

PRELIMINARY DESIGN REPORT
GOWAN OUTFALL | ALEXANDER BRANCH
RANCHO DRIVE TO DECATUR BOULEVARD

SEPTEMBER 2014
H#49867



PREPARED BY



A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

5820 S. Eastern Ave, Suite 200
Las Vegas, Nevada 89119



PREPARED FOR
CITY OF LAS VEGAS
DEPARTMENT OF PUBLIC WORKS
333 N. RANCHO DRIVE
LAS VEGAS, NEVADA 89106

Preliminary Design Report for the
Gowan Outfall - Alexander Branch, Rancho to Decatur

September 2014
H# 49867
SCI Project # 25450

Prepared for:
City of Las Vegas (Public Works)
333 N. Rancho Drive
Las Vegas, NV 89106
Phone: (702) 229-6276

Prepared By:
Stanley Consultants, Inc.
5820 South Eastern Avenue, Suite 200
Las Vegas, Nevada 89119

HYDROLOGIC CRITERIA AND DRAINAGE MANUAL
DRAINAGE STUDY INFORMATION FORM

Name of Development: Gowan Outfall - Alexander Branch, Rancho to Decatur Date: 09/18/2014

Location of Development: a) Descriptive (Cross Streets) North/South: Rancho Drive to Decatur Boulevard
East/West: Alexander Road

b) Section: 1, 12 Township: 20 South Range: 60 East

c) APN : See attached

Name of Owner: City of Las Vegas / Dennis Moyer

Telephone No.: (702) 229-6018 Fax No.: 702-369-9793 E-Mail Address: dmoeyer@lasvegasnevada.gov

Address: 333 N. Rancho Drive, Las Vegas, NV 89106

Contact Person-Name: Lant Leavitt Telephone No.: 702-369-9396

* E-Mail Address: LeavittLant@stanleygroup.com Fax No.: 702-369-9793

Firm: Stanley Consultants

Address: 5820 S. Eastern Ave, Suite 200, LV NV 89119

Type of Land Development/Land Disturbance Process:

☐ Rezoning	☐ Subdivision Map	☐ Clearing and Grading Only
☐ Parcel Map	☐ Planned Unit Development	☒ Other (Please specify below)
☐ Large Parcel Map	☐ Building Permit	CCRCD facility

1. Total Owned Land Area: At Site: right-of-way Being Developed/Disturbed: entire roadway

2. Is a portion or all of the subject property located in a designated FEMA Flood Hazard Area? ☒ Yes** ☐ No

3. Is the property bordered or crossed by an existing or proposed Clark County Regional Flood Control District Master Planned Facility? ☒ Yes** ☐ No

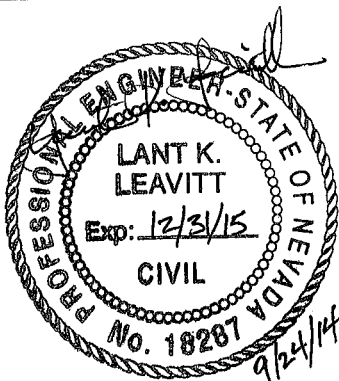
4. Proposed type of development (Residential, Commercial, Etc.): CCRCD Flood Control Facilities

5. Approximate upstream land area which drains to the subject site: _____

6. Has the site drainage been evaluated in the past? ☒ YES ☐ NO If yes, please identify documentation: Refer to Preliminary Design Report Section 3 for a complete list of referenced studies.

7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Alexander Road / Decatur Boulevard

8. Briefly describe your proposed schedule for the subject project:
Construction schedule to be determined as project is not yet funded.



Engineer's Seal

Submit this form as part of the required drainage study to the local entity which has jurisdiction over the subject property. This form may provide sufficient information to serve as the Conceptual Drainage Study.

*New Required Field

**Review and concurrence of the Clark County Regional Flood Control District is required.

Local Entity File No.	Revision	Date

REFERENCE:

STANDARD FORM 1

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL		
DRAINAGE SUBMITTAL CHECKLIST		
Project Name: Gowan Outfall-Alexander Branch	Map ID: See form 1 supplemental	
Firm Name: Stanley Consultants	Engineer: Lant Leavitt, P.E.	
Address: 5820 S. Eastern Ave., Suite 200		
City: Las Vegas	State: NV	Zip: 89119
Phone Number: (702)369-9396	Fax Number: (702) 369-9793	
Property Owner: City of Las Vegas		
Address: 333 N. Rancho Drive		
City: Las Vegas	State: NV	Zip: 89119
Reviewed By:	Date Received:	Date Accepted for Review:
The following checklist is intended as a guide for the engineer preparing a Technical Drainage Study to submit to the local entity and Clark County Regional Flood Control District (if necessary). The listed items are the minimum information required prior to the entity performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the Clark County Regional Flood Control District (CCRFC) Hydrologic Criteria and Drainage Design Manual (MANUAL). This document is intended as an aid in preparing Technical Drainage Studies. Each study submitted is reviewed for compliance with local and regional criteria. This form is not intended to be all inclusive and does not limit the extent of the information, calculations or exhibits which may be necessary to properly evaluate the intended land use. If items are not applicable for the subject site, provide N/A. I. GENERAL REQUIREMENT YES NO <u> X </u> Design manual Standard Form 1 with the engineer's seal and signature. <u> X </u> Design manual Standard Form 4. <u> X </u> 2 copies of the 24" x 36" Drainage Plan. <u> n/a </u> A notarized letter from the adjacent property owner(s) allowing off-site grading or discharge. II. MAPS AND EXHIBITS YES NO <u> X </u> A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated. <u> X </u> A copy of the current CCRFC Master Plan Update Figure, (F-x), for Flood Control Facilities and Environmental areas with the site delineated.		
REFERENCE:		STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS (Continued)

Yes No

X Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs.

n/a On-site drainage basin maps for existing and proposed conditions showing the existing topography, basin boundaries, concentration points, and on-site and off-site flows in cfs.

X Vicinity Map with local and major cross streets identified and a north arrow.

III. DRAINAGE PLAN

Yes No

X Sheet size: 24" x 36" sealed by a registered engineer in the State of Nevada.

X Minimum scale: 1" = 60'.

X Project name.

X Vicinity Map with local and major cross streets.

X Revision box.

X North arrow and bar scale.

X Engineer's/consultant's address and phone number.

X Elevation datum and benchmark.

X Legend for symbols and abbreviations.

n/a Cut/fill scarps, where applicable.

X Street names, grades widths.

n/a Proposed future and existing spot grades for top of curbs and street crowns at lot lines, grade breaks, and along curb returns on both sides of the street.

n/a Existing contours encompassing the site and 100 feet beyond with spot elevations for important locations, where appropriate.

n/a Minimum finish floor elevations with top-of-curb elevations at upstream end of lot.

n/a Proposed typical street sections.

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes No

n/a _____ Streets with off-set crowns.

X _____ Proposed contours or spot elevations in sufficient detail to exhibit intended drainage patterns and slopes.

X _____ Property lines.

X _____ Right-of-way lines and widths, existing and proposed.

X _____ Existing improvements and their elevations.

n/a X _____ Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points.

n/a _____ Concentration points and drainage flow direction with Q_{100} and V_{100} and D_{100} in streets.

X _____ Cumulative flows, velocity, and direction of flow at upstream and downstream ends of site for the 10-year and 100-year flows.

X _____ Location and cross-section of street capacity calculations.

X _____ Cross-sectional detail for channels, including cutoff wall locations.

X _____ Existing and proposed drainage facilities, appurtenances, and connections (i.e., sidewalk, ditches, swales, storm drain systems, unimproved and improved channels, and culverts, etc.) stating size, material, shape, and slope with plan and profile and HGL calculations.

X _____ Existing and proposed drainage easements and widths shown with sufficient detail. A cross sectional detail must be provided that shows appropriate lining and reinforcement.

n/a _____ Location and detail of existing, proposed, and future block wall openings. Minimum size is 16" x 48". Wrought iron gate is required for flows > 10 cfs.

n/a _____ Location and detail of flood walls illustrating depth of flow, proposed grouting height, etc.

n/a _____ Perimeter retaining wall locations. All existing and proposed walls (retaining screen and flood) must be shown with adjacent ground elevations. Flood walls with 8-inch concrete masonry unit.

n/a _____ Building and/or lot numbers.

X _____ Alignment of all existing, proposed, or future Regional Facilities adjacent to the site.

X _____ Limits of existing floodplain based on current FIRM or best available information; limits of proposed floodplains based on best available information.

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes No

n/a For areas in Zone A, AE, AH, and AO, base flood elevations (BFEs) must be shown for each lot; BFEs may be listed on each lot, or in a table. Finish floor elevations must be a minimum of 18 inches above BFE.

n/a Appropriately elevated "humps" 6 inches above the 100 year water surface elevation at site accesses where the intent is to protect the site from the Q100 flows.

n/a Street slopes for perimeter and interior streets. The minimum slope is 0.4 percent.

n/a Location and detail of best management practice (BMP) for parking lots and low impact development (LID) (if required).

IV. HYDROLOGIC ANALYSIS

Yes No

X Appropriate soil information and Soils Map for existing and future conditions with subbasins and property delineated.

X Input and output information for existing conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models.

X Input and output information for future conditions from computer models (HEC-1 or TR-55). The flow routing diagram must be provided with HEC-1 models.

X Use of correct precipitation values in and around the McCarran Airport rainfall area.

X A discussion in the text of the hydrologic analysis justifying subbasin boundaries and cutoffs, supporting assumptions, and calculations.

X A summary table of stormwater flows showing basin area, Q10 and Q100 for both individual basins and combined basin flows, where applicable.

X Copies of supporting technical information referenced from a previously approved study and a statement accepting these results.

n/a On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners in accordance with current Nevada Drainage Law.

n/a Calculation for impervious area for parking lots and LIDs (if required).

REFERENCE:

STANDARD FORM 2

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

V. HYDRAULIC ANALYSIS

Yes No

n/a _____ Flow split calculations and supporting documentation or reference for the method of flow split calculations used.

n/a _____ Normal depth street flow calculations and cross section diagrams for all interior and perimeter streets. Provide "d x v" products for the Q_{100} and Q_{10} flows representing the worst case for interior and all perimeter streets. $Q_{100} d \times v \leq 8$. $Q_{10} d \times v \leq 6$ and 12 foot dry lane for rights-of-way ≥ 80 feet. Calculations must be labeled by street name as indicated on the Grading Plan.

n/a _____ A summary table of interior and exterior street capacity calculations showing the street name, Q_{100} flow, slope, depth of flow, velocity and depth times velocity product and streets needing to meet 12 foot dry lane criteria.

n/a _____ Appropriate hydraulic calculations for block wall openings assuming a 50 percent vertical clogging factor. (Assume the lower half of the opening is plugged.)

n/a _____ Appropriate hydraulic calculations at drainage easement entrance and discharge locations to set finish floor elevations. Hydraulic calculations must include submerged weir, superelevation and tee intersection losses, where appropriate.

n/a _____ Provide necessary freeboard requirements to set the finished floor elevations of all proposed buildings, 2 x depth of flow or depth of flow plus 18 inches of freeboard, whichever is less. The minimum requirement is 6 inches above adjacent upstream top of curb. Buildings adjacent to drainage easements must always be provided with 18 inches of freeboard above the Q_{100} weir height or flow depth, whichever is greater.

X _____ A complete water surface profile analysis (HEC-2, HEC-RAS, etc.) for channel flows and FEMA Zone A flood zones.

Field survey data.

Input and output information.

Plotted cross-sections based on survey with proper encroachments.

A map showing the location of the cross-sections.

Analysis of both sub and super-critical flow segments.

A summary table and a discussion of the results in the text of the report.

X _____ Provide a 50 percent clogging factor in the capacity calculation for drop inlets.

X _____ Hydraulic calculations for culverts and storm drains. D-Load calculations must be provided for storm drain pipes in public rights-of-way, including headwater pool inundation.

n/a _____ The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed.

n/a _____ Provide BMP type, size and supporting calculations for parking lots and LIDs (if required).

REFERENCE:

STANDARD FORM 2

Standard Form 1-supplemental sheet with project APN's for Gowan Outfall-Alexander Road Facilities

138-12-199-003	138-01-899-017
138-12-199-004	138-12-599-010
138-01-499-016	138-01-899-012
138-12-199-007	138-12-599-001
138-01-499-017	138-01-899-003
138-01-499-002	138-12-599-015
138-01-499-003	138-01-899-018
138-01-499-019	138-01-899-013
138-01-499-007	138-12-599-003
138-01-899-001	138-01-899-014

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EXECUTIVE SUMMARY

This Preliminary Design Report presents hydrologic and hydraulic analyses performed for the Gowan Outfall - Alexander Branch, Rancho to Decatur Project for the 30% Design Phase Submittal. It describes the drainage facilities recommended for construction with the project, including the Clark County Regional Flood Control District (CCRFCDD) Las Vegas Valley Master Plan Update (MPU) flood control facility. The recommended alignment for the Gowan Outfall – Alexander Branch, Rancho to Decatur facility and recommended sizes and locations of associated collection facilities are included in this report.

The Gowan Outfall – Alexander Branch, Rancho to Decatur facility receives stormwater runoff from two sources: planned upstream MPU facilities and the local offsite watershed south of Alexander Road. The majority of the flow comes from upstream MPU facilities in Rancho Drive and other upstream tributaries. The flow from these upstream MPU facilities is 1461 cfs at Rancho Drive and Alexander Road during the 100-year event. Local offsite flows from the roads crossing Alexander Road on the south side between Rancho Drive and Decatur Boulevard vary, but don't exceed 50 cfs in the 100-year event.

Analyses and design for the flood control facilities proposed as part of the project improvements meet criteria set forth by the City of Las Vegas (CLV), Regional Transportation Commission (RTC), and CCRFCDD. Storm drain and drop inlets are sized to capture 100-year storm event flow rates. The analysis and design of this MPU facility extends from Rancho Drive east in Alexander Road to the intersection of Alexander Road and Decatur Boulevard.

The specific MPU facilities that are recommended for inclusion in this project are the following: 1865 lf of 12' x 8' RCB in Alexander Road east of Rancho Drive (GOAL 0000), 2122 lf of 14' x 8' RCB continuing east in Alexander Road toward Decatur Boulevard (GOAL 0000), and 1022 lf of two 10' x 6' parallel RCBs heading east on Alexander Road until reaching Decatur Boulevard (GOAL 0000.) Recommended facilities also include collection facilities at cross streets with Alexander Road between Rancho Drive and Decatur Boulevard. These are proposed to capture all of the offsite 100-year flow to take full advantage of the reinforced concrete boxes being constructed along Alexander Road.

The MPU facility in Alexander Road changes size twice between Rancho Drive and Decatur Boulevard. The facility starts out near Rancho Drive as a 12' x 8' RCB. Approximately 1865 lf downstream, the existing roadway profile flattens, and the proposed MPU facility slope flattens as well, from 1.25% to 0.67%. This flatter slope, combined with incoming local offsite flows from cross streets, necessitates a change in facility size to a 14' x 8' RCB. The 14' x 8' RCB continues for another 2122 lf before transitioning to two parallel 10' x 6' RCB. The two parallel 10' x 6' RCBs continue another

approximately 1066 lf to the end of the project. The change from one 14' x 8' RCB to two parallel 10' x 6' RCB is required to resolve a sewer conflict located west of Decatur Boulevard. At the intersection of Alexander Road and Decatur Boulevard, a future connection to existing facilities is planned. The Rancho to Decatur facility will join with the existing 96-inch RCP in Decatur Boulevard (Gowan Outfall Facility GOOF 0427) and continue east in Alexander Road. However, this connection is not being designed at this time.

Construction costs for the Gowan Outfall - Alexander Branch, Rancho to Decatur Project are estimated at approximately \$12.1 million.

1. INTRODUCTION

On June 10, 2014, Stanley Consultants, Inc. received a Notice-to-Proceed from the City of Las Vegas to begin preliminary design services for the Gowan Outfall – Alexander Branch, Rancho to Decatur Project. Analysis and recommendations from the preliminary design phase are included in this Preliminary Design Report.

The purpose of this report is to present analysis and recommendations for the project, present the hydrologic and hydraulic analyses, and recommend drainage facilities necessary to meet criteria set forth by the CLV, RTC, and CCRFCD. The report includes hydrologic and hydraulic descriptions and calculations for the existing roadway conditions and recommended drainage facilities as well as a summary of costs, utility conflicts, and geotechnical considerations.

The design for the project will be completed and bid at such a time as construction funds become available.

2. GOWAN OUTFALL – ALEXANDER BRANCH, RANCHO TO DECATUR PROJECT DESCRIPTION

2.1. Project Scope

The project includes the design of Clark County Regional Flood Control District (CCRFCD) Las Vegas Valley Master Plan Update (MPU) flood control facilities in Alexander Road from Rancho Drive to Decatur Boulevard. The facilities vary in size from a 12' X 8' RCB, to a 14' X 8' RCB, ending in two parallel 10' X 6' RCB. These all work to convey the 100-year flow. The project also includes associated storm drain collection facilities at intersecting cross streets to collect local offsite flow and discharge to the proposed facility.

This preliminary design report describes the hydrologic and hydraulic analyses performed for the site, as well as recommended drainage facilities. The storm drain facility is a MPU facility that will convey flow from the intersection of Rancho Drive and Alexander Road east to the intersection of Alexander Road and Decatur Boulevard. Plans for the project are included in Appendix G.

The design for the project extends from Alexander Road approximately 100 feet east of Rancho Drive to the intersection of Alexander Road and Decatur Boulevard. The general location and alignment of the proposed flood control facilities are shown in Figure 1.

2.2. Project Location

The location of the project is the one mile reach of Alexander Road between the intersection with Rancho Drive and the intersection with Decatur Boulevard, in the City of Las Vegas, Nevada (Figure 1). Specifically, the project area is identified by the Assessor's Parcel Numbers (APNs) 138-12-199-003, 138-12-199-004, 138-01-499-016, 138-12-199-007, 138-01-499-017, 138-01-499-002, 138-01-499-003, 138-01-499-019, 138-01-499-007, 138-01-899-001, 138-01-899-017, 138-12-599-010, 138-01-899-012, 138-12-599-001, 138-01-899-003, 138-12-599-015, 138-01-899-018, 138-01-899-013, 138-12-599-003, and 138-01-899-014.

3. PROJECT BACKGROUND INFORMATION

3.1. Referenced Drainage Studies

As part of the engineering services, Stanley Consultants obtained and reviewed hydrologic and hydraulic reports and studies performed for areas surrounding, tributary to, and adjacent to the project site. The following studies were reviewed in the preparation of this report:

- *2008 Las Vegas Valley Flood Control Master Plan Update (MPU)*, prepared for Clark County Regional Flood Control District, prepared by PBS&J, September 2008.
- *Rancho Drive/US 95 LOMR (Rancho LOMR)*, prepared for City of Las Vegas, prepared by The Louis Berger Group, Inc., November 2006.
- *Final Design Report for Gowan Outfall Lone Mountain Branch Rancho to Decatur (Gowan Outfall)*, prepared for City of Las Vegas, prepared by G.C. Wallace, Inc., January 2009.
- *Technical Drainage Report for the Rancho Drive Capacity Improvements - Rainbow Boulevard to Decatur Boulevard, and Gowan Outfall - Alexander Road Facilities*, prepared for City of Las Vegas, prepared by Stanley Consultants, April 2014.

3.2. FEMA Floodplain Information

The project site is located on Flood Insurance Rate Maps (FIRM) panel 2155F (Map Number 32003C2155F, revised November 16, 2011). The majority of the project site is outside of existing flood zones. The easternmost approximately 500 feet of the project is located within flood zone X.

A FIRM panel showing the limits of the project is included in this study in FEMA FIRM in Appendix A. Flood zones are defined by FEMA as follows:

- Zone X is a Moderate, Minimal Hazard Area subject to flooding from severe storm activity or local drainage problems.

3.3. Clark County Regional Flood Control District Facilities

The CCRFCD facilities analyzed in this preliminary design report are the Gowan Outfall – Alexander Road Facilities in Alexander Road from Rancho Drive to Decatur Boulevard (GOAL 0000). Other CCRFCD facilities within or adjacent to this project include the existing Gowan Outfall Facilities in Decatur Boulevard from Gowan Road to Alexander Road (GOOF 0427), the proposed Gowan Outfall Facilities downstream of the project in Alexander Road (GOOF 0375), and the proposed facilities upstream of the project including the Gowan Outfall Alexander Road Facilities in Rancho Drive (GOAL 0100 and GOAL 0111), the Gowan Outfall – Alexander Branch Facilities in West Alexander Road (GOA2 0000), the Gowan Outfall Alexander Road Facilities in Craig Road (GOAL 0168), and the Gowan Outfall Alexander Road Facilities along US 95 (GOAL 0247).

A map of the project facilities with respect to other MPU facilities in the area is included in the CCRFCD Facilities Map in Appendix A. This figure is reproduced from Figure F-19 of the CCRFCD MPU. An annotated facility inventory is also included in this study in CCRFCD Facilities Table in Appendix A.

The facilities in the project area and those being constructed with the project, their corresponding identification number (ID), and types and sizes are listed in Table 1. Due to the detailed hydrologic and hydraulic analysis performed for this report, the approximate sizes listed in the MPU have been reviewed and revised as necessary to convey project design flows. For comparison purposes, the table includes both MPU and recommended sizes.

Table 1 – CCRFCD Facilities

FACILITY	ID	Size and Type: Recommended	Size and Type: MPU	Location and construction status
Gowan Outfall – Alexander Road facilities	GOAL 0000	Dual 10' x 6' RCB	10' x 9' RCB	In Alexander Road from Decatur Blvd to 300 feet west of Tuffer Lane; future construction
		14' x 8' RCB	10' x 9' RCB	In Alexander Rd from west of Tuffer Lane to 250 feet east of Helen Avenue, and in Alexander Road from 250 feet east of Helen Avenue to Rancho Drive; future construction
		12' x 8' RCB	10' x 9' RCB	

The sizes and approximate lengths of facilities recommended to be constructed in Alexander Road are the following:

- 1865 lf of 12' x 8' RCB from near Rancho Drive to the east
- 2122 lf of 14' x 8' RCB from end of 12' x 8' RCB to the east
- 1022 lf of Dual 10' x 6' RCBs from end of 14' x 8' RCB to Decatur Boulevard

Near the location where the proposed facility changes from 12' x 8' RCB to 14' x 8' RCB, the existing roadway profile flattens. To maintain cover over the RCB, the slope of the facility is flattened as well, from 1.25% to 0.67%. This flatter slope, combined with incoming local offsite flows from cross streets, necessitates an increase in facility size to a 14' x 8' RCB. Farther east, the change from one 14' x 8' RCB to two parallel 10' x 6' RCB is required to resolve a sewer conflict located west of Decatur Boulevard. At the intersection of Alexander Road and Decatur Boulevard, a future connection to existing facilities is planned. The Rancho to Decatur facility will join with the existing 96-inch RCP in Decatur Boulevard (Gowan Outfall Facility GOOF 0427) and continue east in Alexander Road. However, this connection is not being designed at this time.

4. SURVEY AND EASEMENT INFORMATION

4.1. Survey Summary

Aerial mapping and topographic information at a contour interval of 1 foot was acquired for Alexander Road from Rancho Drive to Decatur Blvd. An extensive ground survey was also completed to gather horizontal and vertical data at key locations along the project corridor and in order to acquire invert elevations of existing storm drain and sanitary sewer facilities and to locate other utilities. Existing public land corners, street centerline monuments, and reference monuments have been located to provide for Horizontal Control Plans, alignment ties, and a Record of Survey.

4.2. Rights-of-Way and Easements

Right-of-way plans are not required for the project at this time. The proposed connection to the existing 36-inch CMP culvert crossing Rancho Drive near Alexander Road will be located in an existing drainage easement. No additional right-of-way or easements are currently anticipated for the project.

5. GEOTECHNICAL CONDITIONS AND RECOMMENDATIONS

The subsurface conditions for the storm drain facilities were evaluated by GeoTek during design of the Rancho Drive Capacity Improvement Project. That same report is being used for design of this project. The report is titled *Pavement and Geotechnical Evaluation Report, Rancho Drive – Pavement Rehabilitation, Storm Drain, and Sewer Line, Decatur Boulevard to Rainbow Boulevard, Alexander Road*

– *Storm Drain, Rancho Drive to Decatur Boulevard*, prepared for City of Las Vegas, May 31, 2013. The report describes subsurface conditions that include hard to very hard soil in some areas as well as loose and soft soils. The hard to very hard soils may require the contractor to utilize special construction methods for the handling and removal of the material. The loose and soft soils may prove to be unstable during trenching operations for the deep drainage facilities excavation and, thus, require the contractor to utilize shoring. Thin layers of caliche can be found on Alexander Road, but do not appear to be a major cause for concern due to their depth and lack of substantial thickness. Medium dense to dense and stiff soils would provide suitable support of the pipeline. Over-excavation is recommended for loose and firm soils. Geotechnical issues affecting construction of project improvements will be addressed in the project specifications.

The thickness of the existing pavement surface on Alexander Road was found to be 3 to 5 inches of asphalt pavement over 6 to 10 inches of aggregate base. Where existing pavement is being removed to accommodate the proposed storm drain improvements, the improvement plans will require the existing pavement section to be replaced to match existing.

6. UTILITY IMPACTS

The facilities proposed with the project affect existing utilities in the area. Affected utilities include sanitary sewer conflicts, water conflicts, and dry utility conflicts. To document utility conflicts and proposed resolutions, a Utility Conflict Matrix has been prepared for the 30% construction documents (Appendix D). The matrix lists the existing utility, the proposed feature that is in conflict and whether the existing utility can be protected-in-place, or concrete encased, or if it requires relocation.

A CNLV utility conflict permit is required for this project. Details about the utility conflict permit as well as other permits for this project are included in Appendix E.

6.1. Drop Inlets:

The majority of existing utilities in the Alexander Road alignment are within or near the sidewalk area. To minimize conflicts and relocations of these existing utilities, the proposed drop inlets for the areas of the project with existing curb and gutter are Clark County Type DM2 (Std Dwg 412.1) of the Uniform Standard Drawings Clark County Area (USDCCA). Type DM2 drop inlets feature a narrower width than other inlets to allow greater room for utilities beneath the sidewalk. For field areas, NDOT Type 2 inlets (Std Dwg R-4.2.1) with concrete apron (Std Dwg R-4.2.7) are proposed.

6.2. Water Conflicts:

Conflicts with water utilities are resolved in conformance with the Las Vegas Valley Water District Uniform Design and Construction Standards for Potable Water Systems, 3rd Edition 2010 (UDACS). The proposed improvement plans show a minimum of 10 feet of horizontal clearance between proposed storm drain facilities and adjacent parallel water facilities, which meets the requirements of UDACS Section 2.19. Asbestos concrete pipe (ACP) waterlines crossing trenches greater than 4 feet in width during construction are proposed to be replaced with ductile iron pipe (DIP) across the spanning section. Special instructions for the removal and disposal of ACP will be provided in the project special provisions. In most locations of the proposed vertical alignment of the storm drain facility, a minimum of 1.5 feet of clearance is maintained with existing waterlines. Concrete encasements will be provided per Design and Construction Standards for Wastewater Collection Systems (DCSWCS) Standard Drawing SD-11 for locations that do not meet the minimum vertical clearance requirements. Major water-storm drain conflicts include the following (conflict number corresponds to the conflict listed in the Utility Conflict Matrix):

- CONFLICT NO. 001 (Station 48+50): Existing 8-inch PVC water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 002 (Station 51+90): Existing 8-inch PVC water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 003 (Station 53+40): Existing 6-inch PVC water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 006 (Station 62+40): Existing 6-inch ACP water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 007 (Station 62+70 RT 20'): Existing 6-inch ACP water line is in conflict with proposed RCP between south inlet and RCB. It is proposed to relocate to minimum clearance below RCP.
- CONFLICT NO. 008 (Station 69+15 RT 20'): Existing 8-inch PVC water line is in conflict with proposed RCP between south inlet and RCB. It is proposed to relocate to minimum clearance below RCP.
- CONFLICT NO. 011 (Station 72+35): Existing 8-inch PVC water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.

- CONFLICT NO. 018 (Station 82+45 RT 20'): Existing 8-inch PVC water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 020 (Station 88+75): Existing 8-inch PVC water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 025 (Station 96+60): Existing 16-inch water line is in conflict with proposed RCB. It is proposed to relocate to minimum clearance below RCB.

6.3. Sanitary Sewer Conflicts:

Conflicts with sanitary sewer facilities are resolved in conformance with the Clark County Water Reclamation District Design and Construction Standards for Wastewater Collection Systems, 3rd Edition 2009 (DCSWCS). In most locations, the proposed storm drain meets the minimum required one foot vertical clearance with existing sanitary sewer lines. In locations that don't meet the minimum vertical clearance requirements, concrete encasement has been provided (DCSWCS SD-11). Major sanitary sewer-storm drain conflicts include the following:

- CONFLICT NO. 012 (Station 75+20 RT 10'): Conflict with 18-inch PVC sewer line and RCB. It is proposed that sanitary sewer stub be removed.
- CONFLICT NO. 015 (Station 81+65 LT 30'): Conflict with 18-inch PVC sewer line and RCP between north inlet and RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 016 (Station 82+10): Conflict with 10-inch PVC sewer line and RCB as well as RCP between south inlet and RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 021 (Station 89+95): Conflict with 8-inch PVC sewer line and RCB. It is proposed that sanitary sewer stub be removed.
- CONFLICT NO. 022 (Station 93+20): Conflict with 8-inch PVC sewer line and RCB. It is proposed to relocate to minimum clearance below RCB.
- CONFLICT NO. 023 (Station 93+75): Conflict with 27-inch PVC sewer line and RCB. It is proposed to relocate to minimum clearance below RCB.

6.4. Dry Utility Conflicts:

Design adjustments were made to avoid conflicts with gas, power, telephone, cable and other dry utilities. Because the existing dry utilities are located either within the existing sidewalk or outside the existing roadway, most of the dry utility conflicts with proposed drainage facilities occur near the proposed curb line:

- CONFLICT NO. 004 (Station 58+20): Conflict with existing underground telephone line and power line with RCB. It is proposed that they be relocated by owners.
- CONFLICT NO. 005 (Station 61+20): Conflict with existing underground cable TV line and RCB. It is proposed that it be protected in place.
- CONFLICT NO. 009 (Station 69+35): Conflict with existing underground power line and cable TV line with RCB. It is proposed that they be relocated by owners.
- CONFLICT NO. 010 (Station 72+25): Conflict with existing underground telephone line and RCB. It is proposed that it be relocated by owner.
- CONFLICT NO. 013 (Station 76+05): Conflict with existing 2-inch gas line and RCB. It is proposed that it be relocated by owner.
- CONFLICT NO. 014 (Station 79+05): Conflict with existing 2-inch gas line and RCB. It is proposed that it be relocated by owner.
- CONFLICT NO. 017 (Station 82+45): Conflict with existing 2'-4" underground telephone line and RCB. It is proposed that it be relocated by owner.
- CONFLICT NO. 019 (Station 82+45): Conflict with existing underground telephone line and RCB. It is proposed that it be relocated by owner.
- CONFLICT NO. 024 (Station 95+55): Conflict with existing 2-inch gas line and RCB. It is proposed that it be relocated by owner.

7. HYDROLOGY

The Gowan Outfall – Alexander Road Facilities is a CCRFCD Master Plan facility and was designed to convey the 100-year storm event (developed condition flows). The offsite hydrology models for the project are based on the MPU Gowan Watershed hydrology models, with the exception of MPU subbasin

PT5B6-C. This subbasin is adjacent to the site and was subdivided into smaller subbasins to determine design flows at cross streets with Alexander Road. Flow from each of these smaller local offsite subbasins was then combined with major offsite flows in Alexander Road.

7.1. Criteria and Modeling

The offsite flows impacting the project were determined in accordance with CCRFCD's *Hydrologic Criteria and Drainage Design Manual* (HCDDM). The *HEC-1 Flood Hydrograph Computer Model* was used to estimate runoff. This program was developed by the U.S. Army Corps of Engineers Hydrologic Engineering Center in the late 1970's and adopted in 1988 by the CCRFCD's HCDDM for rainfall and runoff predictions. The model is used to simulate the surface runoff response of a watershed to a design rainfall event by representing the watershed as an interconnected system of hydrologic and hydraulic components. Each component models an aspect of the rainfall-runoff process within a portion of the whole watershed. This basin portion is referred to as a subbasin. The runoff hydrographs of each subbasin are then combined and a final discharge hydrograph is obtained.

HEC-1 parameters are those drainage shed attributes that are input into the HEC-1 model in order to estimate peak runoff values. The parameters include the design storm, subbasin delineation, hydrologic abstractions lag time and flow routing. These parameters were either based on the referenced studies or determined as described below.

Subbasin Delineations: Subbasin areas were either referenced from the 2008 MPU or from subbasins created using AutoCAD and ArcMap. These created offsite subbasins are included in the Offsite Subbasin Map in Appendix A.

Design Storm: The design storm event for the project is the 6-hour, 100-year frequency rainfall event. The rainfall pattern is based on Table 503 of HCDDM, 6-hour Design Storm Distributions. For convenience, the analysis performed for this study is combined in a single HEC-1 model. In the developed condition, the area conveyed to the Alexander Road site is less than 8 square miles, therefore SDN3 distribution was used. The design storm events used for the analysis meet the criteria specified in the HCDDM.

The depth-duration-frequency data for the 100-year storm event were referenced from the MPU models.

Depth-area reduction factors (DARF; Table 502 of HCDDM) were applied to the point rainfall depths based on the tributary area of the concentration point as specified in HCDDM. The DARFs for the 100-year event were referenced from the MPU.

Curve Number: Hydrologic Abstraction is the reduction of total rainfall to effective rainfall through runoff interception, infiltration, surface storage, evaporation, and/or evapotranspiration. These factors are influenced by surface cover and soil characteristics and input into the model as a "Curve Number" as defined in the *HCDDM*. Most of the curve numbers were referenced from the MPU. With the aid of data from the MPU and soil type shapefiles that were imported into a map of the project site in ArcMap, curve numbers were found for each of the smaller subbasins created for the project area. A curve number calculation matrix is included in Appendix A.

Lag Time: Lag time is described as the time between the center of mass of rainfall excess and the time of peak discharge from a basin. The time of concentration is defined as the time required for runoff to flow from the most hydraulically distant point of the subbasin to the outlet of the subbasin. Lag times for project subbasins have been calculated using *HCDDM* Standard Form 4, included in Appendix A.

Flow Routing: The majority of flow routing used in the HEC-1 model is referenced from the MPU. New routing lengths and parameters were determined using AutoCAD.

Storm Centering: the applicability of storm centering to the project area was analyzed. Without tributary area from upstream of the Gowan Detention Basin, the watershed area of the project is approximately 5 square miles. Adding additional area upstream of the Gowan Detention Basin was investigated, however flow above the capacity of the Gowan outfall pipe continues east in Gowan Road and doesn't flow north to the project area. Therefore, modeling additional watershed area upstream of the basin doesn't increase the peak flow at Alexander Road/Decatur Boulevard; instead the peak flow is reduced due to the increasing Depth Area Reduction Factor (DARF) and/or changing storm distribution (SDN3 to SDN4 or SDN5).

7.2. Offsite Ultimate Conditions

Developed condition analysis assumes full build-out of all CCRFCD facilities and properties located upstream of the site are fully developed in accordance with current zoning requirements. Developed conditions are based on the MPU. The ultimate condition HEC-1 models are included in Appendix A.

The MPU includes a subbasin, PT5B6-C, adjacent to the project alignment. This subbasin is roughly bounded by Alexander Road, Rancho Drive, Gowan Road, and Decatur Boulevard. Further analysis of this subbasin reveals that a portion of the area drains to Decatur Boulevard, while another portion drains to Alexander Road. In order to determine design flows in Alexander Road, the subbasin has been divided into seven smaller subbasins. One subbasin (5B6-CG) defines the area tributary to Decatur Boulevard, the other six subbasins are subdivided to determine design flows at cross streets with Alexander Road. A

summary of peak 100-year flows for each subbasin is included in Table 2, below. Combined flow rates with the MPU facility in Alexander Road are shown in Table 3. Although project design on the downstream end is stopping short of Decatur Boulevard, a comparison of flows at the intersection of Alexander Road/Decatur Boulevard is also included. The MPU flow is slightly higher and should be used for future design of the confluence at this intersection.

Table 2 – Local Offsite Subbasin Flow Summary

HEC-1 SUBBASIN	AREA, mi ²	Q100, CFS
5B6-CA	0.022	26
5B6-CB	0.042	45
5B6-CC	0.044	37
5B6-CD	0.030	21
5B6-CE	0.029	20
5B6-CF	0.030	23
5B6-CG	0.180	161

Table 3 – MPU Facility Flow Summary

LOCATION	HEC-1 NODE	AREA, mi ²	2008 MPU Q100, CFS	2014 STANLEY CONSULTANTS Q100, CFS
ALEXANDER/RANCHO	CPT5A2-C	3.23	1461	1461
ALEXANDER/LEON	C5B6-CA	3.25	n/a	1476
ALEXANDER/HELEN	C5B6-CB	3.29	n/a	1503
ALEXANDER/BRADLEY	C5B6-CC	3.34	n/a	1525
ALEXANDER/THOM	CR5B6-CE	3.40	n/a	1550
ALEXANDER/TUFFER	C5B6-CF	3.43	n/a	1563
ALEXANDER/DECATUR	CCPT5B6C / CPT5B6-C	4.99	2277	2269

Local areas on the east and west sides of the streets crossing Alexander Road are discussed in the storm drain collection section of this study. Drop inlets along Alexander Road were sized for the offsite flow rates shown in the above tables and are described in Section 8, Storm Drain Collection Facility Design.

8. STORM DRAIN COLLECTION FACILITY DESIGN

Drop inlets were designed for flow from subbasins 5B6-CA through 5B6-CF (See Table 2). These subbasins drain to Alexander Road. Subbasin 5B6-CG drains to Decatur Boulevard. Existing facilities in this reach of Decatur Boulevard are part of the MPU GOOF 0427 facility and were not studied as part of this project.

8.1. Determining Surface Runoff

In general, local offsite flows drain to the project from the south side of Alexander Road. To determine how the incoming flows are distributed in the street cross section, flow rates approaching Alexander Road at major cross streets were determined from Table 2 and a normal depth analysis of the roadway section was performed using Bentley Flowmaster V8i. This analysis was used to determine flow rates on either side of the cross street. The analysis consisted of analyzing the runoff height to determine if it exceeds the roadway crest height. When the runoff exceeds the crest height, surface runoff divides itself between both sides of the road. When the crest height exceeds the height of the runoff, flow was assumed to be greater on the side of the road where the runoff started. The Flowmaster inputs and results from these runs are included in the Road Sections Table in Appendix B. Two additional columns created to give crest height and which side of the street has more of the runoff were added to this spreadsheet as well. Cross sections of the road segments are included in the road profiles of Appendix B with the sections going from left to right either South to North or West to East. Roadway surface flow spread calculations used a Manning's "n" value of 0.016 for the asphalt, 0.015 for the concrete of the curbs and sidewalks, and 0.025 for the sections of earth.

8.2. Inlet and Pipe Location and Design

Inlet capture for inlets and normal depth calculation for swales were performed using FlowMaster. Inlet interception in FlowMaster is based on FHWA HEC-22. From the information obtained from the road section runoff, it was possible to determine the required inlet size. Where a percentage of the flow bypasses the inlet, the design of the downstream inlet added that runoff flow to its calculation. The proposed drop inlets for the project are Clark County Type DM2 (Std Dwg 412.1) of the Uniform Standard Drawings Clark County Area (USDCCA). Type DM2 drop inlets feature a narrower width than other inlets to allow greater room for utilities beneath the sidewalk. For field areas, NDOT Type 2 inlets (Std Dwg R-4.2.1) with concrete apron (Std Dwg R-4.2.7) are proposed. A table of inlet types and locations are included in Table 4.

