CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: January 22, 2018
TO: **Land Development Services** Department of Building & Safety				FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Skye Canyon – Phase 3A Infrastructure**			**COPIES TO:** Slater Hanifan Group
Cross Streets:	Skye Village Road & Grand Canyon Drive			M F Land LLC / Ninety-Five Management LLC
File Number:	F:\Depot\DSMemos\DS4931A.doc			Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-007 & Portion of 125-07-101-009			CCRFCD
Zoning Action:				
FEMA Flood Zone	YES	NO **X**		
Proposed Storm Drain	YES **X**	NO		

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	11/6/2017	1/22/2018	See Comments Below	$400.00	491017: $400
			TOTAL FEES (LDDRS):	**$400.00**	**----**

REMARKS:

The Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
X	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. The site is adjacent to or crosses an existing or proposed *Clark County Regional Flood Control District* (CCRFCD) master planned facility. Therefore, CCRFCD concurrence is required prior to final approval of the drainage study.

2. The subject *Skye Canyon Phase 3A Infrastructure Drainage Study* will not be approved prior to the approval of the *Skye Canyon Detention Basin 2 Technical Drainage Study*.

3. *Skye Canyon Phase 3A* onsite developments are to be flood protected by *Detention Basin 2*. No occupancy permits within onsite *Phase 3A* will be issued prior to the substantial completion of *Detention Basin 2*.

4. The future MPU facility within Skye Village Road north of the Skye Village/Grand Canyon/Iron Mountain intersection to the proposed MPU facility at the Kyle Canyon interchange area shall be substantially complete before occupancy of residential Units beyond Phase 3A, 3B and 3C. This includes residential development within Phases 4 & 6 and the development of Phase 5 as shown on the Development Phasing Exhibit dated 12/4/2017.

5. The implementation of the CCRFCD Master Plan is being progressed with the recent bid opening of the NDOT US-95 facilities from the CC-215 interchange north to the Kyle Canyon interchange. Construction of the associated CCRFCD MPU facilities allows for the utilization of the existing MPU facilities constructed with the Horse Interchange. The development of Phase 3A west of US-95 shall

TECHNICAL DRAINAGE STUDY

Skye Canyon

(Phase 3A Infrastructure)

City of Las Vegas, Nevada

Job No.: OLY1609.000
Date: November 2017

Prepared By:
Slater Hanifan Group, Inc.
5740 S. Arville Street, Suite 216
Las Vegas, Nevada 89118
Phone: 702-284-5300 ▪ Fax: 702-284-5399

Prepared For:
Ninety-Five Management, LLC
11411 Southern Highlands Parkway, Suite 300
Las Vegas, NV 89141
Phone: 702-220-6565 ▪ Fax: 702-220-6566

Lant Leavitt, P.E.
NV Professional Engineer No. 18287

Assisted by: Erick Mata, EI

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE STUDY INFORMATION FORM

Name of Development: Skye Canyon – Phase 3A Infrastructure Date: November 2017

Location of Development:
a) Descriptive (Cross Streets): North/South: Skye Village Road
East/West: Grand Canyon Drive
b) Section: 7 Township: 19 South Range: 60 East
c) APN: 125-07-201-007 and a portion of 125-07-101-009

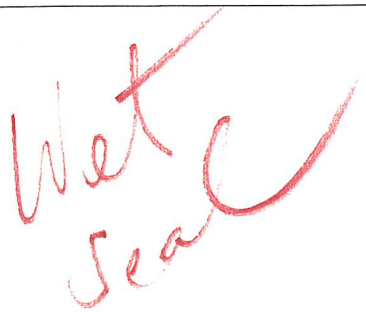
Name of Owner/Developer: M F Land, LLC / Ninety-Five Management, LLC
Telephone No.: 702-220-6565 Fax No.: 702-220-6566 E-mail Address: mbolduc@olympiacompanies.com
Address: 11411 Southern Highlands Parkway, Suite 300; Las Vegas, NV 89141

Contact Person – Name: Lant Leavitt, P.E. Telephone No.: 702-284-5300
*E-mail Address: lleavitt@shg-inc.com Fax No.: 702-284-5399
Firm: Slater Hanifan Group
Address: 5740 S. Arville Street, Suite 216; Las Vegas, NV 89118

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	☐	Roadway & Storm Drain Infrastructure

1. Total Owned Land Area: At Site: 665 Acres Being Developed/Disturbed: 20 Acres +/-
2. Is a portion or all of the subject property located in a 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.): Roadway & Storm Drain Infrastructure
5. Approximate upstream land area which drains to the subject site: 1800 acre +/-
6. Has the site drainage been evaluated in the past? ☒ Yes** ☐ No If yes, please identify documentation: *Master Drainage Study for Skye Canyon Update #4* (SHG, DS4420)
7. If known, please briefly identify the proposed discharge point(s) of runoff from the site: Skye Village Road thru MOHU 0036, And Minor flows thru local facilities discharging to desert shrub east of the project site.
8. Briefly describe your proposed schedule for the subject project: ASAP Upon Substantial Completion of Detention Basin 2 Facilities Phase 3A – Roadway Infrastructure per this TDS; Future Phase 3A Residential Subdivisions to follow by separate TDS.



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.

*Newly Required Field

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

Local Entity File No.

Revision	Date

REFERENCE: ***SHG Job No. OLY1609.000***

STANDARD FORM 1

Updated 05/01/2008

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL

DRAINAGE SUBMITTAL CHECKLIST

Project Name: Skye Canyon – Phase 3A Infrastructure		Map ID:
Firm Name: Slater Hanifan Group (SHG)		
Address: 5740 S. Arville St., Suite 216		
City: Las Vegas	State: Nevada	Zip: 89118
Phone Number: 702-284-5300	Fax Number: 702-284-5399	
Property Owner/Developer: M F Land, LLC / Ninety-Five Management, LLC		
Address: 11411 Southern Highlands Parkway, Suite 300		
City: Las Vegas	State: NV	Zip: 89141
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 (CCRFCD) 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	
X		Design Manual **Standard Form 1** with the engineer's seal and signature.
X		Design Manual **Standard Form 4**.
X		2 copies of the 24" x 36" Drainage Plan.
	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading or discharge.

Reference:	**STANDARD FORM 2**

DRAINAGE SUBMITTAL CHECKLIST

II. MAPS AND EXHIBITS

Yes	No	
X		A copy of a current Flood Insurance Rate Map (FIRM) with the site delineated.
X		A copy of the current CCRFCD Master Plan Update Figure, (F-12), for Flood Control Facilities and Environmental areas with the site delineated.
X		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.
X		Off-site drainage basin maps for existing, interim and future conditions showing the existing topography, basin boundaries, concentration points, and flows in cfs.

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.
X		Cut/fill scarps, where applicable.
X		Street names, grades, widths.
X		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.

REFERENCE:	STANDARD FORM 2

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
X		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.
X		Proposed typical street sections.
	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.
X		Delineation of proposed on-site drainage basins indicating area and 10-year and 100-year storm peak flows at basin concentration points.
X		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.
	N/A	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 is16"x48". 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.

REFERENCE:	STANDARD FORM 2

DRAINAGE SUBMITTAL CHECKLIST

III. DRAINAGE PLAN (Continued)

Yes	No	
	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.
	N/A	Limits of existing floodplain based on current FIRM or best available information; limits of proposed floodplains based on best available information.
	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 Q_{100} flows.
X		Street slopes for perimeter and interior streets. The minimum slope is 0.4 percent.

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 storm water flows showing basin area, Q_{10} and Q_{100} for both individual basins and combined basin flows, where acceptable.
X		Copies of supporting technical information referenced from a previously approved study and a statement accepting these results.
X		On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners in accordance with current Nevada Drainage Law.

REFERENCE:	STANDARD FORM 2

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.
X		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 x v ≤ 8. Q_{10} d x v ≤ 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.
X		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, which ever is greater.
	N/A	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.
X		The mitigation of nuisance water, both during construction and in the fully developed condition, must be addressed.

REFERENCE:	STANDARD FORM 2

CITY OF LAS VEGAS

MINIMUM DRAINAGE STUDY CRITERIA
STANDARD FORM 2 CHECKLIST SUPPLEMENT

(Revised 5/18/11)

The following checklist is intended as a supplemental guide for the engineer preparing a Technical Drainage Study submittal to the City of Las Vegas. This supplement focuses on requirements specific to the City of Las Vegas. The requirements presented are in addition to the Clark County Regional Flood Control District (CCRFCD) Manual Standard Form 2. The listed items are the minimum information required prior to the City performing a review. The engineer will remain responsible to ensure the Technical Drainage Study is prepared within the guidelines as set forth in the CCRFCD Hydrologic Criteria and Drainage Design Manual (Design Manual).

An appointment must be made to preview this checklist in conjunction with CCRFCD Standard Form 2 prior to the City accepting a new drainage study for review. The engineer must contact the Flood Control Section at (702) 229-6541 to schedule a submittal appointment.

If items are not applicable for the subject site, provide N/A.

I. GENERAL REQUIREMENT		
Yes	No	
-	N/A	A notarized letter from the adjacent property owner(s) allowing off-site grading. (A copy of the letter must be received prior to final acceptance of the drainage study.)
-	X	Copies of all conditions of approval for development related to this property. (e.g. zoning, use permit, tentative map, etc.) Verify compliance with conditions. **Tentative Map currently being processed.
X	-	An electronic copy of the complete submittal is required to be submitted with one original hard copy of the study. Electronic documents should be on a universal computer-readable digital output device replicating your submittal. An Indexed Portable Document Format (PDF) or Print Ready CAD file formats with a minimum of 300dpi are the desired formats. If figures are in color, they must be scanned in color and saved as a separate file. _____ by initial here, the engineer on record acknowledges that the electronic copy is an identical replicate of the original hard copy submitted to the City of Las Vegas.

II. GRADING PLAN INFORMATION		
Yes	No	
X	-	(1) 24" X 36" copy of the Grading Plan, (including all Detail Sheets) sealed by the engineer.
X	-	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. Note: Proposed top of curb elevations must be provided for both sides of roadways even if only half street construction is required.
X	-	Label existing topography at a minimum 5 foot elevation interval including adjacent developments, finished floor elevations of existing buildings and top of existing curbs extending 100 feet* around the perimeter of the site. (*Measured from the centerline of the adjacent roadway.)

II. GRADING PLAN INFORMATION		
Yes	No	
X	-	Proposed on-site and off-site storm drains and other flood control facilities with plan and profile sheets for public storm drains showing the class of pipe, (Class III, IV, V, etc.), design hydraulic grade line, (HGL) and 100 year storm flow. A public drainage easement must be provided over on-site storm drains conveying off-site flows. An overflow path must be provided over all storm drains.
-	N/A	All existing and "to be constructed" walls with cross-sections showing wall type, (e.g. block wall, retaining wall, flood wall, etc.), with limits clearly defined, adjacent ground elevations. Wall heights must meet current ordinances and in no case exceed 14 feet above the adjacent property.
X	-	Street slopes for both interior and perimeter streets. Note: The minimum slope for a roadway is 0.4 percent, a minimum 18-inch storm drain must be provided where minimum slopes cannot be met.
-	N/A	Back of lot elevations and lot drainage pattern for all lots including common lots.
-	N/A	Sites with a grade difference two feet above or below existing ground are required to have approval from City of Las Vegas Current Planning. Current Planning approval is required prior to final approval of the drainage study.
X	-	On-site facilities must perpetuate flows through or around the site without significantly impacting adjacent property owners. (The project must pass flows through the site every 600 feet where the project is blocking flow paths.)
-	N/A	This project uses a solid grouted stem wall (or approved alternate) at the back of sidewalk to provide erosion protection for landscaped areas where the depth of flow in the roadway exceeds the back of walk elevation. A corresponding cross-section detail is included.
-	N/A	Commercial and Common Lot Landscape areas are not allowed to drain over the sidewalk. The grading plans show flow lines with grades and sidewalk under drains for all landscape areas draining to the public ROW.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
-	N/A	Concrete valley gutters are required in parking lots with slopes less than 1 percent. Slopes through cul-de-sac must be at a 1 percent minimum where flow is drained through the cul-de-sac.
-	N/A	Ten-foot wide public drainage easements to be privately maintained are allowed for flow less than 20 cfs. The depth of flow entering the easement must be checked using the submerged weir calculation.
-	N/A	The limits of the flood zones and the base flood elevations (BFE) must be shown on all grading plans for all developments within a Special Flood Hazard Zone A, AO, AE, etc.
-	N/A	Minimum finish floor elevation is 6 inches above highest adjacent top of curb. Finish floor calculations must include allowances for super elevations on curves and velocity head for tee intersections.
-	N/A	Finished floor elevations for buildings adjacent to public drainage easements must be a minimum of 18 inches above the Q100 weir of submerged weir elevation, whichever is greater.

III. Local Entity Criteria - City of Las Vegas – Manual Section 1600		
Yes	No	
-	N/A	Lots with "B and C Type Drainage" that drain from one lot to another through a drainage easement shall be required to install an underground nuisance drainage system or a 2-foot valley gutter. 16" x 24" minimum block wall openings are required for both options.
-	N/A	Bubblers are required across 80 foot and greater ROW streets. When flows exceed 10 cfs, bubblers larger than 18 inches will be required up to a maximum of 36". Inlets must be sized to match the pipe size provided.

- Contact the Flood Control Section regarding the drainage study review fee. These fees are payable at the time of submittal.
- The Drainage Study must be conditionally approved prior to submitting improvement plans to the Civil and Planning Development of the Department of Building and Safety for review.

This document is intended as an **aid** in preparing Technical Drainage Studies for the City of Las Vegas. 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.

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- Exhibit A – Location Map
- Exhibit B – FEMA FIRM Panel Map
- Exhibit C – CCRFCD 2013 MPU Facilities Exhibit
- Exhibit D – Soils Map
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- Exhibit H – Ultimate Condition Drainage Map
- Exhibit I – Facilities map

Appendix B Hydrologic Data
- Precipitation
- Curve Number
- Lag Time Computations – Standard Form 4

Appendix C HEC-1 Analyses
- Historic Condition
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Appendix D Surface Flow Hydraulic Computations
- Street Hydraulics
- Drop Inlets
- Ditches
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Appendix E Storm Drain Analyses
- Arch Sections
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- Skye Village Road (Proposed Condition)
- Skye Village Road-Laterals (Proposed Condition)
- Skye Village Road (Ultimate Condition)
- Skye Village Road-Laterals (Ultimate Condition
- Street E and Skye Park Drive (Proposed Condition)
- Street E and Skye Park Drive-Laterals (Proposed Condition)
- Smith's Storm Drain Evaluation (Proposed Condition)

Appendix F Reference Material
Master Drainage Study for Skye Canyon - Update #4 to the Master Drainage Study for Kyle Canyon, by SHG
- Approval Letter
- Ultimate Condition Drainage Map & HEC-1
  (Utilized for "Skye Canyon Hydrology – Evaluation" HEC-1 Model)

Appendix G Reference Material
Technical Drainage Study for Skye Canyon Phase 1 Infrastructure, by Slater Hanifan Group
- Approval Letter
- Plan and Profile Sheets
- Street Hydraulic Condition Map

Appendix H Reference Material
Technical Drainage Study for Skye Canyon Park, by Slater Hanifan Group
- Approval Letter
- Plan and Profile Sheets

Appendix I Reference Material
Technical Drainage Study for Skye Canyon Phase 3 Infrastructure, by Slater Hanifan Group
- Approval Letter
- Referenced Basins (HEC-1)
- Drainage Exhibit
- Pertinent Improvement Plans

Appendix J Reference Material
Technical Drainage Study for Skye Canyon Village (Smith's Marketplace), by Slater Hanifan Group
- Approval Letter
- Drainage Exhibit
- Improvement Plans

Appendix K Reference Material
Technical Drainage Study for Skye Canyon Parcel 2.16, by Slater Hanifan Group
- Approval Letter
- Referenced Basins (HEC-1)
- Drainage Exhibit

Appendix L Reference Material
Technical Drainage Study for Skye Canyon Detention Basin 1, by Slater Hanifan Group
- Approval Letter
- Referenced Basins (HEC-1)
- Drainage Exhibits

Appendix M Reference Material
Technical Drainage Study for Skye Canyon Detention Basin 2, by Slater Hanifan Group
- Referenced Basins (HEC-1)

Appendix N Reference Material
30% Design Report for Moccasin Rd CCRFCD Flood Control Facility, by Slater Hanifan Group

- Location Map

Appendix O CD of Electronic Files, Grading Plan, Storm Drain Profiles and Detail Sheets

1 INTRODUCTION

1.1 Project Overview & Study Purpose

Ninety-Five Management, LLC is proposing to install roadway and drainage infrastructure improvements intended to support development of an approximately 86-acre portion of the Skye Canyon master planned property, identified hereinafter as *Phase 3A*. The Phase 3A portion of Skye Canyon addressed by this technical study is bounded by the existing Skye Canyon Phase 1 development to the south, undeveloped desert shrub to the north and west, and undeveloped desert shrub and U.S. Highway 95 to the east. The overall Skye Canyon property boundary encompasses approximately 1,662 acres and spans both sides of U.S. Highway 95 within the corporate limits of the City of Las Vegas, Nevada.

The Skye Canyon property has been master planned and a *Master Drainage Study for Kyle Canyon (DS4420)* has been approved by the City of Las Vegas. In addition, four (4) updates to the master drainage study have been processed:

- Skye Canyon Master Drainage Study - Update #1 to Kyle Canyon Master Drainage Study addressed changes in land use plan for the Phase 1, Phase 2 and detention basin areas of the site and was approved by the City of Las Vegas on March 05, 2015.
- Skye Canyon Master Drainage Study - Update #2 addressed downstream drainage impacts resulting from the changes in land use plan for the Phase 1, Phase 2 and detention basin areas and was approved by the City of Las Vegas on November 23, 2015.
- Skye Canyon Master Drainage Study - Update #3 addressed changes in the land use plan, re-alignment of Sheep Mountain Parkway, introduction of the Kyle Canyon Interchange Project, and relocation of the Skye Canyon downstream MPU facility to Log Cabin Way. This study was approved by the City of Las Vegas on August 15, 2016.
- Skye Canyon Master Drainage Study - Update #4 addressed a change in the Skye Canyon downstream MPU facility alignment from Log Cabin Way to Moccasin Road. This study was conditionally approved by the City of Las Vegas on October 10, 2017.

The portion of the site identified as Phase 3A has been proposed within the framework set forth by the Master Drainage Study Updates. Therefore, it is the objective of this technical study to show conformance to the drainage patterns set forth in the Master Updates, specifically the Master Update #4.

Utilizing the conceptual analyses presented in the Master Update 4, this study intends to provide a detailed hydrologic and hydraulic analysis for the proposed improvements. Drainage facilities have been proposed in order to protect the property from onsite and offsite runoff in accordance with local storm water criteria. Existing storm water facilities are identified, and this study intends to show conformance to each existing facility's design.

1.2 Description of Project

The project is located within Township 19 South, Range 60 East and Section 7, on APN 125-07-201-007 and a portion of APN 125-07-101-009. A location map identifying the site

in relation to the surrounding major streets has been prepared as Exhibit A, included in Appendix A.

A Final Map for Skye Canyon has been processed through the City of Las Vegas that addresses the Phase 3A infrastructure roadway alignments and parcels for future development. Note that the roadway alignments, street sections and future development densities proposed by the Final Map are supported by the currently approved land plan for the property as addressed and supported by the approved Master Drainage Study – Update #4.

The roadway and drainage improvements proposed by this study are those necessary to service the Phase 3A portion of the property. In addition, MPU Facility MOHU 0036 is being constructed with this phase in Skye Village Road from Skye Canyon Park Drive to Iron Mountain Road. This facility runs south to north and cuts across several existing washes that flow west to east. In the ultimate condition this facility will discharge to the north in the proposed Moccasin MPU Facility. In the proposed condition, the flows intercepted by this facility will be limited to avoid exceeding existing flow patterns at the interim discharge point at Skye Village Road/Grand Canyon Way.

Future technical drainage studies will follow that address the onsite individual residential subdivisions and associated interior drainage patterns that route storm runoff to the drainage infrastructure proposed by this study.

1.3 Summary of Prior Relevant Drainage Studies

Various drainage studies for the Skye Canyon master planned property with direct impact to the subject Phase 3A have been prepared. Some of the studies have been approved and different stages of reviews are on-going for others. The relevant drainage studies and their impacts to the Phase 3A infrastructure improvements have been identified below.

- *Skye Canyon Master Drainage Study – Update #4*, prepared by Slater Hanifan Group was conditionally approved by the City of Las Vegas on October 10, 2017. This study addressed the developed condition hydrologic analysis of the Phase 3A area based on the most current master land use plan.

- *Technical Drainage Study for Skye Canyon Detention Basin 1 – Update #3,* prepared by Slater Hanifan Group was approved by the City of Las Vegas on January 12, 2017. This study addressed the upstream detention basin facility that provides flood protection to the Skye Canyon Phase 2 area and southern portion of the Phase 3 area. The Detention Basin 1 outfall discharges through the south portion of Phase 3A in the existing condition. Skye Canyon Detention Basin 1 was deemed substantially complete by City of Las Vegas on September 12, 2017. Note that the subject Phase 2 improvements will include a driveway off Grand Teton Drive for accessing the maintenance road for Detention Basin 1.

- *Technical Drainage Study for Skye Canyon Detention Basin 2 – Addendum #1*, prepared by Slater Hanifan Group has been reviewed by the City of Las Vegas and comments were issued on October 10, 2017. This study addresses the upstream detention basin facility that provides flood protection to Skye Canyon Phase 3. The Detention Basin 2 outfall discharges down Lone Mountain Road

Iron

and crosses the northwest corner of Phase 3A at the intersection with Skye Village Road.

- *Moccasin Rd CCRFCD Flood Control Facility – US 95 Kyle Canyon Interchange to LVUP 1076/1077 30% Design Report,* prepared by Slater Hanifan Group was submitted to City of Las Vegas on October 26, 2017. This study addresses the downstream facility that will ultimately convey flow from Skye Village Road northwest to Moccasin Road discharging to the Upper Las Vegas Wash.

1.4 FEMA Flood Zone Designation

The Phase 3A boundary has been delineated on current FEMA FIRM Panel Map 32003C1750E and 32003C1735E, both dated September 27, 2002, as Exhibit B included in Appendix A. Per the FIRM Panel, the project site is located within a FEMA designated unshaded Zone 'X' (unshaded). A Zone 'X' (unshaded) is described as areas located outside the 0.2% annual chance flood plain.

1.5 CCRFCD Facility Information

The project site has been delineated on the current 2013 Clark County Regional Flood Control District (CCRFCD) Las Vegas Valley Flood Control Master Plan Update (2013 MPU, Reference 1) facility figures as Exhibit C, included in Appendix A. Per the 2013 MPU, several CCRFCD regional facility alignments are considered adjacent to the proposed Phase 3A improvements. Although the 2013 CCRFCD MPU is the effective flood control master plan for the project area, a draft Skye Canyon MPA was coordinated and presented to CLV and CCRFCD (formal submittal is pending). MPA exhibits are included behind Exhibit C in Appendix A. In general, the regional facility alignments in the vicinity of Phase 3A are the same between the 2013 MPU and the Skye Canyon MPA. This study has designed for regional facilities along these alignments, but has referenced the approved Skye Canyon Master Drainage Study (MDS) for flow rates. The MDS is a conservative source for flow rates, given that it utilizes smaller subbasins and ignores losses from routing. For more information on ultimate condition hydrology, see Section 6. The following is a summary of the pertinent regional facility alignments, per the 2013 MPU, addressed by this study:

- MOHU 0036 – 8-ft by 7-ft RCA transitions to 10-ft by 9-ft RCA in Skye Village Road. This facility is considered part of the Phase 3A proposed improvements.

- MOHU 0085 – 60-inch RCP. A portion of this facility is existing in Skye Canyon Park Drive west of Skye Village Road. This project proposes to extend the existing storm drain upstream to intercept existing wash MOHU 0100 to the west.

- MOHU 0100 – Natural Wash. This Proposed Category B facility is considered a future improvement in a future phase of Skye Canyon. However, this study proposes a storm drain (Facility MOHU 0085) north of the Natural Wash intended to accommodate future drainage patterns.

