  878.58   30.73  878.58
GR  30.7   880.1    31.6   893.2   31.66  903.42    39.1  903.42    39.1  904.58
GR 31.67  904.58    31.7     909    33.2   920.4    34.7     930    40.9     930
GR    40    1745    41.5    1925
NC .0600   .0600   .0400
X1 6.771      19.    784.    959.     120     180     120                 0.2
X3    10
GR  41.6     280    41.6     478    41.6     516    41.5     526    41.5     668
GR  40.7     679    40.7     696    40.1     720    40.1     740    40.1     784
GR  30.4     831    30.4     913    31.6     915    31.6     948    36.5     959
GR  37.0     982    36.0     992    37.1    1192    38.7    1230
NC .0600   .0600   .0400
X1 6.742      19     784     959     210     120     170
X3    10
X4     4    30.4     888    29.7     890    29.7     900    30.4     902
GR  41.6     280    41.6     478    41.6     516    41.5     526    41.5     668
GR  40.7     679    40.7     696    40.1     720    40.1     740    40.1     784
GR  30.4     831    30.4     913    31.6     915    31.6     948    36.5     959
GR  37.0     982    36.0     992    37.1    1192    38.7    1230
NH     4    0.06     128    0.04     188    0.04     237    0.04     468
X1 6.711      20     194     229     305     296     301
GR  39.7       0    39.3      30    38.0      45    36.0      65    35.0     118
GR  34.9     128    31.5   147.7    31.5     186    32.5     188    32.5     194
GR  30.4     205    30.4     224    32.5     229    32.5     237    31.5   239.2

GR  31.5     284    31.5     298    31.5   363.5    36.3     393    37.2     468
NH     4    0.06     128    0.04     188    0.04     237    0.04     468
X1 6.654      17     412     428     130     185     176
GR  39.3       0    38.0      45    37.0      60    36.0     180    35.0     262
GR  31.5   280.8    31.5   401.6    32.6     404    32.6     412    30.1     415
GR  30.1     425    32.5     428    32.5     436    31.5     438    31.5   480.6
GR  36.8     510    37.3     527
NH     3    0.06     262    0.04     404    0.04     527
X1 6.621      20     463     490     350     420     391
GR  39.3       0    38.2      30    38.0     160    37.0     223    36.0     248
GR  35.2     300    34.5     339    31.5   354.5    31.5   453.7    32.2     455
GR  32.2     463    29.9     465    30.5     485    32.3     490    32.3     498
GR  31.5   500.1    31.5     536    31.5   568.8    36.5     600    37.0     615
NH     3    0.06     339    0.04     455    0.04     615
X1 6.547      20     480     505     382     332     365
GR  38.8       0    38.0      75    37.0     178    36.0     278    35.0     333
GR  35.0     368    34.0     402    35.0     450    35.0     475    33.0     480
GR  29.6     485    29.6     500    32.0     505    32.1     513    31.5   513.9
GR  31.5     672    31.5   710.4    35.0     740    36.0     800    39.3     813
NH     4    0.04     368    0.06     480    0.04     513    0.04     813
X1 6.480      19     458     483     296     331     300
GR  38.6       0    37.0      48    36.0     228    35.0     270    34.0     310
GR  31.5   327.3    31.5     448    32.1     450    32.0     458    29.3     465
GR  29.3     478    31.5     483    31.5     491    31.5     507    31.5     915
GR  31.5   942.1    35.5     961    35.7     998    37.0    1010
NH     3    0.06     310    0.04     491    0.04    1010
NC .0600   .0600   .0400
X1 6.455      22     334     438     360     180     340
GR    37     197      36     237      35     276      34     306      33     334
GR    32     349    29.3     363    29.3     405      31     409      32     417
GR  32.6     438      33     538      34     605      35     684      36     872
GR  36.1     890      36     946      35    1018    34.1    1033      35    1051
GR    36    1108      37    1148
NC .0600   .0600   .0400
*
* Left
LA    43   36.50
WD     1       2   36.50     340
* Right
LA    42   36.50
WD     1       2   36.50     340
*
X1 6.329      40     321     480     921     600     735
X3    10                     321    -200     480    -200
GR    36       0      35     240      34     298      33     321      32     361
GR    31     366      30     369    28.7     373    28.7     380      30     382
GR  30.5     413    30.6     443      31     446      32     458      33     480
GR  33.1     533      32     548      31     557      30     566    29.4     571
GR    30     575      31     583      32     589      33     654      34     789
GR  33.6     811      34     831      35     885    35.2     905      35     921
GR    34     979      33    1021    32.8    1026      33    1031      34    1089
GR  34.1    1109      34    1124    32.2    1137      35    1289      36    1349
NC .0600   .0600   .0400
*
* Left
LA    43   35.00
WD     1       2   35.00     734
* Right
LA    42   35.00
WD     1       2   35.00     734
*
X1 6.190      17     350     428     160     240     200
X3    10                     350    -200     428    -200
GR  37.3     200      37     210      36     225      35     240      34     335
GR    33     350    27.1     363    27.1     425      30     428      31     446
GR    32     521      33     550      34     595      35     705      36     740
GR    37     775      38     805
*      MAD MOD
NH     3    0.06      75    0.04     327    0.04     590
*
* Left
LA    43   32.00
WD     1       2   32.00     201
* Right
LA    42   32.00
WD     1       2   32.00     201
*
X1 6.152      13     335     352     365     345     348
X3    10                     335    -200     352    -200
GR  37.0       0    35.0      28    33.5      75    30.0    96.9    30.0     130
GR  30.0     145    30.0     320    30.0     327    30.0     335    26.8     341
GR  26.8     349    30.0     352    37.1     590
NH     3    0.06     280    0.04     648    0.04     825
*
* Left
LA    43   30.00
WD     1       2   30.00     348
* Right
LA    42   30.00
WD     1       2   30.00     348
*
X1 6.086      16     656     670     257     257     257
X3    10                     656    -200     670    -200
GR  34.5       0    34.0      50    34.5     100    35.1     225    32.0     280
GR  30.0     310    30.0     440    30.0     450    30.0     631    30.0     648
GR  30.0     656    29.0     658    27.2     661    27.2     669    30.0     670
GR  37.1     825
NH     3    0.06     350    0.04     575    0.04     820
*
* Left
LA    43   30.50
WD     1       2   30.50     340
* Right
LA    42   30.60
WD     1       2   30.60     340
*
X1 6.039      19     577     602     100     275     207
X3    10                     577    -200     602    -200
GR  33.1       0    33.4     100    33.4     220    33.0     282    32.2     350
GR  30.0   363.5    30.0     403    30.0     573    31.0     575    31.0     577
GR  30.0     583    26.6     584    26.6     594    30.0     595    31.2     602
GR  30.0   604.5    30.0     625    30.0   714.5    37.1     820
NH     4    0.06    1904    0.04    2080    0.04    2200   0.035    2320
*
* Left
LA    43   30.50
WD     1       2   30.50     340
* Right
LA    42   30.60
WD     1       2   30.60     340
*
X1 6.000      20    2080    2094      74      74      74
GR  34.1    1340      33    1432    32.0    1564    33.4    1640    33.0    1778
GR  32.1    1904    30.0    1937    30.0    2048    30.0  2061.8    30.6    2075
GR  30.0    2080    26.5    2082    26.5    2092    30.0    2094    30.0    2102
GR  30.0    2110    30.0    2194    32.8    2200    33.0    2270    37.1    2320
NH     3    .055     122     .06    2192     .05    2380
X1 5.986      31    2099    2202     120     240     180       0       0       0
X3    10       0       0                       0       0       0       0       0
GR  39.5       0    37.1      26    37.0     122    36.0     200    35.0     600
GR  33.0    1110    34.0    1340    34.0    1396    32.0    1420    32.0    1440
GR  33.0    1470    33.0    1540    33.4    1640    33.0    1695    32.0    1850
GR  31.0    1878    32.0    1896    32.4    1910    32.0    1990    32.0    2045
GR  32.1    2099    31.0    2120    30.0    2150    26.9    2155    26.9    2167
GR  30.0    2185    31.0    2192    32.0    2202    32.0    2342    31.2    2358
GR  37.0    2380
NH     4    .055    2129     .06    2238     .05    2588     .08    2688
X1 5.980      32    2129    2238     500     500     500
X3    10                    2129    -200    2238    -200
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GR  32.3    1644    32.0    1694    31.7    1744    30.8    1754    31.8    1794
GR  31.7    1844    31.7    1894    30.4    1944    30.7    1994    31.8    2044
GR  31.7    2094    31.7    2129    28.7    2144    27.7    2150    27.2    2154
GR  26.8    2160    27.5    2166    28.1    2179    28.6    2188    30.9    2206
GR  31.8    2238    31.9    2288    31.9    2338    31.7    2388    31.3    2424
GR  30.0    2445    30.0    2463    35.1    2513    35.8    2538    36.5    2588
GR  36.3    2638    36.0    2688
*       SECTION 40+00 FROM SURVEY NOTES 7/91
NH    4     .05     540     .06     625     .05     810     .08    1110
*
* Left
LA   43   31.65
WD    1       2   31.65     502
* Right
LA   42   31.80
WD    1       2   31.80     502
*
X1 5.885     30     589     625     600     350     500
X3   10                    589    -200     625    -200
GR  33.3     90    33.3     140    33.1     190    32.8     240    32.8     290
GR  32.0    340    31.6     390    30.8     440    30.4     490    29.2     510
GR  29.9    540    29.1     589    28.0     590    27.2     592    26.7     595
GR  26.2    600    27.2     605    27.8     610    28.4     613    31.8     625
GR  32.3    660    33.1     710    33.1     760    33.5     810    32.8     860
GR  31.8    910    31.9     960    31.9    1010    32.6    1060    32.9    1110
*       SECTION 35+00 FROM SURVEY NOTES 7/91
NH    5     .08     353     .05     560     .06     610     .05     910     .08
NH 1110
*
* Left
LA   43   31.25
WD    1       2   31.25     502
* Right
LA   42   31.30
WD    1       2   31.30     502
*
X1 5.790     33     560     610     500     500     500
X3   10                    560    -200     610    -200
GR  30.7     63    30.5     113    31.3     163    31.8     213    32.0     263
GR  32.7    313    34.2     353    33.0     363    32.6     413    32.2     443
GR  32.6    463    31.7     513    30.9     560    28.1     563    27.0   565.5
GR  26.2  570.5    25.3   586.5    26.2   602.5    27.2   607.5    28.3     610
GR  29.0    656    30.8     680    29.9     710    30.9     760    30.2     790
GR  31.1    820    33.5     873    33.9     910    33.3     960    32.0     984
GR  31.7   1025    33.4    1050    33.5    1110
*       SECTION 30+00 FROM SURVEY NOTES 7/91
NH    4     .08     230     .05     573     .06     620     .05    1120
*
* Left
LA   43   31.35
WD    1       2   31.35     502
* Right
LA   42   31.40
WD    1       2   31.40     502
*
X1 5.695     29     573     670     400     600     500
X3   10                    573    -200     670    -200
GR  31.7     80    32.0     130    32.4     180    32.8     230    32.5     260
GR  32.0    330    31.8     380    31.2     430    30.5     480    29.4     530
GR  28.7    573    28.2     580    26.6     583    25.1     590    24.1     600
GR  25.1    610    26.6     617    28.0     620    28.0     655    32.0     670
GR  33.2    720    33.5     770    33.1     820    33.5     870    33.1     920
GR  33.1    970    33.7    1020    34.1    1070    34.3    1120
*       SECTION 25+00 FROM SURVEY NOTES 7/91
NH    4     .08     548     .05     552     .06     698     .05    1183
*
* Left
LA   43   31.25
WD    1       2   31.25     496
* Right
LA   42   31.55
WD    1       2   31.55     496
*
X1 5.601     34     552     698     500     500     500
X3   10                    552    -200     698    -200
GR  32.0     80    31.7     130    31.9     180    31.5     230    30.8     280
GR  29.8    330    29.9     380    30.0     430    30.2     480    30.2     530
GR  29.0    544    31.7     548    30.7     552    28.9     560    27.9     576
GR  27.3    580    26.4     590    25.4     594    24.9     600    27.4     613
GR  27.4    627    26.9     649    27.4     683    31.1     698    32.5     733
GR  32.4    783    32.3     833    31.0     883    32.3     933    32.5     983
GR  32.9   1033    32.9    1083    33.2    1133    32.8    1183
*       SECTION 20+00 FROM SURVEY NOTES 7/91
NH    4     .12     240     .08     577     .06     700     .05    1200
*
* Left
LA   43   29.30
WD    1       2   29.30     502
* Right
LA   42   29.20
WD    1       2   29.20     502
*
X1 5.506     39     577     700     212     212     212
X3   10                    577    -200     700    -200
GR  31.4     80    31.5      98    28.0     118    27.0     130    26.0     180
GR  26.4    230    28.6     240    28.8     280    29.0     330    29.1     380
GR  29.3    430    29.5     480    30.1     530    30.9     539    30.4     560
GR  31.5    564    31.4     571    27.9     577    27.1     580    26.7     585
GR  26.2    590    24.7     600    25.7     608    27.2     613    27.2     650
GR  26.2    657    26.2     695    27.3     700    28.5     703    29.5     750
GR  30.0    800    30.5     850    29.7     900    29.9     950    28.8    1000
GR  30.3   1050    31.7    1100    31.7    1150    31.7    1200
*
*       SECTION 15+00 FROM SURVEY NOTES 7/91
NH    3     .05     265     .06     710     .05     796
X1 5.501     15     465     770     141     141     141
X3   10                    465    -200     770    -200
GR  32     255      30     265      30     465      26     470    25.4     500
GR  26     580      29     595      29     600    28.9     625    28.9     695
GR  28.9   710      29     725      29     750      30     770      32     796
*
NH    4     .05     248     .06     470     .07     580     .05     850
*
* Left
LA   43   30.00
WD    1       2   30.00     127
* Right
LA   42   29.50
WD    1       2   29.50     127
*
X1 5.447     18     402     710     385     290     352
X3   10                    402    -200     710    -200
GR  32.5    100    32.3     215      32     221    31.8     236    31.5     248
GR  30.5    260      30     402    27.5     412    27.5     470      26     476
GR  25.4    500      26     580    28.5     710      29     725    28.5     750
GR  28.6    800      32     830    32.1     850
NH    5     .05     260     .06     479     .07     586     .06     612     .05
NH  920
*
* Left
LA   43   29.50
WD    1       2   29.50     512
* Right
LA   42   28.70
WD    1       2   28.70     512
*
X1 5.380     26     396     860     335     335     335
X3   10                    396    -200     860    -200
GR  34.2    100      34     150      33     195      32     200      33     203

GR    33     218      32     221      32     244      29     260      29     396
GR    28     400      28     475      27     479      26     494    25.2     500
GR    26     506      26     556      26     586      27     592    27.5     597
GR  27.5     610    27.5     612    27.4     722    28.4     860      32     880
GR    32     920
NH     4     .05     111.     .06     513     .07     880     .05     910
*
* Left
LA   43   29.00
WD    1       2   29.00     333
* Right
LA   42   27.70
WD    1       2   27.70     333
*
X1 5.317     23     330     880     125     220     160
X3   10                    330    -200     880    -200
GR  34.3      0      33      99      30     111      29     130      29     330
GR    26    342      26     392      25     395    23.8     410      25     435
GR  24.5    460      27     480      26     513      26     515      27     523
GR  27.5    593    27.5     617      26     632    25.4     650    26.4     670
GR    27    880      32     900      32     910
NH     5     .04    1092    .045    1760     .07    2010     .05    2225     .04
NH  2300
*
* Left
LA   43   30.50
WD    1       2   30.50     158
* Right
LA   42   29.50
WD    1       2   29.50     158
*
X1 5.287     16    1760    2225     225     225     225
X3   10                    1760    -200    2225    -200
GR  35.5    700    35.1     861      34     980    32.1    1092    31.4    1180
GR    33   1222    30.5    1235      32    1740      32    1760      27    1950
GR  24.3   2000    24.3    2010      27    2020      32    2225      32    2242
GR    32   2300
NH     5     .04    1101    .05     1967     .07    2026     .05    2282     .04
NH  2302
*
* Left
LA   43   30.50
WD    1       2   30.50     227
* Right
LA   42   30.55
WD    1       2   30.55     227
*
X1 5.244     18    1967    2261     105     135     110
X3   10                    1967    -200    2261    -200
GR  35.5    713    35.1     852    34.1     987    32.2    1101    31.5    1185
GR    33   1223    30.7    1242      30    1847      29    1967      28    1977
GR    27   1991      24    2000      24    2014      25    2026      26    2039
GR  29.1   2261      32    2282      32    2302
NH     4     .05    2327    .075    2390     .06    2420     .05    2600
*
* Left
LA   43   28.35
WD    1       2   28.35     111
* Right
LA   42   28.55
WD    1       2   28.55     111
*
X1 5.223     15    2300    2420      27      27      27
X3   10                    2300    -200    2420    -200      32      32
GR  28.2   2200    28.0    2250    27.7    2300    27.2    2320    26.1    2327
GR  23.7   2342    23.6  2382.5    26.0    2390    27.2    2400    25.6    2410
GR  28.0   2420    27.7    2450    27.7    2500    28.0    2550    28.3    2600
NC .0480  .0480   .0480
X1 5.218     40  2830.0  2972.0      35      35      35       0       0       0
*HY Hwy 99 East Frontage
X3   10      0       0    2830    -200    2972    -200       0       0       0
BT    6   1600    31.9       0    2820    30.9       0    2830    32.0    29.5
BT 2972   32.0    29.5    2982    30.9       0    3800    31.8       0       0
GR 31.9   1600    30.9    2820    32.0    2830    26.0    2830    23.4    2847
GR 23.4 2847.17    29.5 2847.17    29.5 2848.33 23.36 2848.33    22.9 2864.92
GR 29.5 2864.92    29.5 2866.08    24.0 2866.08    24.0 2882.67    29.5 2882.67
GR 29.5 2883.83    24.0 2883.83    24.0    2890   24.52 2900.42    29.5 2900.42
GR 29.5 2901.59   24.58 2901.59    25.0    2910    25.0 2918.17    29.5 2918.18
GR 29.5 2919.34    25.0 2919.34    25.0 2935.92    29.5 2935.92    29.5 2937.09
GR 25.0 2937.09    25.0 2953.67    29.5 2953.67    29.5 2954.84    25.0 2954.84
GR 25.0    2962    26.6    2972    32.0    2972    30.9    2982    31.8    3800
NC .0600  .0600   .0400
C  5.211   HIGHWAY 99 EAST FRONTAGE ROAD
X1 5.211     40    2830    2972      23      23      23       0       0       0
X3   10      0       0    2830    -200    2972    -200       0       0       0
BT    6   1600    31.9       0    2820    30.9       0    2830    32.0    29.5
BT 2972   32.0    29.5    2982    30.9       0    3800    31.8       0       0
GR 31.9   1600    30.9    2820    32.0    2830    26.0    2830    23.4    2847
GR 23.4 2847.17    29.5 2847.17    29.5 2848.33 23.36 2848.33    22.9 2864.92
GR 29.5 2864.92    29.5 2866.08    24.0 2866.08    24.0 2882.67    29.5 2882.67
GR 29.5 2883.83    24.0 2883.83    24.0    2890   24.52 2900.42    29.5 2900.42
GR 29.5 2901.59   24.58 2901.59    25.0    2910    25.0 2918.17    29.5 2918.18
GR 29.5 2919.34    25.0 2919.34    25.0 2935.92    29.5 2935.92    29.5 2937.09
GR 25.0 2937.09    25.0 2953.67    29.5 2953.67    29.5 2954.84    25.0 2954.84
GR 25.0    2962    26.6    2972    32.0    2972    30.9    2982    31.8    3800
NC .0600  .0600   .0400
X1 5.207     48  2830.0  3115.0      34      34      34       0       0       0
X3    0      0       0                       0       0       0       0       0
BT    6   1600    32.9    32.9    2820    30.6    30.6    2830    33.7    29.7
BT 3115   33.7    29.7    3125    30.6    30.6    3800    31.0    31.0       0
GR 32.9   1600    30.6    2820    31.8    2830    24.9    2830    25.0    2842
GR 24.0   2843    24.0    2847    22.1    2851    21.4    2861   21.46 2865.05
GR 29.7 2865.05    29.7 2866.21   21.48 2866.21    21.7    2881    24.0    2888
GR 24.0 2900.68    29.7 2900.68    29.7 2901.84    24.0 2901.84    24.0    2918
GR 24.2   2920    24.2    2936    24.2  2936.3    29.7  2936.3    29.7 2937.46
GR 24.19 2937.46    24.0    2958    25.5    2960    25.5 2971.92    29.7 2971.92
GR 29.7 2973.08    25.5 3043.18    29.7 3043.18    29.7 3044.34    25.5 3044.34
GR 25.5 3008.71    25.5 3043.18    29.7 3079.96    25.5 3079.96    25.5    3115
GR 31.8   3115    30.6    3125    31.0    3800
NC .0600  .0600   .0400
C  5.200   HIGHWAY 99 NORTHBOUND *LANES
X1 5.200     48    2830    3115      34      34      34       0       0       0
X3    0      0       0                       0       0       0       0       0
BT    6   1600    32.9    32.9    2820    30.6    30.6    2830    33.7    29.7
BT 3115   33.7    29.7    3125    30.6    30.6    3800    31.0    31.0       0
GR 32.9   1600    30.6    2820    31.8    2830    24.9    2830    25.0    2842
GR 24.0   2843    24.0    2847    22.1    2851    21.4    2861   21.46 2865.05
GR 29.7 2865.05    29.7 2866.21   21.48 2866.21    21.7    2881    24.0    2888
GR 24.0 2900.68    29.7 2900.68    29.7 2901.84    24.0 2901.84    24.0    2918
GR 24.2   2920    24.2    2936    24.2  2936.3    29.7  2936.3    29.7 2937.46
GR 24.19 2937.46    24.0    2958    25.5    2960    25.5 2971.92    29.7 2971.92
GR 29.7 2973.08    25.5 3043.18    29.7 3043.18    29.7 3044.34    25.5 3044.34
GR 25.5 3008.71    25.5 3043.18    29.7 3079.96    25.5 3079.96    25.5    3115
GR 31.8   3115    30.6    3125    31.0    3800
*
NC .0600  .0600   .0400
*
X1 5.194     48  2830.0  3115.0      40      40      40       0       0       0
X3    0      0       0                       0       0       0       0       0
BT    6   1600    32.9    32.9    2820    30.6    30.6    2830    33.7    29.7
BT 3115   33.7    29.7    3125    30.6    30.6    3800    31.0    31.0       0
GR 32.9   1600    30.6    2820    31.8    2830    24.9    2830    25.0    2842
GR 24.0   2843    24.0    2847    22.1    2851    21.4    2861   21.46 2865.05
GR 29.7 2865.05    29.7 2866.21   21.48 2866.21    21.7    2881    24.0    2888
GR 24.0 2900.68    29.7 2900.68    29.7 2901.84    24.0 2901.84    24.0    2918
GR 24.2   2920    24.2    2936    24.2  2936.3    29.7  2936.3    29.7 2937.46
GR 24.19 2937.46    24.0    2958    25.5    2960    25.5 2971.92    29.7 2971.92
```

```
GR  29.7 2973.08    25.5 2973.08    25.5 3007.55    29.7 3007.55    29.7 3008.71
GR  25.5 3008.71    25.5 3043.18    29.7 3043.18    29.7 3044.34    25.5 3044.34
GR  25.5  3078.8    29.7  3078.8    29.7 3079.96    25.5 3079.96    25.5    3115
GR  31.8    3115    30.6    3125    31.0    3800
*
NC .0600   .0600   .0400
*
C  5.186   HIGHWAY 99 SOUTHBOUND *LANES
X1 5.186      48    2830    3115      24      24      24       0       0       0
X3     0       0       0                       0       0       0
BT     6    1600    32.9    32.9    2820    30.6    30.6    2830    33.7    29.7
BT  3115    33.7    29.7    3125    30.6    30.6    3800    31.0    31.0       0
GR  32.9    1600    30.6    2820    31.8    2830    24.9    2830    25.0    2842
GR  24.0    2843    24.0    2847    22.1    2851    21.4    2861   21.46 2865.05
GR  29.7 2865.05    29.7 2866.21   21.48 2866.21    21.7    2881    24.0    2888
GR  24.0 2900.68    29.7 2900.68    29.7 2901.84    24.0 2901.84    24.0    2918
GR  24.2    2920    24.2    2936    24.2  2936.3    29.7  2936.3    29.7 2937.46
GR 24.19 2937.46    24.0    2958    25.5    2960    25.5 2971.92    29.7 2971.92
GR  29.7 2973.08    25.5 2973.08    25.5 3007.55    29.7 3007.55    29.7 3008.71
GR  25.5 3008.71    25.5 3043.18    29.7 3043.18    29.7 3044.34    25.5 3044.34
GR  25.5  3078.8    29.7  3078.8    29.7 3079.96    25.5 3079.96    25.5    3115
GR  31.8    3115    30.6    3125    31.0    3800
*
NC .0600   .0600   .0400
*
X1 5.182      41  2829.0  2971.0      35      35      35       0       0       0
X3     0       0       0                       0       0       0
BT     7    1500    33.0      33    1600    32.9    32.9    2819    30.8    30.8
BT  2829      41    29.4    2971    31.9    29.4    2981    30.8    30.8    3800
BT  32.0    32.0       0       0       0       0       0       0       0       0
GR  33.0    1500    32.9    1600    30.8    2819    31.9    2829    27.8    2829
GR  23.0    2846    23.0 2846.17    29.4 2846.17    29.4 2847.33   22.96 2847.33
GR  22.5 2863.92    29.4 2863.92    29.4 2865.08   22.48 2865.08   22.21 2881.67
GR  29.4 2881.67    29.4 2882.83   22.19 2882.83   21.91 2899.42    29.4 2899.42
GR  29.4 2900.58    21.9 2900.58    22.0 2917.17    29.4 2917.17    29.4 2918.33
GR  22.0 2918.33   22.19 2934.92    29.4 2934.92    29.4 2936.08    22.2 2936.08
GR 22.39 2952.67    29.4 2952.67    29.4 2953.83    22.4 2953.83    22.4    2954
GR  26.1    2954    26.1    2970    26.4    2971    31.9    2971    30.8    2981
GR  32.0    3800
*
NC .0600   .0600   .0400
*
*  5.175   HIGHWAY 99 WEST FRONTAGE ROAD
X1 5.175      41    2829    2971     150     150     150       0       0       0
BT     7    1500    33.0      33    1600    32.9    32.9    2819    30.8    30.8
BT  2829    31.9    29.4    2971    31.9    29.4    2981    30.8       0    3800
BT  32.0    32.0       0       0       0       0       0       0       0       0
GR  33.0    1500    32.9    1600    30.8    2819    31.9    2829    27.8    2829
GR  23.0    2846    23.0 2846.17    29.4 2846.17    29.4 2847.33   22.96 2847.33
GR  22.5 2863.92    29.4 2863.92    29.4 2865.08   22.48 2865.08   22.21 2881.67
GR  29.4 2881.67    29.4 2882.83   22.19 2882.83   21.91 2899.42    29.4 2899.42
GR  29.4 2900.58    21.9 2900.58    22.0 2917.17    29.4 2917.17    29.4 2918.33
GR  22.0 2918.33   22.19 2934.92    29.4 2934.92    29.4 2936.08    22.2 2936.08
GR 22.39 2952.67    29.4 2952.67    29.4 2953.83    22.4 2953.83    22.4    2954
GR  26.1    2954    26.1    2970    26.4    2971    31.9    2971    30.8    2981
GR  32.0    3800
*     NOTE: FLOW CHANGE MOVED TO SECION 3.684
*     STATION EQUATION  4.242 = 5.175   X1 (1) are section names only and
*                                       should not be used to compute reach lgth
NH     3    .045     135     .08    2244     .06    2350
X1 4.233      37    1894    1995     400     120     370       0       0       0
X3    10       0       0                       0       0       0       0       0
GR  30.1       0    30.5      75    31.2     100    30.0     126    28.2     135
GR  28.2     205    29.7     217    30.0     294    29.1     297    30.3     303
GR  30.3     321    29.8     328    31.3     498    30.8     612    29.0     638
GR  29.0     658    30.3     680    33.2     804    32.7     873    27.8     984
GR  29.7    1149    30.5    1366    29.3    1494    27.3    1534    26.8    1582
GR  27.8    1590    29.0    1742    28.3    1837    29.3    1894    24.7    1913
GR  24.7    1983    29.1    1995    28.5    2105    28.0    2228    25.8    2244
GR  31.2    2301    33.1    2350       0       0       0       0       0       0
*     USED OLD 5.023 (ACTUALLY 5.147)
NH     3     .05    1980     .06    2080    .045    3600
X1 4.150      15    1980    2320     240     360     285
X3    10
GR  31       950      31    1020      30    1050      29    1080      27    1980
GR  25      1985      23    1990      23    2010      25    2080      26    2100
GR  27      2220      27    2280      28    2320      30    2380      31    2470
NH     3     .05     995     .06    2295     .05    2610
X1 4.084      20     995    2316     550     450     550
GR  29         0      27     410      27     630      28     745      29     845
GR  29       995      27    1160      27    1460      26    1530      25    1920
GR  24      1950      24    2010      25    2015      26    2295      27    2316
GR  27      2370      29    2425      30    2510      31    2555      32    2610
NH     3     .05    1590     .06    2170     .05    3600
X1 3.972      19    1590    2200     370     370     370
GR  29         0      27     400      27    1100      28    1380      29    1455
GR  29      1590      28    1880      27    1950      25    1960      24    1975
GR  24      2040      25    2170      27    2200      26    2700      28    2770
GR  29      2920      29    3040      30    3400      30    3600
NH     3     .05     560    .075    1000     .05    2400
*
* Left
LA    50   30.00
WD     1       2   30.00     370
* Right
LA    45   30.00
WD     1       2   30.00     370
*
X1 3.892      15     795    1000     550     570     550
GR    30      400      30     560      23     795      23     892      24     896
GR    25     1000      28    1065      28    1310      27    1382      27    1515
GR    25     1570      25    1900    25.1    2100      25    2120      30    2400
NH     3     .05     700    .075    1070    .055    2575
*
* Left
LA    50   28.50
WD     1       2   28.50     586
* Right
LA    45   28.50
WD     1       2   28.50     586
*
X1 3.781      20     700    1160     500     350     500
X3    10                     700    -200    1160    -200
GR    27      460      27     770      22     900      21     980      21    1000
GR    22     1025      23    1070      24    1072      25    1115      26    1160
GR    27     1210      27    1370      25    1520      24    1550      25    1670
GR    24     2170    24.3    2260      25    2400      27    2560      28    2575
NH     4     .045     240    .045    1060    .065    1280     .05    2400
*
* Left
LA    50   27.50
WD     1       2   27.50     512
* Right
LA    45   26.00
WD     1       2   26.00     512
*
X1 3.684      20     880    1290     440     430     430
X3    10                     880    -200    1290    -200
GR    26         0      25      10      25     240      26     263      27     360
GR    28       630      29     800      29     835      28     880      21    1060
GR    21      1130      22    1160      23    1190      24    1280      25    1290
GR    26      1530      27    1645      27    2000      28    2220      28    2400


DB    14
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SUB-APPENDIX 2

UNET GEOMETRY FILES

ELDER AND GERBER CREEKS
UNET GEOMETRY FILE NO. 1

EXISTING CONDITIONS ON LAGUNA CREEK AND THE INTERBASIN-TRANSFER REACH

FILENAME: LCSP1.CS

```
PR ON
T1 LAGUNA CREEK UPPER
T2 From Laguna2.dat HEC-2 Deck
T3 UNET file created by John Wiest 19 Dec 1995
*
*  FILE FROM CORPS OF ENGINEERS' MORRISON CREEK STUDY
*
*******************************************************************************
J1
XK   100                                .35     .01
UB
*
*
*
* TEMPORARY STORAGE AREA 1
*
SA     1    3000      55
*
*
NC .0600    .0600   .0450      .1      .3
*
* UPSTREAM INFLOW HYDROGRAPH LCC7
*
X115.388       14       555       677       843       500       990         0         0         0
X3     10        0         0         0         0                   0         0         0         0
GR  88.7         0      89.6       131      84.8       312      80.5       414      83.0       454
GR  80.7       555      78.3       576      78.3       643      81.6       677      81.2       788
GR  82.2       805      82.2       834      81.5       971      82.2      1150         0         0
NC .0600    .0600   .0450
X115.277       25       466       497       160       100       200         0         0         0
X3      0        0         0                   0                   0         0         0         0
GR  82.6         0      83.0        35      81.1        46      83.3        61      84.0        87
GR  83.2       117      81.0       132      84.1       146      81.7       325      79.0       410
GR  76.3       426      76.3       466      75.0       471      75.0       485      76.0       497
GR  75.3       537      81.1       559      81.2       781      80.2       817      81.1       945
GR  80.6      1024      77.8      1045      80.1      1066      89.5      1296      93.0      1400
NC .0600    .0600   .0450
X115.258       22     460.0     541.0        20        20        20         0         0         0
*HY Excelsior Road
BT     4        50      83.0         0       460      84.0      82.1       541      84.0      82.1
BT  1120      82.2         0         0         0         0         0         0         0         0
GR  83.0        50      84.0       460      80.9       460      77.5       470      75.2       472
GR  74.6       478      73.6       481      73.6       482      73.6   486.33      82.1    486.33
GR  82.1    487.66      73.6    487.66      73.9       507    74.97    513.34      82.1    513.34
GR  82.1    514.67     75.19    514.67      76.6       523      81.2       532      81.2       541
GR  84.0       541      82.2      1120
NC .0600    .0600   .0450
C *** Excelsior Road ***
X115.254       22       460       541         1        60        50         0         0         0
X5      5     80.6      81.3      81.4      81.7         0         0         0         0         0
BT      4        50      83.0         0       460      84.0      82.1       541      84.0      82.1
BT   1120      82.2         0         0         0         0         0         0         0         0
GR  83.0        50      84.0       460      80.9       460      77.5       470      75.2       472
GR  74.6       478      73.6       481      73.6       482      73.6   486.33      82.1    486.33
GR  82.1    487.66      73.6    487.66      73.9       507    74.97    513.34      82.1    513.34
GR  82.1    514.67     75.19    514.67      76.6       523      81.2       532      81.2       541
GR  84.0       541      82.2      1120
NC .0600    .0600   .0450
X115.244       25.      466.0     497.0         1       250       150         0         0         0
X3     10        0         0                   0                   0         0         0         0
GR  82.6         0      83.0        35      81.1        46      83.3        61      84.0        87
GR  83.2       117      81.0       132      84.1       146      81.7       325      79.0       410
GR  76.5       426      76.3       466      75.0       471      75.0       485      76.0       497
GR  75.3       537      81.1       559      81.2       781      80.2       817      81.1       945
GR  80.6      1024      77.8      1045      80.1      1066      89.5      1296      93.0      1400
NC .0600    .0600   .0450
X115.216       25       466       497       969      1124      1022         0         0         0
X3     10        0         0                   0                   0         0         0         0
GR  82.6         0      83.0        35      81.1        46      83.3        61      84.0        87
GR  83.2       117      81.0       132      84.1       146      81.7       325      79.0       410
GR  76.5       426      76.3       466      75.0       471      75.0       485      76.0       497
GR  75.3       537      81.1       559      81.2       781      80.2       817      81.1       945
GR  80.6      1024      77.8      1045      80.1      1066      89.5      1296      93.0      1400
X115.023       28       847       919       928      1068      1053         0         0         0
X3     10        0         0                   0                   0         0         0         0
GR  80.2         0      80.5       122      76.5       239      78.7       277      77.5       322
GR  79.2       397      77.6       422      79.6       438      79.3       540      75.2       561
GR  78.1       594      78.7       702      74.2       724      77.2       763      76.2       847
GR  73.2       866      73.2       892      77.3       919      78.1       992      79.1      1098
GR  76.2      1125      78.7      1150      78.3      1243      75.7      1276      78.3      1301
GR  77.0      1396      81.8      1485      92.1      1600         0         0         0
NC .0600    .0600   .0450
X114.823       12      1139      1253      1006      1053      1084         0         0         0
GR  77.2       445      77.5       673      76.5       678      77.6       685      76.0       950
GR  74.0      1139      71.0      1173      71.0      1215      82.1      1253      88.5      1341
GR  91.7      1465      87.1      1676         0         0         0         0         0         0
NC .0600    .0600   .0450
X114.618       15       723       798      1186       768      1138
GR 074.0       200    074.0     00207     072.5     00211     074.2     00216     072.2     00400
GR 069.0     00679    071.5     00695     072.0     00723     067.7     00737     067.3     00752
GR 067.8     00776    072.1     00798     070.5     00981     072.0     01160     072.5     01369
NC .0600    .0600   .0450
X114.402        9       729       819      1250       640       960
GR 072.1         0    071.8     00374     067.8     00729     064.3     00771     064.3     00805
GR 069.6     00819    072.2     01059     073.2     01320     074.1     01550
NC .0600    .0600   .0450
X114.221        9       777       869       987      1127      1122
HY14.221
GR 069.3         0    069.0     00367     067.2     00777     062.7     00791     062.7     00812
GR 066.0     00869    068.5     01114     072.1     01430     074.6     01650
*
* RIGHT SPILL
* WEIR SEGMENT 1
LS     2    1.858
WD     1      2.0      68.0       300
*
NC .0600    .0600   .0450
X114.008      20.     803.0     892.0       244       499       356         1       0.7
GR 070.2         0    070.8     00142     072.3     00181     069.8     00252     066.4     00357
GR  64.6       525       64       600       64       650       64       790      65.9       803
GR 059.4     00819    059.4     00830     063.2     00863     066.8     00892     065.2     00900
GR 067.1     00910    068.2     01132     070.9     01365     073.9     01396     078.7     01498
*
* RIGHT SPILL
* WEIR SEGMENT 2
LS     2    1.858
WD     1      2.0      66.2       350
*
NC .0600    .0600   .0450
X113.941       20       803       892       100       100       100                 -0.7
GR 070.2         0    070.8     00142     072.3     00181     069.8     00252     066.4     00357
GR  64.6       525       64       600       64       650       64       790      65.9       803
GR 059.4     00819    059.4     00830     063.2     00863     066.8     00892     065.2     00900
GR 067.1     00910    068.2     01132     070.9     01365     073.9     01396     078.7     01498
NC .0600    .0600   .0450
*
* SUB-AREA RUNOFF FROM LC40 ENTERS HERE
*
X113.922       20     610.5     709.5        29        29        29
HY US VINEYARD
X3     10        0         0         0         0         0         0      67.0      67.0
BT      4        0      68.4      68.4     610.5      67.0      65.5     709.5      67.0      65.5
BT   3000      68.2      68.2
GR  69.6         0      67.9     610.5        65     610.5        63     620.5      60.5     630.4
GR 59.67       643      65.5       643      65.5       644      59.6       644      59.8     659.7
GR  61.8     672.9     61.92       676      65.5       676      65.5       677     61.96       677
GR  62.4     688.2      63.2     698.5      65.9     709.5      67.9     709.5      69.4      3000
NC .0600    .0600   .0450
C 13.916*** VINEYARD RD ***
X113.916       20     610.5     709.5       100       100       100                 -1.2
X3     10
BT      4        0      68.4      68.4     610.5      67.0      65.5     709.5      67.0      65.5
BT   3000      68.2      68.2
GR  69.6         0      67.9     610.5        65     610.5        63     620.5      60.5     630.4
GR 59.67       643      65.5       643      65.5       644      59.6       644      59.8     659.7
GR  61.8     672.9     61.92       676      65.5       676      65.5       677     61.96       677
GR  62.4     688.2      63.2     698.5      65.9     709.5      67.9     709.5      69.4      3000
NC .0600    .0600   .0450
X113.897       18      4972      5040       300       330       290
X3     10
GR    69      4420     67.45      4510      67.5      4555      68.6      4620      68.6      4720
GR  67.7      4870      64.2      4888        63      4941     61.85      4972      56.8      4995
GR  56.8      5010        62      5040        62      5190        65      5200        67      5230
GR    66      5370        66      5570        65      5800
NC .0600    .0600   .0450
X113.833       17      4968      5045       960       830       960
HY13.833
X3     10        0         0         0         0         0         0         0         0
GR  67.5      4540      67.5      4630        66      4778        64      4792        63      4820
GR  62.1      4875      61.9      4915      62.5      4922      63.9      4928      63.7      4968
GR  60.1      4982        56      4995      56.5      5005        60      5015        64      5045
GR    64      5160        65      5720
NC .0600    .0600   .0450
*
* Left
***** LA    7    65.05
**** WD     1         2    65.05       945
*
* RIGHT SPILL
* WEIR SEGMENT 3
LS     2    1.825
WD     1      2.0      65.4       500
*
*
X113.654       23      4974      5020       600      1000      1020
HY13.654
X3     10        0         0      4959     61.03      5020      -200         0         0
GR  65.4      3970      65.3      4180      61.4      4235      60.6      4290      60.4      4345
GR  59.9      4398      59.8      4456      60.1      4512      59.7      4570        60      4628
GR 60.25      4685      60.3      4744      59.8      4802     59.15      4860      59.1      4915
GR    60      4963      62.6      4974     62.25      4980        55      4995      55.6      5005
GR    63      5020        64      5045      64.7      5345
NC .0600    .0600   .0450
*
* Left
***** LA    7    62.55
**** WD     1         2    62.55      1077
* RIGHT SPILL
* WEIR SEGMENT 4
LS     2    1.560
WD     3      2.0      62.4        50      62.6       200      63.0       290
*
*
X113.450       27      4921      5020       700      1100      1470
HY13.450
X3     10        0         0      4827     61.01      5020      -200     60.86         0
GR  66.3      3900      66.4      3920      66.7      3980      66.7      4080      64.4      4180
GR  64.4      4181      60.2      4212      59.9      4266      59.3      4378      59.7      4435
GR  59.9      4491      60.2      4548        60      4608      60.2      4665      60.3      4722
GR  60.9      4780      60.7      4840      62.5      4895     60.85      4921      57.8      4980
GR 54.75      4995        55      5005        62      5020        62      5050        61      5065
GR 66.73      5165      61.3      5165
NC .0600    .0600   .0450
*
* Left
***** LA    7    61.75
**** WD     1         2    61.75      1341
* RIGHT SPILL
* WEIR SEGMENT 5
LS     2    1.436
WD     2      2.0      63.0       280      63.8       450
*
*
*
X113.196       17      4980      5035       800       800      1010
HY13.196
X3     10        0         0      4980      -200      5035      -200         0         0
GR  65.2      4560      64.9      4580      65.2      4590      65.5      4670      65.4      4705
GR  65.7      4720      65.7      4830      64.8      4870      62.5      4895      61.5      4915
GR    61      4980      53.6      4995        54      5010        60      5035      60.9      5118
GR  68.6      5129      67.8      5342
NC .0600    .0600   .0450
```

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*
* Left
***** LA   ?   60.85
**** WD   1       2   60.85     1051
* Right
* RIGHT SPILL
* WEIR SEGMENT 6
LS     2   1.304
WD     2     2.0    62.90      150    63.00      250
*
*
X112.997       33     1551     1675      754      245      445        0        0        0
HY12.997
X3     10        0        0     1556     67.3     1686     67.3     67.4     67.4
GR     65        0     64.6      320     63.3      488     64.2      548     62.1      703
GR     63      754     61.2      807       62      843     60.5      892     61.7      970
GR   60.1     1020     61.1     1087     64.8     1253     64.7     1299     61.8     1395
GR   60.3     1471     60.1     1522     60.7     1551     60.2     1574     59.1     1600
GR   59.6     1626     55.3     1638     55.3     1660     61.5     1675       61     1700
GR   59.7     1838       60     2012     61.8     2049     63.3     2161     64.3     2293
GR   65.2     2325     65.2     2434     65.3     2511
NC .0600   .0600   .0450
*
* Left
***** LA   ?   64.20
**** WD   1       2   64.20      100
* Right
* LA  53   64.60
* WD   1       2   64.60      100
*
X112.978       35   1226.7   1301.1       10       10       10
HY US CCTRR
X3     10        0        0        0        0        0        0        0        0
BT      4        0     67.4     67.4   1226.7     67.7     65.4   1301.1     67.7     65.4
BT   2030     66.4     66.4        0        0        0        0        0        0        0
GR   67.4        0     67.7   1226.7     57.7   1226.7     56.0   1235.4     55.9   1236.7
GR   65.4   1236.7     65.4   1237.7    55.82   1237.7     55.1   1246.9     55.1   1247.2
GR   65.4   1247.2     65.4   1248.2    55.12   1248.2    55.29   1257.7     65.4   1257.7
GR   65.4   1258.7    55.28   1258.7    54.96   1268.2     65.4   1268.2     65.4   1269.2
GR 54.92   1269.2     54.9   1269.9     55.2   1278.7     65.4   1278.7     65.4   1279.7
GR 55.24   1279.7     55.3   1281.6    56.43   1289.7     65.4   1289.7     65.4   1290.7
GR 56.57   1290.7     56.9   1293.1     58.3   1301.1     67.7   1301.1     66.4     2030


*C *** CCTRR ***
X112.976       35   1226.7   1301.1      170       80       90        0        0        0
**HY 12.976
* X3  10        0        0        0        0        0        0        0        0
BT      4        0     67.4     67.4   1226.7     67.7     65.4   1301.1     67.7     65.4
BT   2030     66.4     66.4        0        0        0        0        0        0        0
GR   67.4        0     67.7   1226.7     57.7   1226.7     56.0   1235.4     55.9   1236.7
GR   65.4   1236.7     65.4   1237.7    55.82   1237.7     55.1   1246.9     55.1   1247.2
GR   65.4   1247.2     65.4   1248.2    55.12   1248.2    55.29   1257.7     65.4   1257.7
GR   65.4   1258.7    55.28   1258.7    54.96   1268.2     65.4   1268.2     65.4   1269.2
GR 54.92   1269.2     54.9   1269.9     55.2   1278.7     65.4   1278.7     65.4   1279.7
GR 55.24   1279.7     55.3   1281.6    56.43   1289.7     65.4   1289.7     65.4   1290.7
GR 56.57   1290.7     56.9   1293.1     58.3   1301.1     67.7   1301.1     66.4     2030

X112.959       33     1551     1675      400       80      245    0.766        0        0
*HY 12.959
* X3  10        0        0     1551        0     1675        0     67.4     67.4        0
GR   65.0        0     64.6      320     63.3      488     64.2      548     62.1      703
GR   63.0      754     61.2      807     62.0      843     60.5      892     61.7      970
GR   60.1     1020     61.1     1087     64.8     1253     64.7     1299     61.8     1395
GR   60.3     1471     60.1     1522     60.7     1551     60.2     1574     59.1     1600
GR   59.6     1626     55.3     1638     55.3     1660     61.5     1675     61.0     1700
GR   59.7     1838     60.0     2012     61.8     2049     63.3     2161     64.3     2293
GR   65.2     2325     65.2     2434     65.3     2511        0        0        0        0

X112.913       18      870      905      150       80       80        0        0        0
* X3  10        0        0      870        0      905        0        0        0        0
GR   63.3        0     62.6       95     59.6      373     59.2      619     60.3      750
GR   60.1      857     59.2      870     54.3      876     54.3      887     60.1      905
GR   61.7      922     64.1     1000     64.8     1180     65.6     1242     64.1     1263
GR   64.6     1286     64.0     1306     65.7     1350        0        0        0        0

X112.900       22    851.4    928.6       20       20       20        0        0        0
**HY 12.900
* X3  10        0        0        0        0        0        0        0        0        0
BT      6        0     63.3     63.3    851.4     65.9     65.9    851.4     65.9     63.9
BT 928.6     65.9     63.9    928.6     65.9     65.9     1350     65.7     65.7
GR   63.3        0     65.9    851.4     61.8    851.4     59.0      861    59.49    869.9
GR   63.9    869.9     63.9    870.9    59.32    870.9     57.2    880.3     55.3    889.5
GR   63.9    889.5     63.9    890.5    55.12    890.5     54.4      895    58.15    909.1
GR   63.9    909.1     63.9    910.1    58.44    910.1     61.1      919     62.7    928.6
GR   65.9    928.6     65.7     1350
*
C 12.896    CARMENCITA AVENUE
X112.896       22    851.4    928.6       55       55       55        0        0        0
**HY 12.896
* X3  10        0        0        0        0        0        0        0        0        0
BT      6        0     63.3     63.3    851.4     65.9     65.9    851.4     65.9     63.9
BT 928.6     65.9     63.9    928.6     65.9     65.9     1350     65.7     65.7
GR   63.3        0     65.9    851.4     61.8    851.4     59.0      861    59.49    869.9
GR   63.9    869.9     63.9    870.9    59.32    870.9     57.2    880.3     55.3    889.5
GR   63.9    889.5     63.9    890.5    55.12    890.5     54.4      895    58.15    909.1
GR   63.9    909.1     63.9    910.1    58.44    910.1     61.1      919     62.7    928.6
GR   65.9    928.6     65.7     1350

X112.886       18      870      905      300      800      600        0        0        0
HY DS CARMENCITA
* X3  10        0        0      870        0      905        0        0        0
GR   63.3        0     62.6       95     59.6      373     59.2      619     60.3      750
GR   60.1      857     59.2      870     54.3      876     54.3      887     60.1      905
GR   61.7      922     64.1     1000     64.8     1180     65.6     1242     64.1     1263
GR   64.6     1286     64.0     1306     65.7     1350        0        0        0        0


X112.772       18      653      719      948      760     1075        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   64.6        0     62.5       16     64.6       26     62.5      157     61.2      295
GR   59.2      603     58.8      653     53.8      665     53.8      699     60.1      719
GR   60.1      791     63.0      845     61.2      981     62.6     1094     63.3     1208
GR   62.5     1382     62.6     1635     62.6     1800        0        0        0        0

XK     99                         1.0       .1
X112.568       17     1026     1075      692      444      981        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   63.6        0     62.7      297     60.7      751     60.1     1026     53.0     1039
GR   53.0     1062     58.6     1075     58.9     1303     59.3     1473     58.4     1667
GR   56.5     1687     60.5     1702     60.7     1759     57.0     1772     59.3     1788
GR   61.7     2001     60.7     2150        0        0        0        0        0        0

X112.383       10      645      685      170      100      220        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   61.5        0     60.3      400     58.5      645     52.2      650     52.2      673
GR   58.5      685     57.4      712     58.1      950     59.0     1750     60.5     1850

X112.341       11    869.0    931.0       34       34       34        0        0        0
*HY Bradshaw Road
X3     10        0        0        0        0        0        0        0        0        0
*BT     4        0     63.5     63.5      869     63.9     60.6      931     63.9     60.
*BT  1900     60.5     60.5        0        0        0        0        0        0        0
GR   63.5        0     63.5      869     57.1      869     55.0    884.5     53.2    898.6
GR   60.6    898.6     60.6    900.1    53.15    900.1     55.2      931     63.5      931
GR   60.5     1900
```

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C 12.334    BRADSHAW ROAD
X112.334       11      869      931       20       90       70        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
*BT     4        0     63.5     63.5      869     63.9     60.6      931     63.9     60.
*BT  1900     60.5     60.5        0        0        0        0        0        0        0
GR   63.5        0     63.5      869     57.1      869     55.0    884.5     53.2    898.6
GR   60.6    898.6     60.6    900.1    53.15    900.1     55.2      931     63.5      931
GR   60.5     1900

X112.321       18.    886.0    934.0       50      360      300        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   60.7        0     61.5       89     60.6      303     59.2      427     55.6      477
GR   57.5      550     56.7      740     57.6      886     51.4      894     51.4      918
GR   57.9      934     58.9     1200     56.2     1211     58.2     1222     61.8     1461
GR   62.2     1692     60.5     1852     60.2     2050        0        0        0        0

X112.264       18      886      934      564      835      745        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   60.7        0     61.5       89     60.6      303     59.2      427     55.6      477
GR   57.5      550     56.7      740     57.6      886     51.4      894     51.4      918
GR   57.9      934     58.9     1200     56.2     1211     58.2     1222     61.8     1461
GR   62.2     1692     60.5     1852     60.2     2050        0        0        0        0

X112.123       17     1078     1121      976      865     1157        0        0        0
X3     10        0        0        0                          0        0        0        0
GR   60.3        0     58.2      137     56.7      406     56.6      585     53.8      636
GR   57.4      718     56.2     1078     51.0     1086     51.0     1103     59.1     1121
GR   60.1     1366     60.5     1596     62.2     1773     59.5     1876     62.7     1964
GR   62.1     2027     65.3     2200        0        0        0        0        0        0

X111.904       16      913      942      711     1299     1199        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   59.1        0     57.9      379     55.4      749     54.8      913     49.6      917
GR   49.6      933     55.0      942     54.1     1014     55.9     1276     55.8     1428
GR   58.4     1447     63.2     1724     68.6     2036     72.9     2215     65.7     2405
GR   67.5     2450        0        0        0        0        0        0        0        0

X111.677       15     1365     1404      892      892      892        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   58.5        0     57.2      363     55.3      781     55.5     1072     53.8     1326
GR   52.7     1365     49.3     1371     49.3     1390     55.5     1404     59.2     1544
GR   60.2     1779     58.4     1807     60.6     1825     67.0     2120     75.6     2400

X111.470       13     1059     1206     1130      530     1080        0        0        0
X3      0        0        0        0                          0        0        0        0
GR   58.7        0     56.4      381     56.2      799     54.6     1059     49.0     1067
GR   49.0     1092     51.3     1097     54.8     1206     53.1     1529     53.4     1819
GR   57.9     1913     61.5     2077     68.2     2250        0        0        0        0

X111.290       27     1224     1288      755      968     1023        0        0        0
X3      0        0        0        0                          0        0        0        0
GR   56.4        0     57.9       93     56.0      175     57.9      235     54.6      304
GR   57.0      340     55.6      455     54.6      734     54.6      997     52.3     1125
GR   53.6     1224     48.8     1235     48.8     1261     56.9     1288     56.0     1298
GR   56.0     1338     56.0     1351     56.0     1377     56.0     1389     56.0     1407
GR   59.0     1588     65.1     1796     69.3     2016     67.8     2042     69.1     2061
GR   67.2     2086     68.6     2150        0        0        0        0        0        0

X111.097       17      847      897      950      786     1452        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   57.0        0     57.7       97     56.4      204     56.4      430     54.4      613
GR   51.4      675     53.0      847     48.7      853     48.7      876     52.8      897
GR   53.9     1209     59.3     1517     62.0     1689     64.4     1703     70.9     1900
GR   74.2     2069     71.5     2200        0        0        0        0        0        0

X110.822       18     1003     1039      852      869     1056        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   52.7        0     52.5      174     51.2      192     54.4      217     54.1      465
GR   55.4      726     50.0      902     51.5      946     50.5     1003     48.6     1007
GR   48.6     1032     52.4     1039     53.6     1222     55.5     1523     58.7     1898
GR   61.8     2192     63.4     2351     61.8     2400        0        0        0        0

X110.622       23     1252     1307     1056     1056     1056        0        0        0
X3     10        0        0        0                          0        0        0        0
GR   55.1        0     53.9      347     52.8      586     52.9      826     52.7     1050
GR   51.4     1242     54.0     1252     48.4     1262     48.4     1299     52.7     1307
GR   49.7     1337     52.2     1396     51.9     1659     52.8     1897     52.0     1911
GR   53.6     1953     55.5     2111     54.8     2130     57.4     2267     56.1     2379
GR   57.5     2418     61.2     2617     63.2     2700        0        0        0        0

X110.404       20     1720     1756      933     1061     1055        0        0        0
X3     10        0                                   0        0        0        0        0
GR   55.1        0     56.4       59     55.1      296     55.9      510     55.4      780
GR   54.4     1133     53.1     1341     51.2     1579     49.1     1622     48.8     1705
GR   49.6     1720     46.6     1726     46.6     1742     51.5     1756     53.6     1849
GR   56.9     2061     56.6     2176     61.7     2310     65.8     2530     67.2     2700

X110.172       13      986     1036      750      780      872        0        0        0
X3     10        0        0        0                          0        0        0        0
GR   54.8        0     54.5      386     52.3      796     49.3      986     45.8     1000
GR   45.8     1022     49.1     1036     57.6     1286     62.1     1431     67.3     1496
GR   69.0     1668     66.3     1833     66.5     2000        0        0        0        0
*
* SUB-AREA RUNOFF FROM LC45 ENTERS HERE
*
X110.007       17     1002     1105      263      903     1115        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   52.8        0     51.7      295     50.0      550     48.4      970     47.3     1002
GR   45.2     1008     45.2     1036     52.7     1105     58.4     1222     56.4     1228
GR   64.2     1270     66.0     1341     53.4     1463     61.6     1595     60.1     1612
GR   65.5     1773     67.3     1850        0        0        0        0        0        0

X1 9.796       11     1452     1610      412      550     1318        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   53.4        0     51.9      377     50.3      753     49.1     1011     48.2     1300
GR   46.3     1452     44.2     1458     44.2     1484     53.1     1610     57.9     1873
GR   64.8     2150        0        0        0        0        0        0        0        0

X1 9.546       13     1007     1057     1118      200      850        0        0        0
X3     10        0        0        0        0        0        0        0        0        0
GR   53.8        0     53.0      341     51.2      839     48.7     1007     43.7     1027
GR   43.7     1057     45.2     1065     47.2     1201     48.0     1500     52.0     1760
GR   56.0     2030     56.0     2160     60.0     2330        0        0        0        0

DB

T1 OVERSPILL REACH
T2
T3 DATA FROM SACRAMENTO COUNTY TOPOGRAPHIC MAPS
UB
J1
XK    100                                    .3      .05
PC      5        5        1      .08
NC .0800   .0800   .0500      .1       .3
*
X1 1.858       16      410      760      700      650      750
HY 1.858
GR     68     4.49       67    57.04     66.9   128.14     66.9   316.03       67      410
GR   66.6   488.67     66.5      560     66.4      580     66.4   585.16     66.4   594.22
GR   66.5   625.78     66.6   630.86       67      760     67.5      990     67.5     1190
GR     68     1600
*
X1 1.825       20      910     1223      700      650      750
HY 1.825
GR   66.1        0       66       66     65.9      176     65.9      294     65.9      390
GR   65.8      458     65.7      504     65.6      622     65.6      710     65.6      778
GR   65.7      854     65.8      910     65.7      949     65.6     1033     65.5     1108
GR   65.5     1130     65.5     1148     65.7     1223     65.9     1311     66.5     1430
```

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*
X1 1.692      14     190     594     750     750     750
HY 1.692
GR  65.7       1    65.2      28      65      63    64.7     137    64.5     190
GR  64.4     315    64.4     480    64.6     594    64.7     670      65     770
GR    65     840      65     860    65.2     896    65.7     930
*
X1 1.560       7      20     280     650     650     650
HY 1.560
GR  64.0       0    62.0      20    62.0     200    62.4     280    63.0     770
GR  64.0     780    64.6     790
*
X1 1.436      14      51     260     700    1050     400
HY 1.436
GR    64       8    62.7      51    62.6      64    62.4      80    62.4     130
GR  62.5     188    62.6     260    62.8     397    63.1     511      64     660
GR  63.7     820      64     910      64     940      64     960
*
X1 1.304      13     535    1271    1250    1550    1300
HY 1.304
GR  64.8       0      64     120      63     410    62.5     535    62.3     677
GR  62.1     820    62.1     967    62.3    1124    62.6    1271      63    1360
GR  63.6    1440      64    1500      64    1540
*
X1 1.058      20      86     420    1400    1200    1150
HY 1.058
GR    62      17      62      40    60.2      86    59.1      93      59     110
GR    59     151    59.3     238    59.5     345      60     420    60.6     750
GR  60.6    1010      61    1090    62.2    1170      61    1460    60.9    1610
GR  60.4    1790    60.3    1980    60.4    2119    60.8    2188    63.5    2220
*
X1 0.764      17      48     398     550     650     450
HY 0.764
GR  60.5       2    60.5      25    57.4      48      57     124    56.8     162
GR  56.8     220    56.9     276    57.5     398    59.8     730    59.3     855
GR    59    1090    59.3    1228      60    1280      60    1700    60.2    1850
GR    61    2000      62    2270
*
X1 0.660      19     720    1199     850    1000     700
GR  60.8      20    58.9      39    58.5     170      58     230      58     350
GR  58.2     720    57.8     826    57.5     940    57.3    1016    57.3    1110
GR  57.9    1199    58.6    1306    59.5    1350      60    1620      61    1910
GR  61.5    2220      62    2440    62.1    2520    62.3    2800
*
X1 0.499      21      32     440     800     600    1050
GR    60       0    59.2      32      58      55    56.8     101    56.5     101
GR  56.4     130    56.5     154    56.7     192    57.2     246    59.8     440
GR  60.8     790    59.5     900    58.9     969    58.8    1030    58.9    1121
GR  59.3    1243      60    1320      61    1590    61.2    1680      62    1820
GR    63    2040
*
X1 0.347      18     123     830    1200    1200    1150
GR  63.9       2    58.6      37    57.9     123    56.2     148    56.2     163
GR  56.2     188    57.5     210    57.6     312    57.7     390    57.5     535
GR  57.6     670    57.8     799    57.9     830    58.3    1040    58.9    1231
GR    60    1560    60.9    1754    62.5    1970
*
X1 0.120      17    1283    1839       0       0       0
HY AT GERBER CREEK
GR    57       2    55.4      71    55.4     216    55.5     310    55.4     498
GR  55.4     680    55.4    1050    55.6    1200    55.5    1283    55.2    1435
GR    55    1580    54.9    1626    54.9    1730      55    1770    55.4    1839
GR  56.6    1976    59.1    2210
DB
EJ
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ELDER AND GERBER CREEKS
UNIT GEOMETRY FILE NO. 2

EXISTING CONDITIONS ON ELDER AND GERBER CREEKS

FILENAME: EGEX2.CS

```
PR ON
*
*  EXISTING / BASE CONDITION FILE
*  FILE NAME: EGEX1.CS
*
*  NETWORK ANALYSIS FOR ELDER AND GERBER CREEKS, MAY, 1996
*  THIS FILE IS BASED ON THE HEC-2 ANALYSIS FOR THE EFFECTIVE FLOOD
*  INSURANCE STUDY AND AN UPDATED HEC-2 MODEL PREPARED BY MCKAY &
*  SOMPS FOR THE VINEYARD STATION S.P.A.
*
*
*  THE FOLLOWING MODIFICATIONS ARE INCLUDED:
*  1. THE SMALLER, PERCHED BRIDGES WERE CHANGED FROM THE SPECIAL BRIDGE
*     METHOD TO THE NORMAL BRIDGE.
*  2. MINOR CORRECTIONS WERE MADE TO THE EFFECTIVE FLOOD INSURANCE STUDY FILES
*  3. SOME OF THE SECTIONS WERE LENGTHENED TO REFLECT ACTUAL FLOODPLAIN STORAGE
*  4. ALL SECTION NUMBERS ARE CHANGED TO RIVER MILES.
*  5. THE SECTIONS ARE ORDERED FROM UPSTREAM TO DOWNSTREAM.
*
*
*
*  PREPARED FOR SACRAMENTO COUNTY, WATER RESOURCES DIVISION, BY DOUGLAS HAMILTON
*
*
*  REACH 1 = UPPER ELDER CREEK
*  REACH 2 = GERBER CREEK
*  REACH 3 = LOWER ELDER CREEK
*
*
*
*   THIS FILE IS FOR VERSION 2.1 OF UNET.
*
*
*
T1 ELDER CREEK UPPER
T2      UNET CROSS SECTIONS FROM MCKAY AND SOMPS & SACRAMENTO COUNTY
T3      EXISTING CONDITIONS GEOMETRY FILE          S-96
*
*
*  THIS IS REACH 1
*
*
J1
*
*
XK   100                          0.70    .0150
XI   .010
*
UB
*
*
NC .0600  .06000   .04000   .10000   .30000
X111.821       6    594.3    605.7     50.0     50.0     50.0
X3    10.                                        .00      .00
GR 100.0      .0    90.10    594.3    83.20    594.3    83.20    605.7    90.10    605.7
GR  90.6  1100.0
NH      5   1.110    585.0   .06000    626.0   .04000    689.0   .06000    796.0    1.110
NH 1000.  .00000
X111.811      19    626.0    689.0    180.0    180.0    180.0
*  HY SECTION 11.811
GR 107.5      .0   103.00     85.0   101.70     95.0   101.70    142.0   105.50    151.0
GR  99.5   168.0    93.20    277.0    90.20    385.0    89.30    438.0    90.70    479.0
GR  88.0   504.0    85.00    585.0    84.50    626.0    84.00    666.0    86.80    689.0
GR  86.8   796.0    89.80    892.0    90.00    969.0    90.10   1000.0
NH      5   1.110    479.0   .06000    626.0   .04000    689.0   .06000    892.0    1.110
NH 1000.  .00000
X111.777      19    626.0    689.0    980.0    980.0    980.0
GR 107.5      .0   103.00     85.0   101.70     95.0   101.70    142.0   105.50    151.0
GR  99.5   168.0    93.20    277.0    90.20    385.0    89.30    438.0    90.70    479.0
GR  88.0   504.0    85.00    585.0    84.50    626.0    84.00    666.0    86.80    689.0
GR  86.8   796.0    89.80    892.0    90.00    969.0    90.10   1000.0
NH      5   1.110    338.0   .06000    555.0   .04000    579.0   .06000    678.0    1.110
NH 1100.  .00000
X111.592      20    555.0    579.0    890.0    890.0    890.0
GR 108.2      .0   108.70     15.0   108.80     54.0   102.30     90.0     94.60    161.0
GR  90.5   233.0    85.20    338.0    83.30    427.0    83.00    519.0    83.00    555.0
GR  81.3   560.0    81.30    569.0    83.80    579.0    86.00    678.0    89.70    736.0
GR  94.0   803.0    95.00    845.0    94.10    902.0    91.20    970.0    87.10   1100.0
NH      5   1.110    244.0   .06000    439.0   .04000    450.0   .06000    603.0    1.110
NH  676.  .00000
X111.423      12    439.0    450.0    600.0    560.0    580.0
GR  88.6      .0    87.00     59.0    84.00    244.0    82.00    369.0    81.00    439.0
GR  79.7   442.0    79.70    445.0    81.50    450.0    81.50    484.0    83.80    547.0
GR  84.3   603.0    84.00    676.0
NH      5   1.110    367.0   .06000    730.0   .04000    762.0   .06000   1042.0    1.110
NH 1250.  .00000
X111.313      20    730.0    762.0    680.0    720.0    700.0
*  HY SECTION 11.313
GR  84.0      .0    84.70     34.0    82.20    148.0    83.50    212.0    84.50    263.0
GR  85.0   367.0    84.70    462.0    82.10    569.0    81.10    648.0    80.30    730.0
GR  78.7   737.0    78.70    742.0    81.00    762.0    80.50    873.0    85.60    911.0
GR  88.8   988.0    90.00   1042.0    89.30   1097.0    88.20   1202.0    88.00   1250.0
NH      5   1.110    216.0   .06000    466.0   .04000    497.0   .06000    912.0    1.110
NH 1100.  .00000
X111.181      16    466.0    497.0    710.0    670.0    690.0
*  HY SECTION 11.181
GR  86.3      .0    67.80     99.0    88.00    216.0    86.10    372.0    84.80    413.0
GR  80.3   466.0    77.70    481.0    77.70    486.0    79.70    497.0    80.10    536.0
GR  81.1   624.0    81.80    718.0    82.60    785.0    87.00    912.0    87.10   1046.0
GR  86.8  1100.0
NH      5   1.110     33.0   .06000    292.0   .04000    330.0   .06000    883.0    1.110
NH 1000.  .00000
* LATERAL INFLOW FROM BASIN E1C
* LATERAL INFLOW FROM BASIN R-RE1B
X111.050      13    292.0    330.0    940.0    940.0    940.0
*  HY SECTION 11.050
GR  84.1      .0    79.30     26.0    80.50     33.0    79.50    216.0    78.60    292.0
GR  76.7   302.0    76.70    312.0    78.70    330.0    79.10    400.0    79.10    523.0
GR  80.0   721.0    81.70    883.0    82.50   1000.0
NC   .06     .06      .04
XK   100                                .5       .01
X110.872      19    362.0    390.0    940.0    940.0    940.0
*  HY SECTION 10.872
GR  82.5      .0    81.10     30.0    81.60     78.0    80.10     90.0    82.10    114.0
GR  79.6   136.0    81.70    143.0    79.00    270.0    77.50    362.0    75.70    365.0
GR  75.7   376.0    77.80    390.0    77.00    424.0    76.30    501.0    78.10    581.0
GR  83.2   729.0    86.70    812.0    85.80    865.0    86.20   1000.0
NH      5   1.110    706.0   .06000    756.0   .04000    784.0   .06000    881.0    1.110
NH 1450.  .00000
X110.694      18    756.0    784.0    170.0    170.0    170.0
*  HY SECTION 10.694
GR  81.6   464.0    77.60    474.0    79.80    496.0    79.50    527.0    80.30    619.0
GR  80.3   706.0    78.80    756.0    75.20    765.0    75.20    777.0    76.70    784.0
GR  76.7   800.0    75.50    881.0    76.60    922.0    77.60   1031.0    82.20   1212.0
GR  84.1  1320.0    84.70   1365.0    84.70   1450.0
*
* SECTIONS 10.675 AND 10.671 REMOVED DUE TO INADEQUATE GEOMETRY
NC   .06     .06      .04
X110.662      19    756.0    784.0    101.0    320.0    170.0
GR  81.1   464.0    77.10    474.0    79.30    496.0    79.00    527.0    79.80    619.0
GR  79.8   706.0    78.50    740.0    78.30    756.0    74.30    765.0    74.70    777.0
GR  76.2   784.0    76.20    800.0    75.00    881.0    76.10    922.0    77.10   1031.0
GR  81.7  1212.0    83.60   1320.0    84.20   1365.0    84.20   1450.0
*      5   1.110    619.0   .06000    756.0   .04000    784.0   .06000    881.0    1.110
*  1450.  .00000
X110.630      19    756.0    784.0     25.0    175.0    100.0
GR  81.1   464.0    77.10    474.0    79.30    496.0    79.00    527.0    79.80    619.0
GR  79.8   706.0    78.50    740.0    78.30    756.0    74.30    765.0    74.70    777.0
GR  76.2   784.0    76.20    800.0    75.00    881.0    76.10    922.0    77.10   1031.0
GR  81.7  1212.0    83.60   1320.0    84.20   1365.0    84.20   1450.0
* ELDER CREEK ROAD
* 3 CIRCULAR PIPES WITH WEIR FLOW OVER ROAD
X110.611       8        0     2600     40.0     40.0     40.0
X2     0.     .00                74.50    77.00      .00                .000                .000
GR  80.0      0.0    77.00    200.0    77.00    800.0     71.2    800.0     71.2    815.0
GR  77.0      815     77.0   2400.0     80.0   2600.0
*
CC      4     71.2     71.2       70     .015        4        0
CC      4     71.2     71.2       70     .015        4        0
CC      4     71.2     71.2       70     .015        4        0
WD      1      2.8       78      350
CL
*
X110.603       8        0     2600     70.0     50.0     60.0
*  HY SECTION 10.603
GR  80.0      0.0    77.00    200.0    77.00    800.0     71.2    800.0     71.2    815.0
GR  77.0      815     77.0   2400.0     80.0   2600.0
*      5   1.110    500.0   .06000    627.0   .04000    697.0   .06000    776.0    1.110
*  1200.  .00000
* LATERAL INFLOW FROM BASIN D-E1B
X110.592      12    665.0    697.0    555.0    555.0    500.0
GR  79.5      .0    75.50    300.0    73.50    500.0    72.90    627.0    72.70    665.0
GR  70.1   670.0    70.10    690.0    73.60    697.0    74.60    776.0    75.50    800.0
GR  75.5  1000.0    78.50   1200.0
NH      5   1.110    300.0   .06000    665.0   .04000    697.0   .06000    800.0    1.110
NH 1200.  .00000
X110.497      12    665.0    697.0    920.0   1120.0    990.0
GR  80.0      .0    76.00    300.0    74.00    500.0    73.40    627.0    73.20    665.0
GR  70.6   670.0    70.60    690.0    74.10    697.0    75.10    776.0    76.00    800.0
GR  76.0  1000.0    79.00   1200.0
NH      5   1.110    245.0   .06000    480.0   .04000    504.0   .06000    772.0    1.110
NH 1000.  .00000
X110.310      15    480.0    504.0   1250.0   1040.0   1130.0
GR  76.3      .0    72.80    245.0    70.50    355.0    71.60    397.0    72.20    439.0
GR  72.2   473.0    73.30    480.0    70.20    489.0    70.20    500.0    71.50    504.0
GR  70.6   528.0    70.80    632.0    72.70    772.0    74.00    896.0    74.60   1000.0
NH      5   1.110    232.0   .06000    485.0   .04000    517.0   .06000    784.0    1.110
NH 1000.  .00000
X110.095      14    485.0    517.0    980.0    960.0    970.0
GR  77.8      .0    76.30     54.0    77.30     94.0    77.30    232.0    75.70    389.0
GR  71.8   452.0    69.00    485.0    66.80    492.0    66.80    506.0    68.10    517.0
GR  69.0   567.0    68.50    688.0    68.70    784.0    72.00   1000.0
NH      5   1.110    572.0   .06000    789.0   .04000    811.0   .06000   1169.0    1.110
NH 1300.  .00000
X1 9.912      12    789.0    811.0   1230.0   1000.0   1210.0
GR  82.6      .0    82.60    192.0    78.20    507.0    71.80    572.0    67.20    685.0
GR  67.5   789.0    65.50    793.0    65.50    801.0    66.70    811.0    66.50    979.0
GR  68.1  1169.0    69.10   1300.0
NH      5   1.110     25.0   .06000    559.0   .04000    601.0   .06000    938.0    1.110
NH 1250.  .00000
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X1 9.683       12   559.0   601.0  1200.0  1200.0  1210.0
GR  66.0       .0   67.80    25.0   67.70   174.0   67.50   321.0   64.80   495.0
GR  66.6    520.0   65.60   559.0   63.10   577.0   64.70   601.0   67.20   824.0
GR  68.8    938.0   73.10  1250.0
NH     5    1.110   388.0  .06000   904.0  .04000   934.0  .06000  1137.0   1.110
NH 1400.   .00000
X1 9.453       18   904.0   934.0   230.0   250.0   240.0
GR  64.1       .0   65.10   123.0   63.60   186.0   65.00   252.0   63.70   320.0
GR  65.1    388.0   63.70   453.0   63.80   520.0   62.20   588.0   63.70   656.0
GR  63.2    720.0   64.20   791.0   63.60   904.0   61.30   918.0   62.80   934.0
GR  64.8   1137.0   65.70  1296.0   66.70  1400.0
NH     5    1.110   537.0  .06000   620.0  .04000   694.0  .06000  1293.0   1.110
NH 1550.   .00000
X1 9.408       14   620.0   694.0  1190.0  1190.0  1190.0
GR  65.0       .0   63.00   500.0   61.60   537.0   64.10   620.0   63.30   642.0
GR  59.8    652.0   59.80   676.0   64.10   694.0   62.10   714.0   62.80   911.0
GR  63.5   1103.0   65.30  1293.0   65.50  1460.0   66.30  1550.0
NH     5    1.110   786.0  .06000  1152.0  .04000  1205.0  .06000  1485.0   1.110
NH 2050.   .00000
X1 9.183       13  1152.0  1205.0  1290.0  1290.0  1290.0
GR  64.8       .0   64.30   281.0   63.80   501.0   62.50   786.0   62.60  1152.0
GR  55.6   1167.0   55.60  1189.0   61.80  1205.0   62.20  1485.0   60.80  1500.0
GR  62.1   1520.0   63.70  1800.0   64.60  2050.0
NH     5    1.110   933.0  .06000   933.0  .04000   990.0  .06000  1271.0   1.110
NH 1950.   .00000
X1 8.938       11   933.0   990.0    60.0    60.0    60.0
GR  62.3       .0   62.00   280.0   61.50   531.0   60.60   795.0   61.10   933.0
GR  55.0    950.0   55.00   980.0   58.60   990.0   59.00  1271.0   60.20  1624.0
GR  61.7   1950.0
NC   .06      .06     .04
X1 8.927        6   875.0   925.0    40.0    40.0    40.0
X2    0.      .00           58.80   60.10     .00             .000            .000
X3   10.                                                       .00     .00
GR  62.3       .0   60.10   875.0   54.90   875.0   54.90   925.0   60.10   925.0
GR  61.7   1950.0
NC .0600   .06000  .04000  .10000  .30000
BR     1      1.5     1.6     0.4    58.8    60.1     2.7
BL                      6
X1 8.919        6   875.0   925.0     1.0   100.0    50.0
X3   10.                                                       .00     .00
GR  62.3       .0   60.10   875.0   54.90   875.0   54.90   925.0   60.10   925.0
GR  61.7   1950.0
NH     5    1.110   795.0  .06000   933.0  .04000   990.0  .06000  1271.0   1.110
NH 1950.   .00000
X1 8.910       11   933.0   990.0   720.0   720.0   720.0
GR  62.3       .0   62.00   280.0   61.50   531.0   60.60   795.0   61.10   933.0
GR  54.2    950.0   54.20   980.0   58.60   990.0   59.00  1271.0   60.20  1624.0
GR  61.7   1950.0
NH     5    1.110   214.0  .06000   936.0  .04000   966.0  .06000  1281.0   1.110
NH 1900.   .00000
X1 8.774       18   936.0   966.0   800.0   800.0   905.0
GR  60.7       .0   59.20   102.0   59.70   214.0   57.20   466.0   58.30   645.0
GR  57.0    838.0   54.70   851.0   58.80   936.0   53.00   950.0   53.00   958.0
GR  57.8    966.0   59.00  1281.0   58.20  1571.0   59.30  1639.0   57.70  1678.0
GR  59.6   1767.0   57.70  1861.0   59.10  1900.0
NH     5    1.110   184.0  .06000   753.0  .04000   781.0  .06000  1540.0   1.110
NH 1600.   .00000
X1 8.602       19   753.0   781.0  1200.0  1000.0  1465.0
GR  57.1       .0   56.10   122.0   58.20   184.0   56.70   476.0   53.00   495.0
GR  54.2    515.0   56.20   613.0   56.20   729.0   59.00   753.0   52.20   763.0
GR  52.2    773.0   56.60   781.0   55.80   969.0   57.20  1029.0   57.30  1299.0
GR  56.0   1340.0   57.80  1402.0   58.00  1540.0   57.10  1600.0
NH     5    1.110   712.0  .06000  1293.0  .04000  1322.0  .06000  1981.0   1.110
NH 2200.   .00000
X1 8.325       12  1293.0  1322.0   800.0   840.0  1150.0
GR  56.5       .0   55.70   354.0   56.10   712.0   55.10  1017.0   55.60  1250.0
GR  56.3   1293.0   51.80  1303.0   51.80  1315.0   56.00  1322.0   56.20  1583.0
GR  56.6   1981.0   56.30  2200.0
NH     5    1.110   448.0  .06000  1148.0  .04000  1177.0  .06000  1582.0   1.110
NH 2500.   .00000
X1 8.107       17  1148.0  1177.0  1050.0   950.0  1330.0
GR  55.3       .0   54.30   415.0   51.70   422.0   56.10   448.0   54.10   510.0
GR  55.6    679.0   56.00  1148.0   51.00  1154.0   51.00  1167.0   55.50  1177.0
GR  53.2   1327.0   54.60  1400.0   55.00  1582.0   53.10  1716.0   54.50  2043.0
GR  56.7   2363.0   58.00  2500.0
*
* END OF McCAY AND SOMPS DATA
*
*
NC .0600   .06000  .03000  .10000  .30000
* LATERAL INFLOW FROM BASIN E-2
* LATERAL INFLOW FROM BASIN E-3
X1 7.855       38  2038.0  2071.0  1050.0  1000.0  1040.0
*  HY SECTION 7.855
GR  55.3       .0   54.30    90.0   56.10   107.0   56.20   132.0   54.00   138.0
GR  56.1    149.0   56.10   433.0   56.70   708.0   56.80   955.0   55.60  1250.0
GR  55.5   1444.0   56.80  1505.0   53.60  1855.0   52.60  1972.0   53.70  2019.0
GR  54.6   2038.0   50.10  2047.0   50.10  2062.0   53.60  2071.0   52.80  2169.0
GR  53.3   2222.0   54.60  2310.0   54.60  2457.0   54.50  2655.0   52.80  2800.0
GR  54.1   2830.0   54.30  3015.0   53.50  3116.0   54.70  3207.0   53.00  3245.0
GR  53.8   3276.0   55.00  3478.0   55.20  3597.0   55.20  3674.0   57.00  3771.0
GR  57.1   3869.0   55.50  3973.0   55.60  4100.0
X1 7.638       16  1001.1  1122.0     320     320     320
GR  53.1    605.3   52.49   699.2   52.43   700.9   53.00   710.3   52.98  1000.0
GR  53.0   1001.1   52.00  1013.6   51.44  1020.5    50.9  1032.4    50.0  1033.1
GR 50.81   1033.2    51.0  1105.5   51.24  1111.3   51.87  1121.0   52.00    1122
GR  55.0   1253.1
X1 7.577       26   956.6  975.50     220     220     220
GR  52.9    500.0   52.00   901.8   52.03   902.7   52.00   903.5   52.00   937.2
GR  50.1    943.2   50.76   944.0   52.37   945.2   52.37   955.0   52.25   956.6
GR  51.0    962.9   50.60   963.3   50.00   968.5   50.61   973.6   50.93   975.3
GR  51.0    975.5   51.02   976.0   51.02  1021.6   51.00  1021.6   51.21  1029.6
GR  51.0   1044.6   51.51  1055.9   51.77  1058.6   52.00  1063.3   52.00  1072.0
GR  52.5     1500
X1 7.542       16  1082.1  1097.5   400.0   400.0   400.0
GR  52.5    500.0   52.00  1024.5   51.40  1029.6   51.33  1029.8   50.85  1031.2
GR  50.9   1031.2   51.00  1082.1   50.18  1090.5   50.17  1090.6   50.15  1090.8
GR  50.1   1091.0   50.15  1091.2   50.17  1091.4   51.00  1097.5   51.00  1108.1
GR    52     1500
X1 7.466       16   500.0  1500.0     380     420     400
GR  51.4    500.0   52.00  1073.2   50.98  1077.8   50.00  1078.2   50.39  1082.6
GR  50.8   1083.8   49.84  1087.4   48.97  1098.3   49.03  1098.6   49.35  1307.2
GR  49.9   1322.5   51.01  1340.1   51.97  1395.7   51.98  1395.8   53.00  1442.9
GR  53.0   1500.0
X1 7.419       19  1051.1  1114.9     380     420     555
GR    52        0      52      75    51.4     130    51.4     250    51.4     390
GR  51.4    500.0   52.24   997.2   52.00  1006.8   52.50  1012.8   52.58  1051.1
GR  52.0   1064.9   50.00  1067.3    49.2  1077.9    50.0  1080.9    50.5  1083.4
GR 51.00   1088.3   51.71  1113.3   52.00  1114.9   53.17  1500.0
X1 7.361       25  1073.4  1110.4     400     410     380
GR  51.3    500.0   51.91  1050.3   52.00  1054.0   52.00  1073.4   51.79  1074.0
GR  50.0   1078.8   49.41  1084.6   49.33  1084.9   48.97  1088.9   48.97  1089.4
GR  48.7   1093.7   48.72  1093.7   48.72  1093.8   48.72  1093.8   48.70  1095.3
GR  48.8   1095.3   49.66  1100.9   50.00  1101.6   50.23  1102.2   52.00  1108.1
GR  52.8   1109.5   53.00  1110.4   53.88  1281.5   53.00  1321.9   53.00  1500.0
X1 7.308       31  1214.6  1253.5     680     680     670
X3                            969    51.0
GR  50.8    500.0   51.00   509.0   51.00   969.0   50.90   969.4   50.36   976.5
GR  50.1    983.6   49.90   984.8   49.86   985.4   49.84   986.1   49.91   996.1
GR  50.0    997.7   50.00  1001.7   51.00  1025.0   51.00  1214.6   50.00  1219.9
GR  49.5   1220.1   49.41  1220.2   49.19  1220.5   49.19  1220.6   50.39  1241.9
GR  50.4   1242.0   50.20  1244.4   50.03  1247.3   50.00  1247.6   50.21  1247.9
GR  52.0   1253.5   53.00  1294.8   52.99  1294.9   52.00  1312.8   52.00  1406.0
GR  53.0   1500.0
X1 7.226       23   893.2   925.7     310     310     310
GR  51.2    500.0   50.80   893.2   50.00   898.2   49.56   900.6   49.48   900.8
GR  49.4    900.8   49.34   902.1   47.97   912.3   48.04   912.4   48.00   912.5
GR  50.0    922.1   51.78   924.8   52.00   925.7   52.00   951.0   51.64   954.4
GR  51.3   1063.4   51.29  1063.8   52.00  1173.7   51.47  1179.2   52.00  1183.0
GR  52.0   1211.6   52.18  1215.8   51.88  1500.0
X1 7.211       22   921.9   977.1     300     300     300
GR  51.6    500.0   51.49   501.3   50.35   871.3   50.29   873.2   50.00   921.9
GR  49.3    931.7   49.00   938.3   49.39   941.5   49.25   946.0   48.63   948.3
GR  48.3    950.3   48.21   952.4   47.99   954.0   47.91   958.3   48.28   958.7
GR  48.4    962.5   49.33   967.2   50.00   975.1   50.66   977.1   51.25   986.7
GR  51.2    989.9   51.06  1500.0
X1 7.154       19   948.1   966.1     230     230     230
GR  51.0    500.0   50.00   778.0   48.18   784.3   48.14   784.7   48.78   787.0
GR  48.8    787.3   48.77   787.3   48.57   789.2   49.89   795.3   50.00   796.1
GR  50.0    948.1      48   954.1   47.81   956.7   47.21   958.9   47.63   959.5
GR  51.0    966.1    50.8  1131.5    51.0  1137.6      52    1500
X1 7.110       25   938.6   981.6     205     205     205
GR  50.2    500.0   50.00   667.2   50.66   669.6   50.96   673.2   51.00   673.6
GR  51.0    712.2   50.82   713.0   50.00   713.1   50.70   713.6   50.00   720.6
GR  49.0    938.6   48.76   940.5   48.42   941.4   48.71   942.0   47.97   952.0
GR  47.5    954.5   47.48   954.7   47.49   955.0   47.98   955.2   48.00   955.7
GR  49.2    962.3   50.00   981.6   51.00  1241.1   51.09  1241.7   51.92  1500.0
X1 7.072       18   831.5     878     460     460     460
HY US BDRY SPA
GR  49.9    500.0   50.00   783.7   50.21   784.0   52.01   795.1   51.48   795.8
GR  52.0    796.1   52.27   797.1   52.31   797.3    50.0   831.5    49.3   839.1
GR  48.0    863.0    47.9   872.1      50     878    51.0   886.9      51   898.2
GR 50.93    898.5    50.0   901.9   51.49    1500
* U/S FACE FLORIN RD
X1 6.992       28     950   988.9      50      50      50
*                            51.4    51.8
*    -14        0    51.8    51.8       5    51.8      50     470    52.0      50
*             500    52.1    50.0   509.8   52.15   49.99     520    52.2      50
*           627.2    52.3    52.0   941.9    53.5      52     950    53.5   52.38
*             950    53.5    51.4   988.9    53.5    51.4   988.9    53.5   48.77
*           999.3    53.5   52.23    1500    52.4   51.45
GR  51.8        0      50       5      50     200      50     300      50     470
GR  50.0    500.0   49.99   509.8   49.99   509.9   50.00   520.0   50.10   529.7
GR  52.0    615.4   51.14   623.9   52.00   627.2   52.53   642.8   52.56   643.4
GR  53.0    936.0   52.15   938.9   52.00   941.9   52.38   950.0   50.76   960.4
GR  49.2    965.4   49.19   978.6   48.48   987.6   48.77   988.9   52.23   999.3
GR  53.1   1004.3   52.25  1377.1   51.45  1500.0
* FLORIN RD 6.974 RIVER MILE
*      1        2     1.6     0.2    51.4    51.8     2.7
*     60       70      12
X1 6.974       24   931.2   969.6     110     110     110
GR  50.2    500.0   50.51   512.3   49.00   931.2   48.72   933.2   48.62   933.6
GR  48.4    934.8   48.34   934.9   48.00   936.7   47.16   954.3   47.10   955.9
GR  47.2    956.0   48.00   967.0   48.56   969.1   48.92   969.4   49.00   969.6
GR  49.6    982.9   50.00   999.9   50.14  1134.3   51.00  1169.5   51.22  1361.4
GR  51.0   1368.1   51.00  1370.1   50.00  1410.6   50.03  1500.0
X1 6.954       24   931.2   969.6     155     155     155
GR  50.2    500.0   50.51   512.3   49.00   931.2   48.72   933.2   48.62   933.6
GR  48.4    934.8   48.34   934.9   48.00   936.7   47.16   954.3   47.10   955.9
GR  47.2    956.0   48.00   967.0   48.56   969.1   48.92   969.4   49.00   969.6
GR  49.6    982.9   50.00   999.9   50.14  1134.3   51.00  1169.5   51.22  1361.4
GR  51.0   1368.1   51.00  1370.1   50.00  1410.6   50.03  1500.0
* LATERAL INFLOW FROM BASIN E-4A
* LATERAL INFLOW FROM BASIN E-4B
X1 6.925       43   914.5   965.7     300     300     300
*  HY AT FLORIN
GR  50.0    500.0   50.00   501.4   49.99   501.5   49.00   914.5   48.23   915.5
GR  48.2    917.3   48.15   917.4   48.13   917.5   48.00   918.0   47.68   918.5
GR  46.9    922.5   46.93   923.0   46.76   925.2   46.20   931.0   45.71   943.8
GR  47.0    950.1   47.11   951.0   47.16   951.1   47.30   951.3   47.38   951.5
GR  48.0    954.4   48.28   957.3   48.32   957.9   49.00   965.7   50.39  1137.7
GR  50.5   1139.3   51.00  1158.3   51.72  1337.3   51.00  1357.4   50.29  1440.7
GR  50.5   1441.9   50.61  1447.7   50.39  1448.8   50.41  1450.1   50.68  1457.0
GR  50.8   1480.9   51.00  1487.2   51.00  1487.5   51.25  1490.3   51.70  1490.6
GR  52.0   1490.6   51.38  1491.5   51.71  1500.0
X1 6.868       24   956.2     987     280     280     280
GR  50.0    500.0   49.00   956.2   48.94   958.1   48.00   962.4   47.55   965.5
GR  47.4    965.9   46.70   976.7   46.72   976.7   47.86   977.7   48.00   979.2
GR  48.9    986.8   49.00   987.0   50.00  1093.7   51.00  1118.5   51.00  1298.3
GR  50.0   1334.4   48.30  1477.3   48.29  1477.4   48.22  1477.9   48.16  1478.8
GR  48.1   1479.0   48.10  1479.6   48.00  1480.3   48.00  1500.0
BT   -30      140    52.9    49.9     425    52.9    49.9     740    52.7    49.9
BT            880      52    49.5    1000    53.8      49  1000.1    53.8   51.55
BT         1009.6    53.8   51.55  1009.6    53.8    45.6    1011    53.8    45.6
BT           1011    53.8   51.55  1024.6    53.8   51.55  1024.6    53.8    45.6
BT           1026    53.8    45.4    1026    53.8   51.55  1039.8    53.8   51.55
BT         1039.8    53.8    45.4    1041    53.8    45.5    1041    53.8   51.55
BT         1054.6    53.8   51.55  1054.6    53.8    46.9  1055.8    53.8    46.9
BT         1055.8    53.8   51.55  1069.4    53.8   51.55  1069.4    53.8    46.9
BT         1070.6    53.8    47.8  1070.6    53.8   51.55  1081.1    53.8   51.55
BT         1081.2    53.8      49    1570    53.6      49    1600    53.6    53.6
X1 6.813       12   970.3    1072    88.6    88.6    88.6
GR  49.5    500.0   49.00   970.3      49     975   48.00   999.5   47.86  1003.8
GR  46.7   1019.2   47.51  1025.4   47.84  1029.0   48.25  1032.0   48.57  1059.9
GR  49.0   1072.0   49.00  1500.0
X1 6.804       20    1000  1081.2    43.0    43.0    43.0
X2                          51.55    52.7
GR  49.9      140    49.9     425    49.9     740    49.5     880      49    1000
GR  45.6   1000.1    45.6  1009.6    45.6    1011    45.6  1024.6    45.4    1026
GR  45.4   1039.8    45.4    1041    46.9  1054.6    46.9  1055.8    46.9  1069.4
GR  47.8   1070.6    47.8  1081.1      49  1081.2      49    1570    53.6    1600
* CCTRKR  ● RIVER MILE 6.800
BR     1      6.4     1.6      .4   51.55    52.7     2.7
BL                      6
```

```
X1 6.800      20    1000  1081.2    34.8    34.8    34.8
GR  49.9     140    49.9     425    49.9     740    49.5     880      49    1000
GR  45.6  1000.1    45.6  1009.6    45.6    1011    45.6  1024.6    45.4    1026
GR  45.4  1039.8    45.4    1041    46.9  1054.6    46.9  1055.8    46.9  1069.4
GR  47.8  1070.6    47.8  1081.1      49  1081.2      49    1570    53.6    1600
X1 6.779      32   991.6  1048.6   380.0   380.0   380.0
GR  49.0   500.0    49.0   991.6   48.65   997.0   48.59   997.6   48.39   998.6
GR  48.3   998.8   48.26   998.9   48.00  1001.0   48.29  1003.2   48.69  1019.2
GR  47.1  1020.0   46.00  1021.5   46.00  1031.1   46.78  1032.1   47.21  1033.0
GR  47.2  1033.1   49.00  1048.6   49.00  1083.1   48.21  1089.4   48.16  1093.3
GR  48.3  1102.3   46.67  1143.7   47.36  1276.4   47.40  1277.4   47.53  1312.9
GR  47.6  1316.1   48.90  1335.2   51.24  1385.0   52.00  1394.2   53.00  1434.3
GR  53.0  1499.4   52.97  1500.0
X1 6.707      15  1134.2  1176.9     450     475     465
HY DS OF CCTRR
GR  49.0   500.0   48.00  1134.2   46.00  1142.6   45.7    1147   45.98  1174.8
GR 46.29  1175.5   48.16  1176.9   48.22  1177.1   48.2  1177.2   48.34  1178.3
GR 48.87  1180.9   49.00  1181.3   49.20  1378.4   49.6  1389.5   49.99    1500
X1 6.619      13  1022.9  1056.3     960     960     960
GR  49.0   500.0   48.00  1022.9   46.34  1024.8   46.00  1025.0    46.0  1054.7
GR 46.97  1055.0    47.1  1055.3   47.21  1056.3   47.18  1058.8   47.20  1059.6
GR 47.13  1085.1    47.0  1088.0   48.00  1500.0
X1 6.455      12  1030.7  1089.8     475     475     475
GR  48.4   500.0   46.50   997.2   46.00  1030.7   45.55  1031.4   44.00  1044.0
GR  43.6  1045.5   43.58  1048.3   43.75  1063.5   44.05  1063.9   44.11  1064.3
GR  46.0  1089.8   48.10  1500.0
X1 6.365      10  1094.6  1131.1     580     580     580
GR  48.6   500.0   47.07   816.6   47.00   819.0   45.00  1094.6   44.28  1097.0
GR  44.0  1099.9    44.0  1125.1   44.43  1126.2   45.00  1131.1   46.97  1500.0
X1 6.256      22  1035.5  1063.3     590     590     590
X3                         990      46
GR  49.7   500.0   48.00   765.8   47.92   767.5   47.83   768.2   47.75   773.2
GR  47.8   775.9   47.00   917.3   45.24   921.2   44.41   927.1   44.00   929.2
GR  44.0   977.9   45.70   987.3   46.00   990.0   46.00  1035.5   45.76  1036.5
GR  44.0  1038.4      44    1055   45.84  1058.8   45.49  1059.5    45.3  1063.3
GR 46.00  1065.3   46.24  1500.0
X1 6.144      27  1036.8  1094.3     280     280     280
GR  49.0   500.0   49.00   547.9   48.92   549.8   48.83   601.8   49.00   680.5
GR  48.6   687.4   47.00   791.1   46.18   808.3   46.14   808.6   46.00   812.7
GR  46.0   823.3   45.00   864.2   45.00   882.1   44.15   893.3   44.13   893.4
GR  44.3   920.4   44.23   924.6   44.41   930.6   44.00   951.1   44.00  1036.8
GR  43.5  1048.6   42.00  1060.0   42.00  1074.1   44.00  1094.3   45.35  1200.4
GR  46.0  1218.6   46.29  1500.0
X1 6.101      16  1007.7  1091.4     180     180     180
GR  47.0   500.0   45.96   738.6   45.33   761.8   45.00  1007.7   44.39  1008.8
GR  44.4  1008.8   44.00  1010.1   44.00  1010.2   43.66  1012.7   43.00  1015.3
GR  42.9  1015.5   42.00  1019.2   42.00  1023.7   44.00  1055.0   45.00  1091.4
GR  46.5  1500.0
X1 6.067      19  1021.2  1040.8     270     270     270
GR  48.2   500.0   48.00   663.2   47.31   675.2   46.00   839.6   44.44   895.0
GR  43.0   928.4   43.00  1021.2   42.90  1024.1   42.00  1027.0   42.00  1035.9
GR  43.0  1038.0   44.00  1040.8   44.78  1090.4   44.56  1105.0   44.67  1105.9
GR  44.9  1110.0   44.90  1183.8   45.00  1187.7   46.59  1500.0
BT    -8     500    45.5    45.5    1000   45.43   45.43  1000.5   45.43    43.9
BT            1027   45.43    43.9  1033.5   45.43    43.9    1034   45.43   45.43
BT            1200    45.4    45.4    1500      45      45
X1 6.002      28  1027.9  1054.5      85     110      95
X3                         970.5
GR  45.9   500.0   43.36   949.4   43.79   953.1   43.90   953.3   44.08   954.0
GR  44.4   955.5   45.00   957.8   45.00   970.5   44.71   971.7   44.61   971.9
GR  44.3   972.5   44.23   972.9   44.22   973.0   44.00   974.5   43.54  1004.4
GR  43.0  1008.1   43.00  1027.9   42.96  1028.0   42.62  1028.6   42.00  1030.4
GR  42.0  1041.4   42.99  1051.3   43.00  1051.4   43.08  1053.5   43.36  1054.5
GR  44.0  1158.2   45.00  1182.1   46.01  1500.0
X1 5.984       9    1000    1034      40      40      40
X2                         43.9   45.43
X3    10
GR  45.2   330     45.5     500   45.43    1000    39.1  1000.5    39.1    1027
GR  41.3  1033.5   45.43    1034    45.4    1200      45    1500
* McCOY AVE.
BR  1.25      2     1.6      .4    43.9   45.43     2.7
WD     1    2.7    45.5    1200
BL                     6
X1 5.982       9    1000    1034      90      90      90
X3    10
GR  45.2   330     45.5     500   45.43    1000    39.1  1000.5    39.1    1027
GR  41.3  1033.5   45.43    1034    45.4    1200      45    1500
X1 5.978      32  1014.8  1037.7     340     180     340
X3                         709.5      46    1250
GR  46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.5   46.00   516.6
GR  44.0   518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0   756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.00  1014.8
GR  42.7  1018.1   42.00  1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7
GR  43.1  1094.3   43.81  1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2
GR  44.2  1236.3   44.00  1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4
GR  47.1  1497.9   47.06  1500.0
* LATERAL INFLOW FROM BASIN E-5
X1 5.914      20  1013.7  1048.9     425     140     390
HY US OF CONFL
X3                                    1450
GR  48.2   500.0   47.74   704.8   46.00   767.5   45.00  1013.7   44.77  1014.9
GR  44.3  1016.1   42.38  1020.1   42.00  1023.2   42.00  1035.3   42.09  1035.4
GR  44.8  1040.4   44.97  1042.4   45.87  1048.9   46.00  1074.8    45.0    1150
GR    45    1300      44    1320    43.4    1450      44    1500      46    1550
X1 5.840      25  1043.8  1077.7     500     500     500
X3                         900      1550
GR  45.5   500.0   45.00   618.8   44.74   620.2   44.23   642.2   43.15   652.9
GR  42.1   674.3   42.00   674.5   42.00   674.5   42.00   718.1   42.07   718.8
GR  42.1   719.9   43.00   727.3   44.00   844.3   45.00   861.7   45.00  1043.8
GR 41.83  1066.9   42.09  1067.4   45.00  1077.7      46    1200      45    1290
GR    44    1300      43    1460      43    1550      44    1620      46    1640
X1 5.763      29  1005.2  1072.8
GR  46.0   500.0   45.00   734.1   44.99   734.2   44.96   735.3   44.00   753.8
GR  44.0   768.1   43.13   817.0   43.00   937.0   42.00  1000.2   42.00  1005.2
GR  41.6  1009.3   38.00  1058.0   38.00  1061.9   39.15  1065.4   39.50  1066.8
GR  39.6  1066.9   39.66  1066.9   39.82  1067.4   39.86  1067.6   40.06  1068.5
GR  40.7  1070.0   42.23  1072.8   42.41  1076.7   42.00  1087.1   43.00  1500.0
GR  44.0  1550.0    45.0  1750.0    46.0  2030.0    46.8  2200.0
*
DB     3
*
*
*
*
* +++++++ REACH 2 STARTS
*
*
```

```
*
*
T1 GERBER CREEK
T2
T3   GERBER CREEK
*
*
*
UB
*
*
XK   100       0       0       0       1   .0150
*
*
*
NC   .06     .06     .05      .1      .3
* UPSTREAM INFLOW HYDROGRAPH FROM BASIN G-2A
ZD   INV       EX
ZI MILES
X1 4.555      12     845     989    1023     964    1049       0       0       0
*  HY SECTION 4.555
GR  98.7       0    86.0     199    80.5     261    71.3     543    69.2     695
GR  70.0     845    68.5     865    76.5     989    79.6    1061    76.5    1292
GR  73.8    1407    78.7    1550       0       0       0       0       0       0
*
*
*    CROSS SECTIONS ARE STARTING FROM UP STREAM OF GERBER CREEK.
*    FOR EXISTING CONDITION
*    THESE SECTIONS TO GERBER ROAD PREPARED BY SACRAMENTO COUNTY BASED ON
*    1996 TOPOGRAPHIC MAPPING
*
*
X1 4.529      21    1500    1810     480     480     480       0       0       0
GR    94    1000      92    1020      90    1045      88    1060      86    1070
GR    84    1097      82    1105      80    1170      78    1180      76    1215
GR    74    1275      72    1350      70    1500    69.2    1603    69.2    1664
GR  69.5    1721      70    1810      72    1850      74    1895      76    1925
GR  95.5    1942
X1 4.442      21    1665    1920     260     260     260       0       0       0
GR    92    1000      90    1025      88    1050      86    1058      84    1068
GR    82    1135      80    1145      78    1175      76    1215      74    1300
GR    72    1575      70    1665    68.8    1750    67.7    1774    67.3    1793
GR  67.4    1808    68.3    1820      70    1920      72    2080    72.5    2109
GR  94.5    2117
X1 4.393      27    1650    2040     130     130     130       0       0       0
GR    92    1000      90    1044      88    1048      86    1055      84    1070
GR    84    1130      82    1150      80    1170      78    1220      76    1260
GR    74    1310      72    1450      70    1650    69.6    1770    69.1    1827
GR  68.4    1842    67.4    1880      67    1907      67    1930      68    1960
GR    69    1987    69.4    1995      70    2040    70.9    2120    71.6    2310
GR  71.8    2338    95.9    2357
X1 4.349      27    1721    2110     400     400     400       0       0       0
HY US OF LAT SPILLWAY
GR    92    1000      90    1010      88    1020      86    1025      84    1085
GR    82    1145      80    1150      78    1185      76    1210      74    1270
GR    72    1390      70    1630    69.5    1721    68.8    1824    68.2    1847
GR  67.2    1893    67.1    1908    66.8    1935    66.8    1958    67.2    1973
GR  67.9    1992    68.3    2000    69.1    2110    68.8    2345    68.6    2380
GR  69.8    2395      94    2414
*
* LATERAL SPILLWAY FLOWING TO THE WEST
*
LS     2   2.539
WD     2     2.0    69.8     100    70.0     300
X1 4.292      26    1745    2135     250     250     250       0       0       0
HY DS OF LAT SPILLWAY
GR    92    1000      90    1015      88    1020      86    1030      84    1100
GR    82    1155      80    1160      78    1205      76    1235      74    1285
GR    72    1395      70    1560      70    1745    69.4    1869    68.5    1907
GR  67.8    1926    67.1    1945      67    1968      67    1995    67.4    2010
GR  68.3    2025    68.7    2040      70    2135    70.3    2140    70.5    2185
GR  92.8    2208
X1 4.245      28    1640    1820     200     200     200       0       0       0
GR    92    1000      90    1010      88    1020      86    1028      84    1090
GR    82    1168      80    1175      78    1185      76    1240      74    1285
GR    72    1365      70    1640    68.4    1686    67.3    1695    66.9    1703
GR  66.3    1720    66.1    1732    66.2    1743    66.4    1751    66.7    1761
GR  67.1    1769    68.3    1781      70    1820    68.8    2070      70    2135
GR    71    2320      72    2380    96.3    2418
X1 4.212      23    1640    1820     200     200     280       0       0       0
GR    90    1000      88    1050      86    1090      84    1095      82    1200
GR    80    1315      78    1380      76    1405      74    1445      72    1500
GR    70    1640    66.4    1707    66.4    1727    68.5    1773      70    1820
GR  70.3    1880      70    1950    68.9    2022    69.1    2110      70    2155
GR    72    2180      74    2210    89.5    2240
X1 4.159      25    1700    2140     360     360     360       0       0       0
GR    90    1000      88    1050      86    1100      84    1135      82    1165
GR    82    1365      80    1420      78    1480      76    1498      74    1530
GR    72    1560      72    1630      70    1700    68.5    1780    65.7    1862
GR    66    1893    66.7    1912    68.4    1973    69.2    2011      70    2140
GR    72    2200      74    2252      76    2300      78    2360      80    2450
X1 4.091      18    1473    1730     380     300     340       0       0       0
GR    80    1055      80    1220      78    1255      76    1360      74    1410
GR    72    1445      70    1473      69    1510    65.5    1530    65.5    1553
GR  68.8    1632      70    1730      72    1685      74    2000      76    2050
GR    78    2110      80    2170      80    2320
X1 4.019      21    1438    1630      82     112      90       0       0       0
GR    90    1000      88    1055      86    1090      84    1110      82    1160
GR    80    1200      78    1260      76    1310      74    1345      72    1415
GR    70    1438    66.5    1487    65.3    1523      65    1541    66.7    1581
GR    70    1630      72    1780      74    1832      76    1870      78    1910
GR    80    1965
X1 3.967      18    1635    1750     252     344     277       0       0       0
HY US OF DAM
GR    90    1000      88    1070      86    1100      84    1200      82    1235
GR    80    1270      78    1300      76    1350      74    1400      72    1430
GR    70    1635    68.9    1700      70    1750      72    1800      74    1830
GR    76    1875      78    1915      80    1975
*
* IN LINE SPILLWAY FOR DAM AT SECTION 3.967
*
SP          68.9
WD     3     2.2    68.9      50    70.0     100    71.0     100
X1 3.950      20    1755    2020      50      50      50
GR    88    1000      88    1150      86    1300      84    1380      82    1445
GR    80    1520      78    1620      76    1680      74    1700      72    1720
GR    70    1755    66.8    1980      70    2020      72    2050      74    2090
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GR    74    2190      72    2250      70    2315      70    2415      72    2435
*1 3.945      20    1750    2000      15      15      15       0       0       0
*R    88    1000      88    1140      86    1275      84    1350      82    1420
*R    80    1535      78    1590      76    1680      74    1710      72    1730
*R    70    1750      68    1800      65    1846      66    1945      68    1960
*R    70    2000      72    2045      74    2085      77    2128      88    2136
*
* GERBER CREEK ROAD CROSSING NO. 1
*
*  X1 3.940         (starting the previous cross sections)
*  SECTION 3.940
*
*
* GERBER CREEK ROAD CROSSING NO. 1
*
X1 3.940      28  154.22  308.08   40.00   40.00   40.00     .00     .00     .00
HY US OF GERBER RD #1
*  SECTION 3.940
GR    80       0   77.66   84.14   76.32  100.9   69.97  122.23   68.8  154.22
GR 67.74  177.07    66.9  212.11   66.34  248.67   66.01  277.62   65.97  281.58
GR 65.97  284.63   65.93  286.66   65.96  287.56   65.95   289.2   65.96  289.85
GR 65.95  291.75   65.94  293.02   65.94  297.71   65.93  301.52   65.95  308.08
GR 67.01  332.46   68.24  355.31   69.97  369.02   72.31   393.4    74.6  414.87
GR 74.77  440.77    75.1     490      76     560
*
*
CC   3.5    66.2    66.0      40    .015       3       0
WD     4     2.5    71.8      50    72.7     170    73.6     150    74.0     280
CL    20      20    66.1      68    66.5      90
* CL  20      20    66.5      70    66.5      78
*
*                      4
X1 3.933      28  154.22  308.08      50      50      50     .00     .00     .00
HY DS OF GERBER RD #1
GR    80       0   77.66   84.14   76.32  100.9   69.97  122.23   68.8  154.22
GR 67.74  177.07    66.9  212.11   66.34  248.67   66.01  277.62   65.97  281.58
GR 65.97  284.63   65.80  286.66   65.96  287.56   65.95   289.2   65.96  289.85
GR 65.95  291.75   65.94  293.02   65.94  297.71   65.93  301.52   65.95  308.08
GR 67.01  332.46   68.24  355.31   69.97  369.02   72.31   393.4    74.6  414.87
GR 74.77  440.77    75.1     490      76     560
X1 3.923      22     897     957     500     100     370       1       0       0
GR  73.6       0    70.5     107    72.1     197    69.7     330    68.3     509
GR  66.2     671    64.1     847    63.3     897    62.8     927    66.1     957
GR  66.7     977    68.3    1032    68.5    1094    70.8    1109    67.3    1134
GR  66.8    1250      70    1263    72.9    1294      73    1541    73.2    1597
GR  74.5    1613    75.5    1704
X1 3.853      22     897     957     230      10      93       0       0       0
GR  73.6       0    70.5     107    72.1     197    69.7     330    68.3     509
GR  66.2     671    64.1     847    63.3     897    62.8     927    66.1     957
GR  66.7     977    68.3    1032    68.5    1094    70.8    1109    67.3    1134
GR  66.8    1250      70    1263    72.9    1294      73    1541    73.2    1597
GR  74.5    1613    75.5    1704
XK   100                             1.2   .0150
*
* VINEYARD ROAD
*
X1 3.836      11       0     620      40      40      40       0       0       0
HY US OF VINEYARD RD
X3    10
*      6       0    72.0    72.0     180    68.0    67.5     340    67.9    66.4
*  356.2    67.9    66.4     390    68.0    66.8     620    72.0    72.0       0
GR  72.0       0    67.5     180    66.4     340    63.6     340    63.3   343.9
GR  63.6   347.8    64.6   352.4    64.8   356.2    66.4   356.2    66.8     390
GR  72.0     620
BR  1.25      .8     1.6      .4    66.4    68.0     2.5
WD     3     2.5      68     100    68.5     150      69     100
BL     0       0       8
X1 3.828      11     340   356.2      50      50      50       0       0       0
HY DS OF VINEYARD RD
*      6       0    72.0    72.0     180    68.0    67.5     340    67.9    66.4
*  356.2    67.9    66.4     390    68.0    66.8     620    72.0    72.0       0
GR  72.0       0    67.5     180    66.4     340    63.6     340    63.1   343.9
GR  63.6   347.8    64.6   352.4    64.8   356.2    66.4   356.2    66.8     390
GR  72.0     620
X1 3.819      15     606     670     840     983     950       1     0.5       0
X3     0       0       0       0       0    1310      69       0       0
GR  74.6       0    72.8     158      72     293    66.8     485    64.5     606
GR  62.7     654      64     670    64.1     897    65.2    1216    66.3    1233
GR  65.7    1249      69    1310    65.7    1417    65.7    1537      66    1700
X1 3.639      15     606     670     832     841     866       0       0       0
*  SECTION 3.639
X3     0       0       0       0       0    1310    69.0       0       0       0
GR  74.6       0    72.8     158    72.0     293    66.8     485    64.5     606
GR  62.7     654    64.0     670    64.1     897    65.2    1216    66.3    1233
GR  65.7    1249    69.0    1310    65.7    1417    65.7    1537    66.0    1700
X1 3.475      13     436     504    1061     646    1001
*  SECTION 3.475
X3     0       0       0       0       0     631    69.7       0       0       0
GR  71.5       0    72.5     161    66.3     311    63.8     378    62.8     436
GR  61.3     496    62.0     504    61.3     513    69.7     631    68.0     692
GR  65.8     749    65.3     808    65.6     850
X1 3.285      17    1496    1632     718     656    1135       0       0       0
*  SECTION 3.285
GR  62.7       0    64.0     304    65.2     818    64.8     843    63.2     848
GR  62.7    1295    62.2    1496    60.5    1540    61.8    1559    63.0    1632
GR  62.0    1681    62.3    1761    63.2    1799    63.8    1976    63.5    2115
GR  65.8    2208    65.1    2300       0       0       0       0       0       0
* LATERAL INFLOW BASIN G-2B
X1 3.070      20    2615    2631    1556     724    1019       0       0       0
GR  60.3       0    60.6     320    61.7     642    64.2     652    66.8    1030
GR  63.8    1322    63.2    1342    62.3    1772    61.5    2204    60.6    2230
GR  60.3    2468    60.3    2615    59.1    2623    60.7    2631    60.8    2672
GR  59.2    2678    62.2    2691    61.5    2712    62.2    2924    63.8    3100
**************
NC   .060    .060    .050      .1      .3
X1 2.877      12     315     336     823     542     720       0       0       0
X3     0       0       0       0       0     539    66.3       0       0       0
GR  59.6       0    59.6     304    62.7     315    57.7     322    57.7     331
GR  60.3     336    61.1     386    65.5     500    66.3     539    62.8     689
GR  61.6     819    61.8     850       0       0       0       0       0       0
X1 2.792      35   921.7   981.9     320     320     320
*  HY SECTION 2.792
GR  61.0   500.0    61.00   898.4   61.08   898.8   61.50   900.9   61.54   901.1
GR  62.0   902.9    62.90   904.9   64.00   907.5   64.71   909.7   65.00   910.6
GR  65.0   921.7    64.00   924.4   63.01   925.4   62.00   927.0   60.36   928.8
GR  60.2   928.8    60.00   929.6   59.83   929.6   59.82   929.7   59.32   932.4
GR  59.0   933.1    59.00   960.3   59.48   961.8   60.00   962.8   59.65   963.0
GR  61.0   968.6    61.24   970.1   62.00   973.6   62.64   978.5   62.73   979.0
GR  63.0   981.9    66.00  1044.3   66.00  1058.1   66.72  1092.4   66.00  1134.2
NC                    .05      .1      .3
X1 2.732      10   938.3   972.7     185     185     185
GR  63.4   573.2    62.00   633.2   61.75   707.0    60.0   938.3    58.6   958.6
GR  58.6   958.6    60.00   972.7   61.00  1393.0    62.5  1447.2   62.86    1500
X1 2.725      10   938.3   972.7      41      41      41
*  HY SECTION 2.725
X2                     0    62.8    63.6
X3    10                                      63.6    63.6
BT   -15   573.2    63.4    63.4   573.2      68    63.4    633.2    67.3    62.0
BT         707    66.1   61.75   938.3    64.4      60      948    64.3    59.3
BT         948    64.3    62.8     963    64.1    62.8      963    64.1   59.15
BT        972.7    64.1      60    1280    63.6   60.73     1393    64.9      61
BT       1447.2   65.15    62.5  1499.9    65.4    62.8     1500    62.8    62.8
GR  63.4   573.2    62.00   633.2   61.75   707.0    60.0   938.3   58.38   947.7
GR  58.6   958.6    60.00   972.7   61.00  1393.0    62.5  1447.2   62.86    1500
* GERBER ROAD CROSSING #2 EAST OF BRADSHAW RD M&S
*   1.05    1.33     1.6      .4    62.8    63.6     2.7
*                      4
X1 2.723      16   889.4   975.9    31.5    31.5    31.5
HY US BDRY SPA
GR  64.6   682.8    64.00   688.9   63.48   876.6   63.00   889.4   63.00   900.1
GR 57.46   908.4    60.26   939.8   63.20   954.2   63.78   975.9   63.65  1288.3
GR 64.00  1325.7    64.30  1331.5    65.0  1477.7   65.27  1485.5   65.28  1495.4
GR 65.20    1500
X1 2.607      49   892.2   940.1     500     500     500
GR  63.0   710.8    62.77   717.9   62.46   781.5   62.00   798.4   61.42   805.2
GR  61.2   807.3    60.85   834.0   60.86   892.2   60.20   903.3   60.00   905.1
GR  59.9   905.5    59.82   906.0   59.00   909.4   59.00   911.7   58.36   915.3
GR  56.0   916.5    58.00   930.7   61.35   936.2   61.49   936.2   62.00   938.8
GR  62.0   940.1    62.81   960.5   62.29   969.1   62.19   975.1   62.00   979.8
GR  61.2   983.5    60.95   986.5   60.45  1000.5   60.31  1010.5   60.45  1018.0
GR  60.4  1020.3    59.97  1046.6   59.00  1072.9   59.00  1089.3   59.41  1100.6
GR  59.5  1101.2    59.83  1105.4   60.00  1114.1   60.00  1134.6   61.00  1188.0
GR  61.0  1211.6    61.08  1215.4   61.46  1225.4   61.51  1226.1   62.00  1238.4
GR  62.0  1263.0    62.63  1296.5   63.00  1308.4   63.27  1324.3
*
*  LATERAL SPILLWAY FROM SECTION 4.349 CONNECTS TO THIS SECTION.
*
X1 2.539      26   935.3   963.7     640     650     640
GR  61.1   500.0    60.84   507.0   60.00   541.5   59.00   562.5   59.00   933.2
GR  59.0   934.9    58.85   935.3   58.68   939.7   58.00   941.8   56.26   948.4
GR  58.8   949.5    60.00   963.7   59.83  1049.5   59.96  1056.5   61.00  1238.4
GR  61.3  1244.6    62.00  1266.5   62.51  1274.2   64.00  1313.4   64.98  1323.0
GR  65.0  1323.0    65.00  1323.5   66.00  1366.5   66.00  1466.4   65.55  1477.4
GR  65.0  1500.0
* LATERAL INFLOW BASIN G-3A
X1 2.476      42   961.6  1009.6     250     285     275
GR  63.0   729.0    63.00   729.3   62.67   736.1   62.00   745.3   61.50   761.5
GR  61.0   767.3    61.00   767.6   60.01   780.6   60.01   780.6   60.00   780.7
GR  60.0   780.9    59.00   826.7   58.22   913.8   58.58   937.6   59.00   950.7
GR  58.3   956.6    58.44   957.8   58.45   961.6   58.00   962.5   56.74   967.7
GR  56.3   971.8    56.00   977.7   56.00   983.5   56.88   987.8   57.83  1007.8
GR  58.0  1009.6    58.03  1010.0   58.07  1014.1   58.78  1043.0   59.00  1133.7
GR  59.0  1134.6    59.46  1144.3   60.68  1161.7   61.00  1170.5   61.74  1181.3
GR  61.9  1184.4    62.00  1185.2   62.99  1215.8   63.00  1215.9   64.00  1244.3
GR  64.0  1367.9    63.66  1372.4
X1 2.424      30   971.4   988.6     165     165     165
GR  61.0   896.7    60.82   899.0   60.00   904.3   59.80   905.7   59.74   907.3
GR  59.0   919.9    58.77   922.9   58.62   970.6   58.51   971.3   58.51   971.4
GR  57.1   974.8    56.0    976.2    56.0   983.6   57.59   985.6    58.0   986.4
GR  58.8   988.6    58.87   988.7   59.00   988.9   59.00   999.1   58.49  1005.6
GR  57.0  1033.7    57.00  1033.9   57.10  1034.1   57.00     1037   57.00  1141.7
GR  57.1  1217.7     58.2  1223.3   59.00  1320.9   59.00  1409.5   60.87  1500.0
X1 2.393      55   969.2     989     185     185     185
GR  61.0   908.0    60.49   911.7   60.41   912.2   60.23   912.4   60.15   913.8
GR  60.1   913.9    60.11   914.1   60.10   914.1   60.09   914.5   60.08   914.6
GR  60.1   914.6    59.85   916.2   59.79   916.5   59.77   916.8   59.00   930.2
GR  58.1   969.2    58.05   969.4   58.04   972.7   58.04   972.7   57.93   973.0
GR  56.0   975.4    56.00   981.9   56.11   982.1   56.36   982.5   58.00   986.3
GR  58.7   988.0    59.00   989.0   59.00  1004.3   58.82  1008.4   58.00  1021.7
GR  57.6  1023.4    57.53  1024.7   57.53  1041.6   58.00  1052.1   57.92  1157.1
GR  57.8  1161.7    57.90  1181.9   57.00  1209.6   57.00  1223.7   57.55  1225.8
GR  57.6  1226.0    57.85  1227.7   57.86  1227.8   57.90  1227.9   58.00  1228.3
GR  58.4  1230.0    58.44  1230.3   59.00  1232.3   60.00  1252.1   60.79  1404.9
GR  60.8  1405.3    61.00  1409.8   61.00  1435.0   60.94  1437.5   61.00  1500.0
X1 2.360      60     970     988     325     325     325
GR  62.2   695.4    62.00   702.9   62.00   707.0   61.00   761.1   61.00   766.9
GR  59.0   912.9    58.84   916.3   58.65   925.2   59.00   939.9   59.00   940.1
GR  58.3   970.0    58.00   970.2   56.49   972.1   56.00   972.4   55.15   974.2
GR  55.0   975.0    55.12   975.2   55.14   975.3   55.18   975.5   55.22   975.8
GR  55.4   978.1    55.46   978.1   57.05   981.7   56.00   982.7   57.63   982.7
GR  57.9   986.5    58.00   986.8   58.06   987.0   58.07   987.1   58.09   987.2
GR  58.1   987.5    58.14   988.0   58.00   993.6   58.00  1002.0   57.00  1020.7
GR  57.0  1048.9    56.98  1049.4   56.68  1070.5   56.59  1072.7   56.31  1076.1
GR  56.2  1078.1    56.17  1214.3   57.00  1238.4   57.00  1258.2   57.24  1265.6
GR  58.0  1309.7    58.16  1310.4   58.30  1311.2   58.36  1311.7   59.00  1315.9
GR  59.2  1316.4    59.27  1316.7   59.50  1316.9   60.00  1320.1   60.66  1322.8
GR  60.7  1323.1    61.00  1323.9   62.00  1374.3   62.00  1421.2   62.94  1500.0
X1 2.300      35   954.1   984.7     255     255     255
GR  61.6   500.0    61.00   539.8   59.00   927.8   58.60   936.7   58.57   936.9
GR  59.0   954.1    58.76   963.9   57.44   965.4      56     966    55.6     957
GR  55.5   974.2    58.00   983.8   58.86   984.7   58.79   986.1   58.78   990.3
GR  58.4  1007.6    58.37  1009.0   58.36  1009.1   58.31  1009.2   58.00  1018.9
GR  58.0  1033.5    57.00  1050.0   57.04  1184.3   57.00  1187.0   57.00  1243.2
GR  56.0  1246.0    56.00  1257.4   56.70  1259.1   58.64  1271.2   58.84  1272.7
GR  58.9  1273.5    58.00  1275.4   58.79  1277.1   59.66  1279.4   60.00  1279.8
NC                    .05      .1      .3
X1 2.252      24   959.2  1008.3     345     345     345
GR  61.4   500.0    61.00   522.5   61.00   536.3   60.00   592.6   59.07   672.9
GR  59.0   673.2    59.00   959.2   58.00   977.9   54.99   994.5   54.99  1004.2
GR  56.5  1006.7    56.32  1007.4   56.00  1007.7   56.95  1008.3   57.00  1008.5
GR  57.0  1108.0    58.00  1152.0   58.00  1153.8   59.00  1208.8   59.00  1227.2
GR  60.0  1269.6    61.05  1475.6   61.08  1476.6   61.25  1500.0
X1 2.222      25   975.4   996.8      35      35      35
X2                     0    59.1   59.52               0
X3    10       0       0       0       0       0       0    59.8    59.8
BT   -24     500   59.52   59.52   500.6   59.52    58.6   513.1   59.52   57.52
BT         530.4   59.53   57.19   532.3   59.53      57   613.5   59.55      57
BT         621.3   59.55   57.15   975.4    60.1      56   980.2    60.1   55.24
BT         983.9    60.1   55.13   983.9    60.1   55.13   984.7    63.4    59.1
BT         994.4    63.4    59.1   999.6    63.4    59.1  1000.7    60.1   58.32
BT        1023.8   60.12      59  1068.4   60.16   59.05  1104.7    60.2      60
BT        1111.7    60.3    60.3  1111.8   60.33   60.33  1299.4    60.5    60.5
BT        1302.7   60.66   60.66  1392.5      61      61    1500   61.95   61.95
GR 59.52     500    58.6   500.6   57.52   513.1   57.19   530.4      57   532.3
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GR    57   613.5   57.15   621.3     56   975.4   55.24   980.2   55.13   983.9
GR  54.1   984.7    54.1   991.9   55.6   994.4   57.35   996.8   58.32   999.6
GR 58.32  1000.7      59  1023.8  59.05  1068.4      60  1104.7    60.3  1111.7
GR 60.33  1111.8    60.5  1299.4  60.66  1302.7      61  1392.5   61.95    1500
* BRADSHAW ROAD TWIN 5'X 8' RCBC L=35'
CB     5       8    54.1    54.0      35    .015      15       0
CB     5       8    54.1    54.0      35    .015      15       0
CL    20      20    54.5    62.0      55      63
X1 2.212      24   975.4   996.8      25      25      25
X3    10                                            59.8    59.8
GR 59.52   500.0   58.60   500.6   57.52   513.1   57.19   530.4   57.00   532.3
GR  57.0   613.5   57.15   621.3   56.00   975.4   55.24   980.2   55.13   983.9
GR  54.1   984.7    54.1   991.9   55.60   994.4   57.35   996.8   58.32   999.6
GR  59.0  1023.8   59.05  1068.4   60.00  1104.7   60.30  1111.7   60.33  1111.8
GR  60.5  1299.4   60.66  1302.7   61.00  1392.5   61.95  1500.0
X1 2.169      30   909.5  1025.4     360     340     350
HY DS OF BRADSHAW
X3                          799.4
GR  57.5   780.0   58.77   795.9   58.78   796.3   58.87   799.4   58.71   842.3
GR  58.0   848.3   57.36   849.1   57.26   849.7   57.24   850.0   57.00   851.1
GR  57.0   863.1   57.17   866.0   57.37   880.2   57.00   882.5   57.00   909.5
GR  56.0   956.1   55.44   961.0   54.64   970.0   54.66   970.7   54.68   971.4
GR  54.7   971.4   54.61   976.3   55.50   982.5   55.97   988.0   55.97   988.0
GR  57.0  1008.7   57.31  1017.8   58.00  1025.4   58.00  1036.4   58.65  1091.8
X1 2.103      16      735     768     280     280     280
GR    58     500      58     535      57     536      57     545    57.8     575
GR    57     680      56     735    53.3     747    52.8     753      54     758
GR    56     765      57     768    57.4     920      58     975      59    1040
GR    59    1100
* LATERAL INFLOW BASIN G-3B
X1 2.060      33   889.7  1018.4     365     365     365
*  HY SECTION 2.060
GR  56.3   500.0   56.72   717.6   57.00   729.5   57.00   730.0   56.95   731.2
GR  56.9   732.3   56.77   733.2   56.65   736.4   56.61   737.1   56.60   737.1
GR  56.5   737.4   56.00   739.0   56.47   740.9   56.48   741.3   56.00   751.0
GR  56.7   759.4   56.76   760.0   56.67   764.0   56.72   764.1   56.73   764.1
GR  56.8   764.2   56.84   775.0   56.72   778.5   56.00   783.4   56.00   889.7
GR  54.0   936.3   52.27   940.4   53.94   948.4   54.00   948.7   56.00  1018.4
GR  56.0  1241.7      57    1380   58.00    1430
NC                  .065      .1      .3
*  SECNO 1.991 = 2.003
X1 2.003      41     960   998.1      25      25      25
X3                          698.8            1319.9
GR  56.0   500.0   56.00   685.9   55.71   697.2   55.53   698.8   54.00   960.0
GR  52.3   962.5   52.03   963.6   52.02   963.7   52.00   963.7   52.89   967.6
GR  52.0   969.1   52.06   969.5   54.00   987.2   54.16   988.8   55.10   994.4
GR  56.0   998.1   56.00  1016.3   56.53  1030.0   56.85  1031.2   57.00  1034.0
GR  57.3  1203.5   57.17  1207.0   57.10  1313.3   57.64  1318.1   58.00  1319.9
GR  58.0  1422.8   57.72  1427.8   57.60  1428.2   56.00  1428.9   56.88  1429.0
GR  57.0  1429.1   57.00  1429.3   56.06  1438.9   56.05  1439.0   56.00  1439.2
GR  56.0  1439.5   56.00  1440.7   56.33  1445.5   55.65  1456.9   55.49  1460.1
GR  55.8  1500.0
*
*  BRIDGE
*
X1 2.002      15     180     208      12      12      12       0       0       0
X2    0       0       0    55.3     56.5       0       0       0       0       0
X3    10      0       0       0       0       0       0       0       0
BT    -2     180    56.5    55.3     208    56.5    55.3
GR  56.5       0    56.5     180    53.1     180    51.7   186.5    52.3     190
GR  53.1     190    51.7   192.5    52.3     193    52.3     193      52     195.2
GR    52   195.2    51.7   201.6    51.8     208    56.5     208    56.5     658
*  2.000 *** PRIVATE ROAD ***    FIS/JMM
NC                  .055      .3      .5
*    1.3     2.2     1.6      .4    55.3    56.5     2.7
*                      4
X1 2.000      12     180     208      50      50      50       0       0       0
X3    10       0       0       0       0       0       0       0       0
BT    -2     180    56.5    55.3     208    56.5    55.3
GR  56.5       0    56.5     180    53.1     180    51.7   186.5    52.3     193
GR  52.3     193    52.0   195.2    52.0   195.2    51.7   201.6    51.8     208
GR  56.5     208    56.5     658       0       0       0       0       0       0
X1 1.987      26   956.7   990.7     100     150     135
X3                          633.5   56.73  1440.8   57.00
GR  56.0   500.0   56.73   633.5   56.00   704.0   55.89   704.9   54.00   956.7
GR  53.6   957.4   52.00   968.6   52.01   968.6   51.97   968.7   51.59   969.6
GR  52.0   979.7   52.00   979.9   52.22   981.0   53.16   983.2   55.86   990.7
GR  56.0   991.3   56.34  1201.8   56.63  1211.2   56.70  1230.3   57.00  1245.8
GR  57.0  1281.4   57.79  1286.6   57.00  1323.3   57.00  1440.8   56.49  1452.2
GR  56.0  1500.0
X1 1.961      33   870.5   905.7     170     170     170
*  HY SECTION 1.961
GR  56.0   500.0   56.00   637.8   55.96   638.1   54.00   870.5   52.00   883.9
GR  51.3   890.2   51.12   890.6   50.69   891.8   50.53   891.9   50.51   892.0
GR  50.7   892.6   51.43   895.7   51.59   896.4   51.98   897.7   52.00   897.7
GR  52.0   897.8   52.16   898.5   54.00   905.7   54.00   907.3   56.00   996.6
GR  56.0  1000.1   57.00  1053.3   57.00  1053.9   59.00  1128.5   59.00  1130.2
GR  59.9  1174.1   60.00  1176.7   60.00  1185.9   60.77  1237.1   60.19  1285.4
GR  60.8  1363.3   60.71  1370.0   61.00  1500.0
* GERBER ROAD CROSSING #3 U/S SECTION
NC                  .060      .1      .3
X1 1.926      26   939.7   974.1      14      14      14
GR  55.8   500.0   53.58   939.7   52.40   941.5   52.00   942.5   51.90   944.0
GR  51.9   944.5   51.83   944.8   50.88   949.7   50.53   959.8   51.71   964.2
GR  51.8   964.2   52.00   964.5   51.73   965.5   51.71   966.0   51.71   966.0
GR  51.7   966.2   52.37   970.2   54.00   974.1   54.26  1191.1   55.95  1258.1
GR  56.0  1331.0   57.00  1426.2   57.52  1430.7   58.22  1443.8   59.00  1492.3
GR  59.0  1500.0
X1 1.925       6     475   495.2    30.3    30.3    30.3
X2                      0    53.8    55.2       0
X3    10       0       0       0       0       0       0       0       0
*    -6     200   55.25   55.25     475    55.2    55.2     475    56.6    53.8
*           495.2    58.6    53.8   495.2    55.2    55.2     800      56      56
GR 55.25     200    55.2     475      48   475.1    47.8   495.1    55.2   495.2
GR    56     800
* GERBER ROAD CROSSING #3 WEST OF BRADSHAW RD
NC                  .050      .3      .5
BR     1       0     1.6      .4    53.8    55.2     2.7
WD     1     2.7    55.2     600
BL                      4
X1 1.919       6     475   495.2      50      50      50
X3    10
GR 55.25     200    55.2     475      48   475.1    47.8   495.1    55.2   495.2
GR    56     800
X1 1.900      29   960.3  1001.6     280     250     260
*  HY SECTION 1.900
GR  56.7   500.0   56.70   503.1   56.43   514.1   56.57   559.4   56.00   565.5
GR  54.0   908.0   53.95   909.3   53.86   910.2   53.48   911.9   53.02   913.0
GR  53.0   913.4   53.00   929.5   53.86   941.2   54.00   944.5   54.00   960.3
GR  53.5   960.9   52.00   970.2   51.77   970.4   50.80   981.8   51.47   990.6
GR  51.9   992.8   52.00   994.6   52.12   994.9   53.53  1000.0   54.00  1001.6
GR  54.2  1259.0   54.00  1270.6   57.09  1446.4   56.13  1500.0
* LATERAL INFLOW BASIN G-3D
X1 1.851      34  1053.3  1097.8     210     200     210
GR  54.9   500.0   54.00   896.9   53.21   944.7   53.65  1025.4   53.00  1053.3
GR  50.5  1058.3   50.42  1058.6   50.81  1059.0   50.79  1059.1   50.60  1059.5
GR  50.6  1066.7   50.95  1068.5   52.00  1073.0   53.00  1073.1   53.00  1073.1
GR  53.7  1097.8   53.70  1097.9   54.00  1164.7   54.25  1169.6   54.38  1283.3
GR  55.4  1330.6   56.86  1337.8   56.00  1338.3   56.50  1339.3   56.59  1352.9
GR  56.0  1358.7   55.91  1372.4   56.00  1373.1   56.00  1381.1   57.00  1413.4
GR  57.0  1413.5   59.00  1479.6   59.00  1479.7   59.88  1500.0
NC                  .065      .1      .3
X1 1.811      31  1046.4  1090.9     175     175     175
HY DS OF GERBER#3
GR  54.7   695.4   54.67   695.8   54.00   910.6   53.59   925.5   53.07  1044.0
GR  53.0  1046.1   53.00  1046.4   51.49  1048.0   50.41  1049.0   50.74  1055.1
GR  51.3  1061.4   52.29  1065.2   52.53  1067.8   53.00  1068.7   53.37  1075.8
GR  53.6  1084.2   53.79  1086.8   53.85  1087.4   54.00  1090.9   56.39  1411.9
GR  57.3  1415.7   56.00  1416.4   56.73  1417.6   56.79  1433.2   56.23  1437.4
GR  56.3  1438.2   56.37  1439.1   56.40  1446.6   57.00  1475.6   57.00  1476.1
GR  57.5  1500.0
X1 1.788      10     488     505      15      15      15       0       0       0
X2    0       0       0    54.0    55.3       0       0       0       0       0
BT    -3     488      52      52     499    55.3      54     510      52      52
GR  55.0       0      54     250      53     390      52     488    50.6     492
GR  50.6     505      52     510      53     511      54     620      55     820
*  1.785 *** PRIVATE ROAD ***
NC                  .055      .3      .5
*    1.3      .8     1.6      .4      54    55.3     2.7
*                      4
X1 1.785      10     488     505      70      70      70       0       0       0
X3    10
GR  55.0       0      54     250      53     390      52     488    50.6     492
GR  50.6     505      52     510      53     511      54     620      55     820
X1 1.761      34     971  1062.3     600     200     800
GR  54.3   591.1   54.69   657.4   52.74   971.0   50.63  1011.3   49.63  1013.5
GR  50.0  1015.3   49.70  1016.0   49.69  1016.1   49.10  1017.0   49.13  1017.1
GR  49.1  1017.1   49.17  1017.3   49.23  1017.5   49.53  1022.1   49.76  1023.5
GR  50.0  1027.6   51.72  1038.0   52.36  1058.2   52.86  1061.3   53.00  1062.3
GR  53.0  1077.9   54.00  1127.9   55.64  1411.3   56.57  1425.4   56.00  1425.7
GR  56.3  1426.2   56.84  1427.4   57.00  1437.5   57.00  1442.8   57.11  1444.8
GR  58.2  1483.1   58.23  1487.9   58.79  1500.0   58.80  1500.0

* THIS SECTION REMOVED - DOES NOT REFLECT ACCURATE FLOW DIRECTION.
*
*  1.669      37  1036.4  1095.6     500     300     405
*                          867            1476.8
*    54.0   508.3   54.00   584.3   54.06   587.2   54.13   587.8   54.18   588.8
*    55.0   600.8   54.55   672.9   55.00   867.0   54.00   894.6   54.00   951.7
*    53.0  1001.8   53.00  1036.4   53.05  1037.4   52.94  1037.7   52.00  1057.6
*    51.1  1058.5   50.00  1062.7   49.54  1064.1   48.77  1067.9   48.77  1068.2
*    48.8  1068.2   50.27  1076.8   50.21  1077.6   50.00  1078.0   51.85  1093.6
*    52.0  1095.6   52.93  1326.7   53.00  1326.9   53.00  1476.8   52.27  1483.6
*    52.1  1492.6   52.00  1492.8   52.00  1497.1   51.95  1497.4   51.94  1497.6
*    52.0  1497.8   52.00  1500.0
*
*
NC  .060    .060    .065
* LATERAL INFLOW BASIN G-4
* LATERAL INFLOW RSPILL (LAGUNA CREEK OVERFLOW)
*
*  THIS SECTION MODIFIED TO REFLECT MORE ACCURATE DATA FOR EXISTING CONDITIONS
*  11-25-96
*
XK   100                                    0.5   0.015
X1 1.590      62   932.6  1008.3     280     100     280
X3    0       0       0     897    58.44       0       0       0       0
GR  56.3     500      56     752       58   800.7   58.01   838.8      58   839.4
GR    56   847.2   55.85   847.7   55.56     849   54.64   849.6      54   852.5
GR    53   856.3   52.68   858.4   52.56   860.7   52.24   861.4      52   861.9
GR  50.9   866.6      52   870.7   52.42   887.2      54   887.9   54.58   892.8
GR  54.6     893   54.67     898   54.68   898.2   54.69   898.3    54.7   902.4
GR  54.6   905.2   54.45   906.5   54.46   914.3   54.44   914.6      54   914.9
GR  52.4   914.9   52.38   916.4      52   919.1      52   932.6   50.44   940.5
GR    50   942.5      50   946.1   49.58   949.3   49.34   950.3   49.19   950.9
GR  47.9   955.1   48.32   958.6    49.6   967.5    49.6   967.5   49.62   967.6
GR    50   970.5   50.53     974   50.63   974.4   50.65   974.7   50.84   978.4
GR    51   980.2      52  1008.3      52  1153.6      53  1215.6      53     1260
GR  52.8    1350      53    1450   53.03  1578.7    53.3    1700      54     1730
GR  54.5    1830      60    2000
*
*  GERBER ROAD CROSSING NO. 4
*
*  THIS SECTION MODIFIED TO REFLECT MORE ACCURATE DATA FOR EXISTING CONDITIONS
*  11-25-96
*
NC  .018    .018    .065
X1 1.534       7      75     100      40      40      40
BT    -7       0      55      55      75    54.6    54.6      75    54.6    53.5
BT             100    54.4    53.5     100    54.4    54.4     710      53      53
BT            1190      55      55
GR    55       0    54.6      75      47      75      47     100    54.4     100
GR    53     710      55    1190
*
*  THIS SECTION MODIFIED TO REFLECT MORE ACCURATE DATA FOR EXISTING CONDITIONS
*  11-25-96
*
NC  .060    .060    .065
X1 1.524       7      75     100     450     500     450
GR  55.0       0    54.6      75    47.0      75    47.0     100    54.4     100
GR  53.0     710    55.0    1190
*
*
*
X1 1.422      24   867.8     892     265     265     265
X3                          707.0
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.94   782.1
GR  50.7   782.5   51.21   801.7   50.00   867.8   49.43   868.9   48.00   871.5
GR  47.4   874.4   46.99   874.6   47.09   885.5   47.62   888.1   47.65   888.2
GR  48.0   888.4      50     892      52    1085      53    1550
* LATERAL INFLOW BASIN G-3C
X1 1.376      29     941   975.2     100     400     250
X3    0       0       0       0       0    1280       0       0       0
```