Table 4 - Inlet Types and Locations

Subbasin Contributing Flow	Location	Inlet Type (Flowmaster)	Uniform Standard Drawing
Existing 30" CMP	South side of Alexander near Rancho	36" RCP	n/a

in Rancho Drive			
5B6-CA	North side of Alexander near Leon	36" RCP stub	n/a
5B6-CA	South side of Alexander near Leon	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CA	West side of Leon near Alexander	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CA	East side of Leon near Alexander	Ditch Inlet In Sag	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7
5B6-CB	North side of Alexander near Helen	Ditch Inlet In Sag	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7
5B6-CB	West side of Helen near Alexander	Ditch Inlet In Sag	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7
5B6-CB	East side of Helen near Alexander	Ditch Inlet In Sag	Custom Inlet based off NDOT Type 2
5B6-CC	North side of Alexander near Bradley	Ditch Inlet In Sag	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7
5B6-CC	West side of Bradley near Alexander	Ditch Inlet In Sag	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7
5B6-CC	East side of Bradley near Alexander	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CD	South side of Alexander near Thom	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CD	North side of Alexander near Thom	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CE	West side of Thom near Alexander	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CE	East side of Thom near Alexander	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CF	North side of Alexander near Tuffer	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CF	South side of Alexander near Tuffer	Combination Inlet On Grade	Type "C-D" Modified Drop Inlet
5B6-CG	North side of Alexander near Decatur	Curb Inlet On Grade	Existing Drop Inlet Type "A"
5B6-CG	South side of Alexander near Decatur	Curb Inlet On Grade	Existing Drop Inlet Type "A"

The design of inlets in Flowmaster was performed by selecting either a combination inlet on grade or ditch inlet in sag. The type was determined by curb and gutter availability. Along Alexander, there are many locations without curb and gutter. This condition made it necessary to use ditch inlets in sags (NDOT Type 2). When a ditch inlet in sag was used in the design, a side slope of 6:1 was used provide roadside safety. Where curb and gutter is existing, combination inlets on grade (Clark County Type DM2) are used to collect flow. Both the ditch inlets and combination inlets are sized with a 50 percent clogging factor to provide a factor of safety against clogging. Calculations were also performed for the two existing inlets in Alexander Road near Decatur Boulevard. A summary of the inputs and outputs is included in the Inlets Table in Appendix B. This table also includes notes and a column detailing needed apron size for the ditch inlets on sag.

Flow collected by the drop inlets will be discharged to the proposed MPU facility in Alexander Road by RCP laterals. These pipes were preliminarily sized in FlowMaster using the intercepted flow from the corresponding drop inlet. A summary of pipe size and placement location is included in the Pipe Table in Appendix B.

9. STORM DRAIN CONVEYANCE FACILITY DESIGN

9.1. Storm drain Criteria and Methods

The project facilities were designed to accommodate the major storm event (100-year design storm). They were designed in accordance with criteria listed in CCRFCD's HCDDM. These criteria include the following:

- Maintain the hydraulic grade line (HGL) at 1 ft below the final grade above the storm drain at all locations; utilize a locking manhole lids for HGL less than 1.5 ft below the final grade.
- Limit the maximum velocity in the system to 25 ft/sec and the minimum velocity in the system to 3 ft/sec at half or full conduit flow conditions (minimum 0.3 percent slope of the storm drain).
- Increase conduit cross section area in the downstream direction.
- Locate manholes a maximum of 400 ft apart otherwise and outside of the normal vehicle wheel path where possible.
- Provide minimum 18-inch diameter RCP for new storm drain laterals.
- Manning's roughness used for design is 0.015.

The Water Surface Pressure Gradient Hydraulic Model (WSPG) 2010 software, updated by XP Software, was used to estimate hydraulic losses, including friction, expansion, construction, bend, and junction losses, and to calculate the energy grade line (EGL) and HGL for the storm drain systems.

9.2. Gowan Outfall – Alexander Road Facilities Design Summary

The Gowan Outfall – Alexander Road Facilities were analyzed from the southern intersection of Alexander Road and Rancho Drive to the intersection of Alexander Road and Decatur Boulevard. The flow rates calculated by this study for the developed condition were used to design the project facilities because they provide additional flow combination points for a more accurate design.

The Rancho Drive Capacity Improvements Project, Stanley Consultants, April 2014, recommended a 12' x 8' RCB facility in Alexander Road from Rancho Drive to Decatur Boulevard with dual 9' x 6' RCB at the downstream sewer crossing. The original analysis assumed one design flow from Rancho Drive to Decatur Boulevard without flow increases, or junctions. Based on the refined hydrology presented in Section 7, additional flow is being added into the facility at cross streets. The inclusion of these elements into the WSPG model shows that a slightly larger facility is required to convey the 100-year storm and maintain the criteria listed in Section 9.1. The proposed facility includes 1865 lf of 12' x 8' RCB going east from near Rancho Drive to a 20 lf transition to a 14' x 8' RCB. The 14' x 8' RCB then continues east for approximately 2122 lf to a 20 lf transition into two dual 10' x 6' RCBs. The dual boxes continue east for 1066 lf to the end of the project at Decatur Boulevard. WSPG analysis results are included in Appendix C.

10. ESTIMATED PROJECT CONSTRUCTION COSTS

Costs for the project were estimated to be approximately \$12.1 million. The 30% Construction Cost Estimate is included in Appendix F.

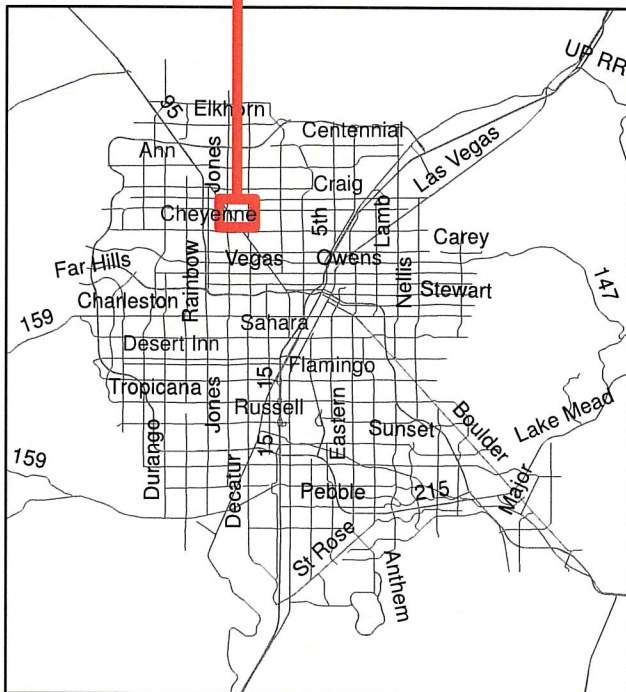
11. CONCLUSIONS AND RECOMMENDATIONS

1. Methodology in this report is in compliance with Clark County Regional Flood Control District (CCRFCD) criteria.
2. The project site has an area within FEMA Flood Zone X. Zone X is a moderate, minimal hazard area subject to flooding from severe storm activity or local drainage problems.
3. The proposed alignment and function of the Gowan Outfall – Alexander Road Facilities are in conformance with the CCRFCD Las Vegas Flood Control Master Plan as outlined in the 2008 MPU.

4. The proposed improvements will intercept flows currently impacting Alexander Drive with proposed Clark County Type DM2 drop inlets where curb and gutter exists, and NDOT Type 2 drop inlets with concrete aprons in other locations. Construction of the proposed facility will reduce surface flows in Alexander Road so that it will meet CCRFCD street flow criteria as outlined in the HCDDM.
5. The recommended facilities for the Gowan Outfall – Alexander Road Facilities consist of 1865 lf of 12' X 8' RCB going east until a 20 lf transition to a 14' X 8' RCB. The 14' X 8' RCB then continues east for roughly 2122 lf until a 20 lf transition into two Dual 10' X 6' RCBs. The dual boxes continue east for 1066 lf until the end of the project.
6. Conflicts between the proposed storm drain systems and existing utilities are identified; several were potholed to identify vertical conflicts and to incorporate into design to minimize conflicts. Additional potholes will be required as the design progresses.

12. REFERENCES

- Clark County Regional Flood Control District. (August 12th, 1999). *Hydrologic Criteria and Drainage Design Manual (HCDDM)*, . Las Vegas, NV: Clark County Regional Flood Control District.
- Federal Highway Administration's (FHWA) *Urban Drainage Design Manual Hydraulic Engineering Circular No. 22, Third Edition (HEC-22)*, September 2009.
- PBS&J, The Louis Berger Group. (September 2008). *Las Vegas Valley Flood Control Master Plan Update (MPU)*. Las Vegas, NV.
- Stanley Consultants. (April 2014) *Technical Drainage Report for the Rancho Drive Capacity Improvements - Rainbow Boulevard to Decatur Boulevard, and Gowan Outfall - Alexander Road Facilities*. Las Vegas, NV.
- Stanley Consultants. (December 2012). *Preliminary Design Report for the Gowan Outfall - Alexander Road Facilities*. Las Vegas, NV: Stanley Consultants.
- Standards Manual for Drainage Design and Floodplain Management in Tucson, Arizona, December, 1989, Revised July, 1998.
- U.S Army Corps of Engineers. (June 1998). HEC-1 Flood Hydrograph Package. United States Army.



Gowan Outfall - Alexander Road Flood Control Facility

Figure 1 - Vicinity Map



Stanley Consultants INC.

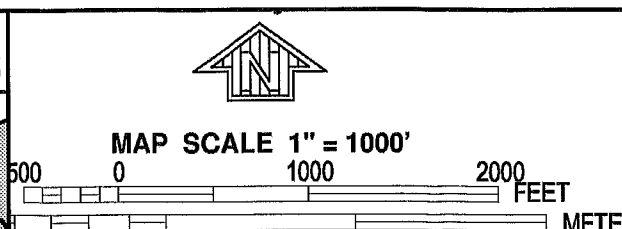
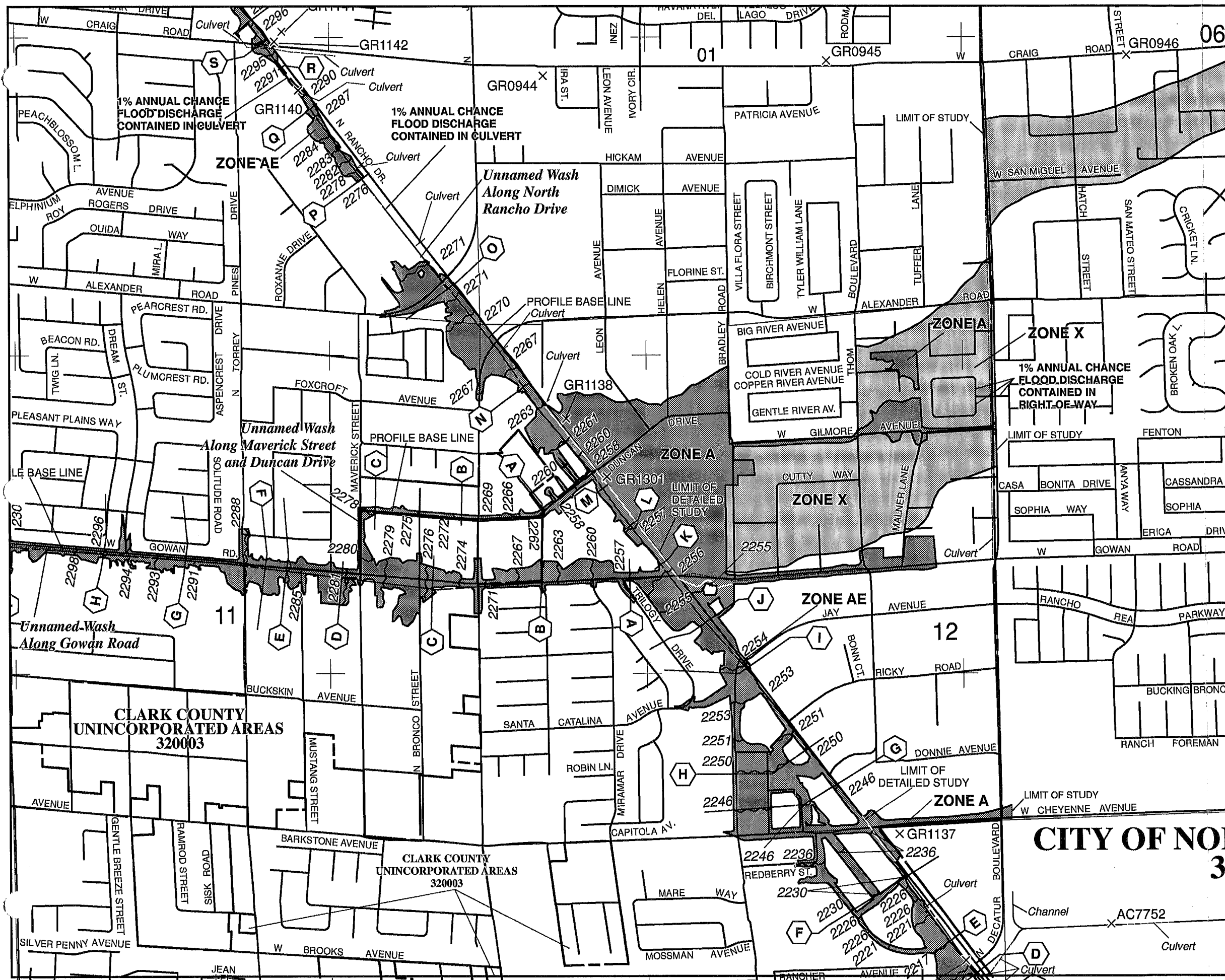
5820 S. Eastern Ave., Suite 200
Las Vegas, NV 89119
(702) 369-9396

SCI# 25450

Appendix A

HYDROLOGY

- FEMA FIRM MAP
- CCRFCD FACILITIES MAP
- CCRFCD FACILITIES TABLE
- OFFSITE SUB-BASIN MAP
- STANDARD FORM 4
- CN CALCULATIONS
- HEC-1 ANALYSIS



PANEL 2155F

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY,
NEVADA
AND INCORPORATED AREAS

PANEL 2155 OF 4090
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

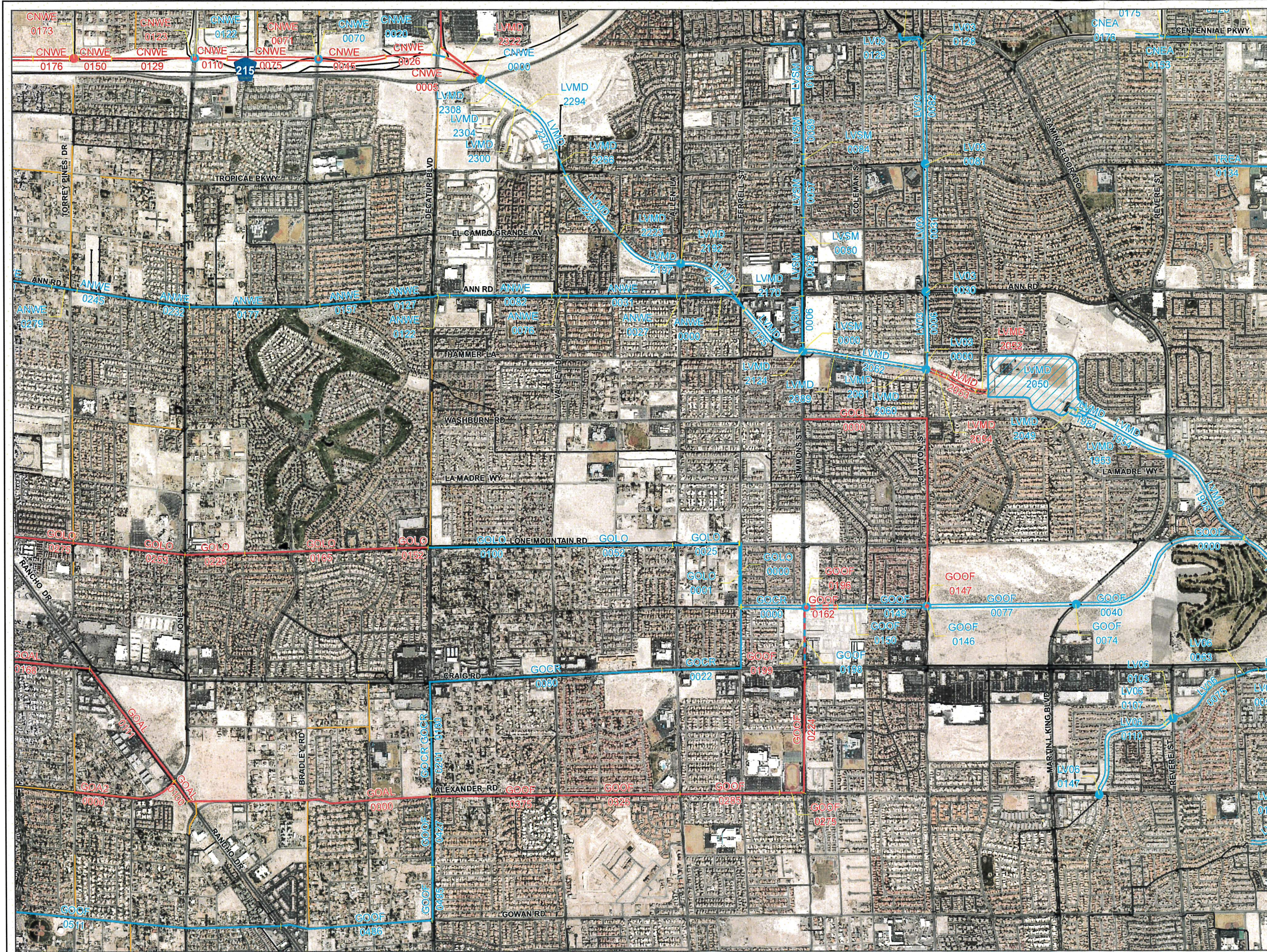
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CLARK COUNTY	320003	2155	F
LAS VEGAS, CITY OF	325276	2155	F
NORTH LAS VEGAS, CITY OF	320007	2155	F

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

 **MAP NUMBER**
32003C2155F
MAP REVISED
NOVEMBER 16, 2011

Federal Emergency Management Agency

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



2008
LAS VEGAS VALLEY
FLOOD CONTROL
MASTER PLAN UPDATE

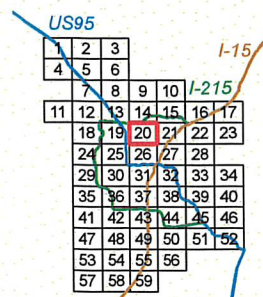
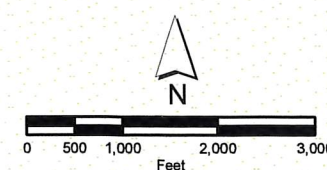
**FIGURE F-20
FLOOD CONTROL FACILITIES**

LEGEND

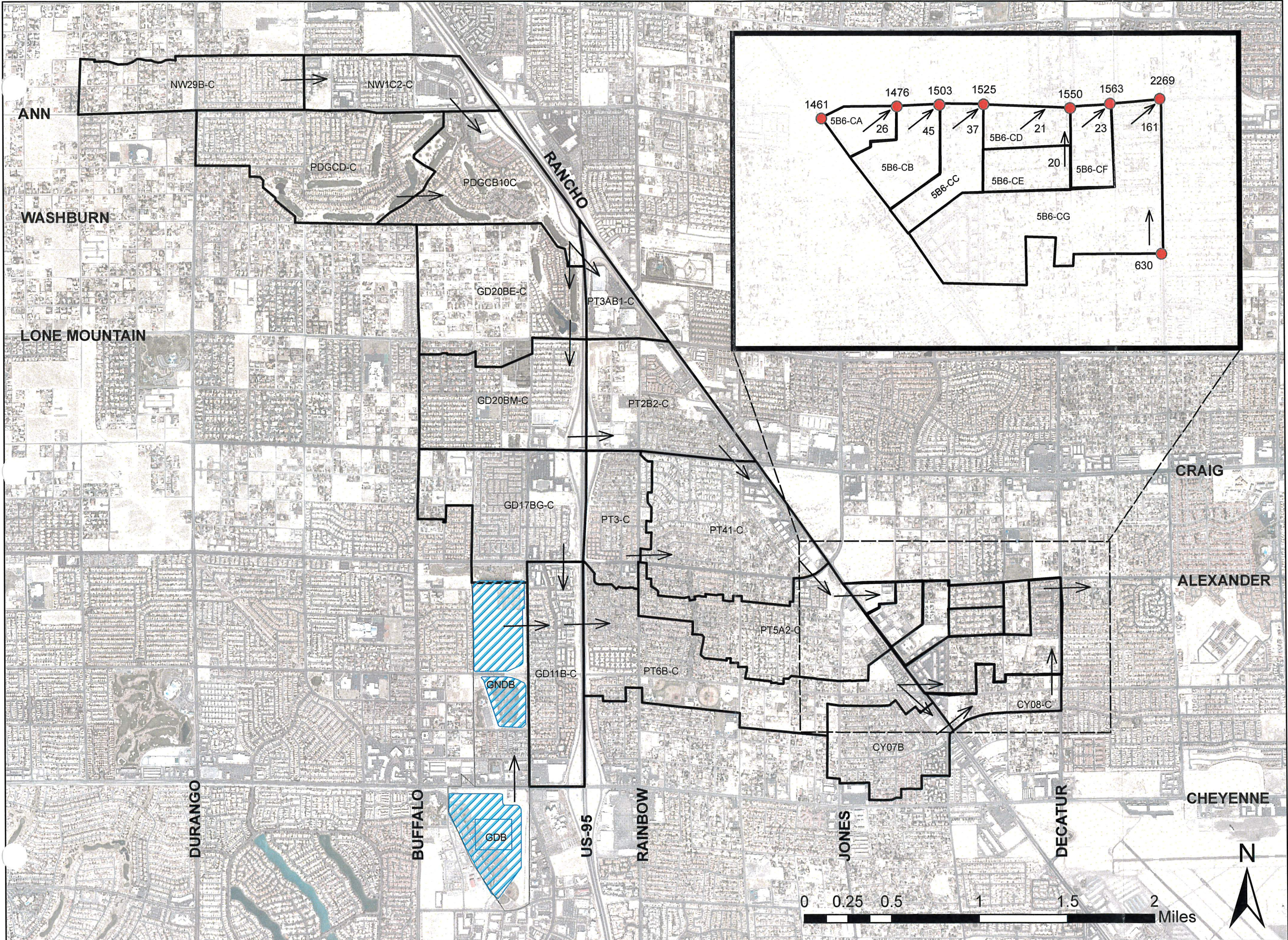
- Ultimate Development Boundary
- Existing Facilities
- Category A Proposed Facilities
- Category B Proposed Facilities
- Local Existing Facilities
- Local Proposed Facilities
- Detention Basin
- Culvert or Bridge Crossing
- Stormdrain
- Lined Channel
- Unlined Channel
- Levee/Dike
- Natural Wash/Floodway
- ID-Mile Separator

Remove & Replace/Parallel Facilities

- | Category A | Category B |
|------------|------------|
| Channel | Channel |
| Stormdrain | Stormdrain |
| Crossing | Crossing |



ID / River Mile	Status	Facility Description	Length (ft.)	Flow (cfs)	HEC-1 Node	HEC-1 Model	Tributary Area (sq.mi.)	Channel Slope (%) **
ANWE		ANN ROAD CHANNEL WEST						
0000	E	12' X 12' RCB	1400	2214	CNN043-C	CWEST3	3.41	0.66
0027	E	14' X 9' RCB	203	2214	CNN043-C	CWEST3	3.41	0.77
0031	E	12' X 10' RCB	2362	2214	CNN043-C	CWEST3	3.41	1.40
0076	E	16' X 8' RCB	350	2214	CNN043-C	CWEST3	3.41	0.93
0082	E	12' X 11' RCB	2217	1947	CNW3B2-C	CWEST3	2.99	0.71
0122	E	12' X 10' RCB	260	1947	CNW3B2-C	CWEST3	2.99	0.71
0127	E	10' X 8' RCB	1450	1947	CNW3B2-C	CWEST3	2.99	2.55
0157	E	10' X 9' RCB	1112	1257	CNW2D2-C	CWEST3	1.95	1.13
0177	E	12' X 10' RCB	2797	1257	CNW2D2-C	CWEST3	1.95	0.39
0232	E	12' X 8' RCB	714	1257	CNW2D2-C	CWEST3	1.95	0.43
0245	E	10' X 9' RCB	1721	993	CNW2D1-C	WEST3	6.84	0.80
0279	E	10' X 9' RCB	553	743	2CNW2B5C	WEST3	6.37	0.80
0290	E	8' X 8' RCB	2050	743	2CNW2B5C	WEST3	6.37	0.70
CNEA		CENTENNIAL PKWY CHANNEL EAST						
0123	E	14' X 6' RCB	1585	1457	CNN093-C	WEST3	1.67	0.92
0153	E	14' X 6' RCB	1125	1457	CNN093-C	WEST3	1.67	1.34
0175	E	15' X 6' RCB	125	1174	CNN078-C	WEST3	1.35	5.66
0176	E	Conc Chnl 15'W 6.5'D 0:1 SS	540	1174	CNN078-C	WEST3	1.35	0.70
CNWE		CENTENNIAL PKWY CHANNEL WEST						
0000	E	2: 27' X 10' RCBC @ Beltway	235	4465	CNW3D3-C	WEST3	6.41	1.51
0005	P2	2: 27' X 10' RCB	764	4465	CNW3D3-C	WEST3	6.41	1.10
0020	E	2: 27' X 10' RCBC @ Decatur	310	4465	CNW3D3-C	WEST3	6.41	2.58
0026	P2	2: 27' X 10' RCB	1006	4465	CNW3D3-C	WEST3	6.41	0.59
0045	P2	Conc Chnl 56'W 10'D 0:1 SS	1404	4465	CNW3D3-C	WEST3	6.41	0.59
0070	E	27' X 10' RCBC @ Bradley	155	2233 ^A	CNW3D3-C ^A	WEST3	6.41	0.40
0071	P2	Add 1: 27' X 10' RCBC @ Bradley	155	2233 ^A	CNW3D3-C ^A	WEST3	6.41	0.40
0075	P2	Conc Chnl 56'W 10'D 0:1 SS	1915	4465	CNW3D3-C	WEST3	6.41	0.40
0110	P2	2: 27' X 10' RCB	650	4382	2CW3B4-C	WEST3	6.15	0.40
0122	E	27' X 10' RCBC @ Jones	122	2191 ^A	2CW3B4-C ^A	WEST3	6.15	0.40
0123	P2	Add 1: 27' X 10' RCBC @ Jones	122	2191 ^A	2CW3B4-C ^A	WEST3	6.15	0.40
0129	P2	2: 27' X 10' RCB	1695	4382	2CW3B4-C	WEST3	6.15	0.40
0150	P2	Conc Chnl 42'W 10'D 0:1 SS	720	4233	CNW3B3-C	WEST3	5.64	0.40
0173	P2	42' X 10' RCBC @ Torrey Pines	190	4233	CNW3B3-C	WEST3	5.64	0.40
0176	P2	Conc Chnl 32'W 12'D 0:1 SS	795	4233	CNW3B3-C	WEST3	5.64	0.40
0189	P2	Conc Chnl 32'W 10'D 0:1 SS	1845	4067	CNW2D4-C	WEST3	5.15	0.54
GOA2		GOWAN OUTFALL - ALEXANDER BRANCH						
0000	P1	8' X 5' RCB	2281	523	CPT41-C	ALLGOW3	0.61	0.90
GOAL		GOWAN OUTFALL - ALEXANDER ROAD FACILITIES						
0000	P1	10' X 9' RCB	5280	1461	CPT5A2-C	ALLGOW3	3.23	1.00
0100	P1	10' X 8' RCB	540	1297	CCPT41-C	ALLGOW3	2.89	1.00
0111	P1	10' X 8' RCB	3000	880	CPT2B2	ALLGOW3	2.28	0.83
0168	P1	10' X 8' RCB	4200	880	CPT2B2	ALLGOW3	2.28	0.50
GOCL		GOWAN OUTFALL - CLAYTON BRANCH						
0000	P1	9' X 8' RCB	6785	814	CPT2B-1	ALLGOW3	1.11	0.61
GOCR		GOWAN OUTFALL - CRAIG ROAD						
0000	E	Conc Chnl 20'W 6'D 2:1 SS	1380	3101	CPT3D-3	ALLGOW3	5.78	1.30
0022	E	2: 8' X 8' RCB	3000	1120	CPT4C-2	ALLGOW3	1.75	0.50
0080	E	120" RCP	5850	995	CPT4C-1	ALLGOW3	1.50	0.50
0180	E	114" RCP	350	238	PT4B3-C	ALLGOW3	0.28	0.30
0201	E	96" RCP	1090	238	PT4B3-C	ALLGOW3	0.28	0.35
GOLO		GOWAN OUTFALL - LONE MTN. ROAD BRANCH						
0000	E	72" RCP	1370	308 ^A	CPT2AD-1 ^A	ALLGOW3	3.28	0.53
0001	E	13' X 8' RCB	1370	1433 ^A	CPT2AD-1 ^A	ALLGOW3	3.28	0.45
0025	E	16' X 8' RCB	1464	1741	CPT2AD-1	ALLGOW3	3.28	0.39
0052	E	16' X 8' RCB	2564	1741	CPT2AD-1	ALLGOW3	3.28	0.42
0100	E	16' X 8' RCB	2732	1605	C2AC2-C	ALLGOW3	2.96	0.37
0152	P1	10' X 10' RCB	700	1605	C2AC2-C	ALLGOW3	2.96	0.71
0165	P1	10' X 8' RCB	3300	1415	CPT2AB2	ALLGOW3	2.59	1.21
0228	P1	10' X 8' RCB	1300	1244	C2AB1C	ALLGOW3	2.31	1.00
0253	P1	10' X 6' RCB	1200	986	CPT3AC1	ALLGOW3	2.10	1.25
GOLO		GOWAN OUTFALL - LONE MTN. ROAD BRANCH						
0275	P1	8' X 6' RCB	3000	590	CPT3AA2	ALLGOW3	1.16	0.77
GOOF		GOWAN OUTFALL FACILITIES						
0000	E	Conc Chnl 20'W 7'D 2:1 SS	2500	5233	CPT-2B-3	GW5SC	14.66	1.25
0040	E	Conc Chnl 20'W 7'D 2:1 SS	1900	5058	CCPT2C1*	GW4SC	11.84	0.60
0074	E	2: 16' X 7' RCBC @ Camino Al Norte	131	5058	CCPT2C1*	GW4SC	11.84	1.30
0077	E	Conc Chnl 20'W 7'D 2:1 SS	3157	5058	CCPT2C1*	GW4SC	11.84	1.40
0146	E	3: 12' X 5' RCBC @ Clayton	150	4014 ^A	CCPT2C1* ^A	GW4SC	11.84	1.33
0147	P1	Add 1: 12' X 7' RCBC @ Clayton	150	1044 ^A	CCPT2C1* ^A	GW4SC	11.84	1.33
0149	E	Conc Chnl 20'W 7'D 2:1 SS	1228	5058	CCPT2C1	GW4SC	11.84	1.13
0150	E	Conc Chnl 20'W 7'D 2:1 SS	612	4772	CCPT3D-3	GW4SC	10.86	1.13
0161	E	Conc Chnl 20'W 7'D 2:1 SS (Replace w/ GOOF0162)	625	4772	CCPT3D-3	GW4SC	10.86	0.90
0162	P3	Confluence Structure (Replaces GOOF0161)	625	4772	CCPT3D-3	GW4SC	10.86	0.90
0196	P3	37.66' X 5.66' Bridge @ Simmons (Replaces GOOF0197)	120	3101	CPT3D-3	ALLGOW3	5.78	0.90
0197	E	3: 12' X 5' RCBC @ Simmons (Replace w/ GOOF0196)	120	3101	CPT3D-3	ALLGOW3	5.78	0.90
0198	E	14' X 6' RCB	1344	1164 ^A	CPT4C-3 ^A	GW3SC	5.85	0.41
0199	P3	Add 1: 24' X 6' RCB	1344	1581 ^A	CPT4C-3 ^A	GW3SC	5.85	0.40
0224	P3	1: 20' X 6' RCB and 1: 14' X 6' RCB	2700	2745	CPT4C-3	GW3SC	5.85	0.40
0275	P3	1: 16' X 8' RCB and 1: 14' X 6' RCB	515	2582	CPT5C-3	GW3SC	5.59	0.40
0285	P1	2: 14' X 8' RCB	2650	2582	CPT5C-3	GW3SC	5.59	0.45
0325	P1	2: 14' X 8' RCB	2650	2458	CPT5C-2	GW3SC	5.36	0.37
0375	P1	2: 12' X 8' RCB	2700	2375	CPT5C-1	GW3SC	5.17	0.56
0427	E	96" RCP	1510	630	DGOW2A	GW3SC	1.38	0.47
0485	E	90" RCP	1160	630	DGOW2A	GW3SC	1.38	0.47
0486	E	8' X 5' RCB	3300	630	DGOW2A	GW3SC	1.38	0.60
0511	E	8' X 5' RCB	8390	699	CPT6B-C	GW3SC	1.08	0.50
LV03		CLAYTON STREET CHANNEL						
0000	E	33' X 16' RCBC @ Hammer	400	1044	CNN057-C	WEST3	1.22	0.42
0006	E	Conc Chnl 9'W 9.4'D 1.5:1 SS	1300	1044	CNN057-C	WEST3	1.22	0.42
0030	E	2: 9' X 7' RCBC @ Ann	120	1044	CNN057-C	WEST3	1.22	0.42
0031	E	Conc Chnl 8'W 8.1'D 1.5:1 SS	2600	757	CNN054-C	WEST3	0.81	0.40
0081	E	2: 10' X 7' RCBC @ Tropical	100	757	CNN054-C	WEST3	0.81	0.42
0082	E	Conc Chnl 7'W 7.1'D 1.5:1 SS	2444	757	CNN054-C	WEST3	0.81	2.80
0128	E	Conc Chnl 7'W 7.1'D 1.5:1 SS	167	257	1/2NN052-C	WEST3	0.55	2.80
0129	E	2: 10' X 6' RCB	801	257	1/2NN052-C	WEST3	0.55	1.60
0131	E	10' X 6' RCB	665	257	1/2NN052-C	WEST3	0.55	1.28
LV05		WESTERN TRIBUTARY AT ALEXANDER RD						
0131	E	Conc Chnl 28'W 3'D 3:1 SS	1300	567	CLV99B-3	WEST3	0.64	0.76
LV06		WESTERN TRIBUTARY AT CRAIG RD						
0053	E	16' X 6' RCAP	782	1080	CLV99A-3	WEST3	1.31	1.56
0063	E	14' X 6' RCAP	526	1080	CLV99A-3	WEST3	1.31	1.88
0075	E	12' X 6' RCB	1608	1080	CLV99A-3	WEST3	1.31	0.72
0105	E	2: 8' X 6' RCBC @ Revere	158	1080	CLV99A-3	WEST3	1.31	1.71
0107	E	Conc Chnl 17.3'W 6'D 0:1 SS	140	1080	CLV99A-3	WEST3	1.31	3.79
0110	E	Conc Chnl 12'W 5.5'D 2:1 SS	2451	1080	CLV99A-3	WEST3	1.31	0.87
0147	E	12' X 6' RCBC @ Alexander	150	629	CLV99A-2	WEST3	0.74	1.16
LVMD		LAS VEGAS WASH - MIDDLE						
1877	E	Conc Chnl 30'W 10'D 1:1 SS	1570	6423	CNN104-C	WEST5	44.33	1.10
1905	E	Conc Chnl 12'W 10'D 1.65:1 SS	2440	3245	CNN086-C	WEST5	29.30	1.00
1953	E	2: 24' X 10' RCBC @ Camino Al Norte	145	3245	CNN086-C	WEST5	29.30	0.94
1954	E	Conc Chnl 32'W 7'D 2:1 SS	1587	3245	CNN086-C	WEST5	29.30	0.99
1984	E	Transition Structure	550	3221	LOWERDB	CWEST5	19.67	0.99
2048	E	68,000 cfs PMF Spillway		68000	LOWERIN	CWEST5	19.67	
2049	E	4: 7' X 7' RCB Outlet	200	3221	LOWERDB	CWEST5	19.67	
2050	E	700 ac-ft Lower Las Vegas Wash Detention Basin		6729	LOWERIN	CWEST5	19.67	
2052	P1	Conc Chnl 50'W 6'D 0:1 SS	240	6636	2C057-C	CWEST5	19.28	3.11
2053	P1	Conc Chnl 60'W 12'D 0:1 SS	690	6636	2C057-C	CWEST5	19.28	0.15
2054	P1	Conc Chnl 60'W 12'D 0:1 SS	260	6636	2C057-C	CWEST5	19.28	11.97
2055	P1	Conc Chnl 60'W 12'D 0:1 SS	165	6636	2C057-C	CWEST5	19.28	0.15
2060	E	4: 12.75' X 16' RCBC @ Clayton	144	6171	2C044-C	CWEST5	18.06	0.15
2061	E	Conc Chnl 54'W 16'D 0:1 SS	425	6171	2C044-C	CWEST5	18.06	0.15
LVMD		LAS VEGAS WASH - MIDDLE						
2062	E	Conc Chnl 54'W 9'D 0:1 SS	1200	6171	2C044-C	CWEST5	18.06	1.35
2089	E	Conc Chnl 54'W 9'-9.5'D 0:1 SS	908	6171	2C044-C	CWEST5	18.06	0.50
2124	E	2: 26.5' X 10' RCBC @ Simmons	110	6046	2C043-C	CLVMD5	15.94	0.50
2125	E	Conc Chnl 54'W 9'D 0:1 SS	1571	6046	2C043-C	CLVMD5	15.94	0.77
2170	E	4: 12' X 10' RCBC @ Ann Road	500	6046	2C043-C	CLVMD5	15.94	1.42
2172	E	Conc Chnl 50'W 10'D 0:1 SS	1289	5734	2C3D4-C*	CLVMD4	11.98	1.15
2192	E	2: 24.5' X 10' RCBC @ Allen	110	5734	2C3D4-C*	CLVMD4	11.98	1.15
2197	E	Conc Chnl 50'W 10'D 0:1 SS	1385	5734	2C3D4-C*	CLVMD4	11.98	1.37
2223	E	50' X 10' RCBC @ El Campo Grande	275	5734	2C3D4-C*	CLVMD4	11.98	1.60
2228	E	Conc Chnl 50'W 10'D 0:1 SS	1600	5734	2C3D4-C*	CLVMD4	11.98	1.83
2266	E	2: 24.5' X 10' RCBC @ Tropical	575	5734	2C3D4-C*	CLVMD4	11.98	1.04
2276	E	Conc Chnl 50'D 10'D 0:1 SS	985	5734	2C3D4-C*	CLVMD4	11.98	0.80
2294	E	2: 24.5' X 10' RCBC @ Ranchhouse	292	5734	2C3D4-C	CLVMD4	11.98	1.04
2300	E	Transition Structure	200	5734	2C3D4-C	CLVMD4	11.98	1.50
2304	E	Conc Chnl 70'W 10'D 0:1 SS	220	5734	2C3D4-C	CLVMD4	11.	



LEGEND

XXX
●
100 YEAR FLOW (CFS)
COMBINATION POINT

↗
XX
FLOW DIRECTION
100 YEAR FLOW (CFS)

5B6-CG SUBBASIN NAME

— SUBBASIN BOUNDARY

**GOWAN OUTFALL-ALEXANDER BRANCH
RANCHO TO DECATUR**

OFFSITE SUBBASIN MAP


Stanley Consultants INC.
5820 SOUTH EASTERN AVE
LAS VEGAS, NV 89119
(702) 369-9396

Job No.: 25450
Date: 09/24/2014
Calculated by: JFR



Stanley Consultants INC.