- MOHU 0000 – 14-ft by 8-ft RCB. Facility downstream of MOHU 0035 that is proposed with a future phase. This facility will discharge flow to the planned Moccasin MPU Facility which then discharges to the Upper Las Vegas Wash.

- MOIR 0000 – 60-inch RCP. Facility in Iron Mountain Road at Skye Village Road. This facility is proposed to be constructed under the Skye Village Road / Iron Mountain Road intersection.

Note that the above discussed alignments and facility types had been included in the *2013 Kyle Canyon Amendment to the 2008 Las Vegas Valley Master Plan Update* prepared by Slater Hanifan Group, and reflected in the currently issued 2013 MPU. As stated above, the facilities shown within the Kyle Canyon watershed by the Master Update Study have been adopted in the MPA. Therefore, the 2013 MPU facilities are now valid for the overall Kyle Canyon area.

1.6 Referenced Documents

The following documents have been utilized as reference materials in preparation of this drainage study. The referenced documents have been reviewed and portions determined acceptable for reference have been included in the appropriate appendix. Slater Hanifan Group generally concurs with all referenced and adopted hydrologic and hydraulic analysis from the studies and the results established therein.

- *Skye Canyon Master Drainage Study - Update #4 to the Skye Canyon Master Drainage Study*, prepared by Slater Hanifan Group (hereinafter referred to as the Master Update Study; Reference 4), incorporates the most updated master land use plan for the site which includes the Phase 3A area. Additionally, the Master Update Study also includes the most recent Detention Basin 1 and Detention Basin 2 upstream hydrology and basin parameters. The Master Update Study established the developed ultimate condition peak flow rates for the subject Phase 3A area and utilized the flows generated by each basin to conceptually evaluate the design of the proposed master planned drainage facilities. Relevant reference material from the Master Update Study has been included in Appendix F.

- *Technical Drainage Study for Skye Canyon Phase 1*, prepared by Slater Hanifan Group (hereinafter referred to as the Phase 1 Study, Reference 5), proposed infrastructure improvements along the south edge of the Phase 3A Study. The Phase 1 Study establishes acceptable offsite flow conveyed through the site and constructed a portion of MPU Facility MOHU 0036 at the intersection of Skye Canyon Park Drive and Skye Village Road. Relevant reference material from the Phase 1 Study has been included in Appendix G.

- *Technical Drainage Study for Skye Canyon Park*, prepared by Slater Hanifan Group (hereinafter referred to as the Park Study, Reference 6), proposed development at the southwest corner of the Phase 3A Study. The Park Study constructed a portion of MPU Facility MOHU 0085 in Skye Canyon Park Drive west of Skye Village Road. Relevant reference material from the Park Study has been included in Appendix H.

- *Technical Drainage Study for Skye Canyon Phase 3*, prepared by Slater Hanifan Group (hereinafter referred to as the Phase 3 Study, Reference 7), proposed infrastructure improvements at the southeast corner of the Phase 3A Study. The Phase 3 Study constructed storm drain facilities in Skye Park Drive and Grand Canyon Drive. The Skye Canyon Park Drive culvert crossing has been utilized to accept existing offsite

flow established by the Phase 3A study. A Grand Canyon facility proposed by Phase 3A discharges flow to the existing facility provided by the Phase 3 Study. Relevant reference material from the Phase 3 Study has been included in Appendix I.

- *Technical Drainage Study for Skye Canyon Village,* prepared by Slater Hanifan Group (hereinafter referred to as Smith's Marketplace; Reference 8), proposed storm drain facilities for commercial development within the Phase 3 area from Skye Park Drive to Grand Canyon Drive. Plans from the Smith's Marketplace were utilized to model storm drain hydraulics and verify downstream capacity. Relevant reference material from the Smith's Marketplace Study has been included in Appendix J.

- *Technical Drainage Study for Skye Canyon Parcel 2.16,* prepared by Slater Hanifan Group (hereinafter referred to as Parcel 2.16 Study; Reference 9), proposed the development of Parcel 2.16 within the Phase 2 area south of the MOHU wash. Drainage basins from the study have been referenced to account for flow impacting the Phase 3A Study. Relevant reference material from the Parcel 2.16 Study has been included in Appendix K.

- *Technical Drainage Study for Skye Canyon Detention Basin 1,* prepared by Slater Hanifan Group (hereinafter referred to as the DB1 Study; Reference 10), proposed the development of the upstream southern detention basin. Drainage basins from the study have been referenced to account for flow impacting the Phase 3A Study. Relevant reference material from the DB1 Study has been included in Appendix L.

- *Technical Drainage Study for Skye Canyon Detention Basin 2,* prepared by Slater Hanifan Group (hereinafter referred to as the DB2 Study; Reference 11), proposed the development of the upstream northern detention basin. Drainage basins from the study have been referenced to account for flow impacting the Phase 3A Study. Relevant reference material from the DB2 Study has been included in Appendix M.

- *30% Design Report for Moccasin Rd CCRFCD Flood Control Facility;* prepared by Slater Hanifan Group (hereinafter referred to as the Moccasin Study; Reference 12), is proposing the development of a future regional facility downstream of the Phase 3A study. The development of this project will allow Skye Village Road to be full flow drainage cutoff. A project location map of the Moccasin facility has been included in Appendix N.

2 METHODOLOGY

2.1 Compliance

The methodologies utilized in the preparation of this study are in compliance with the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual (CCRFCD Manual, Reference 2).

2.2 Hydrologic Modeling

Modeling: The SCS Unit Hydrograph Method (SCS Method) was utilized to determine peak flow rates. The SCS Method utilizes precipitation, drainage area, curve number and lag time parameters to determine peak flow rates. The SCS Method routine within the U.S. Army Corp of Engineers HEC-1 Flood Hydrograph Package program was utilized to model the drainage basins analyzed by this study.

Precipitation: The site is located outside of the McCarran Rainfall Area. The precipitation values utilized in this study's HEC-1 models have been analyzed to be 3.00 and 1.61 inches for the 100-year and 10-year storm event, respectively.

Curve Number: The SCS curve number loss rate methodology was utilized to approximate infiltration for the drainage basins. The soils information within the watershed was obtained from the NRCS Natural Resources Conservation Service of the Las Vegas Valley Area, Nevada, Part of Clark County (Soil Survey, Reference 3), this study's drainage basins lie within the following soil types delineated on Exhibit D – included in Appendix A.

- Soil 155 – Cave gravelly fine sandy loam, 4 to 15 percent slopes. This soil is composed of 100% HSG 'D'.
- Soil 314 – Weiser-Wechech association. This soil is composed of 80% HSG 'A', 5% HSG 'B' and 15% HSG 'D'.
- Soil 400 – Tencee very gravelly fine sandy loam, 2 to 8 percent slopes. This soil is composed of 100% HSG 'D'.

A composite curve number for each land use utilized in this study's hydrologic analysis has been obtained utilizing the percentages identified above, and the computations are included in Appendix B.

Note the following regarding the land uses analyzed in this study, and the associated CCRFCD Manual curve number tables have been included in Appendix B.

- Undeveloped areas have been analyzed with a land use corresponding to "desert shrub – poor condition".

- The proposed infrastructure roadways have been analyzed with a land use corresponding to "roadway".

- The onsite parcels draining to interior roadways in the proposed condition have been conservatively assumed to be < 6,000 square feet lots with a land use corresponding to "residential < 6,000 sf".

- Hydrologic analyses for the future residential subdivisions within the Phase 3A perimeter have been referenced from the Update #4 to the Master Drainage Study for Skye Canyon. Development of the individual PODs within the Phase 3A area will be addressed by separate technical drainage study updates.

Lag Time: The lag time is defined as the time measured from the center of mass of excess rainfall to the time to peak of the outflow hydrograph. The lag time is related to the time of concentration as 0.6 times the time of concentration. The time of concentration is defined as the time required for runoff to flow from the hydraulically most distant point of a basin to the outlet point of the basin. Standard Form 4, as outlined in the CCRFCD Manual, was

utilized to determine the lag times for basins modeled. The lag time computations have been included in Appendix B.

2.3 Hydraulic Modeling & Criteria

Street Flow: Street flows have been analyzed utilizing the Flowmaster Version 7.0 software by Haestad Methods. In accordance with the CCRFCD Manual, the depth times velocity factor (D x V) for street flow for the minor 10-year storm event must be less than or equal to 6, with a maximum depth of 1-ft. The depth times velocity factor (D x V) for street flow for the major 100-year storm event must be less than or equal to 8, with a maximum depth of 2-ft. Additionally, streets with right-of-way width that are 80-ft wide or greater are required to meet the 10-year dry lane criteria. A 12-ft wide dry lane (excluding center turning lane) must be provided during the 10-year storm event. Also, the 10-year depth of flow at intersections with other streets with 80-ft and or greater right-of-way width must be limited to curb height. Note that all 10-yr street flow criteria (except dry lane) are met in the 100-yr event and therefore additional computations for the 10-yr event are not necessary.

Drop Inlets: Drop inlets have been assessed using an in-house computation spreadsheet which utilizes the equations outlined in Section 805 of the CCRFCD Manual. The computations include a 50% clogging factor in determining the inlet sizes.

Storm Drains: The hydraulic analysis for the proposed storm drain has been performed utilizing the Water Surface and Pressure Gradient (WSPG) Hydraulic Analysis System software by the Los Angeles County Department of Public Works. As outlined in the CCRFCD Manual, storm drain facilities are designed to maintain its hydraulic gradient line (HGL) minimum 1-ft below above finished grade and limit the flow velocities in the facility to less than 25 ft/s.

Proposed Storm Drain Stubs: Inlet control has b
proposed storm drain stub openings in sump. Thi
drains that will be extended into future development; h
to extension, many of these storm drains function
openings. Inlet control nomographs have been utilize
criteria are satisfied, as set forth in the CCRFCD Man
provided in the slopes proposed into the headwalls for

10-yr Dry Lane Calc needed

3 HISTORIC DRAINAGE CONDITION

3.1 Definition of Historic Condition

The historic condition considers the Skye Canyon
basins undeveloped. Several washes traverse the site and convey the existing flow in an easterly direction toward US Highway 95. The historic condition does not take into account any existing or proposed Skye Canyon improvements.

Refer to Exhibit E, included in Appendix A, for a detailed illustration of the historic condition drainage patterns.

3.2 Discussion of Historic Condition

The historic condition has been prepared to determine existing condition flow rates prior to any Skye Canyon development. These flow rates are used for comparison purposes to determine allowable drainage conditions at the downstream boundary of the Phase 3A site.

4 EXISTING DRAINAGE CONDITION

4.1 Definition of Existing Condition

The existing condition considers the Skye Canyon Phase 3A area undeveloped and upstream Detention Basin 1 and Detention Basin 2 in place. DB1 is currently substantially complete. DB2 is currently in design and it is the intention of the developer to progress the Phase 3A design so that it can be constructed immediately after construction of DB2. The existing condition has similar drainage patterns to the historic condition with the exception that all active construction and finished developments in Skye Canyon have been included.

The following adjacent improvements are considered in place and functioning during the existing condition:

- Skye Canyon Detention Basin 1 – Detention basin is in place and discharges to existing wash that crosses Phase 3A on the south side of the site.
- Skye Canyon Detention Basin 2 – Detention basin is assumed in place and will discharge to existing wash along Iron Mountain Road alignment, crossing Phase 3A at northwest corner of site.
- Skye Canyon Park Phase 1 - 60" RCP in Skye Canyon Park Drive from Skye Village Road, terminating short of existing wash MOHU 0100 on upstream end, connecting to existing Phase 1 storm drain on downstream end.
- Skye Canyon Phase 1 – MPU Facility MOHU 0036 (8-ft x 5-ft RCB) in Skye Village at Skye Canyon Park Drive, and portion of 60" RCP in Skye Canyon Park Drive.
- Skye Canyon Village (Smith's Marketplace) – 54"/60" RCP storm drain on north side of development and 60"/72" RCP storm drain on south side of development. Both facilities begin at Skye Park Drive and discharge into a 14-ft x 5-ft RCB culvert in Grand Canyon Drive which terminates into the existing wash to the east.

4.2 Discussion of Existing Condition

Refer to Exhibit F, included in Appendix A, for a detailed illustration of the existing condition drainage patterns.

The existing condition model defines existing condition flow rates as they will occur before construction of Phase 3A infrastructure. This existing condition model does not determine allowable drainage conditions at the perimeter of the site. The existing condition model reduces downstream flow rates due to upstream detention basins being considered in place, without the development of downstream parcels the basins provide for. The historic condition model is used for determination of allowable downstream flow rates. Note that several Skye Canyon Phase 2 Infrastructure parcels discharge flow north to the adjacent wash (MOHU 0100 and MOHU 0118) at concentration points CP6 and CP7. Flow

conveyed within the wash is routed east to concentration point CP3 to future Skye Village Road at the intersection with Skye Canyon Park Drive. See Exhibit F for specific locations.

5 PROPOSED DRAINAGE CONDITION

5.1 Definition of Proposed Condition

The proposed condition is defined as the proposed roadway and infrastructure improvements inclusive of the ditch grading on the parcels to be constructed prior to the development of the future residential subdivisions. It is anticipated that the proposed infrastructure improvements will exist, and interim ditch grading has been designed to route runoff and protect the roadways. All the proposed mainline drainage infrastructure is described in Section 5.5 of this study and is anticipated to be complete during the proposed condition. The offsite drainage areas shown in the existing condition are assumed to remain in their current state with a slight decrease in area for offsite basins OFF1 – OFF4 fronting Skye Village Road due to the roadway encroachment from existing to proposed condition.

5.2 Discussion of Proposed Condition

Refer to Exhibit G, included in Appendix A, for a detailed illustration of the proposed condition drainage patterns.

Several existing washes cross the west side of Phase 3A at Skye Village Road. Full street improvements are proposed in Skye Village Road, and therefore the MPU Facility planned for this street, MOHU 0036, is being proposed as well. However, downstream MPU improvements are not anticipated to be in place in advance of Phase 3A. Without downstream MPU improvements in place, the MOHU 0036 facility cannot collect all the existing washes crossing it without exceeding existing downstream flow rates at Skye Village Road/Grand Canyon Drive. Therefore, it is proposed to convey a portion of the offsite flows east through Phase 3A in the interim. The facilities proposed to convey flow through the site are discussed in greater detail in Section 5.5.

Storm drain stubs for use by future residential subdivision developments of the individual parcels within the Skye Canyon Phase 3A project area have been provided and extended as necessary to collect the contributing interim condition flows. The proposed condition proposes to utilize interim ditches to convey flows such that the proposed roadways are maintained dry with the exception of runoff generated by the roadways, which are also intercepted at intervals. The proposed condition analyzed the onsite parcels as seven basins identified as 2.02 thru 2.06. The roadway improvements for Skye Village Road are analyzed as basins SVR1 and SVR2. All other interior roadways are analyzed as basins STR1 thru STR4. The Skye Canyon Phase 3 basins at the southeast boundary have been referenced from the Smith's Study.

5.3 Summary of Proposed Condition Flows

A summary of all proposed condition flow rates determined by the HEC-1 analysis, as well as the concentrated flows at critical locations have been provided on the Proposed

Condition Drainage Map (Exhibit G) in Appendix A. The applicable HEC-1 analysis has been provided in Appendix C for your reference.

Proposed condition facilities have been designed to convey flows through the site in order to meet historical existing flow rates at downstream discharge points. A comparison of flow rates at downstream discharge points is provided in the following table:

Table 1: Flow Comparison of Concentration Points - Historic vs. Proposed Condition

Concentration Point ID	Historic Condition Q_{100} (cfs)	Proposed Condition Q_{100} (cfs)
CP10	780	588
CP11	153	148
CP12	1044	697

Review of Table 1 above indicates that the proposed condition flows are lower than historic condition at all downstream discharge locations. Therefore, the proposed discharge of flows from Phase 3A to the east will not adversely impact receiving downstream facilities. The comparison at concentration point CP10 shows almost a 200 cfs reduction in flow; however, additional flow is intended to be discharged to CP10 with development of future phases west of Phase 3A. Ultimately, Skye Village Road will be a 100-Year cutoff and the discharges to the east from Phase 3A will be limited to onsite flow.

5.4 Summary of Proposed Condition Street Flows

Street flow hydraulics for the proposed perimeter roadways have been analyzed and are summarized on the Proposed Condition Drainage Map (Exhibit G) in Appendix A.

Note that all sections have been modeled as full street sections with the exception of sections GC1 thru GC3. This is due to only half of the roadway being proposed within Grand Canyon Drive with this Phase 3A improvements. Additionally, Section 6 has been analyzed as a half street capacity section with the remainder of the impacting flow utilized in the sizing its pertinent drop inlets. Note that the sections with erosive velocities (> 5 fps) are considered acceptable since the flow depth is within the right of way where no landscape can be eroded. All other sections generate velocities of <5 fps. All 10-yr street flow criteria are met in the 100-yr event and therefore additional computations for the 10-yr event are not necessary.

Also note that Skye Village Road has an 80-ft right-of-way width and therefore a 10-year calculation has been provided to demonstrate that the minimum dry lane requirement has also been satisfied. Section 10YR has been conservatively analyzed with the total flow from basins SVR1 and SVR2. As a result, section 10YR meets the dry lane criterion for the full length of Skye Village Road.

5.5 Summary of Drainage Facilities – Proposed Condition

Refer to Exhibit I, for locations and sizes of all proposed drainage facilities designed to be utilized during the proposed and ultimate developed conditions of the Skye Canyon Phase 3A area. The following discussion summarize the design considerations for each mainline storm drain proposed by this study.

Skye Canyon Park Drive - MPU Facility MOHU 0085 (60" RCP): The entirety of the flow in existing wash MOHU 0100 will be intercepted by the proposed MPU facility MOHU 0085 where the existing wash crosses Skye Canyon Park Drive. An improved inlet in the form of a 72" RCP is proposed to collect the flow from the existing wash. The flow is then proposed to be conveyed east to MPU Facility MOHU 0036 at the southwest corner of the site. The MPU facility will then be blocked off with a temporary removable structural wall, and all flow diverted through an interim 72" outlet pipe to the east. The 72" RCP is proposed to discharge to the existing wash, which will then be intercepted by the existing Skye Canyon Village (Smith's Marketplace) 60"/72" RCP storm drain on the south side of that site. A WSPGW model has been prepared to verify capacity though the Smith's Marketplace, see Appendix E for reference. Ultimately the diversion of the MPU Facility to the east will be blocked off, the MPU Facility opened back up, and all flow routed north in the Skye Village Road MPU Facility (MOHU 0036).

Station "SVR" 38+50 - 30" RCP Culvert Lateral: In addition to wash MOHU 0100, 40 cfs will be diverted (DIV1) to the 60"/72" Smith's Marketplace storm drain from the next wash to the north. This flow will be intercepted by a 30" RCP culvert lateral discharging to MPU Facility MOHU 0036 upstream of the interim plug and then diverts flow to the east. Ultimately the 30" RCP Culvert Lateral flow will be conveyed north in MPU Facility MOHU 0036.

Street E / Skye Park Drive (36"/42" RCP): 70 cfs from the existing wash aligned with Street E is proposed to be intercepted and conveyed east within an interim 42" RCP in the proposed condition. This storm drain is proposed to increase in slope and reduce to a 36" RCP before discharging to the existing 54"/60" RCP at the north side of the Smith's Marketplace. The Smith's Marketplace storm drain is designed for 258 cfs at this location, therefore no adverse impacts to the existing Smith's Marketplace storm drain are anticipated. In Skye Park Drive, a 20-ft drop inlet on the west and a 15-ft drop inlet on the east intercept street flow and discharge it to the proposed 36" RCP. These drop inlets are on-grade and will bypass 6 cfs south toward Skye Canyon Park Drive. Skye Canyon Park Drive was designed to accept 35 cfs street flow from Skye Park Drive, as shown in the Phase 1 Infrastructure Street Hydraulic Condition Map Exhibit I in Appendix A; therefore, no adverse impacts to Skye Canyon Park Drive street flow are anticipated, and some additional capacity for street flow is remaining for development of parcel 2.06. Ultimately the upstream portion of the 36"/42" RCP culvert storm drain will be abandoned and the 70 cfs offsite flow discharged into MPU Facility MOHU 0036 and conveyed north.

Iron Mountain Road - MPU Facility MOIR 0000 (60" RCP): This facility is proposed to be constructed to the west edge of the proposed Skye Village Road / Iron Mountain Road intersection. Flow in the existing wash along the Iron Mountain Road alignment is proposed to be intercepted by an improved inlet in the form of a 72" RCP. The facility then reduces in size to the proposed 60" RCP and discharges at a 45-degree angle into MPU Facility MOHU 0036 in Skye Village Road. The Skye Village Road MPU facility is slope constrained due to a relatively deep fixed connection point at the upstream end (Skye Canyon Park Drive), and an existing 36" MLCP water line running parallel at a similar depth. Due to the proximity and depth of the parallel water line, a reach of 76"x48" HERCP (60" RCP

equivalent) is proposed to maintain vertical clearance over the water line. The HERCP is proposed to connect into the Skye Village Road MPU facility at an elevation above the flow line due to the vertical constraint. Structural design will be performed for this connection with the improvement plan process.

Grand Canyon Drive – Local Onsite Facilities: Grand Canyon Drive consists of three (3) storm drain alignments. The facility P1 alignment is intended to perpetuate flow from basin 2.05a to offsite basin OFF11. Flow is collected at a sump on basin 2.05a and routed east through a 30" RCP to basin OFF11 where flow is then routed east in conformance to the existing/historic condition.

The second alignment is proposed to collect flow at a sump from basin 2.03 through a 30" RCP (Facility P2). An 18" RCP stub (Facility P3) has been provided for a future park connection and tie back into the Grand Canyon alignment. Flow collected is then conveyed south via a 30" RCP (Facility P4) where it collects roadway flow and from a proposed inlet and a future stub. The Grand Canyon alignment ends by conveying flow from basin 2.02 through a 36" RCP (Facility P7) and combining its discharge to basin OFF12 through a 42" RCP (Facility P8).

Lastly, an inlet is proposed at the southeast boundary of the project site, within the downstream portion of the Grand Canyon alignment. The 15' Type CM2 inlet is intended to collect the majority of the street flow before reaching the Phase 3 development. Note that a stub has been provided on the north side of Grand Canyon to replicate the same function of the currently proposed inlet. Additionally, the proposed inlet has provided a stub behind the proposed inlet due to uncertainties to the future grading of basin 2.02. Note that the tie in to existing Facility X1 was designed as a 66" RCP. This was due to previous planning conditions in the area. The upstream drainage facility alignments have since been modified and reduce flow to Grand Canyon. As a result, the proposed facilities tying into Facility X1 are adequate for design.

Skye Village Road - MPU Facility MOHU 0036 (8-ft x 7-ft RCA, 10-ft x 9-ft RCA):
MPU Facility MOHU 0036 intercepts and conveys all offsite flow not proposed to be conveyed east through the Phase 3A site. Laterals have been provided for the respective parcels for future residential subdivisions tributary to Skye Village Drive. The laterals are extended into each parcel and have been sized accordingly to collect the entire contributing runoff from the respective parcels. Drop inlets are also proposed along Skye Village Road to intercept flows generated by the street. As discussed in the paragraph above, the MOHU 0036 facility is slope constrained due to a relatively deep fixed connection point at the upstream end and an existing 36" MLCP water line running parallel at a similar depth. The MOHU 0036 facility is able to cross over the water line near the upstream end where the water line dips beneath an existing wash. Elsewhere, the two facilities run at similar depths. Crossing over the water line to the east is necessary because the MOHU 0036 facility discharges to the east in both interim and ultimate scenarios. Flows that are intercepted and conveyed north by the MOHU 0036 MPU Facility in Skye Village Drive are proposed to discharge at Iron Mountain Road (Grand Canyon Drive on the east) into a riprap/earthen swale. The swale is riprap lined initially before widening out and becoming non-erosive. At this point the swale is proposed to be earthen and continues east then discharges into the Iron Mountain wash downstream. Ultimately the proposed MPU Facility will extend to the north and connect to the Moccasin MPU Facility currently under design. However, the Phase 3A improvements are anticipated to be constructed prior to construction of the Moccasin MPU Facility.