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GR    54   715.7   50.33   731.8     50   732.7   49.72   733.2   49.64   733.2
GR    49   733.4      49   746.6   49.6   767.4   50.17   864.3      50     941
GR  48.9   948.2      48   950.2  47.76   951.1  47.69   955.8   47.63   956.8
GR  47.1   962.9   47.09   964.3  47.19   964.4      48   964.4   47.13   964.8
GR  47.4   965.6   49.12   968.5  50.64   974.2      51   975.2   51.53  1265.8
GR 51.95  1415.6      52  1422.8  52.91    1500   54.09  1689.8
NC                  .065      .1     .3
X1 1.328      28   980.6  1012.7     80     80
X3     0       0       0     880      0   1110       0       0       0
GR 54.38   408.4    52.5   423.6   51.4   458.2    50.1     500   50.63   646.9
GR 50.08   649.3   49.54   864.7     50   897.8    49.5   905.7   49.51   941.5
GR    49   971.6      49   980.6  48.97   981.3      48   986.6   47.13   990.5
GR 47.09  1009.1   47.79  1009.7     48  1010.4    48.9  1012.7   48.99  1013.4
GR  50.3  1029.8      51  1070.7  50.77    1500   51.03  1615.7   51.47  1996.9
GR 51.73    2200   53.06  2873.4  54.36  3132.4
X1 1.315      14    1000  1068.1     15      15      15
X2                     0    51.7     54       0       0
X3    10       0       0       0      0       0       0       0       0
BT   -22     990      54      54   1000      54      54    1000      54    51.7
BT          1010.8      54    51.7  1010.8      54    47.4    1012      54    47.4
BT            1012      54    51.7  1025.8      54    51.7  1025.8      54    46.7
BT          1027.5      54    46.7  1027.5      54    51.7  1040.8      54    51.7
BT          1040.8      54    45.7  1042.5      54    45.7  1042.5      54    51.7
BT          1056.1      54    51.7  1056.1      54    45.7  1057.3      54    45.7
BT          1057.3      54    51.7  1068.1      54    51.7  1068.1      54      54
BT            1100      54      54
GR    54     990      54    1000    47.6  1000.1    47.4  1010.8    47.4    1012
GR  46.7  1025.8    46.7  1027.5    45.7  1040.8    45.7  1042.5    45.7  1056.1
GR  45.7  1057.3    46.2    1068      54  1068.1      54    1100
* CCTRXR  M&S
NC                  .055      .3      .5
BR  1.05     5.8     1.6      .4    51.7      54     2.7
BL                     4
X1 1.314      14    1000  1068.1      40      40      40
X3    10
GR    54     990      54    1000    47.6  1000.1    47.4  1010.8    47.4    1012
GR  46.7  1025.8    46.7  1027.5    45.7  1040.8    45.7  1042.5    45.7  1056.1
GR  45.7  1057.3    46.2    1068      54  1068.1      54    1100
*
SA     1    1000      30
HS UNION
*
*  LATERAL SPILLWAY FOR OVERFLOW TO UNION HOUSE CREEK
*  GERBER ROAD STATIONS 166+00 TO 171+00
LA     1
WD     1     2.5    52.0     500
*
*
*
XK   100                                 1.0   0.015
X1 1.295      25   990.9  1058.7     110     110     110
HY DS OF CCTRR
X3                                    1173.6
GR  51.1   500.0   50.00   990.9   48.32  1015.9   48.00  1023.4   47.67  1029.1
GR  46.7  1042.9   46.63  1044.5   47.87  1047.7   47.90  1047.9   47.94  1048.1
GR  48.1  1048.6   50.00  1058.7   50.00  1128.1   49.00  1147.6   49.00  1159.0
GR  49.2  1159.4   49.19  1159.4   50.00  1164.6   50.15  1165.8   51.84  1171.2
GR  52.0  1171.5   52.82  1173.6   52.83  1188.5   51.85  1191.0   51.85  1191.6
X1 1.274      20   971.7  1057.5     320     320     320
X3                                    1176
GR  51.0   500.0   50.00   971.7   48.00  1020.5   47.85  1023.1   47.06  1034.1
GR  47.0  1035.3   46.63  1043.3   47.45  1045.4   47.57  1046.3   47.75  1047.0
GR  48.5  1049.4   50.00  1057.5   50.00  1130.5   49.00  1149.7   49.00  1160.0
GR  50.0  1166.4   50.18  1167.8   51.81  1173.0   52.00  1173.5   53.01  1176.0
NC                  .065      .1     .3
*
*
X1 1.214      33    1030  1065.8      55      55      55
X3                                    1408.9
GR  51.3   500.0   49.27  1015.8   49.00  1030.0   49.00  1030.4   48.78  1031.3
GR  47.7  1035.7   47.55  1039.4   47.55  1040.4   47.19  1041.7   46.88  1052.2
GR  48.0  1062.3   48.00  1062.3   48.01  1062.4   50.00  1065.8   50.00  1342.5
GR  50.0  1344.0   49.94  1376.2   50.00  1376.7   50.91  1387.4   51.09  1388.2
GR  52.0  1391.3   52.78  1394.1   53.82  1407.8   53.82  1408.9   51.40  1426.8
GR  51.4  1427.2   51.41  1428.6   51.09  1429.8   51.11  1434.7   50.64  1438.4
GR  50.8  1456.4   51.00  1460.7   51.10  1500.0
*
*
*  LATERAL SPILLWAY FOR OVERFLOW TO UNION HOUSE CREEK
*  GERBER ROAD STATIONS 158+00 TO 166+00
LA     1
WD     1     2.5    51.8     800
*
*
X1 1.202      10     780     800      20      20      20       0       0       0
X2     0       0       0    49.5    51.5       0       0       0       0       0
GR  51.8       0      51     390      50     700      50     770    45.5     780
GR  45.5     788    49.3     800      50     920      50    1040      51    1200
*  1.198 *** PRIVATE ROAD #3 ***
NC                  .055      .3      .5
BR  1.25      .7     1.6      .4    49.5    51.5     2.7
WD     1     2.7    51.5    1000
BL                     4
X1 1.198      10     780     800     230     230     230       0       0       0
GR  51.8       0      51     390      50     700      50     770    45.5     780
GR  45.5     788    49.3     800      50     920      50    1040      51    1200
X1 1.160      11  1076.8  1112.5     305     305     305
GR  51.0   500.0   49.00  1076.8   48.97  1076.8   48.96  1076.9   47.84  1083.8
GR  47.7  1104.5   47.86  1108.1   48.00  1109.1   48.92  1111.9   49.00  1112.5
GR  50.8  1500.0
X1 1.102      17  1042.1  1090.8     285     285     285
GR  50.5   500.0   49.89   652.6   50.00   653.5   50.00  1042.1   49.02  1051.7
GR  48.0  1056.5   47.76  1060.8   47.72  1061.2   47.69  1062.2   47.72  1082.9
GR  48.0  1085.5   48.00  1085.6   48.22  1086.3   49.00  1090.8   49.03  1172.5
GR  50.0  1232.5   51.00  1500.0
X1 1.048      18  1043.7    1089     245     245     245
GR  50.0   500.0   50.00  1043.7   47.69  1068.7   47.69  1069.1   47.83  1069.1
GR  48.0  1069.3   47.86  1077.4   47.89  1082.1   47.93  1083.3   48.00  1083.6
GR  48.0  1083.8   48.26  1086.2   48.42  1086.4   48.48  1086.6   49.00  1089.0
GR  50.0  1406.1   50.23  1409.7   50.67  1500.0
*
*  LATERAL SPILLWAY FOR OVERFLOW TO UNION HOUSE CREEK
*  GERBER ROAD STATIONS 147+00 TO 158+00
LA     1
WD     1     2.5    51.0    1100
*
*
X1 1.002      14  1059.3  1100.5     265     265     265
GR  49.7   500.0   48.00  1059.3   47.97  1059.4   46.00  1072.6   46.00  1094.3
GR  46.1  1094.6   46.06  1095.2   46.00  1095.6   46.07  1096.0   46.62  1096.6
GR  48.0  1100.5   49.94  1420.6   49.98  1422.4   50.05  1500.0
X1  .950      23    1045  1130.2     325     325     325
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1025.1   49.00  1025.6   49.00  1045.0   48.17  1070.2
GR  48.0  1071.7   48.00  1074.3   47.96  1074.3   47.12  1080.4   46.71  1081.0
GR  46.0  1081.3   46.00  1094.4   46.22  1095.1   47.00  1102.2   47.00  1121.5
GR  47.6  1127.3   48.00  1130.2   50.00  1500.0
*
X1  .888      15  1088.8  1114.8     385     385     385
GR  49.1   500.0   47.00  1085.1   47.00  1088.8   46.75  1093.2   46.70  1094.0
GR  46.4  1099.8   46.30  1100.8   45.54  1104.3   46.00  1105.9   47.34  1109.1
GR  47.8  1114.8   48.00  1116.4   48.77  1152.1   49.00  1154.4   50.01  1500.0
*
*  LATERAL SPILLWAY FOR OVERFLOW TO UNION HOUSE CREEK
*  GERBER ROAD STATIONS 138+00 TO 147+00
LA     1
WD     1     2.5    49.0     900
*
*
*
XK   100                                  .5    .001
*
X1  .815       8     930     958     630     630     630
*  HY SECTION 0.815
GR  49.0   500.0   48.00     780   47.0     930      44     935      44     950
GR    46     958      48     990     50    1100
*
NC                  .065      .1      .3
X1  .708       8     950    1020     120      70     165
GR    49   500.0      48     630      47     720      46     940      45     950
GR    42     980      42    1000      50    1020
XK   100                                  .5   .0150
X1 0.636       9    1000  1003.6      20      20      20       0       0       0
*  HY SECTION 0.636
X2     0       0       0    47.0    46.8       0       0       0       0       0
* CHG'D X3 CARD REMOVED 10 IN FIELD X3.1 USED STENCL & STENCR WITH LOW OVER BANK
* ELEV. M&S
X3    10       0       0    1000    46.8  1003.6    46.8       0       0
BT    -6       0    46.8      42     800    47.2      42     950    46.8      42
BT          1000    48.9      47  1003.6    48.9      47    1050    46.8      42
GR  46.8       0    47.2     800    46.8     950    48.9    1000    42.4  1000.1
GR  42.4  1003.6    48.9  1003.6    46.8    1050      48    1250
*  0.633 *** PRIVATE ROAD #2 ***      FIS/JMM
NC                  .055      .3      .5
BR     1       0     1.6      .4    46.8      47     2.7
BL                     4
X1 0.633       9    1000  1003.6     230     230     230       0       0       0
* CHG'D X3 CARD REMOVED 10 IN FIELD X3.1 USED STENCL & STENCR WITH LOW OVER BANK
* ELEV. M&S
X3    10                          1000    46.8  1003.6    46.8
* XS     5    47.9   48.45   48.7       0       0       0       0       0
GR  46.8       0    47.2     800    46.8     950    48.9    1000    42.4  1000
GR  42.4  1003.6    48.9  1003.6    46.8    1050      48    1250
*  X3    10      REMOVED X3 MS
* CHANGED XLCEL ON BT RECORDS FROM 0 TO 40
BT     9       0    47.5      42     350    47.1      42     620    46.1      42
BT   700    47.1      42     750    51.3    50.8   756.7    51.3    50.8     900
BT  46.3      42     970    48.0      42    1250    49.0      42       0       0
NC                  .065      .1      .3
X1  .632      26   500.0  1057.7      10      10      10
X3                                    1124.3    49.1
GR  46.4   500.0   46.31   537.8   46.00   555.3   45.95   845.9   45.98   847.2
GR  46.0  1020.4   47.53  1037.9   48.00  1038.1   49.00  1057.7   49.00  1124.3
GR  48.6  1134.5   48.45  1137.5   48.92  1144.2   49.00  1232.6   48.24  1234.5
GR  48.0  1237.3   48.26  1238.2   48.27  1238.7   48.35  1241.1   48.39  1241.1
GR  48.0  1260.3   49.00  1312.0   49.00  1342.3   49.57  1348.5   49.91  1350.7
GR  50.0  1353.5
*
*  LATERAL SPILLWAY FOR OVERFLOW TO UNION HOUSE CREEK
*  GERBER ROAD STATIONS 128+00 TO 138+00
LA     1
WD     1     2.5    47.5     1000
*
*
X1 0.612      10     750   756.7      18      18      18       0       0       0
X2     0       0       0    50.8    46.3       0       0       0       0       0
BT     9       0    47.5      42     350    47.1      42     620    46.1      42
BT   700    47.1      42     750    51.3    50.8   756.7    51.3    50.8     900
BT  46.3      42     970    48.0      42    1250    49.0      42       0       0
GR  47.5       0    47.3     350    47.1     700    51.3     750    42.3     750
GR  42.3   756.7    51.3   756.7    46.3     900    48.0     970    49.0    1250
*
NC                  .05       .3      .5
*     1       0     1.6      0.4    46.3    50.8     2.7
*                      4
X1 0.608      14     750   756.7      50      50      50       0       0       0
* X3    10  REMOVED X3 MS
GR    0       0       0       0       0       0    47.5       0    47.3     350
GR  46.1     620    47.1     700    51.3     750    42.3     750    42.3   756.7
GR  51.3   756.7    46.3     900      48     970      49    1250
X1 0.607      36  1057.7  1145.6     110     110     100
*  0.608 *** PRIVATE ROAD #1 ***
* BRIDGE SECTION INPUT DIRECTLY FROM JMM MODEL CAUSES  3.59' INCRRASE IN WS ELEV
* MODIFIED FOR CONVEYANCE RATHER THAN SPECIAL BRIDGE ENERGY LOSS 11-5-93
GR    47     480   46.00     863.0   45.00     922.2   45.00     949.1   45.92     952.8
GR  46.0     953.2   46.00     954.3   45.38     958.4   45.84     970.4   45.54  1054.1
GR  45.6  1057.7    45.74  1058.3    44.34  1072.6    45.00  1085.3    45.00  1085.3
GR  42.3  1093.8    42.07  1094.5    42.05  1094.5    42.04  1094.5    42.00  1095.7
GR  41.9  1102.8    42.00  1104.1    43.97  1111.3    44.14  1112.3    44.16  1112.5
GR  45.0  1115.3    45.73  1145.6    46.00  1182.0    47.00  1214.1    47.00  1214.4
GR  47.4  1234.5    48.00  1246.8    49.00  1301.1    49.00  1301.3    50.00  1323.7
GR  50.5  1500.0
*
NC                  .065      .1      .3
X1  .554      31  1055.3  1084.1     300     300     300
```

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GR  47.0   500.0   46.28   579.0   46.27   579.5   45.27   858.0   45.00   875.6
GR  45.0   889.1   44.27   924.8   44.22   936.8   44.40   947.3   45.00   963.7
GR  45.0  1055.3   43.52  1059.8   43.39  1060.4   42.75  1062.6      42  1070.1
GR  43.9  1079.3   44.00  1079.3   44.20  1081.1   44.22  1081.2   44.40  1082.7
GR  44.5  1082.9   45.00  1084.1   45.00  1123.3   45.54  1165.3   46.00  1172.9
GR  47.0  1198.7   47.00  1198.7   47.67  1216.6   48.00  1246.6   47.55  1265.3
GR  49.2  1500.0
X1 0.431      16     720     830      16      16      16       0       0       0
X2     0       0       0    45.5    46.5       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0
BT    -5     485      46      46     538      46    45.4     717    46.1    45.5
BT           870      46    45.4     943      46      46
GR  46.3       0      46     360      46     480   45.95     485   45.42     538
GR    45     580      45     717      45     720      44     810    41.5     815
GR  41.5     823      45  83045.33333   87045.94167     943      46     950
GR    47    1010
*  0.428 *** PASSALIS LANE ***
NC                  .050      .3      .5
X1 0.428      11     810     830      40      40      40       0       0       0
X3    10
* ALL X5 cards disabled - 3/92, JMM:
* X5      5    46.7    47.3    47.5    47.8       0       0       0       0
GR  46.3       0    46.0     360      46     480      45     580      45     720
GR    44     810    41.5     815    41.5     823      45     830      46     950
GR    47    1010
X1  .427      15     585     615     320     320     320
GR    46     135      46     265      45     375    44.8     450      45     515
GR  45.3     550      45     565      42     600      42     610      44     615
GR    45     635      45     690      46     740      48     760      48    1000
*
*  LATERAL SPILLWAY FOR OVERFLOW TO UNION HOUSE CREEK
*  GERBER ROAD STATIONS 110+00 TO 128+00
LA     1
WD     1     2.5    46.9    1800
*
*
X1  .425      16  1167.6  1244.1     425     425     425
GR  46.2   500.0   44.12  1167.6   44.00  1169.8   42.37  1186.5   42.20  1190.7
GR  42.0  1191.3   42.00  1210.5   42.99  1211.0   44.00  1220.6   45.00  1244.1
GR  45.0  1246.9   46.00  1279.5   46.00  1289.1   47.97  1384.1   48.00  1384.7
GR  48.2  1500.0
NC                  .065      .1      .3
* LATERAL INFLOW BASIN G-5
X1  .345      12    1050    1145     200     210     280
GR  46.4   500.0   46.00     720      45     860      44     900      44    1050
GR    43    1070      42    1075      42    1088      43    1090   45.00    1145
GR  46.0    1230    47.6    1320
X1 0.306      10  1255.4  1260.1      16      16      16       1       0       0
*  HY SECTION 0.306
X2     0       0       0    41.6    42.8       0       0       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
BT     4     800    45.6      40  1255.4    42.8    41.6    1260    42.8    41.6
BT  1400    45.0      40       0       0       0       0       0       0       0
GR  45.6     800    42.8  1255.4    37.9  1255.5    37.9  1255.9    37.9    1256
GR  37.9  1256.1    37.9  1256.2    37.9    1260    42.8  1260.1    45.0    1400
*  0.303 *** PRIVATE BRIDGE ***
NC                  .055      .3      .5
*  1.25       .2     1.6      .4    41.6    42.8     2.7
*                       4
X1 0.303      10  1255.4  1260.1     200     200     200       0       0       0
X3    10       0       0       0       0       0       0       0       0       0
GR  45.6     800    42.8  1255.4    37.9  1255.5    37.9  1255.9    37.9    1256
GR  37.9  1256.1    37.9  1256.2    37.9    1260    42.8  1260.1    45.0    1400
X1  .254      19  1008.6  1072.2     500     350     565
HY US OF CONFL
GR  46.0   500.0      46     930      45  1008.6   44.24  1016.0   44.00  1018.0
GR  42.5  1037.8   42.10  1045.3   42.00  1045.5   42.00  1061.9   42.18  1062.7
GR  42.2  1063.2   42.57  1066.4   43.00  1072.2   44.00  1285.1   44.83  1299.0
GR  45.0  1302.7   45.00  1302.8    45.5    1440   43.97  1500.0
*
*
*  ECCS @ CCTRXR
X1  .147      26  1061.0  1093.1     290     410     390
GR  47.1   500.0   47.00   590.2   46.00   622.2   46.00   749.9   45.98   750.8
GR  45.2   913.3   44.41   933.2   44.00   939.4   43.72   942.0   43.67   943.4
GR  43.0  1061.0   42.82  1061.4   42.34  1062.0   42.00  1066.3   42.00  1089.4
GR  42.8  1092.7   43.00  1093.1   43.00  1147.0   43.92  1203.6   43.92  1203.6
GR  44.8  1278.6   45.00  1283.3   45.00  1455.8   44.66  1459.2   45.00  1462.4
GR  45.0  1500.0
*
*     2     1000      35
*  TEMP2
X1  .047      26  1061.0  1093.1     400     400     400
GR  47.1   500.0   47.00   590.2   46.00   622.2   46.00   749.9   45.98   750.8
GR  45.2   913.3   44.41   933.2   44.00   939.4   43.72   942.0   43.67   943.4
GR  43.0  1061.0   42.82  1061.4   42.34  1062.0   42.00  1066.3   42.00  1089.4
GR  42.8  1092.7   43.00  1093.1   43.00  1147.0   43.92  1203.6   43.92  1203.6
GR  44.8  1278.6   45.00  1283.3   45.00  1455.8   44.66  1459.2   45.00  1462.4
GR  45.0  1500.0
X1 0.007      29  1005.2  1072.8
GR  46.0   500.0   45.00   734.1   44.99   734.2   44.96   735.3   44.00   753.8
GR  44.0   768.1   43.13   817.0   43.00   937.0   42.00  1000.2   42.00  1005.2
GR  41.6  1009.3   38.00  1058.0   38.00  1061.9   39.15  1065.4   39.50  1066.8
GR  39.6  1066.9   39.66  1066.9   39.82  1067.4   39.86  1067.6   40.06  1068.5
GR  40.7  1070.0   42.23  1072.8   42.41  1076.7   42.00  1087.1   43.00  1500.0
GR  44.0  1550.0    45.0  1750.0    46.0  2030.0    46.8  2200.0
ZI   OFF
*
*
*
DB     3
*
T1 ELDER CREEK LOWER
T2
T3
*
UB     1       2
*
*
*
XK   100                                .7   .0150
XI    .05
*
*
NC    .04     .04     .03      .1      .3
X1 5.753      29  1005.2  1072.8   680.0   630.0   630.0
GR  46.0   500.0   45.00   734.1   44.99   734.2   44.96   735.3   44.00   753.8
GR  44.0   768.1   43.13   817.0   43.00   937.0   42.00  1000.2   42.00  1005.2
GR  41.6  1009.3   38.00  1058.0   38.00  1061.9   39.15  1065.4   39.50  1066.8
GR  39.6  1066.9   39.66  1066.9   39.82  1067.4   39.86  1067.6   40.06  1068.5
GR  40.7  1070.0   42.23  1072.8   42.41  1076.7   42.00  1087.1   43.00  1500.0
GR  44.0  1550.0    45.0  1750.0    46.0  2030.0    46.8  2200.0
NC    .05     .05     .05
X1 5.633      17   865.6    1433     465     465     465
HY DS OF CONFL
GR  46.5   500.0   46.73   535.9   46.00   555.1   44.00   832.3   43.01   865.0
GR  43.0   865.1   43.00   865.6   41.68   913.2   41.35   976.9   41.35   977.1
GR  41.0  1178.8   41.60  1204.4   41.65  1205.5   41.85  1208.8   43.00  1433.0
GR  44.0  1440.6   43.83  1500.0
X1 5.545      22  1021.4  1056.5     580     600     600
GR  44.2   500.0   44.18   503.8   44.00   508.9   43.77   511.7   43.26   534.3
GR  43.0   537.9   41.00  1021.4   40.64  1023.3   40.54  1024.8   38.00  1036.6
GR  38.0  1049.5   40.14  1052.3   40.92  1053.9   42.00  1056.5   43.00  1086.7
GR  43.0  1112.2   42.64  1115.9   42.00  1127.4   42.00  1167.7   42.92  1171.8
GR  43.0  1172.2   42.92  1500.0
* LATERAL INFLOW HYDROGRAPH BASIN E-6
X1 5.423      27  1112.0  1165.2      30      30      30
X3                          990            1285
GR  44.9   500.0   44.72   649.8   45.00   845.1   44.02   887.1   43.61  1060.7
GR  44.0  1062.7   44.00  1070.1   43.00  1088.1   43.00  1088.4   42.65  1092.4
GR  42.2  1096.1   42.43  1112.0   40.22  1114.0   38.00  1119.8   38.00  1144.9
GR  40.5  1150.3   42.00  1156.8   42.87  1164.5   43.00  1165.0   43.13  1165.2
GR  43.2  1167.2   43.00  1459.3   42.46  1461.1   42.00  1461.7   42.00  1472.4
GR  42.4  1476.9   42.99  1500.0
*
*
X1 5.417      27     280  2248.8      35      35      35
X2     0       0            43.8    43.2       0       0
X3    10       0       0       0       0       0       0       0       0
BT   -20     180    46.3    46.3     200    46.3      45     280   46.25      45
BT           300   46.15    44.2     675      46    44.2     970      45      44
BT           988      45      43     992      45   42.65     996      45    42.2
BT          1012      45   42.43    1013    48.3    43.8    1045    48.3    43.8
BT          1052.5    48.3    43.8  1052.6      45    41.4  1065.2    44.9   43.13
BT          1067   44.85    43.2    1270      44    43.2  1365.2    44.7  42.975
BT          1690    43.2    43.2    2100    43.9    43.9
GR  46.3     180      45     200      45     280    44.2     300    44.2     675
GR    44     970      43     988   42.65     992    42.2     996   42.43    1012
GR41.325    1013   40.22    1014      38  1019.8      38    1045    40.5    1045
GR41.388  1052.5    41.4  1052.6   43.13  1065.2    43.2    1067    43.2    1270
GR43.072  1365.2  43.031  1395.7      43    1500    43.2    1690    43.9    2100
GR 44.65  2248.8   46.04  2629.7
*  1.25      1.4     1.6      .4    43.2    43.8     2.7
*                       6
X1 5.410      20  1071.6  1116.6      50      50      50
X3    10
GR  45.2   500.0   45.00   857.4   44.46   860.7   44.05   936.4   44.00   937.4
GR  44.0   940.2   43.00  1005.0   43.00  1017.4   42.75  1032.6   42.47  1036.7
GR  42.1  1040.3   42.12  1040.4   42.01  1071.6   41.89  1072.4   37.59  1104.8
GR 38.00  1107.1   42.00  1116.6    42.4  1276.1      43  1302.1      43    1500
X1 5.402      20  1071.6  1116.6     140     140     140
GR  45.2   500.0   45.00   857.4   44.46   860.7   44.05   936.4   44.00   937.4
GR  44.0   940.2   43.00  1005.0   43.00  1017.4   42.75  1032.6   42.47  1036.7
GR  42.1  1040.3   42.12  1040.4   42.01  1071.6   41.89  1072.4   37.59  1104.8
GR 38.00  1107.1   42.00  1116.6    42.4  1276.1      43  1302.1      43    1500
*
*
X1 5.374      42  1033.2  1068.6     350     400     375
HY DS OF EG FLORIN
X3                          765.2
GR  45.1   500.0   45.00   583.6   44.93   584.5   45.00   624.0   44.74   627.2
GR  44.7   647.8   44.29   686.6   44.77   765.2   44.89   765.8   45.00   770.3
GR  45.0   796.7   44.58   822.0   44.12   826.7   44.08   827.2   44.07   827.4
GR  44.0   828.6   43.14   865.2   43.00   867.8   42.96   868.5   42.95   870.3
GR  42.3   901.6   42.00   908.8   41.86   938.6   42.00   948.2   42.30   951.0
GR  42.5   953.9   43.00   959.3   43.00  1015.4   42.00  1033.2   36.95  1040.5
GR  39.3  1041.6   37.36  1047.2   38.00  1047.3   37.30  1048.4   36.00  1049.7
GR  35.9  1050.7   36.00  1051.2   36.42  1052.7   38.00  1062.3   41.06  1067.8
GR  42.0  1068.6   42.84  1500.0
XK   100                                .5   .0100
X1 5.303      32  1090.4  1148.0     500     400     450
X3                                          1148    42.2
GR  45.9   500.0   45.08   517.7   45.01   518.5   45.00   518.8   45.00   711.9
GR  44.9   717.0   44.00   732.1   43.00   757.5   43.00   759.7   42.00   839.1
GR  41.0   871.5   39.81  1028.7   38.00  1090.4   36.80  1096.4   34.86  1099.2
GR  34.0  1100.0   34.00  1114.6   34.33  1115.8   36.00  1119.5   36.39  1120.1
GR  38.0  1126.0   40.19  1135.1   41.00  1139.2   41.31  1143.6   42.00  1148.0
GR  42.0  1273.2   42.00  1273.3   42.00  1374.2   41.37  1401.6   41.01  1489.8
GR  41.0  1492.0   41.07  1500.0
X1 5.218      34  1058.2  1126.9     250     250     250
GR  43.9   500.0   44.00   818.6   43.86   821.2   43.00   832.7   42.25   852.7
GR  41.9   859.6   41.86   863.6   41.00   889.9   41.00   907.4   40.00   957.1
GR  40.0   985.6   39.03  1003.8   39.00  1058.2   38.25  1073.5   38.00  1076.4
GR  38.0  1082.7   37.66  1082.8   36.00  1085.4   35.49  1086.8   34.00  1087.6
GR  33.1  1092.3   34.00  1093.9   34.00  1099.2   35.21  1101.5   35.00  1102.6
GR  36.8  1104.6   38.00  1106.3   39.00  1112.7   40.00  1126.9   40.00  1338.8
GR  41.0  1398.8   41.00  1409.7   41.76  1500.0      45    3000
X1 5.170      33  1061.0  1085.4     555     500     505
GR  43.8   500.0   44.00   676.3   43.51   678.3   43.62   678.7   44.00   680.3
GR  44.0   755.7   43.00   808.0   43.00   843.2   41.00   898.4   41.00   898.9
GR  40.0   906.5   39.07   933.3   39.00   933.4   39.00  1061.0   36.07  1069.2
GR  36.1  1069.2   36.00  1069.3   36.00  1069.3   34.00  1069.6   34.00  1076.1
GR  35.1  1078.0   35.57  1081.1   36.49  1081.9   40.00  1085.4   40.28  1096.4
GR  40.0  1105.7   40.00  1119.2   39.00  1293.3   40.14  1315.4   40.48  1327.7
GR  41.0  1339.7   41.16  1500.0      45    3000
X1 5.075      32  1082.8  1136.4     370     370     370
GR  43.0   500.0   43.00   517.1   42.93   518.6   42.00   550.0   41.58   599.1
GR  42.0   619.7   42.00   698.0   41.54   708.1   41.45   946.5   41.00   974.0
GR  41.0   975.8   40.00   999.1   39.00  1082.8   38.52  1084.9   38.22  1086.9
GR  38.2  1087.1   38.00  1090.4   36.63  1093.2   36.47  1094.1   35.67  1097.9
GR  34.0  1111.4   35.78  1124.7   36.00  1125.0   36.24  1126.6   36.67  1127.4
GR  38.0  1136.4   38.93  1199.9   39.08  1232.6   39.78  1262.6   39.87  1264.6
GR  40.9  1500.0      45    3000
X1 5.005      31    1116  1160.7     350     500     470
GR  43.0   500.0   43.00   507.3   42.03   531.1   38.74   964.8   39.00  1045.0
GR  39.5  1051.1   40.00  1064.5   40.00  1083.9   39.64  1106.2   39.00  1113.2
GR  39.0  1114.8   38.89  1116.0   38.72  1116.9   36.91  1121.3   36.00  1123.3
GR  35.0  1124.9   34.00  1132.0   34.00  1148.9   35.47  1155.9   36.00  1156.2
GR  36.7  1158.0   36.78  1160.1   37.00  1160.7   38.00  1378.9   38.50  1393.9
GR  39.0  1403.6   39.00  1456.5   39.05  1458.4   40.00  1458.9   40.02  1500.0
GR    45    3000
X1 4.916      28   919.9   970.8     380     380     380
GR  43.1   500.0   43.00   804.7   42.23   864.7   42.37   865.7   41.71   874.9
GR  41.0   882.9   41.00   883.0   40.36   919.9   40.00   925.4   39.07   927.3
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GR  39.3   927.5   39.00   931.1   39.00   932.4   38.00   938.8   35.12   942.1
GR  34.0   943.4   34.00   944.4   34.00   950.7   34.00   959.6   35.23   962.9
GR  36.0   967.2   37.00   970.0   38.00   970.8   39.00  1408.8   39.70  1425.2
GR  40.0  1439.7   40.00  1500.0      45     3000
X1 4.845       42    1028  1090.1   283.0   283.0   283.0
GR  44.0   501.5   42.32   503.5   41.98   523.8   43.00   529.0   42.54   534.9
GR  43.0   535.0   42.52   535.0   42.00   535.6   42.00   667.1   42.89   703.5
GR  43.0   705.2   43.00   858.3   42.98   858.5   42.00   862.7   41.16   874.5
GR  41.0   879.5   41.00   887.0   40.59   892.2   40.00   969.5   38.93  1028.0
GR  38.0  1051.2   37.05  1053.2   34.00  1055.8   34.99  1055.8   34.48  1056.0
GR  32.0  1058.5   32.00  1061.3   33.16  1063.3   34.00  1068.6   33.12  1068.6
GR  34.2  1070.5   36.00  1076.0   37.77  1084.8   37.85  1086.1   38.00  1086.6
GR  38.2  1087.2   38.62  1088.5   39.00  1090.1   39.33  1343.6   40.00  1370.0
GR  40.0  1500.0      45     3000
*
*   McCAY AND SOMPS DATA STARTS HERE.
*
XK   100                                    .7   .0150
*
NC  .045    .045    .065      .1      .3
X1 4.799       43     914  1036.2     540     540     540
HY DS BDRY SPA
GR  43.6   519.0   41.87   521.1   41.64   534.4   43.00   541.4   42.98   541.6
GR  43.0   541.7   43.00   778.5   43.74   792.6   43.21   837.0   43.00   837.8
GR  43.0   839.3   42.02   855.4   42.00   857.7   41.07   870.3   41.00   871.0
GR  40.0   912.5   40.00   914.0   38.19   921.1   38.11   926.7   38.00   927.4
GR  37.9   927.4   37.62   927.7   35.60   935.1   34.00   939.7   32.39   946.5
GR  32.0   947.1   31.72   948.7   30.00   954.2   30.00   981.5   31.93   983.1
GR  32.0   983.2   32.09   983.3   32.83   994.0   34.00  1000.2   35.13  1003.3
GR  36.0  1006.9   37.04  1013.8   38.00  1017.4   38.54  1023.4   38.62  1023.5
GR  38.6  1024.3   39.00  1036.2   40.48  1500.0
NC .0600  .06000  .04000  .10000  .30000
X1 4.697       22     755     895.0    80.0    80.0    80.0
GR  43.2      .0   42.80   219.0   43.00   548.0   42.20   556.0   43.30   589.0
GR  42.6   621.0   43.30   633.0   42.30   714.0   38.70   755.0   38.10   786.0
GR  30.5   814.0   30.50   849.0   36.60   873.0   38.70   895.0   38.30  1000.0
GR  39.7  1121.0   39.30  1257.0   40.20  1517.0   39.70  1737.0   39.50  1926.0
GR  39.5  2083.0   40.10  2200.0
NC .0600  .06000  .04000  .10000  .30000
X1 4.682       16     960  1040.0    30.0    30.0    30.0
X2    0.     .00            41.00   40.00     .00           1.500            .000
X3   10.                                                     .00     .00
BT   -9      .0   41.70   41.70   840.0   40.00   40.00   870.0   39.80   39.80
BT    0   910.0   40.00   40.00   960.0   42.30   41.00  1040.0   42.30   41.00
BT    0  1110.0   40.00   40.00  1210.0   40.00   40.00  2100.0   41.00   41.00
GR  41.7      .0   40.00   840.0   39.80   870.0   40.00   910.0   41.00   960.0
GR  37.0   960.0   33.50   971.9   30.90   985.4   29.90  1000.0   31.40  1013.0
GR  33.8  1029.0   37.30  1040.0   41.00  1040.0   40.00  1110.0   40.00  1210.0
GR  41.0  2100.0
NC .0600  .06000  .04000  .10000  .30000
*      1    2.81     1.6      .4      40      41     2.7
*                      6
X1 4.676       16     960  1040.0    80.0    80.0    80.0
X3   10.                                                     .00     .00
BT   -9      .0   41.70   41.70   840.0   40.00   40.00   870.0   39.80   39.80
BT    0   910.0   40.00   40.00   960.0   42.30   41.00  1040.0   42.30   41.00
BT    0  1110.0   40.00   40.00  1210.0   40.00   40.00  2100.0   41.00   41.00
GR  41.7      .0   40.00   840.0   39.80   870.0   40.00   910.0   41.00   960.0
GR  37.0   960.0   33.50   971.9   30.90   985.4   29.90  1000.0   31.40  1013.0
GR  33.8  1029.0   37.30  1040.0   41.00  1040.0   40.00  1110.0   40.00  1210.0
GR  41.0  2100.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.661       27  1089.0  1229.0   520.0   520.0   520.0
GR  38.7      .0   39.40    98.0   39.50   143.0   39.00   176.0   40.00   192.0
GR  38.7   352.0   38.10   422.0   39.60   538.0   37.60   748.0   36.50   918.0
GR  34.4   957.0   37.40  1005.0   37.60  1089.0   36.20  1122.0   27.60  1141.0
GR  27.6  1159.0   35.60  1180.0   35.60  1204.0   37.60  1229.0   37.60  1299.0
GR  35.6  1337.0   37.50  1369.0   36.60  1515.0   38.50  1585.0   38.10  1766.0
GR  38.5  1992.0   38.20  2150.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.562       27  1089.0  1229.0   880.0   880.0   880.0
GR  39.3      .0   40.00    98.0   40.10   143.0   39.60   176.0   40.60   192.0
GR  39.3   352.0   38.70   422.0   40.20   538.0   38.20   748.0   37.10   918.0
GR  35.0   957.0   38.00  1005.0   38.20  1089.0   36.80  1122.0   28.20  1141.0
GR  28.2  1159.0   36.20  1180.0   36.20  1204.0   38.20  1229.0   38.20  1299.0
GR  36.2  1337.0   38.10  1369.0   37.20  1515.0   39.10  1585.0   38.70  1766.0
GR  39.1  1992.0   38.80  2150.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.396       29  1011.1  1104.5   630.0   630.0   630.0
GR  39.8      .0   37.80    21.0   39.50    54.0   38.50    82.0   39.70   101.0
GR  39.3   276.0   39.50   416.0   37.00   503.0   34.60   863.0   36.60   906.0
GR  37.8  1000.0   36.69  1011.1   34.25  1016.0   28.00  1028.5   28.00  1041.0
GR  28.0  1048.0   28.00  1054.0   28.00  1081.0   28.00  1088.5   34.25  1101.0
GR  36.0  1104.5   38.50  1117.0   37.30  1201.0   36.20  1245.0   38.00  1295.0
GR  38.2  1363.0   37.30  1471.0   38.20  1668.0   39.80  1950.0
NC .0600  .06000  .05000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH BASIN E-7
X1 4.276       29  1000.0  1117.0   120.0   120.0   120.0
GR  39.8      .0   37.80    21.0   39.50    54.0   38.50    82.0   39.70   101.0
GR  39.3   276.0   39.50   416.0   37.00   503.0   34.60   863.0   36.60   906.0
GR  37.8  1000.0   36.81  1009.9   33.75  1016.0   27.50  1028.5   27.50  1041.0
GR  27.5  1048.0   27.50  1054.0   27.50  1081.0   27.50  1088.5   33.75  1101.0
GR  36.3  1106.2   38.50  1117.0   37.30  1201.0   36.20  1245.0   38.00  1295.0
GR  38.2  1363.0   37.30  1471.0   38.20  1668.0   39.80  1950.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.254       16   950.9  1049.4    80.0    80.0    80.0
X3   10.                                                     .00     .00
BT   -6      .0   39.50   39.50   955.0   37.00   37.00   962.3   37.00   35.70
BT    0  1038.0   37.00   35.70  1045.0   37.00   37.00  2000.0   38.50   38.50
GR  39.5      .0   37.01   950.9   34.98   955.0   31.33   962.3   28.58   967.8
GR  27.4   970.2   27.40   980.0   27.40  1000.0   27.40  1010.0   27.40  1020.0
GR  27.4  1027.0   27.40  1030.2   31.32  1038.0   34.82  1045.0   37.01  1049.4
GR  38.5  2000.0
NC .0600  .06000  .05000  .10000  .30000
*      1    3.61     1.6      .3    35.7      37     2.7
*     39      40       15
X1 4.238       16   951.1  1049.2   140.0     1.0    70.0
X3   10.                                                   36.50   36.50
BT   -6      .0   39.50   39.50   955.0   37.00   37.00   962.3   37.00   35.70
BT    0  1038.0   37.00   35.70  1045.0   37.00   37.00  2000.0   38.50   38.50
GR  39.5      .0   37.01   951.1   35.06   955.0   31.43   962.3   28.68   967.8
GR  27.5   970.2   27.50   980.0   27.50  1000.0   27.50  1010.0   27.50  1020.0
GR  27.5  1027.0   27.50  1030.2   31.42  1038.0   34.92  1045.0   37.01  1049.2
GR  38.5  2000.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.225       30   984.0  1082.7   410.0   410.0   410.0
GR  39.6      .0   41.20    27.0   35.30    72.0   40.60   128.0   36.50   196.0
GR  37.5   248.0   34.60   766.0   36.70   839.0   34.30   902.0   36.30   984.0
GR  36.3   984.2   27.40  1002.0   27.40  1028.0   27.40  1047.0   27.40  1056.0
GR  27.4  1062.0   36.40  1080.0   37.73  1082.7   36.30  1097.0   37.10  1117.0
GR  37.2  1270.0   38.00  1409.0   38.20  1570.0   38.80  1623.0   39.60  1713.0
GR  39.6  1743.0   39.60  1777.0   38.20  1913.0   39.20  1987.0   39.60  2050.0
NC .0600  .06000  .05000  .10000  .30000
* LATERAL INFLOW BASIN E-8
X1 4.148       29   984.0  1082.8   120.0   160.0   141.0
GR  39.6      .0   41.20    27.0   35.30    72.0   40.60   128.0   36.50   196.0
GR  37.5   248.0   34.60   766.0   36.70   839.0   34.30   902.0   36.30   984.0
GR  27.3  1002.0   27.30  1028.0   27.30  1047.0   27.30  1056.0   27.30  1062.0
GR  36.3  1080.0   37.72  1082.8   36.30  1097.0   37.10  1117.0   37.20  1270.0
GR  38.0  1409.0   38.20  1570.0   38.80  1623.0   39.60  1713.0   39.60  1743.0
GR  39.6  1777.0   38.20  1913.0   39.20  1987.0   39.60  2050.0
* SP RAILROAD
X1 4.121       18   878.3   921.8    29.0    29.0    29.0
GR  41.4      .0   41.50   878.3   31.70   878.3   31.70   879.3   27.80   882.4
GR  27.8   887.4   29.30   889.5   29.30   895.5   27.80   897.5   27.80   902.5
GR  29.3   904.5   29.30   910.5   27.80   912.6   27.80   917.6   31.70   920.8
GR  31.7   921.8   41.50   921.8   41.60  1800.0
*     20      20      22      35      22      37
BR     1       5     1.6      .4    48.4    48.5
BL    36      38       8
*  4.115       18   878.3   921.8    90.0    50.0    70.0
*   41.4      .0   41.50   878.3   31.70   878.3   31.70   879.3   27.80   882.4
*   27.8   887.4   29.30   889.5   29.30   895.5   27.80   897.5   27.80   902.5
*   29.3   904.5   29.30   910.5   27.80   912.6   27.80   917.6   31.70   920.8
*   31.7   921.8   41.50   921.8   41.60  1800.0
*  4.112       23  1228.0  1310.0    31.0    31.0    31.0
*   37.0   130.0   36.00   160.0   36.90   180.0   38.00   220.0   38.00   409.0
*   37.0   521.0   36.90   548.0   37.00   592.0   37.50   668.0   36.10   785.0
*   35.7   940.0   34.20  1025.0   35.10  1087.0   34.20  1147.0   33.70  1200.0
*   34.5  1228.0   31.40  1255.0   27.30  1265.0   27.20  1300.0   34.80  1310.0
*   34.0  1320.0   35.30  1410.0   37.50  1505.0
*  4.106       23  1225.0  1310.0   240.0   215.0   219.0
*   37.0   130.0   36.00   160.0   36.90   180.0   38.00   220.0   38.00   409.0
*   37.0   521.0   36.90   548.0   37.00   592.0   37.50   668.0   36.10   785.0
*   35.7   940.0   34.20  1025.0   35.10  1087.0   34.20  1147.0   35.70  1208.0
*   35.4  1225.0   22.00  1259.0   21.60  1279.0   22.00  1294.0   33.80  1310.0
*   34.0  1320.0   35.30  1410.0   37.50  1505.0
X1 4.064       22  1194.0  1297.0  1050.0  1130.0  1080.0
GR  36.5   137.0   35.50   155.0   36.50   180.0   37.00   200.0   38.00   240.0
GR  37.0   393.0   36.57   460.0   37.12   512.0   40.96   519.0   40.96   710.0
GR  37.0   727.0   35.50   915.0   35.90  1052.0   35.70  1137.0   35.70  1194.0
GR  35.3  1210.0   21.86  1238.0   21.46  1258.0   21.86  1278.0   34.50  1297.0
GR  37.1  1397.0   38.00  1492.0
X1 3.860       21   830.0   937.0    96.0    31.0    66.0
X3   10.                                                     .00     .00
GR  36.0   588.0   35.13   623.0   35.74   632.0   37.11   637.0   36.61   638.0
GR  36.6   697.0   37.11   700.0   37.11   749.0   36.62   750.0   36.20   786.0
GR  36.2   830.0   35.88   846.0   21.19   877.0   20.79   897.0   21.19   917.0
GR  33.6   937.0   34.00  1030.0   35.00  1370.0   36.00  1522.0   37.00  1611.0
GR  38.0  1627.0
X1 3.846        8   100.0   188.0    50.0    50.0    50.0
X3   10.                                                     .00     .00
BT   -6      .0   36.30   36.30   100.0   36.30   36.30   100.0   36.30   34.80
BT    0   188.0   36.30   34.80   188.0   36.30   36.30   288.0   36.30   36.30
GR  36.3      .0   36.30   100.0   32.80   100.0   20.70   124.0   20.70   164.0
GR  32.8   188.0   36.30   188.0   36.30   288.0
*   1.05       3     1.6      .4    34.8    36.3     2.7
*                      6
X1 3.839        8   100.0   188.0   134.0   134.0   134.0
X3   10.                                                     .00     .00
BT   -6      .0   36.30   36.30   100.0   36.30   36.30   100.0   36.30   34.80
BT    0   188.0   36.30   34.80   188.0   36.30   36.30   288.0   36.30   36.30
GR  36.3      .0   36.30   100.0   32.80   100.0   20.70   124.0   20.70   164.0
GR  32.8   188.0   36.30   188.0   36.30   288.0
X1 3.812       22   832.0   937.0   530.0   530.0   530.0
X3   10.                                                     .00     .00
GR  34.8      .0   35.70   299.0   36.00   569.0   35.60   638.0   35.70   680.0
GR  34.5   724.0   37.80   784.0   38.10   832.0   32.10   866.0   22.20   877.0
GR  21.5   888.0   22.20   903.0   23.00   917.0   34.80   937.0   36.20  1102.0
GR  36.3  1216.0   34.50  1265.0   34.80  1423.0   36.80  1463.0   38.80  1751.0
GR  40.2  1934.0   39.00  2100.0
NC .0600  .06000  .04000  .10000  .30000
X1 3.712       16  1017.0  1107.0   910.0   910.0   910.0
X3   10.                                                     .00     .00
GR  35.1      .0   35.50    60.0   34.20   220.0   35.30   357.0   35.00   808.0
GR  35.5   846.0   34.70  1017.0   32.30  1035.0   21.70  1044.0   21.50  1059.0
GR  21.5  1071.0   22.20  1083.0   33.00  1107.0   34.00  1402.0   37.80  1700.0
GR  37.7  1900.0
NH     5   1.110   876.0  .06000  1033.0  .04000  1131.0  .06000  1443.0   1.110
NH 1700.  .00000
X1 3.540       22  1033.0  1131.0   100.0   160.0   130.0
X3   10.                                                     .00     .00
GR  34.8      .0   34.80    87.0   33.70   137.0   35.20   192.0   34.50   350.0
GR  31.3   393.0   33.80   440.0   33.70   520.0   31.70   661.0   33.00   830.0
GR  33.6   876.0   32.50   995.0   32.20  1033.0   30.20  1059.0   21.10  1070.0
GR  20.6  1083.0   20.60  1098.0   21.10  1108.0   33.10  1131.0   33.70  1195.0
GR  35.8  1443.0   35.20  1700.0
NC  .06     .06     .04
X1 3.515       14  1050.0  1130.0    35.0    35.0    35.0
X3   10.                                                     .00     .00
BT   -6      .0   31.40   31.40  1050.0   33.30   33.30  1050.0   35.70   32.00
BT    0  1130.0   35.70   32.00  1130.0   33.30   33.30  2000.0   34.00   34.00
GR  31.4      .0   33.30  1050.0   32.00  1056.0   26.00  1056.0   22.70  1065.0
GR  21.7  1074.6   20.60  1090.0   22.00  1103.0   23.90  1113.9   26.80  1119.0
GR  29.6  1123.9   32.00  1123.9   33.30  1130.0   34.00  2000.0
NC .0600  .06000  .04000  .10000  .30000
*      1     2.8     1.6      .4      32    33.1     2.7
*                      6
* LATERAL INFLOW HYDROGRAPH BASIN E-9
X1 3.508       14  1050.0  1130.0    30.0   110.0    70.0
X3   10.                                                     .00     .00
BT   -6      .0   31.40   31.40  1050.0   33.30   33.30  1050.0   35.70   32.00
BT    0  1130.0   35.70   32.00  1130.0   33.30   33.30  2000.0   34.00   34.00
GR  31.4      .0   33.30  1050.0   32.00  1056.0   26.00  1056.0   22.70  1065.0
GR  21.7  1074.6   20.60  1090.0   22.00  1103.0   23.90  1113.9   26.80  1119.0
GR  29.6  1123.9   32.00  1123.9   33.30  1130.0   34.00  2000.0
NC  0.06  .06000  .04000  .10000  .30000
X1 3.495        6   775.0   850.0    20.0   320.0   170.0
X3   10.                                                     .00     .00
GR  31.4      .0   32.50   775.0   20.40   795.0   20.40   830.0   32.50   850.0
GR  34.0  2000.0
X1 3.463       49   671.8   737.5   115.0   115.0   115.0
X3   10.                                                     .00     .00
BT  -14  327.54   34.88   34.88  396.09   33.15   33.15  492.57   32.7    32.7
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BT        568.74   32.42   32.42  629.68   32.36   32.36  676.13   32.64   32.26
BT        679.18   32.57   30.05  730.98   32.66   30.03  739.36   32.64   32.26
BT        754.09   32.36   32.36  809.95    32.3    32.3  881.04   32.52   32.52
BT        985.14   32.91   32.91 1058.77   34.53   34.53
GR 34.94  326.4134.91171  327.5433.19530  396.09   33.16   397.532.71146  492.57
GR  32.7     495    32.4     56532.39466  568.74 32.3076  629.68    32.3     635
GR  32.2   671.8    29.9   675.3    27.8   675.326.83167  676.1323.27333  679.18
GR  20.1   681.9    20.1   695.3      23   697.4      23   698.3    29.9   698.3
GR  29.9   699.3      23   699.3      23   700.2    20.1   702.3    20.1   710.3
GR    23   712.4      23   713.3    29.9   713.3    29.9   714.3      23   714.3
GR    23   715.2    20.1   717.3    20.1   723.2    27.9   727.5    27.9  730.98
GR  27.9     734    29.9     734    32.2   737.532.20496  739.3632.24424  754.09
GR  32.3     775    32.3  809.95    32.3     845    32.5     88032.50297  881.04
GR  32.8     98532.80328  985.1434.52844 1058.77   34.55 1059.69
NC .0600  .06000  .04000  .10000  .30000
*      1       0     1.6      .4    29.9    32.2     2.7
*                      6
X1 3.441      33   671.8   737.5   120.0    20.0    70.0
X3   10.                                                     .00     .00
BT   -14  327.54   34.88   34.88  396.09   33.15   33.15  492.57    32.7    32.7
BT        568.74   32.42   32.42  629.68   32.36   32.36  676.13   32.64   32.26
BT        679.18   32.57   30.05  730.98   32.66   30.03  739.36   32.64   32.26
BT        754.09   32.36   32.36  809.95    32.3    32.3  881.04   32.52   32.52
BT        985.14   32.91   32.91 1058.77   34.53   34.53
GR  33.2   390.0   32.70   495.0   32.40   565.0   32.30   635.0   32.20   671.8
GR  29.9   675.3   27.80   675.3   20.10   681.9   20.10   695.3   23.00   697.4
GR  23.0   698.3   29.90   698.3   29.90   699.3   23.00   699.3   23.00   700.2
GR  20.1   702.3   20.10   710.3   23.00   712.4   23.00   713.3   29.90   713.3
GR  29.9   714.3   23.00   714.3   23.00   715.2   20.10   717.3   20.10   723.2
GR  27.9   727.5   27.90   734.0   29.90   734.0   32.20   737.5   32.30   775.0
GR  32.3   845.0   32.50   880.0   32.80   985.0
NH     4  .06000   801.0  .04000   871.0  .06000  1311.0   1.110  1800.0  .00000
X1 3.428      19   801.0   871.0   300.0   300.0   300.0
X3   10.                                                     .00     .00
GR  33.8      .0   35.80   374.0   32.60   801.0   20.80   820.0   20.50   828.0
GR  19.5   833.0   19.50   843.0   20.80   847.0   20.90   858.0   29.90   871.0
GR  31.9   891.0   32.60  1156.0   32.90  1311.0   31.60  1355.0   33.10  1397.0
GR  34.8  1516.0   32.90  1619.0   35.10  1690.0   35.10  1800.0
NH     4  .06000   801.0  .04000   871.0  .06000  1311.0   1.110  1800.0  .00000
X1 3.371      19   801.0   871.0  1240.0  1140:0  1190.0
X3   10.                                                     .00     .00
GR  33.5      .0   35.50   374.0   32.30   801.0   20.50   820.0   20.20   828.0
GR  19.2   833.0   19.20   843.0   20.50   847.0   20.60   858.0   29.60   871.0
GR  31.6   891.0   32.30  1156.0   32.60  1311.0   31.30  1355.0   32.80  1397.0
GR  34.5  1516.0   32.60  1619.0   34.80  1690.0   34.80  1800.0
NH     4  .06000   588.0  .04000   653.0  .06000   950.0   1.110  1750.0  .00000
X1 3.146      10   588.0   653.0   160.0   220.0   190.0
X3   10.                                 950             .00     .00
GR  33.1      .0   33.10   297.0   30.20   588.0   18.30   617.0   18.30   626.0
GR  28.8   653.0   30.90   950.0   28.40  1106.0   31.90  1311.0   32.60  1750.0
* LATERAL INFLOW HYDROGRAPH BASIN E-10
NC   .06     .06     .04
X1 3.110      11   576.2   663.7    80.0    80.0    80.0
X3   10.                                                     .00     .00
BT    -6      .0   32.50   32.50   576.2   31.00   31.00   576.2   33.80   30.40
BT     0   663.7   33.80   30.40   663.7   31.00   31.00  2000.0   31.50   31.50
GR  32.5      .0   31.00   576.2   28.40   581.2   28.10   589.2   19.10   599.3
GR  18.3   620.0   19.10   640.0   28.00   649.4   28.80   658.7   31.00   663.7
GR  31.5  2000.0
*      1     4.2     1.6      .4    30.3      31     2.7
*                      6
X1 3.095      11   576.2   663.7    70.0    70.0    70.0
X3   10.                                                     .00     .00
BT    -6      .0   32.50   32.50   576.2   31.00   31.00   576.2   33.80   30.40
BT     0   663.7   33.80   30.40   663.7   31.00   31.00  2000.0   31.50   31.50
GR  32.5      .0   31.00   576.2   28.40   581.2   28.10   589.2   19.10   599.3
GR  18.3   620.0   19.10   640.0   28.00   649.4   28.80   658.7   31.00   663.7
GR  31.5  2000.0
XK   100                                  .7     .02
X1 3.081      20   788.0   883.0   700.0   700.0   700.0
HY DS POWER INN
X3   10.                                                     .00     .00
GR  30.2      .0   32.00   100.0   30.50   180.0   28.80   224.0   32.30   281.0
GR  31.5   604.0   29.00   663.0   31.50   715.0   31.10   788.0   18.20   824.0
GR  18.2   834.0   28.30   861.0   31.50   883.0   31.20  1046.0   30.20  1200.0
GR  31.7  1427.0   32.30  1470.0   32.10  1578.0   30.00  1852.0   30.80  2100.0
NC .0600  .06000  .04000  .10000  .30000
X1 2.949      20   788.0   883.0   790.0   790.0   790.0
X3   10.                                                     .00     .00
GR  29.2      .0   31.00   100.0   29.50   180.0   27.80   224.0   31.30   281.0
GR  30.5   604.0   28.00   663.0   30.50   715.0   30.10   788.0   17.20   824.0
GR  17.2   834.0   27.30   861.0   30.50   883.0   30.20  1046.0   29.30  1200.0
GR  30.7  1427.0   31.30  1470.0   31.10  1578.0   29.00  1852.0   29.80  2100.0
NH     5   1.110   704.0  .06000  1068.0  .04000  1143.0  .06000  1341.0   1.110
NH 1750.  .00000
X1 2.799      21  1068.0  1143.0   450.0   450.0   450.0
X3   10.                                                     .00     .00
GR  29.2      .0   29.80   191.0   27.60   242.0   30.00   283.0   29.50   485.0
GR  30.3   704.0   30.00   879.0   29.10  1068.0   16.50  1100.0   16.50  1121.0
GR  27.1  1143.0   29.20  1182.0   29.50  1251.0   29.50  1341.0   28.60  1374.0
GR  29.5  1405.0   30.00  1510.0   29.10  1610.0   27.90  1646.0   29.40  1690.0
GR  29.1  1750.0
NH     5   1.110   704.0  .06000  1068.0  .04000  1143.0  .06000  1341.0   1.110
NH 1750.  .00000
* LATERAL INFLOW HYDROGRAPH BASIN E-11
X1 2.714      21  1068.0  1143.0   130.0   130.0   130.0
X3   10.                                                     .00     .00
GR  29.0      .0   29.60   191.0   27.40   242.0   29.80   283.0   29.30   485.0
GR  30.1   704.0   29.80   879.0   28.90  1068.0   16.30  1100.0   16.30  1121.0
GR  26.9  1143.0   29.00  1182.0   29.30  1251.0   29.30  1341.0   28.40  1374.0
GR  29.3  1405.0   29.80  1510.0   28.90  1610.0   27.70  1646.0   29.20  1690.0
GR  28.9  1750.0
NC   .06     .06     .04
X1 2.689      12   702.8   737.2    60.0    60.0    60.0
X3   10.                                                   27.60   28.70
* ....
BT    -9   680.0   27.60   27.60   688.0   27.60   27.60   688.0   28.80   27.60
BT     0   702.8   28.80   25.10   737.2   28.80   25.10   751.0   28.80   28.70
BT     0   751.0   28.70   28.70   767.0   29.00   29.00   867.0   29.60   29.60
GR  29.0      .0   27.60   680.0   27.60   688.0   25.10   702.8   16.50   702.8
GR  16.2   714.2   16.20   725.9   16.50   737.2   25.10   737.2   28.70   751.0
GR  29.0   767.0   29.60   867.0
NC .0600  .06000  .04000  .10000  .30000
*     .9     1.4     1.6      .4    25.1    27.6     2.7
*                      6
X1 2.678      12   702.8   737.2    50.0    50.0    50.0
X3   10.                                                   27.00   28.70
BT    -9   680.0   27.60   27.60   688.0   27.60   27.60   688.0   28.80   27.60
BT     0   702.8   28.80   25.10   737.2   28.80   25.10   751.0   28.80   28.70
BT     0   751.0   28.70   28.70   767.0   29.00   29.00   867.0   29.60   29.60
GR  29.0      .0   27.60   680.0   27.60   688.0   25.10   702.8   16.50   702.8
GR  16.2   714.2   16.20   725.9   16.50   737.2   25.10   737.2   28.70   751.0
GR  29.0   767.0   29.60   867.0
NH     5   1.110   600.0  .06000   707.0  .04000   770.0  .06000   821.0   1.110
NH 1600.  .00000
X1 2.668      17   707.0   770.0   320.0   320.0   320.0
X3   10.                                                     .00     .00
GR  28.2      .0   27.60   323.0   28.50   600.0   27.30   707.0   16.60   715.0
GR  15.9   726.0   15.90   739.0   16.20   749.0   27.20   770.0   28.40   821.0
GR  28.4   986.0   27.20  1189.0   26.70  1310.0   28.90  1338.0   27.40  1452.0
GR  28.9  1561.0   27.10  1600.0
NH     5   1.110   600.0  .06000   707.0  .04000   770.0  .06000   821.0   1.110
NH 1600.  .00000
X1 2.608      17   707.0   770.0  1030.0  1030.0  1030.0
X3   10.                                                     .00     .00
GR  28.2      .0   27.60   323.0   28.50   600.0   27.30   707.0   16.60   715.0
GR  15.9   726.0   15.90   739.0   16.20   749.0   27.20   770.0   28.40   821.0
GR  28.4   986.0   27.20  1189.0   26.70  1310.0   28.90  1338.0   27.40  1452.0
GR  28.9  1561.0   27.10  1600.0
NC   .06     .06     .04
X1 2.413      19   970.0  1043.0   350.0   430.0   390.0
X3   10.                                                     .00     .00
GR  27.3      .0   27.30    67.0   26.80   102.0   26.20   355.0   25.30   800.0
GR  26.0   970.0   15.10  1001.0   15.10  1014.0   26.50  1043.0   26.90  1093.0
GR  27.0  1141.0   27.00  1220.0   25.20  1267.0   27.40  1308.0   29.10  1531.0
GR  29.1  1633.0   28.10  1702.0   26.50  1738.0   26.50  1750.0
NC .0600  .06000  .04000  .10000  .30000
X1 2.339      19   970.0  1043.0   350.0   250.0   300.0
X3   10.                                                   26.80   26.80
GR  27.0      .0   27.00    67.0   26.50   102.0   25.90   355.0   25.00   800.0
GR  25.7   970.0   14.80  1001.0   14.80  1014.0   26.20  1043.0   26.60  1093.0
GR  26.7  1141.0   26.70  1220.0   24.90  1267.0   27.10  1308.0   28.80  1531.0
GR  28.8  1633.0   27.80  1702.0   26.20  1738.0   26.20  1750.0
* STOCKTON BLVD.
* LATERAL INFLOW HYDROGRAPH BASIN E-12
X1 2.282      28   452.5   505.5    80.0    80.0    80.0
X3   10.                                                     .00     .00
* BT  -4   452.5   27.00   27.00   452.5   28.00   25.10   505.5   28.00   25.10
* BT   0   505.5   27.00   27.00
GR  27.0      .0   27.00   440.0   27.00   452.5   19.50   452.5   19.50   455.0
GR  14.9   458.0   14.90   464.5   19.10   467.5   19.10   469.5   25.10   469.5
GR  25.1   471.0   19.10   471.0   19.20   473.0   14.80   475.5   14.80   482.0
GR  19.4   485.5   19.00   487.5   25.10   487.5   25.10   489.0   19.00   489.0
GR  19.0   491.0   14.80   493.5   14.90   500.5   19.30   503.5   19.30   505.5
GR  27.0   505.5   27.00   518.0   27.00  1100.0
BR     1      .1     1.6      .4    25.1    27.1     2.7
WD     1     2.7    27.1     100
BL                     7
X1 2.267      28   452.5   505.5    50.0    50.0    50.0
X3   10.                                                     .00     .00
GR  27.0      .0   27.00   440.0   27.00   452.5   19.50   452.5   19.50   455.0
GR  14.9   458.0   14.90   464.5   19.10   467.5   19.10   469.5   25.10   469.5
GR  25.1   471.0   19.10   471.0   19.20   473.0   14.80   475.5   14.80   482.0
GR  19.4   485.5   19.00   487.5   25.10   487.5   25.10   489.0   19.00   489.0
GR  19.0   491.0   14.80   493.5   14.90   500.5   19.30   503.5   19.30   505.5
GR  27.0   505.5   27.00   518.0   27.00  1100.0
NC .0600  .06000  .01500  .10000  .30000
X1 2.257      11   225.5   293.8   200.0   160.0   180.0
HY DS STOCKTON
X3   10.                                                     .00     .00
GR  27.2   181.0   26.50   200.0   25.21   206.7   24.83   225.5   14.91   237.3
GR  14.2   249.2   14.06   260.1   14.86   261.5   15.40   276.9   26.41   293.8
GR  26.2   329.0
*
*
* NH RECORDS CHANGED TO NC RECORDS FOR CALIBRATION
*
*
*
NC .0600   .0600   .0150
* N    7  .06000   204.0  .04000   225.0  .01500   239.0  .04000   254.0  .01500
* N 271.  .04000   291.9  .06000   321.0  .00000
X1 2.223      15   204.0   291.9   115.0   140.0   125.0
X3   10.                                                     .00     .00
GR  24.3   121.0   25.00   143.0   26.00   158.0   26.10   180.0   26.00   200.0
GR  25.1   204.0   14.72   225.0   14.40   239.0   14.57   254.0   13.54   256.9
GR  13.3   269.6   14.14   271.1   17.26   284.5   25.83   291.9   25.80   321.0
* N    7  .06000   204.0  .04000   225.0  .01500   240.0  .04000   250.0  .01500
* N 267.  .04000   289.7  .06000   323.0  .00000
X1 2.200      18   204.0   289.7   215.0   215.0   215.0
X3   10.                                                     .00     .00
GR  24.0    53.0   23.40   114.0   25.00   154.0   25.60   181.0   25.20   200.0
GR  24.5   204.0   14.47   225.0   14.15   240.0   14.16   250.0   13.21   253.8
GR  13.1   265.7   14.08   267.0   15.87   271.6   16.35   280.4   25.22   289.7
GR  25.5   292.1   25.60   304.0   25.00   323.0
* N    7  .06000   204.0  .04000   226.0  .01500   240.0  .04000   252.0  .01500
* N 267.  .04000   287.6  .06000   309.0  .00000
X1 2.159      13   204.0   287.6   320.0   320.0   320.0
X3   10.                                                     .00     .00
GR  25.0   187.0   24.44   200.0   24.47   204.0   14.38   226.0   14.14   240.0
GR  14.2   252.0   13.09   253.8   13.10   266.1   13.81   267.0   14.83   279.0
GR  23.4   287.6   23.84   291.4   24.50   309.0
* N    7  .06000   204.0  .04000   225.0  .01500   239.0  .04000   253.0  .01500
* N 267.  .04000   288.5  .06000   309.0  .00000
X1 2.098      15   204.0   288.5   300.0   300.0   300.0
HY GAGE 1735
X3   10.                                                     .00     .00
GR  24.0   165.0   23.20   185.0   23.95   200.0   24.10   204.0   13.81   225.0
GR  13.6   239.0   13.60   253.0   12.67   254.4   12.67   266.0   13.37   267.1
GR  15.3   280.3   23.38   288.5   23.88   290.7   25.00   299.0   25.90   309.0
* N    7  .06000   204.0  .04000   225.0  .01500   239.0  .04000   253.0  .01500
* N 267.  .04000   289.0  .06000   303.0  .00000
X1 2.042      16   204.0   289.0   280.0   330.0   350.0
X3   10.                                                     .00     .00
GR  23.9   162.0   23.00   177.0   22.70   186.0   23.46   200.0   23.42   204.0
GR  13.7   225.0   13.58   239.0   13.30   253.0   12.40   254.3   12.36   266.1
GR  13.3   267.4   14.24   279.6   22.60   289.0   23.32   291.3   24.00   296.0
GR  25.0   303.0
* N    7  .06000   204.0  .04000   225.0  .01500   238.0  .04000   253.0  .01500
* N 269.  .04000   292.5  .06000   326.0  .00000
X1 1.975      14   204.0   292.5   130.0   180.0   160.0
X3   10.                                                     .00     .00
GR  25.0   146.0   24.00   155.0   22.87   200.0   23.10   204.0   13.41   225.0
GR  13.3   238.0   13.11   253.0   11.93   255.8   11.98   267.6   13.02   269.2
```

```
GR  14.7   283.3   22.25   292.5   23.42   308.3   23.80   326.0
* N    7  .06000   205.0  .04000   231.0  .01500   240.0  .04000   252.0  .01500
* N 268.  .04000   291.5  .06000   355.0  .00000
X1 1.945      14   205.0   291.5    50.0    50.0    50.0
X3   10.                                          .00     .00
GR  25.5   180.0   25.50   200.0   25.22   205.0   13.08   231.0   12.83   240.0
GR  12.8   252.0   11.92   254.5   11.87   266.8   12.77   268.3   13.13   280.2
GR  22.8   291.5   23.48   303.1   24.00   331.0   25.00   355.0
* N    5  .06000   220.0  .04000   241.0  .01500   268.7  .04000   291.9  .06000
* N 324.  .00000
X1 1.935      14   220.0   291.9    80.0    30.0    55.0
X3   10.                                          .00     .00
GR  26.0   173.0   26.20   191.0   26.00   200.0   25.78   204.3   22.97   220.0
GR  13.0   241.0   12.71   250.0   12.64   253.0   11.95   266.7   12.64   268.7
GR  12.8   279.4   23.28   291.9   23.99   300.0   25.00   324.0
NC   .06      .06     .015
X1 1.925      13   211.0   277.0    50.0    80.0    60.0
X3   10.                                          .00     .00
GR  25.0    33.0   22.00    95.0   22.90   162.0   23.00   180.0   23.40   200.0
GR  23.3   203.8   23.70   211.0   12.30   222.0   12.18   263.0   23.70   277.0
GR  24.0   285.0   25.00   306.0   25.60   371.0
* LATERAL INFLOW HYDROGRAPH BASIN E-13
X1 1.914      34   824.0   888.0   190.0   190.0   190.0
X3   10.                                          .00     .00
BT    -6   814.0   25.90   25.90   824.0   25.90   25.90   824.0   27.80   24.30
BT     0   888.0   27.90   24.40   888.0   25.90   25.90   898.0   25.90   25.90
GR  26.6      .0   25.90   814.0   25.90   824.0   21.30   824.0   13.40   830.5
GR  13.4   835.0   16.80   837.5   16.80   839.3   24.30   839.3   24.30   840.6
GR  16.8   840.6   16.80   842.5   10.80   846.0   10.80   851.0   16.80   853.5
GR  16.7   855.6   24.40   855.6   24.40   856.9   16.70   856.9   16.70   859.0
GR  10.7   862.0   10.80   868.5   16.80   870.0   16.70   871.6   24.40   871.6
GR  24.4   872.9   16.70   872.9   16.70   874.5   13.70   877.0   13.60   882.5
GR  19.7   888.0   25.90   888.0   25.90   898.0   29.20  1300.0
NC .0600  .06000  .01500  .10000  .30000
*      1      .1     1.6      .4    23.8    26.6     2.7
*                     6
X1 1.878      34   824.0   888.0    50.0    50.0    50.0
HY AT CITY BDRY
X3   10.                                          .00     .00
BT    -6   814.0   25.90   25.90   824.0   25.90   25.90   824.0   27.80   24.30
BT     0   888.0   27.90   24.40   888.0   25.90   25.90   898.0   25.90   25.90
GR  26.6      .0   25.90   814.0   25.90   824.0   21.30   824.0   13.40   830.5
GR  13.4   835.0   16.80   837.5   16.80   839.3   24.30   839.3   24.30   840.6
GR  16.8   840.6   16.80   842.5   10.80   846.0   10.80   851.0   16.80   853.5
GR  16.7   855.6   24.40   855.6   24.40   856.9   16.70   856.9   16.70   859.0
GR  10.7   862.0   10.80   868.5   16.80   870.0   16.70   871.6   24.40   871.6
GR  24.4   872.9   16.70   872.9   16.70   874.5   13.70   877.0   13.60   882.5
GR  19.7   888.0   25.90   888.0   25.90   898.0   29.20  1300.0
X1 1.868      17   814.0   886.0  1015.0  1005.0  1010.0
X3   10.                                        25.10   25.10
GR  26.2      .0   26.30   166.0   24.30   189.0   25.60   238.0   23.30   289.0
GR  25.8   328.0   25.20   671.0   23.20   790.0   23.00   814.0   11.50   833.0
GR  10.5   848.0   10.50   861.0   26.60   886.0   25.60   910.0   25.70  1079.0
GR  25.7  1231.0   26.80  1500.0
NC .0600  .06000  .03000  .10000  .30000
X1 1.677      10   809.0   882.0   950.0   970.0   960.0
X3   10.                                          .00     .00
GR  23.8      .0   23.80   357.0   22.60   809.0    8.80   843.0    8.80   853.0
GR  22.7   882.0   21.70   966.0   20.10  1016.0   21.10  1243.0   21.00  1450.0
NC .0600  .06000  .03000  .10000  .30000
X1 1.495      24   819.0   887.0   860.0   815.0   840.0
X3   10.                                        21.40     .00
GR  22.5      .0   22.30    94.0   20.60   101.0   21.80   112.0   23.30   155.0
GR  21.7   200.0   23.00   222.0   22.60   319.0   21.70   395.0   23.60   471.0
GR  22.0   531.0   22.80   585.0   20.00   800.0   21.10   819.0    8.50   852.0
GR   8.5   864.0   21.30   887.0   19.00  1028.0   20.20  1082.0   21.20  1150.0
GR  18.6  1281.0   20.80  1330.0   22.20  1539.0   22.80  1600.0
X1 1.336      13   152.5   219.4   120.0   160.0   140.0
X3   10.                                          .00   21.00
GR  21.3   110.5   20.80   150.0   20.10   152.5   11.60   167.4    8.40   184.3
GR   7.5   185.8    7.60   196.6   10.80   199.7   13.30   206.5   13.28   206.5
GR  20.3   217.2   20.40   219.4   20.30   266.5
* CENTER PARKWAY
X1 1.310      15   760.0   845.1    76.0    76.0    76.0
X3   10.                                          .00     .00
BT    -2   760     21.2     19.7     845     21.2     19.7
GR  20.9      .0   21.20   760.0   19.10   760.1   19.10   764.6   14.90   772.9
GR   8.2   785.0    6.50   787.0    6.60   799.0    8.20   801.0    8.20   815.5
GR  14.5   825.0   19.10   840.6   19.10   845.0   21.20   845.1   20.90  1600.0
*      1     3.7     1.6      .4    19.7    21.2     2.7
*                     6
* LATERAL INFLOW HYDROGRAPH BASIN E-14
X1 1.295      15   760.0   845.1    50.0    50.0    50.0
HY DS CENTSR PKWY
X3   10.                     760             845.1           .00     .00
BT    -2   760     21.2     19.7     845     21.2     19.7
GR  20.9      .0   21.20   760.0   19.10   760.1   19.10   764.6   14.90   772.9
GR   8.2   785.0    6.50   787.0    6.60   799.0    8.20   801.0    8.20   815.5
GR  14.5   825.0   19.10   840.6   19.10   845.0   21.20   845.1   20.90  1600.0
X1 1.286      13   152.4   220.6   120.0   120.0   120.0
X3   10.                                          .00     .00
GR  20.6   100.0   20.80   150.0   20.20   152.4   11.70   164.6    8.00   181.0
GR   7.1   182.3    7.20   194.2    9.30   196.2   11.40   204.3   12.53   206.6
GR  19.7   218.1   20.80   220.6   21.00   270.6
X1 1.263      12   100.0   191.0   607.0   607.0   607.0
X3   10.                                          .00     .00
GR  20.4    88.0   20.80   100.0   18.16   104.5   17.40   106.6   10.40   127.0
GR   8.0   137.0    7.10   138.4    7.10   150.5    8.00   152.5    9.00   160.0
GR  20.0   179.0   21.00   191.0
X1 1.148      11   150.0   219.8  1050.0  1050.0  1050.0
X3   10.                                        20.50   20.50
GR  16.8    97.0   16.90   141.0   19.80   150.0    9.80   169.0    8.00   184.2
GR   7.0   185.7    6.90   196.4    9.80   199.2   13.14   207.0   19.90   219.8
GR  19.8   270.0
X1 .949       12   150.0   219.4   600.0   600.0   600.0
X3   10.                                          .00     .00
GR  17.0   103.9   16.60   119.9   19.40   150.0   19.00   152.1    9.00   169.7
GR   7.4   183.8    6.50   185.6    6.60   196.3    9.00   199.0   11.44   205.9
GR  19.4   219.4   18.40   269.9
X1 .835       10   150.0   218.8   100.0   100.0   100.0
X3   10.                                        18.80     .00
GR  16.5    97.5   18.50   150.0   10.10   165.1    6.90   184.5    6.00   185.6
GR   6.2   196.3    8.40   198.5   17.38   215.2   19.10   218.8   18.80   269.2
X1 .817       11   829.0   905.0    60.0    60.0    60.0
X3   10.                                          .00     .00
BT    -6   729.0   18.00   18.00   829.0   18.20   18.20   829.0   20.20   18.20
BT     0   905.0   19.80   17.80   905.0   19.80   19.80  1000.0   18.00   18.00
GR  18.0   729.0   19.40   829.0   16.70   829.0   16.70   833.0   10.00   846.0
GR   6.0   867.0    7.00   884.0   16.70   901.0   16.70   905.0   19.40   905.0
GR  18.0  1000.0
*      1       2     1.6      .4      18      20     2.7
*                     6
X1  .805       11   829.0   905.0    50.0    50.0    50.0
X3   10.                                          .00     .00
BT    -6   729.0   18.00   18.00   829.0   18.20   18.20   829.0   20.20   18.20
BT     0   905.0   19.80   17.80   905.0   19.80   19.80  1000.0   18.00   18.00
GR  18.0   729.0   19.40   829.0   16.70   829.0   16.70   833.0   10.00   846.0
GR   6.0   867.0    7.00   884.0   16.70   901.0   16.70   905.0   19.40   905.0
GR  18.0  1000.0
X1  .796       11   150.0   217.7   190.0   190.0   190.0
X3   10.                                          .00     .00
GR  18.4   100.7   18.90   150.0    8.80   171.8    6.80   183.6    5.90   185.3
GR   5.9   196.1    8.00   198.1   19.30   217.7   19.28   217.7   19.30   231.6
GR  18.3   281.7
X1  .760       12   102.0   170.3   470.0   470.0   470.0
X3   10.                                          .00     .00
GR  16.6    49.9   18.40   100.0   18.20   102.0    8.50   121.0    6.90   134.2
GR   5.9   135.8    5.90   146.3    8.30   148.9   14.87   161.9   18.60   170.3
GR  17.6   174.1   17.40   222.1
X1  .671       12   100.0   167.2   443.0   443.0   443.0
X3   10.                                          .00     .00
GR  17.9    50.0   18.60   100.0    9.90   114.3    7.30   123.0    6.50   133.3
GR   5.6   134.7    5.80   145.6    7.60   147.9   12.73   158.2   17.90   167.2
GR  18.2   169.3   16.70   218.2
X1  .567       10   100.0   167.8    68.0    68.0    68.0
X3   10.                                          .00     .00
GR  17.4    50.2   18.20   100.0    6.20   134.1    5.40   135.2    5.40   146.5
GR   7.9   149.2   12.21   158.2   18.10   167.8   18.40   169.3   18.40   219.3
X1  .574       14   282.7   363.3     5.0     5.0     5.0
X3   10.                                          .00     .00
GR  18.0   200.0   18.90   261.4   18.70   282.7    8.80   301.7    6.10   323.1
GR   5.5   325.3    5.30   338.5    6.10   339.4   18.07   363.3   18.20   363.8
GR  18.7   370.5   17.60   377.1   17.00   418.5   17.30   458.5
X1  .573       21   298.5   378.5   105.0   105.0   105.0
X3   10.                                          .00     .00
BT    -7   198.5   18.40   18.40   248.5   18.80   18.80   298.5   19.70   17.70
BT     0   342.4   19.60   17.70   378.5   19.60   17.70   428.5   19.00   19.00
BT     0   528.5   18.30   18.30
GR  18.4   198.5   18.80   248.5   19.70   298.5   18.80   299.0   18.90   303.0
GR  14.8   303.9   14.70   306.0    8.00   316.6    6.40   332.5    5.60   333.3
GR   5.5   342.4    6.70   343.4    9.60   362.9   15.30   370.5   15.10   373.9
GR  18.6   374.8   18.40   378.0   19.60   378.5   19.00   428.5   19.00   478.5
GR  18.3   528.5
*  1.05      2.5     1.6      .4    17.7    19.6     2.7
*                     6
* FLORIN CREEK INFLOW HYDROGRAPH ENTERS HERE
X1  .553       21   298.5   378.5    58.0    53.0    58.0
X3   10.                                          .00     .00
BT    -7   198.5   18.40   18.40   248.5   18.80   18.80   298.5   19.70   17.70
BT     0   342.4   19.60   17.70   378.5   19.60   17.70   428.5   19.00   19.00
BT     0   528.5   18.30   18.30
GR  18.4   198.5   18.80   248.5   19.70   298.5   18.80   299.0   18.90   303.0
GR  14.8   303.9   14.70   306.0    8.00   316.6    6.40   332.5    5.60   333.3
GR   5.5   342.4    6.70   343.4    9.60   362.9   15.30   370.5   15.10   373.9
GR  18.6   374.8   18.40   378.0   19.60   378.5   19.00   428.5   19.00   478.5
GR  18.3   528.5
X1  .542       16   226.4   302.1   780.0   780.0   780.0
X3   10.                                          .00     .00
GR  13.8   160.0   13.70   180.0   13.80   201.1   18.10   209.4   18.50   226.4
GR  10.4   235.2   10.60   248.6    6.70   257.3    6.90   270.3    5.30   272.7
GR   5.4   284.4   18.20   302.1   18.35   310.0   18.30   316.1   16.90   321.8
GR  16.7   370.0
NC   .06      .06     .035      .1      .3
X1  .394       16   199.3   278.8      32      32      32
HY AT END
X3   10.                                          .00     .00
GR  13.8   150.0   14.30   179.1   18.20   188.5   18.30   199.3    6.70   218.2
GR   6.5   234.3    4.90   236.7    4.80   248.5    6.60   250.9    6.80   261.5
GR  18.0   278.8   18.30   284.0   18.10   290.9   13.30   299.1   13.00   303.7
GR  12.9   349.0
*
*
* THIS SECTION PROVIDED BY SACRAMENTO COUNTY DIVISION OF WATER RESOURCES
* BASED ON AN HEC-2 FILE DEVELOPED BY THE CITY OF SACRAMENTO
*
* ---------------------------------------------------------------------

*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAP 5/93
*
X1 0.388      23   199.3   278.8     910     910     910
* CI    -1             .015       2       2
X3    10       0       0   179.1       0       0       0       0       0
GR     0       0       0       0       0       0       0       0       0       0
GR     0       0       0       0    13.8     150    14.3   179.1    18.2   188.5
GR  18.3   199.3     6.7   218.2     6.5   234.3     4.9   236.7     4.8   248.5
GR   6.6   250.9     6.8   261.5      18   278.8    18.3     284    18.1   290.9
GR  13.3   299.1      13   303.7    12.9     349
*
*
*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAP 5/93
* LENGTH (X1.5-7) CHANGED PER PLANS AND AIR PHOTO               - MAP 5/93
* REPOSITION SECTION 0.536 AT SECOND 70-DEGREE BEND             - MAP 5/93
*
*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAP 5/93
* THIS IS A CHANGE FROM CDM STUDY, WHICH USED AN ARTIFICIAL
* CROSS SECTION HERE, COPIED FROM ACTUAL SECTION 0.388          - MAP 5/93
*
* END EXISTING RESIDENTIAL DEVELOPMENT ON RIGHT BANK
* FOR EXISTING CONDITIONS
* DISCONTINUE X3.6 TO ENABLE RIGHT OVERBANK FLOW                - MAP 5/93
*
X1 0.216      16   215.7   294.6      70      70      70
* CI    -1 .000286     .015       2       2    -.01
X3    10       0       0   194.2       0       0       0       0       0
GR    13     145    13.2   194.2      18   203.6      18   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    18.1     300    17.9   305.8    12.8   314.7    12.8   318.3
GR  12.7     360
*
* THIS ARTIFICIAL CROSS SECTION IS A COPY OF 0.216              - MAP 5/93
* IT DOES NOT APPEAR IN PREVIOUS STUDIES                        - MAP 5/93
```

```
*
X1 0.200      16   215.7   294.6    1200    1200    1200
* CI    -1 .000286    .015       2       2    -.01
X3    10       0       0   194.2       0   318.3       0       0       0
GR    13     145    13.2   194.2      18   203.6      18   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    18.1     300    17.9   305.8    12.8   314.7    12.8   318.3
GR  12.7     360
*
* MARTIN FARBER (MAF) - MAY 1993
* FILE "ELDTEST.DAT" IS USED TO TEST CHANNEL IMPROVEMENTS      - MAF 5/93
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE - MAF 5/93
*
* SET J1.2 TO RUN N-TH FLOW IN "QT" RECORD                     - MAF 5/93
* SET CONCURRENT MORRISON CREEK WATER SURFACE ELEV. IN J1.9    - MAF 5/93
* WARNING!! THIS ELEVATION NOT VERIFIED                        - MAF 5/93
*
* J1.2 AND J1.9 SET FOR 100-YEAR EVENT                        - MAF 5/93
*
*
* SET J2.8 TO READ N-TH FIELD IN "CI" RECORD
*
*
* SET J3 TO SHOW CHANNEL N-VALUE IN SUMMARY PRINTOUT FIELD 10  - MAF 5/93
*
*
* SET N=0.035 FOR UNLINED CHANNEL                              - MAF 5/93
* THIS CONFORMS TO 1988 FEMA AND 1990-92 CDM STUDIES           - MAF 5/93
* NOTE: LINED LOW FLOW CHANNEL EXISTS, ABOUT 13 FEET WIDE;
* IT DOES NOT GO ALL THE WAY ACROSS THE CHANNEL BOTTOM         - MAF 5/93
* NOTE: SPINK CORP USED N=0.030 IN VALLEY HIGH 29-A LOMR STUDY - MAF 5/93
*
*
* SET QT ACCORDING TO CDM/ENSIGN & BUCKLEY 1991 HEC-1 HYDROLOGY - MAF 5/93
*
* SET QT.2 TO QT.6 = 10-, 50-, 100-, 200-, AND 500-YEAR FLOW   - MAF 5/93
*
* SET NEXT QT RECORD FOR POINT 12, HEC-1 ID "ELDER"            - MAF 5/93
*
*
* BEGIN AT CONFLUENCE FIRST CROSS SECTION                      - MAF 5/93
* FROM CITY SURVEY, 9/14/1987                                  - MAF 5/93
*
* THIS IS A CHANGE FROM CDM STUDY, WHICH USED AN ARTIFICIAL
* CROSS SECTION HERE, COPIED FROM ACTUAL SECTION 0.388         - MAF 5/93
*
X1 0.019      12   196.8   278.7       0       0       0
*
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE - MAF 5/93
* FOR EXISTING CHANNEL GEOMETRY ALL CI RECORDS ARE SUPPRESSED  - MAF 5/93
*
* CI    -1     6.5     .015       2       2    -.01
*
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE - MAF 5/93
*
* BEGIN LEVEES BOTH SIDES OF CHANNEL                           - MAF 5/93
* SET X3.1 = 10 FOR LEVEES                                     - MAF 5/93
*
* BEGIN SINGLE FAMILY RESIDENTIAL BOTH SIDES                   - MAF 5/93
* OVERBANK FLOW SEVERELY IMPAIRED BY DEVELOPMENT               - MAF 5/93
* SET X3.4 AND X3.6 TO CONFINE ALL FLOW WITHIN FENCE LINE      - MAF 5/93
* THIS IS A CHANGE FROM CDM, WHICH SUPPRESSED ALL OVERBANK FLOW  MAF 5/93
*
X3    10       0       0     177       0     300       0       0       0
GR  15.5   176.2      14     177    17.4   186.2    17.6   196.8     5.8   216.2
GR   5.6   229.7     5.8   247.6     5.5   257.6    17.5   278.7    17.5   289.6
GR  13.1     300    14.1   301.2
*
*
DB
EJ
```

ELDER AND GERBER CREEKS
UNET GEOMETRY FILE NO. 3

ULTIMATE CONDITIONS ON ELDER AND GERBER CREEK WITH THE PREFERRED FLOOD CONTROL ALTERNATIVE

FILENAME: EGULT2.CS

```
PR ON
T1 ELDER CREEK UPPER
T2       ULTIMATE CONDITIONS CROSS SECTIONS WITH DETENTION BASINS
T3       ALL DETENTION BASINS                          12-15-95
*
*
*  THIS IS REACH 1
*
*
J1
*
*
XK   100                                0.70     .010
XI  .010
*
UB
*
* ___________________________________
*
NC .0600   .06000   .04000   .10000   .30000
X112.209        8    399.0    650.0    840.0    830.0   1310.0
GR 111.2       .0   111.60    110.0    95.10    399.0    89.50    522.0    95.60    650.0
GR  95.8    903.0    96.50   1024.0    96.50   1200.0
X111.961       16    501.9    554.2    560.0    560.0    560.0
GR 113.3       .0   114.60     71.0   110.50    168.0    90.00    334.0    87.56    501.9
GR  86.2    506.0    81.53    520.0    80.53    523.0    80.53    533.0    86.20    550.0
GR  87.6    554.2    87.20    741.0    94.10    884.0    92.60   1091.0    92.20   1180.0
GR  95.7   1300.0
X111.855       17    470.0    550.0    100.0    100.0    100.0
GR 113.3       .0   114.60     71.0   110.50    168.0    90.00    334.0    88.00    470.0
GR  88.0    470.8    76.56    505.0    76.56    515.0    78.23    520.0    87.43    547.6
GR  87.6    550.0    87.50    580.0    87.20    741.0    94.10    884.0    92.60   1091.0
GR  92.2   1180.0    95.70   1300.0
X111.836        8    550.0    647.9     80.0     80.0     80.0
GR 100.0       .0    90.84    550.0    76.08    594.3    75.85    595.0    75.85    605.0
GR  76.1    605.7    90.14    647.9    90.60   1100.0
X111.821        8    548.2    649.6     50.0     50.0     50.0
GR 100.0       .0    90.87    548.2    75.51    594.3    75.28    595.0    75.28    605.0
GR  75.5    605.7    90.14    649.6    90.60   1100.0
* QT  1.     143.       0.       0.       0.       0.       0.       0.       0.       0.
X111.811       23    624.5    697.3    180.0    180.0    180.0
GR 107.5       .0   103.00     85.0   101.70     95.0   101.70    142.0   105.50    151.0
GR  99.5    168.0    93.20    277.0    90.20    385.0    89.30    438.0    90.70    479.0
GR  88.0    504.0    85.00    585.0    84.52    624.5    84.03    626.0    75.20    652.5
GR  75.2    662.5    76.36    666.0    84.03    689.0    86.80    697.3    86.80    796.0
GR  89.8    892.0    90.00    969.0    90.10   1000.0
X111.777       23    623.6    698.2    980.0    980.0    980.0
GR 107.5       .0   103.00     85.0   101.70     95.0   101.70    142.0   105.50    151.0
GR  99.5    168.0    93.20    277.0    90.20    385.0    89.30    438.0    90.70    479.0
GR  88.0    504.0    85.00    585.0    84.53    623.6    83.72    626.0    74.89    652.5
GR  74.9    662.5    76.06    666.0    83.72    689.0    86.80    698.2    86.80    796.0
GR  89.8    892.0    90.00    969.0    90.10   1000.0
X111.592       24    532.7    605.5    890.0    890.0    890.0
GR 108.2       .0   108.70     15.0   108.80     54.0   102.30     90.0    94.60    161.0
GR  90.5    233.0    85.20    338.0    83.30    427.0    83.00    519.0    83.00    532.7
GR  75.6    555.0    73.89    560.0    73.22    562.0    73.22    569.0    73.22    572.0
GR  75.6    579.0    84.39    605.5    86.00    678.0    89.70    736.0    94.00    803.0
GR  95.0    845.0    94.10    902.0    91.20    970.0    87.10   1100.0
X111.423       16    410.4    478.9    600.0    560.0    580.0
GR  88.6       .0    87.00     59.0    84.00    244.0    82.00    369.0    81.41    410.4
GR  71.9    439.0    71.71    439.5    71.71    442.0    71.71    445.0    71.71    449.5
GR  71.9    450.0    81.50    478.9    81.50    484.0    83.80    547.0    84.30    603.0
GR  84.0    676.0
X111.313       24    711.7    781.6    680.0    720.0    700.0
GR  84.0       .0    84.70     34.0    82.20    148.0    83.50    212.0    84.50    263.0
GR  85.0    367.0    84.70    462.0    82.10    569.0    81.10    648.0    80.48    711.7
GR  74.4    730.0    72.06    737.0    70.72    741.0    70.72    742.0    70.72    751.0
GR  74.4    762.0    80.91    781.6    80.50    873.0    85.60    911.0    88.80    988.0
GR  90.0   1042.0    89.30   1097.0    88.20   1202.0    88.00   1250.0
X111.181       20    436.8    517.6    710.0    670.0    690.0
GR  86.3       .0    87.80     99.0    88.00    216.0    86.10    372.0    84.80    413.0
GR  82.8    436.8    73.03    466.0    69.53    476.5    69.53    481.0    69.53    486.0
GR  69.5    486.5    73.03    497.0    79.91    517.6    80.10    536.0    81.10    624.0
GR  81.8    718.0    82.60    785.0    87.00    912.0    87.10   1046.0    86.80   1100.0
* QT  1.     278.       0.       0.       0.       0.       0.       0.       0.       0.
* LATERAL INFLOW FROM BASIN E1C
* LATERAL INFLOW FROM BASIN E1B
X111.050       17    274.7    347.3    940.0    940.0    940.0
GR  84.1       .0    79.30     26.0    80.50     33.0    79.50    216.0    78.81    274.7
GR  73.0    292.0    69.70    302.0    68.36    306.0    68.36    312.0    68.36    316.0
GR  73.0    330.0    78.80    347.3    79.10    400.0    79.10    523.0    80.00    721.0
GR  81.7    883.0    82.50   1000.0
X110.872       23    337.6    412.5    940.0    940.0    940.0
GR  82.5       .0    81.10     30.0    81.60     78.0    80.10     90.0    82.10    114.0
GR  79.6    136.0    81.70    143.0    79.00    270.0    77.90    337.6    69.76    362.0
GR  68.8    365.0    66.76    371.0    66.76    378.0    66.76    381.0    69.76    390.0
GR  77.3    412.5    77.00    424.0    76.30    501.0    78.10    581.0    83.20    729.0
GR  86.7    812.0    85.80    885.0    86.20   1000.0
X110.694       21    720.9    809.2    100.0    100.0    100.0
GR  81.6    464.0    77.60    474.0    79.80    496.0    79.50    527.0    80.30    619.0
GR  80.3    706.0    79.85    720.9    68.17    756.0    65.17    765.0    65.17    775.0
GR  65.8    777.0    68.17    784.0    73.50    800.0    76.56    809.2    75.50    881.0
GR  76.6    922.0    77.60   1031.0    82.20   1212.0    84.10   1320.0    84.70   1365.0
GR  84.7   1450.0
X110.675        8    551.4    649.5     20.0     20.0     20.0
GR  80.0       .0    79.54    551.4    65.26    594.2    65.00    595.0    65.00    605.0
GR  65.3    605.8    79.83    649.5    84.00   1200.0
X110.671        8    551.3    649.6     50.0     50.0     50.0
GR  80.0       .0    79.54    551.3    65.23    594.2    64.96    595.0    64.96    605.0
GR  65.2    605.8    79.83    649.6    84.00   1200.0
NC .0600   .06000   .05000   .10000   .30000
X110.662       22    722.1    808.6      1.0    320.0    170.0
* HY SEC 10.662
HY US OF E37
GR  81.1    464.0    77.10    474.0    79.30    496.0    79.00    527.0    79.80    619.0
GR  79.8    706.0    79.19    722.1    73.21    740.0    67.88    756.0    64.88    765.0
GR  64.9    775.0    65.54    777.0    67.88    784.0    73.21    800.0    76.07    808.6
GR  75.0    881.0    76.10    922.0    77.10   1031.0    81.70   1212.0    83.60   1320.0
GR  84.2   1365.0    84.20   1450.0
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* ++++++++++++++++++++++++++++++++++++++
* OFF LINE DETETENTION BASIN NO. E-37
*
SA      1        0
SV   65.0        0     65.6       18     67.6       54     69.6       91     74.6      190
HS BASIN  E37
SC      0       -1
CC      2     65.0     64.9      200     .016        1       -1
CL
LA      1
WD      1      3.0     69.3      160
*
*
* ++++++++++++++++++++++++++++++++++++++
*
X110.630       22    721.1    809.4     25.0    175.0    100.0
HY DS OF E37
GR  81.1    464.0    77.10    474.0    79.30    496.0    79.00    527.0    79.80    619.0
GR  79.8    706.0    79.22    721.1    72.92    740.0    67.59    756.0    64.59    765.0
GR  64.6    775.0    65.25    777.0    67.59    784.0    72.92    800.0    76.06    809.4
GR  75.0    881.0    76.10    922.0    77.10   1031.0    81.70   1212.0    83.60   1320.0
GR  84.2   1365.0    84.20   1450.0
NC .0600   .06000   .05000   .10000   .30000
X110.611       54    956.4   1040.7     40.0     40.0     40.0
GR  79.8    850.0    78.60    900.0    78.00    950.0    77.28    956.4    64.58    994.5
GR  64.6    994.5    64.50    994.8    64.42    995.0    64.42    995.3    64.42    995.5
GR  64.4    995.8    64.42    996.0    64.42    996.3    64.42    996.5    64.42    996.8
GR  64.4    997.0    64.42    997.3    64.42    997.5    64.42    997.5    64.42    998.5
GR  64.4    998.5    64.42    998.8    64.42    999.0    64.42    999.3    64.42    999.5
GR  64.4    999.8    64.42   1000.0    64.42   1000.3    64.42   1000.5    64.42   1000.8
GR  64.4   1001.0    64.42   1001.3    64.42   1001.5    64.42   1001.5    64.42   1002.5
GR  64.4   1002.5    64.42   1002.8    64.42   1003.0    64.42   1003.3    64.42   1003.5
GR  64.4   1003.8    64.42   1004.0    64.42   1004.3    64.42   1004.5    64.42   1004.8
GR  64.4   1005.0    64.50   1005.3    64.57   1005.5    64.58   1005.5    76.32   1040.7
GR  77.2   1050.0    77.20   1100.0    77.30   1150.0    77.00   1200.0
NC .0600   .06000   .05000   .10000   .30000
X110.603       54    956.1   1041.0     70.0     50.0     60.0
GR  79.8    850.0    78.60    900.0    78.00    950.0    77.31    956.1    64.52    994.5
GR  64.5    994.5    64.43    994.8    64.35    995.0    64.35    995.3    64.35    995.5
GR  64.3    995.8    64.35    996.0    64.35    996.3    64.35    996.5    64.35    996.8
GR  64.3    997.0    64.35    997.3    64.35    997.5    64.35    997.5    64.35    998.5
GR  64.3    998.5    64.35    998.8    64.35    999.0    64.35    999.3    64.35    999.5
GR  64.3    999.8    64.35   1000.0    64.35   1000.3    64.35   1000.5    64.35   1000.8
GR  64.3   1001.0    64.35   1001.3    64.35   1001.5    64.35   1001.5    64.35   1002.5
GR  64.3   1002.5    64.35   1002.8    64.35   1003.0    64.35   1003.3    64.35   1003.5
GR  64.3   1003.8    64.35   1004.0    64.35   1004.3    64.35   1004.5    64.35   1004.8
GR  64.3   1005.0    64.43   1005.3    64.50   1005.5    64.52   1005.5    76.35   1041.0
GR  77.2   1050.0    77.20   1100.0    77.30   1150.0    77.00   1200.0
NC .0600   .06000   .05000   .10000   .30000
X110.592       16    650.4    714.7    555.0    555.0    500.0
GR  79.5       .0    75.50    300.0    73.50    500.0    72.90    627.0    72.78    650.4
GR  67.9    665.0    66.25    670.0    64.25    676.0    64.25    686.0    65.58    690.0
GR  67.9    697.0    73.82    714.7    74.60    776.0    75.50    800.0    75.50   1000.0
GR  78.5   1200.0
NC .0600   .06000   .05000   .10000   .30000
* QT  1.     390.       0.       0.       0.       0.       0.       0.       0.       0.
X110.497       16    646.3    718.9    920.0   1120.0    990.0
GR  80.0       .0    76.00    300.0    74.00    500.0    73.40    627.0    73.30    646.3
GR  67.1    665.0    65.40    670.0    63.40    676.0    63.40    686.0    64.73    690.0
GR  67.1    697.0    74.38    718.9    75.10    776.0    76.00    800.0    76.00   1000.0
GR  79.0   1200.0
NC .0600   .06000   .05000   .10000   .30000
X110.310       19    455.5    524.1   1250.0   1040.0   1130.0
GR  76.3       .0    72.80    245.0    70.50    355.0    71.60    397.0    72.20    439.0
GR  72.2    455.5    66.38    473.0    64.05    480.0    61.71    487.0    61.71    489.0
GR  61.7    497.0    62.71    500.0    64.05    504.0    70.75    524.1    70.60    528.0
GR  70.8    632.0    72.70    772.0    74.00    896.0    74.60   1000.0
NC .0600   .06000   .05000   .10000   .30000
X110.095       17    462.7    531.7    980.0    960.0    970.0
GR  77.8       .0    76.30     54.0    77.30     94.0    77.30    232.0    75.70    389.0
GR  71.8    452.0    70.89    462.7    63.46    485.0    61.13    492.0    59.79    496.0
GR  59.8    506.0    63.46    517.0    68.36    531.7    69.00    567.0    68.50    688.0
GR  68.7    784.0    72.00   1000.0
NC .0600   .06000   .05000   .10000   .30000
X1 9.912       16    767.1    830.6   1230.0   1000.0   1210.0
GR  82.6       .0    82.60    192.0    78.20    507.0    71.80    572.0    67.20    685.0
GR  67.4    767.1    60.15    789.0    58.81    793.0    58.14    795.0    58.14    801.0
GR  58.1    805.0    60.14    811.0    66.68    830.6    66.50    979.0    68.10   1169.0
GR  69.1   1300.0
NC .0600   .06000   .05000   .10000   .30000
X1 9.683       16    545.4    611.2   1200.0   1200.0   1210.0
* LATERAL INFLOW FOR SUB-BASIN E2
* THIS IS SLIGHTLY UPSTREAM THAN FOR EXISTING CONDITIONS DUE TO THE
* LOCATION OF PROPOSED DETENTION BASIN NO. E-32
GR  66.0       .0    67.80     25.0    67.70    174.0    67.50    321.0    64.80    495.0
GR  66.6    520.0    65.95    545.4    61.42    559.0    56.09    575.0    56.09    577.0
GR  56.1    585.0    61.42    601.0    64.81    611.2    67.20    824.0    68.80    938.0
GR  73.1   1250.0
NC .0600   .06000   .05000   .10000   .30000
X1 9.453       22    885.0    950.8    230.0    250.0    240.0
* HY SEC 9.453
HY US OF E32
GR  64.1       .0    65.10    123.0    63.60    186.0    65.00    252.0    63.70    320.0
GR  65.1    388.0    63.70    453.0    63.80    520.0    62.20    588.0    63.70    656.0
GR  63.2    720.0    64.20    791.0    63.70    885.0    57.36    904.0    54.03    914.0
GR  54.0    918.0    54.03    924.0    57.36    934.0    62.97    950.8    64.80   1137.0
GR  65.7   1296.0    66.70   1400.0
*
*
* ++++++++++++++++++++++++++++++++++++++
* OFF LINE DETETENTION BASIN NO. E-32
*
SA      2        0
SV   54.2        0       55       14       57       42       59       71       63      132
HS BASIN E32
SC      0       -2
CC      2     54.2     54.1      200     .016        1       -1
CL
LA      2
WD      1      3.0     58.6      100
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* ++++++++++++++++++++++++++++++++++++++++
*
X1 9.408       17    620.0    694.0   1190.0   1190.0   1190.0
HY DS OF E32
GR  65.0        .0   63.00    500.0    61.60    537.0    64.10    620.0    64.08    620.6
GR  57.0    642.0   53.62    652.0    53.62    662.0    58.29    676.0    63.62    692.0
GR  64.1    694.0   62.10    714.0    62.80    911.0    63.50   1103.0    65.30   1293.0
GR  65.5   1460.0   66.30   1550.0
NC .0600   .06000   .05000   .10000   .30000
X1 9.183       17   1140.5   1214.1   1290.0   1290.0   1290.0
GR  64.8        .0   64.30    261.0    63.80    501.0    62.50    786.0    62.60   1140.5
GR  58.8   1152.0   53.77   1167.0    51.60   1173.5    51.60   1183.5    53.43   1189.0
GR  58.8   1205.0   61.81   1214.1    62.20   1485.0    60.80   1500.0    62.10   1520.0
GR  63.7   1800.8   64.60   2050.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.938       15    920.7    994.9     60.0     60.0     60.0
GR  62.3        .0   62.00    280.0    61.50    531.0    60.60    795.0    61.06    920.7
GR  57.0    933.0   51.29    950.0    49.96    954.0    49.96    969.0    53.63    980.0
GR  57.0    990.0   58.61    994.9    59.00   1271.0    60.20   1624.0    61.70   1950.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.927       12    861.8    938.2     40.0     40.0     40.0
GR  62.3        .0   60.13    861.8    55.73    875.0    54.90    875.0    54.90    877.5
GR  49.9    892.5   49.90    907.5    54.90    922.5    54.90    925.0    55.73    925.0
GR  60.1    938.2   61.70   1950.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.919       12    861.7    938.3      1.0    100.0     50.0
GR  62.3        .0   60.13    861.7    55.69    875.0    54.90    875.0    54.90    877.4
GR  49.9    892.5   49.86    907.5    54.90    922.6    54.90    925.0    55.69    925.0
GR  60.1    938.3   61.70   1950.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.910       15    920.3    995.4    720.0    720.0    720.0
GR  62.3        .0   62.00    280.0    61.50    531.0    60.60    795.0    61.05    920.3
GR  56.8    933.0   51.14    950.0    49.81    954.0    49.81    969.0    53.48    980.0
GR  56.8    990.0   58.61    995.4    59.00   1271.0    60.20   1624.0    61.70   1950.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.774       20    910.6    992.4    800.0    800.0    905.0
GR  60.7        .0   59.20    102.0    59.70    214.0    57.20    466.0    58.30    645.0
GR  57.0    838.0   54.70    851.0    57.57    910.6    49.09    936.0    49.09    950.0
GR  49.1    958.0   49.09    966.0    57.90    992.4    59.00   1281.0    58.20   1571.0
GR  59.3   1639.0   57.70   1678.0    59.60   1767.0    57.70   1861.0    59.10   1900.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.602       23    728.0    806.9   1200.0   1000.0   1465.0
GR  57.1        .0   56.10    122.0    58.20    184.0    56.70    476.0    53.00    495.0
GR  54.2    515.0   56.20    613.0    56.20    728.0    55.85    729.0    48.19    752.0
GR  48.2    753.0   48.19    763.0    48.19    773.0    48.19    781.0    48.19    782.0
GR  56.5    806.9   55.80    969.0    57.20   1029.0    57.30   1299.0    56.00   1340.0
GR  57.8   1402.0   58.00   1540.0    57.10   1600.0
NC .0600   .06000   .05000   .10000   .30000
X1 8.325       16   1265.1   1350.4    800.0    840.0   1150.0
GR  56.5        .0   55.70    354.0    56.10    712.0    55.10   1017.0    55.60   1250.0
GR  55.8   1265.1   46.72   1292.5    46.72   1293.0    46.72   1303.0    46.72   1315.0
GR  46.7   1322.0   46.72   1322.5    56.02   1350.4    56.20   1583.0    56.60   1981.0
GR  56.3   2200.0
NC .0600   .06000   .05000   .10000   .30000
* QT   1.     486.      0.       0.       0.       0.       0.       0.       0.
X1 8.107       21   1116.3   1206.0   1050.0    950.0   1330.0
HY US OF E31
GR  55.3        .0   54.30    415.0    51.70    422.0    56.10    448.0    54.10    510.0
GR  55.6    679.0   55.97   1116.3    45.57   1147.5    45.57   1148.0    45.57   1154.0
GR  45.6   1167.0   45.57   1177.0    45.57   1177.5    55.06   1206.0    53.20   1327.0
GR  54.6   1400.0   55.00   1582.0    53.10   1716.0    54.50   2043.0    56.70   2363.0
GR  58.0   2500.0
*
* LATERAL INFLOW HYDROGRAPH POR BASIN E3 GOES INTO ON-LINE DETENTION BASIN E31
*
*
*
* ++++++++++++++++++++++++++++++++++++++++
*  ON LINE DETETENTION BASIN NO. E-31
*  UPDATED 6-5-96
*
SA     3       0
SV  46.7       0    48.7       23     50.7       47     54.7       97
HS BASIN E31
SC     0      -3
CC     4.5    46.7    45.6      100     .016        1       -1
CL
* LA   4
* WD   1     3.0    47.5       25
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
*
NC .0600   .06000   .05000   .10000   .30000
X1 7.855       42   2011.6   2096.9   1050.0   1000.0   1040.0
HY DS OF E31
GR  55.3        .0   54.30     90.0    56.10    107.0    56.20    132.0    54.00    138.0
GR  56.1    149.0   56.10    433.0    56.70    708.0    56.80    955.0    55.60   1250.0
GR  55.5   1444.0   56.80   1505.0    53.60   1855.0    52.60   1972.0    53.53   2011.6
GR  51.1   2019.0   44.74   2038.0    44.24   2039.5    44.24   2047.0    44.24   2062.0
GR  44.2   2069.5   44.74   2071.0    53.39   2096.9    52.80   2169.0    53.30   2222.0
GR  54.6   2310.0   54.60   2457.0    54.50   2655.0    52.80   2800.0    54.10   2830.0
GR  54.3   3015.0   53.50   3116.0    54.70   3207.0    53.00   3245.0    53.80   3276.0
GR  55.0   3478.0   55.20   3597.0    55.20   3674.0    57.00   3771.0    57.10   3869.0
GR  55.5   3973.0   55.60   4100.0
NC .0600   .06000   .05000   .10000   .30000
* LATERAL INFLOW SUB BASIN E-4B
X1 7.658       41   2066.8   2149.8    800.0    920.0   1080.0
GR  53.1        .0   54.10    341.0    53.70    649.0    52.80    667.0    52.70    673.0
GR  52.6    682.0   52.70    998.0    52.60   1298.0    52.70   1456.0    52.00   1686.0
GR  51.5   2011.0   51.76   2066.8    48.70   2076.0    45.03   2087.0    43.20   2092.5
GR  43.2   2098.0   43.20   2111.0    43.20   2115.0    43.20   2122.5    45.03   2128.0
GR  52.3   2149.8   51.80   2171.0    52.60   2181.0    50.20   2237.0    52.00   2328.0
GR  51.0   2358.0   53.00   2381.0    52.60   2521.0    52.60   2596.0    51.50   2615.0
GR  53.7   2653.0   53.70   2773.0    52.70   2830.0    54.20   2873.0    54.20   3050.0
GR  54.2   3161.0   56.30   3322.0    54.70   3332.0    54.70   3374.0    55.00   3515.0
GR  55.1   3600.0
NC .0600   .06000   .05000   .10000   .30000
X1 7.453       23   1456.4   1549.0    600.0    600.0   1180.0
* HY SEC 7.453
HY US OF E28
GR  53.5    275.0   52.10    330.0    52.00    340.0    51.70    460.0    51.40    560.0
GR  51.0    760.0   51.00    785.0    51.60   1020.0    51.30   1210.0    51.99   1456.4
GR  50.8   1460.0   47.45   1470.0    43.45   1482.0    42.12   1486.0    42.12   1492.0
GR  42.1   1505.0   42.12   1516.0    43.45   1520.0    53.13   1549.0    53.80   1695.0
GR  53.0   1735.0   53.00   1930.0    53.90   1950.0
*
*
* ++++++++++++++++++++++++++++++++++++++++
* OFF LINE DETETENTION BASIN NO. E-28
* UPDATED 6-5-96 STORAGE-ELEV DATA
*
SA     4       0
SV  41.2       0    43.2       21     45.2       42     47.2       64     51.2      111
HS BASIN E28
SC     0      -4
CC     2    42.3    42.1      200     .016        1       -1
CL
LA     4
WD     2     3.0    46.0       25     47.0      150
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 7.230       18    452.2    540.3    550.0    750.0    700.0
HY DS OF E28
GR  52.0      15.0   51.30    250.0    51.00    305.0    50.40    430.0    50.22    452.2
GR  40.9    480.0   40.94    490.0    40.94    505.0    40.94    510.0    51.03    540.3
GR  51.2    710.0   51.30    890.0    51.00   1180.0    50.80   1190.0    51.00   1210.0
GR  52.0   1250.0   53.00   1370.0    54.00   1560.0
NC .0600   .06000   .05000   .10000   .30000
X1 7.097       21    448.2    536.8    500.0    400.0    460.0
HY US BDRY SPA
GR  51.9    275.0   51.00    290.0    50.40    335.0    50.00    410.0    50.00    448.2
GR  41.1    475.0   40.24    477.5    40.24    490.0    40.24    505.0    40.24    507.5
GR  41.1    510.0   44.41    520.0    49.41    535.0    49.99    536.8    49.70    620.0
GR  50.0    710.0   51.00    780.0    52.00   1200.0    52.40   1260.0    52.40   1440.0
GR  53.0   1690.0
NC .0600   .06000   .05000   .10000   .30000
X1 7.010       24    450.0    544.2     60.0    350.0    120.0
GR  50.9    450.0   44.28    470.0    39.78    483.5    39.78    487.0    39.78    495.0
GR  39.8    507.0   39.78    510.0    39.78    513.5    40.61    516.0    43.61    525.0
GR  47.9    538.0   48.61    540.0    50.00    544.2    50.00    675.0    50.50    750.0
GR  51.0    910.0   51.20   1040.0    51.00   1120.0    51.00   1180.0    51.20   1230.0
GR  51.7   1670.0   51.20   1920.0    52.00   2040.0    52.60   2200.0
NC .0450   .04500   .06000   .10000   .30000
X1 7.000       22    786.2    921.2     22.0     22.0     22.0
GR  49.9    500.0   50.00    783.7    50.21    784.0    50.57    786.2    48.35    795.1
GR  48.2    795.8   48.10    796.1    47.85    797.1    47.80    797.3    39.69    829.8
GR  39.7    831.5   39.69    839.1    39.69    863.0    39.69    872.1    39.69    878.0
GR  39.7    879.8   41.48    886.9    44.30    898.2    44.38    898.5    45.23    901.9
GR  50.0    921.2   51.49   1500.0
* $1.250     1.05     2.63    300.0    20.00     2.00   428.00     1.500    39.67    39.58
X1 6.992       27    945.9   1004.8    104.0    104.0    104.0
* * X20.       .00       1.    51.40    53.10      .00                .000                .000
GR  50.0    500.0   49.99    509.8    49.99    509.9    50.00    528.3    50.10    529.7
GR  52.0    615.4   51.14    623.9    52.00    627.2    52.53    642.8    52.56    643.4
GR  53.0    936.0   52.15    938.9    52.00    941.9    52.19    945.9    49.44    950.0
GR  42.5    960.4   39.67    964.7    39.67    965.4    39.67    978.6    39.67    984.7
GR  41.6    987.6   42.50    988.9    49.44    999.3    52.77   1004.3    53.10   1004.8
GR  52.3   1377.1   51.45   1500.0
NC .0450   .04500   .06000   .30000   .50000
* QT   2.      647.     648.       0.       0.       0.       0.       0.       0.       0.
X1 6.974       28    926.2    974.9     88.0     88.0     88.0
GR  50.2    500.0   50.51    512.3    49.02    926.2    45.71    931.2    44.38    933.2
GR  44.1    933.6   43.31    934.8    43.25    934.9    42.05    936.7    39.58    940.4
GR  39.6    954.3   39.58    955.9    39.58    956.0    39.58    960.4    43.98    967.0
GR  45.4    969.1   45.58    969.4    45.71    969.6    49.24    974.9    49.60    982.9
GR  50.0    999.9   50.14   1134.3    51.00   1169.5    51.22   1361.4    51.00   1368.1
GR  51.0   1370.1   50.00   1410.6    50.03   1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN E4A
* GOES INTO ON-LINE DETENTION BASIN.
X1 6.954       32    931.2   1072.7    411.0    411.0    411.0
HY US OF E26
GR  50.2    500.0   50.51    512.3    49.00    931.2    48.72    933.2    48.62    933.6
GR  48.4    934.8   48.34    934.9    48.00    936.7    47.16    954.3    47.10    955.9
GR  47.2    956.0   47.47    959.7    45.66    967.0    45.14    969.1    45.06    969.4
GR  45.0    969.6   41.68    982.9    40.91    986.0    40.91    999.9    40.91   1005.2
GR  39.5   1008.0   39.51   1014.0    40.91   1016.8    40.91   1036.0    50.08   1072.7
GR  50.1   1134.3   51.00   1169.5    51.22   1361.4    51.00   1368.1    51.00   1370.1
GR  50.0   1410.6   50.03   1500.0
*
*
* ++++++++++++++++++++++++++++++++++++++++
*  ON LINE DETETENTION BASIN NO. E-26
*
SA     5       0
SV  42.5       0    47.5       52     52.5      112
HS BASIN E26
SC     0      -5
CC     5    42.5    40.0      200     .016        1       -1
CL
*      5
*      1     3.0    47.5       25
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 6.868       31    912.8   1031.7    258.0    258.0    258.0
HY DS OF E26
GR  50.0    500.0   49.10    912.8    40.65    946.6    40.65    956.2    40.65    958.1
GR  40.7    962.4   40.65    965.5    40.65    965.9    40.65    966.2    39.15    969.2
GR  39.2    975.2   39.88    976.7    40.38    977.7    40.65    978.2    40.65    979.2
GR  40.7    986.8   40.65    987.0    40.65    996.6    49.42   1031.7    50.00   1093.7
GR  51.0   1118.5   51.00   1298.3    50.00   1334.4    48.30   1477.3    48.29   1477.4
GR  48.2   1477.9   48.16   1478.8    48.10   1479.0    48.10   1479.6    48.00   1480.3
GR  48.0   1500.0
NC .0450   .04500   .06000   .10000   .30000
X1 6.820       20    926.5   1072.0     25.0     25.0     25.0
GR  49.5    500.0   49.05    926.5    40.42    961.0    40.42    970.3    40.42    975.0
GR  40.4    980.0   38.92    983.0    38.92    989.0    40.42    992.0    40.42    999.5
GR  40.4   1003.8   40.42   1011.0    42.47   1019.2    44.02   1025.4    44.92   1029.0
GR  45.7   1032.0   48.37   1042.8    48.57   1059.9    49.00   1072.0    49.00   1500.0
* $1.250     1.05     2.63      .00     18.00      6.40   584.00     2.000    38.90    38.83
XK   100                              .35      .01
X1 6.813       24   1000.0   1081.1     84.0     84.0     84.0
* X2  0.       .00       1.    51.55    52.70      .00                .000                .000
BT    -30    140.0    52.90    49.90    425.0    52.90    49.90    740.0    52.70    49.90
BT      0    880.0    52.00    49.50   1000.0    53.80    49.00   1000.1    53.80    51.55
BT      0   1009.6    53.80    51.55   1009.6    53.80    45.60   1011.0    53.80    45.60
BT      0   1011.0    53.80    51.55   1024.6    53.80    51.55   1024.6    53.80    45.60
BT      0   1026.0    53.80    45.40   1026.0    53.80    51.55   1039.8    53.80    51.55
BT      0   1039.8    53.80    45.40   1041.0    53.80    45.50   1041.0    53.80    51.55
BT      0   1054.6    53.80    51.55   1054.6    53.80    46.90   1055.8    53.80    46.90
BT      0   1055.8    53.80    51.55   1069.4    53.80    51.55   1069.4    53.80    46.90
BT      0   1070.6    53.80    47.80   1070.6    53.80    51.55   1081.1    53.80    51.55
BT      0   1081.2    53.80    49.00   1570.0    53.60    49.00   1600.0    53.60    53.60
GR  49.9    140.0   49.90    425.0    49.90    740.0    49.50    880.0    49.00   1000.0
GR  45.6   1000.0   45.60   1009.6    45.60   1011.0    45.60   1018.1    42.38   1024.6
GR  41.7   1026.0   38.90   1031.6    38.90   1039.8    38.90   1041.0    38.90   1049.6
GR  41.4   1054.6   42.03   1055.8    46.90   1065.6    46.90   1069.4    47.80   1070.6
GR  47.8   1081.1   49.00   1081.1    49.00   1570.0    53.60   1600.0
NC .0450   .04500   .06000   .30000   .50000
X1 6.800       24   1000.0   1081.1    100.0    100.0    100.0
GR  49.9    140.0   49.90    425.0    49.90    740.0    49.50    880.0    49.00   1000.0
GR  45.6   1000.0   45.60   1009.6    45.60   1011.0    45.60   1018.0    42.31   1024.6
GR  41.6   1026.0   38.83   1031.6    38.83   1039.8    38.83   1041.0    38.83   1049.6
GR  41.4   1054.6   41.95   1055.8    46.90   1065.7    46.90   1069.4    47.80   1070.6
GR  47.8   1081.1   49.00   1081.1    49.00   1570.0    53.60   1600.0
*
XK   100                              .500      .01
*
X1 6.775       40    900.0   1048.6    197.0    197.0    197.0
GR  49.0    500.0   49.00    900.0    40.24    935.0    40.24    954.0    38.74    957.0
GR  38.7    963.0   40.24    966.0    40.24    985.0    41.89    991.6    43.24    997.0
GR  43.4    997.6   43.64    998.6    43.69    998.8    43.71    998.9    44.24   1001.0
GR  44.8   1003.2   48.68   1018.8    48.69   1019.2    47.10   1020.0    46.00   1021.5
GR  46.0   1031.1   46.78   1032.1    47.21   1033.0    47.20   1033.1    49.00   1048.6
GR  49.0   1083.1   48.21   1089.4    48.16   1093.3    48.30   1102.3    46.67   1143.7
GR  47.4   1276.4   47.40   1277.4    47.53   1312.9    47.60   1316.1    48.90   1335.2
GR  51.2   1385.0   52.00   1394.2    53.00   1434.3    53.00   1499.4    52.97   1500.0
X1 6.707       23    917.9   1033.4    475.0    475.0    475.0
HY DS OF CCTRR
GR  49.0    500.0   48.34    917.9    40.07    951.0    40.07    970.0    38.57    973.0
GR  38.6    979.0   40.07    982.0    40.07   1001.0    48.16   1033.4    48.00   1134.2
GR  46.0   1142.6   45.70   1147.0    45.98   1174.8    46.29   1175.5    48.16   1176.9
GR  48.2   1177.1   48.20   1177.2    48.34   1178.3    48.87   1180.9    49.00   1181.3
GR  49.2   1378.4   49.60   1389.5    49.99   1500.0
X1 6.619       21   1135.2   1245.9    660.0    660.0    660.0
GR  49.0    500.0   48.00   1022.9    46.34   1024.8    46.00   1025.0    46.00   1054.7
GR  47.0   1055.0   47.10   1055.3    47.21   1056.3    47.18   1058.8    47.20   1059.6
GR  47.1   1085.1   47.00   1088.0    47.11   1135.2    39.66   1165.0    39.66   1184.0
GR  38.2   1187.0   38.16   1193.0    39.66   1196.0    39.66   1215.0    47.38   1245.9
GR  48.0   1500.0
X1 6.455       20   1006.1   1113.4    485.0    485.0    485.0
GR  48.4    500.0   46.50    997.2    46.37   1006.1    40.23   1030.7    40.05   1031.4
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GR  39.1  1035.3   39.09  1044.0   39.09  1045.5   39.09  1048.3   39.09  1053.8
GR  37.6  1056.8   37.59  1062.8   37.96  1063.5   38.16  1063.9   38.36  1064.3
GR  39.1  1065.8   39.09  1085.3   40.23  1089.8   46.12  1113.4   48.10  1500.0
* QT  2.    702.    704.      0.       0.       0.       0.       0.       0.       0.
X1 6.365      18  1020.5  1131.1   675.0   675.0   675.0
GR  48.6   500.0   47.07   816.6   47.00   819.0   45.54  1020.5   38.66  1048.0
GR  38.7  1067.0   37.16  1070.0   37.16  1076.0   38.66  1079.0   38.66  1094.6
GR  38.7  1097.0   38.66  1098.0   39.13  1099.9   44.00  1119.4   44.00  1125.1
GR  44.4  1126.2   45.00  1131.1   46.97  1500.0
X1 6.256      30   790.4   914.7   600.0   600.0   600.0
GR  49.7   500.0   48.00   765.8   47.92   767.5   47.83   768.2   47.75   773.2
GR  47.8   775.9   47.72   790.4   38.08   829.0   38.08   848.0   36.58   851.0
GR  36.6   857.0   38.08   860.0   38.08   879.0   47.01   914.7   47.00   917.3
GR  45.2   921.2   44.41   927.1   44.00   929.2   44.00   977.9   45.70   987.3
GR  46.0   990.0   46.00  1035.5   45.76  1036.5   44.00  1038.4   44.00  1055.0
GR  45.8  1058.8   45.49  1059.5   45.30  1063.3   46.00  1065.3   46.24  1500.0
X1 6.144      35   848.7   955.8   375.0   375.0   375.0
GR  49.0   500.0   49.00   547.9   48.92   549.8   48.83   601.8   49.00   680.5
GR  48.6   687.4   47.00   791.1   46.18   808.3   46.14   808.6   46.00   812.7
GR  46.0   823.3   45.38   848.7   41.51   864.2   37.56   880.0   37.56   882.1
GR  37.6   893.3   37.56   893.4   37.56   899.0   36.06   902.0   36.06   908.0
GR  37.6   911.0   37.56   920.4   37.56   924.6   37.56   930.0   37.71   930.6
GR  42.8   951.1   44.00   955.8   44.00  1036.8   43.50  1048.6   42.00  1060.0
GR  42.0  1074.1   44.00  1094.3   45.35  1200.4   46.00  1218.6   46.29  1500.0
*
* REMOVED
* ++++++++++++++++++++++++++++++++++++++++
*  OFF LINE DETETENTION BASIN NO. L-24C
*
*     5       0
*  39.1       0    44.3    14.7    49.1      33
*  BASIN L24C
*     0      -5
*     2    39.1    37.0      50    .016       1      -1
*
*     5
*     1     3.0    42.5     180
*
*
* ++++++++++++++++++++++++++++++++++++++++
X1 6.067      27   982.9  1085.9   243.0   243.0   243.0
GR  48.2   500.0   48.00   663.2   47.31   675.2   46.00   839.6   44.44   895.0
GR  43.0   928.4   43.00   982.9   37.23  1006.0   37.23  1021.2   37.23  1024.1
GR  37.2  1027.0   37.23  1028.4   35.73  1031.4   35.73  1035.9   35.73  1037.4
GR  36.0  1038.0   37.23  1040.4   37.23  1040.8   37.23  1056.0   44.71  1085.9
GR  44.8  1090.4   44.56  1105.0   44.67  1105.9   44.90  1110.0   44.90  1183.8
GR  45.0  1187.7   46.59  1500.0
NC .0450  .04500  .06000  .10000  .30000
* XK 100                      .2      .01
X1 6.002      36   935.3  1054.5   100.0   100.0   100.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN E5
GR  45.9   500.0   43.44   935.3   39.92   949.4   39.00   953.1   38.85   953.3
GR  38.8   954.0   38.40   955.5   37.82   957.8   37.02   961.0   37.02   970.5
GR  37.0   971.7   37.02   971.9   37.02   972.5   37.02   972.9   37.02   973.0
GR  37.0   974.5   37.02   980.0   35.52   983.0   35.52   989.0   37.02   992.0
GR  37.0  1004.4   37.02  1008.1   37.02  1011.0   41.24  1027.9   41.27  1028.0
GR  41.4  1028.5   41.87  1030.4   42.00  1030.9   42.00  1041.4   42.99  1051.3
GR  43.0  1051.4   43.08  1053.5   43.36  1054.5   44.00  1158.2   45.00  1182.1
GR  46.0  1500.0
CB     6       8   35.49   35.45      50    .015      14       0
CB     6       8   35.49   35.45      50    .015      14       0
CB     6       8   35.49   35.45      50    .015      14       0
WD     1     2.8      43     800
CL
*     20      20    35.6      46    35.7    46.5
*  3.015     .40    2.70     .00    6.00    8.00   50.00    10.1   35.49   35.45
X1 5.984      36   913.3  1037.7   250.0   250.0   250.0
* X2  0.      .00      2.   41.50   45.43     .00                .000            .000
* BT  -3   500.0   45.50   45.50  1000.0   45.43   45.43  1000.5   45.43   43.90
GR  46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.6   46.00   516.7
GR  44.0   518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0   756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.41   913.3
GR  35.5   945.0   35.49   995.0   40.44  1014.8   41.26  1018.1   42.21  1021.9
GR  42.0  1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7   43.10  1094.3
GR  43.8  1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2   44.20  1236.3
GR  44.0  1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4   47.10  1497.9
GR  47.1  1500.0
XK  100.                      .500     .01
X1 5.978      36   913.1  1037.7   100.0   100.0   100.0
* HY US OF E24B
GR  46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.6   46.00   516.7
GR  44.0   518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0   756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.41   913.1
GR  35.5   945.0   35.45   995.0   40.40  1014.8   41.22  1018.1   42.20  1022.0
GR  42.0  1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7   43.10  1094.3
GR  43.8  1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2   44.20  1236.3
GR  44.0  1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4   47.10  1497.9
GR  47.1  1500.0
*
*
* ++++++++++++++++++++++++++++++++++++++++
*  OFF LINE DETETENTION BASIN NO. E-24B
*  THIS IS NOT BEING USED AS A FLOOD CONTROL BASIN SO
*  THE WEIR ELEVATION IS SET HIGHER THAN THE WATER SURFACE
*  IT IS INCLUDED HERE, HOWEVER, FOR FUTURE ALTERNATIVE EVALUATION.
*
*
SA     6       0
SV  37.8       0    42.8     6.6    47.8    15.7
HS BASIN E24B
SC     0      -6
CC     2    37.8    35.7      50    .016       1      -1
CL
LA     6
WD     1     3.0    50.0     180
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 5.970      39   930.1  1037.7   305.0   305.0   305.0
HY DS OF E24B
GR  46.0   500.0   46.00   516.4   46.00   516.5   46.00   516.6   44.00   518.6
GR  44.0   534.3   44.65   537.6   46.00   538.3   46.00   709.5   45.00   756.4
GR  45.0   757.2   44.17   765.8   44.00   769.1   43.34   930.1   36.86   956.0
GR  36.9   975.0   35.36   978.0   35.36   984.0   36.86   987.0   36.86  1006.0
GR  39.1  1014.8   39.88  1018.1   41.24  1023.5   43.00  1030.6   43.00  1035.5
GR  43.0  1036.4   43.00  1037.7   43.10  1094.3   43.81  1115.3   44.00  1116.4
GR  44.0  1233.3   44.16  1236.2   44.20  1236.3   44.00  1237.4   45.00  1457.7
GR  46.0  1476.9   47.04  1489.4   47.10  1497.9   47.06  1500.0
X1 5.914      36   926.0  1048.9   270.0   270.0   270.0
HY US OF CONFL
GR  48.2   500.0   47.74   704.8   46.00   767.5   45.36   926.0   36.60   961.0
GR  36.6   981.4   35.10   984.4   35.10   990.4   36.60   993.4   36.60  1011.0
GR  37.3  1013.7   37.58  1014.9   37.88  1016.1   38.88  1020.1   39.65  1023.2
GR  42.0  1032.6   42.00  1035.3   42.09  1035.4   43.22  1037.5   43.95  1040.4
GR  44.5  1042.4   45.62  1047.1   45.87  1048.9   46.00  1074.8   45.85  1181.5
GR  45.3  1209.4   45.14  1212.4   45.14  1252.4   45.09  1253.4   45.07  1282.4
GR  45.1  1282.5   45.06  1282.6   45.00  1325.5   44.53  1327.8   44.00  1337.3
GR  42.4  1500.0
X1 5.840      37  1001.2  1121.2   615.0   615.0   615.0
GR  45.5   500.0   45.00   618.8   44.74   620.2   44.23   642.2   43.15   652.9
GR  42.1   674.3   42.01   674.5   42.00   674.5   42.00   718.1   42.07   718.8
GR  42.1   719.9   43.00   727.3   44.00   844.3   45.00   861.7   45.00  1001.2
GR  36.4  1035.8   36.37  1043.8   36.37  1055.2   34.87  1058.2   34.87  1064.2
GR  36.2  1066.9   36.37  1067.2   36.37  1067.4   36.37  1077.7   36.37  1085.8
GR  45.2  1121.2   45.80  1221.9   45.85  1222.5   45.88  1223.1   45.82  1227.0
GR  46.0  1235.6   45.00  1273.8   45.00  1299.5   44.60  1306.9   45.00  1326.0
GR  45.0  1434.8   44.00  1500.0
*
*
*
DB     3
*
*
*
* +++++++ REACH 2 STARTS
*
*
*
T1 GERBER CREEK
T2
T3   GERBER CREEK
*
*
*
UB
*
*
XK   100       0       0       0      .7     .01
*
*
*
NC   .06     .06     .05      .1      .3
* UPSTREAM INFLOW HYDROGRAPH FROM BASIN G2A
X1 4.555      12   845.0   989.0  1023.0   964.0  1049.0
GR  98.7       .0   86.00   199.0   80.50   261.0   71.30   543.0   69.20   695.0
GR  70.0   845.0   68.50   865.0   76.60   989.0   79.60  1061.0   76.50  1292.0
GR  73.8  1407.0   78.70  1550.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.357      18   599.7   654.2   419.0   815.0   622.0
HY US OF G50
GR  71.7       .0   70.00   215.0   69.10   408.0   67.71   599.7   62.60   615.0
GR  60.6   621.0   60.60   622.0   60.60   631.0   62.60   637.0   68.34   654.2
GR  70.5   765.0   69.80   845.0   71.20   890.0   71.00  1025.0   69.20  1065.0
GR  71.6  1191.0   69.60  1246.0   70.80  1400.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.239      16   502.4   563.7   964.0   552.0  1159.0
GR  70.1       .0   69.00   194.0   66.80   213.0   69.00   253.0   69.80   371.0
GR  67.6   502.4   62.36   518.0   59.36   527.0   59.36   532.0   59.36   537.0
GR  62.4   546.0   68.26   563.7   71.60   653.0   70.10   779.0   69.10   909.0
GR  68.1  1050.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.019      15   556.6   623.4   334.0   456.0   367.0
GR  90.3       .0   82.00   232.0   72.60   435.0   68.20   497.0   66.18   556.6
GR  65.4   559.0   57.04   584.0   57.04   589.0   57.04   594.0   65.37   619.0
GR  66.8   623.4   70.20   689.0   73.70   860.0   79.50  1116.0   69.10  1450.0
NC .0600  .06000  .05000  .50000  .80000
X1 3.950      15   552.4   627.7    50.0    50.0    50.0
GR  90.8       .0   82.50   232.0   73.10   435.0   68.70   497.0   66.82   552.4
GR  64.6   559.0   56.30   584.0   56.30   589.0   56.30   594.0   64.64   619.0
GR  67.5   627.7   70.70   689.0   74.20   860.0   80.00  1116.0   69.60  1450.0
NC .0600  .06000  .05000  .50000  .80000
*
* GERBER ROAD CROSSING NO. 1.
* THE UPSTREAM AREA MAY BE USED IN PLACE OF DETENTION BASIN NO. G-50
*
X1 3.940      29   227.0   351.7    40.0    40.0    40.0
GR  80.0       .0   76.00   160.0   75.53   227.0   56.20   285.0   56.20   288.0
GR  56.2   288.2   56.20   288.3   56.20   288.3   56.20   288.5   56.20   288.8
GR  56.2   289.0   56.20   289.3   56.20   289.5   56.20   289.8   56.20   290.0
GR  56.2   290.3   56.20   290.5   56.20   290.8   56.20   291.0   56.20   291.3
GR  56.2   291.5   56.20   291.7   56.20   291.8   56.20   291.8   56.20   292.0
GR  56.2   295.0   75.10   351.7   75.10   490.0   76.00   560.0
*
*
CB     6       8   56.2    56.1      60    .015      15       0
CB     6       8   56.2    56.1      60    .015      15       0
WD     1     2.8   72.5     600
CL
*
*
X1 3.933      29   226.8   351.9    50.0    50.0    50.0
HY DS OF G50
GR  80.0       .0   76.00   160.0   75.53   226.8   56.12   285.0   56.12   288.0
GR  56.1   288.2   56.12   288.3   56.12   288.3   56.12   288.5   56.12   288.8
GR  56.1   289.0   56.12   289.3   56.12   289.5   56.12   289.8   56.12   290.0
GR  56.1   290.3   56.12   290.5   56.12   290.8   56.12   291.0   56.12   291.3
GR  56.1   291.5   56.12   291.7   56.12   291.8   56.12   291.8   56.12   292.0
GR  56.1   295.0   75.10   351.9   75.10   490.0   76.00   560.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.923      26   897.0   962.7   500.0   100.0   370.0
GR  73.6       .0   70.50   107.0   72.10   197.0   69.70   330.0   68.30   509.0
GR  66.2   671.0   64.10   847.0   63.30   897.0   63.24   900.3   56.02   922.0
GR  56.0   927.0   56.02   932.0   64.36   957.0   66.27   962.7   66.70   977.0
GR  68.3  1032.0   68.50  1094.0   70.80  1109.0   67.30  1134.0   66.80  1250.0
GR  70.0  1263.0   72.90  1294.0   73.00  1541.0   73.20  1597.0   74.50  1613.0
GR  75.5  1704.0
NC .0600  .06000  .05000  .10000  .30000
* QT  1.    126.      0.      0.      0.      0.      0.      0.      0.      0.
X1 3.853      26   897.0   963.7   230.0    10.0    93.0
GR  73.6       .0   70.50   107.0   72.10   197.0   69.70   330.0   68.30   509.0
GR  66.2   671.0   64.10   847.0   63.30   897.0   63.26   899.4   55.74   922.0
GR  55.7   927.0   55.74   932.0   64.08   957.0   66.30   963.7   66.70   977.0
GR  68.3  1032.0   68.50  1094.0   70.80  1109.0   67.30  1134.0   66.80  1250.0
GR  70.0  1263.0   72.90  1294.0   73.00  1541.0   73.20  1597.0   74.50  1613.0
GR  75.5  1704.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.836      13   310.3   386.4    40.0    40.0    40.0
GR  72.0       .0   67.50   180.0   66.60   310.3   56.70   340.0   55.67   343.1
GR  55.7   343.9   55.67   347.8   55.67   352.4   55.67   353.1   56.70   356.2
GR  66.8   386.4   66.80   390.0   72.00   620.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.828      13   310.2   386.5    50.0    50.0    50.0
GR  72.0       .0   67.50   180.0   66.60   310.2   56.67   340.0   55.64   343.1
GR  55.6   343.9   55.64   347.8   55.64   352.4   55.64   353.1   56.67   356.2
GR  66.8   386.5   66.80   390.0   72.00   620.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.819      19   604.7   670.0   840.0   983.0   950.0
GR  75.1       .0   73.30   158.0   72.50   293.0   67.30   485.0   65.02   604.7
GR  64.6   606.0   55.60   633.0   55.60   643.0   59.27   654.0   64.47   669.6
GR  64.5   670.0   64.60   897.0   65.70  1216.0   66.80  1233.0   66.20  1249.0
GR  69.5  1310.0   66.20  1417.0   66.20  1537.0   66.50  1700.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.639      19   604.0   670.4   832.0   841.0   866.0
GR  74.6       .0   72.80   158.0   72.00   293.0   66.80   485.0   64.54   604.0
GR  63.9   606.0   54.88   633.0   54.88   643.0   58.55   654.0   63.88   670.0
GR  64.0   670.4   64.10   897.0   65.20  1216.0   66.30  1233.0   65.70  1249.0
GR  69.0  1310.0   65.70  1417.0   65.70  1537.0   66.00  1700.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.475      17   436.0   504.0  1051.0   646.0  1001.0
GR  71.5       .0   72.50   161.0   66.30   311.0   63.80   378.0   62.80   436.0
GR  62.7   439.5   54.22   465.0   54.22   475.0   61.22   496.0   61.33   496.3
GR  62.0   504.0   61.30   513.0   69.70   631.0   68.00   692.0   65.80   749.0
GR  65.3   808.0   65.60   850.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.285      20  1496.0  1632.0   718.0   656.0  1135.0
GR  62.7       .0   64.00   304.0   65.20   818.0   64.80   843.0   63.20   848.0
GR  62.7  1295.0   62.20  1496.0   60.59  1537.6   59.80  1540.0   53.46  1559.0
GR  53.5  1569.0   62.41  1595.8   63.00  1632.0   62.00  1681.0   62.30  1761.0
GR  63.2  1799.0   63.80  1976.0   63.50  2115.0   65.80  2208.0   65.10  2300.0
NC .0600  .06000  .05000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH FOR BASIN G2B
X1 3.070      24  2594.9  2652.5  1556.0   724.0  1019.0
GR  60.3       .0   60.60   320.0   61.70   642.0   64.20   652.0   66.80  1030.0
GR  63.8  1322.0   63.20  1342.0   62.30  1772.0   61.50  2204.0   60.60  2230.0
```


ATTACHMENT 5D

```
GR  60.3  2468.0   60.30  2594.9   53.60  2615.0   52.60  2618.0   52.60  2623.0
GR  52.6  2628.0   53.60  2631.0   60.75  2652.5   60.80  2672.0   59.20  2678.0
GR  62.2  2691.0   61.50  2712.0   62.20  2924.0   63.80  3100.0
NC .0600   .06000  .05000  .10000  .30000
X1 2.877      16   297.2   356.9   823.0   542.0   720.0
HY US OF G45
GR  59.6       0   59.60   297.2   57.32   304.0   53.66   315.0   51.82   320.5
GR  51.8   322.0   51.82   330.5   51.99   331.0   53.66   336.0   60.63   356.9
GR  61.1   386.0   65.50   500.0   66.30   539.0   62.80   689.0   61.60   819.0
GR  61.8   850.0
*
*
* ++++++++++++++++++++++++++++++++++++++++
* OFF LINE DETETENTION BASIN NO. G-45
*
SA     7       0
SV  52.1       0    53.1       7    55.1      22    58.1      45    60.1      61
HS BASIN   G45
SC     0      -7
CC     2    52.1    51.5     200    .016       1      -1
CL
LA     7
WD     2     3.0    56.5      25    57.5     100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 2.741      25   466.4   529.7    50.0    50.0    50.0
HY DS OF G45
GR  65.0   180.0   64.00   190.0   63.00   260.0   62.00   315.0   61.00   365.0
GR  61.0   425.0   60.31   466.4   54.11   485.0   51.78   492.0   51.28   493.5
GR  51.3   503.5   52.11   506.0   54.11   512.0   60.00   529.7   60.00   535.0
GR  59.0   538.0   59.00   550.0   59.20   640.0   59.10   765.0   60.00   820.0
GR  61.0   840.0   62.00   860.0   63.00   910.0   64.00   950.0   65.00   990.0
NC .0600  .06000  .05000  .30000  .50000
X1 2.731      16   457.4   539.8   100.0   100.0   100.0
GR  65.0   405.0   63.60   457.4   56.07   480.0   52.07   492.0   51.24   494.5
GR  51.2   498.8   51.24   500.2   51.24   504.5   52.07   507.0   56.07   519.0
GR  63.0   539.8   63.00   620.0   62.00   750.0   63.00   840.0   64.70   950.0
GR  66.0  1130.0
X1 2.727      18   919.3   991.3    16.0    16.0    16.0
HY US BDRY SPA
GR  63.4   573.2   62.00   633.2   61.75   707.0   60.14   919.3   55.39   938.3
GR  53.0   947.7   52.59   949.5   52.59   953.0   51.09   954.5   51.09   956.5
GR  52.6   958.0   52.59   958.6   52.59   961.5   55.39   972.7   60.04   991.3
GR  61.0  1393.0   62.50  1447.2   62.86  1500.0
* $1.050    1.56    2.63     .00    5.00    1.33   181.00    1.000   51.08   50.95
XK   100                      .5     .01
X1 2.725      14   938.3   972.7   184.0   184.0   184.0
* X2  0.     .00      1.   62.80   63.60     .00                .000            .000
*    -11   573.2   63.40   63.40   573.2   68.00   63.40   633.2   67.30   62.00
*      0   707.0   66.10   61.75   938.3   64.40   60.00   948.0   64.30   59.00
*      0   948.0   64.30   62.80   963.0   64.10   62.80   963.0   64.10   59.10
*      0   972.7   64.10   60.00  1280.0   63.60   60.73
GR  63.4   573.2   62.00   633.2   61.75   707.0   60.00   938.3   58.80   945.3
GR  56.4   947.7   51.08   953.0   51.08   958.0   51.68   958.6   59.36   966.3
GR  60.0   972.7   61.00  1393.0   62.50  1447.2   62.86  1500.0
NC .0600  .06000  .06000  .30000  .50000
X1 2.607      20   889.4   975.9    24.0    24.0    24.0
GR  64.6   682.8   64.00   688.9   63.48   876.6   63.00   889.4   63.00   900.1
GR  57.5   908.4   58.71   922.4   50.95   930.2   50.95   935.2   55.60   939.8
GR  61.5   945.7   63.20   954.2   63.78   975.9   63.65  1288.3   64.00  1325.7
GR  64.3  1331.5   65.00  1477.7   65.27  1485.5   65.28  1495.4   65.20  1500.0
*
*
* LATERAL INFLOW FOR BASIN G3A GOES INTO THE CHANNEL UPSTREAM OF STORAGE G46
* THROUGH A DRAINAGE PIPE
*
*
XK   100                      .75     .01
X1 2.598      58   858.2   940.1   487.0   487.0   487.0
HY US OF G46
GR  63.0   710.8   62.77   717.9   62.46   781.5   62.00   798.4   61.42   805.2
GR  61.2   807.3   60.85   834.0   60.85   858.2   52.91   890.0   52.91   892.2
GR  52.9   893.0   50.91   895.0   50.91   897.0   52.91   899.0   52.91   902.0
GR  53.2   903.3   53.68   905.1   53.78   905.5   53.91   906.0   54.76   909.4
GR  55.3   911.7   56.23   915.3   56.53   916.5   58.00   922.4   58.00   930.7
GR  61.3   936.2   61.46   936.2   61.60   936.8   62.00   938.8   62.00   940.1
GR  62.8   960.5   62.29   969.1   62.19   975.1   62.00   979.8   61.20   983.5
GR  61.0   986.5   60.45  1000.5   60.31  1010.5   60.45  1018.0   60.40  1020.3
GR  60.0  1046.6   59.00  1072.9   59.00  1089.3   59.41  1100.6   59.50  1101.2
GR  59.8  1105.4   60.00  1114.1   60.00  1134.6   61.00  1188.0   61.00  1211.6
GR  61.1  1215.4   61.46  1225.4   61.51  1226.1   62.00  1238.4   62.00  1263.0
GR  62.6  1296.5   63.00  1308.4   63.27  1324.3
*
* ++++++++++++++++++++++++++++++++++++++++
*
*   OFF-LINE DETETENTION BASIN NO. G-46
*
SA     8       0
SV  53.0       0    57.0      48    62.2     109
HS BASIN G46
SC     0      -8
CC     2    53.0    52.9     100    .016       1      -1
CL
LA     8
WD     1     3.0    56.2     100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 2.476      49   841.0   908.5   265.0   265.0   265.0
HY DS OF G46
GR  63.0   729.0   63.00   729.3   62.67   736.1   62.00   745.3   61.50   761.5
GR  61.0   767.3   61.00   767.6   60.01   780.6   60.00   780.7   60.00   780.9
GR  59.0   826.7   58.87   841.0   51.63   870.0   51.63   873.5   50.13   875.0
GR  50.1   877.0   51.63   878.5   51.63   882.0   58.27   908.5   58.22   913.8
GR  58.6   937.6   59.00   950.7   58.30   956.6   58.44   957.8   58.45   961.6
GR  58.0   962.5   56.74   967.7   56.30   971.8   56.00   977.7   56.00   983.5
GR  56.9   987.8   57.83  1007.8   58.00  1009.6   58.03  1010.0   58.07  1014.1
GR  58.8  1043.0   59.00  1133.7   59.00  1134.6   59.46  1144.3   60.68  1161.7
GR  61.0  1170.5   61.74  1181.3   61.90  1184.4   62.00  1185.2   62.99  1215.8
GR  63.0  1215.9   64.00  1244.3   64.00  1367.9   63.66  1372.4
X1 2.424      40   917.2   992.2   160.0   160.0   160.0
* HY US BDRY SPA
GR  61.0   896.7   60.82   899.0   60.00   904.3   59.80   905.7   59.74   907.3
GR  59.2   917.2   58.48   919.9   57.73   922.9   51.21   949.0   51.21   952.5
GR  49.7   954.0   49.71   956.0   51.21   957.5   51.21   961.0   53.61   970.6
GR  53.8   971.3   53.81   971.4   54.66   974.8   55.01   976.2   56.00   980.2
GR  56.0   983.6   57.25   985.2   57.36   985.6   57.56   986.4   58.11   988.6
GR  58.1   988.7   58.18   988.9   59.00   992.2   59.00   999.1   58.49  1005.6
GR  57.0  1033.7   57.00  1033.9   57.10  1034.1   57.00  1037.0   57.00  1141.7
GR  57.1  1217.7   58.20  1223.3   59.00  1320.9   59.00  1409.5   60.87  1500.0
X1 2.393      59   908.0   989.0   200.0   200.0   200.0
GR  58.7   908.0   57.78   911.7   57.65   912.2   57.60   912.4   57.25   913.8
GR  57.2   913.9   57.18   914.1   57.08   914.5   57.05   914.6   56.65   916.2
GR  56.6   916.5   56.50   916.8   53.15   930.2   50.95   939.0   50.95   942.5
GR  49.5   944.0   49.45   946.0   50.95   947.5   50.95   951.0   55.50   969.2
GR  55.6   969.4   56.38   972.7   56.45   973.0   56.80   974.4   56.00   975.4
GR  56.0   981.9   56.11   982.1   56.36   982.5   56.00   986.3   58.70   988.0
GR  59.0   989.0   59.00  1004.3   58.82  1008.4   58.00  1021.7   57.60  1023.4
GR  57.5  1024.7   57.53  1041.6   58.00  1052.1   57.92  1157.1   57.80  1161.7
GR  57.9  1181.9   57.00  1209.6   57.00  1223.7   57.55  1225.8   57.60  1226.0
GR  57.8  1227.7   57.86  1227.8   57.90  1227.9   58.00  1228.3   58.40  1230.0
GR  58.4  1230.3   59.00  1232.3   60.00  1252.1   60.79  1404.9   60.80  1405.3
GR  61.0  1409.8   61.00  1435.0   60.94  1437.5   61.00  1500.0
X1 2.360      68   970.0  1050.3   335.0   335.0   335.0
GR  62.2   695.4   62.00   702.9   62.00   707.0   61.00   761.1   61.00   766.9
GR  59.0   912.9   58.84   916.3   58.65   925.2   59.00   939.9   59.00   940.1

GR  58.3   970.0   58.00   970.2   56.49   972.1   56.00   972.4   55.15   974.2
GR  55.0   975.0   55.12   975.2   55.14   975.3   55.18   975.5   55.22   975.8
GR  55.4   978.1   55.46   978.1   57.05   981.7   56.00   982.7   57.63   982.7
GR  57.8   984.5   57.26   986.5   57.18   986.8   57.13   987.0   57.11   987.1
GR  57.1   987.2   57.01   987.5   56.88   988.0   55.48   993.6   53.38  1002.0
GR  50.6  1013.0   50.63  1016.5   49.13  1018.0   49.13  1020.0   49.83  1020.7
GR  50.6  1021.5   50.63  1025.0   56.60  1048.9   56.73  1049.4   56.97  1050.3
GR  56.7  1070.5   56.59  1072.7   56.31  1076.1   56.20  1078.1   56.17  1214.3
GR  57.0  1238.4   57.00  1258.2   57.24  1265.6   58.00  1309.7   58.16  1310.4
GR  58.3  1311.2   58.36  1311.7   59.00  1315.9   59.20  1316.4   59.27  1316.7
GR  59.5  1316.9   60.00  1320.1   60.66  1322.8   60.70  1323.1   61.00  1323.9
GR  62.0  1374.3   62.00  1421.2   62.94  1500.0
X1 2.300      43   927.8  1008.6   260.0   260.0   260.0
GR  61.6   500.0   61.00   539.8   59.00   927.8   58.99   927.8   56.77   936.7
GR  56.7   936.9   52.42   954.1   50.09   963.4   50.09   963.9   50.09   965.4
GR  50.1   965.7   49.75   966.0   48.75   967.0   48.59   967.2   48.59   969.2
GR  50.1   970.7   50.09   974.2   50.09   975.4   52.19   983.8   52.41   984.7
GR  52.8   986.1   53.81   990.3   58.14  1007.6   58.38  1008.6   58.37  1009.0
GR  58.4  1009.1   58.31  1009.2   58.00  1018.9   58.00  1033.5   57.00  1050.0
GR  57.0  1184.3   57.00  1187.0   57.00  1243.2   56.00  1246.0   56.00  1257.4
GR  56.7  1259.1   58.64  1271.2   58.84  1272.7   58.90  1273.5   58.00  1275.4
GR  58.8  1277.1   59.66  1279.4   60.00  1279.8
X1 2.252      32   959.2  1069.3   276.0   276.0   276.0
GR  61.4   500.0   61.00   522.5   61.00   536.3   60.00   592.6   59.07   672.9
GR  59.0   673.2   59.00   959.2   58.00   977.9   54.99   994.5   54.99  1004.2
GR  55.4  1004.9   54.99  1006.7   54.82  1007.4   54.74  1007.7   54.59  1008.3
GR  54.5  1008.5   49.67  1028.0   49.67  1031.5   48.17  1033.0   48.17  1035.0
GR  49.7  1036.5   49.67  1040.0   57.00  1069.3   57.00  1108.0   58.00  1152.0
GR  58.0  1153.8   59.00  1208.8   59.00  1227.2   60.00  1269.6   61.05  1475.6
GR  61.1  1476.6   61.25  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 2.225      40   976.9  1048.5    11.0    11.0    11.0
GR  58.7   500.0   57.78   510.4   57.28   531.9   57.00   534.6   57.00   636.0
GR  56.0   976.9   52.60   990.6   51.38   995.5   50.80   997.8   50.33   999.7
GR  49.2  1004.1   49.23  1010.2   47.73  1011.7   47.73  1013.7   48.67  1014.6
GR  49.2  1015.2   49.23  1016.1   49.46  1017.0   49.76  1018.2   51.10  1023.6
GR  51.3  1024.3   52.60  1029.6   54.41  1036.8   57.32  1048.5   57.69  1061.9
GR  58.0  1065.5   58.42  1076.3   58.46  1082.2   59.00  1103.2   59.00  1125.4
GR  59.4  1131.0   60.00  1155.1   61.00  1414.7   61.10  1415.4   62.00  1426.3
GR  63.0  1452.7   63.00  1454.4   63.56  1465.5   64.00  1487.9   64.00  1500.0
CB     5       8   47.72   47.54     114     .015      14
CB     5       8   47.72   47.54     114     .015      14
WD     1     2.8      S9     300
CL
*  2.015      .40    2.63     .00    5.00    8.00  114.00    10.1   47.72   47.54
X1 2.222      29   946.6  1037.3   114.0   114.0   114.0
* X2  0.     .00      2.   59.10   60.10     .00            .000            .000
BT   -24   500.0   59.52   59.52   500.6   59.52   59.10   513.1   59.52   59.10
BT     0   530.4   59.53   59.10   532.3   59.53   59.10   613.5   59.55   59.10
BT     0   621.3   59.55   59.10   975.4   60.10   59.10   977.0   60.10   59.10
BT     0   983.9   60.10   59.10   983.9   60.10   59.10   984.7   63.40   59.10
BT     0   994.7   63.40   59.10   999.6   63.40   59.10   999.6   60.10   59.10
BT     0  1023.8   60.12   59.10  1068.4   60.16   59.10  1104.7   60.20   59.10
BT     0  1111.7   60.30   59.10  1111.8   60.33   59.10  1299.4   60.50   59.10
BT     0  1302.7   60.66   59.10  1392.5   61.00   61.00  1500.0   61.95   61.95
GR  59.5   500.0   58.60   500.6   57.52   513.1   57.19   530.4   57.00   532.3
GR  57.0   613.5   57.15   621.3   56.09   946.6   48.89   975.4   48.49   977.0
GR  47.7   980.1   47.72   983.9   47.72   984.7   47.72   991.9   47.72   992.1
GR  48.4   995.0   48.90   996.8   49.60   999.6   49.87  1000.7   55.65  1023.8
GR  59.0  1037.3   59.05  1068.4   59.10  1104.7   59.10  1111.7   60.33  1111.8
GR  60.5  1299.4   60.66  1302.7   61.00  1392.5   61.95  1500.0
NC .0600  .06000  .06000  .30000  .50000
X1 2.212      28   944.3  1039.6    44.0    44.0    44.0
GR  59.5   500.0   58.60   500.6   57.52   513.1   57.19   530.4   57.00   532.3
GR  57.0   613.5   57.15   621.3   56.10   944.3   48.33   975.4   47.93   977.0
GR  47.5   978.6   47.53   983.9   47.53   984.7   47.53   991.9   47.53   993.6
GR  47.9   995.0   48.33   996.8   49.03   999.5   55.08  1023.8   59.02  1039.6
GR  59.0  1068.4   59.10  1104.7   59.10  1111.7   60.33  1111.8   60.50  1299.4
GR  60.7  1302.7   61.00  1392.5   61.95  1500.0
X1 2.169      54   1072.6  1166.3   364.0   364.0   364.0
HY DS OF BRADSHAW
GR  56.0   500.0   58.00   514.0   57.85   522.0   57.00   542.0   56.00   728.7
GR  56.2   738.8   56.15   741.1   56.51   770.4   57.42   772.4   58.00   779.5
GR  57.5   780.0   58.77   795.9   58.78   796.3   58.87   799.4   58.71   842.3
GR  58.0   848.3   57.36   849.1   57.26   849.7   57.24   850.0   57.00   851.1
GR  57.0   863.1   57.17   866.0   57.37   880.2   57.00   882.5   57.00   909.5
GR  56.0   956.1   55.44   961.0   54.64   970.0   54.66   970.7   54.68   971.4
GR  54.7   971.4   54.61   976.3   55.50   982.5   55.97   988.0   56.00   988.1
GR  56.0   988.1   56.04   988.4   56.05   988.6   56.08   990.3   57.00  1008.7
GR  57.3  1017.8   58.00  1025.4   58.00  1036.4   58.43  1072.6   53.63  1091.8
GR  52.0  1098.4   48.96  1110.5   48.96  1115.0   47.46  1116.5   47.46  1119.5
GR  49.0  1121.0   48.96  1125.5   59.17  1166.3   60.00  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN G3B
X1 2.060      47   1138.2  1492.1   540.0   540.0   540.0
GR  56.3   500.0   56.72   717.5   57.00   729.5   57.00   730.0   56.95   731.2
GR  56.9   732.3   56.77   733.2   56.65   736.4   56.61   737.1   56.60   737.1
GR  56.5   737.4   56.00   739.0   56.47   740.9   56.48   741.3   56.00   751.0
GR  56.7   759.4   56.76   760.0   56.67   764.0   56.72   764.1   56.73   764.1
GR  56.8   764.2   56.84   775.0   56.72   778.5   56.00   783.4   56.00   889.7
GR  54.0   936.3   52.27   940.4   53.94   948.4   54.00   948.7   56.00  1018.4
GR  56.0  1241.7   55.86  1248.0   57.95  1398.2   57.05  1401.8   53.65  1415.4
GR  49.3  1432.9   48.48  1436.1   48.38  1436.5   48.38  1439.8   48.38  1440.1
GR  48.4  1441.0   46.88  1442.5   46.88  1445.5   48.38  1447.0   48.38  1451.5
GR  58.5  1492.1   58.57  1500.0
X1 1.987      34   1157.5  1245.4   195.0   195.0   195.0
GR  56.0   500.0   56.73   633.5   56.00   704.0   55.89   704.9   54.00   956.7
GR  53.6   957.4   52.00   968.6   52.01   968.6   51.97   968.7   51.59   969.6
GR  52.0   979.7   52.00   979.9   52.22   981.0   53.16   983.2   55.86   990.7
GR  56.0   991.3   56.27  1157.5   47.52  1192.5   47.52  1197.0   46.02  1198.5
GR  46.0  1201.5   46.32  1201.8   47.52  1203.0   47.52  1207.5   48.44  1211.2
GR  53.2  1230.3   56.99  1245.4   57.00  1245.8   57.00  1281.4   57.79  1286.6
GR  57.0  1323.3   57.00  1440.8   56.49  1452.2   56.00  1500.0
X1 1.961      41   1029.2  1128.7   195.0   195.0   195.0
GR  56.0   500.0   56.00   637.8   55.96   638.1   54.00   870.5   52.00   883.9
GR  51.3   892.2   51.12   900.6   50.69   891.8   50.53   891.9   50.51   892.0
GR  50.7   892.6   51.43   895.7   51.59   896.4   51.98   897.7   52.00   897.7
GR  52.0   897.8   52.16   898.5   54.00   905.7   54.00   907.3   56.00   996.6
GR  56.0  1000.1   56.55  1029.2   50.51  1053.3   50.36  1053.9   47.21  1066.5
GR  47.2  1071.0   45.71  1072.5   45.71  1075.5   47.21  1077.0   47.21  1081.5
GR  59.0  1128.5   59.00  1128.7   59.00  1130.2   59.90  1174.1   60.00  1176.7
GR  60.0  1185.9   60.77  1237.1   60.19  1285.4   60.80  1363.3   60.71  1370.0
GR  61.0  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 1.926      33   991.0  1063.3    20.0    20.0    20.0
GR  55.8   500.0   53.58   939.7   52.40   941.5   52.00   942.5   51.90   944.0
GR  51.9   944.5   51.83   944.8   50.88   949.7   50.53   959.8   51.71   964.2
GR  51.8   964.2   52.00   964.5   51.73   965.5   51.71   966.0   51.70   966.2
GR  52.4   970.2   54.00   974.1   54.02   991.0   46.90  1019.5   46.90  1024.0
GR  45.4  1025.5   45.40  1026.5   46.90  1030.0   46.90  1034.5   54.11  1063.3
GR  54.3  1191.1   55.95  1258.1   56.00  1331.0   57.00  1426.2   57.52  1430.7
GR  58.2  1443.8   59.00  1492.3   59.00  1500.0
* $ .000    1.50    2.70     .00    8.60     .00  105.00    1.000   45.36   45.23
X1 1.925      14   471.0   499.3    84.0    84.0    84.0
* X2  0.     .00      1.   51.55   55.20     .00            .000            .000
BT    -6   200.0   55.25   55.25   475.0   55.20   55.20   475.0   58.60   53.80
BT     0   495.2   58.60   53.80   495.2   55.20   55.20   800.0   56.00   56.00
GR  55.3   200.0   55.20   471.0   51.16   475.0   51.10   475.1   48.00   475.1
GR  48.0   478.2   45.36   480.8   45.36   489.4   47.83   491.9   47.80   495.1
GR  51.1   495.1   51.16   495.2   55.21   499.3   56.00   800.0
NC .0600  .06000  .05000  .30000  .50000
X1 1.900      14   470.8   499.4    80.0    80.0    80.0
GR  55.3   200.0   55.20   470.8   51.03   475.0   50.97   475.1   48.00   475.1
GR  48.0   478.1   45.23   480.8   45.23   489.4   47.83   492.0   47.80   495.1
GR  51.0   495.1   51.03   495.2   55.21   499.4   56.00   800.0
X1 1.891      37   943.9  1018.1   170.0   170.0   170.0
GR  56.7   500.0   56.70   503.1   56.43   514.1   56.57   559.4   56.00   565.5
GR  54.0   908.0   53.95   909.3   53.86   910.2   53.48   911.9   53.02   913.0
GR  53.0   913.4   53.00   929.5   53.86   941.2   53.98   943.9   53.84   944.5
GR  49.9   960.3   49.74   960.9   47.41   970.2   47.36   970.4   46.60   973.4
```