5820 S. Eastern Ave. Suite 200
Las Vegas, Nevada 89119
702.369.9396

SCS Curve Numbers														Curve Number
Soils										Landuse				
Drainage Basin Name	Drainage Area (Acres)	Drainage Area (Sq. Mi.)	MPU Soil ID	Percent of Soil	Percent of Drainage Area in Each Hydrologic Soils Group (Sum Must=100%)						MPU Landuse	Percent of Landuse	Composite CN	
					A	B	C	D	Sum					
NEW SUB BASINS														
5B6-CA	14.08	0.0220	305	100%	5	30	5	60	100	9	100%	95.0		
5B6-CB	26.88	0.0420	305	100%	5	30	5	60	100	19	58%	92.0		
										14	42%			
5B6-CC	28.16	0.0440	305	100%	5	30	5	60	100	9	31%	86.0		
										4	69%			
5B6-CD	19.20	0.0300	305	100%	5	30	5	60	100	5	50%	82.0		
										15	50%			
5B6-CE	18.56	0.0290	305	100%	5	30	5	60	100	5	50%	82.0		
										15	50%			
5B6-CF	19.20	0.0300	305	100%	5	30	5	60	100	4	50%	83.5		
										14	50%			
			305	80%	5	30	5	60	100	9	15%			
										14	45%			
										5	11%			
										6	7%			
5B6-CG	115.20	0.1800	380	3%	0	10	85	5	100	16	3%	87.1		
			300	17%	0	10	0	90	100	9	4%			
										14	8%			
										4	7%			

Project: Gowan Outfall-Alexander Branch				Job No.: 25450				Date: 09/24/2014				Calculated by: JR				 Stanley Consultants INC. 5820 S. Eastern Ave. Suite 200 Las Vegas, Nevada 89119 702.369.9396																									
6-Hour Design Storm Distribution																		SCS Curve Numbers																							
										Soils				Curve Numbers																											
										Percent of Drainage Area in Each Hydrologic Soils Group (Sum Must=100%)				Tbl. 602 Paragraph No.				Curve # for Hydrologic Soils Group				Composite																			
Drainage Basin Name			Drainage Area (Acres)		Drainage Area (Sq. Mi.)		100-Year Adj. Pt. Rainfall (inches) Tbl. 505 x1.0 (Default)		Depth-Area Reduction Factor		100-Year Rainfall (inches)		10-Year Rainfall (inches)		SDN # Tbl. 503		A		B		C		D		Sum		Cover Type and Hydrologic Condition				A		B		C		D		CN		
NEW SUB BASINS																																									
5B6-CA			14.08		0.0220		REFERENCED FROM MPU								See MPU								Referenced from MPU												95.0						
5B6-CB			26.88		0.0420		REFERENCED FROM MPU								See MPU								Referenced from MPU												92.0						
5B6-CC			28.16		0.0440		REFERENCED FROM MPU								See MPU								Referenced from MPU												86.0						
5B6-CD			19.20		0.0300		REFERENCED FROM MPU								See MPU								Referenced from MPU												82.0						
5B6-CE			18.56		0.0290		REFERENCED FROM MPU								See MPU								Referenced from MPU												82.0						
5B6-CF			19.20		0.0300		REFERENCED FROM MPU								See MPU								Referenced from MPU												83.5						
5B6-CG			115.20		0.1800		REFERENCED FROM MPU								See MPU								Referenced from MPU												87.1						

Project:Gowan Outfall-Alexander Branch

Job No.: 25450

Date: 09/24/2014

Calculated by: JR

Modified STANDARD FORM 4 from the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual



Stanley Consultants INC.

5820 S. Eastern Ave. Suite 200
Las Vegas, Nevada 89119
702.369.9396

Sub-Basin Data			Initial/Overland Time (Ti)			Travel Time (Tt)					TLAG	HEC-INPUT		Remarks
Designation	K (Default by CN)	Area (Acres)	Length (feet)	Slope (%)	Ti (Min)	Length (feet)	Slope (%)	V1 (FPS) (Manning)	V2 (FPS) (Manning)	Tt (Min)	(Tc*0.6) (Hr)	Composite CN	Drainage Area (Sq. Mi.)	Tc>=10 for Non Urban Tc>=5 for Urban
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(Hr)	CN		
NEW SUB BASINS														
5B6-CA	0.86	14.08	600	1.00	10.41	600	1.00	1.48	2.94	6.20	0.368	95.0	0.0220	
5B6-CB	0.82	26.88	400	1.00	9.92	400	1.00	1.48	2.94	4.50	0.367	92.0	0.0420	
5B6-CC	0.75	28.16	425	0.70	14.83	425	0.70	1.24	2.46	5.72	0.366	86.0	0.0440	
5B6-CD	0.69	19.20	875	0.50	27.34	875	0.50	1.05	2.08	10.97	0.365	82.0	0.0300	
5B6-CE	0.69	18.56	425	1.00	15.13	425	1.00	1.48	2.94	4.79	0.364	82.0	0.0290	
5B6-CF	0.71	19.20	475	0.80	16.39	475	0.80	1.32	2.63	5.98	0.363	83.5	0.0300	
5B6-CG	0.76	115.20	2405	0.65	34.67	2405	0.65	1.19	2.37	20.38	0.368	87.1	0.1800	

1*****
 * FLOOD HYDROGRAPH PACKAGE (HEC-1) *
 * JUN 1998 *
 * VERSION 4.1 *
 * RUN DATE 20AUG14 TIME 07:15:38 *

ALEXDECAT.txt

 * U.S. ARMY CORPS OF ENGINEERS *
 * HYDROLOGIC ENGINEERING CENTER *
 * 609 SECOND STREET *
 * DAVIS, CALIFORNIA 95616 *
 * (916) 756-1104 *

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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.
 THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
 THE DEFINITION OF -AMSK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
 NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE, SINGLE EVENT DAMAGE CALCULATION, DSS-WRITE STAGE FREQUENCY,
 DSS-READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
 KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
*** FREE ***
1 ID CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2008 MASTER PLAN UPDATE
2 ID GOWAN WATERSHED (ALL)
3 ID RECOMMENDED DRAINAGE SYSTEM WITH ULTIMATE DEVELOPMENT
4 ID INPUT FILE = ALLGOW3.DAT
5 ID INPUT FILE DATE = MAY 5, 2008
6 ID DESIGN STORM = 100-YEAR 6-HR STORM
7 ID STORM DISTRIBUTION = SDN #3
8 ID MODELED BY PBS&J (MICHELE L. D'ALESSANDRO, E.I., CFM)
9 ID CHECKED BY PBS&J (HARSHAL B. DESAI, P.E., CFM)
10 ID STORM CENTERING = FULL WATERSHED
11 ID
12 ID REFERENCED HYDROLOGIC MODELS:
13 ID CITY OF LAS VEGAS CITY WIDE HYDROLOGY ANALYSIS (PBS&J 1997)
14 ID NORTHWEST NEIGHBORHOOD STUDY PHASE 1 (PBS&J 1997)
15 ID RESPONSE TO COMMENTS ON THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD
16 ID CONTROL MASTER PLAN UPDATE (G.C. WALLACE 2006)
17 ID 3RD RESPONSE TO COMMENTS ON THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD
18 ID CONTROL MASTER PLAN UPDATE (G.C. WALLACE 2006)
19 ID SUPPLEMENT FOR THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL
20 ID MASTER PLAN UPDATE (G.C. WALLACE 2006)
21 ID GOWAN OUTFALL - LONE MOUNTAIN BRANCH PRELIMINARY DESIGN REPORT
22 ID (G.C. WALLACE 2007)
23 ID LONE MOUNTAIN WESTERN BELTWAY DETENTION BASIN PARAMETERS (RECEIVED
24 ID FROM G.C. WALLACE ON JANUARY 31, 2008)
25 ID US 95/RANCHO FIS RESTUDY (PBS&J 1998)
26 ID JR CARDS CONTAIN DARFS BASED ON THE FOLLOWING VALUES:
27 ID
28 ID AREA DARF
29 ID SQ. MI.
30 ID 0-0.5 0.99
31 ID 0.5-1 0.975
32 ID 1-2 0.95
33 ID 2-3 0.925
34 ID 3-4 0.915
35 ID 4-5 0.908
36 ID 5-6 0.903
37 ID 6-7 0.895
38 ID 7-8 0.885
39 ID
40 ID JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)
41 ID
42 ID 100-YEAR, 6-HOUR STORM, SDN3
43 ID
44 ID 5 0 0 300
45 ID 5 0 0
46 ID 5 0 0
47 ID PREC 0.99 0.975 0.95 0.925 0.915 0.908 0.903 0.895 0.885
*

```

1 HEC-1 INPUT PAGE 2

```

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
48 KKLGD17BG-C
49 BA 0.364
50 PB 2.77
51 PC 0 0.02 0.057 0.07 0.087 0.108 0.124 0.13 0.13 0.13
52 PC 0.13 0.13 0.13 0.133 0.14 0.142 0.148 0.158 0.172 0.181
53 PC 0.19 0.197 0.199 0.2 0.201 0.204 0.214 0.229 0.241 0.249
54 PC 0.251 0.256 0.27 0.278 0.281 0.283 0.295 0.322 0.352 0.409
55 PC 0.499 0.59 0.71 0.744 0.781 0.812 0.819 0.835 0.851 0.856
56 PC 0.86 0.868 0.876 0.888 0.91 0.926 0.937 0.95 0.97 0.976
57 PC 0.982 0.985 0.987 0.989 0.99 0.993 0.993 0.994 0.995 0.998
58 PC 0.998 0.999 1
59 LS 0 88.7
60 UD 0.478
*
61 KK RGD17BG
62 KM ROUTE RGD17BG TO CGD11B-C
63 KM FACILITY = GOWAN OUTFALL - U.S. 95 CHANNEL
64 KM FACILITY # = G095 0000
65 KM LINING = CONCRETE
66 RD 2640 0.003 0.015 0 TRAP 12 2
*
67 KK GD11B-C
68 BA 0.262
69 PB 2.77
70 LS 0 91.4
71 UD 0.278
*
72 KKCGD11B-C
73 KM COMBINE GD11B-C, RGD17BG, AND GWNNOT
74 KM GOWAN AND US 95
75 HC 2
*
76 KK RCGD11B
77 KM ROUTE CGD11B-C TO CPT6B-C
78 KM FACILITY = GOWAN OUTFALL FACILITIES
79 KM FACILITY # = G00F 0511
80 KM LINING = RCB
81 RD 8390 0.005 0.015 0 TRAP 8 0
*

```

82 KK PT6B-C
83 BA 0.454
84 PB 2.77
85 LS 0 86.1
86 UD 0.756
*
1 HEC-1 INPUT PAGE 3

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

87 KK CPT6B-C
88 KM COMBINE PT6B-C AND RCGD11B
89 KM GOWAN AND RANCHO
90 HC 2
*
91 KK DPT6B-C1
92 KM FLOW SPLIT TO GOWAN OUTFALL
93 KM DGOW1A
94 KM FROM CWH
95 DT DGOW1A
96 DI 0 31 51 71 101 301 561 600 3000 5000
97 DQ 0 30 50 70 100 300 560 560 560 560
*
98 KK DPT6B-C2
99 KM FLOW SPLIT TO TRILOGY CHANNEL
100 KM DTRILGY
101 KM FROM CWH
102 DT DTRILGY
103 DI 0 31 91 202 349 625 1214 1944 2801
104 DQ 0 3 33 55 95 173 267 374 491
*
105 KK RCPT6B-C
106 KM ROUTE DPT6B-C2 TO CCY08-C
107 KM GOWAN
108 RD 3300 0.006 0.016 0 TRAP 0 50
*
109 KK DGOW1A
110 KM RETRIEVE DGOW1A
111 DR DGOW1A
*
112 KK RDGOW1A
113 KM ROUTE DGOW1A TO CCY08-C
114 KM FACILITY = GOWAN OUTFALL FACILITIES
115 KM FACILITY # = GOOF 0486
116 KM LINING = RCB
117 RD 3300 0.006 0.015 0 TRAP 8 0
*
118 KK CCY08-C
119 KM COMBINE RCPT6B-C AND RDGOW1A
120 KM GOWAN AND DECATUR
121 HC 2
*
1 HEC-1 INPUT PAGE 4

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

122 KK DTRILGY
123 KM RETRIEVE DTRILGY
124 DR DTRILGY
*
125 KK CY07B
126 BA 0.203
127 PB 2.77
128 LS 0 89.1
129 UD 0.461
*
130 KK CCY07B
131 KM COMBINE DTRILGY AND CY07B
132 KM RANCHO AND MICHAEL WAY
133 HC 2
*
134 KK DCY07B
135 KM FLOW SPLIT TO CENTRAL BASIN
136 KM DIVERT FLOW EAST IN RAN 190
137 KM OPPOSITE OF D9RCHO
138 KM FROM CWH
139 DT DCENT1
140 DI 0 19 73 100 1000 2000
141 DQ 0 1 1 28 928 1928
*
142 KK RDCY07B
143 KM ROUTE DCY07B TO CCCY08-C
144 KM DECATUR AND GOWAN
145 RD 3150 0.007 0.016 0 TRAP 0 50
*
146 KK CY08-C
147 BA 0.094
148 PB 2.77
149 LS 0 88.5
150 UD 0.306
*
151 KK CCCY08-C
152 KM COMBINE CY08-C, CCY08-C, AND RDCY07B
153 KM GOWAN AND DECATUR
154 HC 3
*
155 KK DGOW2A
156 KM DIVERT FLOW TO GOWAN OUTFALL
157 KM DIVERSION BASED ON GOWAN ROAD DRAINAGE STUDY BY POGGEMEYER
158 KM 8' X 5' RCB, CAPACITY = 630 CFS (GOOF 0486)
159 KM REMAINING FLOW CONTINUES EAST IN GOWAN RD. AND ENTERS THE CENTRAL BASIN
160 KM OPPOSITE OF DGOW2A IN CWH
161 DTD CENTRAL
*
1 HEC-1 INPUT PAGE 5

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

162 DI 0 31 51 71 101 301 601 631 3000 5000
163 DQ 0 1 1 1 1 1 1 1 2370 4370
*
164 KK RDGOW2A
165 KM ROUTE DGOW2A TO CPT5B6-C
166 KM FACILITY = GOWAN NORTH SYSTEM
167 KM FACILITY # = GOOF 0427, 0485
168 KM LINING = RCP
169 RD 2370 0.005 0.013 0 CIRC 8 0
*
170 KK 5B6-CG
171 BA 0.183
172 PB 2.77

ALEXDECAT.txt

173 LS 0 87.1
 174 UD 0.368
 *

175 KK C586-CG
 176 KM COMBINE R586-C0 AND 586-CG
 177 HC 2
 *

178 KK PDGCD-C
 179 BA 0.441
 180 PB 2.77
 181 LS 0 80.6
 182 UD 0.543
 *

183 KKRPDGCDC
 184 KM ROUTE PDGCD-C TO RRPDGCDC
 185 KM FROM CWH
 186 RD 3080 0.0065 0.03 0 TRAP 30 2
 *

187 KK RRPDGCDC
 188 KM ROUTE RPDGCDC-C TO CDPDGCBC1
 189 KM LINING = CONCRETE
 190 KM FROM CWH
 191 RD 1610 0.0062 0.015 0 TRAP 8 2
 *

192 KK NW29B-C
 193 BA 0.254
 194 PB 2.80
 195 LS 0 80.9
 196 UD 0.404
 *

1 HEC-1 INPUT PAGE 6

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

197 KKRNW29B-C
 198 KM ROUTE NW29B-C TO CNW1C2
 199 KM ANN ROAD
 200 RD 4500 0.0122 0.016 0 TRAP 0 50
 *

201 KK NW1C2-C
 202 BA 0.207
 203 PB 2.77
 204 LS 0 89.5
 205 UD 0.409
 *

206 KK CNW1C2
 207 KM COMBINE RNW29B-C AND NW1C2-C
 208 KM ANN ROAD AND RANCHO
 209 HC 2
 *

210 KK RCNW1C2
 211 KM ROUTE CNW1C2 TO CPDGCBC10
 212 KM ALONG RANCHO
 213 KM LINING = CONCRETE
 214 RD 2300 0.0087 0.015 0 TRAP 12 0
 *

215 KKPDGCBC10C
 216 BA 0.309
 217 PB 2.77
 218 LS 0 84.6
 219 UD 0.414
 *

220 KKCPDGCBC10
 221 KM COMBINE PDGCBC10C AND RCNW1C2
 222 KM NEAR US95 AND RANCHO INTERSECTION
 223 HC 2
 *

224 KKDPDGCBC10
 225 KM FLOW SPLIT ACROSS RANCHO TO PT3AA1
 226 KM 10' X 3' RCB (139 CFS) CULVERT 3
 227 KM FROM U.S. 95 / RANCHO FIS
 228 KM D95A
 229 DTDPT3AA11
 230 DI 0 51 101 118 140 318 10000
 231 DQ 0 50 100 117 139 139 139
 *

1 HEC-1 INPUT PAGE 7

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

232 KKRPDGCBC1
 233 KM ROUTE DDPDGCBC10 TO DDPDGCBC1
 234 KM ALONG US95
 235 KM LINING = CONCRETE
 236 RD 2000 0.0004 0.015 0 TRAP 8 2
 *

237 KKDDPDGCBC1
 238 KM FLOW SPLIT ACROSS US95 TO PT3AB1-C
 239 KM (2) 6' X 2' RCB (192 CFS - BASED ON INLET CONTROL NOMOGRAPH WITH 4' OF
 240 KM HEADWATER; HEADWATER BASED ON DEPTH OF CONCRETE CHANNEL)
 241 DTDPT3AB1C
 242 DI 0 192 10000
 243 DQ 0 192 192
 *

244 KKCDPDGCBC1
 245 KM COMBINE RRPDGCDC AND DDPDGCBC1
 246 KM NEAR US95 AND RANCHO INTERSECTION
 247 HC 2
 *

248 KKRCDPDGCBC
 249 KM ROUTE CDPDGCBC1 TO CGD20BEC
 250 KM LOCAL FACILITY ALONG U.S. 95
 251 RD 1750 0.0029 0.025 0 TRAP 20 3
 *

252 KKGD20BE-C
 253 BA 0.427
 254 PB 2.77
 255 LS 0 83.4
 256 UD 0.467
 *

257 KKCGD20BEC
 258 KM COMBINE GD20BE-C AND RCDPDGCBC
 259 KM COMBINATION OF US 95 AND LONE MOUNTAIN
 260 HC 2
 *

261 KKRCGD20BE
 262 KM ROUTE CGD20BEC TO CGD20BMC
 263 KM NEWLY PROPOSED REGIONAL FACILITY

264 KM FACILITY = GOWAN OUTFALL - ALEXANDER BRANCH ALEXDECAT.txt
 265 KM FACILITY # = GOAL 0247
 266 KM LINING = CONCRETE
 267 RD 2640 0.003 0.015 0 TRAP 12 2
 *
 1 HEC-1 INPUT PAGE 8

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

268 KKGD20BM-C
 269 BA 0.343
 270 PB 2.77
 271 LS 0 89.3
 272 UD 0.456
 *
 273 KKCGD20BMC
 274 KM COMBINE GD20BM-C AND RCGD20BE
 275 KM US 95 AND CRAIG ROAD
 276 HC 2
 *
 277 KKRCGD20BM
 278 KM ROUTE CGD20BM TO CPT2B2
 279 KM NEWLY PROPOSED REGIONAL FACILITY
 280 KM FACILITY = GOWAN OUTFALL - ALEXANDER BRANCH
 281 KM FACILITY # = GOAL 0168
 282 KM LINING = RCB
 283 RD 4200 0.005 0.015 0 TRAP 10 0
 *
 284 KK PT2B2-C
 285 BA 0.300
 286 PB 2.77
 287 LS 0 92.1
 288 UD 0.417
 *
 289 KK CPT2B2
 290 KM COMBINE RCGD20BM AND PT2B2-C
 291 KM CRAIG AND ALEXANDER
 292 HC 2
 *
 293 KK RCPT2B2
 294 KM ROUTE CPT2B2 TO CPT41-C
 295 KM NEWLY PROPOSED REGIONAL FACILITY
 296 KM FACILITY = GOWAN OUTFALL - ALEXANDER BRANCH
 297 KM FACILITY # = GOAL 0111
 298 KM LINING = RCB
 299 RD 3000 0.0083 0.015 0 TRAP 10 0
 *
 300 KK PT3-C
 301 BA 0.172
 302 PB 2.77
 303 LS 0 89.9
 304 UD 0.372
 *

1 HEC-1 INPUT PAGE 9

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

305 KK RCPT3-C
 306 KM ROUTE PT3-C TO CPT41-C
 307 KM FACILITY = GOWAN OUTFALL - ALEXANDER 2 BRANCH
 308 KM FACILITY # = GOA2 0000
 309 KM ALEXANDER
 310 RD 4700 0.0081 0.016 0 TRAP 0 50
 *
 311 KK PT41-C
 312 BA 0.435
 313 PB 2.77
 314 LS 0 88.6
 315 UD 0.424
 *
 316 KK CPT41-C
 317 KM COMBINE RCPT3-C AND PT41-C
 318 KM ALEXANDER AND RANCHO
 319 HC 2
 *
 320 KKCCPT41-C
 321 KM COMBINE RCPT2B2 AND CPT41-C
 322 KM ALEXANDER AND RANCHO
 323 HC 2
 *
 324 KKRCPT41-C
 325 KM ROUTE CCPT41-C TO CPT5A2-C
 326 KM NEWLY PROPOSED REGIONAL FACILITY
 327 KM FACILITY = GOWAN OUTFALL - ALEXANDER BRANCH
 328 KM FACILITY # = GOAL 0100
 329 KM LINING = RCB
 330 RD 540 0.003 0.015 0 TRAP 10 0
 *
 331 KK PT5A2-C
 332 BA 0.341
 333 PB 2.77
 334 LS 0 86.9
 335 UD 0.644
 *
 336 KKCP5A2-C
 337 KM COMBINE PT5A2-C AND RCPT41-C
 338 KM ALEXANDER AND RANCHO
 339 HC 2
 *

1 HEC-1 INPUT PAGE 10

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

340 KK RCPT5A2
 341 KM ROUTE CPT5A2-C TO CPT5B6-CA
 342 KM FACILITY = GOWAN OUTFALL - ALEXANDER BRANCH
 343 KM FACILITY # = GOAL 0000
 344 KM LINING = RCB
 345 RD 1200 0.01 0.015 0 TRAP 12 0
 *
 346 KK 5B6-CA
 347 BA 0.022
 348 PB 2.77
 349 LS 0 95
 350 UD 0.368
 *
 351 KK C5B6-CA
 352 KM COMBINE CPT5A2-C AND 5B6-CA
 353 HC 2
 354 KO 1

355 KKRC5B6-CA
 356 KM ROUTE C5B6-CA TO C5B6-CB
 357 KM FACILITY = ALEXANDER - HELEN
 358 KM FACILITY # = GOAL 0000
 359 KM LINING = RCB
 360 RD 800 0.01 0.015 0 TRAP 12 0
 361 KO 1
 *

362 KK 5B6-CB
 363 BA 0.042
 364 PB 2.77
 365 LS 0 92
 366 UD 0.367
 *

367 KK C5B6-CB
 368 KM COMBINE 5B6-CA AND 5B6-CB
 369 HC 2
 *

370 KKRC5B6-CB
 371 KM ROUTE C5B6-CB TO C5B6-CC
 372 KM FACILITY = ALEXANDER - HELEN
 373 KM FACILITY # = GOAL 0000
 374 KM LINING = RCB
 375 RD 850 0.007 0.015 0 TRAP 12 0
 *

1

HEC-1 INPUT

PAGE 11

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

376 KK 5B6-CC
 377 BA 0.044
 378 PB 2.77
 379 LS 0 86
 380 UD 0.366
 *

381 KK C5B6-CC
 382 KM COMBINE RC5B6-CB AND 5B6-CC
 383 HC 2
 *

384 KKRC5B6-CC
 385 KM ROUTE C5B6-CC TO C5B6-CD
 386 KM FACILITY = ALEXANDER - HELEN
 387 KM FACILITY # = GOAL 0000
 388 KM LINING = RCB
 389 RD 1400 0.005 0.015 0 TRAP 12 0
 *

390 KK 5B6-CD
 391 BA 0.030
 392 PB 2.77
 393 LS 0 82
 394 UD 0.365
 *

395 KK C5B6-CD
 396 KM COMBINE RC5B6-CC AND 5B6-CD
 397 HC 2
 *

398 KK R5B6-CD
 399 KM ROUTE 5B6-CD TO C5B6-CD
 400 KM FACILITY = ALEXANDER - BRADLEY
 401 KM FACILITY # = GOAL 0000
 402 KM LINING = RCB
 403 RD 350 0.006 0.015 0 TRAP 12 0
 *

404 KK 5B6-CE
 405 BA 0.029
 406 PB 2.77
 407 LS 0 82
 408 UD 0.364
 *

409 KKRC5B6-CE
 410 KM ROUTE 5B6-CE TO 5B6-CD
 411 KM FACILITY = ALEXANDER - BRADLEY
 412 KM FACILITY # = GOAL 0000
 413 KM LINING = RCB
 414 RD 850 0.01 0.015 0 TRAP 12 0
 *

1

HEC-1 INPUT

PAGE 12

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

415 KKRC5B6-CE
 416 KM COMBINE RC5B6-CD AND RC5B6-CE
 417 HC 2
 *

418 KK R5B6-CF
 419 KM ROUTE C5B6-CD TO 5B6-CF
 420 KM FACILITY = ALEXANDER - THOM
 421 KM FACILITY # = GOAL 0000
 422 KM LINING = RCB
 423 RD 600 0.008 0.015 0 TRAP 12 0
 *

424 KK 5B6-CF
 425 BA 0.03
 426 PB 2.77
 427 LS 0 83.5
 428 UD 0.363
 *

429 KK C5B6-CF
 430 KM COMBINE RC5B6-CD AND 5B6-CF
 431 HC 2
 *

432 KK R5B6-CM
 433 KM ROUTE R5B6-CF TO 5B6-CO
 434 KM FACILITY = ALEXANDER - TUFFER
 435 KM FACILITY # = GOAL 0000
 436 KM LINING = RCB
 437 RD 350 0.009 0.016 0 TRAP 12 0
 *

438 KK R5B6-CO
 439 KM ROUTE R5B6-CO TO CPT5B6-C
 440 KM FACILITY = ALEXANDER - DECATUR
 441 KM FACILITY # = GOAL 0000
 442 KM LINING = RCB
 443 RD 1050 0.01 0.016 0 TRAP 12 0
 *

444 KKCP5B6-C
 445 KM COMBINE RDGOW2A AND RCPT5A2

446 KM DECATUR AND ALEXANDER
 447 HC 2
 *
 448 KKRCPT5B6
 449 KM ROUTE CCPT5B6C TO CPT5C-1
 450 KM FACILITY = GOWAN OUTFALL FACILITIES
 451 KM FACILITY # = GOOF 0375
 452 KM LINING = RCB
 453 RD 2700 0.0056 0.015 0 TRAP 24 0
 *

ALEXDECAT.txt

1

HEC-1 INPUT

PAGE 13

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

454 KK PT5C-1
 455 BA 0.186
 456 PB 2.77
 457 LS 0 88.2
 458 UD 0.356
 *
 459 KK CPT5C-1
 460 KM COMBINE RCCPT5B6 AND PT5C-1
 461 KM ALEXANDER AND VALLEY
 462 HC 2
 *
 463 ZZ

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT
 LINE (V) ROUTING (--->) DIVERSION OR PUMP FLOW
 NO. (.) CONNECTOR (<---) RETURN OF DIVERTED OR PUMPED FLOW

```

48 LGD17BG-
   V
61 RGD17BG
   V
67      GD11B-C
   V
72 CGD11B-C.....
   V
76 RCGD11B
   V
82      PT6B-C
   V
87 CPT6B-C.....
   V
95      DPT6B-C1-----> DGOW1A
91
102      DPT6B-C2-----> DTRILGY
98
105 RCPT6B-C
   V
111      DGOW1A<----- DGOW1A
109      V
112      RDGOW1A
   V
118 CCY08-C.....
   V
124      DTRILGY<----- DTRILGY
122      V
125      CY07B
   V
130      CCY07B.....
   V
139      DCY07B-----> DCENT1
134      V
142      RDCY07B
   V
146      CY08-C
   V
151 CCCY08-C.....
   V
161      DGOW2A----->DCENTRAL
155      V
164      RDGOW2A
   V
170      5B6-CG
   V
175      C5B6-CG.....
   V
178      PDGCD-C
   V
183      RPDGCD-C
   V
187      RRPDGD
   V
192      NW29B-C
   V
197      RNW29B-C
   V
201      NW1C2-C
   V
206      CNW1C2.....
   V
210      RCNW1C2
   V
  
```

[illegible]

```

444 CPT5B6-C.....
      V
448 RCCPT5B6
      .
454      PT5C-1
      .
459 CPT5C-1.....

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* JUN 1998 *
* VERSION 4.1 *
* RUN DATE 20AUG14 TIME 07:15:38 *
*****

```

```

*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 756-1104 *
*****

```

CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT 2008 MASTER PLAN UPDATE
 GOWAN WATERSHED (ALL)
 RECOMMENDED DRAINAGE SYSTEM WITH ULTIMATE DEVELOPMENT
 INPUT FILE = ALLGOW3.DAT
 INPUT FILE DATE = MAY 5, 2008
 DESIGN STORM = 100-YEAR 6-HR STORM
 STORM DISTRIBUTION = SDN #3
 MODELED BY PBS&J (MICHELE L. D'ALESSANDRO, E.I., CFM)
 CHECKED BY PBS&J (MARSHAL B. DESAI, P.E., CFM)
 STORM CENTERING = FULL WATERSHED

REFERENCED HYDROLOGIC MODELS:
 CITY OF LAS VEGAS CITY WIDE HYDROLOGY ANALYSIS (PBS&J 1997)
 NORTHWEST NEIGHBORHOOD STUDY PHASE 1 (PBS&J 1997)
 RESPONSE TO COMMENTS ON THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD
 CONTROL MASTER PLAN UPDATE (G.C. WALLACE 2006)
 3RD RESPONSE TO COMMENTS ON THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD
 CONTROL MASTER PLAN UPDATE (G.C. WALLACE 2006)
 SUPPLEMENT FOR THE 2006 SUMMERLIN WEST PLANNING AREA FLOOD CONTROL
 MASTER PLAN UPDATE (G.C. WALLACE 2006)
 GOWAN OUTFALL - LONE MOUNTAIN BRANCH PRELIMINARY DESIGN REPORT
 (G.C. WALLACE 2007)
 LONE MOUNTAIN WESTERN BELTWAY DETENTION BASIN PARAMETERS (RECEIVED
 FROM G.C. WALLACE ON JANUARY 31, 2008)
 US 95/RANCHO FIS RESTUDY (PBS&J 1998)
 JR CARDS CONTAIN DARFS BASED ON THE FOLLOWING VALUES:

AREA SQ. MI.	DARF
0-0.5	0.99
0.5-1	0.975
1-2	0.95
2-3	0.925
3-4	0.915
4-5	0.908
5-6	0.903
6-7	0.895
7-8	0.885

JR CARD RATIOS REPRESENT DEPTH-AREA REDUCTION FACTORS (DARF'S)
 100-YEAR, 6-HOUR STORM, SDN3

```

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

```

```

IT      HYDROGRAPH TIME DATA
          NMIN      5 MINUTES IN COMPUTATION INTERVAL
          IDATE      1 0000 STARTING DATE
          ITIME      1 0000 STARTING TIME
          NQ      300 NUMBER OF HYDROGRAPH ORDINATES
          NDDATE      2 0055 ENDING DATE
          NDTIME      2 0055 ENDING TIME
          ICENT      19 CENTURY MARK

          COMPUTATION INTERVAL .08 HOURS
          TOTAL TIME BASE 24.92 HOURS

```

ENGLISH UNITS
 DRAINAGE AREA SQUARE MILES
 PRECIPITATION DEPTH INCHES
 LENGTH, ELEVATION FEET
 FLOW CUBIC FEET PER SECOND
 STORAGE VOLUME ACRE-Feet
 SURFACE AREA ACRES
 TEMPERATURE DEGREES FAHRENHEIT

```

JP      MULTI-PLAN OPTION
          NPLAN      1 NUMBER OF PLANS

```

```

JR      MULTI-RATIO OPTION
          RATIOS OF PRECIPITATION
          .99 .98 .95 .93 .92 .91 .90 .89 .88

```

*** ** ** ** **

```

*****
* CSB6-CA *
* * *
*****

```

```

354 KO      OUTPUT CONTROL VARIABLES
          IPRNT      1 PRINT CONTROL
          IPLOT      0 PLOT CONTROL
          QSCAL      0. HYDROGRAPH PLOT SCALE

```