Storm Drain Laterals: The mainline storm drains have been designed in a manner as to not result in significant backwater impacts to the proposed storm drain laterals. Most of the storm drain laterals stubbed for extension into future residential subdivisions have been hydraulically analyzed utilizing WSPG and/or verified with the inlet control nomograph to ensure that adequate headwater is provided at the interim sump locations. In addition, all storm drain laterals utilized by drop inlets have also been verified by method of inlet control nomograph to show adequate headwater capacity for flow to exit the drop inlet boxes.

Drop Inlets: Several drop inlets have been proposed specifically to keep the proposed roadways dry during the 100-year storm event. The existing drop inlets along Skye Village Road have been reanalyzed to ensure the street design criteria are satisfied. The majority of drop inlets are located on-grade along the streets and have been sized to maximize their interception capacity hence limiting the bypass flows to minimal amounts. The drop inlet capacity calculations are provided in Appendix D. The summary of the proposed storm drain and drop inlet facilities has been provided on Exhibit I in Appendix A.

Interim Ditches: Interim earthen ditches have been proposed within the respective parcels to direct flows to the designed storm drain stub. The ditches have been designed to convey flows while maintaining non-erosive velocities. However, minimum riprap protection (D_{50}=6", Thickness=12") have been specified at all the proposed sump locations with storm drain stubs for future extension into the residential subdivisions. Normal depth calculations for the proposed ditches have been provided in Appendix D.

6 ULTIMATE DRAINAGE CONDITION

6.1 Definition of Ultimate Condition

The ultimate condition considers the subject Phase 3A being fully developed with all the future residential subdivisions. This condition also considers the tributary offsite basins west of Skye Village Road to be fully developed. As previously stated, the ultimate condition of the Phase 3A site has already been conceptually analyzed by the Master Update Study based on the current master land plan and the estimated flow rates have been referenced for this study. Therefore, hydrology for the ultimate developed condition will not be reanalyzed with this study. However, future technical drainage studies will be provided to address the development of the residential subdivisions within the Skye Canyon Phase 3A area. It should be noted that for regional facilities, ultimate condition flow rates are higher than proposed, and therefore govern the design of the proposed facilities. Refer to Appendix A Exhibit H for the adopted ultimate condition map impacting the site and Exhibit I facilities map for a flow summary comparison of proposed and ultimate design flows for the proposed facilities.

7 CONCLUSIONS & RECOMMENDATIONS

1. This project is in compliance with the applicable drainage laws as recognized by the state of Nevada. This project is in compliance with the CCRFCD "*Hydrologic Criteria and Drainage Design Manual*" (Reference 1).

2. This project is in compliance with the CCRFCD "Master Plan Update," and is proposing regional facilities in the alignments of Skye Canyon Park Drive, Skye Village Road, and Iron Mountain Road.

3. The project site is not located within a FEMA designated Special Flood Hazard Area (SFHA). The site and the proposed improvements are located within a FEMA flood Zone "X" (unshaded). Therefore, FEMA notification will not be required.

4. The design of this project and the proposed drainage patterns are in compliance with the approved Master Drainage Study Update. The storm flows discharging from the Skye Canyon Phase 3A property are in conformance with the master planned drainage patterns and do not exceed allowable discharges established in the Master Update Study. Therefore, there are no adverse impacts to downstream property and facilities as a result of the proposed improvements.

5. Storm drain infrastructure required for the protection of Phase 3A from onsite and offsite runoff is generally in conformance to the conceptual master plan established in the Master Update Study. The drainage facilities have been designed to control and convey the onsite and offsite runoff from the 100-year storm event safely through the site and perpetuate flow in accordance to the master plan.

6. The design of site has been planned in such a way that flows from the site are generally kept away from the roadways. Street flow calculations for the proposed roadways have been provided which show that all the streets satisfy the street design criteria stipulated in the CCRFCD HCDDM.

7. No buildings nor finished floors and/or pad elevations are being proposed with this project. Future individual Technical Drainage Studies for the respective residential subdivisions will be provided to support compliance with finished floor requirements of any proposed building pads.

8. The grading plan, storm drain profile and detail sheets for this project have been included with this study in Appendix O. These plans support the drainage patterns and conclusions detailed in this study.

8 REFERENCES

1. *Las Vegas Valley Flood Control Master Plan Update*. Clark County Regional Flood Control District, 2013.

2. *Hydrologic Criteria and Drainage Design Manual.* Clark County Regional Flood Control District, 1999.

3. *Soil Survey of Las Vegas Valley Area, Nevada. U.S. Department of Agriculture, Natural Resources Conservation Service, August 2016.*

4. *Skye Canyon Master Drainage Study – Update #4 to the Kyle Canyon Master Drainage Study;* Slater Hanifan Group, October 2017.

5. *Technical Drainage Study for Skye Canyon Phase 1 Infrastructure;* Slater Hanifan Group, July 2015.

6. *Technical Drainage Study for Skye Canyon Park;* Slater Hanifan Group, September 2015.

7. *Technical Drainage Study for Skye Canyon Phase 3 Infrastructure;* Slater Hanifan Group, September 2016.

8. *Technical Drainage Study for Skye Canyon Village (Smith's Marketplace);* Slater Hanifan Group, November 2016.

9. *Technical Drainage Study for Skye Canyon Parcel 2.16;* Slater Hanifan Group, March 2017.

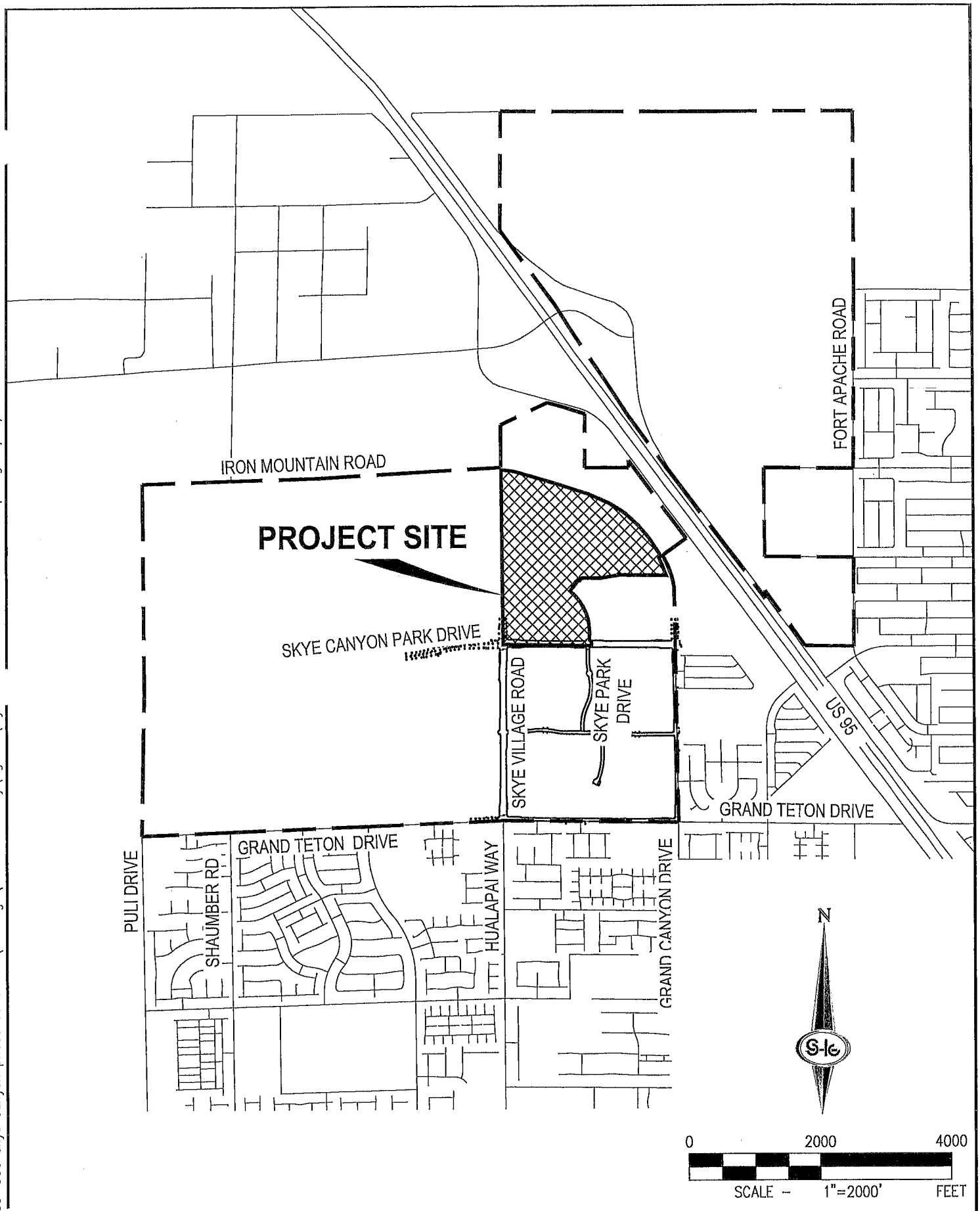
10. *Technical Drainage Study for Detention Basin 1;* Slater Hanifan Group, January 2017.

11. *Technical Drainage Study for Skye Canyon Detention Basin 2;* Slater Hanifan Group.

12. *30% Design Report for Moccasin Rd CCRFCD Flood Control Facility;* Slater Hanifan Group.

APPENDIX A

Drainage Exhibits



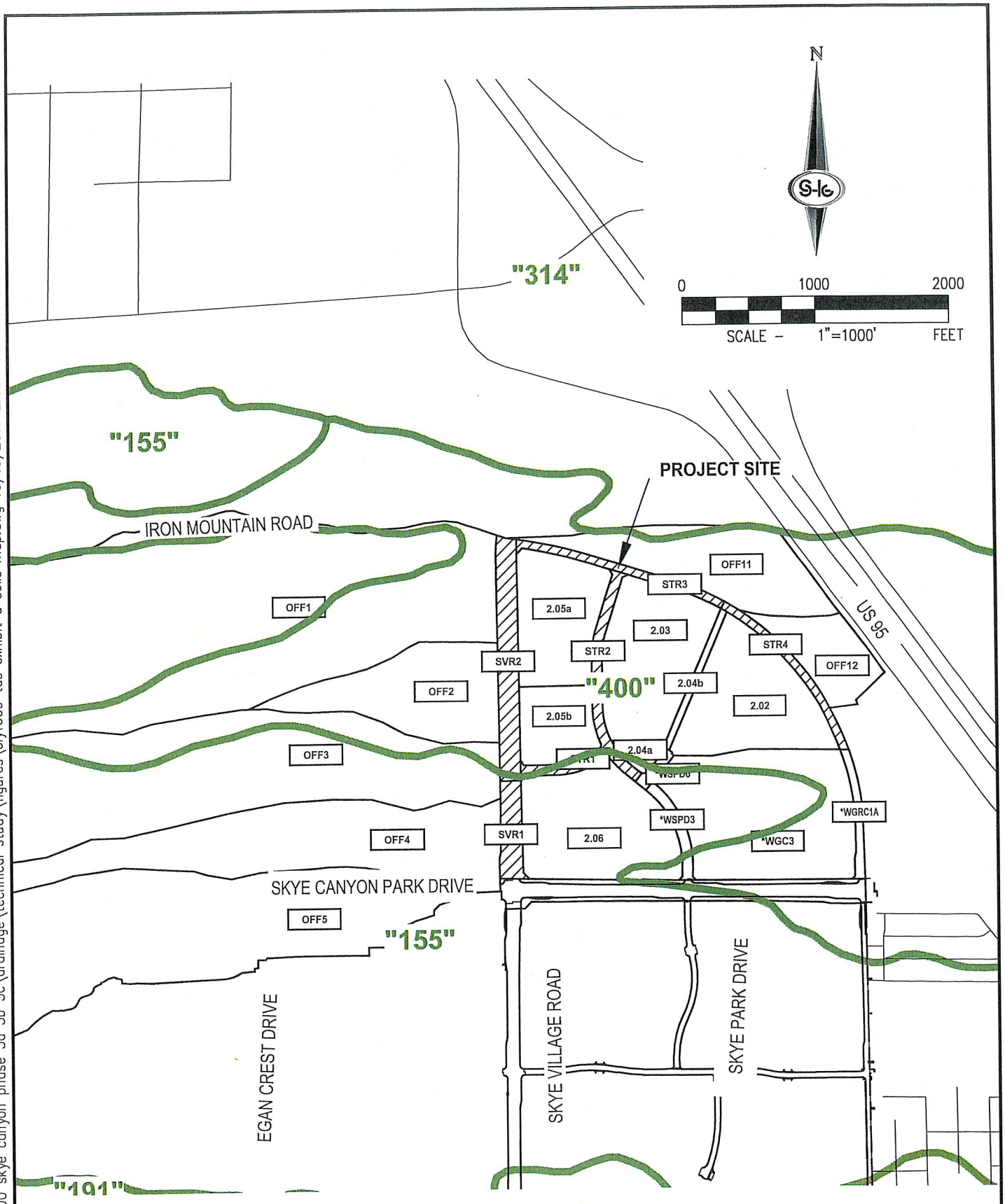
\\shgfs1\data\olv1609-000 skye canyon phase 3a 3b 3c\drainage\technical study\figures\olv1609-000 tds exhibit a location map.dwg 10/16/2017 1:13 PM Erick Mata

SLATER HANIFAN GROUP
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PHONE (702) 284-5300 FAX (702) 284-5399

NINETY-FIVE MANAGEMENT, LLC.

SKYE CANYON PHASE 3A INFRASTUCTURE
LOCATION MAP

DATE: OCT 2017	PROJECT NO. OLY1609.000
DRAFTER: ETM	
DESIGNER: ETM	EXHIBIT A
CHECKED: LKL	SHEET 1 OF 1



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NINETY-FIVE MANAGEMENT, LLC.

SKYE CANYON PHASE 3A INFRASTUCTURE

SOILS MAP

DATE: OCT 2017	PROJECT NO. OLY1609.000
DRAFTER: ETM	
DESIGNER: ETM	EXHIBIT D
CHECKED: LKL	SHEET 1 OF 1

APPENDIX B

Hydrologic Data

Precipitation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Rainfall and Precipitation Computation

Project Name: Skye Canyon Infrastructure Phase 3A
Date: 10/26/2017
File Name: OLY1609 TDS Precipitation Calcs.xls
By: ETM

Data:

Reference:

Project is located in: Township: 19 S. Range: 60 E. Section: 7 — APN Map

Site is NOT located in the McCarran Airport Rainfall Area — Figure 513*

Rainfall Depth-Duration-Frequency 10-Year, 6-Hour: 1.30 inches — Figure 503*

Rainfall Depth-Duration-Frequency 100-Year, 6-Hour: 2.10 inches — Figure 506*

Precipitation Adjustment Ratios:

10-Year: 1.24 — Table 501*
100-Year: 1.43 — Table 501*

Six Hour Depth Area Reduction Factors (DARF):
Area (gross acres): 0.0 = 0.0000 square miles — Table 502*
DARF = 1.00

Calculations:

P_{10} = 1.61 10-Year Precipitation (in)
P_{100} = 3.00 100-Year Precipitation (in)

P10/P100= 0.54 HEC-1 Multiple Ratio Value

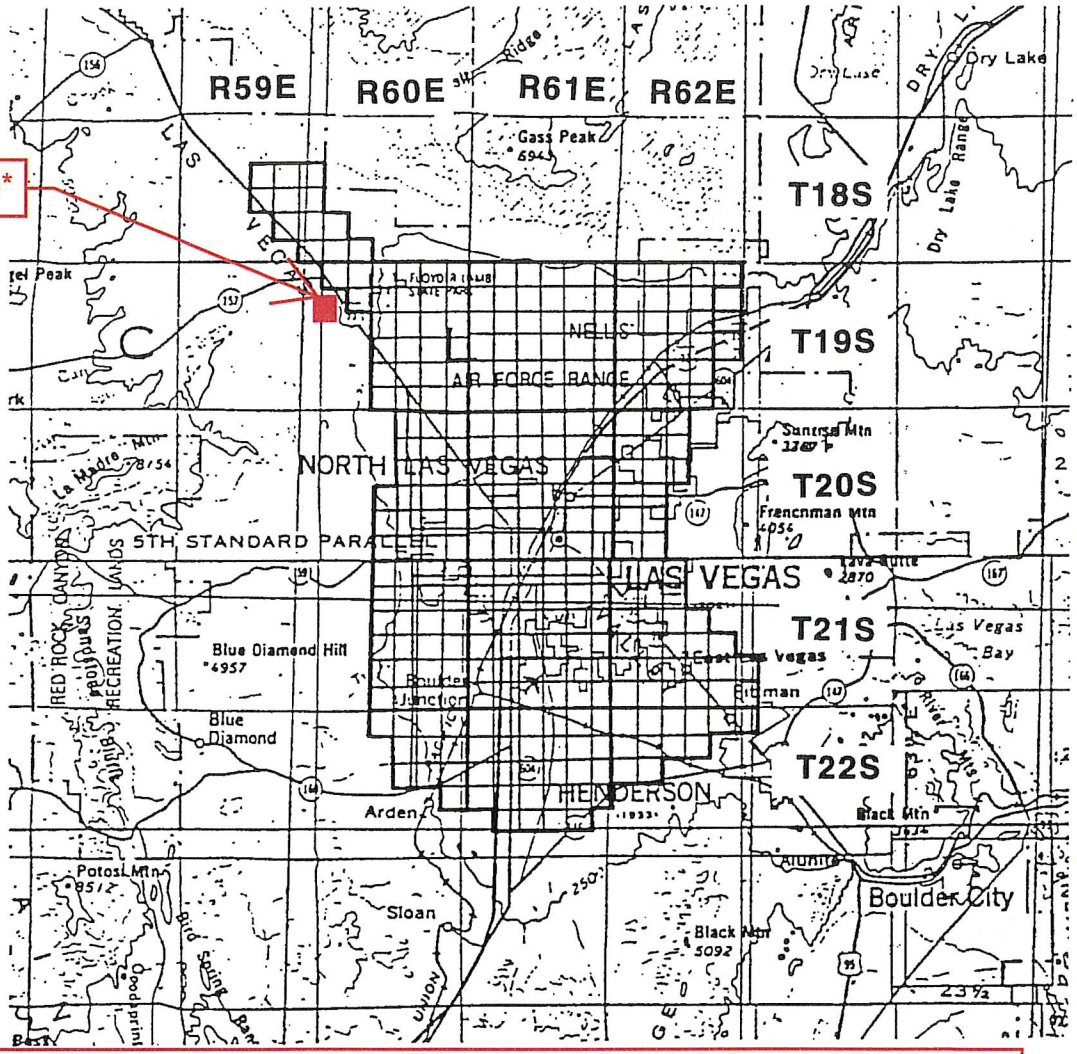
Equations:

P=(Rainfall)*(Precipitation Adjustment Ratio)*(Depth Area Reduction Factor)

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Desi

5740 S. Arville St., Suite 216 - Las Vegas, NV 89118
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McCARRAN AIRPORT RAINFALL AREA



*Project site not located within the McCarran Rainfall area (T19-R60-S7)

TOWNSHIP	RANGE	SECTIONS	TOWNSHIP	RANGE	SECTIONS
18 South	59 East	13-15,22-26,36	20 South	62 East	4-9,16-20,29-32
18 South	60 East	30-32	21 South	60 East	1-4,9-16,21-28,33-36
19 South	60 East	1-6,8-16,21-28,33-36	21 South	61 East	ALL SECTIONS
19 South	61 East	ALL SECTIONS	21 South	62 East	4-9,15-23, 25-36
19 South	62 East	2-11,14-23,27-34	22 South	60 East	1-4,10-15,24
20 South	60 East	1-3,10-15,21-28,33-36	22 South	61 East	1-24,26-29
20 South	61 East	ALL SECTIONS	22 South	62 East	1-10,17-18

Notes:
1. Refer to Table 505 and Figure 516 Depth-Duration- Frequency values in the McCarran Airport Rainfall Area.
2. Refer to Table 506 and Figure 517 for Time-Intensity-Frequency values on the McCarran Airport Rainfall Area.

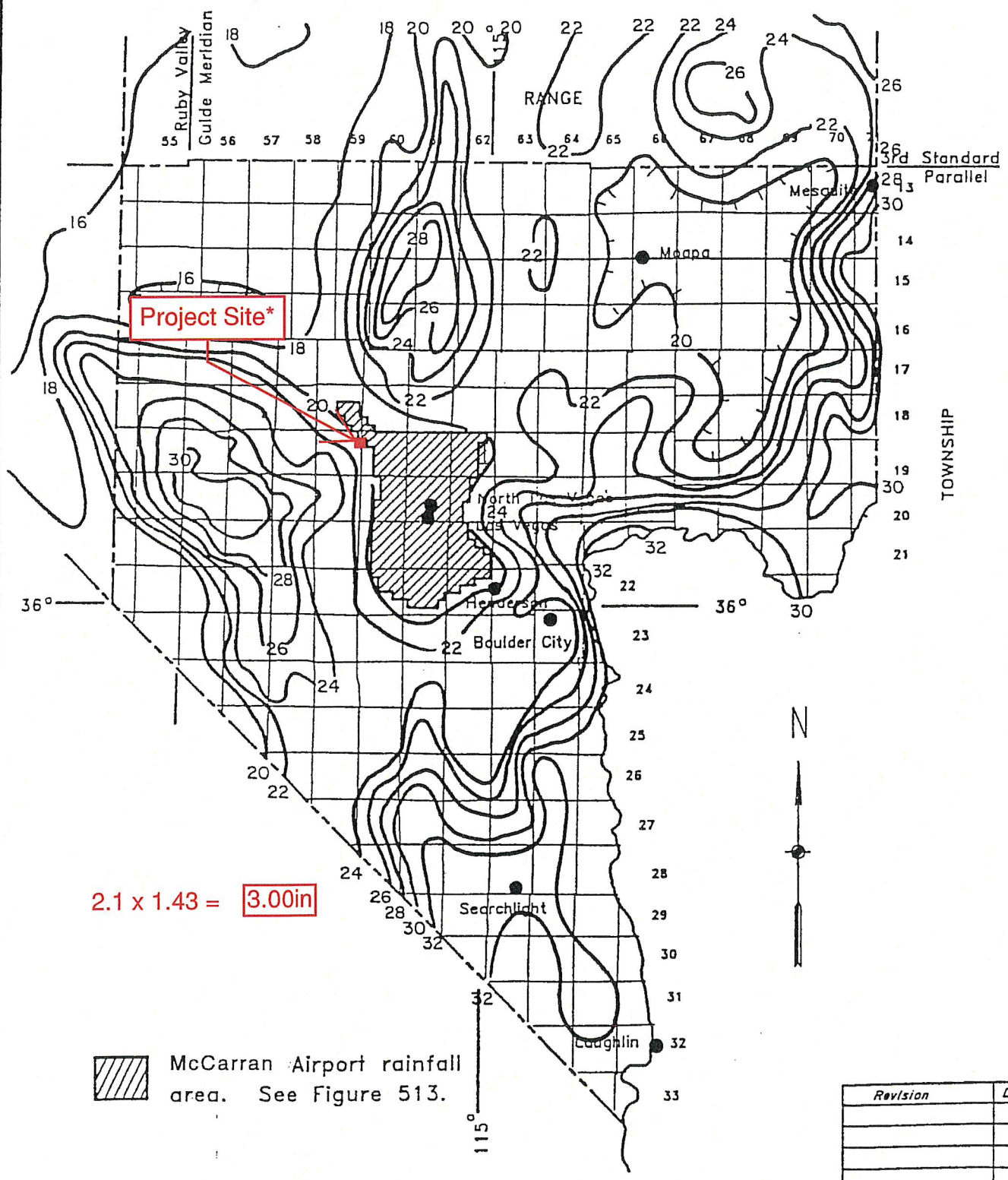
Revision	Date

WRC ENGINEERING

REFERENCE:
USACE, Los Angeles District, 1988

FIGURE 513

RAINFALL DEPTH-DURATION-FREQUENCY
100-YEAR, 6-HOUR
(DEPTHS IN TENTHS OF INCHES)