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GR  46.6   978.0   45.10   979.5   45.10   981.8   45.10   982.5   46.60   984.0
GR  46.6   988.4   47.14   990.6   47.69   992.8   48.14   994.6   48.21   994.9
GR  49.5  1000.0   49.89  1001.6   54.01  1018.1   54.20  1259.0   54.00  1270.6
GR  57.1  1446.4   56.13  1500.0
* QT  2.    315.    355.      0.      0.      0.      0.      0.      0.      0.
X1 1.851      41  1040.1  1112.8   200.0   200.0   200.0
GR  54.9   500.0   54.00   896.9   53.21   944.7   53.65  1025.4   53.31  1040.1
GR  50.0  1053.3   48.77  1058.3   48.69  1058.6   48.59  1059.0   48.57  1059.1
GR  48.5  1059.5   46.67  1066.7   46.33  1068.1   46.33  1068.5   46.33  1073.0
GR  46.3  1073.1   46.33  1073.5   44.83  1075.0   44.83  1078.0   46.33  1079.5
GR  46.3  1083.1   50.02  1097.8   50.04  1097.9   53.77  1112.8   54.00  1164.7
GR  54.3  1169.6   54.38  1283.3   55.40  1330.6   56.86  1337.8   56.00  1338.3
GR  56.5  1339.3   56.59  1352.9   56.00  1358.7   55.91  1372.4   56.00  1373.1
GR  56.0  1381.1   57.00  1413.4   57.00  1413.5   59.00  1479.6   59.00  1479.7
GR  59.9  1500.0
X1 1.811      39  1020.0  1121.5   165.0   165.0   165.0
HY DS OF GERBER#3
GR  54.7   695.4   54.67   695.8   54.00   910.6   53.59   925.5   53.18  1020.0
GR  47.2  1044.0   46.65  1046.1   46.57  1046.4   46.17  1048.0   46.01  1048.7
GR  46.0  1049.0   46.01  1055.1   46.01  1061.4   46.01  1064.8   45.79  1065.2
GR  44.5  1067.8   44.51  1067.8   44.51  1068.7   44.51  1073.8   45.53  1075.8
GR  46.0  1076.8   46.01  1084.2   46.01  1086.8   46.01  1087.4   46.01  1088.7
GR  46.6  1090.9   54.23  1121.5   56.39  1411.9   57.30  1415.7   56.00  1416.4
GR  56.7  1417.6   56.79  1433.2   56.23  1437.4   56.30  1438.2   56.37  1439.1
GR  56.4  1446.6   57.00  1475.6   57.00  1476.1   57.50  1500.0
X1 1.788      15   149.6   270.1   125.0   125.0   125.0
GR  55.8      .0   55.80   149.6   45.75   189.8   45.75   200.0   45.75   203.8
GR  45.2   204.9   44.25   206.8   44.25   210.0   44.25   210.8   44.25   212.8
GR  45.8   215.8   45.75   219.5   45.75   229.8   55.83   270.1   56.00   579.5
X1 1.761      41   967.8  1066.5   435.0   435.0   435.0
HY US OF G43
GR  54.3   591.1   54.69   657.4   52.76   967.8   51.96   971.0   45.55   996.7
GR  45.5  1011.1   45.47  1011.3   44.37  1013.5   44.05  1014.1   44.05  1015.3
GR  44.0  1016.0   44.05  1016.1   44.05  1017.0   44.05  1017.1   44.05  1017.3
GR  44.0  1017.5   44.05  1020.1   45.03  1022.1   45.55  1023.1   45.55  1023.5
GR  45.5  1027.6   45.55  1036.7   45.89  1038.0   50.94  1058.2   51.71  1061.3
GR  52.0  1062.3   53.00  1066.5   53.00  1077.9   54.00  1127.9   55.64  1411.3
GR  56.6  1425.4   56.00  1425.7   56.30  1426.2   56.84  1427.4   57.00  1437.5
GR  57.0  1442.8   57.11  1444.8   58.20  1483.1   58.23  1487.9   58.79  1500.0
GR  58.8  1500.0
*
* RUNOFF FROM SUB-BASIN G3D GOES INTO DETENTION BASIN G-43
*
* ++++++++++++++++++++++++++++++++++++++
*
*  ON-LINE DETETENTION BASIN NO. G-43
*
SA     9       0
SV  45.8       0    46.8       4    48.8      13    50.8      22    55.8      48
HS BASIN G43
SC     0      -9
CC     4    45.8    44.5     100    .016       1      -1
CL
*      9
*      1     3.0    50.0     225
*
*
* ++++++++++++++++++++++++++++++++++++++
*
X1 1.669      44  1013.4  1114.9   470.0   470.0   470.0
HY DS OF G43
GR  54.0   508.3   54.00   584.3   54.06   587.2   54.13   587.8   54.18   588.8
GR  55.0   600.8   54.55   672.9   55.00   867.0   54.00   894.6   54.00   951.7
GR  53.0  1001.8   53.00  1013.4   47.25  1036.4   47.00  1037.4   46.93  1037.7
GR  44.8  1046.0   44.85  1057.6   44.85  1058.2   44.68  1058.5   43.35  1061.2
GR  43.3  1062.7   43.35  1064.1   43.35  1067.2   43.72  1067.9   43.87  1068.2
GR  44.8  1070.2   44.85  1076.8   44.85  1077.6   44.85  1078.0   44.85  1086.0
GR  46.8  1093.6   47.25  1095.6   52.08  1114.9   52.93  1326.7   53.00  1326.9
GR  53.0  1476.8   52.27  1483.6   52.10  1492.6   52.00  1492.8   52.00  1497.1
GR  52.0  1497.4   51.94  1497.6   52.00  1497.8   52.00  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN G4
* QT  2.    569.    738.      0.      0.      0.      0.      0.      0.      0.
X1 1.590      65   909.0  1022.0   262.0   262.0   262.0
GR  56.3   500.0   56.00   752.0   58.00   800.7   58.01   838.8   58.00   839.4
GR  56.0   847.2   55.85   847.7   55.56   849.0   54.64   849.6   54.00   852.5
GR  53.0   856.3   52.68   858.4   52.56   860.7   52.24   861.4   52.00   861.9
GR  50.9   866.6   52.00   870.7   52.42   887.2   54.00   887.9   54.58   892.8
GR  54.6   893.0   54.67   898.0   54.68   898.2   54.69   898.3   54.70   902.4
GR  54.6   905.2   54.45   906.5   54.45   909.0   53.14   914.3   53.06   914.6
GR  53.0   914.9   52.40   914.9   52.38   916.4   52.08   918.5   51.94   919.1
GR  48.6   932.6   46.59   940.5   46.09   942.5   45.19   946.1   44.39   949.3
GR  44.1   950.3   44.10   950.4   44.10   950.9   44.10   955.1   44.10   958.6
GR  44.1   959.5   42.60   962.5   42.60   967.5   42.60   967.6   42.60   968.5
GR  43.6   970.5   44.10   971.5   44.10   974.0   44.10   974.4   44.10   974.7
GR  44.1   978.4   44.10   980.2   44.10   990.4   48.56  1008.3   52.00  1022.0
GR  52.0  1153.6   53.00  1215.6   53.86  1464.4   53.00  1484.5   53.01  1500.0
NC .0600  .06000  .05000  .10000  .30000
X1 1.544      17   128.7   255.3    25.0    25.0    25.0
GR  54.9   100.0   54.76   128.7   43.67   173.1   43.67   180.0   43.67   184.1
GR  43.7   187.1   42.17   190.1   42.17   192.4   42.17   193.8   42.17   196.1
GR  43.7   199.1   43.67   202.1   43.67   206.1   43.67   213.1   54.24   255.3
GR  54.1   380.0   53.70   580.0
*  2.015     .40    2.70     .00    5.00    8.00  100.00    10.1   42.14   42.03
X1 1.534      13   122.5   261.4   100.0   100.0   100.0
* X2  0.     .00      2.   48.20   54.50     .00             .000            .000
* BT -11   100.0   54.90   54.90   180.0   54.50   54.50   180.0   54.50   53.50
* BT   0   192.4   54.50   53.50   192.4   54.50   47.00   193.8   54.50   47.00
* BT   0   193.8   54.50   53.50   206.2   54.50   53.50   206.2   54.50   54.50
* BT   0   380.0   54.00   54.00   580.0   53.70   53.70
GR  54.9   100.0   54.79   122.5   42.14   173.1   42.14   180.0   42.14   184.1
GR  42.1   192.4   42.14   193.8   42.14   202.1   42.14   206.1   42.14   213.1
GR  54.2   261.4   54.10   380.0   53.70   580.0
NC .0600  .06000  .06000  .30000  .50000
CB     5       8   42.14   42.03     100    .015      14
CB     5       8   42.14   42.03     100    .015      14
WD     1     2.8      53     800
CL
* LATERAL INFLOW HYDROGRAPH FOR BASIN G3C
* PIPED TO THIS CROSS SECTION FOR SPA CONDITIONS
X1 1.524      13   122.0   261.9   100.0   100.0   100.0
GR  54.9   100.0   54.79   122.0   42.03   173.1   42.03   180.0   42.03   184.1
GR  42.0   192.4   42.03   193.8   42.03   202.1   42.03   206.1   42.03   213.1
GR  54.2   261.9   54.10   380.0   53.70   580.0
X1 1.487      36   827.7   926.6   342.0   342.0   342.0
HY US OF G41
GR  51.8   500.0   51.00   661.7   51.15   664.6   51.24   686.8   52.00   693.5
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.94   782.1
GR  50.7   782.5   51.21   801.7   50.73   827.7   43.42   857.0   43.42   867.8
GR  43.4   868.9   43.42   871.0   43.17   871.5   41.92   874.0   41.92   874.4
GR  41.9   874.6   41.92   880.0   43.42   883.0   43.42   885.5   43.42   888.1
GR  43.4   888.2   43.42   888.4   43.42   897.0   45.29   904.5   50.83   926.6
GR  53.0  1500.0
*
* ++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. G-41
*
SA    10       0
SV  42.8       0    47.6      26    52.8      62
HS BASIN G41
SC     0     -10
CC     2    42.8    42.0     100    .016       1      -1
CL
LA    10
WD     2     3.0    46.5      50    47.5     150
*
*
* ++++++++++++++++++++++++++++++++++++++
*
X1 1.422      36   771.8   904.5   225.0   225.0   225.0
HY DS OF G41
GR  51.8   500.0   51.00   661.7   51.15   664.6   51.24   686.8   52.00   693.5
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.60   771.8
GR  48.0   782.1   47.92   782.5   43.12   801.7   43.04   802.0   43.04   816.0
GR  41.5   819.0   41.54   825.0   43.04   828.0   43.04   842.0   49.49   867.8
GR  49.7   868.5   49.43   868.9   48.00   871.5   47.40   874.4   46.99   874.6
GR  47.1   885.5   47.62   888.1   47.65   888.2   48.00   888.4   50.75   904.5
GR  53.0  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN G3C
X1 1.376      52   775.6   872.4   270.0   270.0   270.0
GR  51.2   500.0   51.00   664.0   50.77   666.2   50.55   669.9   51.24   672.9
GR  51.5   682.9   51.58   685.1   51.63   696.3   52.00   699.6   53.98   705.7
GR  54.0   705.7   54.00   715.7   53.93   715.7   52.69   719.1   52.49   721.8
GR  52.0   724.2   50.33   731.8   50.00   732.7   49.72   733.2   49.64   733.2
GR  49.0   733.4   49.00   746.6   49.60   767.4   49.65   775.6   42.79   803.0
GR  42.8   817.0   41.29   820.0   41.29   826.0   42.79   829.0   42.79   843.0
GR  48.1   864.3   50.15   872.4   50.00   941.0   48.90   948.2   48.00   950.2
GR  47.8   951.1   47.69   955.8   47.63   956.8   47.10   962.9   47.09   964.3
GR  47.2   964.4   48.00   964.4   47.13   964.8   47.40   965.5   49.12   968.5
GR  50.6   974.2   51.00   975.2   52.38  1276.4   52.50  1279.8   52.54  1280.0
GR  52.0  1422.8   52.91  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 1.324      28   949.1  1049.2    11.0    11.0    11.0
GR  50.1   500.0   50.63   646.9   50.08   649.3   49.54   864.7   50.00   897.8
GR  49.5   905.7   49.51   941.5   49.38   949.1   43.76   971.6   42.50   976.7
GR  42.5   980.6   42.50   981.3   42.50   986.6   42.50   990.5   42.50   993.2
GR  41.0   996.2   41.00  1002.2   42.50  1005.2   42.50  1009.1   42.50  1009.7
GR  42.5  1010.4   42.50  1012.7   42.50  1013.4   42.50  1016.7   45.79  1029.8
GR  50.6  1049.2   51.00  1070.7   50.77  1500.0
* $1.050    1.50    2.70     .00   36.00    5.80  541.00   2.000   40.98   40.96
X1 1.315      22   990.0  1078.1    25.0    25.0    25.0
* X2  0.     .00      1.   51.70   54.00     .00            .000             .000
BT   -22   990.0   54.00   54.00  1000.0   54.00   54.00  1000.0   54.00   51.70
BT     0  1010.8   54.00   51.70  1010.8   54.00   47.40  1012.0   54.00   47.40
BT     0  1012.0   54.00   51.70  1025.8   54.00   51.70  1025.8   54.00   46.70
BT     0  1027.5   54.00   46.70  1027.5   54.00   51.70  1040.8   54.00   51.70
BT     0  1040.8   54.00   45.70  1042.5   54.00   45.70  1042.5   54.00   51.70
BT     0  1056.1   54.00   51.70  1056.1   54.00   45.70  1057.3   54.00   45.70
BT     0  1057.3   54.00   51.70  1068.1   54.00   51.70  1068.1   54.00   54.00
BT     0  1100.0   54.00   54.00
GR  54.0   990.0   54.00   990.0   49.02  1000.0   48.98  1000.1   47.60  1000.1
GR  47.5  1002.9   43.62  1010.8   43.02  1012.0   40.99  1016.1   40.99  1025.8
GR  41.0  1027.5   40.99  1040.8   40.99  1042.5   40.99  1052.1   43.01  1056.1
GR  43.6  1057.3   45.91  1061.9   46.20  1068.0   48.98  1068.0   49.01  1068.1
GR  54.0  1078.1   54.00  1100.0
NC .0600  .06000  .05500  .30000  .50000
X1 1.314      21   990.0  1078.1    44.0    44.0    44.0
GR  54.0   990.0   48.99  1000.0   48.95  1000.1   47.60  1000.1   47.55  1002.9
GR  43.6  1010.8   42.99  1012.0   40.96  1016.1   40.96  1025.8   40.96  1027.5
GR  41.0  1040.8   40.96  1042.5   40.96  1052.1   42.98  1056.1   43.58  1057.3
GR  45.9  1062.0   46.20  1068.0   48.95  1068.0   48.98  1068.1   54.00  1078.1
GR  54.0  1100.0
X1 1.274      37   964.2  1065.0   500.0   500.0   500.0
HY DS OF CCTRR
GR  51.0   500.0   50.02   964.2   48.13   971.7   42.41   994.6   42.41  1008.6
GR  40.9  1011.6   40.91  1017.6   42.38  1020.5   42.41  1020.6   42.41  1023.1
GR  42.4  1034.1   42.41  1034.6   42.59  1035.3   44.59  1043.3   45.11  1045.4
GR  45.3  1046.3   45.51  1047.0   46.11  1049.4   48.13  1057.5   50.00  1065.0
GR  50.0  1130.5   49.00  1149.7   49.00  1160.0   50.00  1166.4   50.18  1167.8
GR  51.8  1173.0   52.00  1173.5   53.01  1176.0   53.00  1190.2   51.81  1193.3
GR  51.8  1193.9   51.26  1196.9   49.88  1200.7   50.00  1206.4   50.05  1207.5
GR  51.0  1229.5   51.80  1500.0
X1 1.214      40   998.0  1100.5    55.0    55.0    55.0
GR  51.3   500.0   49.34   998.0   44.89  1015.8   41.86  1027.9   41.86  1030.0
GR  41.9  1030.4   41.86  1031.3   41.86  1035.7   41.86  1039.4   41.86  1040.4
GR  41.9  1041.7   41.86  1043.2   40.36  1046.2   40.36  1052.2   40.36  1052.2
GR  41.9  1055.2   41.86  1062.3   41.86  1062.4   41.86  1065.8   41.86  1067.9
GR  50.0  1100.5   50.00  1342.5   50.00  1344.0   49.94  1376.2   50.00  1376.7
GR  50.9  1387.4   51.09  1388.2   52.00  1391.3   52.78  1394.1   53.82  1407.8
GR  53.8  1408.9   51.40  1426.8   51.40  1427.2   51.41  1428.6   51.09  1429.8
GR  51.1  1434.7   50.64  1438.4   50.80  1456.4   51.00  1460.7   51.10  1500.0
X1 1.202      14   239.1   356.5    20.0    20.0    20.0
GR  51.6      .0   51.51   239.1   41.80   278.0   41.80   280.0   41.80   283.1
GR  41.8   283.8   41.80   286.9   41.80   292.0   40.30   295.0   40.30   301.0
GR  41.8   304.0   41.80   318.0   51.43   356.5   51.20   600.0
X1 1.198      14   239.1   356.6   240.0   240.0   240.0
GR  51.6      .0   51.51   239.1   41.78   278.0   41.78   280.0   41.78   283.1
GR  41.8   283.8   41.78   286.9   41.78   292.0   40.28   295.0   40.28   301.0
GR  41.8   304.0   41.78   318.0   51.43   356.6   51.20   600.0
X1 1.160      18  1075.0  1176.1   295.0   295.0   295.0
GR  51.0   500.0   49.01  1075.0   48.56  1076.8   48.53  1076.9   46.81  1083.8
GR  41.6  1104.5   41.51  1105.0   41.51  1108.1   41.51  1109.1   41.51  1111.9
GR  41.5  1112.5   41.51  1119.0   40.01  1122.0   40.01  1128.0   41.51  1131.0
GR  41.5  1145.0   49.30  1176.1   50.80  1500.0
X1 1.102      25  1011.2  1117.7   285.0   285.0   285.0
GR  50.5   500.0   49.89   652.6   50.00   653.5   50.00  1011.2   42.28  1042.1
GR  41.2  1046.4   41.19  1051.7   41.19  1056.5   41.19  1058.5   40.02  1060.8
GR  39.8  1061.2   39.69  1061.5   39.69  1062.2   39.69  1067.5   41.19  1070.5
GR  41.2  1082.9   41.19  1085.5   41.19  1085.6   41.19  1086.3   41.19  1086.4
GR  42.3  1090.8   49.01  1117.7   49.03  1172.5   50.00  1232.5   51.00  1500.0
X1 1.048      25  1009.9  1119.2   422.0   422.0   422.0
GR  50.0   500.0   50.00  1009.9   41.54  1043.7   40.88  1046.3   40.88  1058.5
GR  39.4  1061.5   39.38  1067.5   39.96  1068.7   40.16  1069.1   40.26  1069.3
GR  40.9  1070.5   40.88  1077.4   40.88  1082.1   40.88  1083.3   40.88  1083.6
GR  40.9  1083.8   40.88  1086.2   40.88  1086.3   40.89  1086.4   40.94  1086.6
GR  41.5  1089.0   49.10  1119.2   50.00  1406.1   50.23  1409.7   50.67  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 1.001      22  1029.2  1131.0    25.0    25.0    25.0
GR  49.7   500.0   48.09  1029.2   40.56  1059.3   40.54  1059.4   40.41  1059.9
GR  40.4  1072.6   40.41  1074.1   38.91  1077.1   38.91  1083.1   40.41  1086.1
GR  40.4  1094.3   40.41  1094.6   40.41  1095.2   40.41  1095.6   40.41  1096.0
GR  40.4  1096.6   40.41  1099.9   40.56  1100.5   48.18  1131.0   49.94  1420.6
GR  50.0  1422.4   50.05  1500.0
CB     6       8   38.88   38.78      94    .015      14
CB     6       8   38.88   38.78      94    .015      14
WD     1     2.8      45     300
CL
*  2.015     .40    2.70   94.00    6.00    8.00   94.00    10.1   38.88   38.78
X1  .999      26  1027.1  1144.4    94.0    94.0    94.0
* X2  0.     .00      2.   47.50   46.00     .00            .000             .000
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1025.1   49.00  1025.6   49.00  1027.1   44.53  1045.0
GR  38.9  1067.6   38.88  1070.2   38.88  1071.7   38.88  1074.3   38.88  1080.4
GR  38.9  1081.0   38.88  1081.3   38.88  1094.4   38.88  1095.1   38.88  1102.2
GR  38.9  1107.6   42.35  1121.5   43.81  1127.3   44.53  1130.2   48.08  1144.4
GR  50.0  1500.0
NC .0600  .06000  .06000  .30000  .50000
X1  .950      26  1026.7  1144.8   100.0   100.0   100.0
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1025.1   49.00  1025.6   49.00  1026.7   44.43  1045.0
GR  38.8  1067.6   38.78  1070.2   38.78  1071.7   38.78  1074.3   38.78  1080.4
GR  38.8  1081.0   38.78  1081.3   38.78  1094.4   38.78  1095.1   38.78  1102.2
GR  38.8  1107.6   42.26  1121.5   43.71  1127.3   44.43  1130.2   48.08  1144.8
GR  50.0  1500.0
X1  .900      29  1022.5  1130.2   253.0   253.0   253.0
HY US OF L24D
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1022.5   48.41  1025.1   48.28  1025.6   43.43  1045.0
GR  40.2  1058.0   40.18  1070.2   40.18  1071.7   40.18  1072.0   39.03  1074.3
GR  38.7  1075.0   38.68  1080.4   38.68  1081.0   38.83  1081.3   40.18  1084.0
GR  40.2  1094.4   40.18  1095.1   40.18  1098.0   41.23  1102.2   46.06  1121.5
GR  47.5  1127.3   47.72  1128.1   48.00  1130.2   50.00  1500.0
*
* REMOVED
* ++++++++++++++++++++++++++++++++++++++
*
```

```
*  OFF-LINE DETETENTION BASIN NO. L-24D
*
*     11        0
*     40.6      0     45.0      7.8     50.6       22
*  BASIN L24D
*      0      -11
*      2     40.6     40.2       50     .016        1       -1
*
*     11
*      1      3.0     44.5      150
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1   .888       23  1002.4  1114.8   430.0   430.0   430.0
HY DS OF L24D
GR   49.1    500.0   47.30  1002.4   39.89  1032.0   39.89  1046.0   38.39  1049.0
GR   38.4   1055.0   39.89  1058.0   39.89  1072.0   43.16  1085.1   44.09  1088.8
GR   45.2   1093.2   45.39  1094.0   46.48  1098.3   46.40  1099.8   46.30  1100.8
GR   45.5   1104.3   46.00  1105.9   47.34  1109.1   47.80  1114.8   48.00  1116.4
GR   48.8   1152.1   49.00  1154.4   50.01  1500.0
* QT  2.     428.     428.      0.       0.       0.       0.       0.       0.
X1   .815       33  1113.0  1219.4   500.0   500.0   500.0
GR   49.0    500.0   48.00   986.0   47.10  1113.0   43.53  1127.3   43.26  1128.4
GR   41.1   1137.0   40.41  1139.8   39.71  1142.6   39.68  1142.7   39.61  1143.0
GR   39.4   1143.8   39.42  1150 3   39.42  1152.2   39.42  1160.2   37.92  1163.2
GR   37.9   1163.4   37.92  1169.2   39.42  1172.2   39.42  1183.8   42.53  1196.2
GR   43.3   1199.1   44.73  1205.0   48.32  1219.4   49.00  1252.9   49.00  1270.4
GR   49.5   1292.3   50.00  1306.0   50.50  1380.4   50.00  1383.7   50.33  1415.3
GR   50.0   1423.5   50.12  1428.2   50.00  1500.0
X1   .708       21   837.4   950.8   380.0   380.0   380.0
GR   48.1    500.0   47.50   811.9   47.50   812.0   47.25   837.4   38.86   871.0
GR   38.9    876.4   38.86   886.9   38.86   890.0   37.36   893.0   37.36   899.0
GR   38.9    902.0   38.86   921.0   46.32   950.8   46.00  1028.0   45.93  1028.2
GR   42.0   1031.2   42.00  1096.4   43.10  1097.1   49.20  1111.3   50.00  1113.7
GR   50.4   1500.0
X1   .633       15   943.3  1060.5   125.0   125.0   125.0
GR   46.8      .0   47.20   800.0   46.82   943.3   45.14   950.0   38.44   976.8
GR   38.4    995.9   36.94   998.9   36.94  1000.0   36.94  1003.6   36.94  1004.9
GR   38.4   1007.9   38.44  1026.8   44.24  1050.0   46.86  1060.5   48.00  1250.0
X1   .608       21   997.8  1128.1   110.0   110.0   110.0
GR   47.5      .0   47.30   350.0   46.10   620.0   47.10   700.0   51.30   750.0
GR   42.3    750.0   42.30   756.7   51.30   756.7   46.30   900.0   48.00   970.0
GR   48.1    997.8   38.30  1037.0   38.30  1056.0   36.80  1059.0   36.80  1065.0
GR   38.3   1068.0   38.30  1087.0   48.56  1128.1   49.00  1250.0   50.00  1353.5
GR   50.0   1500.0
X1   .597       41  1012.0  1145.6   255.0   255.0   255.0
GR   46.8    500.0   46.00   863.0   45.00   922.2   45.00   949.1   45.92   952.8
GR   46.0    953.2   46.00   954.3   45.38   958.4   45.84   970.4   45.69  1012.0
GR   38.2   1042.0   38.18  1054.1   38.18  1057.7   38.18  1058.3   38.18  1061.0
GR   36.7   1064.0   36.68  1070.0   37.98  1072.6   38.18  1073.0   38.18  1085.3
GR   38.2   1092.0   38.63  1093.8   38.81  1094.5   39.10  1095.7   40.88  1102.8
GR   41.2   1104.1   43.01  1111.3   43.26  1112.3   43.31  1112.5   44.01  1115.3
GR   45.1   1119.7   45.73  1145.6   46.00  1182.0   47.00  1214.1   47.00  1214.4
GR   47.4   1234.5   48.00  1246.8   49.00  1301.1   49.00  1301.3   50.00  1323.7
GR   50.5   1500.0
X1   .554       37  1046.6  1155.0   232.0   232.0   232.0
GR   47.0    500.0   46.28   579.0   46.27   579.5   45.27   858.0   45.00   875.6
GR   45.0    889.1   44.27   924.8   44.22   936.8   44.40   947.3   45.00   963.7
GR   45.0   1046.6   42.82  1055.3   41.70  1059.8   41.55  1060.4   41.00  1062.6
GR   39.1   1070.1   37.90  1075.0   37.90  1079.3   37.90  1081.1   37.90  1081.2
GR   37.9   1082.7   37.90  1082.9   37.90  1084.1   37.90  1094.0   36.40  1097.0
GR   36.4   1103.0   37.90  1106.0   37.90  1123.3   37.90  1125.0   45.41  1155.0
GR   45.5   1165.3   46.00  1172.9   47.00  1198.7   47.67  1216.6   48.00  1246.6
GR   47.5   1265.3   49.20  1500.0
NC .0600   .06000  .06000  .10000  .30000
X1   .470       14   243.6   364.4    30.0    30.0    30.0
GR   46.5      .0   46.50   243.6   37.64   279.0   37.64   298.0   36.64   300.0
GR   36.1    301.0   36.14   303.1   36.14   304.8   36.14   307.0   36.64   308.0
GR   37.6    310.0   37.64   329.0   46.50   364.4   46.50   700.0
CB      6         8   36.11   36.04      66    .015      14
CB      6         8   36.11   36.04      66    .015      14
CB      6         8   36.11   36.04      66    .015      14
WD      1       2.8      44     300
CL
*  3.015       .40    2.70      .00    6.00    8.00   66.00    10.1   36.11   36.04
X1   .460       10   237.4   370.6    66.0    66.0    66.0
* X2  0.       .00      2.   45.50   46.50     .00                    .000            .000
GR   46.5       .0   46.50   237.4   36.11   279.0   36.11   300.0   36.11   303.1
GR   36.1    304.8   36.11   308.0   36.11   329.0   46.50   370.6   46.50   700.0
NC .0600   .06000  .06000  .30000  .50000
* LATERAL INFLOW HYDROGRAPH FOR BASIN G5
X1   .440       10   237.2   370.8   120.0   120.0   120.0
GR   46.5       .0   46.50   237.2   36.04   279.0   36.04   300.0   36.04   303.1
GR   36.0    304.8   36.04   308.0   36.04   329.0   46.50   370.8   46.50   700.0
X1   .435       23   543.7   655.4   278.0   278.0   278.0
HY US OF E24A
GR   46.0    135.0   46.00   265.0   45.00   375.0   44.80   450.0   45.00   515.0
GR   45.2    543.7   43.66   550.0   37.41   575.0   37.41   585.0   37.41   593.5
GR   35.9    596.5   35.91   600.0   35.91   602.5   37.41   605.5   37.41   610.0
GR   37.4    615.0   37.41   625.0   39.91   635.0   45.00   655.4   45.00   690.0
GR   46.0    740.0   48.00   760.0   48.00  1000.0
*
* ++++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. E-24A
*
SA     11        0
SV   37.5        0    43.0    52.0    48.0     120
HS BASIN E24A
SC      0      -11
CC      2     38.0    37.0      50    .016       1       -1
CL
LA     11
WD      2      3.0    40.5      50    41.5     100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1   .425       24  1167.6  1334.4   315.0   315.0   315.0
HY DS OF E24A
GR   46.2    500.0   44.12  1167.6   44.00  1169.8   42.37  1186.5   42.20  1190.7
GR   42.0   1191.3   42.00  1210.5   42.99  1211.0   43.76  1218.3   43.20  1220.6
GR   37.3   1244.1   37.10  1245.0   37.10  1246.9   37.10  1264.0   35.60  1267.0
GR   35.6   1273.0   37.10  1276.0   37.10  1279.5   37.10  1289.1   37.10  1295.0
GR   46.9   1334.4   47.97  1384.1   48.00  1384.7   48.20  1500.0
X1   .345       21  1220.0  1346.1   350.0   350.0   350.0
HY US OF CONFL
GR   46.4    500.0   44.00  1098.8   43.92  1098.9   42.00  1102.9   42.00  1116.7
GR   42.0   1116.9   42.13  1117.4   44.00  1120.7   44.67  1124.7   45.00  1139.8
GR   45.5   1220.0   36.75  1255.0   36.75  1274.0   35.25  1277.0   35.25  1283.0
GR   36.8   1286.0   36.75  1296.8   36.75  1305.0   41.88  1325.5   47.03  1346.1
GR   47.5   1500.0
*
*
*
DB      3
*
T1 ELDER CREEK LOWER
T2
T3
*
UB      1       2
*
*
*
XK    100                                  .7     .01
XI    .05
*
*
NC    .04      .04      .03       .1       .3
X1 5.753       32   988.6  1088.7   610.0   610.0   610.0
GR   46.0    500.0   45.00   734.1   44.99   734.2   44.95   735.3   44.00   753.8
GR   44.0    768.1   43.13   817.0   43.00   937.0   42.18   988.6   39.29  1000.2
GR   38.0   1005.2   37.01  1009.3   35.84  1014.0   35.84  1032.6   34.34  1035.6
GR   34.3   1041.6   35.84  1044.6   35.84  1058.0   35.84  1061.9   35.84  1064.0
GR   36.2   1065.4   36.54  1066.8   36.57  1066.9   36.69  1067.4   36.74  1067.6
GR   37.0   1068.5   37.34  1070.0   38.04  1072.8   39.01  1076.7   41.61  1087.1
GR   42.0   1088.7   43.00  1500.0
* QT  2.     1162.    1162.      0.       0.       0.       0.       0.       0.
X1 5.633       21   865.6  1433.0   475.0   475.0   475.0
HY DS OF CONFL
GR   46.5      1.0   46.73   535.9   46.00   555.1   44.00   832.3   43.01   865.0
GR   43.0    865.1   43.00   865.6   41.68   913.2   41.35   976.9   41.35   977.1
GR   41.1   1095.0   33.81  1124.3   33.81  1174.3   34.94  1178.8   41.34  1204.4
GR   41.6   1205.5   41.66  1205.7   41.85  1208.8   43.00  1433.0   44.00  1440.6
GR   43.8   2500.0
X1 5.545       26   982.9  1102.4   611.0   611.0   611.0
GR   44.2      1.0   44.18   503.8   44.00   508.9   43.77   511.7   43.26   534.3
GR   43.0    537.9   41.16   582.9   33.40  1013.9   33.40  1021.4   33.40  1023.3
GR   33.4   1024.8   33.40  1036.6   33.40  1049.5   33.40  1052.3   33.40  1053.9
GR   33.4   1056.5   33.40  1063.9   39.09  1086.7   43.00  1102.4   43.00  1112.2
GR   42.6   1115.9   42.00  1127.4   42.00  1167.7   42.92  1171.8   43.00  1172.2
GR   42.9   2500.0
NC .0450   .04500  .06000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH FOR BASIN E6
X1 5.423       34   1069.1  1204.8    28.0    28.0    28.0
GR   44.9      1    44.72   649.8      45   845.1   44.02   887.1   43.61  1060.7
GR     44  1062.7       44  1069.1   43.74  1070.1   39.24  1088.1   39.17  1088.4
GR   38.2   1092.4   37.24  1096.1   33.27    1112   32.87  1113.6   32.87    1114
GR   32.9   1119.8   32.87  1144.9   32.87  1150.3   32.87  1156.8   32.87  1163.6
GR   33.1   1164.5   33.22    1165   33.27  1165.2   33.77  1167.2   43.17  1204.8
GR     43   1459.3   42.46  1461.1      42  1461.7      42  1472.4    42.4  1476.9
GR     43      2500   43.55     2584      44  2667.8   44.67  2759.2
* $1.050       1.56     2.63      .00    13.50     1.40   317.00    2.000   32.86   32.74
X1 5.410       30   969.1   1031   104.0   104.0   104.0
* X2  0.       .00      1.    43.40   44.60      .00                .000            .000
*     -7     100.0    46.07   44.20   980.5   45.00   43.00  1000.0   45.00   42.30
*      0    1040.4    45.00   43.40  1276.1   44.00   43.20  1302.1   43.00   42.83
*      0    2500.0    43.00   42.48
BT     -6     824.7    44.97   44.97      958   45.09   44.88      977   45.12   43.99
BT         1030.3    45.15    43.99  1053.2   45.09   44.85  1159.8   44.73   44.64
GR   45.2  144.95225   824.744.91333      958   44.91   969.140.96693      977
GR 39.22      980.5    37.8    980.5    37.8    983.3    32.8    991.3    32.85    1000
GR 32.85     1006.8    37.8   1016.7    37.8   1019.5    39.2   1019.5    44.6   1030.3
GR 44.95       1031      45  1040.444.95465   1053.2   44.82  1091.244.66446   1159.8
GR 44.44     1258.8   43.86   1540.6   43.19   1974.8   43.03   2092.9      43     2500
GR 43.15     2614.5   43.42   2698.3   44.13   2820.2   44.72     2904   45.31   2926.9
NC .0450   .04500  .06000  .30000  .50000
X1 5.402       20   968.9   1031.2   112.0   112.0   112.0
GR   45.2      1    44.91   968.9   39.13   980.5    37.8   980.5    37.8   983.2
GR   32.8    993.3   32.76    1000   32.76  1006.8    37.8  1016.8    37.8  1019.5
GR   39.1   1019.5   44.96   1031.2      45  1040.4   42.01  1071.6    42.4  1276.1
GR     43   1302.1      43     2500   43.23  2599.2    44.2     2683   45.09   2774.4
* QT  2.     1190.    1330.      0.       0.       0.       0.       0.       0.
X1 5.374       51   984.5  1113.6   429.0   429.0   429.0
HY US OF E20
GR 46.06      85.5   45.47   131.2   45.17   207.4      45   583.6   44.93   584.5
GR     45       624   44.74   627.2    44.7   647.8   44.29   688.6   44.77   765.2
GR 44.89     765.8      45   770.3      45   796.7   44.58      822   44.12   826.7
GR 44.08     827.2   44.07   827.4      44   828.6   43.14   865.2      43   867.8
GR 42.96     868.5   42.95   870.3    42.3   901.6      42   908.8   41.86   938.6
GR     42     948.2    42.3      951    42.5   953.9      43   959.3      43   984.5
GR 35.28    1015.4   32.66  1025.9    32.7  1033.2   32.66  1040.5   32.66  1041.6
GR 32.66    1047.2   32.66  1047.3    32.7  1048.4   32.66  1049.7   32.66  1050.7
GR 32.66    1051.2   32.66  1052.7    32.7  1062.3   32.66  1067.8   32.66  1068.6
GR 32.66    1075.9   42.09  1113.6    42.8     2500   43.39  2568.7   44.43  2637.3
GR 45.32      2683
*
* ++++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. E-20
*  VOLUME REDUCED BY 30% OF ORIGINAL ESTIMATE
*
SA     12        0
SV   32.7        0    34.7    23.1    36.7    46.9    38.7    71.4    40.0    87.5
HS BASIN E20
SC      0      -12
CC      2     32.9    32.7      50    .016       1       -1
CL
LA     12
WD      2      3.0    38.5      50    39.5     150
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 5.303       36   1068.8  1183.1   400.0   400.0   400.0
HY DS OF E20
GR   45.9      1.0   45.08   517.7   45.01   518.5   45.00   518.8   45.00   711.9
GR   44.9    717.0   44.00   732.1   43.00   757.5   43.00   759.7   42.00   839.1
GR   41.0    871.5   39.81  1028.7   38.63  1068.8   33.24  1090.4   32.29  1094.2
GR   32.3   1096.4   32.29  1099.2   32.29  1100.0   32.29  1114.6   32.29  1115.8
GR   32.3   1119.5   32.29  1120.1   32.29  1126.0   32.29  1135.1   32.29  1139.2
GR   32.3   1143.6   32.29  1144.2   33.24  1148.0   42.00  1183.1   42.00  1273.2
GR   42.0   1273.3   42.00  1374.2   41.37  1401.6   41.01  1489.8   41.00  1492.0
GR   41.1   2500.0
X1 5.218       37   1039.3  1149.8   250.0   250.0   250.0
GR   43.9      1.0   44.00   818.6   43.86   821.2   43.00   832.7   42.25   852.7
GR   41.9    859.6   41.86   863.6   41.00   889.9   41.00   907.4   40.00   957.1
GR   40.0    985.6   39.03  1003.8   39.01  1039.3   34.28  1058.2   31.94  1067.6
GR   31.9   1073.5   31.94  1076.4   31.94  1082.7   31.94  1082.8   31.94  1085.4
GR   31.9   1086.8   31.94  1087.6   31.94  1092.3   31.94  1093.9   31.94  1099.2
GR   31.9   1101.5   31.94  1102.6   31.94  1104.6   31.94  1106.3   31.94  1112.7
GR   31.9   1117.6   34.28  1126.9   40.00  1149.8   40.00  1338.8   41.00  1398.8
GR   41.0   1409.7   41.76   2500.0
X1 5.170       34   1019.1  1131.0   500.0   500.0   500.0
GR   43.8      1.0   44.00   676.3   43.51   678.3   43.62   678.7   44.00   680.3
GR   44.0    755.7   43.00   808.0   43.00   843.2   41.00   898.4   41.00   898.9
GR   40.0    906.5   39.07   933.3   39.00   933.4   39.00  1019.1   31.72  1048.2
GR   31.7   1061.0   31.72  1069.2   31.72  1069.3   31.72  1069.6   31.72  1076.1
GR   31.7   1078.0   31.72  1081.1   31.72  1081.9   31.72  1085.4   31.72  1096.4
GR   31.7   1098.2   33.60  1105.7   36.97  1119.2   39.93  1131.0   39.00  1293.3
GR   40.1   1315.4   40.48  1327.7   41.00  1339.7   41.16   2500.0
X1 5.075       35   1052.3  1163.0   400.0   400.0   400.0
GR   43.0    500.0   43.00   517.1   42.93   518.6   42.00   550.0   41.58   599.1
GR   42.0    619.7   42.00   698.0   41.54   708.1   41.45   946.5   41.00   974.0
GR   41.0    975.8   40.00   999.1   39.36  1052.3   31.74  1082.8   31.29  1084.6
GR   31.3   1084.9   31.29  1086.9   31.29  1087.1   31.29  1090.4   31.29  1093.2
GR   31.3   1094.1   31.29  1097.9   31.29  1111.4   31.29  1124.7   31.29  1125.0
GR   31.3   1126.6   31.29  1127.4   31.29  1134.6   31.74  1136.4   38.39  1163.0
GR   38.9   1199.9   39.08  1232.6   39.78  1262.6   39.87  1264.6   40.90  1500.0
* QT  2.     1000.    1000.      0.       0.       0.       0.       0.       0.
X1 5.005       34   1077.1  1188.1   400.0   400.0   400.0
GR   43.0    500.0   43.00   507.3   42.03   531.1   38.74   964.8   39.00  1045.0
GR   39.5   1051.1   40.00  1064.5   40.00  1077.1   38.30  1083.9   32.73  1106.2
GR   31.0   1113.2   30.94  1113.3   30.94  1114.8   30.94  1116.0   30.94  1116.9
GR   30.9   1121.3   30.94  1123.3   30.94  1124.9   30.94  1132.0   30.94  1148.9
GR   30.9   1156.9   30.94  1156.2   30.94  1158.0   30.94  1160.1   30.94  1160.7
GR   30.9   1163.3   37.13  1188.1   38.00  1378.9   38.50  1393.9   39.00  1403.6
GR   39.0   1456.5   39.05  1458.4   40.00  1458.9   40.02   1500.0
X1 4.916       31   876.4  1000.2   400.0   400.0   400.0
GR   43.1    500.0   43.00   804.7   42.23   864.7   42.37   865.7   41.71   874.9
GR   41.6    876.4   39.96   882.9   39.93   883.0   30.71   919.9   30.59   920.3
GR   30.6    925.4   30.59   927.3   30.59   927.5   30.59   931.1   30.59   932.4
GR   30.6    938.8   30.59   942.1   30.59   943.4   30.59   944.4   30.59   950.7
GR   30.6    959.6   30.59   962.9   30.59   967.2   30.59   970.0   30.59   970.3
GR   30.7    970.8   38.07  1000.2   39.00  1408.8   39.70  1425.2   40.00  1439.7
GR   40.0   1500.0
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ATTACHMENT 5D

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X1 4.845      43    997.0  1119.2   283.0   283.0   283.0
GR  44.0   501.5    42.32   503.5   41.98   523.8   43.00   529.0   42.54   534.9
GR  43.0   535.0    42.52   535.0   42.00   535.6   42.00   667.1   42.89   703.5
GR  43.0   705.2    43.00   858.3   42.98   858.5   42.00   862.7   41.16   874.5
GR  41.0   879.5    41.00   887.0   40.59   892.2   40.00   969.5   39.50   997.0
GR  31.8  1028.0    30.25  1034.1   30.25  1051.2   30.25  1053.2   30.25  1055.8
GR  30.2  1056.0    30.25  1058.5   30.25  1061.3   30.25  1063.3   30.25  1068.6
GR  30.2  1070.5    30.25  1076.0   30.25  1084.1   30.43  1084.8   30.76  1086.1
GR  30.9  1086.6    31.03  1087.2   31.36  1088.5   31.76  1090.1   39.04  1119.2
GR  39.3  1343.6    40.00  1370.0   40.00  1500.0
NC .0450  .04500   .06000  .10000  .30000
* QT  2.   1184.    1468.      0.      0.      0.      0.      0.      0.      0.
X1 4.799      46    909.8  1036.2     540     540     540
HY DS BDRY SPA
GR  43.6   519.0    41.87   521.1   41.64   534.4   43.00   541.4   42.98   541.6
GR  43.0   541.7    43.00   778.5   43.74   792.6   43.21   837.0   43.00   837.8
GR  43.0   839.3    42.02   855.4   42.00   857.7   41.07   870.3   41.00   871.0
GR  40.1   909.8    39.40   912.5   39.02   914.0   37.25   921.1   35.85   926.7
GR  35.7   927.4    35.60   927.7   33.75   935.1   32.60   939.7   30.90   946.5
GR  30.8   947.1    30.35   948.7   30.00   950.1   30.00   954.2   30.00   981.5
GR  30.0   983.1    30.00   983.2   30.00   983.3   30.00   994.0   30.00  1000.1
GR  30.0  1000.2    30.80  1003.3   31.70  1006.9   33.43  1013.8   34.33  1017.4
GR  35.8  1023.4    35.85  1023.5   36.05  1024.3   39.00  1036.1   39.00  1036.2
GR  40.5  1500.0
*
*   McCAY AND SOMPS DATA STARTS HERE.
*
*   BASE CONDITION AND ULTIMATE CONDITION ARE THE SAME DOWNSTREAM OF THIS POINT
*
XK   100                                     .7   .0150
*
NC .0600  .06000   .04000  .10000  .30000
X1 4.697      22    755.0   895.0    80.0    80.0    80.0
GR  43.2      .0    42.80   219.0   43.00   548.0   42.20   556.0   43.30   589.0
GR  42.6   621.0    43.30   633.0   42.30   714.0   38.70   755.0   38.10   786.0
GR  30.5   814.0    30.50   849.0   36.60   873.0   38.70   895.0   38.30  1000.0
GR  39.7  1121.0    39.30  1257.0   40.20  1517.0   39.70  1737.0   39.50  1926.0
GR  39.5  2083.0    40.10  2200.0
NC .0600  .06000   .04000  .10000  .30000
X1 4.682      16    960.0  1040.0    30.0    30.0    30.0
X2    0.     .00            41.00   40.00     .00            1.500            .000
X3   10.                                                       .00     .00
BT    -9      .0    41.70   41.70   840.0   40.00   40.00   870.0   39.80   39.80
BT     0   910.0    40.00   40.00   960.0   42.30   41.00  1040.0   42.30   41.00
BT     0  1110.0    40.00   40.00  1210.0   40.00   40.00  2100.0   41.00   41.00
GR  41.7      .0    40.00   840.0   39.80   870.0   40.00   910.0   41.00   960.0
GR  37.0   960.0    33.50   971.9   30.90   985.4   29.90  1000.0   31.40  1013.0
GR  33.8  1029.0    37.30  1040.0   41.00  1040.0   40.00  1110.0   40.00  1210.0
GR  41.0  2100.0
NC .0600  .06000   .04000  .10000  .30000
*      1    2.81      1.6      .4      40      41     2.7
*                       6
X1 4.676      16    960.0  1040.0    80.0    80.0    80.0
X3   10.                                                       .00     .00
BT    -9      .0    41.70   41.70   840.0   40.00   40.00   870.0   39.80   39.80
BT     0   910.0    40.00   40.00   960.0   42.30   41.00  1040.0   42.30   41.00
BT     0  1110.0    40.00   40.00  1210.0   40.00   40.00  2100.0   41.00   41.00
GR  41.7      .0    40.00   840.0   39.80   870.0   40.00   910.0   41.00   960.0
GR  37.0   960.0    33.50   971.9   30.90   985.4   29.90  1000.0   31.40  1013.0
GR  33.8  1029.0    37.30  1040.0   41.00  1040.0   40.00  1110.0   40.00  1210.0
GR  41.0  2100.0
NC .0600  .06000   .05000  .10000  .30000
X1 4.661      27   1089.0  1229.0   520.0   520.0   520.0
GR  38.7      .0    39.40    98.0   39.50   143.0   39.00   176.0   40.00   192.0
GR  38.7   352.0    38.10   422.0   39.60   538.0   37.60   748.0   36.50   918.0
GR  34.4   957.0    37.40  1005.0   37.60  1089.0   36.20  1122.0   27.60  1141.0
GR  27.6  1159.0    35.60  1180.0   35.60  1204.0   37.60  1229.0   37.60  1299.0
GR  35.6  1337.0    37.50  1369.0   36.60  1515.0   38.50  1585.0   38.10  1766.0
GR  38.5  1992.0    38.20  2150.0
NC .0600  .06000   .05000  .10000  .30000
X1 4.562      27   1089.0  1229.0   880.0   880.0   880.0
GR  39.3      .0    40.00    98.0   40.10   143.0   39.60   176.0   40.60   192.0
GR  39.3   352.0    38.70   422.0   40.20   538.0   38.20   748.0   37.10   918.0
GR  35.0   957.0    38.00  1005.0   38.20  1089.0   36.80  1122.0   28.20  1141.0
GR  28.2  1159.0    36.20  1180.0   36.20  1204.0   38.20  1229.0   38.20  1299.0
GR  36.2  1337.0    38.10  1369.0   37.20  1515.0   39.10  1585.0   38.70  1766.0
GR  39.1  1992.0    38.80  2150.0
NC .0600  .06000   .05000  .10000  .30000
X1 4.396      29   1011.1  1104.5   630.0   630.0   630.0
GR  39.8      .0    37.80    21.0   39.50    54.0   38.50    82.0   39.70   101.0
GR  39.3   276.0    39.50   416.0   37.00   503.0   34.60   863.0   36.60   906.0
GR  37.8  1000.0    36.69  1011.1   34.25  1016.0   28.00  1028.5   28.00  1041.0
GR  28.0  1048.0    28.00  1054.0   28.00  1081.0   28.00  1088.5   34.25  1101.0
GR  36.0  1104.5    38.50  1117.0   37.30  1201.0   36.20  1245.0   38.00  1295.0
GR  38.2  1363.0    37.30  1471.0   38.20  1668.0   39.80  1950.0
NC .0600  .06000   .05000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH BASIN E-7
X1 4.276      29   1000.0  1117.0   120.0   120.0   120.0
GR  39.8      .0    37.80    21.0   39.50    54.0   38.50    82.0   39.70   101.0
GR  39.3   276.0    39.50   416.0   37.00   503.0   34.60   863.0   36.60   906.0
GR  37.8  1000.0    36.81  1009.9   33.75  1016.0   27.50  1028.5   27.50  1041.0
GR  27.5  1048.0    27.50  1054.0   27.50  1081.0   27.50  1088.5   33.75  1101.0
GR  36.3  1106.2    38.50  1117.0   37.30  1201.0   36.20  1245.0   38.00  1295.0
GR  38.2  1363.0    37.30  1471.0   38.20  1668.0   39.80  1950.0
NC .0600  .06000   .05000  .10000  .30000
X1 4.254      16    950.9  1049.4    80.0    80.0    80.0
X3   10.                                                       .00     .00
BT    -6      .0    39.50   39.50   955.0   37.00   37.00   962.3   37.00   35.70
BT     0  1038.0    37.00   35.70  1045.0   37.00   37.00  2000.0   38.50   38.50
GR  39.5      .0    37.01   950.9   34.98   955.0   31.33   962.3   28.58   967.8
GR  27.4   970.2    27.40   980.0   27.40  1000.0   27.40  1010.0   27.40  1020.0
GR  27.4  1027.0    27.40  1030.2   31.32  1038.0   34.82  1045.0   37.01  1049.4
GR  38.5  2000.0
NC .0600  .06000   .05000  .10000  .30000
*      1    3.61      1.6      .3    35.7      37     2.7
*     39      40       15
X1 4.238      16    951.1  1049.2   140.0     1.0    70.0
X3   10.                                                     36.50   36.50
BT    -6      .0    39.50   39.50   955.0   37.00   37.00   962.3   37.00   35.70
BT     0  1038.0    37.00   35.70  1045.0   37.00   37.00  2000.0   38.50   38.50
GR  39.5      .0    37.01   951.1   35.08   955.0   31.43   962.3   28.68   967.8
GR  27.5   970.2    27.50   980.0   27.50  1000.0   27.50  1010.0   27.50  1020.0
GR  27.5  1027.0    27.50  1030.2   31.42  1038.0   34.92  1045.0   37.01  1049.2
GR  38.5  2000.0
NC .0600  .06000   .05000  .10000  .30000
X1 4.225      30    984.0  1082.7   410.0   410.0   410.0
GR  39.6      .0    41.20    27.0   35.30    72.0   40.60   128.0   36.50   196.0
GR  37.5   248.0    34.60   766.0   36.70   839.0   34.30   902.0   36.30   984.0
GR  36.3   984.2    27.40  1002.0   27.40  1028.0   27.40  1047.0   27.40  1056.0
GR  27.4  1062.0    36.40  1080.0   37.73  1082.7   36.30  1097.0   37.10  1117.0
GR  37.2  1270.0    38.00  1409.0   38.20  1570.0   38.80  1623.0   39.60  1713.0
GR  39.6  1743.0    39.60  1777.0   38.20  1913.0   39.20  1987.0   39.60  2050.0
NC .0600  .06000   .05000  .10000  .30000
* LATERAL INFLOW BASIN E-8
X1 4.148      29    984.0  1082.8   120.0   160.0   141.0
GR  39.6      .0    41.20    27.0   35.30    72.0   40.60   128.0   36.50   196.0
GR  37.5   248.0    34.60   766.0   36.70   839.0   34.30   902.0   36.30   984.0
GR  27.3  1002.0    27.30  1028.0   27.30  1047.0   27.30  1056.0   27.30  1062.0
GR  36.3  1080.0    37.72  1082.8   36.30  1097.0   37.10  1117.0   37.20  1270.0
GR  38.0  1409.0    38.20  1570.0   38.80  1623.0   39.60  1713.0   39.60  1743.0
GR  39.6  1777.0    38.20  1913.0   39.20  1987.0   39.60  2050.0
* SP RAILROAD
X1 4.121      18    878.3   921.8    29.0    29.0    29.0
GR  41.4      .0    41.50   878.3   31.70   878.3   31.70   879.3   27.80   882.4
GR  27.8   887.4    29.30   889.5   29.30   895.5   27.80   897.5   27.80   902.5
GR  29.3   904.5    29.30   910.5   27.80   912.6   27.80   917.6   31.70   920.8
GR  31.7   921.8    41.50   921.8   41.60  1800.0
*     20      20       22      35      22      37
BR     1       5      1.6      .4    48.4    48.5
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BL    36      38        8
*  4.115      18    878.3   921.8    90.0    50.0    70.0
*   41.4      .0    41.50   878.3   31.70   878.3   31.70   879.3   27.80   882.4
*   27.8   887.4    29.30   889.5   29.30   895.5   27.80   897.5   27.80   902.5
*   29.3   904.5    29.30   910.5   27.80   912.6   27.80   917.6   31.70   920.8
*   31.7   921.8    41.50   921.8   41.60  1800.0
*  4.112      23   1228.0  1310.0    31.0    31.0    31.0
*   37.0   130.0    36.00   160.0   36.90   180.0   38.00   220.0   38.00   409.0
*   37.0   521.0    36.90   548.0   37.00   592.0   37.50   668.0   36.10   785.0
*   35.7   940.0    34.20  1025.0   35.10  1087.0   34.20  1147.0   33.70  1200.0
*   34.5  1228.0    31.40  1255.0   27.30  1265.0   27.20  1300.0   34.80  1310.0
*   34.0  1320.0    35.30  1410.0   37.50  1505.0
*  4.106      23   1225.0  1310.0   240.0   215.0   219.0
*   37.0   130.0    36.00   160.0   36.90   180.0   38.00   220.0   38.00   409.0
*   37.0   521.0    36.90   548.0   37.00   592.0   37.50   668.0   36.10   785.0
*   35.7   940.0    34.20  1025.0   35.10  1087.0   34.20  1147.0   35.70  1208.0
*   35.4  1225.0    22.00  1259.0   21.60  1279.0   22.00  1294.0   33.80  1310.0
*   34.0  1320.0    35.30  1410.0   37.50  1505.0
X1 4.064      22   1194.0  1297.0  1050.0  1130.0  1080.0
GR  36.5   137.0    35.50   155.0   36.50   180.0   37.00   200.0   38.00   240.0
GR  37.0   393.0    36.57   460.0   37.12   512.0   40.96   519.0   40.96   710.0
GR  37.0   727.0    35.50   915.0   35.90  1052.0   35.70  1137.0   35.70  1194.0
GR  35.3  1210.0    21.86  1238.0   21.46  1258.0   21.86  1278.0   34.50  1297.0
GR  37.1  1397.0    38.00  1492.0
X1 3.860      21    830.0   937.0    96.0    31.0    66.0
X3   10.                                                       .00     .00
GR  36.0   588.0    35.13   623.0   35.74   632.0   37.11   637.0   36.61   638.0
GR  36.6   697.0    37.11   700.0   37.11   749.0   36.62   750.0   36.20   786.0
GR  36.2   830.0    35.88   846.0   21.19   877.0   20.79   897.0   21.19   917.0
GR  33.6   937.0    34.00  1030.0   35.00  1370.0   36.00  1522.0   37.00  1611.0
GR  38.0  1627.0
X1 3.846       8    100.0   188.0    50.0    50.0    50.0
X3   10.                                                       .00     .00
BT    -6      .0    36.30   36.30   100.0   36.30   36.30   100.0   36.30   34.80
BT     0   188.0    36.30   34.80   188.0   36.30   36.30   288.0   36.30   36.30
GR  36.3      .0    36.30   100.0   32.80   100.0   20.70   124.0   20.70   164.0
GR  32.8   188.0    36.30   188.0   36.30   288.0
*   1.05       3      1.6      .4    34.8    36.3     2.7
*                       6
X1 3.839       8    100.0   188.0   134.0   134.0   134.0
X3   10.                                                       .00     .00
BT    -6      .0    36.30   36.30   100.0   36.30   36.30   100.0   36.30   34.80
BT     0   188.0    36.30   34.80   188.0   36.30   36.30   288.0   36.30   36.30
GR  36.3      .0    36.30   100.0   32.80   100.0   20.70   124.0   20.70   164.0
GR  32.8   188.0    36.30   188.0   36.30   288.0
X1 3.812      22    832.0   937.0   530.0   530.0   530.0
X3   10.                                                       .00     .00
GR  34.8      .0    35.70   299.0   36.00   569.0   35.60   638.0   35.70   680.0
GR  34.5   724.0    37.80   784.0   38.10   832.0   32.10   866.0   22.20   877.0
GR  21.5   888.0    22.20   903.0   23.00   917.0   34.80   937.0   36.20  1102.0
GR  36.3  1216.0    34.50  1285.0   34.80  1423.0   36.80  1463.0   38.80  1751.0
GR  40.2  1934.0    39.00  2100.0
NC .0600  .06000   .04000  .10000  .30000
X1 3.712      16   1017.0  1107.0   910.0   910.0   910.0
X3   10.                                                       .00     .00
GR  35.1      .0    35.50    60.0   34.20   220.0   35.30   357.0   35.00   808.0
GR  35.5   846.0    34.70  1017.0   32.30  1035.0   21.70  1044.0   21.50  1059.0
GR  21.5  1071.0    22.20  1083.0   33.00  1107.0   34.00  1402.0   37.80  1700.0
GR  37.7  1900.0
NH     5   1.110    876.0  .06000  1033.0  .04000  1131.0  .06000  1443.0   1.110
NH 1700.  .00000
X1 3.540      22   1033.0  1131.0   100.0   160.0   130.0
X3   10.                                                       .00     .00
GR  34.8      .0    34.80    87.0   33.70   137.0   35.20   192.0   34.50   350.0
GR  31.3   393.0    33.80   440.0   33.70   520.0   31.70   661.0   33.00   830.0
GR  33.6   876.0    32.50   995.0   32.20  1033.0   30.20  1059.0   21.10  1070.0
GR  20.6  1083.0    20.60  1098.0   21.10  1108.0   33.10  1131.0   33.70  1195.0
GR  35.8  1443.0    35.20  1700.0
NC   .06     .06      .04
X1 3.515      14   1050.0  1130.0    35.0    35.0    35.0
X3   10.                                                       .00     .00
BT    -6      .0    31.40   31.40  1050.0   33.30   33.30  1050.0   35.70   32.00
BT     0  1130.0    35.70   32.00  1130.0   33.30   33.30  2000.0   34.00   34.00
GR  31.4      .0    33.30  1050.0   32.00  1056.0   26.00  1056.0   22.70  1065.0
GR  21.7  1074.6    20.60  1090.0   22.00  1103.0   23.90  1113.9   26.80  1119.0
GR  29.6  1123.9    32.00  1123.9   33.30  1130.0   34.00  2000.0
NC .0600  .06000   .04000  .10000  .30000
*      1     2.8      1.6      .4      32    33.1     2.7
*                       6
* LATERAL INFLOW HYDROGRAPH BASIN E-9
X1 3.508      14   1050.0  1130.0    30.0   110.0    70.0
X3   10.                                                       .00     .00
BT    -6      .0    31.40   31.40  1050.0   33.30   33.30  1050.0   35.70   32.00
BT     0  1130.0    35.70   32.00  1130.0   33.30   33.30  2000.0   34.00   34.00
GR  31.4      .0    33.30  1050.0   32.00  1056.0   26.00  1056.0   22.70  1065.0
GR  21.7  1074.6    20.60  1090.0   22.00  1103.0   23.90  1113.9   26.80  1119.0
GR  29.6  1123.9    32.00  1123.9   33.30  1130.0   34.00  2000.0
NC  0.06  .06000   .04000  .10000  .30000
X1 3.495       6    775.0   850.0    20.0   320.0   170.0
X3   10.                                                       .00     .00
GR  31.4      .0    32.50   775.0   20.40   795.0   20.40   830.0   32.50   850.0
GR  34.0  2000.0
X1 3.463      49    671.8   737.5   115.0   115.0   115.0
X3   10.                                                       .00     .00
BT   -14  327.54    34.88   34.88  396.09   33.15   33.15  492.57    32.7    32.7
BT        568.74    32.42   32.42  629.68   32.36   32.36  676.13   32.64   32.26
BT        679.18    32.57   30.05  730.98   32.66   30.03  739.36   32.64   32.26
BT        754.09    32.36   32.36  809.95    32.3    32.3  881.04   32.52   32.52
BT        985.14    32.91   32.91 1058.77   34.53   34.53
GR 34.94  326.4134.91171  327.5433.19530  396.09   33.16  397.532.71146  492.57
GR  32.7     495     32.4    56532.39466  568.74 32.3076  629.68    32.3     635
GR  32.2   671.8     29.9   675.3    27.8   675.326.83167  676.1323.27333  679.18
GR  20.1   681.9     20.1   695.3      23   697.4      23   698.3    29.9   698.3
GR  29.9   699.3       23   699.3      23   700.2    20.1   702.3    20.1   710.3
GR    23   712.4       23   713.3    29.9   713.3    29.9   714.3      23   714.3
GR    23   715.2     20.1   717.3    20.1   723.2    27.9   727.5    27.9  730.98
GR  27.9     734     29.9     734    32.2   737.532.20496  739.3632.24424  754.09
GR  32.3     775     32.3  809.95    32.3     845    32.5    88032.50297  881.04
GR  32.8    98532.80328   985.1434.52844  1058.77   34.55 1059.69
NC .0600  .06000   .04000  .10000  .30000
*      1       0      1.6      .4    29.9    32.2     2.7
*                       6
X1 3.441      33    671.8   737.5   120.0    20.0    70.0
X3   10.                                                       .00     .00
BT   -14  327.54    34.88   34.88  396.09   33.15   33.15  492.57    32.7    32.7
BT        568.74    32.42   32.42  629.68   32.36   32.36  676.13   32.64   32.26
BT        679.18    32.57   30.05  730.98   32.66   30.03  739.36   32.64   32.26
BT        754.09    32.36   32.36  809.95    32.3    32.3  881.04   32.52   32.52
BT        985.14    32.91   32.91 1058.77   34.53   34.53
GR  33.2   390.0    32.70   495.0   32.40   565.0   32.30   635.0   32.20   671.8
GR  29.9   675.3    27.80   675.3   20.10   681.9   20.10   695.3   23.00   697.4
GR  23.0   698.3    29.90   698.3   29.90   699.3   23.00   699.3   23.00   700.2
GR  20.1   702.3    20.10   710.3   23.00   712.4   23.00   713.3   29.90   713.3
GR  29.9   714.3    23.00   714.3   23.00   715.2   20.10   717.3   20.10   723.2
GR  27.9   727.5    27.90   734.0   29.90   734.0   32.20   737.5   32.30   775.0
GR  32.3   845.0    32.50   880.0   32.80   985.0
NH     4  .06000    801.0  .04000   871.0  .06000  1311.0   1.110  1800.0  .00000
X1 3.428      19    801.0   871.0   300.0   300.0   300.0
X3   10.                                                       .00     .00
GR  33.8      .0    35.80   374.0   32.60   801.0   20.80   820.0   20.50   828.0
GR  19.5   833.0    19.50   843.0   20.80   847.0   20.90   858.0   29.90   871.0
GR  31.9   891.0    32.60  1156.0   32.90  1311.0   31.60  1355.0   33.10  1397.0
GR  34.8  1516.0    32.90  1619.0   35.10  1690.0   35.10  1800.0
NH     4  .06000    801.0  .04000   871.0  .06000  1311.0   1.110  1800.0  .00000
X1 3.371      19    801.0   871.0  1240.0  1140.0  1190.0
X3   10.                                                       .00     .00
GR  33.5      .0    35.50   374.0   32.30   801.0   20.50   820.0   20.20   828.0
GR  19.2   833.0    19.20   843.0   20.50   847.0   20.60   858.0   29.60   871.0
GR  31.6   891.0    32.30  1156.0   32.60  1311.0   31.30  1355.0   32.80  1397.0
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GR  34.5  1516.0   32.60  1619.0   34.80  1690.0   34.80  1800.0
NH     4   .06000   588.0   .04000   653.0   .06000   950.0   1.110  1750.0   .00000
X1 3.146      10   588.0   653.0   160.0   220.0   190.0
X3    10.                           950                .00     .00
GR  33.1      .0   33.10   297.0   30.20   588.0   18.30   617.0   18.30   626.0
GR  28.8   653.0   30.90   950.0   28.40  1106.0   31.90  1311.0   32.60  1750.0
* LATERAL INFLOW HYDROGRAPH BASIN E-10
NC   .06     .06     .04
X1 3.110      11   576.2   663.7    80.0    80.0    80.0
X3    10.                                      .00     .00
BT    -6      .0   32.50   32.50   576.2   31.00   31.00   576.2   33.80   30.40
BT     0   663.7   33.80   30.40   663.7   31.00   31.00  2000.0   31.50   31.50
GR  32.5      .0   31.00   576.2   28.40   581.2   28.10   589.2   19.10   599.3
GR  18.3   620.0   19.10   640.0   28.00   649.4   28.80   658.7   31.00   663.7
GR  31.5  2000.0
*      1     4.2     1.6      .4    30.3      31     2.7
*                      6
X1 3.095      11   576.2   663.7    70.0    70.0    70.0
X3    10.                                      .00     .00
BT    -6      .0   32.50   32.50   576.2   31.00   31.00   576.2   33.80   30.40
BT     0   663.7   33.80   30.40   663.7   31.00   31.00  2000.0   31.50   31.50
GR  32.5      .0   31.00   576.2   28.40   581.2   28.10   589.2   19.10   599.3
GR  18.3   620.0   19.10   640.0   28.00   649.4   28.80   658.7   31.00   663.7
GR  31.5  2000.0
XK   100                                  .7      .02
X1 3.081      20   788.0   883.0   700.0   700.0   700.0
HY DS POWER INN
X3    10.                                      .00     .00
GR  30.2      .0   32.00   100.0   30.50   180.0   28.80   224.0   32.30   281.0
GR  31.5   604.0   29.00   663.0   31.50   715.0   31.10   788.0   18.20   824.0
GR  18.2   834.0   28.30   861.0   31.50   883.0   31.20  1046.0   30.20  1200.0
GR  31.7  1427.0   32.30  1470.0   32.10  1578.0   30.00  1852.0   30.80  2100.0
NC .0600  .06000  .04000  .10000  .30000
X1 2.949      20   788.0   883.0   790.0   790.0   790.0
X3    10.                                      .00     .00
GR  29.2      .0   31.00   100.0   29.50   180.0   27.80   224.0   31.30   281.0
GR  30.5   604.0   28.00   663.0   30.50   715.0   30.10   788.0   17.20   824.0
GR  17.2   834.0   27.30   861.0   30.50   883.0   30.20  1046.0   29.30  1200.0
GR  30.7  1427.0   31.30  1470.0   31.10  1578.0   29.00  1852.0   29.80  2100.0
NH     5  1.110   704.0   .06000  1068.0   .04000  1143.0   .06000  1341.0  1.110
NH 1750.  .00000
X1 2.799      21  1068.0  1143.0   450.0   450.0   450.0
X3    10.                                      .00     .00
GR  29.2      .0   29.80   191.0   27.60   242.0   30.00   283.0   29.50   485.0
GR  30.3   704.0   30.00   879.0   29.10  1068.0   16.50  1100.0   16.50  1121.0
GR  27.1  1143.0   29.20  1182.0   29.50  1251.0   29.50  1341.0   28.60  1374.0
GR  29.5  1405.0   30.00  1510.0   29.10  1610.0   27.90  1646.0   29.40  1690.0
GR  29.1  1750.0
NH     5  1.110   704.0   .06000  1068.0   .04000  1143.0   .06000  1341.0  1.110
NH 1750.  .00000
* LATERAL INFLOW HYDROGRAPH BASIN E-11
X1 2.714      21  1068.0  1143.0   130.0   130.0   130.0
X3    10.                                      .00     .00
GR  29.0      .0   29.60   191.0   27.40   242.0   29.80   283.0   29.30   485.0
GR  30.1   704.0   29.80   879.0   28.90  1068.0   16.30  1100.0   16.30  1121.0
GR  26.9  1143.0   29.00  1182.0   29.30  1251.0   29.30  1341.0   28.40  1374.0
GR  29.3  1405.0   29.80  1510.0   28.90  1610.0   27.70  1646.0   29.20  1690.0
GR  28.9  1750.0
NC   .06     .06     .04
X1 2.689      12   702.8   737.2    60.0    60.0    60.0
X3    10.                                             27.60   28.70
*  ....
BT    -9   680.0   27.60   27.60   688.0   27.60   27.60   688.0   28.80   27.60
BT     0   702.8   28.80   25.10   737.2   28.80   25.10   751.0   28.80   28.70
BT     0   751.0   28.70   28.70   767.0   29.00   29.00   867.0   29.60   29.60
GR  29.0      .0   27.60   680.0   27.60   688.0   25.10   702.8   16.50   702.8
GR  16.2   714.2   16.20   725.9   16.50   737.2   25.10   737.2   28.70   751.0
GR  29.0   767.0   29.60   867.0
NC .0600  .06000  .04000  .10000  .30000
*      .9     1.4     1.6      .4    25.1    27.6     2.7
*                      6
X1 2.678      12   702.8   737.2    50.0    50.0    50.0
X3    10.                                             27.00   28.70
BT    -9   680.0   27.60   27.60   688.0   27.60   27.60   688.0   28.80   27.60
BT     0   702.8   28.80   25.10   737.2   28.80   25.10   751.0   28.80   28.70
BT     0   751.0   28.70   28.70   767.0   29.00   29.00   867.0   29.60   29.60
GR  29.0      .0   27.60   680.0   27.60   688.0   25.10   702.8   16.50   702.8
GR  16.2   714.2   16.20   725.9   16.50   737.2   25.10   737.2   28.70   751.0
GR  29.0   767.0   29.60   867.0
NH     5  1.110   600.0   .06000   707.0   .04000   770.0   .06000   821.0  1.110
NH 1600.  .00000
X1 2.668      17   707.0   770.0   320.0   320.0   320.0
X3    10.                                      .00     .00
GR  28.2      .0   27.60   323.0   28.50   600.0   27.30   707.0   16.60   715.0
GR  15.9   726.0   15.90   739.0   16.20   749.0   27.20   770.0   28.40   821.0
GR  28.4   986.0   27.20  1189.0   26.70  1310.0   28.90  1338.0   27.40  1452.0
GR  28.9  1561.0   27.10  1600.0
NH     5  1.110   600.0   .06000   707.0   .04000   770.0   .06000   821.0  1.110
NH 1600.  .00000
X1 2.608      17   707.0   770.0  1030.0  1030.0  1030.0
X3    10.                                      .00     .00
GR  28.2      .0   27.60   323.0   28.50   600.0   27.30   707.0   16.60   715.0
GR  15.9   726.0   15.90   739.0   16.20   749.0   27.20   770.0   28.40   821.0
GR  28.4   986.0   27.20  1189.0   26.70  1310.0   28.90  1338.0   27.40  1452.0
GR  28.9  1561.0   27.10  1600.0
NC   .06     .06     .04
X1 2.413      19   970.0  1043.0   350.0   430.0   390.0
X3    10.                                      .00     .00
GR  27.3      .0   27.30    67.0   26.80   102.0   26.20   355.0   25.30   800.0
GR  26.0   970.0   15.10  1001.0   15.10  1014.0   26.50  1043.0   26.90  1093.0
GR  27.0  1141.0   27.00  1220.0   25.20  1267.0   27.40  1308.0   29.10  1531.0
GR  29.1  1633.0   28.10  1702.0   26.50  1738.0   26.50  1750.0
NC .0600  .06000  .04000  .10000  .30000
X1 2.339      19   970.0  1043.0   350.0   250.0   300.0
X3    10.                                             26.80   26.80
GR  27.0      .0   27.00    67.0   26.50   102.0   25.90   355.0   25.00   800.0
GR  25.7   970.0   14.80  1001.0   14.80  1014.0   26.20  1043.0   26.60  1093.0
GR  26.7  1141.0   26.70  1220.0   24.90  1267.0   27.10  1308.0   28.80  1531.0
GR  28.8  1633.0   27.80  1702.0   26.20  1738.0   26.20  1750.0
* STOCKTON BLVD.
* LATERAL INFLOW HYDROGRAPH BASIN E-12
X1 2.282      28   452.5   505.5    80.0    80.0    80.0
X3    10.                                      .00     .00
* BT   -6   452.5   27.00   27.00   452.5   28.00   25.10   505.5   28.00   25.10
* BT    0   505.5   27.00   27.00
GR  27.0      .0   27.00   440.0   27.00   452.5   19.50   452.5   19.50   455.0
GR  14.9   458.0   14.90   464.5   19.10   467.5   19.10   469.5   25.10   469.5
GR  25.1   471.0   19.10   471.0   19.20   473.0   14.80   475.5   14.80   482.0
GR  19.4   485.5   19.00   487.5   25.10   487.5   25.10   489.0   19.00   489.0
GR  19.0   491.0   14.80   493.5   14.90   500.5   19.30   503.5   19.30   505.5
GR  27.0   505.5   27.00   518.0   27.00  1100.0
BR     1      .1     1.6      .4    25.1    27.1     2.7
WD     1     2.7    27.1     100
BL                     7
X1 2.267      28   452.5   505.5    50.0    50.0    50.0
X3    10.                                      .00     .00
GR  27.0      .0   27.00   440.0   27.00   452.5   19.50   452.5   19.50   455.0
GR  14.9   458.0   14.90   464.5   19.10   467.5   19.10   469.5   25.10   469.5
GR  25.1   471.0   19.10   471.0   19.20   473.0   14.80   475.5   14.80   482.0
GR  19.4   485.5   19.00   487.5   25.10   487.5   25.10   489.0   19.00   489.0
GR  19.0   491.0   14.80   493.5   14.90   500.5   19.30   503.5   19.30   505.5
GR  27.0   505.5   27.00   518.0   27.00  1100.0
NC .0600  .06000  .01500  .10000  .30000
X1 2.257      11   225.5   293.8   200.0   160.0   180.0
HY DS STOCKTON
X3    10.                                      .00     .00
GR  27.2   181.0   26.50   200.0   25.21   206.7   24.83   225.5   14.91   237.3
GR  14.2   249.2   14.06   260.1   14.86   261.5   15.40   276.9   26.41   293.8
GR  26.2   329.0
*
*
* NH RECORDS CHANGED TO NC RECORDS FOR CALIBRATION
*
*
*
NC .0600  .0600  .0150
* N     7  .06000   204.0  .04000   225.0  .01500   239.0  .04000   254.0  .01500
* N 271.  .04000   291.9  .06000   321.0  .00000
X1 2.223      15   204.0   291.9   115.0   140.0   125.0
X3    10.                                      .00     .00
GR  24.3   121.0   25.00   143.0   26.00   158.0   26.10   180.0   26.00   200.0
GR  25.1   204.0   14.72   225.0   14.40   239.0   14.57   254.0   13.54   256.9
GR  13.3   269.6   14.14   271.1   17.26   284.5   25.83   291.9   25.80   321.0
* N     7  .06000   204.0  .04000   225.0  .01500   240.0  .04000   250.0  .01500
* N 267.  .04000   289.7  .06000   323.0  .00000
X1 2.200      18   204.0   289.7   215.0   215.0   215.0
X3    10.                                      .00     .00
GR  24.0    53.0   23.40   114.0   25.00   154.0   25.60   181.0   25.20   200.0
GR  24.5   204.0   14.47   225.0   14.15   240.0   14.16   250.0   13.21   253.8
GR  13.1   265.7   14.08   267.0   15.87   271.6   16.35   280.4   25.22   289.7
GR  25.5   292.1   25.60   304.0   25.00   323.0
* N     7  .06000   204.0  .04000   226.0  .01500   240.0  .04000   252.0  .01500
* N 267.  .04000   287.6  .06000   309.0  .00000
X1 2.159      13   204.0   287.6   320.0   320.0   320.0
X3    10.                                      .00     .00
GR  25.0   187.0   24.44   200.0   24.47   204.0   14.38   226.0   14.14   240.0
GR  14.2   252.0   13.09   253.8   13.10   266.1   13.81   267.0   14.83   279.0
GR  23.4   287.6   23.84   291.4   24.50   309.0
* N     7  .06000   204.0  .04000   225.0  .01500   239.0  .04000   253.0  .01500
* N 267.  .04000   288.5  .06000   309.0  .00000
X1 2.098      15   204.0   288.5   300.0   300.0   300.0
HY GAGE 1735
X3    10.                                      .00     .00
GR  24.0   165.0   23.20   185.0   23.95   200.0   24.10   204.0   13.81   225.0
GR  13.6   239.0   13.60   253.0   12.67   254.4   12.67   266.0   13.37   267.1
GR  15.3   280.3   23.38   288.5   23.88   290.7   25.00   299.0   25.90   309.0
* N     7  .06000   204.0  .04000   225.0  .01500   239.0  .04000   253.0  .01500
* N 267.  .04000   289.0  .06000   303.0  .00000
X1 2.042      16   204.0   289.0   280.0   330.0   350.0
X3    10.                                      .00     .00
GR  23.9   162.0   23.00   177.0   22.70   186.0   23.46   200.0   23.42   204.0
GR  13.7   225.0   13.58   239.0   13.30   253.0   12.40   254.3   12.36   266.1
GR  13.3   267.4   14.24   279.6   22.60   289.0   23.32   291.3   24.00   296.0
GR  25.0   303.0
* N     7  .06000   204.0  .04000   225.0  .01500   238.0  .04000   253.0  .01500
* N 269.  .04000   292.5  .06000   326.0  .00000
X1 1.975      14   204.0   292.5   130.0   180.0   160.0
HY US OF 85
X3    10.                                      .00     .00
GR  25.0   146.0   24.00   155.0   22.87   200.0   23.10   204.0   13.41   225.0
GR  13.3   238.0   13.11   253.0   11.93   255.8   11.98   267.6   13.02   269.2
GR  14.7   263.3   22.25   292.5   23.42   308.3   23.80   326.0
*
* ++++++++++++++++++++++++++++++++++++++++
*
*   OFF-LINE DETETENTION BASIN NO. E-5
*
SA    13       0
SV  12.9       0    14.9      13    16.9      28    20.9      58    22.9      75
HS BASIN E5
SC     0     -13
CC     2    12.9    12.8      40    .016       1      -1
CL
LA    13
WD     2     3.0    29.0      30    29.5     100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
* N     7  .06000   205.0  .04000   231.0  .01500   240.0  .04000   252.0  .01500
* N 268.  .04000   291.5  .06000   355.0  .00000
X1 1.945      14   205.0   291.5    50.0    50.0    50.0
HY DS OF E5
X3    10.                                      .00     .00
GR  25.5   180.0   25.50   200.0   25.22   205.0   13.08   231.0   12.83   240.0
GR  12.8   252.0   11.92   254.5   11.87   266.8   12.77   268.3   13.13   280.2
GR  22.8   291.5   23.48   303.1   24.00   331.0   25.00   355.0   24.00   391.9   .06000
* N     5  .06000   220.0  .04000   241.0  .01500   268.7  .04000
* N 324.  .00000
X1 1.935      14   220.0   291.9    80.0    30.0    55.0
X3    10.                                      .00     .00
GR  26.0   173.0   26.20   191.0   26.00   200.0   25.78   204.3   22.97   220.0
GR  13.0   241.0   12.71   250.0   12.64   253.0   11.95   266.7   12.64   268.7
GR  12.8   279.4   23.28   291.9   23.99   300.0   25.00   324.0
NC   .06     .06     .015
X1 1.925      13   211.0   277.0    50.0    80.0    60.0
X3    10.                                      .00     .00
GR  25.0    33.0   22.00    95.0   22.00   162.0   23.00   180.0   23.40   200.0
GR  23.3   203.0   23.70   211.0   12.30   222.0   12.18   263.0   23.70   277.0
GR  24.0   285.0   25.00   306.0   25.60   371.0
* LATERAL INFLOW HYDROGRAPH BASIN E-13
X1 1.914      34   824.0   888.0   190.0   190.0   190.0
X3    10.                                      .00     .00
BT    -6   814.0   25.90   25.90   824.0   25.90   25.90   824.0   27.80   24.30
BT     0   888.0   27.90   24.40   888.0   25.90   25.90   898.0   25.90   25.90
GR  26.6      .0   25.90   814.0   25.90   824.0   21.30   824.0   13.40   830.5
GR  13.4   835.0   16.80   837.5   16.80   839.3   24.30   839.3   24.30   840.6
GR  16.8   840.6   16.80   842.5   10.80   846.0   10.80   851.0   16.80   853.5
GR  16.7   855.6   24.40   855.6   24.40   856.9   16.70   856.9   16.70   859.0
GR  10.7   862.0   10.80   868.5   16.80   870.0   16.70   871.6   24.40   871.6
GR  24.4   872.9   16.70   872.9   16.70   874.5   13.70   877.0   13.60   882.5
GR  19.7   888.0   25.90   888.0   25.90   898.0   29.20  1300.0
NC .0600  .06000  .01500  .10000  .30000
*      1      .1     1.6      .4    23.8    26.6     2.7
*                      6
X1 1.878      34   824.0   888.0    50.0    50.0    50.0
HY AT CITY BDRY
X3    10.                                      .00     .00
BT    -6   814.0   25.90   25.90   824.0   25.90   25.90   824.0   27.80   24.30
BT     0   888.0   27.90   24.40   888.0   25.90   25.90   898.0   25.90   25.90
GR  26.6      .0   25.90   814.0   25.90   824.0   21.30   824.0   13.40   830.5
GR  13.4   835.0   16.80   837.5   16.80   839.3   24.30   839.3   24.30   840.6
GR  16.8   840.6   16.80   842.5   10.80   846.0   10.80   851.0   16.80   853.5
GR  16.7   855.6   24.40   855.6   24.40   856.9   16.70   856.9   16.70   859.0
GR  10.7   862.0   10.80   868.5   16.80   870.0   16.70   871.6   24.40   871.6
GR  24.4   872.9   16.70   872.9   16.70   874.5   13.70   877.0   13.60   882.5
GR  19.7   888.0   25.90   888.0   25.90   898.0   29.20  1300.0
X1 1.868      17   814.0   886.0  1015.0  1005.0  1010.0
X3    10.                                             25.10   25.10
GR  26.2      .0   26.30   166.0   24.30   189.0   25.60   238.0   23.30   289.0
GR  25.8   328.0   25.20   671.0   23.20   790.0   23.00   814.0   11.50   833.0
GR  10.5   848.0   10.50   861.0   26.60   886.0   25.60   910.0   25.70  1079.0
GR  25.7  1231.0   26.80  1500.0
NC .0600  .06000  .03000  .10000  .30000
X1 1.677      10   809.0   882.0   950.0   970.0   960.0
X3    10.                                      .00     .00
GR  23.8      .0   23.80   357.0   22.60   809.0    8.80   843.0    8.80   853.0
GR  22.7   882.0   21.70   966.0   20.10  1016.0   21.10  1243.0   21.00  1450.0
NC .0600  .06000  .03000  .10000  .30000
X1 1.495      24   819.0   887.0   860.0   815.0   840.0
X3    10.                                             21.40     .00
GR  22.5      .0   22.30    94.0   20.60   101.0   21.80   112.0   23.30   155.0
GR  21.7   200.0   23.00   222.0   22.60   319.0   21.70   395.0   23.60   471.0
GR  22.0   531.0   22.80   585.0   20.00   800.0   21.10   819.0    8.50   852.0
GR   8.5   864.0   21.30   887.0   19.00  1028.0   20.20  1082.0   21.20  1150.0
GR  18.6  1281.0   20.80  1330.0   22.20  1539.0   22.80  1600.0
X1 1.336      13   152.5   219.4   120.0   160.0   140.0
X3    10.                                             .00     21.00
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GR  21.3   110.5   20.80   150.0   20.10   152.5   11.60   167.4    8.40   184.3
GR   7.5   185.8    7.60   196.6   10.80   199.7   13.30   206.5   13.28   206.5
GR  20.3   217.2   20.40   219.4   20.30   266.5
* CENTER PARKWAY
X1 1.310      15   760.0   845.1    76.0    76.0    76.0
X3   10.                                      .00     .00
BT    -2     760    21.2    19.7     845    21.2    19.7
GR  20.9      .0   21.20   760.0   19.10   760.1   19.10   764.6   14.90   772.9
GR   8.2   785.0    6.50   787.0    6.60   799.0    8.20   801.0    8.30   815.5
GR  14.5   825.0   19.10   840.6   19.10   845.0   21.20   845.1   20.90  1600.0
*     1     3.7     1.6      .4    19.7    21.2     2.7
*                     6
* LATERAL INFLOW HYDROGRAPH BASIN E-14
X1 1.295      15   760.0   845.1    50.0    50.0    50.0
HY DS CENTER PKWY
X3   10.                    760                     .00     .00
BT    -2     760    21.2    19.7     845    21.2    19.7
GR  20.9      .0   21.20   760.0   19.10   760.1   19.10   764.6   14.90   772.9
GR   8.2   785.0    6.50   787.0    6.60   799.0    8.20   801.0    8.20   815.5
GR  14.5   825.0   19.10   840.6   19.10   845.0   21.20   845.1   20.90  1600.0
X1 1.286      13   152.4   220.6   120.0   120.0   120.0
X3   10.                                      .00     .00
GR  20.6   100.0   20.80   150.0   20.20   152.4   11.70   164.6    8.00   181.0
GR   7.1   182.3    7.20   194.2    9.30   196.2   11.40   204.3   12.53   206.6
GR  19.7   218.1   20.80   220.6   21.00   270.6
X1 1.263      12   100.0   191.0   607.0   607.0   607.0
X3   10.                                      .00     .00
GR  20.4    88.0   20.80   100.0   18.16   104.5   17.40   106.6   10.40   127.0
GR   8.0   137.0    7.10   138.4    7.10   150.5    8.00   152.5    9.00   160.0
GR  20.0   179.0   21.00   191.0
X1 1.148      11   150.0   219.8  1050.0  1050.0  1050.0
X3   10.                                    20.50   20.50
GR  16.8    97.0   16.90   141.0   19.80   150.0    9.80   169.0    8.00   184.2
GR   7.0   185.7    6.90   196.4    9.80   199.2   13.14   207.0   19.90   219.8
GR  19.8   270.0
X1  .949      12   150.0   219.4   600.0   600.0   600.0
X3   10.                                      .00     .00
GR  17.0   103.9   16.60   119.9   19.40   150.0   19.00   152.1    9.00   169.7
GR   7.4   183.8    6.50   185.6    6.60   196.3    9.00   199.0   11.44   205.9
GR  19.4   219.4   18.40   269.9
X1  .835      10   150.0   218.8   100.0   100.0   100.0
X3   10.                                    18.80     .00
GR  16.5    97.5   18.50   150.0   10.10   165.1    6.90   184.5    6.00   185.6
GR   6.2   196.3    8.40   198.5   17.38   215.2   19.10   218.8   18.80   269.2
X1  .817      11   829.0   905.0    60.0    60.0    60.0
X3   10.                                      .00     .00
BT    -6     729    18.00   18.00     829    18.20    18.2     829    20.20   18.20
BT     0     905    19.80   17.80     905    19.80   19.80    1000    18.00   18.00
GR  18.0   729.0   19.40   829.0   16.70   829.0   16.70   833.0   10.00   846.0
GR   6.0   867.0    7.00   884.0   16.70   901.0   16.70   905.0   19.40   905.0
GR  18.0  1000.0
*     1       2     1.6      .4      18      20     2.7
*                     6
X1  .805      11   829.0   905.0    50.0    50.0    50.0
X3   10.                                      .00     .00
BT    -6     729    18.00   18.00     829    18.20    18.2     829    20.20   18.20
BT     0     905    19.80   17.80     905    19.80   19.80    1000    18.00   18.00
GR  18.0   729.0   19.40   829.0   16.70   829.0   16.70   833.0   10.00   846.0
GR   6.0   867.0    7.00   884.0   16.70   901.0   16.70   905.0   19.40   905.0
GR  18.0  1000.0
X1  .796      11   150.0   217.7   190.0   190.0   190.0
X3   10.                                      .00     .00
GR  18.4   100.7   18.90   150.0    8.80   171.8    6.80   183.6    5.90   185.3
GR   5.9   196.1    8.00   198.1   19.30   217.7   19.28   217.7   19.30   231.6
GR  18.3   281.7
X1  .760      12   102.0   170.3   470.0   470.0   470.0
X3   10.                                      .00     .00
GR  16.6    49.9   18.40   100.0   18.20   102.0    8.50   121.0    6.90   134.2
GR   5.9   135.8    5.90   146.3    8.30   148.9   14.87   161.9   18.60   170.3
GR  17.6   174.1   17.40   222.1
X1  .671      12   100.0   167.2   443.0   443.0   443.0
X3   10.                                      .00     .00
GR  17.9    50.0   18.60   100.0    9.90   114.3    7.30   123.0    6.50   133.3
GR   5.6   134.7    5.80   145.6    7.60   147.9   12.73   158.2   17.90   167.2
GR  18.2   169.3   16.70   218.2
X1  .587      10   100.0   167.8    68.0    68.0    68.0
X3   10.                                      .00     .00
GR  17.4    50.2   18.20   100.0    6.20   134.1    5.40   135.2    5.40   146.5
GR   7.9   149.2   12.21   158.2   18.10   167.8   18.40   169.3   18.40   219.3
X1  .574      14   282.7   363.3     5.0     5.0     5.0
X3   10.                                      .00     .00
GR  18.0   200.0   18.90   261.4   18.70   282.7    8.60   301.7    6.10   323.1
GR   5.5   325.3    5.30   338.5    6.10   339.4   18.07   363.3   18.20   363.8
GR  18.7   370.5   17.60   377.1   17.00   418.5   17.30   458.5
X1  .573      21   298.5   378.5   105.0   105.0   105.0
X3   10.                                      .00     .00
BT    -7     198    18.40   18.40     248    18.80    18.8     298    19.70   17.70
BT     0     342    19.60   17.70     378    19.60    17.7     428    19.00   19.00
BT     0     528    18.30   18.30
GR  18.4   198.5   18.80   248.5   19.70   298.5   18.80   299.0   18.90   303.0
GR  14.8   303.9   14.70   306.0    8.00   316.6    6.40   332.5    5.60   333.3
GR   5.5   342.4    6.70   343.4    9.60   362.9   15.30   370.5   15.10   373.9
GR  18.6   374.8   18.40   378.0   19.60   378.5   19.00   428.5   19.00   478.5
GR  18.3   528.5
*   1.05      2.5     1.6      .4    17.7    19.6     2.7
*                     6
* FLORIN CREEK INFLOW HYDROGRAPH ENTERS HERE
X1  .553      21   298.5   378.5    58.0    53.0    58.0
X3   10.                                      .00     .00
BT    -7     198    18.40   18.40     248    18.80    18.8     298    19.70   17.70
BT     0     342    19.60   17.70     378    19.60    17.7     428    19.00   19.00
BT     0     528    18.30   18.30
GR  18.4   198.5   18.80   248.5   19.70   298.5   18.80   299.0   18.90   303.0
GR  14.8   303.9   14.70   306.0    8.00   316.6    6.40   332.5    5.60   333.3
GR   5.5   342.4    6.70   343.4    9.60   362.9   15.30   370.5   15.10   373.9
GR  18.6   374.8   18.40   378.0   19.60   378.5   19.00   428.5   19.00   478.5
GR  18.3   528.5
X1  .542      16   226.4   302.1   780.0   780.0   780.0
X3   10.                                      .00     .00
GR  13.8   160.0   13.70   180.0   13.80   201.1   18.10   209.4   18.50   226.4
GR  10.4   235.2   10.60   248.6    6.70   257.3    6.90   270.3    5.30   272.7
GR   5.4   284.4   18.20   302.1   18.35   310.0   18.30   316.1   16.90   321.8
GR  16.7   370.0
NC   .06      .06    .035      .1      .3
X1  .394      16   199.3   278.8      32      32      32
HY AT END
X3   10.                                      .00     .00
GR  13.8   150.0   14.30   179.1   18.20   188.5   18.30   199.3    6.70   218.2
GR   6.5   234.3    4.90   236.7    4.80   248.5    6.60   250.9    6.80   261.5
GR  18.0   278.8   18.30   284.0   18.10   290.9   13.30   299.1   13.00   303.7
GR  12.9   349.0
*
*
* THIS SECTION PROVIDED BY SACRAMENTO COUNTY DIVISION OF WATER RESOURCES
* BASED ON AN HEC-2 FILE DEVELOPED BY THE CITY OF SACRAMENTO
*
* ---------------------------------------------------------------------------

*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAF 5/93
*
X1 0.368      23   199.3   278.8     910     910     910
* CI    -1             .015         2       2
X3    10       0       0   179.1       0       0       0       0       0
GR     0       0       0       0       0       0       0       0       0       0
GR     0       0       0       0    13.8     150    14.3   179.1    18.2   188.5
GR  18.3   199.3     6.7   218.2     6.5   234.3     4.9   236.7     4.8   248.5
GR   6.6   250.9     6.8   261.5      18   278.8    18.3     284    18.1   290.9
GR  13.3   299.1      13   303.7    12.9     349
*
*
*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAF 5/93
* LENGTH (X1.5-7) CHANGED PER PLANS AND AIR PHOTO               - MAF 5/93
* REPOSITION SECTION 0.536 AT SECOND 70-DEGREE BEND             - MAF 5/93
*
*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAF 5/93
* THIS IS A CHANGE FROM CDM STUDY, WHICH USED AN ARTIFICIAL
* CROSS SECTION HERE, COPIED FROM ACTUAL SECTION 0.388          - MAF 5/93
*
* END EXISTING RESIDENTIAL DEVELOPMENT ON RIGHT BANK
* FOR EXISTING CONDITIONS
* DISCONTINUE X3.6 TO ENABLE RIGHT OVERBANK FLOW                - MAF 5/93
*
X1 0.216      16   215.7   294.6      70      70      70
* CI    -1 .000286    .015         2       2    -.01
X3    10       0       0   194.2       0       0       0       0       0
GR    13     145    13.2   194.2      18   203.6      18   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    18.1     300    17.9   305.8    12.8   314.7    12.8   318.3
GR  12.7     360
*
* THIS ARTIFICIAL CROSS SECTION IS A COPY OF 0.216              - MAF 5/93
* IT DOES NOT APPEAR IN PREVIOUS STUDIES                        - MAF 5/93
*
X1 0.200      16   215.7   294.6    1200    1200    1200
* CI    -1 .000286    .015         2       2    -.01
X3    10       0       0   194.2       0   318.3       0       0       0
GR    13     145    13.2   194.2      18   203.6      18   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    18.1     300    17.9   305.8    12.8   314.7    12.8   318.3
GR  12.7     360
*
* MARTIN FARBER (MAF) - MAY 1993
* FILE "ELDTEST.DAT" IS USED TO TEST CHANNEL IMPROVEMENTS       - MAF 5/93
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE  - MAF 5/93
*
* SET J1.2 TO RUN N-TH FLOW IN "QT" RECORD                      - MAF 5/93
* SET CONCURRENT MORRISON CREEK WATER SURFACE ELEV. IN J1.9     - MAF 5/93
* WARNING!! THIS ELEVATION NOT VERIFIED                         - MAF 5/93
*
* J1.2 AND J1.9 SET FOR 100-YEAR EVENT                          - MAF 5/93
*
*
* SET J2.8 TO READ N-TH FIELD IN "CI" RECORD
*
*
* SET J3 TO SHOW CHANNEL N-VALUE IN SUMMARY PRINTOUT FIELD 10   - MAF 5/93
*
*
* SET N=0.035 FOR UNLINED CHANNEL                               - MAF 5/93
* THIS CONFORMS TO 1988 FEMA AND 1990-92 CDM STUDIES            - MAF 5/93
* NOTE: LINED LOW FLOW CHANNEL EXISTS, ABOUT 13 FEET WIDE;
* IT DOES NOT GO ALL THE WAY ACROSS THE CHANNEL BOTTOM          - MAF 5/93
* NOTE: SPINK CORP USED N=0.030 IN VALLEY HIGH 29-A LOMR STUDY  - MAF 5/93
*
*
* SET QT ACCORDING TO CDM/ENSIGN & BUCKLEY 1991 HEC-1 HYDROLOGY - MAF 5/93
*
* SET QT.2 TO QT.6 = 10-, 50-, 100-, 200-, AND 500-YEAR FLOW    - MAF 5/93
*
* SET NEXT QT RECORD FOR POINT 12, HEC-1 ID "ELDER"             - MAF 5/93
*
*
* BEGIN AT CONFLUENCE FIRST CROSS SECTION                       - MAF 5/93
* FROM CITY SURVEY, 9/14/1987                                   - MAF 5/93
*
* THIS IS A CHANGE FROM CDM STUDY, WHICH USED AN ARTIFICIAL
* CROSS SECTION HERE, COPIED FROM ACTUAL SECTION 0.388          - MAF 5/93
*
X1 0.019      12   196.8   278.7       0       0       0
*
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE  - MAF 5/93
* FOR EXISTING CHANNEL GEOMETRY ALL CI RECORDS ARE SUPPRESSED   - MAF 5/93
*
* CI    -1      6.5    .015         2       2    -.01
*
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE  - MAF 5/93
*
* BEGIN LEVEES BOTH SIDES OF CHANNEL                            - MAF 5/93
* SET X3.1 = 10 FOR LEVEES                                      - MAF 5/93
*
* BEGIN SINGLE FAMILY RESIDENTIAL BOTH SIDES                    - MAF 5/93
* OVERBANK FLOW SEVERELY IMPAIRED BY DEVELOPMENT                - MAF 5/93
* SET X3.4 AND X3.6 TO CONFINE ALL FLOW WITHIN FENCE LINE       - MAF 5/93
* THIS IS A CHANGE FROM CDM, WHICH SUPPRESSED ALL OVERBANK FLOW - MAF 5/93
*
X3    10       0       0     177       0     300       0       0       0
GR  15.5   176.2      14     177    17.4   186.2    17.6   196.8     5.8   216.2
GR   5.6   229.7     5.8   247.6     5.5   257.6    17.5   278.7    17.5   289.6
GR  13.1     300    14.1   301.2
*
*
DB
EJ
```

ELDER AND GERBER CREEKS
UNET GEOMETRY FILE NO. 4

INTERIM CONDITIONS ON ELDER AND GERBER CREEKS WITH THE NVSSP IN PLACE

FILENAME: EGSTAL2.CS

```
PR ON
*
*  STAND ALONE CONDITIONS FILE - SPA DETENTION BASINS ONLY
*  FILE NAME: EGSTAL2.CS
*
*  NETWORK ANALYSIS FOR ELDER AND GERBER CREEKS, MAY, 1996
*  THIS FILE IS BASED ON THE HEC-2 ANALYSIS FOR THE EFFECTIVE FLOOD
*  INSURANCE STUDY AND AN UPDATED HEC-2 MODEL PREPARED BY MCKAY &
*  SOMPS FOR THE VINEYARD STATION S.P.A.
*
*
*  THE FOLLOWING MODIFICATIONS ARE INCLUDED:
*  1. THE SMALLER, PERCHED BRIDGES WERE CHANGED FROM THE SPECIAL BRIDGE
*     METHOD TO THE NORMAL BRIDGE.
*  2. MINOR CORRECTIONS WERE MADE TO THE EFFECTIVE FLOOD INSURANCE STUDY FILES
*  3. SOME OF THE SECTIONS WERE LENGTHENED TO REFLECT ACTUAL FLOODPLAIN STORAGE
*  4. ALL SECTION NUMBERS ARE CHANGED TO RIVER MILES.
*  5. THE SECTIONS ARE ORDERED FROM UPSTREAM TO DOWNSTREAM.
*
*
*
*  PREPARED FOR SACRAMENTO COUNTY, WATER RESOURCES DIVISION, BY DOUGLAS HAMILTON
*
*
*  REACH 1 = UPPER ELDER CREEK
*  REACH 2 = GERBER CREEK
*  REACH 3 = LOWER ELDER CREEK
*
*
*
*   THIS FILE IS FOR VERSION 2.1 OF UNET.
*
*
*
T1 ELDER CREEK UPPER
T2      UNET CROSS SECTIONS FROM MCKAY AND SOMPS & SACRAMENTO COUNTY
T3      INTERIM  CONDITIONS GEOMETRY FILE        6-96
*
*
*  THIS IS REACH 1
*
*
J1
*
*
XK   100                              0.70    .0150
XI   .010
*
UB
*
*
NC .0600  .06000  .04000  .10000  .30000
X111.821       6   594.3   605.7    50.0    50.0    50.0
X3   10.                                        .00     .00
GR 100.0      .0   90.10   594.3   83.20   594.3   83.20   605.7   90.10   605.7
GR  90.6  1100.0
NH      5   1.110   585.0  .06000   626.0  .04000   689.0  .06000   796.0   1.110
NH 1000.  .00000
X111.811      19   626.0   689.0   180.0   180.0   180.0
*  HY SECTION 11.811
GR 107.5      .0  103.00    85.0  101.70    95.0  101.70   142.0  105.50   151.0
GR  99.5   168.0   93.20   277.0   90.20   385.0   89.30   438.0   90.70   479.0
GR  88.0   504.0   85.00   585.0   84.50   626.0   84.00   666.0   86.80   689.0
GR  86.8   796.0   89.80   892.0   90.00   969.0   90.10  1000.0
NH      5   1.110   479.0  .06000   626.0  .04000   689.0  .06000   892.0   1.110
NH 1000.  .00000
X111.777      19   626.0   689.0   980.0   980.0   980.0
GR 107.5      .0  103.00    85.0  101.70    95.0  101.70   142.0  105.50   151.0
GR  99.5   168.0   93.20   277.0   90.20   385.0   89.30   438.0   90.70   479.0
GR  88.0   504.0   85.00   585.0   84.50   626.0   84.00   666.0   86.80   689.0
GR  86.8   796.0   89.80   892.0   90.00   969.0   90.10  1000.0
NH      5   1.110   338.0  .06000   555.0  .04000   579.0  .06000   678.0   1.110
NH 1100.  .00000
X111.592      20   555.0   579.0   890.0   890.0   890.0
GR 108.2      .0  108.70    15.0  108.80    54.0  102.30    90.0    94.60   161.0
GR  90.5   233.0   85.20   338.0   83.30   427.0   83.00   519.0   83.00   555.0
GR  81.3   560.0   81.30   569.0   83.80   579.0   86.00   678.0   89.70   736.0
GR  94.0   803.0   95.00   845.0   94.10   902.0   91.20   970.0   87.10  1100.0
NH      5   1.110   244.0  .06000   439.0  .04000   450.0  .06000   603.0   1.110
NH  676.  .00000
X111.423      12   439.0   450.0   600.0   560.0   580.0
GR  88.6      .0   87.00    59.0   84.00   244.0   82.00   369.0   81.00   439.0
GR  79.7   442.0   79.70   445.0   81.50   450.0   81.50   484.0   83.80   547.0
GR  84.3   603.0   84.00   676.0
NH      5   1.110   367.0  .06000   730.0  .04000   762.0  .06000  1042.0   1.110
NH 1250.  .00000
X111.313      20   730.0   762.0   680.0   720.0   700.0
*  HY SECTION 11.313
GR  84.0      .0   84.70    34.0   82.20   148.0   83.50   212.0   84.50   263.0
GR  85.0   367.0   84.70   462.0   82.10   569.0   81.10   648.0   80.30   730.0
GR  78.7   737.0   78.70   742.0   81.00   762.0   80.50   873.0   85.60   911.0
GR  88.8   988.0   90.00  1042.0   89.30  1097.0   88.20  1202.0   88.00  1250.0
NH      5   1.110   216.0  .06000   466.0  .04000   497.0  .06000   912.0   1.110
NH 1100.  .00000
X111.181      16   466.0   497.0   710.0   670.0   690.0
*  HY SECTION 11.181
GR  86.3      .0   87.80    99.0   88.00   216.0   86.10   372.0   84.80   413.0
GR  80.3   466.0   77.70   481.0   77.70   486.0   79.70   497.0   80.10   536.0
GR  81.1   624.0   81.80   718.0   82.60   785.0   87.00   912.0   87.10  1046.0
GR  86.8  1100.0
NH      5   1.110    33.0  .06000   292.0  .04000   330.0  .06000   883.0   1.110
NH 1000.  .00000
*  LATERAL INFLOW FROM BASIN E1C
*  LATERAL INFLOW FROM BASIN R-RE1B
X111.050      13   292.0   330.0   940.0   940.0   940.0
*  HY SECTION 11.050
GR  84.1      .0   79.30    26.0   80.50    33.0   79.50   216.0   78.60   292.0
GR  76.7   302.0   76.70   312.0   78.70   330.0   79.10   400.0   79.10   523.0
GR  80.0   721.0   81.70   883.0   82.50  1000.0
NC   .06     .06     .04
XK   100                                    .5     .01
X110.872      19   362.0   390.0   940.0   940.0   940.0
*  HY SECTION 10.872
GR  82.5      .0   81.10    30.0   81.60    78.0   80.10    90.0   82.10   114.0
GR  79.6   136.0   81.70   143.0   79.00   270.0   77.50   362.0   75.70   365.0
GR  75.7   378.0   77.80   390.0   77.00   424.0   76.30   501.0   78.10   581.0
GR  83.2   729.0   86.70   812.0   85.80   885.0   86.20  1000.0
NH      5   1.110   706.0  .06000   756.0  .04000   784.0  .06000   881.0   1.110
NH 1450.  .00000
X110.694      18   756.0   784.0   170.0   170.0   170.0
*  HY SECTION 10.694
GR  81.6   464.0   77.60   474.0   79.80   496.0   79.50   527.0   80.30   619.0
GR  80.3   706.0   78.80   756.0   75.20   765.0   75.20   777.0   76.70   784.0
GR  76.7   800.0   75.50   881.0   76.60   922.0   77.60  1031.0   82.20  1212.0
GR  84.1  1320.0   84.70  1365.0   84.70  1450.0
*
* SECTIONS 10.675 AND 10.671 REMOVED DUE TO INADEQUATE GEOMETRY
NC   .06     .06     .04
X110.662      19   756.0   784.0   101.0   320.0   170.0
GR  81.1   464.0   77.10   474.0   79.30   496.0   79.00   527.0   79.80   619.0
GR  79.8   706.0   78.50   740.0   78.30   756.0   74.30   765.0   74.70   777.0
GR  76.2   784.0   76.20   800.0   75.00   881.0   76.10   922.0   77.10  1031.0
GR  81.7  1212.0   83.60  1320.0   84.20  1365.0   84.20  1450.0
*      5   1.110   619.0  .06000   756.0  .04000   784.0  .06000   881.0   1.110
*  1450.  .00000
X110.630      19   756.0   784.0    25.0   175.0   100.0
GR  81.1   464.0   77.10   474.0   79.30   496.0   79.00   527.0   79.80   619.0
GR  79.8   706.0   78.50   740.0   78.30   756.0   74.30   765.0   74.70   777.0
GR  76.2   784.0   76.20   800.0   75.00   881.0   76.10   922.0   77.10  1031.0
GR  81.7  1212.0   83.60  1320.0   84.20  1365.0   84.20  1450.0
*  ELDER CREEK ROAD
*  3 CIRCULAR PIPES WITH WEIR FLOW OVER ROAD
X110.611       8       0    2600    40.0    40.0    40.0
X2     0.     .00            74.50   77.00     .00             .000             .000
GR  80.0     0.0   77.00   200.0   77.00   800.0    71.2   800.0    71.2   815.0
GR  77.0     815   77.0   2400.0    80.0  2600.0
*
CC      4    71.2    71.2      70    .015       4       0
CC      4    71.2    71.2      70    .015       4       0
CC      4    71.2    71.2      70    .015       4       0
WD      1     2.8      78     350
CL
*
X110.603       8       0    2600    70.0    50.0    60.0
*  HY SECTION 10.603
GR  80.0     0.0   77.00   200.0   77.00   800.0    71.2   800.0    71.2   815.0
GR  77.0     815   77.0   2400.0    80.0  2600.0
*      5   1.110   500.0  .06000   627.0  .04000   697.0  .06000   776.0   1.110
*  1200.  .00000
*  LATERAL INFLOW FROM BASIN D-E1B
X110.592      12   665.0   697.0   555.0   555.0   500.0
GR  79.5      .0   75.50   300.0   73.50   500.0   72.90   627.0   72.70   665.0
GR  70.1   670.0   70.10   690.0   73.60   697.0   74.60   776.0   75.50   800.0
GR  75.5  1000.0   78.50  1200.0
NH      5   1.110   300.0  .06000   665.0  .04000   697.0  .06000   800.0   1.110
NH 1200.  .00000
X110.497      12   665.0   697.0   920.0  1120.0   990.0
GR  80.0      .0   76.00   300.0   74.00   500.0   73.40   627.0   73.20   665.0
GR  70.6   670.0   70.60   690.0   74.10   697.0   75.10   776.0   76.00   800.0
GR  76.0  1000.0   79.00  1200.0
NH      5   1.110   245.0  .06000   480.0  .04000   504.0  .06000   772.0   1.110
NH 1000.  .00000
X110.310      15   480.0   504.0  1250.0  1040.0  1130.0
GR  76.3      .0   72.80   245.0   70.50   355.0   71.60   397.0   72.20   439.0
GR  72.2   473.0   73.30   480.0   70.20   489.0   70.20   500.0   71.50   504.0
GR  70.6   528.0   70.80   632.0   72.70   772.0   74.00   896.0   74.60  1000.0
NH      5   1.110   232.0  .06000   485.0  .04000   517.0  .06000   784.0   1.110
NH 1000.  .00000
X110.095      14   485.0   517.0   980.0   960.0   970.0
GR  77.8      .0   76.30    54.0   77.30    94.0   77.30   232.0   75.70   389.0
GR  71.8   452.0   69.00   485.0   66.80   492.0   66.80   506.0   68.10   517.0
GR  69.0   567.0   68.50   688.0   68.70   784.0   72.00  1000.0
NH      5   1.110   572.0  .06000   789.0  .04000   811.0  .06000  1169.0   1.110
NH 1300.  .00000
X1 9.912      12   789.0   811.0  1230.0  1000.0  1210.0
GR  82.6      .0   82.60   192.0   78.20   507.0   71.80   572.0   67.20   685.0
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GR  67.5   789.0   65.50   793.0   65.50   801.0   66.70   811.0   66.50   979.0
GR  68.1  1169.0   69.10  1300.0
NH     5   1.110    25.0   .06000   559.0   .04000   601.0   .06000   938.0   1.110
NH 1250.   .00000
X1 9.683      12   559.0   601.0  1200.0  1200.0  1210.0
GR  66.0       .   67.80    25.0   67.70   174.0   67.50   321.0   64.80   495.0
GR  66.6   520.0   65.60   559.0   63.10   577.0   64.70   601.0   67.20   824.0
GR  68.8   938.0   73.10  1250.0
NH     5   1.110   388.0   .06000   904.0   .04000   934.0   .06000  1137.0   1.110
NH 1400.   .00000
X1 9.453      18   904.0   934.0   230.0   250.0   240.0
GR  64.1       .   65.10   123.0   63.60   186.0   65.00   252.0   63.70   320.0
GR  65.1   388.0   63.70   453.0   63.80   520.0   62.20   588.0   63.70   656.0
GR  63.2   720.0   64.20   791.0   63.60   904.0   61.30   918.0   62.80   934.0
GR  64.8  1137.0   65.70  1296.0   66.70  1400.0
NH     5   1.110   537.0   .06000   620.0   .04000   694.0   .06000  1293.0   1.110
NH 1550.   .00000
X1 9.408      14   620.0   694.0  1190.0  1190.0  1190.0
GR  65.0       .   63.00   500.0   61.60   537.0   64.10   620.0   63.30   642.0
GR  59.8   652.0   59.80   675.0   64.10   694.0   62.10   714.0   62.80   911.0
GR  63.5  1103.0   65.30  1293.0   65.50  1460.0   66.30  1550.0
NH     5   1.110   786.0   .06000  1152.0   .04000  1205.0   .06000  1485.0   1.110
NH 2050.   .00000
X1 9.183      13  1152.0  1205.0  1290.0  1290.0  1290.0
GR  64.8       .   64.30   281.0   63.80   501.0   62.50   786.0   62.60  1152.0
GR  55.6  1167.0   55.60  1189.0   61.80  1205.0   62.20  1485.0   60.80  1500.0
GR  62.1  1520.0   63.70  1800.0   64.60  2050.0
NH     5   1.110   933.0   .06000   933.0   .04000   990.0   .06000  1271.0   1.110
NH 1950.   .00000
X1 8.938      11   933.0   990.0    60.0    60.0    60.0
GR  62.3       .   62.00   280.0   61.50   531.0   60.60   795.0   61.10   933.0
GR  55.0   950.0   55.00   980.0   58.60   990.0   59.00  1271.0   60.20  1624.0
GR  61.7  1950.0
NC  .060    .06     .04
X1 8.927       6   875.0   925.0    40.0    40.0    40.0
X2    0.     .00           58.80   60.10     .00            .000            .000
X3   10.                                                    .00     .00
GR  62.3       .   60.10   875.0   54.90   875.0   54.90   925.0   60.10   925.0
GR  61.7  1950.0
NC .0600  .06000  .04000  .10000  .30000
BR     1     1.5     1.6     0.4    58.8    60.1     2.7
BL                     6
X1 8.919       6   875.0   925.0     1.0   100.0    50.0
X3   10.                                                    .00     .00
GR  62.3       .   60.10   875.0   54.90   875.0   54.90   925.0   60.10   925.0
GR  61.7  1950.0
NH     5   1.110   795.0   .06000   933.0   .04000   990.0   .06000  1271.0   1.110
NH 1950.   .00000
X1 8.910      11   933.0   990.0   720.0   720.0   720.0
GR  62.3       .   62.00   280.0   61.50   531.0   60.60   795.0   61.10   933.0
GR  54.2   950.0   54.20   980.0   58.60   990.0   59.00  1271.0   60.20  1624.0
GR  61.7  1950.0
NH     5   1.110   214.0   .06000   936.0   .04000   966.0   .06000  1281.0   1.110
NH 1900.   .00000
X1 8.774      18   936.0   966.0   800.0   800.0   905.0
GR  60.7       .   59.20   102.0   59.70   214.0   57.20   466.0   58.30   645.0
GR  57.0   838.0   54.70   851.0   58.80   936.0   53.00   950.0   53.00   958.0
GR  57.8   966.0   59.00  1281.0   58.20  1571.0   59.30  1639.0   57.70  1678.0
GR  59.6  1767.0   57.70  1861.0   59.10  1900.0
NH     5   1.110   184.0   .06000   753.0   .04000   781.0   .06000  1540.0   1.110
NH 1600.   .00000
X1 8.602      19   753.0   781.0  1200.0  1000.0  1465.0
GR  57.1       .   56.10   122.0   58.20   184.0   56.70   476.0   53.00   495.0
GR  54.2   515.0   56.20   613.0   56.20   729.0   59.00   753.0   52.20   763.0
GR  52.2   773.0   56.60   781.0   55.80   969.0   57.20  1029.0   57.30  1299.0
GR  56.0  1340.0   57.80  1402.0   58.00  1540.0   57.10  1600.0
NH     5   1.110   712.0   .06000  1293.0   .04000  1322.0   .06000  1981.0   1.110
NH 2200.   .00000
X1 8.325      12  1293.0  1322.0   800.0   840.0  1150.0
GR  56.5       .   55.70   354.0   56.10   712.0   55.10  1017.0   55.60  1250.0
GR  56.3  1293.0   51.80  1303.0   51.80  1315.0   56.00  1322.0   56.20  1583.0
GR  56.6  1981.0   56.30  2200.0
NH     5   1.110   448.0   .06000  1148.0   .04000  1177.0   .06000  1582.0   1.110
NH 2500.   .00000
X1 8.107      17  1148.0  1177.0  1050.0   950.0  1330.0
GR  55.3       .   54.30   415.0   51.70   422.0   56.10   448.0   54.10   510.0
GR  55.6   679.0   56.00  1148.0   51.00  1154.0   51.00  1167.0   55.50  1177.0
GR  53.2  1327.0   54.60  1400.0   55.00  1582.0   53.10  1716.0   54.50  2043.0
GR  56.7  2363.0   58.00  2500.0
*
* END OF McCAY AND SOMPS DATA
*
*
NC .0600  .06000  .03000  .10000  .30000
* LATERAL INFLOW FROM BASIN E-2
* LATERAL INFLOW FROM BASIN E-3
X1 7.855      38  2038.0  2071.0  1050.0  1000.0  1040.0
*  HY SECTION 7.855
GR  55.3       .   54.30    90.0   56.10   107.0   56.20   132.0   54.00   138.0
GR  56.1   149.0   56.10   433.0   56.70   708.0   56.80   955.0   55.60  1250.0
GR  55.5  1444.0   56.80  1505.0   53.60  1855.0   52.60  1972.0   53.70  2019.0
GR  54.6  2038.0   50.10  2047.0   50.10  2062.0   53.60  2071.0   52.80  2169.0
GR  53.3  2222.0   54.60  2310.0   54.60  2457.0   54.50  2655.0   52.80  2800.0
GR  54.1  2830.0   54.30  3015.0   53.50  3116.0   54.70  3207.0   53.00  3245.0
GR  53.8  3276.0   55.00  3478.0   55.20  3597.0   55.20  3674.0   57.00  3771.0
GR  57.1  3869.0   55.50  3973.0   55.60  4100.0
X1 7.638      16  1001.1  1122.0   320     320     320
GR  53.1   605.3   52.49   699.2   52.43   700.9   53.00   710.3   52.98  1000.0
GR  53.0  1001.1   52.00  1013.6   51.44  1020.5    50.9  1032.4    50.0  1033.1
GR 50.81  1033.2    51.0  1105.5   51.24  1111.3   51.87  1121.0   52.00   1122
GR  55.0  1253.1
X1 7.577      26   956.6   975.50   220     220     220
GR  52.9   500.0   52.00   901.8   52.03   902.7   52.00   903.5   52.00   937.2
GR  50.1   943.2   50.76   944.0   52.37   945.2   52.37   955.0   52.25   956.6
GR  51.0   962.9   50.60   963.3   50.00   968.5   50.61   973.6   50.93   975.3
GR  51.0   975.5   51.02   976.0   51.02  1021.6   51.00  1021.6   51.21  1029.6
GR  51.0  1044.6   51.51  1055.9   51.77  1058.6   52.00  1063.3   52.00  1072.0
GR  52.5     1500
X1 7.542      16  1082.1  1097.5   400.0   400.0   400.0
GR  52.5   500.0   52.00  1024.5   51.40  1029.6   51.33  1029.8   50.85  1031.2
GR  50.9  1031.2   51.00  1082.1   50.18  1090.5   50.17  1090.6   50.15  1090.8
GR  50.1  1091.0   50.15  1091.2   50.17  1091.4   51.00  1097.5   51.00  1108.1
GR    52     1500
X1 7.466      16   500.0  1500.0   380     420     400
GR  51.4   500.0   52.00  1073.2   50.98  1077.8   50.00  1078.2   50.39  1082.6
GR  50.8  1083.8   49.84  1087.4   48.97  1098.3   49.03  1098.6   49.35  1307.2
GR  49.9  1322.5   51.01  1340.1   51.97  1395.7   51.98  1395.8   53.00  1442.9
GR  53.0  1500.0
X1 7.419      19  1051.1  1114.9     380     420     555
GR    52       0      52      75    51.4     130    51.4     250    51.4     390
GR  51.4   500.0   52.24   997.2   52.00  1006.8   52.50  1012.8   52.58  1051.1
GR  52.0  1064.9   50.00  1067.3    49.2  1077.9    50.0  1080.9    50.5  1083.4
GR 51.00  1088.3   51.71  1113.3   52.00  1114.9   53.17  1500.0
X1 7.361      25  1073.4  1110.4     400     400     400
GR  51.3   500.0   51.91  1050.3   52.00  1054.0   52.00  1073.4   51.79  1074.0
GR  50.0  1078.8   49.41  1084.6   49.33  1084.9   48.97  1088.9   48.97  1089.4
GR  48.7  1093.7   48.72  1093.7   48.72  1093.8   48.72  1093.8   48.70  1095.3
GR  48.8  1095.3   49.66  1100.9   50.00  1101.6   50.23  1102.2   52.00  1108.1
GR  52.8  1109.5   53.00  1110.4   53.88  1281.5   53.00  1321.9   53.00  1500.0
X1 7.308      31  1214.6  1253.5     680     680     670
GR  50.8   500.0   51.00   509.0   51.00   969.0   50.90   969.4   50.36   976.5
GR  50.1   983.6   47.00   984.8   47.00   985.4   47.00   986.1   47.00   996.1
GR  50.0   997.7   50.00  1001.7   51.00  1025.0   47.00  1214.6   47.00  1219.9
GR  47.0  1220.1   47.01  1220.2   47.00  1220.5   47.00  1220.6   47.00  1241.9
GR  50.4  1242.0   50.20  1244.4   50.03  1247.3   50.00  1247.6   50.21  1247.9
GR  52.0  1253.5   53.00  1294.8   52.99  1294.9   52.00  1312.8   52.00  1406.0
GR  53.0  1500.0
*
* ------------------------------
* ULTIMATE CONDITIONS CHANNEL DOWNSTREAM FROM HERE
* ------------------------------
*
SP          46.0
WD     1      2.8    46.0      40
X1 7.230      18   452.2   540.3   550.0   750.0   700.0
GR  52.0    15.0   51.30   250.0   51.00   305.0   50.40   430.0   50.22   452.2
GR  40.9   480.0   40.94   490.0   40.94   505.0   40.94   510.0   51.03   540.3
GR  51.2   710.0   51.30   890.0   51.00  1180.0   50.80  1190.0   51.00  1210.0
GR  52.0  1250.0   53.00  1370.0   54.00  1560.0
NC .0600  .06000  .05000  .10000  .30000
X1 7.097      21   448.2   536.8   500.0   400.0   460.0
HY US BDRY SPA
GR  51.9   275.0   51.00   290.0   50.40   335.0   50.00   410.0   50.00   448.2
GR  41.1   475.0   40.24   477.5   40.24   490.0   40.24   505.0   40.24   507.5
GR  41.1   510.0   44.41   520.0   49.41   535.0   49.99   536.8   49.70   620.0
GR  50.0   710.0   51.00   780.0   52.00  1200.0   52.40  1260.0   52.40  1440.0
GR  53.0  1690.0
NC .0600  .06000  .05000  .10000  .30000
X1 7.010      24   450.0   544.2    60.0   350.0   120.0
GR  50.9   450.0   44.28   470.0   39.78   483.5   39.78   487.0   39.78   495.0
GR  39.8   507.0   39.78   510.0   39.78   513.5   40.61   516.0   43.61   525.0
GR  47.9   538.0   48.61   540.0   50.00   544.2   50.00   675.0   50.50   750.0
GR  51.0   910.0   51.20  1040.0   51.00  1120.0   51.00  1180.0   51.20  1230.0
GR  51.7  1670.0   51.20  1920.0   52.00  2040.0   52.60  2200.0
NC .0450  .04500  .06000  .10000  .30000
X1 7.000      22   786.2   921.2    22.0    22.0    22.0
GR  49.9   500.0   50.00   783.7   50.21   784.0   50.57   786.2   48.35   795.1
GR  48.2   795.8   48.10   796.1   47.85   797.1   47.80   797.3   39.69   829.8
GR  39.7   831.5   39.69   839.1   39.69   863.0   39.69   872.1   39.69   878.0
GR  39.7   879.8   41.48   886.9   44.30   898.2   44.38   898.5   45.23   901.9
GR  50.0   921.2   51.49  1500.0
* $1.250    1.05    2.63   300.00    20.00     2.00  428.00    1.500   39.67   39.58
X1 6.992      27   945.9  1004.8   104.0   104.0   104.0
* * X20.     .00      1.   51.40   53.10     .00            .000            .000
GR  50.0   500.0   49.99   509.8   49.99   509.9   50.00   528.3   50.10   529.7
GR  52.0   615.4   51.14   623.9   52.00   627.2   52.53   642.8   52.56   643.4
GR  53.0   936.0   52.15   938.9   52.00   941.9   52.19   945.9   49.44   950.0
GR  42.5   960.4   39.67   964.7   39.67   965.4   39.67   978.6   39.67   984.7
GR  41.6   987.6   42.50   988.9   49.44   999.3   52.77  1004.3   53.10  1004.8
GR  52.3  1377.1   51.45  1500.0
NC .0450  .04500  .06000  .30000  .50000
* QT  2.    647.     648.      0.      0.      0.      0.      0.      0.      0.
X1 6.974      28   926.2   974.9    88.0    88.0    88.0
GR  50.2   500.0   50.51   512.3   49.02   926.2   45.71   931.2   44.38   933.2
GR  44.1   933.6   43.31   934.8   43.25   934.9   42.05   936.7   39.58   940.4
GR  39.6   954.3   39.58   955.9   39.58   956.0   39.58   960.4   43.98   967.0
GR  45.4   969.1   45.58   969.4   45.71   969.6   49.24   974.9   49.60   982.9
GR  50.0   999.9   50.14  1134.3   51.00  1169.5   51.22  1361.4   51.00  1368.1
GR  51.0  1370.1   50.00  1410.6   50.03  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN E4A
* GOES INTO ON-LINE DETENTION BASIN.
X1 6.954      32   931.2  1072.7   411.0   411.0   411.0
HY US OF E26
GR  50.2   500.0   50.51   512.3   49.00   931.2   48.72   933.2   48.62   933.6
GR  48.4   934.8   48.34   934.9   48.00   936.7   47.16   954.3   47.10   955.9
GR  47.2   956.0   47.47   959.7   45.66   967.0   45.14   969.1   45.06   969.4
GR  45.0   969.6   41.68   982.9   40.91   986.0   40.91   999.9   40.91  1005.2
GR  39.5  1008.0   39.51  1014.0   40.91  1016.8   40.91  1036.0   50.08  1072.7
GR  50.1  1134.3   51.00  1169.5   51.22  1361.4   51.00  1368.1   51.00  1370.1
GR  50.0  1410.6   50.03  1500.0
*
*
* ++++++++++++++++++++++++++++++++++++++++
*  ON LINE DETETENTION BASIN NO. E-26
*
SA     1      0
SV  42.5      0    47.5      52    52.5     112
HS BASIN E26
SC     0     -1
CC     5    42.5    40.0     200    .016       1      -1
CL
*      1
*      1     3.0    47.5      25
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 6.868      31   912.8  1031.7   258.0   258.0   258.0
HY DS OF E26
GR  50.0   500.0   49.10   912.8   40.65   946.6   40.65   956.2   40.65   958.1
GR  40.7   962.4   40.65   965.5   40.65   965.9   40.65   966.2   39.15   969.2
GR  39.2   975.2   39.88   976.7   40.38   977.7   40.65   978.2   40.65   979.2
GR  40.7   986.8   40.65   987.0   40.65   996.6   49.42  1031.7   50.00  1093.7
GR  51.0  1118.5   51.00  1298.3   50.00  1334.4   48.30  1477.3   48.29  1477.4
GR  48.2  1477.9   48.16  1478.8   48.10  1479.0   48.10  1479.6   48.00  1480.3
GR  48.0  1500.0
NC .0450  .04500  .06000  .10000  .30000
X1 6.820      20   926.5  1072.0    25.0    25.0    25.0
GR  49.5   500.0   49.05   926.5   40.42   961.0   40.42   970.3   40.42   975.0
GR  40.4   980.0   38.92   983.0   38.92   989.0   40.42   992.0   40.42   999.5
GR  40.4  1003.8   40.42  1011.0   42.47  1019.2   44.02  1025.4   44.92  1029.0
GR  45.7  1032.0   48.37  1042.8   48.57  1059.9   49.00  1072.0   49.00  1500.0
* $1.250    1.05    2.63     .00   18.00    6.40  584.00   2.000   38.90   38.83
XK   100                          .35     .01
```