```

353 HC      HYDROGRAPH COMBINATION
          ICOMP      2 NUMBER OF HYDROGRAPHS TO COMBINE

```

HYDROGRAPH AT STATION CSB6-CA
 SUM OF 2 HYDROGRAPHS
 PLAN 1, RATIO = .99

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW			
1	0000	1	0.	0.	*	1	0615	76	139.	*	1	1230	151	0.	*	1	1845	226	0.
1	0005	2	0.	0.	*	1	0620	77	122.	*	1	1235	152	0.	*	1	1850	227	0.

ALEXDECAT.txt																		
1	0010	3	0.	*	1	0625	78	106.	*	1	1240	153	0.	*	1	1855	228	0.
1	0015	4	0.	*	1	0630	79	92.	*	1	1245	154	0.	*	1	1900	229	0.
1	0020	5	0.	*	1	0635	80	78.	*	1	1250	155	0.	*	1	1905	230	0.
1	0025	6	1.	*	1	0640	81	67.	*	1	1255	156	0.	*	1	1910	231	0.
1	0030	7	2.	*	1	0645	82	57.	*	1	1300	157	0.	*	1	1915	232	0.
1	0035	8	4.	*	1	0650	83	48.	*	1	1305	158	0.	*	1	1920	233	0.
1	0040	9	7.	*	1	0655	84	40.	*	1	1310	159	0.	*	1	1925	234	0.
1	0045	10	11.	*	1	0700	85	34.	*	1	1315	160	0.	*	1	1930	235	0.
1	0050	11	14.	*	1	0705	86	28.	*	1	1320	161	0.	*	1	1935	236	0.
1	0055	12	16.	*	1	0710	87	23.	*	1	1325	162	0.	*	1	1940	237	0.
1	0100	13	16.	*	1	0715	88	19.	*	1	1330	163	0.	*	1	1945	238	0.
1	0105	14	16.	*	1	0720	89	16.	*	1	1335	164	0.	*	1	1950	239	0.
1	0110	15	15.	*	1	0725	90	13.	*	1	1340	165	0.	*	1	1955	240	0.
1	0115	16	14.	*	1	0730	91	11.	*	1	1345	166	0.	*	1	2000	241	0.
1	0120	17	14.	*	1	0735	92	9.	*	1	1350	167	0.	*	1	2005	242	0.
1	0125	18	15.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.
1	0130	19	17.	*	1	0745	94	6.	*	1	1400	169	0.	*	1	2015	244	0.
1	0135	20	20.	*	1	0750	95	5.	*	1	1405	170	0.	*	1	2020	245	0.
1	0140	21	26.	*	1	0755	96	4.	*	1	1410	171	0.	*	1	2025	246	0.
1	0145	22	34.	*	1	0800	97	3.	*	1	1415	172	0.	*	1	2030	247	0.
1	0150	23	43.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.
1	0155	24	52.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.
1	0200	25	58.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.
1	0205	26	62.	*	1	0820	101	1.	*	1	1435	176	0.	*	1	2050	251	0.
1	0210	27	63.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.
1	0215	28	64.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.
1	0220	29	65.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.
1	0225	30	69.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.
1	0230	31	76.	*	1	0845	106	0.	*	1	1500	181	0.	*	1	2115	256	0.
1	0235	32	84.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.
1	0240	33	92.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	100.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	109.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	116.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	123.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	127.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	135.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	154.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	196.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	279.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	428.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	653.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	936.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	1227.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	1462.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	1615.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	1701.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	1733.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	1688.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	1565.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	1401.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	1228.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	1066.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	928.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	823.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	752.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	709.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	682.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	663.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	645.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	621.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	588.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	546.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	499.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	447.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	396.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	348.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	305.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	266.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	232.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	204.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	179.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	158.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
+	1733.	4.08					
		(CFS)	413.	104.	100.	100.	
		(INCHES)	1.181	1.189	1.189	1.189	
		(AC-FT)	205.	206.	206.	206.	
		CUMULATIVE AREA =	3.25 SQ MI				

HYDROGRAPH AT STATION C586-CA SUM OF 2 HYDROGRAPHS PLAN 1, RATIO = .98

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
1	0000	1		0.	*	1	0615	76	137.	*	1	1230	151	0.	*	1	1845	226	0.	*			0.
1	0005	2		0.	*	1	0620	77	120.	*	1	1235	152	0.	*	1	1850	227	0.	*			0.
1	0010	3		0.	*	1	0625	78	104.	*	1	1240	153	0.	*	1	1855	228	0.	*			0.
1	0015	4		0.	*	1	0630	79	90.	*	1	1245	154	0.	*	1	1900	229	0.	*			0.
1	0020	5		0.	*	1	0635	80	77.	*	1	1250	155	0.	*	1	1905	230	0.	*			0.
1	0025	6		1.	*	1	0640	81	66.	*	1	1255	156	0.	*	1	1910	231	0.	*			0.
1	0030	7		1.	*	1	0645	82	56.	*	1	1300	157	0.	*	1	1915	232	0.	*			0.
1	0035	8		3.	*	1	0650	83	47.	*	1	1305	158	0.	*	1	1920	233	0.	*			0.
1	0040	9		6.	*	1	0655	84	40.	*	1	1310	159	0.	*	1	1925	234	0.	*			0.
1	0045	10		10.	*	1	0700	85	34.	*	1	1315	160	0.	*	1	1930	235	0.	*			0.
1	0050	11		13.	*	1	0705	86	28.	*	1	1320	161	0.	*	1	1935	236	0.	*			0.
1	0055	12		15.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.	*			0.
1	0100	13		15.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	*			0.
1	0105	14		15.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	*			0.
1	0110	15		14.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	*			0.
1	0115	16		13.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	*			0.
1	0120	17		13.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	*			0.
1	0125	18		14.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	*			0.
1	0130	19		16.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	*			0.
1	0135	20		19.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	*			0.
1	0140	21		25.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	*			0.
1	0145	22		33.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	*			0.
1	0150	23		41.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	*			0.
1	0155	24		49.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.	*			0.
1	0200	25		55.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	*			0.
1	0205	26		59.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	*			0.
1	0210	27		60.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	*			0.
1	0215	28		61.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	*			0.
1	0220	29		62.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	*			0.
1	0225	30		66.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	*			0.
1	0230	31		73.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	*			0.
1	0235	32		81.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.	*			0.
1	0240	33		89.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	*			0.
1	0245	34		97.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	*			0.
1	0250	35		105.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	*			0.
1	0255	36		112.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	*			0.
1	0300	37		118.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	*			0.
1	0305	38		123.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	*			0.
1	0310	39		131.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	*			0.
1	0315	40		148.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	*			0.

1	0320	41	189.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.					
1	0325	42	269.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.					
1	0330	43	414.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.					
1	0335	44	633.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.					
1	0340	45	910.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.					
1	0345	46	1195.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.					
1	0350	47	1425.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.					
1	0355	48	1572.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.					
1	0400	49	1653.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.					
1	0405	50	1682.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.					
1	0410	51	1635.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.					
1	0415	52	1518.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.					
1	0420	53	1362.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.					
1	0425	54	1196.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.					
1	0430	55	1039.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.					
1	0435	56	905.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.					
1	0440	57	804.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.					
1	0445	58	736.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.					
1	0450	59	695.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.					
1	0455	60	669.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.					
1	0500	61	650.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.					
1	0505	62	632.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.					
1	0510	63	609.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.					
1	0515	64	576.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.					
1	0520	65	536.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.					
1	0525	66	489.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.					
1	0530	67	439.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.					
1	0535	68	389.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.					
1	0540	69	342.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.					
1	0545	70	299.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.					
1	0550	71	261.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.					
1	0555	72	228.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.					
1	0600	73	200.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.					
1	0605	74	176.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.					
1	0610	75	155.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.					

PEAK FLOW TIME 6-HR MAXIMUM AVERAGE FLOW 24.92-HR																							
+ (CFS) (HR) (CFS) 402. 101. 98. 98.																							
+ 1682. 4.08 (INCHES) 1.151 1.159 1.159 1.159																							
(AC-FT) 200. 201. 201. 201.																							
CUMULATIVE AREA = 3.25 SQ MI																							

HYDROGRAPH AT STATION C5B6-CA																							
SUM OF 2 HYDROGRAPHS																							
PLAN 1, RATIO = .95																							

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
1	0000	1	0.	*	1	0615	76	133.	*	1	1230	151	0.	*	1	1845	226	0.					
1	0005	2	0.	*	1	0620	77	117.	*	1	1235	152	0.	*	1	1850	227	0.					
1	0010	3	0.	*	1	0625	78	102.	*	1	1240	153	0.	*	1	1855	228	0.					
1	0015	4	0.	*	1	0630	79	88.	*	1	1245	154	0.	*	1	1900	229	0.					
1	0020	5	0.	*	1	0635	80	75.	*	1	1250	155	0.	*	1	1905	230	0.					
1	0025	6	0.	*	1	0640	81	64.	*	1	1255	156	0.	*	1	1910	231	0.					
1	0030	7	1.	*	1	0645	82	55.	*	1	1300	157	0.	*	1	1915	232	0.					
1	0035	8	3.	*	1	0650	83	46.	*	1	1305	158	0.	*	1	1920	233	0.					
1	0040	9	5.	*	1	0655	84	39.	*	1	1310	159	0.	*	1	1925	234	0.					
1	0045	10	9.	*	1	0700	85	33.	*	1	1315	160	0.	*	1	1930	235	0.					
1	0050	11	11.	*	1	0705	86	28.	*	1	1320	161	0.	*	1	1935	236	0.					
1	0055	12	13.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.					
1	0100	13	14.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.					
1	0105	14	13.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.					
1	0110	15	12.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.					
1	0115	16	11.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.					
1	0120	17	11.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.					
1	0125	18	12.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.					
1	0130	19	14.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.					
1	0135	20	17.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.					
1	0140	21	23.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.					
1	0145	22	30.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.					
1	0150	23	38.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.					
1	0155	24	46.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.					
1	0200	25	51.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.					
1	0205	26	55.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.					
1	0210	27	56.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.					
1	0215	28	56.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.					
1	0220	29	58.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.					
1	0225	30	62.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.					
1	0230	31	68.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.					
1	0235	32	76.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.					
1	0240	33	83.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.					
1	0245	34	91.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.					
1	0250	35	98.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.					
1	0255	36	105.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.					
1	0300	37	111.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.					
1	0305	38	116.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.					
1	0310	39	123.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.					
1	0315	40	140.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.					
1	0320	41	178.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.					
1	0325	42	255.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.					
1	0330	43	392.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.					
1	0335	44	602.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.					
1	0340	45	868.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.					
1	0345	46	1143.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.					
1	0350	47	1365.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.					
1	0355	48	1504.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.</					

PEAK FLOW TIME
+ (CFS) (HR)
+ 1594. 4.08
(CFS)
(INCHES)
(AC-FT)
385.
1,102
191.
CUMULATIVE AREA = 3.25 SQ MI
MAXIMUM AVERAGE FLOW
24-HR 72-HR
97.
1,110
192.
93.
1,110
192.
93.
1,110
192.
ALEXDECAT.txt
24.92-HR

HYDROGRAPH AT STATION C5B6-CA
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .93

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	0.	1	0615	76	129.	0.	1	1230	151	0.	0.	1	1845	226	0.	0.
1	0005	2	0.	0.	1	0620	77	113.	0.	1	1235	152	0.	0.	1	1850	227	0.	0.
1	0010	3	0.	0.	1	0625	78	99.	0.	1	1240	153	0.	0.	1	1855	228	0.	0.
1	0015	4	0.	0.	1	0630	79	86.	0.	1	1245	154	0.	0.	1	1900	229	0.	0.
1	0020	5	0.	0.	1	0635	80	73.	0.	1	1250	155	0.	0.	1	1905	230	0.	0.
1	0025	6	0.	0.	1	0640	81	63.	0.	1	1255	156	0.	0.	1	1910	231	0.	0.
1	0030	7	1.	1.	1	0645	82	53.	0.	1	1300	157	0.	0.	1	1915	232	0.	0.
1	0035	8	2.	2.	1	0650	83	45.	0.	1	1305	158	0.	0.	1	1920	233	0.	0.
1	0040	9	4.	4.	1	0655	84	38.	0.	1	1310	159	0.	0.	1	1925	234	0.	0.
1	0045	10	7.	7.	1	0700	85	32.	0.	1	1315	160	0.	0.	1	1930	235	0.	0.
1	0050	11	10.	10.	1	0705	86	27.	0.	1	1320	161	0.	0.	1	1935	236	0.	0.
1	0055	12	11.	11.	1	0710	87	23.	0.	1	1325	162	0.	0.	1	1940	237	0.	0.
1	0100	13	12.	12.	1	0715	88	20.	0.	1	1330	163	0.	0.	1	1945	238	0.	0.
1	0105	14	11.	11.	1	0720	89	17.	0.	1	1335	164	0.	0.	1	1950	239	0.	0.
1	0110	15	11.	11.	1	0725	90	14.	0.	1	1340	165	0.	0.	1	1955	240	0.	0.
1	0115	16	10.	10.	1	0730	91	12.	0.	1	1345	166	0.	0.	1	2000	241	0.	0.
1	0120	17	10.	10.	1	0735	92	10.	0.	1	1350	167	0.	0.	1	2005	242	0.	0.
1	0125	18	11.	11.	1	0740	93	8.	0.	1	1355	168	0.	0.	1	2010	243	0.	0.
1	0130	19	12.	12.	1	0745	94	7.	0.	1	1400	169	0.	0.	1	2015	244	0.	0.
1	0135	20	16.	16.	1	0750	95	5.	0.	1	1405	170	0.	0.	1	2020	245	0.	0.
1	0140	21	21.	21.	1	0755	96	4.	0.	1	1410	171	0.	0.	1	2025	246	0.	0.
1	0145	22	27.	27.	1	0800	97	4.	0.	1	1415	172	0.	0.	1	2030	247	0.	0.
1	0150	23	35.	35.	1	0805	98	3.	0.	1	1420	173	0.	0.	1	2035	248	0.	0.
1	0155	24	42.	42.	1	0810	99	2.	0.	1	1425	174	0.	0.	1	2040	249	0.	0.
1	0200	25	47.	47.	1	0815	100	2.	0.	1	1430	175	0.	0.	1	2045	250	0.	0.
1	0205	26	50.	50.	1	0820	101	2.	0.	1	1435	176	0.	0.	1	2050	251	0.	0.
1	0210	27	51.	51.	1	0825	102	1.	0.	1	1440	177	0.	0.	1	2055	252	0.	0.
1	0215	28	52.	52.	1	0830	103	1.	0.	1	1445	178	0.	0.	1	2100	253	0.	0.
1	0220	29	54.	54.	1	0835	104	1.	0.	1	1450	179	0.	0.	1	2105	254	0.	0.
1	0225	30	57.	57.	1	0840	105	1.	0.	1	1455	180	0.	0.	1	2110	255	0.	0.
1	0230	31	63.	63.	1	0845	106	1.	0.	1	1500	181	0.	0.	1	2115	256	0.	0.
1	0235	32	70.	70.	1	0850	107	0.	0.	1	1505	182	0.	0.	1	2120	257	0.	0.
1	0240	33	78.	78.	1	0855	108	0.	0.	1	1510	183	0.	0.	1	2125	258	0.	0.
1	0245	34	85.	85.	1	0900	109	0.	0.	1	1515	184	0.	0.	1	2130	259	0.	0.
1	0250	35	92.	92.	1	0905	110	0.	0.	1	1520	185	0.	0.	1	2135	260	0.	0.
1	0255	36	99.	99.	1	0910	111	0.	0.	1	1525	186	0.	0.	1	2140	261	0.	0.
1	0300	37	104.	104.	1	0915	112	0.	0.	1	1530	187	0.	0.	1	2145	262	0.	0.
1	0305	38	109.	109.	1	0920	113	0.	0.	1	1535	188	0.	0.	1	2150	263	0.	0.
1	0310	39	116.	116.	1	0925	114	0.	0.	1	1540	189	0.	0.	1	2155	264	0.	0.
1	0315	40	132.	132.	1	0930	115	0.	0.	1	1545	190	0.	0.	1	2200	265	0.	0.
1	0320	41	168.	168.	1	0935	116	0.	0.	1	1550	191	0.	0.	1	2205	266	0.	0.
1	0325	42	241.	241.	1	0940	117	0.	0.	1	1555	192	0.	0.	1	2210	267	0.	0.
1	0330	43	271.	271.	1	0945	118	0.	0.	1	1600	193	0.	0.	1	2215	268	0.	0.
1	0335	44	571.	571.	1	0950	119	0.	0.	1	1605	194	0.	0.	1	2220	269	0.	0.
1	0340	45	826.	826.	1	0955	120	0.	0.	1	1610	195	0.	0.	1	2225	270	0.	0.
1	0345	46	1091.	1091.	1	1000	121	0.	0.	1	1615	196	0.	0.	1	2230	271	0.	0.
1	0350	47	1305.	1305.	1	1005	122	0.	0.	1	1620	197	0.	0.	1	2235	272	0.	0.
1	0355	48	1437.	1437.	1	1010	123	0.	0.	1	1625	198	0.	0.	1	2240	273	0.	0.
1	0400	49	1494.	1494.	1	1015	124	0.	0.	1	1630	199	0.	0.	1	2245	274	0.	0.
1	0405	50	1506.	1506.	1	1020	125	0.	0.	1	1635	200	0.	0.	1	2250	275	0.	0.
1	0410	51	1467.	1467.	1	1025	126	0.	0.	1	1640	201	0.	0.	1	2255	276	0.	0.
1	0415	52	1371.	1371.	1	1030	127	0.	0.	1	1645	202	0.	0.	1	2300	277	0.	0.
1	0420	53	1238.	1238.	1	1035	128	0.	0.	1	1650	203	0.	0.	1	2305	278	0.	0.
1	0425	54	1089.	1089.	1	1040	129	0.	0.	1	1655	204	0.	0.	1	2310	279	0.	0.
1	0430	55	948.	948.	1	1045	130	0.	0.	1	1700	205	0.	0.	1	2315	280	0.	0.
1	0435	56	830.	830.	1	1050	131	0.	0.	1	1705	206	0.	0.	1	2320	281	0.	0.
1	0440	57	744.	744.	1	1055	132	0.	0.	1	1710	207	0.	0.	1	2325	282	0.	0.
1	0445	58	685.	685.	1	1100	133	0.	0.	1	1715	208	0.	0.	1	2330	283	0.	0.
1	0450	59	648.	648.	1	1105	134	0.	0.	1	1720	209	0.	0.	1	2335	284	0.	0.
1	0455	60	624.	624.	1	1110	135	0.	0.	1	1725	210	0.	0.	1	2340	285	0.	0.
1	0500	61	606.	606.	1	1115	136	0.	0.	1	1730	211	0.	0.	1	2345	286	0.	0.
1	0505	62	590.	590.	1	1120	137	0.	0.	1	1735	212	0.	0.	1	2350	287	0.	0.
1	0510	63	568.	568.	1	1125	138	0.	0.	1	1740	213	0.	0.	1	2355	288	0.	0.
1	0515	64	538.	538.	1	1130	139	0.	0.	1	1745	214	0.	0.	1	2360	289	0.	0.
1	0520	65	501.	501.	1	1135	140	0.	0.	1	1750	215	0.	0.	1	2365	290	0.	0.
1	0525	66	457.	457.	1	1140	141	0.	0.	1	1755	216	0.	0.	1	2370	291	0.	0.
1	0530	67	411.	411.	1	1145	142	0.	0.	1	1800	217	0.	0.	1	2375	292	0.	0.
1	0535	68	364.	364.	1	1150	143	0.	0.	1	1805	218	0.	0.	1	2380	293	0.	0.
1	0540	69	321.	321.	1	1155	144	0.	0.	1	1810	219	0.	0.	1	2385	294	0.	0.
1	0545	70	281.	281.	1	1200	145	0.	0.	1	1815	220	0.	0.	1	2390	295	0.	0.
1	0550	71	245.	245.	1	1205	146	0.	0.	1	1820	221	0.	0.	1	2395	296	0.	0.
1	0555	72	215.	215.	1	1210	147	0.	0.	1	1825	222	0.	0.	1	2400	297	0.	0.
1	0600	73	188.	188.	1	1215	148	0.	0.	1	1830	223	0.	0.	1	2405	298	0.	0.
1	0605	74	166.	166.	1	1220	149	0.	0.	1	1835	224	0.	0.	1	2410	299	0.	0.
1	0610	75	146.	146.	1	1225	150	0.	0.	1	1840	225	0.	0.	1	2415	300	0.	0.

PEAK FLOW TIME
+ (CFS) (HR)
+ 1506. 4.08
(CFS)
(INCHES)
(AC-FT)
368.
1,052
182.
CUMULATIVE AREA = 3.25 SQ MI
MAXIMUM AVERAGE FLOW
24-HR 72-HR
93.
1,059
184.
89.
1,059
184.
ALEXDECAT.txt
24.92-HR

HYDROGRAPH AT STATION C5B6-CA
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .92

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	0.	1	0615	76	127.	0.	1	1230	151	0.	0.	1	1845	226	0.	0.
1	0005	2	0.	0.	1	0620	77	112.	0.	1	1235	152	0.	0.	1	1850	227	0.	0.
1	0010	3	0.	0.	1	0625	78	98.	0.	1	1240	153	0.	0.	1	1855	228	0.	0.
1	0015	4	0.	0.	1	0630	79	85.	0.	1	1245	154	0.	0.	1	1900	229	0.	0.
1	0020	5	0.	0.	1	0635	80	73.	0.	1	1250	155	0.	0.	1	1905	230	0.	0.
1	0025	6	0.	0.	1	0640	81	62.	0.	1	1255	156	0.	0.	1	1910	231	0.	0.
1	0030	7	1.	1.	1	0645	82	53.	0.	1	1300	157	0.	0.	1	1915	232	0.	0.
1	0035	8	2.	2.	1	0650	83	45.	0.	1	1305	158	0.	0.	1	1920	233	0.	0.
1	0040	9	4.	4.	1	0655	84	38.	0.	1	1310	159	0.	0.	1	1925	234	0.	0.
1	0045	10	7.	7.	1	0700	85	32.	0.	1	1315	160	0.	0.	1	1930	235	0.	0.
1	0050	11	9.	9.	1	0705	86	27.	0.	1	1320	161	0.	0.	1	1935	236	0.	0.
1	0055	12	11.	11.	1	0710	87	23.	0.	1	1325	162	0.	0.	1	1940	237	0.	0.
1	0100	13	11.	11.	1	0715	88	19.	0.	1	1330	163	0.	0.	1	1945	238	0.	0.
1	0105	14	11.	11.	1	0720	89	16.	0.	1	1335	164	0.	0.	1	1950	239	0.	0.
1	0110	15	10.	10.	1	0725	90	14.	0.	1	1340	165	0.	0.	1	1955	240	0.	0.
1	0115	16	9.	9.	1	0730	91	12.	0.	1	1345	166	0.	0.	1	2000	241	0.	0.
1	0120	17	9.	9.	1	0735	92	10.	0.	1	1350	167	0.	0.	1	2005	242	0.	0.

ALEXDECAT.txt																		
1	0125	18	10.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.
1	0130	19	12.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.
1	0135	20	15.	*	1	0750	95	5.	*	1	1405	170	0.	*	1	2020	245	0.
1	0140	21	20.	*	1	0755	96	4.	*	1	1410	171	0.	*	1	2025	246	0.
1	0145	22	26.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.
1	0150	23	34.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.
1	0155	24	40.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.
1	0200	25	46.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.
1	0205	26	49.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.
1	0210	27	50.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.
1	0215	28	50.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.
1	0220	29	52.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.
1	0225	30	55.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.
1	0230	31	61.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.
1	0235	32	68.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.
1	0240	33	76.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	83.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	89.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	96.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	102.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	106.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	113.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	129.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	164.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	235.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	363.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	560.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	810.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	1071.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	1283.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	1413.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	1469.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	1476.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	1437.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	1347.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	1216.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	1069.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	931.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	816.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	732.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	674.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	638.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	615.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	598.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	582.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	561.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	531.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	494.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	451.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	405.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	359.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	316.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	277.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	242.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	212.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	186.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	164.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	144.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW TIME
 + (CFS) (HR)
 + 1476. 4.08
 (CFS) 362.
 (INCHES) 1,034
 (AC-FT) 179.
 CUMULATIVE AREA = 3.25 SQ MI
 6-HR 91.
 24-HR 1,041
 72-HR 1,041
 24.92-HR 88.
 180.

HYDROGRAPH AT STATION C586-CA
 SUM OF 2 HYDROGRAPHS
 PLAN 1, RATIO = .91

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0615	76	126.	*	1	1230	151	0.	*	1	1845	226	0.	
1	0005	2	0.	*	1	0620	77	111.	*	1	1235	152	0.	*	1	1850	227	0.	
1	0010	3	0.	*	1	0625	78	97.	*	1	1240	153	0.	*	1	1855	228	0.	
1	0015	4	0.	*	1	0630	79	84.	*	1	1245	154	0.	*	1	1900	229	0.	
1	0020	5	0.	*	1	0635	80	72.	*	1	1250	155	0.	*	1	1905	230	0.	
1	0025	6	0.	*	1	0640	81	62.	*	1	1255	156	0.	*	1	1910	231	0.	
1	0030	7	1.	*	1	0645	82	52.	*	1	1300	157	0.	*	1	1915	232	0.	
1	0035	8	2.	*	1	0650	83	44.	*	1	1305	158	0.	*	1	1920	233	0.	
1	0040	9	4.	*	1	0655	84	37.	*	1	1310	159	0.	*	1	1925	234	0.	
1	0045	10	7.	*	1	0700	85	32.	*	1	1315	160	0.	*	1	1930	235	0.	
1	0050	11	9.	*	1	0705	86	27.	*	1	1320	161	0.	*	1	1935	236	0.	
1	0055	12	10.	*	1	0710	87	23.	*	1	1325	162	0.	*	1	1940	237	0.	
1	0100	13	11.	*	1	0715	88	19.	*	1	1330	163	0.	*	1	1945	238	0.	
1	0105	14	10.	*	1	0720	89	16.	*	1	1335	164	0.	*	1	1950	239	0.	
1	0110	15	10.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	
1	0115	16	9.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	
1	0120	17	9.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	
1	0125	18	10.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	
1	0130	19	11.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	
1	0135	20	15.	*	1	0750	95	5.	*	1	1405	170	0.	*	1	2020	245	0.	
1	0140	21	19.	*	1	0755	96	4.	*	1	1410	171	0.	*	1	2025	246	0.	
1	0145	22	26.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	
1	0150	23	33.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	
1	0155	24	39.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.	
1	0200	25	45.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	
1	0205	26	48.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	
1	0210	27	49.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	
1	0215	28	49.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	
1	0220	29	51.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	
1	0225	30	54.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	
1	0230	31	60.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	
1	0235	32	67.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.	
1	0240	33	74.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	
1	0245	34	81.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	
1	0250	35	88.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	
1	0255	36	94.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	
1	0300	37	100.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	
1	0305	38	104.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	
1	0310	39	111.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	
1	0315	40	127.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	
1	0320	41	162.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	
1	0325	42	231.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	
1	0330	43	357.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	
1	0335	44	551.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	
1	0340	45	798.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	
1	0345	46	1056.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	
1	0350	47	1266.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	
1	0355	48	1392.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	
1	0400	49	1443.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	
1	0405	50	1449.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	
1	0410	51	1411.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	
1	0415	52	1322.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	
1	0420	53	1194.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	
1	0425	54	1052.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	
1	0430	55	917.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	

ALEXDECAT.txt																		
1	0435	56	804.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	722.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	667.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	632.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	609.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	592.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	576.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	555.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	525.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	489.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	447.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	401.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	356.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	313.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	275.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	240.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	210.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	184.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	162.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	143.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW TIME
 + (CFS) (HR)
 + 1449. 4.08
 (CFS)
 (INCHES)
 (AC-FT)
 CUMULATIVE AREA = 3.25 SQ MI

HYDROGRAPH AT STATION C5B6-CA
 SUM OF 2 HYDROGRAPHS
 PLAN 1, RATIO = .90

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
1	0000	1	0.	*	1	0615	76	125.	*	1	1230	151	0.	*	1	1845	226	0.					
1	0005	2	0.	*	1	0620	77	110.	*	1	1235	152	0.	*	1	1850	227	0.					
1	0010	3	0.	*	1	0625	78	96.	*	1	1240	153	0.	*	1	1855	228	0.					
1	0015	4	0.	*	1	0630	79	84.	*	1	1245	154	0.	*	1	1900	229	0.					
1	0020	5	0.	*	1	0635	80	72.	*	1	1250	155	0.	*	1	1905	230	0.					
1	0025	6	0.	*	1	0640	81	61.	*	1	1255	156	0.	*	1	1910	231	0.					
1	0030	7	1.	*	1	0645	82	52.	*	1	1300	157	0.	*	1	1915	232	0.					
1	0035	8	2.	*	1	0650	83	44.	*	1	1305	158	0.	*	1	1920	233	0.					
1	0040	9	4.	*	1	0655	84	37.	*	1	1310	159	0.	*	1	1925	234	0.					
1	0045	10	6.	*	1	0700	85	32.	*	1	1315	160	0.	*	1	1930	235	0.					
1	0050	11	9.	*	1	0705	86	27.	*	1	1320	161	0.	*	1	1935	236	0.					
1	0055	12	10.	*	1	0710	87	23.	*	1	1325	162	0.	*	1	1940	237	0.					
1	0100	13	10.	*	1	0715	88	19.	*	1	1330	163	0.	*	1	1945	238	0.					
1	0105	14	10.	*	1	0720	89	16.	*	1	1335	164	0.	*	1	1950	239	0.					
1	0110	15	9.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.					
1	0115	16	9.	*	1	0730	91	11.	*	1	1345	166	0.	*	1	2000	241	0.					
1	0120	17	9.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.					
1	0125	18	10.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.					
1	0130	19	11.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.					
1	0135	20	14.	*	1	0750	95	5.	*	1	1405	170	0.	*	1	2020	245	0.					
1	0140	21	19.	*	1	0755	96	4.	*	1	1410	171	0.	*	1	2025	246	0.					
1	0145	22	25.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.					
1	0150	23	32.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.					
1	0155	24	39.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.					
1	0200	25	44.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.					
1	0205	26	47.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.					
1	0210	27	48.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.					
1	0215	28	48.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.					
1	0220	29	50.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.					
1	0225	30	53.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.					
1	0230	31	59.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.					
1	0235	32	66.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.					
1	0240	33	73.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.					
1	0245	34	80.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.					
1	0250	35	86.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.					
1	0255	36	93.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.					
1	0300	37	99.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.					
1	0305	38	103.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.					
1	0310	39	110.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.					
1	0315	40	125.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.					
1	0320	41	160.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.					
1	0325	42	229.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.					
1	0330	43	354.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.					
1	0335	44	545.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.					
1	0340	45	789.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.					
1	0345	46	1046.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.					
1	0350	47	1255.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.					
1	0355	48	1380.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.					
1	0400	49	1432.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.					
1	0405	50	1437.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.					
1	0410	51	1400.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.					
1	0415	52	1312.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.					
1	0420	53	1183.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.					
1	0425	54	1041.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.					
1	0430	55	908.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.					
1	0435	56	798.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.					
1	0440	57	716.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.					
1	0445	58	662.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.					
1	0450	59	627.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.					
1	0455	60	604.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.					
1	0500	61	588.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.					
1	0505	62	572.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.					
1	0510	63	551.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.					
1	0515	64	522.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.					
1	0520	65	485.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.					
1	0525	66	444.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.					
1	0530	67	398.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.					
1	0535	68	353.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.					
1	0540	69	311.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.					
1	0545	70	273.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.					
1	0550	71	238.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.					
1	0555	72	209.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.					
1	0600	73	183.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.					
1	0605	74	161.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.					
1	0610	75	142.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.					

ALEXDECAT.txt
PLAN 1, RATIO = .89

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0615	76	124.	*	1	1230	151	0.	*	1	1845	226	0.	*
1	0005	2	0.	*	1	0620	77	109.	*	1	1235	152	0.	*	1	1850	227	0.	*
1	0010	3	0.	*	1	0625	78	95.	*	1	1240	153	0.	*	1	1855	228	0.	*
1	0015	4	0.	*	1	0630	79	83.	*	1	1245	154	0.	*	1	1900	229	0.	*
1	0020	5	0.	*	1	0635	80	71.	*	1	1250	155	0.	*	1	1905	230	0.	*
1	0025	6	0.	*	1	0640	81	61.	*	1	1255	156	0.	*	1	1910	231	0.	*
1	0030	7	1.	*	1	0645	82	52.	*	1	1300	157	0.	*	1	1915	232	0.	*
1	0035	8	2.	*	1	0650	83	44.	*	1	1305	158	0.	*	1	1920	233	0.	*
1	0040	9	4.	*	1	0655	84	37.	*	1	1310	159	0.	*	1	1925	234	0.	*
1	0045	10	6.	*	1	0700	85	31.	*	1	1315	160	0.	*	1	1930	235	0.	*
1	0050	11	8.	*	1	0705	86	27.	*	1	1320	161	0.	*	1	1935	236	0.	*
1	0055	12	10.	*	1	0710	87	22.	*	1	1325	162	0.	*	1	1940	237	0.	*
1	0100	13	10.	*	1	0715	88	19.	*	1	1330	163	0.	*	1	1945	238	0.	*
1	0105	14	10.	*	1	0720	89	16.	*	1	1335	164	0.	*	1	1950	239	0.	*
1	0110	15	9.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	*
1	0115	16	8.	*	1	0730	91	11.	*	1	1345	166	0.	*	1	2000	241	0.	*
1	0120	17	8.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	*
1	0125	18	9.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	*
1	0130	19	11.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	*
1	0135	20	14.	*	1	0750	95	5.	*	1	1405	170	0.	*	1	2020	245	0.	*
1	0140	21	16.	*	1	0755	96	4.	*	1	1410	171	0.	*	1	2025	246	0.	*
1	0145	22	24.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	*
1	0150	23	31.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	*
1	0155	24	38.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.	*
1	0200	25	43.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	*
1	0205	26	46.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	*
1	0210	27	47.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	*
1	0215	28	47.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	*
1	0220	29	49.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	*
1	0225	30	52.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	*
1	0230	31	58.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	*
1	0235	32	61.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.	*
1	0240	33	71.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	*
1	0245	34	78.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	*
1	0250	35	84.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	*
1	0255	36	91.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	*
1	0300	37	97.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	*