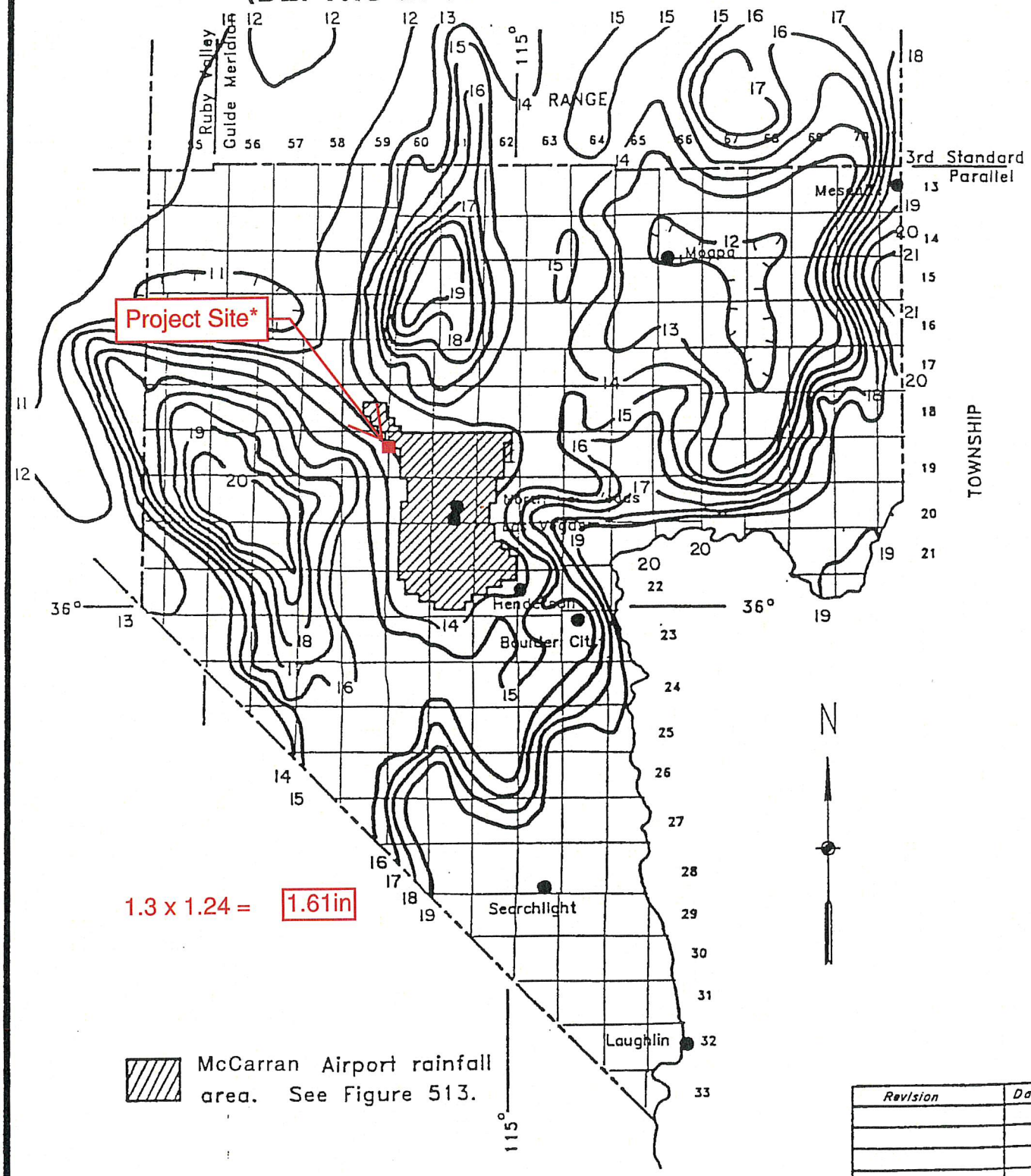
Revision	Date

WRC ENGINEERING

REFERENCE:
NOAA ATLAS 2, VOLUME VII NEVADA, 1973

FIGURE 506

RAINFALL DEPTH-DURATION-FREQUENCY
10-YEAR, 6-HOUR
(DEPTHS IN TENTHS OF INCHES)



Revision	Date

WRC ENGINEERING

REFERENCE:
NOAA ATLAS 2, VOLUME VII NEVADA, 1973

FIGURE 503

PRECIPITATION ADJUSTMENT RATIOS

Recurrence Interval	Ratio to NOAA Atlas 2
2-year	1.00
5-year	1.16
10-year	1.24
25-year	1.33
50-year	1.39
100-year	1.43

NOTE:
1. Multiply the values obtained from the NOAA Atlas 2 by the above ratios to obtain the adjusted precipitation values.
2. NOAA Atlas 2 values for use with TR-55 shall not be adjusted by the above ratios.
3. Tables 505 and 506 require no adjustments.

Revision	Date

SIX HOUR DEPTH-AREA REDUCTION FACTORS

Drainage Area (Square Miles)	Six-Hour Depth-Area Reduction Factor
0.0	1.00
0.5	0.98
1.0	0.97
2.0	0.93
4.0	0.91
6.0	0.90
8.0	0.88
10.0	0.86
20.0	0.79
30.0	0.74
50.0	0.68
100.0	0.60
150.0	0.55
200.0	0.51
300.0	0.46
400.0	0.42
500.0	0.39

NOTES:
1. A graphical representation of these factors is presented in Figure 514.
2. Consult with the local entity and/or the CCRFCD for guidance in using the Depth-Area Reduction Factors for drainage areas greater than 200 square miles.

Revision	Date

SIX-HOUR STORM DISTRIBUTIONS

Storm Time (In Minutes)	Percent of Total Storm Depth SDN3	SDN4	SDN5
0	0.0	0.0	0.0
5	2.0	2.0	2.0
10	5.7	5.8	5.9
15	7.0	7.5	8.0
20	8.7	9.9	11.0
25	10.8	12.6	14.4
30	12.4	13.7	15.0
35	13.0	14.5	16.0
40	13.0	14.9	16.8
45	13.0	15.1	17.1
50	13.0	15.5	18.0
55	13.0	15.6	18.2
60	13.0	15.9	18.7
65	13.3	16.2	19.0
70	14.0	16.9	19.7
75	14.2	17.2	20.2
80	14.8	17.9	21.0
85	15.8	18.9	22.0
90	17.2	20.1	23.0
95	18.1	21.1	24.1
100	19.0	22.0	25.0
105	19.7	22.8	25.9
110	19.9	23.2	26.5
115	20.0	24.0	28.0
120	20.1	24.6	29.0
125	20.4	25.2	30.0
130	21.4	26.0	30.5
135	22.9	26.9	30.9
140	24.1	27.6	31.0
145	24.9	28.3	31.7
150	25.1	28.6	32.1
155	25.6	29.2	32.7
160	27.0	30.2	33.3
165	27.8	31.2	34.6
170	28.1	32.1	36.1
175	28.3	33.2	38.1
180	29.5	35.2	40.8
185	32.2	37.6	43.0
190	35.2	41.5	47.7
195	40.9	46.2	51.4
200	49.9	53.0	56.1
205	59.0	61.0	63.0
210	71.0	71.0	71.0
215	74.4	73.2	72.0
220	78.1	75.6	73.1
225	81.2	78.2	75.2
230	81.9	79.9	77.9
235	83.5	81.3	79.0
240	85.1	82.3	79.5
245	85.6	83.0	80.4
250	86.0	83.5	81.0
255	86.8	84.4	82.0
260	87.6	85.1	82.6
265	88.8	86.4	84.0
270	91.0	88.5	85.9
275	92.6	90.8	88.9
280	93.7	92.4	91.0
285	95.0	94.4	93.8
290	97.0	96.8	96.6
295	97.6	97.3	97.0
300	98.2	97.8	97.4
305	98.5	98.2	97.9
310	98.7	98.4	98.1
315	98.9	98.6	98.3
320	99.0	98.8	98.5
325	99.3	99.1	98.9
330	99.3	99.2	99.0
335	99.4	99.3	99.2
340	99.5	99.4	99.3
345	99.8	99.7	99.6
350	99.8	99.8	99.7
355	99.9	99.9	99.9
360	100.0	100.0	100.0

Notes
1. For drainage areas less than 8 square miles in size, use SDN 3.
2. For drainage areas greater than or equal to 8 square miles and less than 12 square miles in size, use SDN 4.
3. For drainage areas greater than or equal to 12 square miles, use SDN 5.
4. A graphical representation of these values is presented on **Figure 515**.

Revision	Date

REFERENCE:

TABLE 503

Curve Number

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Soil Data & Curve Number Computation

Project Name & Number: Skye Canyon Infrastructure Phase 3A (OLY1609)
Date: 10/26/2017
By: ETM

Data:

Reference: Exhibit D NRCS Soil Data

Soil Type - Soil Survey Area & Version, Soil Description				A	B	C	D
LV	155	Las Vegas Valley 2016	Cave gravelly fine sandy loam, 4 to 15 percent slopes	0%	0%	0%	100%
LV	314	Las Vegas Valley 2016	Weiser-Wechech association	80%	5%	0%	15%
LV	400	Las Vegas Valley 2016	Tencee very gravelly fine sandy loam, 2 to 8 percent slopes	0%	0%	0%	100%

Land Use	A	B	C	D
Residential (<6,000 sf)*	89	92	94	95
Commercial	89	92	94	95
Desert Shrub (poor)	63	77	85	88
Roadway	98	98	98	98
Open Space (fair)	49	69	79	84

*Commercial land use per Note 3

HISTORIC CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
OFF1	LV	155	33.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	52.45	29.05
	LV	400	67.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	106.46	58.95
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									158.91	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
OFF2	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	19.89	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									19.89	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
OFF3	LV	155	80.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	83.60	70.40
	LV	400	20.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	20.90	17.60
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									104.50	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
OFF4	LV	155	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	141.94	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									141.94	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
XON1	LV	314	8.2%	Desert Shrub (poor)	80%	5%	0%	15%	63	77	85	88	3.11	5.56
	LV	400	91.8%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	34.61	80.74
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									37.72	86.3

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
XON2	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	48.79	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									48.79	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
XON3	LV	155	56.9%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	31.87	50.08
	LV	400	43.1%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	24.13	37.92
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									56.00	88.0

EXISTING CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
OFF1	LV	155	34.9%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	49.64	30.68
	LV	400	65.1%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	92.75	57.32
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									142.39	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP A	B	C	D	LAND USE CN A	B	C	D	SUBAREA ACRES	CURVE NUMBER
OFF3	LV	155	78.4%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	75.85	68.99
	LV	400	21.6%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	20.90	19.01
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									96.75	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF4	LV	155	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	40.14	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									40.14	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF5	LV	155	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	88.82	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									88.82	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF11	LV	314	16.6%	Desert Shrub (poor)	80%	5%	0%	15%	63	77	85	88	3.11	11.21
	LV	400	83.4%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	15.60	73.37
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									18.71	84.6

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF12	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	8.16	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									8.16	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
XON1	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	19.01	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									19.01	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
XON2	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	40.63	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									40.63	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
XON3	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	5.93	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									5.93	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
XON4	LV	155	25.1%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	1.41	22.08
	LV	400	74.9%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	4.21	65.92
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									5.62	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
XON5	LV	155	95.7%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	19.51	84.20
	LV	400	4.3%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	0.88	3.80
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									20.39	88.0

PROPOSED CONDITION

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.02	LV	400	100.0%	Commercial	0%	0%	0%	100%	89	92	94	95	17.84	95.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									17.84	95.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.03	LV	400	100.0%	Commercial	0%	0%	0%	100%	89	92	94	95	17.45	95.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									17.45	95.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.04a	LV	400	100.0%	Open Space (fair)	0%	0%	0%	100%	49	69	79	84	1.43	84.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									1.43	84.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.04b	LV	400	100.0%	Open Space (fair)	0%	0%	0%	100%	49	69	79	84	1.26	84.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									1.26	84.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.05a	LV	400	100.0%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	13.54	95.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									13.54	95.0

BASIN ID	SURVEY	SOIL TYPE	SUBAREA	LAND USE	HYDROLOGIC SOIL GROUP	LAND USE CN	SUBAREA	CURVE

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.05b	LV	400	100.0%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	7.37	95.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									7.37	95.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
2.06	LV	155	95.6%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	18.99	90.79
	LV	400	4.4%	Residential (<6,000 sf)*	0%	0%	0%	100%	89	92	94	95	0.88	4.21
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									19.87	95.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF1	LV	155	35.2%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	49.64	30.98
	LV	400	64.8%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	91.37	57.02
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									141.01	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF2	LV	400	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	18.56	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									18.56	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF3	LV	155	78.6%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	75.50	69.18
	LV	400	21.4%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	20.54	18.82
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									96.04	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
OFF4	LV	155	100.0%	Desert Shrub (poor)	0%	0%	0%	100%	63	77	85	88	38.97	88.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									38.97	88.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
STR1	LV	155	27.5%	Roadway	0%	0%	0%	100%	98	98	98	98	0.72	26.93
	LV	400	72.5%	Roadway	0%	0%	0%	100%	98	98	98	98	1.90	71.07
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									2.62	98.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
STR2	LV	400	100.0%	Roadway	0%	0%	0%	100%	98	98	98	98	1.55	98.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									1.55	98.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
STR3	LV	400	100.0%	Roadway	0%	0%	0%	100%	98	98	98	98	2.19	98.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									2.19	98.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
STR4	LV	400	100.0%	Roadway	0%	0%	0%	100%	98	98	98	98	1.93	98.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									1.93	98.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
SVR1	LV	155	100.0%	Roadway	0%	0%	0%	100%	98	98	98	98	2.73	98.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									2.73	98.0

BASIN ID	SURVEY AREA	SOIL TYPE	SUBAREA PERCENT	LAND USE	HYDROLOGIC SOIL GROUP				LAND USE CN				SUBAREA ACRES	CURVE NUMBER
					A	B	C	D	A	B	C	D		
SVR2	LV	155	100.0%	Roadway	0%	0%	0%	100%	98	98	98	98	6.41	98.00
	TOTAL PERCENT		100.0%	TOTAL AREA & COMPOSITE CURVE NUMBER:									6.41	98.0

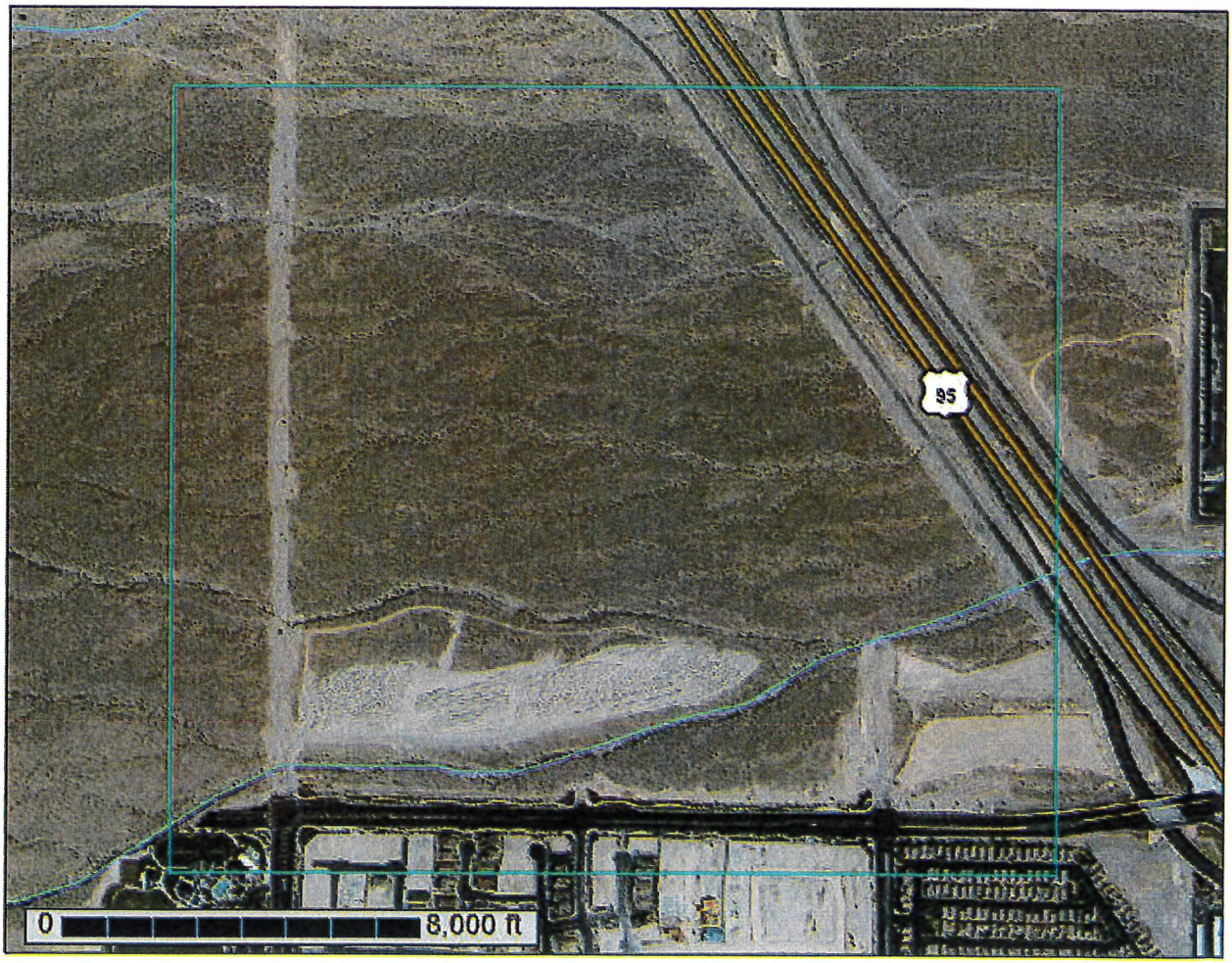
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Las Vegas Valley Area, Nevada, Part of Clark County



October 26, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

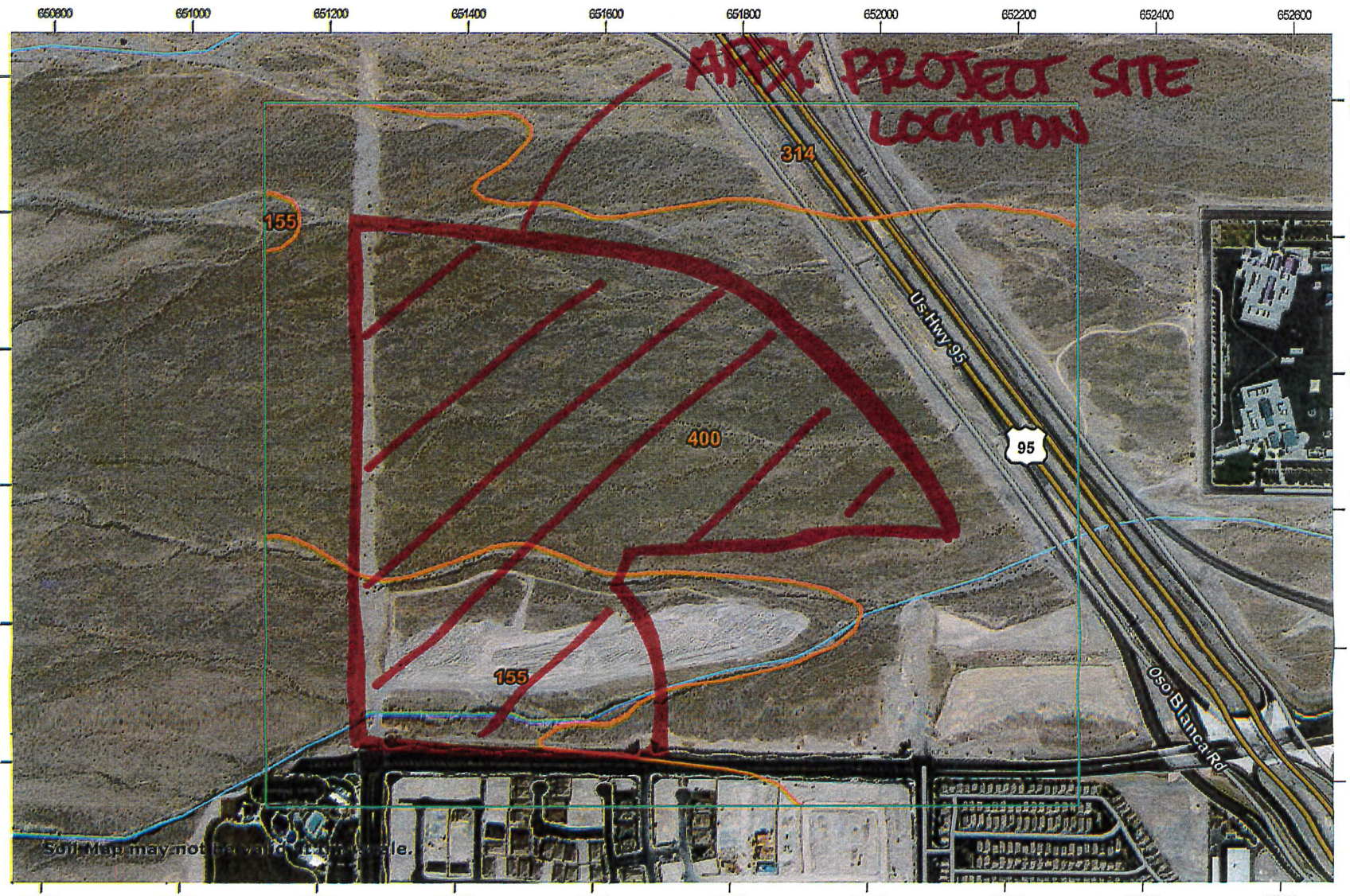
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



115° 19' 14" W
115° 17' 57" W
36° 19' 25" N
36° 18' 45" N
650800
651000
651200
651400
651600
651800
652000
652200
652400
652600
4021100
4020900
4020700
4020500
4020300
4020100

Map Scale: 1:8,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Las Vegas Valley Area, Nevada, Part of Clark County
Survey Area Data: Version 11, Sep 16, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 17, 2014—Feb 27, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
155	Cave gravelly fine sandy loam, 4 to 15 percent slopes	63.1	20.8%
314	Weiser-Wechech association	32.7	10.8%
400	Tencee very gravelly fine sandy loam, 2 to 8 percent slopes	207.8	68.5%
Totals for Area of Interest		**303.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Las Vegas Valley Area, Nevada, Part of Clark County

155—Cave gravelly fine sandy loam, 4 to 15 percent slopes

Map Unit Setting

National map unit symbol: hr9w
Elevation: 2,000 to 4,800 feet
Mean annual precipitation: 4 to 12 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Cave and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cave

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 15 inches: gravelly fine sandy loam
H2 - 15 to 60 inches: indurated

Properties and qualities

Slope: 4 to 15 percent
Depth to restrictive feature: 4 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Other vegetative classification: LIMY 3-5" P.Z. (030XB019NV_3)
Hydric soil rating: No

314—Weiser-Wechech association

Map Unit Setting

National map unit symbol: 1tf6l
Elevation: 1,610 to 4,850 feet
Mean annual precipitation: 5 to 7 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 300 days
Farmland classification: Not prime farmland

Map Unit Composition

Weiser, very rarely flooded, and similar soils: 70 percent
Wechech and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Weiser, Very Rarely Flooded

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from limestone and dolomite

Typical profile

H1 - 0 to 6 inches: extremely gravelly fine sandy loam
H2 - 6 to 60 inches: extremely gravelly sandy loam

Properties and qualities

Slope: 2 to 8 percent
Percent of area covered with surface fragments: 5.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Very rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: Arid Fans 4-6 P.Z. (R030XB005NV)

Hydric soil rating: No

Description of Wechech

Setting

Landform: Fan remnants
Landform position (two-dimensional): Summit
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from limestone and dolomite

Typical profile

H1 - 0 to 2 inches: very gravelly sandy loam
H2 - 2 to 7 inches: very gravelly sandy loam
H3 - 7 to 13 inches: very gravelly sandy loam
H4 - 13 to 60 inches: cemented material

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 8 to 14 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Arid Fans 4-6 P.Z. (R030XB005NV)
Hydric soil rating: No

Minor Components

Threelakes

Percent of map unit: 6 percent
Landform: Fan remnants
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: CALCAREOUS LOAM 5-7 P.Z. (R030XA066NV)
Hydric soil rating: No