```
X1 6.813       24  1000.0  1081.1    84.0    84.0    84.0
* X2  0.      .00      1.   51.55   52.70     .00            .000            .000
BT   -30    140.0   52.90   49.90   425.0   52.90   49.90   740.0   52.70   49.90
BT     0    880.0   52.00   49.50  1000.0   53.80   49.00  1000.1   53.80   51.55
BT     0   1009.6   53.80   51.55  1009.6   53.80   45.60  1011.0   53.80   45.60
BT     0   1011.0   53.80   51.55  1024.6   53.80   51.55  1024.6   53.80   45.60
BT     0   1026.0   53.80   45.40  1026.0   53.80   51.55  1039.8   53.80   51.55
BT     0   1039.8   53.80   45.40  1041.0   53.80   45.50  1041.0   53.80   51.55
BT     0   1054.6   53.80   51.55  1054.6   53.80   46.90  1055.8   53.80   46.90
BT     0   1055.8   53.80   51.55  1069.4   53.80   51.55  1069.4   53.80   46.90
BT     0   1070.6   53.80   47.80  1070.6   53.80   51.55  1081.1   53.80   51.55
BT     0   1081.2   53.80   49.00  1570.0   53.60   49.00  1600.0   53.60   53.60
GR  49.9    140.0   49.90   425.0   49.90   740.0   49.50   880.0   49.00  1000.0
GR  45.6   1000.0   45.60  1009.6   45.60  1011.0   45.60  1018.1   42.38  1024.6
GR  41.7   1026.0   38.90  1031.6   38.90  1039.8   38.90  1041.0   38.90  1049.6
GR  41.4   1054.6   42.03  1055.8   46.90  1065.6   46.90  1069.4   47.80  1070.6
GR  47.8   1081.1   49.00  1081.1   49.00  1570.0   53.60  1600.0
NC .0450  .04500  .06000  .30000  .50000
X1 6.800       24  1000.0  1081.1   100.0   100.0   100.0
GR  49.9    140.0   49.90   425.0   49.90   740.0   49.50   880.0   49.00  1000.0
GR  45.6   1000.0   45.60  1009.6   45.60  1011.0   45.60  1018.0   42.31  1024.6
GR  41.6   1026.0   38.83  1031.6   38.83  1039.8   38.83  1041.0   38.83  1049.6
GR  41.4   1054.6   41.95  1055.8   46.90  1065.7   46.90  1069.4   47.80  1070.6
GR  47.8   1081.1   49.00  1081.1   49.00  1570.0   53.60  1600.0
*
XK   100                            .500     .01
*
X1 6.775       40   900.0  1048.6   197.0   197.0   197.0
GR  49.0    500.0   49.00   900.0   40.24   935.0   40.24   954.0   38.74   957.0
GR  38.7    963.0   40.24   966.0   40.24   985.0   41.89   991.6   43.24   997.0
GR  43.4    997.6   43.64   998.6   43.69   998.8   43.71   998.9   44.24  1001.0
GR  44.8   1003.2   48.68  1018.8   48.69  1019.2   47.10  1020.0   46.00  1021.5
GR  46.0   1031.1   46.78  1032.1   47.21  1033.0   47.20  1033.1   49.00  1048.6
GR  49.0   1083.1   48.21  1089.4   48.16  1093.3   48.30  1102.3   46.67  1143.7
GR  47.4   1276.4   47.40  1277.4   47.53  1312.9   47.60  1316.1   48.90  1335.2
GR  51.2   1385.0   52.00  1394.2   53.00  1434.3   53.00  1499.4   52.97  1500.0
X1 6.707       23   917.9  1033.4   475.0   475.0   475.0
HY DS OF CCTRR
GR  49.0    500.0   48.34   917.9   40.07   951.0   40.07   970.0   38.57   973.0
GR  38.6    979.0   40.07   982.0   40.07  1001.0   48.16  1033.4   48.00  1134.2
GR  46.0   1142.6   45.70  1147.0   45.98  1174.8   46.29  1175.5   48.16  1176.9
GR  48.2   1177.1   48.20  1177.2   48.34  1178.3   48.87  1180.9   49.00  1181.3
GR  49.2   1378.4   49.60  1389.5   49.99  1500.0
X1 6.619       21  1135.2  1245.9   660.0   660.0   660.0
GR  49.0    500.0   48.00  1022.9   46.34  1024.8   46.00  1025.0   46.00  1054.7
GR  47.0   1055.0   47.10  1055.3   47.21  1056.3   47.18  1058.8   47.20  1059.6
GR  47.1   1085.1   47.00  1088.0   47.11  1135.2   39.66  1165.0   39.66  1184.0
GR  38.2   1187.0   38.16  1193.0   39.66  1196.0   39.66  1215.0   47.38  1245.9
GR  48.0   1500.0
X1 6.455       20  1006.1  1113.4   485.0   485.0   485.0
GR  48.4    500.0   46.50   997.2   46.37  1006.1   40.23  1030.7   40.05  1031.4
GR  39.1   1035.3   39.09  1044.0   39.09  1045.5   39.09  1048.3   39.09  1053.8
GR  37.6   1056.8   37.59  1062.8   37.96  1063.5   38.16  1063.9   38.36  1064.3
GR  39.1   1065.8   39.09  1085.3   40.23  1089.8   46.12  1113.4   48.10  1500.0
* QT  2.    702.    704.      0.      0.      0.      0.      0.      0.      0.
X1 6.365       18  1020.5  1131.1   675.0   675.0   675.0
GR  48.6    500.0   47.07   816.6   47.00   819.0   45.54  1020.5   38.66  1048.0
GR  38.7   1067.0   37.16  1070.0   37.16  1076.0   38.66  1079.0   38.66  1094.6
GR  38.7   1097.0   38.66  1098.0   39.13  1099.9   44.00  1119.4   44.00  1125.1
GR  44.4   1126.2   45.00  1131.1   46.97  1500.0
X1 6.256       30   790.4   914.7   600.0   600.0   600.0
GR  49.7    500.0   48.00   765.8   47.92   767.5   47.83   768.2   47.75   773.2
GR  47.8    775.9   47.72   790.4   38.08   829.0   38.08   848.0   36.58   851.0
GR  36.6    857.0   38.08   860.0   38.08   879.0   47.01   914.7   47.00   917.3
GR  45.2    921.2   44.41   927.1   44.00   929.2   44.00   977.9   45.70   987.3
GR  46.0    990.0   46.00  1035.5   45.76  1036.5   44.00  1038.4   44.00  1055.0
GR  45.8   1058.8   45.49  1059.5   45.30  1063.3   46.00  1065.3   46.24  1500.0
X1 6.144       35   848.7   955.8   375.0   375.0   375.0
GR  49.0    500.0   49.00   547.9   48.92   549.8   48.83   601.8   49.00   680.5
GR  48.6    687.4   47.00   791.1   46.18   808.3   46.14   808.6   46.00   812.7
GR  46.0    823.3   45.38   848.7   41.51   864.2   37.56   880.0   37.56   882.1
GR  37.6    893.3   37.56   893.4   37.56   899.0   36.06   902.0   36.06   908.0
GR  37.6    911.0   37.56   920.4   37.56   924.6   37.56   930.0   37.71   930.6
GR  42.8    951.1   44.00   955.8   44.00  1036.8   43.50  1048.6   42.00  1060.0
GR  42.0   1074.1   44.00  1094.3   45.35  1200.4   46.00  1218.6   46.29  1500.0
*
* REMOVED
* ++++++++++++++++++++++++++++++++++++++++
*  OFF LINE DETETENTION BASIN NO. L-24C
*
*      5       0
*   39.1       0    44.3    14.7    49.1      33
*  BASIN L24C
*      0      -5
*      2    39.1    37.0      50    .016       1      -1
*
*      5
*      1     3.0    42.5     180
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 6.067       27   982.9  1085.9   243.0   243.0   243.0
GR  48.2    500.0   48.00   663.2   47.31   675.2   46.00   839.6   44.44   895.0
GR  43.0    928.4   43.00   982.9   37.23  1006.0   37.23  1021.2   37.23  1024.1
GR  37.2   1027.0   37.23  1028.4   35.73  1031.4   35.73  1035.9   35.73  1037.4
GR  36.0   1038.0   37.23  1040.4   37.23  1040.8   37.23  1056.0   44.71  1085.9
GR  44.8   1090.4   44.56  1105.0   44.67  1105.9   44.90  1110.0   44.90  1183.8
GR  45.0   1187.7   46.59  1500.0
NC .0450  .04500  .06000  .10000  .30000
* XK 100                            .2     .01
X1 6.002       36   935.3  1054.5   100.0   100.0   100.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN E5
GR  45.9    500.0   43.44   935.3   39.92   949.4   39.00   953.1   38.95   953.3
GR  38.8    954.0   38.40   955.5   37.82   957.8   37.02   961.0   37.02   970.5
GR  37.0    971.7   37.02   971.9   37.02   972.5   37.02   972.9   37.02   973.0
GR  37.0    974.5   37.02   980.0   35.52   983.0   35.52   989.0   37.02   992.0
GR  37.0   1004.4   37.02  1008.1   37.02  1011.0   41.24  1027.9   41.27  1028.0
GR  41.4   1028.6   41.87  1030.4   42.00  1030.9   42.00  1041.4   42.99  1051.3
GR  43.0   1051.4   43.08  1053.5   43.36  1054.5   44.00  1158.2   45.00  1182.1
GR  46.0   1500.0
CB     6       8    35.49   35.45      50    .015      14       0
CB     6       8    35.49   35.45      50    .015      14       0
CB     6       8    35.49   35.45      50    .015      14       0
WD     1     2.8       43     800
CL
*     20      20     35.6      46    35.7    46.5
*  3.015     .40    2.70     .00    6.00    8.00   50.00    10.1   35.49   35.45
X1 5.984       36   913.3  1037.7   250.0   250.0   250.0
* X2  0.      .00      2.   41.50   45.43     .00            .000            .000
* BT  -3    500.0   45.50   45.50  1000.0   45.43   45.43  1000.5   45.43   43.90
GR  46.0    500.0   46.00   516.4   46.00   516.5   46.00   516.6   46.00   516.7
GR  44.0    518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0    756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.41   913.3
GR  35.5    945.0   35.49   995.0   40.44  1014.8   41.26  1018.1   42.21  1021.9
GR  42.0   1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7   43.10  1094.3
GR  43.8   1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2   44.20  1236.3
GR  44.0   1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4   47.10  1497.9
GR  47.1   1500.0
XK   100                            .500     .01
X1 5.978       36   913.1  1037.7   100.0   100.0   100.0
HY US OF E24B
GR  46.0    500.0   46.00   516.4   46.00   516.5   46.00   516.6   46.00   516.7
GR  44.0    518.6   44.00   534.3   44.65   537.6   46.00   538.3   46.00   709.5
GR  45.0    756.4   45.00   757.2   44.17   765.8   44.00   769.1   43.41   913.1
GR  35.5    945.0   35.45   995.0   40.40  1014.8   41.22  1018.1   42.20  1022.0
GR  42.0   1023.5   42.00  1035.5   42.86  1036.4   43.00  1037.7   43.10  1094.3
GR  43.8   1115.3   44.00  1116.4   44.00  1233.3   44.16  1236.2   44.20  1236.3
GR  44.0   1237.4   45.00  1457.7   46.00  1476.9   47.04  1489.4   47.10  1497.9
GR  47.1   1500.0
*
*
* ++++++++++++++++++++++++++++++++++++++++
*  OFF LINE DETETENTION BASIN NO. E-24B
*  THIS IS NOT BEING USED AS A FLOOD CONTROL BASIN SO
*  THE WEIR ELEVATION IS SET HIGHER THAN THE WATER SURFACE
*  IT IS INCLUDED HERE, HOWEVER, FOR FUTURE ALTERNATIVE EVALUATION.
*
*
SA     2       0
SV  37.8       0    42.8     6.6    47.8    15.7
HS BASIN E24B
SC     0      -2
CC     2    37.8    35.7      50    .016       1      -1
CL
LA     2
WD     1     3.0    50.0     180
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 5.970       39   930.1  1037.7   305.0   305.0   305.0
HY DS OF E24B
GR  46.0    500.0   46.00   516.4   46.00   516.5   46.00   516.6   44.00   518.6
GR  44.0    534.3   44.65   537.6   46.00   538.3   46.00   709.5   45.00   756.4
GR  45.0    757.2   44.17   765.8   44.00   769.1   43.34   930.1   36.86   956.0
GR  36.9    975.0   35.36   978.0   35.36   984.0   36.86   987.0   36.86  1006.0
GR  39.1   1014.8   39.88  1018.1   41.24  1023.5   43.00  1030.6   43.00  1035.5
GR  43.0   1036.4   43.00  1037.7   43.10  1094.3   43.81  1115.3   44.00  1116.4
GR  44.0   1233.3   44.16  1236.2   44.20  1236.3   44.00  1237.4   45.00  1457.7
GR  46.0   1476.9   47.04  1489.4   47.10  1497.9   47.06  1500.0
X1 5.914       36   926.0  1048.9   270.0   270.0   270.0
HY US OF CONFL
GR  48.2    500.0   47.74   704.8   46.00   767.5   45.36   926.0   36.60   961.0
GR  36.6    981.4   35.10   984.4   35.10   990.4   36.60   993.4   36.60  1011.0
GR  37.3   1013.7   37.58  1014.9   37.88  1016.1   38.88  1020.1   39.65  1023.2
GR  42.0   1032.6   42.00  1035.3   42.09  1035.4   43.22  1037.5   43.95  1040.4
GR  44.5   1042.4   45.62  1047.1   45.87  1048.9   46.00  1074.8   45.85  1181.5
GR  45.3   1209.4   45.14  1212.4   45.14  1252.4   45.09  1253.4   45.07  1282.4
GR  45.1   1282.5   45.06  1282.6   45.00  1325.5   44.53  1327.8   44.00  1337.3
GR  42.4   1500.0
X1 5.840       37  1001.2  1121.2   615.0   615.0   615.0
GR  45.5    500.0   45.00   618.8   44.74   620.2   44.23   642.2   43.15   652.9
GR  42.1    674.3   42.01   674.5   42.00   674.5   42.00   718.1   42.07   718.8
GR  42.1    719.9   43.00   727.3   44.00   844.3   45.00   861.7   45.00  1001.2
GR  36.4   1035.8   36.37  1043.8   36.37  1055.2   34.87  1058.2   34.87  1064.2
GR  36.2   1066.9   36.37  1067.2   36.37  1067.4   36.37  1077.7   36.37  1085.8
GR  45.2   1121.2   45.80  1221.9   45.85  1222.5   45.88  1223.1   45.82  1227.0
GR  46.0   1235.6   45.00  1273.8   45.00  1299.5   44.60  1306.9   45.00  1326.0
GR  45.0   1434.8   44.00  1500.0
*
*
*
DB     3
*
*
*
*
* +++++++ REACH 2 STARTS
*
*
*
*
*
T1 GERBER CREEK
T2
T3   GERBER CREEK
*
*
*
UB
*
*
XK   100       0       0       0      .7     .01
*
*
*
NC   .06     .06     .05      .1      .3
* UPSTREAM INFLOW HYDROGRAPH FROM BASIN G2A
X1 4.555       12   845.0   989.0  1023.0   964.0  1049.0
GR  98.7       .0   86.00   199.0   80.50   261.0   71.30   543.0   69.20   695.0
GR  70.0    845.0   68.50   865.0   76.60   989.0   79.60  1061.0   76.50  1292.0
GR  73.8   1407.0   78.70  1550.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.357       18   599.7   654.2   419.0   815.0   622.0
GR  71.7       .0   70.00   215.0   69.10   408.0   67.71   599.7   62.60   615.0
GR  60.6    621.0   60.60   622.0   60.60   631.0   62.60   637.0   68.34   654.2
GR  70.5    765.0   69.80   845.0   71.20   890.0   71.00  1025.0   69.20  1065.0
GR  71.6   1191.0   69.60  1246.0   70.80  1400.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.239       16   502.4   563.7   964.0   552.0  1159.0
GR  70.1       .0   69.00   194.0   66.80   213.0   69.00   253.0   69.80   371.0
GR  67.6    502.4   62.36   518.0   59.36   527.0   59.36   532.0   59.36   537.0
GR  62.4    546.0   68.26   563.7   71.60   653.0   70.10   779.0   69.10   909.0
```

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GR  68.1  1050.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.019      15   556.6   623.4   334.0   456.0   367.0
GR  90.3      .0   82.00   232.0   72.60   435.0   68.20   497.0   66.18   556.6
GR  65.4   559.0   57.04   584.0   57.04   589.0   57.04   594.0   65.37   619.0
GR  66.8   623.4   70.20   689.0   73.70   860.0   79.50  1116.0   69.10  1450.0
NC .0600  .06000  .05000  .50000  .80000
X1 3.950      15   552.4   627.7    50.0    50.0    50.0
GR  90.8      .0   82.50   232.0   73.10   435.0   68.70   497.0   66.82   552.4
GR  64.6   559.0   56.30   584.0   56.30   589.0   56.30   594.0   64.64   619.0
GR  67.5   627.7   70.70   689.0   74.20   860.0   80.00  1116.0   69.60  1450.0
NC .0600  .06000  .05000  .50000  .80000
*
* GERBER ROAD CROSSING NO. 1.
* ULTIMATE CONDITIONS CHANNEL ASSUMED DOWNSTREAM FROM HERE
* EVEN THOUGH IT IS UPSTREAM OF THE SPA
*
X1 3.940      29   227.0   351.7    40.0    40.0    40.0
GR  80.0      .0   76.00   160.0   75.53   227.0   56.20   285.0   56.20   288.0
GR  56.2   288.2   56.20   288.3   56.20   288.3   56.20   288.5   56.20   288.8
GR  56.2   289.0   56.20   289.3   56.20   289.5   56.20   289.8   56.20   290.0
GR  56.2   290.3   56.20   290.5   56.20   290.8   56.20   291.0   56.20   291.3
GR  56.2   291.5   56.20   291.7   56.20   291.8   56.20   291.8   56.20   292.0
GR  56.2   295.0   75.10   351.7   75.10   490.0   76.00   560.0
*
*
CB      6       8    56.2    56.1      60    .015      15       0
CB      6       8    56.2    56.1      60    .015      15       0
WD      1     2.8    72.5     600
CL
*
*
X1 3.933      29   226.8   351.9    50.0    50.0    50.0
HY DS OF GERBER #1
GR  80.0      .0   76.00   160.0   75.53   226.8   56.12   285.0   56.12   288.0
GR  56.1   288.2   56.12   288.3   56.12   288.3   56.12   288.5   56.12   288.8
GR  56.1   289.0   56.12   289.3   56.12   289.5   56.12   289.8   56.12   290.0
GR  56.1   290.3   56.12   290.5   56.12   290.8   56.12   291.0   56.12   291.3
GR  56.1   291.5   56.12   291.7   56.12   291.8   56.12   291.8   56.12   292.0
GR  56.1   295.0   75.10   351.9   75.10   490.0   76.00   560.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.923      26   897.0   962.7   500.0   100.0   370.0
GR  73.6      .0   70.50   107.0   72.10   197.0   69.70   330.0   68.30   509.0
GR  66.2   671.0   64.10   847.0   63.30   897.0   63.24   900.3   56.02   922.0
GR  56.0   927.0   56.02   932.0   64.36   957.0   66.27   962.7   66.70   977.0
GR  68.3  1032.0   68.50  1094.0   70.80  1109.0   67.30  1134.0   66.80  1250.0
GR  70.0  1263.0   72.90  1294.0   73.00  1541.0   73.20  1597.0   74.50  1613.0
GR  75.5  1704.0
NC .0600  .06000  .05000  .10000  .30000
* QT  1.     126.      0.      0.      0.      0.      0.      0.      0.      0.
X1 3.853      26   897.0   963.7   230.0    10.0    93.0
GR  73.6      .0   70.50   107.0   72.10   197.0   69.70   330.0   68.30   509.0
GR  66.2   671.0   64.10   847.0   63.30   897.0   63.26   899.4   55.74   922.0
GR  55.7   927.0   55.74   932.0   64.08   957.0   66.30   963.7   66.70   977.0
GR  68.3  1032.0   68.50  1094.0   70.80  1109.0   67.30  1134.0   66.80  1250.0
GR  70.0  1263.0   72.90  1294.0   73.00  1541.0   73.20  1597.0   74.50  1613.0
GR  75.5  1704.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.836      13   310.3   386.4    40.0    40.0    40.0
GR  72.0      .0   67.50   180.0   66.60   310.3   56.70   340.0   55.67   343.1
GR  55.7   343.9   55.67   347.8   55.67   352.4   55.67   353.1   56.70   356.2
GR  66.8   386.4   66.80   390.0   72.00   620.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.828      13   310.2   386.5    50.0    50.0    50.0
GR  72.0      .0   67.50   180.0   66.60   310.2   56.67   340.0   55.64   343.1
GR  55.6   343.9   55.64   347.8   55.64   352.4   55.64   353.1   56.67   356.2
GR  66.8   386.5   66.80   390.0   72.00   620.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.819      19   604.7   670.0   840.0   983.0   950.0
GR  75.1      .0   73.30   158.0   72.50   293.0   67.30   485.0   65.02   604.7
GR  64.6   606.0   55.60   633.0   55.60   643.0   59.27   654.0   64.47   669.6
GR  64.5   670.0   64.60   897.0   65.70  1216.0   66.80  1233.0   66.20  1249.0
GR  69.5  1310.0   66.20  1417.0   66.20  1537.0   66.50  1700.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.639      19   604.0   670.4   832.0   841.0   866.0
GR  74.6      .0   72.80   158.0   72.00   293.0   66.80   485.0   64.54   604.0
GR  63.9   606.0   54.88   633.0   54.88   643.0   58.55   654.0   63.88   670.0
GR  64.0   670.4   64.10   897.0   65.20  1216.0   66.30  1233.0   65.70  1249.0
GR  69.0  1310.0   65.70  1417.0   65.70  1537.0   66.00  1700.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.475      17   436.0   504.0  1061.0   646.0  1001.0
GR  71.5      .0   72.50   161.0   66.30   311.0   63.80   378.0   62.80   436.0
GR  62.7   439.5   54.22   465.0   54.22   475.0   61.22   496.0   61.33   496.3
GR  62.0   504.0   61.30   513.0   69.70   631.0   68.00   692.0   65.80   749.0
GR  65.3   808.0   65.60   850.0
NC .0600  .06000  .05000  .10000  .30000
X1 3.285      20  1496.0  1632.0   718.0   656.0  1135.0
GR  62.7      .0   64.00   304.0   65.20   818.0   64.80   843.0   63.20   848.0
GR  62.7  1295.0   62.20  1496.0   60.59  1537.6   59.80  1540.0   53.46  1559.0
GR  53.5  1569.0   62.41  1595.8   63.00  1632.0   62.00  1681.0   62.30  1761.0
GR  63.2  1799.0   63.80  1976.0   63.50  2115.0   65.80  2208.0   65.10  2300.0
NC .0600  .06000  .05000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH FOR BASIN G2B
X1 3.070      24  2594.9  2652.5  1556.0   724.0  1019.0
GR  60.3      .0   60.60   320.0   61.70   642.0   64.20   652.0   66.80  1030.0
GR  63.8  1322.0   63.20  1342.0   62.30  1772.0   61.50  2204.0   60.60  2230.0
GR  60.3  2468.0   60.30  2594.9   53.60  2615.0   52.60  2618.0   52.60  2623.0
GR  52.6  2628.0   53.60  2631.0   60.75  2652.5   60.80  2672.0   59.20  2678.0
GR  62.2  2691.0   61.50  2712.0   62.20  2924.0   63.80  3100.0
NC .0600  .06000  .05000  .10000  .30000
X1 2.877      16   297.2   356.9   823.0   542.0   720.0
GR  59.6      .0   59.60   297.2   57.32   304.0   53.66   315.0   51.82   320.5
GR  51.8   322.0   51.82   330.5   51.99   331.0   53.66   336.0   60.63   356.9
GR  61.1   386.0   65.50   500.0   66.30   539.0   62.80   689.0   61.60   819.0
GR  61.8   850.0
* ++++++++++++++++++++++++++++++++++++++++
*
X1 2.741      25   466.4   529.7    50.0    50.0    50.0
GR  65.0   180.0   64.00   190.0   63.00   260.0   62.00   315.0   61.00   365.0
GR  61.0   425.0   60.31   466.4   54.11   485.0   51.78   492.0   51.28   493.5
GR  51.3   503.5   52.11   506.0   54.11   512.0   60.00   529.7   60.00   535.0
GR  59.0   538.0   59.00   550.0   59.20   640.0   59.10   765.0   60.00   820.0
GR  61.0   840.0   62.00   860.0   63.00   910.0   64.00   950.0   65.00   990.0
NC .0600  .06000  .05000  .30000  .50000
X1 2.731      16   457.4   539.8   100.0   100.0   100.0
GR  65.0   405.0   63.60   457.4   56.07   480.0   52.07   492.0   51.24   494.5
GR  51.2   498.8   51.24   500.2   51.24   504.5   52.07   507.0   56.07   519.0
GR  63.0   539.8   63.00   620.0   62.00   750.0   63.00   840.0   64.70   950.0
GR  66.0  1130.0
X1 2.727      18   919.3   991.3    16.0    16.0    16.0
HY US BDRY SPA
GR  63.4   573.2   62.00   633.2   61.75   707.0   60.14   919.3   55.39   938.3
GR  53.0   947.7   52.59   949.5   52.59   953.0   51.09   954.5   51.09   956.5
GR  52.6   958.0   52.59   958.6   52.59   961.5   55.39   972.7   60.04   991.3
GR  61.0  1393.0   62.50  1447.2   62.86  1500.0
* $1.050    1.56    2.63     .00    5.00    1.33  181.00   1.000   51.08   50.95
XK  100                              .5     .01
X1 2.725      14   938.3   972.7   184.0   184.0   184.0
* X2  0.      .00      1.   62.80   63.60     .00                .000             .000
*    -11   573.2   63.40   63.40   573.2   68.00   63.40   633.2   67.30   62.00
*      0   707.0   66.10   61.75   938.3   64.40   60.00   948.0   64.30   59.00
*      0   948.0   64.30   62.80   963.0   64.10   62.80   963.0   64.10   59.10
*      0   972.7   64.10   60.00  1280.0   63.60   60.73
GR  63.4   573.2   62.00   633.2   61.75   707.0   60.00   938.3   58.80   945.3
GR  56.4   947.7   51.08   953.0   51.08   958.0   51.68   958.6   59.36   966.3
GR  60.0   972.7   61.00  1393.0   62.50  1447.2   62.86  1500.0
NC .0600  .06000  .06000  .30000  .50000
X1 2.607      20   889.4   975.9    24.0    24.0    24.0
GR  64.6   682.8   64.00   688.9   63.48   876.6   63.00   889.4   63.00   900.1
GR  57.5   908.4   58.71   922.4   60.95   930.2   60.95   935.2   55.60   939.8
GR  61.5   945.7   63.20   954.2   63.78   975.9   63.65  1288.3   64.00  1325.7
GR  64.3  1331.5   65.00  1477.7   65.27  1485.5   65.28  1495.4   65.20  1500.0
*
*
* LATERAL INFLOW FOR BASIN G3A GOES INTO THE CHANNEL UPSTREAM OF STORAGE G46
* THROUGH A DRAINAGE PIPE
*
*
XK  100                              .75     .01
X1 2.598      58   858.2   940.1   487.0   487.0   487.0
HY US OF G46
GR  63.0   710.8   62.77   717.9   62.46   781.5   62.00   798.4   61.42   805.2
GR  61.2   807.3   60.85   834.0   60.85   858.2   52.91   890.0   52.91   892.2
GR  52.9   893.0   50.91   895.0   50.91   897.0   52.91   899.0   52.91   902.0
GR  53.2   903.3   53.68   905.1   53.78   905.5   53.91   906.0   54.76   909.4
GR  55.3   911.7   56.23   915.3   56.53   916.5   58.00   922.4   58.00   930.7
GR  61.3   936.2   61.46   936.2   61.60   936.8   62.00   938.8   62.00   940.1
GR  62.8   960.5   62.29   969.1   62.19   975.1   62.00   979.8   61.20   983.5
GR  61.0   986.5   60.45  1000.5   60.31  1010.5   60.45  1018.0   60.40  1020.3
GR  60.0  1046.6   59.00  1072.9   59.00  1089.3   59.41  1100.6   59.50  1101.2
GR  59.8  1105.4   60.00  1114.1   60.00  1134.6   61.00  1188.0   61.00  1211.6
GR  61.1  1215.4   61.46  1225.4   61.51  1226.1   62.00  1238.4   62.00  1263.0
GR  62.6  1296.5   63.00  1308.4   63.27  1324.3
*
* ++++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. G-46
*
SA      3       0
SV   53.0       0    57.0      48    62.2     109
HS BASIN G46
SC      0      -3
CC      2    53.0    52.9     100    .016       1      -1
CL
LA      3
WD      1     3.0    56.9     100
*    WD     1     3.0    56.2     100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 2.476      49   841.0   908.5   265.0   265.0   265.0
HY DS OF G46
GR  63.0   729.0   63.00   729.3   62.67   736.1   62.00   745.3   61.50   761.5
GR  61.0   767.3   61.00   767.6   60.01   780.6   60.00   780.7   60.00   780.9
GR  59.0   826.7   58.87   841.0   51.63   870.0   51.63   873.5   50.13   875.0
GR  50.1   877.0   51.63   878.5   51.63   882.0   58.27   908.5   58.22   913.8
GR  58.6   937.6   59.00   950.7   58.30   956.6   58.44   957.8   58.45   961.6
GR  58.0   962.5   56.74   967.7   56.30   971.8   56.00   977.7   56.00   983.5
GR  56.9   987.8   57.83  1007.8   58.00  1009.6   58.03  1010.0   58.07  1014.1
GR  58.8  1043.0   59.00  1133.7   59.00  1134.6   59.46  1144.3   60.68  1161.7
GR  61.0  1170.5   61.74  1181.3   61.90  1184.4   62.00  1185.2   62.99  1215.8
GR  63.0  1215.9   64.00  1244.3   64.00  1367.9   63.66  1372.4
X1 2.424      40   917.2   992.2   160.0   160.0   160.0
* HY US BDRY SPA
GR  61.0   896.7   60.82   899.0   60.00   904.3   59.80   905.7   59.74   907.3
GR  59.2   917.2   58.48   919.9   57.73   922.9   51.21   949.0   51.21   952.5
GR  49.7   954.0   49.71   956.0   51.21   957.5   51.21   961.0   53.61   970.6
GR  53.8   971.3   53.81   971.4   54.66   974.8   55.01   976.2   56.00   980.2
GR  56.0   983.6   57.25   985.2   57.36   985.6   57.56   986.4   58.11   988.6
GR  58.1   988.7   58.18   988.9   59.00   992.2   59.00   999.1   58.49  1005.6
GR  57.0  1033.7   57.00  1033.9   57.10  1034.1   57.00  1037.0   57.00  1141.7
GR  57.1  1217.7   58.20  1223.3   59.00  1320.9   59.00  1409.5   60.87  1500.0
X1 2.393      59   908.0   989.0   200.0   200.0   200.0
GR  58.7   908.0   57.78   911.7   57.65   912.2   57.60   912.4   57.25   913.8
GR  57.2   913.9   57.18   914.1   57.08   914.5   57.05   914.6   56.65   916.2
GR  56.6   916.5   56.50   916.8   53.15   930.2   50.95   939.0   50.95   942.5
GR  49.5   944.0   49.45   946.0   50.95   947.5   50.95   951.0   55.50   969.2
GR  55.6   969.4   56.38   972.7   56.45   973.0   56.80   974.4   56.00   975.4
GR  56.0   981.9   56.11   982.1   56.36   982.5   58.00   986.3   58.70   988.0
GR  59.0   989.0   59.00  1004.3   58.82  1008.4   58.00  1021.7   57.60  1023.4
GR  57.5  1024.7   57.53  1041.6   58.00  1052.1   57.92  1157.1   57.80  1161.7
GR  57.9  1181.9   57.00  1209.6   57.00  1223.7   57.55  1225.8   57.60  1226.0
GR  57.8  1227.7   57.86  1227.8   57.90  1227.9   58.00  1228.3   58.40  1230.0
GR  58.4  1230.3   59.00  1232.3   60.00  1252.1   60.79  1404.9   60.80  1405.3
GR  61.0  1409.8   61.00  1435.0   60.94  1437.5   61.00  1500.0
X1 2.360      68   970.0  1050.3   335.0   335.0   335.0
GR  62.2   695.4   62.00   702.9   62.00   707.0   61.00   761.1   61.00   766.9
GR  59.0   912.9   58.84   916.3   58.65   925.2   59.00   939.9   59.00   940.1
GR  58.3   970.0   58.00   970.2   56.49   972.1   56.00   972.4   55.15   974.2
GR  55.0   975.0   55.12   975.2   55.14   975.3   55.18   975.5   55.22   975.8
GR  55.4   978.1   55.46   978.1   57.05   981.7   56.00   982.7   57.63   982.7
GR  57.8   984.5   57.26   986.5   57.18   986.8   57.13   987.0   57.11   987.1
GR  57.1   987.2   57.01   987.5   56.88   988.0   55.48   993.6   53.38  1002.0
GR  50.6  1013.0   50.63  1016.5   49.13  1018.0   49.13  1020.0   49.83  1020.7
GR  50.6  1021.5   50.63  1025.0   56.60  1048.9   56.73  1049.4   56.97  1050.3
GR  56.7  1070.5   56.59  1072.7   56.31  1076.1   56.20  1078.1   56.17  1214.3
GR  57.0  1238.4   57.00  1258.2   57.24  1265.6   58.00  1309.7   58.16  1310.4
GR  58.3  1311.2   58.36  1311.7   59.00  1315.9   59.20  1316.4   59.27  1316.7
GR  59.5  1316.9   60.00  1320.1   60.66  1322.8   60.70  1323.1   61.00  1323.9
GR  62.0  1374.3   62.00  1421.2   62.94  1500.0
X1 2.300      43   927.8  1008.6   260.0   260.0   260.0
GR  61.6   500.0   61.00   539.8   59.00   927.8   58.99   927.8   56.77   936.7
GR  56.7   936.9   52.42   954.1   50.09   963.4   50.09   963.9   50.09   965.4
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ATTACHMENT 5D

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GR  50.1   965.7   49.75   966.0   48.75   967.0   48.59   967.2   48.59   969.2
GR  50.1   970.7   50.09   974.2   50.09   975.4   52.19   983.8   52.41   984.7
GR  52.8   986.1   53.81   990.3   58.14  1007.6   58.38  1008.6   58.37  1009.0
GR  58.4  1009.1   58.31  1009.2   58.00  1018.9   58.00  1033.5   57.00  1050.0
GR  57.0  1184.3   57.00  1187.0   57.00  1243.2   56.00  1246.0   56.00  1257.4
GR  56.7  1259.1   58.64  1271.2   58.84  1272.7   58.90  1273.5   58.00  1275.4
GR  58.8  1277.1   59.66  1279.4   60.00  1279.8
X1 2.252      32   959.2  1069.3   276.0   276.0   276.0
GR  61.4   500.0   61.00   522.5   61.00   536.3   60.00   592.6   59.07   672.9
GR  59.0   673.2   59.00   959.2   58.00   977.9   54.99   994.5   54.99  1004.2
GR  55.4  1004.9   54.99  1006.7   54.82  1007.4   54.74  1007.7   54.59  1008.3
GR  54.5  1008.5   49.67  1028.0   49.67  1031.5   48.17  1033.0   48.17  1035.0
GR  49.7  1036.5   49.67  1040.0   57.00  1069.3   57.00  1108.0   58.00  1152.0
GR  58.0  1153.8   59.00  1208.8   59.00  1227.2   60.00  1269.6   61.05  1475.6
GR  61.1  1476.6   61.25  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 2.225      40   976.9  1048.5    11.0    11.0    11.0
GR  58.7   500.0   57.78   510.4   57.28   531.9   57.00   534.6   57.00   636.0
GR  56.0   976.9   52.60   990.6   51.38   995.5   50.80   997.8   50.33   999.7
GR  49.2  1004.1   49.23  1010.2   47.73  1011.7   47.73  1013.7   48.67  1014.6
GR  49.2  1015.2   49.23  1016.1   49.46  1017.0   49.76  1018.2   51.10  1023.6
GR  51.3  1024.3   52.60  1029.6   54.41  1036.8   57.32  1048.5   57.69  1061.9
GR  58.0  1065.5   58.42  1076.3   58.46  1082.2   59.00  1103.2   59.00  1125.4
GR  59.4  1131.0   60.00  1155.1   61.00  1414.7   61.10  1415.4   62.00  1426.3
GR  63.0  1452.7   63.00  1454.4   63.56  1465.5   64.00  1487.9   64.00  1500.0
CB     5       8   47.72   47.54     114    .015      14
CB     5       8   47.72   47.54     114    .015      14
WD     1     2.8      59     300
CL
*  2.015     .40    2.63     .00    5.00    8.00  114.00    10.1   47.72   47.54
X1 2.222      29   946.6  1037.3   114.0   114.0   114.0
* X2  0.     .00      2.   59.10   60.10     .00            .000            .000
BT   -24   500.0   59.52   59.52   500.6   59.52   59.10   513.1   59.52   59.10
BT     0   530.4   59.53   59.10   532.3   59.53   59.10   613.5   59.55   59.10
BT     0   621.3   59.55   59.10   975.4   60.10   59.10   977.0   60.10   59.10
BT     0   983.9   60.10   59.10   983.9   60.10   59.10   984.7   63.40   59.10
BT     0   994.7   63.40   59.10   999.6   63.40   59.10   999.6   60.10   59.10
BT     0  1023.8   60.12   59.10  1068.4   60.16   59.10  1104.7   60.20   59.10
BT     0  1111.7   60.30   59.10  1111.8   60.33   59.10  1299.4   60.50   59.10
BT     0  1302.7   60.66   59.10  1392.5   61.00   61.00  1500.0   61.95   61.95
GR  59.5   500.0   58.60   500.6   57.52   513.1   57.19   530.4   57.00   532.3
GR  57.0   613.5   57.15   621.3   56.09   946.6   48.89   975.4   48.49   977.0
GR  47.7   980.1   47.72   983.9   47.72   984.7   47.72   991.9   47.72   992.1
GR  48.4   995.0   48.90   996.8   49.60   999.6   49.87  1000.7   55.65  1023.8
GR  59.0  1037.3   59.05  1068.4   59.10  1104.7   59.10  1111.7   60.33  1111.8
GR  60.5  1299.4   60.66  1302.7   61.00  1392.5   61.95  1500.0
NC .0600  .06000  .06000  .30000  .50000
X1 2.212      28   944.3  1039.6    44.0    44.0    44.0
GR  59.5   500.0   58.60   500.6   57.52   513.1   57.19   530.4   57.00   532.3
GR  57.0   613.5   57.15   621.3   56.10   944.3   48.33   975.4   47.93   977.0
GR  47.5   978.6   47.53   983.9   47.53   984.7   47.53   991.9   47.53   993.6
GR  47.9   995.0   48.33   996.8   49.03   999.6   55.08  1023.8   59.02  1039.6
GR  59.0  1068.4   59.10  1104.7   59.10  1111.7   60.33  1111.8   60.50  1299.4
GR  60.7  1302.7   61.00  1392.5   61.95  1500.0
X1 2.169      54  1072.6  1166.3   364.0   364.0   364.0
HY DS OF BRADSHAW
GR  58.0   500.0   58.00   514.0   57.85   522.0   57.00   542.0   56.00   728.7
GR  56.2   738.8   56.15   741.1   56.51   770.4   57.42   772.4   58.00   779.5
GR  57.5   780.0   58.77   795.9   58.78   796.3   58.87   799.4   58.71   842.3
GR  58.0   848.3   57.36   849.1   57.26   849.7   57.24   850.0   57.00   851.1
GR  57.0   863.1   57.17   866.0   57.37   880.2   57.00   882.5   57.00   909.5
GR  56.0   956.1   55.44   961.0   54.64   970.0   54.66   970.7   54.68   971.4
GR  54.7   971.4   54.61   976.3   55.50   982.5   55.97   988.0   56.00   988.1
GR  56.0   988.1   56.04   988.4   56.05   988.6   56.08   990.3   57.00  1008.7
GR  57.3  1017.8   58.00  1025.4   58.00  1036.4   58.43  1072.6   53.63  1091.8
GR  52.0  1098.4   48.96  1110.5   48.96  1115.0   47.46  1116.5   47.46  1119.5
GR  49.0  1121.0   48.96  1125.5   59.17  1166.3   60.00  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN G3B
X1 2.060      47  1398.2  1492.1   540.0   540.0   540.0
GR  56.3   500.0   56.72   717.6   57.00   729.5   57.00   730.0   56.95   731.2
GR  56.9   732.3   56.77   733.2   56.65   736.4   56.61   737.1   56.60   737.1
GR  56.5   737.4   56.00   739.0   56.47   740.9   56.48   741.3   56.00   751.0
GR  56.7   759.4   56.76   760.0   56.67   764.0   56.72   764.1   56.73   764.1
GR  56.8   764.2   56.84   775.0   56.72   778.5   56.00   783.4   56.00   889.7
GR  54.0   936.3   52.27   940.4   53.94   948.4   54.00   948.7   56.00  1018.4
GR  56.0  1241.7   55.86  1248.0   57.95  1398.2   57.05  1401.8   53.65  1415.4
GR  49.3  1432.9   48.48  1436.1   48.38  1436.5   48.38  1439.8   48.38  1440.1
GR  48.4  1441.0   46.88  1442.5   46.88  1445.5   48.38  1447.0   48.38  1451.5
GR  58.5  1492.1   58.57  1500.0
X1 1.987      34  1157.5  1245.4   195.0   195.0   195.0
GR  56.0   500.0   56.73   633.5   56.00   704.0   55.69   704.9   54.00   956.7
GR  53.6   957.4   52.00   968.6   52.01   968.6   51.97   968.7   51.59   969.6
GR  52.0   979.7   52.00   979.9   52.22   981.0   53.16   983.2   55.86   990.7
GR  56.0   991.3   56.27  1157.5   47.52  1192.5   47.52  1197.0   46.02  1198.5
GR  46.0  1201.5   46.32  1201.8   47.52  1203.0   47.52  1207.5   48.44  1211.2
GR  53.2  1230.3   56.99  1245.4   57.00  1245.8   57.00  1281.4   57.79  1286.6
GR  57.0  1323.3   57.00  1440.8   56.49  1452.2   56.00  1500.0
X1 1.961      41  1029.2  1128.7   195.0   195.0   195.0
GR  56.0   500.0   56.00   637.8   55.96   638.1   54.00   870.5   52.00   883.9
GR  51.3   890.2   51.12   890.6   50.69   891.8   50.53   891.9   50.51   892.0
GR  50.7   892.6   51.43   895.7   51.59   896.4   51.98   897.7   52.00   897.7
GR  52.0   897.8   52.16   898.5   54.00   905.7   54.00   907.3   56.00   996.6
GR  56.0  1000.1   56.55  1029.2   50.51  1053.3   50.36  1053.9   47.21  1066.5
GR  47.2  1071.0   45.71  1072.5   45.71  1075.5   47.21  1077.0   47.21  1081.5
GR  59.0  1128.5   59.00  1128.7   59.00  1130.2   59.90  1174.1   60.00  1176.7
GR  60.0  1185.9   60.77  1237.1   60.19  1285.4   60.80  1363.3   60.71  1370.0
GR  61.0  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 1.926      33   991.0  1063.3    20.0    20.0    20.0
GR  55.8   500.0   53.58   939.7   52.40   941.5   52.00   942.5   51.90   944.0
GR  51.9   944.5   51.83   944.8   50.88   949.7   50.53   959.8   51.71   964.2
GR  51.8   964.2   52.00   964.5   51.73   965.5   51.71   966.0   51.70   966.2
GR  52.4   970.2   54.00   974.1   54.02   991.0   46.90  1019.5   46.90  1024.0
GR  45.4  1025.5   45.40  1028.5   46.90  1030.0   46.90  1034.5   54.11  1063.3
GR  54.3  1191.1   55.95  1258.1   56.00  1331.0   57.00  1426.2   57.52  1430.7
GR  58.2  1443.8   59.00  1492.3   59.00  1500.0
* $ .000     1.50    2.70     .00    8.60     .00  105.00   1.000   45.36   45.23
X1 1.925      14   471.0   499.3    84.0    84.0    84.0
* X2  0.     .00      1.   51.55   55.20     .00            .000            .000
BT    -6   200.0   55.25   55.25   475.0   55.20   55.20   475.0   58.60   53.80
BT     0   495.2   58.60   53.80   495.2   55.20   55.20   800.0   56.00   56.00
GR  55.3   200.0   55.20   471.0   51.16   475.0   51.10   475.1   48.00   475.1
GR  48.0   478.2   45.36   480.8   45.36   489.4   47.83   491.9   47.80   495.1
GR  51.1   495.1   51.16   495.2   55.21   499.3   56.00   800.0
NC .0600  .06000  .05000  .30000  .50000
X1 1.900      14   470.8   499.4    80.0    80.0    80.0
GR  55.3   200.0   55.20   470.8   51.03   475.0   50.97   475.1   48.00   475.1
GR  48.0   478.1   45.23   480.8   45.23   489.4   47.83   492.0   47.80   495.1
GR  51.0   495.1   51.03   495.2   55.21   499.4   56.00   800.0
X1 1.891      37   943.9  1018.1   170.0   170.0   170.0
GR  56.7   500.0   56.70   503.1   56.43   514.1   56.57   559.4   56.00   565.5
GR  54.0   908.0   53.95   909.3   53.86   910.2   53.48   911.9   53.02   913.0
GR  53.0   913.4   53.00   929.5   53.86   941.2   53.98   943.9   53.84   944.5
GR  49.9   960.3   49.74   960.9   47.41   970.2   47.36   970.4   46.60   973.4
GR  46.6   978.0   45.10   979.5   45.10   981.8   45.10   982.5   46.60   984.0
GR  46.6   988.4   47.14   990.6   47.69   992.8   48.14   994.6   48.21   994.9
GR  49.5  1000.0   49.89  1001.6   54.01  1018.1   54.20  1259.0   54.00  1270.6
GR  57.1  1446.4   56.13  1500.0
* QT  2.     315.     355.       0.       0.       0.       0.       0.       0.
X1 1.851      41  1040.1  1112.8   200.0   200.0   200.0
GR  54.9   500.0   54.00   896.9   53.21   944.7   53.65  1025.4   53.31  1040.1
GR  50.0  1053.3   48.77  1058.3   48.69  1058.6   48.59  1059.0   48.57  1059.1
GR  48.5  1059.5   46.67  1066.7   46.33  1068.1   46.33  1068.5   46.33  1073.0
GR  46.3  1073.1   46.33  1073.5   44.83  1075.0   44.83  1078.0   46.33  1079.5
GR  46.3  1083.1   50.02  1097.8   50.04  1097.9   53.77  1112.8   54.00  1164.7
GR  54.3  1169.6   54.38  1283.3   55.40  1330.6   56.86  1337.8   56.00  1338.3
GR  56.5  1339.3   56.59  1352.9   56.00  1358.7   55.91  1372.4   56.00  1373.1
GR  56.0  1381.1   57.00  1413.4   57.00  1413.5   59.00  1479.6   59.00  1479.7
GR  59.9  1500.0
X1 1.811      39  1020.0  1121.5   165.0   165.0   165.0
HY DS OF GERBER#3
GR  54.7   695.4   54.67   695.8   54.00   910.6   53.59   925.5   53.18  1020.0
GR  47.2  1044.0   46.65  1046.1   46.57  1046.4   46.17  1048.0   46.01  1048.7
GR  46.0  1049.0   46.01  1055.1   46.01  1061.4   46.01  1064.8   45.79  1065.2
GR  44.5  1067.8   44.51  1067.8   44.51  1068.7   44.51  1073.8   45.53  1075.8
GR  46.0  1076.8   46.01  1084.2   46.01  1086.8   46.01  1087.4   46.01  1088.7
GR  46.6  1090.9   54.23  1121.5   56.39  1411.9   57.30  1415.7   56.00  1416.4
GR  56.7  1417.6   56.79  1433.2   56.23  1437.4   56.30  1438.2   56.37  1439.1
GR  56.4  1446.6   57.00  1475.6   57.00  1476.1   57.50  1500.0
X1 1.788      15   149.6   270.1   125.0   125.0   125.0
GR  55.8     .0   55.80   149.6   45.75   189.8   45.75   200.0   45.75   203.8
GR  45.2   204.9   44.25   206.8   44.25   210.0   44.25   210.8   44.25   212.8
GR  45.8   215.8   45.75   219.5   45.75   229.8   55.83   270.1   56.00   579.5
X1 1.761      41   967.8  1066.5   435.0   435.0   435.0
* HY US OF G43
GR  54.3   591.1   54.69   657.4   52.76   967.8   51.96   971.0   45.55   996.7
GR  45.5  1011.1   45.47  1011.3   44.37  1013.5   44.05  1014.1   44.05  1015.3
GR  44.0  1016.0   44.05  1016.1   44.05  1017.0   44.05  1017.1   44.05  1017.3
GR  44.0  1017.5   44.05  1020.1   45.03  1022.1   45.55  1023.1   45.55  1023.5
GR  45.5  1027.6   45.55  1036.7   45.89  1038.0   50.94  1058.2   51.71  1061.3
GR  52.0  1062.3   53.00  1066.5   53.00  1077.9   54.00  1127.9   55.64  1411.3
GR  56.6  1425.4   56.00  1425.7   56.30  1426.2   56.84  1427.4   57.00  1437.5
GR  57.0  1442.8   57.11  1444.8   58.20  1483.1   58.23  1487.9   58.79  1500.0
GR  58.8  1500.0
*
* RUNOFF FROM SUB-BASIN G3D GOES INTO DETENTION BASIN G-43
* THIS BASIN NOT PRESENT FOR INTERIM CONDITIONS
* ++++++++++++++++++++++++++++++++++++++++
*
*  ON-LINE DETETENTION BASIN NO. G-43
*
*A     9       0
*V  45.8       0    46.8       4    48.8      13    50.8      22    55.8      48
*S BASIN G43
*C     0      -9
*C     4    45.8    44.5     100    .016       1      -1
*L
*     9
*     1     3.0    50.0     225
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 1.669      44  1013.4  1114.9   470.0   470.0   470.0
* HY DS OF G43
GR  54.0   508.3   54.00   584.3   54.06   587.2   54.13   587.8   54.18   588.8
GR  55.0   600.8   54.55   672.9   55.00   867.0   54.00   894.6   54.00   951.7
GR  53.0  1001.8   53.00  1013.4   47.25  1036.4   47.00  1037.4   46.93  1037.7
GR  44.8  1046.0   44.85  1057.6   44.85  1058.2   44.68  1058.5   43.35  1061.2
GR  43.3  1062.7   43.35  1064.1   43.35  1067.2   43.72  1067.9   43.87  1068.2
GR  44.8  1070.2   44.85  1076.8   44.85  1077.6   44.85  1078.0   44.85  1086.0
GR  46.8  1093.6   47.25  1095.6   52.08  1114.9   52.93  1326.7   53.00  1326.9
GR  53.0  1476.8   52.27  1483.6   52.10  1492.6   52.00  1492.8   52.00  1497.1
GR  52.0  1497.4   51.94  1497.6   52.00  1497.8   52.00  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN G4
* QT  2.     569.     738.       0.       0.       0.       0.       0.       0.
X1 1.590      65   909.0  1022.0   262.0   262.0   262.0
GR  56.3   500.0   56.00   752.0   58.00   800.7   56.01   838.8   58.00   839.4
GR  56.0   847.2   55.85   847.7   55.56   849.0   54.64   849.6   54.00   852.5
GR  53.0   856.3   52.68   858.4   52.56   860.7   52.24   861.4   52.00   861.9
GR  50.9   866.6   52.00   870.7   52.42   887.2   54.00   887.9   54.58   892.8
GR  54.6   893.0   54.67   898.0   54.68   898.2   54.69   898.3   54.70   902.4
GR  54.6   905.2   54.45   906.5   54.45   909.0   53.14   914.3   53.06   914.6
GR  53.0   914.9   52.40   914.9   52.38   916.4   52.08   918.5   51.94   919.1
GR  48.6   932.6   46.59   940.5   46.09   942.5   45.19   946.1   44.39   949.3
GR  44.1   950.3   44.10   950.4   44.10   950.9   44.10   955.1   44.10   958.6
GR  44.1   959.5   42.60   962.5   42.60   967.5   42.60   967.6   42.60   968.5
GR  43.6   970.5   44.10   971.5   44.10   974.0   44.10   974.4   44.10   974.7
GR  44.1   978.4   44.10   980.2   44.10   990.4   48.56  1008.3   52.00  1022.0
GR  52.0  1153.6   53.00  1215.6   53.86  1464.4   53.00  1484.5   53.01  1500.0
NC .0600  .06000  .05000  .10000  .30000
X1 1.544      17   128.7   255.3    25.0    25.0    25.0
GR  54.9   100.0   54.76   128.7   43.67   173.1   43.67   180.0   43.67   184.1
GR  43.7   187.1   42.17   190.1   42.17   192.4   42.17   193.8   42.17   196.1
GR  43.7   199.1   43.67   202.1   43.67   206.1   43.67   213.1   54.24   255.3
GR  54.1   380.0   53.70   580.0
*  2.015     .40    2.70     .00    5.00    8.00  100.00    10.1   42.14   42.03
X1 1.534      13   122.5   261.4   100.0   100.0   100.0
* X2  0.     .00      2.   48.20   54.50     .00            .000            .000
* BT -11   100.0   54.90   54.90   180.0   54.50   54.50   180.0   54.50   53.50
* BT    0   192.4   54.50   53.50   192.4   54.50   47.00   193.8   54.50   47.00
* BT    0   193.8   54.50   53.50   206.2   54.50   53.50   206.2   54.50   54.50
* BT    0   380.0   54.00   54.00   580.0   53.70   53.70
GR  54.9   100.0   54.79   122.5   42.14   173.1   42.14   180.0   42.14   184.1
GR  42.1   192.4   42.14   193.8   42.14   202.1   42.14   206.1   42.14   213.1
GR  54.2   261.4   54.10   380.0   53.70   580.0
NC .0600  .06000  .06000  .30000  .50000
CB     5       8   42.14   42.03     100    .015      14
CB     5       8   42.14   42.03     100    .015      14
WD     1     2.8      54     200
CL
* LATERAL INFLOW HYDROGRAPH FOR BASIN G3C
* PIPED TO THIS CROSS SECTION FOR SPA CONDITIONS
X1 1.524      13   122.0   261.9   100.0   100.0   100.0
```

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GR  54.9   100.0   54.79   122.0   42.03   173.1   42.03   180.0   42.03   184.1
GR  42.0   192.4   42.03   193.8   42.03   202.1   42.03   206.1   42.03   213.1
GR  54.2   261.9   54.10   380.0   53.70   580.0
X1 1.487       36  827.7   926.6   342.0   342.0   342.0
HY US OF G41
GR  51.8   500.0   51.00   661.7   51.15   664.6   51.24   686.8   52.00   693.5
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.94   782.1
GR  50.7   782.5   51.21   801.7   50.73   827.7   43.42   857.0   43.42   867.8
GR  43.4   868.9   43.42   871.0   43.17   871.5   41.92   874.0   41.92   874.4
GR  41.9   874.6   41.92   880.0   43.42   883.0   43.42   885.5   43.42   888.1
GR  43.4   888.2   43.42   888.4   43.42   897.0   45.29   904.5   50.83   926.6
GR  53.0  1500.0
*
* ++++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. G-41
*
SA     4       0
SV  42.8       0    47.6      26    52.8      62
HS BASIN G41
SC     0      -4
CC     2    42.8    42.0     100    .016       1      -1
CL
LA     4
WD     2     3.0    49.0      50    50.0     150
*     WD     2     3.0    46.5      50    47.5     150
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 1.422       36   771.8   904.5   225.0   225.0   225.0
HY DS OF G41
GR  51.8   500.0   51.00   661.7   51.15   664.6   51.24   686.8   52.00   693.5
GR  53.0   696.5   52.96   701.1   53.91   707.0   53.45   708.3   53.03   713.9
GR  52.0   719.0   50.51   725.7   50.48   739.7   50.00   753.4   50.50   771.8
GR  48.0   782.1   47.92   782.5   43.12   801.7   43.04   802.0   43.04   816.0
GR  41.5   819.0   41.54   825.0   43.04   828.0   43.04   842.0   49.49   867.8
GR  49.7   868.5   49.43   868.9   48.00   871.5   47.40   874.4   46.99   874.6
GR  47.1   885.5   47.62   888.1   47.65   888.2   48.00   888.4   50.75   904.5
GR  53.0  1500.0
* LATERAL INFLOW HYDROGRAPH FOR BASIN G3C
X1 1.376       52   775.6   872.4   270.0   270.0   270.0
GR  51.2   500.0   51.00   664.0   50.77   666.2   50.55   669.9   51.24   672.9
GR  51.5   682.9   51.58   685.1   51.63   696.3   52.00   699.6   53.98   705.7
GR  54.0   705.7   54.00   715.7   53.93   715.7   52.69   719.1   52.49   721.8
GR  52.0   724.2   50.33   731.8   50.00   732.7   49.72   733.2   49.64   733.2
GR  49.0   733.4   49.00   746.6   49.60   767.4   49.65   775.6   42.79   803.0
GR  42.8   817.0   41.29   820.0   41.29   826.0   42.79   829.0   42.79   843.0
GR  48.1   864.3   50.15   872.4   50.00   941.0   48.90   948.2   48.00   950.2
GR  47.8   951.1   47.69   955.8   47.63   956.8   47.10   962.9   47.09   964.3
GR  47.2   964.4   48.00   964.4   47.13   964.8   47.40   965.5   49.12   968.5
GR  50.6   974.2   51.00   975.2   52.38  1276.4   52.50  1279.8   52.54  1280.0
GR  52.0  1422.8   52.91  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 1.324       28   949.1  1049.2    11.0    11.0    11.0
GR  50.1   500.0   50.63   646.9   50.08   649.3   49.54   864.7   50.00   897.8
GR  49.5   905.7   49.51   941.5   49.38   949.1   43.76   971.6   42.50   976.7
GR  42.5   980.6   42.50   981.3   42.50   986.6   42.50   990.5   42.50   993.2
GR  41.0   996.2   41.00  1002.2   42.50  1005.2   42.50  1009.1   42.50  1009.7
GR  42.5  1010.4   42.50  1012.7   42.50  1013.4   42.50  1016.7   45.79  1029.8
GR  50.6  1049.2   51.00  1070.7   50.77  1500.0
* $1.050     1.50    2.70     .00   36.00    5.80  541.00   2.000   40.98   40.96
X1 1.315       22   990.0  1078.1    25.0    25.0    25.0
* X2  0.      .00      1.   51.70   54.00     .00                    .000
BT   -22   990.0   54.00   54.00  1000.0   54.00   54.00  1000.0   54.00   51.70
BT     0  1010.8   54.00   51.70  1010.8   54.00   47.40  1012.0   54.00   47.40
BT     0  1012.0   54.00   51.70  1025.8   54.00   51.70  1025.8   54.00   46.70
BT     0  1027.5   54.00   46.70  1027.5   54.00   51.70  1040.8   54.00   51.70
BT     0  1040.8   54.00   45.70  1042.5   54.00   45.70  1042.5   54.00   51.70
BT     0  1056.1   54.00   51.70  1056.1   54.00   45.70  1057.3   54.00   45.70
BT     0  1057.3   54.00   51.70  1068.1   54.00   51.70  1068.1   54.00   54.00
BT     0  1100.0   54.00   54.00
GR  54.0   990.0   54.00   990.0   49.02  1000.0   48.98  1000.1   47.60  1000.1
GR  47.5  1002.9   43.62  1010.8   43.02  1012.0   40.99  1016.1   40.99  1025.8
GR  41.0  1027.5   40.99  1040.8   40.99  1042.5   40.99  1052.1   43.01  1056.1
GR  43.6  1057.3   45.91  1061.9   46.20  1068.0   48.98  1068.0   49.01  1068.1
GR  54.0  1078.1   54.00  1100.0
NC .0600  .06000  .05500  .30000  .50000
X1 1.314       21   990.0  1078.1    44.0    44.0    44.0
GR  54.0   990.0   48.99  1000.0   48.95  1000.1   47.60  1000.1   47.55  1002.9
GR  43.6  1010.8   42.99  1012.0   40.96  1016.1   40.96  1025.8   40.96  1027.5
GR  41.0  1040.8   40.96  1042.5   40.96  1052.1   42.98  1056.1   43.58  1057.3
GR  45.9  1062.0   46.20  1068.0   48.95  1068.0   48.98  1068.1   54.00  1078.1
GR  54.0  1100.0
X1 1.274       37   964.2  1065.0   500.0   500.0   500.0
HY DS OF CCTRR
GR  51.0   500.0   50.02   964.2   48.13   971.7   42.41   994.6   42.41  1008.6
GR  40.9  1011.6   40.91  1017.6   42.38  1020.5   42.41  1020.6   42.41  1023.1
GR  42.4  1034.1   42.41  1034.6   42.59  1035.3   44.59  1043.3   45.11  1045.4
GR  45.3  1046.3   45.51  1047.0   46.11  1049.4   48.13  1057.5   50.00  1065.0
GR  50.0  1130.5   49.00  1149.7   49.00  1160.0   50.00  1166.4   50.18  1167.8
GR  51.8  1173.0   52.00  1173.5   53.01  1176.0   53.00  1190.2   51.81  1193.3
GR  51.8  1193.9   51.26  1196.9   49.88  1200.7   50.00  1206.4   50.05  1207.5
GR  51.0  1229.5   51.80  1500.0
X1 1.214       40   998.0  1100.5    55.0    55.0    55.0
GR  51.3   500.0   49.34   998.0   44.89  1015.8   41.86  1027.9   41.86  1030.0
GR  41.9  1030.4   41.86  1031.3   41.86  1035.7   41.86  1039.4   41.86  1040.4
GR  41.9  1041.7   41.86  1043.2   40.36  1046.2   40.36  1052.2   40.36  1052.2
GR  41.9  1055.2   41.86  1062.3   41.86  1062.4   41.86  1065.8   41.86  1067.9
GR  50.0  1100.5   50.00  1342.5   50.00  1344.0   49.94  1376.2   50.00  1376.7
GR  50.9  1387.4   51.09  1388.2   52.00  1391.3   52.78  1394.1   53.82  1407.8
GR  53.8  1408.9   51.40  1426.8   51.40  1427.2   51.41  1428.6   51.09  1429.8
GR  51.1  1434.7   50.64  1438.4   50.80  1456.4   51.00  1460.7   51.10  1500.0
X1 1.202       14   239.1   356.5    20.0    20.0    20.0
GR  51.6      .0   51.51   239.1   41.80   278.0   41.80   280.0   41.80   283.1
GR  41.8   283.8   41.80   286.9   41.80   292.0   40.30   295.0   40.30   301.0
GR  41.8   304.0   41.80   318.0   51.43   356.5   51.20   600.0
X1 1.198       14   239.1   356.6   240.0   240.0   240.0
GR  51.6      .0   51.51   239.1   41.78   278.0   41.78   280.0   41.78   283.1
GR  41.8   283.8   41.78   286.9   41.78   292.0   40.28   295.0   40.28   301.0
GR  41.8   304.0   41.78   318.0   51.43   356.6   51.20   600.0
X1 1.160       18  1075.0  1176.1   295.0   295.0   295.0
GR  51.0   500.0   49.01  1075.0   48.56  1076.8   48.53  1076.9   46.81  1083.8
GR  41.6  1104.5   41.51  1105.0   41.51  1108.1   41.51  1109.1   41.51  1111.9
GR  41.5  1112.5   41.51  1119.0   40.01  1122.0   40.01  1128.0   41.51  1131.0
GR  41.5  1145.0   49.30  1176.1   50.80  1500.0

X1 1.102       25  1011.2  1117.7   285.0   285.0   285.0
GR  50.5   500.0   49.89   652.6   50.00   653.5   50.00  1011.2   42.28  1042.1
GR  41.2  1046.4   41.19  1051.7   41.19  1056.5   41.19  1058.5   40.02  1060.8
GR  39.8  1061.2   39.69  1061.5   39.69  1062.2   39.69  1067.5   41.19  1070.5
GR  41.2  1082.9   41.19  1085.5   41.19  1085.6   41.19  1086.3   41.19  1086.4
GR  42.3  1090.8   49.01  1117.7   49.03  1172.5   50.00  1232.5   51.00  1500.0
X1 1.048       25  1009.9  1119.2   422.0   422.0   422.0
GR  50.0   500.0   50.00  1009.9   41.54  1043.7   40.88  1046.3   40.88  1058.5
GR  39.4  1061.5   39.38  1067.5   39.96  1068.7   40.16  1069.1   40.26  1069.3
GR  40.9  1070.5   40.88  1077.4   40.88  1082.1   40.88  1083.3   40.88  1083.6
GR  40.9  1083.8   40.88  1086.2   40.88  1086.3   40.89  1086.4   40.94  1086.6
GR  41.5  1089.0   49.10  1119.2   50.00  1406.1   50.23  1409.7   50.67  1500.0
NC .0600  .06000  .06000  .10000  .30000
X1 1.001       22  1029.2  1131.0    25.0    25.0    25.0
GR  49.7   500.0   48.09  1029.2   40.56  1059.3   40.54  1059.4   40.41  1059.9
GR  40.4  1072.6   40.41  1074.1   38.91  1077.1   38.91  1083.1   40.41  1086.1
GR  40.4  1094.3   40.41  1094.6   40.41  1095.2   40.41  1095.6   40.41  1096.0
GR  40.4  1096.6   40.41  1099.9   40.56  1100.5   48.18  1131.0   49.94  1420.6
GR  50.0  1422.4   50.05  1500.0
CB     6       8   38.88   38.78      94    .015      14
CB     6       8   38.88   38.78      94    .015      14
WD     1     2.8      45     300
CL
* 2.015      .40    2.70   94.00    6.00    8.00   94.00    10.1   38.88   38.78
X1  .999       26  1027.1  1144.4    94.0    94.0    94.0
* X2  0.      .00      2.   47.50   46.00     .00                    .000
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1025.1   49.00  1025.6   49.00  1027.1   44.53  1045.0
GR  38.9  1067.6   38.88  1070.2   38.88  1071.7   38.88  1074.3   38.88  1080.4
GR  38.9  1081.0   38.88  1081.3   38.88  1094.4   38.88  1095.1   38.88  1102.2
GR  38.9  1107.6   42.35  1121.5   43.81  1127.3   44.53  1130.2   48.08  1144.4
GR  50.0  1500.0
NC .0600  .06000  .06000  .30000  .50000
X1  .950       26  1026.7  1144.8   100.0   100.0   100.0
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1025.1   49.00  1025.6   49.00  1026.7   44.43  1045.0
GR  38.8  1067.6   38.78  1070.2   38.78  1071.7   38.78  1074.3   38.78  1080.4
GR  38.8  1081.0   38.78  1081.3   38.78  1094.4   38.78  1095.1   38.78  1102.2
GR  38.8  1107.6   42.26  1121.5   43.71  1127.3   44.43  1130.2   48.08  1144.8
GR  50.0  1500.0
X1  .900       29  1022.5  1130.2   253.0   253.0   253.0
*  US OF L24D
GR  49.5   500.0   48.92   947.5   48.72   950.6   48.82   950.8   48.99   998.5
GR  49.0   998.6   49.05  1022.5   48.41  1025.1   48.28  1025.6   43.43  1045.0
GR  40.2  1058.0   40.18  1070.2   40.18  1071.7   40.18  1072.0   39.03  1074.3
GR  38.7  1075.0   38.68  1080.4   38.68  1081.0   38.83  1081.3   40.18  1084.0
GR  40.2  1094.4   40.18  1095.1   40.18  1098.0   41.23  1102.2   46.06  1121.5
GR  47.5  1127.3   47.72  1128.1   48.00  1130.2   50.00  1500.0
*
* REMOVED
* ++++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. L-24D
*
*     11       0
*   40.6       0    45.0     7.8    50.6      22
*  BASIN L24D
*      0     -11
*      2    40.6    40.2      50    .016       1      -1
*
*     11
*      1     3.0    44.5     150
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1  .888       23  1002.4  1114.8   430.0   430.0   430.0
*  DS OF L24D
GR  49.1   500.0   47.30  1002.4   39.89  1032.0   39.89  1046.0   38.39  1049.0
GR  38.4  1055.0   39.89  1058.0   39.89  1072.0   43.16  1085.1   44.09  1088.8
GR  45.2  1093.2   45.39  1094.0   46.48  1098.3   46.40  1099.8   46.30  1100.8
GR  45.5  1104.3   46.00  1105.9   47.34  1109.1   47.80  1114.8   48.00  1116.4
GR  48.8  1152.1   49.00  1154.4   50.01  1500.0
* QT  2.      428.    428.      0.      0.      0.      0.      0.      0.      0.
X1  .815       33  1113.0  1219.4   500.0   500.0   500.0
GR  49.0   500.0   48.00   986.0   47.10  1113.0   43.53  1127.3   43.26  1128.4
GR  41.1  1137.0   40.41  1139.8   39.71  1142.6   39.68  1142.7   39.61  1143.0
GR  39.4  1143.8   39.42  1150.3   39.42  1152.2   39.42  1160.2   37.92  1163.2
GR  37.9  1163.4   37.92  1169.2   39.42  1172.2   39.42  1183.8   42.53  1196.2
GR  43.3  1199.1   44.73  1205.0   48.32  1219.4   49.00  1252.9   49.00  1270.4
GR  49.5  1292.3   50.00  1306.0   50.50  1380.4   50.00  1383.7   50.33  1415.3
GR  50.0  1423.5   50.12  1428.2   50.00  1500.0
X1  .708       21   837.4   950.8   380.0   380.0   380.0
GR  48.1   500.0   47.50   811.9   47.50   812.0   47.25   837.4   38.86   871.0
GR  38.9   876.4   38.86   886.9   38.86   890.0   37.36   893.0   37.36   899.0
GR  38.9   902.0   38.86   921.0   46.32   950.8   46.00  1028.0   45.93  1028.2
GR  42.0  1031.2   42.00  1096.4   43.10  1097.1   49.20  1111.3   50.00  1113.7
GR  50.4  1500.0
X1  .633       15   943.3  1060.5   125.0   125.0   125.0
GR  46.8      .0   47.20   800.0   46.82   943.3   45.14   950.0   38.44   976.8
GR  38.4   995.9   36.94   998.9   36.94  1000.0   36.94  1003.6   36.94  1004.9
GR  38.4  1007.9   38.44  1026.8   44.24  1050.0   46.86  1060.5   48.00  1250.0
X1  .608       21   997.8  1128.1   110.0   110.0   110.0
GR  47.5      .0   47.30   350.0   46.10   620.0   47.10   700.0   51.30   750.0
GR  42.3   750.0   42.30   756.7   51.30   756.7   46.30   900.0   48.00   970.0
GR  48.1   997.8   38.30  1037.0   38.30  1056.0   36.80  1059.0   36.80  1065.0
GR  38.3  1068.0   38.30  1087.0   48.56  1128.1   49.00  1250.0   50.00  1353.5
GR  50.0  1500.0
X1  .597       41  1012.0  1145.6   255.0   255.0   255.0
GR  46.8   500.0   46.00   863.0   45.00   922.2   45.00   949.1   45.92   952.8
GR  46.0   953.2   46.00   954.3   45.38   958.4   45.84   970.4   45.69  1012.0
GR  38.2  1042.0   38.18  1054.1   38.18  1057.7   38.18  1058.3   38.18  1061.0
GR  36.7  1064.0   36.68  1070.0   37.98  1072.6   38.18  1073.0   38.18  1085.3
GR  38.2  1092.0   38.63  1093.8   38.81  1094.5   39.10  1095.7   40.88  1102.8
GR  41.2  1104.1   43.01  1111.3   43.26  1112.3   43.31  1112.5   44.01  1115.3
GR  45.1  1119.7   45.73  1145.6   46.00  1182.0   47.00  1214.1   47.00  1214.4
GR  47.4  1234.5   48.00  1246.8   49.00  1301.1   49.00  1301.3   50.00  1323.7
GR  50.5  1500.0
X1  .554       37  1046.6  1155.0   232.0   232.0   232.0
GR  47.0   500.0   46.28   579.0   46.27   579.5   45.27   858.0   45.00   875.6
GR  45.0   889.1   44.27   924.8   44.22   936.8   44.40   947.3   45.00   963.7
GR  45.0  1046.6   42.82  1055.3   41.70  1059.8   41.55  1060.4   41.00  1062.6
GR  39.1  1070.1   37.90  1075.0   37.90  1079.3   37.90  1081.1   37.90  1081.2
GR  37.9  1082.7   37.90  1082.9   37.90  1084.1   37.90  1094.0   36.40  1097.0
GR  36.4  1103.0   37.90  1106.0   37.90  1123.3   37.90  1125.0   45.41  1165.0
GR  45.5  1165.3   46.00  1172.9   47.00  1198.7   47.67  1216.6   48.00  1246.6
GR  47.5  1265.3   49.20  1500.0
```

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NC .0600  .06000  .06000  .10000  .30000
X1  .470      14    243.6    364.4     30.0     30.0     30.0
GR  46.5      .0    46.50    243.6    37.64    279.0    37.64    298.0    36.64    300.0
GR  36.1    301.0    36.14    303.1    36.14    304.8    36.14    307.0    36.64    308.0
GR  37.6    310.0    37.64    329.0    46.50    364.4    46.50    700.0
CB     6        8    36.11    36.04       66     .015       14
CB     6        8    36.11    36.04       66     .015       14
CB     6        8    36.11    36.04       66     .015       14
WD     1      2.8       44      300
CL
*  3.015      .40     2.70      .00     6.00     8.00    66.00     10.1    36.11    36.04
X1  .460       10    237.4    370.6     66.0     66.0     66.0
* X2  0.      .00       2.    45.50    46.50      .00                .000                .000
GR  46.5      .0    46.50    237.4    36.11    279.0    36.11    300.0    36.11    303.1
GR  36.1    304.8    36.11    308.0    36.11    329.0    46.50    370.6    46.50    700.0
NC .0600  .06000  .06000  .30000  .50000
* LATERAL INFLOW HYDROGRAPH FOR BASIN G5
X1  .440       10    237.2    370.8    120.0    120.0    120.0
GR  46.5      .0    46.50    237.2    36.04    279.0    36.04    300.0    36.04    303.1
GR  36.0    304.8    36.04    308.0    36.04    329.0    46.50    370.8    46.50    700.0
X1  .435       23    543.7    655.4    278.0    278.0    278.0
HY US OF E24A
GR  46.0    135.0    46.00    265.0    45.00    375.0    44.80    450.0    45.00    515.0
GR  45.2    543.7    43.66    550.0    37.41    575.0    37.41    585.0    37.41    593.5
GR  35.9    596.5    35.91    600.0    35.91    602.5    37.41    605.5    37.41    610.0
GR  37.4    615.0    37.41    625.0    39.91    635.0    45.00    655.4    45.00    690.0
GR  46.0    740.0    48.00    760.0    48.00   1000.0
*
* ++++++++++++++++++++++++++++++++++++++++
*
*  OFF-LINE DETETENTION BASIN NO. E-24A
*
SA     5        0
SV  37.5        0     43.0     52.0     48.0      120
HS BASIN E24A
SC     0       -5
CC     2     38.0     37.0       50     .016        1       -1
CL
LA     5
WD     2      3.0     42.8       50     43.3      100
* WD     2      3.0     40.5       50     41.5      100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1  .425       24   1167.6   1334.4    315.0    315.0    315.0
HY DS OF E24A
GR  46.2    500.0    44.12   1167.6    44.00   1169.8    42.37   1186.5    42.20   1190.7
GR  42.0   1191.3    42.00   1210.5    42.99   1211.0    43.76   1218.3    43.20   1220.6
GR  37.3   1244.1    37.10   1245.0    37.10   1246.9    37.10   1264.0    35.60   1267.0
GR  35.6   1273.0    37.10   1276.0    37.10   1279.5    37.10   1289.1    37.10   1295.0
GR  46.9   1334.4    47.97   1384.1    48.00   1384.7    48.20   1500.0
X1  .345       21   1220.0   1346.1    350.0    350.0    350.0
HY US OF CONFL
GR  46.4    500.0    44.00   1098.8    43.92   1098.9    42.00   1102.9    42.00   1116.7
GR  42.0   1116.9    42.13   1117.4    44.00   1120.7    44.67   1124.7    45.00   1139.8
GR  45.5   1220.0    36.75   1255.0    36.75   1274.0    35.25   1277.0    35.25   1283.0
GR  36.8   1286.0    36.75   1296.8    36.75   1305.0    41.88   1325.5    47.03   1346.1
GR  47.5   1500.0
*
*
*
DB     3
*
T1 ELDER CREEK LOWER
T2
T3
*
UB     1        2
*
*
*
XK   100                                  .7      .01
XI    .05
*
*
NC   .04      .04      .03       .1       .3
X1 5.753       32    988.6   1088.7    610.0    610.0    610.0
GR  46.0    500.0    45.00    734.1    44.99    734.2    44.96    735.3    44.00    753.8
GR  44.0    768.1    43.13    817.0    43.00    937.0    42.18    988.6    39.29   1000.2
GR  38.0   1005.2    37.01   1009.3    35.84   1014.0    35.84   1032.6    34.34   1035.6
GR  34.3   1041.6    35.84   1044.6    35.84   1058.0    35.84   1061.9    35.84   1064.0
GR  36.2   1065.4    36.54   1066.8    36.57   1066.9    36.69   1067.4    36.74   1067.6
GR  37.0   1068.5    37.34   1070.0    38.04   1072.8    39.01   1076.7    41.61   1087.1
GR  42.0   1088.7    43.00   1500.0
* QT  2.    1162.    1162.       0.       0.       0.       0.       0.       0.       0.
X1 5.633       21    865.6   1433.0    475.0    475.0    475.0
HY DS OF CONFL
GR  46.5      1.0    46.73    535.9    46.00    555.1    44.00    832.3    43.01    865.0
GR  43.0    865.1    43.00    865.6    41.68    913.2    41.35    976.9    41.35    977.1
GR  41.1   1095.0    33.81   1124.3    33.81   1174.3    34.94   1178.8    41.34   1204.4
GR  41.6   1205.5    41.66   1205.7    41.85   1208.8    43.00   1433.0    44.00   1440.6
GR  43.8   2500.0
X1 5.545       26    982.9   1102.4    611.0    611.0    611.0
GR  44.2      1.0    44.18    503.8    44.00    508.9    43.77    511.7    43.26    534.3
GR  43.0    537.9    41.16    982.9    33.40   1013.9    33.40   1021.4    33.40   1023.3
GR  33.4   1024.8    33.40   1036.6    33.40   1049.5    33.40   1052.3    33.40   1053.9
GR  33.4   1056.5    33.40   1063.9    39.09   1086.7    43.00   1102.4    43.00   1112.2
GR  42.6   1115.9    42.00   1127.4    42.00   1167.7    42.92   1171.8    43.00   1172.2
GR  42.9   2500.0
NC .0450  .04500  .06000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH FOR BASIN E6
X1 5.423       34   1069.1   1204.8     28.0     28.0     28.0
GR  44.9        1    44.72    649.8       45    845.1    44.02    887.1    43.61   1060.7
GR    44   1062.7       44   1069.1    43.74   1070.1    39.24   1088.1    39.17   1088.4
GR  38.2   1092.4    37.24   1096.1    33.27     1112    32.87   1113.6    32.87     1114
GR  32.9   1119.8    32.87   1144.9    32.87   1150.3    32.87   1156.8    32.87   1163.6
GR  33.1   1164.5    33.22     1165    33.27   1165.2    33.77   1167.2    43.17   1204.8
GR    43   1459.3    42.46   1461.1       42   1461.7       42   1472.4     42.4   1476.9
GR    43      2500    43.55     2584       44   2667.8    44.67   2759.2
* $1.050      1.56     2.63      .00    13.50     1.40   317.00    2.000    32.86    32.74
X1 5.410       30    969.1     1031    104.0    104.0    104.0
* X2  0.      .00       1.    43.40    44.60      .00                .000                .000
*     -7    100.0    46.07    44.20    980.5    45.00    43.00   1000.0    45.00    42.30
*      0   1040.4    45.00    43.40   1276.1    44.00    43.20   1302.1    43.00    42.83
*      0   2500.0    43.00    42.48
BT    -6    824.7    44.97    44.97      958    45.09    44.88      977    45.12    43.99
BT         1030.3    45.15    43.99   1053.2    45.09    44.85   1159.8    44.73    44.64
GR  45.2       144.95326    824.744.91333      958    44.91    969.140.96693      977
GR 39.22      980.5     37.8    980.5     37.8    983.3     32.8    993.3    32.85     1000
GR 32.85     1006.8     37.8   1016.7     37.8   1019.5     39.2   1019.5     44.6   1030.3
GR 44.95       1031       45   1040.444.95465   1053.2    44.82   1091.244.66446   1159.8
GR 44.44     1258.8    43.86   1540.6    43.19   1974.8    43.03   2092.9       43     2500
GR 43.15     2614.5    43.42   2698.3    44.13   2820.2    44.72     2904    45.31   2926.9
NC .0450  .04500  .06000  .30000  .50000
X1 5.402       20    968.9   1031.2    112.0    112.0    112.0
GR  45.2        1    44.91    968.9    39.13    980.5    37.8     980.5     37.8     983.2
GR  32.8    993.3    32.76     1000    32.76   1006.8     37.8   1016.8     37.8   1019.5
GR  39.1   1019.5    44.96   1031.2       45   1040.4    42.01   1071.6     42.4   1276.1
GR    43   1302.1       43     2500    43.23   2599.2     44.2     2683    45.09   2774.4
* QT  2.    1190.    1330.       0.       0.       0.       0.       0.       0.       0.
X1 5.374       51    984.5   1113.6    429.0    429.0    429.0
HY US OF E20
GR 46.06     85.5    45.47    131.2    45.17    207.4       45    583.6    44.93    584.5
GR    45      624    44.74    627.2    44.7     647.8    44.29    688.6    44.77    765.2
GR 44.89     765.8       45    770.3       45    796.7    44.58      822    44.12    826.7
GR 44.08     827.2    44.07    827.4       44    828.6    43.14    865.2       43    867.8
GR 42.96     868.5    42.95    870.3     42.3    901.6       42    908.8    41.86    938.6
GR    42     948.2     42.3      951     42.5    953.9       43    959.3       43    984.5
GR 35.28    1015.4    32.66   1025.9     32.7   1033.2    32.66   1040.5    32.66   1041.6
GR 32.66    1047.2    32.66   1047.3     32.7   1048.4    32.66   1049.7    32.66   1050.7
GR 32.66    1051.2    32.66   1052.7     32.7   1062.3    32.66   1067.8    32.66   1068.6
GR 32.66    1075.9    42.09   1113.6     42.8     2500    43.39   2568.7    44.43   2637.3
GR 45.32      2683
*
* ++++++++++++++++++++++++++++++++++++++++
*  NOT USED FOR INTERRIM CONDITIONS
*  OFF-LINE DETETENTION BASIN NO. E-20
*
SA     6        0
SV  32.7        0     34.7       33     36.7       67     38.7      102     40.0      125
HS BASIN E20
SC     0       -6
CC     2     32.9     32.7       50     .016        1       -1
CL
LA     6
WD     2      3.0     80.0       50     80.5      150
* WD     2      3.0     40.0       50     40.5      150
* WD     2      3.0     38.0       50     38.5      150
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
X1 5.303       36   1068.8   1183.1    400.0    400.0    400.0
HY DS OF E20
GR  45.9      1.0    45.08    517.7    45.01    518.5    45.00    518.8    45.00    711.9
GR  44.9    717.0    44.00    732.1    43.00    757.5    43.00    759.7    42.00    839.1
GR  41.0    871.5    39.81   1028.7    38.63   1068.8    33.24   1090.4    32.29   1094.2
GR  32.3   1096.4    32.29   1099.2    32.29   1100.0    32.29   1114.6    32.29   1115.8
GR  32.3   1119.5    32.29   1120.1    32.29   1126.0    32.29   1135.1    32.29   1139.2
GR  32.3   1143.6    32.29   1144.2    33.24   1148.0    42.00   1183.1    42.00   1273.2
GR  42.0   1273.3    42.00   1374.2    41.37   1401.6    41.01   1489.8    41.00   1492.0
GR  41.1   2500.0
X1 5.218       37   1039.3   1149.8    250.0    250.0    250.0
GR  43.9      1.0    44.00    818.6    43.86    821.2    43.00    832.7    42.25    852.7
GR  41.9    859.6    41.86    863.6    41.00    889.9    41.00    907.4    40.00    957.1
GR  40.0    985.6    39.03   1003.8    39.01   1039.3    34.28   1058.2    31.94   1067.6
GR  31.9   1073.5    31.94   1076.4    31.94   1082.7    31.94   1082.8    31.94   1085.4
GR  31.9   1086.8    31.94   1087.6    31.94   1092.3    31.94   1093.9    31.94   1099.2
GR  31.9   1101.5    31.94   1102.6    31.94   1104.6    31.94   1106.3    31.94   1112.7
GR  31.9   1117.6    34.28   1126.9    40.00   1149.8    40.00   1338.8    41.00   1398.8
GR  41.0   1409.7    41.76   2500.0
X1 5.170       34   1019.1   1131.0    500.0    500.0    500.0
GR  43.8      1.0    44.00    676.3    43.51    678.3    43.62    678.7    44.00    680.3
GR  44.0    755.7    43.00    808.0    43.00    843.2    41.00    898.4    41.00    898.9
GR  40.0    906.5    39.07    933.3    39.00    933.4    39.00   1019.1    31.72   1048.2
GR  31.7   1061.0    31.72   1069.2    31.72   1069.3    31.72   1069.6    31.72   1076.1
GR  31.7   1078.0    31.72   1081.1    31.72   1081.9    31.72   1085.4    31.72   1096.4
GR  31.7   1098.2    33.60   1105.7    36.97   1119.2    39.93   1131.0    39.00   1293.3
GR  40.1   1315.4    40.48   1327.7    41.00   1339.7    41.16   2500.0
X1 5.075       35   1052.3   1163.0    400.0    400.0    400.0
GR  43.0    500.0    43.00    517.1    42.93    518.6    42.00    550.0    41.58    599.1
GR  42.0    619.7    42.00    698.0    41.54    708.1    41.45    946.5    41.00    974.0
GR  41.0    975.8    40.00    999.1    39.36   1052.3    31.74   1082.8    31.29   1084.6
GR  31.3   1084.9    31.29   1086.9    31.29   1087.1    31.29   1090.4    31.29   1093.2
GR  31.3   1094.1    31.29   1097.9    31.29   1111.4    31.29   1124.7    31.29   1125.0
GR  31.3   1126.6    31.29   1127.4    31.29   1134.6    31.74   1136.4    38.39   1163.0
GR  38.9   1199.9    39.08   1232.6    39.78   1262.6    39.87   1264.6    40.90   1500.0
* QT  2.    1000.    1000.       0.       0.       0.       0.       0.       0.       0.
X1 5.005       34   1077.1   1188.1    400.0    400.0    400.0
GR  43.0    500.0    43.00    507.3    42.03    531.1    38.74    964.8    39.00   1045.0
GR  39.5   1051.1    40.00   1064.5    40.00   1077.1    38.30   1083.9    32.73   1106.2
GR  31.0   1113.2    30.94   1113.3    30.94   1114.8    30.94   1116.0    30.94   1116.9
GR  30.9   1121.3    30.94   1123.3    30.94   1124.9    30.94   1132.0    30.94   1148.9
GR  30.9   1155.9    30.94   1156.2    30.94   1158.0    30.94   1160.1    30.94   1160.7
GR  30.9   1163.3    37.13   1188.1    38.00   1378.9    38.50   1393.9    39.00   1403.6
GR  39.0   1456.5    39.05   1458.4    40.00   1458.9    40.02   1500.0
X1 4.916       31    876.4   1000.2    400.0    400.0    400.0
GR  43.1      500    43.00    804.7    42.23    864.7    42.37    865.7    41.71    874.9
GR  41.6    876.4    39.96    882.9    39.93    883.0    30.71    919.9    30.59    920.3
GR  30.6    925.4    30.59    927.3    30.59    927.5    30.59    931.1    30.59    932.4
GR  30.6    938.8    30.59    942.1    30.59    943.4    30.59    944.4    30.59    950.7
GR  30.6    959.6    30.59    962.9    30.59    967.2    30.59    970.0    30.59    970.3
GR  30.7    970.8    38.07   1000.2    39.00   1408.8    39.70   1425.2    40.00   1439.7
GR  40.0   1500.0
X1 4.845       43    997.0   1119.2    283.0    283.0    283.0
GR  44.0    501.5    42.32    503.5    41.98    523.8    43.00    529.0    42.54    534.9
GR  43.0    535.0    42.52    535.0    42.00    535.6    42.00    667.1    42.89    703.5
GR  43.0    705.2    43.00    858.3    42.98    858.5    42.00    862.7    41.16    874.5
GR  41.0    879.5    41.00    887.0    40.59    892.2    40.00    969.5    39.50    997.0
GR  31.8   1028.0    30.25   1034.1    30.25   1051.2    30.25   1053.2    30.25   1055.8
GR  30.2   1056.0    30.25   1058.5    30.25   1061.3    30.25   1063.3    30.25   1068.6
GR  30.2   1070.5    30.25   1076.0    30.25   1084.1    30.43   1084.8    30.76   1086.1
GR  30.9   1086.6    31.03   1087.2    31.36   1088.5    31.76   1090.1    39.04   1119.2
GR  39.3   1343.6    40.00   1370.0    40.00   1500.0
NC .0450  .04500  .06000  .10000  .30000
* QT  2.    1184.    1468.       0.       0.       0.       0.       0.       0.       0.
X1 4.799       46    909.8   1036.2      540      540      540
HY DS BDRY SPA
GR  43.6    519.0    41.87    521.1    41.64    534.4    43.00    541.4    42.98    541.6
GR  43.0    541.7    43.00    778.5    43.74    792.6    43.21    837.0    43.00    837.8
GR  43.0    839.3    42.02    855.4    42.00    857.7    41.07    870.3    41.00    871.0
GR  40.1    909.8    39.40    912.5    39.02    914.0    37.25    921.1    35.85    926.7
GR  35.7    927.4    35.60    927.7    33.75    935.1    32.60    939.7    30.90    946.5
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GR  30.8   947.1   30.35   948.7   30.00   950.1   30.00   954.2   30.00   981.5
GR  30.0   983.1   30.00   983.2   30.00   983.3   30.00   994.0   30.00  1000.1
GR  30.0  1000.2   30.80  1003.3   31.70  1006.9   33.43  1013.8   34.33  1017.4
GR  35.8  1023.4   35.85  1023.5   36.05  1024.3   39.00  1036.1   39.00  1036.2
GR  40.5  1500.0
*
*   McCAY AND SOMPS DATA STARTS HERE.
*
*   BASE CONDITION AND ULTIMATE CONDITION ARE THE SAME DOWNSTREAM OF THIS POINT
*
XK   100                                .7   .0150
*
NC .0600  .06000  .04000  .10000  .30000
X1 4.697      22   755.0   895.0    80.0    80.0    80.0
GR  43.2      .0   42.80   219.0   43.00   548.0   42.20   556.0   43.30   589.0
GR  42.6   621.0   43.30   633.0   42.30   714.0   38.70   755.0   38.10   786.0
GR  30.5   814.0   30.50   849.0   36.60   873.0   38.70   895.0   38.30  1000.0
GR  39.7  1121.0   39.30  1257.0   40.20  1517.0   39.70  1737.0   39.50  1926.0
GR  39.5  2083.0   40.10  2200.0
NC .0600  .06000  .04000  .10000  .30000
X1 4.682      16   960.0  1040.0    30.0    30.0    30.0
X2    0.     .00           41.00   40.00     .00           1.500            .000
X3   10.                                                     .00     .00
BT    -9      .0   41.70   41.70   840.0   40.00   40.00   870.0   39.80   39.80
BT     0   910.0   40.00   40.00   960.0   42.30   41.00  1040.0   42.30   41.00
BT     0  1110.0   40.00   40.00  1210.0   40.00   40.00  2100.0   41.00   41.00
GR  41.7      .0   40.00   840.0   39.80   870.0   40.00   910.0   41.00   960.0
GR  37.0   960.0   33.50   971.9   30.90   985.4   29.90  1000.0   31.40  1013.0
GR  33.8  1029.0   37.30  1040.0   41.00  1040.0   40.00  1110.0   40.00  1210.0
GR  41.0  2100.0
NC .0600  .06000  .04000  .10000  .30000
*      1    2.81     1.6      .4      40      41     2.7
*                      6
X1 4.676      16   960.0  1040.0    80.0    80.0    80.0
X3   10.                                                     .00     .00
BT    -9      .0   41.70   41.70   840.0   40.00   40.00   870.0   39.80   39.80
BT     0   910.0   40.00   40.00   960.0   42.30   41.00  1040.0   42.30   41.00
BT     0  1110.0   40.00   40.00  1210.0   40.00   40.00  2100.0   41.00   41.00
GR  41.7      .0   40.00   840.0   39.80   870.0   40.00   910.0   41.00   960.0
GR  37.0   960.0   33.50   971.9   30.90   985.4   29.90  1000.0   31.40  1013.0
GR  33.8  1029.0   37.30  1040.0   41.00  1040.0   40.00  1110.0   40.00  1210.0
GR  41.0  2100.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.661      27  1089.0  1229.0   520.0   520.0   520.0
GR  38.7      .0   39.40    98.0   39.50   143.0   39.00   176.0   40.00   192.0
GR  38.7   352.0   38.10   422.0   39.60   538.0   37.60   748.0   36.50   918.0
GR  34.4   957.0   37.40  1005.0   37.60  1089.0   36.20  1122.0   27.60  1141.0
GR  27.6  1159.0   35.60  1180.0   35.60  1204.0   37.60  1229.0   37.60  1299.0
GR  35.6  1337.0   37.50  1369.0   36.60  1515.0   38.50  1585.0   38.10  1766.0
GR  38.5  1992.0   38.20  2150.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.562      27  1089.0  1229.0   880.0   880.0   880.0
GR  39.3      .0   40.00    98.0   40.10   143.0   39.60   176.0   40.60   192.0
GR  39.3   352.0   38.70   422.0   40.20   538.0   38.20   748.0   37.10   918.0
GR  35.0   957.0   38.00  1005.0   38.20  1089.0   36.80  1122.0   28.20  1141.0
GR  28.2  1159.0   36.20  1180.0   36.20  1204.0   38.20  1229.0   38.20  1299.0
GR  36.2  1337.0   38.10  1369.0   37.20  1515.0   39.10  1585.0   38.70  1766.0
GR  39.1  1992.0   38.80  2150.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.396      29  1011.1  1104.5   630.0   630.0   630.0
GR  39.8      .0   37.80    21.0   39.50    54.0   38.50    82.0   39.70   101.0
GR  39.3   276.0   39.50   416.0   37.00   503.0   34.60   863.0   36.60   906.0
GR  37.8  1000.0   36.69  1011.1   34.25  1016.0   28.00  1028.5   28.00  1041.0
GR  28.0  1048.0   28.00  1054.0   28.00  1081.0   28.00  1088.5   34.25  1101.0
GR  36.0  1104.5   38.50  1117.0   37.30  1201.0   36.20  1245.0   38.00  1295.0
GR  38.2  1363.0   37.30  1471.0   38.20  1668.0   39.80  1950.0
NC .0600  .06000  .05000  .10000  .30000
* LATERAL INFLOW HYDROGRAPH BASIN E-7
X1 4.276      29  1000.0  1117.0   120.0   120.0   120.0
GR  39.8      .0   37.80    21.0   39.50    54.0   38.50    82.0   39.70   101.0
GR  39.3   276.0   39.50   416.0   37.00   503.0   34.60   863.0   36.60   906.0
GR  37.8  1000.0   36.81  1009.9   33.75  1016.0   27.50  1028.5   27.50  1041.0
GR  27.5  1048.0   27.50  1054.0   27.50  1081.0   27.50  1088.5   33.75  1101.0
GR  36.3  1106.2   38.50  1117.0   37.30  1201.0   36.20  1245.0   38.00  1295.0
GR  38.2  1363.0   37.30  1471.0   38.20  1668.0   39.80  1950.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.254      16   950.9  1049.4    80.0    80.0    80.0
X3   10.                                                     .00     .00
BT    -6      .0   39.50   39.50   955.0   37.00   37.00   962.3   37.00   35.70
BT     0  1038.0   37.00   35.70  1045.0   37.00   37.00  2000.0   38.50   38.50
GR  39.5      .0   37.01   950.9   34.98   955.0   31.33   962.3   28.58   967.8
GR  27.4   970.2   27.40   980.0   27.40  1000.0   27.40  1010.0   27.40  1020.0
GR  27.4  1027.0   27.40  1030.2   31.32  1038.0   34.82  1045.0   37.01  1049.4
GR  38.5  2000.0
NC .0600  .06000  .05000  .10000  .30000
*      1    3.61     1.6      .3    35.7      37     2.7
*     39      40      15
X1 4.238      16   951.1  1049.2   140.0     1.0    70.0
X3   10.                                                   36.50   36.50
BT    -6      .0   39.50   39.50   955.0   37.00   37.00   962.3   37.00   35.70
BT     0  1038.0   37.00   35.70  1045.0   37.00   37.00  2000.0   38.50   38.50
GR  39.5      .0   37.01   951.1   35.08   955.0   31.43   962.3   28.68   967.8
GR  27.5   970.2   27.50   980.0   27.50  1000.0   27.50  1010.0   27.50  1020.0
GR  27.5  1027.0   27.50  1030.2   31.42  1038.0   34.92  1045.0   37.01  1049.2
GR  38.5  2000.0
NC .0600  .06000  .05000  .10000  .30000
X1 4.225      30   984.0  1082.7   410.0   410.0   410.0
GR  39.6      .0   41.20    27.0   35.30    72.0   40.60   128.0   36.50   196.0
GR  37.5   248.0   34.60   766.0   36.70   839.0   34.30   902.0   36.30   984.0
GR  36.3   984.2   27.40  1002.0   27.40  1028.0   27.40  1047.0   27.40  1056.0
GR  27.4  1062.0   36.40  1080.0   37.73  1082.7   36.30  1097.0   37.10  1117.0
GR  37.2  1270.0   38.00  1409.0   38.20  1570.0   38.80  1623.0   39.60  1713.0
GR  39.6  1743.0   39.60  1777.0   38.20  1913.0   39.20  1987.0   39.60  2050.0
NC .0600  .06000  .05000  .10000  .30000
* LATERAL INFLOW BASIN E-8
X1 4.148      29   984.0  1082.8   120.0   160.0   141.0
GR  39.6      .0   41.20    27.0   35.30    72.0   40.60   128.0   36.50   196.0
GR  37.5   248.0   34.60   766.0   36.70   839.0   34.30   902.0   36.30   984.0
GR  27.3  1002.0   27.30  1028.0   27.30  1047.0   27.30  1056.0   27.30  1062.0
GR  36.3  1080.0   37.72  1082.8   36.30  1097.0   37.10  1117.0   37.20  1270.0
GR  38.0  1409.0   38.20  1570.0   38.80  1623.0   39.60  1713.0   39.60  1743.0
GR  39.6  1777.0   38.20  1913.0   39.20  1987.0   39.60  2050.0
* SP RAILROAD
X1 4.121      18   878.3   921.8    29.0    29.0    29.0
GR  41.4      .0   41.50   878.3   31.70   878.3   31.70   879.3   27.80   882.4
GR  27.8   887.4   29.30   889.5   29.30   895.5   27.80   897.5   27.80   902.5
GR  29.3   904.5   29.30   910.5   27.80   912.6   27.80   917.6   31.70   920.8
GR  31.7   921.8   41.50   921.8   41.60  1800.0
*     20      20      22      35      22      37
BR     1       5     1.6      .4    48.4    48.5
BL    36      38       8
* 4.115       18   878.3   921.8    90.0    50.0    70.0
*   41.4      .0   41.50   878.3   31.70   878.3   31.70   879.3   27.80   882.4
*   27.8   887.4   29.30   889.5   29.30   895.5   27.80   897.5   27.80   902.5
*   29.3   904.5   29.30   910.5   27.80   912.6   27.80   917.6   31.70   920.8
*   31.7   921.8   41.50   921.8   41.60  1800.0
* 4.112       23  1228.0  1310.0    31.0    31.0    31.0
*   37.0   130.0   36.00   160.0   36.90   180.0   38.00   220.0   38.00   409.0
*   37.0   521.0   36.90   548.0   37.00   592.0   37.50   668.0   36.10   785.0
*   35.7   940.0   34.20  1025.0   35.10  1087.0   34.20  1147.0   33.70  1200.0
*   34.5  1228.0   31.40  1255.0   27.30  1265.0   27.20  1300.0   34.80  1310.0
*   34.0  1320.0   35.30  1410.0   37.50  1505.0
* 4.106       23  1225.0  1310.0   240.0   215.0   219.0
*   37.0   130.0   36.00   160.0   36.90   180.0   38.00   220.0   38.00   409.0
*   37.0   521.0   36.90   548.0   37.00   592.0   37.50   668.0   36.10   785.0
*   35.7   940.0   34.20  1025.0   35.10  1087.0   34.20  1147.0   35.70  1208.0
*   35.4  1225.0   22.00  1259.0   21.60  1279.0   22.00  1294.0   33.80  1310.0
*   34.0  1320.0   35.30  1410.0   37.50  1505.0
X1 4.064      22  1194.0  1297.0  1050.0  1130.0  1080.0
GR  36.5   137.0   35.50   155.0   36.50   180.0   37.00   200.0   38.00   240.0
GR  37.0   393.0   36.57   460.0   37.12   512.0   40.96   519.0   40.96   710.0
GR  37.0   727.0   35.50   915.0   35.90  1052.0   35.70  1137.0   35.70  1194.0
GR  35.3  1210.0   21.86  1238.0   21.46  1258.0   21.86  1278.0   34.50  1297.0
GR  37.1  1397.0   38.00  1492.0
X1 3.860      21   830.0   937.0    96.0    31.0    66.0
X3   10.                                                     .00     .00
GR  36.0   588.0   35.13   623.0   35.74   632.0   37.11   637.0   36.61   638.0
GR  36.6   697.0   37.11   700.0   37.11   749.0   36.62   750.0   36.20   786.0
GR  36.2   830.0   35.88   846.0   21.19   877.0   20.79   897.0   21.19   917.0
GR  33.6   937.0   34.00  1030.0   35.00  1370.0   36.00  1522.0   37.00  1611.0
GR  38.0  1627.0
X1 3.846       8   100.0   188.0    50.0    50.0    50.0
X3   10.                                                     .00     .00
BT    -6      .0   36.30   36.30   100.0   36.30   36.30   100.0   36.30   34.80
BT     0   188.0   36.30   34.80   188.0   36.30   36.30   288.0   36.30   36.30
GR  36.3      .0   36.30   100.0   32.80   100.0   20.70   124.0   20.70   164.0
GR  32.8   188.0   36.30   188.0   36.30   288.0
*   1.05       3     1.6      .4    34.8    36.3     2.7
*                      6
X1 3.839       8   100.0   188.0   134.0   134.0   134.0
X3   10.                                                     .00     .00
BT    -6      .0   36.30   36.30   100.0   36.30   36.30   100.0   36.30   34.80
BT     0   188.0   36.30   34.80   188.0   36.30   36.30   288.0   36.30   36.30
GR  36.3      .0   36.30   100.0   32.80   100.0   20.70   124.0   20.70   164.0
GR  32.8   188.0   36.30   188.0   36.30   288.0
X1 3.812      22   832.0   937.0   530.0   530.0   530.0
X3   10.                                                     .00     .00
GR  34.8      .0   35.70   299.0   36.00   569.0   35.60   638.0   35.70   680.0
GR  34.5   724.0   37.80   784.0   38.10   832.0   32.10   866.0   22.20   877.0
GR  21.5   888.0   22.20   903.0   23.00   917.0   34.80   937.0   36.20  1102.0
GR  36.3  1216.0   34.50  1285.0   34.80  1423.0   36.80  1463.0   38.80  1751.0
GR  40.2  1934.0   39.00  2100.0
NC .0600  .06000  .04000  .10000  .30000
X1 3.712      16  1017.0  1107.0   910.0   910.0   910.0
X3   10.                                                     .00     .00
GR  35.1      .0   35.50    60.0   34.20   220.0   35.30   357.0   35.00   808.0
GR  35.5   846.0   34.70  1017.0   32.30  1035.0   21.70  1044.0   21.50  1059.0
GR  21.5  1071.0   22.20  1083.0   33.00  1107.0   34.00  1402.0   37.80  1700.0
GR  37.7  1900.0
NH     5   1.110   876.0  .06000  1033.0  .04000  1131.0  .06000  1443.0   1.110
NH 1700.  .00000
X1 3.540      22  1033.0  1131.0   100.0   160.0   130.0
X3   10.                                                     .00     .00
GR  34.8      .0   34.80    87.0   33.70   137.0   35.20   192.0   34.50   350.0
GR  31.3   393.0   33.80   440.0   33.70   520.0   31.70   661.0   33.00   830.0
GR  33.6   876.0   32.50   995.0   32.20  1033.0   30.20  1059.0   21.10  1070.0
GR  20.6  1083.0   20.60  1098.0   21.10  1108.0   33.10  1131.0   33.70  1195.0
GR  35.8  1443.0   35.20  1700.0
NC   .06     .06     .04
X1 3.515      14  1050.0  1130.0    35.0    35.0    35.0
X3   10.                                                     .00     .00
BT    -6      .0   31.40   31.40  1050.0   33.30   33.30  1050.0   35.70   32.00
BT     0  1130.0   35.70   32.00  1130.0   33.30   33.30  2000.0   34.00   34.00
GR  31.4      .0   33.30  1050.0   32.00  1056.0   26.00  1056.0   22.70  1065.0
GR  21.7  1074.6   20.60  1090.0   22.00  1103.0   23.90  1113.9   26.80  1119.0
GR  29.6  1123.9   32.00  1123.9   33.30  1130.0   34.00  2000.0
NC .0600  .06000  .04000  .10000  .30000
*      1     2.8     1.6      .4      32    33.1     2.7
*                      6
* LATERAL INFLOW HYDROGRAPH BASIN E-9
X1 3.508      14  1050.0  1130.0    30.0   110.0    70.0
X3   10.                                                     .00     .00
BT    -6      .0   31.40   31.40  1050.0   33.30   33.30  1050.0   35.70   32.00
BT     0  1130.0   35.70   32.00  1130.0   33.30   33.30  2000.0   34.00   34.00
GR  31.4      .0   33.30  1050.0   32.00  1056.0   26.00  1056.0   22.70  1065.0
GR  21.7  1074.6   20.60  1090.0   22.00  1103.0   23.90  1113.9   26.80  1119.0
GR  29.6  1123.9   32.00  1123.9   33.30  1130.0   34.00  2000.0
NC  0.06  .06000  .04000  .10000  .30000
X1 3.495       6   775.0   850.0    20.0   320.0   170.0
X3   10.                                                     .00     .00
GR  31.4      .0   32.50   775.0   20.40   795.0   20.40   830.0   32.50   850.0
GR  34.0  2000.0
X1 3.463      49   671.8   737.5   115.0   115.0   115.0
X3   10.                                                     .00     .00
BT   -14  327.54   34.88   34.88  396.09   33.15   33.15  492.57    32.7    32.7
BT        568.74   32.42   32.42  629.68   32.36   32.36  676.13   32.64   32.26
BT        679.18   32.57   30.05  730.98   32.66   30.03  739.36   32.64   32.26
BT        754.09   32.36   32.36  809.95    32.3    32.3  881.04   32.52   32.52
BT        985.14   32.91   32.91 1058.77   34.53   34.53
GR 34.94  326.4134.91171  327.5433.19530  396.09   33.16   397.532.71146  492.57
GR  32.7     495    32.4     56532.39466  568.74 32.3076  629.68    32.3     635
GR  32.2   671.8    29.9   675.3    27.8   675.326.83167  676.1323.27333  679.18
GR  20.1   681.9    20.1   695.3      23   697.4      23   698.3    29.9   698.3
GR  29.9   699.3      23   699.3      23   700.2    20.1   702.3    20.1   710.3
GR    23   712.4      23   713.3    29.9   713.3    29.9   714.3      23   714.3
GR    23   715.2    20.1   717.3    20.1   723.2    27.9   727.5    27.9  730.98
GR  27.9     734    29.9     734    32.2   737.532.20496  739.3632.24424  754.09
GR  32.3     775    32.3  809.95    32.3     845    32.5     88032.50297  881.04
GR  32.8     98532.80328  985.1434.52844 1058.77   34.55 1059.69
NC .0600  .06000  .04000  .10000  .30000
*      1       0     1.6      .4    29.9    32.2     2.7
*                      6
X1 3.441      33   671.8   737.5   120.0    20.0    70.0
X3   10.                                                     .00     .00
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BT   -14  327.54   34.88   34.88  396.09   33.15   33.15  492.57   32.7    32.7
BT         568.74  32.42   32.42  629.68   32.36   32.36  676.13   32.64   32.26
BT         679.18  32.57   30.05  730.98   32.66   30.03  739.36   32.64   32.26
BT         754.09  32.36   32.36  809.95   32.3    32.3   881.04   32.52   32.52
BT         985.14  32.91   32.91 1058.77   34.53   34.53
GR  33.2   390.0   32.70  495.0   32.40   565.0   32.30   635.0   32.20   671.8
GR  29.9   675.3   27.80  675.3   20.10   681.9   20.10   695.3   23.00   697.4
GR  23.0   698.3   29.90  698.3   29.90   699.3   23.00   699.3   23.00   700.2
GR  20.1   702.3   20.10  710.3   23.00   712.4   23.00   713.3   29.90   713.3
GR  29.9   714.3   23.00  714.3   23.00   715.2   20.10   717.3   20.10   723.2
GR  27.9   727.5   27.90  734.0   29.90   734.0   32.20   737.5   32.30   775.0
GR  32.3   845.0   32.50  880.0   32.80   985.0
NH     4  .06000   801.0  .04000  871.0  .06000  1311.0  1.110   1800.0  .00000
X1 3.428      19   801.0  871.0   300.0   300.0   300.0
X3   10.                                    .00     .00
GR  33.8      .0   35.80  374.0   32.60   801.0   20.80   820.0   20.50   828.0
GR  19.5   833.0   19.50  843.0   20.80   847.0   20.90   858.0   29.90   871.0
GR  31.9   891.0   32.60 1156.0   32.90  1311.0   31.60  1355.0   33.10  1397.0
GR  34.8  1516.0   32.90 1619.0   35.10  1690.0   35.10  1800.0
NH     4  .06000   801.0  .04000  871.0  .06000  1311.0  1.110   1800.0  .00000
X1 3.371      19   801.0  871.0  1240.0  1140.0  1190.0
X3   10.                                    .00     .00
GR  33.5      .0   35.50  374.0   32.30   801.0   20.50   820.0   20.20   828.0
GR  19.2   833.0   19.20  843.0   20.50   847.0   20.60   858.0   29.60   871.0
GR  31.6   891.0   32.30 1156.0   32.60  1311.0   31.30  1355.0   32.80  1397.0
GR  34.5  1516.0   32.60 1619.0   34.80  1690.0   34.80  1800.0
NH     4  .06000   588.0  .04000  653.0  .06000   950.0  1.110   1750.0  .00000
X1 3.146      10   588.0  653.0   160.0   220.0   190.0
X3   10.                                    950     .00     .00
GR  33.1      .0   33.10  297.0   30.20   588.0   18.30   617.0   18.30   626.0
GR  28.8   653.0   30.90  950.0   28.40  1106.0   31.90  1311.0   32.60  1750.0
* LATERAL INFLOW HYDROGRAPH BASIN E-10
NC   .06    .06     .04
X1 3.110      11   576.2  663.7   80.0    80.0    80.0
X3   10.                                    .00     .00
BT    -6      .0   32.50  32.50   576.2   31.00   31.00   576.2   33.80   30.40
BT     0   663.7   33.80  30.40   663.7   31.00   31.00  2000.0   31.50   31.50
GR  32.5      .0   31.00  576.2   28.40   581.2   28.10   589.2   19.10   599.3
GR  18.3   620.0   19.10  640.0   28.00   649.4   28.80   658.7   31.00   663.7
GR  31.5  2000.0
*      1     4.2     1.6     .4    30.3      31     2.7
*                      6
X1 3.095      11   576.2  663.7   70.0    70.0    70.0
X3   10.                                    .00     .00
BT    -6      .0   32.50  32.50   576.2   31.00   31.00   576.2   33.80   30.40
BT     0   663.7   33.80  30.40   663.7   31.00   31.00  2000.0   31.50   31.50
GR  32.5      .0   31.00  576.2   28.40   581.2   28.10   589.2   19.10   599.3
GR  18.3   620.0   19.10  640.0   28.00   649.4   28.80   658.7   31.00   663.7
GR  31.5  2000.0
XK   100                             .7      .02
X1 3.081      20   788.0  883.0   700.0   700.0   700.0
HY DS POWER INN
X3   10.                                    .00     .00
GR  30.2      .0   32.00  100.0   30.50   180.0   28.80   224.0   32.30   281.0
GR  31.5   604.0   29.00  663.0   31.50   715.0   31.10   788.0   18.20   824.0
GR  18.2   834.0   28.30  861.0   31.50   883.0   31.20  1046.0   30.20  1200.0
GR  31.7  1427.0   32.30 1470.0   32.10  1578.0   30.00  1852.0   30.80  2100.0
NC .0600  .06000   .04000  .10000  .30000
X1 2.949      20   788.0  883.0   790.0   790.0   790.0
X3   10.                                    .00     .00
GR  29.2      .0   31.00  100.0   29.50   180.0   27.80   224.0   31.30   281.0
GR  30.5   604.0   28.00  663.0   30.50   715.0   30.10   788.0   17.20   824.0
GR  17.2   834.0   27.30  861.0   30.50   883.0   30.20  1046.0   29.30  1200.0
GR  30.7  1427.0   31.30 1470.0   31.10  1578.0   29.00  1852.0   29.80  2100.0
NH     5  1.110    704.0  .06000  1068.0  .04000  1143.0  .06000  1341.0  1.110
NH 1750.  .00000
X1 2.799      21  1068.0 1143.0   450.0   450.0   450.0
X3   10.                                    .00     .00
GR  29.2      .0   29.80  191.0   27.60   242.0   30.00   283.0   29.50   485.0
GR  30.3   704.0   30.00  879.0   29.10  1068.0   16.50  1100.0   16.50  1121.0
GR  27.1  1143.0   29.20 1182.0   29.50  1251.0   29.50  1341.0   28.60  1374.0
GR  29.5  1405.0   30.00 1510.0   29.10  1610.0   27.90  1646.0   29.40  1690.0
GR  29.1  1750.0
NH     5  1.110    704.0  .06000  1068.0  .04000  1143.0  .06000  1341.0  1.110
NH 1750.  .00000
* LATERAL INFLOW HYDROGRAPH BASIN E-11
X1 2.714      21  1068.0 1143.0   130.0   130.0   130.0
X3   10.                                    .00     .00
GR  29.0      .0   29.60  191.0   27.40   242.0   29.80   283.0   29.30   485.0
GR  30.1   704.0   29.80  879.0   28.90  1068.0   16.30  1100.0   16.30  1121.0
GR  26.9  1143.0   29.00 1182.0   29.30  1251.0   29.30  1341.0   28.40  1374.0
GR  29.3  1405.0   29.80 1510.0   28.90  1610.0   27.70  1646.0   29.20  1690.0
GR  28.9  1750.0
NC   .06    .06     .04
X1 2.689      12   702.8  737.2   60.0    60.0    60.0
X3   10.                                    27.60   28.70
* ....
BT    -9   680.0   27.60  27.60   688.0   27.60   27.60   688.0   28.80   27.60
BT     0   702.8   28.80  25.10   737.2   28.80   25.10   751.0   28.80   28.70
BT     0   751.0   28.70  28.70   767.0   29.00   29.00   867.0   29.60   29.60
GR  29.0      .0   27.60  680.0   27.60   688.0   25.10   702.8   16.50   702.8
GR  16.2   714.2   16.20  725.9   16.50   737.2   25.10   737.2   28.70   751.0
GR  29.0   767.0   29.60  867.0
NC .0600  .06000   .04000  .10000  .30000
*     .9     1.4     1.6     .4    25.1    27.6     2.7
*                      6
X1 2.678      12   702.8  737.2   50.0    50.0    50.0
X3   10.                                    27.00   28.70
BT    -9   680.0   27.60  27.60   688.0   27.60   27.60   688.0   28.80   27.60
BT     0   702.8   28.80  25.10   737.2   28.80   25.10   751.0   28.80   28.70
BT     0   751.0   28.70  28.70   767.0   29.00   29.00   867.0   29.60   29.60
GR  29.0      .0   27.60  680.0   27.60   688.0   25.10   702.8   16.50   702.8
GR  16.2   714.2   16.20  725.9   16.50   737.2   25.10   737.2   28.70   751.0
GR  29.0   767.0   29.60  867.0
NH     5  1.110    600.0  .06000  707.0   .04000  770.0   .06000  821.0   1.110
NH 1600.  .00000
X1 2.668      17   707.0  770.0   320.0   320.0   320.0
X3   10.                                    .00     .00
GR  28.2      .0   27.60  323.0   28.50   600.0   27.30   707.0   16.60   715.0
GR  15.9   726.0   15.90  739.0   16.20   749.0   27.20   770.0   28.40   821.0
GR  28.4   986.0   27.20 1189.0   26.70  1310.0   28.90  1338.0   27.40  1452.0
GR  28.9  1561.0   27.10 1600.0
NH     5  1.110    600.0  .06000  707.0   .04000  770.0   .06000  821.0   1.110
NH 1600.  .00000
X1 2.608      17   707.0  770.0  1030.0  1030.0  1030.0
X3   10.                                    .00     .00
GR  28.2      .0   27.60  323.0   28.50   600.0   27.30   707.0   16.60   715.0
GR  15.9   726.0   15.90  739.0   16.20   749.0   27.20   770.0   28.40   821.0
GR  28.4   986.0   27.20 1189.0   26.70  1310.0   28.90  1338.0   27.40  1452.0
GR  28.9  1561.0   27.10 1600.0
NC   .06    .06     .04
X1 2.413      19   970.0 1043.0   350.0   430.0   390.0
X3   10.                                    .00     .00
GR  27.3      .0   27.30   67.0   26.80   102.0   26.20   355.0   25.30   800.0
GR  26.0   970.0   15.10 1001.0   15.10  1014.0   26.50  1043.0   26.90  1093.0
GR  27.0  1141.0   27.00 1220.0   25.20  1267.0   27.40  1308.0   29.10  1531.0
GR  29.1  1633.0   28.10 1702.0   26.50  1738.0   26.50  1750.0
NC .0600  .06000   .04000  .10000  .30000
X1 2.339      19   970.0 1043.0   350.0   250.0   300.0
X3   10.                                    26.80   26.80
GR  27.0      .0   27.00   67.0   26.50   102.0   25.90   355.0   25.00   800.0
GR  25.7   970.0   14.80 1001.0   14.80  1014.0   26.20  1043.0   26.60  1093.0
GR  26.7  1141.0   26.70 1220.0   24.90  1267.0   27.10  1308.0   28.80  1531.0
GR  28.8  1633.0   27.80 1702.0   26.20  1738.0   26.20  1750.0
* STOCKTON BLVD.
* LATERAL INFLOW HYDROGRAPH BASIN E-12
X1 2.282      28   452.5  505.5   80.0    80.0    80.0
X3   10.                                    .00     .00
* BT   -4   452.5   27.00  27.00   452.5   28.00   25.10   505.5   28.00   25.10
* BT    0   505.5   27.00  27.00
GR  27.0      .0   27.00  440.0   27.00   452.5   19.50   452.5   19.50   455.0
GR  14.9   458.0   14.90  464.5   19.10   467.5   19.10   469.5   25.10   469.5
GR  25.1   471.0   19.10  471.0   19.20   473.0   14.80   475.5   14.80   482.0
GR  19.4   485.5   19.00  487.5   25.10   487.5   25.10   489.0   19.00   489.0
GR  19.0   491.0   14.80  493.5   14.90   500.5   19.30   503.5   19.30   505.5
GR  27.0   505.5   27.00  518.0   27.00  1100.0
BR     1      .1     1.6      .4    25.1    27.1     2.7
WD     1     2.7    27.1     100
BL                     7
X1 2.267      28   452.5  505.5   50.0    50.0    50.0
X3   10.                                    .00     .00
GR  27.0      .0   27.00  440.0   27.00   452.5   19.50   452.5   19.50   455.0
GR  14.9   458.0   14.90  464.5   19.10   467.5   19.10   469.5   25.10   469.5
GR  25.1   471.0   19.10  471.0   19.20   473.0   14.80   475.5   14.80   482.0
GR  19.4   485.5   19.00  487.5   25.10   487.5   25.10   489.0   19.00   489.0
GR  19.0   491.0   14.80  493.5   14.90   500.5   19.30   503.5   19.30   505.5
GR  27.0   505.5   27.00  518.0   27.00  1100.0
NC .0600  .06000   .01500  .10000  .30000
X1 2.257      11   225.5  293.8   200.0   160.0   180.0
HY DS STOCKTON
X3   10.                                    .00     .00
GR  27.2   181.0   26.50  200.0   25.21   206.7   24.83   225.5   14.91   237.3
GR  14.2   249.2   14.06  260.1   14.86   261.5   15.40   276.9   26.41   293.8
GR  26.2   329.0
*
*
* NH RECORDS CHANGED TO NC RECORDS FOR CALIBRATION
*
*
*
NC .0600  .0600   .0150
* N    7  .06000   204.0  .04000  225.0  .01500  239.0  .04000  254.0  .01500
* N 271.  .04000   291.9  .06000  321.0  .00000
X1 2.223      15   204.0  291.9   115.0   140.0   125.0
X3   10.                                    .00     .00
GR  24.3   121.0   25.00  143.0   26.00   158.0   26.10   180.0   26.00   200.0
GR  25.1   204.0   14.72  225.0   14.40   239.0   14.57   254.0   13.54   256.9
GR  13.3   269.6   14.14  271.1   17.26   284.5   25.83   291.9   25.80   321.0
* N    7  .06000   204.0  .04000  225.0  .01500  240.0  .04000  250.0  .01500
* N 267.  .04000   289.7  .06000  323.0  .00000
X1 2.200      18   204.0  289.7   215.0   215.0   215.0
X3   10.                                    .00     .00
GR  24.0    53.0   23.40  114.0   25.00   154.0   25.60   181.0   25.20   200.0
GR  24.5   204.0   14.47  225.0   14.15   240.0   14.16   250.0   13.21   253.8
GR  13.1   265.7   14.08  267.0   15.87   271.6   16.35   280.4   25.22   289.7
GR  25.5   292.1   25.60  304.0   25.00   323.0
* N    7  .06000   204.0  .04000  226.0  .01500  240.0  .04000  252.0  .01500
* N 267.  .04000   287.6  .06000  309.0  .00000
X1 2.159      13   204.0  287.6   320.0   320.0   320.0
X3   10.                                    .00     .00
GR  25.0   187.0   24.44  200.0   24.47   204.0   14.38   226.0   14.14   240.0
GR  14.2   252.0   13.09  253.8   13.10   266.1   13.81   267.0   14.83   279.0
GR  23.4   287.6   23.84  291.4   24.50   309.0
* N    7  .06000   204.0  .04000  225.0  .01500  239.0  .04000  253.0  .01500
* N 267.  .04000   288.5  .06000  309.0  .00000
X1 2.098      15   204.0  288.5   300.0   300.0   300.0
HY GAGE 1735
X3   10.                                    .00     .00
GR  24.0   165.0   23.20  185.0   23.95   200.0   24.10   204.0   13.81   225.0
GR  13.6   239.0   13.60  253.0   12.67   254.4   12.67   266.0   13.37   267.1
GR  15.3   280.3   23.38  288.5   23.88   290.7   25.00   299.0   25.90   309.0
* N    7  .06000   204.0  .04000  225.0  .01500  239.0  .04000  253.0  .01500
* N 267.  .04000   289.0  .06000  303.0  .00000
X1 2.042      16   204.0  289.0   280.0   330.0   350.0
X3   10.                                    .00     .00
GR  23.9   162.0   23.00  177.0   22.70   186.0   23.46   200.0   23.42   204.0
GR  13.7   225.0   13.58  239.0   13.30   253.0   12.40   254.3   12.36   266.1
GR  13.3   267.4   14.24  279.6   22.60   289.0   23.32   291.3   24.00   296.0
GR  25.0   303.0
* N    7  .06000   204.0  .04000  225.0  .01500  238.0  .04000  253.0  .01500
* N 269.  .04000   292.5  .06000  326.0  .00000
X1 1.975      14   204.0  292.5   130.0   180.0   160.0
HY US OF E5
X3   10.                                    .00     .00
GR  25.0   146.0   24.00  155.0   22.87   200.0   23.10   204.0   13.41   225.0
GR  13.3   238.0   13.11  253.0   11.93   255.8   11.98   267.6   13.02   269.2
GR  14.7   283.3   22.25  292.5   23.42   308.3   23.80   326.0
*
* ++++++++++++++++++++++++++++++++++++++++
*  NOT USED FOR INTERRIM CONDITION
*  OFF-LINE DETETENTION BASIN NO. E-5
*
SA     7       0
SV  12.9       0    14.9      13    16.9      28    20.9      58    22.9      75
HS BASIN E5
SC     0      -7
CC     2    12.9    12.8      40    .016       1      -1
CL
LA     7
WD     2     3.0    29.0      30    29.5     100
*
*
* ++++++++++++++++++++++++++++++++++++++++
*
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* N    7  .06000   205.0  .04000   231.0  .01500   240.0  .04000   252.0  .01500
* N 268.  .04000   291.5  .06000   355.0  .00000
X1 1.945      14   205.0   291.5    50.0    50.0    50.0
HY DS OF E5
X3   10.                                            .00     .00
GR  25.5   180.0   25.50   200.0   25.22   205.0   13.08   231.0   12.83   240.0
GR  12.8   252.0   11.92   254.5   11.87   266.8   12.77   268.3   13.13   280.2
GR  22.8   291.5   23.48   303.1   24.00   331.0   25.00   355.0
* N    5  .06000   220.0  .04000   241.0  .01500   268.7  .04000   291.9  .06000
* N 324.  .00000
X1 1.935      14   220.0   291.9    80.0    30.0    55.0
X3   10.                                            .00     .00
GR  26.0   173.0   26.20   191.0   26.00   200.0   25.78   204.3   22.97   220.0
GR  13.0   241.0   12.71   250.0   12.64   253.0   11.95   266.7   12.64   268.7
GR  12.8   279.4   23.28   291.9   23.99   300.0   25.00   324.0
NC   .06     .06     .015
X1 1.925      13   211.0   277.0    50.0    80.0    60.0
X3   10.                                            .00     .00
GR  25.0    33.0   22.00    95.0   22.00   162.0   23.00   180.0   23.40   200.0
GR  23.3   203.0   23.70   211.0   12.30   222.0   12.18   263.0   23.70   277.0
GR  24.0   285.0   25.00   306.0   25.60   371.0
* LATERAL INFLOW HYDROGRAPH BASIN E-13
X1 1.914      34   824.0   888.0   190.0   190.0   190.0
X3   10.                                            .00     .00
BT   -6   814.0   25.90   25.90   824.0   25.90   25.90   824.0   27.80   24.30
BT    0   888.0   27.90   24.40   888.0   25.90   25.90   898.0   25.90   25.90
GR  26.6     .0   25.90   814.0   25.90   824.0   21.30   824.0   13.40   830.5
GR  13.4   835.0   16.80   837.5   16.80   839.3   24.30   839.3   24.30   840.6
GR  16.8   840.6   16.80   842.5   10.80   846.0   10.80   851.0   16.80   853.5
GR  16.7   855.6   24.40   855.6   24.40   856.9   16.70   856.9   16.70   859.0
GR  10.7   862.0   10.80   868.5   16.80   870.0   16.70   871.6   24.40   871.6
GR  24.4   872.9   16.70   872.9   16.70   874.5   13.70   877.0   13.60   882.5
GR  19.7   888.0   25.90   888.0   25.90   898.0   29.20  1300.0
NC .0600  .06000  .01500  .10000  .30000
*      1      .1     1.6      .4    23.8    26.6     2.7
*                     6
X1 1.878      34   824.0   888.0    50.0    50.0    50.0
HY AT CITY BDRY
X3   10.                                            .00     .00
BT   -6   814.0   25.90   25.90   824.0   25.90   25.90   824.0   27.80   24.30
BT    0   888.0   27.90   24.40   888.0   25.90   25.90   898.0   25.90   25.90
GR  26.6     .0   25.90   814.0   25.90   824.0   21.30   824.0   13.40   830.5
GR  13.4   835.0   16.80   837.5   16.80   839.3   24.30   839.3   24.30   840.6
GR  16.8   840.6   16.80   842.5   10.80   846.0   10.80   851.0   16.80   853.5
GR  16.7   855.6   24.40   855.6   24.40   856.9   16.70   856.9   16.70   859.0
GR  10.7   862.0   10.80   868.5   16.80   870.0   16.70   871.6   24.40   871.6
GR  24.4   872.9   16.70   872.9   16.70   874.5   13.70   877.0   13.60   882.5
GR  19.7   888.0   25.90   888.0   25.90   898.0   29.20  1300.0
X1 1.868      17   814.0   886.0  1015.0  1005.0  1010.0
X3   10.                                            25.10   25.10
GR  26.2     .0   26.30   166.0   24.30   189.0   25.60   238.0   23.30   289.0
GR  25.8   328.0   25.20   671.0   23.20   790.0   23.00   814.0   11.50   833.0
GR  10.5   848.0   10.50   861.0   26.60   886.0   25.60   910.0   25.70  1079.0
GR  25.7  1231.0   26.80  1500.0
NC .0600  .06000  .03000  .10000  .30000
X1 1.677      10   809.0   882.0   950.0   970.0   960.0
X3   10.                                            .00     .00
GR  23.8     .0   23.80   357.0   22.60   809.0    8.80   843.0    8.80   853.0
GR  22.7   882.0   21.70   966.0   20.10  1016.0   21.10  1243.0   21.00  1450.0
NC .0600  .06000  .03000  .10000  .30000
X1 1.495      24   819.0   887.0   860.0   815.0   840.0
X3   10.                                            21.40   .00
GR  22.5     .0   22.30    94.0   20.60   101.0   21.80   112.0   23.30   155.0
GR  21.7   200.0   23.00   222.0   22.60   319.0   21.70   395.0   23.60   471.0
GR  22.0   531.0   22.80   585.0   20.00   800.0   21.10   819.0    8.50   852.0
GR   8.5   864.0   21.30   887.0   19.00  1028.0   20.20  1082.0   21.20  1150.0
GR  18.6  1281.0   20.80  1330.0   22.20  1539.0   22.80  1600.0
X1 1.336      13   152.5   219.4   120.0   160.0   140.0
X3   10.                                            .00     21.00
GR  21.3   110.5   20.80   150.0   20.10   152.5   11.60   167.4    8.40   184.3
GR   7.5   185.8    7.60   196.6   10.80   199.7   13.30   206.5   13.28   206.5
GR  20.3   217.2   20.40   219.4   20.30   266.5
* CENTER PARKWAY
X1 1.310      15   760.0   845.1    76.0    76.0    76.0
X3   10.                                            .00     .00
BT   -2    760    21.2     19.7     845    21.2     19.7
GR  20.9     .0   21.20   760.0   19.10   760.1   19.10   764.6   14.90   772.9
GR   8.2   785.0    6.50   787.0    6.60   799.0    8.20   801.0    8.20   815.5
GR  14.5   825.0   19.10   840.6   19.10   845.0   21.20   845.1   20.90  1600.0
*      1     3.7     1.6      .4    19.7    21.2     2.7
*                     6
* LATERAL INFLOW HYDROGRAPH BASIN E-14 (PMF67)
X1 1.295      15   760.0   845.1    50.0    50.0    50.0
HY DS CENTER PKWY
X3   10.                    760             845.1           .00     .00
BT   -2    760    21.2     19.7     845    21.2     19.7
GR  20.9     .0   21.20   760.0   19.10   760.1   19.10   764.6   14.90   772.9
GR   8.2   785.0    6.50   787.0    6.60   799.0    8.20   801.0    8.20   815.5
GR  14.5   825.0   19.10   840.6   19.10   845.0   21.20   845.1   20.90  1600.0
X1 1.286      13   152.4   220.6   120.0   120.0   120.0
X3   10.                                            .00     .00
GR  20.6   100.0   20.80   150.0   20.20   152.4   11.70   164.6    8.00   181.0
GR   7.1   182.3    7.20   194.2    9.30   196.2   11.40   204.3   12.53   206.6
GR  19.7   218.1   20.80   220.6   21.00   270.6
X1 1.263      12   100.0   191.0   607.0   607.0   607.0
X3   10.                                            .00     .00
GR  20.4    88.0   20.80   100.0   18.16   104.5   17.40   106.6   10.40   127.0
GR   8.0   137.0    7.10   138.4    7.10   150.5    8.00   152.5    9.00   160.0
GR  20.0   179.0   21.00   191.0
X1 1.148      11   150.0   219.8  1050.0  1050.0  1050.0
X3   10.                                            20.50   20.50
GR  16.8    97.0   16.90   141.0   19.80   150.0    9.80   169.0    8.00   184.2
GR   7.0   185.7    6.90   196.4    9.80   199.2   13.14   207.0   19.90   219.8
GR  19.8   270.0
X1  .949      12   150.0   219.4   600.0   600.0   600.0
X3   10.                                            .00     .00
GR  17.0   103.9   16.60   119.9   19.40   150.0   19.00   152.1    9.00   169.7
GR   7.4   183.8    6.50   185.6    6.60   196.3    9.00   199.0   11.44   205.9
GR  19.4   219.4   18.40   269.9
X1  .835      10   150.0   218.8   100.0   100.0   100.0
X3   10.                                            18.80   .00
GR  16.5    97.5   18.50   150.0   10.10   165.1    6.90   184.5    6.00   185.6
GR   6.2   196.3    8.40   198.5   17.38   215.2   19.10   218.8   18.80   269.2
X1  .817      11   829.0   905.0    60.0    60.0    60.0
X3   10.                                            .00     .00
BT   -6   729.0   18.00   18.00   829.0   18.20   18.20   829.0   20.20   18.20
BT    0   905.0   19.80   17.80   905.0   19.80   19.80  1000.0   18.00   18.00
GR  18.0   729.0   19.40   829.0   16.70   829.0   16.70   833.0   10.00   846.0
GR   6.0   867.0    7.00   884.0   16.70   901.0   16.70   905.0   19.40   905.0
GR  18.0  1000.0
*      1       2     1.6      .4      18      20     2.7
*                     6
X1  .805      11   829.0   905.0    50.0    50.0    50.0
X3   10.                                            .00     .00
BT   -6   729.0   18.00   18.00   829.0   18.20   18.20   829.0   20.20   18.20
BT    0   905.0   19.80   17.80   905.0   19.80   19.80  1000.0   18.00   18.00
GR  18.0   729.0   19.40   829.0   16.70   829.0   16.70   833.0   10.00   846.0
GR   6.0   867.0    7.00   884.0   16.70   901.0   16.70   905.0   19.40   905.0
GR  18.0  1000.0
X1  .796      11   150.0   217.7   190.0   190.0   190.0
X3   10.                                            .00     .00
GR  18.4   100.7   18.90   150.0    8.80   171.8    6.80   183.6    5.90   185.3
GR   5.9   196.1    8.00   198.1   19.30   217.7   19.28   217.7   19.30   231.6
GR  18.3   281.7
X1  .760      12   102.0   170.3   470.0   470.0   470.0
X3   10.                                            .00     .00
GR  16.6    49.9   18.40   100.0   18.20   102.0    8.50   121.0    6.90   134.2
GR   5.9   135.8    5.90   146.3    8.30   148.9   14.87   161.9   18.60   170.3
GR  17.6   174.1   17.40   222.1
X1  .671      12   100.0   167.2   443.0   443.0   443.0
X3   10.                                            .00     .00
GR  17.9    50.0   18.60   100.0    9.90   114.3    7.30   123.0    6.50   133.3
GR   5.6   134.7    5.80   145.6    7.60   147.9   12.73   158.2   17.90   167.2
GR  18.2   169.3   16.70   218.2
X1  .587      10   100.0   167.8    68.0    68.0    68.0
X3   10.                                            .00     .00
GR  17.4    50.2   18.20   100.0    6.20   134.1    5.40   135.2    5.40   146.5
GR   7.9   149.2   12.21   158.2   18.10   167.8   18.40   169.3   18.40   219.3
X1  .574      14   282.7   363.3     5.0     5.0     5.0
X3   10.                                            .00     .00
GR  18.0   200.0   18.90   261.4   18.70   282.7    8.80   301.7    6.10   323.1
GR   5.5   325.3    5.30   338.5    6.10   339.4   18.07   363.3   18.20   363.8
GR  18.7   370.5   17.60   377.1   17.00   418.5   17.30   458.5
X1  .573      21   298.5   378.5   105.0   105.0   105.0
X3   10.                                            .00     .00
BT   -7   198.5   18.40   18.40   248.5   18.80   18.80   298.5   19.70   17.70
BT    0   342.4   19.60   17.70   378.5   19.60   17.70   428.5   19.00   19.00
BT    0   528.5   18.30   18.30
GR  18.4   198.5   18.80   248.5   19.70   298.5   18.80   299.0   18.90   303.0
GR  14.8   303.9   14.70   306.0    8.00   316.6    6.40   332.5    5.60   333.3
GR   5.5   342.4    6.70   343.4    9.60   362.9   15.30   370.5   15.10   373.9
GR  18.6   374.8   18.40   378.0   19.60   378.5   19.00   428.5   19.00   478.5
GR  18.3   528.5
*   1.05      2.5     1.6      .4    17.7    19.6     2.7
*                     6
* FLORIN CREEK INFLOW HYDROGRAPH ENTERS HERE
X1  .553      21   298.5   378.5    58.0    53.0    58.0
HY DS FRANKLIN BL
X3   10.                                            .00     .00
BT   -7   198.5   18.40   18.40   248.5   18.80   18.80   298.5   19.70   17.70
BT    0   342.4   19.60   17.70   378.5   19.60   17.70   428.5   19.00   19.00
BT    0   528.5   18.30   18.30
GR  18.4   198.5   18.80   248.5   19.70   298.5   18.80   299.0   18.90   303.0
GR  14.8   303.9   14.70   306.0    8.00   316.6    6.40   332.5    5.60   333.3
GR   5.5   342.4    6.70   343.4    9.60   362.9   15.30   370.5   15.10   373.9
GR  18.6   374.8   18.40   378.0   19.60   378.5   19.00   428.5   19.00   478.5
GR  18.3   528.5
X1  .542      16   226.4   302.1   780.0   780.0   780.0
X3   10.                                            .00     .00
GR  13.8   160.0   13.70   180.0   13.80   201.1   18.10   209.4   18.50   226.4
GR  10.4   235.2   10.60   248.6    6.70   257.3    6.90   270.3    5.30   272.7
GR   5.4   284.4   18.20   302.1   18.35   310.0   18.30   316.1   16.90   321.8
GR  16.7   370.0
NC   .06     .06     .035      .1      .3
X1  .394      16   199.3   278.8      32      32      32
HY AT END
X3   10.                                            .00     .00
GR  13.8   150.0   14.30   179.1   18.20   188.5   18.30   199.3    6.70   218.2
GR   6.5   234.3    4.90   236.7    4.80   248.5    6.60   250.9    6.80   261.5
GR  18.0   278.8   18.30   284.0   18.10   290.9   13.30   299.1   13.00   303.7
GR  12.9   349.0
*
*
* THIS SECTION PROVIDED BY SACRAMENTO COUNTY DIVISION OF WATER RESOURCES
* BASED ON AN HEC-2 FILE DEVELOPED BY THE CITY OF SACRAMENTO
*
* ---------------------------------------------------------------------

*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAP 5/93
*
X1 0.388      23   199.3   278.8     910     910     910
* CI    -1             .015       2       2
X3    10       0       0   179.1       0       0       0       0       0
GR     0       0       0       0       0       0       0       0       0       0
GR     0       0       0       0    13.8     150    14.3   179.1    18.2   188.5
GR  18.3   199.3     6.7   218.2     6.5   234.3     4.9   236.7     4.8   248.5
GR   6.6   250.9     6.8   261.5      18   278.8    18.3     284    18.1   290.9
GR  13.3   299.1      13   303.7    12.9     349
*
*
*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAP 5/93
* LENGTH (X1,5-7) CHANGED PER PLANS AND AIR PHOTO               - MAP 5/93
* REPOSITION SECTION 0.536 AT SECOND 70-DEGREE BEND             - MAP 5/93
*
*
* CITY SURVEY, 1988, FIELD BOOK 1405, PG.26,37                  - MAP 5/93
* THIS IS A CHANGE FROM CDM STUDY, WHICH USED AN ARTIFICIAL
* CROSS SECTION HERE, COPIED FROM ACTUAL SECTION 0.388          - MAP 5/93
*
* END EXISTING RESIDENTIAL DEVELOPMENT ON RIGHT BANK
* FOR EXISTING CONDITIONS
* DISCONTINUE X3.6 TO ENABLE RIGHT OVERBANK FLOW                - MAP 5/93
*
X1 0.216      16   215.7   294.6      70      70      70
* CI    -1 .000286    .015       2       2    -.01
X3    10       0       0   194.2       0       0       0       0       0
GR    13     145    13.2   194.2      18   203.6      18   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    18.1     300    17.9   305.8    12.8   314.7    12.8   318.3
GR  12.7     360
*
* THIS ARTIFICIAL CROSS SECTION IS A COPY OF 0.216              - MAP 5/93
```

```
* IT DOES NOT APPEAR IN PREVIOUS STUDIES                          - MAF 5/93
*
X1 0.200      16   215.7   294.6    1200    1200    1200
* CI    -1 .000286    .015       2       2    -.01
X3    10       0       0   194.2       0   318.3       0       0       0
GR    13     145    13.2   194.2      18   203.6      18   215.7     5.9   234.9
GR   6.1   248.4     4.4   251.3     4.3   262.9     6.1   265.2     6.2   275.2
GR  17.7   294.6    18.1     300    17.9   305.8    12.8   314.7    12.8   318.3
GR  12.7     360
*
* MARTIN FARBER (MAF) - MAY 1993
* FILE "ELDTEST.DAT" IS USED TO TEST CHANNEL IMPROVEMENTS         - MAF 5/93
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE    - MAF 5/93
*
* SET J1.2 TO RUN N-TH FLOW IN "QT" RECORD                        - MAF 5/93
* SET CONCURRENT MORRISON CREEK WATER SURFACE ELEV. IN J1.9       - MAF 5/93
* WARNING!! THIS ELEVATION NOT VERIFIED                           - MAF 5/93
*
* J1.2 AND J1.9 SET FOR 100-YEAR EVENT                           - MAF 5/93
*
*
* SET J2.8 TO READ N-TH FIELD IN "CI" RECORD
*
*
* SET J3 TO SHOW CHANNEL N-VALUE IN SUMMARY PRINTOUT FIELD 10     - MAF 5/93
*
*
* SET N=0.035 FOR UNLINED CHANNEL                                 - MAF 5/93
* THIS CONFORMS TO 1988 FEMA AND 1990-92 CDM STUDIES              - MAF 5/93
* NOTE: LINED LOW FLOW CHANNEL EXISTS, ABOUT 13 FEET WIDE;
* IT DOES NOT GO ALL THE WAY ACROSS THE CHANNEL BOTTOM            - MAF 5/93
* NOTE: SPINK CORP USED N=0.030 IN VALLEY HIGH 29-A LOMR STUDY    - MAF 5/93
*
*
* SET QT ACCORDING TO CDM/ENSIGN & BUCKLEY 1991 HEC-1 HYDROLOGY   - MAF 5/93
*
* SET QT.2 TO QT.6 = 10-, 50-, 100-, 200-, AND 500-YEAR FLOW      - MAF 5/93
*
* SET NEXT QT RECORD FOR POINT 12, HEC-1 ID "ELDER"               - MAF 5/93
*
*
* BEGIN AT CONFLUENCE FIRST CROSS SECTION                         - MAF 5/93
* FROM CITY SURVEY, 9/14/1987                                     - MAF 5/93
*
* THIS IS A CHANGE FROM CDM STUDY, WHICH USED AN ARTIFICIAL
* CROSS SECTION HERE, COPIED FROM ACTUAL SECTION 0.388            - MAF 5/93
*
X1 0.019      12   196.8   278.7       0       0       0
*
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE    - MAF 5/93
* FOR EXISTING CHANNEL GEOMETRY ALL CI RECORDS ARE SUPPRESSED     - MAF 5/93
*
* CI    -1     6.5    .015       2       2    -.01
*
* WARNING!!  "CI," "X3" AND "NC" RECORDS ARE SUBJECT TO CHANGE    - MAF 5/93
*
* BEGIN LEVEES BOTH SIDES OF CHANNEL                              - MAF 5/93
* SET X3.1 = 10 FOR LEVEES                                        - MAF 5/93
*
* BEGIN SINGLE FAMILY RESIDENTIAL BOTH SIDES                      - MAF 5/93
* OVERBANK FLOW SEVERELY IMPAIRED BY DEVELOPMENT                  - MAF 5/93
* SET X3.4 AND X3.6 TO CONFINE ALL FLOW WITHIN FENCE LINE         - MAF 5/93
* THIS IS A CHANGE FROM CDM, WHICH SUPPRESSED ALL OVERBANK FLOW   MAF 5/93
*
X3    10       0       0     177       0     300       0       0       0
GR  15.5   176.2      14     177    17.4   186.2    17.6   196.8     5.8   216.2
GR   5.6   229.7     5.8   247.6     5.5   257.6    17.5   278.7    17.5   289.6
GR  13.1     300    14.1   301.2
*
*
DB
EJ
```

SUB-APPENDIX 3

UNET BOUNDARY CONDITION FILES

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 1

100-YEAR EVENT, EXISTING CONDITIONS ON LAGUNA CREEK AND THE INTERBASIN-TRANSFER REACH

FILENAME: LCSP1.UN

```
* UPPER LAGUNA CREEK         EXISTING CHANNEL, FLOWS
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY 100-YEAR EVENT
* EXISTING

JOB CONTROL
  T  T   2.0  1   0  T  1.0  F  T  -1  15MIN
*
*
*
TIME WINDOW
01JAN1999 0505 01JAN1999 2330
*
*
OPEN DSS FILE
ULEXB  01JAN1999 0505 01JAN1999 2330 .0833
*
*
*
*
************************** LAGUNA CREEK UPPER ************************
UPSTREAM FLOW HYDROGRAPH
1
/LAGUNA CREEK UPPER/LCC7/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
*
*****************
****************************** LAGUNA CREEK UPPER ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
14.221
/LAGUNA CREEK UPPER/LC40/FLOW/01JAN1999/5MIN/HEC1EX/
*
* 14.221
******************
****************************** LAGUNA CREEK UPPER  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
9.796
/LAGUNA CREEK UPPER/LC45/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
CLOSE DSS FILE
*
****************************** OVERSPILL REACH  **************************
REACH=2
UPSTREAM FLOW HYDROGRAPH
2 9
0 30
2 20
4 20
6 10
8 10
10 10
12 10
14 10
24 10
*
*
*
*
WRITE HYDROGRAPHS TO DSS
LCSP1
*
*
*
*
* RATING CURVE FOR LAGUNA CREEK AT CONFLUENCE WITH TRIB 1
DOWNSTREAM RATING CURVE
1 6
44.7    10
46.2   110
47.7   360
49.2  1176
50.7  2716
55.2 13800
*
* STAGE HYDROGRAPH FOR OVERSPILL REACH AT CONFLUENCE WITH GERBER CREEK
* DOWNSTREAM STAGE HYDROGRAPH
* 2
* /GERBER CREEK/DS OF GERBER#3/STAGE/01JAN99/5MIN/EXISTING/
*
DOWNSTREAM STAGE HYDROGRAPH
2 3
0 56
12 56
24 56
*
*
*
*
INITIAL STORAGE AREA ELEVATION
1 58
*
*
INITIAL FLOW DISTRIBUTION
1 150
2  30
*
*
*
*
MXITER=20
QTOL=.10
ZTOL=.05
ZATOL=.1
* WFSTAB=3.0
MAXINSTEPS=200
SPSTAB=5.0
SFX=3.0

EJ
```

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 2

1995 FLOOD EVENT, ON ELDER AND GERBER CREEKS

FILENAME: EG1995.UN

```
* ELDER AND GERBER CREEKS   EXISTING CHANNEL, 1995 EVENT
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY HEC-1 GENERATED 1995 EVENT
* UNET

JOB CONTROL
  T  T   2.0  1  0  T  1.0  F  T  -1  15MIN
*


TIME WINDOW
10JAN1995 0230 10JAN1995 2130
*
*
OPEN DSS FILE
ELEX-95 10JAN1995 0230 10JAN1995 2130 .0833



**************************** ELDER CREEK UPPER *************************
UPSTREAM FLOW HYDROGRAPH
1
/ELDER CREEK UPPER/E1A/FLOW/10JAN1995/5MIN/HEC195/
*
*
*
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/R-RS1B/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/E1C/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
10.592
/ELDER CREEK UPPER/D-E1B/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E2/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E3/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.925
/ELDER CREEK UPPER/E4A/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.925
/ELDER CREEK UPPER/E4B/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
****************************** ELDER CREEK  *************************
REACH=1
LATERAL INFLOW HYDROGRAPH
5.914
/ELDER CREEK UPPER/E5/FLOW/10JAN1995/5MIN/HEC195/
*
*
*
*
**************************** GERBER CREEK *************************
UPSTREAM FLOW HYDROGRAPH
2
/GERBER CREEK/G2A/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
****************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
3.070
/GERBER CREEK/G2B/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
**************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.476
/GERBER CREEK/G3A/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
**************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.060
/GERBER CREEK/G3B/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
**************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.851
/GERBER CREEK/G3D/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
*
**************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.590
/GERBER CREEK/G4/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
*
**************************** GERBER CREEK *************************
* THIS IS THE OLD PATHNAME FOR THE HEC-1 OVERSPILL HYDROGRAPH
* REACH=2
* LATERAL INFLOW HYDROGRAPH
* 1.590
* /GERBER CREEK/RSPILL/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
**************************** GERBER CREEK *************************
REACH=2
UNIFORM LATERAL INFLOW HYDROGRAPH
1.788 1.590
/OVERSPILL REACH/AT GERBER CREEK/FLOW/10JAN1995/15MIN/UNET 1995/
*
*
******************
**************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.376
/GERBER CREEK/G3C/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
*
**************************** GERBER CREEK *************************
REACH=2
LATERAL INFLOW HYDROGRAPH
0.345
/GERBER CREEK/G5/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************
*
*
******************
**************************** ELDER CREEK  *************************
REACH=3
LATERAL INFLOW HYDROGRAPH
5.423
/ELDER CREEK LOWER/E6/FLOW/10JAN1995/5MIN/HEC195/
*
**************************** ELDER CREEK  *************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.276
/ELDER CREEK LOWER/E7/FLOW/10JAN1995/5MIN/HEC195/
*
*
******************

**************************** ELDER CREEK  *************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.148
/ELDER CREEK LOWER/E8/FLOW/10JAN1995/5MIN/HEC195/
*
**************************** ELDER CREEK  *************************
REACH=3
LATERAL INFLOW HYDROGRAPH
```

```
3.508
/ELDER CREEK LOWER/E9/FLOW/10JAN1995/5MIN/HEC195/
*
***************************** ELDER CREEK  ****************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.110
/ELDER CREEK LOWER/E10/FLOW/10JAN1995/5MIN/HEC195/
*
***************************** ELDER CREEK  ****************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.714
/ELDER CREEK LOWER/E11/FLOW/10JAN1995/5MIN/HEC195/
*
***************************** ELDER CREEK  ****************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.282
/ELDER CREEK LOWER/E12/FLOW/10JAN1995/5MIN/HEC195/
*
***************************** ELDER CREEK  ****************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.914
/ELDER CREEK LOWER/E13/FLOW/10JAN1995/5MIN/HEC195/
*
***************************** ELDER CREEK  ****************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.295
/ELDER CREEK LOWER/E14/FLOW/10JAN1995/5MIN/HEC195/
*
****************************************
*
***************************** ELDER CREEK  ****************************
* REACH=3
* LATERAL INFLOW HYDROGRAPH
* 0.553
* /ELDER CREEK LOWER/FLORIN/FLOW/10JAN1995/5MIN/HEC195/
*
****************************************
*
CLOSE DSS FILE
WRITE HYDROGRAPHS TO DSS
EG1995
*
*
* RATING CURVE FOR ELDER CREEK AT CONFLUENCE WITH MORRISON CREEK
* DOWNSTREAM RATING CURVE
* 3 2
* 15.7   10
* 15.8  2000
*
*
OPEN DSS FILE
MORRISON 10JAN1995 0230 10JAN1995 2130 .0833
*
DOWNSTREAM STAGE HYDROGRAPH
3
/MORRISON CREEK/S168B/STAGE/10JAN1995/5MIN/OBS/
*
*
*
*
INITIAL FLOW DISTRIBUTION
3 700
1 200
2  50
*
*
INITIAL STORAGE AREA ELEVATION
1 47.9
*
*
MXITER=20
QTOL=10
ZTOL=.05
ZATOL=.1
WFSTAB=3.0
MAXINSTEPS=40
SFSTAB=5.0
SFX=3.0

EJ
```

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 3

1995 FLOOD EVENT, ON LAGUNA CREEK

FILENAME: LC1995.UN

```
* UPPER LAGUNA CREEK        1995 EVENT
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY 100-YEAR EVENT
* UNST 1995

JOB CONTROL
  T  T   2.0  1   0  T  1.0  F  T  -1  15MIN
*
*
*
TIME WINDOW
09JAN1995 2130 10JAN1995 1830
*
*
OPEN DSS FILE
ULEX-95 09JAN1995 2130 10JAN1995 1830 .0833
*
*
*
*
*************************** LAGUNA CREEK UPPER ************************
UPSTREAM FLOW HYDROGRAPH
1
/LAGUNA CREEK UPPER/LCC7/FLOW/10JAN1995/5MIN/1995 HEC1/
*
*
*
******************
******************************** LAGUNA CREEK UPPER ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
14.221
/LAGUNA CREEK UPPER/LC40/FLOW/10JAN1995/5MIN/1995 HEC1/
*
* 14.221
******************
******************************** LAGUNA CREEK UPPER  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
9.796
/LAGUNA CREEK UPPER/LC45/FLOW/10JAN1995/5MIN/1995 HEC1/
*
*
******************
CLOSE DSS FILE
*
******************************** OVERSPILL REACH  ***************************
REACH=2
UPSTREAM FLOW HYDROGRAPH
2 9
0 10
2 10
4 10
6 10
8 10
10 10
12 10
14 10
24 10
*
*
*
*
WRITE HYDROGRAPHS TO DSS
LC1995
*
*
*
*
* RATING CURVE FOR LAGUNA CREEK AT CONFLUENCE WITH TRIB 1
DOWNSTREAM RATING CURVE
1 6
44.7    10
46.2   110
47.7   360
49.2  1176
50.7  2716
55.2 13800
*
* STAGE HYDROGRAPH FOR OVERSPILL REACH AT CONFLUENCE WITH GERBER CREEK
* DOWNSTREAM STAGE HYDROGRAPH
* 2
* /GERBER CREEK/DS OF GERBER#3/STAGE/01JAN99/5MIN/EXISTING/
*
DOWNSTREAM STAGE HYDROGRAPH
2 3
0 56
12 56
24 56
*
*
*
*
INITIAL STORAGE AREA ELEVATION
1 58
*
*
INITIAL FLOW DISTRIBUTION
1 150
2  30
*
*
*
*
MXITER=20
QTOL=10
ZTOL=.05
ZATOL=.1
* WFSTAB=3.0
MAXINSTEPS=20
SFSTAB=5.0
SFX=3.0

EJ
```

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 4

100-YEAR FLOOD EVENT, EXISTING CONDITIONS, ELDER AND GERBER CREEKS

FILENAME: EGEX2.UN

```
* ELDER AND GERBER CREEKS   EXISTING CHANNEL, FLOWS, WITH LAGUNA CREEK
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY 100-YEAR EVENT
* EX2

JOB CONTROL
  T  T   2.0  1  0  T  1.0  F  T  -1  15MIN
*


TIME WINDOW
01JAN1999 0505 01JAN1999 2030
*
*
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 2030 .0833



*************************** ELDER CREEK UPPER *************************
UPSTREAM FLOW HYDROGRAPH
1
/ELDER CREEK UPPER/E1A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/R-RE1B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/E1C/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
10.592
/ELDER CREEK UPPER/D-E1B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E2/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E3/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.925
/ELDER CREEK UPPER/E4A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.925
/ELDER CREEK UPPER/E4B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=1
LATERAL INFLOW HYDROGRAPH
5.914
/ELDER CREEK UPPER/E5/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
*
*
******************************** GERBER CREEK ***************************
UPSTREAM FLOW HYDROGRAPH
2
/GERBER CREEK/G2A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
3.070
/GERBER CREEK/G2B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.476
/GERBER CREEK/G3A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.060
/GERBER CREEK/G3B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.851
/GERBER CREEK/G3D/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.590
/GERBER CREEK/G4/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ***************************
* THIS IS THE OLD PATHNAME FOR THE HEC-1 OVERSPILL HYDROGRAPH
* REACH=2
* LATERAL INFLOW HYDROGRAPH
* 1.590
* /GERBER CREEK/RSPILL/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** GERBER CREEK ***************************
* REACH=2
UNIFORM LATERAL INFLOW HYDROGRAPH
1.900 1.590
/OVERSPILL REACH/AT GERBER CREEK/FLOW/01JAN1999/15MIN/EXISTING/
*
*
******************
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.376
/GERBER CREEK/G3C/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
0.345
/GERBER CREEK/G5/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
5.423
```

```
/ELDER CREEK LOWER/E6/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.276
/ELDER CREEK LOWER/E7/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************

****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.148
/ELDER CREEK LOWER/E8/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.508
/ELDER CREEK LOWER/E9/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.110
/ELDER CREEK LOWER/E10/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.714
/ELDER CREEK LOWER/E11/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.282
/ELDER CREEK LOWER/E12/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.914
/ELDER CREEK LOWER/E13/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.295
/ELDER CREEK LOWER/PMP67/FLOW/01JAN1999/5MIN/HEC1EX/
*
**************************************
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
0.553
/ELDER CREEK LOWER/FLORIN/FLOW/01JAN1999/5MIN/HEC1EX/
*
**************************************
*
CLOSE DSS FILE
WRITE HYDROGRAPHS TO DSS
EGEX2
*
*
*
*
* RATING CURVE FOR ELDER CREEK AT CONFLUENCE WITH MORRISON CREEK
* TAKEN FROM UPPER LIMIT OF COE MORRISON CREEK STUDY FILENAME:MORR100E.DSS
DOWNSTREAM RATING CURVE
3 2
15.0   10
15.1  2000
*
*
*
INITIAL FLOW DISTRIBUTION
3 400
1 150
2 150
*
*
INITIAL STORAGE AREA ELEVATION
1 31.0
*
*
MXITER=20
QTOL=10
ZTOL=.05
ZATOL=.1
WFSTAB=3.0
MAXINSTEPS=200
SFSTAB=5.0
SFX=3.0


EJ
```

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 5

100-YEAR FLOOD EVENT, ULTIMATE CONDITIONS WITH PREFERRED FLOOD CONTROL ALTERNATIVE, ELDER AND GERBER CREEKS

FILENAME: EGULT2.UN

```
* ELDER AND GERBER CREEKS  ULTIMATE CONDITIONS WITH DETENTION BASINS
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY 100-YEAR EVENT
* PREP ALT

JOB CONTROL
  T  T   2.0  1  0  T  1.0  F  T  1   5MIN
*


TIME WINDOW
01JAN1999 0330 01JAN1999 0400
*
*
OPEN DSS FILE
ELULB 01JAN1999 0330 01JAN1999 0400 .06666



**************************** ELDER CREEK UPPER *************************
UPSTREAM FLOW HYDROGRAPH
1
/ELDER CREEK UPPER/E1A+DET/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/E1B+DET/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/E1C/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
9.683
/ELDER CREEK UPPER/E2/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH INTO STORAGE AREA
3
/ELDER CREEK UPPER/E3/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH INTO STORAGE AREA
5
/ELDER CREEK UPPER/E4A/FLOW/01JAN1999/2MIN/HEC1ULT/
* 6.954
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.658
/ELDER CREEK UPPER/E4B/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.002
/ELDER CREEK UPPER/E5/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
*
*
******************************** GERBER CREEK ****************************
UPSTREAM FLOW HYDROGRAPH
2
/GERBER CREEK/G2A+DET/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
3.070
/GERBER CREEK/G2B/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.607
/GERBER CREEK/G3A/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.060
/GERBER CREEK/G3B/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH TO STORAGE AREA
9
/GERBER CREEK/G3D/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.590
/GERBER CREEK/G4+DET/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
* OLD PATHNAME
******************************** GERBER CREEK ****************************
* REACH=2
* LATERAL INFLOW HYDROGRAPH
* 1.524
* /GERBER CREEK/RSPILL/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** GERBER CREEK ****************************
* REACH=2
* UNIFORM LATERAL INFLOW HYDROGRAPH
* 1.524
* /GERBER CREEK/RSPILL/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.524
/GERBER CREEK/G3C/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
0.440
/GERBER CREEK/G5/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=3
LATERAL INFLOW HYDROGRAPH
5.423
/ELDER CREEK LOWER/E6/FLOW/01JAN1999/2MIN/HEC1ULT/
*
******************************** ELDER CREEK  ****************************
REACH=3
```

```
LATERAL INFLOW HYDROGRAPH
4.276
/ELDER CREEK LOWER/E7/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************

****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.148
/ELDER CREEK LOWER/E8/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.508
/ELDER CREEK LOWER/E9/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.110
/ELDER CREEK LOWER/E10/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.714
/ELDER CREEK LOWER/E11/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.282
/ELDER CREEK LOWER/E12/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.914
/ELDER CREEK LOWER/E13/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.295
/ELDER CREEK LOWER/PMP67/FLOW/01JAN1999/2MIN/HEC1ULT/
*
****************************************
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
0.553
/ELDER CREEK LOWER/FLORIN/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************************
*
CLOSE DSS FILE
WRITE HYDROGRAPHS TO DSS
EGULT2
*
*
*
*
* RATING CURVE FOR ELDER CREEK AT CONFLUENCE WITH MORRISON CREEK
DOWNSTREAM RATING CURVE
3 2
15.1   10
15.2  2000
*
*
*
INITIAL FLOW DISTRIBUTION
3 200
1 100
2 100
*
*
INITIAL STORAGE AREA ELEVATION
1 65.0
2 54.2
3 46.7
4 41.2
5 42.5
6 37.8
7 52.1
8 53.0
9 45.8
10 42.8
11 37.5
12 32.7
13 12.9
*
*
MXITER=20
QTOL=10
ZTOL=.05
ZATOL=.1
* WFSTAB=3.0
MAXINSTEPS=200
SFSTAB=5.0
SFX=3.0


EJ
```

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 6

100-YEAR FLOOD EVENT, INTERIM CONDITIONS WITH NVSSP AND LAGUNA CREEK OVERSPILL, ELDER AND GERBER CREEKS

FILENAME: EGSTAL2.UN

```
* ELDER AND GERBER CREEKS   EXISTING CHANNEL, FLOWS, WITH LAGUNA CREEK
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY 100-YEAR EVENT
* STAL2

JOB CONTROL
  T  T   2.0  1  0  T  1.0  F  T  -1  15MIN
*


TIME WINDOW
01JAN1999 0505 01JAN1999 1935
*
*
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1935 .0833



**************************** ELDER CREEK Upper *************************
UPSTREAM FLOW HYDROGRAPH
1
/ELDER CREEK UPPER/E1A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/R-RE1B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/E1C/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
10.592
/ELDER CREEK UPPER/D-E1B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E2/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E3/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1935 .0666
*
*
*
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH INTO STORAGE AREA
1
/ELDER CREEK UPPER/E4A/FLOW/01JAN1999/2MIN/HEC1ULT/
* 6.954
*
******************
*
CLOSE DSS FILE
*
*
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1935 .0833
*
*
*
*

******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.954
/ELDER CREEK UPPER/E4B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1935 .0666
*
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.002
/ELDER CREEK UPPER/E5/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
*
************************
*
*
******************
CLOSE DSSFILE
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1935 .0833
*
*
*
******************************** GERBER CREEK ****************************
UPSTREAM FLOW HYDROGRAPH
2
/GERBER CREEK/G2A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
3.070
/GERBER CREEK/G2B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1935 .0666
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.607
/GERBER CREEK/G3A/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.060
/GERBER CREEK/G3B/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
CLOSE DSS FILE
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1935 .0833
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.851
/GERBER CREEK/G3D/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.590
/GERBER CREEK/G4/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ****************************
* THIS IS THE OLD PATHNAME FOR THE HEC-1 OVERSPILL HYDROGRAPH
* REACH=2
```

```
* LATERAL INFLOW HYDROGRAPH
* 1.590
* /GERBER CREEK/RSPILL/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** GERBER CREEK ***************************
REACH=2
UNIFORM LATERAL INFLOW HYDROGRAPH
1.900 1.590
/OVERSPILL REACH/AT GERBER CREEK/FLOW/01JAN1999/15MIN/EXISTING/
*  1.788 1.590
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1935 .0666
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.524
/GERBER CREEK/G3C/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
*
******************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
0.440
/GERBER CREEK/G5/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1935 .0833
*
*
******************
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
5.423
/ELDER CREEK LOWER/E6/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.276
/ELDER CREEK LOWER/E7/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************

******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.148
/ELDER CREEK LOWER/E8/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.508
/ELDER CREEK LOWER/E9/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.110
/ELDER CREEK LOWER/E10/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.714
/ELDER CREEK LOWER/E11/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.282
/ELDER CREEK LOWER/E12/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.914
/ELDER CREEK LOWER/E13/FLOW/01JAN1999/5MIN/HEC1EX/
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.295
/ELDER CREEK LOWER/PMP67/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************************
*
******************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
0.553
/ELDER CREEK LOWER/FLORIN/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************************
*
CLOSE DSS FILE
WRITE HYDROGRAPHS TO DSS
EGSTAL2
*
*
*
*
* RATING CURVE FOR ELDER CREEK AT CONFLUENCE WITH MORRISON CREEK
* TAKEN FROM UPPER LIMIT OF COE MORRISON CREEK STUDY FILENAME:MORR100E.DSS
DOWNSTREAM RATING CURVE
3 2
15.0   10
15.1  2000
*
*
*
INITIAL FLOW DISTRIBUTION
3  300
1  150
2  150
*
*
INITIAL STORAGE AREA ELEVATION
1 42.5
2 37.8
3 53.0
4 42.8
5 37.5
6 32.7
7 12.9
*
*
*
MXITER=20
QTOL=10
ZTOL=.05
ZATOL=.1
WFSTAB=3.0
MAXINSTEPS=200
SFSTAB=5.0
SFX=3.0


EJ
```

ELDER AND GERBER CREEKS
UNET BOUNDARY CONDITIONS FILE NO. 7

100-YEAR FLOOD EVENT, INTERIM CONDITIONS WITH NVSSP
WITHOUT LAGUNA CREEK OVERSPILL, ELDER AND GERBER CREEKS

FILENAME: EGINT2.UN

```
* ELDER AND GERBER CREEKS   EXISTING CHANNEL, FLOWS, WITH LAGUNA CREEK
* BOUNDARY CONDITION FILES FOR SACRAMENTO COUNTY 100-YEAR EVENT
* INTERRIM W/O LAGUNA

JOB CONTROL
  T  T   2.0  1  0  T  1.0  F  T  -1  15MIN
*


TIME WINDOW
01JAN1999 0505 01JAN1999 1855
*
*
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1855 .0833



**************************** ELDER CREEK Upper *************************
UPSTREAM FLOW HYDROGRAPH
1
/ELDER CREEK UPPER/E1A/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/R-RE1B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
11.050
/ELDER CREEK UPPER/E1C/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
10.592
/ELDER CREEK UPPER/D-E1B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E2/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
7.855
/ELDER CREEK UPPER/E3/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1855 .0666
*
*
*
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH INTO STORAGE AREA
1
/ELDER CREEK UPPER/E4A/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
CLOSE DSS FILE
*
*
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1855 .0833
*
*
*
*
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.954
/ELDER CREEK UPPER/E4B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1855 .0666
*
******************************** ELDER CREEK  ****************************
REACH=1
LATERAL INFLOW HYDROGRAPH
6.002
/ELDER CREEK UPPER/E5/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
*
*
******************************** GERBER CREEK ****************************
UPSTREAM FLOW HYDROGRAPH
2
/GERBER CREEK/G2A+DET/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
CLOSE DSSFILE
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1855 .0833
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
3.070
/GERBER CREEK/G2B/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1855 .0666
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.607
/GERBER CREEK/G3A/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
2.060
/GERBER CREEK/G3B/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
CLOSE DSS FILE
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1855 .0833
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.851
/GERBER CREEK/G3D/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ****************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.590
/GERBER CREEK/G4/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************
*
*
******************************** GERBER CREEK ****************************
* THIS IS THE OLD PATHNAME FOR THE HEC-1 OVERSPILL HYDROGRAPH
* REACH=2
* LATERAL INFLOW HYDROGRAPH
* 1.590
* /GERBER CREEK/RSPILL/FLOW/01JAN1999/5MIN/HEC1EX/
*
```

```
*
*******************
****************************** GERBER CREEK ***************************
* REACH=2
* UNIFORM LATERAL INFLOW HYDROGRAPH
* 1.788 1.590
* /OVERSPILL REACH/AT GERBER CREEK/FLOW/01JAN1999/15MIN/EXISTING/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
ELULB 01JAN1999 0505 01JAN1999 1855 .0666
*
****************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
1.524
/GERBER CREEK/G3C/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
*
****************************** GERBER CREEK ***************************
REACH=2
LATERAL INFLOW HYDROGRAPH
0.440
/GERBER CREEK/G5/FLOW/01JAN1999/2MIN/HEC1ULT/
*
*
******************
*
CLOSE DSS FILE
OPEN DSS FILE
H1EX  01JAN1999 0505 01JAN1999 1855 .0833
*
*
******************
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
5.423
/ELDER CREEK LOWER/E6/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.276
/ELDER CREEK LOWER/E7/FLOW/01JAN1999/5MIN/HEC1EX/
*
*
******************

****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
4.148
/ELDER CREEK LOWER/E8/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.508
/ELDER CREEK LOWER/E9/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
3.110
/ELDER CREEK LOWER/E10/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.714
/ELDER CREEK LOWER/E11/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
2.282
/ELDER CREEK LOWER/E12/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.914
/ELDER CREEK LOWER/E13/FLOW/01JAN1999/5MIN/HEC1EX/
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
1.295
/ELDER CREEK LOWER/PMP67/FLOW/01JAN1999/5MIN/HEC1EX/
*
*****************************************
*
****************************** ELDER CREEK  ***************************
REACH=3
LATERAL INFLOW HYDROGRAPH
0.553
/ELDER CREEK LOWER/FLORIN/FLOW/01JAN1999/5MIN/HEC1EX/
*
*****************************************
*
CLOSE DSS FILE
WRITE HYDROGRAPHS TO DSS
EGINT2
*
*
*
*
* RATING CURVE FOR ELDER CREEK AT CONFLUENCE WITH MORRISON CREEK
* TAKEN FROM UPPER LIMIT OF COE MORRISON CREEK STUDY FILENAME:MORR100E.DSS
DOWNSTREAM RATING CURVE
3 2
15.0   10
15.1  2000
*
*
*
INITIAL FLOW DISTRIBUTION
3  300
1  150
2  150
*
*
INITIAL STORAGE AREA ELEVATION
1 42.5
2 37.8
3 53.0
4 42.8
5 37.5
6 32.7
7 12.9
*
*
*
MXITER=20
QTOL=10
ZTOL=.05
ZATOL=.1
WFSTAB=3.0
MAXINSTEPS=200
SFSTAB=5.0
SFX=3.0


ZJ
```