1	0305	38	103.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	*
1	0310	39	108.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	*
1	0315	40	122.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	*
1	0320	41	156.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	*
1	0325	42	224.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	*
1	0330	43	247.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	*
1	0335	44	336.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	*
1	0340	45	777.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	*
1	0345	46	1030.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	*
1	0350	47	1237.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	*
1	0355	48	1361.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	*
1	0400	49	1409.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	*
1	0405	50	1409.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	*
1	0410	51	1368.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	*
1	0415	52	1284.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	*
1	0420	53	1162.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	*
1	0425	54	1025.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	*
1	0430	55	894.	*	1	1045	130	0.	*	1	1660	205	0.	*	1	2315	280	0.	*
1	0435	56	786.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.	*
1	0440	57	707.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.	*
1	0445	58	654.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.	*
1	0450	59	620.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.	*
1	0455	60	597.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.	*
1	0500	61	580.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.	*
1	0505	62	565.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.	*
1	0510	63	544.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.	*
1	0515	64	515.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.	*
1	0520	65	480.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.	*
1	0525	66	438.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.	*
1	0530	67	394.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.	*
1	0535	68	349.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.	*
1	0540	69	308.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.	*
1	0545	70	270.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.	*
1	0550	71	246.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.	*
1	0555	72	206.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.	*
1	0600	73	181.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.	*
1	0605	74	160.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.	*
1	0610	75	141.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.	*

PEAK FLOW	TIME	6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)			
+	1409.	4.08	348. .995 (INCHES) (AC-FT)	88. 1.001 174.	84. 1.001 174.	84. 1.001 174.
CUMULATIVE AREA =			3.25 SQ MI			

HYDROGRAPH AT STATION C5B6-CA
SUM OF 2 HYDROGRAPHS
PLAN 1, RATIO = .88

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	*	1	0615	76	123.	*	*	1	1230	151	0.	*	*	1	1845	226	0.	*
1	0005	2	0.	*	*	1	0620	77	108.	*	*	1	1235	152	0.	*	*	1	1850	227	0.	*
1	0010	3	0.	*	*	1	0625	78	94.	*	*	1	1240	153	0.	*	*	1	1855	228	0.	*
1	0015	4	0.	*	*	1	0630	79	82.	*	*	1	1245	154	0.	*	*	1	1900	229	0.	*
1	0020	5	0.	*	*	1	0635	80	70.	*	*	1	1250	155	0.	*	*	1	1905	230	0.	*
1	0025	6	0.	*	*	1	0640	81	60.	*	*	1	1255	156	0.	*	*	1	1910	231	0.	*
1	0030	7	1.	*	*	1	0645	82	51.	*	*	1	1300	157	0.	*	*	1	1915	232	0.	*
1	0035	8	2.	*	*	1	0650	83	43.	*	*	1	1305	158	0.	*	*	1	1920	233	0.	*
1	0040	9	4.	*	*	1	0655	84	37.	*	*	1	1310	159	0.	*	*	1	1925	234	0.	*
1	0045	10	6.	*	*	1	0700	85	31.	*	*	1	1315	160	0.	*	*	1	1930	235	0.	*
1	0050	11	8.	*	*	1	0705	86	26.	*	*	1	1320	161	0.	*	*	1	1935	236	0.	*
1	0055	12	9.	*	*	1	0710	87	22.	*	*	1	1325	162	0.	*	*	1	1940	237	0.	*
1	0100	13	9.	*	*	1	0715	88	17.	*	*	1	1330	163	0.	*	*	1	1945	238	0.	*
1	0105	14	9.	*	*	1	0720	89	16.	*	*	1	1335	164	0.	*	*	1	1950	239	0.	*
1	0110	15	8.	*	*	1	0725	90	13.	*	*	1	1340	165	0.	*	*	1	1955	240	0.	*
1	0115	16	8.	*	*	1	0730	91	11.	*	*	1	1345	166	0.	*	*	1	2000	241	0.	*
1	0120	17	8.	*	*	1	0735	92	9.	*	*	1	1350	167	0.	*	*	1	2005	242	0.	*
1	0125	18	9.	*	*	1	0740	93	8.	*	*	1	1355	168	0.	*	*	1	2010	243	0.	*
1	0130	19	10.	*	*	1	0745	94	6.	*	*	1	1400	169	0.	*	*	1	2015	244	0.	*
1	0135	20	13.	*	*	1	0750	95	5.	*	*	1	1405	170	0.	*	*	1	2020	245	0.	*
1	0140	21	17.	*	*	1	0755	96	4.	*	*	1	1410	171	0.	*	*	1	2025	246	0.	*
1	0145	22	23.	*	*	1	0800	97	4.	*	*	1	1415	172	0.	*	*	1	2030	247	0.	*
1	0150	23	30.	*	*	1	0805	98	3.	*	*	1	1420	173	0.	*	*	1	2035	248	0.	*
1	0155	24	36.	*	*	1	0810	99	3.	*	*	1	1425	174	0.	*	*	1	2040	249	0.	*
1	0200	25	41.	*	*	1	0815	100	2.	*	*	1	1430	175	0.	*	*	1	2045	250	0.	*
1	0205	26	44.	*	*	1	0820	101	2.	*	*	1	1435	176	0.	*	*	1	2050	251	0.	*
1	0210	27	45.	*	*	1	0825	102	1.	*	*	1	1440	177	0.	*	*	1	2055	252	0.	*
1	0215	28	46.	*	*	1	0830	103	1.	*	*	1	1445	178	0.	*	*	1	2100	253	0.	*
1	0220	29	47.	*	*	1	0835	104	1.	*	*	1	1450	179	0.	*	*	1	2105	254	0.	*
1	0225	30	50.	*	*	1	0840	105	1.	*	*	1	1455	180	0.	*	*	1	2110	255	0.	*
1	0230	31	56.	*	*	1	0845	106	1.	*	*	1	1500	181	0.	*	*	1	2115	256	0.	*
1	0235	32	63.	*	*	1	0850	107	0.	*	*	1	1505	182	0.	*	*	1	2120	257	0.	*

ALEXDECAT.txt

1	0240	33	69.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	76.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	82.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	89.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	94.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	98.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	105.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	119.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	153.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	219.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	339.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	523.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	760.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	1008.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	1213.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	1335.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	1381.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	1378.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	1341.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	1260.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	1140.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	1004.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	878.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	774.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	697.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	644.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	611.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	588.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	572.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	556.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	536.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	508.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	473.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	432.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	388.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	344.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	303.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	266.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	239.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	204.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	179.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	158.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	139.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW	TIME	6-HR	MAXIMUM AVERAGE FLOW	72-HR
(CFS)	(HR)	(CFS)	24-HR	24.92-HR
+ 1381.	4.00	341.	86.	83.
		(INCHES)	.977	.982
		(AC-FT)	169.	170.

CUMULATIVE AREA = 3.25 SQ MI

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355 KK * RC5B6-CA *

361 KO OUTPUT CONTROL VARIABLES

IPRNT	1	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

HYDROGRAPH ROUTING DATA

360 RD MUSKINGUM-CUNGE CHANNEL ROUTING

L	800.	CHANNEL LENGTH
S	.0100	SLOPE
N	.015	CHANNEL ROUGHNESS COEFFICIENT
CA	.00	CONTRIBUTING AREA
SHAPE	TRAP	CHANNEL SHAPE
WD	12.00	BOTTOM WIDTH OR DIAMETER
Z	.00	SIDE SLOPE

COMPUTED MUSKINGUM-CUNGE PARAMETERS							
ELEMENT	ALPHA	M	DT	DX	PEAK	TIME TO PEAK	VOLUME
			(MIN)	(FT)	(CFS)	(MIN)	(IN)
MAIN	1.90	1.67	.36	400.00	1731.73	245.12	1.19

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	1.90	1.67	5.00	1731.13	245.00	1.19
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CONTINUITY SUMMARY (AC-FT) -- INFLOW= .2062E+03 EXCESS= .0000E+00 OUTFLOW= .2062E+03 BASIN STORAGE= .7937E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RC5B6-CA

PLAN 1, RATIO = .99

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0615	76	142.	*	1	1230	151	0.	*	1	1845	226	0.	
1	0005	2	0.	*	1	0620	77	125.	*	1	1235	152	0.	*	1	1850	227	0.	
1	0010	3	0.	*	1	0625	78	109.	*	1	1240	153	0.	*	1	1855	228	0.	
1	0015	4	0.	*	1	0630	79	94.	*	1	1245	154	0.	*	1	1900	229	0.	
1	0020	5	0.	*	1	0635	80	81.	*	1	1250	155	0.	*	1	1905	230	0.	
1	0025	6	0.	*	1	0640	81	69.	*	1	1255	156	0.	*	1	1910	231	0.	
1	0030	7	1.	*	1	0645	82	58.	*	1	1300	157	0.	*	1	1915	232	0.	
1	0035	8	3.	*	1	0650	83	49.	*	1	1305	158	0.	*	1	1920	233	0.	
1	0040	9	6.	*	1	0655	84	41.	*	1	1310	159	0.	*	1	1925	234	0.	
1	0045	10	10.	*	1	0700	85	35.	*	1	1315	160	0.	*	1	1930	235	0.	
1	0050	11	13.	*	1	0705	86	29.	*	1	1320	161	0.	*	1	1935	236	0.	
1	0055	12	16.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.	
1	0100	13	16.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	
1	0105	14	16.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	
1	0110	15	15.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	
1	0115	16	14.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	
1	0120	17	14.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	
1	0125	18	14.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	
1	0130	19	16.	*	1	0745	94	6.	*	1	1400	169	0.	*	1	2015	244	0.	
1	0135	20	20.	*	1	0750	95	5.	*	1	1405	170	0.	*	1	2020	245	0.	
1	0140	21	25.	*	1	0755	96	4.	*	1	1410	171	0.	*	1	2025	246	0.	
1	0145	22	32.	*	1	0800	97	3.	*	1	1415	172	0.	*	1	2030	247	0.	
1	0150	23	42.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	
1	0155	24	50.	*	1	0810	99	2.	*	1	1425	174	0.	*	1	2040	249	0.	

ALEXDECAT.txt																		
1	0200	25	57.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.
1	0205	26	61.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.
1	0210	27	63.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.
1	0215	28	64.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.
1	0220	29	65.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.
1	0225	30	68.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.
1	0230	31	74.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.
1	0235	32	82.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.
1	0240	33	91.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	99.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	107.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	115.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	122.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	127.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	134.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	151.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	190.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	269.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	413.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	634.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	916.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	1208.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	1448.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	1606.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	1696.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	1731.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	1690.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	1572.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	1411.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	1239.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	1077.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	938.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	831.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	757.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	712.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	684.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	665.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	646.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	623.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	590.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	550.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	503.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	452.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	401.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	353.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	310.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	270.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	236.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	207.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	182.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	161.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW	TIME	6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(CFS)	(CFS)	(CFS)	(CFS)
+	1731.	4.08	413.	104.	100.
			1,182	1,190	1,190
			205.	206.	206.
CUMULATIVE AREA = 3.25 SQ MI					

COMPUTED MUSKINGUM-CUNGE PARAMETERS							
ELEMENT	ALPHA	COMPUTATION TIME STEP	DT	DX	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(FT)	(CFS)	(MIN)	(IN)	MAXIMUM CELERITY (FPS)
MAIN	1.90	1.67	.37	400.00	1680.67	245.13	1.16
INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL							
MAIN	1.90	1.67	5.00	1680.12	245.00	1.16	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2010E+03 EXCESS= .0000E+00 OUTFLOW= .2010E+03 BASIN STORAGE= .7994E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RC5B6-CA
PLAN 1, RATIO = .98

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0615	76	139.	*	1	1230	151	0.	*	1	1845	226	0.	0.
1	0005	2	0.	*	1	0620	77	123.	*	1	1235	152	0.	*	1	1850	227	0.	0.
1	0010	3	0.	*	1	0625	78	107.	*	1	1240	153	0.	*	1	1855	228	0.	0.
1	0015	4	0.	*	1	0630	79	93.	*	1	1245	154	0.	*	1	1900	229	0.	0.
1	0020	5	0.	*	1	0635	80	80.	*	1	1250	155	0.	*	1	1905	230	0.	0.
1	0025	6	0.	*	1	0640	81	68.	*	1	1255	156	0.	*	1	1910	231	0.	0.
1	0030	7	1.	*	1	0645	82	58.	*	1	1300	157	0.	*	1	1915	232	0.	0.
1	0035	8	3.	*	1	0650	83	49.	*	1	1305	158	0.	*	1	1920	233	0.	0.
1	0040	9	6.	*	1	0655	84	41.	*	1	1310	159	0.	*	1	1925	234	0.	0.
1	0045	10	9.	*	1	0700	85	35.	*	1	1315	160	0.	*	1	1930	235	0.	0.
1	0050	11	12.	*	1	0705	86	29.	*	1	1320	161	0.	*	1	1935	236	0.	0.
1	0055	12	15.	*	1	0710	87	25.	*	1	1325	162	0.	*	1	1940	237	0.	0.
1	0100	13	15.	*	1	0715	88	21.	*	1	1330	163	0.	*	1	1945	238	0.	0.
1	0105	14	15.	*	1	0720	89	18.	*	1	1335	164	0.	*	1	1950	239	0.	0.
1	0110	15	14.	*	1	0725	90	15.	*	1	1340	165	0.	*	1	1955	240	0.	0.
1	0115	16	13.	*	1	0730	91	13.	*	1	1345	166	0.	*	1	2000	241	0.	0.
1	0120	17	13.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	0.
1	0125	18	13.	*	1	0740	93	9.	*	1	1355	168	0.	*	1	2010	243	0.	0.
1	0130	19	15.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	0.
1	0135	20	19.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	0.
1	0140	21	24.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	0.
1	0145	22	31.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	0.
1	0150	23	40.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	0.
1	0155	24	48.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.	0.
1	0200	25	54.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	0.
1	0205	26	61.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	0.
1	0210	27	63.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	0.
1	0215	28	61.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	0.
1	0220	29	62.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	0.

ALEXDECAT.txt																								
1	0345	46	1177.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.						
1	0350	47	1411.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.						
1	0355	48	1563.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.						
1	0400	49	1649.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.						
1	0405	50	1680.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.						
1	0410	51	1637.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.						
1	0415	52	1524.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.						
1	0420	53	1372.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.						
1	0425	54	1207.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.						
1	0430	55	1050.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.						
1	0435	56	915.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.						
1	0440	57	812.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.						
1	0445	58	742.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.						
1	0450	59	698.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.						
1	0455	60	671.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.						
1	0500	61	652.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.						
1	0505	62	634.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.						
1	0510	63	611.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.						
1	0515	64	579.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.						
1	0520	65	539.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.						
1	0525	66	493.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.						
1	0530	67	443.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.						
1	0535	68	394.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.						
1	0540	69	347.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.						
1	0545	70	304.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.						
1	0550	71	266.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.						
1	0555	72	232.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.						
1	0600	73	204.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.						
1	0605	74	179.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.						
1	0610	75	158.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.						

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
+	(CFS)	6-HR	24-HR	72-HR	24.92-HR	
+	1680.	4.08	(CFS)	403.	101.	98.
			(INCHES)	1.151	1.159	1.159
			(AC-FT)	200.	201.	201.
		CUMULATIVE AREA =		3.25 SQ MI		

CUMULATIVE AREA = 3.25 SQ MI

COMPUTED MUSKINGUM-CUNGE PARAMETERS							
ELEMENT	ALPHA	M	DT	DX	PEAK	TIME TO PEAK	VOLUME
			(MIN)	(FT)	(CFS)	(MIN)	(IN)
MAIN	1.90	1.67	.38	400.00	1592.70	245.21	1.11

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	1.90	1.67	5.00	1592.26	245.00	1.11
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1924E+03 EXCESS= .0000E+00 OUTFLOW= .1924E+03 BASIN STORAGE= .7898E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RCSB6-CA PLAN 1, RATIO = .95

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
1	0000	1	0.	*	1	0615	76	135.	*	1	1230	151	0.	*	1	1845	226	0.					
1	0005	2	0.	*	1	0620	77	119.	*	1	1235	152	0.	*	1	1850	227	0.					
1	0010	3	0.	*	1	0625	78	104.	*	1	1240	153	0.	*	1	1855	228	0.					
1	0015	4	0.	*	1	0630	79	90.	*	1	1245	154	0.	*	1	1900	229	0.					
1	0020	5	0.	*	1	0635	80	78.	*	1	1250	155	0.	*	1	1905	230	0.					
1	0025	6	0.	*	1	0640	81	66.	*	1	1255	156	0.	*	1	1910	231	0.					
1	0030	7	1.	*	1	0645	82	56.	*	1	1300	157	0.	*	1	1915	232	0.					
1	0035	8	2.	*	1	0650	83	48.	*	1	1305	158	0.	*	1	1920	233	0.					
1	0040	9	5.	*	1	0655	84	40.	*	1	1310	159	0.	*	1	1925	234	0.					
1	0045	10	8.	*	1	0700	85	34.	*	1	1315	160	0.	*	1	1930	235	0.					
1	0050	11	11.	*	1	0705	86	29.	*	1	1320	161	0.	*	1	1935	236	0.					
1	0055	12	13.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.					
1	0100	13	13.	*	1	0715	88	21.	*	1	1330	163	0.	*	1	1945	238	0.					
1	0105	14	13.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.					
1	0110	15	12.	*	1	0725	90	15.	*	1	1340	165	0.	*	1	1955	240	0.					
1	0115	16	12.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.					
1	0120	17	11.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.					
1	0125	18	12.	*	1	0740	93	9.	*	1	1355	168	0.	*	1	2010	243	0.					
1	0130	19	14.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.					
1	0135	20	17.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.					
1	0140	21	22.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.					
1	0145	22	29.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.					
1	0150	23	37.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.					
1	0155	24	44.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.					
1	0200	25	50.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.					
1	0205	26	54.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.					
1	0210	27	56.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.					
1	0215	28	56.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.					
1	0220	29	58.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.					
1	0225	30	61.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.					
1	0230	31	67.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.					
1	0235	32	74.	*	1	0850	107	1.	*	1	1505	182	0.	*	1	2120	257	0.					
1	0240	33	82.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.					
1	0245	34	89.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.					
1	0250	35	97.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.					
1	0255	36	104.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.					
1	0300	37	110.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.					
1	0305	38	115.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.					
1	0310	39	122.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.					
1	0315	40	137.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.					
1	0320	41	173.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.					
1	0325	42	245.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.					
1	0330	43	378.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.					
1	0335	44	584.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.					
1	0340	45	848.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.					
1	0345	46	1125.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.					
1	0350	47	1351.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.					
1	0355	48	1355	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.					
1	0400	49	1570.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.					
1	0405	50	1592.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.					
1	0410	51	1557.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.					
1	0415	52	1457.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.					
1	0420	53	1472.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.					
1	0425	54	1153.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.					
1	0430	55	1004.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.					
1	0435	56	877.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.					
1	0440	57	781.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.					
1	0445	58	715.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.					
1	0450	59	673.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.					
1	0455	60	649.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.					
1	0500	61	630.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.					
1	0505	62	613.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.					
1	0510	63	591.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.					
1	0515	64	564.	*	1	1130	139	0.	*	1	1745	214	0.	*	1	2360	289	0.					
1	0520	65	522.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.					
1	0525	66	477.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.					

ALEXDECAT.txt														
1	0530	67	429.	*	1	1145	142	0.	*	1	1800	217	0.	*
1	0535	68	381.	*	1	1150	143	0.	*	1	1805	218	0.	*
1	0540	69	336.	*	1	1155	144	0.	*	1	1810	219	0.	*
1	0545	70	295.	*	1	1200	145	0.	*	1	1815	220	0.	*
1	0550	71	258.	*	1	1205	146	0.	*	1	1820	221	0.	*
1	0555	72	225.	*	1	1210	147	0.	*	1	1825	222	0.	*
1	0600	73	198.	*	1	1215	148	0.	*	1	1830	223	0.	*
1	0605	74	174.	*	1	1220	149	0.	*	1	1835	224	0.	*
1	0610	75	154.	*	1	1225	150	0.	*	1	1840	225	0.	*

PEAK FLOW	TIME	6-HR	MAXIMUM AVERAGE FLOW	24.92-HR
+ (CFS)	(HR)	(CFS)	24-HR	72-HR
+ 1592.	4.08	385.	97.	93.
		(INCHES)	1,102	1,110
		(AC-FT)	191.	192.
CUMULATIVE AREA = 3.25 SQ MI				

COMPUTED MUSKINGUM-CUNGE PARAMETERS									
ELEMENT	ALPHA	M	DT	DX	PEAK	TIME TO PEAK	VOLUME	MAXIMUM CELERITY	
			(MIN)	(FT)	(CFS)	(MIN)	(IN)	(FPS)	
MAIN	1.90	1.67	.39	400.00	1505.18	245.05	1.06	34.61	

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL									
MAIN	1.90	1.67	5.00		1505.08	245.00	1.06		

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1836E+03 EXCESS= .0000E+00 OUTFLOW= .1836E+03 BASIN STORAGE= .8162E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RC586-CA
PLAN 1, RATIO = .93

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	
1	0000	1	0.	*	1	0615	76	131.	*	1	1230	151	0.	*	1	1845	226	0.	*	1	0005	2	0.	*
1	0005	2	0.	*	1	0620	77	116.	*	1	1235	152	0.	*	1	1850	227	0.	*	1	0010	3	0.	*
1	0010	3	0.	*	1	0625	78	101.	*	1	1240	153	0.	*	1	1855	228	0.	*	1	0015	4	0.	*
1	0015	4	0.	*	1	0630	79	88.	*	1	1245	154	0.	*	1	1900	229	0.	*	1	0020	5	0.	*
1	0020	5	0.	*	1	0635	80	76.	*	1	1250	155	0.	*	1	1905	230	0.	*	1	0025	6	0.	*
1	0025	6	0.	*	1	0640	81	65.	*	1	1255	156	0.	*	1	1910	231	0.	*	1	0030	7	0.	*
1	0030	7	1.	*	1	0645	82	55.	*	1	1300	157	0.	*	1	1915	232	0.	*	1	0035	8	0.	*
1	0035	8	2.	*	1	0650	83	47.	*	1	1305	158	0.	*	1	1920	233	0.	*	1	0040	9	0.	*
1	0040	9	4.	*	1	0655	84	39.	*	1	1310	159	0.	*	1	1925	234	0.	*	1	0045	10	0.	*
1	0045	10	7.	*	1	0700	85	33.	*	1	1315	160	0.	*	1	1930	235	0.	*	1	0050	11	0.	*
1	0050	11	9.	*	1	0705	86	28.	*	1	1320	161	0.	*	1	1935	236	0.	*	1	0055	12	0.	*
1	0055	12	11.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.	*	1	0100	13	0.	*
1	0100	13	12.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	*	1	0105	14	0.	*
1	0105	14	11.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	*	1	0110	15	0.	*
1	0110	15	11.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	*	1	0115	16	0.	*
1	0115	16	10.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	*	1	0120	17	0.	*
1	0120	17	10.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	*	1	0125	18	0.	*
1	0125	18	11.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	*	1	0130	19	0.	*
1	0130	19	12.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	*	1	0135	20	0.	*
1	0135	20	15.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	*	1	0140	21	0.	*
1	0140	21	20.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	*	1	0145	22	0.	*
1	0145	22	26.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	*	1	0150	23	0.	*
1	0150	23	33.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	*	1	0155	24	0.	*
1	0155	24	41.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.	*	1	0200	25	0.	*
1	0200	25	46.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	*	1	0205	26	0.	*
1	0205	26	50.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	*	1	0210	27	0.	*
1	0210	27	51.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	*	1	0215	28	0.	*
1	0215	28	52.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	*	1	0220	29	0.	*
1	0220	29	53.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	*	1	0225	30	0.	*
1	0225	30	57.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	*	1	0230	31	0.	*
1	0230	31	62.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	*	1	0235	32	0.	*
1	0235	32	69.	*	1	0850	107	1.	*	1	1505	182	0.	*	1	2120	257	0.	*	1	0240	33	0.	*
1	0240	33	77.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	*	1	0245	34	0.	*
1	0245	34	84.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	*	1	0250	35	0.	*
1	0250	35	91.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	*	1	0255	36	0.	*
1	0255	36	98.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	*	1	0300	37	0.	*
1	0300	37	104.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	*	1	0305	38	0.	*
1	0305	38	108.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	*	1	0310	39	0.	*
1	0310	39	115.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	*	1	0315	40	0.	*
1	0315	40	129.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	*	1	0320	41	0.	*
1	0320	41	163.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	*	1	0325	42	0.	*
1	0325	42	232.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	*	1	0330	43	0.	*
1	0330	43	357.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	*	1	0335	44	0.	*
1	0335	44	554.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	*	1	0340	45	0.	*
1	0340	45	807.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	*	1	0345	46	0.	*
1	0345	46	1073.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	*	1	0350	47	0.	*
1	0350	47	1292.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	*	1	0355	48	0.	*
1	0355	48	1429.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	*	1	0400	49	0.	*
1	0400	49	1490.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	*	1	0405	50	0.	*
1	0405	50	1505.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	*	1	0410	51	0.	*
1	0410	51	1469.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	*	1	0415	52	0.	*
1	0415	52	1376.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	*	1	0420	53	0.	*
1	0420	53	1246.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	*	1	0425	54	0.	*
1	0425	54	1099.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	*	1	0430	55	0.	*
1	0430	55	958.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	*	1	0435	56	0.	*
1	0435	56	839.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.	*	1	0440	57	0.	*
1	0440	57	750.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.	*	1	0445	58	0.	*
1	0445	58	690.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.	*	1	0450	59	0.	*
1	0450	59	651.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.	*	1	0455	60	0.	*
1	0455	60	626.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.	*	1	0500	61	0.	*
1	0500	61	608.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.	*	1	0505	62	0.	*
1	0505	62	591.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.	*	1	0510	63	0.	*
1	0510	63	570.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.	*	1	0515	64	0.	*
1	0515	64	541.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.	*	1	0520	65	0.	*
1	0520	65	504.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.	*	1	0525	66	0.	*
1	0525	66	461.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.	*	1	0530	67	0.	*
1	0530	67	415.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.	*	1	0535	68	0.	*
1	0535	68	369.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.	*	1	0540	69	0.	*
1	0540	69	325.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.	*	1	0545	70	0.	*
1	0545	70	285.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.	*	1	0550	71	0.	*
1	0550	71	250.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.	*	1	0555	72	0.	*
1	0555	72	218.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.	*	1	0600	73	0.	*
1	0600	73	192.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.</						

COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP
ELEMENT ALPHA M DT DX PEAK TIME TO VOLUME MAXIMUM
(MIN) (FT) (CFS) (MIN) (IN) CELERITY
(FPS)

MAIN 1.90 1.67 .39 400.00 1475.74 245.06 1.04 34.33

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN 1.90 1.67 5.00 1475.67 245.00 1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1804E+03 EXCESS= .0000E+00 OUTFLOW= .1804E+03 BASIN STORAGE= .7976E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RCSB6-CA
PLAN 1, RATIO = .92

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
1	0000	1	0.	*	1	0615	76	130.	*	1	1230	151	0.	*	1	1845	226	0.	*				
1	0005	2	0.	*	1	0620	77	114.	*	1	1235	152	0.	*	1	1850	227	0.	*				
1	0010	3	0.	*	1	0625	78	100.	*	1	1240	153	0.	*	1	1855	228	0.	*				
1	0015	4	0.	*	1	0630	79	87.	*	1	1245	154	0.	*	1	1900	229	0.	*				
1	0020	5	0.	*	1	0635	80	75.	*	1	1250	155	0.	*	1	1905	230	0.	*				
1	0025	6	0.	*	1	0640	81	64.	*	1	1255	156	0.	*	1	1910	231	0.	*				
1	0030	7	1.	*	1	0645	82	54.	*	1	1300	157	0.	*	1	1915	232	0.	*				
1	0035	8	2.	*	1	0650	83	46.	*	1	1305	158	0.	*	1	1920	233	0.	*				
1	0040	9	4.	*	1	0655	84	39.	*	1	1310	159	0.	*	1	1925	234	0.	*				
1	0045	10	6.	*	1	0700	85	33.	*	1	1315	160	0.	*	1	1930	235	0.	*				
1	0050	11	9.	*	1	0705	86	28.	*	1	1320	161	0.	*	1	1935	236	0.	*				
1	0055	12	11.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.	*				
1	0100	13	11.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	*				
1	0105	14	11.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	*				
1	0110	15	10.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	*				
1	0115	16	10.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	*				
1	0120	17	9.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	*				
1	0125	18	10.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	*				
1	0130	19	12.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	*				
1	0135	20	14.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	*				
1	0140	21	19.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	*				
1	0145	22	25.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	*				
1	0150	23	32.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	*				
1	0155	24	39.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.	*				
1	0200	25	45.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	*				
1	0205	26	48.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	*				
1	0210	27	50.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	*				
1	0215	28	50.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	*				
1	0220	29	52.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	*				
1	0225	30	55.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	*				
1	0230	31	60.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	*				
1	0235	32	67.	*	1	0850	107	1.	*	1	1505	182	0.	*	1	2120	257	0.	*				
1	0240	33	74.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	*				
1	0245	34	81.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	*				
1	0250	35	88.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	*				
1	0255	36	95.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	*				
1	0300	37	101.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	*				
1	0305	38	106.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	*				
1	0310	39	112.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	*				
1	0315	40	126.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	*				
1	0320	41	159.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	*				
1	0325	42	226.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	*				
1	0330	43	350.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	*				
1	0335	44	543.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	*				
1	0340	45	791.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	*				
1	0345	46	1053.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	*				
1	0350	47	1270.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	*				
1	0355	48	1405.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	*				
1	0400	49	1465.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	*				
1	0405	50	1476.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	*				
1	0410	51	1439.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	*				
1	0415	52	1353.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	*				
1	0420	53	1224.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	*				
1	0425	54	1078.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	*				
1	0430	55	941.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	*				
1	0435	56	825.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.	*				
1	0440	57	738.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.	*				
1	0445	58	679.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.	*				
1	0450	59	641.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.	*				
1	0455	60	617.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.	*				
1	0500	61	599.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.	*				
1	0505	62	583.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.	*				
1	0510	63	562.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.	*				
1	0515	64	533.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.	*				
1	0520	65	497.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.	*				
1	0525	66	455.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.	*				
1	0530	67	410.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.	*				
1	0535	68	364.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.	*				
1	0540	69	321.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.	*				
1	0545	70	282.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.	*				
1	0550	71	246.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.	*				
1	0555	72	216.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.	*				
1	0600	73	189.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.	*				
1	0605	74	167.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.	*				
1	0610	75	147.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.	*				

PEAK FLOW TIME
+ (CFS) (HR)
+ 1476. 4.08
(INCHES)
(AC-FT)
CUMULATIVE AREA = 3.25 SQ MI

COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP
ELEMENT ALPHA M DT DX PEAK TIME TO VOLUME MAXIMUM
(MIN) (FT) (CFS) (MIN) (IN) CELERITY
(FPS)

MAIN 1.90 1.67 .39 400.00 1448.26 244.97 1.03 34.07

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN 1.90 1.67 5.00 1448.22 245.00 1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1778E+03 EXCESS= .0000E+00 OUTFLOW= .1778E+03 BASIN STORAGE= .8208E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RC5B6-CA
PLAN 1, RATIO = .91

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
1	0000	1	0.	*	1	0615	76	129.	*	1	1230	151	0.	*	1	1845	226	0.	*				
1	0005	2	0.	*	1	0620	77	113.	*	1	1235	152	0.	*	1	1850	227	0.	*				
1	0010	3	0.	*	1	0625	78	99.	*	1	1240	153	0.	*	1	1855	228	0.	*				
1	0015	4	0.	*	1	0630	79	86.	*	1	1245	154	0.	*	1	1900	229	0.	*				
1	0020	5	0.	*	1	0635	80	74.	*	1	1250	155	0.	*	1	1905	230	0.	*				
1	0025	6	0.	*	1	0640	81	64.	*	1	1255	156	0.	*	1	1910	231	0.	*				
1	0030	7	1.	*	1	0645	82	54.	*	1	1300	157	0.	*	1	1915	232	0.	*				
1	0035	8	2.	*	1	0650	83	46.	*	1	1305	158	0.	*	1	1920	233	0.	*				