Weiser, very rarely flooded

Percent of map unit: 5 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: GRAVELLY FAN 5-7 P.Z. (R030XB075NV)
Hydric soil rating: No

Typic torriorthents, sandy-skeletal, occasionally flooded

Percent of map unit: 4 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: VALLEY WASH (R030XB028NV)
Hydric soil rating: No

400—Tencee very gravelly fine sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: hrc1
Elevation: 2,400 to 5,700 feet
Mean annual precipitation: 4 to 10 inches
Mean annual air temperature: 57 to 64 degrees F
Frost-free period: 180 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Tencee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tencee

Setting

Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Alluvium derived from limestone and dolomite

Typical profile

H1 - 0 to 9 inches: very gravelly fine sandy loam
H2 - 9 to 15 inches: very gravelly sandy loam
H3 - 15 to 19 inches: indurated

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0

Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

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Lag Time - Standard Form 4 Computations

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL
TIME OF CONCENTRATION

Project Name & Number: Skye Canyon Infrastructure Phase 3A (OLY1609)
Description:
By: ETM
Date: 10/26/2017

SUB-BASIN DATA						INITIAL / OVERLAND TIME (Ti)			TRAVEL TIME (Tt)					Tc	Tc Check Urbanized Basins		Tlag
DESIG:	DEV./EX. (D or E)	CN	K [1]	AREA Ac	AREA Mi^2 [2]	INITIAL LENGTH Feet	SLOPE %	Ti Min [3]	TRAVEL LENGTH Feet	SLOPE %	V1 VELOCITY FPS [4]	V2 VELOCITY FPS [5]	Tt Min [6]	Tc Calc. [7]	Total Length Feet [8]	Tc Check [9]	Tlag Hours [10]
HISTORIC CONDITION																	
OFF1	E	88.0	0.772	158.9	0.2483	250	13.0	3.97	6135	3.0	2.57	5.11	21.62	25.60			0.256
OFF2	E	88.0	0.772	19.9	0.0311	328	3.7	6.95	1423	4.2	3.04	6.04	5.29	12.23			0.122
OFF3	E	88.0	0.772	104.5	0.1633	350	11.4	4.91	6030	3.0	2.56	5.09	21.35	26.26			0.263
OFF4	E	88.0	0.772	141.9	0.2218	410	6.1	6.55	5793	3.5	2.77	5.50	19.05	25.60			0.256
XON1	E	86.3	0.749	37.7	0.0589	500	4.0	8.90	2245	3.1	2.61	5.19	8.79	17.68			0.177
XON2	E	88.0	0.772	48.8	0.0762	500	4.0	8.33	2873	3.4	2.73	5.42	10.35	18.68			0.187
XON3	E	88.0	0.772	56.0	0.0875	215	11.2	3.88	2720	2.8	2.49	4.95	10.83	14.71			0.147
EXISTING CONDITION																	
OFF1	E	88.0	0.772	142.4	0.2225	250	13.0	3.97	5404	3.1	2.58	5.13	19.14	23.12			0.231
OFF3	E	88.0	0.772	96.8	0.1512	350	11.4	4.91	5595	3.0	2.54	5.05	20.09	25.01			0.250
OFF4	E	88.0	0.772	40.1	0.0627	500	4.0	8.33	4071	4.1	2.98	5.92	12.86	21.18			0.212
OFF5	E	88.0	0.772	88.8	0.1388	410	6.1	6.55	4757	3.9	2.92	5.81	15.07	21.62			0.216
OFF11	E	88.0	0.772	18.7	0.0292	500	0.5	16.65	1050	2.9	2.50	4.97	5.17	21.83			0.218
OFF12	E	88.0	0.772	8.2	0.0128	150	4.6	4.35	544	3.1	2.61	5.18	3.34	7.69			0.100
XON1	E	86.3	0.749	19.0	0.0297	370	4.1	7.62	1460	3.4	2.73	5.42	6.01	13.63			0.136
XON2	E	88.0	0.772	40.6	0.0635	408	4.9	7.03	2090	3.6	2.81	5.58	7.72	14.75			0.147
XON3	E	88.0	0.772	5.9	0.0093	434	2.8	8.78	828	4.2	3.04	6.05	3.64	12.42			0.124
XON4	E	86.3	0.749	5.6	0.0088	317	6.3	6.08	1046.4	2.9	2.50	4.97	5.16	11.25			0.112
XON5	E	88.0	0.772	20.4	0.0319	215	10.0	4.02	1248	2.0	2.09	4.16	6.98	11.00			0.110

PROPOSED CONDITION

2.02	E	95.0	0.864	17.8	0.0279	210	2.8	4.37	1460	2.1	2.12	4.21	7.73	12.10			0.121
2.03	E	95.0	0.864	17.5	0.0273	375	2.7	5.93	1015	2.0	2.08	4.13	6.09	12.02			0.120
2.04a	E	84.0	0.719	1.4	0.0022	60	8.3	2.63	297	6.7	3.83	7.61	1.29	3.92			0.100
2.04b	E	84.0	0.719	1.3	0.0020	60	8.3	2.63	297	6.7	3.83	7.61	1.29	3.92			0.100
2.05a	E	95.0	0.864	13.5	0.0212	500	3.0	6.59	1231	1.2	1.63	3.25	8.85	15.44			0.154
2.05b	E	95.0	0.864	7.4	0.0115	500	3.0	6.59	1231	1.2	1.63	3.25	8.85	15.44			0.154
2.06	E	95.0	0.864	19.9	0.0310	311	4.8	4.44	1152	2.2	2.18	4.33	6.33	10.77			0.108
OFF1	E	88.0	0.772	141.0	0.2203	250	13.0	3.97	5404	3.1	2.58	5.13	19.14	23.12			0.231
OFF2	E	88.0	0.772	18.6	0.0290	328	3.7	6.95	1423	4.2	3.04	6.04	5.29	12.23			0.122
OFF3	E	88.0	0.772	96.0	0.1501	350	11.4	4.91	5595	3.0	2.54	5.05	20.09	25.01			0.250
OFF4	E	88.0	0.772	39.0	0.0609	500	4.0	8.33	4071	4.1	2.98	5.92	12.86	21.18			0.212
STR1	D	98.0	0.904	2.6	0.0041	20	2.0	1.25	950	3.2	3.61	5.47	3.68	4.93	970	15.389	0.050
STR2	D	98.0	0.904	1.6	0.0024	20	2.0	1.25	850	1.2	2.21	3.35	5.51	6.76	870	14.833	0.068
STR3	D	98.0	0.904	2.2	0.0034	25	2.0	1.40	1600	2.8	3.38	5.12	6.05	7.45	1625	19.028	0.074
STR4	D	98.0	0.904	1.9	0.0030	25	2.0	1.40	1435	1.1	2.12	3.21	8.79	10.19	1460	18.111	0.102
SVR1	D	98.0	0.904	2.7	0.0043	37	2.0	1.71	720	0.7	1.69	2.56	6.36	8.07	757	14.206	0.081
SVR2	D	98.0	0.904	6.4	0.0100	37	2.0	1.71	1790	0.6	1.56	2.37	14.40	16.10	1827	20.150	0.161

[1] K = 0.0132 (CN) - 0.39

[2] A = Area/640

[3] Ti = (1.8 (1.1-K) L^0.5)/S^0.33

[4] For Existing Conditions: V1 = 14.8 * (S/100)^0.5
For Developed Conditions: V1 = 20.2 * (S/100)^0.5

[5] For Existing Conditions: V2 = 29.4 * (S/100)^0.5
For Developed Conditions: V2 = 30.6 * (S/100)^0.5

[6] Tt = L/(60*V)

[7] Tc = Ti + Tt

[8] Total L = Initial L + Travel L

[9] Tc = (L/180) + 10

[10] Tlag = (0.6*Tc)/60

[11] Min Tlag =0.05

Note: For Travel Time Calcs: V1 applies to first 500 feet and V2 applies to remaining distance.

REFERENCE :

STANDARD FORM 4

APPENDIX C

HEC-1 Analyses

Historic Condition

```
1*****************************************
*****************************************
 *                                       *                                       *
 *                                       *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                       *    U.S. ARMY CORPS OF ENGINEERS
 *                                       *                                       *
 *               JUN   1998              *                                       *    HYDROLOGIC ENGINEERING CENTER
 *                                       *                                       *
 *            VERSION 4.1                *                                       *         609 SECOND STREET
 *                                       *                                       *
 *                                       *                                       *       DAVIS, CALIFORNIA 95616
 *                                       *                                       *
 *  RUN DATE   20SEP17  TIME  15:14:55   *                                       *         (916) 756-1104
 *                                       *                                       *
 *                                       *                                       *
 *****************************************
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

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 -AMSKK- 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


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

 *** FREE ***
                       *DIAGRAM
             1         ID     SLATER HANIFAN GROUP
             2         ID     NINETY-FIVE MANAGEMENT, LLC.
             3         ID     SKYE CANYON INFRASTRUCTURE PHASE 3A
             4         ID     TECHNICAL DRAINAGE STUDY
             5         ID
             6         ID     DRAINAGE CONDITION -- HISTORIC CONDITION
             7         ID     RETURN PERIOD ------- 100 & 10-YEAR
             8         ID     DISTRIBUTION -------- 6-HOUR SDN3
             9         ID     PROJECT NO. --------- OLY1609.000
            10         ID     FILENAME ------------ HIST.H1
            11         ID     DATE ---------------- SEPTEMBER 2017
            12         ID     MODELED BY ---------- ETM
            13         ID
            14         ID        RETURN PERIOD           RATIO
            15         ID        100-YR                  1.00
            16         ID        10-YR                   0.54
            17         ID
            18         ID        SIX HOUR DEPTH-AREA REDUCTION FACTORS
            19         ID        DRAINAGE AREA (MI^2)    DARF
            20         ID        0.00-0.49               0.990
            21         ID        0.50-0.99               0.975
            22         ID        1.00-1.99               0.950
            23         ID
            24         ID
            25         IT      5       0       0     300
            26         IO      5       0       0
            27         IN      5       0       0
            28         JR    PREC    1.00    0.99   0.975    0.95    0.54
                       *
            29         KK  *OFF10
            30         KM   REFERENCED FROM THE SHG "DB2" DRAINAGE STUDY
            31         PB    3.00
            32         PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
            33         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
            34         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
            35         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
            36         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
            37         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
            38         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
            39         PC   0.998   0.999       1
            40         BA   .6502
            41         LS       0    88.0
            42         UD   0.613
                       *
            43         KK   *OFF9
            44         KM   REFERENCED FROM THE "DB2" DRAINAGE STUDY
            45         BA   .1137
            46         PB    3.00
            47         LS       0    88.0
            48         UD   0.200
                       *
```



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

            49         KK    OFF1
            50         KM   OFFSITE BASIN
            51         BA   .2483
            52         PB    3.00
            53         LS       0    88.0
```

```
 54          UD   0.256
             *

 55          KK     CP1
 56          KM   COMBINES OFF10, OFF9 AND OFF1
 57          HC       3
             *

 58          KK    XON1
 59          KM   ONSITE BASIN
 60          BA   .0589
 61          PB    3.00
 62          LS       0     86.3
 63          UD   0.177
             *

 64          KK    CP10
 65          KM   COMBINES CP1 AND XON1
 66          HC       2
             *

 67          KK    OFF2
 68          KM   OFFSITE BASIN
 69          BA   .0311
 70          PB    3.00
 71          LS       0     88.0
 72          UD   0.122
             *

 73          KK    XON2
 74          KM   ONSITE BASIN
 75          BA   .0762
 76          PB    3.00
 77          LS       0     88.0
 78          UD   0.187
             *

 79          KK    CP11
 80          KM   COMBINES OFF2, AND XON2
 81          HC       2
             *

 82          KK   *OFF8
 83          KM   REFERENCED FROM THE "DB2" DRAINAGE STUDY
 84          BA   .2122
 85          PB    3.00
 86          LS       0     88.0
 87          UD   0.299
             *
```



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

 88          KK   *OFF7
 89          KM   REFERENCED FROM THE "DB2" DRAINAGE STUDY
 90          BA   .0058
 91          PB    3.00
 92          LS       0     88.0
 93          UD   0.100
             *

 94          KK    OFF3
 95          KM   OFFSITE BASIN
 96          BA   .1633
 97          PB    3.00
 98          LS       0     88.0
 99          UD   0.263
             *

100          KK     CP2
101          KM   COMBINES OFF8, OFF7 AND OFF3
102          HC       3
             *

103          KK    XON3
104          KM   ONSITE BASIN
105          BA   .0875
106          PB    3.00
107          LS       0     88.0
108          UD   0.147
             *

109          KK   *OFF6
110          KM   REFERENCED FROM THE "DB1" DRAINAGE STUDY
111          BA   .0399
112          PB    3.00
113          LS       0     88.0
114          UD   0.118
             *

115          KK   *OFF5
116          KM   REFERENCED FROM THE "DB1" DRAINAGE STUDY
117          BA   .2569
118          PB    3.00
119          LS       0     88.0
120          UD   0.416
             *

121          KK    OFF4
122          KM   OFFSITE BASIN
123          BA   .2218
124          PB    3.00
125          LS       0     88.0
126          UD   0.256
             *
```



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

127          KK     CP3
```

```
          128           KM   COMBINES OFF6, OFF5 AND OFF4
          129           HC       3
                        *
          130           KK    CP12
          131           KM   COMBINES CP2, CP3 AND XON3
          132           HC       3
                        *
          133           ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    29      *OFF10
              .
              .
    43        .       *OFF9
              .         .
              .         .
    49        .         .       OFF1
              .         .         .
              .         .         .
    55        CP1.......................
              .
              .
    58        .       XON1
              .         .
              .         .
    64      CP10.........
              .
              .
    67        .       OFF2
              .         .
              .         .
    73        .         .       XON2
              .         .         .
              .         .         .
    79        .       CP11.........
              .         .
              .         .
    82        .         .       *OFF8
              .         .         .
              .         .         .
    88        .         .       .       *OFF7
              .         .         .       .
              .         .         .       .
    94        .         .         .       .       OFF3
              .         .         .       .         .
              .         .         .       .         .
   100        .         .       CP2.......................
              .         .         .
              .         .         .
   103        .         .         .       XON3
              .         .         .       .
              .         .         .       .
   109        .         .         .       .       *OFF6
              .         .         .       .         .
              .         .         .       .         .
   115        .         .         .       .         .       *OFF5
              .         .         .       .         .         .
              .         .         .       .         .         .
   121        .         .         .       .         .         .       OFF4
              .         .         .       .         .         .         .
              .         .         .       .         .         .         .
   127        .         .         .       .       CP3.......................
              .         .         .       .         .
              .         .         .       .         .
   130        .         .       CP12.......................

  (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
****************************************
 *                                      *                                      *
*
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                      *   U.S. ARMY CORPS OF ENGINEERS
*
 *               JUN   1998             *                                      *   HYDROLOGIC ENGINEERING CENTER
*
 *            VERSION 4.1               *                                      *        609 SECOND STREET
*
 *                                      *                                      *      DAVIS, CALIFORNIA 95616
*
 *  RUN DATE   20SEP17  TIME  15:14:55  *                                      *          (916) 756-1104
*
 *                                      *                                      *
*
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SLATER HANIFAN GROUP
NINETY-FIVE MANAGEMENT, LLC.
SKYE CANYON INFRASTRUCTURE PHASE 3A
TECHNICAL DRAINAGE STUDY

DRAINAGE CONDITION -- HISTORIC CONDITION
RETURN PERIOD ------- 100 & 10-YEAR
DISTRIBUTION -------- 6-HOUR SDN3
PROJECT NO. --------- OLY1609.000
FILENAME ------------ HIST.H1
DATE ---------------- SEPTEMBER 2017
MODELED BY ---------- ETM

RETURN PERIOD	RATIO
100-YR	1.00
10-YR	0.54

SIX HOUR DEPTH-AREA REDUCTION FACTORS

DRAINAGE AREA (MI^2)	DARF
0.00-0.49	0.990
0.50-0.99	0.975
1.00-1.99	0.950

26 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	0	STARTING DATE
ITIME		0000	STARTING TIME
NQ		300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	2	0	ENDING DATE
NDTIME		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
1.00 .99 .98 .95 .54

1

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 1.00	RATIO 2 .99	RATIO 3 .98	RATIO 4 .95	RATIO 5 .54
HYDROGRAPH AT									
+	*OFF10	.65	1	FLOW	508.	501.	490.	472.	191.
				TIME	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT									
+	*OFF9	.11	1	FLOW	153.	151.	148.	142.	58.
				TIME	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT									
+	OFF1	.25	1	FLOW	308.	303.	297.	286.	115.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT									
+	CP1	1.01	1	FLOW	782.	771.	755.	727.	293.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	XON1	.06	1	FLOW	79.	78.	76.	73.	28.
				TIME	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT									
+	CP10	1.07	1	FLOW	840.	828.	810.	780.	311.
				TIME	3.75	3.75	3.75	3.75	3.83
HYDROGRAPH AT									
+	OFF2	.03	1	FLOW	49.	48.	47.	45.	19.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	XON2	.08	1	FLOW	106.	105.	103.	99.	40.
				TIME	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT									
+	CP11	.11	1	FLOW	155.	153.	150.	144.	59.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF8	.21	1	FLOW	244.	241.	236.	227.	93.
				TIME	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT									
+	*OFF7	.01	1	FLOW	9.	9.	9.	9.	4.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	OFF3	.16	1	FLOW	200.	197.	193.	186.	75.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT									
+	CP2	.38	1	FLOW	445.	438.	429.	413.	169.
				TIME	3.67	3.67	3.67	3.67	3.75
HYDROGRAPH AT									
+	XON3	.09	1	FLOW	133.	132.	129.	124.	51.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF6	.04	1	FLOW	62.	62.	60.	58.	24.
				TIME	3.58	3.58	3.58	3.58	3.58

						HIST			
HYDROGRAPH AT									
+	*OFF5	.26	1	FLOW	252.	248.	243.	234.	94.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	OFF4	.22	1	FLOW	275.	271.	265.	256.	103.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT									
+	CP3	.52	1	FLOW	536.	528.	517.	498.	203.
				TIME	3.75	3.75	3.75	3.75	3.75
3 COMBINED AT									
+	CP12	.99	1	FLOW	1082.	1067.	1044.	1006.	406.
				TIME	3.67	3.67	3.67	3.67	3.75

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

Existing Condition

```
1*****************************************
*****************************************
 *                                       *                                       *
*                                                                               *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                       *    U.S. ARMY CORPS OF ENGINEERS
*                                                                               *
 *              JUN   1998               *                                       *    HYDROLOGIC ENGINEERING CENTER
*                                                                               *
 *           VERSION 4.1                 *                                       *         609 SECOND STREET
*                                                                               *
 *                                       *                                       *       DAVIS, CALIFORNIA 95616
*                                                                               *
 *  RUN DATE   30OCT17  TIME  10:43:58   *                                       *          (916) 756-1104
*                                                                               *
 *                                       *                                       *
*                                                                               *
 *****************************************
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```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

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 -AMSKK- 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

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

 *** FREE ***
                    *DIAGRAM
              1     ID     SLATER HANIFAN GROUP
              2     ID     NINETY-FIVE MANAGEMENT, LLC.
              3     ID     SKYE CANYON INFRASTRUCTURE PHASE 3A
              4     ID     TECHNICAL DRAINAGE STUDY
              5     ID
              6     ID     DRAINAGE CONDITION -- EXISTING CONDITION
              7     ID     RETURN PERIOD ------- 100 & 10-YEAR
              8     ID     DISTRIBUTION -------- 6-HOUR SDN3
              9     ID     PROJECT NO. --------- OLY1609.000
             10     ID     FILENAME ------------ EX.H1
             11     ID     DATE ---------------- SEPTEMBER 2017
             12     ID     MODELED BY ---------- ETM
             13     ID
             14     ID        RETURN PERIOD           RATIO
             15     ID        100-YR                  1.00
             16     ID        10-YR                   0.54
             17     ID
             18     ID        SIX HOUR DEPTH-AREA REDUCTION FACTORS
             19     ID        DRAINAGE AREA (MI^2)    DARF
             20     ID        0.00-0.49               0.990
             21     ID        0.50-0.99               0.975
             22     ID        1.00-1.99               0.950
             23     ID
             24     ID
             25     IT      5       0       0     300
             26     IO      5       0       0
             27     IN      5       0       0
             28     JR    PREC    1.00    0.99   0.975    0.95    0.54
                    *
             29     KK   *OFF7
             30     KM   REFERENCED FROM THE "DB2" STUDY
             31     KM   DISCHARGES INTO DETENTION BASIN "DB2"
             32     PB    3.00
             33     PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
             34     PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
             35     PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
             36     PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
             37     PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
             38     PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
             39     PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
             40     PC   0.998   0.999       1
             41     BA   .0058
             42     LS       0    88.0
             43     UD   0.100
                    *
             44     KK   *OFF8
             45     KM   REFERENCED FROM THE "DB2" STUDY
             46     KM   DISCHARGES INTO DETENTION BASIN "DB2"
             47     KO       3
             48     BA   .2122
             49     LS       0    88.0
```

1 HEC-1 INPUT PAGE 2

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

             50     UD   0.299
                    *
             51     KK    *CP2
             52     KM   REFERENCED FROM THE "DB2" STUDY
             53     KM   COMBINE OFF7, AND OFF8
```

```
 54          HC       2
             *

 55          KK   *OFF9
 56          KM   REFERENCED FROM THE "DB2" STUDY
 57          KM   DISCHARGES INTO DETENTION BASIN "DB2"
 58          KO       3
 59          BA   .1137
 60          LS        0    88.0
 61          UD   0.200
             *

 62          KK   *CP2a
 63          KM   REFERENCED FROM THE "DB2" STUDY
 64          KM   COMBINE CP2, AND OFF9
 65          HC       2
             *

 66          KK  *OFF10
 67          KM   REFERENCED FROM THE "DB2" STUDY
 68          KM   DISCHARGES INTO DETENTION BASIN "DB2"
 69          KO       3
 70          BA   .6502
 71          LS        0    88.0
 72          UD   0.613
             *

 73          KK    *ON2
 74          KM   REFERENCED FROM THE "DB2" STUDY
 75          KM   DB2 BASIN
 76          BA   .0315
 77          LS        0    94.0
 78          UD   0.083
             *

 79          KK    *DB2
 80          KM   REFERENCED FROM THE "DB2" STUDY
 81          KM   COMBINE CP2a, OFF10 AND ON2
 82          KO       1
 83          HC       3
             *

 84          KK   *RDB2
 85          KM   REFERENCED FROM THE "DB2" STUDY
 86          KM   OUTLET = 25" ORIFICE @ INVERT ELEVATION = 2984.21-FT
 87          KO       1
 88          RS       1    ELEV  2992.0
 89          SV    0.00    2.34    7.60   24.30   46.28   73.78  107.11  146.75  193.03
 90          SE  2992.0  2993.0  2995.0  3000.0  3005.0  3010.0  3015.0  3020.0  3025.0
1                                        HEC-1 INPUT                                    PAGE  3

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

 91          SQ    0.00   44.44   51.05   64.70   83.84   99.36   520.9  3465.5  7888.4
 92          SE  2992.0  2993.0  2995.0  3000.0  3009.0  3018.0  3019.0  3022.0  3025.0
             *

 93          KK    OFF1
 94          KM   OFFSITE BASIN
 95          BA   .2225
 96          PB    3.00
 97          LS        0    88.0
 98          UD   0.231
             *

 99          KK     CP1
100          KM   COMBINES *RDB2 AND OFF1
101          HC       2
             *

102          KK    XON1
103          KM   ONSITE BASIN
104          BA   .0297
105          PB    3.00
106          LS        0    86.3
107          UD   0.136
             *

108          KK   OFF11
109          KM   OFFSITE BASIN
110          BA   .0292
111          PB    3.00
112          LS        0    88.0
113          UD   0.218
             *

114          KK    CP10
115          KM   COMBINES CP1, XON1 AND OFF11
116          HC       3
             *

117          KK    OFF2
118          KM   OFFSITE BASIN
119          BA   .0311
120          PB    3.00
121          LS        0    88.0
122          UD   0.122
             *

123          KK    XON2
124          KM   ONSITE BASIN
125          BA   .0635
126          PB    3.00
127          LS        0    88.0
128          UD   0.147
             *
1                                        HEC-1 INPUT                                    PAGE  4