SUB-APPENDIX 4

HEC-1 FILES

ELDER AND GERBER CREEKS
HEC-1 BOUNDARY CONDITIONS FILE NO. 1

100-YEAR FLOOD EVENT, EXISTING CONDITONS FOR LAGUNA CREEK

FILENAME: ULEXB.DAT

```
ID  MORRISON CREEK STREAM GROUP - UPPER LAGUNA CREEK BASIN - EXISTING COND.
ID  SACRAMENTO COUNTY (APRIL 1996)
ID  **********************************************************************
ID  **********************************************************************
ID  FILENAME: ULEXB.DAT
ID                ----B.DAT INDICATES STORM CENTERING ALL OF ELDER,FLORIN,GERBER AND
ID                                UPPER LAGUNA DOWN STREAM TO THE CCTR
IT     5 01JAN99       10      573                    1900
IO     5         0       0
IN     5
*DIAGRAM
KK  LC05
KM       BLODGETT RESERVOIR
PB  0.00
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .018    .018    .018    .018
PI   .018    .018    .018    .018    .018    .018    .018    .018    .018    .018
PI   .018    .018    .018    .018    .023    .023    .023    .023    .023    .023
PI   .030    .030    .030    .030    .030    .030    .038    .038    .038    .060
PI   .094    .374    .153    .060    .060    .038    .038    .038    .030    .030
PI   .030    .030    .030    .030    .023    .023    .023    .023    .023    .023
PI   .018    .018    .018    .018    .018    .018    .018    .018    .018    .018
PI   .018    .018    .018    .018    .018    .018    .018    .018    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011
BA 3.290
LU    .10     .08    6.57
UI    13.     13.     13.     33.     33.     33.     53.     53.     75.     75.
UI    75.     92.     92.    122.    122.    122.    146.    146.    176.    176.
UI   176.    208.    208.    242.    242.    242.    277.    277.    277.    319.
UI   319.    364.    364.    364.    405.    405.    415.    415.    415.    421.
UI   421.    415.    415.    415.    405.    405.    373.    373.    373.    339.
UI   339.    305.    305.    305.    275.    275.    256.    256.    256.    238.
UI   238.    216.    216.    216.    202.    202.    188.    188.    188.    174.
UI   174.    163.    163.    163.    152.    152.    142.    142.    142.    132.
UI   132.    132.    125.    125.    117.    117.    117.    110.    110.    103.
UI   103.    103.     97.     97.     92.     92.     92.     88.     88.     83.
UI    83.     83.     78.     78.     75.     75.     75.     71.     71.     68.
UI    68.     68.     64.     64.     62.     62.     62.     58.     58.     56.
UI    56.     56.     53.     53.     52.     52.     52.     50.     50.     50.
UI    48.     48.     46.     46.     46.     45.     45.     43.     43.     43.
UI    42.     42.     40.     40.     40.     38.     38.     37.     37.     37.
UI    36.     36.     34.     34.     34.     34.     34.     32.     32.     32.
UI    31.     31.     30.     30.     30.     29.     29.     28.     28.     28.
UI    27.     27.     26.     26.     26.     25.     25.     24.     24.     24.
UI    23.     23.     23.     22.     22.     22.     22.     22.     21.     21.
UI    20.     20.     20.     20.     20.     19.     19.     19.     18.     18.
UI    18.     18.     18.     17.     17.     16.     16.     16.     16.     16.
UI    15.     15.     15.     15.     15.     14.     14.     14.     13.     13.
UI    13.     13.     13.     13.     13.     12.     12.     12.     12.     12.
UI    11.     11.     11.     11.     11.     11.     11.     11.     10.     10.
UI    10.     10.     10.     10.     10.     10.      9.      9.      9.      9.
UI     9.      9.      9.      8.      8.      8.      8.      8.      8.      8.
UI     8.      8.      8.      7.      7.      7.      7.      7.      7.      7.
UI     7.      7.      7.      6.      6.      6.      6.      6.      6.      6.
UI     6.      6.      6.      6.      5.      5.      5.      5.      5.      5.
UI     5.      5.      5.      5.      5.      5.      5.      5.      5.      4.
KK  LCR1
KM       RESERVOIR ROUTING THROUGH BLODGETT RESERVOIR
RS     1    STOR     300.
SV     .0    25.0    40.0    75.0   120.0   180.0   270.0   300.0   525.0   600.0
SE  141.0   151.0   152.0   154.0   156.0   158.0   160.0   160.7   165.0   167.0
SL  151.0     .79     .70     .50
SS  160.7   472.2    3.00    1.50
KK  LCR2
KM       ROUTE LC05 TO LC10(MUSKINGUM CUNGE)
RD
RC   .060    .040    .060   8026.   .0057
RX    .00   61.00  303.00  315.00  328.00  349.00  386.00  409.00
RY130.00  125.80  124.90  122.90  124.90  125.60  125.50  129.90
KK  LC10
BA 1.220
LU    .10     .09    2.00
UI    10.     25.     25.     40.     57.     69.     92.     92.    110.    133.
UI   156.    183.    183.    209.    241.    274.    305.    305.    313.    317.
UI   313.    305.    281.    281.    255.    230.    207.    193.    193.    179.
UI   163.    153.    142.    142.    131.    123.    114.    107.    107.     99.
UI    94.     88.     83.     83.     78.     73.     70.     66.     66.     62.
UI    59.     56.     53.     53.     51.     48.     46.     44.     42.     42.
UI    40.     39.     38.     36.     36.     35.     34.     32.     31.     31.
UI    30.     29.     28.     27.     27.     26.     25.     24.     24.     24.
UI    23.     22.     21.     20.     20.     19.     19.     18.     18.     18.
UI    17.     16.     16.     15.     15.     15.     14.     14.     13.     13.
UI    13.     12.     12.     12.     11.     11.     11.     10.     10.     10.
UI    10.      9.      9.      9.      8.      8.      8.      8.      8.      7.
UI     7.      7.      7.      6.      6.      6.      6.      6.      6.      5.
UI     5.      5.      5.      5.      5.      5.      5.      4.      4.      4.
UI     4.      4.      4.      4.      4.      3.      3.      3.      3.
KK  LCC1
KM       COMBINE ROUTED LC05 AND LC10
HC     2
KK  LC15
BA 3.120
LU    .10     .09    2.16
UI    15.     15.     15.     36.     36.     59.     59.     83.     83.    102.
UI   102.    135.    135.    135.    162.    162.    196.    196.    230.    230.
UI   269.    269.    308.    308.    354.    354.    404.    404.    404.    450.
UI   450.    461.    461.    467.    467.    461.    461.    450.    450.    413.
UI   413.    413.    376.    376.    338.    338.    305.    305.    284.    284.
UI   264.    264.    240.    240.    240.    225.    225.    209.    209.    193.
UI   193.    181.    181.    168.    168.    158.    158.    146.    146.    146.
UI   139.    139.    130.    130.    122.    122.    115.    115.    108.    108.
UI   102.    102.    102.     98.     98.     92.     92.     87.     87.     83.
UI    83.     79.     79.     76.     76.     71.     71.     71.     68.     68.
UI    64.     64.     62.     62.     59.     59.     58.     58.     55.     55.
UI    55.     54.     54.     52.     52.     49.     49.     48.     48.     46.
UI    46.     44.     44.     44.     43.     43.     42.     42.     40.     40.
UI    38.     38.     37.     37.     36.     36.     35.     35.     35.     33.
UI    33.     32.     32.     31.     31.     30.     30.     29.     29.     28.
UI    28.     28.     27.     27.     26.     26.     25.     25.     24.     24.
UI    23.     23.     23.     23.     23.     22.     22.     21.     21.     20.
UI    20.     20.     20.     19.     19.     18.     18.     18.     18.     18.
UI    17.     17.     16.     16.     16.     16.     15.     15.     14.     14.
UI    14.     14.     14.     14.     14.     13.     13.     13.     13.     12.
UI    12.     12.     12.     11.     11.     11.     11.     11.     11.     11.
UI    11.     11.     10.     10.     10.     10.      9.      9.      9.      9.
UI     9.      9.      9.      8.      8.      8.      8.      8.      8.      7.
UI     7.      7.      7.      7.      7.      7.      7.      7.      7.      7.
UI     6.      6.      6.      6.      6.      6.      6.      6.      6.      6.
UI     6.      5.      5.      5.      5.      5.      5.      5.      5.
KK  LCC2
KM       COMBINE LCC1 AND LC15
HC     2
KK  LCR3
KM       ROUTE LCC2 TO LC20 (MUSKINGUM -CUNGE)
RD
RC   .060    .040    .060   4606.   .0020
RX    .00  891.90 1055.90 1077.90 1099.90 1119.90 1435.90 1838.70
RY125.50  118.90  123.70  115.00  115.20  125.10  122.90  126.00
KK  LC20
BA 2.930
LU    .10     .08    2.00
UI    26.     64.    103.    103.    145.    178.    236.    283.    341.    402.
UI   402.    469.    537.    618.    705.    785.    804.    814.    814.    804.
UI   785.    721.    656.    590.    533.    533.    496.    460.    418.    392.
UI   365.    337.    337.    316.    294.    275.    255.    242.    226.    226.
UI   213.    200.    188.    179.    170.    160.    160.    152.    146.    137.
UI   132.    124.    119.    112.    112.    109.    103.    101.     96.     94.
UI    90.     90.     86.     83.     81.     77.     75.     72.     72.     70.
UI    67.     65.     62.     61.     58.     58.     57.     54.     52.     50.
UI    48.     47.     47.     45.     44.     42.     41.     39.     38.     37.
UI    37.     35.     34.     33.     32.     31.     30.     30.     28.     27.
UI    26.     25.     24.     24.     24.     23.     22.     21.     20.     20.
UI    20.     20.     19.     18.     18.     17.     16.     16.     16.     15.
UI    15.     14.     13.     13.     13.     12.     12.     12.     11.     11.
UI    11.     10.     10.     10.     10.      9.      9.      9.
KK  LCC3
KM       COMBINE ROUTED LCC2 AND LC20 -LAGUNA CREEK @SUNRIS
HC     2
KK  LCR4
KM       ROUTE LCC3 TO LC25 -- MODIFIED PULS
RS     1    FLOW      -1
SV     .0    92.0   158.0   217.0   273.0   329.0   383.0   438.0   490.0   591.0
SQ     .0   500.0  1000.0  1500.0  2000.0  2500.0  3000.0  3500.0  4000.0  5000.0
KK  LC25
BA 2.550
LU    .10     .08    3.76
UI    15.     15.     36.     36.     59.     59.     83.    101.    101.    135.
UI   135.    162.    162.    195.    195.    230.    268.    268.    307.    307.
UI   353.    353.    403.    448.    448.    459.    459.    465.    465.    459.
UI   448.    448.    412.    412.    375.    375.    337.    337.    304.    283.
UI   283.    263.    263.    239.    239.    224.    208.    208.    192.    192.
UI   180.    180.    168.    157.    157.    146.    146.    138.    138.    129.
UI   129.    122.    114.    114.    108.    108.    102.    102.     97.     91.
UI    91.     87.     87.     83.     83.     78.     75.     75.     71.     71.
UI    68.     68.     64.     64.     62.     59.     59.     57.     57.     55.
UI    55.     53.     51.     51.     49.     49.     47.     47.     46.     44.
UI    44.     43.     43.     41.     41.     40.     40.     38.     37.     37.
UI    36.     36.     35.     35.     33.     32.     32.     31.     31.     30.
UI    30.     29.     28.     28.     27.     27.     26.     26.     25.     25.
UI    24.     23.     23.     23.     23.     22.     22.     21.     20.     20.
UI    20.     20.     19.     19.     18.     17.     17.     17.     17.     16.
UI    16.     16.     16.     15.     14.     14.     14.     14.     13.     13.
UI    13.     13.     13.     12.     12.     12.     12.     11.     11.     11.
UI    11.     11.     10.     10.     10.     10.     10.      9.      9.      9.
UI     9.      9.      9.      8.      8.      8.      8.      8.      7.      7.
UI     7.      7.      7.      7.      7.      7.      7.      6.      6.      6.
UI     6.      6.      6.      6.      6.      6.      5.      5.      5.      5.
UI     5.      5.      5.
KK  LCC4
KM       COMBINE ROUTED LCC3 AND LC25(EAGLES NEST ROAD GAGE)
HC     2
KK  LCR5
KM       ROUTE LCC4 TO LC26 -- MODIFIED PULS
RS     1    FLOW      -1
SV     .0    62.0   114.0   158.0   196.0   230.0   260.0   287.0   312.0   359.0
SQ     .0   500.0  1000.0  1500.0  2000.0  2500.0  3000.0  3500.0  4000.0  5000.0
KK  LC26
BA  .440
LU    .10     .07    2.00
UI     3.      8.      8.     14.     19.     24.     24.     31.     38.     45.
UI    45.     53.     62.     71.     71.     82.     94.    104.    107.    107.
UI   108.    107.    104.    104.     96.     87.     79.     79.     71.     66.
UI    61.     61.     56.     52.     49.     49.     45.     42.     39.     37.
UI    37.     34.     32.     30.     30.     28.     27.     25.     25.     24.
UI    23.     21.     21.     20.     19.     18.     18.     18.     16.     16.
UI    15.     15.     14.     14.     13.     13.     13.     12.     12.     12.
UI    11.     11.     11.     11.     10.     10.     10.      9.      9.      9.
UI     9.      8.      8.      8.      8.      8.      8.      7.      7.      7.
UI     7.      6.      6.      6.      6.      6.      6.      5.      5.      5.
UI     5.      5.      5.      5.      5.      4.      4.      4.      4.      4.
UI     4.      4.      4.      3.      3.      3.      3.      3.      3.      3.
UI     3.      3.      3.      3.      3.      3.      2.      2.      2.      2.
UI     2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
UI     2.      2.      2.      2.      2.      2.      1.      1.      1.      1.
UI     1.      1.      1.      1.      1.      1.      1.
```

```
KK  LCC5
KM      COMBINE ROUTED LCC4 AND LC26
HC    2
KK  LC30
KM      PRYE CREEK
BA 1.690
LU   .10      .09     8.80
UI    8.      8.      8.     20.     20.     33.     33.     46.     46.     56.
UI   56.     75.     75.     90.     90.    109.    109.    128.    128.    128.
UI  149.    149.    171.    171.    197.    197.    224.    224.    250.    250.
UI  256.    256.    259.    259.    256.    256.    250.    250.    229.    229.
UI  229.    209.    209.    188.    188.    169.    169.    158.    158.    146.
UI  146.    133.    133.    125.    125.    116.    116.    107.    107.    107.
UI  100.    100.     94.     94.     87.     87.     81.     81.     77.     77.
UI   72.     72.     68.     68.     64.     64.     60.     60.     57.     57.
UI   57.     54.     54.     51.     51.     48.     48.     46.     46.     44.
UI   44.     42.     42.     39.     39.     38.     38.     36.     36.     36.
UI   35.     35.     33.     33.     32.     32.     31.     31.     30.     30.
UI   29.     29.     27.     27.     26.     26.     26.     26.     25.     25.
UI   25.     24.     24.     23.     23.     22.     22.     21.     21.     21.
UI   21.     20.     20.     19.     19.     18.     18.     18.     18.     18.
UI   17.     17.     17.     17.     16.     16.     15.     15.     15.     15.
UI   14.     14.     14.     14.     13.     13.     13.     13.     13.     13.
UI   13.     12.     12.     12.     12.     11.     11.     11.     11.     10.
UI   10.     10.     10.     10.     10.      9.      9.      9.      9.      9.
UI    9.      9.      8.      8.      8.      8.      8.      8.      8.      8.
UI    7.      7.      7.      7.      7.      7.      6.      6.      6.      6.
UI    6.      6.      6.      6.      6.      6.      6.      6.      6.      5.
UI    5.      5.      5.      5.      5.      5.      5.      5.      5.      5.
UI    4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
UI    4.      4.      4.      4.      3.      3.      3.      3.      3.      3.
UI    3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
UI    3.      3.      3.
KK  LCC6
KM      COMBINE LCC5 AND LC30- LAGUNA CREEK BELOW PRYE CREEK
HC    2
KK  LCR6
KM      ROUTE LCC6 TO LC35 -- MODIFIED PULS
RS     1      FLOW      -1
SV    .0      63.0    113.0    157.0    198.0    237.0    274.0    308.0    340.0    401.0
SQ    .0     500.0   1000.0   1500.0   2000.0   2500.0   3000.0   3500.0   4000.0   5000.0
KK  LC35
BA 2.770
LU   .10      .07     5.41
UI   16.     16.     38.     38.     62.     62.     88.     88.    107.    143.
UI  143.    171.    171.    206.    206.    243.    243.    283.    283.    324.
UI  373.    373.    426.    426.    474.    474.    486.    486.    492.    486.
UI  486.    474.    474.    436.    436.    397.    397.    357.    357.    322.
UI  300.    300.    278.    278.    253.    253.    237.    237.    220.    203.
UI  203.    191.    191.    178.    178.    166.    166.    154.    154.    146.
UI  137.    137.    129.    129.    121.    121.    114.    114.    108.    103.
UI  103.     97.     97.     92.     92.     87.     87.     83.     83.     80.
UI   75.     75.     72.     72.     68.     68.     66.     66.     62.     61.
UI   61.     58.     58.     57.     57.     54.     54.     52.     52.     50.
UI   49.     49.     47.     47.     45.     45.     44.     44.     42.     40.
UI   40.     39.     39.     38.     38.     37.     37.     35.     34.     34.
UI   32.     32.     31.     31.     30.     30.     29.     29.     28.     27.
UI   27.     26.     26.     25.     25.     25.     25.     24.     23.     23.
UI   22.     22.     21.     21.     21.     21.     20.     20.     19.     18.
UI   18.     18.     18.     17.     17.     16.     16.     16.     15.     15.
UI   15.     15.     14.     14.     14.     14.     13.     13.     13.     12.
UI   12.     12.     12.     12.     12.     11.     11.     11.     11.     11.
UI   10.     10.     10.     10.     10.     10.      9.      9.      9.      8.
UI    8.      8.      8.      8.      8.      8.      8.      7.      7.      7.
UI    7.      7.      7.      7.      6.      6.      6.      6.      6.      6.
UI    6.      6.      6.      5.      5.      5.      5.
KK  LCC7
KM      COMBINE ROUTED LCC6 AND LC35(LAGUNA @ EXCELSIOR)
HC    2
*
* ***************************************************************
*
* WRITE A SUB-AREA HYDROGRAPH TO DSS FOR USE IN UNET
ZW A=LAGUNA CREEK UPPER B=LCC7 C=FLOW F=HEC1EX
*
* ***************************************************************
*
KK  LCR7
KM      ROUTE LCC7 TO LC40 --MODIFIED PULS
RS     1      FLOW      -1
SV    .0      90.0    176.0    267.0    361.0    451.0    542.0    634.0    728.0    921.0
SQ    .0     500.0   1000.0   1500.0   2000.0   2500.0   3000.0   3500.0   4000.0   5000.0
KK  LCD1
DT  TRIB
DI    0.    2500.    3450.    4000.
DQ    0.       0.     171.     180.
*
* ***************************************************************
*
* WRITE A SUB-AREA HYDROGRAPH TO DSS FOR USE IN UNET
ZW A=LAGUNA CREEK UPPER B=LCD1 C=FLOW F=HEC1EX
*
* ***************************************************************
*
KK  LC40
BA 1.780
LU   .10      .08     2.80
UI    9.      9.      9.     22.     22.     35.     35.     50.     50.     61.
UI   61.     81.     81.     97.     97.    117.    117.    138.    138.    161.
UI  161.    185.    185.    213.    213.    243.    243.    270.    270.    276.
UI  276.    280.    280.    276.    276.    270.    270.    248.    248.    226.
UI  226.    226.    203.    203.    183.    183.    171.    171.    158.    158.
UI  144.    144.    135.    135.    125.    125.    116.    116.    109.    109.
UI  101.    101.     95.     95.     88.     88.     83.     83.     78.     78.
UI   73.     73.     69.     69.     65.     65.     61.     61.     59.     59.
UI   59.     55.     55.     52.     52.     50.     50.     47.     47.     45.
UI   45.     43.     43.     41.     41.     39.     39.     37.     37.     35.
UI   35.     35.     35.     33.     33.     32.     32.     31.     31.     30.
UI   30.     29.     29.     28.     28.     27.     27.     26.     26.     25.
UI   25.     25.     24.     24.     23.     23.     22.     22.     21.     21.
UI   21.     21.     20.     20.     19.     19.     18.     18.     18.     18.
UI   17.     17.     17.     17.     16.     16.     16.     16.     15.     15.
UI   14.     14.     14.     14.     14.     14.     13.     13.     13.     13.
UI   12.     12.     12.     12.     12.     11.     11.     11.     11.     11.
UI   11.     10.     10.     10.     10.      9.      9.      9.      9.      9.
UI    9.      8.      8.      8.      8.      8.      8.      8.      8.      7.
UI    7.      7.      7.      7.      7.      7.      7.      6.      6.      6.
UI    6.      6.      6.      6.      6.      6.      6.      5.      5.      5.
UI    5.      5.      5.      5.      5.      5.      5.      5.      5.      4.
UI    4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
UI    4.      4.      4.      4.      3.      3.      3.      3.      3.      3.
UI    3.      3.      3.      3.      3.      3.      3.
*
* ***************************************************************
*
* WRITE A SUB-AREA HYDROGRAPH TO DSS FOR USE IN UNET
ZW A=LAGUNA CREEK UPPER B=LC40 C=FLOW F=HEC1EX
*
* ***************************************************************
*
KK  LCC8
KM      COMBINE ROUTED LCC7 AND LC40(LAGUNA AT CENTRAL CAL. TRACTION)
HC    2
*
* ***************************************************************
*
* WRITE A SUB-AREA HYDROGRAPH TO DSS FOR USE IN UNET
ZW A=LAGUNA CREEK UPPER B=LCC8 C=FLOW F=HEC1EX
*
* ***************************************************************
*
KK  LCD2
DT CCTRR
DI    0.     800.     875.    1334.    1648.    1954.    3244.
DQ    0.       0.       9.     177.     352.     539.    1477.
KK  LCR8
KM      ROUTE LCC8 TO LC45, -- MODIFIED PULS
RS     1      FLOW      -1
SV    .0     201.0    381.0    548.0    709.0    864.0    994.0   1117.0   1235.0   1470.0
SQ    .0     500.0   1000.0   1500.0   2000.0   2500.0   3000.0   3500.0   4000.0   5000.0
KK  LC45
BA 2.770
LU   .10      .08     4.74
UI   12.     12.     12.     29.     29.     29.     47.     47.     66.     66.
UI   81.     81.     81.    107.    107.    128.    128.    128.    155.    155.
UI  182.    182.    213.    213.    213.    244.    244.    281.    281.    281.
UI  320.    320.    356.    356.    356.    365.    365.    370.    370.    365.
UI  365.    365.    356.    356.    328.    328.    328.    298.    298.    268.
UI  268.    242.    242.    242.    225.    225.    209.    209.    209.    190.
UI  190.    178.    178.    178.    166.    166.    153.    153.    143.    143.
UI  143.    133.    133.    125.    125.    125.    116.    116.    110.    110.
UI  103.    103.    103.     97.     97.     91.     91.     91.     86.     86.
UI   81.     81.     81.     77.     77.     73.     73.     69.     69.     69.
UI   66.     66.     62.     62.     62.     60.     60.     56.     56.     56.
UI   54.     54.     51.     51.     49.     49.     49.     47.     47.     46.
UI   46.     46.     44.     44.     43.     43.     41.     41.     41.     39.
UI   39.     38.     38.     38.     37.     37.     35.     35.     35.     34.
UI   34.     33.     33.     32.     32.     32.     30.     30.     30.     30.
UI   30.     28.     28.     28.     28.     26.     26.     26.     26.     26.
UI   24.     24.     24.     24.     24.     23.     23.     23.     22.     22.
UI   21.     21.     21.     21.     21.     20.     20.     19.     19.     19.
UI   18.     18.     18.     18.     17.     17.     17.     17.     17.     16.
UI   16.     16.     16.     16.     15.     15.     15.     14.     14.     14.
UI   14.     13.     13.     13.     13.     13.     12.     12.     12.     12.
UI   12.     11.     11.     11.     11.     11.     11.     11.     10.     10.
UI   10.     10.     10.     10.     10.     10.      9.      9.      9.      9.
UI    9.      9.      9.      9.      9.      8.      8.      8.      8.      8.
UI    8.      8.      7.      7.      7.      7.      7.      7.      7.      7.
UI    7.      7.      6.      6.      6.      6.      6.      6.      6.      6.
UI    6.      6.      6.      6.      5.      5.      5.      5.      5.      5.
UI    5.      5.      5.      5.      5.      5.      4.      4.      4.      4.
UI    4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
UI    4.
*
* ***************************************************************
*
* WRITE A SUB-AREA HYDROGRAPH TO DSS FOR USE IN UNET
ZW A=LAGUNA CREEK UPPER B=LC45 C=FLOW F=HEC1EX
*
* ***************************************************************
*
KK  LCR9
KM      ROUTING OF LC45
RM    36    3.00      .5
KK  LCC9
KM      COMBINE ROUTED LCC8 AND LC45 (LAGUNA ABOVE MAIN )
HC    2
KK LCDR1
DR  TRIB
KK LCR10
KM      ROUTE OVERFLOW
RM    12    1.00      .5
KK  LC50
BA 3.080
LU   .10      .07     3.60
UI   22.     22.     53.     85.     85.    120.    147.    147.    195.    234.
UI  234.    282.    332.    332.    388.    444.    511.    511.    583.    649.
UI  649.    664.    673.    673.    664.    649.    649.    596.    543.    543.
UI  488.    440.    440.    410.    381.    381.    346.    324.    324.    302.
UI  278.    278.    261.    243.    243.    227.    211.    200.    200.    187.
UI  176.    176.    166.    156.    156.    148.    141.    141.    132.    126.
UI  126.    126.    113.    113.    109.    102.    102.     99.     93.     93.
UI   90.     85.     85.     83.     80.     80.     77.     74.     71.     71.
UI   69.     67.     67.     64.     62.     62.     60.     58.     58.     55.
UI   54.     54.     52.     50.     50.     48.     47.     47.     44.     43.
UI   43.     41.     40.     40.     39.     37.     37.     36.     35.     34.
UI   34.     33.     31.     31.     30.     29.     29.     28.     27.     27.
UI   26.     25.     25.     25.     23.     23.     23.     22.     22.     21.
UI   20.     20.     20.     19.     19.     18.     18.     18.     17.     16.
UI   16.     16.     15.     15.     15.     14.     14.     14.     13.     13.
UI   13.     12.     12.     12.     11.     11.     11.     11.     10.     10.
UI   10.     10.     10.      9.      9.      9.      9.      8.      8.      8.
UI    8.      8.      8.      7.      7.      7.      7.
KK LCR11
KM      ROUTE LC50 TO LCC10-- MODIFIED PULS--HEC2 X-SECT
RS     1      FLOW      -1
SV    .0     27.0     43.0     59.0     78.0    116.0
SQ    .0    400.0    800.0   1200.0   1600.0   2000.0
KK LCC10
KM      COMBINE OVERFLOW (COE DIVERSION) LAGUNA TRIB AT CCTRR
HC    2
KK LCR12
KM      MUSKINGUM ROUTING FOR FLOW FROM CCTRR TO MOUTH
RM    36    3.00      .5
KK  LC55
BA 2.830
LU   .10      .07    10.60
UI   14.     14.     14.     35.     35.     56.     56.     79.     79.     97.
UI   97.    129.    129.    155.    155.    186.    186.    220.    220.    256.
UI  256.    293.    293.    338.    338.    385.    385.    429.    429.    439.
UI  439.    445.    445.    439.    439.    429.    429.    394.    394.    394.
UI  359.    359.    323.    323.    291.    291.    271.    271.    252.    252.
UI  228.    228.    214.    214.    199.    199.    184.    184.    172.    172.
UI  161.    161.    150.    150.    139.    139.    132.    132.    123.    123.
UI  117.    117.    109.    109.    103.    103.     98.     98.     98.     93.
UI   93.     87.     87.     83.     83.     79.     79.     75.     75.     72.
UI   72.     68.     68.     65.     65.     61.     61.     59.     59.     56.
UI   56.     55.     55.     53.     53.     51.     51.     49.     49.     47.
UI   47.     45.     45.     44.     44.     42.     42.     42.     41.     41.
UI   40.     40.     38.     38.     36.     36.     36.     36.     34.     34.
UI   33.     33.     32.     32.     31.     31.     29.     29.     28.     28.
UI   27.     27.     26.     26.     26.     26.     25.     25.     24.     24.
UI   23.     23.     22.     22.     22.     22.     22.     21.     21.     20.
UI   20.     19.     19.     19.     19.     18.     18.     17.     17.     17.
UI   17.     16.     16.     15.     15.     15.     15.     14.     14.     14.
UI   14.     13.     13.     13.     13.     12.     12.     12.     12.     12.
UI   12.     11.     11.     11.     11.     11.     11.     11.     10.     10.
UI   10.     10.     10.     10.      9.      9.      9.      9.      9.      9.
UI    8.      8.      8.      8.      8.      8.      7.      7.      7.      7.
UI    7.      7.      7.      7.      6.      6.      6.      6.      6.      6.
UI    6.      6.      6.      6.      6.      5.      5.      5.      5.      5.
UI    5.      5.      5.      5.      5.      5.      5.
KK LCR13
KM      ROUTING OF LC55
RM    36    3.00      .5
KK LCC11
KM      COMBINE ROUTED LCC10 AND LC55-LAGUNA TRIB.
HC    2
KK LCC12
KM    COMBINE LCC9 AND LCC11 - LAGUNA CREEK BELOW LAGUNA TRIBUTARY
HC    2
KK LCR14
KM      ROUTE LCC12 TO LC60-- MODIFIED PULS--HEC2 SECT.000 TO 3084 (25 0
RS     1      FLOW      -1
SV    .0     24.0     45.0     66.0     87.0    106.0    124.0    144.0    165.0    213.0
SQ    .0    500.0   1000.0   1500.0   2000.0   2500.0   3000.0   3500.0   4000.0   5000.0
KKLCR14A
KM      SUPPLEMENTARY MUSKINGUM
```

```
RM    36    3.00      .5
KK  LC60
BA 3.470
LU    .10     .07    4.40
UI   18.     18.     18.     43.     43.     70.     70.     99.     99.    121.
UI  121.    161.    161.    192.    192.    232.    232.    273.    273.    319.
UI  319.    365.    365.    420.    420.    479.    479.    533.    533.    546.
UI  546.    554.    554.    546.    546.    533.    533.    490.    490.    446.
UI  446.    401.    401.    362.    362.    337.    337.    313.    313.    284.
UI  284.    267.    267.    248.    248.    229.    229.    215.    215.    200.
UI  200.    187.    187.    174.    174.    164.    164.    154.    154.    145.
UI  145.    136.    136.    128.    128.    122.    122.    116.    116.    109.
UI  109.    103.    103.     98.     98.     93.     93.     90.     90.     90.
UI   84.     84.     81.     81.     76.     76.     74.     74.     70.     70.
UI   68.     68.     66.     66.     64.     64.     61.     61.     59.     59.
UI   56.     56.     55.     55.     53.     53.     51.     51.     49.     49.
UI   47.     47.     45.     45.     44.     44.     42.     42.     41.     41.
UI   39.     39.     38.     38.     37.     37.     35.     35.     34.     34.
UI   33.     33.     32.     32.     31.     31.     30.     30.     29.     29.
UI   28.     28.     27.     27.     26.     26.     25.     25.     24.     24.
UI   23.     23.     22.     22.     22.     22.     21.     21.     20.     20.
UI   19.     19.     19.     19.     18.     18.     17.     17.     17.     17.
UI   17.     16.     16.     16.     16.     15.     15.     14.     14.     14.
UI   14.     14.     14.     13.     13.     13.     13.     12.     12.     12.
UI   12.     11.     11.     11.     11.     11.     11.     10.     10.     10.
UI   10.      9.      9.      9.      9.      9.      9.      9.      9.      8.
UI    8.      8.      8.      8.      8.      7.      7.      7.      7.      7.
UI    7.      7.      7.      7.      7.      6.      6.      6.      6.      6.
UI    6.      6.      6.
KK LCC13
KM       COMBINE ROUTED LCC12 AND LC60(LAGUNA CREEK @ WATERMAN-BOND ROADS)
HC     2
*
KKSHDJMP
KO     3
DR CCTRR
ZW A=LAGUNA TO GERBER B=INTERBASIN C=FLOW F=LEX
*
ZZ
*
*  SUMMED AREA OF SUBBASINS DOES NOT EQUAL TOTAL AREA.
*  SUMMED AREA OF SUBBASINS =     31.940
*  TOTAL AREA =                   41.330
*
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ELDER AND GERBER CREEKS
HEC-1 BOUNDARY CONDITIONS FILE NO. 2

1995 FLOOD EVENT FOR ELDER AND GERBER CREEKS

FILENAME: ELEX-95.DAT

```
ID  +-----------------------------------------------------+
ID  |  Elder and Gerber Creeks --  100-year Existing Condition  |
ID  +-----------------------------------------------------+
ID
ID  Elder and Gerber Creeks
ID  Existing Condition
ID  Sub-basin file created:  March 14, 1994
ID
ID ***  FILE: ELEX-95.DAT
ID ***  Precipitation from radar.
ID ***  Initial Loss set to 0.00
ID
IT     5 09JAN95     0000      865
IO     5         0         0
*DIAGRAM
*
*
*       PRECIPITATION FROM RADAR
*
IN    15 09JAN95     0000
*
PG  AI29
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.02    0.02    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.11    0.23    0.28    0.14    0.08    0.09
PI  0.10    0.10    0.13    0.22    0.26    0.15    0.07    0.06    0.05    0.04
PI  0.03    0.02    0.01    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02    0.06
PI  0.08    0.14    0.00    0.00    0.00    0.29    0.25    0.19    0.14    0.13
PI  0.08    0.15    0.14    0.10    0.18    0.18    0.10    0.08    0.04    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02
PI  0.00    0.00    0.00    0.05    0.15    0.14    0.00    0.00    0.00    0.00
PI  0.00    0.03    0.00    0.00    0.00    0.00    0.00    0.01    0.04    0.00
PI  0.07    0.06    0.02    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AJ29
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.01    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.11    0.23    0.32    0.17    0.08    0.09
PI  0.10    0.10    0.09    0.16    0.26    0.19    0.10    0.06    0.03    0.03
PI  0.03    0.03    0.02    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.06    0.14    0.00    0.00    0.08    0.29    0.25    0.19    0.14    0.16
PI  0.13    0.15    0.20    0.14    0.10    0.10    0.13    0.10    0.04    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.15    0.14    0.00    0.00    0.00    0.00
PI  0.00    0.03    0.02    0.00    0.00    0.00    0.02    0.00    0.01    0.00
PI  0.07    0.06    0.04    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AK29
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.11    0.23    0.28    0.19    0.13    0.09
PI  0.10    0.10    0.07    0.16    0.26    0.22    0.12    0.06    0.03    0.03
PI  0.03    0.03    0.02    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.08    0.17    0.00    0.00    0.08    0.19    0.22    0.13    0.14    0.19
PI  0.13    0.09    0.08    0.10    0.08    0.06    0.06    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.02    0.07    0.07    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.03    0.00
PI  0.07    0.07    0.04    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AL29
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.02    0.06    0.09    0.12    0.19    0.25    0.16    0.09
PI  0.10    0.10    0.07    0.09    0.15    0.23    0.18    0.09    0.04    0.04
PI  0.04    0.04    0.02    0.02    0.02    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.04
PI  0.08    0.17    0.00    0.00    0.05    0.12    0.06    0.08    0.10    0.13
PI  0.08    0.07    0.08    0.08    0.06    0.06    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.02    0.07    0.07    0.05    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.07    0.07    0.04    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AH30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.11    0.20    0.25    0.14    0.08    0.09
PI  0.10    0.10    0.17    0.25    0.30    0.18    0.07    0.06    0.05    0.04
PI  0.03    0.02    0.01    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02    0.06
PI  0.10    0.14    0.00    0.00    0.00    0.25    0.25    0.16    0.10    0.11
PI  0.13    0.15    0.14    0.14    0.14    0.10    0.08    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.17    0.16    0.05    0.00    0.00    0.00
PI  0.00    0.03    0.01    0.00    0.00    0.00    0.01    0.00    0.03    0.01
PI  0.05    0.06    0.04    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AI30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.23    0.23    0.10    0.08    0.09
PI  0.10    0.10    0.13    0.22    0.31    0.18    0.07    0.06    0.04    0.03
PI  0.03    0.02    0.01    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.00    0.01    0.04
PI  0.10    0.17    0.00    0.00    0.00    0.25    0.22    0.16    0.14    0.16
PI  0.13    0.09    0.10    0.10    0.08    0.06    0.08    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.17    0.16    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.03    0.00    0.00    0.00    0.02    0.00    0.01    0.00
PI  0.05    0.06    0.02    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AJ30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.23    0.28    0.14    0.08    0.09
PI  0.08    0.10    0.07    0.13    0.23    0.19    0.10    0.06    0.04    0.03
PI  0.03    0.03    0.02    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.04
PI  0.08    0.17    0.00    0.00    0.00    0.21    0.16    0.14    0.14    0.16
PI  0.11    0.09    0.10    0.10    0.04    0.04    0.04    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.17    0.19    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.03    0.00    0.00    0.00    0.02    0.00    0.03    0.00
PI  0.05    0.06    0.04    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AK30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.06    0.09    0.23    0.28    0.19    0.16    0.12
PI  0.08    0.08    0.07    0.07    0.15    0.19    0.16    0.09    0.04    0.03
PI  0.03    0.03    0.02    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.08    0.14    0.00    0.00    0.00    0.10    0.07    0.06    0.07    0.11
PI  0.11    0.07    0.10    0.10    0.04    0.04    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.17    0.16    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.02    0.00    0.00    0.00    0.02    0.00    0.00    0.00
PI  0.09    0.06    0.04    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AI31
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.20    0.25    0.14    0.08    0.09
PI  0.10    0.10    0.13    0.18    0.23    0.15    0.07    0.06    0.04    0.03
PI  0.03    0.02    0.01    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.01    0.04
PI  0.08    0.00    0.00    0.00    0.00    0.08    0.25    0.22    0.16    0.12    0.13
PI  0.11    0.09    0.10    0.10    0.08    0.08    0.06    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.20    0.19    0.05    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.00    0.00    0.00    0.05    0.00    0.00
PI  0.07    0.07    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
*
*     ****************************
*     *    Begin Gerber Creek    *
*     ****************************
*
KK  G2A
KM  concentration point at Gerber Road, 250 feet east of Vinyard Road.
PR  AK29    AL29
PW   579     163
BA 1.382
LU  0.00     .07    2.00
UI    9.      9.     21.     21.     34.     48.     48.     58.     58.     78.
UI   93.     93.    112.    112.    132.    154.    154.    176.    176.    203.
UI  232.    232.    258.    258.    264.    267.    267.    264.    264.    258.
UI  237.    237.    216.    216.    194.    175.    175.    163.    163.    151.
UI  137.    137.    129.    129.    120.    111.    111.    104.    104.     97.
UI   90.     90.     84.     84.     79.     74.     74.     70.     70.     66.
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UI   62.    62.    59.    59.    56.    53.    53.    50.    50.    47.
UI   45.    45.    43.    43.    41.    39.    39.    37.    37.    36.
UI   34.    34.    33.    33.    32.    31.    31.    30.    30.    28.
UI   27.    27.    26.    26.    25.    24.    24.    24.    24.    23.
UI   22.    22.    21.    21.    20.    20.    20.    19.    19.    19.
UI   18.    18.    17.    17.    16.    16.    16.    15.    15.    15.
UI   14.    14.    14.    14.    13.    13.    13.    12.    12.    12.
UI   12.    12.    11.    11.    11.    10.    10.    10.    10.    10.
UI    9.     9.     9.     9.     9.     8.     8.     8.     8.     8.
UI    7.     7.     7.     7.     7.     7.     7.     7.     7.     6.
UI    6.     6.     6.     6.     6.     5.     5.     5.     5.     5.
UI    5.     5.     5.     5.     5.     4.     4.     4.     4.     4.
UI    4.     4.     4.     4.     4.     4.     4.     3.     3.     3.
UI    3.     3.     3.     3.     3.     3.     3.     3.     3.     3.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G2A      C=FLOW F=HEC195
*
* ************************************
*
KK R-G2A
KM  route subarea G2A
KM ** STORAGE-OUTFLOW FOR X-SECTION    14421.000 TO  20715.000
RS     5     FLOW       -1
SV     .0    15.2    27.7    51.6    76.0   100.8   122.7   145.4   169.0   191.8
SV 221.6   252.7
SQ     .0    50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0  1000.0
KK   G2B
KM  concentration point at Gerber Road, 3600 feet west of Vinyard Road.
PR  AJ30     AK30
PW   280      174
BA  .709
LU  0.00      .07    2.00
UI     6.     14.     14.     22.     32.     39.     39.     51.     62.     74.
UI    88.     88.    102.    117.    135.    135.    154.    171.    175.    177.
UI   177.    175.    171.    157.    157.    143.    129.    116.    116.    108.
UI   100.     91.     85.     85.     79.     73.     69.     69.     64.     60.
UI    56.     53.     53.     49.     46.     44.     44.     41.     39.     37.
UI    35.     35.     33.     31.     30.     30.     29.     27.     26.     24.
UI    24.     24.     22.     22.     22.     21.     20.     20.     20.     19.
UI    18.     18.     17.     17.     16.     16.     15.     15.     15.     14.
UI    14.     13.     13.     13.     12.     12.     12.     11.     11.     11.
UI    10.     10.     10.      9.      9.      9.      9.      9.      8.      8.
UI     8.      8.      7.      7.      7.      7.      7.      6.      6.      6.
UI     6.      6.      5.      5.      5.      5.      5.      5.      5.      5.
UI     4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
UI     3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
UI     3.      3.      2.      2.      2.      2.      2.      2.      2.      2.
UI     2.      2.      2.      2.      2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G2B      C=FLOW F=HEC195
*
* ************************************
*
KK   CG2
KM      GERBER CROSSING #2
HC     2
KK R-CG2
KM ** STORAGE-OUTFLOW FOR X-SECTION    12622.000 TO  14421.000
RS     2     FLOW       -1
SV     .0     2.5     4.5     7.9    11.3    15.2    20.7    24.0    26.0    28.1
SV  30.0    31.8
SQ     .0    50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0  1000.0
KK   G3A
PR  AJ29
PW   370
BA  .744
LU  0.00      .07    2.88
UI     7.     16.     26.     26.     36.     44.     59.     71.     85.     85.
UI   100.    117.    134.    154.    176.    196.    196.    201.    203.    201.
UI   196.    180.    180.    164.    147.    133.    124.    115.    104.    104.
UI    98.     91.     84.     79.     73.     73.     69.     64.     60.     56.
UI    53.     50.     50.     47.     45.     42.     40.     38.     38.     36.
UI    34.     33.     31.     30.     28.     28.     27.     26.     25.     24.
UI    23.     23.     22.     22.     21.     20.     19.     19.     19.     18.
UI    17.     17.     16.     16.     15.     15.     14.     14.     13.     13.
UI    13.     13.     12.     12.     11.     11.     10.     10.     10.     10.
UI     9.      9.      9.      9.      9.      8.      8.      8.      7.      7.
UI     7.      7.      7.      6.      6.      6.      6.      6.      5.      5.
UI     5.      5.      5.      5.      5.      4.      4.      4.      4.      4.
UI     4.      4.      4.      3.      3.      3.      3.      3.      3.      3.
UI     3.      3.      3.      3.      3.      2.      2.      2.      2.      2.
UI     2.      2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G3A      C=FLOW F=HEC195
*
* ************************************
*
KK  CG3A
HC     2
KKR-CG3A
KM ** STORAGE-OUTFLOW FOR X-SECTION    10135.000 TO  12622.000
RS     5     FLOW       -1
SV     .0     1.9     4.4    10.9    18.9    28.4    40.6    50.6    57.2    63.3
SV  68.6    74.0
SQ     .0    50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0  1000.0
KK   G3B
PR  AI30
PW    42
BA  .131
LU  0.00      .07    3.33
UI     2.      7.     10.     17.     20.     24.     34.     38.     44.     56.
UI    58.     58.     56.     52.     42.     38.     36.     30.     28.     24.
UI    23.     21.     18.     17.     15.     14.     14.     12.     11.     11.
UI    10.      9.      9.      8.      8.      7.      7.      7.      6.      6.
UI     6.      5.      5.      5.      5.      4.      4.      4.      4.      4.
UI     3.      3.      3.      3.      3.      3.      3.      2.      2.      2.
UI     2.      2.      2.      2.      2.      2.      2.      2.      1.      1.
UI     1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
UI     1.      1.      1.      1.      1.      1.      1.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G3B      C=FLOW F=HEC195
*
* ************************************
*
KK  CG3B
KM      GERBER CROSSING #3
HC     2
KKR-CG3B
KM ** STORAGE-OUTFLOW FOR X-SECTION     9051.000 TO  10135.000
RS     1     FLOW       -1
SV     .0      .8     1.3     2.8     5.3     7.6     9.2    11.0    13.1    15.3
SV  18.0    19.5
SQ     .0    50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0  1000.0
KK   G3D
PR  AI30     AJ30
PW   140      350
BA  .820
LU  0.00      .07    2.67
UI     5.      5.     13.     21.     21.     30.     30.     36.     48.     48.
UI    58.     70.     70.     82.     82.     96.    110.    110.    127.    145.
UI   145.    161.    165.    165.    167.    167.    165.    161.    161.    148.
UI   135.    135.    121.    121.    109.    102.    102.     95.     86.     86.
UI    80.     75.     75.     69.     69.     65.     60.     60.     56.     52.
UI    52.     50.     50.     46.     44.     44.     41.     39.     39.     37.
UI    35.     35.     33.     33.     31.     30.     30.     28.     27.     27.
UI    25.     25.     24.     23.     23.     22.     21.     21.     21.     20.
UI    20.     19.     19.     18.     18.     18.     17.     17.     17.     16.
UI    16.     15.     15.     15.     14.     14.     14.     13.     13.     13.
UI    12.     12.     12.     12.     12.     11.     11.     11.     10.     10.
UI    10.     10.     10.      9.      9.      9.      9.      8.      8.      8.
UI     8.      8.      8.      8.      7.      7.      7.      7.      7.      7.
UI     6.      6.      6.      6.      6.      6.      5.      5.      5.      5.
UI     5.      5.      5.      5.      5.      5.      4.      4.      4.      4.
UI     4.      4.      4.      4.      4.      4.      4.      3.      3.      3.
UI     3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
UI     3.      3.      3.      2.      2.      2.      2.      2.      2.      2.
UI     2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G3D      C=FLOW F=HEC195
*
* ************************************
*
KK  CG3D
HC     2
KKLAGUNA
KM  retrieve spill from Laguna Creek
BA 19.79
ZR=QI A=LAGUNA CREEK B=CCTRR C=FLOW D=08JAN1995 E=5MIN F=RADAR 95
KKRSPILL
KM  route Laguna Creek spill to Gerber Creek (concentration point CG4)
RD 7500.    .0013    .0600              TRAP 1200.00      .00
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=RSPILL   C=FLOW F=HEC195
*
* ************************************
*
KK    G4
KM      Gerber Creek west of CCTRR, south of Gerber Road
PR  AI30     AI31
PW   195      165
BA  .614
LU  0.00      .07    2.76
UI     6.     14.     23.     32.     39.     39.     52.     62.     75.     88.
UI   103.    118.    136.    155.    173.    173.    177.    179.    177.    173.
UI   159.    144.    130.    117.    109.    101.    101.     92.     86.     80.
UI    74.     69.     65.     60.     56.     53.     53.     50.     47.     44.
UI    41.     39.     37.     35.     33.     32.     30.     30.     29.     27.
UI    26.     25.     24.     23.     22.     21.     21.     21.     20.     19.
UI    18.     18.     17.     16.     16.     15.     15.     14.     14.     14.
UI    13.     13.     12.     12.     11.     11.     11.     10.     10.     10.
UI    10.      9.      9.      9.      8.      8.      8.      8.      8.      7.
UI     7.      7.      7.      6.      6.      6.      6.      5.      5.      5.
UI     5.      5.      5.      4.      4.      4.      4.      4.      4.      4.
UI     4.      4.      3.      3.      3.      3.      3.      3.      3.      3.
UI     3.      3.      3.      2.      2.      2.      2.      2.      2.      2.
UI     2.      2.      2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G4       C=FLOW F=HEC195
*
* ************************************
*
KK   CG4
KM  Central California Traction Railroad U/S reach
HC     3
KK R-CG4
KM ** STORAGE-OUTFLOW FOR X-SECTION     6979.000 TO   9051.000
RS     2     FLOW       -1
SV     .0     2.1     3.8     7.0    10.0    13.4    17.1    21.4    27.0    34.1
SV  41.5    45.5    52.0
SQ     .0    50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0  1000.0  1100.0
KK   G3C
KM      Gerber Creek west of CCTRR
PR  AI29     AI30
PW    94       57
BA  .228
LU  0.00      .07    2.34
UI    10.     16.     27.     43.     52.     72.     95.    120.    123.    123.
UI   111.    101.     82.     71.     64.     56.     48.     42.     39.     35.
UI    31.     29.     26.     23.     22.     20.     18.     17.     16.     15.
UI    14.     13.     12.     11.     11.     10.     10.      9.      9.      8.
UI     7.      7.      7.      6.      6.      6.      5.      5.      5.      4.
UI     4.      4.      4.      3.      3.      3.      3.      3.      3.      2.
UI     2.      2.      2.      2.      2.      2.      2.      1.      1.      1.
UI     1.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G3C      C=FLOW F=HEC195
*
* ************************************
*
KK    CG3
KM  Central California Traction Railroad D/S reach
HC     2
KKDIVBR
KM  Diversion to Unionhouse Creek
DT UNION
DI     0.    300.    370.    571.    812.   1067.   1920.
DQ     0.      0.     12.     51.    167.    253.    802.
KK R-CG3
KM ** STORAGE-OUTFLOW FOR X-SECTION          .000 TO   6979.000
RS     5     FLOW       -1
SV     .0     8.6    16.3    37.7    67.1    77.5    95.2   107.4   119.2   130.8
SV 142.3   153.9
SQ     .0    50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0  1000.0
KK    G5
KM      Gerber Creek @ confluence with Elder Creek
PR  AH30
PW   112
BA  .394
LU  0.00      .07    2.62
UI     4.      9.     14.     14.     20.     24.     32.     38.     46.     55.
UI    64.     64.     73.     84.     96.    107.    109.    111.    109.    109.
UI   107.     98.     89.     80.     72.     67.     67.     63.     57.     53.
UI    50.     46.     43.     40.     40.     37.     35.     33.     31.     29.
UI    27.     26.     26.     24.     23.     22.     21.     20.     19.     19.
UI    18.     17.     16.     15.     15.     14.     14.     14.     13.     13.
UI    12.     12.     11.     11.     11.     11.     10.     10.      9.      9.
UI     9.      8.      8.      8.      8.      8.      7.      7.      7.      7.
UI     7.      6.      6.      6.      6.      6.      5.      5.      5.      5.
```

```
UI    5.    5.    4.    4.    4.    4.    4.    4.    4.    4.
UI    3.    3.    3.    3.    3.    3.    3.    3.    3.    3.
UI    3.    3.    2.    2.    2.    2.    2.    2.    2.    2.
UI    2.    2.    2.    2.    2.    2.    2.    2.    1.    1.
UI    1.    1.    1.    1.    1.    1.    1.    1.
*
* ***********************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=GERBER CREEK B=G5        C=FLOW F=HEC195
*
* ***********************************
*
KK   CG5
KM   Gerber Creek at confluence
HC     2
*
*     * ********************************************************
*     *     End Gerber Creek at Confluence with Elder Creek    *
*     * ********************************************************
*
*       PRECIPITATION FROM RADAR
*
IN     15 09JAN95     0000
*
*     * **************************
*     *     Begin Elder Creek    *
*     * **************************
*
KK   E1A
*
PG   AL27
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.11  0.12  0.15  0.22  0.16  0.09
PI  0.10  0.10  0.09  0.13  0.20  0.16  0.10  0.06  0.04  0.03
PI  0.03  0.03  0.02  0.02  0.02  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.01  0.06
PI  0.06  0.11  0.00  0.00  0.10  0.21  0.16  0.14  0.14  0.16
PI  0.11  0.09  0.08  0.08  0.08  0.04  0.06  0.08  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.05  0.05  0.05  0.07  0.00  0.00  0.00
PI  0.03  0.02  0.00  0.00  0.00  0.00  0.00  0.01  0.03  0.00
PI  0.07  0.07  0.04  0.07  0.08  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AM27
PI  0.00  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.09  0.10  0.19  0.22  0.13  0.09
PI  0.10  0.10  0.07  0.07  0.10  0.15  0.18  0.12  0.05  0.04
PI  0.04  0.04  0.02  0.02  0.02  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.01  0.04
PI  0.08  0.14  0.00  0.00  0.10  0.14  0.03  0.09  0.12  0.08
PI  0.08  0.06  0.06  0.10  0.06  0.04  0.04  0.04  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.02  0.05  0.07  0.07  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.07  0.07  0.04  0.04  0.06  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AI28
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.01  0.02  0.01  0.01  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.11  0.23  0.28  0.14  0.13  0.12
PI  0.10  0.10  0.13  0.18  0.23  0.15  0.07  0.06  0.04  0.03
PI  0.03  0.01  0.01  0.02  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.02  0.01
PI  0.02  0.06  0.06  0.03  0.15  0.15  0.12  0.10  0.07  0.08
PI  0.08  0.15  0.14  0.10  0.18  0.24  0.21  0.15  0.04  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.04  0.00  0.00  0.07  0.07  0.07  0.07  0.00  0.00  0.00
PI  0.00  0.03  0.00  0.00  0.00  0.00  0.00  0.03  0.03  0.00
PI  0.07  0.06  0.04  0.02  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AJ28
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.11  0.23  0.28  0.19  0.13  0.09
PI  0.10  0.10  0.09  0.13  0.23  0.15  0.07  0.06  0.04  0.03
PI  0.03  0.02  0.01  0.02  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.01  0.03
PI  0.04  0.11  0.09  0.03  0.08  0.19  0.22  0.13  0.12  0.16
PI  0.13  0.09  0.14  0.14  0.14  0.14  0.10  0.08  0.04  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.05  0.07  0.07  0.05  0.00  0.00  0.01
PI  0.02  0.03  0.00  0.00  0.00  0.00  0.00  0.04  0.03  0.00
PI  0.07  0.06  0.02  0.03  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AK28
PI  0.00  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.11  0.16  0.21  0.14  0.08  0.09
PI  0.10  0.10  0.09  0.16  0.26  0.15  0.07  0.06  0.04  0.03
PI  0.03  0.03  0.02  0.02  0.02  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.02  0.04
PI  0.04  0.11  0.00  0.00  0.05  0.25  0.22  0.16  0.17  0.19
PI  0.13  0.09  0.08  0.08  0.08  0.06  0.08  0.08  0.04  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.05  0.07  0.05  0.07  0.00  0.00  0.00
PI  0.02  0.03  0.00  0.00  0.00  0.00  0.00  0.03  0.03  0.00
PI  0.07  0.06  0.04  0.03  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AL28
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.09  0.10  0.19  0.25  0.16  0.09
PI  0.10  0.10  0.09  0.13  0.20  0.19  0.12  0.05  0.03  0.03
PI  0.03  0.03  0.02  0.02  0.02  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.01  0.02  0.06
PI  0.06  0.14  0.00  0.00  0.03  0.15  0.09  0.10  0.14  0.13
PI  0.08  0.06  0.04  0.06  0.06  0.06  0.04  0.02  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.01  0.00  0.00  0.05  0.07  0.07  0.07  0.00  0.00  0.00
PI  0.00  0.02  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.07  0.07  0.04  0.07  0.08  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AM28                                AK29
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.02  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.09  0.10  0.19  0.25  0.16  0.09
PI  0.10  0.10  0.07  0.07  0.10  0.18  0.21  0.12  0.04  0.04
PI  0.04  0.04  0.03  0.02  0.02  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.03
PI  0.06  0.11  0.00  0.00  0.00  0.08  0.03  0.05  0.07  0.08
PI  0.05  0.04  0.08  0.08  0.04  0.04  0.04  0.06  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.02  0.07  0.09  0.10  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.07  0.07  0.04  0.02  0.03  0.04  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
PG   AH29                                AL29
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.01
PI  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.00
PI  0.00  0.00  0.01  0.00  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.11  0.12  0.11  0.10  0.08  0.09
PI  0.10  0.10  0.17  0.25  0.26  0.19  0.10  0.05  0.05  0.04
PI  0.03  0.02  0.01  0.02  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.03
PI  0.06  0.11  0.09  0.00  0.00  0.25  0.22  0.16  0.12  0.08
PI  0.08  0.15  0.14  0.10  0.18  0.18  0.13  0.13  0.08  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.02
PI  0.04  0.00  0.00  0.00  0.02  0.07  0.09  0.00  0.00  0.02
PI  0.00  0.03  0.00  0.00  0.00  0.00  0.00  0.00  0.01  0.04
PI  0.07  0.06  0.05  0.03  0.00  0.00  0.00  0.00  0.00  0.00
PI  0.00  0.00  0.00  0.00  0.00  0.00
*
*
KM   concentration point 1700 feet U/S from Jackson and Excelsior Roads
PR   AL27     AM27
PW    335      244
BA 1.420
LU  0.00      .07     2.66
UI    11.      11.      26.      41.      59.      59.      72.      95.      95.     114.
UI   138.     162.     162.     190.     217.     217.     250.     285.     317.     317.
UI   325.     329.     325.     325.     317.     292.     265.     239.     215.     215.
UI   215.     201.     186.     185.     169.     158.     147.     147.     136.     128.
UI   128.     119.     111.     103.     103.      98.      91.      91.      86.      81.
UI    76.      76.      72.      69.      65.      65.      61.      58.      58.      55.
UI    53.      50.      50.      48.      45.      45.      44.      42.      41.      41.
UI    39.      38.      38.      36.      35.      34.      34.      33.      31.      31.
UI    30.      29.      28.      28.      27.      26.      26.      25.      25.      23.
UI    23.      23.      22.      21.      21.      20.      20.      20.      19.      18.
UI    18.      18.      17.      16.      16.      16.      15.      15.      15.      14.
UI    14.      14.      13.      13.      12.      12.      12.      11.      11.      11.
UI    11.      10.      10.      10.      10.      10.       9.       9.       9.       9.
UI     8.       8.       8.       8.       8.       7.       7.       7.       7.       7.
UI     7.       6.       6.       6.       6.       6.       5.       5.       5.       5.
UI     5.       5.       5.       5.       5.       4.       4.       4.       4.       4.
UI     4.       4.       4.       4.       3.       3.       3.
*
* ***********************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E1A       C=FLOW F=HEC195
*
* ***********************************
*
KK R-E1A
KM   route area E1A to concentration point CE1AC
KM       REACH EXTENDS FROM X-SECT.  57172.000 TO X-SECT.  63292.000
RS     5      FLOW      -1
SV    .0     11.2     29.2     35.0     42.5     60.4     80.3     93.2    105.1    122.8
SQ    .0    100.0    300.0    350.0    400.0    500.0    700.0    800.0    900.0   1000.0
KK   E1C
KM   concentration point at Elder Creek Road
PR   AK28     AL28
PW    546      250
BA 1.416
LU  0.00      .07     2.66
UI    11.      28.      28.      45.      64.      78.      78.     104.     124.     150.
UI   177.     177.     206.     236.     272.     310.     310.     345.     353.     358.
UI   358.     353.     345.     317.     289.     289.     260.     234.     218.     202.
UI   202.     184.     172.     160.     160.     148.     139.     129.     121.     121.
UI   112.     106.      99.      99.      94.      88.      83.      79.      79.      75.
UI    70.      67.      64.      64.      60.      58.      54.      54.      52.      49.
UI    48.      45.      45.      44.      42.      41.      41.      40.      38.      37.
UI    35.      35.      34.      33.      32.      31.      31.      29.      29.      27.
UI    27.      27.      25.      25.      24.      24.      23.      22.      21.      21.
UI    21.      20.      19.      18.      18.      18.      17.      17.      16.      16.
UI    16.      15.      14.      14.      14.      13.      13.      12.      12.      12.
UI    11.      11.      11.      11.      10.      10.      10.      10.       9.       9.
UI     9.       9.       9.       8.       8.       8.       7.       7.       7.       7.
UI     7.       7.       6.       6.       6.       6.       6.       6.       5.       5.
UI     5.       5.       5.       5.       4.       4.       4.       4.       4.       4.
UI     4.       4.       4.
*
* ***********************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E1C       C=FLOW F=HEC195
*
* ***********************************
*
KK CE1AC
KM   combine subares E1A with previously combined area  E1C
HC     2
*
KK   E1B
KM   concentration point d/s of Shagil reservoir
PR   AL28     AM28
PW    349      336
BA 1.247
LU  0.00      .07     2.66
UI     7.       7.      16.      16.      26.      26.      37.      37.      46.      46.
UI    61.      61.      73.      73.      88.      88.     103.     103.     120.     120.
UI   138.     138.     159.     159.     181.     181.     201.     206.     206.     209.
UI   209.     206.     206.     201.     201.     185.     185.     168.     168.     151.
UI   151.     137.     137.     127.     127.     118.     118.     107.     107.     101.
UI   101.      94.      86.      86.      81.      81.      75.      75.      71.      71.
UI    65.      65.      62.      62.      58.      58.      55.      55.      51.      51.
UI    48.      48.      46.      46.      44.      44.      41.      41.      39.      37.
UI    37.      35.      35.      34.      34.      32.      32.      31.      31.      29.
UI    29.      28.      28.      26.      26.      26.      26.      25.      25.      24.
UI    24.      23.      23.      22.      21.      21.      21.      21.      20.      20.
UI    19.      19.      19.      19.      18.      18.      17.      17.      17.      17.
UI    16.      16.      16.      16.      15.      15.      15.      15.      14.      14.
UI    13.      13.      13.      12.      12.      12.      12.      12.      12.      11.
UI    11.      11.      11.      10.      10.      10.      10.      10.      10.       9.
UI     9.       9.       9.       9.       9.       8.       8.       8.       8.       8.
UI     8.       8.       7.       7.       7.       7.       7.       7.       6.       6.
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UI    6.    6.    6.    6.    6.    6.    6.    6.    5.    5.
UI    5.    5.    5.    5.    5.    5.    5.    5.    5.    4.
UI    4.    4.    4.    4.    4.    4.    4.    4.    4.    4.
UI    4.    4.    4.    3.    3.    3.    3.    3.    3.    3.
UI    3.    3.    3.    3.    3.    3.    3.    3.    3.    3.
UI    3.    3.    3.    3.    2.    2.    2.    2.    2.    2.
UI    2.    2.
KK R-E1B
KM  route from Shagil reservoir to Elder Creek Road
*   cross-secting is based on typical section between the reservoir and Elder
*   Creek Road.  Surveyed March 14, 1994 by John Alexander.
RC  .060    .035    .060   4000.    .0003      10
RX   .00   50.00  100.00  104.00  108.00  116.00  166.00  216.00
RY  3.70    3.00    1.20     .60     .40    1.50    3.70    5.50
*
KKR-RE1B
KM  route through the 42" culvert crossing Elder Creek Road, culvert analysis
KM  was performed using HY8, flow from the diversion is added to a concentration
KM  2710' D/S from Elder Creek Road.
DT D-E1B
DI    0.     81.     90.    119.    149.    174.    251.    354.
DQ    0.      0.      7.     33.     63.     88.    165.    268.
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* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=R-RE1B    C=FLOW F=HEC195
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* ************************************
*
*
KKCE1ABC
KM  combine subareas E1A and E1B and E1C physically at concentration point CE1AB
HC    2
KK   CE1
KM  route from the 42" cross culvert at Elder Creek Road to concentration
KM  point CE1
KM       REACH EXTENDS FROM X-SECT.  54812.000 TO X-SECT.  57172.000
RS     5      FLOW       -1
SV     .0     7.7    35.6    47.8    60.4    69.0    80.7    86.5    91.9    97.0
SQ     .0   100.0   300.0   350.0   400.0   500.0   700.0   800.0   900.0  1000.0
KK R-CE1
KM  route from point CE1 at Elder Creek Road to a temp concentration point
KM  (TMP1), loacted 2710 feet D/S from point CE1
KM       REACH EXTENDS FROM X-SECT.  52132.000 TO X-SECT.  54812.000
RS     3      FLOW       -1
SV     .0     5.1    14.2    16.2    18.1    21.7    25.1    28.5    31.7    34.9
SV   38.0    41.0    44.0    46.8    49.6
SQ     .0   100.0   300.0   350.0   400.0   500.0   600.0   700.0   800.0   900.0
SQ1000.0  1100.0  1200.0  1300.0  1400.0
KKRETE1B
KM  retrieve diverted hydrograph from the 42" cross culvert at Elder Creek Rd.
DR D-E1B
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* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=D-E1B    C=FLOW F=HEC195
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* ************************************
*
KK  TMP1
KM  temp concentration point located 2710 feet D/S from piont CE1, this point
KM  only occurs in the existing model
HC    2
KKR-TMP1
KM  route from point TMP1 to conc pt C-E1&2 at the confluence of areas E2 & E3
KM       REACH EXTENDS FROM X-SECT.  40302.000 TO X-SECT.  52132.000
RS     5      FLOW       -1
SV     .0    22.8    74.4    86.6    98.7   122.8   146.6   169.7   193.5   216.8
SV  239.1   260.3   281.2   301.9   322.2
SQ     .0   100.0   300.0   350.0   400.0   500.0   600.0   700.0   800.0   900.0
SQ1000.0  1100.0  1200.0  1300.0  1400.0
KK    E2
KM      Elder Creek south of Elder Creek Road
PR  AJ28
PW   342
BA 1.105
LU  0.00     .07    2.08
UI    6.     6.     6.    14.    14.    22.    22.    31.    31.    38.
UI   38.    51.    51.    61.    61.    73.    73.    86.    86.   101.
UI  101.   115.   115.   133.   133.   151.   151.   168.   168.   172.
UI  172.   175.   175.   172.   172.   168.   168.   155.   155.   141.
UI  141.   127.   127.   114.   114.   106.   106.    99.    99.    99.
UI   90.    90.    84.    84.    78.    78.    72.    72.    68.    68.
UI   63.    63.    59.    59.    55.    55.    52.    52.    48.    48.
UI   46.    46.    43.    43.    40.    40.    38.    38.    37.    37.
UI   34.    34.    33.    33.    31.    31.    29.    29.    28.    28.
UI   27.    27.    26.    26.    24.    24.    23.    23.    23.    22.
UI   22.    22.    22.    21.    21.    20.    20.    19.    19.    19.
UI   19.    18.    18.    17.    17.    17.    17.    16.    16.    16.
UI   16.    15.    15.    14.    14.    14.    14.    13.    13.    13.
UI   13.    12.    12.    12.    12.    12.    12.    11.    11.    11.
UI   11.    10.    10.    10.    10.    10.    10.    10.     9.     9.
UI    9.     9.     9.     9.     8.     8.     8.     8.     8.     8.
UI    8.     8.     7.     7.     7.     7.     7.     7.     7.     7.
UI    6.     6.     6.     6.     6.     6.     6.     6.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     5.     5.     5.
UI    4.     4.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     4.     4.     4.     4.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     3.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E2        C=FLOW F=HEC195
*
* ************************************
*
KK  CE12
KM  the conc pt is physically located at the confluence of sub-areas E2 and E3,
KM  5000 ft U/S of Florin Rd
HC    2
KK    E3
KM      Elder Creek north and south of Florin Road
PR  AJ29
PW   319
BA .742
LU  0.00     .07    2.25
UI    5.     5.    13.    21.    21.    30.    36.    48.    48.    58.
UI   70.    70.    82.    96.    96.   109.   126.   126.   144.   160.
UI  164.   164.   166.   164.   164.   160.   147.   147.   134.   120.
UI  120.   109.   101.    94.    94.    85.    80.    80.    74.    69.
UI   69.    64.    60.    60.    56.    52.    49.    49.    46.    43.
UI   43.    41.    38.    38.    36.    35.    33.    33.    31.    29.
UI   29.    28.    27.    27.    25.    24.    24.    23.    22.    21.
UI   21.    20.    20.    20.    19.    18.    18.    18.    17.    17.
UI   16.    16.    15.    15.    15.    14.    14.    14.    13.    13.
UI   13.    12.    12.    12.    12.    11.    11.    11.    10.    10.
UI   10.    10.    10.     9.     9.     9.     9.     8.     8.     8.
UI    8.     7.     7.     7.     7.     7.     7.     6.     6.     6.
UI    6.     6.     6.     6.     5.     5.     5.     5.     5.     5.
UI    5.     5.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     4.     4.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     3.     3.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.
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* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E3        C=FLOW F=HEC195
*
* ************************************
*
KK  CE23
KM  the conc pt is physically located at the confluence of sub-areas E2 and E3,
KM  5000 ft U/S of Florin Rd
HC    2
KKR-CE23
KM       ROUTE TO FLORIN ROAD
KM       REACH EXTENDS FROM X-SECT.  35607.000 TO X-SECT.  40302.000
RS     5      FLOW       -1
SV     .0     7.6    39.9    47.6    55.2    71.4    87.5   102.9   115.6   126.3
SV  136.2   145.8   155.2   164.5   173.8
SQ     .0   100.0   300.0   350.0   400.0   500.0   600.0   700.0   800.0   900.0
SQ1000.0  1100.0  1200.0  1300.0  1400.0
KK   E4B
PR  AI28    AI29
PW   274     238
BA 1.000
LU  0.00     .07    2.24
UI    6.     6.    16.    16.    25.    36.    36.    44.    58.    58.
UI   70.    70.    84.    99.    99.   116.   132.   132.   152.   152.
UI  174.   193.   193.   198.   201.   201.   198.   198.   193.   178.
UI  178.   162.   145.   145.   131.   131.   122.   113.   113.   103.
UI  103.    97.    90.    90.    83.    78.    78.    72.    72.    68.
UI   63.    63.    60.    56.    56.    53.    53.    49.    46.    46.
UI   44.    42.    42.    39.    39.    37.    36.    36.    34.    32.
UI   32.    30.    30.    29.    28.    28.    27.    27.    25.    25.
UI   25.    24.    23.    23.    22.    22.    21.    20.    20.    20.
UI   19.    19.    18.    18.    18.    17.    17.    16.    16.    16.
UI   15.    15.    15.    14.    14.    14.    13.    13.    13.    13.
UI   12.    12.    12.    12.    12.    11.    11.    11.    10.    10.
UI   10.    10.    10.     9.     9.     9.     9.     8.     8.     8.
UI    8.     8.     8.     8.     7.     7.     7.     7.     7.     6.
UI    6.     6.     6.     6.     6.     6.     6.     5.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     5.     4.     4.
UI    4.     4.     4.     4.     4.     4.     4.     4.     3.     3.
UI    3.     3.     3.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E4B       C=FLOW F=HEC195
*
* ************************************
*
KK  CE4B
HC    2
KK   E4A
PR  AI29
PW   343
BA .650
LU  0.00     .07    2.67
UI    5.     5.    12.    20.    28.    28.    34.    45.    54.    54.
UI   66.    77.    90.    90.   103.   119.   136.   136.   151.   155.
UI  157.   157.   155.   151.   139.   139.   126.   114.   103.   103.
UI   96.    89.    80.    80.    75.    70.    65.    65.    61.    57.
UI   53.    53.    49.    47.    44.    44.    41.    39.    36.    36.
UI   34.    33.    31.    31.    29.    28.    26.    26.    25.    24.
UI   23.    23.    22.    21.    20.    20.    19.    19.    18.    18.
UI   17.    17.    16.    16.    16.    15.    14.    14.    14.    13.
UI   13.    13.    13.    12.    12.    12.    11.    11.    10.    10.
UI   10.    10.     9.     9.     9.     9.     9.     8.     8.     8.
UI    8.     8.     7.     7.     7.     7.     7.     6.     6.     6.
UI    6.     6.     6.     5.     5.     5.     5.     5.     5.     5.
UI    5.     4.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     3.     3.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E4A       C=FLOW F=HEC195
*
* ************************************
*
KK   CE4
KM  Central California Traction Railroad
HC    2
KK R-CE4
KM       REACH EXTENDS FROM X-SECT.  29357.000 TO X-SECT.  35607.000
RS     5      FLOW       -1
SV     .0    13.1    44.1    53.5    63.7    83.6   102.7   121.1   139.7   158.4
SV  177.7   198.5   219.9   242.3   264.6
SQ     .0   100.0   300.0   350.0   400.0   500.0   600.0   700.0   800.0   900.0
SQ1000.0  1100.0  1200.0  1300.0  1400.0
KK    E5
KM      Elder Creek @ confluence with Gerber Creek
PR  AH29
PW   100
BA .333
LU  0.00     .07    3.24
UI    3.     7.    12.    17.    17.    21.    28.    33.    40.    47.
UI   55.    63.    73.    83.    83.    93.    95.    96.    95.    93.
UI   85.    77.    70.    70.    63.    59.    54.    49.    46.    43.
UI   40.    37.    35.    35.    32.    30.    29.    27.    25.    24.
UI   22.    21.    21.    20.    19.    18.    17.    16.    16.    15.
UI   14.    13.    13.    13.    12.    12.    11.    11.    11.    10.
UI   10.    10.    10.     9.     9.     9.     8.     8.     8.     7.
UI    7.     7.     7.     7.     6.     6.     6.     6.     6.     5.
UI    5.     5.     5.     5.     5.     4.     4.     4.     4.     4.
UI    4.     4.     4.     4.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    1.     1.     1.     1.     1.     1.     1.     1.     1.     1.
UI    1.     1.     1.     1.     1.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK UPPER B=E5        C=FLOW F=HEC195
*
* ************************************
*
KK   CE5
KM  Elder Creek at confluence
HC    2
KK   CEG
KM  Elder and Gerber Creeks combined
HC    2
KK R-CEG
KM       REACH EXTENDS FROM X-SECT.  27367.000 TO X-SECT.  29357.000
RS     3      FLOW       -1
SV     .0     2.8    16.8    31.8    46.4    56.1    62.3    67.1    71.5    75.6
SV   79.5    83.3    87.1
SQ     .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
*
*       PRECIPITATION FROM RADAR
```

```
*
IN    15 09JAN95    0000
*
KK    E6
*
PG  AG29                        AI30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.11    0.12    0.11    0.10    0.08    0.09
PI  0.10    0.10    0.17    0.25    0.26    0.19    0.10    0.06    0.05    0.04
PI  0.03    0.02    0.01    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.03
PI  0.06    0.11    0.06    0.06    0.20    0.25    0.22    0.16    0.12    0.08
PI  0.08    0.15    0.14    0.10    0.18    0.18    0.13    0.13    0.08    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02
PI  0.04    0.00    0.00    0.02    0.07    0.12    0.07    0.00    0.02    0.00
PI  0.00    0.05    0.00    0.00    0.00    0.00    0.00    0.00    0.04    0.00
PI  0.07    0.06    0.05    0.03    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AD30                        AJ30
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.03    0.07    0.08    0.15    0.16    0.15    0.14    0.08    0.09
PI  0.10    0.16    0.19    0.18    0.15    0.08    0.07    0.05    0.03    0.04
PI  0.03    0.01    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.08    0.09    0.09    0.10    0.19    0.06    0.13    0.14    0.13
PI  0.11    0.06    0.04    0.08    0.08    0.18    0.17    0.08    0.08    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.10    0.15    0.16    0.07    0.00    0.00    0.00
PI  0.00    0.03    0.00    0.00    0.00    0.00    0.00    0.01    0.03    0.00
PI  0.05    0.03    0.08    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AE30                        AK30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.02    0.03    0.08    0.15    0.16    0.15    0.14    0.08    0.09
PI  0.10    0.14    0.19    0.18    0.18    0.12    0.07    0.06    0.04    0.04
PI  0.03    0.01    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.08    0.00    0.00    0.06    0.23    0.25    0.13    0.16    0.12    0.16
PI  0.14    0.07    0.08    0.10    0.14    0.20    0.13    0.06    0.04    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.10    0.12    0.07    0.00    0.00    0.00
PI  0.00    0.03    0.00    0.00    0.00    0.00    0.00    0.03    0.04    0.00
PI  0.05    0.03    0.06    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AF30                        AI31
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00
PI  0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.02    0.02    0.06    0.11    0.16    0.21    0.14    0.08    0.09
PI  0.10    0.10    0.17    0.22    0.15    0.08    0.07    0.06    0.05    0.04
PI  0.03    0.02    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02    0.06
PI  0.08    0.00    0.00    0.00    0.18    0.25    0.14    0.16    0.10    0.11
PI  0.11    0.13    0.20    0.14    0.14    0.14    0.10    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.15    0.14    0.05    0.00    0.00    0.00
PI  0.00    0.03    0.00    0.00    0.00    0.00    0.00    0.03    0.04    0.00
PI  0.05    0.06    0.05    0.04    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
*
*
KM      Elder Creek @ Elk Grove-Florin Road
PR  AH29
PW    98
BA  .211
LU  0.00      .07    2.55
UI    3.      12.     17.     28.     33.     40.     55.     63.     82.     92.
UI   94.      94.     92.     77.     69.     62.     54.     49.     43.     39.
UI   37.      32.     30.     28.     25.     23.     21.     20.     19.     17.
UI   16.      14.     14.     13.     12.     12.     11.     10.     10.      9.
UI    9.       8.      8.      8.      7.      7.      7.      6.      6.      6.
UI    5.       5.      5.      5.      4.      4.      4.      4.      4.      3.
UI    3.       3.      3.      3.      3.      3.      2.      2.      2.      2.
UI    2.       2.      2.      2.      2.      2.      2.      1.      1.      1.
UI    1.       1.      1.      1.      1.      1.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E6       C=FLOW F=HEC195
*
* ************************************
*
KK   CE6
KM  ElkGrove-Florin Road
HC     2
KK R-CE6
KM      REACH EXTENDS FROM X-SECT.  22917.000 TO X-SECT.  27367.000
RS     2     FLOW      -1
SV    .0      5.2     15.4     22.9     31.3     40.9     51.7     64.7     79.7     94.1
SV 110.7    126.1    142.2
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK    E7
KM      Elder Creek east of French Road
PR  AG29
PW   251
BA  .722
LU  0.00      .07   25.34
UI    9.      22.      50.      61.      81.      97.     117.     162.     185.     213.
UI  243.     270.     280.     277.     270.     248.     226.     183.     171.     159.
UI  144.     135.     116.     109.     101.      95.      88.      78.      73.      69.
UI   65.      59.      55.      52.      50.      47.      43.      41.      39.      37.
UI   35.      33.      32.      31.      30.      29.      27.      26.      25.      24.
UI   23.      21.      21.      20.      19.      19.      17.      17.      16.      16.
UI   15.      14.      14.      13.      13.      12.      11.      11.      11.      10.
UI   10.       9.       9.       8.       8.       8.       7.       7.       7.       7.
UI    6.       6.       6.       6.       5.       5.       5.       5.       4.       4.
UI    4.       4.       4.       4.       3.       3.       3.       3.       3.       3.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E7       C=FLOW F=HEC195
*
* ************************************
*
KK   CE7
KM  concentration pt. 1400 ft U/S of French Road
HC     2
KK R-CE7
KM      REACH EXTENDS FROM X-SECT.  20557.000 TO X-SECT.  22917.000
RS     1     FLOW      -1
SV    .0      6.1     12.4     15.6     17.9     20.5     23.0     25.9     30.5     36.4
SV   51.3     64.5     76.8
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK    E8
KM      Elder Creek @ SPRR
PR  AG29
PW   106
BA  .250
LU  0.00      .07   31.97
UI    4.      15.      22.      35.      42.      60.      70.      92.     105.     119.
UI  121.     117.     107.      88.      79.      68.      62.      54.      50.      44.
UI   41.      36.      34.      30.      28.      25.      24.      21.      20.      18.
UI   18.      16.      15.      14.      14.      13.      12.      11.      11.      10.
UI   10.       9.       9.       8.       8.       7.       7.       7.       6.       6.
UI    6.       5.       5.       5.       5.       4.       4.       4.       4.       4.
UI    3.       3.       3.       3.       3.       3.       2.       2.       2.       2.
UI    2.       2.       2.       2.       2.       2.       1.       1.       1.       1.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E8       C=FLOW F=HEC195
*
* ************************************
*
KK   CE8
KM  S.P.R.R.
HC     2
KK R-CE8
KM      REACH EXTENDS FROM X-SECT.  16997.000 TO X-SECT.  20557.000
RS     2     FLOW      -1
SV    .0      7.3     17.3     22.6     27.3     31.7     35.8     39.7     43.2     47.2
SV   51.1     56.2     63.0
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK    E9
KM      Elder Creek south of Gerber Road
PR  AF30
PW   189
BA  .428
LU  0.00      .07   37.20
UI   19.      30.      52.      84.     119.     139.     183.     232.     240.     237.
UI  213.     174.     147.     136.     116.      99.      87.      81.      71.      63.
UI   56.      53.      47.      43.      39.      37.      33.      30.      30.      28.
UI   25.      24.      23.      21.      20.      18.      18.      17.      15.      14.
UI   14.      13.      12.      11.      11.      10.       9.       9.       8.       8.
UI    7.       7.       6.       6.       6.       6.       5.       5.       4.       4.
UI    4.       4.       3.       3.       3.       3.       3.       3.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E9       C=FLOW F=HEC195
*
* ************************************
*
KK   CE9
KM  Gerber Road
HC     2
KK R-CE9
KM  HEC-2 X-Sections 15167 upstream to 16997
RS     1     FLOW      -1
SV    .0      3.0      7.0     10.0     12.0     13.0     15.0     17.0     19.0     20.0
SV  23.0     26.0     33.0
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK   E10
KM      Elder Creek @ Power Inn Road
PR  AF30
PW   135
BA  .284
LU  0.00      .07   45.66
UI   29.      50.      96.     132.     199.     227.     221.     185.     140.     118.
UI   95.      83.      68.      60.      50.      45.      39.      35.      31.      28.
UI   25.      23.      21.      20.      18.      16.      15.      14.      12.      11.
UI   10.      10.       9.       8.       7.       7.       6.       6.       5.       5.
UI    4.       4.       4.       3.       3.       3.       3.       2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E10      C=FLOW F=HEC195
*
* ************************************
*
KK   CE10
KM  Power Inn Road
HC     2
KKR-CE10
KM  HEC-2 X-Sections 13607 upstream to 15167
RS     1     FLOW      -1
SV    .0      2.0      5.0      7.0      8.0     10.0     11.0     13.0     14.0     16.0
SV  17.0     19.0     21.0
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK   E11
KM      Elder Creek
PR  AE30
PW    72
BA  .235
LU  0.00      .07   50.37
UI   28.      65.     111.     171.     223.     217.     164.     128.     101.      81.
UI   67.      56.      47.      40.      34.      30.      27.      24.      21.      19.
UI   17.      16.      14.      13.      12.      10.       9.       8.       8.       7.
UI    6.       6.       5.       5.       4.       4.       3.       3.       3.       2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E11      C=FLOW F=HEC195
*
* ************************************
*
KK   CE11
KM  Palmer House Drive
HC     2
KKR-CE11
KM  HEC-2 X-Sections 10797 upstream to 13067
RS     1     FLOW      -1
SV    .0      4.0      9.0     12.0     14.0     17.0     19.0     21.0     23.0     25.0
SV  27.0     29.0     32.0
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK   E12
KM      Elder Creek @ Stockton Boulevard
PR  AE30
PW   246
BA  .403
LU  0.00      .07   43.60
UI   16.      26.      46.      61.      88.     120.     138.     181.     201.     209.
UI  201.     185.     152.     137.     118.     101.      94.      81.      71.      66.
UI   58.      55.      48.      44.      41.      37.      35.      32.      29.      28.
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UI   26.    25.    23.    21.    21.    19.    19.    17.    16.    16.
UI   15.    14.    13.    12.    12.    11.    10.    10.     9.     9.
UI    8.     8.     7.     7.     6.     6.     6.     5.     5.     5.
UI    5.     4.     4.     4.     4.     3.     3.     3.     3.     3.
UI    3.     3.     2.     2.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E12       C=FLOW F=HEC195
*
* ************************************
*
KK  CE12
KO     1
KM  Stockton Blvd
HC     2
ZW A=ELDER CREEK B=STOCKTON BLVD C=FLOW
*
IN     5 08JAN95    2400
*
KK  1735
KO     1
KM      RATING CURVE FROM HEC-2 MODEL, X-SECTION 10227
KM      ALERT GAGE# 1735 700' - 800' DOWNSTREAM OF STOCKTON BLVD.
HQ  0.00   25.00   50.00   75.00  100.00  300.00  500.00  700.00  900.00 1100.00
HQ1300.0 1500.00 1700.00 1900.00 2100.00 2300.00 2500.00
HE 13.09   13.82   14.28   14.45   14.58   15.57   16.76   17.80   18.67   19.45
HE 20.16   20.80   21.39   21.95   22.47   22.96   23.45
QS 14.90 14.8944 14.8917 14.8890 14.8864 14.8837 14.8811 14.8784 14.8757 14.8731
QS 14.87 14.8678 14.8651 14.8624 14.8598 14.8571 14.8545 14.8518 14.8491 14.8465
QS 14.84 14.8412 14.8385 14.8358 14.8332 14.8305 14.8289 14.8275 14.8260 14.8246
QS 14.82 14.8218 14.8204 14.8190 14.8176 14.8162 14.8147 14.8133 14.8119 14.8105
QS 14.81 14.8077 14.8063 14.8049 14.8034 14.8020 14.8006 14.7992 14.7978 14.7964
QS 14.79 14.7936 14.7921 14.7907 14.7893 14.7879 14.7865 14.7851 14.7837 14.7823
QS 14.78 14.8288 14.8227 14.8166 14.8105 14.8044 14.7983 14.7922 14.7861 14.7800
QS 14.83 14.8284 14.8276 14.8267 14.8259 14.8250 14.8241 14.8233 14.8224 14.8216
QS 14.82 14.8198 14.8190 14.8181 14.8172 14.8164 14.8155 14.8147 14.8138 14.8129
QS 14.81 14.8112 14.8103 14.8095 14.8086 14.8078 14.8069 14.8060 14.8052 14.8043
QS 14.80 14.8026 14.8017 14.8009 14.8000 14.7991 14.7983 14.7974 14.7965 14.7957
QS 14.79 14.7940 14.7931 14.7922 14.7914 14.7905 14.7897 14.7888 14.7879 14.7871
QS 14.79 14.7853 14.7845 14.7836 14.7828 14.7819 14.7810 14.7802 14.7775 14.7743
QS 14.77 14.7680 14.7648 14.7616 14.7585 14.7553 14.7522 14.7490 14.7458 14.7427
QS 14.74 14.7363 14.7332 14.7300 14.7268 14.7237 14.7205 14.7173 14.7142 14.7110
QS 14.71 14.7047 14.7015 14.6984 14.6952 14.6920 14.6889 14.6857 14.6825 14.6794
QS 14.68 14.6729 14.6697 14.6665 14.6633 14.6601 14.6569 14.6537 14.6505 14.6473
QS 14.64 14.6409 14.6377 14.6345 14.6313 14.6275 14.6232 14.6190 14.6147 14.6105
QS 14.61 14.6020 14.5978 14.5936 14.5893 14.5851 14.5808 14.5776 14.5747 14.5718
QS 14.57 14.5659 14.5629 14.5600 14.5571 14.5541 14.5512 14.5482 14.5453 14.5424
QS 14.54 14.5365 14.5335 14.5306 14.5319 14.5343 14.5367 14.5391 14.5415 14.5439
QS 14.55 14.5488 14.5512 14.5536 14.5560 14.5584 14.5608 14.5632 14.5656 14.5680
QS 14.57 14.5728 14.5752 14.5776 14.5800 14.7800 14.9550 15.1050 15.2100 15.3300
QS 15.43 15.6133 15.7550 15.8800 15.9825 16.0700 16.1525 16.2233 16.3150 16.3900
QS 16.47 16.5525 16.6233 16.6900 16.7400 16.7400 16.7817 16.8400 16.9233 17.0150
QS 17.13 17.2213 17.3150 17.4025 17.4600 17.4900 17.4900 17.4900 17.4900 17.4900
QS 17.49 17.4900 17.4900 17.4900 17.4900 17.4650 17.4233 17.3837 17.3525 17.3150
QS 17.27 17.2317 17.1900 17.1588 17.1200 17.0757 17.0400 16.9983 16.9567 16.9150
QS 16.87 16.8264 16.7823 16.7438 16.7054 16.6600 16.6233 16.5956 16.5614 16.5275
QS 16.50 16.4767 16.4600 16.4433 16.4289 16.4150 16.4011 16.3917 16.4000 16.4083
QS 16.42 16.4250 16.4333 16.4414 16.4485 16.4555 16.4625 16.4696 16.4766 16.4837
QS 16.49 16.4977 16.5048 16.5118 16.5189 16.5259 16.5330 16.5400 16.5539 16.5678
QS 16.58 16.5963 16.6119 16.6275 16.6431 16.6588 16.6744 16.6900 16.7092 16.7285
QS 16.75 16.7692 16.7900 16.8213 16.8525 16.8837 16.9264 16.9718 17.0900 17.2900
QS 17.44 17.5900 17.7400 17.8650 17.9900 18.1067 18.1900 18.2838 18.3622 18.4178
QS 18.49 18.5317 18.5900 18.6400 18.6900 18.8257 18.9400 19.0150 19.1150 19.2400
QS 19.34 19.4114 19.4700 19.5114 19.5430 19.5582 19.5733 19.5885 19.6036 19.6188
QS 19.63 19.6587 19.6900 19.8150 19.9400 20.0650 20.1733 20.2525 20.3400 20.5150
QS 20.62 20.6900 20.7614 20.8386 20.8319 20.8251 20.8184 20.8116 20.8049 20.7981
QS 20.79 20.7789 20.7650 20.7511 20.7400 20.7400 20.7400 20.7400 20.7400 20.7400
QS 20.74 20.7400 20.7400 20.7400 20.7400 20.7400 20.7400 20.7400 20.7400 20.7400
QS 20.74 20.7312 20.7257 20.7202 20.7147 20.7092 20.7037 20.6982 20.6927 20.6873
QS 20.68 20.6763 20.6708 20.6653 20.6598 20.6543 20.6488 20.6433 20.6511 20.6789
QS 20.68 20.6710 20.6590 20.6471 20.4300 20.7800 20.9767 21.0475 21.0822 21.1100
QS 21.09 21.0767 21.0600 21.0350 21.0100 20.9683 20.9446 20.9254 20.9050 20.8800
QS 20.86 20.8386 20.8207 20.8050 20.7925 20.7800 20.7675 20.7500 20.7250 20.7017
QS 20.68 20.6600 20.6322 20.6038 20.5725 20.5464 20.5236 20.4900 20.4500 20.4250
QS 20.40 20.3600 20.3183 20.2814 20.2475 20.2162 20.1850 20.1579 20.1472 20.1366
QS 20.13 20.1153 20.1047 20.0940 20.0834 20.0728 20.0621 20.0378 20.0100 20.0014
QS 19.99 19.9841 19.9755 19.9669 19.9523 19.9138 19.8754 19.8300 19.7850 19.7433
QS 19.70 19.6533 19.6075 19.5557 19.5200 19.4783 19.4414 19.4033 19.3638 19.3325
QS 19.30 19.2628 19.2271 19.1800 19.1450 19.1138 19.0825 19.0486 19.0138 18.9825
QS 18.95 18.9200 18.8950 18.8700 18.8343 18.7986 18.7629 18.7271 18.6950 18.6667
QS 18.65 18.6333 18.6129 18.5771 18.5450 18.5150 18.4900 18.4629 18.4271 18.3867
QS 18.34 18.3033 18.2756 18.2450 18.2100 18.1600 18.1152 18.0914 18.0676 18.0438
QS 18.02 18.0104 18.0008 17.9912 17.9815 17.9719 17.9500 17.9250 17.9033 17.8825
QS 17.86 17.8445 17.8247 17.7984 17.7721 17.7458 17.7233 17.7067 17.6900 17.6729
QS 17.65 17.6371 17.6175 17.5967 17.5772 17.5633 17.5494 17.5356 17.5217 17.5078
QS 17.49 17.4800 17.4633 17.4467 17.4300 17.4121 17.3943 17.3767 17.3600 17.3433
QS 17.33 17.3086 17.2907 17.2745 17.2609 17.2473 17.2336 17.2200 17.2064 17.1927
QS 17.18 17.1600 17.1433 17.1282 17.1135 17.0988 17.0844 17.0706 17.0567 17.0428
QS 17.03 17.0079 16.9900 16.9753 16.9606 16.9459 16.9312 16.9165 16.9018 16.8874
QS 16.87 16.8611 16.8479 16.8341 16.8194 16.8047 16.7900 16.7761 16.7622 16.7483
QS 16.73 16.7181 16.7025 16.6869 16.6712 16.6556 16.6400 16.6244 16.6088 16.5931
QS 16.58 16.5650 16.5511 16.5372 16.5233 16.5094 16.4956 16.4812 16.4665 16.4518
QS 16.44 16.4259 16.4141 16.4024 16.3857 16.3679 16.3500 16.3353 16.3206 16.3059
QS 16.29 16.2733 16.2567 16.2421 16.2289 16.2158 16.2026 16.1875 16.1719 16.1563
QS 16.14 16.1265 16.1118 16.0976 16.0857 16.0738 16.0619 16.0500 16.0400 16.0300
QS 16.02 16.0100 15.9933 15.9767 15.9600 15.9481 15.9362 15.9243 15.9124 15.9005
QS 15.89 15.8767 15.8648 15.8544 15.8452 15.8359 15.8267 15.8174 15.8081 15.7989
QS 15.79 15.7804 15.7711 15.7619 15.7495 15.7363 15.7232 15.7100 15.6991 15.6883
QS 15.68 15.6665 15.6571 15.6500 15.6429 15.6357 15.6286 15.6214 15.6143 15.6072
QS 15.60 15.5933 15.5864 15.5794 15.5725 15.5656 15.5581 15.5489 15.5396 15.5304
QS 15.52 15.5119 15.5041 15.4968 15.4894 15.4821 15.4747 15.4674 15.4600 15.4532
QS 15.45 15.4397 15.4330 15.4262 15.4195 15.4127 15.4067 15.4013 15.3959 15.3904
QS 15.38 15.3796 15.3741 15.3687 15.3633 15.3576 15.3515 15.3454 15.3393 15.3332
QS 15.33 15.3210 15.3149 15.3092 15.3054 15.3015 15.2977 15.2938 15.2900 15.2862
QS 15.28 15.2785 15.2746 15.2708 15.2660 15.2610 15.2560 15.2510 15.2460 15.2410
QS 15.24 15.2310 15.2262 15.2214 15.2167 15.2119 15.2071 15.2024 15.1976 15.1929
QS 15.19 15.1787 15.1706 15.1626 15.1545 15.1465 15.1388 15.1329 15.1269 15.1210
QS 15.12 15.1090 15.1031 15.0971 15.0912 15.0856 15.0800 15.0744 15.0689 15.0633
QS 15.06 15.0522 15.0467 15.0411 15.0359 15.0308 15.0257 15.0206 15.0155 15.0104
QS 15.01 15.0002 14.9951 14.9900 14.9849 14.9798 14.9747 14.9696 14.9645 14.9594
QS 14.95 14.9492 14.9441 14.9391 14.9348 14.9304 14.9261 14.9218 14.9174 14.9131
QS 14.91 14.9044 14.9000 14.8957 14.8914 14.8870 14.8827 14.8783 14.8740 14.8696
QS 14.87 14.8609 14.8566 14.8523 14.8479 14.8436 14.8392 14.8349 14.8305 14.8262
QS 14.82 14.8175 14.8132 14.8088 14.8045
ZW C=STAGE
*
KKR-CE12
KM  HEC-2 X-Sections  8742 upstream to 10797
RS     1     FLOW      -1
SV    .0      6.0     9.0     12.0    14.0    17.0    19.0    21.0    23.0    25.0
SV  27.0     29.0    31.0
SQ    .0    100.0   400.0    600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0   2200.0  2400.0
KK   E13
KM      Elder Creek @ Highway-99 (City Limits)
PR  AE30
PW    97
BA  .196
LU  0.00     .07   40.65
UI   10.     22.     36.     52.     71.     94.    119.    124.    119.    100.
UI   81.     75.     64.     55.     48.     42.     37.     32.     29.     26.
UI   23.     21.     19.     17.     16.     15.     14.     13.     12.     11.
UI   10.      9.      9.      8.      8.      7.      7.      6.      6.      6.
UI    5.      5.      5.      4.      4.      4.      3.      3.      3.      3.
UI    3.      2.      2.      2.      2.      2.      2.      2.      1.      1.
UI    1.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E13       C=FLOW F=HEC195
*
* ************************************
*
KK  CE13
KM  Highway-99
HC     2
KKR-CE13
KM  HEC-2 X-Sections  5666 upstream to  8742
RS     1     FLOW      -1
SV    .0     15.0     16.0     18.0     20.0     22.0     24.0     26.0     28.0     30.0
SV  32.0     34.0     36.0
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
KK   E14
KM      Elder Creek @ Center Parkway
PR  AD30     AE30
PW   597      237
BA 1.364
LU  0.00     .07   57.00
UI   54.     87.    151.    201.    291.    343.    458.    601.    669.    694.
UI  685.    615.    503.    454.    393.    357.    311.    287.    251.    218.
UI  206.    182.    171.    152.    145.    129.    117.    112.    102.     95.
UI   88.     86.     80.     74.     71.     66.     64.     59.     56.     53.
UI   49.     48.     44.     43.     40.     37.     36.     34.     32.     30.
UI   29.     27.     25.     24.     22.     22.     20.     19.     18.     17.
UI   17.     16.     15.     14.     13.     12.     11.     11.     10.     10.
UI    9.      9.      8.      8.      8.      7.
*
* ************************************
* THIS STATEMENT DEVELOPS AN INFLOW HYDROGRAPH FOR THE APPLICATION OF UNET
*
ZW A=ELDER CREEK LOWER B=E14       C=FLOW F=HEC195
*
* ************************************
*
KK R-E14
KM  pump routing from Corps model (point KK 570920)
RS     1     STOR      -1.
SV    .0      2.3      4.7      7.0    100.0
SQ    .0     56.0    113.0    169.0    175.0
KK  CE14
KM  Center Parkway
HC     2
KKR-CE14
KM  HEC-2 X-Sections   910 upstream to  5666
RS     2     FLOW      -1
SV    .0     40.7     41.2     41.9     42.8     43.8     45.0     46.3     47.7     49.2
SV  50.7     52.3     54.1
SQ    .0    100.0    400.0    600.0    800.0   1000.0   1200.0   1400.0   1600.0   1800.0
SQ2000.0   2200.0   2400.0
* KKFLORIN
* KM  retrieve Florin Creek hydrograph
* BA  4.18
* ZR-QI A=FLORIN B=EXISTING C=FLOW D=12JAN1992 E=2MIN F=100-YR
* KK C-PEG
* HC     2
ZZ
```

ATTACHMENT 5D

ELDER AND GERBER CREEKS
HEC-1 BOUNDARY CONDITIONS FILE NO. 3

1995 FLOOD EVENT FOR LAGUNA CREEK

FILENAME: ULEX-95.DAT

```
ID   MORRISON CREEK STREAM GROUP-LAGUNA CREEK BASIN
ID   EXISTING LAND USE
ID ***  REVISED 10/94 FOR NEW PREPROCESSOR
ID   FILE ULEX-95.DAT
ID ***  Precipitation from radar.
ID ***  Initial loss set to 0.00
IT     5  9JAN95     0000      865
IO     5        0        0
*DIAGRAM
*
*       PRECIPITATION FROM RADAR
*
IN    15 09JAN95     0000
*
PG  AP26
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.01    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.04    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.10    0.11    0.10    0.08    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.15    0.16    0.09    0.05    0.06
PI  0.06    0.04    0.02    0.01    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.01    0.03
PI  0.08    0.14    0.00    0.00    0.00    0.06    0.01    0.04    0.07    0.05
PI  0.02    0.06    0.06    0.08    0.04    0.04    0.06    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.05    0.07    0.07    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.12    0.14    0.06    0.04    0.06    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AQ26
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.10    0.09    0.08    0.08    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.08    0.10    0.15    0.09    0.04
PI  0.04    0.03    0.01    0.00    0.00    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.03
PI  0.06    0.14    0.00    0.00    0.00    0.04    0.03    0.03    0.06    0.05
PI  0.03    0.06    0.06    0.08    0.04    0.04    0.00    0.00    0.04    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.02    0.05    0.07    0.00    0.00    0.03
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.12    0.13    0.06    0.03    0.06    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AR26
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.12    0.11    0.08    0.11    0.14
PI  0.10    0.14    0.13    0.07    0.08    0.07    0.07    0.16    0.12    0.06
PI  0.06    0.04    0.02    0.01    0.00    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.06    0.08    0.00    0.00    0.00    0.02    0.03    0.01    0.04    0.06
PI  0.03    0.06    0.06    0.06    0.00    0.00    0.00    0.00    0.02    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.05    0.05    0.05    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.07    0.07    0.06    0.03    0.04    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AQ27
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.05    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.08    0.08    0.15    0.14    0.08    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.18    0.23    0.14    0.05    0.06
PI  0.06    0.04    0.02    0.01    0.02    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.06
PI  0.08    0.14    0.00    0.00    0.00    0.08    0.04    0.05    0.07    0.05
PI  0.03    0.04    0.06    0.08    0.04    0.04    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.05    0.07    0.05    0.00    0.00    0.00
PI  0.00    0.00    0.02    0.00    0.00    0.00    0.02    0.00    0.00    0.00
PI  0.07    0.07    0.05    0.04    0.07    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AP27
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.03    0.06    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.09    0.10    0.09    0.08    0.08    0.09
PI  0.10    0.10    0.09    0.07    0.10    0.12    0.13    0.09    0.05    0.06
PI  0.05    0.05    0.04    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.06
PI  0.08    0.11    0.00    0.00    0.05    0.08    0.03    0.05    0.07    0.05
PI  0.03    0.07    0.08    0.08    0.04    0.04    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.03    0.00    0.00    0.02    0.05    0.07    0.05    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.13    0.14    0.05    0.03    0.08    0.09    0.09    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AQ27
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.01    0.03    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.06    0.10    0.11    0.08
PI  0.15    0.10    0.07    0.07    0.10    0.07    0.06    0.12    0.09    0.04
PI  0.04    0.04    0.02    0.00    0.00    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.04
PI  0.08    0.11    0.00    0.00    0.05    0.04    0.03    0.03    0.04    0.05
PI  0.03    0.06    0.08    0.08    0.06    0.04    0.00    0.00    0.04    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.05    0.07    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.12    0.13    0.06    0.03    0.04    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AM28
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.09    0.10    0.19    0.25    0.16    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.18    0.21    0.12    0.04    0.04
PI  0.04    0.03    0.02    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.06    0.11    0.00    0.00    0.00    0.00    0.08    0.03    0.05    0.07    0.08
PI  0.05    0.04    0.08    0.08    0.04    0.04    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.07    0.07    0.04    0.02    0.03    0.04    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AO28
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.08    0.08    0.11    0.10    0.08    0.09
PI  0.10    0.10    0.09    0.07    0.08    0.18    0.23    0.14    0.05    0.06
PI  0.05    0.03    0.02    0.01    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.04
PI  0.06    0.11    0.00    0.00    0.03    0.06    0.03    0.04    0.06    0.05
PI  0.03    0.07    0.10    0.10    0.04    0.04    0.04    0.06    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.03    0.00    0.00    0.00    0.05    0.09    0.07    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.01
PI  0.07    0.07    0.05    0.02    0.04    0.06    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AP28
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.03    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.06    0.08    0.09    0.08    0.08    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.08    0.12    0.12    0.05    0.04
PI  0.03    0.03    0.02    0.00    0.00    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.06
PI  0.08    0.08    0.00    0.00    0.05    0.08    0.06    0.05    0.04    0.03
PI  0.02    0.06    0.10    0.08    0.06    0.04    0.04    0.04    0.04    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.03    0.00    0.00    0.00    0.05    0.05    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.12    0.13    0.05    0.02    0.08    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AM29
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
```

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PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.08    0.09    0.10    0.15    0.22    0.16    0.14
PI  0.14    0.10    0.07    0.07    0.10    0.18    0.21    0.12    0.05    0.06
PI  0.06    0.04    0.02    0.01    0.02    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.08    0.14    0.00    0.00    0.05    0.06    0.04    0.04    0.04    0.05
PI  0.05    0.07    0.08    0.08    0.04    0.04    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.02    0.07    0.07    0.07    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.12    0.13    0.05    0.02    0.03    0.07    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AN29
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.08    0.09    0.10    0.15    0.22    0.16    0.14
PI  0.14    0.10    0.07    0.07    0.10    0.18    0.21    0.12    0.05    0.06
PI  0.06    0.04    0.02    0.00    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.08    0.14    0.00    0.00    0.05    0.06    0.04    0.04    0.04    0.05
PI  0.05    0.07    0.08    0.08    0.06    0.06    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.02    0.05    0.05    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.12    0.13    0.05    0.02    0.03    0.07    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AO29
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.03    0.04    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.08    0.08    0.08    0.09    0.10    0.08    0.14
PI  0.14    0.10    0.07    0.07    0.08    0.14    0.21    0.14    0.05    0.06
PI  0.06    0.04    0.02    0.01    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.04    0.08    0.00    0.00    0.05    0.08    0.06    0.05    0.06    0.05
PI  0.02    0.06    0.10    0.08    0.06    0.04    0.04    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02
PI  0.03    0.00    0.00    0.00    0.05    0.05    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.12    0.13    0.06    0.02    0.04    0.07    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AM30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.03    0.08    0.08    0.08    0.09    0.17    0.16    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.15    0.21    0.14    0.05    0.06
PI  0.06    0.04    0.02    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.08    0.11    0.00    0.00    0.13    0.08    0.06    0.05    0.06    0.05
PI  0.03    0.06    0.08    0.08    0.04    0.02    0.02    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02
PI  0.00    0.00    0.00    0.02    0.07    0.07    0.00    0.00    0.04    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.12    0.13    0.05    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AN30
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.08    0.08    0.08    0.09    0.17    0.16    0.09
PI  0.10    0.10    0.07    0.07    0.10    0.15    0.21    0.14    0.05    0.06
PI  0.06    0.04    0.02    0.00    0.01    0.01    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.02    0.03
PI  0.06    0.11    0.00    0.00    0.13    0.08    0.06    0.05    0.06    0.05
PI  0.03    0.06    0.08    0.08    0.00    0.00    0.02    0.04    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02
PI  0.00    0.00    0.00    0.05    0.07    0.07    0.00    0.00    0.04    0.00
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.12    0.13    0.05    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
*
*
KK  LC05
KM      BLODGETT RESERVOIR
BA 3.290
PR  AQ26    AR26    AQ27
PW   525     380     519
LU 0.00      .08    6.57
UI   13.    13.     13.     33.     33.     33.     53.     53.     75.     75.
UI   75.    92.     92.    122.    122.    122.    146.    146.    176.    176.
UI  176.   208.    208.    242.    242.    242.    277.    277.    277.    319.
UI  319.   364.    364.    364.    405.    405.    415.    415.    415.    421.
UI  421.   415.    415.    415.    405.    405.    373.    373.    373.    339.
UI  339.   305.    305.    305.    275.    275.    256.    256.    256.    238.
UI  238.   216.    216.    216.    202.    202.    188.    188.    188.    174.
UI  174.   163.    163.    163.    152.    152.    142.    142.    142.    132.
UI  132.   132.    125.    125.    117.    117.    117.    110.    110.    103.
UI  103.   103.     97.     97.     92.     92.     92.     88.     88.     83.
UI   83.    83.     78.     78.     75.     75.     75.     71.     71.     68.
UI   68.    68.     64.     64.     62.     62.     62.     58.     58.     56.
UI   56.    56.     53.     53.     52.     52.     52.     50.     50.     50.
UI   48.    48.     46.     46.     46.     45.     45.     43.     43.     43.
UI   42.    42.     40.     40.     40.     38.     38.     37.     37.     37.
UI   36.    36.     34.     34.     34.     34.     34.     32.     32.     32.
UI   31.    31.     30.     30.     30.     29.     29.     28.     28.     28.
UI   27.    27.     26.     26.     26.     25.     25.     24.     24.     24.
UI   23.    23.     23.     22.     22.     22.     22.     22.     21.     21.
UI   20.    20.     20.     20.     20.     19.     19.     19.     18.     18.
UI   18.    18.     18.     17.     17.     16.     16.     16.     16.     16.
UI   15.    15.     15.     15.     15.     14.     14.     14.     13.     13.
UI   13.    13.     13.     13.     13.     12.     12.     12.     12.     12.
UI   11.    11.     11.     11.     11.     11.     11.     11.     10.     10.
UI   10.    10.     10.     10.     10.     10.      9.      9.      9.      9.
UI    9.     9.      9.      8.      8.      8.      8.      8.      8.      8.
UI    8.     8.      8.      7.      7.      7.      7.      7.      7.      7.
UI    7.     7.      7.      6.      6.      6.      6.      6.      6.      6.
UI    6.     6.      6.      6.      5.      5.      5.      5.      5.      4.
UI    5.     5.      5.      5.      5.      5.      5.      5.      4.
KK  LCR1
KM      RESERVOIR ROUTING THROUGH BLODGETT RESERVOIR
RS     1    STOR    300.
SV    .0    25.0    40.0    75.0   120.0   180.0   270.0   300.0   525.0   600.0
SS 141.0   151.0   152.0   154.0   156.0   158.0   160.0   160.7   165.0   167.0
SL 151.0     .79     .70     .50
SS 160.7   472.2    3.00    1.50
KK  LCR2
KM      ROUTE LC05 TO LC10(MUSKINGUM CUNGE)
RD
RC  .060    .040    .060   8026.    .0057
RX   .00   61.00  303.00  315.00  328.00  349.00  386.00  409.00

RY130.00  125.80  124.90  122.90  124.90  125.60  125.50  129.90
KK  LC10
BA 1.220
PR  AO28    AP28
PW   284     354
LU 0.00      .09    2.00
UI   10.    25.     25.     40.     57.     69.     92.     92.    110.    133.
UI  156.   183.    183.    209.    241.    274.    305.    305.    313.    317.
UI  313.   305.    281.    281.    255.    230.    207.    193.    193.    179.
UI  163.   153.    142.    142.    131.    123.    114.    107.    107.     99.
UI   94.    88.     83.     83.     78.     73.     70.     66.     66.     62.
UI   59.    56.     53.     53.     51.     48.     46.     44.     42.     42.
UI   40.    39.     38.     36.     36.     35.     34.     32.     31.     31.
UI   30.    29.     28.     27.     27.     26.     25.     24.     24.     24.
UI   23.    22.     21.     20.     20.     19.     19.     18.     18.     18.
UI   17.    16.     16.     15.     15.     15.     14.     14.     13.     13.
UI   13.    12.     12.     12.     11.     11.     11.     10.     10.     10.
UI   10.     9.      9.      9.      8.      8.      8.      8.      8.      7.
UI    7.     7.      7.      6.      6.      6.      6.      6.      6.      5.
UI    5.     5.      5.      5.      5.      5.      5.      4.      4.      4.
UI    4.     4.      4.      4.      4.      3.      3.      3.      3.
KK  LCC1
KM      COMBINE ROUTED LC05 AND LC10
HC    2
KK  LC15
BA 3.120
PR  AP26    AO27    AP27
PW   341     659     463
LU 0.00      .09    2.16
UI   15.    15.     15.     36.     36.     59.     59.     83.     83.    102.
UI  102.   135.    135.    135.    162.    162.    196.    196.    230.    230.
UI  269.   269.    308.    308.    354.    354.    404.    404.    404.    450.
UI  450.   461.    461.    467.    467.    461.    461.    450.    450.    413.
UI  413.   413.    376.    376.    338.    338.    305.    305.    284.    284.
UI  264.   264.    240.    240.    240.    225.    225.    209.    209.    193.
UI  193.   181.    181.    168.    168.    158.    158.    146.    146.    146.
UI  139.   139.    130.    130.    122.    122.    115.    115.    108.    108.
UI  102.   102.    102.     98.     98.     92.     92.     87.     87.     83.
UI   83.    79.     79.     76.     76.     71.     71.     71.     68.     68.
UI   64.    64.     62.     62.     59.     59.     58.     58.     55.     55.
UI   55.    54.     54.     52.     52.     49.     49.     48.     48.     46.
UI   46.    44.     44.     44.     43.     43.     42.     42.     40.     40.
UI   38.    38.     37.     37.     36.     36.     35.     35.     35.     33.
UI   33.    32.     32.     31.     31.     30.     30.     29.     29.     28.
UI   28.    28.     27.     27.     26.     26.     25.     25.     24.     24.
UI   23.    23.     23.     23.     23.     22.     22.     21.     21.     20.
UI   20.    20.     20.     19.     19.     18.     18.     18.     18.     18.
UI   17.    17.     16.     16.     16.     16.     15.     15.     14.     14.
UI   14.    14.     14.     14.     14.     13.     13.     13.     13.     12.
UI   12.    12.     12.     11.     11.     11.     11.     11.     11.     11.
UI   11.    11.     10.     10.     10.     10.      9.      9.      9.      9.
UI    9.     9.      9.      8.      8.      8.      8.      8.      8.      7.
UI    7.     7.      7.      7.      7.      7.      7.      7.      7.      7.
UI    6.     6.      6.      6.      6.      6.      6.      6.      6.      6.
KK  LCC2
KM      COMBINE LCC1 AND LC15
HC    2
KK  LCR3
KM      ROUTE LCC2 TO LC20 (MUSKINGUM -CUNGE)
RD
RC  .060    .040    .060   4606.    .0020
RX   .00  891.90 1055.90 1077.90 1099.90 1119.90 1435.90 1838.70
RY125.50  118.90  123.70  115.00  115.20  125.10  122.90  126.00
KK  LC20
BA 2.930
PR  AO28    AO29
PW   293     730
LU 0.00      .08    2.00
UI   26.    64.     103.    103.    145.    178.    236.    283.    341.    402.
UI  402.   469.    537.    618.    705.    785.    804.    814.    814.    804.
UI  785.   721.    656.    590.    533.    533.    496.    460.    418.    392.
UI  365.   337.    337.    316.    294.    275.    255.    242.    226.    226.
UI  213.   200.    188.    179.    170.    160.    160.    152.    145.    137.
UI  132.   124.    119.    112.    112.    109.    103.    101.     96.     94.
UI   90.    90.     86.     83.     81.     77.     75.     72.     72.     70.
UI   67.    65.     62.     61.     58.     58.     57.     54.     52.     50.
UI   48.    47.     47.     45.     44.     42.     41.     39.     38.     37.
UI   37.    35.     34.     33.     32.     31.     30.     30.     28.     27.
UI   26.    25.     24.     24.     24.     23.     22.     21.     20.     20.
UI   20.    20.     19.     18.     18.     17.     16.     16.     16.     15.
UI   15.    14.     13.     13.     13.     12.     12.     12.     11.     11.
UI   11.    10.     10.     10.     10.      9.      9.      9.      9.
KK  LCC3
KM      COMBINE ROUTED LCC2 AND LC20 -LAGUNA CREEK @SUNRIS
HC    2
KK  LCR4
KM      ROUTE LCC3 TO LC25 -- MODIFIED PULS
RS     1    FLOW      -1
SV    .0    92.0   158.0   217.0   273.0   329.0   383.0   438.0   490.0   591.0
SQ    .0   500.0  1000.0  1500.0  2000.0  2500.0  3000.0  3500.0  4000.0  5000.0
KK  LC25
BA 2.550
PR  AN28    AN29    AN30
PW   417     613     333
LU 0.00      .08    3.76
UI   15.    15.     36.     36.     59.     59.     83.    101.    101.    135.
UI  135.   162.    162.    195.    195.    230.    268.    268.    307.    307.
UI  353.   353.    403.    448.    448.    459.    459.    465.    465.    459.
UI  448.   448.    412.    412.    375.    375.    337.    337.    304.    283.
UI  283.   263.    263.    239.    239.    224.    208.    208.    192.    192.
UI  180.   180.    166.    157.    157.    146.    146.    138.    138.    129.
UI  129.   122.    114.    114.    108.    108.    102.    102.     97.     91.
UI   91.    87.     87.     83.     83.     78.     75.     75.     71.     71.
UI   68.    68.     64.     64.     62.     59.     59.     57.     57.     55.
UI   55.    53.     51.     51.     49.     49.     47.     47.     46.     44.
UI   44.    43.     43.     41.     41.     40.     40.     38.     37.     37.
UI   36.    36.     35.     35.     33.     32.     32.     31.     31.     30.
UI   30.    29.     28.     28.     27.     27.     26.     25.     25.     25.
UI   24.    23.     23.     23.     23.     22.     22.     21.     20.     20.
UI   20.    20.     19.     19.     18.     17.     17.     17.     17.     16.
UI   15.    15.     15.     15.     14.     14.     14.     14.     13.     13.
UI   13.    13.     13.     12.     12.     12.     12.     11.     11.     11.
UI   11.    11.     10.     10.     10.     10.     10.      9.      9.      9.
UI    9.     9.      9.      8.      8.      8.      8.      8.      7.      7.
UI    7.     7.      7.      7.      7.      7.      7.      6.      6.      6.
UI    6.     6.      6.      6.      6.      6.      5.      5.      5.      5.
UI    5.     5.      5.
KK  LCC4
KM      COMBINE ROUTED LCC3 AND LC25(EAGLES NEST ROAD GAGE)
HC    2
KK  LCR5
KM      ROUTE LCC4 TO LC26 -- MODIFIED PULS
RS     1    FLOW      -1
SV    .0    62.0   114.0   158.0   196.0   230.0   260.0   287.0   312.0   359.0
SQ    .0   500.0  1000.0  1500.0  2000.0  2500.0  3000.0  3500.0  4000.0  5000.0
KK  LC26
BA  .440
PR  AM29    AM30
PW   135     139
LU 0.00      .07    2.00
UI    3.     8.      8.     14.     19.     24.     24.     31.     38.     45.
UI   45.    53.     62.     71.     71.     82.     94.    104.    107.    107.
UI  108.   107.    104.    104.     96.     87.     79.     79.     71.     66.
UI   61.    61.     56.     52.     49.     49.     45.     42.     39.     37.
UI   37.    34.     32.     30.     30.     28.     27.     25.     25.     24.
UI   23.    21.     21.     20.     19.     18.     18.     18.     16.     16.
UI   15.    15.     14.     14.     13.     13.     13.     12.     12.     12.
UI   11.    11.     11.     11.     10.     10.     10.      9.      9.      9.
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UI    9.    8.    8.    8.    8.    8.    8.    7.    7.    7.
UI    7.    6.    6.    6.    6.    6.    6.    5.    5.    5.
UI    5.    5.    5.    5.    5.    4.    4.    4.    4.    4.
UI    4.    4.    4.    3.    3.    3.    3.    3.    3.    3.
UI    3.    3.    3.    3.    3.    3.    2.    2.    2.    2.
UI    2.    2.    2.    2.    2.    2.    2.    2.    2.    2.
UI    2.    2.    2.    2.    2.    2.    1.    1.    1.    1.
UI    1.    1.    1.    1.    1.    1.    1.
KK  LCC5
KM      COMBINE ROUTED LCC4 AND LC26
HC      2
KK  LC30
KM      FRYE CREEK
BA 1.690
PR  AM28     AN28     AM29
PW   298      204      372
LU 0.00      .09     8.80
UI    8.       8.       8.      20.      20.      33.      33.      46.      46.      56.
UI   56.      75.      75.      90.      90.     109.     109.     128.     128.     128.
UI  149.     149.     171.     171.     197.     197.     224.     224.     250.     250.
UI  256.     256.     259.     259.     256.     256.     250.     250.     229.     229.
UI  229.     209.     209.     188.     188.     169.     169.     158.     158.     146.
UI  146.     133.     133.     125.     125.     116.     116.     107.     107.     107.
UI  100.     100.      94.      94.      87.      87.      81.      81.      77.      77.
UI   72.      72.      68.      68.      64.      64.      60.      60.      57.      57.
UI   57.      54.      54.      51.      51.      48.      48.      46.      46.      44.
UI   44.      42.      42.      39.      39.      38.      38.      36.      36.      36.
UI   35.      35.      33.      33.      32.      32.      31.      31.      30.      30.
UI   29.      29.      27.      27.      26.      26.      26.      26.      25.      25.
UI   25.      24.      24.      23.      23.      22.      22.      21.      21.      21.
UI   21.      20.      20.      19.      19.      18.      18.      18.      18.      18.
UI   17.      17.      17.      17.      16.      16.      15.      15.      15.      15.
UI   14.      14.      14.      14.      13.      13.      13.      13.      13.      13.
UI   13.      12.      12.      12.      12.      11.      11.      11.      11.      10.
UI   10.      10.      10.      10.      10.       9.       9.       9.       9.       9.
UI    9.       9.       8.       8.       8.       8.       8.       8.       8.       8.
UI    7.       7.       7.       7.       7.       7.       6.       6.       6.       6.
UI    6.       6.       6.       6.       6.       6.       6.       6.       6.       5.
UI    5.       5.       5.       5.       5.       5.       5.       5.       5.       5.
UI    4.       4.       4.       4.       4.       4.       4.       4.       4.       4.
UI    4.       4.       4.       4.       3.       3.       3.       3.       3.       3.
UI    3.       3.       3.       3.       3.       3.       3.       3.       3.       3.
UI    3.       3.       3.
KK  LCC6
KM      COMBINE LCC5 AND LC30- LAGUNA CREEK BELOW FRYE CREEK
HC      2
KK  LCR6
KM      ROUTE LCC6 TO LC35 -- MODIFIED PULS
RS      1    FLOW      -1
SV     .0    63.0    113.0    157.0    198.0    237.0    274.0    308.0    340.0    401.0
SQ     .0   500.0   1000.0   1500.0   2000.0   2500.0   3000.0   3500.0   4000.0   5000.0
*
*       PRECIPITATION FROM RADAR
*
IN     15 09JAN95     0000
*
KK  LC35
*
PG  AL29                             AP26
PI  0.00     0.00     0.01     0.00     0.00     0.00     0.00     0.00     0.00     0.00
PI  0.00     0.00     0.00
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PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.03
PI  0.12    0.17    0.00    0.00    0.00    0.08    0.04    0.05    0.06    0.06
PI  0.00    0.00    0.08    0.10    0.08    0.02    0.04    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.02
PI  0.00    0.00    0.00    0.05    0.07    0.05    0.02    0.00    0.00    0.00
PI  0.00    0.01    0.01    0.00    0.00    0.00    0.01    0.00    0.00    0.00
PI  0.09    0.10    0.07    0.02    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
PG  AK33                    AO29
PI  0.00    0.00    0.01    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.02    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.08    0.09    0.10    0.11    0.10    0.13    0.12
PI  0.08    0.08    0.07    0.07    0.10    0.15    0.16    0.08    0.03    0.04
PI  0.03    0.03    0.01    0.01    0.01    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.01    0.01    0.03
PI  0.12    0.17    0.00    0.00    0.00    0.06    0.06    0.04    0.04    0.06
PI  0.03    0.06    0.10    0.10    0.06    0.02    0.04    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.05    0.07    0.05    0.05    0.00    0.00    0.00
PI  0.00    0.01    0.02    0.00    0.00    0.00    0.02    0.00    0.00    0.00
PI  0.13    0.10    0.05    0.00    0.00    0.00    0.00    0.00    0.00    0.00
PI  0.00    0.00    0.00    0.00    0.00    0.00
*
*
BA 2.770
PR  AL29    AL30
PW   525     698
LU 0.00      .07    5.41
UI   16.     16.     38.     38.     62.     62.     88.     88.    107.    143.
UI  143.    171.    171.    206.    206.    243.    243.    283.    283.    324.
UI  373.    373.    426.    426.    474.    474.    486.    486.    492.    486.
UI  486.    474.    474.    436.    436.    397.    397.    357.    357.    322.
UI  300.    300.    278.    278.    253.    253.    237.    237.    220.    203.
UI  203.    191.    191.    178.    178.    166.    166.    154.    154.    146.
UI  137.    137.    129.    129.    121.    121.    114.    114.    108.    103.
UI  103.     97.     97.     92.     92.     87.     87.     83.     83.     80.
UI   75.     75.     72.     72.     68.     68.     66.     66.     62.     61.
UI   61.     58.     58.     57.     57.     54.     54.     52.     52.     50.
UI   49.     49.     47.     47.     45.     45.     44.     44.     42.     40.
UI   40.     39.     39.     38.     38.     37.     37.     35.     34.     34.
UI   32.     32.     31.     31.     30.     30.     29.     29.     28.     27.
UI   27.     26.     26.     25.     25.     25.     25.     24.     23.     23.
UI   22.     22.     21.     21.     21.     21.     20.     20.     19.     18.
UI   18.     18.     18.     17.     17.     16.     16.     16.     15.     15.
UI   15.     15.     14.     14.     14.     14.     13.     13.     13.     12.
UI   12.     12.     12.     12.     12.     11.     11.     11.     11.     11.
UI   10.     10.     10.     10.     10.     10.      9.      9.      9.      8.
UI    8.      8.      8.      8.      8.      8.      8.      7.      7.      7.
UI    7.      7.      7.      7.      6.      6.      6.      6.      6.      6.
UI    6.      6.      6.      5.      5.      5.      5.      5.
KK  LCC7
KM       COMBINE ROUTRD LCC6 AND LC35(LAGUNA @ EXCELSIOR)
HC     2
*
* ****************************************************************
*
* WRITE HYDROGRAPH TO DSS FOR LATER USE IN UNET
ZW A=LAGUNA CREEK UPPER B=LCC7 C=FLOW F=1995 HEC1
*
* ****************************************************************
*
KK  LCR7
KM       ROUTE LCC7 TO LC40 --MODIFIED PULS
RS      1    FLOW      -1
SV     .0    90.0   176.0   267.0   361.0   451.0   542.0   634.0   728.0   921.0
SQ     .0   500.0  1000.0  1500.0  2000.0  2500.0  3000.0  3500.0  4000.0  5000.0
KK  LCD1
DT  TRIB
DI     0.   2500.   3450.   4000.
DQ     0.      0.    171.    180.
KK  LC40
BA 1.780
PR  AK30    AK31
PW   513     231
LU 0.00      .08    2.80
UI    9.      9.      9.     22.     22.     35.     35.     50.     50.     61.
UI   61.     81.     81.     97.     97.    117.    117.    138.    138.    161.
UI  161.    185.    185.    213.    213.    243.    243.    270.    270.    276.
UI  276.    280.    280.    276.    276.    270.    270.    248.    248.    226.
UI  226.    226.    203.    203.    183.    183.    171.    171.    158.    158.
UI  144.    144.    135.    135.    125.    125.    116.    116.    109.    109.
UI  101.    101.     95.     95.     88.     88.     83.     83.     78.     78.
UI   73.     73.     69.     69.     65.     65.     61.     61.     59.     59.
UI   59.     55.     55.     52.     52.     50.     50.     47.     47.     45.
UI   45.     43.     43.     41.     41.     39.     39.     37.     37.     35.
UI   35.     35.     35.     33.     33.     32.     32.     31.     31.     30.
UI   30.     29.     29.     28.     28.     27.     27.     26.     26.     25.
UI   25.     25.     24.     24.     23.     23.     22.     22.     21.     21.
UI   21.     21.     20.     20.     19.     19.     18.     18.     18.     18.
UI   17.     17.     17.     17.     16.     16.     16.     16.     15.     15.
UI   14.     14.     14.     14.     14.     14.     13.     13.     13.     13.
UI   12.     12.     12.     12.     12.     11.     11.     11.     11.     11.
UI   11.     10.     10.     10.     10.      9.      9.      9.      9.      9.
UI    9.      8.      8.      8.      8.      8.      8.      8.      8.      7.
UI    7.      7.      7.      7.      7.      7.      7.      6.      6.      6.
UI    6.      6.      6.      6.      6.      6.      6.      6.      5.      5.
UI    5.      5.      5.      5.      5.      5.      5.      5.      4.      4.
UI    4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
UI    4.      4.      4.      4.      3.      3.      3.      3.      3.      3.
UI    3.      3.      3.      3.      3.      3.      3.      3.
*
* ****************************************************************
*
* WRITE HYDROGRAPH TO DSS FOR LATER USE IN UNET
ZW A=LAGUNA CREEK UPPRR B=LC40 C=FLOW F=1995 HEC1
*
* ****************************************************************
*
KK  LCC8
KM       COMBINE ROUTED LCC7 AND LC40(LAGUNA AT CENTRAL CAL. TRACTION)
HC     2
KK  LCD2
DT  CCTRR
DI     0.    800.    875.   1334.   1648.   1954.   3244.
DQ     0.      0.      9.    177.    352.    539.   1477.
KK  LCR8
KM       ROUTE LCC8 TO LC45, -- MODIFIED PULS
RS      1    FLOW      -1
SV     .0   201.0   381.0   548.0   709.0   864.0   994.0  1117.0  1235.0  1470.0
SQ     .0   500.0  1000.0  1500.0  2000.0  2500.0  3000.0  3500.0  4000.0  5000.0
KK  LC45
BA 2.770
PR  AI31    AJ31    AI32
PW   456     434     608
LU 0.00      .08    4.74
UI   12.     12.     12.     29.     29.     29.     47.     47.     66.     66.
UI   81.     81.     81.    107.    107.    128.    128.    128.    155.    155.
UI  182.    182.    213.    213.    213.    244.    244.    281.    281.    281.
UI  320.    320.    356.    356.    356.    365.    365.    370.    370.    365.
UI  365.    365.    356.    356.    328.    328.    328.    298.    298.    268.
UI  268.    242.    242.    242.    225.    225.    209.    209.    209.    190.
UI  190.    178.    178.    178.    166.    166.    153.    153.    143.    143.
UI  143.    133.    133.    125.    125.    125.    116.    116.    110.    110.
UI  103.    103.    103.     97.     97.     91.     91.     91.     86.     86.
UI   81.     81.     81.     77.     77.     73.     73.     69.     69.     69.
UI   66.     66.     62.     62.     62.     60.     60.     56.     56.     56.
UI   54.     54.     51.     51.     49.     49.     49.     47.     47.     46.
UI   46.     46.     44.     44.     43.     43.     41.     41.     41.     39.
UI   39.     38.     38.     38.     37.     37.     35.     35.     35.     34.
UI   34.     33.     33.     32.     32.     32.     30.     30.     30.     30.
UI   30.     28.     28.     28.     28.     26.     26.     26.     26.     26.
UI   24.     24.     24.     24.     24.     23.     23.     23.     22.     22.
UI   21.     21.     21.     21.     21.     20.     20.     19.     19.     19.
UI   18.     18.     18.     18.     17.     17.     17.     17.     17.     16.
UI   16.     16.     16.     16.     15.     15.     15.     14.     14.     14.
UI   14.     13.     13.     13.     13.     13.     12.     12.     12.     12.
UI   12.     11.     11.     11.     11.     11.     11.     11.     10.     10.
UI   10.     10.     10.     10.     10.     10.      9.      9.      9.      9.
UI    9.      8.      8.      8.      8.      8.      8.      8.      8.      8.
UI    8
```

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UI   39.     39.     38.     38.     37.     37.     35.     35.     34.     34.
UI   33.     33.     32.     32.     31.     31.     30.     30.     29.     29.
UI   28.     28.     27.     27.     26.     26.     25.     25.     24.     24.
UI   23.     23.     22.     22.     22.     22.     21.     21.     20.     20.
UI   19.     19.     19.     19.     18.     18.     17.     17.     17.     17.
UI   17.     16.     16.     16.     16.     15.     15.     14.     14.     14.
UI   14.     14.     14.     13.     13.     13.     13.     12.     12.     12.
UI   12.     11.     11.     11.     11.     11.     11.     10.     10.     10.
UI   10.      9.      9.      9.      9.      9.      9.      9.      9.      8.
UI    8.      8.      8.      8.      8.      7.      7.      7.      7.      7.
UI    7.      7.      7.      7.      7.      6.      6.      6.      6.      6.
UI    6.      6.      6.
*
KK LCC13
KM      COMBINE ROUTED LCC12 AND LC60(LAGUNA CREEK @ BOND-WATERMAN ROADS)
HC    2
ZW A=LAGUNA CREEK B=BOND ROAD C=FLOW F=RADAR 95
*
IN    10 08JAN95    2400
*
KK SI106
KM      RATING CURVE FOR LAGUNA CREEK AT BOND ROAD U/S OF WATERMAN ROAD
KM **** NOTE: STAGES BETWEEN APPROX. 10JAN 08:12 AND 10JAN 14:12 ESTIMATED
KM **** NOTE: STAGES SMOOTHED AND CONVERTED TO 10MIN TIME INTERVAL.
KM          (ORIGINAL DATA IN 2MIN TIME INTERVAL)
HQ   0.45   41.43  123.52  193.96  262.22  336.65  423.75  518.03  621.98  736.12
HQ860.94  996.95 1144.66 1304.56 1477.15 1662.96 1862.48 2076.20 2304.64 2548.30
HE   1.80    2.13    2.46    2.79    3.12    3.45    3.78    4.11    4.44    4.77
HE   5.10    5.43    5.76    6.09    6.42    6.75    7.08    7.41    7.74    8.07
QS 3.977 3.98154 3.98877 3.99777 4.00423 4.01062 4.01654 4.01438 4.01977 4.03146
QS 4.036 4.04438 4.04300 4.04785 4.04685 4.04362 4.04185 4.04354 4.04800 4.04215
QS 4.035 4.02738 4.03038 4.02215 4.02469 4.02123 4.02046 4.01769 4.02162 4.00938
QS 3.997 3.98562 3.98100 3.97954 3.96969 3.96923 3.96108 3.96485 3.96462 3.95977
QS 3.951 3.93946 3.93577 3.92515 3.92385 3.91854 3.91523 3.89954 3.88915 3.88315
QS 3.874 3.86108 3.84800 3.83323 3.81123 3.79015 3.77315 3.76123 3.75677 3.74915
QS 3.740 3.72992 3.71454 3.70969 3.70608 3.69154 3.67315 3.65392 3.64469 3.63438
QS 3.623 3.60862 3.59777 3.58154 3.55723 3.54392 3.53777 3.53131 3.51792 3.51331
QS 3.516 3.50577 3.46838 3.44438 3.42615 3.41562 3.39900 3.38869 3.37869 3.37038
QS 3.356 3.33269 3.31592 3.28392 3.26669 3.22869 3.20800 3.18238 3.17438 3.17100
QS 3.185 3.15462 3.13500 3.10669 3.07877 3.04831 3.02838 3.01246 3.00308 2.97531
QS 2.969 2.97331 2.97485 2.99423 3.03792 3.13838 3.23354 3.33215 3.42315 3.50900
QS 3.599 3.70123 3.80546 3.90392 4.00108 4.10285 4.23246 4.41123 4.61146 4.76508
QS 4.879 4.96315 5.02938 5.08531 5.12185 5.15977 5.18938 5.21792 5.23746 5.25908
QS 5.295 5.32238 5.33908 5.34977 5.37608 5.38669 5.39985 5.40985 5.42892 5.45377
QS 5.485 5.51277 5.54808 5.59338 5.63077 5.66162 5.70039 5.73461 5.78592 5.83746
QS 5.883 5.92300 5.95569 5.98354 6.00015 6.02292 6.05154 6.08262 6.09315 6.09423
QS 6.103 6.10569 6.12062 6.12908 6.14085 6.13692 6.14500 6.16046 6.13231 6.24000
QS 6.271 6.29331 6.30354 6.31869 6.34869 6.38885 6.41523 6.43785 6.46100 6.49108
QS 6.514 6.54060 6.56675 6.59151 6.61487 6.63685 6.65746 6.67670 6.69459 6.71113
QS 6.726 6.74020 6.75275 6.76398 6.77391 6.78255 6.78990 6.79597 6.80077 6.80431
QS 6.807 6.80764 6.80744 6.80603 6.80339 6.79954 6.79450 6.78826 6.78084 6.77224
QS 6.762 6.75156 6.73950 6.72629 6.71195 6.69649 6.67992 6.66224 6.64346 6.62360
QS 6.603 6.58064 6.55756 6.53343 6.50961 6.48977 6.46600 6.44508 6.41146 6.37000
QS 6.332 6.30669 6.27885 6.26031 6.22808 6.20715 6.16846 6.13223 6.10569 6.07762
QS 6.044 6.00685 5.97369 5.94600 5.91192 5.88192 5.85200 5.82269 5.79438 5.76369
QS 5.734 5.71115 5.68577 5.66308 5.63485 5.60723 5.58208 5.55785 5.53008 5.50915
QS 5.486 5.46431 5.43362 5.40892 5.38931 5.37246 5.35092 5.33631 5.31339 5.29062
QS 5.267 5.25300 5.22938 5.21346 5.19277 5.17592 5.15977 5.13854 5.12085 5.10054
QS 5.082 5.06485 5.04992 5.03615 5.01715 4.99862 4.97800 4.95777 4.93854 4.92369
QS 4.901 4.88200 4.85662 4.83892 4.82292 4.80792 4.79046 4.76746 4.75023 4.72923
QS 4.718 4.70077 4.68308 4.66046 4.64269 4.62108 4.60900 4.59500 4.57815 4.56669
QS 4.551 4.53600 4.52331 4.51154 4.49846 4.48123 4.46231 4.44854 4.43885 4.42723
QS 4.415 4.40200 4.38831 4.37108 4.35938 4.34569 4.33200 4.32092 4.31554 4.30315
QS 4.291 4.27754 4.25692 4.25585 4.24508 4.23623 4.21677 4.20608 4.19592 4.18008
QS 4.167 4.14931 4.13685 4.11946 4.10708 4.09769 4.08092 4.06508 4.05200 4.03746
QS 4.024 4.01069 3.99900 3.98008 3.96208 3.94615 3.93131 3.91231 3.89531 3.87546
QS 3.853 3.83062 3.80992 3.78946 3.77077 3.74754 3.72469 3.70162 3.68162 3.65846
QS 3.634 3.60992 3.58769 3.56546 3.54385 3.52138 3.50146 3.48038 3.45692 3.43592
QS 3.417 3.39538 3.37377 3.35377 3.33231 3.31346 3.29015 3.26723 3.24677 3.22754
QS 3.208 3.18577 3.16238 3.13892 3.11869 3.09723 3.07869 3.05708 3.03962 3.02092
QS 3.007 2.99300 2.97992 2.96323 2.94846 2.93315 2.91785 2.90492 2.89177 2.87862
QS 2.865 2.85546 2.84523 2.82977 2.81608 2.79962 2.78654 2.77554 2.76023 2.74662
QS 2.735 2.72392 2.71946
ZW C=STAGE
*
KK  JUMP
DR CCTRR
ZW B=CCTRR C=FLOW
*
ZZ
```

ELDER AND GERBER CREEKS
HEC-1 BOUNDARY CONDITIONS FILE NO. 4

100-YEAR FLOOD EVENT, EXISTING CONDITIONS FOR ELDER AND GERBER CREEKS

FILENAME: H1EX.DAT