1	0040	9	4.	*	1	0655	84	39.	*	1	1310	159	0.	*	1	1925	234	0.	*				
1	0045	10	6.	*	1	0700	85	33.	*	1	1315	160	0.	*	1	1930	235	0.	*				
1	0050	11	8.	*	1	0705	86	28.	*	1	1320	161	0.	*	1	1935	236	0.	*				
1	0055	12	10.	*	1	0710	87	24.	*	1	1325	162	0.	*	1	1940	237	0.	*				
1	0100	13	11.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	*				
1	0105	14	10.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	*				
1	0110	15	10.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	*				
1	0115	16	9.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	*				
1	0120	17	9.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	*				
1	0125	18	10.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	*				
1	0130	19	11.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	*				
1	0135	20	14.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	*				
1	0140	21	18.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	*				
1	0145	22	24.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	*				
1	0150	23	31.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	*				
1	0155	24	38.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.	*				
1	0200	25	44.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	*				
1	0205	26	47.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	*				
1	0210	27	48.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	*				
1	0215	28	49.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	*				
1	0220	29	50.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	*				
1	0225	30	54.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	*				
1	0230	31	59.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	*				
1	0235	32	66.	*	1	0850	107	1.	*	1	1505	182	0.	*	1	2120	257	0.	*				
1	0240	33	73.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	*				
1	0245	34	80.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	*				
1	0250	35	86.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	*				
1	0255	36	93.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	*				
1	0300	37	99.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	*				
1	0305	38	104.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	*				
1	0310	39	110.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	*				
1	0315	40	124.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	*				
1	0320	41	157.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	*				
1	0325	42	222.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	*				
1	0330	43	344.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	*				
1	0335	44	534.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	*				
1	0340	45	779.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	*				
1	0345	46	1039.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	*				
1	0350	47	1253.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	*				
1	0355	48	1384.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	*				
1	0400	49	1440.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	*				
1	0405	50	1448.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	*				
1	0410	51	1413.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	*				
1	0415	52	1327.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	*				
1	0420	53	1202.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	*				
1	0425	54	1061.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	*				
1	0430	55	926.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	*				
1	0435	56	812.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.	*				
1	0440	57	728.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.	*				
1	0445	58	672.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.	*				
1	0450	59	635.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.	*				
1	0455	60	611.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.	*				
1	0500	61	593.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.	*				
1	0505	62	577.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.	*				
1	0510	63	557.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.	*				
1	0515	64	528.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.	*				
1	0520	65	492.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.	*				
1	0525	66	451.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.	*				
1	0530	67	406.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.	*				
1	0535	68	360.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.	*				
1	0540	69	318.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.	*				
1	0545	70	279.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.	*				
1	0550	71	244.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.	*				
1	0555	72	214.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.	*				
1	0600	73	188.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.	*				
1	0605	74	166.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.	*				
1	0610	75	146.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.	*				

PEAK FLOW	TIME		6-HR	24-HR	72-HR	24.92-HR
+	(CFS)					
+	1448.	4.08	357.	90.	86.	86.
			1,020	1,026	1,026	1,026
			177.	178.	178.	178.

CUMULATIVE AREA = 3.25 SQ MI

COMPUTED MUSKINGUM-CUNGE PARAMETERS								
ELEMENT	ALPHA	COMPUTATION TIME STEP			PEAK	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
		M	DT	DX				
			(MIN)	(FT)				
MAIN	1.90	1.67	.39	400.00	1436.31	245.00	1.02	33.96

ALEXDECAT.txt																		
1	0105	14	10.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.
1	0110	15	9.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.
1	0115	16	9.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.
1	0120	17	9.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.
1	0125	18	9.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.
1	0130	19	11.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.
1	0135	20	14.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.
1	0140	21	18.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.
1	0145	22	24.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.
1	0150	23	31.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.
1	0155	24	37.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.
1	0200	25	43.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.
1	0205	26	46.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.
1	0210	27	48.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.
1	0215	28	48.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.
1	0220	29	50.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.
1	0225	30	53.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.
1	0230	31	58.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.
1	0235	32	65.	*	1	0850	107	1.	*	1	1505	182	0.	*	1	2120	257	0.
1	0240	33	72.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	79.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	85.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	92.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	98.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	102.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	109.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	123.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	155.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	220.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	341.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	528.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	770.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	1028.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	1241.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	1372.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	1428.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	1436.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	1402.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	1317.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	1192.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	1051.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	918.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	806.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	723.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	666.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	630.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	606.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	589.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	573.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	553.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	524.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	489.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	448.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	403.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	358.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	316.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	277.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	243.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	212.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	187.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	164.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	145.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW	TIME		6-HR	MAXIMUM AVERAGE FLOW	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)					
+	1436.	4.08	(CFS)	353.	89.	86.	86.
			(INCHES)	1.011	1.017	1.017	1.017
			(AC-FT)	175.	176.	176.	176.

CUMULATIVE AREA = 3.25 SQ MI

COMPUTED MUSKINGUM-CUNGE PARAMETERS									
ELEMENT	ALPHA	M	DT	DX	PEAK	TIME TO PEAK	VOLUME	MAXIMUM Celerity	
			(MIN)	(FT)	(CFS)	(MIN)	(IN)	(FPS)	
MAIN	1.90	1.67	.40	400.00	1409.31	244.91	1.00	33.70	

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	1.90	1.67	5.00	1409.15	245.00	1.00
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1736E+03 EXCESS= .0000E+00 OUTFLOW= .1736E+03 BASIN STORAGE= .7945E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RC5B6-CA PLAN 1, RATIO = .89

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1	0000	1	0.	*	1	0615	76	127.	*	1	1230	151	0.	*	1	1845	226	0.	*			
1	0005	2	0.	*	1	0620	77	112.	*	1	1235	152	0.	*	1	1850	227	0.	*			
1	0010	3	0.	*	1	0625	78	98.	*	1	1240	153	0.	*	1	1855	228	0.	*			
1	0015	4	0.	*	1	0630	79	85.	*	1	1245	154	0.	*	1	1900	229	0.	*			
1	0020	5	0.	*	1	0635	80	73.	*	1	1250	155	0.	*	1	1905	230	0.	*			
1	0025	6	0.	*	1	0640	81	63.	*	1	1255	156	0.	*	1	1910	231	0.	*			
1	0030	7	1.	*	1	0645	82	53.	*	1	1300	157	0.	*	1	1915	232	0.	*			
1	0035	8	2.	*	1	0650	83	45.	*	1	1305	158	0.	*	1	1920	233	0.	*			
1	0040	9	3.	*	1	0655	84	38.	*	1	1310	159	0.	*	1	1925	234	0.	*			
1	0045	10	6.	*	1	0700	85	32.	*	1	1315	160	0.	*	1	1930	235	0.	*			
1	0050	11	8.	*	1	0705	86	27.	*	1	1320	161	0.	*	1	1935	236	0.	*			
1	0055	12	9.	*	1	0710	87	23.	*	1	1325	162	0.	*	1	1940	237	0.	*			
1	0100	13	10.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	*			
1	0105	14	10.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	*			
1	0110	15	9.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	*			
1	0115	16	9.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	*			
1	0120	17	8.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	*			
1	0125	18	9.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	*			
1	0130	19	10.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	*			
1	0135	20	13.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	*			
1	0140	21	15.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	*			
1	0145	22	23.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	*			
1	0150	23	30.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	*			
1	0155	24	36.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.	*			
1	0200	25	42.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	*			
1	0205	26	45.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	*			
1	0210	27	40.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	*			
1	0215	28	47.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	*			
1	0220	29	48.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	*			
1	0225	30	51.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	*			
1	0230	31	57.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	*			
1	0235	32	58.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.	*			
1	0240	33	70.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	*			
1	0245	34	77.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	*			

ALEXDECAT.txt																		
1	0250	35	83.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	90.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	96.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	100.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	106.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	120.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	152.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	216.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	334.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	519.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	759.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	1013.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	1224.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	1353.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	1406.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	1409.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	1371.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	1289.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	1170.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	1034.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	904.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	795.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	713.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	658.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	623.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	599.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	582.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	566.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	546.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	518.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	483.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	442.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	398.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	354.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	312.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	274.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	240.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	210.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	185.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	163.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	144.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW							
(CFS)	(HR)	6-HR	24-HR	72-HR	24.92-HR				
+		(CFS)							
+	1409.	4.08	348.	88.	84.				
			.995	1.001	1.001				
		(INCHES	173.	174.	174.				
		(AC-FT)							
CUMULATIVE AREA = 3.25 SQ MI									
COMPUTED MUSKINGUM-CUNGE PARAMETERS									
ELEMENT	ALPHA	M	COMPUTATION TIME STEP	DT	DX	PEAK	TIME TO PEAK	VOLUME	MAXIMUM CELERITY
			(MIN)		(FT)	(CFS)	(MIN)	(IN)	(FPS)
MAIN	1.90	1.67	.40		400.00	1380.44	240.55	.98	33.42
INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL									
MAIN	1.90	1.67	5.00			1377.92	245.00	.98	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1703E+03 EXCESS= .0000E+00 OUTFLOW= .1703E+03 BASIN STORAGE= .8204E-03 PERCENT ERROR= .0

HYDROGRAPH AT STATION RCSB6-CA																							
PLAN 1, RATIO = .88																							

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	
1	0000	1	0.	*	1	0615	76	125.	*	1	1230	151	0.	*	1	1845	226	0.	1	0005	2	0.	*
1	0005	2	0.	*	1	0620	77	110.	*	1	1235	152	0.	*	1	1850	227	0.	1	0010	3	0.	*
1	0010	3	0.	*	1	0625	78	97.	*	1	1240	153	0.	*	1	1855	228	0.	1	0015	4	0.	*
1	0015	4	0.	*	1	0630	79	84.	*	1	1245	154	0.	*	1	1900	229	0.	1	0020	5	0.	*
1	0020	5	0.	*	1	0635	80	73.	*	1	1250	155	0.	*	1	1905	230	0.	1	0025	6	0.	*
1	0025	6	0.	*	1	0640	81	62.	*	1	1255	156	0.	*	1	1910	231	0.	1	0030	7	1.	*
1	0030	7	1.	*	1	0645	82	53.	*	1	1300	157	0.	*	1	1915	232	0.	1	0035	8	2.	*
1	0035	8	2.	*	1	0650	83	45.	*	1	1305	158	0.	*	1	1920	233	0.	1	0040	9	3.	*
1	0040	9	3.	*	1	0655	84	38.	*	1	1310	159	0.	*	1	1925	234	0.	1	0045	10	5.	*
1	0045	10	5.	*	1	0700	85	32.	*	1	1315	160	0.	*	1	1930	235	0.	1	0050	11	7.	*
1	0050	11	7.	*	1	0705	86	27.	*	1	1320	161	0.	*	1	1935	236	0.	1	0055	12	9.	*
1	0055	12	9.	*	1	0710	87	23.	*	1	1325	162	0.	*	1	1940	237	0.	1	0100	13	9.	*
1	0100	13	9.	*	1	0715	88	20.	*	1	1330	163	0.	*	1	1945	238	0.	1	0105	14	9.	*
1	0105	14	9.	*	1	0720	89	17.	*	1	1335	164	0.	*	1	1950	239	0.	1	0110	15	9.	*
1	0110	15	9.	*	1	0725	90	14.	*	1	1340	165	0.	*	1	1955	240	0.	1	0115	16	8.	*
1	0115	16	8.	*	1	0730	91	12.	*	1	1345	166	0.	*	1	2000	241	0.	1	0120	17	8.	*
1	0120	17	8.	*	1	0735	92	10.	*	1	1350	167	0.	*	1	2005	242	0.	1	0125	18	8.	*
1	0125	18	8.	*	1	0740	93	8.	*	1	1355	168	0.	*	1	2010	243	0.	1	0130	19	10.	*
1	0130	19	10.	*	1	0745	94	7.	*	1	1400	169	0.	*	1	2015	244	0.	1	0135	20	12.	*
1	0135	20	12.	*	1	0750	95	6.	*	1	1405	170	0.	*	1	2020	245	0.	1	0140	21	17.	*
1	0140	21	17.	*	1	0755	96	5.	*	1	1410	171	0.	*	1	2025	246	0.	1	0145	22	22.	*
1	0145	22	22.	*	1	0800	97	4.	*	1	1415	172	0.	*	1	2030	247	0.	1	0150	23	29.	*
1	0150	23	29.	*	1	0805	98	3.	*	1	1420	173	0.	*	1	2035	248	0.	1	0155	24	35.	*
1	0155	24	35.	*	1	0810	99	3.	*	1	1425	174	0.	*	1	2040	249	0.	1	0200	25	40.	*
1	0200	25	40.	*	1	0815	100	2.	*	1	1430	175	0.	*	1	2045	250	0.	1	0205	26	43.	*
1	0205	26	43.	*	1	0820	101	2.	*	1	1435	176	0.	*	1	2050	251	0.	1	0210	27	45.	*
1	0210	27	45.	*	1	0825	102	1.	*	1	1440	177	0.	*	1	2055	252	0.	1	0215	28	45.	*
1	0215	28	45.	*	1	0830	103	1.	*	1	1445	178	0.	*	1	2100	253	0.	1	0220	29	47.	*
1	0220	29	47.	*	1	0835	104	1.	*	1	1450	179	0.	*	1	2105	254	0.	1	0225	30	50.	*
1	0225	30	50.	*	1	0840	105	1.	*	1	1455	180	0.	*	1	2110	255	0.	1	0230	31	55.	*
1	0230	31	55.	*	1	0845	106	1.	*	1	1500	181	0.	*	1	2115	256	0.	1	0235	32	61.	*
1	0235	32	61.	*	1	0850	107	1.	*	1	1505	182	0.	*	1	2120	257	0.	1	0240	33	68.	*
1	0240	33	68.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	1	0245	34	75.	*
1	0245	34	75.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	1	0250	35	81.	*
1	0250	35	81.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	1	0255	36	87.	*
1	0255	36	87.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	1	0300	37	93.	*
1	0300	37	93.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	1	0305	38	98.	*
1	0305	38	98.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	1	0310	39	104.	*
1	0310	39	104.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	1	0315	40	117.	*
1	0315	40	117.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	1	0320	41	148.	*
1	0320	41	148.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	1	0325	42	210.	*
1	0325	42	210.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	1	0330	43	326.	*
1	0330	43	326.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	1	0335	44	306.	*
1	0335	44	306.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	1	0340	45	741.	*
1	0340	45	741.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	1	0345	46	991.	*
1	0345	46	991.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	1	0350	47	1199.	*
1	0350	47	1199.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	1	0355	48	1328.	*
1	0355	48	1328.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	1	0400	49	1378.	*
1	0400	49	1378.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	1	0405	50	1378.	*
1	0405	50	1378.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	1	0410	51	1343.	*
1	0410	51	1343.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	1	0415	52	1265.	*
1	0415	52	1265.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	1	0420	53	1148.	*
1	0420	53	1148.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	1	0425	54	1014.	*
1	0425	54	1014.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	1	0430	55	887.	*
1	0430	55	887.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	1				

ALEXDECAT.txt													
1	0435	56	782.	*	1	1050	131	0.	*	1	1705	206	0.
1	0440	57	703.	*	1	1055	132	0.	*	1	1710	207	0.
1	0445	58	649.	*	1	1100	133	0.	*	1	1715	208	0.
1	0450	59	614.	*	1	1105	134	0.	*	1	1720	209	0.
1	0455	60	590.	*	1	1110	135	0.	*	1	1725	210	0.
1	0500	61	573.	*	1	1115	136	0.	*	1	1730	211	0.
1	0505	62	558.	*	1	1120	137	0.	*	1	1735	212	0.
1	0510	63	538.	*	1	1125	138	0.	*	1	1740	213	0.
1	0515	64	511.	*	1	1130	139	0.	*	1	1745	214	0.
1	0520	65	476.	*	1	1135	140	0.	*	1	1750	215	0.
1	0525	66	436.	*	1	1140	141	0.	*	1	1755	216	0.
1	0530	67	392.	*	1	1145	142	0.	*	1	1800	217	0.
1	0535	68	349.	*	1	1150	143	0.	*	1	1805	218	0.
1	0540	69	308.	*	1	1155	144	0.	*	1	1810	219	0.
1	0545	70	270.	*	1	1200	145	0.	*	1	1815	220	0.
1	0550	71	237.	*	1	1205	146	0.	*	1	1820	221	0.
1	0555	72	207.	*	1	1210	147	0.	*	1	1825	222	0.
1	0600	73	182.	*	1	1215	148	0.	*	1	1830	223	0.
1	0605	74	161.	*	1	1220	149	0.	*	1	1835	224	0.
1	0610	75	142.	*	1	1225	150	0.	*	1	1840	225	0.

PEAK FLOW	TIME	6-HR	MAXIMUM AVERAGE FLOW	72-HR	24.92-HR
+	(CFS)				
+	1378.	4.08	342.	86.	83.
			.977	.983	.983
		(INCHES)			
		(AC-FT)	169.	170.	170.
CUMULATIVE AREA = 3.25 SQ MI					

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PEAK FLOW AND STAGE (END-OF-PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND, AREA IN SQUARE MILES
TIME TO PEAK IN HOURS

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO PRECIPITATION								
				RATIO 1	RATIO 2	RATIO 3	RATIO 4	RATIO 5	RATIO 6	RATIO 7	RATIO 8	RATIO 9
				.99	.98	.95	.93	.92	.91	.90	.89	.88
HYDROGRAPH AT	LGD17BG-	.36	1 FLOW TIME	299.	293.	282.	272.	267.	264.	262.	259.	254.
ROUTED TO	RGD17BG	.36	1 FLOW TIME	298.	292.	281.	271.	267.	264.	261.	258.	254.
HYDROGRAPH AT	GD11B-C	.26	1 FLOW TIME	313.	307.	297.	287.	283.	280.	278.	274.	270.
2 COMBINED AT	CGD11B-C	.63	1 FLOW TIME	539.	528.	509.	490.	483.	478.	474.	468.	460.
ROUTED TO	RCGD11B	.63	1 FLOW TIME	538.	527.	508.	490.	482.	477.	473.	467.	460.
HYDROGRAPH AT	PT6B-C	.45	1 FLOW TIME	250.	244.	234.	224.	220.	218.	216.	213.	209.
2 COMBINED AT	CPT6B-C	1.08	1 FLOW TIME	742.	726.	699.	672.	662.	654.	649.	641.	630.
DIVERSION TO	DGOW1A	1.08	1 FLOW TIME	560.	560.	560.	560.	560.	560.	560.	560.	560.
HYDROGRAPH AT	DPT6B-C1	1.08	1 FLOW TIME	182.	166.	139.	112.	102.	94.	89.	81.	70.
DIVERSION TO	DTRILGY	1.08	1 FLOW TIME	51.	48.	43.	37.	35.	34.	32.	28.	23.
HYDROGRAPH AT	DPT6B-C2	1.08	1 FLOW TIME	131.	118.	97.	75.	67.	61.	57.	53.	48.
ROUTED TO	RCPT6B-C	1.08	1 FLOW TIME	128.	131.	98.	74.	64.	68.	66.	62.	58.
HYDROGRAPH AT	DGOW1A	.00	1 FLOW TIME	560.	560.	560.	560.	560.	560.	560.	560.	560.
ROUTED TO	RDGOW1A	.00	1 FLOW TIME	562.	563.	563.	561.	561.	561.	561.	561.	561.
2 COMBINED AT	CCY08-C	1.08	1 FLOW TIME	688.	691.	658.	634.	624.	628.	624.	617.	607.
HYDROGRAPH AT	DTRILGY	.00	1 FLOW TIME	51.	48.	43.	37.	35.	34.	32.	28.	23.
HYDROGRAPH AT	CY07B	.20	1 FLOW TIME	173.	169.	163.	157.	155.	153.	152.	150.	147.
2 COMBINED AT	CCY07B	.20	1 FLOW TIME	223.	216.	204.	193.	189.	184.	181.	174.	167.
DIVERSION TO	DCENT1	.20	1 FLOW TIME	151.	144.	132.	121.	117.	112.	109.	102.	95.
HYDROGRAPH AT	DCY07B	.20	1 FLOW TIME	72.	72.	72.	72.	72.	72.	72.	72.	72.
ROUTED TO	RDCY07B	.20	1 FLOW TIME	75.	75.	76.	76.	76.	76.	76.	76.	76.
HYDROGRAPH AT	CY08-C	.09	1 FLOW TIME	96.	94.	91.	87.	86.	85.	84.	83.	82.
3 COMBINED AT	CCCY08-C	1.38	1 FLOW TIME	800.	803.	768.	744.	733.	731.	726.	718.	707.
DIVERSION TO				4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.25	4.25

				ALEXDECAT.txt									
+	DCENTRAL	1.38	1	FLOW TIME	170. 4.17	173. 4.17	138. 4.17	114. 4.17	103. 4.17	101. 4.17	96. 4.17	88. 4.25	77. 4.25
+	HYDROGRAPH AT												
+	DGOW2A	1.38	1	FLOW TIME	630. 3.75	630. 3.75	630. 3.75	630. 3.75	630. 3.75	630. 3.83	630. 3.83	630. 3.83	630. 3.83
+	ROUTED TO												
+	RDGOW2A	1.38	1	FLOW TIME	631. 3.83	631. 3.83	631. 3.83	631. 3.83	631. 3.83	631. 3.83	630. 3.92	630. 3.92	631. 3.92
+	HYDROGRAPH AT												
+	5B6-CG	.18	1	FLOW TIME	161. 3.83	157. 3.83	151. 3.83	145. 3.83	143. 3.83	141. 3.83	140. 3.83	138. 3.83	136. 3.83
+	2 COMBINED AT												
+	C5B6-CG	1.56	1	FLOW TIME	792. 3.83	788. 3.83	782. 3.83	776. 3.83	774. 3.83	772. 3.83	768. 3.83	763. 3.83	758. 3.92
+	HYDROGRAPH AT												
+	PDGCD-C	.44	1	FLOW TIME	228. 4.00	222. 4.00	211. 4.00	201. 4.00	197. 4.00	194. 4.00	192. 4.00	189. 4.00	184. 4.00
+	ROUTED TO												
+	RPDGD-C	.44	1	FLOW TIME	228. 4.17	221. 4.17	211. 4.17	201. 4.17	196. 4.17	194. 4.17	192. 4.17	188. 4.17	184. 4.17
+	ROUTED TO												
+	RRPDGCD	.44	1	FLOW TIME	227. 4.17	220. 4.17	211. 4.17	199. 4.17	196. 4.17	192. 4.17	190. 4.17	187. 4.17	183. 4.17
+	HYDROGRAPH AT												
+	NW29B-C	.25	1	FLOW TIME	161. 3.83	157. 3.83	149. 3.83	142. 3.83	139. 3.83	137. 3.83	136. 3.83	133. 3.83	130. 3.83
+	ROUTED TO												
+	RNW29B-C	.25	1	FLOW TIME	161. 4.00	157. 4.00	149. 4.00	142. 4.08	139. 4.08	137. 4.08	136. 4.08	134. 4.08	131. 4.08
+	HYDROGRAPH AT												
+	NW1C2-C	.21	1	FLOW TIME	192. 3.83	188. 3.83	181. 3.83	175. 3.83	172. 3.83	170. 3.83	169. 3.83	167. 3.83	164. 3.83
+	2 COMBINED AT												
+	CNW1C2	.46	1	FLOW TIME	334. 3.92	326. 3.92	312. 3.92	298. 3.92	292. 3.92	289. 3.92	286. 3.92	281. 3.92	276. 3.92
+	ROUTED TO												
+	RCNW1C2	.46	1	FLOW TIME	332. 4.00	324. 4.00	310. 4.00	297. 4.00	292. 4.00	288. 4.00	286. 4.00	282. 4.00	276. 4.00
+	HYDROGRAPH AT												
+	PDGCB10C	.31	1	FLOW TIME	229. 3.83	223. 3.83	214. 3.83	204. 3.83	201. 3.83	198. 3.83	196. 3.83	193. 3.83	190. 3.83
+	2 COMBINED AT												
+	CPDGCB10	.77	1	FLOW TIME	552. 3.92	538. 3.92	515. 3.92	492. 3.92	483. 3.92	477. 3.92	472. 3.92	466. 3.92	456. 3.92
+	DIVERSION TO												
+	DPT3AA11	.77	1	FLOW TIME	139. 3.50	139. 3.50	139. 3.50	139. 3.50	139. 3.50	139. 3.50	139. 3.50	139. 3.58	139. 3.58
+	HYDROGRAPH AT												
+	DPDGCB10	.77	1	FLOW TIME	413. 3.92	399. 3.92	376. 3.92	353. 3.92	344. 3.92	338. 3.92	333. 3.92	327. 3.92	317. 3.92
+	ROUTED TO												
+	RDPDGCB1	.77	1	FLOW TIME	356. 4.00	343. 4.00	322. 4.00	300. 4.00	292. 4.00	286. 4.00	282. 4.00	276. 4.00	267. 4.00
+	DIVERSION TO												
+	DPT3AB1C	.77	1	FLOW TIME	192. 3.75	192. 3.83	192. 3.83	192. 3.83	192. 3.83	192. 3.83	192. 3.83	192. 3.83	192. 3.92
+	HYDROGRAPH AT												
+	DDPDGCB1	.77	1	FLOW TIME	164. 4.00	151. 4.00	130. 4.00	108. 4.00	100. 4.00	94. 4.00	90. 4.00	84. 4.00	75. 4.00
+	2 COMBINED AT												
+	CDPDGCB1	1.21	1	FLOW TIME	378. 4.08	359. 4.08	329. 4.08	298. 4.08	286. 4.08	277. 4.08	271. 4.08	262. 4.08	249. 4.08
+	ROUTED TO												
+	RCDPDGCB	1.21	1	FLOW TIME	374. 4.17	355. 4.17	326. 4.17	294. 4.17	283. 4.17	274. 4.17	268. 4.17	259. 4.17	246. 4.17
+	HYDROGRAPH AT												
+	GD20BE-C	.43	1	FLOW TIME	279. 3.92	272. 3.92	260. 3.92	249. 3.92	244. 3.92	241. 3.92	238. 3.92	235. 3.92	230. 3.92
+	2 COMBINED AT												
+	CGD20BEC	1.64	1	FLOW TIME	616. 4.08	590. 4.08	549. 4.08	506. 4.08	490. 4.08	478. 4.08	469. 4.08	457. 4.08	439. 4.08
+	ROUTED TO												
+	RCGD20BE	1.64	1	FLOW TIME	609. 4.17	581. 4.17	546. 4.17	495. 4.17	486. 4.17	467. 4.17	466. 4.17	446. 4.17	436. 4.17
+	HYDROGRAPH AT												
+	GD20BM-C	.34	1	FLOW TIME	296. 3.92	290. 3.92	280. 3.92	269. 3.92	265. 3.92	262. 3.92	260. 3.92	257. 3.92	253. 3.92
+	2 COMBINED AT												
+	CGD20BMC	1.98	1	FLOW TIME	850. 4.08	816. 4.08	757. 4.17	699. 4.17	686. 4.17	665. 4.17	663. 4.17	640. 4.17	628. 4.17
+	ROUTED TO												
+	RCGD20BM	1.98	1	FLOW TIME	843. 4.17	807. 4.17	758. 4.17	697. 4.17	681. 4.17	662. 4.17	657. 4.17	633. 4.17	618. 4.17
+	HYDROGRAPH AT												
+	PT2B2-C	.30	1	FLOW TIME	304. 3.83	298. 3.83	289. 3.83	279. 3.83	275. 3.83	272. 3.83	270. 3.83	267. 3.83	264. 3.83
+	2 COMBINED AT												
+	CPT2B2	2.28	1	FLOW TIME	1050. 4.08	1012. 4.08	947. 4.17	880. 4.17	861. 4.17	841. 4.17	834. 4.17	808. 4.17	791. 4.17
+	ROUTED TO												
+	RCPT2B2	2.28	1	FLOW TIME	1042. 4.17	1003. 4.17	945. 4.17	879. 4.17	858. 4.17	838. 4.17	832. 4.17	807. 4.17	788. 4.17
+	HYDROGRAPH AT												
+	PT3-C	.17	1	FLOW TIME	169. 3.83	166. 3.83	160. 3.83	154. 3.83	152. 3.83	150. 3.83	149. 3.83	147. 3.83	145. 3.83
+	ROUTED TO												
+	RCPT3-C	.17	1	FLOW TIME	171. 4.00	167. 4.00	162. 4.00	156. 4.00	153. 4.00	152. 4.00	150. 4.00	149. 4.00	146. 4.00
+	HYDROGRAPH AT												
+	PT41-C	.44	1	FLOW TIME	380. 3.83	372. 3.83	358. 3.83	344. 3.83	339. 3.83	335. 3.83	332. 3.83	328. 3.83	323. 3.83
+	2 COMBINED AT												
+	CPT41-C	.61	1	FLOW	535.	523.	504.	485.	477.	472.	468.	462.	454.

				ALEXDECAT.txt									
				TIME	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92	3.92
2 COMBINED AT	CCPT41-C	2.89	1	FLOW	1504.	1458.	1377.	1297.	1271.	1247.	1237.	1217.	1192.
				TIME	4.08	4.08	4.08	4.08	4.00	4.00	4.00	4.00	4.00
ROUTED TO	RCPT41-C	2.89	1	FLOW	1502.	1457.	1376.	1296.	1270.	1245.	1235.	1215.	1190.
				TIME	4.08	4.08	4.08	4.08	4.08	4.00	4.00	4.00	4.00
HYDROGRAPH AT	PT5A2-C	.34	1	FLOW	217.	212.	203.	195.	192.	190.	188.	185.	182.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
2 COMBINED AT	CPT5A2-C	3.23	1	FLOW	1719.	1668.	1579.	1492.	1461.	1434.	1422.	1395.	1367.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00	4.00
ROUTED TO	RCPT5A2	3.23	1	FLOW	1716.	1665.	1577.	1490.	1461.	1433.	1421.	1394.	1363.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT	5B6-CA	.02	1	FLOW	26.	26.	25.	24.	24.	24.	23.	23.	23.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT	C5B6-CA	3.25	1	FLOW	1733.	1682.	1594.	1506.	1476.	1449.	1437.	1409.	1381.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00
ROUTED TO	RC5B6-CA	3.25	1	FLOW	1731.	1680.	1592.	1505.	1476.	1448.	1436.	1409.	1378.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT	5B6-CB	.04	1	FLOW	45.	44.	43.	41.	41.	40.	40.	39.	39.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT	C5B6-CB	3.29	1	FLOW	1761.	1710.	1621.	1533.	1503.	1475.	1463.	1438.	1409.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00	4.00
ROUTED TO	RC5B6-CB	3.29	1	FLOW	1759.	1707.	1619.	1532.	1502.	1475.	1463.	1436.	1406.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00
HYDROGRAPH AT	5B6-CC	.04	1	FLOW	37.	36.	35.	33.	33.	32.	32.	32.	31.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT	C5B6-CC	3.34	1	FLOW	1784.	1732.	1643.	1555.	1525.	1497.	1485.	1460.	1431.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00	4.00
ROUTED TO	RC5B6-CC	3.34	1	FLOW	1781.	1729.	1641.	1554.	1524.	1496.	1484.	1457.	1426.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT	5B6-CD	.03	1	FLOW	21.	20.	19.	18.	18.	18.	18.	17.	17.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT	C5B6-CD	3.37	1	FLOW	1795.	1744.	1655.	1567.	1537.	1509.	1497.	1470.	1439.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00
ROUTED TO	R5B6-CD	3.37	1	FLOW	1794.	1743.	1654.	1566.	1536.	1509.	1497.	1470.	1438.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT	5B6-CE	.03	1	FLOW	20.	20.	19.	18.	18.	17.	17.	17.	17.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
ROUTED TO	RC5B6-CE	.03	1	FLOW	20.	20.	19.	18.	17.	17.	17.	17.	16.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT	CR5B6-CE	3.40	1	FLOW	1810.	1757.	1668.	1580.	1550.	1522.	1510.	1483.	1451.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00
ROUTED TO	R5B6-CF	3.40	1	FLOW	1808.	1756.	1667.	1579.	1549.	1522.	1509.	1483.	1451.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT	5B6-CF	.03	1	FLOW	23.	22.	21.	20.	20.	19.	19.	19.	19.
				TIME	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83	3.83
2 COMBINED AT	C5B6-CF	3.43	1	FLOW	1824.	1771.	1682.	1593.	1563.	1535.	1523.	1496.	1464.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.00
ROUTED TO	R5B6-CM	3.43	1	FLOW	1823.	1770.	1681.	1593.	1563.	1535.	1522.	1496.	1464.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
ROUTED TO	R5B6-CO	3.43	1	FLOW	1820.	1768.	1680.	1592.	1562.	1534.	1522.	1495.	1463.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
2 COMBINED AT	CPT5B6-C	4.99	1	FLOW	2561.	2507.	2414.	2324.	2294.	2269.	2255.	2230.	2199.
				TIME	4.08	4.08	4.08	4.00	4.00	4.00	4.00	4.00	4.00
ROUTED TO	RCCPT5B6	4.99	1	FLOW	2556.	2502.	2412.	2322.	2291.	2263.	2250.	2223.	2190.
				TIME	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT	PT5C-1	.19	1	FLOW	174.	170.	164.	157.	155.	153.	152.	150.	147.
				TIME	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT	CPT5C-1	5.17	1	FLOW	2670.	2614.	2520.	2431.	2400.	2374.	2359.	2334.	2300.
				TIME	4.08	4.08	4.08	4.00	4.00	4.00	4.00	4.00	4.00

1.

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT	PEAK	TIME TO	VOLUME	DT	INTERPOLATED TO	COMPUTATION INTERVAL	VOLUME
		(MIN)	(CFS)	PEAK	(IN)	(MIN)	PEAK	TIME TO	(IN)
				(MIN)				PEAK	

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 298.35 240.00 1.64 5.00 298.35 240.00 1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3194E+02 EXCESS= .0000E+00 OUTFLOW= .3193E+02 BASIN STORAGE= .2867E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 291.97 240.00 1.61 5.00 291.97 240.00 1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3122E+02 EXCESS= .0000E+00 OUTFLOW= .3122E+02 BASIN STORAGE= .2834E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 281.35 240.00 1.55 5.00 281.35 240.00 1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3004E+02 EXCESS= .0000E+00 OUTFLOW= .3004E+02 BASIN STORAGE= .2778E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 270.76 240.00 1.49 5.00 270.76 240.00 1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2886E+02 EXCESS= .0000E+00 OUTFLOW= .2886E+02 BASIN STORAGE= .2721E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 266.52 240.00 1.46 5.00 266.52 240.00 1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2839E+02 EXCESS= .0000E+00 OUTFLOW= .2839E+02 BASIN STORAGE= .2699E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 263.56 240.00 1.45 5.00 263.56 240.00 1.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2806E+02 EXCESS= .0000E+00 OUTFLOW= .2806E+02 BASIN STORAGE= .2682E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 261.45 240.00 1.43 5.00 261.45 240.00 1.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2783E+02 EXCESS= .0000E+00 OUTFLOW= .2783E+02 BASIN STORAGE= .2559E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 258.07 240.00 1.41 5.00 258.07 240.00 1.41

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2746E+02 EXCESS= .0000E+00 OUTFLOW= .2746E+02 BASIN STORAGE= .2542E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RGD17BG MANE 5.00 253.85 240.00 1.39 5.00 253.85 240.00 1.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2699E+02 EXCESS= .0000E+00 OUTFLOW= .2699E+02 BASIN STORAGE= .2519E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 538.04 235.00 1.74 5.00 538.04 235.00 1.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5801E+02 EXCESS= .0000E+00 OUTFLOW= .5805E+02 BASIN STORAGE= .1039E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 526.77 235.00 1.70 5.00 526.77 235.00 1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5676E+02 EXCESS= .0000E+00 OUTFLOW= .5679E+02 BASIN STORAGE= .1029E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 508.00 235.00 1.64 5.00 508.00 235.00 1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5469E+02 EXCESS= .0000E+00 OUTFLOW= .5472E+02 BASIN STORAGE= .1012E-01 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 489.78 235.00 1.58 5.00 489.78 235.00 1.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5262E+02 EXCESS= .0000E+00 OUTFLOW= .5264E+02 BASIN STORAGE= .9318E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 482.29 235.00 1.55 5.00 482.29 235.00 1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5179E+02 EXCESS= .0000E+00 OUTFLOW= .5182E+02 BASIN STORAGE= .9257E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 477.05 235.00 1.53 5.00 477.05 235.00 1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5122E+02 EXCESS= .0000E+00 OUTFLOW= .5124E+02 BASIN STORAGE= .9213E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 473.30 235.00 1.52 5.00 473.30 235.00 1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5080E+02 EXCESS= .0000E+00 OUTFLOW= .5083E+02 BASIN STORAGE= .9061E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 467.32 235.00 1.50 5.00 467.32 235.00 1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5015E+02 EXCESS= .0000E+00 OUTFLOW= .5017E+02 BASIN STORAGE= .9011E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCGD11B MANE 5.00 459.84 235.00 1.48 5.00 459.84 235.00 1.48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4933E+02 EXCESS= .0000E+00 OUTFLOW= .4935E+02 BASIN STORAGE= .8949E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCPT6B-C MANE 4.75 139.97 247.00 .08 5.00 127.54 250.00 .08

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4785E+01 EXCESS= .0000E+00 OUTFLOW= .4820E+01 BASIN STORAGE= .2529E-02 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .00
RCPT6B-C MANE 5.00 131.19 250.00 .07 5.00 131.19 250.00 .07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4195E+01 EXCESS= .0000E+00 OUTFLOW= .4229E+01 BASIN STORAGE= .2284E-02 PERCENT ERROR= -.8

FOR PLAN = 1 RATIO= .00
RCPT6B-C MANE 4.75 102.17 251.75 .06 5.00 97.55 250.00 .06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3235E+01 EXCESS= .0000E+00 OUTFLOW= .3268E+01 BASIN STORAGE= .2402E-02 PERCENT ERROR= -1.1

ALEXDECAT.txt

FOR PLAN = 1	RATIO=	.00							
RCPT6B-C	MANE	4.75	86.71	251.75	.04	5.00	74.16	250.00	.04
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2488E+01 EXCESS= .0000E+00 OUTFLOW= .2516E+01 BASIN STORAGE= .2100E-02 PERCENT ERROR= -1.2									
FOR PLAN = 1	RATIO=	.00							
RCPT6B-C	MANE	4.75	77.07	251.75	.04	5.00	63.85	250.00	.04
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2206E+01 EXCESS= .0000E+00 OUTFLOW= .2229E+01 BASIN STORAGE= .2081E-02 PERCENT ERROR= -1.1									
FOR PLAN = 1	RATIO=	.00							
RCPT6B-C	MANE	5.00	67.92	255.00	.04	5.00	67.92	255.00	.04
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2023E+01 EXCESS= .0000E+00 OUTFLOW= .2049E+01 BASIN STORAGE= .2344E-02 PERCENT ERROR= -1.4									
FOR PLAN = 1	RATIO=	.00							
RCPT6B-C	MANE	5.00	65.54	255.00	.03	5.00	65.54	255.00	.03
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1911E+01 EXCESS= .0000E+00 OUTFLOW= .1943E+01 BASIN STORAGE= .2333E-02 PERCENT ERROR= -1.8									
FOR PLAN = 1	RATIO=	.00							
RCPT6B-C	MANE	5.00	62.29	255.00	.03	5.00	62.29	255.00	.03
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1768E+01 EXCESS= .0000E+00 OUTFLOW= .1795E+01 BASIN STORAGE= .2316E-02 PERCENT ERROR= -1.6									
FOR PLAN = 1	RATIO=	.00							
RCPT6B-C	MANE	5.00	57.86	255.00	.03	5.00	57.86	255.00	.03