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

129          KK   OFF12
```

```
130          KM   OFFSITE BASIN
131          BA   .0128
132          PB    3.00
133          LS      0    88.0
134          UD   0.100
             *

135          KK    CP11
136          KM   COMBINES OFF2, XON2 AND OFF12
137          HC      3
             *

138          KK   *OFF1
139          KM   REFERENCED FROM THE "DB1" STUDY
140          KM   DISCHARGES INTO DETENTION BASIN "DB1"
141          KO      3
142          BA   .4291
143          LS      0    86.8
144          UD   0.419
             *

145          KK   *OFF2
146          KM   REFERENCED FROM THE "DB1" STUDY
147          KM   DISCHARGES INTO DETENTION BASIN "DB1"
148          KO      3
149          BA   .0419
150          LS      0    81.8
151          UD   0.154
             *

152          KK   *OFF3
153          KM   REFERENCED FROM THE "DB1" STUDY
154          KM   DISCHARGES INTO DETENTION BASIN "DB1"
155          KO      3
156          BA   .0259
157          LS      0    88.0
158          UD   0.110
             *

159          KK  *DUMMY
160          KM   COMBINE OFF1, OFF2, AND OFF3
161          HC      3
             *

162          KK   *OFF4
163          KM   REFERENCED FROM THE "DB1" STUDY
164          KM   DISCHARGES INTO DETENTION BASIN "DB1"
165          KO      3
166          BA   .0581
167          LS      0    88.0
168          UD   0.134
             *
```



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

169          KK   *OFF5
170          KM   REFERENCED FROM THE "DB1" STUDY
171          KM   DISCHARGES INTO DETENTION BASIN "DB1"
172          KO      3
173          BA   .2569
174          LS      0    88.0
175          UD   0.416
             *

176          KK   *OFF6
177          KM   REFERENCED FROM THE "DB1" STUDY
178          KM   DISCHARGES INTO DETENTION BASIN "DB1"
179          KO      3
180          BA   .0399
181          LS      0    88.0
182          UD   0.118
             *

183          KK    *ON1
184          KM   REFERENCED FROM THE "DB1" STUDY
185          KM   DB1 BASIN
186          BA   .0261
187          LS      0    94.0
188          UD   0.115
             *

189          KK    *DB1
190          KM   REFERENCED FROM THE "DB1" STUDY
191          KM   COMBINE DUMMY, OFF4, OFF5, OFF6 AND ON1
192          HC      5
             *

193          KK   *RDB1
194          KM   REFERENCED FROM THE "DB1" STUDY
195          KM   OUTLET = 24" ORIFICE @ INVERT ELEVATION = 3013.8-FT
196          RS      1    ELEV  3025.5
197          SA    4.58    5.63    5.81    6.00    6.19    7.17    7.61    8.31    9.00    9.69
198          SE  3025.5    3027    3028    3029    3030    3035    3037    3040    3043    3046
199          SQ    49.7    60.6    70.8    74.5  1436.0  3920.5  7136.3
200          SE  3025.5    3030    3035    3037    3040    3043    3046
             *

201          KK   *WPF5
202          KM   WEST BASIN, WEST OF SHAUMBER RD
203          BA   .0006
204          PB    3.00
205          LS      0    86.0
206          UD   0.052
             *
```



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

207          KK   *WML2
```

```
KM   WEST BASIN, WEST OF SHAUMBER ROAD
BA   .0428
PB    3.00
LS       0    93.5
UD   0.142
*

KK  *WSHA5
KM   WEST BASIN, SHAUMBER ROAD
BA   .0037
PB    3.00
LS       0    98.0
UD   0.086
*

KK   *WC20
KM   S OF EAGLE CANYON/SHAUMBER INTERSECTION
KM   COMBINE WPF5, WML2, WSHA5
HC       3
*

KK   *WPF4
BA   .0090
PB    3.00
LS       0    94.0
UD   0.087
*

KK  *WSHA4
BA   .0022
PB    3.00
LS       0    98.0
UD   0.051
*

KK     CP6
KM   COMBINES *RDB1, *WC20, *WPF4 AND *WSHA4
HC       4
*

KK    RCP6
KM   ROUTE CP6 TO CP7
KM   LENGTH SLOPE   n-VALUE          SHAPE   WIDTH   S-SLOPE
RD    2520    .039    .040       0   TRAP      50       2
*

KK   *WL4A
KM   BASIN WEST OF PARCEL 2.16
BA   .0125
PB    3.00
LS       0    92.0
UD   0.106
*
```



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

KK   *ON1D
KM   PARCEL 2.16
BA   .0222
PB    3.00
LS       0    92.0
UD   0.099
*

KK     CP7
KM   COMBINES *RDB1, *WC20, *WPF4, *WSHA4, *WL4A AND *ON1D
HC       3
*

KK    RCP7
KM   ROUTE CP7 TO CP8
KM   LENGTH SLOPE   n-VALUE          SHAPE   WIDTH   S-SLOPE
RD    1470    .039    .040       0   TRAP      50       2
*

KK    OFF5
KM   OFFSITE BASIN
BA   .1388
PB    3.00
LS       0    88.0
UD   0.216
*

KK     CP8
KM   COMBINES OFF5 AND CP7
HC       2
*

KK    RCP8
KM   ROUTE CP8 TO CP3
KM   LENGTH SLOPE   n-VALUE          SHAPE   WIDTH   S-SLOPE
RD     450    .039    .040       0   TRAP      50       2
*

KK    OFF4
KM   OFFSITE BASIN
BA   .0627
PB    3.00
LS       0    88.0
UD   0.212
*

KK   *OFF3
KM   REFERENCED FROM THE "SMITH'S" STUDY
PB    3.00
BA   .0012
LS       0    86.2
UD   0.100
*
```

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

 284          KK     *D2
 285          KM    REFERENCED FROM THE "SMITH'S" STUDY
 286          PB     3.00
 287          BA    .0154
 288          LS        0     86.0
 289          UD    0.089
              *

 290          KK   *IOFF4
 291          KM    REFERENCED FROM THE "SMITH'S" STUDY
 292          PB     3.00
 293          BA    .0062
 294          LS        0     86.2
 295          UD    0.100
              *

 296          KK    *PARK
 297          KM    REFERENCED FROM THE "SMITH'S" STUDY
 298          KM    COMBINES IOFF4, OFF3, D2
 299          HC        3
              *

 300          KK     CP3
 301          KM    COMBINES CP8, OFF4 AND *PARK
 302          HC        3
              *

 303          KK     XON5
 304          KM    ONSITE BASIN
 305          BA    .0319
 306          PB     3.00
 307          LS        0     88.0
 308          UD    0.110
              *

 309          KK     CP3a
 310          KM    COMBINES CP3 AND XON5
 311          HC        2
              *

 312          KK     OFF3
 313          KM    OFFSITE BASIN
 314          BA    .1512
 315          PB     3.00
 316          LS        0     88.0
 317          UD    0.250
              *

 318          KK     XON4
 319          KM    ONSITE BASIN
 320          BA    .0088
 321          PB     3.00
 322          LS        0     86.3
 323          UD    0.112
              *
```



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

 324          KK     CP2a
 325          KM    COMBINES OFF3 AND XON4
 326          HC        2
              *

 327          KK      DBN
 328          KM    REFERENCED FROM THE "SMITH'S" STUDY
 329          KM    OUTLET = 54" ORIFICE @ INVERT ELEVATION = 2997.3-FT
 330          KO        1
 331          RS        1    ELEV  2797.3
 332          SA     0.00    0.09    0.12    0.15     .37    0.79    0.86
 333          SE   2797.3    2798    2799    2800    2805    2812    2813
 334          SQ     0.00      54     129     193     241     268
 335          SE   2797.3    2802    2804    2807    2810    2812
              *

 336          KK   *WSPD3
 337          KM    REFERENCED FROM THE "SMITH'S" STUDY
 338          BA    .0022
 339          PB     2.93
 340          LS        0     92.8
 341          UD    0.056
              *

 342          KK    *WGC3
 343          KM    REFERENCED FROM THE "SMITH'S" STUDY
 344          BA    .0444
 345          PB     2.93
 346          LS        0     94.6
 347          UD    0.095
              *

 348          KK     XON3
 349          KM    ONSITE BASIN
 350          BA    .0093
 351          PB     3.00
 352          LS        0     88.0
 353          UD    0.124
              *

 354          KK     WC9a
 355          HC        5
              *

 356          KK   *ON1-D
 357          KM    REFERENCED FROM THE "SMITH'S" STUDY
 358          KM    PHASE 1, NORTHWEST QUAD ONSITE BASIN
 359          BA    .0278
```

```
360           PB    2.93
361           LS       0    91.2
362           UD   0.114
              *
```



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

363           KK  *ON2-D
364           KM   REFERENCED FROM THE "SMITH'S" STUDY
365           KM   PHASE 1, NORTHEAST QUAD ONSITE BASIN
366           BA   .0301
367           PB    2.93
368           LS       0    88.8
369           UD   0.152
              *

370           KK    *HOR
371           KM   REFERENCED FROM THE "SMITH'S" STUDY
372           KM   PHASE 1, STREET BASIN SKYE CANYON PARK DRIVE
373           BA   .0163
374           PB    2.93
375           LS       0    93.3
376           UD   0.108
              *

377           KK    *WC7
378           KM   REFERENCED FROM THE "SMITH'S" STUDY
379           HC       3
              *

380           KK *WGRC1A
381           KM   REFERENCED FROM THE "SMITH'S" STUDY
382           BA   .0022
383           PB    2.93
384           LS       0    93.2
385           UD   0.095
              *

386           KK  *WSPD0
387           KM   REFERENCED FROM THE "SMITH'S" STUDY
388           BA   .0010
389           PB    2.93
390           LS       0    93.4
391           UD   0.050
              *

392           KK    CP12
393           HC       4
              *
394           ZZ
```

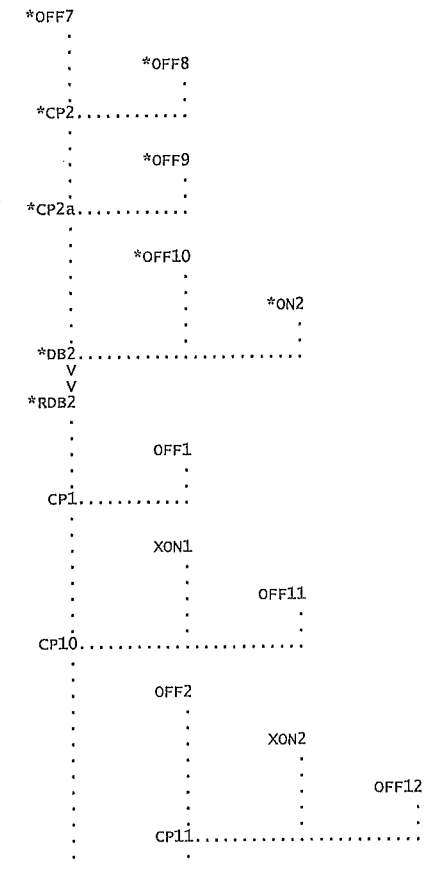
1

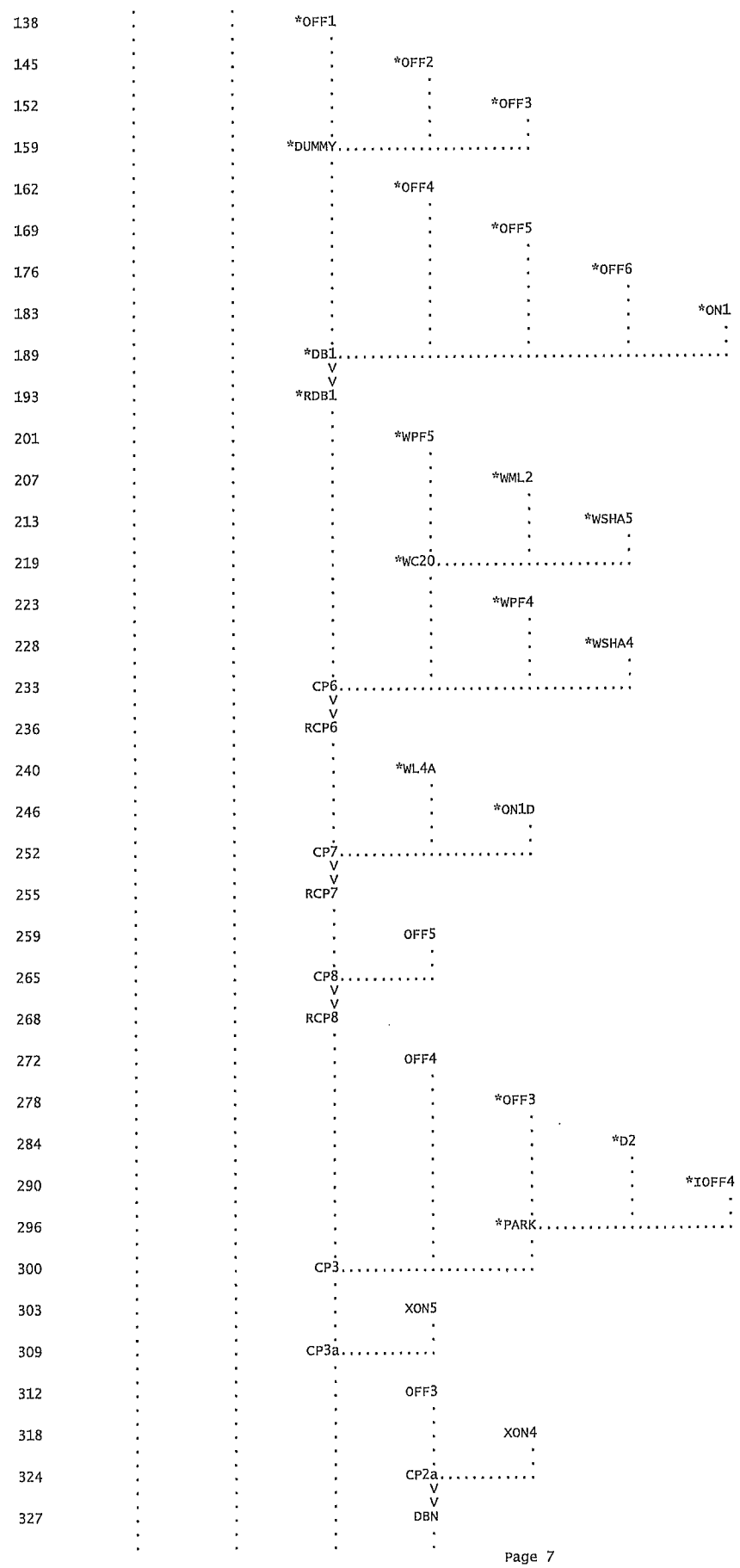
SCHEMATIC DIAGRAM OF STREAM NETWORK

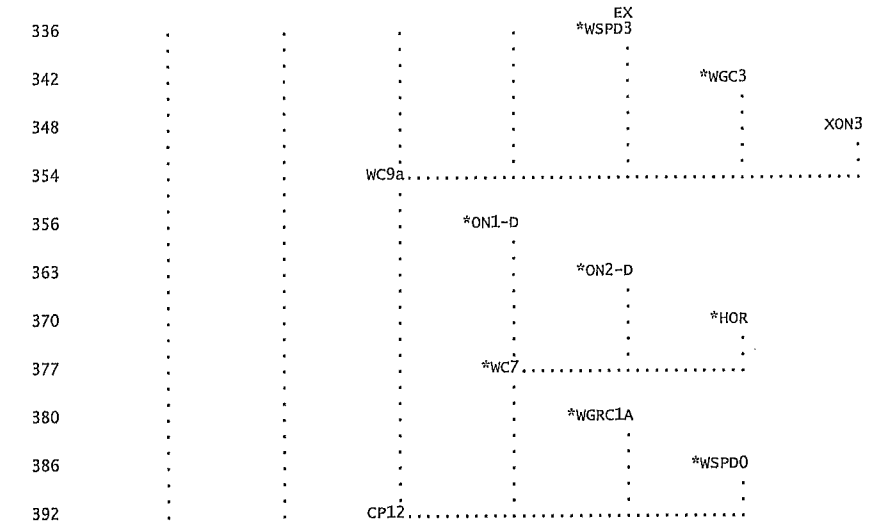
INPUT LINE NO.

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

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




138
*OFF1
145
*OFF2
152
*OFF3
159
*DUMMY
162
*OFF4
169
*OFF5
176
*OFF6
183
*ON1
189
*DB1
193
*RDB1
201
*WPF5
207
*WML2
213
*WSHA5
219
*WC20
223
*WPF4
228
*WSHA4
233
CP6
236
RCP6
240
*WL4A
246
*ON1D
252
CP7
255
RCP7
259
OFF5
265
CP8
268
RCP8
272
OFF4
278
*OFF3
284
*D2
290
*IOFF4
296
*PARK
300
CP3
303
XON5
309
CP3a
312
OFF3
318
XON4
324
CP2a
327
DBN



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1**********

****

```
 *                                  *                                  *
*
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                             *    U.S. ARMY CORPS OF ENGINEERS
*
 *              JUN   1998              *                              *    HYDROLOGIC ENGINEERING CENTER
*
 *           VERSION 4.1                *                              *         609 SECOND STREET
*
 *                                      *                              *      DAVIS, CALIFORNIA 95616
*
 *  RUN DATE   30OCT17  TIME  10:43:58  *                              *          (916) 756-1104
*
 *                                      *                              *
*
 ****************************************
****************************************
```

SLATER HANIFAN GROUP
NINETY-FIVE MANAGEMENT, LLC.
SKYE CANYON INFRASTRUCTURE PHASE 3A
TECHNICAL DRAINAGE STUDY

DRAINAGE CONDITION -- EXISTING CONDITION
RETURN PERIOD ------- 100 & 10-YEAR
DISTRIBUTION -------- 6-HOUR SDN3
PROJECT NO. --------- OLY1609.000
FILENAME ------------ EX.H1
DATE ---------------- SEPTEMBER 2017
MODELED BY ---------- ETM

RETURN PERIOD	RATIO
100-YR	1.00
10-YR	0.54

SIX HOUR DEPTH-AREA REDUCTION FACTORS

DRAINAGE AREA (MI^2)	DARF
0.00-0.49	0.990
0.50-0.99	0.975
1.00-1.99	0.950

```
26 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    0  STARTING DATE
                   ITIME         0000  STARTING TIME
                      NQ          300  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE       2    0  ENDING DATE
                  NDTIME         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
```

```
                                                                    EX
                    1.00        .99        .98        .95        .54

 *** *** ***
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```
                                                                    EX
                    (CFS)
+     236.     3.75                    40.        10.        10.        10.
                (INCHES)              1.750      1.752      1.752      1.752
                 (AC-FT)                20.        20.        20.        20.

                CUMULATIVE AREA =     .21 SQ MI

      ***           ***           ***           ***           ***

                HYDROGRAPH AT STATION    *OFF8
                  FOR PLAN 1, RATIO =  .95

     TOTAL RAINFALL =   2.85, TOTAL LOSS =   1.16, TOTAL EXCESS =   1.69

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                    (CFS)
+     227.     3.75                    38.        10.         9.         9.
                (INCHES)              1.684      1.685      1.685      1.685
                 (AC-FT)                19.        19.        19.        19.

                CUMULATIVE AREA =     .21 SQ MI

      ***           ***           ***           ***           ***

                HYDROGRAPH AT STATION    *OFF8
                  FOR PLAN 1, RATIO =  .54

     TOTAL RAINFALL =   1.62, TOTAL LOSS =    .95, TOTAL EXCESS =    .67

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                    (CFS)
+      93.     3.75                    15.         4.         4.         4.
                (INCHES)              .670       .670       .670       .670
                 (AC-FT)                8.         8.         8.         8.