```
ID  +-------------------------------------------------+
ID  |  Elder and Gerber Creeks -- Existing Condition  |
ID  +-------------------------------------------------+
ID
ID  Elder and Gerber Creeks
ID  Existing Condition
ID  Intermediate file converted to new SACPRE format, May 1995
ID  Subareas within SPA subdivided, May 1995
ID
ID  Storm centered over Florin, Elder and Gerber Creeks, and portion of
ID  Upper Laguna upstream of the shed jump from Laguna to Gerber.
ID  Total Area = 41.33 square miles
ID
ID  When processing this file, SACPRE should be forced to process with a
ID  timestep of 5 minutes (answer No to update based on storm duration)
ID  due to the large lag times of the larger, undeveloped subareas in the upper
ID  part of the watershed.
ID
IT     5  1JAN99      100      270
IO     3        0        0
IN     5
*DIAGRAM
*
*     ****************************
*     *    Begin Gerber Creek    *
*     ****************************
*
KK   G2A
KM   concentration point at Gerber Road, 250 feet east of Vinyard Road.
PB  0.00
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .018    .018    .018    .018
PI   .018    .018    .018    .018    .018    .018    .018    .018    .018    .018
PI   .018    .018    .018    .018    .023    .023    .023    .023    .023    .023
PI   .030    .030    .030    .030    .030    .030    .038    .038    .038    .060
PI   .094    .374    .153    .060    .060    .038    .038    .038    .030    .030
PI   .030    .030    .030    .030    .023    .023    .023    .023    .023    .023
PI   .018    .018    .018    .018    .018    .018    .018    .018    .018    .018
PI   .018    .018    .018    .018    .018    .018    .018    .018    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011
BA 1.382
LU   .10     .07    2.00
UI    9.      9.     21.     21.     34.     48.     48.     58.     58.     78.
UI   93.     93.    112.    112.    132.    154.    154.    176.    176.    203.
UI  232.    232.    258.    258.    264.    267.    267.    264.    264.    258.
UI  237.    237.    216.    216.    194.    175.    175.    163.    163.    151.
UI  137.    137.    129.    129.    120.    111.    111.    104.    104.     97.
UI   90.     90.     84.     84.     79.     74.     74.     70.     70.     66.
UI   62.     62.     59.     59.     56.     53.     53.     50.     50.     47.
UI   45.     45.     43.     43.     41.     39.     39.     37.     37.     36.
UI   34.     34.     33.     33.     32.     31.     31.     30.     30.     28.
UI   27.     27.     26.     26.     25.     24.     24.     24.     24.     23.
UI   22.     22.     21.     21.     20.     20.     20.     19.     19.     19.
UI   18.     18.     17.     17.     16.     16.     16.     15.     15.     15.
UI   14.     14.     14.     14.     13.     13.     13.     12.     12.     12.
UI   12.     12.     11.     11.     11.     10.     10.     10.     10.     10.
UI    9.      9.      9.      9.      9.      8.      8.      8.      8.      8.
UI    7.      7.      7.      7.      7.      7.      7.      7.      7.      6.
UI    6.      6.      6.      6.      6.      5.      5.      5.      5.      5.
UI    5.      5.      5.      5.      5.      4.      4.      4.      4.      4.
UI    4.      4.      4.      4.      4.      4.      4.      3.      3.      3.
UI    3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G2A C=FLOW F=HEC1EX
*
*
KK R-G2A
KM  route subarea G2A
KM ** STORAGE-OUTFLOW FOR X-SECTION   14421.000 TO  20715.000
RS     5     FLOW       -1
SV    .0     15.2     27.7     51.6     76.0    100.8    122.7    145.4    169.0    191.8
SV 221.6    252.7
SQ    .0     50.0    100.0    200.0    300.0    400.0    500.0    600.0    700.0    800.0
SQ 900.0   1000.0
KK   G2B
KM  concentration point at Gerber Road, 3600 feet west of Vinyard Road.
BA   .709
LU   .10     .07    2.00
UI    6.     14.     14.     22.     32.     39.     39.     51.     62.     74.
UI   88.     88.    102.    117.    135.    135.    154.    171.    175.    177.
UI  177.    175.    171.    157.    157.    143.    129.    116.    116.    108.
UI  100.     91.     85.     85.     79.     73.     69.     69.     64.     60.
UI   56.     53.     53.     49.     46.     44.     44.     41.     39.     37.
UI   35.     35.     33.     31.     30.     30.     29.     27.     26.     24.
UI   24.     24.     22.     22.     22.     21.     20.     20.     20.     19.
UI   18.     18.     17.     17.     16.     16.     15.     15.     15.     14.
UI   14.     13.     13.     13.     12.     12.     12.     11.     11.     11.
UI   10.     10.     10.      9.      9.      9.      9.      9.      8.      8.
UI    8.      8.      7.      7.      7.      7.      7.      6.      6.      6.
UI    6.      6.      5.      5.      5.      5.      5.      5.      5.      5.
UI    4.      4.      4.      4.      4.      4.      4.      4.      4.      4.
UI    3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
UI    3.      3.      2.      2.      2.      2.      2.      2.      2.      2.
UI    2.      2.      2.      2.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G2B C=FLOW F=HEC1EX
*
*
KK   CG2
KM      GERBER CROSSING #2
HC     2
KK R-CG2
KM ** STORAGE-OUTFLOW FOR X-SECTION   12622.000 TO  14421.000
RS     2     FLOW       -1
SV    .0      2.5      4.5      7.9     11.3     15.2     20.7     24.0     26.0     28.1
SV  30.0     31.8
SQ    .0     50.0    100.0    200.0    300.0    400.0    500.0    600.0    700.0    800.0
SQ 900.0   1000.0
KK   G3A
BA   .744
LU   .10     .07    2.88
UI    7.     16.     26.     26.     36.     44.     59.     71.     85.     85.
UI  100.    117.    134.    154.    176.    196.    196.    201.    203.    201.
UI  196.    180.    180.    164.    147.    133.    124.    115.    104.    104.
UI   98.     91.     84.     79.     73.     73.     69.     64.     60.     56.
UI   53.     50.     50.     47.     45.     42.     40.     38.     38.     36.
UI   34.     33.     31.     30.     28.     28.     27.     26.     25.     24.
UI   23.     23.     22.     22.     21.     20.     19.     19.     19.     18.
UI   17.     17.     16.     16.     15.     15.     14.     14.     13.     13.
UI   13.     13.     12.     12.     11.     11.     10.     10.     10.     10.
UI    9.      9.      9.      9.      9.      8.      8.      8.      7.      7.
UI    7.      7.      7.      6.      6.      6.      6.      6.      5.      5.
UI    5.      5.      5.      5.      5.      5.      4.      4.      4.      4.
UI    4.      4.      4.      3.      3.      3.      3.      3.      3.      3.
UI    3.      3.      3.      3.      3.      3.      2.      2.      2.      2.      2.
UI    2.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G3A C=FLOW F=HEC1EX
*
*
KK   CG3A
HC     2
KKR-CG3A
KM ** STORAGE-OUTFLOW FOR X-SECTION   10135.000 TO  12622.000
RS     5     FLOW       -1
SV    .0      1.9      4.4     10.9     18.9     28.4     40.6     50.6     57.2     63.3
SV  68.6     74.0
SQ    .0     50.0    100.0    200.0    300.0    400.0    500.0    600.0    700.0    800.0
SQ 900.0   1000.0
KK   G3B
BA   .131
LU   .10     .07    3.33
UI    2.      7.     10.     17.     20.     24.     34.     38.     44.     56.
UI   58.     58.     56.     52.     42.     38.     36.     30.     28.     24.
UI   23.     21.     18.     17.     15.     14.     14.     12.     11.     11.
UI   10.      9.      9.      8.      8.      7.      7.      7.      6.      6.
UI    6.      5.      5.      5.      5.      4.      4.      4.      4.      4.
UI    3.      3.      3.      3.      3.      3.      3.      2.      2.      2.
UI    2.      2.      2.      2.      2.      2.      2.      2.      1.      1.      1.
UI    1.      1.      1.      1.      1.      1.      1.      1.      1.      1.      1.
UI    1.      1.      1.      1.      1.      1.      1.      1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G3B C=FLOW F=HEC1EX
*
*
KK   CG3B
KM      GERBER CROSSING #3
HC     2
KKR-CG3B
KM ** STORAGE-OUTFLOW FOR X-SECTION    9051.000 TO  10135.000
RS     1     FLOW       -1
SV    .0      .8      1.3      2.8      5.3      7.6      9.2     11.0     13.1     15.3
SV  18.0     19.5
SQ    .0     50.0    100.0    200.0    300.0    400.0    500.0    600.0    700.0    800.0
SQ 900.0   1000.0
KK   G3D
BA   .820
LU   .10     .07    2.67
UI    5.      5.     13.     21.     21.     30.     30.     36.     48.     48.
UI   58.     70.     70.     82.     82.     96.    110.    110.    127.    145.
UI  145.    161.    165.    165.    167.    167.    165.    161.    161.    148.
UI  135.    135.    121.    121.    109.    102.    102.     95.     86.     86.
UI   80.     75.     75.     69.     69.     65.     60.     60.     56.     52.
UI   52.     50.     50.     46.     44.     44.     41.     39.     39.     37.
UI   35.     35.     33.     33.     31.     30.     30.     28.     27.     27.
UI   25.     25.     24.     23.     23.     22.     21.     21.     21.     20.
UI   20.     19.     19.     18.     18.     18.     17.     17.     17.     16.
UI   16.     15.     15.     15.     14.     14.     14.     13.     13.     13.
UI   12.     12.     12.     12.     12.     11.     11.     11.     10.     10.
UI   10.     10.     10.      9.      9.      9.      9.      8.      8.      8.
UI    8.      8.      8.      8.      7.      7.      7.      7.      7.      7.
UI    6.      6.      6.      6.      6.      6.      5.      5.      5.      5.
UI    5.      5.      5.      5.      5.      5.      4.      4.      4.      4.
UI    4.      4.      4.      4.      4.      4.      4.      3.      3.      3.
UI    3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
UI    3.      3.      3.      2.      2.      2.      2.      2.      2.      2.
UI    2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G3D C=FLOW F=HEC1EX
*
```

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*
KK  CG3D
HC    2
*
*       The next BA record is commented out to prevent SACPRE from deleting it
*       when processing the intermediate file.  The record should be uncommented
*       after processing since the ZREAD requires this record and HEC-1 will
*       crash if this record is not present.
*
KKLAGUNA
KM  retrieve spill from Laguna Creek
BA 19.79
ZR=QI A-LAGUNA CREEK B=CCTRR C=FLOW D=01JAN1999 E=5MIN F=EXISTING CONDITION
KKRSPILL
KM  route Laguna Creek spill to Gerber Creek (concentration point CG4)
RD 7500.   .0013   .0600              TRAP 1200.00      .00
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=RSPILL C=FLOW F=HEC1EX
*
*
KK    G4
KM       Gerber Creek west of CCTRR, south of Gerber Road
BA  .614
LU   .10      .07    2.76
UI    6.      14.     23.     32.     39.     39.     52.     62.     75.     88.
UI  103.     118.    136.    155.    173.    173.    177.    179.    177.    173.
UI  159.     144.    130.    117.    109.    101.    101.     92.     86.     80.
UI   74.      69.     65.     60.     56.     53.     53.     50.     47.     44.
UI   41.      39.     37.     35.     33.     32.     30.     30.     29.     27.
UI   26.      25.     24.     23.     22.     21.     21.     21.     20.     19.
UI   18.      18.     17.     16.     16.     15.     15.     14.     14.     14.
UI   13.      13.     12.     12.     11.     11.     11.     10.     10.     10.
UI   10.       9.      9.      9.      8.      8.      8.      8.      8.      7.
UI    7.       7.      7.      6.      6.      6.      6.      5.      5.      5.
UI    5.       5.      5.      4.      4.      4.      4.      4.      4.      4.
UI    4.       4.      3.      3.      3.      3.      3.      3.      3.      3.
UI    3.       3.      3.      2.      2.      2.      2.      2.      2.      2.
UI    2.       2.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G4 C=FLOW F=HEC1EX
*
*
KK   CG4
KM  Central California Traction Railroad U/S reach
HC    3
KK R-CG4
KM ** STORAGE-OUTFLOW FOR X-SECTION    6979.000 TO   9051.000
RS     2     FLOW      -1
SV    .0      2.1     3.8     7.0    10.0    13.4    17.1    21.4    27.0    34.1
SV   41.5     45.5    52.0
SQ    .0      50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0   1000.0  1100.0
KK   G3C
KM      Gerber Creek west of CCTRR
BA  .228
LU   .10      .07    2.34
UI   10.      16.     27.     43.     52.     72.     95.    120.    123.    123.
UI  111.     101.     82.     71.     64.     56.     48.     42.     39.     35.
UI   31.      29.     26.     23.     22.     20.     18.     17.     16.     15.
UI   14.      13.     12.     11.     11.     10.     10.      9.      9.      8.
UI    7.       7.      7.      6.      6.      6.      5.      5.      5.      4.
UI    4.       4.      4.      3.      3.      3.      3.      3.      3.      2.
UI    2.       2.      2.      2.      2.      2.      2.      1.      1.      1.
UI    1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G3C C=FLOW F=HEC1EX
*
*
KK   CG3
KM  Central California Traction Railroad D/S reach
HC    2
KKDIVER
KM  Diversion to Unionhouse Creek
DT UNION
DI    0.     300.    370.    571.    812.   1067.   1920.
* DQ   0       1       2       3       4       5       6
DQ    0.      0.     12.     51.    167.    253.    802.
KK UNDIV
DR UNION
ZW A=UNION B=DIVERTED C=FLOW F=HEC1EX
KK R-CG3
KM ** STORAGE-OUTFLOW FOR X-SECTION        .000 TO   6979.000
RS     5     FLOW      -1
SV    .0      8.6    16.3    37.7    67.1    77.5    95.2   107.4   119.2   130.8
SV 142.3   153.9
SQ    .0      50.0   100.0   200.0   300.0   400.0   500.0   600.0   700.0   800.0
SQ 900.0   1000.0
KK    G5
KM       Gerber Creek @ confluence with Elder Creek
BA  .394
LU   .10      .07    2.62
UI    4.       9.     14.     14.     20.     24.     32.     38.     46.     55.
UI   64.      64.     73.     84.     96.    107.    109.    111.    109.    109.
UI  107.      98.     89.     80.     72.     67.     67.     63.     57.     53.
UI   50.      46.     43.     40.     40.     37.     35.     33.     31.     29.
UI   27.      26.     26.     24.     23.     22.     21.     20.     19.     19.
UI   18.      17.     16.     15.     15.     14.     14.     14.     13.     13.
UI   12.      12.     11.     11.     11.     11.     10.     10.      9.      9.
UI    9.       8.      8.      8.      8.      8.      7.      7.      7.      7.
UI    7.       6.      6.      6.      6.      6.      5.      5.      5.      5.
UI    5.       5.      4.      4.      4.      4.      4.      4.      4.      4.
UI    3.       3.      3.      3.      3.      3.      3.      3.      3.      3.
UI    3.       3.      2.      2.      2.      2.      2.      2.      2.      2.
UI    2.       2.      2.      2.      2.      2.      2.      2.      1.      1.
UI    1.       1.      1.      1.      1.      1.      1.      1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=GERBER CREEK B=G5  C=FLOW F=HEC1EX
*
*
KK   CG5
KM  Gerber Creek at confluence
HC    2
*
*     ************************************************************
*     *    End Gerber Creek at Confluence with Elder Creek       *
*     ************************************************************
*
*     ****************************
*     *    Begin Elder Creek     *
*     ****************************
*
*      Subareas E1 and E2 subdivided 3/1/94
*
KK   E1A
BA 1.420
LU   .10      .07    2.66
KM  concentration point 1700 feet U/S from Jackson and Excelsior Roads
UI   11.      11.     26.     41.     59.     59.     72.     95.     95.    114.
UI  138.     162.    162.    190.    217.    217.    250.    285.    317.    317.
UI  325.     329.    325.    325.    317.    292.    292.    265.    239.    215.
UI  219.     201.    186.    186.    169.    158.    147.    147.    136.    128.
UI  128.     119.    111.    103.    103.     98.     91.     91.     86.     81.
UI   76.      76.     72.     69.     65.     65.     61.     58.     58.     55.
UI   53.      50.     50.     48.     45.     45.     44.     42.     41.     41.
UI   39.      38.     38.     36.     35.     34.     34.     33.     31.     31.
UI   30.      29.     28.     28.     27.     26.     26.     25.     25.     23.
UI   23.      23.     22.     21.     21.     20.     20.     20.     19.     18.
UI   18.      18.     17.     16.     16.     16.     15.     15.     15.     14.
UI   14.      14.     13.     13.     12.     12.     12.     11.     11.     11.
UI   11.      10.     10.     10.     10.     10.      9.      9.      9.      9.
UI    8.       8.      8.      8.      8.      7.      7.      7.      7.      7.
UI    7.       6.      6.      6.      6.      6.      5.      5.      5.      5.
UI    5.       5.      5.      5.      5.      4.      4.      4.      4.      4.
UI    4.       4.      4.      4.      3.      3.      3.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E1A    C=FLOW F=HEC1EX
*
*
KK R-E1A
KM  route area E1A to concentration point CE1AC
KM       REACH EXTENDS FROM X-SECT.  57172.000 TO X-SECT.  63292.000
RS     5     FLOW      -1
SV    .0      11.2    29.2    34.5    42.4    60.3    77.5    93.3   116.1   141.6
SV 171.8   206.5   245.1   286.0   328.6
SQ    .0     100.0   300.0   350.0   400.0   500.0   600.0   700.0   800.0   900.0
SQ1000.0  1100.0  1200.0  1300.0  1400.0
KK   E1C
KM  concentration point at Elder Creek Road
BA 1.416
LU   .10      .07    2.66
UI   11.      28.     28.     45.     64.     78.     78.    104.    124.    150.
UI  177.     177.    206.    236.    272.    310.    310.    345.    353.    358.
UI  358.     353.    345.    317.    289.    289.    260.    234.    218.    202.
UI  202.     184.    172.    160.    160.    148.    139.    129.    121.    121.
UI  112.     106.     99.     99.     94.     88.     83.     79.     79.     75.
UI   70.      67.     64.     64.     60.     58.     54.     54.     52.     49.
UI   48.      45.     45.     44.     42.     41.     41.     40.     38.     37.
UI   35.      35.     34.     33.     32.     31.     31.     29.     29.     27.
UI   27.      27.     25.     25.     24.     24.     23.     22.     21.     21.
UI   21.      20.     19.     18.     18.     18.     17.     17.     16.     16.
UI   16.      15.     14.     14.     14.     13.     13.     12.     12.     12.
UI   11.      11.     11.     11.     10.     10.     10.     10.      9.      9.
UI    9.       9.      9.      8.      8.      8.      7.      7.      7.      7.
UI    7.       7.      6.      6.      6.      6.      6.      6.      5.      5.
UI    5.       5.      5.      5.      4.      4.      4.      4.      4.      4.
UI    4.       4.      4.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E1C    C=FLOW F=HEC1EX
*
*
*
*
*
KK CE1AC
KM  combine subarea E1A with previously combined area  E1C
HC    2
KK   E1B
KM  concentration point d/s of Shagil reservoir
BA 1.247
LU   .10      .07    2.66
*
UI    7.       7.     16.     16.     26.     26.     37.     37.     46.     46.
UI   61.      61.     73.     73.     88.     88.    103.    103.    120.    120.
UI  138.     138.    159.    159.    181.    181.    201.    206.    206.    209.
UI  209.     206.    206.    201.    201.    185.    185.    168.    168.    151.
UI  151.     137.    137.    127.    127.    118.    118.    107.    107.    101.
UI  101.      94.     86.     86.     81.     81.     75.     75.     71.     71.
UI   65.      65.     62.     62.     58.     58.     55.     55.     51.     51.
UI   48.      48.     46.     46.     44.     44.     41.     41.     39.     37.
UI   37.      35.     35.     34.     34.     32.     32.     31.     31.     29.
UI   29.      28.     28.     26.     26.     26.     26.     25.     25.     24.
UI   24.      23.     23.     22.     21.     21.     21.     21.     20.     20.
UI   19.      19.     19.     19.     18.     18.     17.     17.     17.     17.
UI   16.      16.     16.     16.     15.     15.     15.     15.     14.     14.
UI   13.      13.     13.     12.     12.     12.     12.     12.     12.     11.
UI   11.      11.     11.     10.     10.     10.     10.     10.     10.      9.
UI    9.       9.      9.      9.      9.      8.      8.      8.      8.      8.
UI    8.       8.      7.      7.      7.      7.      7.      7.      6.      6.
UI    6.       6.      6.      6.      6.      6.      6.      6.      5.      5.
UI    5.       5.      5.      5.      5.      5.      5.      5.      5.      4.
UI    4.       4.      4.      4.      4.      4.      4.      4.      4.      4.
UI    4.       4.      4.      3.      3.      3.      3.      3.      3.      3.
UI    3.       3.      3.      3.      3.      3.      3.      3.      3.      3.
UI    3.       3.      3.      3.      2.      2.      2.      2.      2.      2.
UI    2.       2.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
*  A=ELDER CREEK UPPER B=E1B    C=FLOW F=HEC1EX
*
*
KK R-E1B
KM  route from Shagil reservoir to Elder Creek Road
*   cross-secting is based on typical section between the reservoir and Elder
*   Creek Road.  Surveyed March 14, 1994 by John Alexander.
RC  .060    .035    .060   4000.    .0003
RX   .00   50.00  100.00  104.00  108.00  116.00  166.00  216.00
RY 3.70    3.00    1.20     .60     .40    1.50    3.70    5.50
*
KKR-RE1B
KM  route through the 42" culvert crossing Elder Creek Road, culvert analysis
KM  was performed using HY8, flow from the diversion is added to a concentration
KM  2710' D/S from Elder Creek Road.
DT D-S1B
DI    0.     81.     90.    119.    149.    174.    251.    354.
DQ    0.      0.      7.     33.     63.     88.    165.    268.
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=R-RE1B C=FLOW F=HEC1EX
*
*
KKCE1ABC
KM  combine subareas E1A and E1B and E1C physically at concentration point CE1AB
HC    2
KK   CE1
KM  route from the 42" cross culvert at Elder Creek Road to concentration
KM  point CE1
KM       REACH EXTENDS FROM X-SECT.  54812.000 TO X-SECT.  57172.000
RS     5     FLOW      -1
SV    .0      7.7     35.6    45.0    60.3    68.5    91.3   115.9   141.2   166.4
SV 190.9   215.3   239.6   263.6   288.9
SQ    .0     100.0   300.0   350.0   400.0   500.0   600.0   700.0   800.0   900.0
SQ1000.0  1100.0  1200.0  1300.0  1400.0
KK R-CE1
KM  route from point CE1 at Elder Creek Road to a temp concentration point
KM  (TMP1), loacted 2710 feet D/S from point CE1
KM       REACH EXTENDS FROM X-SECT.  52132.000 TO X-SECT.  54812.000
RS     3     FLOW      -1
```

```
SV    .0    5.1   14.2   16.2   18.1   21.7   25.1   28.5   31.7   34.9
SV  38.0   41.0   44.0   46.8   49.6
SQ    .0  100.0  300.0  350.0  400.0  500.0  600.0  700.0  800.0  900.0
SQ1000.0 1100.0 1200.0 1300.0 1400.0
KKRETE1B
KM  retrieve diverted hydrograph from the 42" cross culvert at Elder Creek Rd.
DR D-E1B
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=D-E1B  C=FLOW F=HEC1EX
*
KK  TMP1
KM  temp concentration point located 2710 feet D/S from piont CE1, this point
KM  only occurs in the existing model
HC    2
KKR-TMP1
KM  route from point TMP1 to conc pt C-E1&2 at the confluence of areas E2 & E3
KM      REACH EXTENDS FROM X-SECT.  40302.000 TO X-SECT.  52132.000
RS    5    FLOW      -1
SV    .0   22.8   74.4   86.6   98.7  122.8  146.6  169.7  193.5  216.8
SV 239.1  260.3  281.2  301.9  322.2
SQ    .0  100.0  300.0  350.0  400.0  500.0  600.0  700.0  800.0  900.0
SQ1000.0 1100.0 1200.0 1300.0 1400.0
KK    E2
KM      Elder Creek south of Elder Creek Road
BA 1.105
LU   .10    .07   2.08
UI    6.     6.     6.    14.    14.    22.    22.    31.    31.    38.
UI   38.    51.    51.    61.    61.    73.    73.    86.    86.   101.
UI  101.   115.   115.   133.   133.   151.   151.   168.   168.   172.
UI  172.   175.   175.   172.   172.   168.   168.   155.   155.   141.
UI  141.   127.   127.   114.   114.   106.   106.    99.    99.    99.
UI   90.    90.    84.    84.    78.    78.    72.    72.    68.    68.
UI   63.    63.    59.    59.    55.    55.    52.    52.    48.    48.
UI   46.    46.    43.    43.    40.    40.    38.    38.    37.    37.
UI   34.    34.    33.    33.    31.    31.    29.    29.    28.    28.
UI   27.    27.    26.    26.    24.    24.    23.    23.    23.    22.
UI   22.    22.    22.    21.    21.    20.    20.    19.    19.    19.
UI   19.    18.    18.    17.    17.    17.    17.    16.    16.    16.
UI   16.    15.    15.    14.    14.    14.    14.    13.    13.    13.
UI   13.    12.    12.    12.    12.    12.    12.    11.    11.    11.
UI   11.    10.    10.    10.    10.    10.    10.     9.     9.     9.
UI    9.     9.     9.     9.     8.     8.     8.     8.     8.     8.
UI    8.     8.     7.     7.     7.     7.     7.     7.     7.     7.
UI    6.     6.     6.     6.     6.     6.     6.     6.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     5.     5.     5.
UI    4.     4.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     4.     4.     4.     4.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     3.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E2     C=FLOW F=HEC1EX
*
*
KK  CE12
KM  the conc pt is physically located at the confluence of sub-areas E2 and E3,
KM  5000 ft U/S of Florin Rd
HC    2
KK    E3
KM      Elder Creek north and south of Florin Road
BA  .742
LU   .10    .07   2.25
UI    5.     5.    13.    21.    21.    30.    35.    48.    48.    58.
UI   70.    70.    82.    96.    96.   109.   126.   126.   144.   160.
UI  164.   164.   166.   164.   164.   160.   147.   147.   134.   120.
UI  120.   109.   101.    94.    94.    85.    80.    80.    74.    69.
UI   69.    64.    60.    60.    56.    52.    49.    49.    45.    43.
UI   43.    41.    38.    38.    36.    35.    33.    33.    31.    29.
UI   29.    28.    27.    27.    25.    24.    24.    23.    22.    21.
UI   21.    20.    20.    20.    19.    18.    18.    18.    17.    17.
UI   16.    16.    15.    15.    15.    14.    14.    14.    13.    13.
UI   13.    12.    12.    12.    12.    11.    11.    11.    10.    10.
UI   10.    10.    10.     9.     9.     9.     9.     8.     8.     8.
UI    8.     7.     7.     7.     7.     7.     7.     6.     6.     6.
UI    6.     6.     6.     6.     5.     5.     5.     5.     5.     5.
UI    5.     5.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     4.     4.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     3.     3.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E3     C=FLOW F=HEC1EX
*
*
KK  CE23
KM  the conc pt is physically located at the confluence of sub-areas E2 and E3,
KM  5000 ft U/S of Florin Rd
HC    2
KKR-CE23
KM      ROUTE TO FLORIN ROAD
KM      REACH EXTENDS FROM X-SECT.  35607.000 TO X-SECT.  40302.000
RS    5    FLOW      -1
SV    .0   7.6   39.9   47.6   55.2   71.4   87.5  102.9  115.6  126.3
SV 136.2  145.8  155.2  164.5  173.8
SQ    .0  100.0  300.0  350.0  400.0  500.0  600.0  700.0  800.0  900.0
SQ1000.0 1100.0 1200.0 1300.0 1400.0
KK   E4B
BA 1.000
LU   .10    .07   2.24
UI    6.     6.    16.    16.    25.    36.    36.    44.    58.    58.
UI   70.    70.    84.    99.    99.   116.   132.   132.   152.   152.
UI  174.   193.   193.   198.   201.   201.   198.   198.   193.   178.
UI  178.   162.   145.   145.   131.   131.   122.   113.   113.   103.
UI  103.    97.    90.    90.    83.    78.    78.    72.    72.    68.
UI   63.    63.    60.    56.    56.    53.    53.    49.    46.    46.
UI   44.    42.    42.    39.    39.    37.    36.    36.    34.    32.
UI   32.    30.    30.    29.    28.    28.    27.    27.    25.    25.
UI   25.    24.    23.    23.    22.    22.    21.    20.    20.    20.
UI   19.    19.    18.    18.    18.    17.    17.    16.    16.    16.
UI   15.    15.    15.    14.    14.    14.    13.    13.    13.    13.
UI   12.    12.    12.    12.    12.    11.    11.    11.    10.    10.
UI   10.    10.    10.     9.     9.     9.     9.     8.     8.     8.
UI    8.     8.     8.     8.     7.     7.     7.     7.     7.     6.
UI    6.     6.     6.     6.     6.     6.     6.     5.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     5.     4.     4.
UI    4.     4.     4.     4.     4.     4.     4.     4.     3.     3.
UI    3.     3.     3.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     3.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E4B    C=FLOW F=HEC1EX
*
*
KK  CE4B
HC    2
KK   E4A
BA  .650
LU   .10    .07   2.67
UI    5.     5.    12.    20.    28.    28.    34.    45.    54.    54.
UI   66.    77.    90.    90.   103.   119.   136.   136.   151.   155.
UI  157.   157.   155.   151.   139.   139.   126.   114.   103.   103.
UI   96.    89.    80.    80.    75.    70.    65.    65.    61.    57.
UI   53.    53.    49.    47.    44.    44.    41.    39.    36.    36.
UI   34.    33.    31.    31.    29.    28.    26.    26.    25.    24.
UI   23.    23.    22.    21.    20.    20.    19.    19.    18.    18.
UI   17.    17.    16.    16.    16.    15.    14.    14.    14.    13.
UI   13.    13.    13.    12.    12.    12.    11.    11.    10.    10.
UI   10.    10.     9.     9.     9.     9.     9.     8.     8.     8.
UI    8.     8.     7.     7.     7.     7.     7.     6.     6.     6.
UI    6.     6.     6.     5.     5.     5.     5.     5.     5.     5.
UI    5.     4.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     3.     3.     3.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E4A    C=FLOW F=HEC1EX
*
*
KK   CE4
KM  Central California Traction Railroad
HC    2
KK R-CE4
KM      REACH EXTENDS FROM X-SECT.  29357.000 TO X-SECT.  35607.000
RS    5    FLOW      -1
SV    .0   13.1   44.1   53.5   63.7   83.6  102.7  121.1  139.7  158.4
SV 177.7  198.5  219.9  242.3  264.6
SQ    .0  100.0  300.0  350.0  400.0  500.0  600.0  700.0  800.0  900.0
SQ1000.0 1100.0 1200.0 1300.0 1400.0
KK    E5
KM      Elder Creek @ confluence with Gerber Creek
BA  .333
LU   .10    .07   3.24
UI    3.     7.    12.    17.    17.    21.    28.    33.    40.    47.
UI   55.    63.    73.    83.    83.    93.    95.    96.    95.    93.
UI   85.    77.    70.    70.    63.    59.    54.    49.    46.    43.
UI   40.    37.    35.    35.    32.    30.    29.    27.    25.    24.
UI   22.    21.    21.    20.    19.    18.    17.    16.    16.    15.
UI   14.    13.    13.    13.    12.    12.    11.    11.    11.    10.
UI   10.    10.    10.     9.     9.     9.     8.     8.     8.     7.
UI    7.     7.     7.     7.     6.     6.     6.     6.     6.     5.
UI    5.     5.     5.     5.     5.     4.     4.     4.     4.     4.
UI    4.     4.     4.     4.     3.     3.     3.     3.     3.     3.
UI    3.     3.     3.     2.     2.     2.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     2.     2.     2.
UI    1.     1.     1.     1.     1.     1.     1.     1.     1.     1.
UI    1.     1.     1.     1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK UPPER B=E5     C=FLOW F=HEC1EX
*
*
KK   CE5
KM  Elder Creek at confluence
HC    2
KK   CEG
KM  Elder and Gerber Creeks combined
HC    2
KK R-CEG
KM      REACH EXTENDS FROM X-SECT.  27367.000 TO X-SECT.  29357.000
RS    3    FLOW      -1
SV    .0    2.8   16.8   31.8   46.4   56.1   62.3   67.1   71.5   75.6
SV  79.5   83.3   87.1
SQ    .0  100.0  400.0  600.0  800.0 1000.0 1200.0 1400.0 1600.0 1800.0
SQ2000.0 2200.0 2400.0
KK    E6
KM      Elder Creek @ Elk Grove-Florin Road
BA  .211
LU   .10    .07   2.55
UI    3.    12.    17.    26.    33.    40.    55.    63.    82.    92.
UI   94.    94.    92.    77.    69.    62.    54.    49.    43.    39.
UI   37.    32.    30.    28.    25.    23.    21.    20.    19.    17.
UI   16.    14.    14.    13.    12.    12.    11.    10.    10.     9.
UI    9.     8.     8.     8.     7.     7.     7.     6.     6.     6.
UI    5.     5.     5.     5.     4.     4.     4.     4.     4.     3.
UI    3.     3.     3.     3.     3.     3.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     2.     1.     1.     1.
UI    1.     1.     1.     1.     1.     1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E6     C=FLOW F=HEC1EX
*
*
KK   CE6
KM  ElkGrove-Florin Road
HC    2
ZW A=ELDER CREEK LOWER B=ELK GROVE FLORIN C=FLOW F=HEC1EX
KK R-CE6
KM      REACH EXTENDS FROM X-SECT.  22917.000 TO X-SECT.  27367.000
RS    2    FLOW      -1
SV    .0    5.2   15.4   22.9   31.3   40.9   51.7   64.7   79.7   94.1
SV 110.7  126.1  142.2
SQ    .0  100.0  400.0  600.0  800.0 1000.0 1200.0 1400.0 1600.0 1800.0
SQ2000.0 2200.0 2400.0
KK    E7
KM      Elder Creek east of French Road
BA  .722
LU   .10    .07  25.34
UI    9.    22.    50.    61.    81.    97.   117.   162.   185.   213.
UI  243.   270.   280.   277.   270.   248.   226.   183.   171.   159.
UI  144.   135.   116.   109.   101.    95.    88.    78.    73.    69.
UI   65.    59.    55.    52.    50.    47.    43.    41.    39.    37.
UI   35.    33.    32.    31.    30.    29.    27.    26.    25.    24.
UI   23.    21.    21.    20.    19.    19.    17.    17.    16.    16.
UI   15.    14.    14.    13.    13.    12.    11.    11.    11.    10.
UI   10.     9.     9.     8.     8.     8.     7.     7.     7.     7.
UI    6.     6.     6.     6.     5.     5.     5.     5.     4.     4.
UI    4.     4.     4.     4.     4.     3.     3.     3.     3.     3.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E7     C=FLOW F=HEC1EX
*
*
KK   CE7
KM  concentration pt. 1400 ft U/S of French Road
HC    2
KK R-CE7
KM      REACH EXTENDS FROM X-SECT.  20557.000 TO X-SECT.  22917.000
RS    1    FLOW      -1
SV    .0    6.1   12.4   15.6   17.9   20.5   23.0   25.9   30.5   36.4
SV  51.3   64.5   76.8
SQ    .0  100.0  400.0  600.0  800.0 1000.0 1200.0 1400.0 1600.0 1800.0
SQ2000.0 2200.0 2400.0
KK    E8
KM      Elder Creek @ SPRR
BA  .250
LU   .10    .07  31.97
```

```
UI    4.    15.    22.    35.    42.    60.    70.    92.   105.   119.
UI  121.   117.   107.    88.    79.    68.    62.    54.    50.    44.
UI   41.    36.    34.    30.    28.    25.    24.    21.    20.    18.
UI   18.    16.    15.    14.    14.    13.    12.    11.    11.    10.
UI   10.     9.     9.     8.     8.     7.     7.     7.     6.     6.
UI    6.     5.     5.     5.     5.     4.     4.     4.     4.     4.
UI    3.     3.     3.     3.     3.     3.     2.     2.     2.     2.
UI    2.     2.     2.     2.     2.     2.     1.     1.     1.     1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E8     C=FLOW F=HEC1EX
*
*
KK   CE8
KM  S.P.R.R.
HC     2
KK R-CE8
KM      REACH EXTENDS FROM X-SECT.  16997.000 TO X-SECT.  20557.000
RS     2    FLOW      -1
SV    .0     7.3    17.3    22.6    27.3    31.7    35.8    39.7    43.2    47.2
SV  51.1    56.2    63.0
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
KK    E9
KM      Elder Creek south of Gerber Road
BA  .428
LU   .10     .07   37.20
UI   19.     30.     52.     84.    119.    139.    183.    232.    240.    237.
UI  213.    174.    147.    136.    116.     99.     87.     81.     71.     63.
UI   56.     53.     47.     43.     39.     37.     33.     30.     30.     28.
UI   25.     24.     23.     21.     20.     18.     18.     17.     15.     14.
UI   14.     13.     12.     11.     11.     10.      9.      9.      8.      8.
UI    7.      7.      6.      6.      6.      6.      5.      5.      4.      4.
UI    4.      4.      3.      3.      3.      3.      3.      3.      3.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E9     C=FLOW F=HEC1EX
*
*
KK   CE9
KM  Gerber Road
HC     2
KK R-CE9
KM  HEC-2 X-Sections 15167 upstream to 16997
RS     1    FLOW      -1
SV    .0     3.0     7.0    10.0    12.0    13.0    15.0    17.0    19.0    20.0
SV  23.0    26.0    33.0
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
KK   E10
KM      Elder Creek @ Power Inn Road
BA  .284
LU   .10     .07   45.66
UI   29.     50.     96.    132.    199.    227.    221.    185.    140.    118.
UI   95.     83.     68.     60.     50.     45.     39.     35.     31.     28.
UI   25.     23.     21.     20.     18.     16.     15.     14.     12.     11.
UI   10.     10.      9.      8.      7.      7.      6.      6.      5.      5.
UI    4.      4.      4.      3.      3.      3.      3.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E10    C=FLOW F=HEC1EX
*
*
KK  CE10
KM  Power Inn Road
HC     2
ZW A=ELDER CREEK LOWER B=POWER INN C=FLOW F=HEC1EX
KKR-CE10
KM  HEC-2 X-Sections 13607 upstream to 15167
RS     1    FLOW      -1
SV    .0     2.0     5.0     7.0     8.0    10.0    11.0    13.0    14.0    16.0
SV  17.0    19.0    21.0
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
KK   E11
KM      Elder Creek
BA  .235
LU   .10     .07   50.37
UI   28.     65.    111.    171.    223.    217.    164.    128.    101.     81.
UI   67.     56.     47.     40.     34.     30.     27.     24.     21.     19.
UI   17.     16.     14.     13.     12.     10.      9.      8.      8.      7.
UI    6.      6.      5.      5.      4.      4.      3.      3.      3.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E11    C=FLOW F=HEC1EX
*
*
KK  CE11
KM  Palmer House Drive
HC     2
KKR-CE11
KM  HEC-2 X-Sections 10797 upstream to 13067
RS     1    FLOW      -1
SV    .0     4.0     9.0    12.0    14.0    17.0    19.0    21.0    23.0    25.0
SV  27.0    29.0    32.0
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
KK   E12
KM      Elder Creek @ Stockton Boulevard
BA  .403
LU   .10     .07   43.60
UI   16.     26.     46.     61.     88.    120.    138.    181.    201.    209.
UI  201.    185.    152.    137.    118.    101.     94.     81.     71.     66.
UI   58.     55.     48.     44.     41.     37.     35.     32.     29.     28.
UI   26.     25.     23.     21.     21.     19.     19.     17.     16.     16.
UI   15.     14.     13.     12.     12.     11.     10.     10.      9.      9.
UI    8.      8.      7.      7.      6.      6.      6.      5.      5.      5.
UI    5.      4.      4.      4.      4.      3.      3.      3.      3.      3.
UI    3.      3.      2.      2.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E12    C=FLOW F=HEC1EX
*
*
KK  CE12
KM  Stockton Blvd
HC     2
KKR-CE12
KM  HEC-2 X-Sections  8742 upstream to 10797
RS     1    FLOW      -1
SV    .0     6.0     9.0    12.0    14.0    17.0    19.0    21.0    23.0    25.0
SV  27.0    29.0    31.0
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
KK   E13
KM      Elder Creek @ Highway-99 (City Limits)
BA  .196
LU   .10     .07   40.65
UI   10.     22.     36.     52.     71.     94.    119.    124.    119.    100.
UI   81.     75.     64.     55.     48.     42.     37.     32.     29.     26.
UI   23.     21.     19.     17.     16.     15.     14.     13.     12.     11.
UI   10.      9.      9.      8.      8.      7.      7.      6.      6.      6.
UI    5.      5.      5.      4.      4.      4.      3.      3.      3.      3.
UI    3.      2.      2.      2.      2.      2.      2.      2.      1.      1.
UI    1.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E13    C=FLOW F=HEC1EX
*
*
KK  CE13
KM  Highway-99
HC     2
KKR-CE13
KM  HEC-2 X-Sections  5666 upstream to  8742
RS     1    FLOW      -1
SV    .0    15.0    16.0    18.0    20.0    22.0    24.0    26.0    28.0    30.0
SV  32.0    34.0    36.0
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
KK   E14
KM      Elder Creek @ Center Parkway
BA 1.364
LU   .10     .07   57.00
UI   54.     87.    151.    201.    291.    343.    458.    601.    669.    694.
UI  685.    615.    503.    454.    393.    357.    311.    287.    251.    218.
UI  206.    182.    171.    152.    145.    129.    117.    112.    102.     95.
UI   88.     86.     80.     74.     71.     66.     64.     59.     56.     53.
UI   49.     48.     44.     43.     40.     37.     36.     34.     32.     30.
UI   29.     27.     25.     24.     22.     22.     20.     19.     18.     17.
UI   17.     16.     15.     14.     13.     12.     11.     11.     10.     10.
UI    9.      9.      8.      8.      8.      7.
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=E14    C=FLOW F=HEC1EX
*
*
KK R-E14
KM  pump routing from Corps model (point KK 570920)
RS     1    STOR      -1.
SV    .0     2.3     4.7     7.0   100.0
SQ    .0    56.0   113.0   169.0   175.0
KK  CE14
KM  Center Parkway
HC     2
KKR-CE14
KM  HEC-2 X-Sections   910 upstream to  5666
RS     2    FLOW      -1
SV    .0    40.7    41.2    41.9    42.8    43.8    45.0    46.3    47.7    49.2
SV  50.7    52.3    54.1
SQ    .0   100.0   400.0   600.0   800.0  1000.0  1200.0  1400.0  1600.0  1800.0
SQ2000.0  2200.0  2400.0
*
*       The next BA record is commented out to prevent SACPRE from deleting it
*       when processing the intermediate file.  The record should be uncommented
*       after processing since the ZREAD requires this record and HEC-1 will
*       crash if this record is not present.
*
KKPLORIN
KM  retrieve Florin Creek hydrograph
BA  4.18
ZR-QI A=FLORIN CREEK B=CONFLUENCE C=FLOW D=12JAN1992 E=2MIN F=EXISTING CONDITION
*
*
* THIS STATEMENT DEVELOPS A LOCAL INLFOW HYDROGRAPH FOR APPLICATION OF UNET.
*
ZW A=ELDER CREEK LOWER B=FLORIN C=FLOW F=HEC1EX
*
*
KK C-PEG
HC     2
ZZ
*
*  NUMBER OF SUBBASINS FOR WHICH DATA WAS ENTERED DOES NOT
*  EQUAL THE NUMBER OF SUBBASINS ENTERED IN THE MAIN MENU.
*
*  DATA WAS ENTERED FOR 25 SUBBASINS.
*  DATA WAS EXPECTED FOR 21 SUBBASINS.
*
*
*  SUMMED AREA OF SUBBASINS DOES NOT EQUAL TOTAL AREA.
*  SUMMED AREA OF SUBBASINS =      17.028
*  TOTAL AREA =                    41.330
*
```

ELDER AND GERBER CREEKS
HEC-1 BOUNDARY CONDITIONS FILE NO. 5

100-YEAR FLOOD EVENT, ULTIMATE CONDITIONS FOR ELDER AND GERBER CREEKS

FILENAME: ELULB.DAT

```
ID   +-------------------------------------------------+
ID   |  Elder and Gerber Creeks -- Ultimate Condition  |
ID   +-------------------------------------------------+
ID
ID   Elder and Gerber Creeks
ID   Ultimate Condition
ID   Intermediate file converted to new SACPRE format, May 1995
ID   Subareas within SPA subdivided, May 1995
ID
ID   Storm centered over Florin, Elder and Gerber Creeks.
ID   Total Area = 21.202 square miles
ID
ID   SHED JUMP FROM LAGUNA CREEK NOT INCLUDED IN THIS RUN.
ID   ROUTING UPDATED TO REFLECT MINIMUM CHANNELIZATION.
ID   LOCAL AND REGIONAL DETENTION INCLUDED.
ID
ID   **** NOTE: MODIFIED-PULS ROUTING STORAGE/VOLUME ONLY DEFINED TO 2500 CFS
ID
ID   FILENAME:  ELULA.INT  ***  Ultimate Condition Alternative A
ID
ID  ************************************************
ID   REVISED ON 3-27-96 BASED ON NORTH VIENYARD SPRING
ID   SUBBASINS G4 AND G3B, G3D WERE REVISED
ID   STORM CENTERING WAS CHANGED FROM 21.202 SQ.MI. TO 20.866 SQ.MI.
ID
ID  ************************************************
IT     2  1JAN99      100      750
IO     5        0        0
IN     5
*NOLIST
*DIAGRAM
*
*     ****************************
*     *    Begin Gerber Creek    *
*     ****************************
*
KK   G2A
KM       LANDUSE DIFFERS FROM GENERAL PLAN
PB  0.00
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .018    .018    .018    .018
PI   .018    .018    .018    .018    .018    .018    .018    .018    .018    .018
PI   .018    .018    .018    .018    .023    .023    .023    .023    .023    .023
PI   .030    .030    .030    .030    .030    .030    .041    .041    .041    .064
PI   .101    .403    .165    .064    .064    .041    .041    .041    .030    .030
PI   .030    .030    .030    .030    .023    .023    .023    .023    .023    .023
PI   .018    .018    .018    .018    .018    .018    .018    .018    .018    .018
PI   .018    .018    .018    .018    .018    .018    .018    .018    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011    .011    .011    .011    .011    .011    .011
PI   .011    .011    .011    .011
BA 1.382
LU    .10     .07   50.00
*
UI    19.     19.     46.     46.     75.     75.    106.    106.    129.    129.
UI   172.    172.    206.    206.    248.    292.    292.    341.    341.    391.
UI   391.    450.    450.    513.    513.    571.    571.    585.    585.    592.
UI   592.    585.    571.    571.    525.    525.    477.    477.    429.    429.
UI   387.    387.    361.    361.    335.    335.    304.    285.    285.    265.
UI   265.    245.    245.    230.    230.    214.    214.    200.    200.    186.
UI   186.    176.    176.    164.    155.    155.    146.    146.    137.    137.
UI   130.    130.    124.    124.    116.    116.    110.    110.    105.    100.
UI   100.     96.     96.     90.     90.     87.     87.     81.     81.     79.
UI    79.     75.     75.     73.     73.     70.     68.     68.     65.     65.
UI    63.     63.     60.     60.     59.     59.     56.     56.     54.     54.
UI    53.     51.     51.     49.     49.     47.     47.     45.     45.     44.
UI    44.     42.     42.     41.     41.     39.     39.     38.     36.     36.
UI    35.     35.     34.     34.     33.     33.     32.     32.     31.     31.
UI    30.     30.     29.     28.     28.     27.     27.     26.     26.     25.
UI    25.     24.     24.     23.     23.     22.     22.     22.     22.     20.
UI    20.     20.     19.     19.     18.     18.     18.     18.     17.     17.
UI    17.     17.     16.     16.     15.     15.     15.     15.     15.     14.
UI    14.     14.     14.     13.     13.     13.     13.     12.     12.     12.
UI    12.     12.     11.     11.     11.     11.     10.     10.     10.     10.
UI     9.      9.      9.      9.      9.      9.      9.      8.      8.      8.
UI     8.      8.      8.      7.      7.      7.      7.      7.      7.      7.
UI     7.      7.      7.      6.      6.      6.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G2A      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASG2A
KM       LOCAL DETENTION BASIN
KO     3
DT  G-50
DI     0.    126.   2126.
DQ     0.      0.   2000.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G2A+DET C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
*
KK R-G2A
KM  route subarea G2A
KM       REACH EXTENDS FROM X-SECT.  14421.000 TO X-SECT.  20765.000
RS     5     FLOW       -1
SV     .0     10.3     22.8     33.0     42.2     50.6     58.6     68.5     83.9    100.2
SV 118.7    136.2
SQ     .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0
KK   G2B
KM       LANDUSE BASED ON GENERAL PLAN -REVISED ON 3-28-96 BASED ON NORTH VIENYAR
BA   .659
LU    .10      .07    27.27
*
UI     8.       8.       8.      18.      18.      30.      30.      42.      42.      42.
UI    51.      51.      68.      68.      82.      82.      99.      99.      99.     116.
UI   116.     136.     136.     155.     155.     179.     179.     179.     204.     204.
UI   227.     227.     232.     232.     232.     235.     235.     232.     232.     227.
UI   227.     209.     209.     209.     190.     190.     171.     171.     154.     154.
UI   143.     143.     143.     133.     133.     121.     121.     113.     113.     105.
UI   105.     105.      97.      97.      91.      91.      85.      85.      79.      79.
UI    79.      74.      74.      70.      70.      65.      65.      62.      62.      62.
UI    58.      58.      54.      54.      52.      52.      49.      49.      49.      46.
UI    46.      44.      44.      42.      42.      42.      40.      40.      38.      38.
UI    36.      36.      34.      34.      34.      32.      32.      31.      31.      30.
UI    30.      29.      29.      29.      28.      28.      27.      27.      26.      26.
UI    25.      25.      25.      24.      24.      23.      23.      22.      22.      22.
UI    22.      22.      21.      21.      20.      20.      19.      19.      19.      19.
UI    19.      18.      18.      18.      18.      17.      17.      16.      16.      16.
UI    16.      16.      15.      15.      14.      14.      14.      14.      14.      14.
UI    14.      13.      13.      13.      13.      13.      12.      12.      12.      12.
UI    11.      11.      11.      11.      11.      11.      11.      10.      10.      10.
UI    10.      10.      10.      10.       9.       9.       9.       9.       9.       9.
UI     8.       8.       8.       8.       8.       8.       8.       7.       7.       7.
UI     7.       7.       7.       7.       7.       7.       6.       6.       6.       6.
UI     6.       6.       6.       6.       6.       6.       6.       5.       5.       5.
UI     5.       5.       5.       5.       5.       5.       5.       5.       5.       5.
UI     5.       4.       4.       4.       4.       4.       4.       4.       4.       4.
UI     4.       4.       4.       4.       4.       4.       4.       3.       3.       3.
UI     3.       3.       3.       3.       3.       3.       3.       3.       3.       3.
UI     3.       3.       3.       3.       3.       3.       3.       2.       2.       2.
UI     2.       2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G2B      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASG2B
KM       LOCAL DETENTION BASIN
KO     3
DT  G-45
DI     0.     68.   2068.
DQ     0.      0.   2000.
KK   CG2
KM       GERBER CROSSING #2
HC     2
KK R-CG2
KM       REACH EXTENDS FROM X-SECT.  12622.000 TO X-SECT.  14421.000
RS     4     FLOW       -1
SV     .0      2.4      5.4      7.9     10.1     12.1     14.1     16.1     18.7     21.9
SV  25.6     29.4
SQ     .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0
KK   G3A
KM       LANDUSE BASED ON SPA
BA   .744
LU    .10      .07    35.58
*
UI    13.      13.      32.      52.      52.      74.      90.     120.     120.     144.
UI   174.     174.     204.     239.     239.     273.     315.     315.     359.     399.
UI   399.     409.     414.     409.     409.     399.     367.     367.     334.     300.
UI   300.     271.     253.     253.     234.     213.     200.     200.     186.     171.
UI   171.     161.     150.     150.     140.     130.     130.     123.     115.     109.
UI   109.     102.      96.      96.      91.      87.      87.      81.      77.      77.
UI    74.      70.      70.      67.      63.      61.      61.      57.      55.      55.
UI    52.      51.      51.      49.      48.      48.      46.      44.      42.      42.
UI    41.      39.      39.      38.      37.      37.      35.      34.      34.      33.
UI    32.      31.      31.      29.      29.      29.      27.      27.      27.      25.
UI    25.      25.      24.      23.      23.      22.      21.      21.      21.      20.
UI    19.      19.      19.      18.      18.      17.      17.      17.      16.      16.
UI    15.      15.      14.      14.      14.      13.      13.      13.      12.      12.
UI    12.      12.      11.      11.      11.      10.      10.      10.      10.      10.
UI    10.       9.       9.       9.       8.       8.       8.       8.       8.       7.
UI     7.       7.       7.       7.       7.       6.       6.       6.       6.       6.
UI     6.       6.       5.       5.       5.       5.       5.       5.       5.       5.
UI     5.       4.       4.       4.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G3A      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASG3A
KM       LOCAL DETENTION BASIN
KO     3
DT  G-46
DI     0.     66.   2066.
DQ     0.      0.   2000.
*
KK  CG3A
HC     2
*
KKR-CG3A
```

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KM      REACH EXTENDS FROM X-SECT.  10135.000 TO X-SECT.  12622.000
RS     5     FLOW      -1
SV    .0      3.3      7.3     10.7     13.8     16.6     19.4     22.0     24.5     27.1
SV  30.6     34.6
SQ    .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0
*
KK   G3B
KM      LANDUSE BASED ON SPA
BA  .131
LU   .10      .07    35.73
*
UI     4.       9.      15.      21.      34.      41.      50.      59.      68.      78.
UI    90.     103.     117.     119.     117.     114.     105.      96.      86.      78.
UI    67.      61.      57.      53.      49.      46.      43.      40.      35.      33.
UI    31.      29.      27.      26.      25.      23.      21.      20.      19.      18.
UI    17.      16.      16.      15.      14.      14.      13.      13.      12.      12.
UI    11.      11.      11.      10.       9.       9.       9.       8.       8.       8.
UI     8.       7.       7.       7.       6.       6.       6.       6.       6.       5.
UI     5.       5.       5.       4.       4.       4.       4.       4.       4.       3.
UI     3.       3.       3.       3.       3.       3.       3.       3.       2.       2.
UI     2.       2.       2.       2.       2.       2.       2.       2.       2.       2.
UI     2.       1.       1.       1.       1.       1.       1.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G3B      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASG3B
KM      LOCAL DETENTION BASIN
KO     3
DT  G-44
DI    0.      13.    2013.
DQ    0.       0.    2000.
*
KK   CG3B
KM      GERBER CROSSING #3
HC     2
*
KKR-CG3B
KM      REACH EXTENDS FROM X-SECT.   9051.000 TO X-SECT.  10135.000
RS     2     FLOW      -1
SV    .0      1.5      3.3      4.9      6.3      7.6      8.8     10.0     11.1     12.3
SV  13.9     16.0
SQ    .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0
*
KK   G3D
KM      LANDUSE BASED ON GENERAL PLAN -REVISED ON 3-28-96 BASED ON NORTH VIENYAR
BA  .570
LU   .10      .07    41.56
*
UI     7.       7.       7.      18.      18.      29.      29.      41.      41.      50.
UI    50.      66.      66.      80.      80.      96.      96.     113.     113.     132.
UI   132.     151.     151.     174.     174.     198.     198.     220.     220.     226.
UI   226.     229.     229.     226.     226.     220.     220.     203.     203.     184.
UI   184.     166.     166.     150.     150.     139.     139.     129.     129.     117.
UI   117.     110.     110.     103.     103.      95.      95.      89.      89.      83.
UI    83.      77.      77.      72.      72.      68.      68.      63.      63.      60.
UI    60.      56.      56.      53.      53.      50.      50.      48.      48.      45.
UI    45.      43.      43.      41.      41.      39.      39.      37.      37.      35.
UI    35.      34.      34.      31.      31.      31.      31.      29.      29.      28.
UI    28.      27.      27.      26.      26.      25.      25.      24.      24.      23.
UI    23.      23.      23.      22.      22.      21.      21.      20.      20.      20.
UI    20.      19.      19.      18.      18.      18.      18.      17.      17.      16.
UI    16.      16.      16.      15.      15.      15.      15.      14.      14.      14.
UI    14.      13.      13.      13.      13.      12.      12.      12.      12.      11.
UI    11.      11.      11.      11.      11.      10.      10.      10.      10.      10.
UI    10.       9.       9.       9.       9.       9.       9.       8.       8.       8.
UI     8.       8.       8.       7.       7.       7.       7.       7.       7.       7.
UI     7.       6.       6.       6.       6.       6.       6.       6.       6.       6.
UI     6.       5.       5.       5.       5.       5.       5.       5.       5.       5.
UI     5.       5.       5.       4.       4.       4.       4.       4.       4.       4.
UI     4.       4.       4.       4.       4.       4.       4.       4.       3.       3.
UI     3.       3.       3.       3.       3.       3.       3.       3.       3.       3.
UI     3.       3.       3.       3.       3.       3.       3.       3.       2.       2.
UI     2.       2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G3D      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASG3D
KM      LOCAL DETENTION BASIN
KO     3
DT  G-43
DI    0.      77.    2077.
DQ    0.       0.    2000.
*
KK  CG3D
HC     2
*
KK    G4
KM      LANDUSE BASED ON GENERAL PLAN -REVISED ON 3-28-96 BASED ON NORTH VIENYAR
BA  .578
LU   .10      .07    60.83
*
UI    13.      31.      50.      50.      71.      86.     115.     138.     166.     166.
UI   196.     228.     261.     301.     343.     382.     382.     391.     396.     391.
UI   382.     351.     319.     319.     287.     259.     242.     224.     203.     203.
UI   191.     178.     164.     154.     143.     134.     134.     124.     118.     110.
UI   104.      97.      92.      92.      87.      83.      78.      74.      70.      70.
UI    67.      64.      60.      58.      54.      53.      53.      50.      49.      47.
UI    46.      44.      42.      42.      40.      39.      38.      36.      35.      35.
UI    34.      32.      32.      30.      30.      28.      28.      28.      26.      25.
UI    24.      24.      23.      23.      22.      21.      20.      20.      19.      19.
UI    18.      18.      17.      17.      16.      15.      15.      15.      14.      14.
UI    13.      13.      12.      12.      12.      11.      11.      11.      10.      10.
UI    10.      10.      10.       9.       9.       9.       9.       8.       8.       8.
UI     7.       7.       7.       7.       7.       6.       6.       6.       6.       6.
UI     6.       5.       5.       5.       5.       5.       5.       5.       4.       4.
UI     4.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G4       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK BASG4
KM      LOCAL DETENTION BASIN
KO     3
DT  G-42
DI    0.      64.    2064.
DQ    0.       0.    2000.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G4+DET   C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
*
KK   CG4
KM Central California Traction Railroad U/S reach.
HC     2
KK R-CG4
KM      REACH EXTENDS FROM X-SECT.   6979.000 TO X-SECT.   9051.000
RS     4     FLOW      -1
SV    .0      2.9      6.6      9.6     12.4     14.9     17.3     19.6     21.9     24.9
SV  28.5     32.5
SQ    .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0
KK   G3C
KM      LANDUSE BASED ON SPA
BA  .228
LU   .10      .07    35.55
*
UI     8.      32.      46.      75.      89.     108.     148.     170.     223.     248.
UI   254.     254.     248.     207.     187.     168.     146.     132.     115.     106.
UI   100.      87.      81.      71.      67.      63.      57.      54.      48.      46.
UI    43.      39.      38.      34.      33.      32.      30.      28.      26.      25.
UI    24.      23.      22.      21.      20.      19.      18.      17.      16.      15.
UI    15.      14.      13.      12.      12.      12.      11.      10.      10.       9.
UI     9.       8.       8.       7.       7.       7.       6.       6.       6.       6.
UI     6.       5.       5.       5.       4.       4.       4.       4.       4.       3.
UI     3.       3.       3.       3.       3.       3.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G3C      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASG3C
KM      LOCAL DETENTION BASIN
KO     3
DT  G-41
DI    0.      22.    2022.
DQ    0.       0.    2000.
*
KK   CG3
KM Central California Traction Railroad D/S reach.
HC     2
KK R-CG3
KM      Route to confluence with Elder Creek
KM      REACH EXTENDS FROM X-SECT.      0.000 TO X-SECT.   6979.000
RS     5     FLOW      -1
SV    .0      10.7     23.1     33.2     42.4     50.7     58.6     66.1     73.2     80.0
SV  88.1     98.4
SQ    .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0
*
*       NOTE:   Local area of Gerber Creek at confluence is combined with
*               local area of Elder Creek at confluence.  Combined flows
*               area then diverted into a single detention basin.
*
*     ********************************************************
*     *    End Gerber Creek at Confluence with Elder Creek   *
*     ********************************************************
*
*     ***************************
*     *    Begin Elder Creek    *
*     ***************************
*
KK   E1A
KM  concentration point 1700 feet U/S from Jackson and Excelsior Roads
KM      Landuse different from future condition
BA 1.420
LU   .10      .07    61.39
*
UI    25.      25.      61.      98.      98.     139.     169.     169.     225.     270.
UI   270.     326.     383.     383.     447.     512.     590.     590.     673.     749.
UI   749.     767.     777.     777.     767.     749.     749.     688.     626.     626.
UI   563.     508.     508.     474.     439.     439.     399.     374.     374.     348.
UI   321.     321.     301.     280.     262.     262.     244.     231.     231.     216.
UI   204.     204.     191.     180.     180.     171.     162.     162.     153.     145.
UI   145.     138.     131.     131.     126.     118.     118.     114.     107.     107.
UI   104.      98.      96.      96.      92.      89.      89.      86.      82.      82.
UI    79.      77.      77.      74.      71.      71.      69.      66.      66.      64.
UI    62.      62.      59.      58.      58.      55.      54.      54.      51.      50.
UI    50.      48.      46.      45.      45.      43.      42.      42.      40.      39.
UI    39.      38.      36.      36.      35.      34.      34.      33.      31.      31.
UI    30.      29.      29.      28.      27.      27.      26.      25.      25.      24.
UI    23.      23.      23.      22.      21.      21.      20.      19.      19.      19.
UI    19.      19.      18.      17.      17.      17.      16.      16.      16.      15.
UI    15.      14.      14.      14.      13.      13.      13.      12.      12.      12.
UI    12.      11.      11.      11.      10.      10.      10.      10.       9.       9.
UI     9.       9.       9.       9.       8.       8.       8.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E1A      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASE1A
KM      LOCAL DETENTION BASIN
KO     3
DT  E-38
DI    0.     143.    2143.
DQ    0.       0.    2000.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E1A+DET C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
*
KK R-E1A
KM  route area E1A to concentration point CE1AC
KM      REACH EXTENDS FROM X-SECT.  57172.000 TO X-SECT.  63292.000
RS     5     FLOW      -1
SV    .0      6.7     14.4     22.2     28.7     34.8     40.6     46.2     51.5     56.8
SV  62.7     70.8     79.6     89.6
SQ    .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK   E1C
KM  concentration point at Elder Creek Road
KM      Landuse different from future condition
BA 1.416
LU   .10      .07    50.00
UI    25.      25.      61.      99.      89.     140.     171.     228.     228.     273.
UI   329.     329.     388.     453.     453.     518.     597.     597.     681.     757.
UI   757.     776.     786.     776.     776.     757.     696.     696.     634.     570.
UI   570.     514.     479.     479.     445.     404.     404.     378.     352.     325.
UI   325.     305.     284.     284.     265.     246.     246.     233.     218.     218.
UI   206.     193.     193.     182.     173.     164.     164.     154.     147.     147.
UI   140.     132.     132.     127.     119.     119.     115.     108.     108.     105.
UI    99.      97.      97.      93.      90.      90.      87.      83.      83.      80.
UI    78.      78.      75.      72.      72.      70.      67.      64.      64.      63.
UI    60.      60.      59.      56.      56.      55.      52.      52.      50.      48.
UI    47.      47.      45.      44.      44.      42.      40.      40.      39.      38.
UI    38.      37.      35.      35.      34.      33.      32.      32.      31.      29.
UI    29.      29.      27.      27.      26.      25.      25.      24.      24.      24.
UI    23.      22.      21.      21.      20.      20.      20.      19.      19.      19.
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UI   18.    18.    18.    17.    16.    16.    16.    15.    15.    15.
UI   14.    13.    13.    13.    13.    13.    12.    12.    12.    11.
UI   11.    11.    11.    10.    10.    10.     9.     9.     9.     9.
UI    9.     9.     8.     8.     8.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E1C     C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
KKBASE1C
KM       LOCAL DETENTION BASIN
KO     3
DT  E-37
DI    0.     135.   2135.
DQ    0.      0.    2000.
*
KK CE1AC
KM  combine subarea E1A with previously combined area E1C
HC     2
*
KK   E1B
KM  concentration point d/s of Shagil reservoir
KM       Landuse different from future condition
BA 1.247
LU   .10      .07   52.41
*
UI   15.    15.    15.    36.    36.    59.    59.    83.    83.   101.
UI  101.   135.   135.   135.   162.   162.   195.   195.   230.   230.
UI  268.   268.   307.   307.   353.   353.   353.   403.   403.   448.
UI  448.   459.   459.   465.   465.   459.   459.   448.   448.   448.
UI  412.   412.   375.   375.   337.   337.   304.   304.   284.   284.
UI  263.   263.   239.   239.   239.   224.   224.   208.   208.   192.
UI  192.   180.   180.   168.   168.   157.   157.   157.   146.   146.
UI  138.   138.   129.   129.   122.   122.   114.   114.   108.   108.
UI  108.   102.   102.    97.    97.    91.    91.    87.    87.    83.
UI   83.    78.    78.    78.    75.    75.    71.    71.    68.    68.
UI   64.    64.    62.    62.    59.    59.    59.    57.    57.    55.
UI   55.    54.    54.    51.    51.    49.    49.    47.    47.    47.
UI   46.    46.    44.    44.    43.    43.    41.    41.    40.    40.
UI   38.    38.    37.    37.    37.    36.    36.    35.    35.    33.
UI   33.    32.    32.    31.    31.    30.    30.    30.    29.    29.
UI   28.    28.    27.    27.    26.    26.    25.    25.    24.    24.
UI   24.    23.    23.    23.    23.    22.    22.    21.    21.    20.
UI   20.    20.    20.    20.    19.    19.    18.    18.    17.    17.
UI   17.    17.    16.    16.    16.    16.    16.    15.    15.    14.
UI   14.    14.    14.    13.    13.    13.    13.    13.    13.    13.
UI   12.    12.    12.    12.    11.    11.    11.    11.    11.    11.
UI   10.    10.    10.    10.    10.    10.    10.     9.     9.     9.
UI    9.     9.     9.     8.     8.     8.     8.     8.     8.     8.
UI    7.     7.     7.     7.     7.     7.     7.     7.     7.     7.
UI    7.     6.     6.     6.     6.     6.     6.     6.     6.     6.
UI    6.     5.     5.     5.     5.     5.     5.     5.     5.     5.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E1B     C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
KKBASE1B
KM       LOCAL DETENTION BASIN
KO     3
DT  E-36
DI    0.     112.   2112.
DQ    0.      0.    2000.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E1B+DET C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
*
*
KK R-E1B
KM  route from Shagil reservoir to Elder Creek Road
*   cross-section has a 10' bottom width and 2.5 to 1 side slopes and is sized
*   to contain the 10 year ultimate flow of 364 cfs at about a 6 foot depth.
*   original cross-section Surveyed March 14, 1994 by John Alexander.
RC  .060    .050    .060   3500.    .0003
RX    .00   50.00   73.90   98.00  108.00  132.20  166.00  216.00
RY 13.70   13.00   12.10    2.50    2.50   12.20   13.70   15.50
KK CE1AB
KM  combine subareas E1A and E1B and E1C physically at concentration point CE1AB
HC     2
KK   CE1
KM  route from the 42" cross culvert at Elder Creek Road to concentration
KM  point CE1
KM       REACH EXTENDS FROM X-SECT.  54812.000 TO X-SECT.  57172.000
RS     4      FLOW      -1
SV    .0     2.9     6.5     9.5    12.1    14.6    17.0    19.3    21.4    23.4
SV  25.4    28.0    30.9    34.8
SQ     .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK R-CE1
KM       REACH EXTENDS FROM X-SECT.  40302.000 TO X-SECT.  54812.000
RS     5      FLOW      -1
SV    .0     20.4    44.3    64.1    81.9    98.4   114.1   129.1   146.3   174.9
SV 205.6   233.4   261.6   289.2
SQ     .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK     E2
KM       Elder Creek south of Elder Creek Road
KM       Landuse different from future condition
BA 1.105
LU   .10      .07   50.00
*
UI   12.    12.    12.    30.    30.    49.    49.    49.    69.    69.
UI   84.    84.   112.   112.   134.   134.   134.   162.   162.   191.
UI  191.   223.   223.   223.   255.   255.   293.   293.   335.   335.
UI  335.   372.   372.   381.   381.   386.   386.   386.   381.   381.
UI  372.   372.   342.   342.   311.   311.   311.   280.   280.   253.
UI  253.   235.   235.   235.   218.   218.   198.   198.   186.   186.
UI  186.   173.   173.   160.   160.   150.   150.   150.   139.   139.
UI  130.   130.   121.   121.   115.   115.   115.   107.   107.   101.
UI  101.    95.    95.    95.    89.    89.    85.    85.    81.    81.
UI   81.    76.    76.    72.    72.    69.    69.    69.    65.    65.
UI   63.    63.    59.    59.    57.    57.    57.    53.    53.    52.
UI   52.    49.    49.    49.    48.    48.    46.    46.    44.    44.
UI   44.    43.    43.    41.    41.    39.    39.    39.    38.    38.
UI   37.    37.    35.    35.    34.    34.    34.    33.    33.    32.
UI   32.    31.    31.    31.    30.    30.    29.    29.    27.    27.
UI   27.    27.    27.    25.    25.    25.    25.    25.    24.    24.
UI   23.    23.    22.    22.    21.    21.    21.    21.    21.    20.
UI   20.    19.    19.    19.    19.    19.    18.    18.    17.    17.
UI   17.    17.    17.    16.    16.    16.    16.    15.    15.    15.
UI   14.    14.    14.    14.    13.    13.    13.    13.    13.    12.
UI   12.    12.    12.    12.    12.    12.    11.    11.    11.    11.
UI   11.    10.    10.    10.    10.    10.    10.    10.     9.     9.
UI    9.     9.     9.     9.     9.     9.     9.     8.     8.     8.
UI    8.     8.     8.     8.     8.     8.     7.     7.     7.     7.
UI    7.     7.     7.     6.     6.     6.     6.     6.     6.     6.
UI    6.     6.     6.     6.     5.     5.     5.     5.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     5.     4.     4.
UI    4.     4.     4.     4.     4.     4.     4.     4.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E2      C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
KK BASE2
KM       LOCAL DETENTION BASIN
KO     3
DT  E-32
DI    0.     96.   2096.
DQ    0.      0.   2000.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E2+DET  C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
*
KK  CE12
KM concentration pt 5000 ft U/S of Florin Rd
HC     2
KK     E3
KM       LANDUSE DIFFERS FROM GENERAL PLAN
BA  .742
LU   .10      .07   50.00
*
UI   12.    12.    29.    29.    46.    65.    65.    80.   106.   106.
UI  127.   127.   154.   181.   181.   211.   211.   242.   278.   278.
UI  317.   317.   353.   362.   362.   366.   362.   362.   353.   353.
UI  325.   295.   295.   266.   266.   240.   223.   223.   207.   207.
UI  188.   176.   176.   164.   151.   151.   142.   142.   132.   124.
UI  124.   115.   115.   109.   102.   102.    96.    90.    90.    85.
UI   85.    80.    77.    77.    72.    72.    68.    65.    65.    62.
UI   62.    59.    56.    56.    54.    50.    50.    49.    49.    46.
UI   45.    45.    43.    43.    42.    40.    40.    39.    39.    37.
UI   36.    36.    35.    34.    34.    33.    33.    31.    30.    30.
UI   29.    29.    28.    27.    27.    26.    26.    25.    24.    24.
UI   23.    23.    23.    22.    22.    21.    20.    20.    20.    20.
UI   19.    18.    18.    18.    17.    17.    16.    16.    16.    15.
UI   15.    15.    15.    14.    14.    14.    13.    13.    13.    12.
UI   12.    12.    11.    11.    11.    11.    11.    10.    10.    10.
UI   10.    10.     9.     9.     9.     9.     9.     8.     8.     8.
UI    8.     8.     8.     8.     7.     7.     7.     7.     7.     7.
UI    6.     6.     6.     6.     6.     6.     6.     5.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     4.     4.     4.
UI    4.     4.     4.     4.     4.     4.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E3      C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
KK BASE3
KM       LOCAL DETENTION BASIN
KO     3
DT  E-31
DI    0.     70.   2070.
DQ    0.      0.   2000.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E3+DET  C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
*
KK  CE23
KM concentration pt 5000 ft U/S of Florin Rd
HC     2
KKR-CE23
KM       ROUTE TO FLORIN ROAD
KM       REACH EXTENDS FROM X-SECT.  35677.000 TO X-SECT.  40302.000
RS     5      FLOW      -1
SV    .0     7.8    16.4    23.4    29.7    35.6    41.1    46.3    51.4    56.3
SV  64.4    77.2    87.4    97.9
SQ     .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK    E4B
KM       LANDUSE DIFFERS FROM GENERAL PLAN
BA 1.000
LU   .10      .07   50.00
*
UI   14.    14.    35.    35.    56.    56.    79.    79.    97.    97.
UI  128.   154.   154.   186.   186.   219.   219.   255.   255.   292.
UI  336.   336.   384.   384.   427.   427.   437.   437.   443.   443.
UI  437.   427.   427.   392.   392.   357.   357.   321.   321.   290.
UI  270.   270.   250.   250.   227.   227.   213.   213.   198.   198.
UI  183.   172.   172.   160.   160.   149.   149.   139.   139.   132.
UI  132.   123.   116.   116.   109.   109.   103.   103.    97.    97.
UI   93.    87.    87.    83.    83.    79.    79.    75.    75.    72.
UI   72.    67.    65.    65.    61.    61.    59.    59.    56.    56.
UI   55.    52.    52.    51.    51.    49.    49.    47.    47.    45.
UI   45.    44.    42.    42.    41.    41.    39.    39.    38.    38.
UI   36.    36.    35.    34.    34.    33.    33.    31.    31.    31.
UI   31.    29.    28.    28.    27.    27.    26.    26.    25.    25.
UI   25.    25.    24.    23.    23.    22.    22.    21.    21.    21.
UI   21.    20.    19.    19.    19.    19.    18.    18.    17.    17.
UI   17.    17.    16.    15.    15.    15.    15.    14.    14.    14.
UI   14.    13.    13.    13.    12.    12.    12.    12.    12.    12.
UI   11.    11.    11.    11.    11.    10.    10.    10.    10.    10.
UI   10.     9.     9.     9.     9.     9.     8.     8.     8.     8.
UI    8.     8.     7.     7.     7.     7.     7.     7.     7.     6.
UI    6.     6.     6.     6.     6.     6.     6.     6.     5.     5.
UI    5.     5.     5.     5.     5.     5.     5.     5.     5.
*
* ------------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E4B     C=FLOW F=HEC1ULT
*
* ------------------------------------------------
*
KKBASE4B
KM       LOCAL DETENTION BASIN
KO     3
DT  E-28
DI    0.     92.   2092.
DQ    0.      0.   2000.
*
KK  CE4B
HC     2
*
KK   E4A
KM   LANDUSE BASED ON SPA
BA  .650
LU   .10      .07   35.58
*
UI   10.    10.    25.    25.    40.    57.    57.    70.    70.    93.
UI  111.   111.   134.   158.   158.   185.   185.   211.   243.   243.
UI  277.   277.   309.   316.   316.   320.   320.   316.   309.   309.
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UI  284.   258.   258.   232.   232.   210.   195.   195.   181.   181.
UI  165.   154.   154.   144.   144.   132.   124.   124.   116.   108.
UI  108.   100.   100.    95.    89.    89.    84.    84.    79.    74.
UI   74.    70.    70.    67.    63.    63.    60.    57.    57.    54.
UI   54.    52.    49.    49.    47.    47.    44.    43.    43.    41.
UI   41.    40.    38.    38.    37.    35.    35.    34.    34.    33.
UI   32.    32.    30.    30.    29.    29.    29.    27.    27.    26.
UI   26.    26.    25.    24.    24.    23.    23.    22.    21.    21.
UI   21.    21.    20.    19.    19.    18.    18.    18.    17.    17.
UI   17.    16.    16.    16.    16.    15.    14.    14.    14.    14.
UI   13.    13.    13.    12.    12.    12.    12.    12.    11.    11.
UI   11.    10.    10.    10.    10.    10.     9.     9.     9.     9.
UI    9.     8.     8.     8.     8.     8.     8.     7.     7.     7.
UI    7.     7.     7.     7.     6.     6.     6.     6.     6.     6.
UI    6.     5.     5.     5.     5.     5.     5.     5.     5.     5.
UI    4.     4.     4.     4.     4.     4.     4.     4.     4.     4.
UI    4.     4.     4.     4.     3.     3.     3.     3.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E4A      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKBASE4A
KM       LOCAL DETENTION BASIN
KO     3
DT  E-26
DI     0.     56.   2056.
DQ     0.      0.   2000.
*
KK    CE4
KM Central California Traction Railroad
HC     2
KK R-CE4
KM       REACH EXTENDS FROM X-SECT.  29357.000 TO X-SECT.  35677.000
RS      5     FLOW       -1
SV     .0     11.5     24.5     35.0     44.3     52.9     61.0     68.7     75.9     82.8
SV   89.5     95.8    101.8    109.1
SQ      .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK     E5
KM       LANDUSE BASED ON SPA
BA   .333
LU    .10      .07    35.59
*
UI     6.       6.      15.      25.      35.      35.      42.      57.      68.      68.
UI    82.      96.      96.     112.     129.     148.     148.     169.     188.     192.
UI   192.     195.     192.     192.     188.     173.     157.     157.     141.     127.
UI   127.     119.     110.     100.     100.      94.      87.      81.      81.      76.
UI    70.      70.      66.      51.      50.      58.      54.      51.      48.      48.
UI    45.      43.      43.      41.      38.      36.      36.      35.      33.      32.
UI    32.      30.      29.      29.      27.      26.      25.      25.      24.      23.
UI    22.      22.      22.      21.      21.      20.      19.      19.      19.      18.
UI    17.      17.      17.      16.      16.      16.      15.      15.      14.      14.
UI    14.      13.      13.      12.      12.      12.      12.      11.      11.      10.
UI    10.      10.      10.      10.       9.       9.       9.       9.       8.       8.
UI     8.       8.       8.       7.       7.       7.       7.       7.       7.       6.
UI     6.       6.       6.       6.       5.       5.       5.       5.       5.       5.
UI     5.       5.       4.       4.       4.       4.       4.       4.       4.       4.
UI     4.       4.       4.       4.       3.       3.       3.       3.       3.       3.
UI     3.       3.       3.       3.       3.       3.       2.       2.       2.       2.
UI     2.       2.       2.       2.       2.       2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK UPPER B=E5       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK    G5
KM       LANDUSE BASED ON SPA
BA   .394
LU    .10      .07    35.56
*
UI     7.       7.      18.      29.      40.      40.      49.      66.      66.      79.
UI    95.     112.     112.     130.     149.     149.     172.     196.     218.     218.
UI   223.     226.     226.     223.     218.     200.     200.     182.     164.     164.
UI   148.     138.     138.     128.     116.     109.     109.     101.      94.      94.
UI    88.      82.      76.      76.      71.      67.      67.      63.      59.      56.
UI    56.      52.      50.      50.      47.      44.      42.      42.      40.      38.
UI    38.      37.      34.      33.      33.      31.      30.      30.      29.      28.
UI    27.      27.      26.      25.      25.      24.      23.      22.      22.      21.
UI    21.      21.      20.      19.      19.      19.      18.      17.      17.      17.
UI    16.      16.      16.      15.      14.      14.      14.      13.      13.      13.
UI    13.      12.      12.      12.      11.      11.      11.      11.      10.      10.
UI    10.      10.      10.       9.       9.       8.       8.       8.       8.       8.
UI     8.       7.       7.       7.       7.       7.       7.       6.       6.       6.
UI     6.       6.       6.       6.       5.       5.       5.       5.       5.       5.
UI     5.       5.       4.       4.       4.       4.       4.       4.       4.       4.
UI     4.       4.       3.       3.       3.       3.       3.       3.       3.       3.
UI     3.       3.       3.       3.       3.       2.       2.       2.       2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=GERBER CREEK B=G5       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KKC-E5G5
KM Local area at confluence of Elder and Gerber
HC     2
*
KKBASEG5
KM       LOCAL DETENTION BASIN FOR SUBAREAS E5 AND G5
KO     3
DT  E-23
DI     0.     65.   2065.
DQ     0.      0.   2000.
*
KK    CEG
KM Elder and Gerber Creeks combined
HC     3
ZW A=ELDER CREEK B=CONFLUENCE C=FLOW F=ALT A
*
KK R-CEG
KM       REACH EXTENDS FROM X-SECT.  27367.000 TO X-SECT.  29357.000
RS      4     FLOW       -1
SV     .0      5.7     11.1     15.2     18.7     22.0     25.0     27.8     30.5     32.9
SV   36.1     39.8     43.6     47.5
SQ      .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK     E6
KM       Elder Creek @ Elk Grove-Florin Road
BA   .211
LU    .10      .07    50.00
UI     7.      16.      37.      46.      61.      73.     103.     121.     138.     159.
UI   202.     207.     209.     207.     202.     169.     152.     137.     128.     107.
UI   101.      94.      87.      76.      71.      66.      62.      58.      51.      48.
UI    46.      44.      39.      37.      35.      34.      32.      29.      28.      26.
UI    26.      24.      23.      22.      21.      20.      19.      19.      18.      17.
UI    16.      16.      15.      15.      13.      13.      12.      12.      11.      11.
UI    10.      10.      10.       9.       9.       8.       8.       8.       7.       7.
UI     7.       6.       6.       6.       6.       5.       5.       5.       5.       5.
UI     4.       4.       4.       4.       4.       3.       3.       3.       3.       3.
UI     3.       3.       3.       3.       2.       2.       2.       2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E6       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK    CE6
KM Elk Grove - Florin Road
HC     2
*
KKBASN20
KM       REGIONAL DETENTION BASIN
KO     3
DT REG20
DI     0.   1000.   2000.
DQ     0.      0.   1000.
ZW B=EG FLORIN RD
*
KK R-CE6
KM       REACH EXTENDS FROM X-SECT.  22917.000 TO X-SECT.  27367.000
RS      5     FLOW       -1
SV     .0     11.0     20.5     28.0     34.6     40.7     46.6     52.2     59.1     67.2
SV   80.7     95.2    108.8    114.4
SQ      .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK     E7
KM       Elder Creek east of French Road
BA   .722
LU    .10      .07    54.09
UI    16.      38.      62.      62.      88.     107.     143.     171.     206.     206.
UI   243.     283.     324.     373.     426.     474.     474.     486.     492.     486.
UI   474.     436.     436.     396.     357.     322.     300.     278.     278.     253.
UI   237.     220.     203.     191.     178.     178.     166.     154.     146.     137.
UI   129.     129.     121.     114.     108.     103.      97.      92.      92.      87.
UI    83.      80.      75.      72.      72.      68.      66.      62.      61.      58.
UI    57.      57.      54.      52.      50.      49.      47.      47.      45.      44.
UI    42.      40.      39.      39.      38.      37.      35.      34.      32.      31.
UI    31.      30.      29.      28.      27.      26.      26.      25.      25.      24.
UI    23.      22.      21.      21.      21.      20.      19.      18.      18.      18.
UI    17.      16.      16.      15.      15.      14.      14.      14.      13.      13.
UI    12.      12.      12.      12.      11.      11.      11.      10.      10.      10.
UI    10.       9.       9.       8.       8.       8.       8.       8.       7.       7.
UI     7.       7.       7.       6.       6.       6.       6.       6.       6.       5.
UI     5.       5.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E7       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK    CE7
KM concentration point 1400 ft U/S of French Road
HC     2
KK R-CE7
KM       REACH EXTENDS FROM X-SECT.  20557.000 TO X-SECT.  22917.000
RS      4     FLOW       -1
SV     .0      6.8     11.9     15.8     18.4     21.4     24.1     26.7     29.2     31.6
SV   35.6     38.7     51.1     75.3
SQ      .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK     E8
KM       Elder Creek @ SPRR
BA   .250
LU    .10      .07    57.48
UI     6.      15.      24.      34.      41.      55.      66.      80.      80.      94.
UI   110.     125.     144.     165.     183.     188.     190.     188.     183.     168.
UI   153.     138.     124.     116.     108.      98.      98.      92.      85.      79.
UI    74.      69.      64.      60.      56.      53.      50.      47.      44.      42.
UI    40.      37.      35.      35.      34.      32.      31.      29.      28.      26.
UI    25.      24.      23.      23.      22.      21.      20.      19.      19.      18.
UI    17.      17.      17.      16.      16.      15.      15.      14.      14.      13.
UI    13.      12.      12.      11.      11.      11.      10.      10.      10.      10.
UI     9.       9.       9.       8.       8.       8.       7.       7.       7.       7.
UI     6.       6.       6.       6.       6.       5.       5.       5.       5.       5.
UI     5.       5.       4.       4.       4.       4.       4.       4.       4.       3.
UI     3.       3.       3.       3.       3.       3.       3.       3.       3.       2.
UI     2.       2.       2.       2.       2.       2.       2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E8       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK    CE8
KM S.P.R.R.
HC     2
ZW B=SPRR
KK R-CE8
KM       REACH EXTENDS FROM X-SECT.  16997.000 TO X-SECT.  20557.000
RS      5     FLOW       -1
SV     .0      7.2     14.3     20.0     24.9     29.4     33.6     37.5     41.3     44.9
SV   48.8     52.6     59.0     63.0
SQ      .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK     E9
KM       Elder Creek south of Gerber Road
BA   .428
LU    .10      .07    60.49
UI    12.      28.      46.      65.      79.     106.     127.     153.     210.     240.
UI   277.     316.     351.     360.     365.     360.     351.     323.     294.     264.
UI   238.     222.     206.     187.     176.     163.     141.     132.     123.     114.
UI   108.     101.      96.      90.      84.      80.      76.      72.      68.      65.
UI    61.      59.      55.      53.      49.      46.      45.      43.      42.      40.
UI    39.      37.      36.      35.      33.      32.      31.      30.      29.      28.
UI    27.      26.      24.      23.      22.      22.      21.      20.      20.      19.
UI    18.      18.      17.      16.      16.      15.      15.      14.      14.      13.
UI    12.      12.      11.      11.      11.      10.      10.       9.       9.       9.
UI     9.       8.       8.       8.       7.       7.       7.       7.       6.       6.
UI     6.       6.       5.       5.       5.       5.       5.       5.       4.       4.
UI     4.       4.       4.       4.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E9       C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK    CE9
KM Gerber Road
HC     2
KK R-CE9
KM       REACH EXTENDS FROM X-SECT.  15167.000 TO X-SECT.  16997.000
RS      2     FLOW       -1
SV     .0      2.9      6.1      8.5     10.6     12.5     14.3     16.0     17.6     19.4
SV   21.4     24.2     28.8     35.8
SQ      .0    100.0    300.0    500.0    700.0    900.0   1100.0   1300.0   1500.0   1700.0
SQ1900.0   2100.0   2300.0   2500.0
KK    E10
KM       Elder Creek @ Power Inn Road
BA   .284
LU    .10      .07    50.21
UI     8.      20.      33.      57.      75.      90.     109.     128.     150.     171.
```