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1548E+01 EXCESS= .0000E+00 OUTFLOW= .1563E+01 BASIN STORAGE= .2294E-02 PERCENT ERROR= -1.1									
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	564.58	229.30	-1.00	5.00	562.49	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	564.80	229.30	-1.00	5.00	562.61	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	565.15	229.30	-1.00	5.00	562.79	230.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	561.78	233.98	-1.00	5.00	560.70	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	561.98	233.98	-1.00	5.00	560.79	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	562.13	233.98	-1.00	5.00	560.86	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	562.23	233.98	-1.00	5.00	560.90	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	562.39	233.98	-1.00	5.00	560.98	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDGOW1A	MANE	2.34	562.60	233.98	-1.00	5.00	561.08	235.00	-1.00
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	75.26	230.00	1.23	5.00	75.26	230.00	1.23
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1333E+02 EXCESS= .0000E+00 OUTFLOW= .1334E+02 BASIN STORAGE= .1943E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	75.43	230.00	1.21	5.00	75.43	230.00	1.21
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1315E+02 EXCESS= .0000E+00 OUTFLOW= .1315E+02 BASIN STORAGE= .1919E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	75.72	230.00	1.19	5.00	75.72	230.00	1.19
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1284E+02 EXCESS= .0000E+00 OUTFLOW= .1285E+02 BASIN STORAGE= .1880E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	76.00	230.00	1.16	5.00	76.00	230.00	1.16
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1254E+02 EXCESS= .0000E+00 OUTFLOW= .1254E+02 BASIN STORAGE= .1870E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	76.12	230.00	1.15	5.00	76.12	230.00	1.15
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+02 EXCESS= .0000E+00 OUTFLOW= .1242E+02 BASIN STORAGE= .1854E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	76.19	230.00	1.14	5.00	76.19	230.00	1.14
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1233E+02 EXCESS= .0000E+00 OUTFLOW= .1233E+02 BASIN STORAGE= .1843E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RDCY07B	MANE	5.00	76.25	230.00	1.13	5.00	76.25	230.00	1.13
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1226E+02 EXCESS= .0000E+00 OUTFLOW= .1227E+02 BASIN STORAGE= .2495E-02 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO= .00									

	RDCY07B	MANE	5.00	76.33	230.00	1.12	ALEXDECAT.txt 5.00	76.33	230.00	1.12
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.1216E+02	EXCESS=	.0000E+00	OUTFLOW=	.1217E+02	BASIN STORAGE=	.2477E-02	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDCY07B	MANE	5.00	76.44	230.00	1.11	5.00	76.44	230.00	1.11	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.1204E+02	EXCESS=	.0000E+00	OUTFLOW=	.1204E+02	BASIN STORAGE=	.2455E-02	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	631.27	230.47	1.43	5.00	630.53	230.00	1.43	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.1053E+03	EXCESS=	.0000E+00	OUTFLOW=	.1053E+03	BASIN STORAGE=	.3690E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	631.49	230.47	1.41	5.00	630.63	230.00	1.41	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.1037E+03	EXCESS=	.0000E+00	OUTFLOW=	.1037E+03	BASIN STORAGE=	.3657E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	631.85	230.47	1.38	5.00	630.81	230.00	1.38	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.1011E+03	EXCESS=	.0000E+00	OUTFLOW=	.1011E+03	BASIN STORAGE=	.3543E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	632.23	230.47	1.34	5.00	630.99	230.00	1.34	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.9854E+02	EXCESS=	.0000E+00	OUTFLOW=	.9851E+02	BASIN STORAGE=	.3454E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	632.37	230.47	1.33	5.00	631.06	230.00	1.33	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.9742E+02	EXCESS=	.0000E+00	OUTFLOW=	.9740E+02	BASIN STORAGE=	.3339E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	632.08	230.47	1.32	5.00	630.63	230.00	1.32	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.9663E+02	EXCESS=	.0000E+00	OUTFLOW=	.9661E+02	BASIN STORAGE=	.3431E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	630.27	235.12	1.31	5.00	630.21	235.00	1.31	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.9605E+02	EXCESS=	.0000E+00	OUTFLOW=	.9603E+02	BASIN STORAGE=	.3333E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	630.45	235.12	1.30	5.00	630.36	235.00	1.29	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.9513E+02	EXCESS=	.0000E+00	OUTFLOW=	.9511E+02	BASIN STORAGE=	.3303E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RDGOW2A	MANE	2.33	630.66	235.12	1.28	5.00	630.54	235.00	1.28	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.9396E+02	EXCESS=	.0000E+00	OUTFLOW=	.9393E+02	BASIN STORAGE=	.3266E-03	PERCENT ERROR=	.0
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	227.50	250.00	1.10	5.00	227.50	250.00	1.10	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2576E+02	EXCESS=	.0000E+00	OUTFLOW=	.2577E+02	BASIN STORAGE=	.5421E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	221.21	250.00	1.07	5.00	221.21	250.00	1.07	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2504E+02	EXCESS=	.0000E+00	OUTFLOW=	.2505E+02	BASIN STORAGE=	.6246E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	210.85	250.00	1.01	5.00	210.85	250.00	1.01	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2386E+02	EXCESS=	.0000E+00	OUTFLOW=	.2387E+02	BASIN STORAGE=	.6114E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	200.56	250.00	.97	5.00	200.56	250.00	.97	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2269E+02	EXCESS=	.0000E+00	OUTFLOW=	.2270E+02	BASIN STORAGE=	.5980E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	196.47	250.00	.95	5.00	196.47	250.00	.95	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2223E+02	EXCESS=	.0000E+00	OUTFLOW=	.2224E+02	BASIN STORAGE=	.5926E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	193.61	250.00	.93	5.00	193.61	250.00	.93	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2191E+02	EXCESS=	.0000E+00	OUTFLOW=	.2192E+02	BASIN STORAGE=	.5888E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	191.57	250.00	.92	5.00	191.57	250.00	.92	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2168E+02	EXCESS=	.0000E+00	OUTFLOW=	.2169E+02	BASIN STORAGE=	.5861E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	188.31	250.00	.91	5.00	188.31	250.00	.91	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2131E+02	EXCESS=	.0000E+00	OUTFLOW=	.2132E+02	BASIN STORAGE=	.5817E-02	PERCENT ERROR=	-.1
FOR PLAN = 1	RATIO=	.00								
RPDgcd-C	MANE	5.00	184.26	250.00	.89	5.00	184.26	250.00	.89	
CONTINUITY SUMMARY (AC-FT) -	INFLOW=	.2086E+02	EXCESS=	.0000E+00	OUTFLOW=	.2087E+02	BASIN STORAGE=	.5563E-02	PERCENT ERROR=	-.1

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FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.49	227.08	249.34	1.10	5.00	226.92	250.00	1.10	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2577E+02 EXCESS= .0000E+00 OUTFLOW= .2577E+02 BASIN STORAGE= .8328E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.51	220.51	251.44	1.07	5.00	220.33	250.00	1.06	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2505E+02 EXCESS= .0000E+00 OUTFLOW= .2505E+02 BASIN STORAGE= .8054E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.55	210.70	249.96	1.02	5.00	210.68	250.00	1.02	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2388E+02 EXCESS= .0000E+00 OUTFLOW= .2388E+02 BASIN STORAGE= .9859E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.59	200.04	251.12	.96	5.00	199.34	250.00	.96	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2269E+02 EXCESS= .0000E+00 OUTFLOW= .2269E+02 BASIN STORAGE= .9365E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.60	196.05	250.07	.95	5.00	195.97	250.00	.95	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2225E+02 EXCESS= .0000E+00 OUTFLOW= .2225E+02 BASIN STORAGE= .8454E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.62	193.07	251.16	.93	5.00	192.26	250.00	.93	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2191E+02 EXCESS= .0000E+00 OUTFLOW= .2191E+02 BASIN STORAGE= .8562E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.62	190.77	251.96	.92	5.00	190.29	250.00	.92	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2168E+02 EXCESS= .0000E+00 OUTFLOW= .2168E+02 BASIN STORAGE= .9464E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.64	187.92	250.61	.91	5.00	187.27	250.00	.91	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2133E+02 EXCESS= .0000E+00 OUTFLOW= .2133E+02 BASIN STORAGE= .9296E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RRPDGCD MANE	2.66	183.44	252.24	.89	5.00	183.01	250.00	.89	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2086E+02 EXCESS= .0000E+00 OUTFLOW= .2086E+02 BASIN STORAGE= .8044E-03 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	161.38	240.00	1.14	5.00	161.38	240.00	1.14	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1537E+02 EXCESS= .0000E+00 OUTFLOW= .1538E+02 BASIN STORAGE= .2243E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	156.83	240.00	1.10	5.00	156.83	240.00	1.10	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1495E+02 EXCESS= .0000E+00 OUTFLOW= .1496E+02 BASIN STORAGE= .2213E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	149.27	240.00	1.05	5.00	149.27	240.00	1.05	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1425E+02 EXCESS= .0000E+00 OUTFLOW= .1426E+02 BASIN STORAGE= .2162E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	142.06	245.00	1.00	5.00	142.06	245.00	1.00	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1357E+02 EXCESS= .0000E+00 OUTFLOW= .1358E+02 BASIN STORAGE= .3018E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	139.29	245.00	.98	5.00	139.29	245.00	.98	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1329E+02 EXCESS= .0000E+00 OUTFLOW= .1330E+02 BASIN STORAGE= .2929E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	137.34	245.00	.97	5.00	137.34	245.00	.97	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1310E+02 EXCESS= .0000E+00 OUTFLOW= .1311E+02 BASIN STORAGE= .2909E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	135.96	245.00	.96	5.00	135.96	245.00	.96	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1297E+02 EXCESS= .0000E+00 OUTFLOW= .1298E+02 BASIN STORAGE= .2849E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	133.75	245.00	.94	5.00	133.75	245.00	.94	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1275E+02 EXCESS= .0000E+00 OUTFLOW= .1276E+02 BASIN STORAGE= .2825E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RNW29B-C MANE	5.00	130.99	245.00	.92	5.00	130.99	245.00	.92	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1248E+02 EXCESS= .0000E+00 OUTFLOW= .1249E+02 BASIN STORAGE= .2796E-02 PERCENT ERROR= -.1									
FOR PLAN = 1 RATIO=	.00								
RCNWIC2 MANE	2.11	334.59	238.32	1.39	5.00	331.83	240.00	1.39	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3424E+02 EXCESS= .0000E+00 OUTFLOW= .3425E+02 BASIN STORAGE= .2420E-02 PERCENT ERROR= .0									
FOR PLAN = 1 RATIO=	.00								
RCNWIC2 MANE	2.13	326.30	238.63	1.36	5.00	323.71	240.00	1.36	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3341E+02 EXCESS= .0000E+00 OUTFLOW= .3341E+02 BASIN STORAGE= .2668E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.17	312.51	238.51	1.30	5.00	310.26	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3203E+02 EXCESS= .0000E+00 OUTFLOW= .3203E+02 BASIN STORAGE= .2498E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.21	298.70	238.48	1.25	5.00	296.89	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3066E+02 EXCESS= .0000E+00 OUTFLOW= .3066E+02 BASIN STORAGE= .2734E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.22	292.80	238.05	1.22	5.00	291.95	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3012E+02 EXCESS= .0000E+00 OUTFLOW= .3012E+02 BASIN STORAGE= .2773E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.24	289.66	239.32	1.21	5.00	288.36	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2974E+02 EXCESS= .0000E+00 OUTFLOW= .2974E+02 BASIN STORAGE= .2688E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.25	286.14	237.99	1.20	5.00	285.66	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2946E+02 EXCESS= .0000E+00 OUTFLOW= .2947E+02 BASIN STORAGE= .2693E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.26	282.66	239.47	1.18	5.00	281.65	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2904E+02 EXCESS= .0000E+00 OUTFLOW= .2904E+02 BASIN STORAGE= .2460E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCNWIC2	MANE		2.28	277.33	239.09	1.16	5.00	275.89	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2850E+02 EXCESS= .0000E+00 OUTFLOW= .2850E+02 BASIN STORAGE= .2527E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	356.01	240.00	.59	5.00	356.01	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2480E+02 EXCESS= .0000E+00 OUTFLOW= .2437E+02 BASIN STORAGE= .2974E-02 PERCENT ERROR= 1.7									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	343.22	240.00	.57	5.00	343.22	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2369E+02 EXCESS= .0000E+00 OUTFLOW= .2328E+02 BASIN STORAGE= .2943E-02 PERCENT ERROR= 1.7									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	321.86	240.00	.52	5.00	321.86	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2188E+02 EXCESS= .0000E+00 OUTFLOW= .2148E+02 BASIN STORAGE= .2889E-02 PERCENT ERROR= 1.8									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	300.48	240.00	.48	5.00	300.48	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2008E+02 EXCESS= .0000E+00 OUTFLOW= .1968E+02 BASIN STORAGE= .2834E-02 PERCENT ERROR= 2.0									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	292.09	240.00	.46	5.00	292.09	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1937E+02 EXCESS= .0000E+00 OUTFLOW= .1896E+02 BASIN STORAGE= .2812E-02 PERCENT ERROR= 2.1									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	286.33	240.00	.45	5.00	286.33	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1887E+02 EXCESS= .0000E+00 OUTFLOW= .1845E+02 BASIN STORAGE= .2797E-02 PERCENT ERROR= 2.2									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	281.85	240.00	.44	5.00	281.85	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1851E+02 EXCESS= .0000E+00 OUTFLOW= .1809E+02 BASIN STORAGE= .2786E-02 PERCENT ERROR= 2.3									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	275.50	240.00	.43	5.00	275.50	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1797E+02 EXCESS= .0000E+00 OUTFLOW= .1754E+02 BASIN STORAGE= .2768E-02 PERCENT ERROR= 2.4									
FOR PLAN	= 1	RATIO=	.00						
RDPDGCBI	MANE		5.00	266.94	240.00	.41	5.00	266.94	240.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1730E+02 EXCESS= .0000E+00 OUTFLOW= .1686E+02 BASIN STORAGE= .2746E-02 PERCENT ERROR= 2.5									
FOR PLAN	= 1	RATIO=	.00						
RCDPDGCB	MANE		5.00	373.77	250.00	.49	5.00	373.77	250.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3137E+02 EXCESS= .0000E+00 OUTFLOW= .3136E+02 BASIN STORAGE= .2572E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCDPDGCB	MANE		5.00	355.23	250.00	.47	5.00	355.23	250.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .3010E+02 EXCESS= .0000E+00 OUTFLOW= .3009E+02 BASIN STORAGE= .2887E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RCDPDGCB	MANE		5.00	325.66	250.00	.43	5.00	325.66	250.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2804E+02 EXCESS= .0000E+00 OUTFLOW= .2804E+02 BASIN STORAGE= .2817E-02 PERCENT ERROR= .0									

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FOR PLAN = 1	RATIO=	.00								
RCDPDGB	MANE	5.00	294.44	250.00	.40	5.00	294.44	250.00	.40	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2592E+02 EXCESS= .0000E+00 OUTFLOW= .2592E+02 BASIN STORAGE= .2789E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCDPDGB	MANE	5.00	283.05	250.00	.39	5.00	283.05	250.00	.39	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2516E+02 EXCESS= .0000E+00 OUTFLOW= .2515E+02 BASIN STORAGE= .2759E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCDPDGB	MANE	5.00	273.75	250.00	.38	5.00	273.75	250.00	.38	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2454E+02 EXCESS= .0000E+00 OUTFLOW= .2453E+02 BASIN STORAGE= .2744E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCDPDGB	MANE	5.00	267.76	250.00	.37	5.00	267.76	250.00	.37	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2415E+02 EXCESS= .0000E+00 OUTFLOW= .2414E+02 BASIN STORAGE= .2742E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCDPDGB	MANE	5.00	258.73	250.00	.36	5.00	258.73	250.00	.36	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2356E+02 EXCESS= .0000E+00 OUTFLOW= .2355E+02 BASIN STORAGE= .2733E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCDPDGB	MANE	5.00	245.99	250.00	.35	5.00	245.99	250.00	.35	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2278E+02 EXCESS= .0000E+00 OUTFLOW= .2276E+02 BASIN STORAGE= .2663E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.01	615.24	248.92	.69	5.00	609.47	250.00	.69	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .6025E+02 EXCESS= .0000E+00 OUTFLOW= .6024E+02 BASIN STORAGE= .2176E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.07	588.20	248.16	.67	5.00	580.96	250.00	.67	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5827E+02 EXCESS= .0000E+00 OUTFLOW= .5826E+02 BASIN STORAGE= .2787E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.16	546.76	249.74	.63	5.00	545.60	250.00	.63	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5494E+02 EXCESS= .0000E+00 OUTFLOW= .5493E+02 BASIN STORAGE= .2503E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.27	496.25	251.89	.59	5.00	495.48	250.00	.59	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5155E+02 EXCESS= .0000E+00 OUTFLOW= .5155E+02 BASIN STORAGE= .2217E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.31	487.28	250.21	.58	5.00	485.93	250.00	.58	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .5037E+02 EXCESS= .0000E+00 OUTFLOW= .5036E+02 BASIN STORAGE= .2736E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.35	468.92	252.14	.56	5.00	467.01	250.00	.56	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4934E+02 EXCESS= .0000E+00 OUTFLOW= .4933E+02 BASIN STORAGE= .2720E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.37	467.79	249.28	.56	5.00	466.13	250.00	.56	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4879E+02 EXCESS= .0000E+00 OUTFLOW= .4878E+02 BASIN STORAGE= .2087E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.41	451.49	251.37	.55	5.00	445.55	250.00	.55	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4775E+02 EXCESS= .0000E+00 OUTFLOW= .4775E+02 BASIN STORAGE= .2818E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BE	MANE	4.47	437.15	250.12	.53	5.00	436.12	250.00	.53	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .4654E+02 EXCESS= .0000E+00 OUTFLOW= .4654E+02 BASIN STORAGE= .2221E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BM	MANE	2.91	843.04	250.24	.86	5.00	842.91	250.00	.86	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .9126E+02 EXCESS= .0000E+00 OUTFLOW= .9126E+02 BASIN STORAGE= .4898E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BM	MANE	2.96	811.54	248.54	.84	5.00	807.13	250.00	.84	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .8856E+02 EXCESS= .0000E+00 OUTFLOW= .8856E+02 BASIN STORAGE= .6030E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BM	MANE	3.05	758.57	250.03	.80	5.00	758.42	250.00	.80	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .8413E+02 EXCESS= .0000E+00 OUTFLOW= .8413E+02 BASIN STORAGE= .4877E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BM	MANE	3.15	697.53	251.78	.75	5.00	697.50	250.00	.75	
CONTINUITY SUMMARY (AC-FT) - INFLOW= .7953E+02 EXCESS= .0000E+00 OUTFLOW= .7954E+02 BASIN STORAGE= .5101E-02 PERCENT ERROR= .0										
FOR PLAN = 1	RATIO=	.00								
RCGD20BM	MANE	3.17	682.74	250.44	.74	5.00	680.56	250.00	.74	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7800E+02 EXCESS= .0000E+00 OUTFLOW= .7800E+02 BASIN STORAGE= .6048E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCGD20BM MANE 3.21 663.85 250.37 .72 5.00 662.02 250.00 .72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7655E+02 EXCESS= .0000E+00 OUTFLOW= .7656E+02 BASIN STORAGE= .5776E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCGD20BM MANE 3.21 660.12 250.73 .72 5.00 656.85 250.00 .72

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7584E+02 EXCESS= .0000E+00 OUTFLOW= .7585E+02 BASIN STORAGE= .5360E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCGD20BM MANE 3.26 636.38 251.03 .70 5.00 632.63 250.00 .70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7444E+02 EXCESS= .0000E+00 OUTFLOW= .7444E+02 BASIN STORAGE= .6004E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCGD20BM MANE 3.29 621.67 253.00 .69 5.00 618.01 250.00 .69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7283E+02 EXCESS= .0000E+00 OUTFLOW= .7283E+02 BASIN STORAGE= .5330E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.64 1049.01 247.78 1.00 5.00 1042.06 250.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1221E+03 EXCESS= .0000E+00 OUTFLOW= .1221E+03 BASIN STORAGE= .3089E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.67 1010.09 248.15 .98 5.00 1002.92 250.00 .98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1188E+03 EXCESS= .0000E+00 OUTFLOW= .1188E+03 BASIN STORAGE= .3380E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.71 946.75 247.94 .93 5.00 945.41 250.00 .93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1133E+03 EXCESS= .0000E+00 OUTFLOW= .1133E+03 BASIN STORAGE= .3421E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.76 880.70 248.28 .89 5.00 879.00 250.00 .89

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1077E+03 EXCESS= .0000E+00 OUTFLOW= .1077E+03 BASIN STORAGE= .2987E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.78 859.30 248.72 .87 5.00 858.45 250.00 .87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1057E+03 EXCESS= .0000E+00 OUTFLOW= .1057E+03 BASIN STORAGE= .2976E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.79 838.75 249.30 .85 5.00 838.21 250.00 .85

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1040E+03 EXCESS= .0000E+00 OUTFLOW= .1040E+03 BASIN STORAGE= .3001E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.80 831.86 250.07 .85 5.00 831.83 250.00 .85

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1031E+03 EXCESS= .0000E+00 OUTFLOW= .1031E+03 BASIN STORAGE= .3002E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.82 807.34 249.63 .83 5.00 806.89 250.00 .83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1014E+03 EXCESS= .0000E+00 OUTFLOW= .1014E+03 BASIN STORAGE= .2920E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT2B2 MANE 1.84 788.33 249.93 .82 5.00 788.31 250.00 .82

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9934E+02 EXCESS= .0000E+00 OUTFLOW= .9934E+02 BASIN STORAGE= .3019E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT3-C MANE 5.00 171.04 240.00 1.74 5.00 171.04 240.00 1.74

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1597E+02 EXCESS= .0000E+00 OUTFLOW= .1598E+02 BASIN STORAGE= .3348E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCPT3-C MANE 5.00 167.49 240.00 1.70 5.00 167.49 240.00 1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1562E+02 EXCESS= .0000E+00 OUTFLOW= .1564E+02 BASIN STORAGE= .3312E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCPT3-C MANE 5.00 161.57 240.00 1.64 5.00 161.57 240.00 1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1505E+02 EXCESS= .0000E+00 OUTFLOW= .1506E+02 BASIN STORAGE= .3252E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCPT3-C MANE 5.00 155.64 240.00 1.58 5.00 155.64 240.00 1.58

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1448E+02 EXCESS= .0000E+00 OUTFLOW= .1449E+02 BASIN STORAGE= .3191E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCPT3-C MANE 5.00 153.27 240.00 1.56 5.00 153.27 240.00 1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1426E+02 EXCESS= .0000E+00 OUTFLOW= .1427E+02 BASIN STORAGE= .3167E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00
RCPT3-C MANE 5.00 151.61 240.00 1.54 5.00 151.61 240.00 1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1410E+02 EXCESS= .0000E+00 OUTFLOW= .1411E+02 BASIN STORAGE= .3052E-02 PERCENT ERROR= -.1

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FOR PLAN = 1	RATIO=	.00							
RCPT3-C	MANE	5.00	150.43	240.00	1.53	5.00	150.43	240.00	1.53
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1398E+02 EXCESS= .0000E+00 OUTFLOW= .1399E+02 BASIN STORAGE= .3040E-02 PERCENT ERROR= -.1									
FOR PLAN = 1	RATIO=	.00							
RCPT3-C	MANE	5.00	148.53	240.00	1.51	5.00	148.53	240.00	1.51
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1380E+02 EXCESS= .0000E+00 OUTFLOW= .1381E+02 BASIN STORAGE= .2959E-02 PERCENT ERROR= -.1									
FOR PLAN = 1	RATIO=	.00							
RCPT3-C	MANE	5.00	146.16	240.00	1.48	5.00	146.16	240.00	1.48
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1358E+02 EXCESS= .0000E+00 OUTFLOW= .1359E+02 BASIN STORAGE= .2890E-02 PERCENT ERROR= -.1									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.35	1502.59	245.08	1.14	5.00	1502.38	245.00	1.14
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1761E+03 EXCESS= .0000E+00 OUTFLOW= .1761E+03 BASIN STORAGE= .7278E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.35	1456.68	245.00	1.11	5.00	1456.67	245.00	1.11
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1715E+03 EXCESS= .0000E+00 OUTFLOW= .1715E+03 BASIN STORAGE= .7133E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.36	1376.02	244.91	1.07	5.00	1375.80	245.00	1.07
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1641E+03 EXCESS= .0000E+00 OUTFLOW= .1641E+03 BASIN STORAGE= .7427E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.37	1296.55	244.95	1.02	5.00	1296.37	245.00	1.02
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1565E+03 EXCESS= .0000E+00 OUTFLOW= .1565E+03 BASIN STORAGE= .7381E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.37	1270.37	241.76	1.00	5.00	1269.58	245.00	1.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1538E+03 EXCESS= .0000E+00 OUTFLOW= .1538E+03 BASIN STORAGE= .7333E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.37	1246.48	240.96	.98	5.00	1245.05	240.00	.98
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1515E+03 EXCESS= .0000E+00 OUTFLOW= .1515E+03 BASIN STORAGE= .7132E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.38	1236.62	240.97	.97	5.00	1235.26	240.00	.98
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1502E+03 EXCESS= .0000E+00 OUTFLOW= .1502E+03 BASIN STORAGE= .7165E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.38	1215.88	240.68	.96	5.00	1215.21	240.00	.96
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1478E+03 EXCESS= .0000E+00 OUTFLOW= .1478E+03 BASIN STORAGE= .7260E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT41-C	MANE	.38	1190.38	240.44	.94	5.00	1189.98	240.00	.94
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1450E+03 EXCESS= .0000E+00 OUTFLOW= .1450E+03 BASIN STORAGE= .7256E-03 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.55	1717.26	245.57	1.18	5.00	1716.28	245.00	1.18
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2036E+03 EXCESS= .0000E+00 OUTFLOW= .2036E+03 BASIN STORAGE= .1196E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.55	1666.22	245.20	1.15	5.00	1665.39	245.00	1.15
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1984E+03 EXCESS= .0000E+00 OUTFLOW= .1984E+03 BASIN STORAGE= .1285E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.57	1577.89	245.54	1.10	5.00	1577.48	245.00	1.10
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1899E+03 EXCESS= .0000E+00 OUTFLOW= .1899E+03 BASIN STORAGE= .1204E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.58	1490.31	245.41	1.05	5.00	1490.16	245.00	1.05
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1812E+03 EXCESS= .0000E+00 OUTFLOW= .1812E+03 BASIN STORAGE= .1210E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.58	1460.78	245.08	1.03	5.00	1460.70	245.00	1.03
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1780E+03 EXCESS= .0000E+00 OUTFLOW= .1780E+03 BASIN STORAGE= .1196E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.59	1433.21	245.19	1.02	5.00	1433.17	245.00	1.02
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1755E+03 EXCESS= .0000E+00 OUTFLOW= .1755E+03 BASIN STORAGE= .1239E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.59	1421.38	244.83	1.01	5.00	1421.26	245.00	1.01
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1739E+03 EXCESS= .0000E+00 OUTFLOW= .1739E+03 BASIN STORAGE= .1198E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCPT5A2	MANE	.60	1395.18	241.34	.99	5.00	1394.14	245.00	.99

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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1712E+03 EXCESS= .0000E+00 OUTFLOW= .1712E+03 BASIN STORAGE= .1268E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCPT5A2 MANE .60 1366.45 240.93 .98 5.00 1362.85 245.00 .98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1680E+03 EXCESS= .0000E+00 OUTFLOW= .1680E+03 BASIN STORAGE= .1211E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .36 1731.73 245.12 1.19 5.00 1731.13 245.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2062E+03 EXCESS= .0000E+00 OUTFLOW= .2062E+03 BASIN STORAGE= .7937E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .37 1680.67 245.13 1.16 5.00 1680.12 245.00 1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2010E+03 EXCESS= .0000E+00 OUTFLOW= .2010E+03 BASIN STORAGE= .7994E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .38 1592.70 245.21 1.11 5.00 1592.26 245.00 1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1924E+03 EXCESS= .0000E+00 OUTFLOW= .1924E+03 BASIN STORAGE= .7898E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .39 1505.18 245.05 1.06 5.00 1505.08 245.00 1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1836E+03 EXCESS= .0000E+00 OUTFLOW= .1836E+03 BASIN STORAGE= .8162E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .39 1475.74 245.06 1.04 5.00 1475.67 245.00 1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1804E+03 EXCESS= .0000E+00 OUTFLOW= .1804E+03 BASIN STORAGE= .7976E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .39 1448.26 244.97 1.03 5.00 1448.22 245.00 1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1778E+03 EXCESS= .0000E+00 OUTFLOW= .1778E+03 BASIN STORAGE= .8208E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .39 1436.31 245.00 1.02 5.00 1436.31 245.00 1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1763E+03 EXCESS= .0000E+00 OUTFLOW= .1763E+03 BASIN STORAGE= .8185E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .40 1409.31 244.91 1.00 5.00 1409.15 245.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1736E+03 EXCESS= .0000E+00 OUTFLOW= .1736E+03 BASIN STORAGE= .7945E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CA MANE .40 1380.44 240.55 .98 5.00 1377.92 245.00 .98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1703E+03 EXCESS= .0000E+00 OUTFLOW= .1703E+03 BASIN STORAGE= .8204E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .43 1759.46 245.22 1.20 5.00 1758.71 245.00 1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2106E+03 EXCESS= .0000E+00 OUTFLOW= .2106E+03 BASIN STORAGE= .9523E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .43 1707.92 245.12 1.17 5.00 1707.44 245.00 1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2052E+03 EXCESS= .0000E+00 OUTFLOW= .2052E+03 BASIN STORAGE= .9741E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .44 1619.60 245.10 1.12 5.00 1619.34 245.00 1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1965E+03 EXCESS= .0000E+00 OUTFLOW= .1965E+03 BASIN STORAGE= .9803E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .45 1531.77 245.21 1.07 5.00 1531.67 245.00 1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1876E+03 EXCESS= .0000E+00 OUTFLOW= .1876E+03 BASIN STORAGE= .9494E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .46 1502.37 244.86 1.05 5.00 1502.25 245.00 1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1843E+03 EXCESS= .0000E+00 OUTFLOW= .1843E+03 BASIN STORAGE= .9888E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .46 1474.88 244.86 1.03 5.00 1474.71 245.00 1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1817E+03 EXCESS= .0000E+00 OUTFLOW= .1817E+03 BASIN STORAGE= .9875E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .46 1462.76 244.74 1.03 5.00 1462.61 245.00 1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1801E+03 EXCESS= .0000E+00 OUTFLOW= .1801E+03 BASIN STORAGE= .9706E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .46 1437.60 240.89 1.01 5.00 1435.60 245.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1774E+03 EXCESS= .0000E+00 OUTFLOW= .1774E+03 BASIN STORAGE= .9511E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RC5B6-CB MANE .47 1408.42 240.98 .99 5.00 1405.53 240.00 .99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1741E+03 EXCESS= .0000E+00 OUTFLOW= .1741E+03 BASIN STORAGE= .9933E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RC586-CC	MANE	.78	1781.15	245.11	1.20	ALEXDECAT.txt 5.00	1780.60	245.00	1.20
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2140E+03 EXCESS= .0000E+00 OUTFLOW= .2140E+03 BASIN STORAGE= .1791E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.78	1729.95	245.67	1.17	5.00	1729.11	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2086E+03 EXCESS= .0000E+00 OUTFLOW= .2086E+03 BASIN STORAGE= .1775E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.80	1641.42	245.30	1.12	5.00	1640.83	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1997E+03 EXCESS= .0000E+00 OUTFLOW= .1997E+03 BASIN STORAGE= .1709E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.82	1553.68	245.06	1.07	5.00	1553.60	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1907E+03 EXCESS= .0000E+00 OUTFLOW= .1907E+03 BASIN STORAGE= .1703E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.83	1524.00	244.48	1.05	5.00	1523.88	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1874E+03 EXCESS= .0000E+00 OUTFLOW= .1874E+03 BASIN STORAGE= .1762E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.83	1496.77	244.63	1.04	5.00	1496.36	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1847E+03 EXCESS= .0000E+00 OUTFLOW= .1847E+03 BASIN STORAGE= .1786E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.83	1484.54	244.60	1.03	5.00	1484.13	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1831E+03 EXCESS= .0000E+00 OUTFLOW= .1831E+03 BASIN STORAGE= .1741E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.84	1459.78	241.19	1.01	5.00	1457.39	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1803E+03 EXCESS= .0000E+00 OUTFLOW= .1803E+03 BASIN STORAGE= .1722E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CC	MANE		.85	1430.39	241.45	.99	5.00	1426.13	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1769E+03 EXCESS= .0000E+00 OUTFLOW= .1769E+03 BASIN STORAGE= .1763E-02 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.18	1794.44	245.04	1.20	5.00	1794.24	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2159E+03 EXCESS= .0000E+00 OUTFLOW= .2159E+03 BASIN STORAGE= .4063E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.19	1742.53	244.97	1.17	5.00	1742.53	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2105E+03 EXCESS= .0000E+00 OUTFLOW= .2105E+03 BASIN STORAGE= .4095E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.19	1653.98	245.05	1.12	5.00	1653.87	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2015E+03 EXCESS= .0000E+00 OUTFLOW= .2015E+03 BASIN STORAGE= .4110E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.19	1566.36	245.03	1.07	5.00	1566.31	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1924E+03 EXCESS= .0000E+00 OUTFLOW= .1924E+03 BASIN STORAGE= .4043E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.19	1536.53	244.98	1.05	5.00	1536.49	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1891E+03 EXCESS= .0000E+00 OUTFLOW= .1891E+03 BASIN STORAGE= .4057E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.20	1508.94	245.01	1.04	5.00	1508.93	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1864E+03 EXCESS= .0000E+00 OUTFLOW= .1864E+03 BASIN STORAGE= .4055E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.20	1496.55	245.02	1.03	5.00	1496.53	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1847E+03 EXCESS= .0000E+00 OUTFLOW= .1847E+03 BASIN STORAGE= .4069E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.20	1469.72	244.83	1.01	5.00	1469.70	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1819E+03 EXCESS= .0000E+00 OUTFLOW= .1819E+03 BASIN STORAGE= .4067E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
R586-CD	MANE		.20	1438.77	240.92	.99	5.00	1438.20	245.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1785E+03 EXCESS= .0000E+00 OUTFLOW= .1785E+03 BASIN STORAGE= .4060E-03 PERCENT ERROR= .0									
FOR PLAN	= 1	RATIO=	.00						
RC586-CE	MANE		2.30	20.13	229.71	1.18	5.00	20.11	230.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1824E+01 EXCESS= .0000E+00 OUTFLOW= .1824E+01 BASIN STORAGE= .9033E-03 PERCENT ERROR= -.1									
FOR PLAN	= 1	RATIO=	.00						
RC586-CE	MANE		2.32	19.60	229.86	1.15	5.00	19.59	230.00
CONTINUITY SUMMARY (AC-FT) - INFLOW= .1775E+01 EXCESS= .0000E+00 OUTFLOW= .1776E+01 BASIN STORAGE= .8918E-03 PERCENT ERROR= -.1									

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.36	18.69	229.40	1.10	5.00	18.66	230.00
									1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1695E+01 EXCESS= .0000E+00 OUTFLOW= .1695E+01 BASIN STORAGE= .9273E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.41	17.74	231.42	1.04	5.00	17.73	230.00
									1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1614E+01 EXCESS= .0000E+00 OUTFLOW= .1614E+01 BASIN STORAGE= .8528E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.43	17.44	230.82	1.02	5.00	17.38	230.00
									1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1583E+01 EXCESS= .0000E+00 OUTFLOW= .1583E+01 BASIN STORAGE= .9116E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.44	17.23	229.67	1.01	5.00	17.21	230.00