                CUMULATIVE AREA =     .21 SQ MI


*** *** *** *
```

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
153.	3.58	22.	6.	5.	5.
		(INCHES) 1.817	1.818	1.818	1.818
		(AC-FT) 11.	11.	11.	11.

CUMULATIVE AREA = .11 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF9
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
151.	3.58	22.	5.	5.	5.
		(INCHES) 1.791	1.792	1.792	1.792
		(AC-FT) 11.	11.	11.	11.

CUMULATIVE AREA = .11 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF9
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
148.	3.58	21.	5.	5.	5.
		(INCHES) 1.751	1.752	1.752	1.752
		(AC-FT) 11.	11.	11.	11.

CUMULATIVE AREA = .11 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF9
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
142.	3.58	21.	5.	5.	5.
		(INCHES) 1.685	1.685	1.685	1.685
		(AC-FT) 10.	10.	10.	10.

CUMULATIVE AREA = .11 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF9
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
		(CFS)			
58.	3.67	8.	2.	2.	2.
		(INCHES) .670	.670	.670	.670
		(AC-FT) 4.	4.	4.	4.

CUMULATIVE AREA = .11 SQ MI

*** *** *** *

EX

33 PI INCREMENTAL PRECIPITATION PATTERN

.02	.04	.01	.02	.02	.01	.00	.00	.00
.00	.00	.00	.01	.00	.01	.01	.01	.01
.01	.00	.00	.00	.00	.01	.02	.01	.01
.01	.01	.01	.00	.00	.01	.03	.03	.06
.09	.12	.03	.04	.03	.01	.02	.02	.00
.01	.01	.01	.02	.02	.01	.01	.02	.01
.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00							

71 LS SCS LOSS RATE

STRTL	.27	INITIAL ABSTRACTION
CRVNBR	88.00	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

72 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.61	LAG

***

UNIT HYDROGRAPH
39 END-OF-PERIOD ORDINATES

24.	72.	138.	234.	345.	427.	473.	479.	462.	422.
374.	311.	242.	193.	156.	128.	106.	86.	69.	57.
46.	37.	30.	24.	20.	16.	13.	11.	9.	7.
6.	5.	4.	3.	3.	2.	1.	1.	0.	

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 508.	4.08	127.	32.	31.	31.
		(INCHES) 1.810	1.818	1.818	1.818
		(AC-FT) 63.	63.	63.	63.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 508.	4.08	127.	32.	31.	31.
		(INCHES) 1.810	1.818	1.818	1.818
		(AC-FT) 63.	63.	63.	63.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 501.	4.08	125.	31.	30.	30.
		(INCHES) 1.784	1.792	1.792	1.792
		(AC-FT) 62.	62.	62.	62.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 490.	4.08	122.	31.	29.	29.
		(INCHES) 1.744	1.752	1.752	1.752
		(AC-FT) 60.	61.	61.	61.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)				
		(CFS)			
+ 472.	4.08	117.	29.	28.	28.
		(INCHES) 1.679	1.685	1.685	1.685
		(AC-FT) 58.	58.	58.	58.

CUMULATIVE AREA = .65 SQ MI

EX

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)			
191.	4.08	47.	12.	11.	11.
		(INCHES) .669	.670	.670	.670
		(AC-FT) 23.	23.	23.	23.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *

EX

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0450	59	332.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	321.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	305.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	286.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	263.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	239.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	213.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.
1		0525	66	189.	1		1140	141	0.	1		1755	216	0.	2		0010	291	0.
1		0530	67	166.	1		1145	142	0.	1		1800	217	0.	2		0015	292	0.
1		0535	68	143.	1		1150	143	0.	1		1805	218	0.	2		0020	293	0.
1		0540	69	123.	1		1155	144	0.	1		1810	219	0.	2		0025	294	0.
1		0545	70	107.	1		1200	145	0.	1		1815	220	0.	2		0030	295	0.
1		0550	71	92.	1		1205	146	0.	1		1820	221	0.	2		0035	296	0.
1		0555	72	79.	1		1210	147	0.	1		1825	222	0.	2		0040	297	0.
1		0600	73	68.	1		1215	148	0.	1		1830	223	0.	2		0045	298	0.
1		0605	74	59.	1		1220	149	0.	1		1835	224	0.	2		0050	299	0.
1		0610	75	51.	1		1225	150	0.	1		1840	225	0.	2		0055	300	0.

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)					
		(CFS)				
774.	3.83		199.	50.	48.	48.
		(INCHES)	1.824	1.835	1.835	1.835
		(AC-FT)	99.	99.	99.	99.

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
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	42.	1		1230	151	0.	1		1845	226	0.
1		0005	2	0.	1		0620	77	36.	1		1235	152	0.	1		1850	227	0.
1		0010	3	0.	1		0625	78	30.	1		1240	153	0.	1		1855	228	0.
1		0015	4	1.	1		0630	79	24.	1		1245	154	0.	1		1900	229	0.
1		0020	5	2.	1		0635	80	20.	1		1250	155	0.	1		1905	230	0.
1		0025	6	4.	1		0640	81	16.	1		1255	156	0.	1		1910	231	0.
1		0030	7	6.	1		0645	82	13.	1		1300	157	0.	1		1915	232	0.
1		0035	8	7.	1		0650	83	11.	1		1305	158	0.	1		1920	233	0.
1		0040	9	7.	1		0655	84	8.	1		1310	159	0.	1		1925	234	0.
1		0045	10	7.	1		0700	85	7.	1		1315	160	0.	1		1930	235	0.
1		0050	11	6.	1		0705	86	6.	1		1320	161	0.	1		1935	236	0.
1		0055	12	6.	1		0710	87	4.	1		1325	162	0.	1		1940	237	0.
1		0100	13	6.	1		0715	88	4.	1		1330	163	0.	1		1945	238	0.
1		0105	14	6.	1		0720	89	3.	1		1335	164	0.	1		1950	239	0.
1		0110	15	7.	1		0725	90	2.	1		1340	165	0.	1		1955	240	0.
1		0115	16	8.	1		0730	91	2.	1		1345	166	0.	1		2000	241	0.
1		0120	17	9.	1		0735	92	1.	1		1350	167	0.	1		2005	242	0.
1		0125	18	12.	1		0740	93	1.	1		1355	168	0.	1		2010	243	0.
1		0130	19	17.	1		0745	94	1.	1		1400	169	0.	1		2015	244	0.
1		0135	20	23.	1		0750	95	1.	1		1405	170	0.	1		2020	245	0.
1		0140	21	28.	1		0755	96	0.	1		1410	171	0.	1		2025	246	0.
1		0145	22	33.	1		0800	97	0.	1		1415	172	0.	1		2030	247	0.
1		0150	23	35.	1		0805	98	0.	1		1420	173	0.	1		2035	248	0.
1		0155	24	35.	1		0810	99	0.	1		1425	174	0.	1		2040	249	0.
1		0200	25	34.	1		0815	100	0.	1		1430	175	0.	1		2045	250	0.
1		0205	26	33.	1		0820	101	0.	1		1435	176	0.	1		2050	251	0.
1		0210	27	35.	1		0825	102	0.	1		1440	177	0.	1		2055	252	0.
1		0215	28	41.	1		0830	103	0.	1		1445	178	0.	1		2100	253	0.
1		0220	29	48.	1		0835	104	0.	1		1450	179	0.	1		2105	254	0.
1		0225	30	54.	1		0840	105	0.	1		1455	180	0.	1		2110	255	0.
1		0230	31	57.	1		0845	106	0.	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	62.	1		0855	108	0.	1		1510	183	0.	1		2125	258	0.
1		0245	34	67.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	70.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	70.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	71.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	83.	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	147.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	225.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	337.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	487.	1		0945	118	0.	1		1600	193	0.	1		2215	268	0.
1		0335	44	616.	1		0950	119	0.	1		1605	194	0.	1		2220	269	0.
1		0340	45	699.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	751.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	763.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	750.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	721.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	681.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	627.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	566.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	505.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	448.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	405.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	378.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	356.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	338.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	328.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	317.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	301.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	282.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	260.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	236.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	211.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.

EX

1	0525	66	187.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	164.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	142.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	122.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	105.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	91.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	78.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	68.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	58.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	50.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.
				*					*					*				

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)					
		(CFS)				
763.	3.83		196.	49.	47.	47.
		(INCHES)	1.798	1.808	1.808	1.808
		(AC-FT)	97.	98.	98.	98.

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
PLAN 1, RATIO = .98

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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	42.	1		1230	151	0.	1		1845	226	0.
1		0005	2	0.	1		0620	77	35.	1		1235	152	0.	1		1850	227	0.
1		0010	3	0.	1		0625	78	29.	1		1240	153	0.	1		1855	228	0.
1		0015	4	1.	1		0630	79	24.	1		1245	154	0.	1		1900	229	0.
1		0020	5	2.	1		0635	80	20.	1		1250	155	0.	1		1905	230	0.
1		0025	6	4.	1		0640	81	16.	1		1255	156	0.	1		1910	231	0.
1		0030	7	6.	1		0645	82	13.	1		1300	157	0.	1		1915	232	0.
1		0035	8	7.	1		0650	83	10.	1		1305	158	0.	1		1920	233	0.
1		0040	9	6.	1		0655	84	8.	1		1310	159	0.	1		1925	234	0.
1		0045	10	6.	1		0700	85	7.	1		1315	160	0.	1		1930	235	0.
1		0050	11	6.	1		0705	86	5.	1		1320	161	0.	1		1935	236	0.
1		0055	12	6.	1		0710	87	4.	1		1325	162	0.	1		1940	237	0.
1		0100	13	5.	1		0715	88	4.	1		1330	163	0.	1		1945	238	0.
1		0105	14	5.	1		0720	89	3.	1		1335	164	0.	1		1950	239	0.
1		0110	15	7.	1		0725	90	2.	1		1340	165	0.	1		1955	240	0.
1		0115	16	8.	1		0730	91	2.	1		1345	166	0.	1		2000	241	0.
1		0120	17	9.	1		0735	92	1.	1		1350	167	0.	1		2005	242	0.
1		0125	18	12.	1		0740	93	1.	1		1355	168	0.	1		2010	243	0.
1		0130	19	16.	1		0745	94	1.	1		1400	169	0.	1		2015	244	0.
1		0135	20	22.	1		0750	95	1.	1		1405	170	0.	1		2020	245	0.
1		0140	21	27.	1		0755	96	0.	1		1410	171	0.	1		2025	246	0.
1		0145	22	31.	1		0800	97	0.	1		1415	172	0.	1		2030	247	0.
1		0150	23	34.	1		0805	98	0.	1		1420	173	0.	1		2035	248	0.
1		0155	24	34.	1		0810	99	0.	1		1425	174	0.	1		2040	249	0.
1		0200	25	33.	1		0815	100	0.	1		1430	175	0.	1		2045	250	0.
1		0205	26	32.	1		0820	101	0.	1		1435	176	0.	1		2050	251	0.
1		0210	27	34.	1		0825	102	0.	1		1440	177	0.	1		2055	252	0.
1		0215	28	39.	1		0830	103	0.	1		1445	178	0.	1		2100	253	0.
1		0220	29	46.	1		0835	104	0.	1		1450	179	0.	1		2105	254	0.
1		0225	30	52.	1		0840	105	0.	1		1455	180	0.	1		2110	255	0.
1		0230	31	55.	1		0845	106	0.	1		1500	181	0.	1		2115	256	0.
1		0235	32	56.	1		0850	107	0.	1		1505	182	0.	1		2120	257	0.
1		0240	33	60.	1		0855	108	0.	1		1510	183	0.	1		2125	258	0.
1		0245	34	65.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	68.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	67.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	69.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	81.	1		0920	113	0.	1		1535	188	0.	1		2150	263	0.
1		0310	39	102.	1		0925	114	0.	1		1540	189	0.	1		2155	264	0.
1		0315	40	143.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	220.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	329.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	476.	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	684.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	735.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	746.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	734.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	706.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	667.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	614.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	554.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	494.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	438.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	397.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	371.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	349.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	331.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	321.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	311.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	296.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	277.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	255.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	231.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	207.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.
1		0525	66	184.	1		1140	141	0.	1		1755	216	0.	2		0010	291	0.
1		0530	67	161.	1		1145	142	0.	1		1800	217	0.	2		0015	292	0.
1		0535	68	139.	1		1150	143	0.	1		1805	218	0.	2		0020	293	0.
1		0540	69	120.	1		1155	144	0.	1		1810	219	0.	2		0025	294	0.
1		0545	70	103.	1		1200	145	0.	1		1815	220	0.	2		0030	295	0.
1		0550	71	89.	1		1205	146	0.	1		1820	221	0.	2		0035	296	0.
1		0555	72	77.	1		1210	147	0.	1		1825	222	0.	2		0040	297	0.

EX

1	0600	73	66.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	57.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	49.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)			
746.	3.83	192.	48.	46.	46.
		(INCHES) 1.759	1.768	1.768	1.768
		(AC-FT) 95.	96.	96.	96.

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION *DB2
SUM OF 3 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	40.	1		1230	151	0.	1		1845	226	0.
1		0005	2	0.	1		0620	77	34.	1		1235	152	0.	1		1850	227	0.
1		0010	3	0.	1		0625	78	28.	1		1240	153	0.	1		1855	228	0.
1		0015	4	1.	1		0630	79	23.	1		1245	154	0.	1		1900	229	0.
1		0020	5	2.	1		0635	80	19.	1		1250	155	0.	1		1905	230	0.
1		0025	6	3.	1		0640	81	16.	1		1255	156	0.	1		1910	231	0.
1		0030	7	5.	1		0645	82	13.	1		1300	157	0.	1		1915	232	0.
1		0035	8	6.	1		0650	83	10.	1		1305	158	0.	1		1920	233	0.
1		0040	9	5.	1		0655	84	8.	1		1310	159	0.	1		1925	234	0.
1		0045	10	5.	1		0700	85	6.	1		1315	160	0.	1		1930	235	0.
1		0050	11	5.	1		0705	86	5.	1		1320	161	0.	1		1935	236	0.
1		0055	12	5.	1		0710	87	4.	1		1325	162	0.	1		1940	237	0.
1		0100	13	4.	1		0715	88	3.	1		1330	163	0.	1		1945	238	0.
1		0105	14	4.	1		0720	89	3.	1		1335	164	0.	1		1950	239	0.
1		0110	15	6.	1		0725	90	2.	1		1340	165	0.	1		1955	240	0.
1		0115	16	7.	1		0730	91	2.	1		1345	166	0.	1		2000	241	0.
1		0120	17	8.	1		0735	92	1.	1		1350	167	0.	1		2005	242	0.
1		0125	18	10.	1		0740	93	1.	1		1355	168	0.	1		2010	243	0.
1		0130	19	15.	1		0745	94	1.	1		1400	169	0.	1		2015	244	0.
1		0135	20	20.	1		0750	95	1.	1		1405	170	0.	1		2020	245	0.
1		0140	21	25.	1		0755	96	0.	1		1410	171	0.	1		2025	246	0.
1		0145	22	29.	1		0800	97	0.	1		1415	172	0.	1		2030	247	0.
1		0150	23	31.	1		0805	98	0.	1		1420	173	0.	1		2035	248	0.
1		0155	24	31.	1		0810	99	0.	1		1425	174	0.	1		2040	249	0.
1		0200	25	31.	1		0815	100	0.	1		1430	175	0.	1		2045	250	0.
1		0205	26	30.	1		0820	101	0.	1		1435	176	0.	1		2050	251	0.
1		0210	27	31.	1		0825	102	0.	1		1440	177	0.	1		2055	252	0.
1		0215	28	37.	1		0830	103	0.	1		1445	178	0.	1		2100	253	0.
1		0220	29	43.	1		0835	104	0.	1		1450	179	0.	1		2105	254	0.
1		0225	30	49.	1		0840	105	0.	1		1455	180	0.	1		2110	255	0.
1		0230	31	52.	1		0845	106	0.	1		1500	181	0.	1		2115	256	0.
1		0235	32	53.	1		0850	107	0.	1		1505	182	0.	1		2120	257	0.
1		0240	33	57.	1		0855	108	0.	1		1510	183	0.	1		2125	258	0.
1		0245	34	62.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	64.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	64.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	66.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	77.	1		0920	113	0.	1		1535	188	0.	1		2150	263	0.
1		0310	39	97.	1		0925	114	0.	1		1540	189	0.	1		2155	264	0.
1		0315	40	136.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	210.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	316.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	457.	1		0945	118	0.	1		1600	193	0.	1		2215	268	0.
1		0335	44	579.	1		0950	119	0.	1		1605	194	0.	1		2220	269	0.
1		0340	45	658.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	708.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	719.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	707.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	681.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	643.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	593.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	535.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	477.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	423.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	384.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	358.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	338.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	320.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	311.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	301.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	286.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	268.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	247.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	224.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	200.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.
1		0525	66	178.	1		1140	141	0.	1		1755	216	0.	2		0010	291	0.
1		0530	67	156.	1		1145	142	0.	1		1800	217	0.	2		0015	292	0.
1		0535	68	135.	1		1150	143	0.	1		1805	218	0.	2		0020	293	0.
1		0540	69	116.	1		1155	144	0.	1		1810	219	0.	2		0025	294	0.
1		0545	70	100.	1		1200	145	0.	1		1815	220	0.	2		0030	295	0.
1		0550	71	86.	1		1205	146	0.	1		1820	221	0.	2		0035	296	0.
1		0555	72	74.	1		1210	147	0.	1		1825	222	0.	2		0040	297	0.
1		0600	73	64.	1		1215	148	0.	1		1830	223	0.	2		0045	298	0.
1		0605	74	56.	1		1220	149	0.	1		1835	224	0.	2		0050	299	0.
1		0610	75	48.	1		1225	150	0.	1		1840	225	0.	2		0055	300	0.

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)					
		(CFS)				
719.	3.83		185.	46.	45.	45.
		(INCHES)	1.693	1.702	1.702	1.702
		(AC-FT)	92.	92.	92.	92.

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
PLAN 1, RATIO = .54

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

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)					
		(CFS)				
290.	3.83		74.	19.	18.	18.
		(INCHES)	.680	.681	.681	.681

						EX				
	(AC-FT)	37.		37.		37.		37.		

CUMULATIVE AREA = 1.01 SQ MI

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EX

1	0200	25	21.	1.1	2992.5	*	1	1020	125	76.	48.2	3005.4	*	1	1840	225	47.	4.7	2993.9
1	0205	26	23.	1.2	2992.5	*	1	1025	126	76.	47.7	3005.3	*	1	1845	226	47.	4.4	2993.8
1	0210	27	24.	1.3	2992.5	*	1	1030	127	76.	47.2	3005.2	*	1	1850	227	47.	4.1	2993.7
1	0215	28	26.	1.4	2992.6	*	1	1035	128	75.	46.6	3005.1	*	1	1855	228	46.	3.7	2993.5
1	0220	29	28.	1.5	2992.6	*	1	1040	129	75.	46.1	3005.0	*	1	1900	229	46.	3.4	2993.4
1	0225	30	31.	1.6	2992.7	*	1	1045	130	75.	45.6	3004.8	*	1	1905	230	45.	3.1	2993.3
1	0230	31	34.	1.8	2992.8	*	1	1050	131	75.	45.1	3004.7	*	1	1910	231	45.	2.8	2993.2
1	0235	32	37.	2.0	2992.8	*	1	1055	132	75.	44.6	3004.6	*	1	1915	232	45.	2.5	2993.1
1	0240	33	40.	2.1	2992.9	*	1	1100	133	74.	44.1	3004.5	*	1	1920	233	42.	2.2	2992.9
1	0245	34	44.	2.3	2993.0	*	1	1105	134	74.	43.6	3004.4	*	1	1925	234	37.	1.9	2992.8
1	0250	35	45.	2.5	2993.0	*	1	1110	135	74.	43.1	3004.3	*	1	1930	235	32.	1.7	2992.7
1	0255	36	45.	2.7	2993.1	*	1	1115	136	74.	42.5	3004.1	*	1	1935	236	28.	1.5	2992.6
1	0300	37	45.	2.8	2993.2	*	1	1120	137	73.	42.0	3004.0	*	1	1940	237	25.	1.3	2992.6
1	0305	38	45.	3.1	2993.3	*	1	1125	138	73.	41.5	3003.9	*	1	1945	238	22.	1.1	2992.5