```
UI  197.   250.   256.   260.   256.   250.   230.   209.   170.   158.
UI  147.   133.   125.   116.   107.   101.    88.    81.    77.    72.
UI   68.    64.    60.    54.    51.    48.    46.    44.    42.    39.
UI   38.    35.    33.    32.    31.    30.    29.    28.    26.    25.
UI   24.    23.    22.    21.    21.    20.    18.    18.    17.    17.
UI   16.    15.    15.    14.    13.    13.    13.    12.    12.    11.
UI   11.    10.    10.     9.     9.     9.     8.     8.     8.     7.
UI    7.     7.     6.     6.     6.     6.     6.     5.     5.     5.
UI    5.     5.     4.     4.     4.     4.     4.     4.     4.     3.
UI    3.     3.     3.     3.     3.     3.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E10      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK  CE10
KM Power Inn Road
HC     2
ZW B=POWER INN RD
KKR-CE10
KM       REACH EXTENDS FROM X-SECT.  13607.000 TO X-SECT.  15167.000
RS     2    FLOW      -1
SV    .0     1.8     4.0     5.8     7.4     9.0    10.4    11.8    13.4    14.9
SV  16.4    18.1    20.0    22.6
SQ    .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK   E11
KM       Elder Creek
BA  .235
LU   .10     .07   53.02
UI    8.    32.     45.     55.     88.    106.    124.    166.    191.    218.
UI  249.   252.    249.    223.    203.    183.    154.    142.    129.    113.
UI  104.    98.     85.     79.     75.     66.     62.     58.     53.     50.
UI   47.    42.     41.     38.     35.     34.     32.     30.     29.     28.
UI   27.    25.     24.     23.     22.     21.     20.     19.     18.     18.
UI   16.    15.     15.     14.     13.     13.     12.     12.     11.     11.
UI   10.    10.      9.      9.      8.      8.      8.      7.      7.      7.
UI    6.     6.      6.      6.      5.      5.      5.      5.      4.      4.
UI    4.     4.      4.      3.      3.      3.      3.      3.      3.      3.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E11      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK  CE11
KM Palmerhouse Drive
HC     2
KKR-CE11
KM       REACH EXTENDS FROM X-SECT.  10797.000 TO X-SECT.  13607.000
RS     3    FLOW      -1
SV    .0     3.9     7.7    10.6    13.1    15.4    17.5    19.3    21.3    23.3
SV  25.2    27.2    29.5    33.9
SQ    .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK   E12
KM       Elder Creek @ Stockton Boulevard
BA  .402
LU   .10     .07   66.75
UI   10.    25.     41.     57.     70.     93.    112.    135.    159.    185.
UI  212.   244.    279.    310.    318.    322.    318.    310.    285.    260.
UI  233.   211.    196.    182.    165.    155.    144.    133.    125.    116.
UI  109.   101.     96.     89.     84.     79.     75.     71.     67.     63.
UI   60.    57.     54.     52.     49.     47.     44.     43.     41.     40.
UI   38.    37.     36.     34.     33.     32.     31.     29.     29.     28.
UI   26.    26.     25.     24.     23.     22.     21.     21.     20.     19.
UI   19.    19.     18.     17.     17.     16.     16.     15.     14.     14.
UI   14.    13.     13.     12.     12.     11.     11.     10.     10.     10.
UI    9.     9.      9.      8.      8.      8.      8.      7.      7.      7.
UI    7.     6.      6.      6.      6.      5.      5.      5.      5.      5.
UI    5.     5.      4.      4.      4.      4.      4.      4.      4.      3.
UI    3.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E12      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK  CE12
KM Stockton Blvd.
HC     2
ZW B=STOCKTON BLVD
KKR-CE12
KM       REACH EXTENDS FROM X-SECT.   8742.000 TO X-SECT.  10797.000
RS     2    FLOW      -1
SV    .0     1.7     4.8     8.1    11.1    13.7    16.2    18.5    20.7    22.8
SV  24.8    26.7    28.5    30.6
SQ    .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK   E13
KM       Elder Creek @ Highway-99 (City Limits)
BA  .195
LU   .10     .07   76.59
UI    7.    28.     40.     64.     77.     93.    128.    146.    192.    213.
UI  219.   219.    213.    179.    161.    135.    125.    114.     99.     92.
UI   80.    75.     69.     61.     58.     51.     49.     46.     41.     39.
UI   36.    34.     32.     30.     28.     26.     25.     23.     23.     22.
UI   20.    20.     18.     18.     17.     16.     15.     14.     14.     13.
UI   12.    12.     11.     11.     10.     10.      9.      9.      8.      8.
UI    7.     7.      7.      6.      6.      6.      6.      5.      5.      5.
UI    5.     4.      4.      4.      4.      4.      3.      3.      3.      3.
UI    3.     3.      3.      2.      2.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E13      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK  CE13
KM Highway 99
HC     2
*
KKBASN05
KM       REGIONAL DETENTION BASIN
KO     3
DT REG05
DI     0.   1570.   2570.
DQ     0.      0.   1000.
ZW B=HIGHWAY 99
*
KKR-CE13
KM       REACH EXTENDS FROM X-SECT.   5666.000 TO X-SECT.   8742.000
RS     3    FLOW      -1
SV    .0     4.0     8.5    12.0    15.1    18.0    20.7    23.3    25.8    28.1
SV  30.5    32.7    34.9    37.5
SQ    .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
KK   E14
KM       Elder Creek @ Center Parkway
BA 1.364
LU   .10     .07   61.33
UI   25.    25.     60.     97.     97.    137.    168.    223.    223.    267.
UI  322.   322.    379.    443.    443.    507.    583.    665.    665.    740.
UI  758.   758.    768.    758.    758.    740.    681.    619.    619.    557.
UI  503.   503.    468.    435.    435.    395.    370.    344.    344.    318.
UI  298.   298.    277.    259.    259.    241.    228.    213.    213.    201.
UI  189.   189.    178.    169.    169.    161.    151.    143.    143.    136.
UI  129.   129.    124.    117.    117.    113.    106.    106.    103.     97.
UI   95.    95.     91.     88.     88.     85.     81.     81.     78.     76.
UI   73.    73.     70.     68.     68.     66.     63.     63.     61.     59.
UI   57.    57.     55.     53.     53.     51.     49.     49.     47.     46.
UI   44.    44.     43.     41.     41.     40.     38.     38.     37.     36.
UI   35.    35.     33.     32.     32.     31.     30.     30.     29.     28.
UI   27.    27.     26.     25.     25.     24.     23.     23.     22.     22.
UI   22.    21.     20.     19.     19.     19.     18.     18.     18.     17.
UI   17.    17.     16.     15.     15.     15.     14.     14.     14.     13.
UI   13.    13.     12.     12.     12.     12.     11.     11.     11.     10.
UI   10.    10.     10.      9.      9.      9.      9.      9.      8.      8.
UI    8.     8.
*
* ---------------------------------------------
* THIS STATEMENT WRITES A SUB-BASIN HYDROGRAPH TO DSS FOR APPLICATION BY UNET
*
ZW A=ELDER CREEK LOWER B=E14      C=FLOW F=HEC1ULT
*
* ---------------------------------------------
*
KK R-E14
KM Pump routing Corps model (point kk 570920)
RS     1    STOR      -1.
SV    .0     2.3     4.7     7.0   100.0
SQ    .0    56.0   113.0   169.0   175.0
KK  CE14
KM Center Parkmay
HC     2
KKR-CE14
KM       REACH EXTENDS FROM X-SECT.    910.000 TO X-SECT.   5666.000
RS     5    FLOW      -1
SV    .0     6.3    12.9    18.3    22.9    27.1    31.2    34.9    38.6    42.0
SV  45.5    48.8    52.1    55.5
SQ    .0   100.0   300.0   500.0   700.0   900.0  1100.0  1300.0  1500.0  1700.0
SQ1900.0  2100.0  2300.0  2500.0
*
*  KKFLORIN
*  KM Retrieve Florin Creek hydrograph
*  BA  4.18
*  ZR=QI A=FLORIN CREEK B=CONFLUENCE C=FLOW D=01JAN1999 E=2MIN F=FUTURE CONDITIO
*  KK  CE15
*  HC     2
*
ZZ
*
*  NUMBER OF SUBBASINS FOR WHICH DATA WAS ENTERED DOES NOT
*  EQUAL THE NUMBER OF SUBBASINS ENTERED IN THE MAIN MENU.
*
*  DATA WAS ENTERED FOR 25 SUBBASINS.
*  DATA WAS EXPECTED FOR 21 SUBBASINS.
*
*
*  SUMMED AREA OF SUBBASINS DOES NOT EQUAL TOTAL AREA.
*  SUMMED AREA OF SUBBASINS =     16.690
*  TOTAL AREA =                   20.866
*
```

SUB-APPENDIX 5

STAFF RECOMMENDATIONS ON DETENTION BASINS AND STORM CENTERING ANALYSIS

COUNTY OF SACRAMENTO
INTER-DEPARTMENT CORRESPONDENCE
WATER RESOURCES DIVISION
MEMORANDUM

DATE: January 25, 1996

TO: Keith DeVore
Drainage Master Planning, Water Resources Division

FROM: Terri Wegener
Drainage Master Planning, Water Resources Division

DISTRIBUTION:
George Phillips, Phillips & Sandberg
Les Clark, MacKay & Somps
Tom Truszkowski, Planning
Robert Davison, Public Plan. & Infrastr.
Sabrina Okamura Johnson, DERA
Craig Crouch, WRD
Dennis Yeast, DERA
Roberta Hettick, WRD
Gary Parker
file: 309/77.04

SUBJECT: **Staff Recommendation on Detention Basins**
Elder and Gerber Creeks, North Vineyard Station Specific Plan

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Purpose

To transmit the findings of our sensitivity analysis, including the effect of higher existing conditions flow at the Sacramento City Limit and adding basin E20 to the North Vineyard Station (NVS) Stand Alone condition.

Objectives

The objectives of this study are:

1) To determine the effect of storm centering on flow results at the Sacramento City Limit (please see Appendix B).

2) To examine the possibility of reducing the detention volume in light of the fact that the existing conditions "target" flow at the City Limit was recently raised.

3) To determine what effect this higher allowable flow had on the WRD's recommendations regarding basin E20.

4) To determine the effectiveness of the basins by isolating each basin and examining the resultant flow/stage at the City Limit.

Conclusion

Basin E20

Basin E20 is required. In addition to the strict criteria of flow and stage that this report identifies, overall system reliability is a factor. Construction should occur with the initial phases of the NVS construction.

The WRD recommends a large basin downstream of the confluence to account for variability in timing of actual floods compared to the design event. As stated in our December 3, 1996, comments placement of this large basin downstream of the confluence of Elder and Gerber Creeks provides flexibility in the system for timing variability on either creek and in the NVS development. System reliability will be maintained with the construction of E20 because the basin can mitigate *variations in timing between peak flow and peak stage*. Please see the section titled "Basin E24A" at the end of this report for the discussion of why basin E24A does not work in this capacity.

With regard to stage constraints, basin E20 is most critical in the Stand Alone condition. Thus, it is also critical to the wide set of "interim" conditions prior to completion of the Ultimate project (which could reasonably be more than twenty years). Moreover, earlier construction of basin E20 allows flexibility in the "interim" development stages and provides the most flexibility for phased construction of the NVS development.

Results

Flow

The basins planned for the Stand Alone and Ultimate conditions meet the drainage plan objectives regarding flow at the City Limits without basin E20. The NVS basins can be reduced in size and still meet the flow criteria at the City Limit (just barely for the Stand Alone condition).

Stage

However, the study also finds a stage increase of approximately 0.5 feet downstream of the City Limit that will be unmitigated without the addition of basin E20 in the Stand Alone condition. The stage increase occurs in both the reduced and unreduced NVS basin volume scenarios. basin E20 reduces this to 0.2 feet or less for various scenarios.

Findings The following is a general discussion of the study findings. For detailed information see the three individual scenarios listed in Appendix A.

Findings

1) Predictably, raising the allowable flow at the City Limit lowered the amount of detention needed upstream of that point to meet the Existing condition "target" flow (at the City Limit) in the Stand Alone and Ultimate conditions.

2) However, the study shows that reducing the NVS detention volumes to more closely match the Existing condition flow at the City Limit increases the stage in the City of Sacramento (stage being the more accurate indicator of downstream damage of a project). basin E20 provides some mitigation for this effect.

The reduced basin sizes are generated from the incidental flood control volume provided by the storm water quality (SWQ) basin "footprint." The total NVS detention volume is reduced by approximately 27 percent (slightly different for the separate models due to changes in the WSELs).

MAXIMUM WSEL INCREASE DOWNSTREAM OF THE CITY LIMIT

Name	**Without** Basin E20	**With** Basin E20
NVS reduced basin volumes	Stand Alone: 0.56 ft. Ultimate: 0.24 ft.	Stand Alone: 0.18 ft. Ultimate: 0.20 ft.
NVS full size basin volumes	Stand Alone: 0.48 ft. Ultimate: 0.20 ft.	Stand Alone: 0.15 ft. Ultimate: 0.17 ft.

Note: The Ultimate condition includes a 0.10 ft. rise due to downstream boundary conditions outside the control of this project.

3) We found E20 to be as effective as *all the NVS basins combined* in reduction of flow at the City Limit. As you can see from the table above, there is little difference in the maximum WSEL increase in the various Ultimate conditions cases. Where basin E20 plays a larger roll is for stage mitigation in the Stand Alone case. The Stand Alone case is very important because some "interim" condition is likely to be the reality in this watershed for a long time. Completion of the Ultimate condition facilities relies on development of the upper watershed which may not occur for more than twenty years.

Continued on the next page

Findings continued

4) The study also found that the Preferred Alternative (without basin E20) *does* meet the drainage master plan *flow* requirement at the City Limit. The stage in Elder Creek was not previously discussed in depth and is not one of the listed objectives of the master plan. However, the increase in stage values downstream of the City Limit **may be unacceptable to the City** due to the perception that storm drains operate less efficiently with high WSELs at the outfall on Elder Creek. This is a concern for the WRD.

5) The only scenario which yielded no detectable increase in WSELs downstream of the City Limit included previously omitted basin E5. This is not a scenario that WRD strongly considers because, 1) E5 does not efficiently reduce flow values due to limited size, and 2) the increase in cost is probably disproportional to the added benefit.

Costs

Costs

It is in the best interest of all parties to plan the least expensive detention basins which will still be safe and reliable. Both the WRD (through the drainage fee) and those who are doing (or causing) large scale reclamation of the existing floodplain will ultimately fund construction of the basins.

Reducing EIR Delays

The analysis shows it may be possible to reduce the flood control volumes of a few of the basins within NVS and still meet the plan objectives. The draft EIR will analyze the maximum impact footprint (the non-reduced basins). The potential reduced size flood control basins can be examined in the future with subsequent tentative maps and environmental analysis, possibly reducing overall basin costs.

Important notes

Important facts to consider when reviewing these results:

1) The downstream boundary condition in the Ultimate model is 0.10 feet higher than that used in the Existing model (15.2 versus 15.1 feet, Army Corps of Engr./ Morrison Creek). Thus, in the Ultimate scenarios the downstream City WSELs have a 0.10 foot rise "built-in" which is outside the control of this project.

2) The results are compared to the Existing condition **flow of 1988 cubic feet per second** (cfs) and **stage of 20.79 feet** at the City Limit. The "Maximum Increase Downstream" value is the greatest difference in WSELs in the City, between the scenario modeled and the existing stage.

Design of weirs

This sensitivity analysis was completed independent of the Storm Centering study outlined by memorandum dated January 22, 1996. In the actual design of the weirs and basins, storm centering is an important factor to consider. Please see the "Local design and weir settings" section of the attached Storm Centering memorandum for more information.

Basin E24A

The WRD recommends a large basin downstream of the confluence to account for variability in timing of actual floods compared to the design event and to allow flexibility in the "interim" development stages prior to the Ultimate condition. Due to the realities of development and economics, the Ultimate condition may not occur for a substantial period of time. The argument has been made that Gerber Creek basin E24A can fill this capacity because it is only slightly upstream of the confluence and is affected by backwater from Elder Creek.

However it is precisely this backwater which makes basin E24A less efficient than basin E20 for mitigating the peak flow. Basin E24A experiences a shift in time between the peak stage and the peak flow. The peak stage occurs first, filling the basin before the peak flow arrives. The optimization process would usually raise the weir elevation to reserve the detention volume for the arrival of the peak flow, but the range of possible weir settings would all begin to draw water into the basin *on the upward leg or at the peak of the stage hydrograph.* The water that needs to be captured to mitigate flow in this case *is on this downward leg of the stage hydrograph* (i.e., while the WSEL is dropping in the channel).

Questions

If I may be of assistance answering questions, please contact me at phone number (916) 440-6851.

Appendix A

Basin Sensitivity

Other UNET runs

The following three scenarios are composed of eleven different UNET models. In the full course of this study twenty-eight UNET models were developed. Many of these were examined for comparison only or did not prove viable. Information on these models is available from the WRD upon request.

Scenario No. 1

Preferred Alternative with and without basin E20:

This scenario keeps the NVS and upstream basins the same size as planned and includes basin E20. In the Stand Alone condition the basins and channelization upstream of the NVS are not included. For comparison, this same scenario without basin E20 is listed to show the stage problems generated.

For all four models shown, the flow and stage values at the City Limit are below the existing values of **1988 cfs** and **20.79 feet** respectively. However as you can see, the Stand Alone alternative without basin E20 has a nearly half foot rise in WSELs downstream of the City Limit.

PREFERRED ALTERNATIVE WITH AND WITHOUT BASIN E20

Name	Land Use	Basins	Flow (cfs) @ City Limit	Stage (ft.) @ City Limit	Maximum Increase* (ft.) D. Stream of City Limit
Pref. Alt.	Ultimate Cond.	All planned basins **with E20**	1689	20.33	0.17
Alt S10	Ultimate Cond.	All planned basins **without E20**	1693	20.35	0.20
STAL13	Stand Alone	All NVS basins **with E20**	1871	20.60	0.15
STAL2	Stand Alone	All NVS basins **without E20**	1911	20.73	0.48

* Maximum Increase refers to the increase in stage between the alternative being considered and the Existing condition stage for the reach of Elder Creek within the City of Sacramento.

Scenario No. 2

NVS basin volumes reduced to SWQ incidental flood detention:

This scenario reduces the NVS basin sizes to the flood control volume incidental to the storm water quality basin (SWQ) "footprint." In the Stand Alone condition no basins upstream of the NVS are included. In the Ultimate, no upstream basins are reduced. For the four models shown, all but one are below the Existing condition values of 1988 cfs for flow and 20.79 feet for stage at the City Limit.

The Ultimate condition flows at the City Limit are significantly below Existing condition (1988 cfs) and there is no significant difference between the Ultimate models with and without basin E20. However in the Stand Alone condition there is a significant difference in downstream stage between the model with and without basin E20. Without basin E20 the stage increase in the City rises to 0.56 feet above existing.

ADD E20/ REDUCE NVS BASINS TO SWQ SIZE

Name	Land Use	Basins	Flow (cfs) @ City Limit	Stage (ft.) @ City Limit	Maximum Increase* (ft.) D. Stream of City Limit
Alt S7	Ultimate	Only NVS basins reduced, **with E20**	1699	20.35	0.20
Alt S10	Ultimate	Only NVS basins reduced, **without E20**	1693	20.35	0.20
STAL11	Stand Alone	Reduced NVS basins, **with E20**	1941**	20.76	0.18
STAL15	Stand Alone	Reduced NVS basins, **without E20**	1980	20.88	0.56

* Maximum Increase refers to the increase in stage between the alternative being considered and the Existing condition stage for the reach of Elder Creek within the City of Sacramento.

** The difference in flow values between model STAL11 and STAL15 at the City Limit does not seem large enough given E20's size and effect. This is due to the fact that these models are specifically set up to use E20 to lower the downstream stage, not reduce flow. It is possible to use the basin weir elevation setting to focus on reduction of stage **or** reduction of flow because at this location the peak flow precedes the peak stage.

Scenario No. 3 **All NVS and upstream basins at full size, including E20 and E5:**

Basin E5 was previously dropped from the regional detention alternatives due to its lack of significant influence on the *flow* at the City Limit. However, basin E5 did show significant effect on reducing *stage*. We included this as the only scenario we found with no detectable increase in stage downstream of the City Limit. Nevertheless, **the WRD feels the incremental benefit may be disproportional to the significant increase in cost.**

For comparison, a Stand Alone model is included with E5 but without E20 (STAL9). This yielded a very similar stage result as the model with E20 but without E5 (STAL13 shown in Scenario No. 1).

INCLUDING E5 TO REDUCE STAGE					
Name	**Land Use**	**Basins**	**Flow (cfs) @ City Limit**	**Stage (ft.) @ City Limit**	**Maximum Increase* (ft.) D. Stream of City Lim.**
Alt S6	Ultimate	All planned basins, **with E20 and E5**	**1400**	**19.63**	0.10**
STAL14	Stand Alone	NVS basins, **with E20 and E5**	**1868**	**20.56**	0.00
STAL9	Stand Alone	NVS basins, **with E5** (no E20)	**1909**	**20.71**	0.17

* Maximum Increase refers to the increase in stage between the alternative being considered and the Existing condition stage for the reach of Elder Creek within the City of Sacramento.

** This increase is due to the difference in the existing and ultimate conditions downstream boundary condition. (Existing condition uses 15.1', Ultimate condition uses 15.2')

Appendix B

Storm Centering Analysis

Purpose

To transmit the results of our Storm Centering Analysis.

Objectives

The objectives of this study are:

1) To test if our previous method of determining the proper storm centering was conservative.

2) To determine the effect of different storm centering on a complicated system including two interbasin transfers.

Background

The study came about due to concerns regarding the complexity of the system. The Elder/Gerber shed is strongly effected by the interbasin transfer from Laguna Creek to Gerber Creek. We were concerned that our standard method of determining the storm centering did not take into account the influence of the Upper Laguna Creek, especially in the Stand Alone Condition.

Results

The "worst case" result of this study are relatively consistent with those obtained with our original storm centering. Thus, for this system, the current storm centering is conservative and adequate. The system hydrology does not need to be adjusted to a different storm centering.

Description of SDP

The Sacramento Design Precipitation (SDP) program software has been prepared to facilitate rainfall-runoff models in Sacramento County using elliptical storm centering. This program is written to operate essentially as a "postprocessor" to the SACPRE program. HEC-1 data files and data reference files are prepared by processing the SDP files using the SDP program.

The ability to enter the storm center coordinate, angle of alignment, and aspect ratio at the time of processing allows the user to run several storm centering alternatives without having to edit the SDP file.

SDP input criteria

All alternatives assume a 2:1 aspect ratio for the elliptical cloudburst. Ellipse center coordinates are in the California Coordinate System (units in feet). The angle of rotation of the elliptical cloudburst is relative to north with the major axis of the ellipse aligned with north. Please see the attached diagrams.

SDP Input Data

Alternative	Center Coordinate	Angle	Description
A	(2201492, 304774)	74	Storm centered over Elder, Florin, Gerber, and portion of Upper Laguna Creeks' watersheds. (area = 41.8 mi.)
B	(2186017, 302166)	77	Storm centered over Elder, Florin, and Gerber Creeks' watersheds.
C	(2189648, 300142)	75	Storm centered over North Vineyard Station.
D	(2197737, 307298)	69	Storm centered over Upper Elder Creek watershed.
E	(2193668, 297995)	60	Storm centered over Gerber Creek watershed.
F	(2117961, 307550)	49	Storm centered over Upper Laguna Creek (to the C.C.T.R.R.)

Notes:

1) The Center Coordinates and Angle values were determined using graphical centroid and center of mass calculations available in the AutoCAD program.

2) Alternative C not modeled in the final analysis because it is very similar to the Alternative B.

Results

In the following results, Alternative C is not included. It was not modeled past the development of the initial input since this input revealed Alternative C's characteristics are close to Alternative B's.

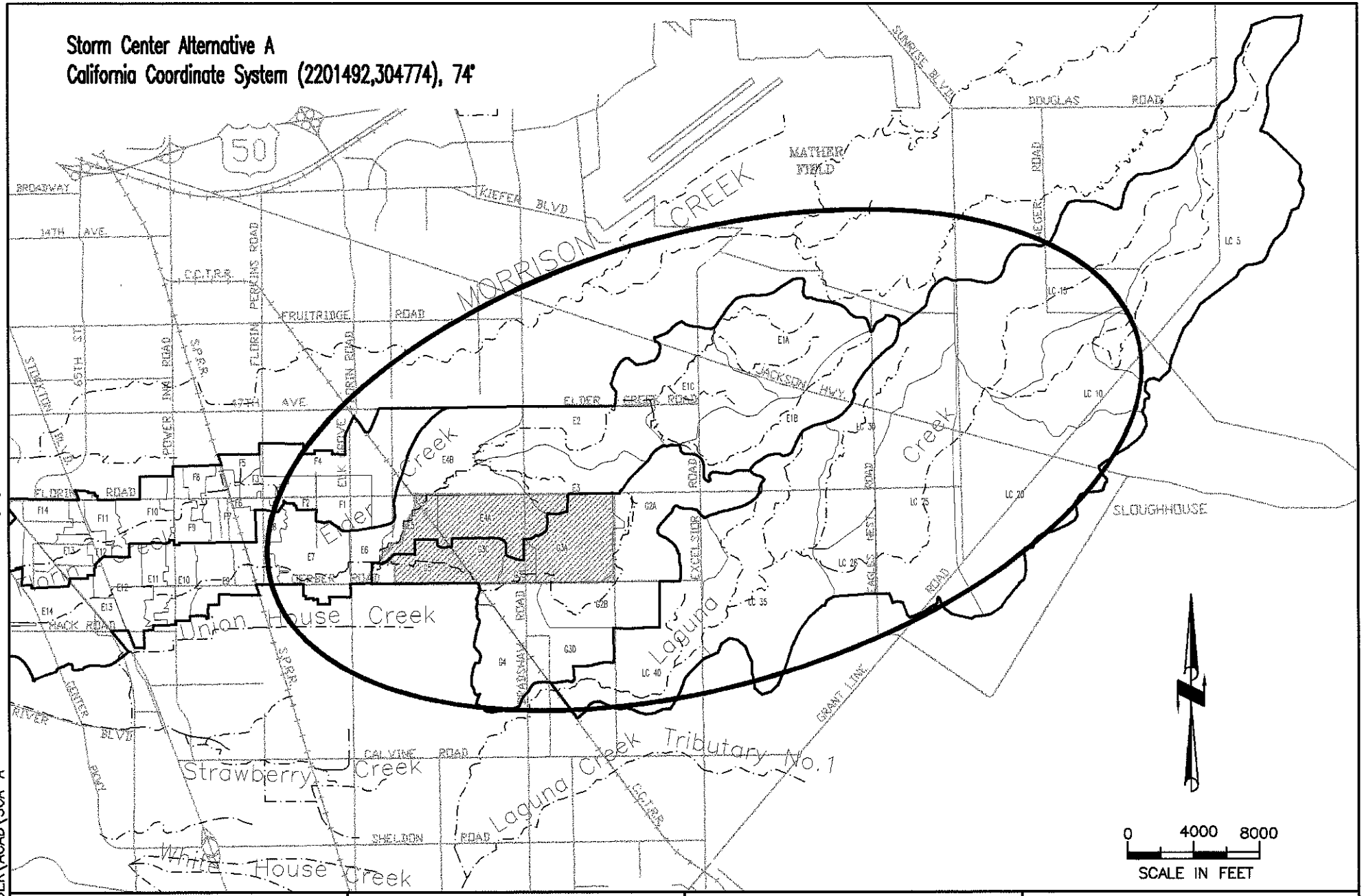
	Elder Creek at the City Limit: Peak Flow (cfs)					
	Original	**Alt. A**	**Alt. B**	**Alt. D**	**Alt. E**	**Alt F.**
Existing	**1984**	**2033**	-	-	-	-
Stand Alone	**2078**	**2108**	2002	2085	2056	2086
Ultimate	**1702**	-	1722	1643	1636	1476

	Laguna to Gerber Interbasin Transfer: Peak Flow (cfs)					
	Original	**Alt. A**	**Alt. B**	**Alt. D**	**Alt. E**	**Alt F.**
Existing	**1031**	1101	945	1030	1061	**1196**

Local design and weir settings

This analysis focuses mainly on the effect of different storm centerings at the City Limit (first table this page). However, in examining the same alternatives with a different point of interest, in this case the interbasin transfer reach (second table), the most conservative (highest flow - Alt F) storm centering may not be that which is the best choice for other more general points of interest downstream.

Thus for a weir or other important hydraulic structure, the designers should check different storm centerings to find the worst case *locally* (in this example Alt. F) to be used for design. This is not a feasible exercise for all points in the study area but should be considered at critical weirs and structures.



1-A

Legend

- Watershed Boundary
- North Vineyard Sation Specific Plan Area

County of Sacramento
Public Works Agency
Water Resources Division
Drainage Master Planning

Elder and Gerber Creeks Storm Centering

Storm Center Sensitivity Analysis Alternative – A

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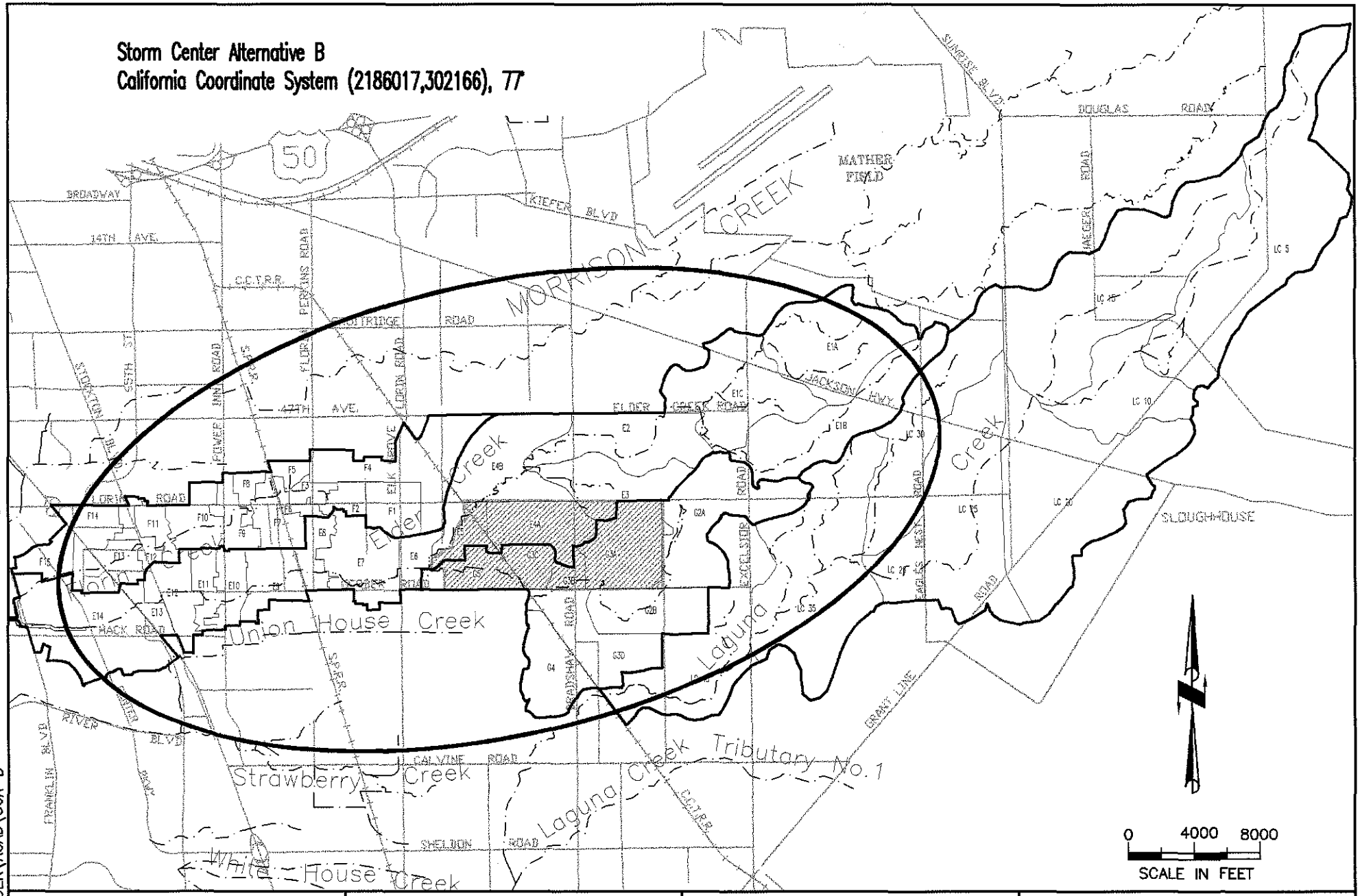


F-8

S:\PROJECTS\ELDER\ACAD\SCA-B

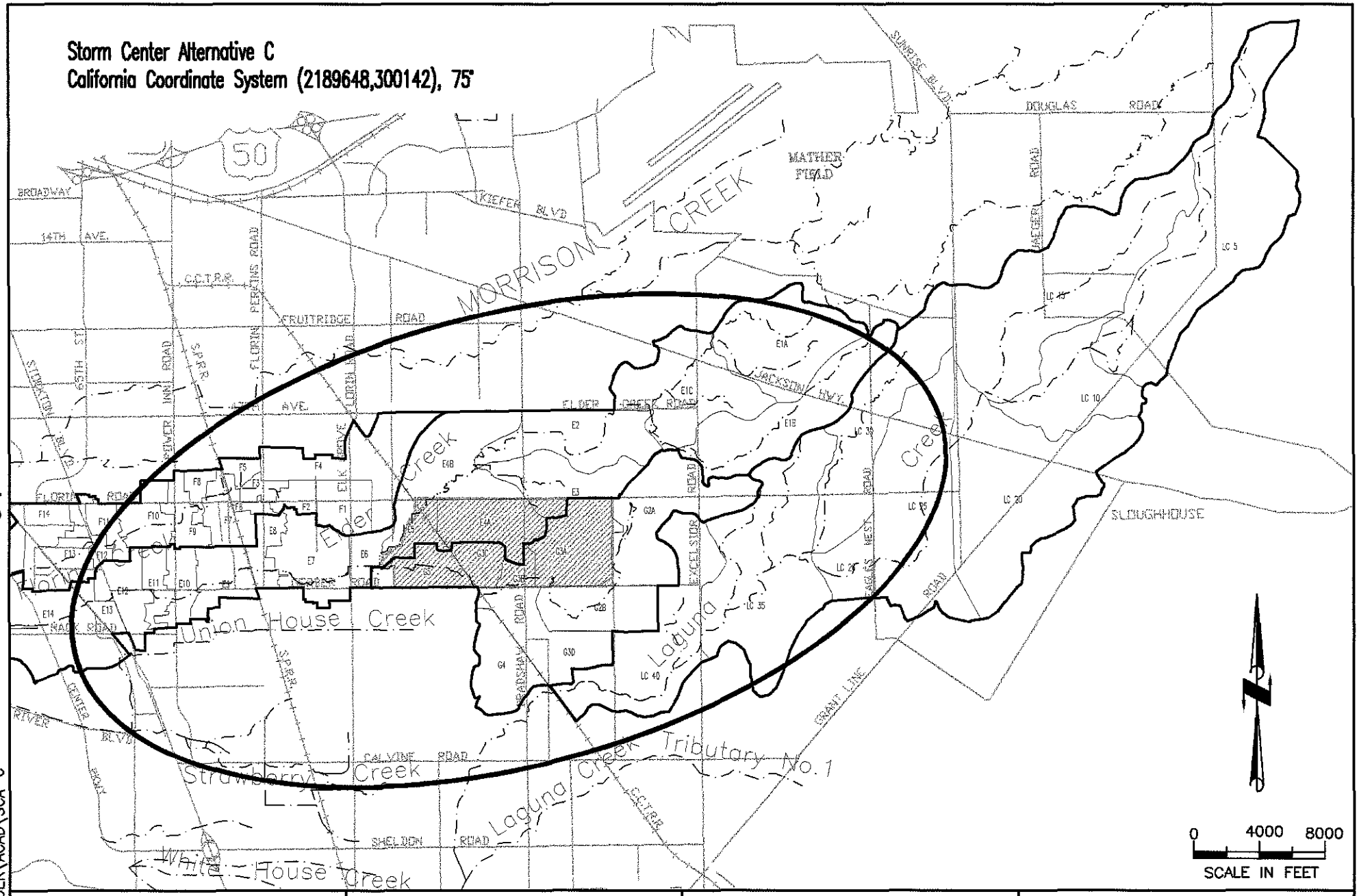
Legend

- Watershed Boundary
- North Vineyard Sation Specific Plan Area

County of Sacramento
Public Works Agency
Water Resources Division
Drainage Master Planning

Elder and Gerber Creeks Storm Centering

Storm Center Sensitivity Analysis Alternative – B



C-1

S:\PROJECTS\ELDER\ACAD\SCA-C

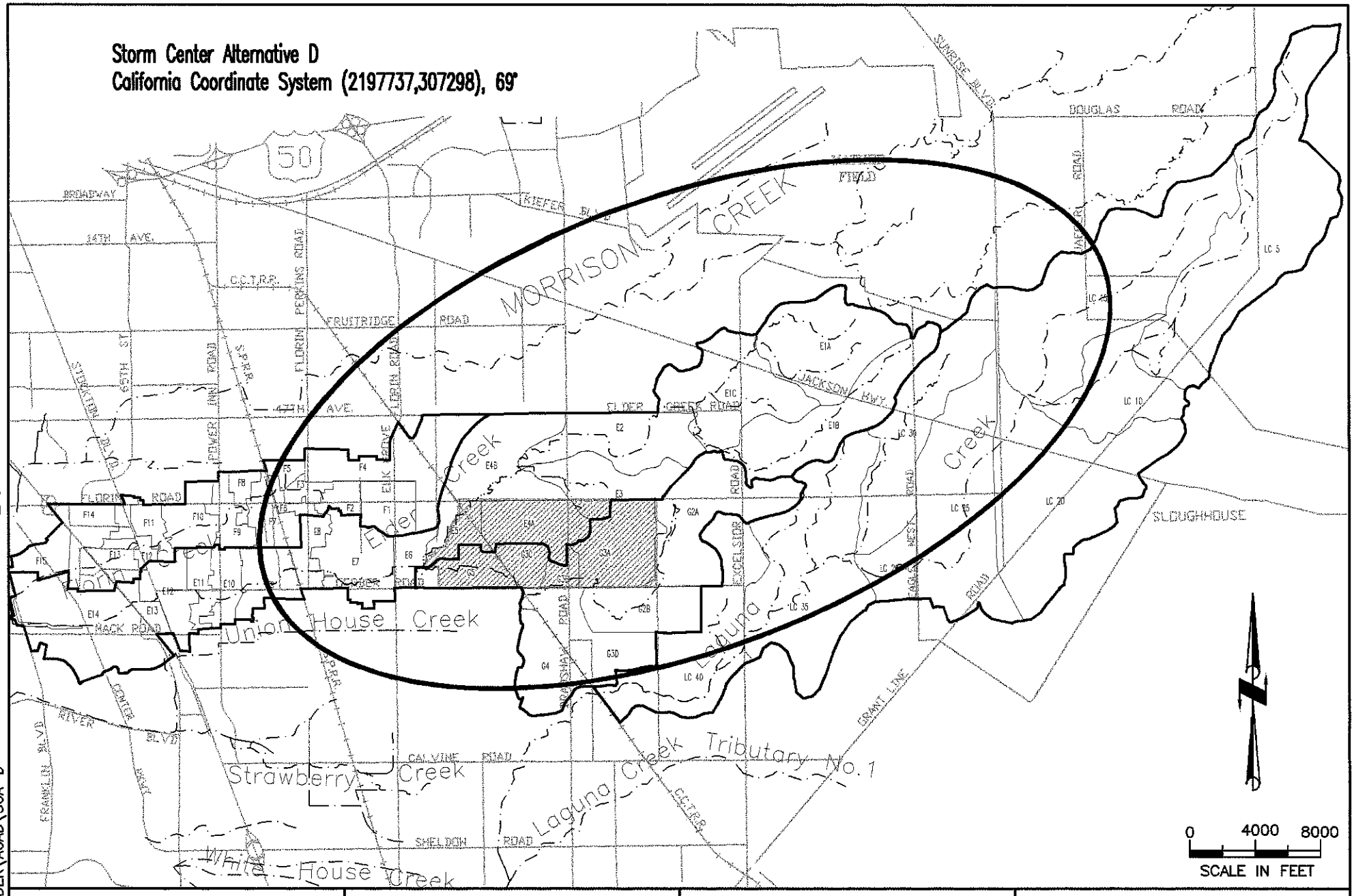
Legend

- Watershed Boundary
- North Vineyard Sation Specific Plan Area

County of Sacramento
Public Works Agency
Water Resources Division
Drainage Master Planning

Elder and Gerber Creeks Storm Centering

Storm Center Sensitivity Analysis Alternative – C



Legend

- Watershed Boundary
- North Vineyard Sation Specific Plan Area

County of Sacramento
Public Works Agency
Water Resources Division
Drainage Master Planning

Elder and Gerber Creeks Storm Centering

Storm Center Sensitivity Analysis Alternative – D

H-D

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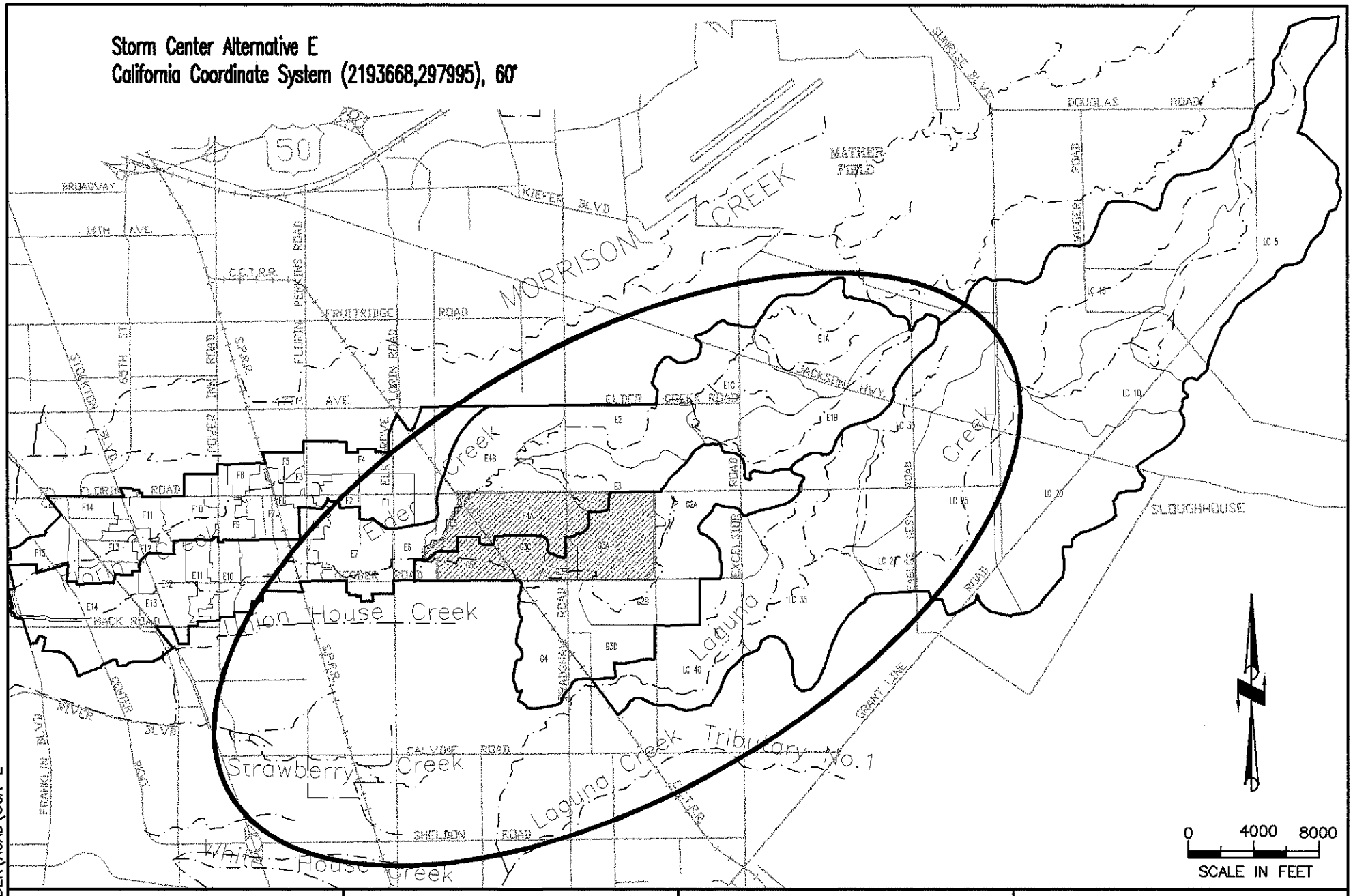

E-1

Legend

- Watershed Boundary
- North Vineyard Sation Specific Plan Area

County of Sacramento
Public Works Agency
Water Resources Division
Drainage Master Planning

Elder and Gerber Creeks Storm Centering

Storm Center Sensitivity Analysis Alternative – E

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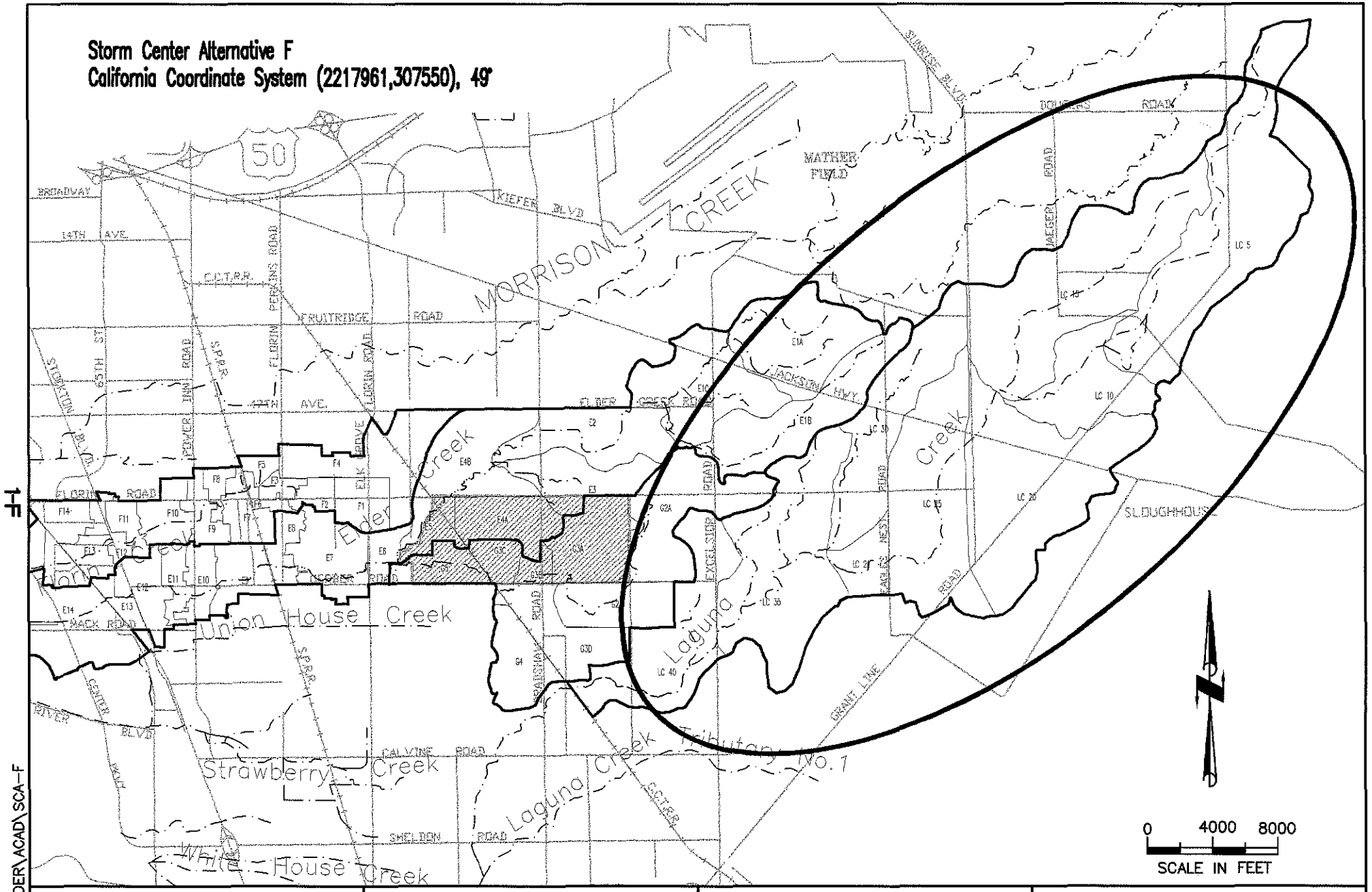

Legend

- Watershed Boundary
- North Vineyard Sation Specific Plan Area

County of Sacramento
Public Works Agency
Water Resources Division
Drainage Master Planning

Elder and Gerber Creeks Storm Centering

Storm Center Sensitivity Analysis Alternative – F

S:\PROJECTS\ELDER\ACAD\SCA-F

APPENDIX I

NVSSP FEIR: Final Technical Appendices Vol. II

MASTER WATER SUPPLY AND WATER DISTRIBUTION SYSTEM REPORT FOR NORTH VINEYARD STATION SPECIFIC PLAN

Prepared For:

Sacramento County
Planning Department
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Prepared By:

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December 1997

COUNTY OF SACRAMENTO
JAN 30 1998
DEPARTMENT OF
ENVIRONMENTAL REVIEW & ASSESSMENT

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NORTH VINEYARD STATION SPECIFIC PLAN MASTER WATER SUPPLY AND WATER DISTRIBUTION REPORT

I. INTENT AND SCOPE OF REPORT

The purpose of this report is to develop water supply alternatives and to identify water facilities needed to serve the North Vineyard Station Specific Plan Area (NVSSP Area). Also, this report summarizes the various completed and ongoing master planning studies which include the Plan Area. In addition, it is a venue to present additional, more project specific data, such as water demands and planned water system. This report is intended to meet the water master planning requirements of General Plan Policies CO-20 and CO-21 and Ordinance 18 of the Sacramento Water Agency, as well as to provide information to allow the NVSSP's Environmental Impact Report (EIR) to satisfy the requirements of State Law SB 901. The report will identify long-term, permanent water supply alternatives for the project in order for the EIR to evaluate the water supply impacts.

II. BACKGROUND AND HISTORY

A. PROJECT DESCRIPTION

The North Vineyard Station Specific Plan Area is located in the south central portion of Sacramento County, approximately thirteen miles southeast of downtown Sacramento and five miles north of the commercial district of the community of Elk Grove. (Refer to Figure 1, Regional Setting Map.)

The 1,595 acre Plan Area is bounded on the north by Florin Road, on the south by Gerber Road, and on the east by the extension of Vineyard Road. Elder Creek roughly constitutes the west boundary of the Plan Area. Figure 2 is the North Vineyard Station Specific Plan Preferred Land Use Plan.

Existing Land Use in and around Plan Area

Existing land uses within and surrounding the Plan Area are generally Agricultural-Residential and Agricultural with approximately ten small commercial enterprises along the periphery. The Bradshaw Golf Center occupies a twenty acre parcel on the west side of Bradshaw Road. Most all of the existing water demands in the Plan Area, both agricultural and domestic, are met with ground water supplies. Some small portion of the agricultural demand may be met by stock ponds catching local surface runoff.

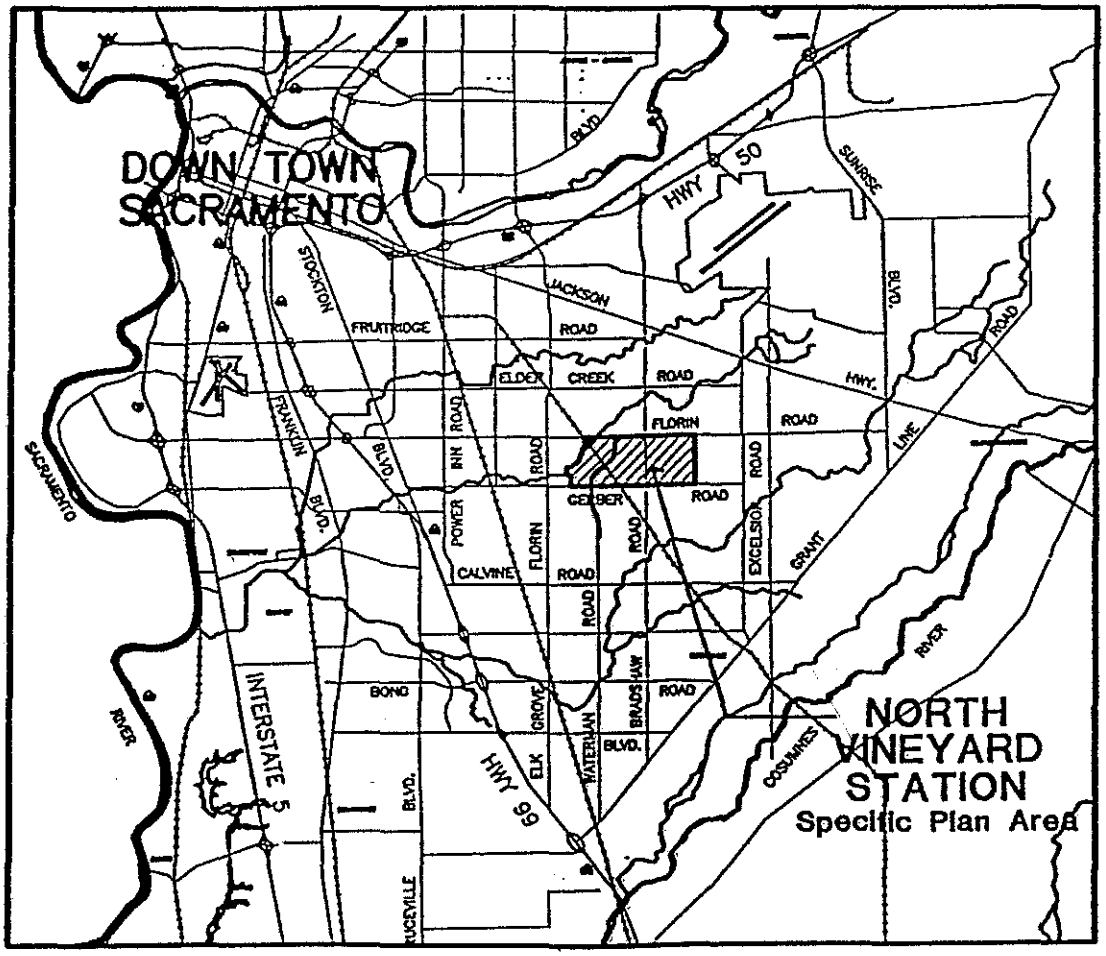
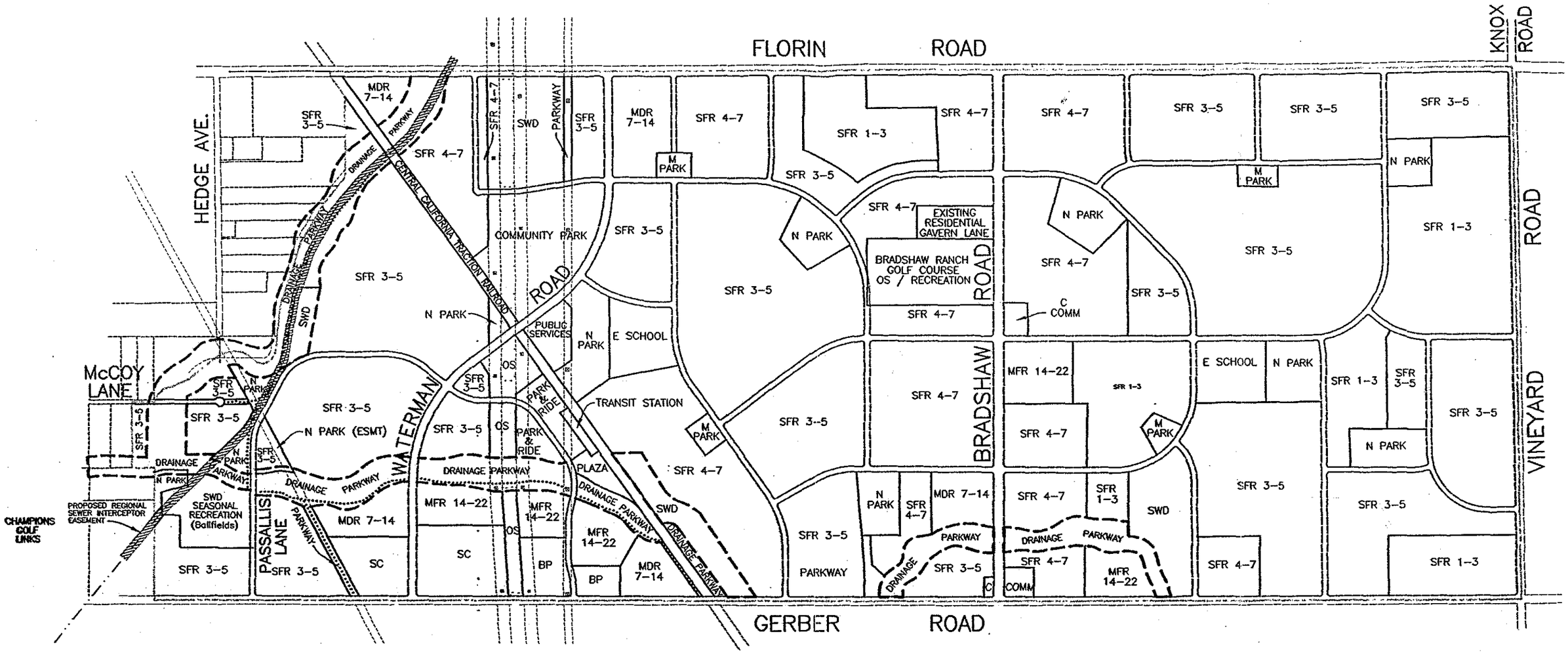


FIGURE 1
REGIONAL SETTING MAP



0 500 1000 2000

SCALE: 1" = 1000'

LEGEND

C	COMMERCIAL
SC	SHOPPING COMMERCIAL
BP	BUSINESS PROFESSIONAL
MFR 14-22	MULTI-FAMILY RESIDENTIAL
MDR 7-14	MEDIUM DENSITY RESIDENTIAL
SFR 4-7	SINGLE FAMILY RESIDENTIAL
SFR 3-5	SINGLE FAMILY RESIDENTIAL
SFR 1-3	SINGLE FAMILY RESIDENTIAL
OS/SWD	OPEN SPACE/STORM WATER DETENTION

NORTH VINEYARD STATION SPECIFIC PLAN
FIGURE 2

LAND USE PLAN

Sacramento, California *January, 1997*

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

/web/7000/7536/clp/clp-landuse.dwg *7536-0*

Specific Plan Land Uses

This section provides an overview of the land use components shown on the Preferred Land Use Plan. Table 1 provides a listing of land uses and acreage depicted in the NVSSP Land Use Plan.

TABLE 1

LAND USE SUMMARY - PREFERRED LAND USE PLAN

Land Use	Fixed Dwelling Count/2	Acres/3	Units
Residential/Density Range/1			
Single-Family SFR/1-3	2 (gross)	150.4 (gross)	301
Single-Family SFR/3-5	5 (gross)	644.5 (gross)	3,222
Single-Family SFR/4-7	6 (gross)	287.3 (gross)	1,724
Existing Residential	--	6.0	13
Medium Density MDR/7-14	10 (net)	44.2	442
Multi-Family MFR/14-22	18 (net)	35.4	637
Commercial		28.5	
Business Professional		9.5	
Schools		20.0	
Parks		99.5	
Golf Course		19.8	
Parkway		6.3	
Drainage Parkway		61.3	
Open Space/Storm Water Detention		76.6	
Major Streets		58.0	
Transit Center		10.0	
Public Services		4.9	
Railroad		14.6	
Totals		**1,594.5**	**6,339**

1. Density is expressed as dwelling units per acre.
2. Fixed Count refers to the density average used to calculate dwelling yields. Medium and Multi-Family Counts are based on net acreage. All Single-Family Counts are based on gross acreage.
3. All acreage is net unless otherwise specified. Gross acreage includes land to the center of the adjacent collector streets; net acreage does not. Acreage of adjacent arterial and thoroughfare streets is not included.

B. REGULATORY ENVIRONMENT

Jurisdictions

Sacramento County Water Agency (SCWA) Zone 40

The Sacramento County Water Agency (SCWA) will provide major water facilities such as transmission pipelines, storage reservoirs, pump stations, wells and treatment facilities for the Specific Plan Area. The SCWA is governed by the Sacramento County Board of Supervisors acting as the Agency's Board of Directors. It may contract with the Federal Government under reclamation laws, and with the State of California and the Federal Government with respect to the purchase, sale, and acquisition of water. SCWA may also construct and operate required facilities.

SCWA is responsible for development and implementation of a Water Management Plan for Zone 40. This zone was created for the purposes of constructing facilities for the production, conservation, transmission, distribution, and sale of ground and surface water, for the present and future beneficial use of the lands or inhabitants within the Zone.

Figure 3 was reproduced from the Water Master Plan for Areas Adjacent to Zone 40 Master Plan Update's Report and modified to show the NVSSP project site. This exhibit shows the Study Area of the Zone 40 Master Plan Update and the potential expansion areas which encompass the Specific Plan Area.

Through Zone 40, water is currently supplied to about 9,700 service connections. SCWA provides wells, treatment and storage facilities, and transmission mains. The Specific Plan site is not currently within Zone 40 and would be required to annex to Zone 40 in order to be served by SCWA.

Sacramento County General Plan

The recently adopted County General Plan includes Policies CO-20 and CO-21, which state the following:

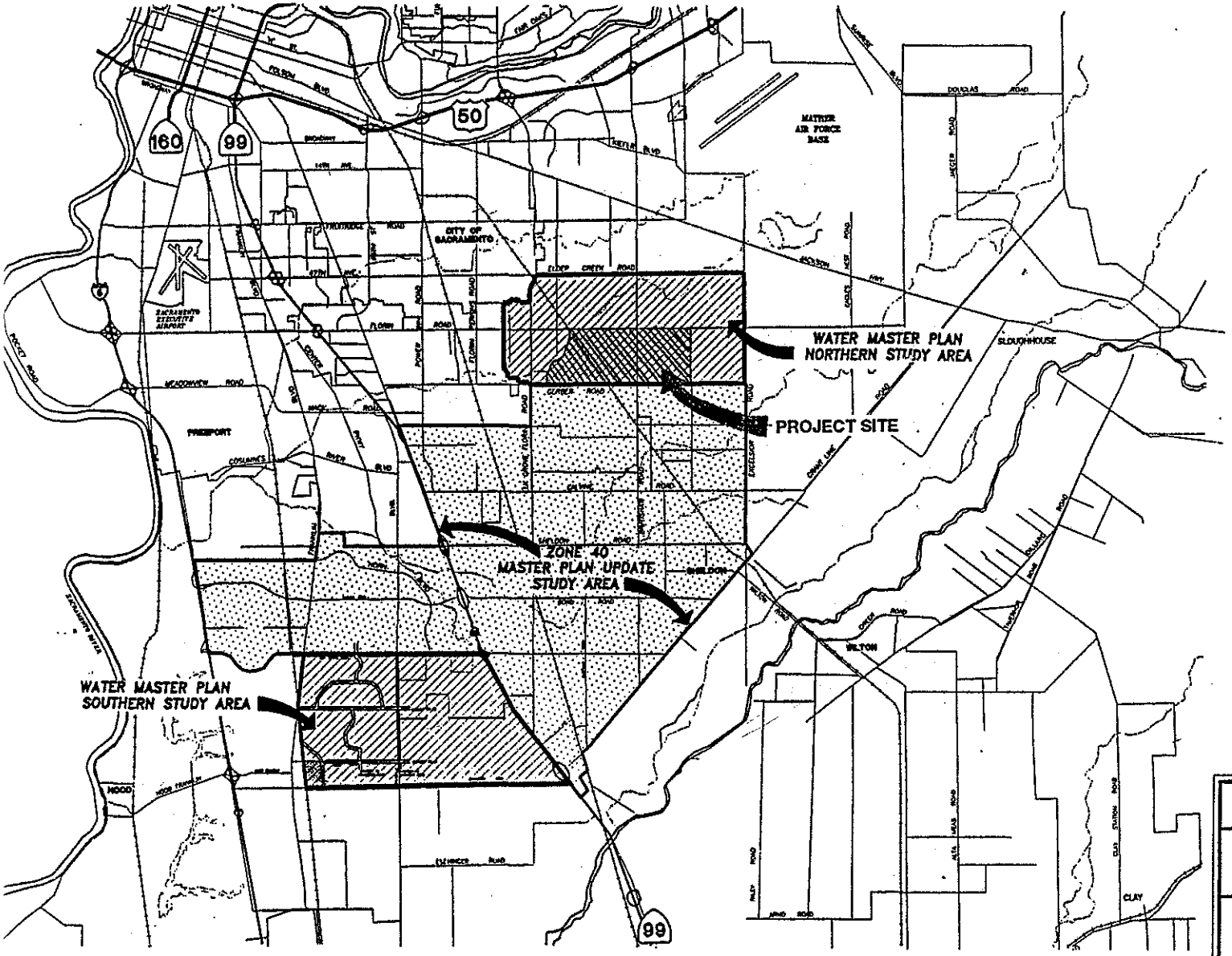
CO-20

"In new development areas, as identified in Figure III-1 of the Land Use Element, entitlements for urban development shall not be granted until a Master Plan for water supply has been adopted by the Board of Supervisors and all agreements and financing for supplemental water supplies are in place. The land use planning process may proceed, and specific plans and rezoning may be approved."

CO-21

"The Master Water Plan shall include three planning objectives which direct the plan to consider alternate conservation measures, achieve safe yield of ground water supply in conjunction with development in new urban growth areas, and formulate a five year monitoring program to review water plan progress."

The intent of these policies is to assist the County in meeting its objective of having a regionally safe ground water yield.



Sacramento County Water Agency

Water Master Plan for Areas Adjacent to Zone 40 Master Plan Update Study Area

STUDY AREAS MAP

WEST YOST & ASSOCIATES

September 1996

FIGURE 3

ATTACHMENT 5D

SB 901, Water Supply Planning Act

The California State Legislature enacted *SB 901, Water Supply Planning Act,* in 1995. State Law SB 901 requires the responsible supplier of water to assess whether the anticipated water demands for a proposed specific plan project are included in the Urban Water Management Plan. The water supplier for the North Vineyard Station Specific Plan is the Sacramento County Water Agency.

Specific Plan

The Citizens Advisory Committee formed to provide structured public participation in the development of the Specific Plan authored twenty-four Guiding Principles. Only one of those Guiding Principles is pertinent to the scope and content of the Water Supply and Water Distribution Master Plan.

4) Provide and maintain an adequate level of public services to the project area, including water, sewer, parks, schools, police, fire, and library services.

City of Sacramento American River Place of Use

The City of Sacramento currently holds surface water rights from the American River. A geographical service area has been assigned for use of this water which extends beyond the current City limits into areas of the unincorporated County of Sacramento. Known as the City of Sacramento American River Place of Use (POU), this geographical area's easterly boundary runs along Bradshaw Road which bisects the Plan Area. The POU extends north of Florin Road and south of Gerber Road, and includes the portion of the plan westerly of Bradshaw Road. Surface water from the City's contractual source could therefore be utilized within the westerly portions of the Plan Area, approximately 945± acres.

Regional Concerns (Forums Process)

The Sacramento Area Water Forum and the Foothill-Forum Water Group are developing a regional plan to provide safe, reliable, and environmentally sound water supply. Six major "stakeholder groups" are involved in the formulation of the Plan. More than forty-seven organizations represent business, environmental, public, and water district interests in the Sacramento Area Water Forum process which began in September 1993. In April 1995, the stakeholders agreed on a set of sixty-five Agreements-in-Principle which serve to document the progress made to date. In January 1996, a progress report was released detailing several proposals under consideration to meet regional water needs to the year 2030. A proposed draft of recommendations for the agreement dated January 1997 is available for review. A final agreement is expected to be executed in December of 1997.

C. EXISTING WATER SERVICE AND DEMANDS

Land Use and Demands

The existing land uses described previously are relatively dispersed and independent. They are served by privately owned and operated wells. It can be generally assumed that these wells are relatively shallow, drawing from the upper aquifer. Existing ground water depths in the area range from approximately 90 to 120 feet below ground surface (Source: County Ground Water Model, June 1993).

Existing water demands cannot be precisely estimated. After reviewing black and white and infrared aerial photographs, analysis shows that current water use within the Specific Plan Area is approximately 580 acre-feet of water annually. (See Table 4-2 of Appendix A, NVSSP Evaluation of Ground water Impacts).

Existing Distribution Facilities

There are no public water distribution facilities within the Plan Area. The nearest facilities are described in the following sections.

SCWA Zone 40 Facilities

Sacramento County Water Agency facilities exist to the south of the project. Currently, there are two separate systems: one east of Bradshaw Road and one west of Bradshaw Road.

The facilities east of Bradshaw Road were installed to provide service to the Country Creek Estates development along Vineyard Road. They have been expanded to provide service to development in the vicinity of Country Creek Estates. Currently, a 12-inch main exists in Vineyard Road approximately 7,000 feet south of Gerber Road. This system is supplied by three domestic wells.

The existing SCWA system west of Bradshaw Road currently serves the development east of Elk Grove-Florin Road, north of Calvine Road and west of Bradshaw Road. Currently, facilities exist along the Waterman Road extension approximately one mile west of Bradshaw Road, and approximately 4,500 feet south of Gerber Road. This system is tied to the rest of the SCWA system to the south and west. A storage facility exists to the south of the Specific Plan Area along Waterman Road, approximately 8,000 feet south of Gerber Road.

SCWA is designing a water transmission main along Elk Grove-Florin Road to be installed concurrent with the road widening project. The transmission main will extend to Gerber Road and be connected with the Vineyard water system by the end of 1998.

City of Sacramento Facilities

City water main facilities exist to the west and northwest of the project site. The nearest existing facilities are described for background purposes.

Transmission size mains currently exist in Power Inn Road approximately 2.8 miles west of the Specific Plan Area. This consists of a 30-inch main. A 24-inch main exists at the intersection of Florin-Perkins Road and Elder Creek Road, one mile north and one and one-half miles west of the Plan Area (southeast corner of Army Depot).

D. CURRENT WATER PLANNING

Zone 40 Master Plan Status

In 1987, the Sacramento County Water Agency developed a Zone 40 Master Water Supply Plan Report. The boundaries of that study extended to the southerly boundary of the Specific Plan Area, but did not include it. The 1987 Master Plan had as its main objective the development of a long-term plan for meeting future water needs through a program of conjunctive use of local ground water supplies and surface water supplies. The Master Plan projected surface water availability in 1992. The Master Plan Report included several scenarios for transmission mains, based upon assumptions of where the delivery point would be for future surface water supplies. The study identified the most economical treatment and conveyance method as the purchase of treatment capacity at the City of Sacramento's Fairbairn Treatment Plant on the American River. Several of the base assumptions of the 1987 Master Plan Report have changed since that time.

In 1993, the Sacramento Water Agency developed a County-wide ground water model which provided a tool to determine safe, sustainable yields from ground water sources. Negotiations currently underway as part of the Water Forums process will recommend an appropriate sustainable ground water yield for the County ground water basin.

In 1993, the Sacramento County Water Agency began an update study for the Zone 40 Water Supply Master Plan Report. The latest technically complete Zone 40 Water Supply Master Plan Update was published in June 1995. The environmental documentation for the Master Plan will begin after completion of the Environmental Documentation for the PL 101-514 Surface Water Contract and Water Forums Agreement. It is anticipated that the Zone 40 Water Supply Master Plan Update will be adopted by the Board of Directors of the Sacramento County Water Agency in late 1998.

The Study Area for this update was basically unchanged from original boundaries and is shown in Figure 3. The Master Plan Update modified the unit demand rates associated with various land uses and established seasonal variations in water use. The Master Plan Update also provided a flexible program of water supply alternatives for the Master Plan Update's Study Area. The water supply alternatives can be implemented and revised as availability and feasibility of water supply sources change in the future. To accomplish this, the Master Plan Update identifies the assumptions and recommendations from the 1987 Zone 40 Master Plan that are no longer valid; evaluates the engineering, institutional, social, financial, and environmental aspects associated with implementing each of the potential sources of water supply; and provides a foundation on which to base future decisions regarding the acquisition, construction, and operation and maintenance of facilities required for the production, conservation, transmission, and distribution of water.

VINEYARD WATER DISTRIBUTION STUDY: The original 1987 Zone 40 Master Water Supply Plan required a supplemental distribution study for the Vineyard Area. In September 1993, the Sacramento County Water Agency developed the Vineyard Water Distribution Study. This report predicted local demands for the areas south of Gerber Road and developed transmission main sizing and required storage facilities for the areas to the south of Gerber Road.

ZONE 40 EXPANSION STUDY: In late 1995, the Sacramento County Water Agency began a further study, this time to expand the Study Areas associated with the Zone 40 Master Plan Update in response to proposed land planning in areas immediately adjacent to the study area of the Zone 40 Water Master Plan Update. The expanded area involves two individual areas, a northern and southern study area as shown in Figure 3. The Northern Study Area encompasses the North Vineyard Station Specific Plan, as well as areas to the west, north, and east of the Specific Plan Area.

A Final Draft of this document titled "Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area" (Adjacent Area Water Master Plan) was published in September of 1996. It includes final demand analysis, an assessment of existing water supplies and treatment facilities, and an evaluation and conceptual design of the Northern Study Area water system. The North Vineyard Station Specific Plan comprises 1,595 acres of the 5,596 acre Northern Study Area, or approximately 28.5%. Environmental documentation of the Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area will begin after completion of the environmental documentation for the PL 101-514 Surface Water Contract and the Water Forums Agreement.

Surface Water Supply

In several reports back to the Board of Supervisors dated September 5, 1995, November 7, 1995 and July 16, 1996, SCWA outlined the progress made toward acquisition of surface water supplies.

Substantial progress has been made toward acquiring surface water supplies which would help to reduce ground water depletion and make possible the integrated use of ground water and surface water supplies in a conjunctive use program. Many of these efforts are a direct result of the success of the Sacramento Area Water Forum's process.

The staff of SCWA has been negotiating with City staff as part of the Sacramento Area Water Forum process. Upon agreement to have the City wheel-treated surface water available to Zone 40 for use in areas within the City's POU, draft agreements between the City and SCWA have been developed.

SCWA staff is working on the environmental documentation and contract negotiations necessary to allow the SCWA to enter into a long-term municipal and industrial water service contract with the United States Bureau of Reclamation as intended by Congress in Public Law 101-514. The contract will be for 22,000 acre-feet of water annually of which 7,000 acre-feet will be subcontracted to the City of Folsom. The Draft Environmental Impact Report is expected to be complete in April of 1997. Finalization of that environmental documentation is expected in the fall of 1997.

Additionally, the Agreement-in-Principle among the Sacramento Municipal Utility District (SMUD), City, and SCWA approved by the County Board of Supervisors on March 8, 1994, will make 15,000 acre-feet of SMUD's Bureau of Reclamation contract water available annually for use within Zone 40. The environmental documentation process being conducted by SMUD is scheduled to be completed when the PL 101-514 Water Contract's is complete or shortly thereafter.

Efforts to acquire "winter" water have also been initiated. On May 30, 1995, the Board of Supervisors approved the submittal of an application to the State Water Resources Control Board for the appropriation of water from the American and Sacramento Rivers. The water would only be available when water is in excess of that dictated by the Hodge Decision criteria, existing riparian water rights, existing appropriated water rights, federal/and state project water, and water needed for Delta outflow requirements and other environmental resource protection criteria. While not available in all years, this water could be used conjunctively with existing ground water supplies to increase long-term ground water yields. Efforts to prepare the necessary environmental documentation are planned.

III. SPECIFIC PLAN WATER MASTER PLAN

A. WATER DEMAND FORECAST

Buildout Average Annual Demand

The determination of water demands for the Specific Plan Area provides the basis for water supply and distribution capacity requirements to serve the Specific Plan Area. Annual domestic water demands for the Specific Plan Area have been calculated based upon the water demand factors listed in the Zone 40 Master Plan Update and the Zone 40 Adjacent Areas Master Plan. The demands and unit demands for North Vineyard Station Specific Plan Area appear in Table 2. They are consistent with the values determined in the Zone 40 Adjacent Areas Master Plan Study Report for their portion of the Northerly Study Area.

Average Day Demands at buildout are reduced by 19%, as determined in the Zone 40 Master Plan Update, to account for conservation measures. The conservation measures are listed in Appendix B of this report.

Demands in Table 2 are not adjusted to reflect conservation; demands in Table 3 are adjusted to reflect effects of conservation measures listed in Appendix B.

TABLE 2

AVERAGE ANNUAL WATER DEMANDS (ACRE-FEET PER YEAR)

Land Use Category			Unit Water	West of Bradshaw		East of Bradshaw		Totals	
General	Specific	Specific Plan	Factors	Area	Demand	Area	Demand	Area	Demand
Residential	Rural Estates		1.65						
	Single Family, Low Density	SF Res (3-5) - SF Res (4-7)	3.57	550.7	1,966	537.5	1,919	1,088.20	3,885
	Multi Family, Medium Density	Med Res (7-14)	4.58	45.4	208	0.0	0	45.40	208
	Multi Family, High Density	Mult Fam (14-22)	5.09	22.8	116	16.9	86	39.70	202
Commercial and Office	Commercial and Office	Comm., B/P	3.40	34.6	118	4.1	14	38.70	132
Industrial	Utilized	NA	3.35		0	0.0	0	0.00	0
	Unutilized	NA	0.00		0	0.0	0	0.00	0
Public	Public, Quasi-Public, Cemeteries & Misc.	Transit Public Services	1.28	16.0	20	0.0	0	16.00	20
	Recreation - Active	Golf Course, Schools, Parks	4.28	106.8	457	45.9	196	152.70	654
	Recreation - Passive	Drain Parkways, Open Space	0.00	115.7	0	25.5	0	141.20	0
Vacant	Vacant	NA	0.00		0	0.0	0	0.00	0
Agriculture	Agriculture	NA	2.41			0.0	0	0.00	0
Other	Right-of Way	Arterial Streets	0.26	38.9	10	19.1	5	58.00	15
	Mixed Land Uses		3.10	0.0	0	0.0	0	0.00	0
	Rural		0.30	0.0	0	0.0	0	0.00	0
	Undeveloped	Railroad	0.00	14.6	0	0.0	0	14.60	0
TOTALS				946	2,895	649	2,220	1,595	5,116

* Presented in acre-feet of water per acre of land per year.

Maximum Day, Peak Hour

Maximum Day Demands are computed from the average annual demands that have been reduced by 19% to account for conservation measures by multiplying by a factor of 2.0. Peak Hour Demands are then calculated at two times Maximum Day Demands for transmission main sizing, or a factor of 1.8 for storage facility sizing.

Maximum Day Demands are therefore approximately 4.2 mgd for the area west of Bradshaw Road and 3.2 mgd for the area east of Bradshaw Road.

Additional engineering analysis to refine distribution main sizing may be required prior to final design of facilities.

Peak Hour flows used to determine storage requirements are 1.8 times Maximum Day Demands. Peak Hour Demands are therefore approximately 7.51 mgd for the area west of Bradshaw Road and approximately 5.76 mgd.

Fire Flows

Fire flows required are a function of land use. Single-family residential development typically requires 1,000 to 1,500 gallons per minute (gpm), while most multi-family and commercial developments require 3,000 gpm. The network of planned distribution mains can adequately provide these required fire flows. Additional engineering analysis will be necessary prior to final construction plan sizing of mains.

TABLE 3

MAXIMUM DAY AND PEAK HOUR WATER DEMANDS (MILLION GALLONS PER DAY)

	Water Demand		
	West of Bradshaw	East of Bradshaw	Totals
Actual Average Day Demand (mgd) (1)	2.09	1.60	3.69
Max Day Demand (mgd)	4.17	3.20	7.37
Peak Hour (mgd)	7.51	5.76	13.27
Storage Capacity (mg)	1.26	0.97	2.22

(1) Actual Average Day Demand is reduced by 19%, as determined in the Zone 40 Master Plan Update, to account for conservation measures which are listed in Appendix B of this report.

B. WATER SUPPLY

The Water Master Plan for Areas Adjacent to the Zone 40 Master Plan Update's Study Area develops and evaluates water supply facilities to serve the demands in the Northern Study Area. (See Figure 3.) The North Vineyard Station Specific Plan is a portion of the Northern Study Area. The following section summarizes the water supply information presented in the Areas Adjacent to the Zone 40 Master Plan Update's Study Area for the Northern Study Area. Where quantities for the Northern Study Area are discussed, the quantity representing the Specific Plan's portion follows in parenthesis.

Zone 40 Expansion Study Content

The Final Draft Water Master Plan for Areas Adjacent to Zone 40 Water Supply Master Plan Update's Study Area (Adjacent Areas Water Master Plan) developed ultimate water supply and distribution demands for the area encompassing the Specific Plan.

The study utilized the unit demand factors and seasonal variations developed in the 1995 Update Report. The report discussed six surface water supply sources and six ground water supply variations. Final alternatives were narrowed to two for the Northerly Study Area.

Water Supply Alternatives

Projected water demands within the Northern Study Area, which includes the North Vineyard Station Specific Plan Area, can be supplied with one of the following two alternatives:

1. All surface water; and

2. Combination of ground water and surface water.

The portion of the Study Area lying entirely within the City's American River POU can be supplied with a firm source of American River surface water. Therefore, it is justified to assume that development within the City's American River POU will be supplied with only surface water in both of these alternatives.

In Alternative 1, surface water would supply the Maximum Day Demand of the entire Study Area, including the North Vineyard Station Specific Plan Area. In Alternative 2, surface water would supply the Maximum Day Demand of the area within the City's POU, and ground water would supply the Maximum Day Demand of the area outside the POU. Demands in excess of the Maximum Day Demand would be met from storage reservoirs in both alternatives.

Surface water and ground water supply options to meet demands in the Northern Study Area, including Specific Plan Area, are presented in Table 4 and the section following Table 4. The demands shown in Table 4 have been reduced to account for water conservation of 19% and include unaccounted for water at 7.5%.

Alternative 1: All Surface Water

Under Alternative 1, all water demands within the Northern Study Area, including the Specific Plan Area, would ultimately be met using City's American River POU surface water or other firm source of water conveyed through a new transmission pipeline connecting a new transmission pipeline in Power Inn Road. Supply to the Northern Study Area, including the Specific Plan Area, will be provided in a staged approach. Because the initial area of development is some distance from this pipeline and initial demands would be relatively small, the initial demands would likely be met with a ground water well supply system. The initial facilities would be sized and configured to be easily incorporated into the ultimate system. As the area develops, ground water facilities would be maintained for backup supply purposes after the surface water deliveries begin.

The City is planning to construct a new pipeline in Power Inn Road that will be 60 to 72 inches in diameter. SCWA plans to participate in the upsizing of this pipeline to serve the demands in the Northern Study Area. To provide sufficient capacity to serve the Maximum Day Demands of the Northern Study Area, 16,530 gpm (5,120 gpm for the NVSSP Area), this new pipeline should be about 6 inches in diameter, larger than would be needed to serve just the City demands. In addition, a 16,530 gpm (5,120 gpm for the NVSSP Area) booster pump station would be required near Florin Road at the western boundary of the Study Area to boost treated surface water supplied from the City's system into the Northern Study Area's distribution system, which includes the NVSSP Water Distribution System, to meet Maximum Day Demands.

The surface water supply facilities would be sized to deliver up the Maximum Day Demand, with water also pumped from ground level storage reservoirs as needed to meet the Peak Hour Demands. A total of 8 million gallons (MG) of storage would be required to meet the Peak Hour Demand, fire flow, and emergency storage requirements. It is proposed that two 4-MG reservoirs be provided. At each of these storage reservoirs, 8,265 gpm (2,560 gpm for the NVSSP Area) of booster pumping capacity, for a total of 16,530 gpm (5,120 gpm for the NVSSP Area), would be required to meet the Peak Hour Demand.

Alternative 2: Combination of Surface Water and Ground Water

This alternative assumes that demands in the western portion of the Northern Study Area (west of Bradshaw Road) that is within the City's American River POU are met with surface water, and the eastern portion outside the City's POU with ground water. Surface water supply facilities would be sized to meet the Maximum Day Demand in the POU, and ground water supply facilities sized to meet the Maximum Day Demand in the area outside the City's POU. (See Table 4-1 of the Zone 40 Master Plan Update.) Peak demands would be met by pumping from storage reservoirs. It is probable that the demands of the initial development west of Bradshaw Road would be served by ground water. At buildout, these ground water facilities would remain as part of the integrated system. The distribution system of the Northern Study Area would be interconnected east and west of Bradshaw Road.

Six wells would be required to supply the demands in the portion of the Northern Study Area outside the POU based on an equivalent daily production of 1,275 gpm per well (one 1,700 gpm well operating eighteen hours per day). With one well out of service, the remaining five wells would be designed to produce the rated capacity of the treatment facility. It is proposed that a single treatment facility be centrally located with six wells providing water to it. The treated ground water would be discharged to storage reservoirs located on-site, and a booster pump station would deliver the stored water to the distribution system.

Alternative 2 surface water supply facilities for the portion of the Study Area, including the Specific Plan Area, within the City's America River POU include an 8,890 gpm (2,900 gpm for the NVSSP Area) pump station along Florin Road at the western end of the Study Area, and an 8,890 gpm (2,900 gpm for the NVSSP Area) booster pump station at the 4.4 MG storage reservoir. In the portion of the Study Area outside the POU, 15,280 gpm (4,440 gpm for the NVSSP Area) pumping capacity is necessary at the storage tank to meet peak hour conditions. The pumping station would be drawing 7,640 gpm (2,220 gpm for the NVSSP Area) from storage, and 7,640 gpm (2,220 gpm for the NVSSP Area) from the satellite treatment facilities located at the 3.8 MG storage reservoir.

Preferred Water Supply Alternative

The preferred water supply alternative is Alternative 2, combination of surface water and ground water. The water supply facilities and transmission main locations and sizes for Alternative 2 are shown in Figure 4-2 of the Zone 40 Master Plan Update. A listing of the improvements and estimated construction costs are presented in Appendix B of the Zone 40 Water Master Plan Update. This alternative will meet water demands of initial phases of development and buildout of the Specific Plan Area while lowering ground water levels only an approximate 1.8 feet in the Specific Plan Area. There may be a slight rise in the ground water level in the area of the Elk Grove cone-of-depression as a result of this water supply alternative. Also, the feasibility of Alternative 1, surface water only, is speculative at this time because there is no current firm source of surface water for areas of the portion of the Specific Plan that are east of Bradshaw Road.

The Maximum Day Demand for the area west of Bradshaw Road will be served ultimately by surface water treated at the City's Fairbairn Water Treatment Plant. This water may be a combination of City water and water developed specifically for the County, but treated at the expanded Fairbairn Water Treatment Plant. Peak Hour flows will be met by use of storage facilities located on the project site and eventually within the vicinity of the project. The currently planned point of diversion of new surface water supplies for the County is near the mouth of the American River. This water will be pumped back to the Fairbairn American River Treatment Plant for treatment.

Phased development of the Specific Plan is expected to commence in the area west of Bradshaw Road. This area will require a first phase conjunctive use ground water supply. This ground water system can ultimately be an integral component of the ultimate system serving the area once surface water is provided. Also, this system could be supplemented by a connection to the existing Zone 40 system to the south of the Specific Plan Area as a back up or emergency source of supply.

The Maximum Day Demand for the area east of Bradshaw Road will be served by a conjunctive use system of both ground water and surface water. The current and planned Zone 40 Vineyard Area systems to the south will eventually connect this area to the rest of the Zone 40 system. Again, Peak Hour Demands will be met by storage facilities.

Ground water in the Plan Area will be extracted from the deeper aquifer and may therefore require treatment for potential excess iron, manganese, and possibly arsenic. Raw water from several wells will be delivered to centralized treatment facilities located at the storage facility sites.

GROUND WATER IMPACTS EVALUATION: A ground water impacts evaluation of the preferred alternative was performed to determine the long-term reliability of ground water supplies. The ground water impacts evaluation also describes the incremental and cumulative impacts the North Vineyard Station Specific Plan will have on the ground water acquifers. The "North Vineyard Station Specific Plan Evaluation of Ground Water Impacts", prepared by SCWA, dated January 32, 1997, is included as Appendix A of this report.

Two ground water modeling scenarios are used to determine the reliability of ground water supplies. The first scenario evaluates the incremental impacts of NVSSP water demands on ground water elevations underlying the NVSSP Area and at the Elk Grove cone-of-depression. Incremental impacts are based on the difference in demands from 1990 to buildout levels. The second scenario is a worst case cumulative impact scenario which assumes ground water is used to supply a new urban growth to buildout (2030) of the General Plan Urban Policy Area.

Incremental impacts includes a lowering of ground water elevations in the NVSSP Area by approximately 1.8 feet, and a slight rise in the Elk Grove cone-of-depression as a result of the assumption that surface water would be the only source of water supply for the NVSSP Area west of Bradshaw Road. Impacts associated with this level of decline include an increase in pumping costs of $0.25 per acre-foot annually within the NVSSP Area.

The cumulative impact scenario shows ground water elevations stabilizing through increased recharge from the American and Sacramento Rivers, and from boundary inflows as ground water levels within the County decline. Under this scenario, the aquifer experiences an approximate 100-foot decline in ground water elevations from 1990 to 2030 stabilized ground water levels. The impacts associated with lowering ground water levels to these levels include in-migration of poor quality water from the deep aquifer system, dewatering of public and private wells, increased pumping costs, land subsidence, and increased rate of movement of ground water contamination.

Surface Water Supply Options

The six potential surface water supply options which could be considered to meet demands in the Northern Study Area, including the Specific Plan Area, are listed in Table 4 of this report. Of these six supply elements, two were identified for full allocation to the study of the Zone 40 Master Plan Update at buildout, and one is too speculative to plan for at this time. The three remaining surface water supply elements which could be used to meet demands in the Northern Study Area, including the Specific Plan Area, are S1, S5, and S7.

TABLE 4

SUMMARY OF SURFACE WATER SUPPLY OPTIONS [1]

Element	Maximum Yield	Average Yield	Reliability	Raw Water Cost
S1. Intermittent "Winter" Water.	9,000 afa	6,750 afa	Low	$ 2.30/af to $15.50/af
S3. SMUD Surface Water Assignment.	100% of yield allocated to Zone 40 Study Area, as defined in the Master Plan Update.			
S4. CVP Water Public Law 101-514 "Fazio" Water.	100% of yield allocated to Zone 40 Study Area, as defined in the Master Plan Update.			
S2. City of Sacramento Expanded POU.	Too speculative to plan for at this time.			
S5. "Firm" Surface Water Transfers from North Sacramento River Basin.	58,000 afa	Up to 58,000 afa	Variable (High to Moderate)	$150/af to $400/af
S7. SCWA Purchase of City of Sacramento Water for Use in Portion of Study Areas with the City POU. [2]	8,700 afa	Up to 8,700 afa	High	$ 9/af to $ 22/af

1 From Table 7-1 of the Zone 40 Water Master Plan Update.

2 Yield equal to the estimated demand at buildout for the portion of the Northern Study Area that is within the City Place of Use. Includes water system loss of 7.5%. See discussion on Element S7 in Section 3, **"Assessment of Existing Water Supplies and Transmission Facilities"** of this report.

S1. Intermittent "Winter" Water

This element involves obtaining surface water entitlements for the diversion of intermittent water from either the Sacramento or American Rivers for use in the Water Master Plan Study Areas. Typically, this water is available during winter months in most years. Estimates of the availability of intermittent flows are being revised due to recent changes in the regulatory environment, including the Central Valley Project Improvement Act, Endangered Species Act, and the ongoing Bay-Delta hearings. For this Water Master Plan, intermittent water is defined as the flows that occur in either the Sacramento or American Rivers that are in excess of all surface water entitlements, instream flow requirements, and other required flows for environmental purposes (i.e., Delta outflow requirements).

S5. "Firm" Surface Water Transfers from North Sacramento River Basin

This element involves entering to a long-term agreement for the purchase and transfer of water from other entities that currently hold surface water rights in the north Sacramento River basin. Such surface water transfer opportunities depend on a variety of hydrologic, geographic, environmental, and regulatory conditions. Regulations pertaining to transfers are currently evolving due to recent changes in the regulatory environment, including the Central Valley Project Improvement Act, Endangered Species Act, Clean Water Act, and the ongoing Bay-Delta hearings.

S7. Agency Purchase of City of Sacramento Water

The City has entitlements to 81,800 afa of Sacramento River water and 230,000 afa of American River water. The water must be used in the currently defined Place of Use (POU) for each water source. The POU for the Sacramento River water is the current City limits, and for the American River water extends beyond the City limits to cover adjacent unincorporated portions of the County. Approximately 3,000 acres of the Northern Study Area is located within the American River POU. This water supply element involves the purchase of City surface water supplies by SCWA for use only in the portion of the Northern Study Area that is within the City's American River POU.

Ground Water Supply Options

The ground water supply elements identified in the Zone 40 Master Plan Update which could be used to meet demands for the Northern Study Area, including the Specific Plan Area, include element G1, Additional Ground Water, and elements G6/G7, Injection. To be consistent with the 1993 Vineyard Water Distribution Study, published as Appendix K in the Master Plan Update, it has been assumed that all ground water supplied to this Study Area would be drawn from the deep aquifer, and would be treated for removal of iron, manganese, and possibly arsenic. Water from this aquifer frequently requires treatment for iron and manganese to meet state drinking water standards. Wells which are integrated into the supply system would thus be tied to centralized satellite treatment facilities prior to discharge of well water into the distribution system.

G1. Zone 40 Additional Ground Water Pumping Capacity

This element involves the development of additional ground water production capacity within the Water Master Plan Study Areas. Presently, ground water is the sole source of long term supply to this Study Areas and to Zone 40. An average annual pumping rate of approximately 0.76 afa per acre has been determined to be the sustainable extraction rate. Additional ground water pumping capacity within the Study Areas can be developed for:

1. the required peaking capacity needed to meet projected maximum day demands;

2. conjunctive use operations whereby the additional capacity can be used to meet future water demands in the event of shortages resulting from other water supply sources; and

3. an interim source of additional water to be used until other water supplies are made available.

G6. Injections Wells Using Intermittent Flows

This water supply element involves injecting treated surface water into the ground water basin during the winter months and recovering the water for use during periods of high demand in the summer months. The water resource for injection would be intermittent flows from either the Sacramento or American Rivers.

The intermittent water would be treated and injected into the aquifer system through wells located within the Study Areas and recovered later through municipal pumping. As reported in the Master Plan Update, it is anticipated that except for minor treatment and conveyance losses, all of the injected water can later be recovered.

Ground water levels within the Study Areas have fallen to about 100 feet below land surface with seasonal fluctuations of approximately 10 feet. The lowered water levels provide significant aquifer storage capability for the recharged water. The potential also exists for the use of dual purpose wells for recharge and recovery. This would require that the wells be used for extraction in summer months, then re-operated for use as injection wells when excess surface water is available during the winter and spring months.

Injection of surface water through wells is subject to California Department of Health Services (DHS) approval, and would require treatment prior to injection. Treatment of the surface water would also be required prior to injection to prevent clogging or binding in the well casing (which can severely impede the injection rate). The surface water needs to be treated for the removal of suspended solids, dissolved oxygen, and organic material. Treatment process requirements are similar to that for conventional surface water treatment which include filtration/sedimentation and disinfection, and this water supply element would thus need to be combined with treated surface water element.

G7. Injection Wells Using Transfer Water

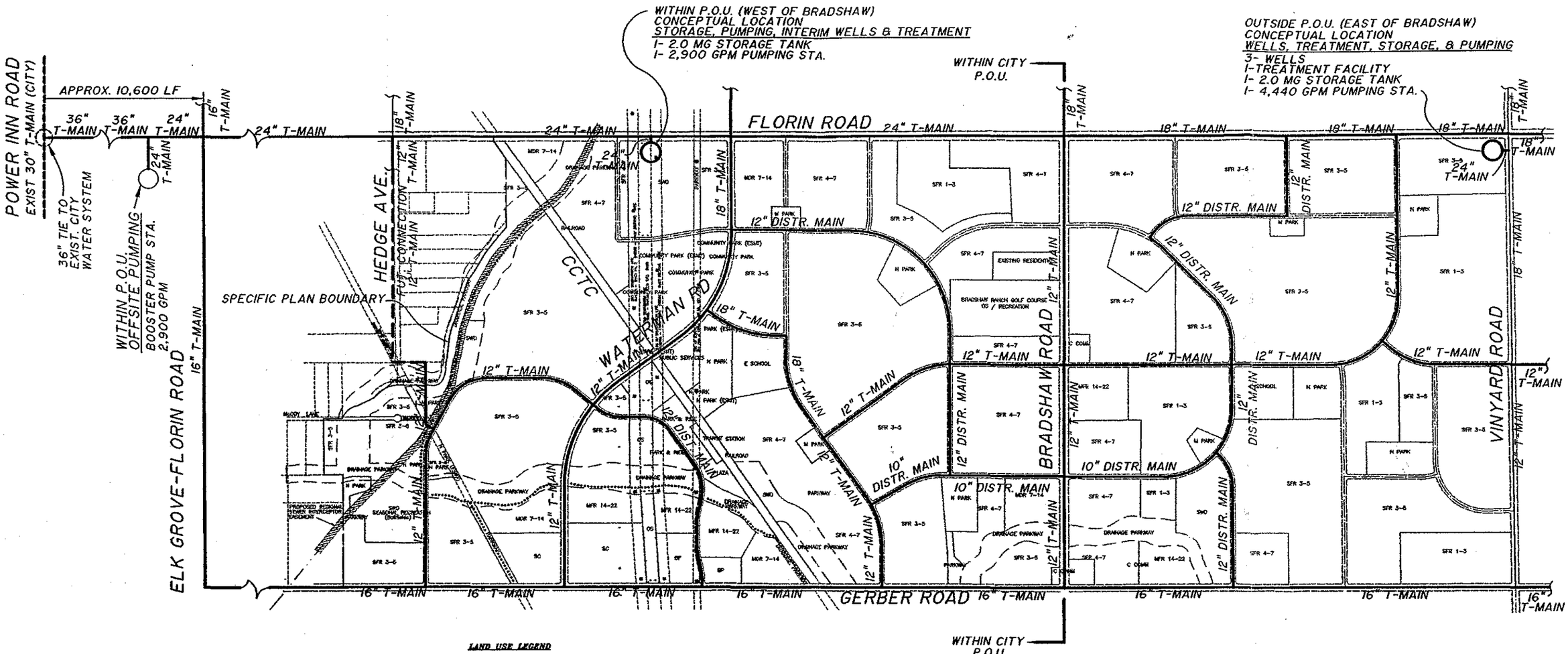
This water supply element involves recharging the ground water basin with surface water during the winter months, and recovering the water for use during periods of high demand in the summer months. The source of the surface water will be from transfers from either the Sacramento or American Rivers. The surface water will be recharged into the aquifer system through injection wells located within the Study Areas and later recovered through municipal pumping. As reported in the Master Plan Update, it is anticipated that except for minor treatment and conveyance losses, all of the injected water can later be recovered.

Ground water levels within the Study Areas are as much as 100 feet below land surface with seasonal fluctuations of approximately 10 feet, thus providing adequate aquifer storage capability for the recharged water. In addition, the potential exists for the use of dual purpose wells for recharge and recovery. The wells would be used for extraction in summer months, then re-operated for use as injection wells when excess surface water is available during the winter months.

Well injection of surface water is subject to DHS approval which normally requires treatment prior to injection. To prevent clogging or binding in the well casing (which can severely impede the injection rate), treatment of the surface water is also required prior to injection. Specifically, the surface water needs to be treated for the removal of suspended solids, dissolved oxygen, and organic material. Treatment process requirements are similar to conventional surface water treatment, including filtration/sedimentation and disinfection, and this water supply element would thus need to be combined with a treated surface water element.

C. WATER DISTRIBUTION

Delivery, storage and treatment systems for the area were planned and tentatively sized as part of the Zone 40 Adjacent Areas Water Master Plan report. These facilities have been incorporated into the NVSSP Water Master Plan and are shown in Figure 4.


WITHIN P.O.U. (WEST OF BRADSHAW)
CONCEPTUAL LOCATION
STORAGE, PUMPING, INTERIM WELLS & TREATMENT
1- 2.0 MG STORAGE TANK
1- 2,900 GPM PUMPING STA.
WITHIN CITY P.O.U.
OUTSIDE P.O.U. (EAST OF BRADSHAW)
CONCEPTUAL LOCATION
WELLS, TREATMENT, STORAGE, & PUMPING
3- WELLS
1-TREATMENT FACILITY
1- 2.0 MG STORAGE TANK
1- 4,440 GPM PUMPING STA.
POWER INN ROAD
EXIST 30" T-MAIN (CITY)
APPROX. 10,600 LF
36" T-MAIN
36" T-MAIN
24" T-MAIN
16" T-MAIN
24" T-MAIN
36" TIE TO EXIST. CITY WATER SYSTEM
WITHIN P.O.U. OFFSITE PUMPING
BOOSTER PUMP STA. 2,900 GPM
24" T-MAIN
16" T-MAIN
FLORIN ROAD
24" T-MAIN
18" T-MAIN
18" T-MAIN
18" T-MAIN
18" T-MAIN
18" T-MAIN
18" T-MAIN
HEDGE AVE.
12" T-MAIN
SPECIFIC PLAN BOUNDARY
CCTC
WATERMAN RD
12" DISTR. MAIN
12" DISTR. MAIN
12" DISTR. MAIN
12" T-MAIN
12" T-MAIN
12" T-

Storage and Treatment Facilities

Storage facilities consisting of 2.0 million gallon reservoirs are proposed which will provide for Peak Hour and Fire Flow Demands. A total of eight million gallons of storage is necessary for the Northern Study Area. The North Vineyard Station Specific Plan requires a total of 2.2 million gallons of storage. Each tank site will include booster pumps to provide adequate pressures to the system. These storage facilities are planned for two locations within the Northern Study Area: one west of Bradshaw Road, and one east of Bradshaw Road. Locations for these facilities would be near the northern boundary of the Specific Plan.

Treatment facilities are proposed at the site of the storage facilities. As previously described, each will be served by a remote water well field of three to six wells located within approximately 1,000 feet the treatment facility. Raw water will be fed directly to the treatment facility from these wells. The treatment facility, providing primarily oxidation and filtration, will feed the storage tanks.

Transmission Mains and Supplemental Booster Pumps

Transmission mains are normally 12-inch diameter and larger. The transmission mains shown on the Master Water Plan provide for a major east/west main along Florin Road, a lesser main in Gerber Road, and north/south mains along Elk Grove-Florin Road, Waterman Road, Bradshaw Road, and Vineyard Road. Lesser transmission mains generally grid the site in the proposed collector roadways. Distribution mains are also shown on the plan to complete the grid. Master planned transmission mains are funded by Zone 40, while distribution mains are not.

The master planned system proposes installation of booster pumps. One large booster pump is proposed along the transmission main along Florin Road at the edge of the service area. This station will have an ultimate capacity of approximately 8,890 gpm (2,900 gpm for NVSSP). Also, booster pumps with ultimate capacities of 15,280 gpm and 8,890 gpm (4,440 gpm and 2,900 gpm for NVSSP) will be provided at the east and west storage sites, respectively. The North Vineyard Station Specific Plan demands are shown in Table 3. The North Vineyard Station Specific Plan requires a total of 10,240 gpm of booster pumping capacity.

Raw Water Facilities

Ground water extracted from municipal wells will provide conjunctive use supplies. Wells are anticipated to be installed in clusters surrounding the proposed storage and treatment facilities. It is expected that up to six wells will feed each treatment facility. Raw water from the wells will be piped directly to the treatment facility. The expected size of these lines is approximately 12-inch diameter. These raw water lines will be funded by standard Zone 40 fees.

Possible Connections to Existing Systems

Zone 40 Vineyard System

The Adjacent Areas Water Master Plan addresses connections southward to the existing Zone 40 system. During initial phases of construction, it is probable that connections to this system would enhance service to both the North Vineyard Station Specific Plan and the exiting Zone 40 system to the south. No sizing has been proposed, but the nearest north/south mains are 12-inches in diameter. It is expected that these mains would be extended at that same size. SCWA is designing a 12-inch diameter main along Elk Grove-Florin Road to Gerber Road. SCWA plans to have this main in place by the Fall of 1998.

City of Sacramento System

The City's existing 30-inch pipeline at Power Inn Road has some available capacity to serve initial development in the Northern Study Area. The City plans to construct a new pipe line in Power Inn Road which could be up-sized to provide ultimate capacity to the Northern Study Area. This new main would be approximately 60-inches to 72-inches in diameter. Extension of a main along Florin Road from Power Inn Road to the boundaries of the North Vineyard Station Specific Plan would be necessary to provide surface water supplies.

IV. PHASING CONSIDERATIONS

A. PROJECT DEVELOPMENT SCHEDULE

Development within the Plan Area may begin in the construction year immediately following adoption of the Specific Plan document. Because of the physical layout of many of the other infrastructure services, such as sewer and drainage, it is anticipated that development may commence in the westerly portions of the Plan Area. This Area is within the City American River POU which is ultimately planned to be supplied with 100% surface water. Because of the substantial estimated costs of providing surface water to the Northern Study Area, an initial, possibly interim, alternative is necessary to allow any approved development to proceed.

A more feasible alternative approach is to develop a more localized supply and distribution system. This system would connect to the existing zone 40 systems to the south and west of the plan area. A storage facility, including booster pump, a ground water treatment plant, and a field of wells to initially feed the storage reservoir and system could supplement this system. It is possible that additional phases of development could extend smaller diameter lines to the existing city system as a supplement to the ground water supply.

B. SUPPLY AND FACILITIES SCHEDULE

Additions to the capacity of the City treatment plant, extension of the ultimate transmission main system connecting to the City transmission system, potential enhancements to that existing City transmission main system, installation of a phased booster pump station, and potential installation of storage facilities are significant capital improvements which will require significant time and effort to design and construct. The estimated cost of those facilities could exceed $30 million. These costs in time and money are too great to be feasible for initial development. Initial development in the Specific Plan must therefore rely on ground water facilities which will become an integral part of the ultimate system.

V. CAPITAL FACILITIES PLAN

This section will describe the planned SCWA Zone 40 Facilities, as well as surface water delivery needs for buildout of the Specific Plan Area. First, the project specific system requirements are identified based on the water demand forecasts. Second, the SCWA Zone 40 Capital Facilities to meet the specific system requirements are identified. The system facilities described in this section are based on either the ultimate SCWA Zone 40 system facilities or a logical phased portion of the system as presented as Alternative 2, the Preferred Water Supply Alternative.

A. SPECIFIC SYSTEM REQUIREMENTS

Table 5 identifies SCWA Zone 40 system requirements and will represent the basis for determination of the facilities required to supply the buildout of the Specific Plan Area. The total SCWA Zone 40 North Expansion Area system requirements are also identified to provide a comparison.

The basis for determination of specific system requirements on Table 5 are as follows:

1. Average Day Demand: Based on Table 3 (includes conservation)
2. Maximum Day Demand: Two times Average Day Demand
   Supply source are sized to serve this demand.
3. Peak Hour Demand for Storage: 1.8 times Maximum Day Demand
   Peak Hour for Transmission Mains: 2.0 times Maximum Day Demand
4. Storage Requirement: Equal to the sum of: four hours of the Peak Hour Demand minus the Maximum Day Demand, a fire flow of 3,000 gpm for three hours, and an emergency storage volume equal to 1/3 of the Average Day Demand.
5. Number of Wells: Determined by Maximum Day Demand divided by 1,275 gpm.
6. Booster Pump Requirements:
   a. Surface Water Delivery: Use Maximum Day Demand
   b. Storage: Within POU: Use Maximum Day Demand. This equals one-half of the Peak Hour Demand; the other one-half is provided by the surface water booster pump in a. above.
      Outside POU: Use Peak Hour at two times Maximum Day Demand.
7. Transmission Main Requirements: Per Alternative 2 of Areas Adjacent to Zone 40 Study and staff comments. (See Figure 4.)
8. City of Sacramento System Requirements:
   a. Purchase of Capacity at City WTP: Maximum Day Demand
   b. City Transmission Main Upgrade: Unknown at this Time

TABLE 5

SCWA ZONE 40 SYSTEM REQUIREMENTS

Item	Within POU, West of Bradshaw Surface Water Delivery			Outside POU, East of Bradshaw Groundwater Delivery		
	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area
1A. Average Day Demand (mgd)	2.09	6.38	33%	1.6	5.5	29%
1B. Average Day Demand (gpm)	1,450	4,445	33%	1,110	3,820	29%
2A. Max Day Demand (mgd)	4.18	12.76	33%	3.2	11	29%
2B. Max Day Demand (gpm)	2,900	8,890	33%	2,220	7,640	29%
3. Storage Requirement (mg)	1.26	4.4	29%	0.97	4.00	24%
4. Wells at 1275 gpm	---	---	---	1.74	6	29%
5. Booster pump Requirements						
A. Surface Water Delivery (gpm)	2,900	8,890	33%	---	---	---
B. Storage (gpm)	2,900	8,890	33%	4,440	15,280	29%
5. Zone 40 Transmission Main Reqm'ts		See Figure 4			See Figure 4	
6. City of Sacto. System Reqm'ts						
A. Purchase of Capacity at City WTP (mg)	4.18	12.8	33%	---	---	---
B. City Transmission Main Upgrade		Unknown at this time		---	---	---

B. ZONE 40 CAPITAL FACILITIES

The required Capital Facilities are based on specific system requirements. These facilities will support buildout of the Specific Plan Area. The Capital Facilities must be sized in standard increments, as well as represent a logical phased component of the ultimate system. The Capital Facilities are described below and are identified on the Water Master Plan, Figure 4.

Facilities Within the City POU (West of Bradshaw Road)

Proposed facilities within the City POU are described below and are summarized on Table 6.

1. Construction of a 2 mg storage reservoir with a 2,900 gpm booster pump station. The ultimate Northern Study Area storage requirement is 4.4 mg with an 8,890 gpm booster pump station.

2. 36"/24" off-site T-main construction east along Florin Road from Power Inn Road to the Specific Plan. (See Figure 4.)

3. 12" to 24" on-site T-mains per the Zone 40 Expansion Study and as indicated by SCWA staff. (See Figure 4.)

4. On-site distribution mains required to complete the transmission grid. (See Figure 4.)

5. Purchase of treatment capacity at the City water treatment plant of approximately 4.2 mgd. The ultimate Northern Study Area requirement is 12.8 mgd.

It is not known at this time whether the incremental increase to the City of Sacramento T-main system is required to deliver 4.2 mg of surface water to the Specific Plan Area. This will be determined through future coordination and analysis of the Water Master Plans between the City of Sacramento and SCWA.

The City of Sacramento has recently completed a Water Distribution Master Plan. Included in this analysis is the transmission main upgrade(s) to deliver surface water from the Fairbairn Treatment Plant to southern City areas, as well as the SCWA Zone 40 system.

Facilities Outside the City POU (East of Bradshaw Road)

Facilities outside the City POU are described below and are summarized on Table 6.

1. Construction of a 2 MG storage reservoir with a 4,440 gpm booster pump station to provide peak hour and fire flow. The Northern Study Area ultimate requirement is 4 mg of storage and a 15,280 gpm booster pump station.

2. Phase I construction of three wells at approximately 1,275 gpm each: two wells will provide the Maximum Day Demands, and one well will provide back up. The Northern Study Area ultimate capacity is six wells.

3. Phase I construction of a treatment facility capable of treating 3.2 mgd with back-up, as determined by the County of Sacramento Water Resources Division staff.

4. 12-inch to 24-inch on-site T-mains per the Areas Adjacent to Zone 40 Study and as indicated by SCWA staff. (See Figure 4.)

5. On-site distribution mains required to complete the transmission grid. (See Figure 4.)

TABLE 6

ZONE 40 CAPITAL FACILITIES

Item	Within POU, West of Bradshaw Surface Water Delivery			Outside POU, East of Bradshaw Groundwater Delivery		
	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area	N. Vinyard Portion	Z40 North Expansion Area Total	N. Vinyard % of Total Exp. Area
1. Storage Reservoir (mg)	2	4.4	45%	2	4	50%
5. Booster pump Requirements						
A. Surface Water Delivery (gpm)	2,900	8,890	34%	---	---	---
B. Storage (gpm)	2,900	8,890	34%	4,440	15,280	29%
3. Wells at 1275 gpm	---	---	---	3	6	50%
4.Groundwater Treatment Facility (mgd)	---	---	---	3.20	11	29%
5. Zone 40 T- Main, D-Main Reqm'ts		See Figure 4			See Figure 4	
6. City of Sacto. System Reqm'ts						
A. Purchase of Capacity at City WTP (mg)	4.2	12.8	33%	---	---	---
B. City Transmission Main Upgrade		Unknown at this time		---	---	---

C. FACILITIES TO SUPPORT INITIAL PHASES OF DEVELOPMENT WITHIN THE CITY POU (WEST OF BRADSHAW ROAD)

It is important to note that the Zone 40 Capital Facilities will be phased as development progresses within the Specific Plan Area.

As referenced in the Areas Adjacent to Zone 40 Water Master Plan Report, "It is probable that the demands of initial development in the western half of the Study Area would be served by ground water". This is based on the fact that the construction of ultimate Capital Facilities to deliver surface water to support initial development would be cost prohibitive, either as a developer funded and reimbursed project, or as a capital improvement by Zone 40.

Ground water facilities to serve initial development of the Specific Plan Area within the City POU would be dependent upon development size and timing of permanent surface water improvements. At minimum, wells, treatment facilities, storage, and booster pumping would be required to supplement the connection to the Zone 40 facilities to the south. Transmission mains would be constructed as currently identified in this Water Master Plan Report.

It is expected that the initial construction of ground water supply and treatment for the western portion of the Specific Plan Area would, if located and sized appropriately, be a reimbursable facility under Zone 40 and ultimately reduce the capital ground water facilities required outside the City POU (East of Bradshaw Road).

The Capital Facilities Plan to provide water service to the Specific Plan Area will be identified in detail as part of the Capital Improvement Program (CIP) and Financing Plan for the NVSSP.

The project facility costs, timing, and initial phasing of capital facility development will be described in detail as part of the Financing Plan for the Specific Plan Area.

VI. REGULATORY REQUIREMENTS

A. ANNEXATION TO SCWA ZONE 40 AND SCWMD

The Plan Area will need to be annexed into the existing Zone 40 of the SCWA in order for Zone 40 to provide major water facilities described in this report. The Specific Plan Area should also be annexed to the Sacramento County Water Maintenance District which will allow the District to purvey water to developments within the Specific Plan Area.

B. WATER SUPPLY AGREEMENTS

While permanent surface water supplies have not yet been finalized, interim surface water supplies have been obtained to address declining ground water levels. On November 16, 1993, the Board approved an Agreement with the City of Sacramento for the City to treat and wheel interim surface water obtained by the Agency (S7).

On June 21, 1994, the Board approved a Water Transfer Agreement with Browns Valley Irrigation District (BVID) for the release of surface water from the Yuba River and delivery to Zone 40, via diversion and treatment at the City's Sacramento River Water Treatment Plant. Approximately 1,500 acre-feet of surface water was used in Zone 40 during the term of the first BVID water transfer agreement from October 1, 1994 to September 30, 1995. On June 6, 1995, the Board approved a second agreement with BVID for the transfer of 2,000 acre-feet of water for use in Zone 40 during the October 1, 1995 to September 30, 1996 time period. It is expected that the entire 2,000 acre-feet of surface water will be utilized, which will supply the water needs for over 3,000 homes within the Laguna and Vineyard water distribution systems. County staff believe that short-term water transfers on the order of 2,000 acre-feet per year can be consistently acquired.

The initial physical facilities needed for SCWA to receive the surface water from the City's water distribution system were completed in February of 1995 with completion of the Franklin Boulevard Booster Pump Station project. Additional facilities and modifications to the Franklin Booster Pump Station are planned which will more than double the capacity to receive water from the City's distribution system to approximately 6,000 acre-feet annually for the Laguna and Vineyard water systems in the Zone 40 Area. These improvements are planned to be operational by the summer of 1997.

VII. WATER MASTER PLANNING EFFORTS

The second component of General Plan Policy CO-20 is a requirement that there be an approved Water Master Plan for new development areas. A Water Master Plan for Zone 40 was completed in February of 1987. (The Zone 40 Master Plan Area is shown on Figure 3.) The 1987 Master Plan recommended conjunctive use with surface water supplies from a proposed Bureau of Reclamation contract or an expansion of the City's American River POU. Facilities have been designed and financing structured to implement conjunctive use of surface water and ground water supplies within Zone 40.

The Draft Zone 40 Water Supply Master Plan Update evaluated water conservation, ground water, surface water, and reclaimed water as measures to meet future water needs in the Study Area. (See Figure 3.) The recommended alternative included water conservation (including the sixteen Best Management Practices identified in the Memorandum of Understanding Regarding Urban Water Conservation in California), a long-term sustainable ground water yield, surface water for conjunctive use, and utilization of reclaimed water from the Sacramento Regional County Sanitation District's 5 million gallon a day wastewater reclamation facility, currently under design. Surface water sources included PL 101-514 water, SMUD assignment water, "winter" water, City water within the existing POU, and other unidentified surface water transfers as needed.

SCWA staff recommends that the Master Plan Update be forwarded to the County Department of Environmental Review and Assessment (DERA) to commence preparation of CEQA documentation once the Water Forum Agreement is completed. It is SCWA staff's intent that the recommended alternative of the Master Plan Update be adjusted accordingly as the Water Forum's Solution Agreement becomes more clarified and that the environmental documentation of the Master Plan Update be closely coordinated with CEQA documentation for the Forums' Solution Agreement.

The regional Water Forum recently published a Working Group Draft Agreement. A DEIR on this project is expected in Fall of 1997, a final Agreement in December of 1997, and a final EIR in the winter. Once this is complete, the SCWA's Zone 40 Master Plan Update Draft EIR can be completed and the Master Plan Update adopted in summer of 1998.

SCWA staff have initiated master planning efforts for the Areas Adjacent to the Zone 40 Master Plan Area, which include the East Franklin, Laguna Ridge, and Lent Ranch Specific Plans and Poppy Ridge Comprehensive Plan in the Laguna Area; and the North vineyard Station Specific Plan and Florin Station Comprehensive Plan in the Vineyard Area. These master plans will be combined with the Zone 40 Master Plan Update and will build on the water supply sources.

VIII. SUMMARY

Conjunctive use water supply for the County of Sacramento and surrounding regions is a very complex and multi-faceted matter that has received intense attention in the last few years from all of the areas water purveyors, environmental interests and governments. Solutions should not be pursued on a project-by-project level. They should be achieved on a regional scale. This effort takes time, and is now demonstrating a high probability of success in the foreseeable future.

Many interim solutions enhancing water supply have been implemented. Temporary surface water supplies are now being provided to areas which were entirely dependent upon ground water. Agreements are being completed which will provide significant long-term surface water supplies. This PL 101-514 water supply of 15,000 acre-feet of surface water is approaching reality with a DEIR due out prior to the approval of the North Vineyard Specific Plan, and scheduled final EIS/EIR for fall of 1997, prior to expected implementation of the Public Facilities Financing Plan for this project. It is therefore probable that long-term surface water contracts providing a more than adequate surface water supply will be in place prior to any possible start of development within the Specific Plan Area.

Initial water supply may require a supplemental dependency upon ground water for the first few developments. This initial supply will likely come from ground water facilities which are constructed to become an integral part of the ultimate system, enhancing and supplementing the assurance of long-term reliable water supply for this comprehensively planned community.

APPENDIX A

North Vineyard Station Specific Plan
Evaluation of Groundwater Impacts

Prepared by

Sacramento County Public Works Agency,
Water Resources Division

January 31, 1997

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EXECUTIVE SUMMARY

The Department of Environmental Review and Assessment (DERA) has requested that additional water supply studies be performed to identify long term reliable sources of potable water supply for the North Vineyard Station Specific Plan (NVSSP) area. This groundwater evaluation study provides the engineering analysis to show that groundwater can be considered a long term reliable source of supply in the NVSSP area.

Two groundwater modeling scenarios are used to determine the reliability of groundwater supplies. The first scenario evaluates the incremental impacts of NVSSP water demands on groundwater elevations underlying the NVSSP area and at the Elk Grove cone-of-depression. Incremental impacts are based on the difference in demands from 1990 to buildout levels. The second scenario is a worst case cumulative impact scenario which assumes groundwater is used to supply all new urban growth to buildout (2030) of the General Plan Urban Policy Area.

Incremental impacts include a lowering of groundwater elevations in the NVSSP area by approximately 1.8 feet, and a slight rise in the Elk Grove cone-of-depression as a result of the assumption that surface water would be the only source of water supply for the NVSSP area west of Bradshaw Road. Impacts associated with this level of decline include an increase in pumping costs of $0.25 per acre-foot annually within the NVSSP area.

The cumulative impact scenario shows groundwater elevations stabilizing through increased recharge from the American, and Sacramento Rivers and from boundary inflows. Under this scenario the aquifer experiences an approximate 100 foot decline in groundwater elevations from 1990 to 2030 stabilized groundwater levels. The impacts associated with lowering groundwater levels to these levels include: in-migration of poor quality water from the deep aquifer system, dewatering of public and private wells, increased pumping costs, land subsidence, and increased rate of movement of groundwater contamination.

1. BACKGROUND

Location

The North Vineyard Station Specific Plan (NVSSP) area is located in the south central portion of Sacramento County (Figure 1-1), and is approximately 1,595 acres in size. The NVSSP area is bounded on the north by Florin Road, on the south by Gerber Road, and on the east by Vineyard Road. Elder Creek roughly constitutes the west boundary.

Existing Water Supply Facilities

At the present time, a public water distribution system does not exist within the NVSSP area; water for domestic and industrial uses is obtained from privately owned and operated wells.

Existing Surface Water Supplies

The City of Sacramento currently holds surface water rights from the American River. The geographical service area of this water, known as the City of Sacramento American River Place of Use (POU), extends beyond the current city limits and into areas of unincorporated Sacramento County. The eastern geographic boundary runs north and south along Bradshaw Road and includes a portion of the NVSSP area located on the west side of Bradshaw Road.

Surface water from the City's contractual source could be utilized within the approximately 945 acre westerly portion of the NVSSP area. The nearest water transmission facilities are a 30-inch transmission main located approximately 2.8 miles west of the Plan area, and a 24-inch transmission main located one mile north and one and one-half mile west of the Plan area.

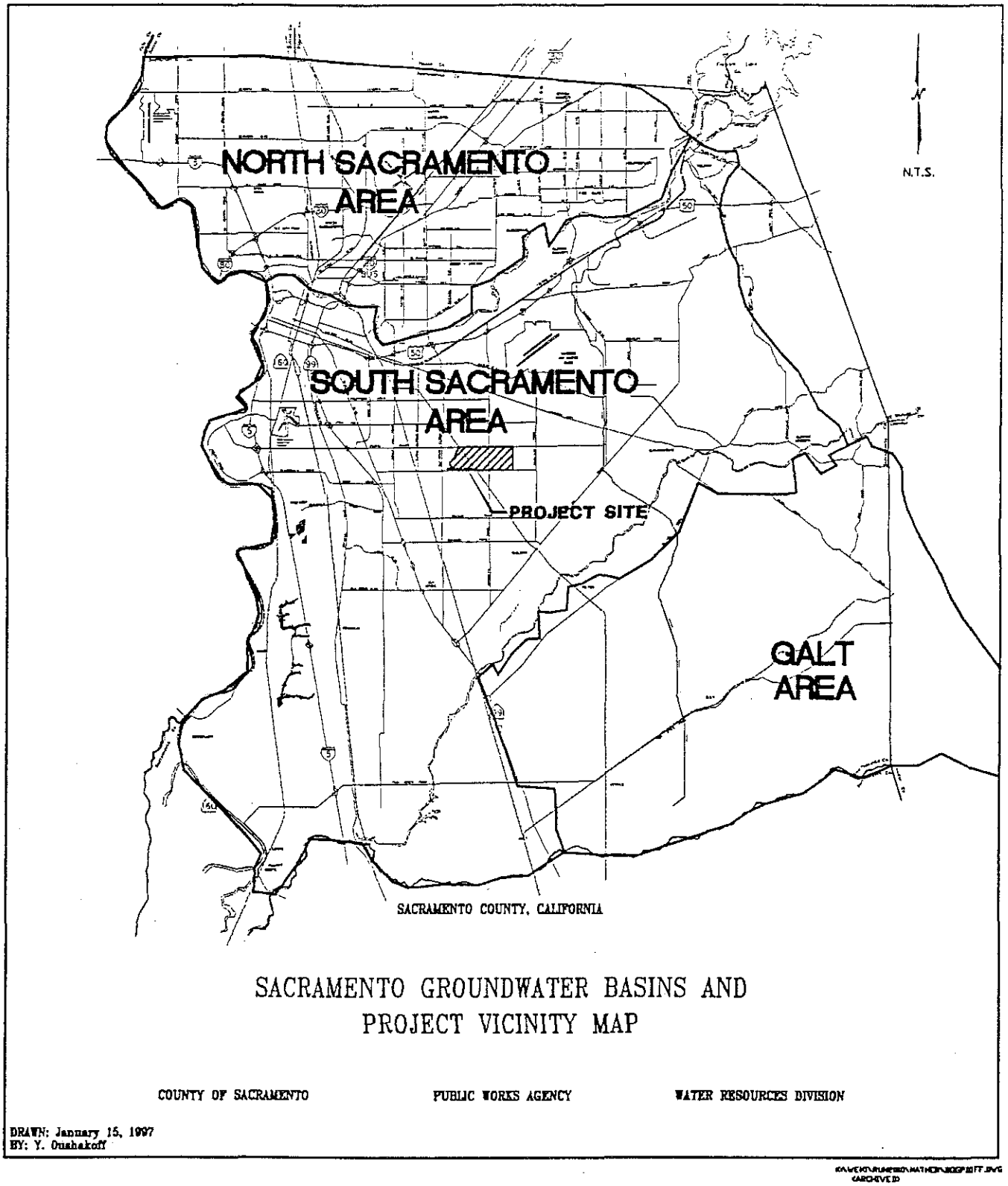


Figure 1-1 - Groundwater Zones and Vicinity Map

Existing Groundwater Supplies

Underlying the NVSSP area are two water bearing strata from which groundwater can be extracted. The Laguna Formation creates a shallow unconfined aquifer and provides the highest quality groundwater. The Mehrten Formation is a deeper confined aquifer and typically requires treatment for reduction of iron and manganese concentrations. The aquifer system underlying the Plan area and much of Sacramento County (Figure 1-2) is a portion of a larger regional aquifer identified as the Central Valley aquifer. To the east, this aquifer tapers out as it approaches the foothills of the Sierra Nevada.

The groundwater basin (South Sacramento Basin) which lies between the American, Cosumnes, and Sacramento rivers, for the most part, is independent from surrounding groundwater basins because of high recharge from the adjacent rivers. A hydraulic connection exists between the basin and the American and Sacramento rivers allowing for increased recharge when the gradient (slope) of the groundwater peizometric surface (water table) is steepened through increased groundwater extraction. If the hydraulic connection between the river and groundwater is lost, recharge to the basin will not increase with increased pumping resulting in potential overdraft of the aquifer.

Over the years, reliance on groundwater for urban and agricultural uses has created a cone-of-depression in the South Sacramento Basin around the Elk Grove area. A cone-of-depression is a sink (steepening of the slope) where all groundwater that enters the basin migrates towards. As a result, the Elk Grove cone is influenced by all pumping in the basin. Through the 1970's and 1980's the cone-of-depression experienced an average one foot drop per year in elevation primarily from increased agricultural and urban pumping. The early 1990's showed a stabilization in groundwater levels due to little increase in overall pumping (urban replacing agriculture) and increased recharge.

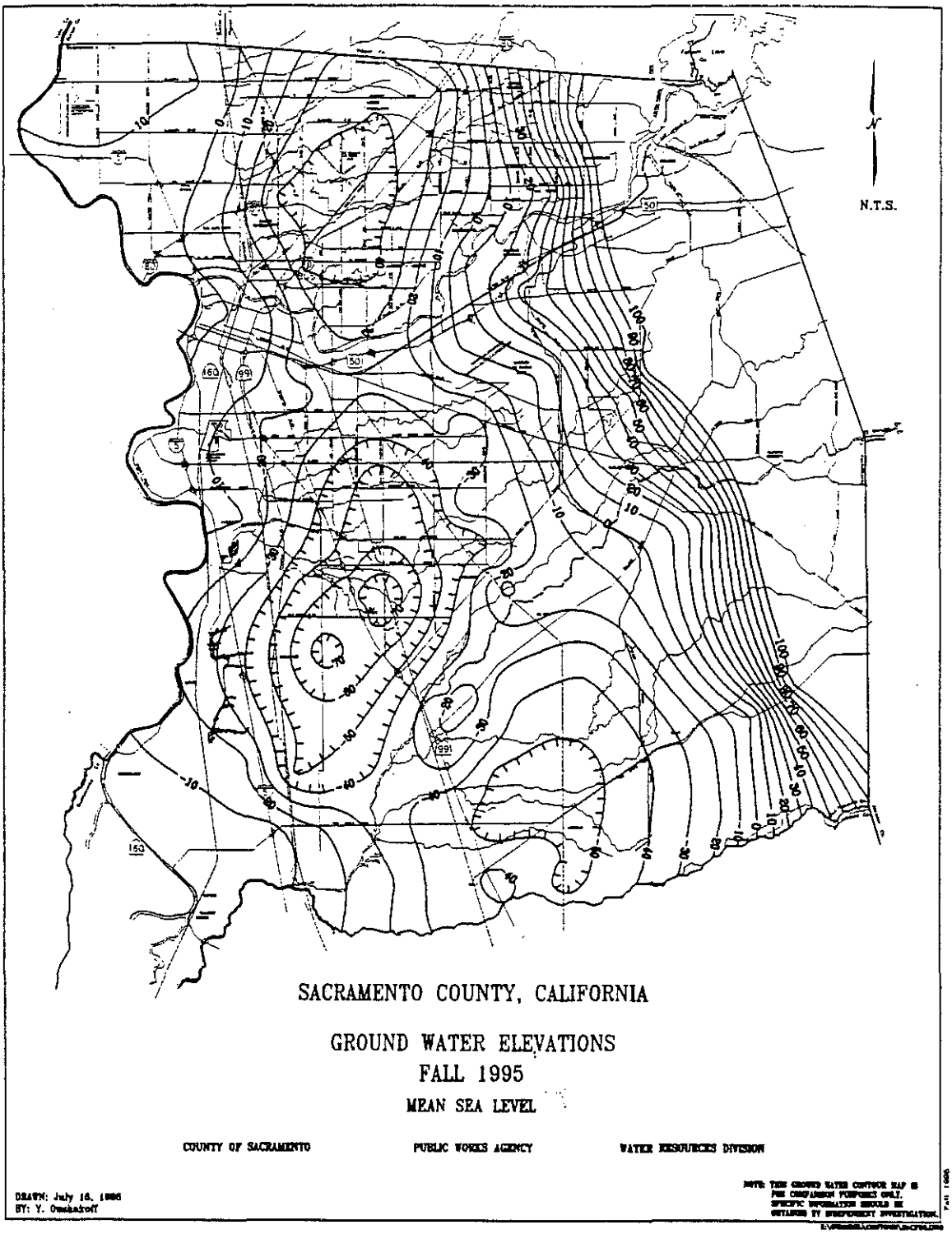


Figure 1-2 - 1995 Groundwater Conditions

2. WATER SUPPLY MASTER PLAN REQUIREMENTS

Zone 40 of the Sacramento County Water Agency was formed to manage groundwater resources within the influence area of the Elk Grove cone-of-depression by providing for the acquisition, construction, maintenance and operation of facilities for the production, treatment, transmission, distribution, conservation, and sale of ground and surface water within the zone. Zone 40 facilities will be constructed to meet the long-term water needs of the North Vineyard Station Specific Plan (NVSSP) area by providing for the conjunctive use of groundwater and surface water.

The Sacramento County Water Agency (Water Agency) will ultimately develop a Water Supply Master Plan for the expanded Zone 40 area, which includes the NVSSP area, using the framework that will be established through the Sacramento Area Water Forum. The Water Agency is proposing to defer completion of a formal Zone 40 Water Supply Master Plan until approval of the Water Forum Agreement, planned for early 1998. In the interim, the project proponent will prepare the necessary project specific facility studies and additional groundwater impact analysis to satisfy CO-20 of the Sacramento County General Plan (1993), State Law (SB901), and the Diablo Grande Court Case as described below:

CO-20

General Plan Conservation Element Policy CO-20 allows for the land use planning process to proceed and for specific plans and rezones to be approved but requires an approved Water Supply Master Plan and the necessary agreements for supplemental water supplies (supplies other than groundwater) in place prior to granting entitlements for urban development in new development areas.

Consistent with this policy, a North Vineyard Station Specific Plan Water Supply Master Plan will be developed by the project proponent and supplemental water

supplies will be obtained within Zone 40 by the Water Agency prior to granting entitlements for urban development in the NVSSP area.

SB 901 and Diablo Grande

As indicated in CO-20, the Specific Plan process can proceed without supplemental water supplies; however, this does not free the project from an environmental analysis of the availability of long term water supplies as required by SB 901 and the outcome of the Diablo Grande Court Case. State Law (SB 901) requires the responsible water purveyor to assess whether the anticipated water demands identified in a Specific Plan are covered in a master water management plan. The Diablo Grande Court Case states that a Specific Plan Environmental Impact Report must identify and provide an environmental analysis of the long term source of water supply.

Based on these requirements an analysis of the necessary facilities, water supply, and finance sources needs to be completed to show that the water demand from the NVSSP area has been planned for, and that a reliable source of supply is available over the long term. Annexation to Zone 40 will provide the necessary financing for construction of water supply facilities in accordance with existing fee structures. Existing engineering studies completed by the project proponent evaluates future water supply facility requirements for the NVSSP area.

The NVSSP area west of Bradshaw Road within the City of Sacramento's American River POU boundary is identified as having a long-term surface water supply available. Appropriate alignment and sizing of surface water conveyance facilities will be included in the project water supply master plan. The NVSSP area east of Bradshaw Road has no firm supplemental water supplies and is assumed to meet 100 percent of their total water needs through groundwater supplies. Groundwater studies are therefore needed to investigate the long term reliability of groundwater supplies necessary to serve this easterly portion of the NVSSP area.

3. STUDY OBJECTIVE AND SCOPE OF WORK

A groundwater modeling analysis will be performed using the Sacramento County Integrated Groundwater Surface Water Model (IGSM). Specifically, groundwater impacts will be evaluated within the North Vineyard Station Specific Plan (NVSSP) area and the Elk Grove cone-of-depression. Two scenarios will be considered: 1) incremental impacts from the NVSSP area based on 100 percent reliance on groundwater, and 2) cumulative impacts based on buildout of the General Plan with reliance on groundwater. These scenarios are described below:

Scenario 1 - Buildout of the NVSSP area with 100 Percent Reliance on Groundwater East of Bradshaw Road

The purpose of this scenario is to determine how much demands within the NVSSP area contribute incrementally to the overall groundwater decline in the basin. A baseline IGSM model run will be developed which assumes 1990 pumping levels within the NVSSP area, and the Water Forum negotiated safe yield (2005 pumping levels) for pumping levels in areas surrounding the NVSSP area. Ultimate NVSSP (east of Bradshaw Road) pumping is added to the baseline run and the difference in elevation between baseline and buildout of the NVSSP area will be determined. Incremental groundwater declines will be presented.

Scenario 2 - Buildout of General Plan with Reliance on Groundwater

For purposes of environmental analysis, a worst case scenario assumes that pumping in the South Sacramento Groundwater Basin will continue to meet the ultimate water needs of the General Plan Urban Policy Area. An identical model run was used in the Water Forum process in developing baseline runs for determining a safe sustainable yield. To make use of existing studies, this study will extract the appropriate sections of previously published studies used

in the Water Forum Process to identify the total impacts related to this scenario. No additional model runs will be completed as part of this scenario.

Modeling Assumptions

A static modeling approach is used for evaluating the long term effects of additional groundwater demand from the NVSSP area. Static modeling implies fixing the water demands, pumping, and surface water diversions at a specified level in accordance with the conditions being investigated. When the model is run, initial groundwater elevations are set to 1990 conditions and the aquifer is subjected to 70 years of historical (1921 to 1991) hydrologic rainfall and streamflow data. The resulting effect on the aquifer elevations is a transition from initial 1990 conditions to conditions reflecting the specified levels of water demand, pumping, and surface water diversions. Beyond the transition stage is the stabilized period where changes in groundwater elevations are a result of only the change in hydrologic data. If groundwater elevations never reach a stabilized condition, an overdraft condition exists and there is insufficient recharge to replenish the aquifer. The years depicting stabilized groundwater elevations are used for determining the probable long term maximum, minimum and average groundwater elevations for the aquifer under the conditions specified.

4. NORTH VINEYARD STATION SPECIFIC PLAN WATER DEMANDS

Ultimate Water Demands

Water demands for the North Vineyard Station Specific Plan (NVSSP) area were determined using water demands and land use areas developed in the December 10, 1996, North Vineyard Station Draft Water Plan prepared by MacKay and Somps. Table 4-1 provides a breakdown of water demands for the NVSSP area east and west of Bradshaw Road. The demands east and west of Bradshaw are 2,220 and 2,895 acre-feet annually (AFA), respectively.

Table 4-1
North Vineyard Station Specific Plan
Ultimate Water Demands

Land Use Category			Demand Factors (ac-ft/ac/year)	West of Bradshaw		East of Bradshaw		Totals	
General	Specific	Specific Plan		Area (acres)	Demand (AFA)	Area (acres)	Demand (AFA)	Area (acres)	Demand (AFA)
Residential	Rural Estates		1.65	0	0	0	0	0	0
	Single Family, Low Density	SF Res (3-5)-SF Res (4-7)	3.57	550.7	1966	537.5	1919	1088.2	3885
	Multi-Family Medium Density	Med Res (7-14)	4.58	45.4	208	0	0	45.4	208
	Multi Family, High Density	Mult Fam (14-22)	5.09	22.8	116	16.9	86	39.7	202
Commercial and Office	Commercial and Office	Comm, B/P	3.4	34.6	118	4.1	14	38.7	132
Public	Public, Quasi-Public, Cemeteries & Misc.	Transit Public Services	1.28	16	20	0	0	16	20
	Recreation - Active	Golf Course, Schools, Park	4.28	106.8	457	45.9	196	152.7	654
	Recreation - Passive	Drain Parkways, Open Space	0.00	115.7	0	25.5	0	141.2	0
Other	Right-of Way	Arterial Streets	0.26	38.9	10	19.1	5	58	15
	Undeveloped	Railroad	0.00	14.6	0	0	0	14.6	0
TOTALS				945.5	2,895	649	2,220	1,594.5	5,116

Pre-Project Water Demands

Water demands associated with pre-project conditions are needed to evaluate groundwater conditions prior to development. Pre-project demands were evaluated using black and white and infrared aerial photographs. Black and white photos provided an inventory of existing structures and types of use (residential, industrial, agriculture, etc.). Infrared color photos show irrigated areas as being redder in color than non-irrigated areas. Infrared photos taken in August of 1991 were used to determine acreages for existing irrigated agricultural uses and residential landscaping. Table 4-2 provides a breakdown of the number of rural dwelling units and crop acreages inventoried. Each dwelling unit was assumed to have one-half acre of irrigated landscaping/pasture at a water demand of 3.5 acre-feet per acre annually and to use two-thirds of an acre foot annually indoors. The total existing water demand is estimated to be 580 AFA.

Table 4-2
North Vineyard Station Specific Plan
Existing Water Demands

Land Use	Annual Demand Factors	West of Bradshaw		East of Bradshaw		Total Existing Demand (AFA)
		Acres or No. of Units	Demand (AFA)	Acres or No. of Units	Demand (AFA)	
Agricultural	3.50 ac-ft/ac	73.5	257	11.5	40	297
AR Dwelling Units	2.40 ac-ft/du	45	108	29	70	178
Light Industrial	0.00 ac-ft/ac	24.5	0	36	0	0
Active Recreational	4.28 ac-ft/ac	24.5	105	0	0	105
Total			470		110	580

5. SCENARIO 1 - BUILDOUT OF THE NORTH VINEYARD STATION SPECIFIC PLAN AREA WITH 100% RELIANCE ON GROUNDWATER EAST OF BRADSHAW ROAD

(Incremental Impact Analysis)

Modeling Methodology

Two IGSM model runs were developed as part of this analysis. A baseline and a North Vineyard Station Specific Plan (NVSSP) model run were developed to determine groundwater elevations under pre-project and post-project conditions, respectively. The resulting difference between the two runs indicates the contribution of groundwater impacts by the NVSSP.

Model conditions were adjusted to best reflect the actual long term condition of the aquifer. The Sacramento Area Water Forum Process is currently negotiating the long term safe sustainable yield of the aquifer and is recommending that groundwater extractions do not exceed projected 2005 pumping levels. This is especially true in areas of the South Sacramento basin (see Figure 1-1) which are outside the City of Sacramento's American River Place-of-Use boundary and will be relying solely on groundwater to meet year 2005 demands. Baseline model conditions were set to reflect 2005 pumping levels in areas surrounding the NVSSP area and pre-project pumping levels (580 AFA) for the NVSSP area. The NVSSP model run reflected the same 2005 pumping levels for surrounding areas and post project pumping levels (2,220 AFA) for the NVSSP area.

For the baseline run, existing pumping within the NVSSP area was assumed to occur at six wells located uniformly over the project area. The post-project model run assumed pumping would occur at two of the six wells for the area east of Bradshaw Road (see Appendix A) and surface water would be used for the area west of Bradshaw Road. Each of the wells was assumed to be fully perforated in the upper and lower aquifer.

Model Results

Figure 5-1 provides the model results for average groundwater elevations underlying the NVSSP area over the 70 year hydrologic period. Stabilization of groundwater elevations occur after the first 20 years. Baseline run elevations were subtracted from the post project run to determine the increment of additional groundwater decline resulting from increased groundwater demands from the NVSSP area as shown in Figure 5-2. The difference hydrograph provides insight into aquifer behavioral differences under pumping stresses induced by increased pumping. What is apparent is the lack of stabilization in the differences. Especially the difference after the first 20 years, which appears to get larger. This differences is not noticeable in Figure 5-1 because of the plot scale.

The reason for the continual downward trend in elevation differences was investigated further. The difference curve shows two aquifer behaviors: 1) short term differences between wet and dry years, and 2) long term differences resulting from changes in aquifer recharge characteristics. The short term differences are reflected in the small rises or declines in the difference curve during wet and dry years, respectively. These small changes indicate the difference between how sensitive the aquifer is to changing hydrology under each run. The post-development run enhances stream recharge by steepening the gradient from the rivers and allows more water to travel from the rivers at a faster rate. The aquifer becomes more sensitive to wet and dry years because more water is moving through the aquifer.

Long term differences are more difficult to assess given the complex nature of the aquifer system. Further investigation was done to evaluate the reason for the apparent continual increase in differences. Three points were chosen to develop additional difference hydrographs each in line with the recharge sources contributing to the NVSSP area (See Appendix A). The point nearest the eastern boundary of the aquifer showed the same increased difference characteristic and those near the river sources

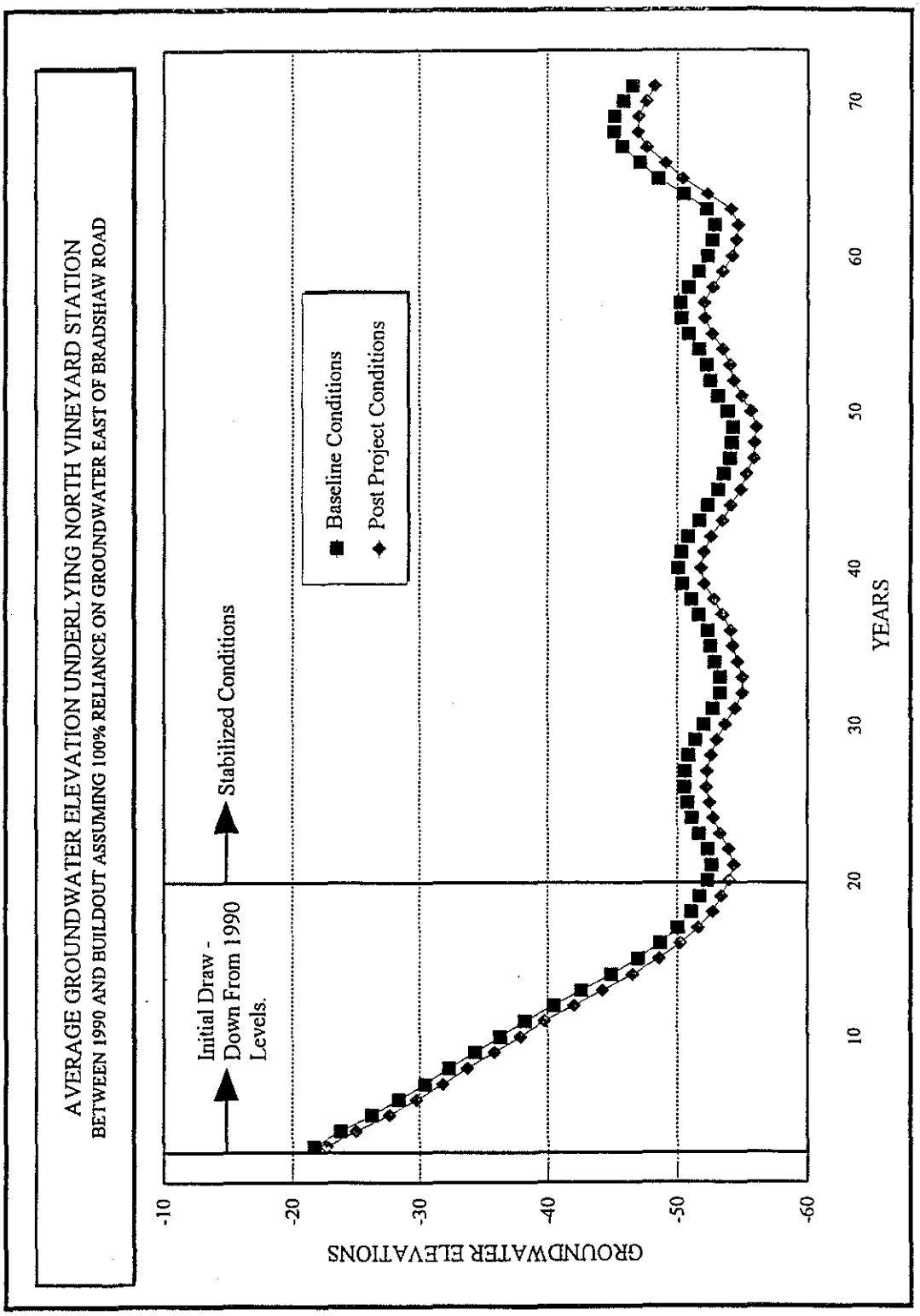


Figure 5-1 - Average Groundwater Elevation Hydrographs

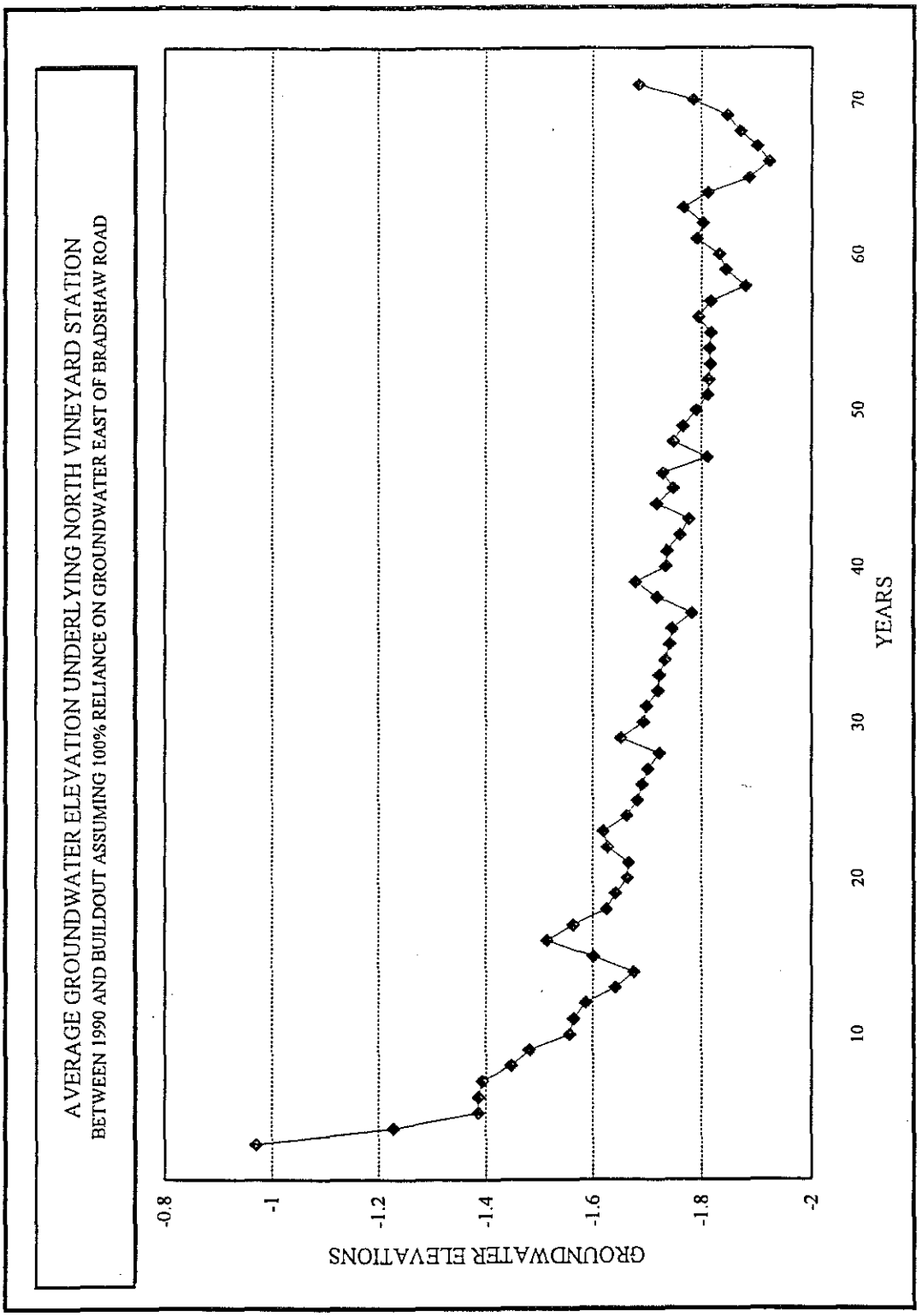


Figure 5-2 - Average Groundwater Elevation Difference Hydrograph

did not. This finding indicates that areas that rely significantly on recharge from the eastern model boundary, where the aquifer pinches out, take longer to stabilize. Without a hydraulically connected recharge source (i.e. a river) at the eastern boundary, dewatering of the aquifer occurs. The aquifer tries to compensate for this by taking water upgradient and adjacent to the dewatered area, that may be providing recharge to the NVSSP area, and diverting it to fill the void. The diverted water may ultimately provide some recharge but the end result is less overall recharge to the NVSSP area.

The last 40 years of the difference curve best represents the behavior of the aquifer under stabilized conditions. The groundwater elevation differences underlying the NVSSP area over that time period show an average decline of 1.8 feet with a range from 1.7 feet to 1.9 feet.

Figure 5-3 is a difference contour map created by taking the difference between the groundwater elevations at the end of the 70 year hydrologic period for the baseline and post-project model runs. The cone of depression shown on this map is the effect of the increased pumping on the aquifer. The deepest point of the difference cone-of-depression is -2.0 feet. The Elk Grove cone-of-depression has a slight positive impact from the increased groundwater demands resulting from increased surface water deliveries to the west of Bradshaw Road portion of the project.

Impacts

The potential impacts associated with lowering groundwater levels may include: land subsidence, increased rate of movement of groundwater contamination, in-migration of poor quality water from the deep aquifer system, dewatering of public and private wells, and increased pumping costs. The magnitude of impacts from the incremental groundwater declines shown are well within the range of seasonal fluctuations and would not contribute significantly to land subsidence, in-migration of poor quality water, or to wells being dewatered. Increased rate of movement of contaminant

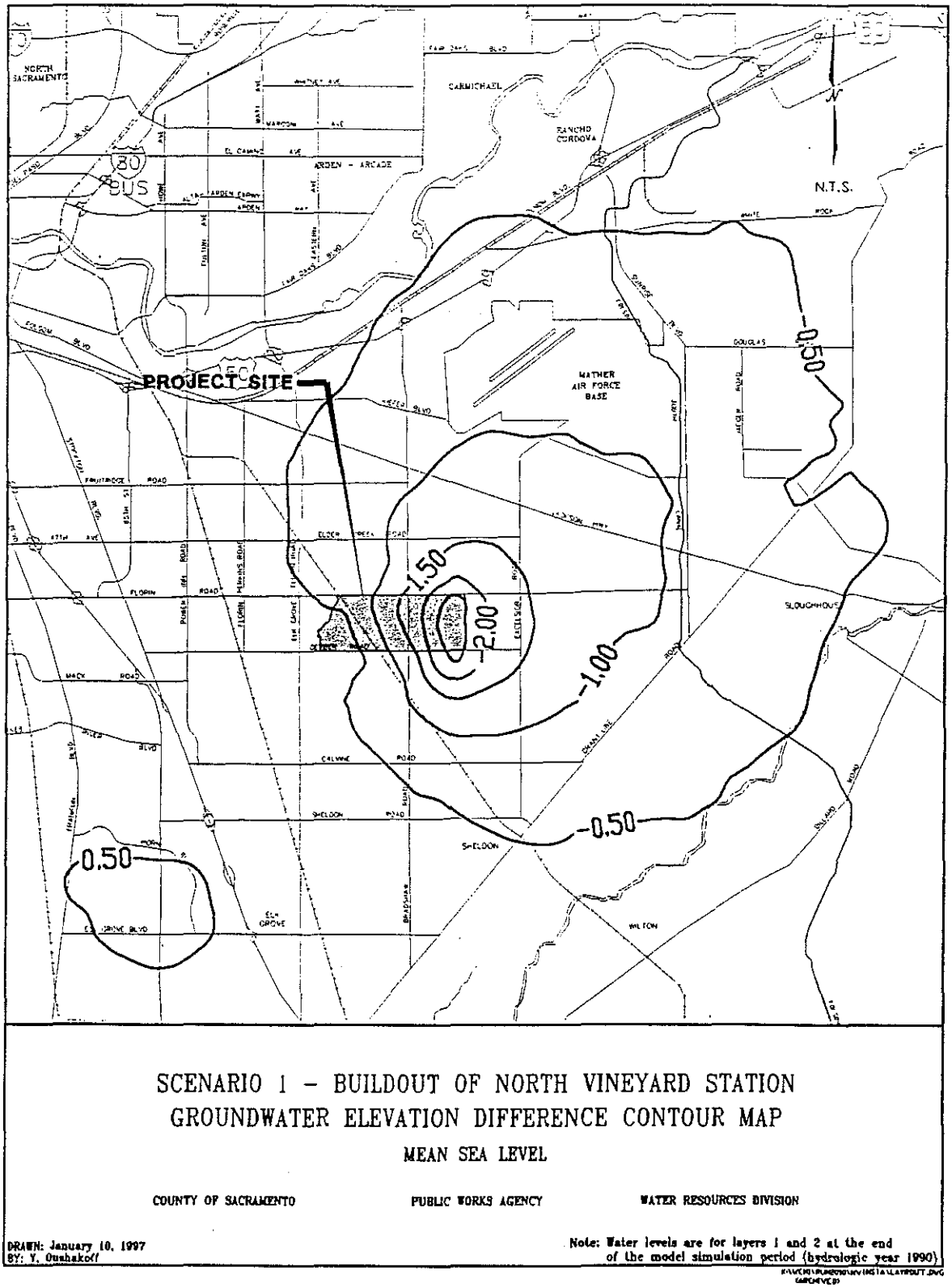


Figure 5-3 - Contour Difference Map of Scenario 1

plumes does not appear to be a concern with declines of less than a foot in areas of known contamination. Increased pumping costs will occur in and around the NVSSP area.

Increased Pumping Costs -

Pumping costs will increase incrementally as groundwater levels are lowered. The estimated incremental increase in cost for municipal pumping within the NVSSP area, based on an average 1.8 foot decline, is estimated to be $0.25 per AFA (1995 dollars).

Water Forum Comparison

Within the context of the Water Forum recommendation, the effects of the project will have a positive impact on the Elk Grove cone-of-depression. The NVSSP demands represent a 1,181 AFA increase in pumping and 2,072 AFA increase in surface water over the Water Forum year 2005 baseline model run. The increase in elevation at the Elk Grove cone-of-depression is the result of the net increase in surface water (i.e. increased groundwater recharge from urban irrigation).

6. SCENARIO 2 - BUILDOUT OF GENERAL PLAN WITH RELIANCE ON GROUNDWATER

(Cumulative Impact Analysis)

Modeling Methodology

Investigating a cumulative worst case groundwater condition requires a second scenario to evaluate the effects of having all new development in the South Sacramento Basin outside the City of Sacramento's American River Place of Use (POU) utilizing groundwater for full buildout of the 1993 Sacramento County General Plan Urban Policy Area. Although this assumption is contrary to current General Plan Policies (i.e., CO-20), it represents a worst case scenario.

Groundwater studies developed for the Sacramento Area Water Forum Process are used for this scenario. The City-County Office of Metropolitan Water Planning contracted with Montgomery Watson Consulting Engineers to prepare Technical Memorandum No. 1 (TM1) and No. 2 (TM2) of the Phase II Groundwater Yield Analysis. The scope of the study was to provide an engineering analysis which would allow the Water Forum to recommend a long term "safe" sustainable yield for the Sacramento area groundwater basin. Nine baseline groundwater model runs were developed to determine the short and long term effects on the groundwater system as increments of new growth increased demands on the aquifer system. The 1990 and Buildout of General Plan (BOGP) baseline static model runs will be used for determining the long term worst case cumulative impact for the North Vineyard Station Specific Plan groundwater evaluation.

The South Sacramento Basin, for the most part, is independent of other groundwater basins. There is a slight connection between the South Sacramento Basin and Galt Basin because the Cosumnes River does not flow year-round. Increased pumping in either basin has a slight negligible affect on the other. For purposes of this study, it is assumed that the South Sacramento Basin is independent of the Galt Basin. Model results and impacts will be presented only for the South Sacramento Basin. Table 6-1

provides the assumptions of Land Use, Water Use, and Water Supply used in the 1990 and BOGP model runs for the South Sacramento groundwater basin (See Figure 1-1).

Table 6-1
Scenario 2 - Land Use, Water Use, and Water Supply Assumptions

		Baseline Conditions	
		1990	BOGP
Land Use (Acres)	Agriculture	76,104	67,702
	Urban	79,173	119,816
Water Use (AFA)	Agriculture	258,781	216,499
	Urban	162,638	340,928
	Total	**421,419**	**557,427**
Water Supply (AFA)	Groundwater	283,280	337,983
	Surface Water	138,139	219,444
	Total	**421,419**	**557,427**

Land use acreages are from direct measurements of the Urban Policy Area as depicted on the 1993 Sacramento County General Plan. The basis for the demands is from a Boyle Engineering study titled, Estimate of Annual Water Demand Within the Sacramento County-wide Area (1995). The amount of groundwater pumped at BOGP in the South Sacramento Basin assumes that all additional urban demands are met with groundwater with the exception of areas within the City of Sacramento's American River POU. Within the City of Sacramento limits and in areas presently outside existing water purveyor boundaries but within the POU, all new demands will be met through surface water. Additional demands within the POU and within existing groundwater purveyor service areas are assumed to be met by groundwater pumping. The majority of additional pumping is assumed to take place from the lower aquifer.

An additional 54,703 AFA of groundwater pumping is assumed to occur from 1990 levels of pumping to BOGP (2030) levels of pumping.

Model Results

Figure 6-1 shows the minimum groundwater elevation hydrographs over the 70 year hydrologic period for both static runs. The last 50 years of the 2030 hydrograph clearly show a stabilization of aquifer elevations which provides the basis for the conclusion that the aquifer is capable of sustaining BOGP levels of pumping indefinitely given historic hydrologic patterns. The difference between the 1990 and 2030 conditions is approximately 100 feet at the Elk Grove cone of depression. Figure 6-2 shows the difference contours representing the change of aquifer elevation related to increased demand. As mentioned earlier, there is a slight connection between the South Sacramento and Galt groundwater basins as can be seen by the 10 and 20 foot change contours enveloping both basins. Through separate study of the hydraulic connection, it has been shown that the majority of the elevation change in the Galt Basin is attributed to increased pumping in the Galt area.

Impacts

The potential impacts associated with lowering groundwater levels may include: in-migration of poor quality water from the deep aquifer system, causing public and private wells to become inoperative, increased pumping costs, land subsidence, and increased rate of movement of groundwater contamination. TM2 evaluated all of these impacts for each of the static baseline runs. The results for the 1990 and 2030 baseline static model runs are presented below.

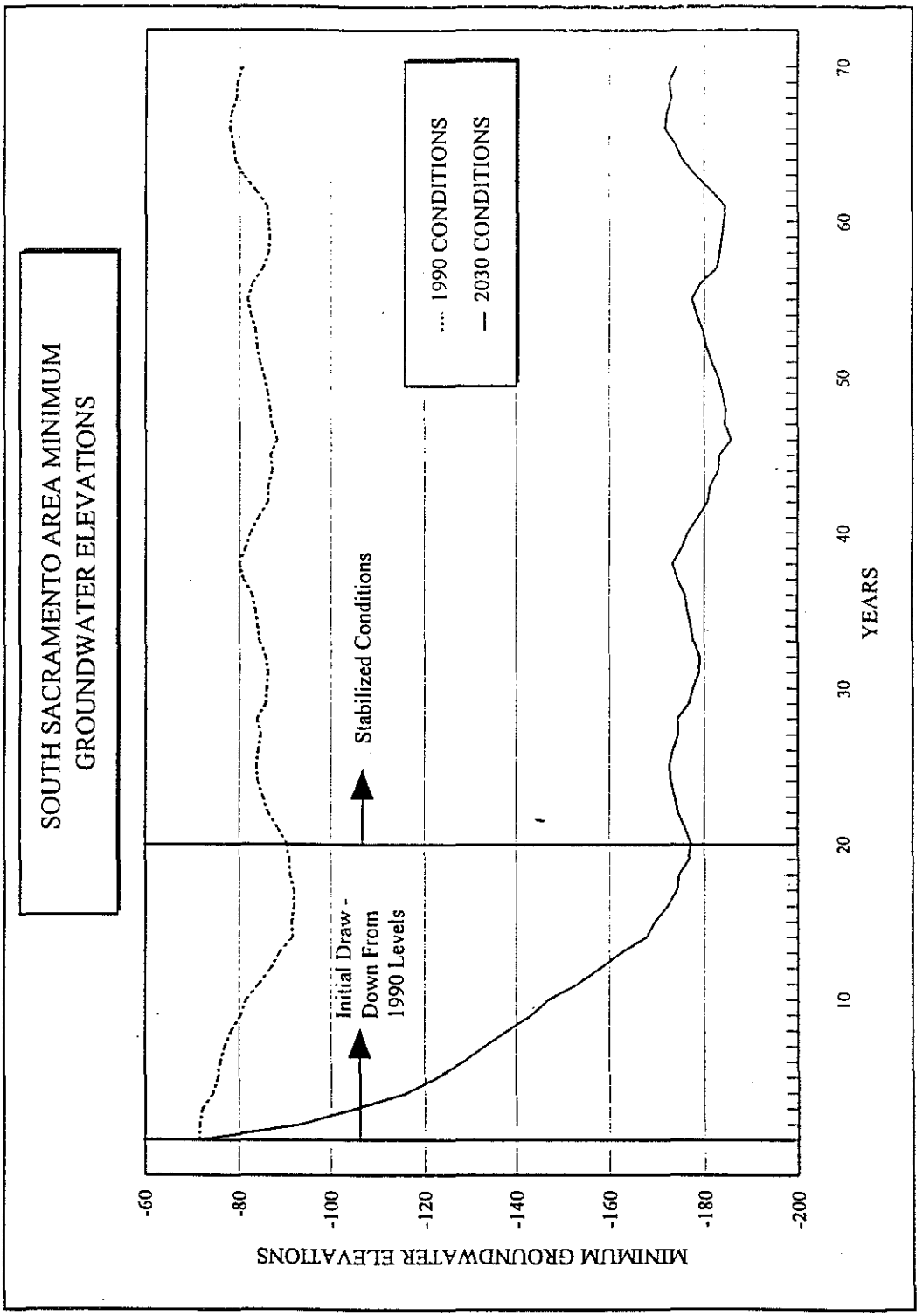


Figure 6-1 - South Sacramento Minimum Elevation Groundwater Hydrographs

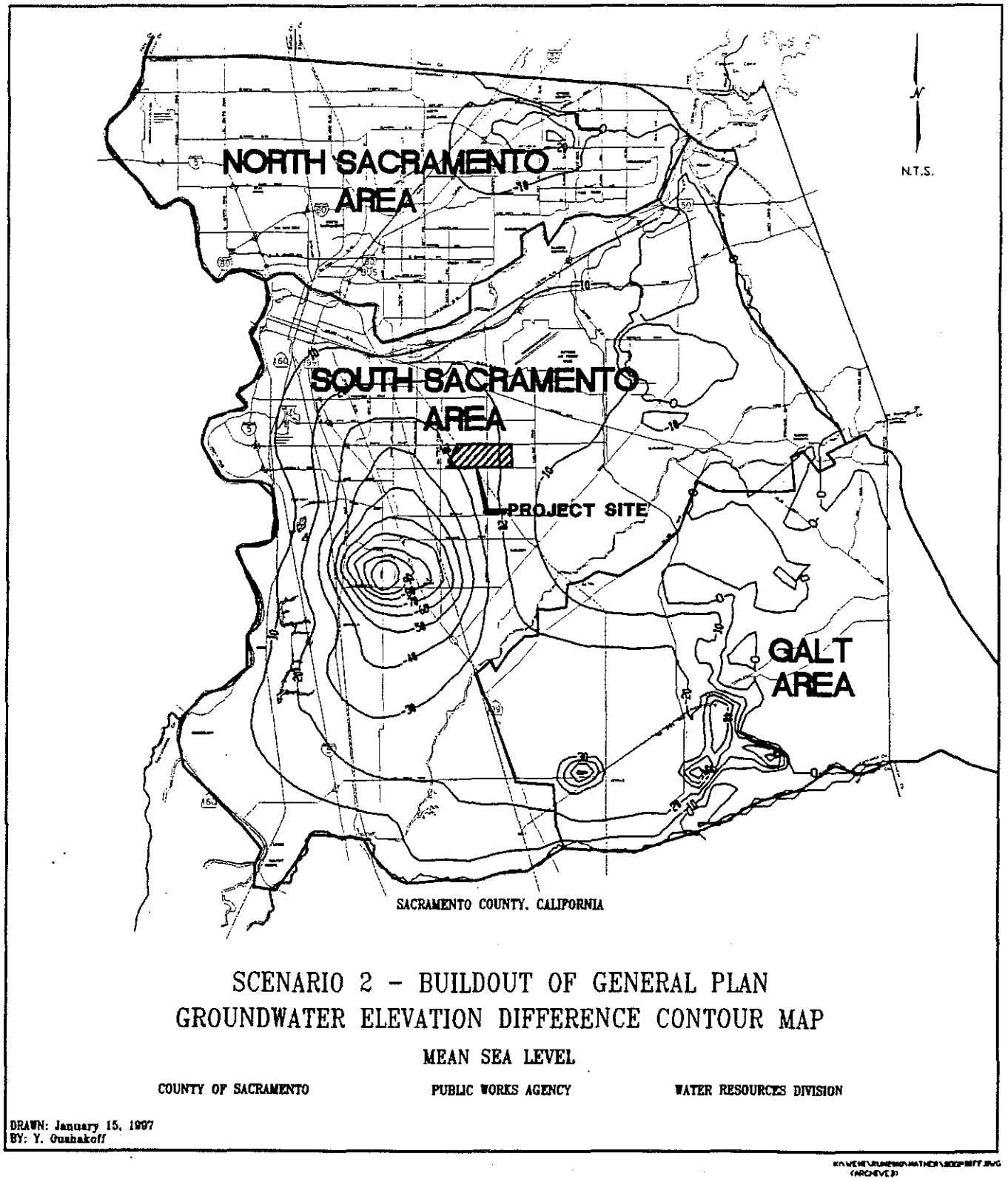


Figure 6-2 - South Sacramento Difference Contours

In-migration of Poor Quality Water from the Deep Aquifer System -

Groundwater degradation from upwelling of poor quality water from the lower to upper aquifer is stated in TM2 as a concern in the South Sacramento groundwater basin. Analysis of groundwater quality data has indicated that a groundwater level decline of over 80 feet from pre-development (before any groundwater pumping) conditions results in average manganese concentrations that exceed the secondary maximum contaminant level (MCLs) which requires treatment. In addition, this level of groundwater decline also results in average arsenic levels exceeding the proposed arsenic MCL of 5μg/L. Based on this analysis, it is likely that the further lowering of groundwater levels in the South Sacramento area will result in continued groundwater quality deterioration. It is anticipated that this deterioration will eventually require that groundwater used for municipal purposes be treated for iron and manganese, and possibly arsenic if new regulations are adopted. The total areas that will be impacted for the 1990 and BOGP conditions are shown in Figures 6-3 and 6-4.

Well Impacts -

Well impacts will occur if the pumping water level drops below the top perforation of the well casing. When this occurs, water will cascade into the well casing and may significantly reduce both the yield and efficiency of the well. Table 6-2 summarizes the well impacts for the 1990 and BOGP static model runs.

Table 6-2
Well Impacts in South Sacramento Basin

Well Type	Total Estimated Number of Wells	Unit Replacement Cost	Wells Impacted			
			1990		BOGP	
			Total No.	Total %	Total No.	Total %
Municipal	157	$390,000	3	2	31	20
Agricultural	385	$150,000	0	0	54	14
Rural	6,068	$10,000	0	0	996	16

Pumping Costs -

As groundwater levels decline, pumping costs increase. Pumping costs refer to the energy costs required to pump groundwater and are a function of unit energy costs, the total lift required, and the overall efficiency of the well. Table 6-3 identifies the additional unit pumping costs from current 1995 (i.e. the groundwater is not at equilibrium) conditions for each of the well types. Under stabilized conditions for BOGP, municipal purveyors could expect to pay an additional $6.72 over what is paid today for every acre-foot of water pumped.

Table 6-3
Pumping Cost Impacts in South Sacramento Basin

Well Type	Current 1995 Cost ($/ AF)	Additional Pumping Cost ($/AF)	
		1990	BOGP
Municipal	$24.58	$0.70	$6.72
Agricultural	$11.64	$1.36	$3.54
Rural	$22.69	$1.60	$6.56

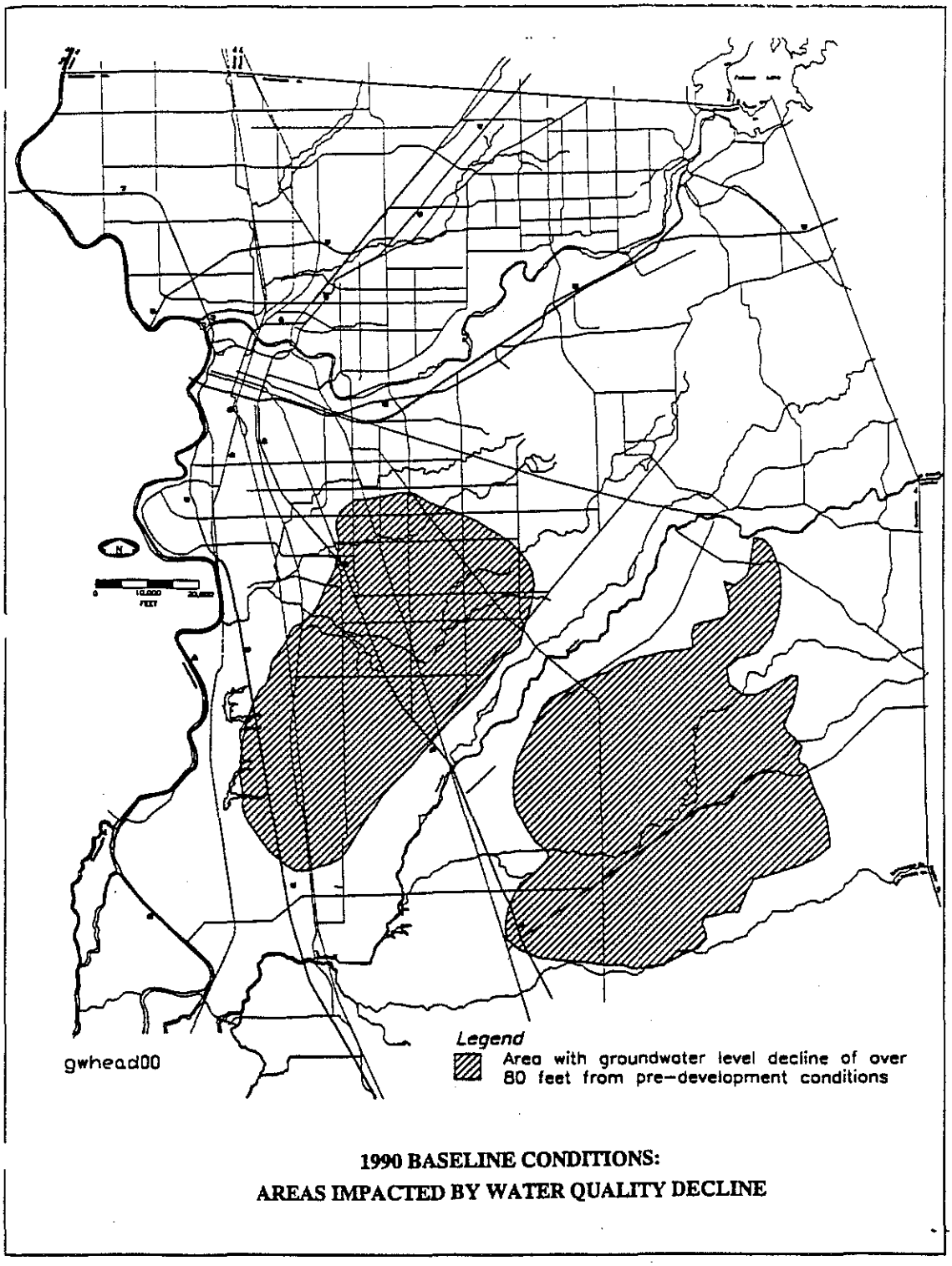


Figure 6-3 - Water Quality Degradation Area for 1990 Stabilized Conditions

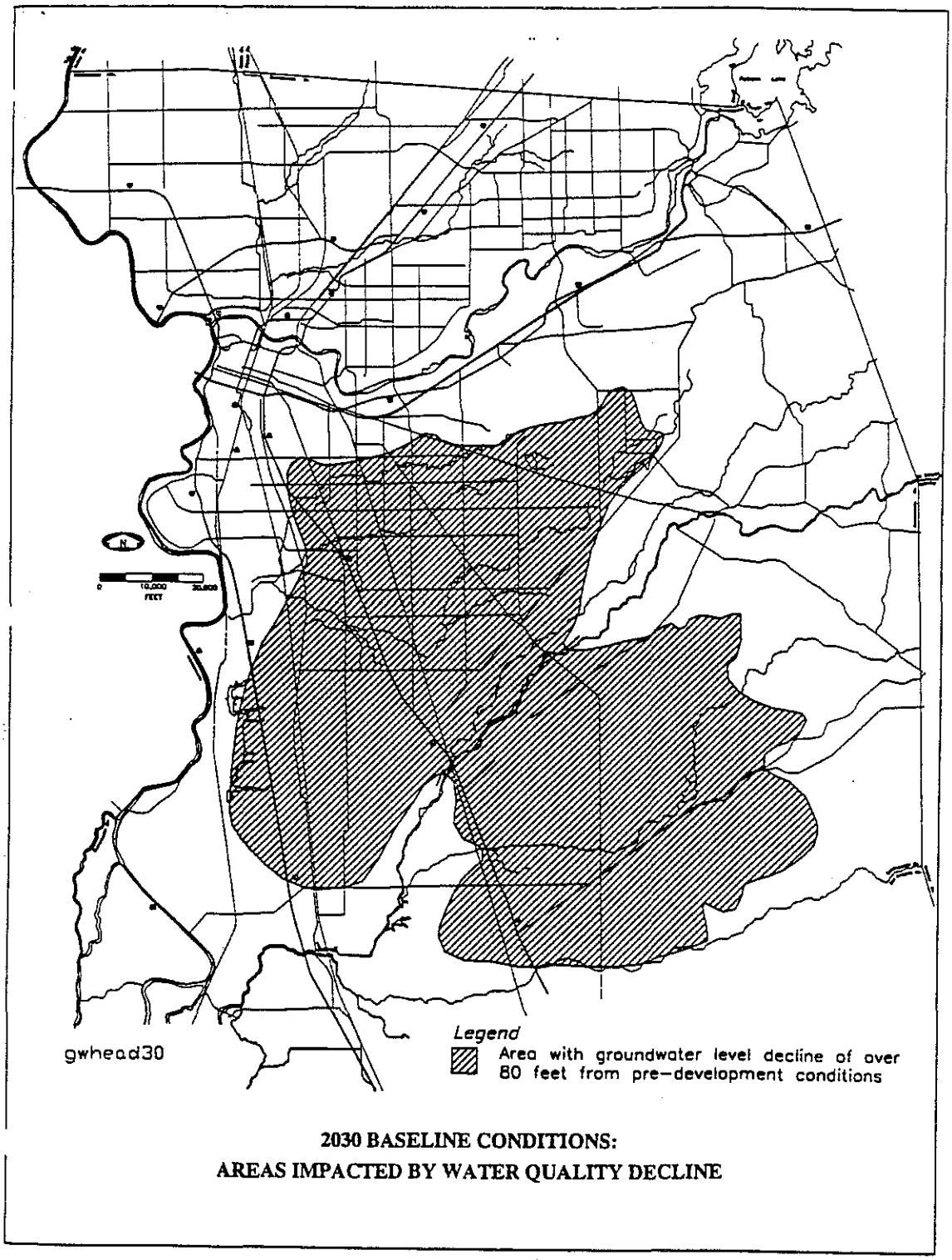


Figure 6-4 - Water Quality Degradation Area for BOGP Stabilized Conditions

Land Subsidence -

The correlation between land subsidence and water level decline has been well documented. A linear relationship has been shown to exist between groundwater elevations and observed historical subsidence. The ratio of subsidence to groundwater declines can be used to estimate the expected land subsidence from a given groundwater decline. For example, if a groundwater elevation decline of 30 feet occurs over a period of years in an area of heavy pumping produced 0.3 foot of subsidence, a ratio of 0.01 is used. This methodology however may slightly underestimate future land subsidence because thick, slow draining aquitards may take years to drain, draining beyond the time of the regional groundwater elevation decline. The ratio determined for the South Sacramento area was calculated to be 0.007 feet per foot. With groundwater elevations estimated to decline 100 feet in the BOGP static model run, the potential additional land subsidence is 0.70 feet.

Migration of Major Groundwater Contamination Plumes -

Seven major groundwater contamination sites have been identified within the South Sacramento Basin. These sites include - Aerojet, Mather Field, Southern Pacific Transport Company Yard, Union Pacific Railroad Yard, Pacific Gas and Electric Company Yard, Sacramento Army Depot, and Keifer Landfill. Each of these sites has existing remediations efforts taking place. While IGSM is not a contaminant transport model, estimates of changes in velocity and direction can be made assuming the contaminants follow the path taken by the groundwater in which they reside. Based on this assumption Table 6-4 provides the rate of movement and direction for each of the South Sacramento basin contaminant plumes for the 1990 and BOGP static model runs.

Table 6-4
South Sacramento Major Contaminant Plumes

Major Contamination Sites	Rate of Movement (ft/Yr) (Direction)	
	1990	BOGP
Aerojet	584 (SW)	714 (SW)
Mather Field	470 (SW)	578 (S-SW)
Union Pacific	299 (SE)	450 (SE)
Southern Pacific	152 (S)	201 (S)
PG&E	97 (S)	161 (S)
Army Depot	576 (S)	762 (S)
Keifer Landfill	302 (W)	341 (W)

APPENDIX A

NORTH VINEYARD STATION

Model Procedures Followed:

A. South Sacramento Subregion

Affected Elements:

a. #238
b. #239

Affected Sinks

Sink #	*Type of Pumping*	*Pumping Distributed By:*	*Action Taken*
33	Urban	Well	none
35	Agricultural	Element	shut off elements by changing the "% column" value to 0
99	Additional beyond 1990	Element	none - elements already shut off due to the fact that future demands are met by surface water.

Modified Files:

1. Urban demand file

   Demands reduced by the 2005 demand level (823 ac-ft), then increased by current calculated demands (470 ac-ft) to simulate existing levels. The file was then further modified to simulate west of Bradshaw buildout demands by increasing the demand by an additional 2,425 ac-ft (2,895 ac-ft - 470 ac-ft).

2. Land use file

   Since elements 238 and 239 were shut off in Sink 35 and to ensure no agriculture pumpage was happening within those elements, the land use file was modified by changing the "% urb" to 1 and "% ag" to 0 for both elements 238 and 239 for both the baseline and buildout runs.

3. Surface Water Diversion File

   The procedure is similar to that used in the Urban Demand file. Diversion site #15 was modified for the baseline run by reducing the diversion based on the 2005 demands. The post development run increased diversions to west of Bradshaw buildout demands (2,895 ac-ft).

4. Well File

   Four new wells were added west of Bradshaw plan area to distribute existing pumping. These wells were fully perforated.

5. Pumping File

   For baseline, pumping amounts were added for existing 470 ac-ft. pumping. Pumping was turned off for the post development run.

B. Sunrise "A" Subregion

Affected Elements:

a. #694
b. #695

Affected Sinks

Sink #	*Type of Pumping*	*Pumping Distributed By:*	*Action Taken*
12	Urban	Element & Well	Shut off elements by changing the "% column" value to 0
45	Agricultural	Element	Shut off elements by changing the "% column" value to 0
78	Additional beyond 1990	Element	Shut off elements by changing the "% column" value to 0. Reduced the pumping amounts by the calculated 2005 demand (1039) to achieve 1990 levels.

Modified Files:

1. Urban demand file

   Demands reduced by 2005 demand (1039 ac-ft) then increased by current demands (109.9 ac-ft) to simulate 1990 demands. The file was then further modified to simulate buildout demands by adding an increased demand of 2,110 ac-ft. (2,220 ac-ft - 109.9 ac-ft).

2. Land use file

   The land use file was modified by changing the "% urb" to 1 and "% ag" to 0 for both elements 694 and 695 for both the baseline and buildout runs.

3. Well file

   Two wells were added within the east of Bradshaw portion of the project area. They were fully perforated and 1000 ft. deep.

4. Pumping file

   For the baseline run, existing pumping levels (109.9 ac-ft) were added. Post development added an additional 2,110 ac-ft (2,220 ac-ft - 109.9 ac-ft).

General notes:

1. For South Sac and Sunrise "A", the monthly distributions used in assigning the monthly demand and pumping amounts for these pumping sinks are based on percentage of total urban demand for each subregion. These demands were taken from the urban demand file.

2. The results did not reflect a groundwater elevation stabilization as expected. Therefore, we used an additional 3 points around the project area to help better understand the groundwater behavior on a regional basis. The three points were located in the City of Sacramento along Franklin Blvd. just north of Fruitridge Road. The second was located in Rancho Cordova and the third towards the South-East area of Mather. The nodes in the City of Sacramento and Rancho Cordova did show stabilization while the Mather node exhibited the same groundwater behavior as the North Vineyard Springs project site. These results lead us to suspect that the rate of recharge is greater near the Sacramento and American Rivers. These locations were selected because of the similar gradients as displayed on a Sacramento County groundwater contour map. Since the gradients are similar surrounding the project site, our other consideration is recharge sources and flux. The Mather node is primarily in a flux pattern from the foothills to the East of the County. The flux is greater from the other directions and therefore exhibit stabilization much sooner.

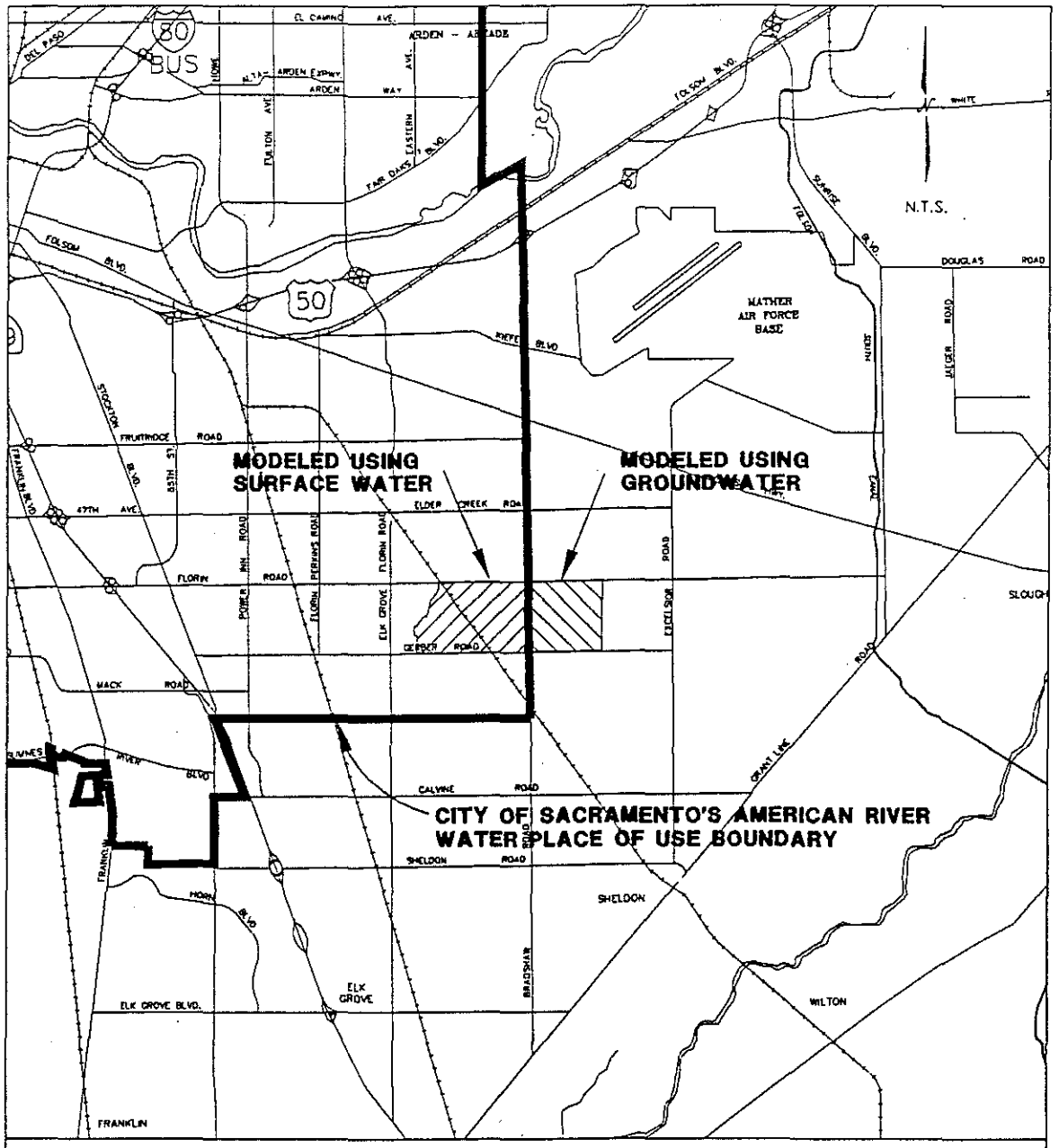
NORTH VINEYARD STATION

Urban Demand And Pumping Breakdown (South Sac. Subregion)

2005 South Sac Urban Demands	Percentage	Amount to reduce by (823 Acft)	Add to return to 1990 levels (470)	1990 South Sac Urban Demands	Buildout Monthly Pumping	Pumping beyond 1990 to meet b.o. demands	Buildout South Sac Urban Demands
6,299.1	4.6%	37.9	21.6	6,282.9	133.2	111.6	6,394.4
6,025.2	4.4%	36.2	20.7	6,009.7	127.4	106.7	6,116.4
6,709.9	4.9%	40.3	23.0	6,692.6	141.9	118.8	6,811.4
8,763.9	6.4%	52.7	30.1	8,741.3	185.3	155.2	8,896.5
13,419.8	9.8%	80.7	46.1	13,385.2	283.7	237.7	13,622.9
16,843.2	12.3%	101.2	57.8	16,799.8	356.1	298.3	17,098.1
19,308.1	14.1%	116.0	66.3	19,258.3	408.2	341.9	19,600.3
18,623.4	13.6%	111.9	63.9	18,575.4	393.7	329.8	18,905.2
15,063.0	11.0%	90.5	51.7	15,024.2	318.4	266.7	15,290.9
11,365.7	8.3%	68.3	39.0	11,336.4	240.3	201.3	11,537.7
7,805.4	5.7%	46.9	26.8	7,785.3	165.0	138.2	7,923.5
6,709.9	4.9%	40.3	23.0	6,692.6	141.9	118.8	6,811.4
136,936.6		823.0	470.0	136,583.6	2,895.0	2,425.0	139,008.6

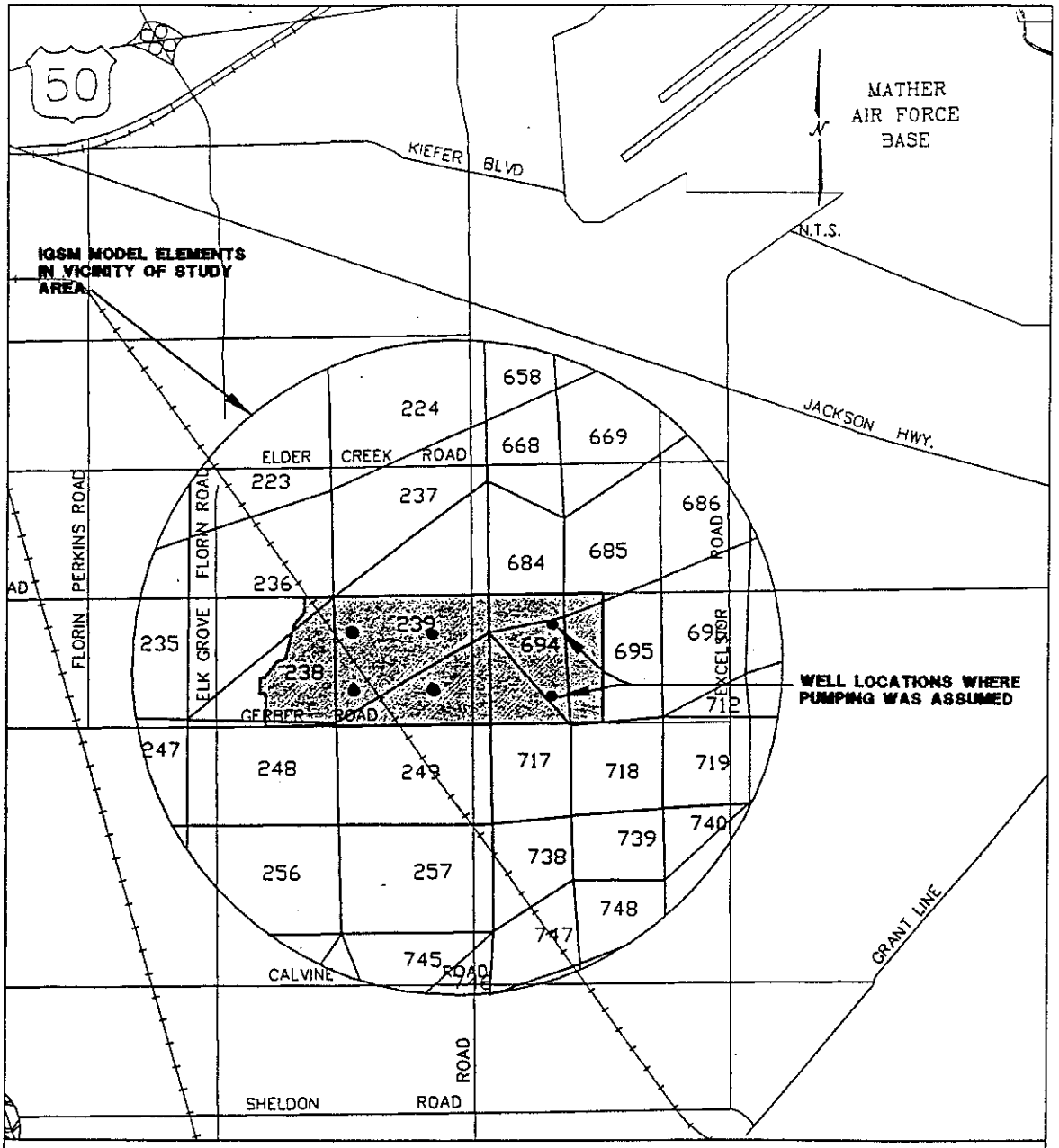
Urban Demand And Pumping Breakdown (Sunrise "A" Subregion)

2005 Sunrise "A" Urban Demands	Percentage	Amount to reduce by (1039 Acft)	Add to return to 1990 levels (109.9)	1990 Sunrise "A" Urban Demands	Buildout Monthly Pumping	Pumping beyond 1990 to meet b.o. demands	Buildout Sunrise "A" Urban Demands
527.0	4.6%	47.8	5.1	484.3	102.1	97.1	581.3
504.1	4.4%	45.7	4.8	463.2	97.7	92.8	556.1
561.4	4.9%	50.9	5.4	515.9	108.8	103.4	619.3
733.2	6.4%	66.5	7.0	673.7	142.1	135.0	808.8
1,122.8	9.8%	101.8	10.8	1,031.7	217.6	206.8	1,238.5
1,409.2	12.3%	127.8	13.5	1,294.9	273.1	259.5	1,554.5
1,615.4	14.1%	146.5	15.5	1,484.4	313.0	297.5	1,781.9
1,558.1	13.6%	141.3	14.9	1,431.7	301.9	287.0	1,718.7
1,260.2	11.0%	114.3	12.1	1,158.0	244.2	232.1	1,390.1
950.9	8.3%	86.2	9.1	873.8	184.3	175.1	1,048.9
653.0	5.7%	59.2	6.3	600.0	126.5	120.3	720.3
561.4	4.9%	50.9	5.4	515.9	108.8	103.4	619.3
11,456.7		1,039.0	109.9	10,527.6	2,220.0	2,110.1	12,637.7



NORTH VINEYARD STATION
WATER SUPPLY SOURCES

DRAWN: January 10, 1997
BY: Y. Onishkoff



NORTH VINEYARD STATION
MODEL ELEMENT IDENTIFICATION EXHIBIT

DRAWN: January 10, 1997
BY: Y. Onishkoff

NORTH VINEYARD STATION WATER USE BUDGETS:

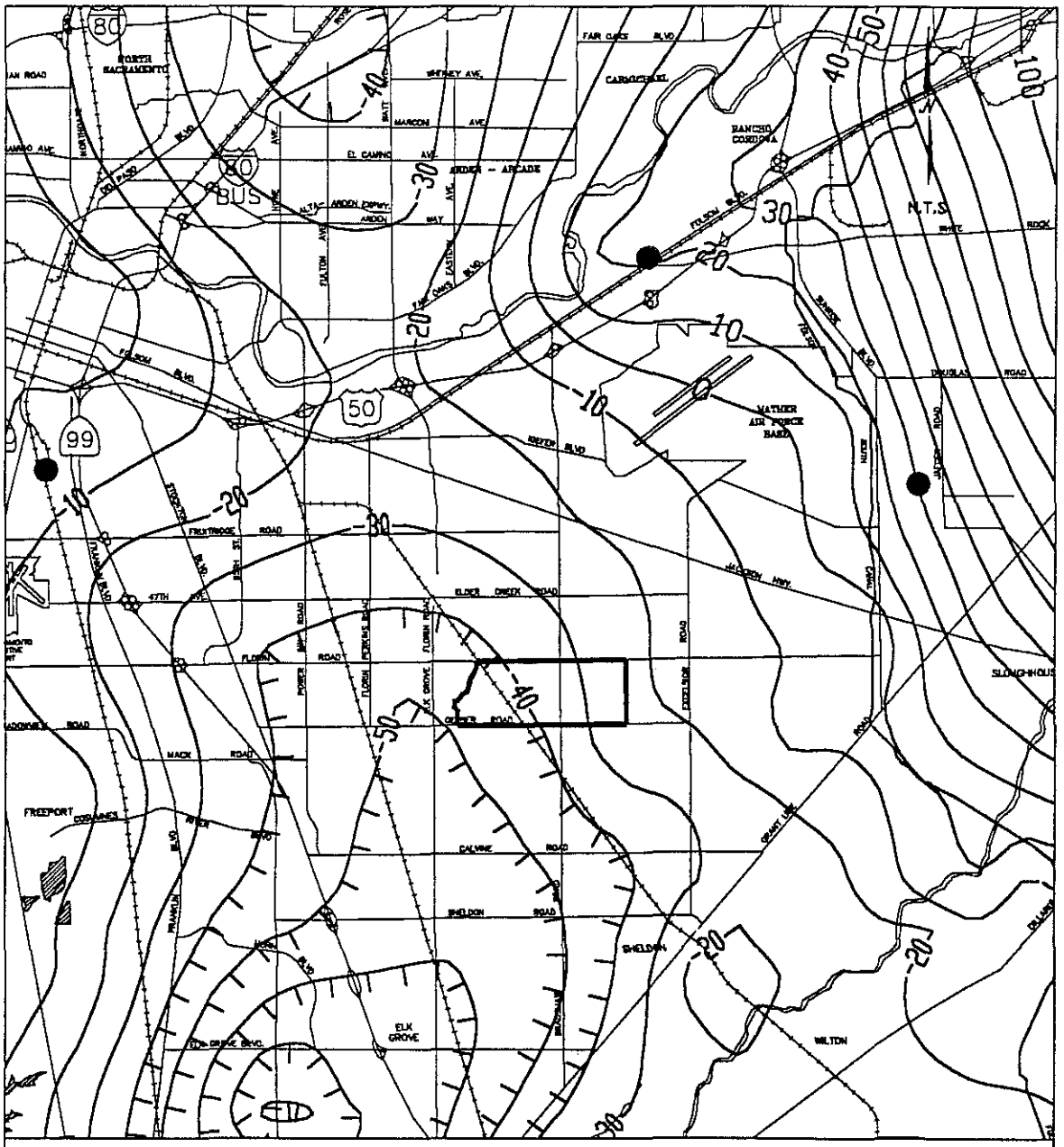
Baseline Conditions:

Subregion #	Ag Acres	Urban Acres	Consumptive Crop Use	Ag Supply	Urban Supply	GW Pumping	SW Diversion	SW Diversion	SW Diversion	Import	Export	Shortage
1	2065	41128	3513	6490	104985	54121	0	0	0	57353	0	0
2	0	54567	0	0	136582	38876	149820	0	0	0	52213	99
3	6011	15381	12548	21522	48779	64239	0	0	0	6062	0	0
4	27750	1498	57056	97861	1756	99617	0	0	0	0	0	0
5	18033	3445	36604	62782	5667	68449	0	0	0	0	0	0
6	0	2657	0	0	6478	6476	0	0	0	0	0	2
7	8015	1060	16470	28249	1904	30153	0	0	0	0	0	0
8	0	657	0	0	23326	0	0	0	0	23325	0	1
9	1378	587	2810	4821	545	5366	0	0	0	0	0	0
10	4974	2197	10377	17798	671	17021	7578	0	0	0	6062	-68
11	0	2476	0	0	6088	0	0	0	0	6087	0	1
12	1417	3549	2941	5043	10528	15571	0	0	0	0	0	0
13	699	3178	1434	2460	10212	12672	0	0	0	0	0	0
14	70	8417	120	222	26302	26524	0	0	0	0	0	0
15	2	11027	4	7	30890	9	0	0	0	30888	0	0
16	57	6901	101	186	18936	14838	0	0	0	4284	0	0
17	0	6269	0	0	16455	1659	0	0	0	14796	0	0
18	24	2260	43	79	7871	831	0	0	0	7119	0	0
19	0	709	0	0	5129	1279	0	0	0	3850	0	0
20	0	4538	0	0	13145	5962	0	0	0	7182	0	1
21	0	7082	0	0	19779	2441	0	0	0	17338	0	0
22	0	5469	0	0	13962	13961	0	0	0	0	0	1
23	25	882	43	79	1626	1705	0	0	0	0	0	0
24	0	1824	0	0	2313	2313	0	0	0	0	0	0
25	3	2371	5	9	6788	6797	0	0	0	0	0	0
26	402	5868	690	1276	16051	17327	0	0	0	0	0	0
27	9888	3181	17327	32009	3028	8929	38697	0	0	0	12162	-427
28	2160	2706	3834	7081	884	1468	0	0	0	7021	0	-524
29	26851	277	42072	71754	137	29964	42435	0	0	0	0	-508
30	0	1311	0	0	2127	2127	0	0	0	0	0	0
31	4623	1311	9371	16073	2127	18200	0	0	0	0	0	0

NORTH VINEYARD STATION WATER USE BUDGETS:

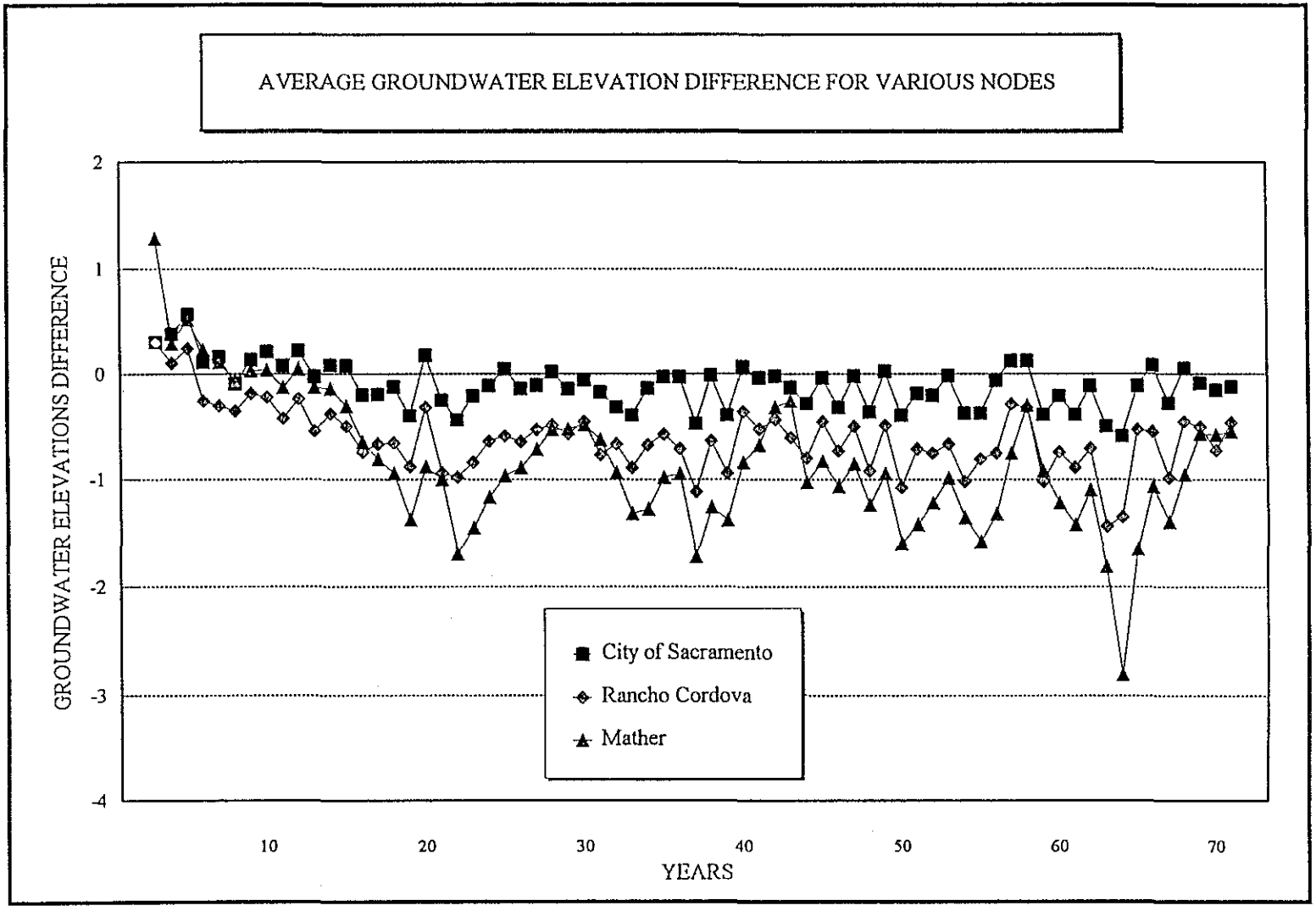
Buildout Conditions:

Subregion #	Ag Acres	Urban Acres	Consumptive Crop Use	Ag Supply	Urban Supply	GW Pumping	SW Diversion	SW Diversion	SW Diversion	Import	Export	Shortage
1	2065	41128	3513	6490	104985	54121	0	0	0	57353	0	0
2	0	54567	0	0	139008	38406	152715	0	0	0	52213	100
3	6011	15381	12548	21522	48779	64239	0	0	0	6062	0	0
4	27750	1498	57056	97861	1756	99617	0	0	0	0	0	0
5	18033	3445	36604	62782	5667	68449	0	0	0	0	0	0
6	0	2657	0	0	6478	6476	0	0	0	0	0	2
7	8015	1060	16470	28249	1904	30153	0	0	0	0	0	0
8	0	657	0	0	23326	0	0	0	0	23325	0	1
9	1378	587	2810	4821	545	5366	0	0	0	0	0	0
10	4974	2197	10377	17798	671	17021	7578	0	0	0	6062	-68
11	0	2476	0	0	6088	0	0	0	0	6087	0	1
12	1417	3549	2941	5043	12638	17681	0	0	0	0	0	0
13	699	3178	1434	2460	10212	12672	0	0	0	0	0	0
14	70	8417	120	222	26302	26524	0	0	0	0	0	0
15	2	11027	4	7	30890	9	0	0	0	30888	0	0
16	57	6901	101	186	18936	14838	0	0	0	4284	0	0
17	0	6269	0	0	16455	1659	0	0	0	14796	0	0
18	24	2260	43	79	7871	831	0	0	0	7119	0	0
19	0	709	0	0	5129	1279	0	0	0	3850	0	0
20	0	4538	0	0	13145	5962	0	0	0	7182	0	1
21	0	7082	0	0	19779	2441	0	0	0	17338	0	0
22	0	5469	0	0	13962	13961	0	0	0	0	0	1
23	25	882	43	79	1626	1705	0	0	0	0	0	0
24	0	1824	0	0	2313	2313	0	0	0	0	0	0
25	3	2371	5	9	6788	6797	0	0	0	0	0	0
26	402	5868	690	1276	16051	17327	0	0	0	0	0	0
27	9888	3181	17327	32009	3028	8929	38697	0	0	0	12162	-427
28	2160	2706	3834	7081	884	1468	0	0	0	7021	0	-524
29	26851	277	42072	71754	137	29964	42435	0	0	0	0	-508
30	0	1311	0	0	2127	2127	0	0	0	0	0	0
31	4623	1311	9371	16073	2127	18200	0	0	0	0	0	0



NORTH VINEYARD STATION
PERIPHERAL GROUNDWATER NODES

DRAWN: January 10, 1997
BY: Y. Onahakoff


AVERAGE GROUNDWATER ELEVATION DIFFERENCE FOR VARIOUS NODES
GROUNDWATER ELEVATIONS DIFFERENCE
2
1
0
-1
-2
-3
-4
10
20
30
40
50
60
70
YEARS
City of Sacramento
Rancho Cordova
Mather

APPENDIX J

NVSSP FEIR: Final Technical Appendices Vol. II

SANITARY SEWER STUDY

FOR

THE NORTH VINEYARD STATION SPECIFIC PLAN

Prepared For:

Sacramento County
Planning Department
827 7th Street
Room 230
Sacramento, CA 95814

Prepared By:

MacKay & Somps Civil Engineers, Inc.
1771 Tribute Road
Suite E
Sacramento, CA 95815

January 30, 1998

COUNTY OF SACRAMENTO
JAN 30 1998
DEPARTMENT OF
ENVIRONMENTAL REVIEW & ASSESSMENT

SANITARY SEWER STUDY
for
NORTH VINEYARD STATION
SPECIFIC PLAN

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SANITARY SEWER STUDY
for
NORTH VINEYARD STATION
SPECIFIC PLAN

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APPENDIX 2 SHED A, DESIGN CALCULATIONS

APPENDIX 3 SHED B, DESIGN CALCULATIONS

APPENDIX 4 SHED C, DESIGN CALCULATIONS

I. INTRODUCTION/PURPOSE

This study has been prepared by MacKay & Somps in conjunction with the Water Quality Division of the Sacramento County Department of Public Works. It is a technical appendix to the North Vineyard Station Specific Plan (NVSSP). The Specific Plan Site is located in the central-eastern portion of Sacramento County, as shown on Figure 1. This study provides background information and a master plan for sanitary sewer facilities to serve lands within and upstream of the Specific Plan. The Sewer Master Plan will be used to develop the sanitary sewer portion of a Capital Improvement Program for the Specific Plan and is intended to serve as a basis for cost estimates and phasing plans, and ultimately to guide the preparation of improvement plans.

The study area will be served by the Bradshaw/Folsom Interceptor, a planned 108-inch regional sewer pipeline which is to be constructed through the western portion of the Specific Plan. The Sewer Master Plan defines sub-areas which will contribute flow to three points on the interceptor. Gravity trunk systems to convey sewage to connection points on the interceptor have been identified in the master plan. In addition, extensions of smaller (non-trunk) pipelines to the limits of each sub-area have been analyzed to verify the ability to serve by gravity.

Also, as directed by the County for purposes of the Environmental Impact Report on the Specific Plan, this study includes a qualitative discussion/analysis of a reduced density land use alternative and a relocation of the core area proposed at Gerber and Waterman Roads.

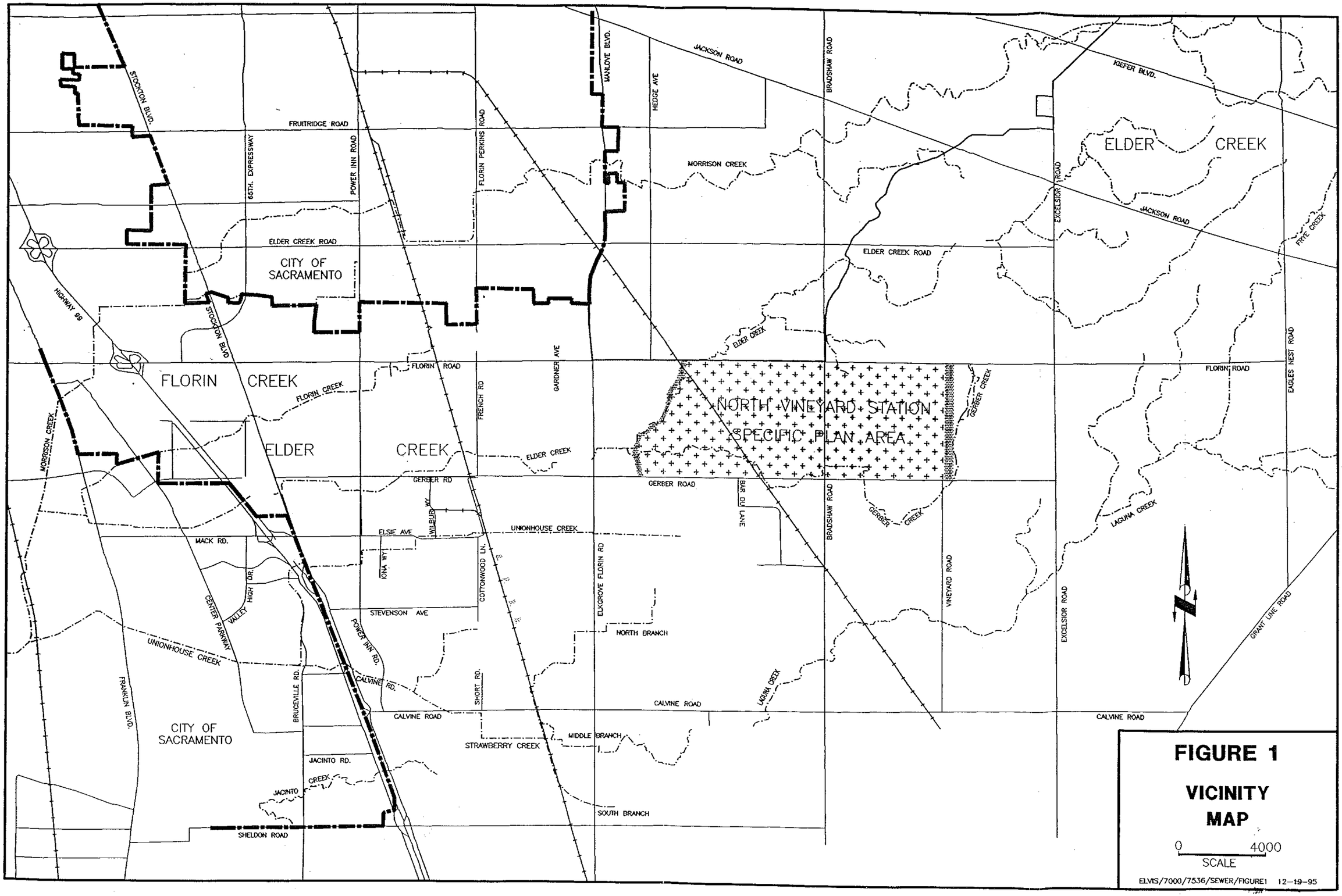


FIGURE 1

VICINITY MAP

0 4000

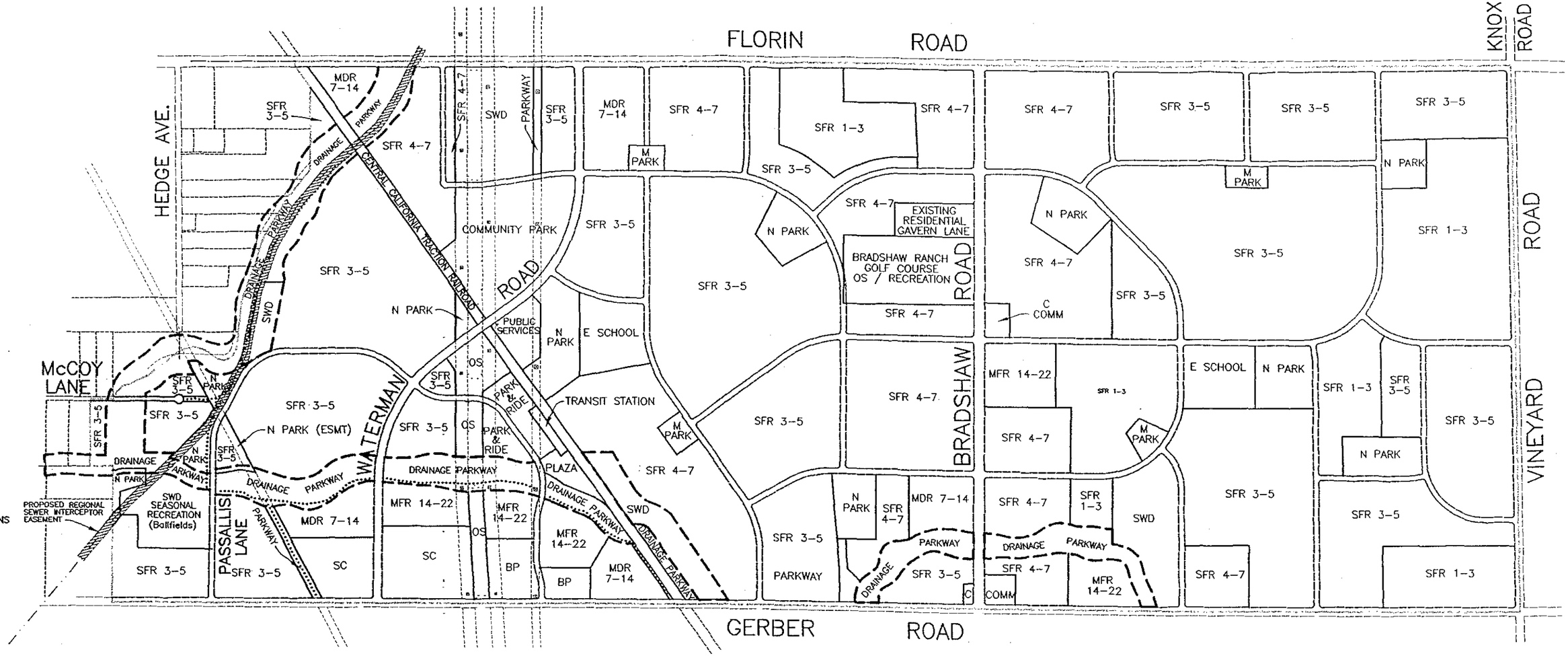
SCALE

ELVIS/7000/7536/SEWER/FIGURE1 12-19-95

II. SPECIFIC PLAN PROJECT DESCRIPTION

The Specific Plan serves as an application tool used to implement the Sacramento County General Plan. The Specific Plan document is a comprehensive plan for development of the project area. It includes a land use plan and associated policies and guidelines, as well as master plans for infrastructure design and financing. This Sanitary Sewer Study is a technical appendix to the Specific Plan which establishes the master plan for wastewater infrastructure improvements to serve the proposed development.

The Preferred Land Use Plan is shown on Figure 2. A "Low Density" Land Use Plan, which reduces the NVSSP residential holding capacity by about 600 dwelling units, is also being forwarded for consideration. In addition, "Core Relocation Alternatives" have been developed for both the Preferred Plan and the Low Density Plan to move the commercial and business uses, as well as some of the higher density housing from the intersection of Waterman and Gerber Roads to the Florin/Bradshaw intersection.



0 500 1000 2000

SCALE:1"=1000'

LEGEND

C	COMMERCIAL
SC	SHOPPING COMMERCIAL
BP	BUSINESS PROFESSIONAL
MFR 14-22	MULTI-FAMILY RESIDENTIAL
MDR 7-14	MEDIUM DENSITY RESIDENTIAL
SFR 4-7	SINGLE FAMILY RESIDENTIAL
SFR 3-5	SINGLE FAMILY RESIDENTIAL
SFR 1-3	SINGLE FAMILY RESIDENTIAL
OS/SWD	OPEN SPACE/STORM WATER DETENTION

NORTH VINEYARD STATION SPECIFIC PLAN
FIGURE 2

LAND USE PLAN

Sacramento, California January, 1997

MacKAY & SOMPS
CIVIL ENGINEERS, INC.
CIVIL ENGINEERING • LAND PLANNING • LAND SURVEYING

/web/7000/7536/cip/cip-landuse.dwg 7536-0

III. BACKGROUND INFORMATION

A. CSD-1, SRCSD

The North Vineyard Station Specific Plan (NVSSP) area is currently within the Spheres of Influence of the Sacramento County Sanitation District No. 1 (CSD-1) and the Sacramento Regional County Sanitation District (SRCSD). These districts own and operate trunk and interceptor sewer systems throughout Sacramento County, as well as the Regional Treatment Plant located approximately six miles southwest of the Plan Area. In order to receive sewer service, the NVSSP must be annexed to both CSD-1 and SRCSD.

B. SACRAMENTO SEWERAGE EXPANSION STUDY

A county-wide Sewer System Master Plan, entitled the "Sacramento Sewerage Expansion Study" (the SSES), was adopted by CSD-1 and SRCSD on December 11,1996. The SSES uses updated land use information and projections, as well as updated design criteria to analyze capacities of existing facilities and to identify necessary expansions to the sewerage system throughout the Sacramento County Urban Service Area. The flow estimation criteria developed in the SSES has been used throughout this NVSSP sewer study.

C. PIPE CLASSIFICATIONS