									1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1561E+01 EXCESS= .0000E+00 OUTFLOW= .1561E+01 BASIN STORAGE= .9068E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.45	17.04	230.60	1.00	5.00	16.98	230.00
									1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1545E+01 EXCESS= .0000E+00 OUTFLOW= .1545E+01 BASIN STORAGE= .9313E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.47	16.76	229.64	.98	5.00	16.75	230.00
									.98

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1520E+01 EXCESS= .0000E+00 OUTFLOW= .1520E+01 BASIN STORAGE= .9106E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
RC5B6-CE	MANE		2.49	16.37	231.55	.96	5.00	16.33	230.00
									.96

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1489E+01 EXCESS= .0000E+00 OUTFLOW= .1489E+01 BASIN STORAGE= .8479E-03 PERCENT ERROR= -.1

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.29	1808.42	245.18	1.20	5.00	1807.83	245.00
									1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2178E+03 EXCESS= .0000E+00 OUTFLOW= .2178E+03 BASIN STORAGE= .6566E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.29	1756.37	245.15	1.17	5.00	1755.88	245.00
									1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2123E+03 EXCESS= .0000E+00 OUTFLOW= .2123E+03 BASIN STORAGE= .6413E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.30	1667.36	245.28	1.12	5.00	1667.22	245.00
									1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2032E+03 EXCESS= .0000E+00 OUTFLOW= .2032E+03 BASIN STORAGE= .6334E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.30	1579.27	245.21	1.07	5.00	1579.25	245.00
									1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1940E+03 EXCESS= .0000E+00 OUTFLOW= .1940E+03 BASIN STORAGE= .6403E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.31	1549.47	244.96	1.05	5.00	1549.44	245.00
									1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1907E+03 EXCESS= .0000E+00 OUTFLOW= .1907E+03 BASIN STORAGE= .6359E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.31	1521.79	244.89	1.04	5.00	1521.72	245.00
									1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1879E+03 EXCESS= .0000E+00 OUTFLOW= .1879E+03 BASIN STORAGE= .6535E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.31	1509.27	245.09	1.03	5.00	1509.24	245.00
									1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1863E+03 EXCESS= .0000E+00 OUTFLOW= .1863E+03 BASIN STORAGE= .6448E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.31	1482.58	245.00	1.01	5.00	1482.57	245.00
									1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1835E+03 EXCESS= .0000E+00 OUTFLOW= .1835E+03 BASIN STORAGE= .6585E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CF	MANE		.31	1451.38	240.82	.99	5.00	1450.76	245.00
									.99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1800E+03 EXCESS= .0000E+00 OUTFLOW= .1800E+03 BASIN STORAGE= .6405E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CM	MANE		.17	1822.77	245.09	1.20	5.00	1822.50	245.00
									1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2198E+03 EXCESS= .0000E+00 OUTFLOW= .2198E+03 BASIN STORAGE= .3745E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CM	MANE		.17	1770.48	245.07	1.17	5.00	1770.23	245.00
									1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2143E+03 EXCESS= .0000E+00 OUTFLOW= .2143E+03 BASIN STORAGE= .3709E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CM	MANE		.17	1681.39	245.01	1.12	5.00	1681.35	245.00
									1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2051E+03 EXCESS= .0000E+00 OUTFLOW= .2051E+03 BASIN STORAGE= .3727E-03 PERCENT ERROR= .0

FOR PLAN	= 1	RATIO=	.00						
R5B6-CM	MANE		.18	1592.90	245.07	1.07	5.00	1592.85	245.00
									1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1959E+03 EXCESS= .0000E+00 OUTFLOW= .1959E+03 BASIN STORAGE= .3754E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-CM MANE .18 1562.99 244.98 1.05 5.00 1562.96 245.00 1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1925E+03 EXCESS= .0000E+00 OUTFLOW= .1925E+03 BASIN STORAGE= .3781E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-CM MANE .18 1535.16 244.96 1.04 5.00 1535.09 245.00 1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1897E+03 EXCESS= .0000E+00 OUTFLOW= .1897E+03 BASIN STORAGE= .3787E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-CM MANE .18 1522.50 245.04 1.03 5.00 1522.48 245.00 1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1881E+03 EXCESS= .0000E+00 OUTFLOW= .1881E+03 BASIN STORAGE= .3801E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-CM MANE .18 1495.83 244.98 1.01 5.00 1495.79 245.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1852E+03 EXCESS= .0000E+00 OUTFLOW= .1852E+03 BASIN STORAGE= .3730E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-CM MANE .18 1463.89 240.89 .99 5.00 1463.71 245.00 .99

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1817E+03 EXCESS= .0000E+00 OUTFLOW= .1817E+03 BASIN STORAGE= .3760E-03 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .49 1821.32 245.47 1.20 5.00 1820.06 245.00 1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2199E+03 EXCESS= .0000E+00 OUTFLOW= .2199E+03 BASIN STORAGE= .1091E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .49 1768.85 245.39 1.17 5.00 1767.74 245.00 1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2143E+03 EXCESS= .0000E+00 OUTFLOW= .2143E+03 BASIN STORAGE= .1104E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .50 1680.28 245.47 1.12 5.00 1679.64 245.00 1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2052E+03 EXCESS= .0000E+00 OUTFLOW= .2052E+03 BASIN STORAGE= .1081E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .51 1591.81 245.18 1.07 5.00 1591.51 245.00 1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1959E+03 EXCESS= .0000E+00 OUTFLOW= .1959E+03 BASIN STORAGE= .1098E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .52 1562.07 244.97 1.05 5.00 1562.06 245.00 1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1925E+03 EXCESS= .0000E+00 OUTFLOW= .1925E+03 BASIN STORAGE= .1137E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .52 1534.32 245.18 1.04 5.00 1534.19 245.00 1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1897E+03 EXCESS= .0000E+00 OUTFLOW= .1897E+03 BASIN STORAGE= .1144E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .52 1521.77 244.94 1.03 5.00 1521.73 245.00 1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1881E+03 EXCESS= .0000E+00 OUTFLOW= .1881E+03 BASIN STORAGE= .1166E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .53 1495.30 245.10 1.01 5.00 1495.26 245.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1852E+03 EXCESS= .0000E+00 OUTFLOW= .1852E+03 BASIN STORAGE= .1098E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
R5B6-C0 MANE .53 1463.45 244.58 .99 5.00 1463.40 245.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1818E+03 EXCESS= .0000E+00 OUTFLOW= .1818E+03 BASIN STORAGE= .1106E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCCPT5B6 MANE 1.65 2556.96 246.01 1.28 5.00 2555.83 245.00 1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3401E+03 EXCESS= .0000E+00 OUTFLOW= .3401E+03 BASIN STORAGE= .4404E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCCPT5B6 MANE 1.67 2502.56 246.48 1.25 5.00 2502.13 245.00 1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3325E+03 EXCESS= .0000E+00 OUTFLOW= .3325E+03 BASIN STORAGE= .4921E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCCPT5B6 MANE 1.69 2412.56 243.43 1.20 5.00 2411.87 245.00 1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3203E+03 EXCESS= .0000E+00 OUTFLOW= .3203E+03 BASIN STORAGE= .4974E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCCPT5B6 MANE 1.72 2324.50 242.03 1.16 5.00 2321.74 245.00 1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3079E+03 EXCESS= .0000E+00 OUTFLOW= .3079E+03 BASIN STORAGE= .4637E-02 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00
RCCPT5B6 MANE 1.73 2294.80 243.27 1.14 5.00 2291.37 245.00 1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3031E+03 EXCESS= .0000E+00 OUTFLOW= .3031E+03 BASIN STORAGE= .5049E-02 PERCENT ERROR= .0

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FOR PLAN = 1	RATIO=	.00							
RCCPT5B6	MANE	1.73	2268.07	242.65	1.13	5.00	2263.15	245.00	1.13
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2994E+03 EXCESS= .0000E+00 OUTFLOW= .2994E+03 BASIN STORAGE= .4592E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCCPT5B6	MANE	1.74	2254.04	243.24	1.12	5.00	2249.84	245.00	1.12
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2970E+03 EXCESS= .0000E+00 OUTFLOW= .2970E+03 BASIN STORAGE= .4901E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCCPT5B6	MANE	1.74	2229.36	242.55	1.10	5.00	2222.94	245.00	1.10
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2931E+03 EXCESS= .0000E+00 OUTFLOW= .2931E+03 BASIN STORAGE= .4989E-02 PERCENT ERROR= .0									
FOR PLAN = 1	RATIO=	.00							
RCCPT5B6	MANE	1.75	2198.21	242.18	1.08	5.00	2190.04	245.00	1.08
CONTINUITY SUMMARY (AC-FT) - INFLOW= .2882E+03 EXCESS= .0000E+00 OUTFLOW= .2882E+03 BASIN STORAGE= .5032E-02 PERCENT ERROR= .0									

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

Appendix B

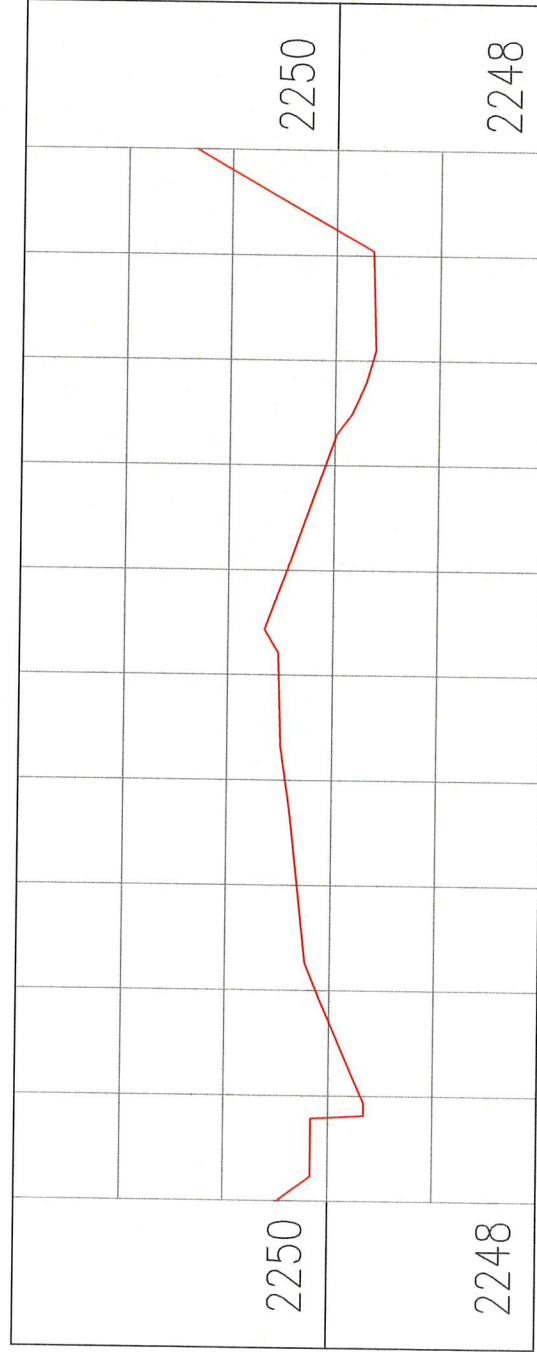
STORM DRAIN COLLECTION FACILITY DESIGN

- ROAD SECTIONS TABLE
- ROAD PROFILES
- INLETS TABLE
- PIPE TABLE

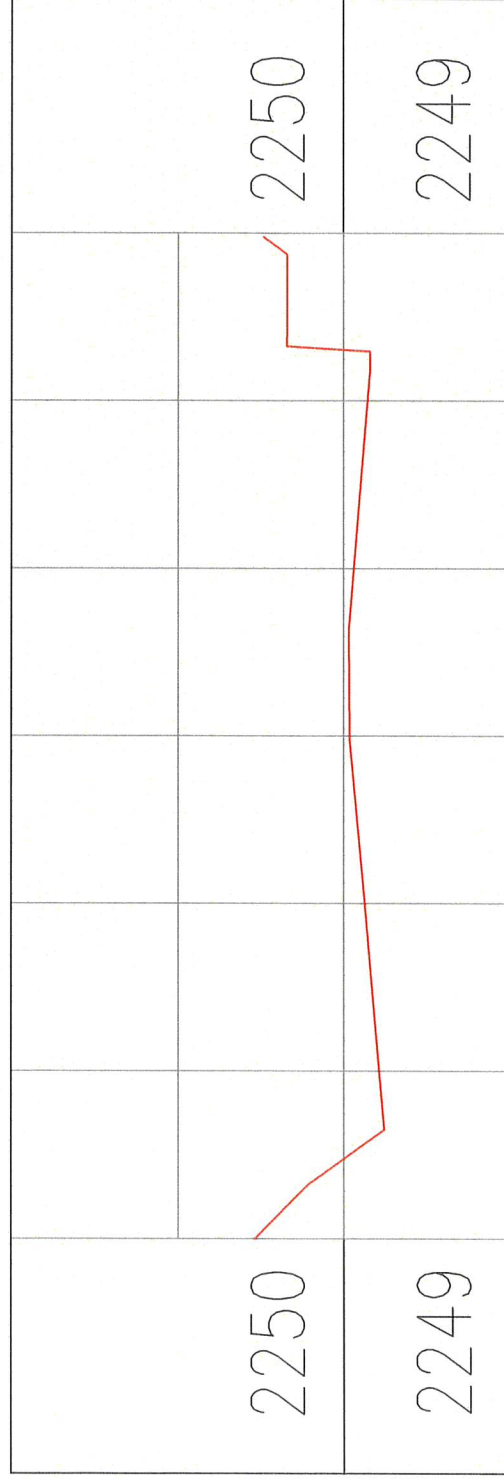
Road Sections

Location	Street	Discharge (cfs)	Longitudinal Slope (%)	Channel Type	Roughness	W. S. Elevation (ft)	Elevation Range (ft)	Crest Height (ft)	Dominant Side for Flow
5B6-CA	Alexander near Leon	10	1.00%	Irregular Section	Varies	0.58	0.00 to 1.53	1.53	South
5B6-CA	Leon near Alexander	16	1.23%	Irregular Section	Varies	0.30	0.00 to 0.60	0.26	Neither
5B6-CB	Alexander near Helen	5	1.10%	Irregular Section	Varies	0.18	0.00 to 0.75	0.05	North
5B6-CB	Helen near Alexander	40	0.44%	Irregular Section	Varies	0.67	0.00 to 2.36	0.41	Neither
5B6-CC	Alexander near Bradley	4	0.70%	Irregular Section	Varies	0.26	0.00 to 0.83	0.37	South
5B6-CC	Bradley near Alexander	37	0.50%	Irregular Section	Varies	1.23	0.00 to 1.50	1.06	East
5B6-CD	Alexander near Thom	21	0.60%	Irregular Section	Varies	0.64	0.00 to 1.08	1.08	South
5B6-CE	Thom near Alexander	20	2.06%	Irregular Section	Varies	0.51	0.00 to 0.72	0.68	Neither
5B6-CF	Alexander near Tuffer	23	0.80%	Irregular Section	Varies	0.56	0.00 to 1.05	0.68	North

Alexander near Leon



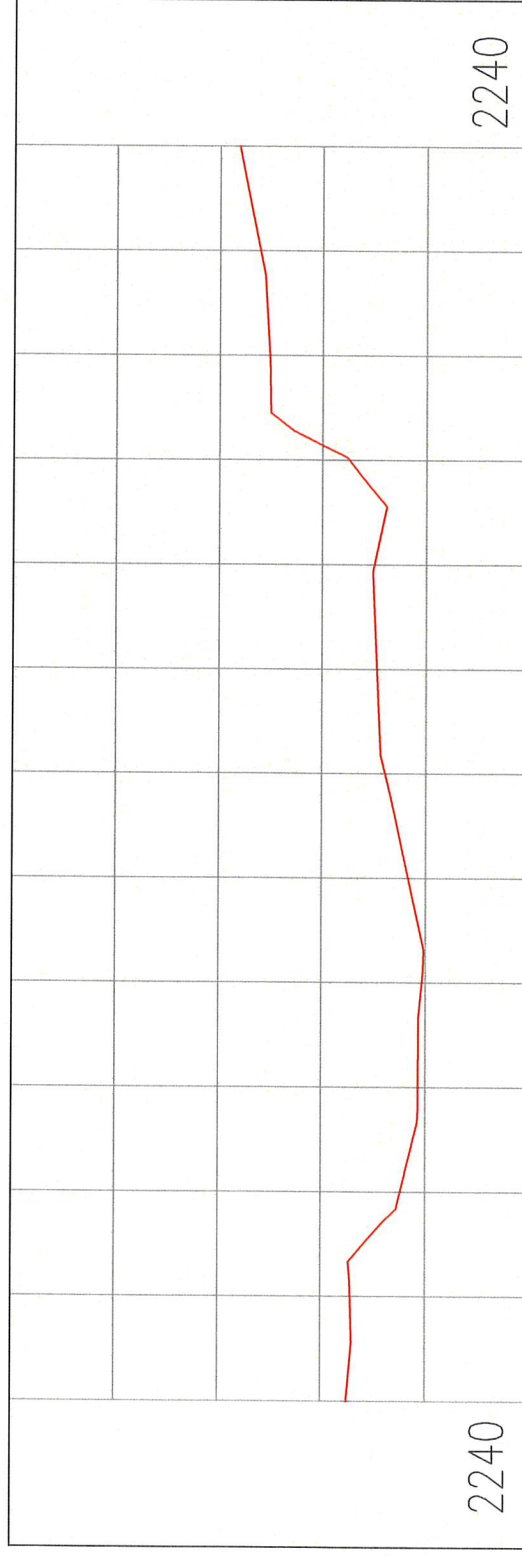
Leon near Alexander



Alexander near Helen

2245

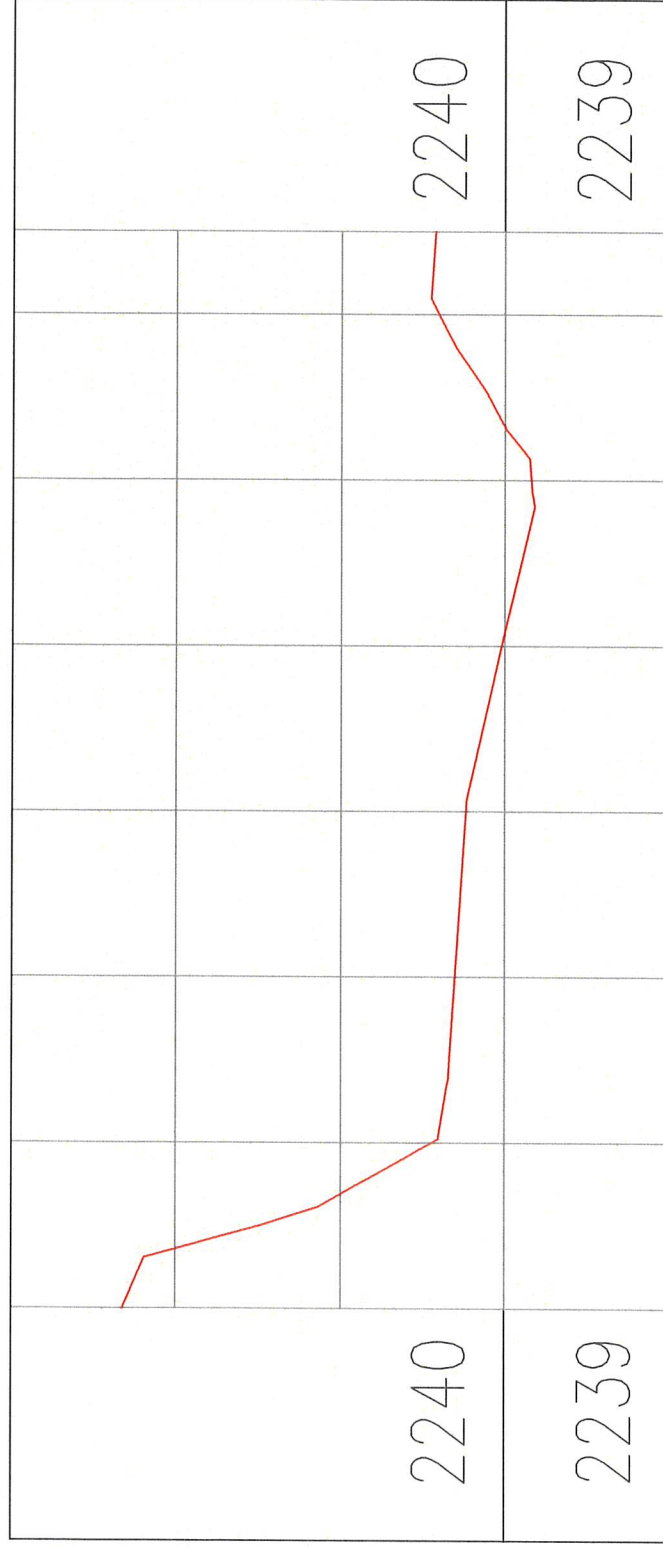
2245



2240

2240

Helen near Alexander



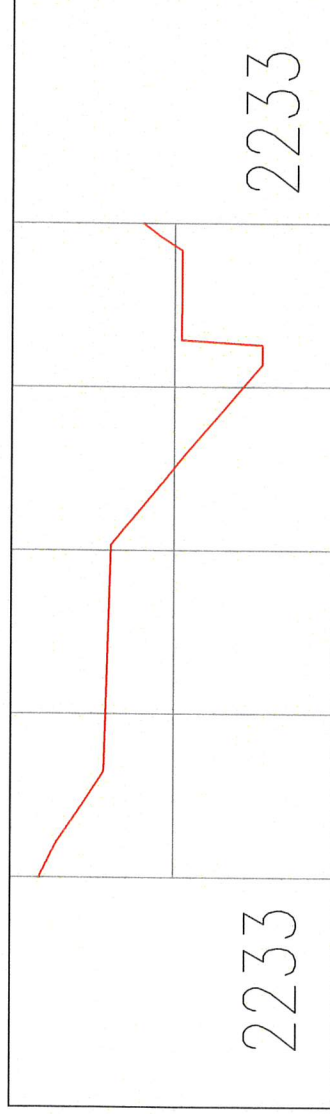
Alexander near Bradley



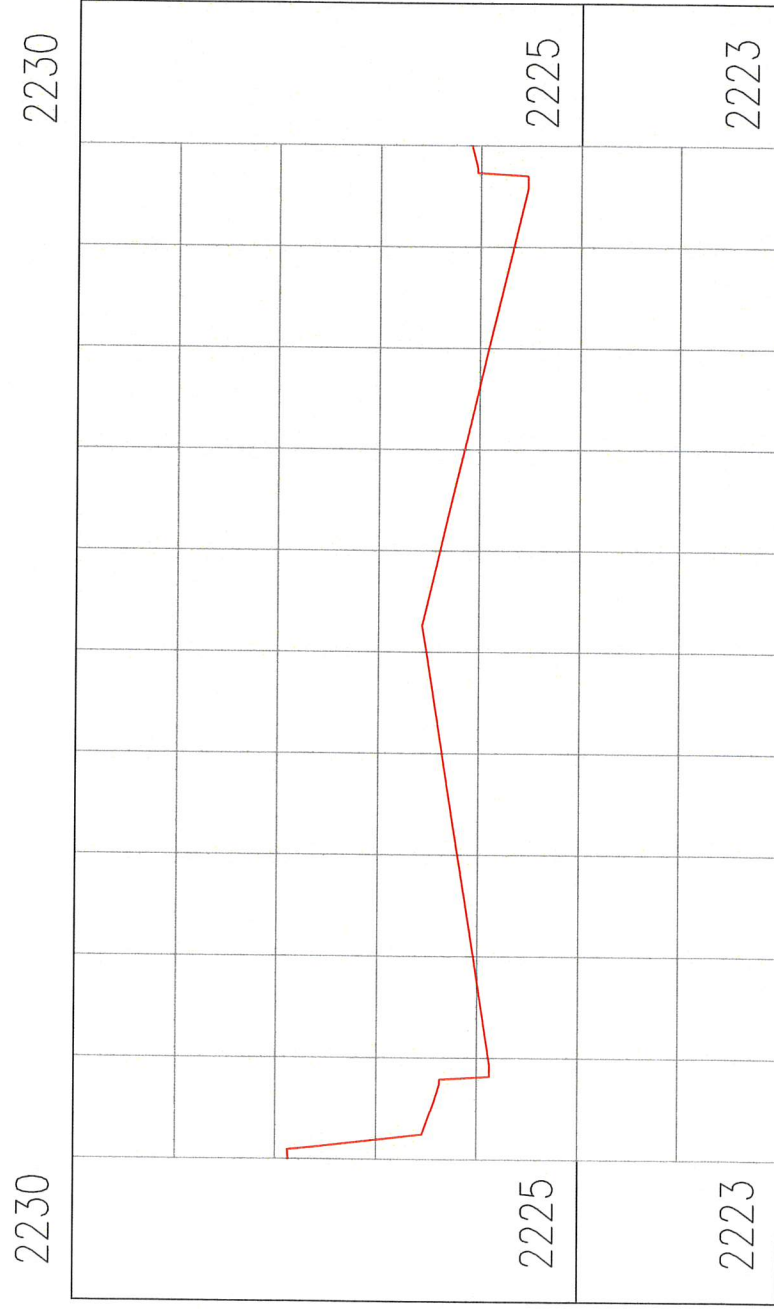
Bradley near Alexander

2235

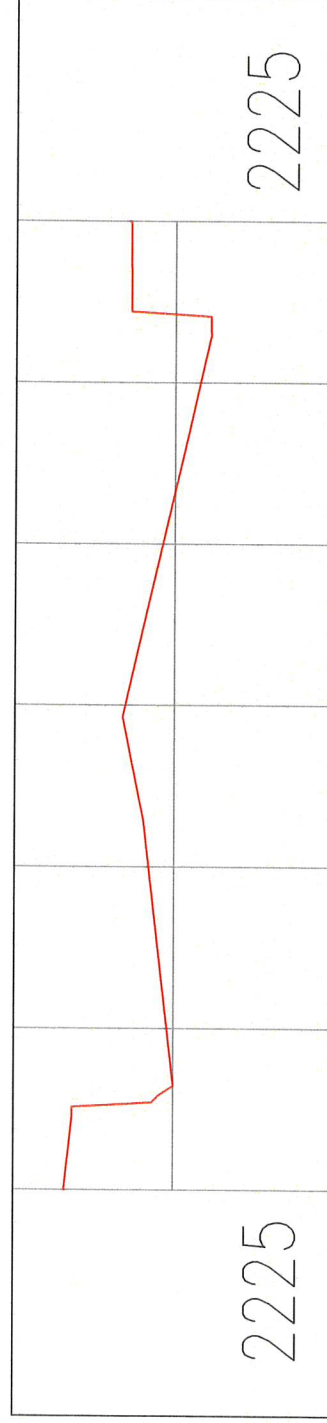
2235



Alexander near Thom



Thom near Alexander



Alexander near Tuffer



Inlet Sections

Subbasin Contributing Flow	Location	Offsite Flow (cfs)	Bypass Flow (cfs)	Design Discharge (cfs)	Longitudinal Slope (%)	Inlet Type (Flowmaster)	Gutter Width (ft)	Gutter Cross Slope (%)	Road Cross Slope (%)	Roughness	Local Depression (in)	Local Depression Width (ft)	Efficiency	Grate Width (ft)	Grate Length (ft)	Grate Type	Clogging	Curb Opening Length (ft)	Spread (ft)	Left Side Slope (H:V)	Right Side Slope (H:V)	Ditch Bottom Width (ft)	Intercepted Flow (cfs)	Depth (ft)	Uniform Standard Drawing	Apron Size (ft)
36" pipe incoming flow	South Alexander near Rancho	32	0	32	1.00%	30" incoming pipe	0.0	0.00%	0.00%	0.015	0	0	n/a	0.0	0.0	n/a	50%	0	n/a	0	0	0	n/a	n/a	n/a	n/a
5B6-CA	North Alexander near Leon	0	0	70	1.00%	36" pipe stub	0.0	0.00%	0.00%	0.015	0	0	n/a	0.0	0.0	n/a	50%	0	n/a	0	0	0	n/a	n/a	n/a	n/a
5B6-CA	South Alexander near Leon	10	0	10	1.00%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	96.1%	1.5	17.5	Curved Vaned	50%	20	16.3	0	0	0	10	0.39	Type "C-D" Modified Drop Inlet	n/a
5B6-CA	West Leon near Alexander	8	0	8	1.23%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	97.3%	1.5	17.5	Curved Vaned	50%	20	14.4	0	0	0	8	0.38	Type "C-D" Modified Drop Inlet	n/a
5B6-CA	East Leon near Alexander	8	0	8	1.23%	Ditch Inlet In Sag	0.0	0.00%	2.00%	0.015	0	2	100.0%	3.0	6.0	P-50 mm (P-1-7/8")	50%	0	7.8	6	6	4	8	0.32	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7	2.0
5B6-CB	North Alexander near Helen	5	0	5	1.10%	Ditch Inlet In Sag	0.0	0.00%	2.00%	0.015	0	2	100.0%	5.0	2.0	P-50 mm (P-1-7/8")	50%	0	9.9	6	6	6	5	0.32	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7	2.0
5B6-CB	West Helen near Alexander	20	1	21	0.44%	Ditch Inlet In Sag	0.0	0.00%	2.00%	0.015	0	2	100.0%	4.0	6.0	P-50 mm (P-1-7/8")	50%	0	11.9	6	6	5	21	0.58	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7	3.5
5B6-CB	East Helen near Alexander	20	0	20	0.44%	Ditch Inlet In Sag	0.0	0.00%	2.00%	0.015	0	2	100.0%	2.0	12.0	P-50 mm (P-1-7/8")	50%	0	7.8	6	6	5	20	0.40	Custom Inlet based off NDOT Type 2	2.5
5B6-CC	North Alexander near Bradley	4	0	4	0.70%	Ditch Inlet In Sag	0.0	0.00%	0.00%	0.015	0	0	100.0%	5.0	2.0	P-50 mm (P-1-7/8")	50%	0	9.4	6	6	6	4	0.28	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7	2.0
5B6-CC	West Bradley near Alexander	14	0	14	0.50%	Ditch Inlet In Sag	0.0	0.00%	2.00%	0.015	0	2	100.0%	5.0	6.0	P-50 mm (P-1-7/8")	50%	0	7.3	6	6	6	14	0.36	NDOT Type 2 R-4.2.1 with concrete apron R-4.2.7	2.5
5B6-CC	East Bradley near Alexander	23	0	23	0.50%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	91.2%	1.5	17.5	Curved Vaned	50%	20	25.8	0	0	0	21	0.61	Type "C-D" Modified Drop Inlet	n/a
5B6-CD	South Alexander near Thom	21	2	23	0.60%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	89.9%	1.5	17.5	Curved Vaned	50%	20	24.9	0	0	0	21	0.59	Type "C-D" Modified Drop Inlet	n/a
5B6-CD	North Alexander near Thom	0	0	7	0.60%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	93.1%	1.5	2.5	Curved Vaned	50%	5	9.4	0	0	0	2	0.28	Type "C-D" Modified Drop Inlet	n/a
5B6-CE	West Thom near Alexander	10	0	10	2.06%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	92.9%	1.5	17.5	Curved Vaned	50%	20	14.2	0	0	0	9	0.38	Type "C-D" Modified Drop Inlet	n/a
5B6-CE	East Thom near Alexander	10	0	10	2.06%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	92.9%	1.5	17.5	Curved Vaned	50%	20	14.2	0	0	0	9	0.38	Type "C-D" Modified Drop Inlet	n/a
5B6-CF	North Alexander near Tuffer	0	0	7	0.80%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	92.7%	1.5	2.5	Curved Vaned	50%	5	8.9	0	0	0	2	0.27	Type "C-D" Modified Drop Inlet	n/a
5B6-CF	South Alexander near Tuffer	23	2	25	0.80%	Combination Inlet On Grade	1.5	8.33%	2.00%	0.015	4	2	86.5%	1.5	17.5	Curved Vaned	50%	20	24.3	0	0	0	22	0.58	Type "C-D" Modified Drop Inlet	n/a
5B6-CG	North Alexander near Decatur	0	0	2	0.90%	Curb Inlet On Grade	1.5	8.33%	2.00%	0.015	8	2	100.0%	n/a	n/a	n/a	50%	20	8.6	0	0	0	2	0.27	Existing Drop Inlet Type "A"	n/a
5B6-CG	South Alexander near Decatur	0	3	5	0.90%	Curb Inlet On Grade	1.5	8.33%	2.00%	0.015	8	2	100.0%	n/a	n/a	n/a	50%	20	12.7	0	0	0	5	0.35	Existing Drop Inlet Type "A"	n/a

Note: North Alexander near Tuffer was given the maximum flow value found in flowmaster for the associated pipe size.
Note: North Alexander near Bradley is assuming a small flow value from driveways on North side of road.
Note: West Bradley near Alexander has the width and length values switched from NDOT standard (length is width and width is length).

Pipe Sections

Subbasin Contributing Flow	Location	Offsite Flow (cfs)	Bypass Flow (cfs)	Design Discharge (cfs)	Channel Slope (%)	Diameter (in)	Normal Depth (ft)	Pipe type
30" pipe incoming flow	South Alexander near Rancho	32	0	32	0.5%	36	1.81	Circular
5B6-CA	North Alexander near Leon	0	0	70	0.5%	36	2.67	Circular
5B6-CA	South Alexander near Leon	10	0	10	0.5%	24	1.15	Circular
5B6-CA	West Leon near Alexander	8	0	8	0.5%	24	1.00	Circular
5B6-CA	East Leon near Alexander	8	0	8	0.5%	24	1.00	Circular
5B6-CB	North Alexander near Helen	5	0	5	0.5%	24	0.77	Circular
5B6-CB	West Helen near Alexander	22	1	23	0.5%	30	1.54	Circular
5B6-CB	East Helen near Alexander	20	0	20	0.5%	30	1.53	Circular
5B6-CC	North Alexander near Bradley	0	0	7	0.5%	18	1.16	Circular
5B6-CC	West Bradley near Alexander	14	0	14	0.5%	24	1.45	Circular
5B6-CC	East Bradley near Alexander	23	0	21	0.5%	30	1.58	Circular
5B6-CD	South Alexander near Thom	23	2	21	0.5%	30	1.58	Circular
5B6-CD	North Alexander near Thom	0	0	7	0.5%	18	1.16	Circular
5B6-CE	West Thom near Alexander	10	0	9	0.5%	24	1.07	Circular
5B6-CE	East Thom near Alexander	10	0	9	0.5%	24	1.07	Circular
5B6-CE	Combined pipes at Manhole	18	0	18	0.5%	30	1.43	Circular
5B6-CF	North Alexander near Tuffer	0	0	7	0.5%	18	1.16	Circular
5B6-CF	South Alexander near Tuffer	23	2	22	0.5%	30	1.63	Circular

Note: All items with an offsite flow of 0 were given the maximum flow value found in flowmaster for the associated pipe size. Maximum flow values can be seen in Design Discharge for items with offsite flow of 0.

Note: Design discharge is based off of value in intercepted flow column in Inlet types and sizes spreadsheet for Type "C-D" Modified Drop Inlets.

Appendix C

STORM DRAIN CONVEYENCE FACILITY DESIGN

- WSPG ANALYSIS

Gowan Outfall-Rancho to Decatur.out

Water Surface Profile Gradient (WSPG)
XP WSPG
Engine Version 1.3 06/09/2010
XP Software www.xpsoftware.com

INPUT FILE

R:\25450-Gowan Channel\07-Engineering\05-DrainageStudy\WSPG Models\Gowan Outfall-Rancho to Decatur.wsx
Computed 09/22/14 16:38:24

TITLE INFORMATION

WARNING SUMMARY

WARNING 25: Link type element Link5 has different invert elevation than its upstream node.
WARNING 25: Link type element Link18 has different invert elevation than its upstream node.
WARNING 25: Link type element Link21 has different invert elevation than its upstream node.
WARNING 25: Link type element Link22 has different invert elevation than its upstream node.
WARNING 25: Link type element Link23 has different invert elevation than its upstream node.
WARNING 25: Link type element Link24 has different invert elevation than its upstream node.
WARNING 25: Link type element Link25 has different invert elevation than its upstream node.
WARNING 25: Link type element Link26 has different invert elevation than its upstream node.

RESULTS

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Main Line

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Composite Profile:

ELEMENT NAME	TYPE	STATION	INVERT ELEV	GROUND ELEV	W.S. ELEV	DEPTH	Q	VELOC.	VELOC. HEAD	ENERGY GRADE LN	SUPER ELEV	CRITICAL DEPTH	FROUDE NUMBER	SLOPE	NORMAL DEPTH	CROSS SECTION
###																
"END"	Outlet	-9680.00	2203.42	2213.00	2208.279	4.859	1563.00	16.08	4.02	2212.30	0.000	5.746	0.000	0.00000	0.000	Tr./Rect.closed
	"i.p."	-9676.47	2203.45	2213.03	2208.308	4.860	1563.00	16.08	4.02	2212.32	0.000	5.746	1.286	0.00799	4.842	Tr./Rect.closed
"Link2"	Reach	-9443.53	2205.31	2214.15	2210.407	5.097	1563.00	15.33	3.65	2214.06	0.000	5.746	1.197	0.00799	4.842	Tr./Rect.closed
"Link3"	Reach	-9385.80	2205.70	2215.00	2210.760	5.060	1563.00	15.44	3.70	2214.46	0.000	5.746	1.210	0.00676	5.157	Tr./Rect.closed
"Link4"	Reach	-9320.93	2206.16	2215.36	2211.218	5.058	1563.00	15.45	3.71	2214.93	0.000	5.746	1.211	0.00709	5.064	Tr./Rect.closed
"Link32"	Reach	-9250.85	2206.65	2216.09	2211.683	5.033	1563.00	15.53	3.74	2215.43	0.000	5.746	1.220	0.00699	5.091	Tr./Rect.closed
	"i.p."	-9048.19	2208.07	2217.51	2212.875	4.803	1563.00	16.27	4.11	2216.99	0.000	5.746	1.308	0.00701	5.085	Tr./Rect.closed
"Link5"	Reach	-8938.62	2208.84	2220.59	2213.420	4.580	1563.00	17.06	4.52	2217.94	0.000	5.746	1.405	0.00701	5.085	Tr./Rect.closed
"Node6"	Junction	-8937.62	2208.85	2220.60	2213.274	4.424	1549.00	17.51	4.76	2218.03	0.000	5.712	0.000	0.01000	0.000	Tr./Rect.closed
"Link6"	Reach	-8931.77	2208.88	2220.67	2213.279	4.399	1549.00	17.61	4.81	2218.09	0.000	5.712	1.479	0.00513	5.686	Tr./Rect.closed
	"i.p."	-8902.26	2209.09	2220.88	2213.405	4.318	1549.00	17.94	5.00	2218.40	0.000	5.712	1.521	0.00701	5.053	Tr./Rect.closed
	"i.p."	-8834.78	2209.56	2221.35	2213.677	4.117	1549.00	18.81	5.49	2219.17	0.000	5.712	1.634	0.00701	5.053	Tr./Rect.closed
	"i.p."	-8775.28	2209.98	2221.77	2213.902	3.926	1549.00	19.73	6.04	2219.95	0.000	5.712	1.755	0.00701	5.053	Tr./Rect.closed
	"i.p."	-8721.45	2210.35	2222.14	2214.097	3.743	1549.00	20.69	6.65	2220.75	0.000	5.712	1.885	0.00701	5.053	Tr./Rect.closed
"Link7"	Reach	-8672.01	2210.70	2222.31	2214.269	3.569	1549.00	21.70	7.31	2221.58	0.000	5.712	2.024	0.00701	5.053	Tr./Rect.closed
"Link8"	Transition	-8652.07	2210.84	2222.49	2216.936	6.096	1549.00	18.15	5.12	2222.05	0.000	7.246	1.295	0.00702	0.000	Tr./Rect.closed
"Link33"	Reach	-8450.85	2212.27	2224.39	2218.460	6.190	1549.00	17.87	4.96	2223.42	0.000	7.246	1.266	0.00711	6.046	Tr./Rect.closed
	"i.p."	-8365.23	2212.87	2224.99	2219.135	6.262	1549.00	17.67	4.85	2223.98	0.000	7.246	1.244	0.00705	6.064	Tr./Rect.closed
"Link9"	Reach	-8226.64	2213.85	2226.10	2220.417	6.567	1549.00	16.85	4.41	2224.82	0.000	7.246	1.159	0.00705	6.064	Tr./Rect.closed
"Node11"	Junction	-8225.64	2213.85	2226.10	2220.103	6.253	1538.00	17.57	4.79	2224.90	0.000	7.211	0.000	0.00000	0.000	Tr./Rect.closed
"Link10"	Reach	-8174.18	2214.21	2226.08	2220.533	6.323	1538.00	17.37	4.69	2225.22	0.000	7.211	1.218	0.00700	6.049	Tr./Rect.closed
"Node12"	Junction	-8173.18	2214.21	2226.08	2220.276	6.066	1527.00	17.98	5.02	2225.30	0.000	7.177	0.000	0.00000	0.000	Tr./Rect.closed
"Link11"	Reach	-8162.49	2214.28	2226.11	2220.341	6.061	1527.00	17.99	5.03	2225.37	0.000	7.177	1.288	0.00655	6.165	Tr./Rect.closed

Gowan Outfall-Rancho to Decatur.out																
"Node13"	Junction	-8161.49	2214.28	2226.11	2220.292	6.012	1525.00	18.12	5.10	2225.39	0.000	7.170	0.000	0.00000	0.000	Tr./Rect.closed
	"i.p."	-8037.95	2215.14	2226.97	2221.156	6.012	1525.00	18.12	5.10	2226.25	0.000	7.170	1.302	0.00699	6.012	Tr./Rect.closed
"Link12"	Reach	-7600.89	2218.20	2231.10	2224.244	6.044	1525.00	18.02	5.04	2229.29	0.000	7.170	1.292	0.00699	6.012	Tr./Rect.closed
"Link13"	Reach	-7596.48	2218.23	2231.69	2224.273	6.043	1525.00	18.02	5.04	2229.32	0.000	7.170	1.292	0.00680	6.073	Tr./Rect.closed
"Link14"	Reach	-7401.22	2219.60	2232.09	2225.712	6.112	1525.00	17.82	4.93	2230.64	0.000	7.170	1.270	0.00702	6.005	Tr./Rect.closed
"Link15"	Reach	-7297.87	2220.28	2232.29	2226.368	6.088	1525.00	17.89	4.97	2231.34	0.000	7.170	1.278	0.00658	6.149	Tr./Rect.closed
"Link34"	Reach	-7123.62	2221.43	2233.15	2227.448	6.018	1525.00	18.10	5.09	2232.54	0.000	7.170	1.300	0.00660	6.142	Tr./Rect.closed
"Link16"	Reach	-6910.37	2222.84	2234.15	2228.673	5.833	1525.00	18.68	5.42	2234.09	0.000	7.170	1.363	0.00661	6.138	Tr./Rect.closed
"Node18"	Junction	-6909.37	2222.84	2234.15	2228.522	5.682	1516.00	19.06	5.64	2234.16	0.000	7.142	0.000	0.00000	0.000	Tr./Rect.closed
"Link17"	Reach	-6891.33	2222.96	2234.12	2228.616	5.656	1516.00	19.15	5.69	2234.31	0.000	7.142	1.419	0.00665	6.097	Tr./Rect.closed
"Node19"	Junction	-6890.33	2222.96	2234.13	2228.466	5.506	1506.00	19.54	5.93	2234.39	0.000	7.110	0.000	0.00000	0.000	Tr./Rect.closed
"Link18"	Reach	-6882.22	2223.02	2234.35	2228.517	5.497	1506.00	19.57	5.95	2234.46	0.000	7.110	1.471	0.00740	5.835	Tr./Rect.closed
"Node20"	Junction	-6881.22	2223.03	2234.36	2228.488	5.458	1503.00	19.67	6.01	2234.50	0.000	7.101	0.000	0.01000	0.000	Tr./Rect.closed
	"i.p."	-6865.60	2223.13	2234.46	2228.560	5.428	1503.00	19.78	6.07	2234.63	0.000	7.101	1.496	0.00652	6.103	Tr./Rect.closed
"Link37"	Reach	-6750.88	2223.88	2235.71	2229.055	5.175	1503.00	20.74	6.68	2235.74	0.000	7.101	1.607	0.00652	6.103	Tr./Rect.closed
	"i.p."	-6706.21	2224.18	2236.01	2229.251	5.072	1503.00	21.17	6.96	2236.21	0.000	7.101	1.656	0.00670	6.043	Tr./Rect.closed
	"i.p."	-6612.44	2224.81	2236.64	2229.643	4.836	1503.00	22.20	7.65	2237.30	0.000	7.101	1.779	0.00670	6.043	Tr./Rect.closed
"Link19"	Reach	-6529.98	2225.36	2235.71	2229.971	4.611	1503.00	23.28	8.42	2238.39	0.000	7.101	1.911	0.00670	6.043	Tr./Rect.closed
"Link20"	Transition	-6509.98	2225.50	2237.50	2231.177	5.677	1503.00	22.06	7.56	2238.74	0.000	7.870	1.632	0.00700	0.000	Tr./Rect.closed
"Link21"	Reach	-6270.94	2228.48	2240.00	2234.304	5.824	1503.00	21.51	7.18	2241.49	0.000	7.870	1.570	0.01247	5.580	Tr./Rect.closed
"Node23"	Junction	-6269.94	2228.49	2240.00	2234.162	5.672	1491.00	21.91	7.45	2241.61	0.000	7.828	0.000	0.01000	0.000	Tr./Rect.closed
"Link22"	Reach	-6232.94	2228.96	2240.45	2234.656	5.696	1491.00	21.81	7.39	2242.05	0.000	7.828	1.611	0.01270	5.508	Tr./Rect.closed
"Node24"	Junction	-6231.94	2228.97	2240.47	2234.520	5.550	1479.00	22.21	7.66	2242.18	0.000	7.786	0.000	0.01000	0.000	Tr./Rect.closed
"Link23"	Reach	-6230.56	2228.97	2240.49	2234.510	5.540	1479.00	22.25	7.68	2242.19	0.000	7.786	1.666	0.00000	8.000	Tr./Rect.closed
"Node25"	Junction	-6229.56	2228.99	2240.51	2234.500	5.510	1476.00	22.32	7.74	2242.24	0.000	7.775	0.000	0.02000	0.000	Tr./Rect.closed
"Link35"	Reach	-5900.88	2233.10	2245.99	2238.638	5.538	1476.00	22.21	7.66	2246.30	0.000	7.775	1.663	0.01250	5.499	Tr./Rect.closed
"Link24"	Reach	-5684.00	2235.81	2248.50	2241.392	5.582	1476.00	22.03	7.54	2248.93	0.000	7.775	1.643	0.01250	5.500	Tr./Rect.closed
"Node26"	Junction	-5683.00	2235.82	2248.50	2241.354	5.534	1472.00	22.17	7.63	2248.98	0.000	7.761	0.000	0.01000	0.000	Tr./Rect.closed
"Link25"	Reach	-5617.51	2236.64	2249.17	2242.186	5.546	1472.00	22.12	7.60	2249.78	0.000	7.761	1.655	0.01252	5.485	Tr./Rect.closed
"Node27"	Junction	-5616.51	2236.66	2249.19	2242.152	5.492	1467.00	22.26	7.69	2249.85	0.000	7.743	0.000	0.02000	0.000	Tr./Rect.closed
"Link26"	Reach	-5567.61	2237.22	2249.67	2242.685	5.465	1467.00	22.37	7.77	2250.46	0.000	7.743	1.686	0.01145	5.656	Tr./Rect.closed
"Node28"	Junction	-5566.61	2237.24	2249.69	2242.641	5.401	1461.00	22.54	7.89	2250.53	0.000	7.723	0.000	0.02000	0.000	Tr./Rect.closed
	"i.p."	-5511.47	2237.94	2250.39	2243.330	5.394	1461.00	22.57	7.91	2251.24	0.000	7.723	1.713	0.01262	5.438	Tr./Rect.closed
"Link27"	Reach	-5050.88	2243.75	2257.30	2248.893	5.143	1461.00	23.67	8.70	2257.60	0.000	7.723	1.840	0.01262	5.438	Tr./Rect.closed
	"i.p."	-4983.17	2245.09	2258.64	2250.402	5.316	1461.00	22.90	8.15	2258.55	0.000	7.723	1.751	0.01973	4.617	Tr./Rect.closed
"Link28"	Reach	-4915.54	2246.42	2259.00	2251.995	5.575	1461.00	21.84	7.41	2259.40	0.000	7.723	1.630	0.01973	4.617	Tr./Rect.closed
	"i.p."	-4810.01	2247.98	2260.56	2253.817	5.837	1461.00	20.86	6.76	2260.57	0.000	7.723	1.522	0.01479	5.129	Tr./Rect.closed
"Link36"	Reach	-4743.80	2248.96	2261.77	2255.082	6.122	1461.00	19.89	6.14	2261.22	0.000	7.723	1.417	0.01479	5.129	Tr./Rect.closed
	"i.p."	-4716.16	2249.37	2262.18	2255.666	6.298	1461.00	19.33	5.80	2261.47	0.000	7.723	1.357	0.01476	5.133	Tr./Rect.closed
"Link29"	Reach	-4683.49	2249.85	2262.54	2256.456	6.606	1461.00	18.43	5.28	2261.73	0.000	7.723	1.264	0.01476	5.133	Tr./Rect.closed
	"i.p."	-4676.51	2249.95	2262.64	2256.644	6.693	1461.00	18.19	5.14	2261.78	0.000	7.723	1.239	0.01447	5.171	Tr./Rect.closed
	"i.p."	-4658.12	2250.22	2262.91	2257.237	7.020	1461.00	17.34	4.67	2261.91	0.000	7.723	1.154	0.01447	5.171	Tr./Rect.closed
	"i.p."	-4648.40	2250.36	2263.05	2257.720	7.362	1461.00	16.54	4.25	2261.97	0.000	7.723	1.074	0.01447	5.171	Tr./Rect.closed
"Link30"	Reach	-4645.48	2250.40	2263.22	2258.122	7.722	1461.00	15.77	3.86	2261.98	0.000	7.723	1.000	0.01447	5.171	Tr./Rect.closed
"Node32"	Headwrk	-4645.48	2250.40	2263.22	2258.123	7.723	1461.00	15.77	3.86	2261.98	0.000	7.723	0.000	0.00000	0.000	Tr./Rect.closed

*) in the W.S.ELEV column indicates flooding, it is set whenever W.S.ELEV > GROUND ELEV
i.p. = intermediate point processing results for reaches

Appendix D

UTILITY CONFLICT SCHEDULE

- UTILITY CONFLICT MATRIX

Stanley Consultants, Inc.
5820 S. Eastern Ave., Suite 200, Las Vegas, NV 89119
Phone: (702) 369-9396

Project: **GOWAN OUTFALL - ALEXANDER BRANCH, RANCHO TO DECATUR - UTILITY CONFLICT MATRIX**
Job no.: 25450
Prepared by : JR
Checked by : LL
Date: 9/17/2014
Computation: Utility Conflict Matrix

Conflict No.	Station	Utility Plan Sheet Number	Offset	Description of Potential Conflict	Utility Type	Utility Company/ Utility Owner/ Agency	Resolution
001	48+50	SD-1	crossing	Conflict with existing 8" PVC Water	Water	LVVWD	Relocate to provide minimum clearance below RCB
002	51+90	SD-2	crossing	Conflict with existing 8" PVC Water	Water	LVVWD	Relocate to provide minimum clearance below RCB
003	53+40	SD-2	crossing	Conflict with existing 6" PVC Water	Water	LVVWD	Relocate to provide minimum clearance below RCB
004	58+20	SD-2	crossing	Conflict with existing underground telephone and existing underground power	Telephone/Power	Centurylink/NVE	To be relocated by owner
005	61+20	SD-3	crossing	Conflict with existing underground Cable TV	CATV	Cox	Protect in place
006	62+40	SD-3	crossing	Conflict with existing 6" ACP Water	Water	LVVWD	Relocate to provide minimum clearance below RCB
007	62+70	SD-3	RT 20'	Conflict involving pipe from drop inlet with existing 6" ACP Water	Water	LVVWD	Relocate to provide minimum clearance below RCP
008	69+15	SD-4	RT 20'	Conflict involving pipe from drop inlet with existing 8" PVC Water	Water	LVVWD	water line designed 18" above RCP. Pothole required of ex 8" water to verify conflict
009	69+35	SD-4	crossing	Conflict with existing underground power and Cable TV	Power/ CATV	NVE/Cox	To be relocated by owner
010	72+25	SD-4	crossing	Conflict with existing underground telephone	Telephone	Centurylink	To be relocated by owner
011	72+35	SD-4	crossing	Conflict with existing 8" PVC Water	Water	LVVWD	Relocate to provide minimum clearance below RCB
012	75+20	SD-4	RT 10'	Conflict with existing 18" pvc ss	Sewer	CLV	sanitary sewer stub to be removed
013	76+05	SD-5	crossing	Conflict with existing 2" gas line	Gas	SWG	To be relocated by owner
014	79+05	SD-5	crossing	Conflict with existing 2" gas line	Gas	SWG	To be relocated by owner
015	81+65	SD-5	LT 30'	Conflict with pipe from drop Inlet with existing 18" PVC Sanitary Sewer	Sewer	CLV	Relocate to provide minimum clearance below RCP
016	82+10	SD-5	crossing	Conflict with existing 10" PVC Sanitary Sewer including conflict with pipe from drop inlet RT 70'	Sewer	CLV	Relocate to provide minimum clearance below RCB
017	82+45	SD-5	crossing	Conflict with existing 2'-4" underground telephone line	Telephone	Centurylink	To be relocated by owner
018	82+45	SD-5	crossing	Conflict with existing 8" PVC Water	Water	LVVWD	Relocate to provide minimum clearance below RCP
019	82+45	SD-5	crossing	Conflict with existing underground telephone	Telephone	Centurylink	To be relocated by owner
020	88+75	SD-6 & SD-7	crossing	Conflict with existing 8" PVC Water for several hundred feet running with boxes	Water	LVVWD	Relocate to provide minimum clearance below RCB
021	89+55	SD-6	crossing	conflict with existing 8" pvc stanitary sewer stub	Sewer	CLV	sanitary sewer stub to be removed
022	93+20	SD-7	crossing	Conflict with existing 8" PVC Sanitary Sewer	Sewer	CLV	Relocate to provide minimum clearance below RCB
023	93+75	SD-7	crossing	Conflict with existing 27" PVC Sanitary Sewer	Sewer	CLV	Relocate to provide minimum clearance below RCB
024	95+55	SD-7	crossing	Conflict with existing 2" gas line	Gas	SWG	To be relocated by owner
025	96+60	SD-7	crossing	Conflict with existing 16" Water	Water	LVVWD	Relocate to provide minimum clearance below RCB

Appendix E

PERMIT AND REGULATORY APPROVAL MATRIX

- PERMIT MATRIX

GOWAN OUTFALL-ALEXANDER BRANCH, RANCHO TO DECATUR JOB #25450
Permit and Regulatory Approval Matrix

Issuing Agency Information	Permit Name	Category	Responsible Party	Application Submittal Phase	Approximate Processing Time	Fees (\$)	Remarks
Municipality/Utilities							
City of Las Vegas - Development Services, Community Development, Building & Fire Safety 333 North Rancho Drive Las Vegas, NV 89106 Main Telephone - (702) 229-6535	Traffic Study	D	Design Eng.	Waived	7 to 14 weeks	N/A	
	CLV Design	D	Design Eng.	90% to Utilities	7 to 14 weeks	TBD	This review will determine all necessary
	Hydraulic analysis	D	Design Eng.	60% Design	7 to 14 weeks	0	Permit Type: UWAV - HYDRAULIC
	Public Works-Grading Permit	C,G	Design Eng./Contractor	100% Design	6 weeks	\$250, but verify fee	
	Construction Permit	C	Contractor	100% Design	4 Weeks	Included in cost of construction bond	Off-site improvements within City of Las Vegas ROW
	Soils Report Submittal	D	Design Eng.	90%	6 to 12 weeks	Included in cost of construction bond	
	Traffic Barricade Plan Approval	C	Contractor	During construction	3 days to 2 weeks	N/A	Processing for Partial road closures: up to 72 hours. Full road closures" up to 2 weeks.
	Temporary Stock Pile Permit	C	Contractor	During construction	1 day	Fee based on valuation of job	Processing time is one day after plans are approved and signed by Land Development
City of North Las Vegas - Utilities 2250 Las Vegas Boulevard N. North Las Vegas, NV 89030 Main Telephone - (702) 633-1200	Civil Improvement Submittal	D	Design Eng.	During Design	TBD	TBD	
NV Energy ROW Management Plan Submittal and Review Process for Transmission Facilities and Corridors NPS Land Services A	Plan review / Authorization to Construct	D	Design Eng.	90% Design	30 days	None	Required when constructing improvements in proximity of NV Energy transmission facilities. Design engineer to prepare application and supporting documents; CLVPW to review and approve the submittal package and pay application fee(s) and submit to NV Energy.

Category:

E=Environmental
 G=Geotech Investigation
 D=Design
 C=Construction
 O=Operation

GOWAN OUTFALL-ALEXANDER BRANCH, RANCHO TO DECATUR JOB #25450

Permit and Regulatory Approval Matrix

Issuing Agency Information	Permit Name	Category	Responsible Party	Application Submittal Phase	Approximate Processing Time	Fees (\$)	Remarks
FEDERAL							
U.S. Bureau of Reclamation	Encroachment Permit	D	CCPW/Design Eng.	60% Design	TBD	TBD	May be required to demonstrate public access to trailhead. CCPW researching.
STATE							
Bureau of Water Pollution Control Nevada division of Environmental Protection 901 South Steward Street Suite 4001 Carson City, NV 89701-5249 Phone - (775) 687-9429	NDEP General Storm water Permit NVR 100000	E	Design Eng./Contractor	2 days prior to start of Construction	2 days	\$200 application fee	Required for construction site over 1 acre and in sensitive areas. NOI (Notice of Intent) and NOT (Notice of Termination) required. Project specific SWPPP required to be kept on site at all times.
Nevada Department of Transportation (NDOT) 123 E. Washington Ave. Las Vegas, NV 89125	Traffic Barricade Plan Approval	C	Contractor	Construction	16 to 30 days	None	
Nevada Department of Transportation (NDOT) 123 E. Washington Ave. Las Vegas, NV 89125	Encroachment permit	D	Engineer	100% Design	14 to 60 days	\$600	
COUNTY							
Clark County Regional Flood Control District (CCRFCD) 600 S. Grand Central Parkway Las Vegas, NV 89106-4511	TDS concurrence letter	D	Design Eng.	TBD	30 days	TBD	
Clark County Department of Air Quality Management (DAQM) 500 S. Grand Central Parkway Las Vegas, NV 89106-4511	Dust Control	C	Contractor	Construction	7 days	\$132/acre	
OTHER							

Appendix F

30% DESIGN PHASE COST ESTIMATE

- 30% CONSTRUCTION COST ESTIMATE

30% Construction Cost Estimate for Gowan Outfall-Alexander Branch, Rancho to Decatur

ITEM NO.	ITEM DESCRIPTION	Quantity	UOM	Unit Price	Extended Price
109.01	OWNER INITIATED TIME EXTENSION ALLOWANCE	20	DAY	\$500.00	\$10,000
109.02	OWNER INITIATED TIME EXTENSION AMOUNT IN ADDITION TO ALLOWANCE	20	DAY	\$500.00	\$10,000
170.01	UTILITY CONFLICT ALLOWANCE	1	LS	\$75,000.00	\$75,000
200.01	MOBILIZATION AND DEMOBILIZATION	1	LS	\$500,000.00	\$500,000
201.01	CLEARING AND GRUBBING	1	LS	\$5,000.00	\$5,000
202.01	REMOVE EXISTING HEADWALL	1	EA	\$1,500.00	\$1,500
202.02	REMOVE CROSS GUTTER	415	LF	\$35.00	\$14,525
302.01	TYPE II AGGREGATE BASE	4,440	CY	\$50.00	\$222,000
402.01	5-INCH PLANTMIX BITUMINOUS SURFACE	5,740	SY	\$40.00	\$229,600
402.02	3-INCH PLANTMIX BITUMINOUS SURFACE	17,072	SY	\$30.00	\$512,160
502.01	10' X 6' RCB	2,132	LF	\$750.00	\$1,599,000
502.02	12' X 8' RCB	2,130	LF	\$1,100.00	\$2,343,000
502.03	14' X 8' RCB	2,130	LF	\$1,250.00	\$2,662,500
502.04	12' X 8' RCB BRICK AND MORTAR PLUG	1	EA	\$2,000.00	\$2,000
502.05	10' x 6' RCB BRICK AND MORTAR PLUG	2	EA	\$1,500.00	\$3,000
502.06	TRANSITION STRUCTURE AT STA 65+55	1	LS	\$23,200.00	\$23,200
502.07	TRANSITION STRUCTURE AT STA 86+50	1	LS	\$28,400.00	\$28,400
603.01	18" RCP (CLASS III)	95	LF	\$200.00	\$19,000
603.02	24" RCP (CLASS III)	291	LF	\$250.00	\$72,750
603.03	30" RCP (CLASS III)	281	LF	\$300.00	\$84,300
603.04	36" RCP (CLASS III)	210	LF	\$350.00	\$73,500
609.01	ADJUST STORM DRAIN MANHOLE RIM AND COVER TO GRADE	22	EA	\$1,500.00	\$33,000
609.02	5' TYPE "DM2" DROP INLET	2	EA	\$5,000.00	\$10,000
609.03	20' TYPE "DM2" DROP INLET	7	EA	\$17,000.00	\$119,000
609.04	NDOT TYPE II INLET	5	EA	\$10,000.00	\$50,000
609.05	NDOT TYPE II MODIFIED INLET	1	EA	\$16,000.00	\$16,000
609.06	48" TYPE I STORM DRAIN MANHOLE	16	EA	\$5,000.00	\$80,000
609.07	60" TYPE I STORM DRAIN MANHOLE	2	EA	\$6,000.00	\$12,000
609.08	60" TYPE III STORM DRAIN MANHOLE	3	EA	\$6,500.00	\$19,500
613.01	CROSS GUTTER	415	LF	\$25.00	\$10,375
622.01	CONSTRUCTION SURVEYING	1	LS	\$15,000.00	\$15,000
624.01	TRAFFIC CONTROL AND MAINTENANCE	1	LS	\$10,000.00	\$10,000
627.01	REMOVE AND REPLACE EXISTING SIGNS	1	EA	\$150.00	\$150
628.01	10' WIDE CROSSWALK (WHITE TYPE I PAVEMENT MARKING FILM)	530	LF	\$1.15	\$610
628.02	YELLOW RAISED PAVEMENT MARKERS FOR CENTERLINE	5,015	LF	\$2.00	\$10,030
628.03	WHITE RAISED PAVEMENT MARKERS FOR ADDED TURN LANES	910	LF	\$2.00	\$1,820
628.04	WHITE (POLYUREA) LIQUID PAVEMENT MARKINGS FOR ARROWS	10	EA	\$250.00	\$2,500
628.05	WHITE TYPE II FILM FOR STOP BARS, CHEVRONS, AND YIELD LINES	2,305	SF	\$5.00	\$11,525
628.06	WHITE (POLYUREA) 6" PAVEMENT MARKING FOR EDGE LINES	3,470	LF	\$5.00	\$17,350
628.07	WHITE RAISED PAVEMENT MARKERS	2,300	LF	\$2.00	\$4,600
628.08	WHITE (POLYUREA) 6" PAVEMENT MARKING FOR RIGHT TURN LANES	690	LF	\$5.00	\$3,450
629.01	6-INCH C900 PVC WATERLINE	170	LF	\$50.00	\$8,500
629.02	8-INCH PVC C900 WATERLINE	1,070	LF	\$60.00	\$64,200
629.03	16-INCH PVC C900 WATERLINE	115	LF	\$100.00	\$11,500
629.04	VERTICALLY ADJUST WATER VALVE COVER	3	EA	\$600.00	\$1,800
630.01	VERTICALLY ADJUST SEWER MANHOLE RIM AND COVER	7	EA	\$1,500.00	\$10,500
637.01	DUST CONTROL	1	LS	\$20,000.00	\$20,000
637.02	STORM WATER POLLUTION PREVENTION PLAN	1	LS	\$4,500.00	\$4,500
637.03	POST CONSTRUCTION DUST PALLIATIVE	1	LS	\$3,000.00	\$3,000

SUBTOTAL	\$9,041,344.50
25% CONTINGENCY	\$2,260,336.13
SUBTOTAL CONSTRUCTION	\$11,301,680.63
7 % CONSTRUCTION MANAGEMENT	\$791,117.64
GRAND TOTAL	\$12,092,798.27

Appendix G

30% DESIGN PHASE PLANS

- 30% DESIGN PHASE PLANS