CSD-1 and SRCSD classify sewer pipelines carrying 10 million gallons per day (mgd) or more as "interceptors". Sewer pipes carrying between 1 mgd and 10 mgd are known as "trunks". Pipelines carrying less than 1 mgd are referred to as "laterals". The cost of interceptor and trunk facilities are reimbursable or creditable against sewer fees.

D. EXISTING FACILITIES

Currently, there are not any public sewer facilities within the Specific Plan where roughly 80 residences and a few commercial operations have individual septic systems. A 102-inch interceptor exists in Elk Grove-Florin Road, approximately one-half mile west of the Plan Area. This existing interceptor, which is nearing capacity, is shown on Figure 3.

E. PLANNED DOWNSTREAM FACILITIES

The SSES Master Plan calls for a new 108-inch pipeline (the Bradshaw/Folsom Interceptor) to be constructed generally along Elder Creek through the Plan Area. This interceptor is needed to relieve the Elk Grove-Florin Interceptor described above. It is also planned to serve future growth in the northeast portion of Sacramento County's Urban Service Area, including the City of Folsom. When constructed, this new pipeline will also serve the NVSSP and upstream areas. A preliminary design report, prepared by Montgomery Watson at the direction of the Water Quality Division, proposes an alignment for the new interceptor, as shown on Figure 3.

F. SERVICE AREA LIMITS

The area to be served by the sewer facilities analyzed in this report extends off-site to the north, east, and south of the NVSSP. The study area has been divided into three major service sheds which are labeled as Shed Areas A, B, and C on Figure 3. These shed designations correspond to connection points on the proposed Bradshaw/Folsom Interceptor. The boundaries of the major sheds were established by the Water Quality Division based on several factors, including the previous SSES, analysis of topography, and the ability to sewer by gravity.

The direction to accommodate off-site flow is consistent with the County's General Plan Policy PF-9, which states:

> *PF-9*
>
> *"Design trunk and interceptor systems to accommodate flows generated by full urban development at urban densities within the ultimate service area. This could include phased construction where deferred capital costs are appropriate."*

The NVSSP and lands to the south are within the County's Urban Policy boundary which defines the expected areas of urbanization during the planned twenty-year buildout of the General Plan. Areas to the north and east of the Specific Plan are not within the Urban Policy boundary. However, the General Plan acknowledges that development in Sacramento County will ultimately extend beyond its Urban Policy boundary. This acknowledgment is made in part through inclusion of an Urban Services boundary. This line establishes the area for which infrastructure improvements are to be sized. The Urban Services boundary in this portion of Sacramento County is along the west side of the Deer Creek/Cosumnes River floodplain, roughly six miles east of the NVSSP. Therefore, oversizing to accommodate future development of the service area included on Figure 3 is consistent with the General Plan.

IV. SEWER MASTER PLAN - PREFERRED PLAN

A. ANALYSIS PROCEDURES

The development of the Sewer Master Plan included the following steps:

1. Major sewer sheds were defined.

2. A schematic backbone collection system was established.

3. Major sheds were divided into sub-sheds in order to define the areas which contribute flows to certain points (nodes) on the collection system.

4. To estimate sewage flows, land use boundaries were overlaid on the sub-sheds creating sub-areas of single land use within each sub-shed. The acreages of these sub-areas were determined and multiplied by the average number of Equivalent Single-Family Dwellings (ESD's) per acre for their particular land use in order to determine the total number of ESD's entering each pipe system. The criteria and methodology used to estimate flows is described in more detail in sub-section B below.

5. Pipes were sized and inverts calculated using an iterative process. The starting invert elevations of the trunks in Gerber and Florin Roads were set to match the crown elevations of the Bradshaw/Folsom Interceptor. Other lateral pipelines were typically designed to be approximately ten feet deep at the upstream end. At the time this report was prepared, information was not available about the layouts of subdivisions internal to the NVSSP. Therefore, the depth of ten feet at the upstream end was chosen conservatively to allow for the potential of longer routes to the extremities of the system.

B. ESTIMATION OF SEWAGE GENERATION

The methodology used to estimate sewage flows in trunk and interceptor systems is defined in the Sacramento Sewerage Expansion Study (SSES). The basic formula used is PWWF = PDWF + I&I where:

PWWF is Peak Wet Weather Flow;

PDWF is Peak Dry Weather Flow; and

I&I is Infiltration and Inflow.

Appendix 1, taken from the SSES, shows the Design Flow Criteria and Peaking Factor formula used in the SSES methodology.

PDWF has been computed based on 310 gpd per ESD entering each trunk pipe system. ESD values used in this analysis are as follows:

LAND USE	ESD VALUE
Single-Family Residential	1 Per Dwelling Unit
Multi-Family Residential	0.75 Per Dwelling Unit
Commercial	6 Per Acre
Employment	6 Per Acre
School	5 Per Acre
Parks	0
Open Space/Constrained Areas (Detention, drainage channels, powerline corridor, and golf course)	0
Off-Site/Non-Constrained Areas	6 Per Acre

At the direction of the Water Quality Division, the analysis assumes that areas within the Specific Plan which are planned for less than five dwelling units to the acre may eventually be rezoned to a higher density (six dwelling units per acre on the average). This assumption is consistent with standard Sacramento County sewer infrastructure planning procedures.

Because land plans for the off-site areas have not been formally adopted, it is assumed by this study that development outside the boundaries of the Specific Plan will occur at an average of six ESD's per acre.

Currently, the practice within Sacramento County is to design laterals using the "old" criteria of 400 gpd per ESD. This NVSSP Sewer Study approximates lateral sizes based on historical experience. Actual lateral sizes and slopes will be determined later in the development process using then current design criteria.

C. DESIGN CRITERIA

The maximum depth of flow at design conditions in any collector (12-inch or less) shall be 0.7 diameter. Lines large than 12-inches in diameter shall be designed to flow full and no direct service connections will be allowed. No collector will have a depth greater than 16 feet.

Proposed trunk and lateral grades were designed to yield a minimum two-feet per second velocity when flowing full using Mannings 'n' = 0.013. These minimum slopes are as follows:

Size		MINIMUM SLOPE Fixed Alignment	Schematic Alignment	Size		MINIMUM SLOPE Fixed Alignment	Schematic Alignment
6"	~	0.0050	0.0100	21"	~	0.00095	N/A
8"	~	0.0035	0.0060	24"	~	0.00075	N/A
10"	~	0.0025	0.0035	27"	~	0.00065	N/A
12"	~	0.0020	0.0024	30"	~	0.00055	N/A
15"	~	0.0015	0.0018	33" & larger	~	0.00050	N/A
18"	~	0.0012	0.004				

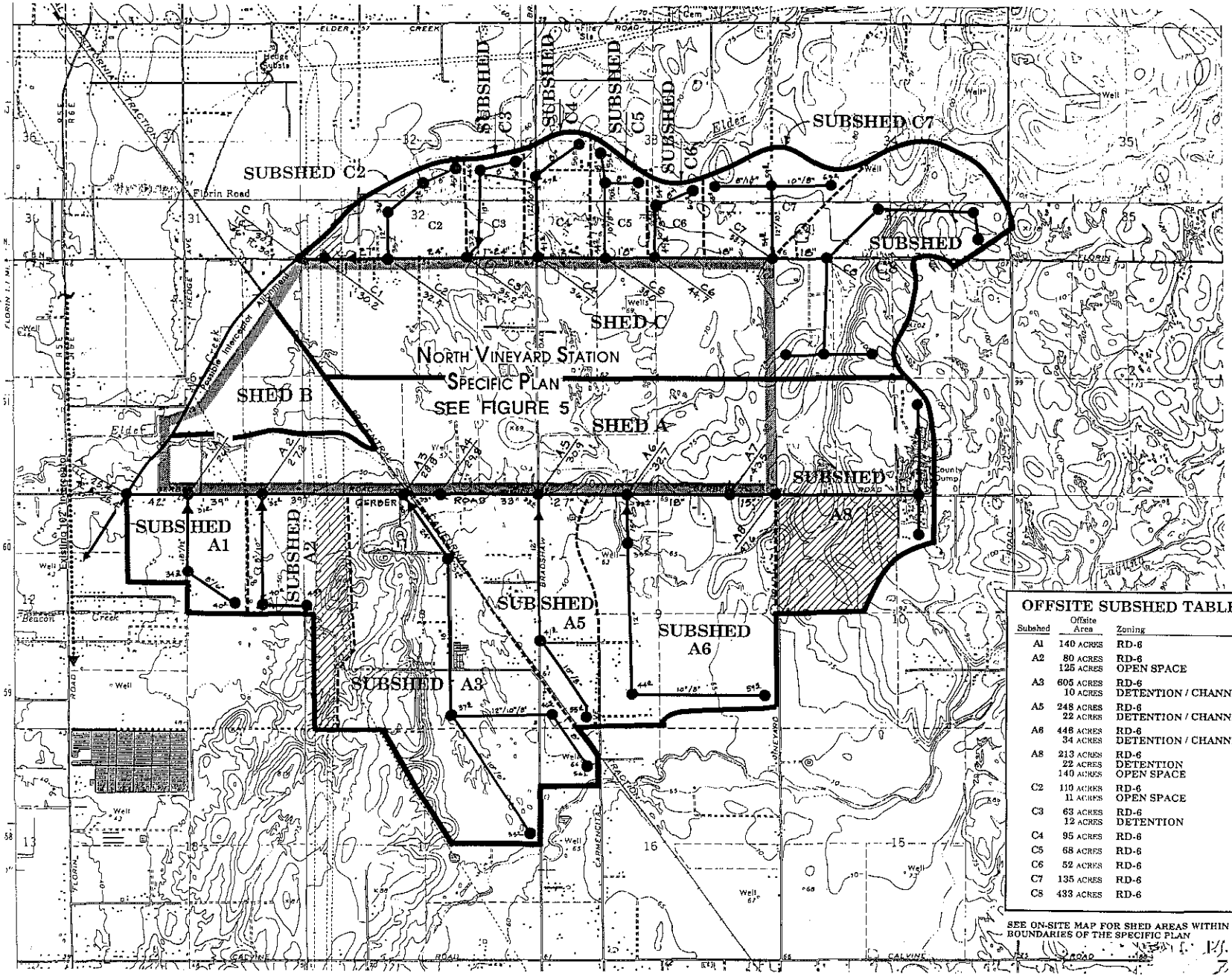
Fixed alignment slopes were generally used within the Specific Plan Area where collector roadway systems have been established. Schematic alignment slopes were typically used outside the boundaries of the Specific Plan where development planning concepts are less certain. The purpose of using steeper pipe grades in this study for "unplanned" areas is to allow for the potential that pipe lengths may turn out to be longer than anticipated at this time.

D. SYSTEM LAYOUT

Figures 3 and 4 show the Sewer Infrastructure Master Plans to serve the proposed development of the NVSSP. The sewer lines have been laid out after consideration of topography and other physical constraints. Within the Specific Plan Area, the pipelines are generally located within existing or proposed roads. The location of proposed sewers in areas outside the boundaries of the Specific Plan are more schematic in nature and are expected to be modified with the submittal of development proposals for those areas.

The pipelines in Gerber and Florin Roads are estimated to carry in excess of 1 million gallons per day (mgd), and therefore are classified as "trunk" facilities subject to CSD-1 policies for reimbursement of construction costs. Portions of other parts of the system are also expected to reach trunk classification.

The design calculations for the Sewer Master Plan are shown in Appendices 2 and 3. The pipe segments and nodes identified in the design calculations are keyed to Figures 3 and 4. Below is a summary of the estimated PWWF discharge at each of the three points of connection to the Bradshaw/Folsom Interceptor.



0 500' 1000' 2000' 3000'

NORTH VINEYARD STATION SPECIFIC PLAN

SANITARY SEWER STUDY

OFFSITE SEWER FIGURE 3

August 9, 1995

REVISED: 10-6-95

OFFSITE SUBSHED TABLE

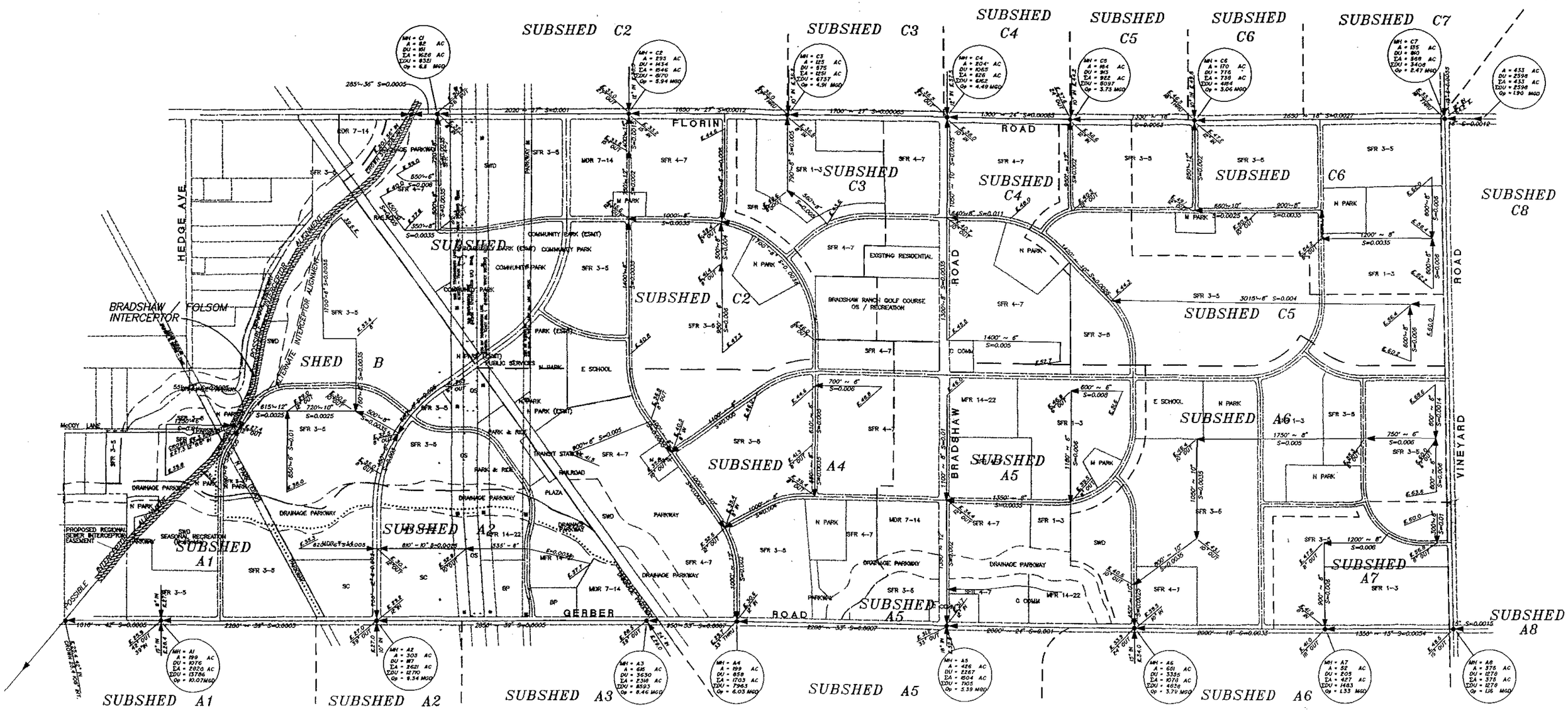
Subshed	Offsite Area	Zoning
A1	140 ACRES	RD-6
A2	80 ACRES	RD-6
	125 ACRES	OPEN SPACE
A3	605 ACRES	RD-6
	10 ACRES	DETENTION / CHANNEL
A5	248 ACRES	RD-6
	22 ACRES	DETENTION / CHANNEL
A6	448 ACRES	RD-6
	34 ACRES	DETENTION / CHANNEL
A8	213 ACRES	RD-6
	22 ACRES	DETENTION
	140 ACRES	OPEN SPACE
C2	110 ACRES	RD-6
	11 ACRES	OPEN SPACE
C3	63 ACRES	RD-6
	12 ACRES	DETENTION
C4	95 ACRES	RD-6
C5	68 ACRES	RD-6
C6	52 ACRES	RD-6
C7	135 ACRES	RD-6
C8	433 ACRES	RD-6

SEE ON-SITE MAP FOR SHED AREAS WITHIN THE BOUNDARIES OF THE SPECIFIC PLAN

LEGEND

- SPECIFIC PLAN BOUNDARY
- SHED BOUNDARY
- SUB-SHED BOUNDARY
- CONCEPTUAL SEWER PIPE ALIGNMENT / PIPE SIZE
- FLOWLINE OUT ELEVATION
- 11 Ac. OFFSITE SUBSHED ACREAGE
- NON-SEWER GENERATING AREAS
- I.C. INTERCEPTOR CROWN ELEVATION
- INVERT ELEVATION

7536-0



0 500 1000 2000

SCALE: 1"=1000'

MACKAY & SOMPS
CIVIL ENGINEERS, INC.
SACRAMENTO, CALIFORNIA (916) 929-6092

LANDUSE LEGEND

D-18	MULTI FAMILY RESIDENTIAL (AVG. 18 DU/AC)
D-10	MULTI FAMILY RESIDENTIAL (AVG. 10 DU/AC)
D-6	SINGLE FAMILY RESIDENTIAL (AVG. 6 DU/AC)
D-5	SINGLE FAMILY RESIDENTIAL (AVG. 5 DU/AC)
D-2	SINGLE FAMILY RESIDENTIAL (AVG. 6 DU/AC=FOR SEWER PURPOSES)
C	COMMERCIAL
BP	BUSINESS PROFESSIONAL
COMM PARK	COMMUNITY PARK
N-PARK	NEIGHBORHOOD PARK
SWD	STORM WATER DETENTION
	STREETS
	LANDUSE BOUNDARY

SEWER LEGEND

- MAJOR-SHED LINE
- SUB-SHED LINE
- IL 32.5 — FLOWLINE ELEVATION
- 10" S=0.0025 — SANITARY SEWER PIPE

MH = H4 — MANHOLE/JUNCTION POINT NUMBER
A = 42.0 AC — CONTRIBUTING AREA
DU = 164 — CONTRIBUTING EQUVALENT SINGLE FAMILY DWELLING UNITS
ΣA = 42.0 AC — TOTAL CONTRIBUTING AREA
ΣDU = 164 — TOTAL CONTRIBUTING DWELLING UNITS
Qp = 0.23 MGD — PEAK WET WEATHER FLOW

NOTE: LARGE SCALE DRAWINGS ARE ON FILE AT THE COUNTY PLANNING DEPARTMENT

FIGURE 4

North Vineyard Station Specific Plan

SEWER MASTER PLAN

Scale: 1"=1000' Sacramento, California August 10, 1995

REVISED MARCH 7, 1996
REVISED JANUARY, 1998
(PER PREFERRED PLAN DATED JULY 10, 1996)

/ELVIS/7000/7536/SEWER/ssbase.dwg 7536-0

Discharge Flow Location	Peak Wet Weather (mgd)
Point A	10.03
Point B	0.57
Point C	6.32
Total	**16.92**

Based on the Master Plan included herein, the entire Service Area can be served by gravity without the need for a lift station.

E. CONSTRUCTION PHASING

Phasing for construction of sanitary sewer improvements will consist of trunk and lateral installation beginning at downstream outfall points and progressing upstream to serve proposed developments. Phasing of improvements will be addressed further in the future Capital Improvement Program developed for the North Vineyard Station Specific Plan.

The Bradshaw/Folsom Interceptor is currently scheduled for construction in 1998. If development of the NVSSP precedes construction of the interceptor, other temporary outfalls will need to be considered.

F. FINANCING/FUNDING

Construction of interceptor and trunk systems are funded by development fees and are operated by SRCSD and CSD-1, respectively. Systems carrying less than 1 mgd are typically funded and constructed by private development and are dedicated to CSD-1 for operation.

SRCSD will be responsible for constructing the Bradshaw/Folsom Interceptor. Trunk sewer facilities are generally developer financed and costs are reimbursed with funds generated by sewer fees (or fee credits may be applied). Reimbursement occurs after acceptance of the facilities by the Water Quality Division. In some cases, CSD-1 may elect to directly fund and construct trunk sewer facilities.

Further discussion of Financing/Funding methods for construction of sewer improvements will be addressed within the future Financing Plan developed for the North Vineyard Station Specific Plan.

V. ALTERNATIVES ANALYSIS

A. DESCRIPTION OF ALTERNATIVES

The alternatives analysis presented in this section compares three different land use plans to the Preferred Plan. The alternatives are as follows:

LOW DENSITY PLAN (Figure 5)

As compared to the Preferred Plan, the Low Density Plan reduces the number of residential dwelling units at several locations. The most significant area where this occurs is within and around the triangle formed by the railroad with Gerber and Waterman Roads.

PREFERRED PLAN - CORE RELOCATION OPTION (Figure 6)

The Preferred Plan Core Relocation Option moves the commercial and multi-family land uses from the vicinity of the Waterman Road/Gerber Road intersection to the area near Bradshaw and Florin Roads and replaces these uses with lower density single-family residential and open space uses.

LOW DENSITY PLAN - CORE RELOCATION OPTION (Figure 7)

This plan has the combined effect of reducing the overall density of the project and moving the higher intensity land uses away from the Waterman/Gerber area to the vicinity of the Florin/Bradshaw intersection.

B. COMPARISON OF LAND USE PLANS

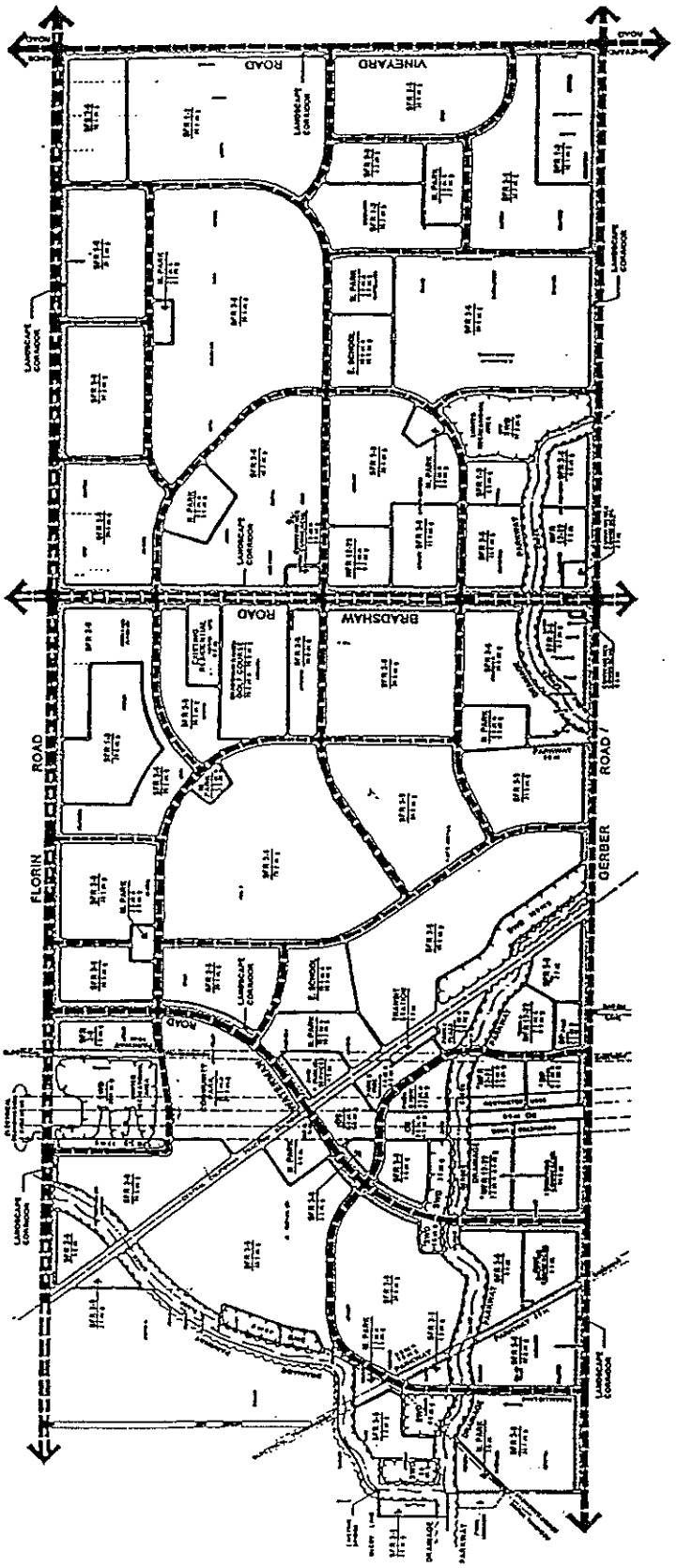
In order to assist decision-makers, Table 1 identifies the probable changes that would occur to the Sewer Master Plan should one of the alternative land use plans or a hybrid of the alternative land use plans be selected over the Preferred Plan.

This comparative analysis is based on an estimated percentage increase (or decrease) in ESD's between the preferred plan and each alternative. It should be noted that ESD's are assigned to some non-residential land uses and that multi-family areas are assigned only 0.75 ESD's per dwelling unit. Therefore, the ESD variations from the Preferred Plan will not precisely correspond to the changes in the number of housing units. The percentage increase (or decrease) of ESD's has then been used to estimate projected flows and the probable changes to the proposed facilities.

At the direction of the Planning Commission a Dispersed Core Reduced Density land plan was proposed. The Dispersed Core Reduced Density land plan is a hybrid of the Low Density Plan and the Low Density Core Relocation Plan. The Dispersed Core Reduced Density Plan falls within the parameters of the comparison alternatives analysis. The probable changes that would occur to the Sewer Master Plan should the Dispersed Core Reduced Density alternative be selected fall within the scope of the results of the comparison analysis in Table 1. The Dispersed Core Reduced Density land plan would not result in any significant additional infrastructure needs.

The Sanitary Sewer Study for this specific plan has four different land use alternatives. After a land use plan has been selected a final Sewer Master Plan for this specific plan will be completed by Mackay & Somps, prior to any development within the plan area.

LAND USE DIAGRAM
15% LOW DENSITY ALTERNATIVE



LEGEND

C	COMMERCIAL
BP	BUSINESS PROFESSIONAL
MFR 12-22	MULTI-FAMILY RESIDENTIAL
SFR 3-5	SINGLE FAMILY RESIDENTIAL
SFR 1-3	SINGLE FAMILY RESIDENTIAL
	TRANSIT FACILITIES
	SCHOOLS
PS	PUBLIC SERVICES
	PARKS / PARKWAY
C	DRAINAGE PARKWAY
OS/SWD	OPEN SPACE / STORM WATER DETENTION

NOT TO SCALE

Figure 5

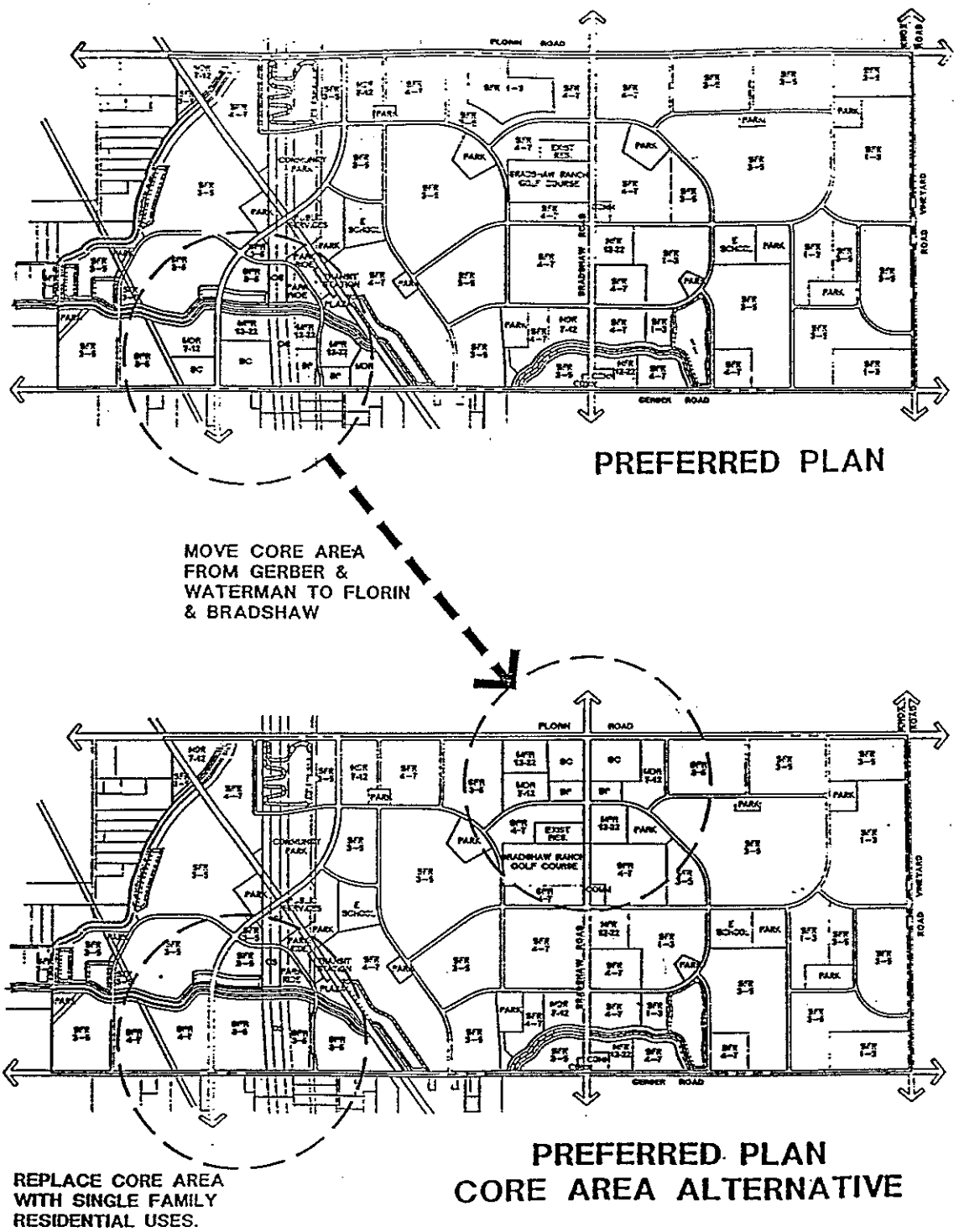

PREFERRED PLAN
MOVE CORE AREA FROM GERBER & WATERMAN TO FLORIN & BRADSHAW
REPLACE CORE AREA WITH SINGLE FAMILY RESIDENTIAL USES.
PREFERRED PLAN
CORE AREA ALTERNATIVE

Figure 6

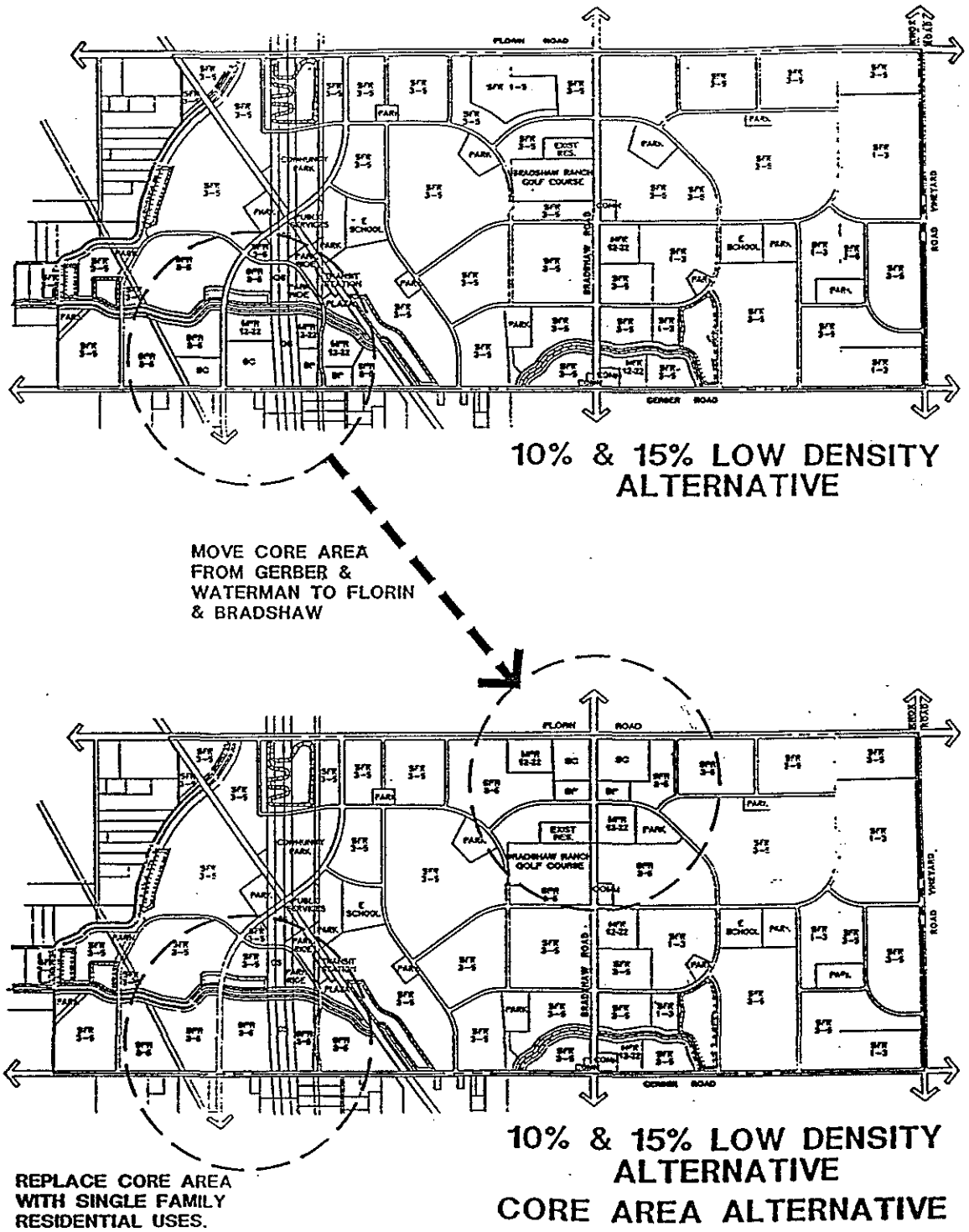

10% & 15% LOW DENSITY ALTERNATIVE
MOVE CORE AREA FROM GERBER & WATERMAN TO FLORIN & BRADSHAW
REPLACE CORE AREA WITH SINGLE FAMILY RESIDENTIAL USES.
10% & 15% LOW DENSITY ALTERNATIVE
CORE AREA ALTERNATIVE

Figure 7

TABLE 1

COMPARISON TO PREFERRED PLAN

	Estimated Total Increase (Decrease) in ESD's	Estimated Increase (Decrease) in Flow at Interceptor Connection (In MGD)	Changes to Sewer Master Plan
Low Density Plan			
Shed A	(440)	(0.2)	Probably no change to Gerber Road trunk. Possible reduction in size of some laterals in Subsheds A2, A4, and A5.
Shed B	(20)	0.0	No change
Shed C	(160)	(0.1)	No Change to Florin Road trunk. Possible reduction in size of some laterals in Subsheds A2, A4, and A5.
Preferred Plan – Core Relocation Option			
Shed A	(390)	(0.2)	Possible increase in size of some segments of Florin Road trunk (C2 to C4). Possible increase in size of Subshed C3 and C4 laterals.
Shed B	(20)	0.0	No change.
Shed C	400	0.2	Probably no change in Gerber Road trunk. Possible reduction in size of some laterals in Subshed A2. Possible increase in size of some segments of Florin Road trunk (C2 to C4).
Low Density Plan - Core Relocation Option			
Shed A	(610)	(0.3)	Probably no change in size of Gerber trunk. Possible some reduction in size of laterals in Subsheds A2, A4, and A5.
Shed B	(20)	0.0	No change.
Shed C	(130)	(0.1)	No change to Florin Road trunk. Possible some reductions in sizes of laterals in Subsheds C2, C3 and C4.

APPENDIX 1

TABLE 3-1

DESIGN FLOW CRITERIA

	Item	Value/Criteria
1.	ESD Flow Factor	310 gpd/ESD
2.	Land Use Unit Flow Rates	
	Low Density Residential	6 ESDs/acre
	Medium Density Residential	15 ESDs/acre
	Commercial/Industrial	6 ESDs/acre
	Transit - Oriented Development	11 ESDs/acre
3.	Dry Weather Peaking Factor	Curve (see Figure 3-1)[a]
4.	Rainfall-Dependent I/I (10-year Storm)	
	Existing Areas	1,400 gpd/acre
	Future Areas	1,000 gpd/acre
5.	Groundwater Infiltration	200 gpd/acre

[a] For average flow ≥ 0.1 mgd, use equation:

$$PF = 3.5 - 1.8\ Q^{0.05}$$

Where

PF = dry weather peaking factor (minimum = 1.2)
Q = average flow (mgd)

TAKEN FROM:
SACRAMENTO SEWERAGE EXPANSION STUDY
APRIL 1993

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536A.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
A8 OFFSITE ONLY																
			RD 1-3			6.0										
			RD 3-5			5.0										
			RD 4-7			6.0										
			RD 6	213		6.0	1278									
			MDR			10.0										
			MFR			14.0										
			OPEN SPACE	162		0.0										
			COMM			6.0										
		A8	**Subtotal**	**375**			**1278**									
A8	A7				375			1278	0.40	1.78	0.71	0.45	1.16	15	0.00150	1350
A7 ONSITE ONLY																
			RD 1-3	18		6.0	108									
			RD 3-5	39		5.0	195									
			RD 4-7			6.0										
			RD 6			6.0										
			MDR			10.0										
			MFR			14.0										
			OPEN SPACE			0.0										
			COMM			6.0										
		A7	**Subtotal**	**57**			**303**									
A7	A6				432			1581	0.49	1.76	0.86	0.52	1.38	18	0.00120	2000

APPENDIX 2

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536A.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
A6 ONSITE AND OFFSITE																
			RD 1-3	21		6.0	126									
			RD 3-5	86		5.0	430									
			RD 4-7	9		6.0	54									
			RD 6	446		6.0	2676									
			MDR			10.0										
			MFR	3		14.0	42									
			OPEN SPACE	67		0.0										
			COMM			6.0										
		A6	**Subtotal**	**632**			**3328**									
A6	A5				1064			4909	1.52	1.66	2.53	1.28	3.81	27	0.00065	2000
A5 ONSITE AND OFFSITE																
			RD 1-3	34												
			RD 3-5	10		6.0	60									
			RD 4-7	29		5.0	145									
			RD 6	248		6.0	1488									
			MDR			6.0										
			MFR	14		14.0	196									
			OPEN SPACE	36		0.0										
			COMM	3		6.0	18									
		A5	**Subtotal**													
				374			**1907**									
A5	A4				1438			6816	2.11	1.63	3.45	1.73	5.17	33	0.00050	2200

APPENDIX 2

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536A.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
A4 ONSITE ONLY																
			RD 1-3			6.0										
			RD 3-5	74		5.0	370									
			RD 4-7	67		6.0	402									
			RD 6			6.0										
			MDR	38		10.0	380									
			MFR			14.0										
			OPEN SPACE	44		0.0										
			COMM			6.0										
		A4	**Subtotal**	**223**			**1152**									
A4	A3				1661			7968	2.47	1.62	3.99	1.99	5.99	33	0.00050	950
A3 OFFSITE ONLY																
			RD 1-3			6.0										
			RD 3-5			5.0										
			RD 4-7			6.0										
			RD 6	605		6.0	3630									
			MDR			10.0										
			MFR			14.0										
			OPEN SPACE	10		0.0										
			COMM			6.0										
		A3	**Subtotal**	**615**			**3630**									
A3	A2				2276			11598	3.60	1.58	5.68	2.73	8.42	39	0.00050	3000

APPENDIX 2

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536A.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
A2 ONSITE AND OFFSITE																
			RD 1-3			6.0										
			RD 3-5	16		5.0	80									
			RD 4-7			6.0										
			RD 6	80		6.0	480									
			MDR	10		10.0	100									
			MFR	14		14.0	196									
			OPEN SPACE	139		0.0										
			COMM	37		6.0	222									
		A2	**Subtotal**	**296**			**1078**									
A2	A1				2572			12676	3.93	1.57	6.18	3.09	9.27	39	0.00050	2130
A1 ONSITE AND OFFSITE																
			RD 1-3			6.0										
			RD 3-5	57		5.0	285									
			RD 4-7			6.0										
			RD 6	140		6.0	840									
			MDR			10.0										
			MFR			14.0										
			OPEN SPACE	11		0.0										
			COMM			6.0										
		A1	**Subtotal**	**208**			**1125**									
A1	A				2780			13801	4.28	1.56	6.69	3.34	10.03	42	0.00050	1200

APPENDIX 2

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536B.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. @ Min. Slope	Min. Slope	Pipe Length (ft.)
B SHED - ONSITE ONLY																
			RD 1-3			6										
			RD 3-5	115		5	575									
			RD 4-7			6										
			RD 6			6										
			MDR			10										
			MFR			14										
			OPEN SPACE	48		0										
			COMM	10		6	60									
			Subtotal	173			635									
					173			635	0.20	1.84	0.36	0.21	0.57	10	0.00250	

APPENDIX 3

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536C2.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
C8 OFFSITE ONLY																
			RD 1-3			6										
			RD 3-5			5										
			RD 4-7			6										
			RD 6	400		6	2400									
			MDR			10										
			MFR			14										
			OPEN SPACE			0										
			COMM			6										
		C8	**Subtotal**	**400**			**2400**									
C8	C7				400			2400	0.74	1.73	1.28	0.48	1.76	18	0.00120	
C7 OFFSITE ONLY																
			RD 1-3			6										
			RD 3-5			5										
			RD 4-7			6										
			RD 6	135		6	810									
			MDR			10										
			MFR			14										
			OPEN SPACE			0										
			COMM			6										
		C7	**Subtotal**	**135**			**810**									
C7	C6				535			3210	1.0	1.70	1.69	0.64	2.33	21	0.00095	2650

APPENDIX 4

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536C2.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
C6 ONSITE AND OFFSITE																
			RD 1-3	34		6	204									
			RD 3-5	80		5	400									
			RD 4-7			6										
			RD 6	52		6	312									
			MDR			10										
			MFR			14										
			OPEN SPACE	10		0										
			COMM			6										
		C6	Subtotal	176			916									
C6	C5				711			4126	1.28	1.68	2.15	0.85	3.0	24	0.00075	1100
C5 ONSITE ONLY																
			RD 1-3	32		6	192									
			RD 3-5	96		5	480									
			RD 4-7			6										
			RD 6	68		6	408									
			MDR			10										
			MFR			14										
			OPEN SPACE			0										
			COMM			6										
		C5	Subtotal	196			1080									
C5	C4				907			5206	1.61	1.66	2.67	1.09	3.76	27	0.00065	1530

APPENDIX 4

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536C2.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
C4 ONSITE AND OFFSITE																
			RD 1-3			6										
			RD 3-5	2		5	10									
			RD 4-7	76		6	456									
			RD 6	95		6	570									
			MDR			10										
			MFR			14										
			OPEN SPACE	4		0										
			COMM	2		6	12									
		C4	**Subtotal**	**179**			**1048**									
C4	C3				1086			6254	1.94	1.64	3.18	1.30	4.48	30	0.00055	1700
C3 ONSITE ONLY																
			RD 1-3	33		6	198									
			RD 3-5	2		5	10									
			RD 4-7	29		6	174									
			RD 6	63		6	378									
			MDR			10										
			MFR			14										
			OPEN SPACE	12		0										
			COMM			6										
		C3	**Subtotal**	**139**			**760**									
C3	C2				1225			7014	2.17	1.63	3.54	1.47	5.01	30	0.00055	1650

APPENDIX 4

DESIGN CRITERIA
ADWF(mgd)= (310 gpd X # ESD's)/1,000,000
PEAKING FACTOR = 3.5 - 1.8 (ADWF^0.05)
INFLOW/INFILTRATION(mgd) = 1200 gpad

NORTH VINEYARD STATION
SANITARY SEWER ANALYSIS

7536-0
10/11/95
7536C2.XLS

From Node	To Node	Subarea	Land Use	Sub-area acreage	Cum. Acreage	Average Density	Subarea ESD's	Cum. ESD's	ADWF (mgd)	Peak Factor	PDWF (mgd)	I&I (mgd)	PWWF (mgd)	Pipe Dia. (") @ Min. Slope	Min. Slope	Pipe Length (ft.)
C2 ONSITE AND OFFSITE																
			RD 1-3			6										
			RD 3-5	106		5	530									
			RD 4-7	58		6	348									
			RD 6	110		6	660									
			MDR	15		10	150									
			MFR			14										
			OPEN SPACE	31		0										
			COMM			6										
		C2	**Subtotal**	**320**			**1688**									
C2	C1				1545			8702	2.70	1.61	4.34	1.85	6.19	33	0.00050	2050
C1 ONSITE ONLY																
			RD 1-3			6										
			RD 3-5			5										
			RD 4-7	13		6	78									
			RD 6			6										
			MDR			10										
			MFR			14										
			OPEN SPACE	62		0										
			COMM			6										
		C1	**Subtotal**	**75**			**78**									
C1	C				1620			8780	2.72	1.61	4.38	1.94	6.32	33	0.00050	150

APPENDIX 4

ATTACHMENT 5D

PRELIMINARY PHASE 1 ENVIRONMENTAL SITE ASSESSMENT

APPENDIX K

NVSSP FEIR: Final Technical Appendices Vol. II

NORTH VIENYARD STATION SPECIFIC PLAN

WKA No. 2954.01

March 1996

A professional services corporation providing consultation and testing in the geoscientific, environmental and construction fields.

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PRELIMINARY PHASE 1
ENVIRONMENTAL SITE ASSESSMENT
NORTH VINEYARD STATION SPECIFIC PLAN
Sacramento County, California

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PRELIMINARY PHASE 1
ENVIRONMENTAL SITE ASSESSMENT
NORTH VINEYARD STATION SPECIFIC PLAN
Sacramento County, California

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PRELIMINARY PHASE 1
ENVIRONMENTAL SITE ASSESSMENT
NORTH VINEYARD STATION SPECIFIC PLAN
Sacramento County, California
WKA No. 2954.01
March 8, 1996

INTRODUCTION

Purpose

We have completed this preliminary Phase 1 Environmental Site Assessment of the North Vineyard Station Specific Plan project area shown on Plates 1 and 2. The purpose of our assessment was to preliminarily evaluate the project area for evidence of potential soil and ground water contamination resulting from current and/or former site activities. Our work was authorized April 28, 1995 by the Law Offices of George E. Phillips on behalf of the North Vineyard Station Association. Our work was temporarily postponed pending establishment of report review procedures with the Sacramento County Department of Environmental Review and Assessment (DERA) and the Sacramento County Environmental Management Department (EMD).

The *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)* of 1980 and the *Superfund Amendments and Reauthorization Act (SARA)* of 1986 together define strict, joint, several and retroactive liability for unauthorized releases of hazardous substances. CERCLA is more commonly known as the Superfund law. CERCLA liability is broad and responsibility for cleanup is not solely dependent upon fault; owners may be liable for cleanup even if a property was "contaminated" prior to their acquiring the site in question. Furthermore, lenders, creditors and shareholders also can be named potentially responsible parties and may have to assume all or part of a property's cleanup costs.

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A party may avoid or reduce their CERCLA liability under the so-called innocent purchaser defense. This defense is available to the party only if they, among other things, undertook at the time of acquisition all appropriate inquiry into the previous uses and ownership of the property consistent with good commercial or customary practice. The very use of the phrase "appropriate inquiry," however, suggests that the level of inquiry will vary dependent upon type of property and party. Appropriate inquiry may invoke site-specific soils, ground water and/or air sampling and analysis to determine contaminant content or verify that contamination is unlikely.

The results of this preliminary environmental assessment will 1) aid in evaluating the feasibility of property acquisition and approval of proposed development plans; 2) assist in determining the final right-of-way sections for new roadway/retail infrastructure as well as tentative subdivision mapping; and, 3) can be used to plan mitigative and remedial actions, as necessary.

Scope

The scope of our work included the following:

- a field reconnaissance of accessible properties within the project area by experienced personnel to look for evidence of surface and potential subsurface sources of contamination

- a cursory reconnaissance performed for sites within the project area for which access had not been arranged to look for obvious evidence of potential hazardous materials contamination; we also flew and photographed the project area from low elevation in a private plane, paying particular attention to inaccessible sites

- review of our firm's August 1994 Phase 1 *Site Assessment Update* already completed for two of the project area proponent (aka "petitioner's") parcels (APN 65-052-2 "Gordon" and APN 65-052-4 "North Vineyard Investors")

- a "windshield survey" of existing commercial facilities in the immediate vicinity of the project area for potential air emissions sources

- review of our firm's *Preliminary Geotechnical Engineering Report* that was completed concurrently with this report for information relevant to evaluating the project area for hazardous materials

- interviews with persons familiar with the overall history of the project area, as well as discussions with individual site owners, operators and/or tenants, as available

- review and summarization of historic U.S.Geological Survey (USGS) topographic mapping of the project area

- examination of stereoscopic aerial photographs of the property taken over the past approximate 30 years and analysis of selected 1" = 500' photographic enlargements of the project area (Plate 3)

- an evaluation of published local and regional hydrologic conditions, including historical ground water depth and regional flow direction (Plate 4)

- a review of federal, state, and county databases for known instances of hazardous materials contamination or registered underground storage tanks within the project area, as well as for hazardous materials/waste storage, generation and disposal permits; emergency response or illegal dumpings documentation; and, the status of investigatory or remedial work for sites within the project area (Plate 5)

- a discussion of the likelihood for radon to be problematic with respect to future development within the project area

- preparation of this report of our findings, which contains conclusions and recommendations for inclusion as a technical appendix in the Specific Plan document.

Laboratory testing for hazardous materials in the soils and ground water and surveys of existing structures for asbestos and lead-based paint were beyond the scope of this assessment.

FINDINGS

Site Description

The project area consists of approximately 1580 acres of irregularly-shaped land located easterly from the urbanized area of the small town of Florin, California (Plate 1). Florin is an unincorporated community in west-central Sacramento County. Highway 99 is approximately five miles westerly from the project area. The project area is comprised of 150 Sacramento County Assessor's Parcels Numbers (APNs), based on review of the April 1993 *Location and Property Ownership Map, North Vineyard Station Specific Plan* prepared by Donn C. Reiners, Inc.

Significant physiographic features in and around the project area consist of Elder Creek, an intermittent stream that flows southwesterly near the northwesterly project area boundary, and two other intermittent streams that flow westerly and southerly across the southwesterly corner and south-central portion of the project area.

Five easements containing high voltage overhead electrical transmission lines supported by steel towers (three sets of lines) or wood poles (two sets of lines) are located within the project area near its westerly boundary (Plate 2). Two of the transmission line right-of-ways, as indicated on the Donn C. Reiners drawing, are apparently operated by the U.S. Bureau of Reclamation; two

are operated by Pacific Gas and Electric Company (PG&E); and, the fifth right-of-way is operated by the Sacramento Municipal Utility District (SMUD).

The project area lies entirely within Sections 4 and 5 of Township 7 North, Range 6 East and consists of decreasing land area toward the west in Section 6 of Township 7 North, Range 6 East. Most roadways adjacent to the project area boundaries as well as many in the project area vicinity correspond to the locations of section lines of the USGS township and range rectangular numbering system for the subdivision of land.

The project area has local relief of approximately 35 feet. The 45-foot through 80-foot mean sea level (MSL) elevation contour lines as shown on the USGS *Elk Grove* quadrangle map generally trend north/south through the project area (Plate 1). Based on this observation, the property generally slopes gently downward to the west with low elevation undulations throughout the central and easterly portion of the project area.

The project area is bounded to the north and south by Florin and Gerber Roads, respectively, beyond which are rural residential and agricultural sites, and to the east and west by agricultural land and rural residential sites. The project area is bisected by Bradshaw Road which trends north/south through the central portion of the project area, and by the Central California Traction Railroad tracks which trend northwesterly/southeasterly through the westerly portion of the project area.

Existing land use within the project area consists predominantly of non-irrigated grazing (natural grass) land followed in order of decreasing prevalence by irrigated pasture and/or dry-farmed haycrop land, and fallow land. After the major land uses as mentioned above (in terms of acreage involved within the project area), next in order of decreasing dominance appears to be rural residential sites within the project area, followed by commercial facilities and homestead sites.

Methodology and Report Format

Most of our field observations were made from public street right-of-ways within the project area, particularly since during the timeframe of this assessment access arrangements had only been made by our client for approximately one-half the land in the project area. This approach in most cases was not considered problematic since most sites within the project area consist of relatively open land visible from adjacent streets. Where site conditions appeared to warrant closer observations and where access arrangements had been made, individual properties within the project area were physically walked and/or driven by our personnel. To further address the inaccessibility issue, we also flew the project area at low elevation in a private plane, taking color photographs for further review at our office. We targeted additional site assessment effort toward project proponent properties, identified by Mr. Phillips' office as "Petitioners' Parcels" and "Parcels Proceeding with Tentative Subdivision Maps."

Given the commonality among existing land uses within the project area, the voluminous amount of data and in order to enhance the readability of this preliminary report of findings, individual properties within the project area are not discussed separately with several exceptions as shown below under corresponding subheadings. These exceptions include subheadings for each of the Petitioners' Parcels. Additionally, and again with ready reference in mind for users of this report, Table 1 following Plate 5 of this report is a summary of site address, Sacramento County APN, land use type, comments and site-specific recommendations based on our preliminary findings for each of the properties within the project area. APNs included in Table 1 are shown on Plate 2.

The commonality among sites and histories for properties within the project area also lends itself to general discussions and recommendations with respect to certain hazardous materials issues. As such, various site-types defined for purposes of this report are discussed under subheadings below; where applicable, recommendations with respect to issues common to many site-types within the project area are made in the *Conclusions and Recommendations* section of this report. An example would be the topic of proper abandonment of existing water supply wells; this topic is relevant to nearly all of the existing developed sites within the project area regardless of

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whether the sites are rural residential, ranch-related homesteads or commercial. The recommendations based on general hazardous materials issues such as well abandonment are not repeated within Table 1 in order to avoid redundancy; again, Table 1 contains site-specific recommendations for individual properties where necessary.

Rural Residential

This site-type within the project area typically consists of a single-family residence with associated outbuildings that often included detached garages, carports, workshops, small barns and/or other ancillary structures. The age of existing structures for this category has a large range, although some of the existing rural residential sites appear to have been constructed during the 1970s, and some structures in this group are not as old as the homestead structures discussed in another subsection.

These sites typically contain water supply wells and some are small-scale livestock raising and/or equestrian establishments. The sites also generally appeared unencumbered with respect to potential hazardous materials contamination based on the methodology used during preparation of this preliminary report. Exceptions to this general observation are included in Table 1.

Homestead Sites

These are the oldest developed sites within the project area, some of which were constructed in the 1950s and 1960s based on aerial photographic review. The homestead sites typically contain some or all of the following: water supply well(s), mobile homes, detached garages and/or larger, apparently ranching-related shop buildings, large cattle-related barns and/or corrals, various buildings apparently used for storage, other agricultural production-related detached structures (such as milking barns on dairy sites), and tractor and implement storage/parking areas.

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A few of these sites also contain out-of-service trucking box trailers that have apparently been placed on the sites for use as miscellaneous storage features. The project area contains five historic homestead sites, one of which is a former dairy; four are homestead sites that appear to be dry-farming, equestrian and cattle ranching facilities. The existing dairy (further discussed in a subsequent report section) within the project area is not included in the historic homestead site category since it was constructed in the 1980s. The large homestead sites are generally located around the perimeter of the project area, surrounding the pastures and hay croplands in the central portion of the project area. For purposes of our work, the homestead sites are distinguished from rural residential sites typically by site size and scale of operations.

Commercial Sites

Approximately ten commercial sites exist within the project area. One commercial site, the B & E Market, is discussed in a subsequent report section since it is an agency-listed facility. Several of the sites have some developmental features in common with those site-types mentioned above. Additionally, these sites may overlap to some extent with features of the homestead or rural residential sites. For example, Rose Nursery on Gerber Road in the southwesterly portion of the project area and Parcel 066-010-062 ("Aston Trust" per the Donn C. Reiners, Inc. location and property ownership map) contains a single-family residence and apparently related outbuildings as well as nursery-related buildings and greenhouses.

Since formal access to these parcels had not been arranged prior to our work, the sites were observed from a private plane and from adjacent sites. Several stored and abandoned vehicles are located behind the structures of the Rose Nursery (APNs 066-008-001 and 065-008-029. Stockpiles of irrigation piping, aboveground storage tanks (ASTs), tires, and mounds of debris containing unidentifiable materials were in full view from the plane on Parcel 1. A rectangular reservoir is also located on the easterly side of Parcel 1 north of the greenhouses. The nursery area on Parcel 29 also has mounds of unidentifiable debris, vehicles, and ASTs.

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Results of Field Reconnaissance and Windshield Survey

In summary we observed no obvious evidence of significant hazardous materials contamination during our preliminary field reconnaissances of the project area. We did observe some evidence and/or features to indicate that some sites have the potential for hazardous materials contamination; no obvious evidence was observed on the Petitioners' Parcels. To address these potential areas of concern it would be prudent, at a minimum, to perform closer field reconnaissances of some properties to which access had not been arranged. Subsequent to additional field reconnaissance, the necessity to perform Phase 2 sampling and testing at previously inaccessible sites could be further evaluated.

During our field reconnaissance we observed strawberry fields and a greenhouse on Parcel 066-007-043 ("Barcelo" per the Donn C. Reiners, Inc. location and property ownership map) located between the electrical transmission line right-of-ways. Commercial sales of fresh strawberries is conducted along an access road east of the strawberry field. Pesticide use information is discussed in a subsequent section of the report.

South of the strawberry field, on Parcel 066-007-045 ("Munoz Trust" per the Donn C. Reiners, Inc. location and property ownership map), we observed several pieces of heavy machinery including a water truck, grader, compactors, two tractor/trailer rigs, a front-end loader and other miscellaneous equipment stored/parked on the soil and gravel surface within a fenced yard. Structures include construction office trailers and covered storage areas. We were able to fly at a low altitude and observe piles of debris including concrete, cut tree trunks, and other unidentifiable items on the westerly side of the parcel. One AST was resting on the ground surface near the easterly parcel boundary; no obvious soils staining was observed from the plane.

We observed apparent vent pipes protruding from the ground surface on the east side of Parcel 066-007-017 ("Johnson" per the Donn C. Reiners, Inc. location and property ownership map), located on the easterly side of Bradshaw Road. No other evidence was observed on this inaccessible site to indicate that which is vented. This site is apparently a former dairy, the

history of which is discussed in a subsequent section of this report. The site is not a Petitioners' Parcel.

With respect to accessible sites where Phase 2 investigation consisting of soil and/or ground water testing should be performed that would either confirm or alleviate potential hazardous material(s) encumbrances, Table 1 contains recommendations in this regard, as necessary, on a site-specific basis. Other accessible sites are further discussed below because an interviewee was available at the time of our work, and/or because our firm had completed previous work for the site, and/or because the sites are representative of other similar sites that were not accessible.

Nine Petitioners Parcels are located within the project area; the parcels are discussed below as groups of parcels identified by the name of the owners listed on the Donn C. Reiners, Inc. location and property ownership map.

North Vineyard Investors
and Gordon Parcels

The North Vineyard Investors and Gordon Parcels include APNs 065-052-002, -004, and 065-008-079. The northernmost portion (Parcel 2 - Gordon) consists of a rural residential site including a house, garage, corrals and a small outbuilding which, based on its construction, appears to have been an old milking room for dairy cattle. Beyond the northwesterly corner of Parcel 2 is a second rural residential site that contains an old residence, outbuildings and discarded or abandoned items. Beyond the westerly boundary of Parcel 2 is another rural residential site that contains a mobilehome, equestrian-related outbuildings and stables.

Elder Creek bisects Parcel 2 south of the two residential sites. The remaining portions of the property, both north and south of the railroad tracks, are dry grazing land and irrigated pasture. Review of aerial photographs and topographic maps indicate that the North Vineyard Investors and Gordon Parcels have generally remained unchanged since 1963; dry-farmed crops and irrigated pasture are visible in the historic photographs. Fewer barns and outbuildings, however,

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are currently located on the north end of Parcel 2 relative to former structures revealed by the historic aerial photographs.

We reviewed our firm's August 1994 Phase 1 *Site Assessment Update* file for APNs 065-052-002 and -004; our previous work did not include publication of a formal report since a fullscope Phase 1 report had been previously completed by others for that portion of Parcel 2 located southerly from Elder Creek. The North Vineyard Investors Parcels contain two agricultural water supply wells, one of which is improperly abandoned; the other is adjacent to an aboveground storage tank that appeared to be used for watering livestock. No obvious surface evidence of buried utilities, such as underground services alert placards, manhole covers or below-grade junction boxes, were observed within the railroad right-of-way. No visibly stained surficial soils were observed within the easement outside the location of the railroad tracks themselves.

The southerly tip of Parcel 2 contains a refuse scatter; this feature was first noted by archaeologists with Peak and Associates, Inc., during their work on the North Vineyard Station Specific Plan project. The refuse scatter is located adjacent to the northwesterly side of a lone fruit tree; the feature is approximately 23 feet in diameter. The predominant contents of the refuse scatter are brick and concrete rubble. The refuse scatter contains several bottle fragments which Peak and Associates indicate are from the late 1930s or early 1940s. Also observed on the ground surface of the area were a sardine can, fuse box insulator, decorated miniature tea cup, a crockery jug lip, a concrete irrigation water pipe segment and a short-length iron pipe fragment. Peak and Associates generally summarized the feature as containing minimal quantities of domestic and construction materials.

During our work at the refuse scatter location, all observations were consistent with those of Peak and Associates. Additionally, we hand-excavated two observation holes at random locations within the refuse scatter to approximately 18 inches below grade; the holes were backfilled after viewing. The only items observed within both observation holes were brick and concrete fragments. No stained or odoriferous soils nor any items of an obvious hazardous materials nature were observed on the ground surface of the refuse scatter or in the excavated holes. We

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also completed a focused aerial photographic review for the refuse scatter location, as further discussed in the following paragraphs. Peak and Associates noted that none of the USGS topographic maps dating back to 1909 showed any developmental items at the refuse scatter location; we concur with that finding.

In the 1963 aerial photographs, Parcel 2 contains irrigation checks for pasture or haycrops, trending east/west. The parcel contains the existing homestead site. The on-site homestead has a large home, several outbuildings (one of which is the probable milking room for a dairy observed during field visit) and a large barn (the barn is centrally located between the creek and Florin Road; the barn no longer exists today). Three trees are visible on the southerly area of Parcel 2. During our field reconnaissance, we noted that the northernmost tree had fallen down; the central fruit tree remains; and, the southernmost tree had fallen down, although suckers have grown up around its old trunk. Adjacent to the northwesterly side of the fruit tree, in the existing refuse scatter location, is a linear object of little to no relief. The scale of photography does not allow a precise determination to be made with respect to the linear object being a razed structure, an old concrete slab, or a scraped ground surface disturbance. The object is no larger than the existing refuse scatter; the feature does not appear to have a subsurface dimension.

The 1968 aerial photographic enlargement shows the location of the existing refuse scatter as an apparent rectangular-shaped scraped ground location adjacent to the northwest of the fruit tree; the location does not appear to have any relief, nor are any stored or built objects visible on the ground surface. The fields of Parcel 2 remain as pastures. The 1976 aerial photographs reveal no change to the existing refuse scatter location except now a square-shaped object with relief is somewhat visible, being partly beneath the fruit tree canopy adjacent to the north side of the tree. The object is so small in the aerial photographs that its purpose or nature cannot be distinguished. The ground-scraped rectangular area appears unchanged.

For the first time since the 1963 aerial photographs, no distinguishable difference is revealed in the 1981 photos on the ground surface around the fruit tree, relative to surrounding ground surfaces. No stored or built objects are apparent on the existing refuse scatter location in the 1981 aerial photographs. Similarly, little to no change is revealed on the refuse scatter location

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in the 1991 aerial photographs. Given that no field or historic evidence was observed in connection with the refuse scatter to suggest potential hazardous materials contamination, we simply recommend that the contents of the area be handled in accordance with the guide earthwork specifications contained in our firm's geotechnical engineering report prepared for this project. Specifically, deleterious materials should be removed from Parcel 2 and properly disposed of or recycled off site; the location should be backfilled with engineered fill. If additional information is desired in regard to the refuse scatter, an exploratory trench could be excavated through the area to further evaluate the nature of the feature.

Morvai Parcels

The Morvai parcels include APNs 066-007-004, -005, -006, 008 and -019. The northwesterly corner is rural residential consisting of four homes, several outbuildings and dilapidated structures. Debris piles and several abandoned vehicles are stored on the site. The remaining portions of the property are fallow land. Review of aerial photographs and topographic maps indicate that the residential areas on these parcels have remained relatively unchanged since 1963, although the presently fallow land historically supported dry-farmed crops and irrigated pasture.

Point/Vineyard Parcels

The Point/Vineyard Parcels are located on Gerber and Bradshaw Roads and have APNs 066-008-004, -006 and -013. We observed no obvious evidence of significant hazardous materials contamination on surface soils of the former homestead site located on APN 066-008-013. The former residential structure, however, has been razed; the building foundation and a large mound of unidentifiable debris and miscellaneous abandoned items remain on the site. It was not possible to determine from field observations alone whether the debris included asbestos-containing materials. This homestead area also contains a corral and apparent livestock feeding area. The remaining portions of the Point/Vineyard Parcels consist of dry grazing land; cattle were grazing at the time of our field reconnaissance.

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Given the mixture of wood, masonry, and other building materials at this location, the potential exists that the former structures may have been razed without asbestos abatement prior to the demolition. All of these materials should be removed from this site and properly disposed of or recycled as appropriate. Furthermore, removal and disposal of the debris which appeared to contain building demolition materials may be hindered by the possibility that the debris piles could contain asbestos that was not abated prior to structure demolition. The current property owner may be able to provide documentation that asbestos was abated from former structures prior to demolition.

Review of historic aerial photographs revealed that a structure existed near the railroad tracks on APN 066-008-004. This structure was razed by 1976. No structures were visible on APN 066-008-006. The central portion of the Point/Vineyard Parcels (APN 066-008-013) had three structures in the homestead area in 1963. By 1976 the structures had been razed and three additional structures had been constructed; the remains of one structure was previously discussed.

Courey Parcel

The Courey Parcel, also known as the Thomas Dairy, is located at 7461 Bradshaw Road and has Sacramento County APN 066-011-001. The Thomas Dairy site consists of two residences, milking barn, and three covered feeding areas. We also observed a wastewater pond and two aboveground storage tanks.

We interviewed Tommy Thomas, the current tenant and the former property owner on June 24, 1995. Mr. Thomas purchased the property in 1980 and has lived and maintained the Thomas Dairy on the property since 1983. Mr. Thomas sold his parcel in May 1995 to a Mr. Cal Maple but will continue to live on the site for another year.

Mr. Thomas indicated that wastewater from cleaning the milking barn flows to a pond located on the northeasterly corner of the parcel. All milking equipment is cleaned with a commercial soap. The milk barn floor is routinely washed down with water containing a trace disinfectant

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concentration. Mr. Thomas explained that the wastewater, after flowing through the pond, is dispersed on surrounding dry-farmed lands. Mr. Thomas described how very little commercial soap is used for cleaning and that the wastewater is highly diluted by the time it reaches the storage pond. The pond edges contained an abundance of green vegetation at the time of our field reconnaissance; the ponded water had no objectionable discoloration or odors. This dairy, compared to many other dairies in Sacramento County, is a relatively small-scale operation.

Two 500-gallon ASTs, one used to store diesel with the other currently out of service, are located south of the milking barn on a non-secondarily-contained concrete slab. We did not observe staining on the ground beneath the ASTs.

The Thomas Dairy does not grow grain crops, but allows natural grasses to grow. Mr. Thomas stated that no agricultural chemicals are applied to the volunteer grasses. Prior to the Thomas' purchase the property was reportedly a portion of a larger area of dry-farmed land. Mr. Thomas indicated that the Hope Brothers historically grew dry-farmed haycrops on both sides (east and west) of Bradshaw Road.

Mr. Thomas indicated that one domestic well exists on the property. Mr. Thomas did not know whether any other wells previously existed that had been hand-dug or drilled and abandoned on his property. We did not observe obvious surface evidence of other wells during our field reconnaissance.

Saca/Florin Investors Parcels

The Saca/Florin Investors Parcels are located east of Bradshaw Road along Florin Road and have APNs 066-010-072, -003, -005. Rural residential sites are located on the northerly portions of the parcels and grazing land and disced fields comprise the remaining land. We observed a homestead site with two houses on Parcel -072; two rural residential sites on Parcel -003; and, one residential site on Parcel -005. Each of these homestead sites includes barns, outbuildings and stables. Horses were grazing on Parcel -003 at the time of our field reconnaissance.

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Review of the aerial photographs and topographic maps reveal minor changes on the Saca/Florin Investors Parcels. Structures did not appear on these parcels on topographic maps prior to 1952. Structures are visible in the 1963 aerial photographs and the number of structures has increased between 1963 and 1980. A small, family-sized orchard (as opposed to commercial agricultural production) is first visible in the 1963 air photos north of the residential site on Parcel -005; an orchard was observed in the same location during our field reconnaissance.

East Bradshaw Gerber Associates Parcels

The East Bradshaw Gerber Associates Parcels are located on Gerber Road east of Bradshaw Road; this land area consists of three parcels with APNs 066-011-010, -011, and -012. These parcels have a gentle westerly slope toward a creek located west of the parcels. At the time of our field reconnaissance the parcels contained no structural development items. The ground surface contained the undisturbed stubble typical of a harvested dry-farmed crop such as grain. The East Bradshaw Gerber Associates Parcels have not changed significantly from their appearances in the earliest aerial photographs (1963) and topographic maps (1909); the parcels have historically supported dry-farmed crops.

Saca Parcels

The Saca Parcels are located between Gerber and Florin Roads adjacent to the easterly Specific Plan project area boundary. The Saca land consists of three parcels with Sacramento County APNs 066-010-019, -020, and -021. These parcels slope gently to the east. We observed an apparent wetlands area near the easterly portion of the Saca Parcels; fallow land was observed on the remaining area of the parcels. The Saca Parcels have not changed significantly from their original appearances in the earliest aerial photographs and topographic maps; the parcels have historically supported dry-farmed crops with the exception of the apparent wetlands area.

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Potential Air Emissions Sources

Excluding area traffic on existing surface streets and single-family residences with fireplaces or other home and business heating devices within and adjacent to the project area, we observed no field evidence indicating any stationary sources of potential, substantial air emissions either within the project area or within 500 feet of the project area.

Buried Petroleum Pipeline

Based on the field observation of placards posted along its length and consistent with our experience along the Bradshaw corridor, a buried liquid petroleum pipeline lies within the street easement beneath the west shoulder of Bradshaw Road. The pipeline is owned, operated and maintained by Santa Fe Pacific Pipeline Partners, L.P. (SFPP).

Concerning the possibility of leakage along the pipeline route near the project area and in order to obtain additional information regarding the pipeline, we performed a telephone interview with Mike Dollar of SFPP. Mr. Dollar explained that the observed pipeline section originates at a petroleum terminal in Stockton, California. The pipeline leaves the railroad easement and follows Grant Line and Bradshaw Roads to a terminal in Rancho Cordova, California, at the corner of Bradshaw Road and Folsom Boulevard. From the Rancho Cordova facility, buried petroleum pipelines extend within the railroad easement over the Sierra Nevada mountains to a terminal in Reno, Nevada, and across non-railroad lands to a terminal within Beale Air Force Base in Yuba County. Mr. Dollar reported that to the best of his knowledge and no leaks, ruptures or problems are known to have occurred along the buried pipeline course adjacent to or in the vicinity of the project area. This section of the buried pipeline does not appear on the regulatory agency databases discussed in a subsequent section of this report as an identified contamination or spill site.

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Agricultural Review
and History Interview

We discussed the agricultural history of the project area with Sacramento County senior agricultural biologist Debbie Thompson. Ms. Thompson recalled that the general area was historically farmed by Japanese-Americans until the mid-1940s. The predominant crops, strawberries and vineyards, generally ceased cultivation when the Japanese-Americans lost their land during World War II internment.

Application of DBCP, a nematicide, is sometimes associated with vineyard cultivation; Ms. Thompson reported, however, that in all of her research and interviews with area farmers that she has yet to encounter information to suggest that DBCP was historically used in Sacramento County. Ms. Thompson explained that soil and climate conditions determine whether or not nematodes are a problem in agricultural areas. Ms. Thompson reported that Sacramento County does not have a nematode problem; she believed, therefore, that it was unlikely that DBCP had been applied to the historic vineyards that may have been cultivated within the project area. Ms. Thompson also indicated that DDT, a persistent organochlorine pesticide, could have been applied to former vineyards in the area.

Ms. Thompson indicated that after World War II the project area was used predominantly as natural grazing land ("rangeland"), equestrian, dairy and beef cattle pastureland, and for the production of equestrian- and cattle-related dry-farmed crops. Ms. Thompson stated that restricted (persistent) chemicals are typically not applied to agricultural land of this nature.

Ms. Thompson also indicated that wild rice and corn were grown near the westerly side of the railroad tracks that traverse the project area approximately six to eight years ago. Parathion and MCPA may have been used on the rice and 2,4-D may have been used on corn. Parathion was often used for leaf miner control, and 2,4-D and MCPA were often used to control broadleaf weeds in these crops. Modern agricultural chemicals such as these are currently not known to be persistent in soils for greater than approximately one year from the date of application. Additionally, Ms. Thompson stated that her office has not issued restricted chemicals application

permits for any sites within the project area including the observed strawberry field on Florin Road (Parcel 066-007-043).

We also performed a personal site and area history interview in September 1995 with Mr. and Mrs. Tsukamoto, residents who have lived in and near the project area for approximately 75 years.

Mrs. Tsukamoto explained how prior to World War II, Japanese-American families cultivated vineyards and strawberries in the Florin area of Sacramento County. Mrs. Tsukamoto recalled that by about 1925 some vineyards had been planted within the project area; Mr. Tsukamoto recalled that the vineyards were of both dry-farmed and irrigated types, the irrigated vineyards being supplied water by windmill-driven pumps and ground water wells. Mr. Tsukamoto described how his grandfather, during the late 1800s, recalled the project area as predominantly natural grass grazing land, prior to the timeframe during which the strawberries and vineyards were cultivated.

Due to World War II internment, Japanese-American families were relocated, leaving behind the agricultural endeavors that they had started. Mr. Tsukamoto explained that after the internment, it was difficult, and in most cases impossible, to "bring back" the unattended vineyards. Consequently, vineyards were removed or abandoned within the project area by the late 1940s and farming anything other than the crops described previously in this report essentially ceased. The Tsukamotos recalled how, subsequent to internment, many Japanese-Americans went on to lines of work other than agriculture. Additionally, Mr. Tsukamoto indicated that by the late 1940s, Lodi, California and vicinity, had become the prominent vineyard area, further contributing to the decline of higher value crops within the project area. It is the higher value crops typically associated with the potential applications of persistent pesticides.

The Tsukamotos indicated that approximately 500 farms, most consisting of five to 10 acres each, existed in the Florin area of Sacramento County. Unlike heavily mechanized, large-scale farming operations in California's central valley, the small plots within the project area were labor-intensively cultivated. Mr. Tsukamoto recalled that strawberries were cultivated in any one

field for only an approximate three-year period, strawberries being the "survival crop" until the vineyards were established. As described in the preceding paragraph, vineyards generally did not exist long-term within the project area. Mr. Tsukamoto also recalled the difficulties of farming the "hardpan" soils of the project area. These factors suggest that the historic uses of persistent agricultural chemicals would have been less than amounts typically used, for example, on intensely cultivated, high-value irrigated rowcrop lands, such as the vicinities of Davis and Woodland, California. The potential for persistent pesticide residuals in surficial soils of the project area is further discussed in the Conclusions and Recommendations section of this report.

Historic Topographic Maps

We reviewed historic USGS topographic maps of the project area at the California State Library in Sacramento. Topographic maps covering the years 1909, 1952, 1968, 1975 and 1979 were available for review; the results of the map reviews are summarized below by year. The current (1979) version of the USGS topographic map is included as Plate 1.

1909 Map

As early as 1909 existing roadways that bound the project area had each been constructed. Single structures are mapped near the roads; the mapped symbols are those used to indicate a "dwelling" based on the USGS map legend. Otherwise, no man-made features are mapped within the project area.

1952 Map

By 1952 additional structures near all the existing roadways have been mapped; the structure that is presently occupied by B & E Market is also mapped. A USGS map symbol which is used for "barn" or "warehouse' buildings is mapped on the Rose Nursery site. Elder Creek, as well as

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the other intermittent streams discussed in a previous section of this report, are now mapped near the westerly and southerly project area boundaries. The Central California Traction Railroad is now mapped, as are two of the five existing overhead electrical transmission lines.

A vineyard is mapped within the project area near its northwesterly corner, just easterly of Elder Creek and the railroad tracks. Consistent with previous site history information presented in this report, the vineyard is only approximately 600 by 900 feet (roughly equivalent to 12 acres), based on scaled measurements from the topographic map. Additional vineyards are mapped northwesterly, westerly, and southerly beyond Florin Road, Elder Creek, and Gerber Road (outside the project area); orchards are mapped west of Hedge Avenue and south of Gerber Road (outside the project area).

1968 Map

Passallis and Gavern Lanes are now mapped (Plate 2). Several dwellings have been mapped on Gavern Lane as well as north and west of the current B & E Market site; a second structure has been mapped on the B & E Market site. A dairy is mapped on Parcel 066-007-017, approximately 1000 feet southerly from Gavern Lane; one dwelling and three barn symbols, as well as two wastewater ponds are shown on the dairy site (this is the *former* dairy mentioned in previous sections of this report). A few additional barn and residential map symbols have been added to other sites within the project area, while the majority of the dwellings mapped in 1909 are no longer mapped. Water supply wells are mapped within the project area for the first time. A decorative pond south of Elder Creek is now mapped on Parcel 065-008-045. Two small reservoirs are mapped within the project area: one is near its northeast corner and the other is located along the westerly side of the railroad tracks that traverse the project area. Two more overhead electrical transmission lines are mapped across the westerly portion of the project area. The vineyards within the project area, as well as the vineyards and orchards in the surrounding areas are no longer mapped.

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1975 Map

By 1975 additional structures have been added to many of the previously mapped rural residential sites located south of Florin Road. The largest of the barn symbols on Parcel 066-007-017 is no longer mapped. Otherwise, little change is revealed within the project area relative to the 1968 mapping.

1979 Map

A second barn structure is no longer mapped on Parcel 066-007-017, the former dairy within the project area. A few more small structures have been added to the rural residential sites on the northerly side of the project area.

Map Summary

In summary, the reviewed topographic maps do not indicate the presence of large manufacturing facilities, industrial ponds, large aboveground storage tanks, airfields, transportation hubs, mining features or mine tailings currently or historically located within the project area. Vast portions of the project area have remained relatively unchanged during the past approximate century based on the available topographic mapping. It does not appear that any locations within the project area received mappable quantities of imported fill materials, based on the topographic review.

Aerial Photographic Review

We obtained standard scale, historic aerial photographs in five- to ten-year increments with coverage of the project area and general vicinity from Geonex Cartwright Aerial Surveys in Sacramento, California for years 1963, 1976, and 1991. Per our request, Geonex also provided

1" = 500' photographic enlargements of the project area and immediate vicinity for years 1968 and 1981. A summary that includes the date of the aerial photography flight, the photograph identification numbers and scales is included as Plate 3.

Given the relative stasis within the project area as revealed through review of the historic and current topographic mapping, we have not discussed the results of the photographic review by year. Rather, the aerial photographs were reviewed for obvious evidence of potential hazardous materials contamination such as ASTs, UST fueling islands, landfilling and mass grading activities, wastewater systems and industrial uses. We did, however, make specific aerial photographic review comments for the specific plan Petitioners' Parcels as discussed previously in this report.

Overall the historic aerial photographs do not reveal the above-named items that can be associated with potential hazardous materials contamination with the exception of the B & E Market, an automobile fueling station. Although no direct evidence of other UST facilities within the project area was observed in the historic aerial photographs, the potential existence of USTs cannot be totally ruled out through aerial photography analysis alone, since in some instances structural developmental items and natural features such as mature vegetation can obscure the ground surface when looking for surface evidence during aerial photography review. The *former* UST fuel pump island is visible northerly from the existing B & E Market site in some of the historic aerial photographs. The *existing* B & E Market fuel island and USTs location historically contained a residence; the residence was razed by the time of the 1981 aerial photographs. A discussion of USTs activity on the current and former B & E Market fuel island locations is presented in the *Agency Database Review* section of this report.

The former dairy site on the west side of Bradshaw Road (Parcel 066-007-017) is present throughout the reviewed aerial photographic coverage but a portion was razed by 1976 and the wastewater ponds were dry. The Thomas Dairy does not appear until 1991, although one residence had been constructed on the site by 1981.

The existing homestead sites and a few of the existing rural residential sites are apparent within the project area as early as 1963. Debris piles are visible on several homestead sites and rural residential sites throughout the reviewed aerial photographic coverage. Other than a decrease or increase in the number of existing structures, the homestead sites have not changed significantly during the past approximate 30 years of available aerial photography reviewed during preparation of this report.

The infrastructure (roadways, drainageways, etc.) mentioned in and around the project area during our topographic map review is visible in the earliest, and throughout, the reviewed aerial photographic coverage. Agriculture consisting of land divided among haycrop, irrigated pasture and natural grass (grazing) uses are predominant throughout the historic photographic coverage. Consistent with other site history information contained in this report, no intense agricultural activity (orchards, vineyards or rowcrops) of a commercial scale has occurred within the project area during the approximate 30-year aerial photographic review timeframe. Strawberry fields within the project area have only reappeared during the past approximate five years.

Soils and Geology

Geology

The subject property is located in the central portion of the Great Valley geomorphic province of California. The Great Valley lies between the mountains and foothills of the Sierra Nevada Range to the east and the California Coast Ranges to the west. The geologic formations of the Great Valley are typified by thick sequences of alluvial (river) sediments deposited during the filling of a large ancient basin.

Soils

Review of selected information contained within our firm's concurrent Preliminary Geotechnical Engineering Report (GER) indicates that the project area soils have historically and predominantly supported irrigated hay and pasture. The source document for our firm's GER was predominantly the June 1991 (preliminary draft) U.S. Department of Agriculture, Soil Conservation Service (SCS) *Soil Survey of the Sacramento Area, California.* Other irrigated crops listed as typically cultivated on soils of the project area are corn, rice, alfalfa and ladino clover for seed, as well as the most often dry-farmed crops of wheat, barley and milo.

Ground Water

The project area is located within the Sacramento River Hydrologic Basin as defined by the California Department of Water Resources (DWR). Ground water elevations for the project area were estimated using depth-to-ground water measurements made in DWR-monitored well number 8N/6E-31F1, located approximately one mile northerly from the Central California Traction Railroad and Florin Road intersection. Plate 1 shows the approximate location of the DWR-monitored well; the measured ground water elevations are summarized in the hydrograph on Plate 4.

Measured ground water elevations published for the well have fluctuated from a maximum of -20 feet MSL during the spring of 1966 to a minimum of -48 feet MSL during the spring of 1990. The ground surface of the project area generally ranges from approximately +45 to +80 feet MSL. Ground water beneath the project area, therefore, has ranged from approximately 65 to 128 feet below the ground surface. The spring 1995 *Ground Water Elevations* map (the most current data available during the timeframe of this assessment) prepared by the Sacramento County Department of Public Works, Water Resources Division indicates that regional ground water flow is southwesterly. The current Sacramento County map also indicates that ground water beneath the project area is encountered approximately 100 feet below the ground surface, consistent with the historic low recorded at the DWR well as described above.

Agency Database Review

We have reviewed databases regarding hazardous materials contamination for sites within the project area that are prepared by the following agencies:

- United States Environmental Protection Agency (EPA)
- California Environmental Protection Agency (Cal-EPA)
- Cal-EPA Department of Toxic Substances Control (DTSC)
- Cal-EPA Office of Environmental Health Hazard Assessment (OEHHA)
- Cal-EPA Regional Water Quality Control Board (RWQCB)
- Cal-EPA Integrated Waste Management Board (CIWMB)
- California State Water Resources Control Board (SWRCB)
- California Department of Health Services (DHS)
- Cal-DHS Office of Drinking Water (ODW)
- California Division of Oil and Gas (DOG)
- Sacramento County Environmental Management Department (EMD), Hazardous Materials Division.

The results of our regulatory agency database review are detailed on Plate 5. The databases reviewed were the most current available (some databases have not been updated due to the lack of legislative funding for the program that originally generated the database under review), or were current within the past six months, during the timeframe of this assessment. In summary, we identified no potential or confirmed, state or federal "Superfund" sites within the project area during review of the former DHS's *Bond Expenditure Plan*, the EPA's *Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)* and *National Priorities List (NPL)*, and the Cal-EPA's list of *Active Annual Workplan Sites*. No *Resource Conservation and Recovery Act (RCRA) Generators* or U.S. EPA *Emergency Response Notification System (ERNS)* database sites occur within the project area.

One site located within 500 feet of the project area is listed as a RCRA Generator. This site, Don Manley & Sons Trucking, is located on the south side of Gerber Road near the Rose

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Nursery. The generator status is most likely the result of the facility generating waste oil stemming from routine truck maintenance.

Databases published by other of the above-named regulatory agencies indicate no known occurrences of the following within the project area: contaminated municipal ground water supply wells; toxic pits; suspect sites flagged for preliminary assessment; spills, leaks, investigations or cleanup sites; active or inactive landfills, and transfer or material recovery stations. The RWQCB and Sacramento County EMD both list the B & E Market as a site where an unauthorized hazardous materials release is known to have occurred. Otherwise, the reviewed databases reveal no known unauthorized hazardous materials release sites within the project area.

B & E Market Site

The B & E Market is located on the northwest corner of Bradshaw and Gerber Roads within the project area. A 2000-gallon unleaded gasoline UST and a 1000-gallon leaded gasoline UST were removed from the site on May 4, 1993. The two USTs and fuel pump island were located easterly of the B & E Market Building. The April 8, 1994 *Preliminary Investigation and Evaluation Report* by Roger Foott Associates indicates that five soil samples were collected from beneath the former fuel pump island and USTs locations. Concentrations of up to 7300 mg/kg (parts per million, ppm) total petroleum hydrocarbons as gasoline (TPHG) were detected in subsurface soils. Waste Extraction Test (WET) lead concentrations did not exceed the Soluble Threshold Limit Concentration (STLC).

Six additional soil borings were drilled in order to determine the lateral and vertical extent of subsurface contamination. From these soil borings 17 samples were analyzed for TPHG and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Soil samples collected from two soil borings (B1 and B5) contained detectable contaminant concentrations. Boring B5, west of the UST locations and at a depth of 10 feet below grade, contained 640 mg/kg TPHG. Toluene, ethylbenzene, and total xylenes were found in concentrations of 1.6, 7.0, and 15.0 mg/kg, respectively; benzene was not detected in boring B5. Boring B1, located in the center of former

UST locations, contained concentrations of .005 mg/kg toluene and .020 mg/kg total xylenes at a depth of 20 feet below grade; TPHG, benzene, and ethylbenzene were not detected in boring B1.

Lateral extent of contamination is estimated at approximately 30 feet in diameter from the center of the former tank locations, although the westerly limit is inferred and may extend beneath the B & E Market building. Vertical extent is estimated at approximately 25 feet below grade. Roger Foott Associates estimates ground water at a depth of 70 feet below ground surface and indicates the potential for ground water to be impacted by fuel hydrocarbons remaining in the soil beneath B & E Market to be low since the contaminants appear to be limited to less than 25 feet below grade.

A workscope to continue remediation by excavating approximately 500 cubic yards of contaminated soil and to complete the delineation of impacted soil west of the former UST location was submitted to the Sacramento County EMD in January 1995.

Two new tanks were installed on the site in 1993. The first tank is a 2000-gallon regular unleaded UST, and the second tank is an 8000-gallon/4000-gallon split UST that holds regular unleaded and unleaded supreme gasoline. Both tanks are single-walled bare steel construction with electronic (continuous) leak detection systems. B & E Market operates their USTs under *Permit Number J0043886* with an expiration of November 18, 1996.

Other Sites

The California Horticulture site appears on the *Sacramento County Hazardous Materials List* and is located on the northeasterly corner of Florin and Bradshaw Roads, north of the boundary of the project area. The facility operates one UST. The tank was registered in November 1987 under *Permit Number J0018386*. No other information was available regarding this site.

We determined that the project area includes one abandoned petroleum well during our review of California DOG map W6-1; we also reviewed appropriate DOG files relative to the abandoned

well. The well is identified as a "plugged and abandoned - dry hole," mapped approximately 2300 feet west of the easterly project area boundary, and 1100 feet north of Gerber Road. DOG personnel made and approved the environmental inspection for abandonment of the well on August 28, 1980; the *Report of Well Abandonment* has been included in its entirety in the Appendix.

PCB Potential

Numerous pole-mounted electrical transformers exist within the project area. We did not observe obvious evidence of transformer leakage installed on accessible sites within the project area.

Regarding the potential PCB-content of transformers within the project area, we relied on previous contact with SMUD engineering specialist Michael Hardin, who indicated that in 1979 SMUD changed its purchase specifications to preclude buying PCB-contaminated transformers and also removed PCB-containing transformers from their inventory. Consequently, sites developed after 1979 generally received PCB-free transformers as part of the electrical service provided by the District. Some transformers are tagged "Non-PCB" with respect to PCB content.

Sites within the project area developed in the early 1980s and later are unlikely to contain PCB-containing transformers. Many transformers within the project area most likely predate 1979 and are not tagged with respect to PCB content. These transformers are therefore of unknown PCB content. Mr. Hardin explained that actual levels of PCBs in specific equipment can only be confirmed by sampling and analysis of the mineral oil coolant within the actual pieces of equipment under consideration.

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Radon Potential

This discussion of the potential for radon exposure within the project area is based on review of available scientific literature on the topic. Radon isotope-22 is a colorless, odorless, tasteless radioactive gas that is a natural decay product of uranium. Uranium and radon are present in varying amounts in rocks and soil, and radon is present in background concentrations in the atmosphere. Current evidence indicates that increased lung cancer risk is directly related to radon-decay products.

Radon potential of rocks and soils and indoor radon exposure levels in the United States are currently areas of intense research by governmental regulators as well as the geoscience and medical communities. At this time, the EPA has recommended an "action" level for indoor radon concentrations at or exceeding 4 pico-curies per liter of air (pCi/ℓ). The EPA has extrapolated a 1% to 3% lung cancer mortality rate due to a lifetime of exposure at 4 pCi/ℓ; that is, 1 to 3 persons per 100 exposed to this concentration for life will die of lung cancer induced by radon.

The recently published *California Statewide Radon Survey Interim Results*, based on the EPA/State Department of Health Services State Radon Survey, predicts that only 3.6% of homes in Sacramento County would exceed the EPA's recommended level of 4 pCi/ℓ. Additionally, California ranks as the third lowest for percentage of homes exceeding 4 pCi/ℓ, of the 33 states participating in the study.

Indoor radon information regarding the project area can only be obtained through building-specific sampling and testing. Based on the low percentage of homes predicted to exceed the EPA's recommended exposure level as described above, the potential for radon concentrations exceeding 4 pCi/ℓ within the project area is low.

CONCLUSIONS AND RECOMMENDATIONS

Table 1 following Plate 5 of this report is a summary of site address, Sacramento County APN, land use type, comments and site-specific recommendations based on our preliminary findings for each of the properties within the project area. The historic land use research completed during this preliminary Phase 1 environmental site assessment report included reviews of aerial photography and topographic maps dating back to 1909 as well as discussions with persons familiar with the history of the project area and reviews of documents containing land use information.

Physical access to only approximately one-half of the project area (consisting of Petitioners' Parcels) had been arranged prior to our site assessment work. Given this situation, our only recommendation for a substantial number of inaccessible sites within the project area is to complete site-specific field reconnaissances. To the maximum extent possible we viewed inaccessible sites from public right-of-ways, from accessible adjacent sites, and from a private plane during low altitude fly-overs; we also reviewed historic aerial photographic enlargements (1" = 500') of the project area to look for obvious potential areas of concern that could otherwise have been more difficult to observe. In spite of these best efforts, some locations within the project area will require individual field reconnaissances given, for example, the presence of heavy vegetation and man-made objects that can hinder aerial views and block lateral views from adjacent or right-of-way locations. We have made no findings for the Petitioners' Parcels that would lead us to recommend specific additional Phase 1 site assessment activities for those parcels; some of the general recommendations presented below, however, do apply to the Petitioners' Parcels.

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Conclusions

Agriculture

The approximate 1580-acre North Vineyard Station Specific Plan project area has consisted of fallow land, or has supported dry farmed and natural grass grazing and irrigated pasture land uses since the 1940s. These agricultural uses typically require little to no applications of environmentally persistent pesticides and we anticipate, therefore, that the potential for residual agricultural chemical concentrations in existing surficial soils of the project area is low.

Although portions of the North Vineyard Station Specific Plan project area supported rowcrops (strawberries) and vineyards in the distant past (prior to the 1940s), we do not believe that additional assessment is required for those locations with respect to potential persistent pesticide residuals. While the higher value rowcrops and vineyards have a somewhat increased potential for the past application of persistent pesticides, the vast length of time between the former vineyard and rowcrops' cultivation in our opinion negates the concern for any significant levels of persistent pesticide residuals in existing surficial soils of the project area. In most cases, our recommendation to sample and test surficial soils for persistent pesticide residuals is made for sites that typically have seen rowcrop or orchard cultivation up to recent times. Additionally, continued low intensity agricultural uses that have occurred within the project area on former vineyard or rowcrop cultivated sites can actually help promote breakdown of potential persistent pesticide residuals by enhancing the natural microbial actions in soil.

Previous sampling and testing programs by our firm on other rowcrop, vineyard and orchard sites in Sacramento County targeted for persistent pesticides have not typically revealed residual concentrations in soil above hazardous waste or health-based thresholds. Some of our previous projects that support our conclusions above include the following; at these previous study sites, no problematic persistent pesticide residuals were detected: the *Ellenwood Joint Venture (New Dawn)* residential subdivision (July 1991); an area within the *East Elk Grove Specific Plan* (February 1995); the *New Dawn II* proposed residential subdivision (July 1994); the *Truxel*

Property (September 1991) and *Gateway 5 West* (March 1991) property in Natomas; the *Country Glen* apartment community in southern Sacramento County (May 1990); the *River Plaza* property in south Natomas (December 1994); the proposed *Laguna Meadows* project within the East Franklin Specific Plan project area (July 1991); and, the *Fowler Property*, under-construction residential subdivision (November 1995) in southern Sacramento County.

The modern strawberry cultivation observed within the North Vineyard Station Specific Plan project area during the course of this work is not anticipated to involve the use of environmentally persistent pesticides. Nearly all of the persistent agricultural chemicals of the organochlorine pesticide variety have been banned since the time of their prevalence in the 1950s, 1960s and early 1970s. It is also important to recognize that the prevalent use of the organochlorine pesticides occurred subsequent to the timeframe that the project area supported the crops which would have typically required pesticide applications.

Ground Water

We identified no regional impairments to ground water quality beneath the project area, nor did we identify any agency-listed contaminated sites within or adjacent to the project area indicated to have affected ground water quality. First ground water beneath the project area occurs at least 100 feet below the ground surface. No large quantity agricultural wastewater producers, industrial facilities or commercial facilities that discharge wastewater to land are located within the project area. The existing dairy within the project area is a relatively small-scale operation, producing only minimal quantities of dairy wastewater. Based on these findings and the site history information presented above, we do not believe that an assessment of ground water quality beneath the project area is necessary.

General Recommendations

Asbestos

In 1978/79 the federal government banned nearly all uses of friable asbestos in building materials. Therefore, existing structures within the project area built subsequent to 1979 are considerably less likely to contain asbestos in their building materials. However, most of the existing structures within the project area predate 1979 and potentially contain asbestos in their building materials. We recommend, therefore, that abatement asbestos surveys be completed for each of the structures within the project area which are intended to be razed or otherwise disturbed.

Water Supply Wells

Numerous water supply wells are located within the project area. We did not attempt to compile an inventory of existing wells since many sites were not accessible during our work. It is obvious, however, that some wells within the project area are currently in an improperly abandoned condition. Regardless of their current use status, all water supply wells within the project area should be properly destroyed; this procedure requires a well abandonment permit (issued on a per-well basis) from the Sacramento County Environmental Management Department, Environmental Health Division. Large-diameter (old hand-excavated) wells in the project area, if any, in addition to requiring a permit for well abandonment, should be backfilled in accordance with the recommendations of a geotechnical engineer. Existing septic tanks, leach lines and cisterns within the project area should be removed and/or their locations backfilled in accordance with the recommendations of a geotechnical engineer.

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Debris

Several sites within the project area contain either building demolition debris or a substantial quantity of apparently abandoned or discarded items; similar conditions may exist elsewhere in the project area. All debris, trash, rubble, refuse and abandoned, discarded and/or out-of-service items within the project area should be removed from the affected properties and disposed of or recycled off-site as appropriate.

LIMITATIONS

The statements and conclusions in this report are based upon the scope of work described above and on observations made only on the dates of our field reconnaissances of accessible or readily visible sites which occurred on June 3, 22, and 24, and December 19, 1995. Our work was performed using a degree of skill consistent with that of competent environmental consulting firms performing similar work in the area under limited site access constraints, and we have attempted to obtain as much information regarding the project area as possible, given what we consider to be a reasonable amount of research. Additional research or information regarding the project area that was not disclosed or available to us during our assessment may result in revision of our conclusions and/or recommendations.

The conclusions in this report should be reevaluated after 180 days or if site conditions have changed. No recommendation is made as to the suitability of the project area for any purpose. The results of our assessment do not preclude the possibility that materials currently or in the future defined as hazardous are present on the properties within the project area. Because of the possibility that information and data delivered in machine readable form on this project may be altered, whether inadvertently or otherwise, client agrees that the hardcopy report original shall be referred to and shall govern in the event of any inconsistency between the hardcopy original and any subsequent report copies and/or portions thereof produced, either as stand alone documents or included in the works of others, from the machine readable form. This report is

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applicable only to the investigated project area and should not be used for any other site. No warranty is expressed or implied.

Wallace ▪ Kuhl & Associates, Inc.

Janine M. Jewell
Staff Geologist



David Von Aspern
Program Manager

JMJ:DVA:cb

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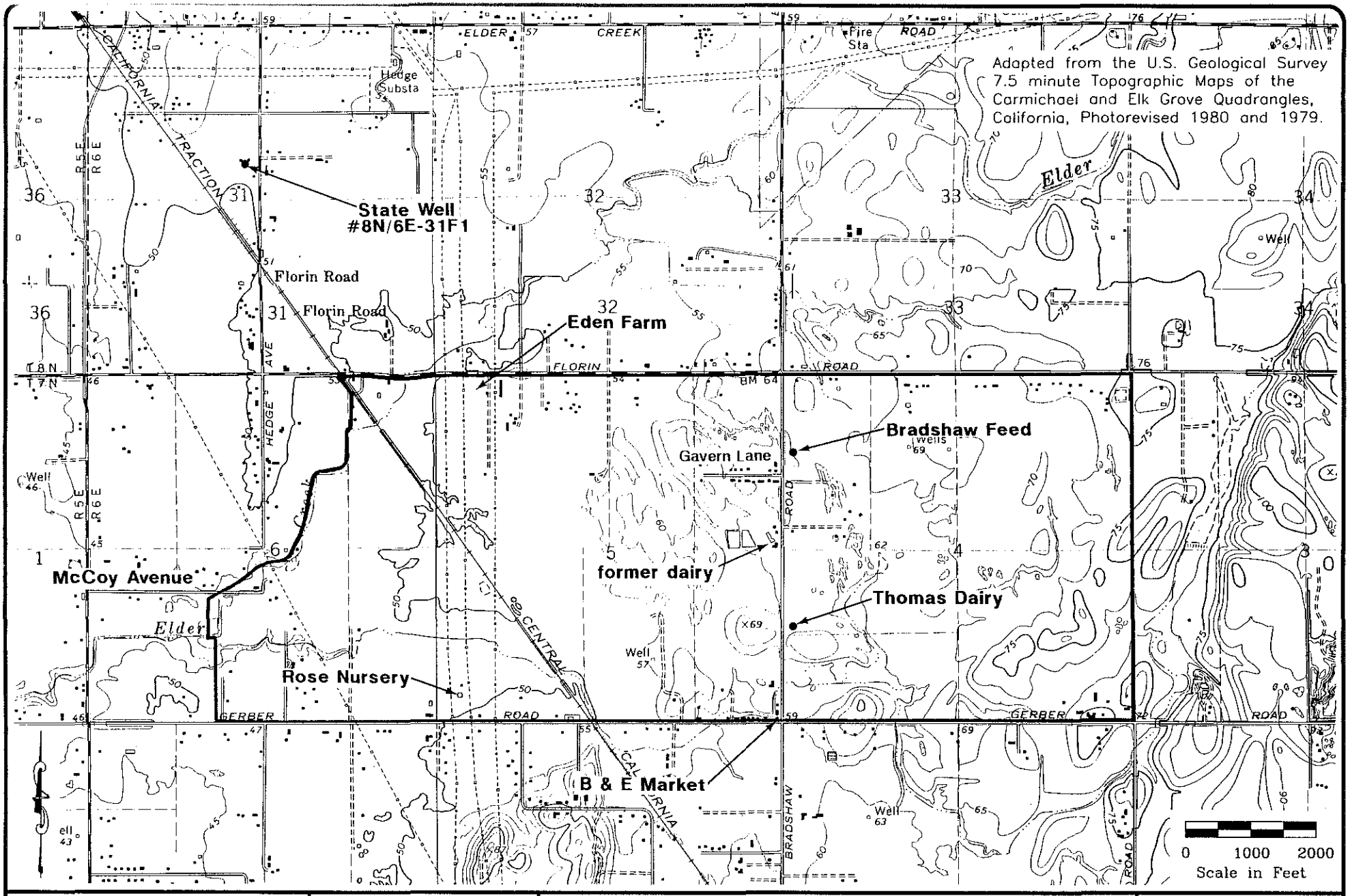
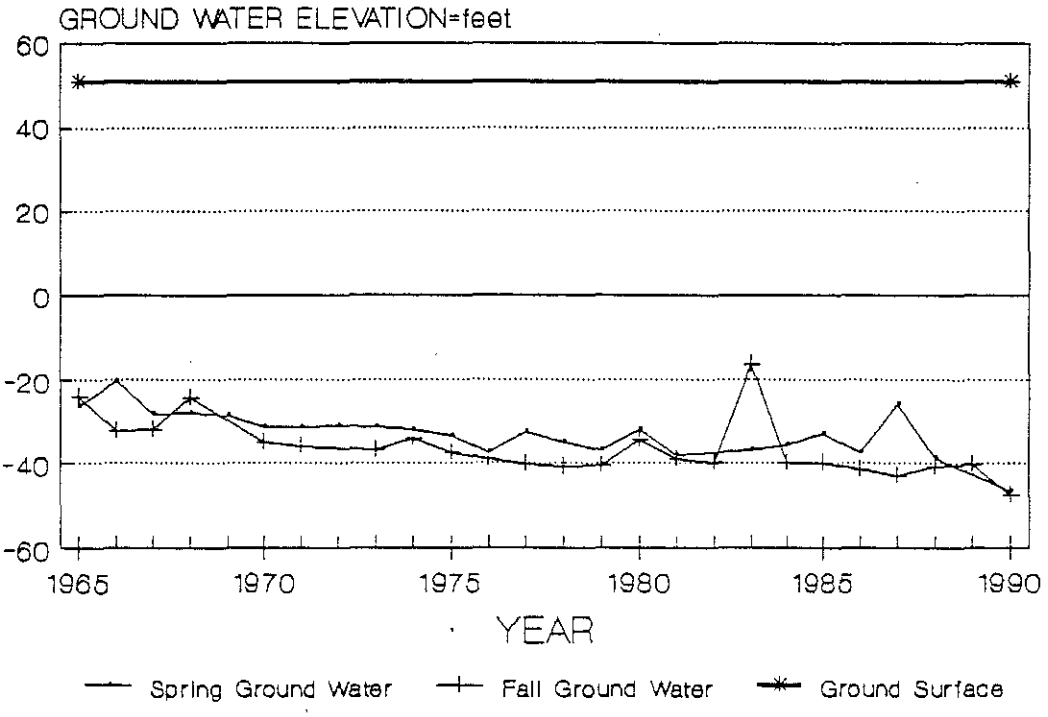


WALLACE ▪ KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	Drawn By: HLA Checked By: JMJ	**TOPOGRAPHIC MAP** NORTH VINEYARD STATION SPECIFIC PLAN Sacramento County, California	WKA NO: **2954.01** DATE: **3/96** PLATE NO: **1**

AERIAL PHOTOGRAPHS
(From Geonex Cartwright Aerial Surveys, Inc.)

Date of Flight Line	Scales	Photo ID No.
August 2, 1963	1" = 1667'	SAC 5-119 -120 -154 -155
March 29, 1968	1"=500"	2247-8-181 -190
May 25, 1976	1" = 1000'	6060-4-243 -244 -245 -299 -300 -301
April 9, 1981	1" = 500'	81081 3-199 5-33 -90
April 7, 1991	1" = 1000'	91091 24-28 -29 25-29 -30 26-28 -29

STATE WELL #8N/6E-31F1
SURFACE ELEVATION=51 feet



NOTES: Ground water elevation data are obtained from the State of California Department of Water Resources Water Data Information System.

Elevations are measured from mean sea level (MSL).

WALLACE · KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	**HYDROGRAPH** NORTH VINEYARD STATION SPECIFIC PLAN Sacramento County, California	WKA NO: 2954.01 DATE: 3/96 PLATE NO: 4

NATIONAL PRIORITIES LIST (EPA)
(Run Date February 16, 1996)

None

CERCLIS LIST (EPA)
(Run Date February 14, 1996)

None

1989 BOND EXPENDITURE PLAN (DHS)
(Run Date January 10, 1990)

None

ACTIVE ANNUAL WORKPLAN SITES, FY 1994-95 (DTSC)
(Run Date January 3, 1995)

None

CALIFORNIA EPA FACILITY INVENTORY DATA BASE
[TSD Facilities]
(Run Date February 23, 1996)

None

CALSITES (DTSC)
(Run Date September 8, 1995)
[Formerly ASPIS]

None

HAZARDOUS WASTE AND SUBSTANCES SITES LIST (OEHHA)
(Run Date December 1994)
[formerly CORTESE]

None

WALLACE - KUHL & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING
GEOLOGIC & ENVIRONMENTAL SERVICES

AGENCY LISTS
NORTH VINEYARD STATION SPECIFIC PLAN
Sacramento County, California

WKA NO: 2954.01
DATE: 3/96
PLATE NO: 5

ASSEMBLY BILL 1803 CONTAMINATED WELLS (DHS-ODW)

Small Systems

(Run Date June 1990)

None

Large Systems

(Run Date April 1986)

None

WELL INVESTIGATION PROGRAM LIST OF POLLUTED WELLS (RWQCB)

(Run Date January 1992)

None

CALIFORNIA DIVISION OF OIL AND GAS (DOG)

(Map W6-1 Published August 20, 1994)

HBC-Harlander Un.1

CENTRAL VALLEY TANK TRACKING SYSTEM (RWQCB)

(Run Date January 10, 1996)

B & E Market - 7596 Bradshaw Road

SPILLS, LEAKS, INVESTIGATIONS & CLEANUPS LIST (RWQCB)

(Run Date June 8, 1994)

None

TOXIC PITS CLEANUP ACT (RWQCB)

(Run Date July 1990)

None

LANDFILLS DATABASES (CIWMB)

Closed and Inactive Sites
(Run Date January 16, 1996)

None

Active Disposal Sites
(Run Date January 16, 1996)

None

Transfer/Processing Stations and Material Recovery Facilities
(Run Date January 16, 1996)

None

Transformation Facilities
(Run Date January 16, 1996)

None

Composting Facilities
(Run Date January 16, 1996)

None

RANKED SOLID WASTE DISPOSAL LIST (SWRCB)

Solid Waste Assessment Test (SWAT) Program
(Adopted June 22, 1989)

None

CALIFORNIA EPA FACILITY INVENTORY DATA BASE

[RCRA Generators]
(Run Date February 23, 1996)

Don Manley & Sons Trucking - 9340 Gerber Road

SACRAMENTO COUNTY TOXISITE CLEANUP PROGRAM
SITE SPECIFIC REPORT (EMD)*
(Run Date January 23, 1996)

B & E Market - 7596 Bradshaw Road

SACRAMENTO COUNTY REGULATORY COMPLIANCE LIST**
(Run Date January 11, 1996)

1. B & E Market - 7596 Bradshaw Road
2. California - 9783 Florin Road

NOTES: Search radius for all lists included the subject and adjacent properties.

* Facilities listed include sites where unauthorized hazardous materials release(s) are known to have occurred.

** Facilities listed include sites where underground storage tanks are registered to be present or registered to have been removed.

WALLACE · KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	**AGENCY LISTS** NORTH VINEYARD STATION SPECIFIC PLAN Sacramento County, California	WKA NO: 2954.01 DATE: 3/96 PLATE NO: 5 cont.

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
7255	Hedge Avenue	065-052-020	Rural residential	Residence on westerly portion, easterly portion appears fallow	Site reconnaissance
7251	"	065-052-013	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
7285	"	065-052-008	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
7325	"	065-052-030	Rural residential	Residence on westerly portion, easterly portion appears fallow, Elder Creek lies on northeasterly corner of property	"
7335	"	065-052-031	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
7351	"	065-052-006	Rural residential	Residence on westerly portion, easterly portion appears fallow	"
	"	065-052-023	Hay cropland	Irrigated, Elder Creek bisects central portion of parcel	"
7412	"	065-008-006	Rural residential	Not observed	"
7407	"	065-008-045	Rural residential	Two residences (one mobile home), outbuildings, overhead transmission lines cross westerly portion of parcel, Elder Creek bisects central portion of parcel, decorative pond adjacent to creek, abandoned vehicles on north-central portion, easterly portion appears fallow	"
9091	McCoy Avenue	065-008-005	Rural residential	Residence	"
9101	"	065-008-044	Rural residential	Residence, detached garage, outbuildings, easterly portion appears fallow	"
	"	065-008-032		Appeared to be fallow land	
	"	065-008-059	Rural residential	Residence	Site reconnaissance
	"	065-008-068	Rural residential	Residence, barn, outbuildings, fallow land on north one-half parcel	"
7471	"	065-008-018	Rural residential	Residence, decorative pond, disced fields on one-half of parcel, bulldozers, backhoes, stored and abandoned vehicles, auto parts, tire piles, several ASTs debris burn areas	Site reconnaissance, surficial soils sampling and testing for automotive related fluids probably necessary
9100	"	065-008-027	Rural residential	Residence, outbuildings, abandoned vehicles, domestic well, easterly portion appears fallow	Site reconnaissance
	Passallis Lane	065-008-048	Rural residential	Residence, outbuilding, truck trailers	"
	"	065-008-049	Fallow land		
9171	Gerber Road	065-008-070	Rural residential	Residence, mowed fields	Site reconnaissance
9059	"	065-008-062	Rural residential	Residence, outbuildings, domestic well	"
	"	065-008-063	Fallow land		
9525	Passallis Lane	065-008-040	Rural residential	Residence, barn, outbuildings	Site reconnaissance
9559	"	065-008-043	Rural residential	Residence, barn, outbuildings	"

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
	Gerber Road	065-008-071		Barn, outbuildings, mowed fields (associated with parcel 065-008-072)	Site reconnaissance
	Gerber Road	065-008-057	Rural residential	Two residences (one mobile home), out buildings, domestic well, abandoned vehicles, debris	"
	"	065-008-034	Fallow land		
9149	"	065-008-042	Rural residential	Residence	Site reconnaissance
9151	"	065-008-072	Rural residential	Residence, outbuilding	"
9191	"	065-008-064	Rural residential	Residence, outbuildings, overhead transmission lines, fallow land	"
	Florin Road	065-052-028	Rural residential	Mobile home, outbuildings, horses	"
	"	065-052-012	Fallow land		
9204	"	065-052-001	Rural residential	Two residences, barn, detached garage, abandoned vehicles, concrete piles, debris piles	Site reconnaissance and removal of debris
9230	"	065-052-002*	Rural residential	Residence, barn, outbuildings, domestic and agricultural wells, grazing land, irrigated pasture, horses	
	"	065-052-004*	Rural residential	Residence, outbuildings, stables, grazing land, horses, agricultural well	
	"	065-008-079*	Grazing land	Agricultural well	
9211	Gerber Road	065-008-080	Rural residential	Residence, cattle barn, outbuildings, agricultural well, grazing land	Site reconnaissance
	"	065-008-077	Fallow land		
	"	065-008-076	Fallow land	Abandoned vehicles, campers, and miscellaneous debris	Site reconnaissance and removal of debris
	"	065-008-029	Rural residential	Residence, abandoned vehicles, truck trailers, ASTs	Site reconnaissance, surficial soils sampling and testing for automotive related fluids probably necessary
9360	Florin Road	066-007-043	Eden Farm	Strawberry sales, greenhouse, abandoned masonry house, strawberry fields, fallow land	Site reconnaissance
9384	"	066-007-002	Residence, Poodle Park	Dog breeding and sales, residence, barn, debris piles, fallow land, overhead transmission lines	Site reconnaissance and removal of debris
	"	066-007-044	Fallow land		
	"	066-007-045		Backhoes, bulldozers, construction and tar equipment storage yard, concrete piles, debris piles, agricultural well	Site reconnaissance, removal of debris, surficial soils sampling and testing for automotive related fluids probably necessary
9362	"	066-007-046	Florin Groundcover	Greenhouses, outbuildings, agricultural well	Site reconnaissance
	"	066-007-020	Mowed fields		

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
	Gerber Road	066-008-002	Mowed fields		
	"	066-008-003	Mowed fields		
9307	Gerber Road	066-008-001	Rose Nursery	Residence, greenhouses, outbuildings, truck trailers, ASTs, abandoned vehicles, disposal areas, reservoir, haycrop land, two overhead transmission lines	Site reconnaissance, removal of debris, surficial soils sampling and testing for automotive related fluids probably necessary
9351	"	066-008-016	Rural residential	Residence, detached garage, outbuildings, PG&E transmission lines	Site reconnaissance
9395	"	066-008-017	Rural residential	Not observed	"
9391	"	066-008-015	Rural residential	Residence, detached garage, barn, outbuildings	"
9424	Florin	066-007-003	Rural residential	Residence, barn, agricultural well, horses	"
9456	"	066-007-004*	Rural residential	Residence, outbuildings, abandoned vehicles	
9464	"	066-007-005*	Rural residential	Modular home	
9458, 9460	"	066-007-006*	Rural residential	Two residences, several outbuildings, dilapidated structures, debris piles, abandoned vehicles, agricultural well, fallow land	Removal of debris
	"	066-007-019*	Fallow land		
9494	"	066-007-018	Rural residential	Residence, barn, outbuildings, corral, miscellaneous vehicles and outbuildings, fallow land	Site reconnaissance
	"	066-007-008*	Fallow land		
9534	"	066-007-007	Rural residential	Residence, outbuilding, domestic well, abandoned vehicles, debris piles	Site reconnaissance
	"	066-007-009	Fallow land		
9610	"	066-007-033	Rural residential	Residence, outbuildings, fallow land	Site reconnaissance
	Florin Road/Bradshaw Road	066-007-034	Fallow land	disced perimeter	
7320	Bradshaw Road	066-007-025	Residential	Residence, sheds	Site reconnaissance
7324	"	066-007-026	Residential	Residence, sheds	"
	Gavern Lane	066-007-032	Horse yard		
9653	"	066-007-038	Residential	Not observed	Site reconnaissance
9647	"	066-007-040	Residential	Not observed	"
9641	"	066-007-039	Residential	Not observed	"

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
9672	"	066-007-013	Residential	Not observed	Site reconnaissance
9671	"	066-007-041	Residential	Not observed	"
9673	"	066-007-042	Residential	Not observed	"
9670	"	066-007-030	Residential	Not observed	"
9668	Gavern Lane	066-007-021	Residential	Not observed	"
9690	"	066-007-036	Residential	Not observed	"
9694	"	066-007-035	Residential	Not observed	"
7340	Bradshaw Road	066-007-028	Residential	Not observed	"
7350	"	066-007-015	Bradshaw Ranch Golf Course	Nine hole golf course, driving range, domestic well	"
7388	"	066-007-016	Rural residential	Residence, detached garage, domestic well	"
7396	"	066-007-017	Rural residential	Residence, outbuildings	"
	Florin Road/Gerber Road	065-052-003	Railroad	Central California Traction Railroad Company	
	Florin Road/Gerber Road	066-008-010	Railroad	Central California Traction Railroad Company	
	Bradshaw Road	066-008-006*	Fallow land		
7502-7512	"	066-008-007	Frederick's Equestrian Center	Two residences, barns, stables, outbuildings, racetrack, ponds	Site reconnaissance
7522	"	066-009-005	Rural residential	Residence, several outbuildings, horses	"
	"	066-009-004	Narrow strip west of parcel 066-009-005	Not observed	"
	"	066-009-015		Not observed, appears to be associated with 066-009-014	"
	"	066-009-013		Not observed, appears to be associated with 066-009-014	"
7590	"	066-009-014	Residential	Residence	Site reconnaissance
7596	"	066-009-012	B&E Market	Convenience store and gas station, USTs, domestic well Remediation on-going	
9681	Gerber Road	066-009-008	Residential	Two residences, debris	Site reconnaissance and removal of debris

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
9679	"	066-009-009	Residential	Residence, debris	Site reconnaissance and removal of debris
9673, 9677	"	066-009-020	Residential	Two residences	Site reconnaissance
9647	"	066-009-019	Residential	Residence, debris	Site reconnaissance and removal of debris
9635	"	066-009-018	Residential	Residence, outbuildings, fallow land	Site reconnaissance
	"	066-009-011	Residential	Residence, outbuildings, fallow land	"
9601	"	066-009-010	Residential	Residence, detached garage, barn, horses	"
	Gerber Road	066-008-012	Fallow land		
	"	066-008-013*	Rural residential site	Concrete slab and plumbing at former house site, domestic well, feeding yard, debris piles	Removal of debris
	"	066-008-004*	Grazing land		
	"	066-008-009	Rural residential	Residence, barn, corral, abandoned cars, debris, 55-gallon drums identified as resin solution (UN-1866), outbuildings, two domestic wells	Site reconnaissance
	"	066-008-008	Fallow land		
7249, 7285	Bradshaw Road	066-010-061	Don Fisher Training Center/Bradshaw Feed & Pet Supplies	Equestrian training facility including stables, outbuildings, ASTs, domestic well Retail feed store, AST	Site reconnaissance
7362	"	066-010-062	Rural residential/tree and shrub sales	Residence, nursery building, outbuildings, decorative pond, nursery equipment	"
7359	"	066-010-035	Rural residential	residence, outbuildings, domestic well, grazing land	"
7361	"	066-010-034	Rural residential	Two residences (one mobile home), outbuildings, fallow land	"
7363	"	066-010-033	Rural residential	Residence, camper trailer, domestic well, fallow land	"
7367	"	066-010-036	Rural residential	Residence, barn, debris, fallow land	"
	"	066-010-024	Fallow land		
7461	"	066-011-001*	Thomas Dairy	Two residences, cow barn, three covered feeding areas, waste water pond, domestic well, two ASTs	
	"	066-011-006	Fallow Land		
9744	"	066-011-002	Rural Residential	Residence	Site reconnaissance
7990	"	066-011-005	Rural residential	Residence, outbuildings, debris, horses	"

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
	Gerber Road	066-011-007	Fallow land		
	"	066-011-008	Fallow land		
	"	066-011-012*	Fallow land	Recently mowed grasses	
	"	066-011-011*	Fallow land	Recently mowed grasses	
	"	066-011-009	Fallow land		
	"	066-011-010*	Fallow land	Recently mowed grasses	
9743	"	066-011-003	Rural residential	Residence, several abandoned vehicles, debris, ASTs, domestic well	Site reconnaissance, removal of debris, surficial soils sampling and testing for automotive related fluids probably necessary
9789	Gerber Road	066-011-004		Residence, motorhomes, debris, ASTs, domestic well	Site reconnaissance and removal of debris
	Florin Road	066-010-058	Grazing land, pasture		
9720	"	066-010-059	Dias Stables	Residence, barns, stables, pasture	Site reconnaissance
	"	066-010-060	Pasture		
9770	"	066-010-057	Rural residential	Residence, sheds, domestic well, debris piles, grazing land	Site reconnaissance, removal of debris
9826	"	066-010-071	Rural residential	Residence	"
	"	066-010-072*	Rural residential	Two residences, barn, stables, grazing land	
9850	"	066-010-003*	Rural residential	Two residences (one mobile home), outbuildings, agricultural well, grazing land, horses	
9946	"	066-010-004	Rural residential	Residence, detached garage	Site reconnaissance
9924	"	066-010-005*	Rural residential	Residence, outbuildings, disced fields	
9994	"	066-010-006	Rural residential	Two residences, domestic well, recently seeded fields	Site reconnaissance
9998, 10000	"	066-010-047	Rural residential	Two residences, barn, outbuildings, disced fields, horses	"
10050	"	066-010-046	Rural residential	Residence, barn, small orchard, agricultural well	"
10072, 10074	"	066-010-050	Rural residential	Two residences, outbuildings, small orchard, fallow land	"
10076	"	066-010-051	Fallow land	Abandoned house trailer, camper, debris	Site reconnaissance and removal of debris
	Heatherpace Lane	066-011-013	Fallow land		
	"	066-011-020	Fallow land	Pond	

TABLE 1
LAND USE/SITE TYPE SUMMARY

Street Number	Street Name	APN	Site Type	Comments	Recommendations
7464	"	066-011-014	Rural residential	Residence, sheds, domestic well	Site reconnaissance
7481	"	066-011-019	Rural residential	Residence (mobile home), outbuildings, domestic well, fallow land	"
7542	"	066-011-015	Rural residential	Residence, two trailer homes, detached garage, barn, small orchard	"
7521	"	066-011-018	Rural residential	Residence, mobile home, garage, outbuildings, fallow land	"
7560	"	066-011-016	Rural residential	Residence, domestic well, fallow land/disced land	"
7561	"	066-011-017	Rural residential	Residence, outbuildings, stable, grazing land, fallow land, decorative pond	"
	Gerber Road	066-010-021*	Fallow land, wetlands	Approximately one-half of parcel is disced	
	"	066-010-020*	Fallow land, wetlands	Approximately one-half of parcel is disced	
	Gerber Road	066-010-019*	Fallow land, wetlands	Approximately one-half of parcel is disced	
10019	"	066-011-029	Rural residential	Residence, outbuildings, domestic well, abandoned vehicles, debris, 55-gallon drums, goats	Site reconnaissance and removal of debris
10041	"	066-011-030	Rural residential	Residence, detached garage, outbuildings, barn, fowl yard (chicken and duck)	Site reconnaissance
10051	"	066-011-031	Rural residential	Residence	"
	"	066-011-017	Rural residential	Residence, domestic well	"
10093	"	066-011-016	Rural residential	Two residences, detached garage, fallow land	"

* = Property was accessible during our field work, i.e. controlled by North Vineyard Specific Plan applicant.

J/2954-01.TBL

APPENDIX

COPY OF CALIFORNIA DIVISION OF
OIL AND GAS *ABANDONMENT CERTIFICATES*
FOR PETROLEUM WELLS FORMERLY LOCATED
WITHIN THE PROJECT AREA

WALLACE · KUHL
& ASSOCIATES INC.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

REPORT OF WELL ABANDONMENT

Woodland, California

August 28, 1980

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING COMPANY
P.O. Box 399
Rio Vista, CA 94571

Your report of abandonment of well "H&C-Harlander Unit 1" 1
(Name and number)
A.P.I. No. 067-20151, Section 4, T. 7N, R. 6E, M.D. B. & M.,
---field, Sacramento County,
dated 6-24-80, received 7-1-80, has been examined in conjunction with records filed in this office, and we have determined that all of the requirements of this Division have been fulfilled.

Environmental inspection made and approved 8-22-80.

Blanket Bond

CS/kw

CONFIDENTIAL STATUS

M. G. MEFFERD
State Oil and Gas Supervisor

By John C. Sullivan
Deputy Supervisor

John C. Sullivan

OG159 (11-76-GSR1-8M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

No. T 630-138

DIVISION OF OIL AND GAS

Report on Operations

Newell B. Hunnicutt, Agent
HUNNICUTT & CAMP DRILLING COMPANY
P.O. Box 399
Rio Vista, CA 94571

Woodland Calif.
June 4, 1980

Your operations at well "H&C-Harlander Unit 1" 1, API No. 067-20151, Sec. 4, T. 7N, R. 6E M.D., B.& M. ---, Field, in Sacramento County, were witnessed on 5-18-80. R. Hauser, representative of the supervisor, was present from 0310 to 0415. There were also present J. Bankston, Drilling Foreman.

Present condition of well: 7" cem. 600'. TD 5114'. Plugged with cement 1470'-1223' and 642'-442'.

The operations were performed for the purpose of abandonment.

DECISION:

The plugging operations as witnessed and reported are approved.

KPH:kw

CONFIDENTIAL STATUS

M. G. MEFFERD
State Oil and Gas Supervisor

By
Deputy Supervisor
John C. Sullivan

APPENDIX L

NVSSP FEIR: Final Technical Appendices Vol. II

Preliminary Geotechnical Engineering Report

NORTH VINEYARD STATION SPECIFIC PLAN

WKA No. 2954.02

Prepared
May 31, 1995

EXECUTIVE SUMMARY
PRELIMINARY GEOTECHNICAL ENGINEERING REPORT
NORTH VINEYARD STATION SPECIFIC PLAN
Sacramento County, California
WKA No. 2954.02

INTRODUCTION: A preliminary geotechnical engineering report was completed for the North Vineyard Station Specific Plan. The subject site is an irregular shaped parcel located east of Florin, California, and bounded by Florin Road to the north, Gerber Road to the south, Elder Creek to the west and the future extension of Vineyard and Knox Roads to the east.

FINDINGS

SITE DESCRIPTION: Site elevations range from approximately +45 to +80 feet, mean sea level. The major portion of the site is currently under cultivation or irrigated pasture with numerous single family houses and out-buildings scattered across the site.

GEOLOGIC SETTING: The site is underlain by the Riverbank and Laguna formations, both of which are dissected alluvial fans, and are generally composed of alluvial gravel, sand and silt, derived from the western slopes of the Sierra Nevada Range.

SOIL CONDITIONS: The Soil Survey of Sacramento County, California lists eight soil types on the site which are primarily silty loams with some scattered areas of clays and gravels. Some clay areas have a high shrink/swell potential but their effects can be successfully mitigated and should not significantly effect development on the site.

AGRICULTURAL CAPABILITY: The soils on the site are suitable for irrigated hay, pasture and other crops such as corn, wheat, rice, barley, milo, ladino clover for seed and alfalfas. Limitations are depth to hardpan/claypan, low permeability and limited available water capacity.

GROUND WATER: Ground water at the site has been mapped at 75 to 130 feet below the surface and therefore, should not significantly impact development on the site.

CONCLUSIONS

GEOLOGIC/SEISMIC HAZARDS: There are no mapped faults on the site and the seismic risk in the area is considered low. There is no risk of other significant geological hazards to the site.

STRUCTURAL SUPPORT: The undisturbed natural soils at shallow depths are capable of supporting anticipated residential, commercial and industrial structural loads. Substantially higher bearing capacities can be assigned to deeper, undisturbed soils. It is anticipated that future structures may be founded on relatively conventional foundations at shallow depths. Deeper foundations may be required for larger structures where higher allowable bearing pressures are desirable.

FLOOD HAZARDS: Significant portions of the site surrounding the two creeks on the site are mapped in the 100-year flood plain. Special attention during construction should result in the successful mitigation of this condition.

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& ASSOCIATES INC.

PRELIMINARY GEOTECHNICAL ENGINEERING REPORT
NORTH VINEYARD STATION SPECIFIC PLAN

Gerber Road and Vineyard Road
Sacramento County, California
WKA No. 2954.02
May 31, 1995

INTRODUCTION

General

A preliminary assessment of soil and geologic conditions has been completed at the subject property, an irregular shaped 1580± acre property, located on the east of the town of Florin, California. The property is bounded by Florin Road to the north, Gerber Road to the south, Elder Creek to the west and the extension of Vineyard and Knox Roads to the east. The purposes of this investigation have been to gather preliminary information on the nature, distribution and general engineering characteristics of the on-site soils; the potential for earthquake or other geologically-related impacts on proposed future development; and, to present our findings with emphasis upon the soil-related aspects of future development.

It is emphasized that the findings and conclusions contained in this report are preliminary in nature and not intended for use in specific design of structural elements or improvements. This investigation is limited to a general overview of soil conditions and the surrounding geology and seismicity.

Scope

The scope of our investigation has included the following phases:

- site reconnaissance, including evaluation of the surrounding geology and visual surface soil identification;
- review of available geologic, soil and ground water information;
- review of aerial photographs dating back to 1961;
- review of previous geotechnical engineering studies conducted by our firm for other properties in the general area;

Geotechnical Engineering
Engineering Geology
Environmental Consulting
Remediation Services
Construction Inspection
Materials Testing

3050 Industrial Blvd.
West Sacramento
CA 95691
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916.372.1434

recycled paper

- performance of EQFAULT computer analysis of historic seismic events and predicted maximum intensities on individual faults within 100 miles of the site to determine appropriate site ground acceleration; and,

- preparation of our findings and conclusions for inclusion into The North Vineyard Station Specific Plan, including an Executive Summary.

Subsurface investigation (test borings) and laboratory testing of on-site soils was beyond the scope of this study.

FINDINGS

Site Description

The project site is located east of the town of Florin in Sacramento County, California. The site is bounded by Florin Road to the north, beyond which is agricultural property with several single-family dwellings; by Gerber Road to the south, beyond which is agricultural property and single-family dwellings; Elder Creek to the west, beyond which is a small residential subdivision to the north and a golf facility to the south; and, the extension of Vineyard and Knox Roads to the east, beyond which are several single-family dwellings and a small nursery facility. A site map of the property is attached as Plate No. 1.

Elder Creek comprises the western boundary of the site. Gerber Creek enters the site across the southern boundary in two locations before merging with Elder Creek along the western site boundary. Aerial photographs indicate that Elder Creek may have been rerouted to follow property boundaries prior to 1961, thereby abandoning its natural stream bed.

On the date of our site reconnaissance, May 5, 1995 the site was covered by grassy fields and pastures. Many single-family houses are located on the site, along with barns and other out buildings. Graveled and asphalt concrete paved roads provide to the resistances. The highest ground surface elevation on the site is located at the southeast boundary, which consists of several small hills. The remainder of the site is relatively level with occasional topographically higher areas. Several stands of eucalyptus, oak and other trees were observed on the site, with concentrations of larger trees surrounding most of the houses and along the creek alignments. A rail line belonging to the Central California Traction Railroad extends across the site, entering the property at the northwest corner and proceeding to the southern boundary. High voltage power lines also cross the western portion of the site in a north-south orientation.

Geologic Setting

The project site is located within the Great Valley geomorphic province of California. The geology of the Great Valley province is typified by thick sequences of sedimentary deposits of Jurassic through Holocene age. The State of California, Division of Mines and Geology

(DMG) and United States Geological Survey (USGS) have mapped a large portion of the site as being underlain by the lower member of the Quaternary-aged Riverbank formation with the remainder being underlain by the Tertiary-aged Laguna formation (Wagner, 1981, Helley, 1985). The Riverbank formation represents dissected alluvial fans and is generally composed of alluvial gravel, sand and silt derived from the western slopes of the Sierra Nevada Range. The Laguna formation represents eroded alluvial fans composed of alluvial gravel, sand and silt also derived from the western slopes of the Sierra Nevada Range. A plan indicating the geologic mapping of the site is attached as Plate No. 2.

Geologic Structure

The Great Valley of California is generally considered to be an elongated sedimentary trough, approximately 450 miles long and 50 miles wide, which has been filled by a thick sequence of Jurassic to Holocene continental and marine sediments. The sediments have been folded into an asymmetric syncline, the axis of which lies immediately east of the interior Coast Ranges.

Surface elevations within the Great Valley generally range from several feet below mean sea level (msl) to more than 1000 feet above sea level. The major topographical feature in the Sacramento Valley is the Sutter Buttes (a volcanic remnant), which rise approximately 1980 feet above the surrounding valley floor. The ground surface elevation in the vicinity of the site, as shown on the USGS Topographic Map of the *Elk Grove Quadrangle, California* (1979), ranges from approximately +45 to +80 feet msl.

Faults and Seismicity

According to the *Preliminary Fault Activity Map of California* (Jennings, 1992), the nearest faults to the site with Historic displacement (activity within the last 200 years) are the Green Valley/Concord, Cleveland Hill and Hayward faults, located approximately 50 miles southwest, 68 miles north and 70 miles southwest of the site, respectively. Other portions of these faults are considered to be active (activity within the last 11,000 years) according to the Alquist-Priolo Special Studies Zone criteria (Hart, 1992). Although most of the Calaveras and Greenville fault zones are indicated to be of Holocene activity (activity within the last 10,000 years), portions of these faults also have been rated as being active within the last 200 years, and are located approximately 65 miles and 60 miles southwest of the site, respectively.

The Foothills Fault System, which includes the Bear Mountains fault zone on the west and the Melones fault zone on the east, is located approximately 20 miles northeast of the site. Jennings (1992) has mapped faults within this system as pre-Quaternary (Mesozoic), with several small portions having late-Quaternary displacement (movement within the past 700,000 years). The closest section of the Foothills Fault System to the site with late-Quaternary displacement is located approximately 20 miles northeast of the site, along the Bear Mountains fault zone.

The site is not indicated to be located over a mapped trace of any fault. The closest fault to the site shown on the *Preliminary Fault Map* is the south end of a queried trace of the northwest-southeast tending, pre-Quaternary (older than 1.6 million years) Willows fault, located approximately 5 miles north of the site.

The Coast Range/Sierran Block boundary zone (CRSB) is not indicated on the *Preliminary Fault Map*, but is considered to be a factor in determining seismic risk potential, especially in southern and central California (Mualchin, 1992). In the north Central Valley, the width of the zone extends from the eastern flanks of the Coast Ranges as far easterly as Dunnigan. This zone of potential faulting is not well understood, but is believed to be connected to the Vacaville-Winters earthquake of 1892 and the Coalinga earthquake of 1983 (Wong et al, 1988). Earthquake activity within the CRSB often occurs on "blind thrusts", in reference to their lack of surface expression before, and often after, a seismic event and the thrust component of the fault offset.

The *Seismic Safety Element of the General Plan for the County of Sacramento* (1985), shows two faults influential to Sacramento County--the Midland Fault zone, located approximately 22 miles west of the site and the Bear Mountains fault zone mentioned above. The Midland fault zone has been mapped by the DMG as pre-Quaternary (Jennings, 1992). This fault zone is considered to be a deep, subsurface feature extending nearly 50 miles along the west side of the Sacramento Valley. This fault has been approximately located only by exploration work for natural gas reserves. Subsurface data indicate that there has been no appreciable movement on the Midland fault in the last 24 to 36 million years, and no evidence of surface expression has yet been found.

Maximum Credible Earthquake

The maximum credible earthquake influencing the site is defined as the maximum earthquake that appears capable of occurring under the presently known tectonic framework. Criteria for determining the maximum credible earthquake include the seismic history of the area, the geologic province in which the faults under consideration are located, fault lengths, faulting mechanisms and geologic structural characteristics.

A maximum credible earthquake of Richter magnitude (M_R) 6.75 on the Zamora-Dunnigan Hills Fault has been assigned by the DMG (Greensfelder, 1974, Mualchin, 1992). According to our analysis using EQFAULT, a computer program developed by Thomas Blake (1991), which uses estimated maximum magnitude events for individual faults, and published attenuation relationships to compute a site specific ground acceleration, a maximum credible earthquake of M_R 6.75 occurring on the Zamora-Dunnigan Hills fault would be the controlling event at this site. The maximum credible site acceleration associated with an event of this magnitude occurring 27 miles northwest of the site, using attenuation relationships published by Joyner & Boore (1982), would be approximately 0.15g.

Soil Conditions

According to the Soil Survey of Sacramento County, California (SSSCC), approximately 75 percent of the site is covered by soils classified as San Joaquin silt loam with slopes between 0 and 8 percent. The SSSCC classifies the top layer of this formation to be a "strong brown silt loam" which is approximately two feet thick. The second layer is a "yellowish red clay loam" approximately five inches thick. The third layer studied is cited as an "indurated hardpan" extending to a depth of at least five feet.

Approximately 10 percent of the site is mapped as Red Bluff loam, possessing slopes between 0 and 2 percent. These soils are located in irregularly-shaped areas in the northern and eastern sections of the site. This soil is formed in alluvium from mixed rock sources, with the top layer classified as "brown loam", approximately one foot thick. The second layer is a "reddish brown clay loam" approximately one and a half feet thick. The third layer extending to over five feet is a "yellowish red clay loam."

Two areas, covering approximately 10 percent of the site, are classified as Redding loam and Redding gravely loam typified by slopes ranging 0 to 8 percent. The SSSCC uses the same description for this soil and the San Joaquin loam, with minor depth changes in the layers, the addition of occasional gravel to cobble sized material occurring throughout the soil layer and a more yellowish color in the upper soil layer. These soils are located in the south central portion of the site.

The remainder of the site is covered by four additional soil types. The first soil type is the San Joaquin-Durixeralfs complex, composed of 55 percent San Joaquin soil and 35 percent Durixeralfs soil. The Durixeralfs soils were formed in areas where most or all of the original surface soils have been removed; therefore, the soil texture, color and layering vary from site to site. The top layers are generally brown clays, sandy clay loams or clay loams approximately two feet thick, overlying a silica-cemented hardpan. This soil type is located in two small areas located near the center of the site. The second soil type is the San Joaquin-Galt complex composed of 45 percent San Joaquin soil and 40 percent Galt soil. The Galt soils are typified by a grayish brown to yellowish red clay over a weakly cemented hardpan. This soil is located in one irregularly shaped area in the eastern portion of the site. The third soil type is the San Joaquin-Xerarents complex with 45 percent San Joaquin soil and 40 percent Xerarents soil. The Xerarents soil is a fill material mixed by leveling activities. The texture, color and thickness of the layers in this soil vary from one area to another. These soils are located in the central portion of the site. The final soil type listed by the SSSCC is Hedge loam between 0 and 2 percent slopes. This soil type is similar to the Redding loam with the addition of black iron cemented concretions in the upper soil layer. This soil has been mapped as a small area in the south-central portion of the site.

The SSSCC soils map has been sketched onto a USGS Topographic map and has been attached as Plate No. 3.

The SSSCC rates some of the soils with large clay contents to poses moderate to high shrink-swell characteristics. The shallow depth to cemented soil strata result in poor permeability properties. These conditions result in the soils having possible limitations with respect to site development.

Test borings on nearby projects indicate several feet of surface soils underlain by cemented soils, commonly referred to as "hardpan". The surface soils typically range from relatively granular silty sands and sandy silts to expansive silty and/or sandy clays. The cemented soils typically have been classified as sandy silts, silty sands or sandy clays. The soil profile depicted by our previous borings generally are consistent with the SSSCC soil classifications.

Agricultural Capability

The soils in the area are indicated to be suitable for irrigated hay and pasture. Other crops listed by the SSSCC as commonly grown in the soils present on the site are corn, wheat, rice, barley, milo, ladino clover for seed, and alfalfa. The main limitation for crops on the site is the depth of the claypan and hardpan layers, which prevent the growth of the crop. The moderate surface slope in conjunction with the low permeability of the soils in several areas also inhibits the growth of some crops. This combination of slope and low permeability often results in erosion of the soil when irrigated.

Ground Water

Our previous drilling experience in the area has not encountered free ground water. In addition, according to the Map of Ground Water Elevations, Spring 1993, for Sacramento County (Borcalli & Assoc., 1994), ground water elevations beneath the study area are between -30 and -50 feet msl, or between 75 and 130 feet below the surface of the ground. However, temporary "perched" high ground water conditions may exist shortly after intense rains and during or following the winter months due to the presence of relatively shallow and fairly impermeable cemented soils that underlie the site.

Surface Water

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the County of Sacramento (Community-Panel Number 060262 0330 C, September 30, 1988) several large areas surrounding the two creeks on the site are listed as "Special Flood Hazard Areas inundated by 100-Year Flood." These areas include the major portion of the site west of the railroad tracks crossing the site, and an area approximately 500 feet to the east of the railroad tracks. An area approximately 500 feet wide follows Elder Creek across the site, and exits across the eastern boundary of the site.

A map of the flood areas at the site has been attached as Plate No. 4.

CONCLUSIONS

General

Our field investigation and office studies indicate that the property is suitable for future development from the standpoint of surface soils, geologic environment and ground water conditions. Significant portions of the site are included in the flood plane by FEMA and may present problems to development. However, successful mitigation of this problem is possible. Soil and geologic conditions are considered typical of the region and consistent with those in the nearby developed areas.

Seismic Hazards

No active or potentially active faults are shown to pass through or near the project site, as indicated by the published geologic maps that we reviewed, nor is the site located within an Alquist-Priolo Special Studies Zone. Therefore, it is our opinion that ground rupture at the site resulting from seismic activity is highly unlikely.

Based upon our experience in the area, fine to medium sand layers may exist below ground level. However, due to the considerable depth of ground water in the area, and density of these sand deposits, it is our opinion that the potential for liquefaction of these soils to occur is very low.

The potential for ground lurching, differential settlement or lateral spreading of the surface during or following seismic events near the site also are considered to be very low.

Volcanic Hazards

The site is located nearly 125 miles from both the Lassen Peak and the Mono Lake - Long Valley Volcanic areas; therefore, the risk associated with volcanic hazards on this site is very low (Miller, 1989).

Structural Support Considerations

The results of our work indicate that the undisturbed natural soils at shallow depths are capable of supporting anticipated residential, commercial and industrial structural loads. Substantially higher bearing capacities can be assigned to the deeper, undisturbed cemented "hardpan" soils.

Soil Expansion Potential

The SSSCC indicates that soils with a moderate to high shrink/swell potential are located throughout the surface of the site. Our experience in the surrounding areas is that the surface and near-surface soils are low plasticity materials considered to range from

essentially non-expansive to moderately expansive. However, occasional layers of highly plastic clays, typically found in low lying areas and immediately above hardpan deposits, are capable of developing significant expansion pressures with variations in moisture content. Although no evidence of highly expansive soils was observed during our site reconnaissance, soil expansion potential should be evaluated on a site-by-site basis as the property is developed. Removal of clay soils, isolation or chemical treatment of expansive soils are measures typically used to mitigate the expansive effects of clay soils in this area of Sacramento County.

Flood Hazard

Significant portions of the site are included in the 100-year flood plane and will require special attention during development to successfully mitigate the effects of flood water. Possibilities for mitigation could include importing fill material to raise local ground elevations or channelization of creeks to contain flood waters.

There are no significant bodies of standing water on or near the site; therefore, the potential that a seiche may influence the site is considered remote.

Ground Water

In our opinion, design and performance of future structures will not be adversely affected by a permanent high ground water table. However, perched water from precipitation or irrigation of adjacent properties may cause some locally soft, saturated areas that could impede access to construction equipment. This will certainly be the case during winter and spring months, and also may be true during summer if nearby agricultural land is under irrigation.

Site Preparation and Soil Engineering Characteristics

Processing and recompaction of existing surface soils will be important to future pavement and structural improvements. On-site soils are considered suitable for use as engineered fill, provided they are free of significant quantities of organic materials and other unsuitable materials. Engineered fill should be constructed in accordance with the generally accepted procedures and standards for residential, commercial and industrial construction. Additional preparation procedures may be required within areas adjacent to existing stream beds and in areas where the natural stream beds have been abandoned.

Preliminary geotechnical information indicates that suitable support for structures is available throughout the property area. It is anticipated that future structures may be founded upon continuous and/or isolated spread foundations bearing at relatively shallow depths (12 to 18 inches). Deeper foundations, extending to the cemented soils, may be suitable for larger structures where higher allowable bearing pressures are desirable.

Near-surface soils are considered to be of medium quality with respect to roadway pavement section design. Chemical amendment of clay soils (e.g. lime treatment) may be a suitable method of increasing the quality of pavement subgrade soils to near subbase quality material.

LIMITATIONS

The findings and conclusions contained in this report are intended as a general overview of geologic and geotechnical reconnaissance information available from previous investigations and studies, combined with limited field work and office analysis. It is emphasized that site specific subsurface investigation should be performed after site development plans are underway so that a final Geotechnical Engineering Report can be prepared for each individual project.

Our recommendations are based upon the information provided regarding the proposed development concept, combined with our analysis of the site conditions revealed by our field and office studies. We have used our best engineering judgment based upon the information provided and the data generated. We emphasize that this report is general in nature and is applicable only to the investigated area.

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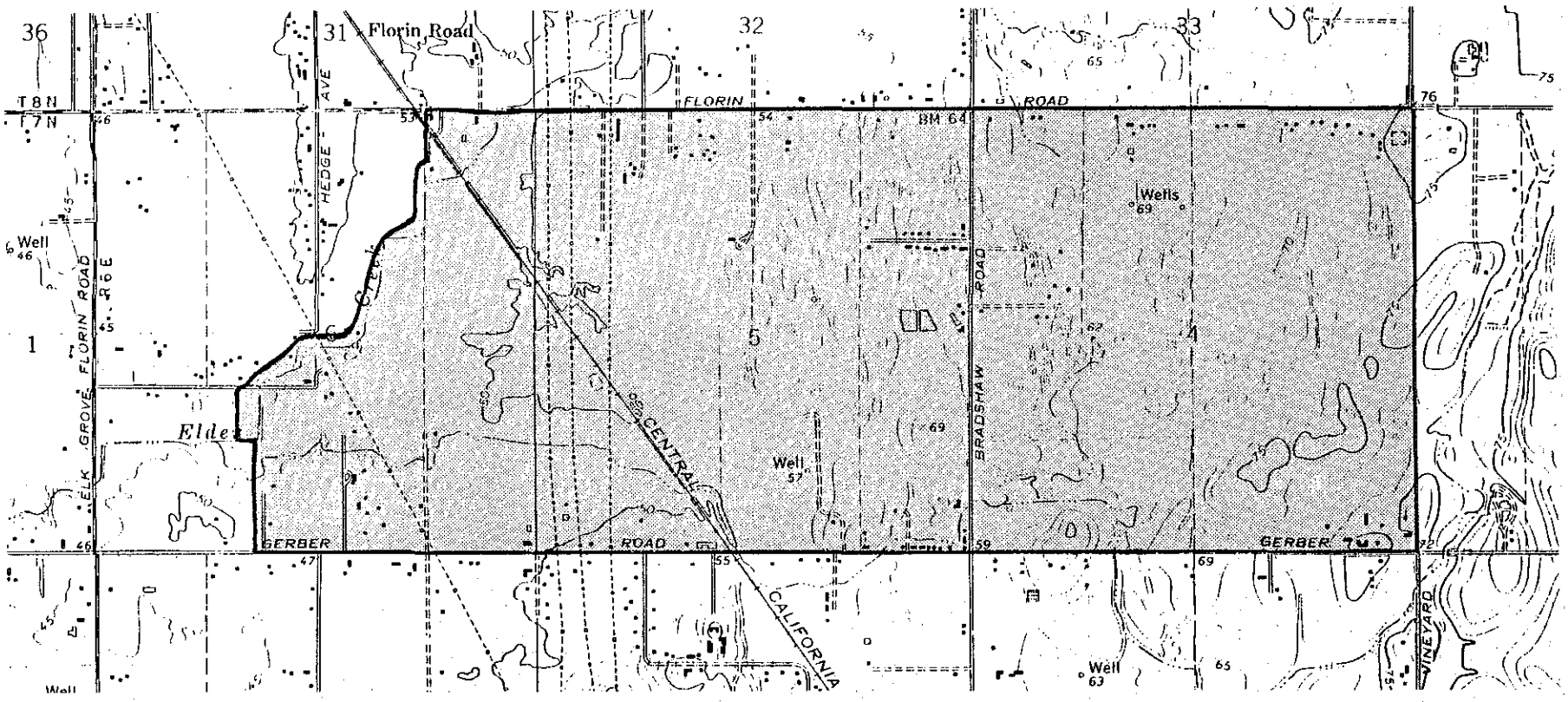
Notes:

DMG - California Department of Conservation, Division of Mines and Geology
USGS - United States Geological Survey
FEMA - Federal Emergency Management Agency



Note: Adapted from the U.S. Geological Survey 7.5 Minute Series (Topographic) Elk Grove Quadrangle, 1975.

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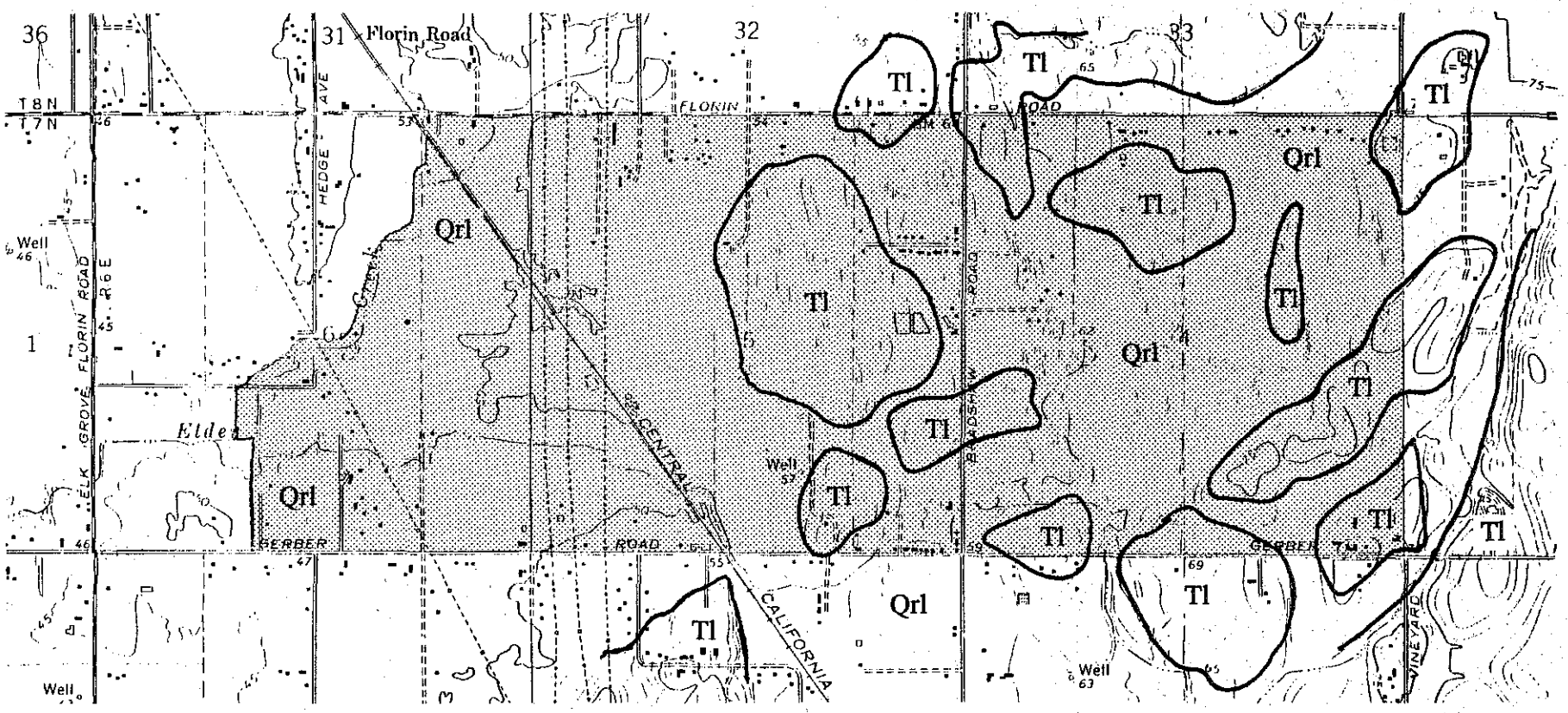
WALLACE · KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	DRAWN BY: TGL CHECKED BY:	**NORTH VINEYARD STATION SPECIFIC PLAN** Gerber Road and Vineyard Road Sacramento County, California	**PROJECT NO:** 2954.02 **DATE:** 5/95 **PLATE NO:** 1



LEGEND

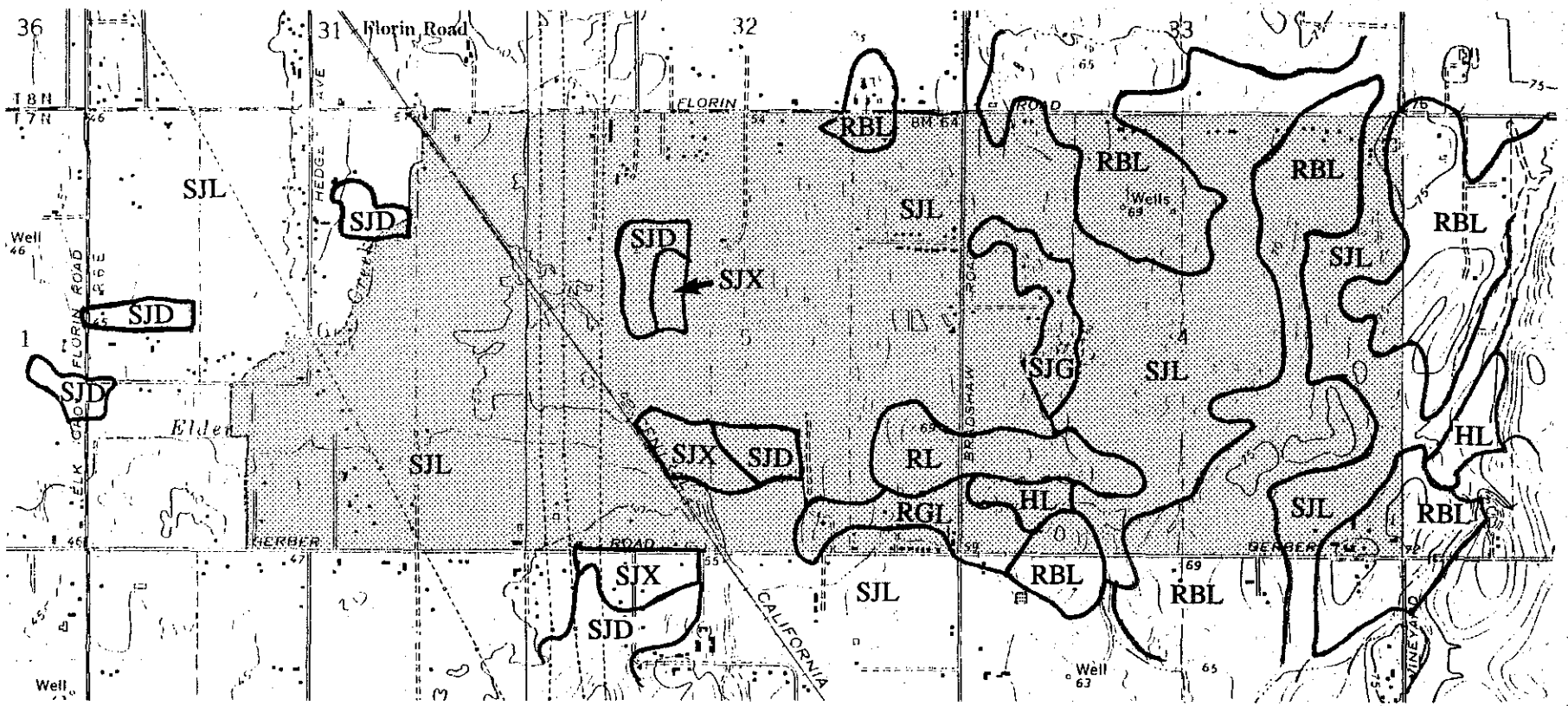
Qrl - Riverbank Formation
Tl - Laguna Formation

Note: Adapted form Helley, 1985.

N

Approximate Scale
1" = 2000'

WALLACE • KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	DRAWN BY: TGK CHECKED BY: MG	**NORTH VINEYARD STATION SPECIFIC PLAN** Gerber Road and Vineyard Road Sacramento County, California	**PROJECT NO:** 2954.02 **DATE:** 5/95 **PLATE NO:** 2



LEGEND

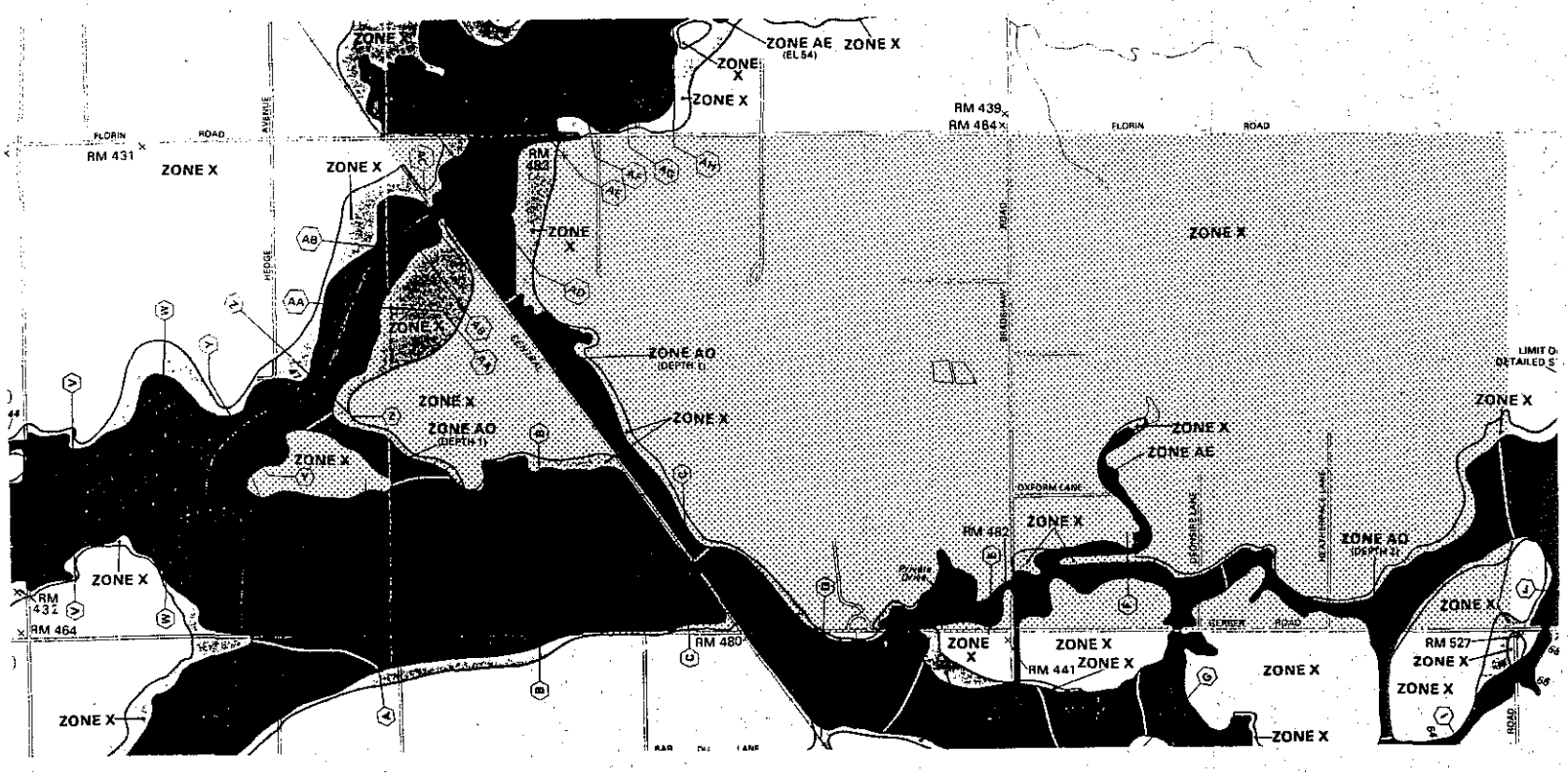
SJL	- San Joaquin Silt Loam
RBL	- Red Bluff Loam
RL	- Redding Loam
RGL	- Redding Gravelly Loam
HL	- Hedge Loam
SJD	- San Joaquin - Durixeralfs Complex
SJG	- San Joaquin - Galt Complex
SJX	- San Joaquin - Xerarents Complex

N

Approximate Scale
1" = 2000'

Note: Adapted from the Soils Survey of Sacramento County, California, 1991.

WALLACE • KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	DRAWN BY: TLK CHECKED BY: MG	**NORTH VINEYARD STATION SPECIFIC PLAN** Gerber Road and Vineyard Road Sacramento County, California	**PROJECT NO:** 2954.02 **DATE:** 5/95 **PLATE NO:** 3



Approximate Scale
1" = 2000'

LEGEND

Zone A	Special flood hazard areas inundated by 100-year flood.
Zone X	Areas of 500-year flood; Areas of 100-year flood with average depths less than 1 foot.
Zone X	Areas outside 500-year flood plane.

Notes:

1. Adapted from FEMA Flood Insurance Rate Map, Community Panel No. 060262 0330, Sacramento County, California, 1988.
2. Western boundary as defined on Plate 1

WALLACE • KUHL & ASSOCIATES, INC. GEOTECHNICAL ENGINEERING GEOLOGIC & ENVIRONMENTAL SERVICES	DRAWN BY: TGK CHECKED BY: MG.	**NORTH VINEYARD STATION SPECIFIC PLAN** Gerber Road and Vineyard Road Sacramento County, California	**PROJECT NO:** 2954.02 **DATE:** 5/95 **PLATE NO:** 4

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