1	0310	39	46.	3.4	2993.4	*	1	1130	139	73.	41.0	3003.8	*	1	1950	239	19.	1.0	2992.4
1	0315	40	47.	4.0	2993.6	*	1	1135	140	73.	40.5	3003.7	*	1	1955	240	17.	.9	2992.4
1	0320	41	48.	5.0	2994.0	*	1	1140	141	72.	40.0	3003.6	*	1	2000	241	15.	.8	2992.3
1	0325	42	50.	6.6	2994.6	*	1	1145	142	72.	39.5	3003.5	*	1	2005	242	13.	.7	2992.3
1	0330	43	52.	9.1	2995.5	*	1	1150	143	72.	39.0	3003.4	*	1	2010	243	11.	.6	2992.3
1	0335	44	55.	12.6	2996.5	*	1	1155	144	72.	38.5	3003.2	*	1	2015	244	10.	.5	2992.2
1	0340	45	59.	16.8	2997.8	*	1	1200	145	71.	38.1	3003.1	*	1	2020	245	9.	.5	2992.2
1	0345	46	62.	21.5	2999.2	*	1	1205	146	71.	37.6	3003.0	*	1	2025	246	8.	.4	2992.2
1	0350	47	66.	26.3	3000.5	*	1	1210	147	71.	37.1	3002.9	*	1	2030	247	7.	.4	2992.1
1	0355	48	68.	31.1	3001.6	*	1	1215	148	71.	36.6	3002.8	*	1	2035	248	6.	.3	2992.1
1	0400	49	70.	35.8	3002.6	*	1	1220	149	70.	36.1	3002.7	*	1	2040	249	5.	.3	2992.1
1	0405	50	72.	40.2	3003.6	*	1	1225	150	70.	35.6	3002.6	*	1	2045	250	4.	.2	2992.1
1	0410	51	74.	44.3	3004.5	*	1	1230	151	70.	35.1	3002.5	*	1	2050	251	4.	.2	2992.1
1	0415	52	76.	47.9	3005.3	*	1	1235	152	70.	34.7	3002.4	*	1	2055	252	3.	.2	2992.1
1	0420	53	77.	51.1	3005.9	*	1	1240	153	69.	34.2	3002.2	*	1	2100	253	3.	.2	2992.1
1	0425	54	78.	53.9	3006.4	*	1	1245	154	69.	33.7	3002.1	*	1	2105	254	3.	.1	2992.1
1	0430	55	79.	56.3	3006.8	*	1	1250	155	69.	33.2	3002.0	*	1	2110	255	2.	.1	2992.1
1	0435	56	80.	58.5	3007.2	*	1	1255	156	69.	32.7	3001.9	*	1	2115	256	2.	.1	2992.0
1	0440	57	81.	60.5	3007.6	*	1	1300	157	69.	32.3	3001.8	*	1	2120	257	2.	.1	2992.0
1	0445	58	82.	62.4	3007.9	*	1	1305	158	68.	31.8	3001.7	*	1	2125	258	2.	.1	2992.0
1	0450	59	82.	64.2	3008.2	*	1	1310	159	68.	31.3	3001.6	*	1	2130	259	1.	.1	2992.0
1	0455	60	83.	65.8	3008.6	*	1	1315	160	68.	30.9	3001.5	*	1	2135	260	1.	.1	2992.0
1	0500	61	84.	67.4	3008.8	*	1	1320	161	68.	30.4	3001.4	*	1	2140	261	1.	.1	2992.0
1	0505	62	84.	68.9	3009.1	*	1	1325	162	67.	29.9	3001.3	*	1	2145	262	1.	.0	2992.0
1	0510	63	84.	70.2	3009.3	*	1	1330	163	67.	29.5	3001.2	*	1	2150	263	1.	.0	2992.0
1	0515	64	85.	71.3	3009.6	*	1	1335	164	67.	29.0	3001.1	*	1	2155	264	1.	.0	2992.0
1	0520	65	85.	72.3	3009.7	*	1	1340	165	67.	28.5	3001.0	*	1	2200	265	1.	.0	2992.0
1	0525	66	85.	73.1	3009.9	*	1	1345	166	67.	28.1	3000.9	*	1	2205	266	1.	.0	2992.0
1	0530	67	86.	73.7	3010.0	*	1	1350	167	66.	27.6	3000.8	*	1	2210	267	0.	.0	2992.0
1	0535	68	86.	74.2	3010.1	*	1	1355	168	66.	27.2	3000.7	*	1	2215	268	0.	.0	2992.0
1	0540	69	86.	74.5	3010.1	*	1	1400	169	66.	26.7	3000.6	*	1	2220	269	0.	.0	2992.0
1	0545	70	86.	74.7	3010.1	*	1	1405	170	66.	26.3	3000.4	*	1	2225	270	0.	.0	2992.0
1	0550	71	86.	74.8	3010.2	*	1	1410	171	65.	25.8	3000.3	*	1	2230	271	0.	.0	2992.0
1	0555	72	86.	74.8	3010.2	*	1	1415	172	65.	25.4	3000.2	*	1	2235	272	0.	.0	2992.0
1	0600	73	86.	74.7	3010.1	*	1	1420	173	65.	24.9	3000.1	*	1	2240	273	0.	.0	2992.0
1	0605	74	86.	74.6	3010.1	*	1	1425	174	65.	24.5	3000.0	*	1	2245	274	0.	.0	2992.0
1	0610	75	86.	74.4	3010.1	*	1	1430	175	64.	24.0	2999.9	*	1	2250	275	0.	.0	2992.0
1	0615	76	86.	74.1	3010.1	*	1	1435	176	64.	23.6	2999.8	*	1	2255	276	0.	.0	2992.0
1	0620	77	86.	73.8	3010.0	*	1	1440	177	64.	23.1	2999.7	*	1	2300	277	0.	.0	2992.0
1	0625	78	85.	73.4	3009.9	*	1	1445	178	63.	22.7	2999.5	*	1	2305	278	0.	.0	2992.0
1	0630	79	85.	73.0	3009.9	*	1	1450	179	63.	22.3	2999.4	*	1	2310	279	0.	.0	2992.0
1	0635	80	85.	72.6	3009.8	*	1	1455	180	63.	21.8	2999.3	*	1	2315	280	0.	.0	2992.0

1	0640	81	85.	72.1	3009.7	*	1	1500	181	62.	21.4	2999.1	*	1	2320	281	0.	.0	2992.0
1	0645	82	85.	71.7	3009.6	*	1	1505	182	62.	21.0	2999.0	*	1	2325	282	0.	.0	2992.0
1	0650	83	85.	71.2	3009.5	*	1	1510	183	62.	20.6	2998.9	*	1	2330	283	0.	.0	2992.0
1	0655	84	85.	70.6	3009.4	*	1	1515	184	61.	20.1	2998.8	*	1	2335	284	0.	.0	2992.0
1	0700	85	84.	70.1	3009.3	*	1	1520	185	61.	19.7	2998.6	*	1	2340	285	0.	.0	2992.0
1	0705	86	84.	69.6	3009.2	*	1	1525	186	61.	19.3	2998.5	*	1	2345	286	0.	.0	2992.0
1	0710	87	84.	69.0	3009.1	*	1	1530	187	60.	18.9	2998.4	*	1	2350	287	0.	.0	2992.0
1	0715	88	84.	68.5	3009.0	*	1	1535	188	60.	18.5	2998.3	*	1	2355	288	0.	.0	2992.0
1	0720	89	84.	67.9	3008.9	*	1	1540	189	60.	18.0	2998.1	*	2	0000	289	0.	.0	2992.0
1	0725	90	83.	67.4	3008.8	*	1	1545	190	59.	17.6	2998.0	*	2	0005	290	0.	.0	2992.0
1	0730	91	83.	66.8	3008.7	*	1	1550	191	59.	17.2	2997.9	*	2	0010	291	0.	.0	2992.0
1	0735	92	83.	66.3	3008.6	*	1	1555	192	59.	16.8	2997.8	*	2	0015	292	0.	.0	2992.0
1	0740	93	83.	65.7	3008.5	*	1	1600	193	58.	16.4	2997.6	*	2	0020	293	0.	.0	2992.0
1	0745	94	83.	65.1	3008.4	*	1	1605	194	58.	16.0	2997.5	*	2	0025	294	0.	.0	2992.0
1	0750	95	82.	64.6	3008.3	*	1	1610	195	58.	15.6	2997.4	*	2	0030	295	0.	.0	2992.0
1	0755	96	82.	64.0	3008.2	*	1	1615	196	57.	15.2	2997.3	*	2	0035	296	0.	.0	2992.0
1	0800	97	82.	63.4	3008.1	*	1	1620	197	57.	14.8	2997.2	*	2	0040	297	0.	.0	2992.0
1	0805	98	82.	62.9	3008.0	*	1	1625	198	57.	14.4	2997.0	*	2	0045	298	0.	.0	2992.0
1	0810	99	82.	62.3	3007.9	*	1	1630	199	56.	14.1	2996.9	*	2	0050	299	0.	.0	2992.0
1	0815	100	81.	61.8	3007.8	*	1	1635	200	56.	13.7	2996.8	*	2	0055	300	0.	.0	2992.0
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 86.	5.83		82.	50.	48.	48.
		(INCHES)	.752	1.835	1.835	1.835
		(AC-FT)	41.	99.	99.	99.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
75.	5.83	64.	26.	25.	25.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
3010.16	5.83	3008.18	2999.20	2998.93	2998.93

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = .99

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1	0000	1	0.	.0	2992.0	*	1	0820	101	81.	60.0	3007.5	*	1	1640	201	55.	12.5	2996.5	
1	0005	2	0.	.0	2992.0	*	1	0825	102	80.	59.5	3007.4	*	1	1645	202	55.	12.1	2996.3	
1	0010	3	0.	.0	2992.0	*	1	0830	103	80.	58.9	3007.3	*	1	1650	203	54.	11.7	2996.2	
1	0015	4	0.	.0	2992.0	*	1	0835	104	80.	58.3	3007.2	*	1	1655	204	54.	11.3	2996.1	
1	0020	5	0.	.0	2992.0	*	1	0840	105	80.	57.8	3007.1	*	1	1700	205	54.	11.0	2996.0	
1	0025	6	1.	.0	2992.0	*	1	0845	106	80.	57.2	3007.0	*	1	1705	206	54.	10.6	2995.9	
1	0030	7	1.	.1	2992.0	*	1	0850	107	79.	56.7	3006.9	*	1	1710	207	53.	10.2	2995.8	
1	0035	8	2.	.1	2992.0	*	1	0855	108	79.	56.2	3006.8	*	1	1715	208	53.	9.9	2995.7	
1	0040	9	2.	.1	2992.1	*	1	0900	109	79.	55.6	3006.7	*	1	1720	209	53.	9.5	2995.6	
1	0045	10	3.	.2	2992.1	*	1	0905	110	79.	55.1	3006.6	*	1	1725	210	52.	9.1	2995.5	
1	0050	11	3.	.2	2992.1	*	1	0910	111	79.	54.5	3006.5	*	1	1730	211	52.	8.8	2995.4	
1	0055	12	4.	.2	2992.1	*	1	0915	112	78.	54.0	3006.4	*	1	1735	212	52.	8.4	2995.2	
1	0100	13	4.	.2	2992.1	*	1	0920	113	78.	53.4	3006.3	*	1	1740	213	51.	8.1	2995.1	
1	0105	14	4.	.2	2992.1	*	1	0925	114	78.	52.9	3006.2	*	1	1745	214	51.	7.7	2995.0	
1	0110	15	5.	.2	2992.1	*	1	0930	115	78.	52.4	3006.1	*	1	1750	215	51.	7.4	2994.9	
1	0115	16	5.	.3	2992.1	*	1	0935	116	77.	51.8	3006.0	*	1	1755	216	50.	7.0	2994.8	

1	0120	17	5.	.3	2992.1	*	1	0940	117	77.	51.3	3005.9	*	1	1800	217	50.	6.7
2994.6																		
1	0125	18	6.	.3	2992.1	*	1	0945	118	77.	50.8	3005.8	*	1	1805	218	49.	6.3
2994.5																		
1	0130	19	7.	.4	2992.2	*	1	0950	119	77.	50.2	3005.7	*	1	1810	219	49.	6.0
2994.4																		
1	0135	20	9.	.5	2992.2	*	1	0955	120	77.	49.7	3005.6	*	1	1815	220	49.	5.7
2994.3																		
1	0140	21	11.	.6	2992.2	*	1	1000	121	76.	49.2	3005.5	*	1	1820	221	48.	5.3
2994.1																		
1	0145	22	13.	.7	2992.3	*	1	1005	122	76.	48.7	3005.4	*	1	1825	222	48.	5.0
2994.0																		
1	0150	23	16.	.8	2992.4	*	1	1010	123	76.	48.1	3005.3	*	1	1830	223	47.	4.7
2993.9																		
1	0155	24	18.	1.0	2992.4	*	1	1015	124	76.	47.6	3005.2	*	1	1835	224	47.	4.3
2993.8																		
1	0200	25	20.	1.1	2992.5	*	1	1020	125	76.	47.1	3005.1	*	1	1840	225	47.	4.0
2993.6																		
1	0205	26	22.	1.2	2992.5	*	1	1025	126	75.	46.6	3005.1	*	1	1845	226	46.	3.7
2993.5																		
1	0210	27	23.	1.2	2992.5	*	1	1030	127	75.	46.1	3004.9	*	1	1850	227	46.	3.4
2993.4																		
1	0215	28	25.	1.3	2992.6	*	1	1035	128	75.	45.5	3004.8	*	1	1855	228	45.	3.1
2993.3																		
1	0220	29	27.	1.4	2992.6	*	1	1040	129	75.	45.0	3004.7	*	1	1900	229	45.	2.8
2993.2																		
1	0225	30	30.	1.6	2992.7	*	1	1045	130	74.	44.5	3004.6	*	1	1905	230	45.	2.4
2993.0																		
1	0230	31	33.	1.8	2992.8	*	1	1050	131	74.	44.0	3004.5	*	1	1910	231	41.	2.2
2992.9																		
1	0235	32	36.	1.9	2992.8	*	1	1055	132	74.	43.5	3004.4	*	1	1915	232	36.	1.9
2992.8																		
1	0240	33	39.	2.1	2992.9	*	1	1100	133	74.	43.0	3004.2	*	1	1920	233	31.	1.7
2992.7																		
1	0245	34	42.	2.2	2993.0	*	1	1105	134	73.	42.5	3004.1	*	1	1925	234	28.	1.5
2992.6																		
1	0250	35	45.	2.4	2993.0	*	1	1110	135	73.	42.0	3004.0	*	1	1930	235	24.	1.3
2992.5																		
1	0255	36	45.	2.6	2993.1	*	1	1115	136	73.	41.5	3003.9	*	1	1935	236	21.	1.1
2992.5																		
1	0300	37	45.	2.8	2993.2	*	1	1120	137	73.	41.0	3003.8	*	1	1940	237	19.	1.0
2992.4																		
1	0305	38	45.	3.0	2993.2	*	1	1125	138	73.	40.5	3003.7	*	1	1945	238	16.	.9
2992.4																		
1	0310	39	46.	3.3	2993.4	*	1	1130	139	72.	40.0	3003.6	*	1	1950	239	14.	.8
2992.3																		
1	0315	40	46.	3.9	2993.6	*	1	1135	140	72.	39.5	3003.4	*	1	1955	240	13.	.7
2992.3																		
1	0320	41	48.	4.8	2993.9	*	1	1140	141	72.	39.0	3003.3	*	1	2000	241	11.	.6
2992.2																		
1	0325	42	50.	6.4	2994.6	*	1	1145	142	72.	38.5	3003.2	*	1	2005	242	10.	.5
2992.2																		
1	0330	43	52.	8.9	2995.4	*	1	1150	143	71.	38.0	3003.1	*	1	2010	243	8.	.4
2992.2																		
1	0335	44	55.	12.3	2996.4	*	1	1155	144	71.	37.5	3003.0	*	1	2015	244	7.	.4
2992.2																		
1	0340	45	58.	16.5	2997.7	*	1	1200	145	71.	37.0	3002.9	*	1	2020	245	7.	.3
2992.1																		
1	0345	46	62.	21.1	2999.0	*	1	1205	146	71.	36.5	3002.8	*	1	2025	246	6.	.3
2992.1																		
1	0350	47	65.	25.8	3000.3	*	1	1210	147	70.	36.0	3002.7	*	1	2030	247	5.	.3
2992.1																		
1	0355	48	68.	30.6	3001.4	*	1	1215	148	70.	35.5	3002.6	*	1	2035	248	4.	.2
2992.1																		
1	0400	49	70.	35.2	3002.5	*	1	1220	149	70.	35.1	3002.4	*	1	2040	249	4.	.2
2992.1																		
1	0405	50	72.	39.5	3003.5	*	1	1225	150	70.	34.6	3002.3	*	1	2045	250	3.	.2
2992.1																		
1	0410	51	74.	43.5	3004.4	*	1	1230	151	69.	34.1	3002.2	*	1	2050	251	3.	.2
2992.1																		
1	0415	52	76.	47.1	3005.2	*	1	1235	152	69.	33.6	3002.1	*	1	2055	252	3.	.1
2992.1																		
1	0420	53	77.	50.3	3005.7	*	1	1240	153	69.	33.2	3002.0	*	1	2100	253	2.	.1
2992.1																		
1	0425	54	78.	53.0	3006.2	*	1	1245	154	69.	32.7	3001.9	*	1	2105	254	2.	.1
2992.0																		
1	0430	55	79.	55.4	3006.7	*	1	1250	155	69.	32.2	3001.8	*	1	2110	255	2.	.1
2992.0																		
1	0435	56	80.	57.6	3007.1	*	1	1255	156	68.	31.7	3001.7	*	1	2115	256	2.	.1
2992.0																		
1	0440	57	80.	59.5	3007.4	*	1	1300	157	68.	31.3	3001.6	*	1	2120	257	1.	.1
2992.0																		
1	0445	58	81.	61.4	3007.7	*	1	1305	158	68.	30.8	3001.5	*	1	2125	258	1.	.1
2992.0																		
1	0450	59	82.	63.1	3008.1	*	1	1310	159	68.	30.3	3001.4	*	1	2130	259	1.	.1
2992.0																		
1	0455	60	82.	64.8	3008.4	*	1	1315	160	67.	29.9	3001.3	*	1	2135	260	1.	.0
2992.0																		
1	0500	61	83.	66.3	3008.6	*	1	1320	161	67.	29.4	3001.2	*	1	2140	261	1.	.0
2992.0																		
1	0505	62	84.	67.8	3008.9	*	1	1325	162	67.	28.9	3001.1	*	1	2145	262	1.	.0
2992.0																		
1	0510	63	84.	69.0	3009.1	*	1	1330	163	67.	28.5	3001.0	*	1	2150	263	1.	.0
2992.0																		
1	0515	64	84.	70.2	3009.3	*	1	1335	164	67.	28.0	3000.8	*	1	2155	264	1.	.0
2992.0																		
1	0520	65	85.	71.1	3009.5	*	1	1340	165	66.	27.6	3000.7	*	1	2200	265	0.	.0
2992.0																		
1	0525	66	85.	71.9	3009.7	*	1	1345	166	66.	27.1	3000.6	*	1	2205	266	0.	.0
2992.0																		
1	0530	67	85.	72.5	3009.8	*	1	1350	167	66.	26.7	3000.5	*	1	2210	267	0.	.0
2992.0																		
1	0535	68	85.	73.0	3009.9	*	1	1355	168	66.	26.2	3000.4	*	1	2215	268	0.	.0
2992.0																		
1	0540	69	85.	73.3	3009.9	*	1	1400	169	65.	25.8	3000.3	*	1	2220	269	0.	.0
2992.0																		
1	0545	70	85.	73.5	3010.0	*	1	1405	170	65.	25.3	3000.2	*	1	2225	270	0.	.0
2992.0																		
1	0550	71	86.	73.6	3010.0	*	1	1410	171	65.	24.9	3000.1	*	1	2230	271	0.	.0
2992.0																		
1	0555	72	86.	73.6	3010.0	*	1	1415	172	65.	24.4	3000.0	*	1	2235	272	0.	.0
2992.0																		

EX

1	0600	73	85.	73.5	3009.9	*	1	1420	173	64.	24.0	2999.9	*	1	2240	273	0.	.0	2992.0
1	0605	74	85.	73.4	3009.9	*	1	1425	174	64.	23.5	2999.8	*	1	2245	274	0.	.0	2992.0
1	0610	75	85.	73.1	3009.9	*	1	1430	175	64.	23.1	2999.6	*	1	2250	275	0.	.0	2992.0
1	0615	76	85.	72.9	3009.8	*	1	1435	176	63.	22.6	2999.5	*	1	2255	276	0.	.0	2992.0
1	0620	77	85.	72.5	3009.8	*	1	1440	177	63.	22.2	2999.4	*	1	2300	277	0.	.0	2992.0
1	0625	78	85.	72.2	3009.7	*	1	1445	178	63.	21.8	2999.2	*	1	2305	278	0.	.0	2992.0
1	0630	79	85.	71.8	3009.6	*	1	1450	179	62.	21.3	2999.1	*	1	2310	279	0.	.0	2992.0
1	0635	80	85.	71.4	3009.6	*	1	1455	180	62.	20.9	2999.0	*	1	2315	280	0.	.0	2992.0
1	0640	81	85.	70.9	3009.5	*	1	1500	181	62.	20.5	2998.9	*	1	2320	281	0.	.0	2992.0
1	0645	82	85.	70.4	3009.4	*	1	1505	182	61.	20.1	2998.7	*	1	2325	282	0.	.0	2992.0
1	0650	83	84.	69.9	3009.3	*	1	1510	183	61.	19.6	2998.6	*	1	2330	283	0.	.0	2992.0
1	0655	84	84.	69.4	3009.2	*	1	1515	184	61.	19.2	2998.5	*	1	2335	284	0.	.0	2992.0
1	0700	85	84.	68.9	3009.1	*	1	1520	185	60.	18.8	2998.4	*	1	2340	285	0.	.0	2992.0
1	0705	86	84.	68.3	3009.0	*	1	1525	186	60.	18.4	2998.2	*	1	2345	286	0.	.0	2992.0
1	0710	87	84.	67.8	3008.9	*	1	1530	187	60.	18.0	2998.1	*	1	2350	287	0.	.0	2992.0
1	0715	88	83.	67.3	3008.8	*	1	1535	188	59.	17.6	2998.0	*	1	2355	288	0.	.0	2992.0
1	0720	89	83.	66.7	3008.7	*	1	1540	189	59.	17.2	2997.9	*	2	0000	289	0.	.0	2992.0
1	0725	90	83.	66.1	3008.6	*	1	1545	190	59.	16.8	2997.7	*	2	0005	290	0.	.0	2992.0
1	0730	91	83.	65.6	3008.5	*	1	1550	191	58.	16.4	2997.6	*	2	0010	291	0.	.0	2992.0
1	0735	92	83.	65.0	3008.4	*	1	1555	192	58.	16.0	2997.5	*	2	0015	292	0.	.0	2992.0
1	0740	93	82.	64.5	3008.3	*	1	1600	193	58.	15.6	2997.4	*	2	0020	293	0.	.0	2992.0
1	0745	94	82.	63.9	3008.2	*	1	1605	194	57.	15.2	2997.3	*	2	0025	294	0.	.0	2992.0
1	0750	95	82.	63.4	3008.1	*	1	1610	195	57.	14.8	2997.2	*	2	0030	295	0.	.0	2992.0
1	0755	96	82.	62.8	3008.0	*	1	1615	196	57.	14.4	2997.0	*	2	0035	296	0.	.0	2992.0
1	0800	97	82.	62.2	3007.9	*	1	1620	197	56.	14.0	2996.9	*	2	0040	297	0.	.0	2992.0
1	0805	98	81.	61.7	3007.8	*	1	1625	198	56.	13.6	2996.8	*	2	0045	298	0.	.0	2992.0
1	0810	99	81.	61.1	3007.7	*	1	1630	199	56.	13.2	2996.7	*	2	0050	299	0.	.0	2992.0
1	0815	100	81.	60.6	3007.6	*	1	1635	200	55.	12.8	2996.6	*	2	0055	300	0.	.0	2992.0

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EX

1	0040	9	2.	.1	2992.1	*	1	0900	109	78.	53.9	3006.4	*	1	1720	209	52.	8.4	2995.2
1	0045	10	3.	.1	2992.1	*	1	0905	110	78.	53.3	3006.3	*	1	1725	210	51.	8.0	2995.1
1	0050	11	3.	.2	2992.1	*	1	0910	111	78.	52.8	3006.2	*	1	1730	211	51.	7.6	2995.0
1	0055	12	3.	.2	2992.1	*	1	0915	112	78.	52.3	3006.1	*	1	1735	212	51.	7.3	2994.9
1	0100	13	4.	.2	2992.1	*	1	0920	113	77.	51.7	3006.0	*	1	1740	213	50.	6.9	2994.8
1	0105	14	4.	.2	2992.1	*	1	0925	114	77.	51.2	3005.9	*	1	1745	214	50.	6.6	2994.6
1	0110	15	4.	.2	2992.1	*	1	0930	115	77.	50.7	3005.8	*	1	1750	215	49.	6.3	2994.5
1	0115	16	4.	.2	2992.1	*	1	0935	116	77.	50.1	3005.7	*	1	1755	216	49.	5.9	2994.4
1	0120	17	5.	.3	2992.1	*	1	0940	117	77.	49.6	3005.6	*	1	1800	217	49.	5.6	2994.2
1	0125	18	6.	.3	2992.1	*	1	0945	118	76.	49.1	3005.5	*	1	1805	218	48.	5.3	2994.1
1	0130	19	7.	.3	2992.1	*	1	0950	119	76.	48.6	3005.4	*	1	1810	219	48.	4.9	2994.0
1	0135	20	8.	.4	2992.2	*	1	0955	120	76.	48.0	3005.3	*	1	1815	220	47.	4.6	2993.9
1	0140	21	10.	.5	2992.2	*	1	1000	121	76.	47.5	3005.2	*	1	1820	221	47.	4.3	2993.7
1	0145	22	12.	.7	2992.3	*	1	1005	122	76.	47.0	3005.1	*	1	1825	222	46.	4.0	2993.6
1	0150	23	15.	.8	2992.3	*	1	1010	123	75.	46.5	3005.0	*	1	1830	223	46.	3.6	2993.5
1	0155	24	17.	.9	2992.4	*	1	1015	124	75.	45.9	3004.9	*	1	1835	224	46.	3.3	2993.4
1	0200	25	19.	1.0	2992.4	*	1	1020	125	75.	45.4	3004.8	*	1	1840	225	45.	3.0	2993.3
1	0205	26	21.	1.1	2992.5	*	1	1025	126	75.	44.9	3004.7	*	1	1845	226	45.	2.7	2993.1
1	0210	27	22.	1.2	2992.5	*	1	1030	127	74.	44.4	3004.6	*	1	1850	227	44.	2.4	2993.0
1	0215	28	24.	1.3	2992.5	*	1	1035	128	74.	43.9	3004.5	*	1	1855	228	40.	2.1	2992.9
1	0220	29	26.	1.4	2992.6	*	1	1040	129	74.	43.4	3004.3	*	1	1900	229	35.	1.8	2992.8
1	0225	30	29.	1.5	2992.7	*	1	1045	130	74.	42.9	3004.2	*	1	1905	230	31.	1.6	2992.7
1	0230	31	32.	1.7	2992.7	*	1	1050	131	73.	42.4	3004.1	*	1	1910	231	27.	1.4	2992.6
1	0235	32	35.	1.8	2992.8	*	1	1055	132	73.	41.9	3004.0	*	1	1915	232	24.	1.2	2992.5
1	0240	33	38.	2.0	2992.9	*	1	1100	133	73.	41.4	3003.9	*	1	1920	233	21.	1.1	2992.5
1	0245	34	41.	2.2	2992.9	*	1	1105	134	73.	40.9	3003.8	*	1	1925	234	18.	1.0	2992.4
1	0250	35	44.	2.3	2993.0	*	1	1110	135	72.	40.4	3003.7	*	1	1930	235	16.	.8	2992.4
1	0255	36	45.	2.5	2993.1	*	1	1115	136	72.	39.9	3003.5	*	1	1935	236	14.	.7	2992.3
1	0300	37	45.	2.6	2993.1	*	1	1120	137	72.	39.4	3003.4	*	1	1940	237	12.	.6	2992.3
1	0305	38	45.	2.8	2993.2	*	1	1125	138	72.	38.9	3003.3	*	1	1945	238	11.	.6	2992.2
1	0310	39	45.	3.2	2993.3	*	1	1130	139	72.	38.4	3003.2	*	1	1950	239	9.	.5	2992.2
1	0315	40	46.	3.7	2993.5	*	1	1135	140	71.	37.9	3003.1	*	1	1955	240	8.	.4	2992.2
1	0320	41	47.	4.6	2993.9	*	1	1140	141	71.	37.4	3003.0	*	1	2000	241	7.	.4	2992.2
1	0325	42	49.	6.2	2994.5	*	1	1145	142	71.	36.9	3002.9	*	1	2005	242	6.	.3	2992.1
1	0330	43	52.	8.6	2995.3	*	1	1150	143	71.	36.4	3002.8	*	1	2010	243	6.	.3	2992.1
1	0335	44	55.	11.9	2996.3	*	1	1155	144	70.	35.9	3002.6	*	1	2015	244	5.	.3	2992.1
1	0340	45	58.	16.0	2997.5	*	1	1200	145	70.	35.4	3002.5	*	1	2020	245	4.	.2	2992.1
1	0345	46	62.	20.5	2998.9	*	1	1205	146	70.	35.0	3002.4	*	1	2025	246	4.	.2	2992.1
1	0350	47	65.	25.1	3000.2	*	1	1210	147	70.	34.5	3002.3	*	1	2030	247	3.	.2	2992.1
1	0355	48	67.	29.8	3001.2	*	1	1215	148	69.	34.0	3002.2	*	1	2035	248	3.	.2	2992.1
1	0400	49	70.	34.3	3002.3	*	1	1220	149	69.	33.5	3002.1	*	1	2040	249	3.	.1	2992.1
1	0405	50	72.	38.5	3003.2	*	1	1225	150	69.	33.1	3002.0	*	1	2045	250	2.	.1	2992.1
1	0410	51	73.	42.4	3004.1	*	1	1230	151	69.	32.6	3001.9	*	1	2050	251	2.	.1	2992.0
1	0415	52	75.	45.9	3004.9	*	1	1235	152	68.	32.1	3001.8	*	1	2055	252	2.	.1	2992.0
1	0420	53	76.	49.0	3005.5	*	1	1240	153	68.	31.6	3001.7	*	1	2100	253	2.	.1	2992.0
1	0425	54	77.	51.7	3006.0	*	1	1245	154	68.	31.2	3001.6	*	1	2105	254	1.	.1	2992.0
1	0430	55	78.	54.0	3006.4	*	1	1250	155	68.	30.7	3001.5	*	1	2110	255	1.	.1	2992.0
1	0435	56	79.	56.1	3006.8	*	1	1255	156	68.	30.2	3001.3	*	1	2115	256	1.	.1	2992.0
1	0440	57	80.	58.1	3007.1	*	1	1300	157	67.	29.8	3001.2	*	1	2120	257	1.	.0	2992.0
1	0445	58	81.	59.9	3007.5	*	1	1305	158	67.	29.3	3001.1	*	1	2125	258	1.	.0	2992.0
1	0450	59	81.	61.5	3007.8	*	1	1310	159	67.	28.8	3001.0	*	1	2130	259	1.	.0	2992.0
1	0455	60	82.	63.2	3008.1	*	1	1315	160	67.	28.4	3000.9	*	1	2135	260	1.	.0	2992.0
1	0500	61	82.	64.7	3008.3	*	1	1320	161	66.	27.9	3000.8	*	1	2140	261	1.	.0	2992.0
1	0505	62	83.	66.1	3008.6	*	1	1325	162	66.	27.5	3000.7	*	1	2145	262	0.	.0	2992.0
1	0510	63	83.	67.3	3008.8	*	1	1330	163	66.	27.0	3000.6	*	1	2150	263	0.	.0	2992.0
1	0515	64	84.	68.4	3009.0	*	1	1335	164	66.	26.6	3000.5	*	1	2155	264	0.	.0	2992.0

EX

1	0520	65	84.	69.4	3009.2	*	1	1340	165	66.	26.1	3000.4	*	1	2200	265	0.	.0	2992.0
1	0525	66	84.	70.1	3009.3	*	1	1345	166	65.	25.7	3000.3	*	1	2205	266	0.	.0	2992.0
1	0530	67	85.	70.7	3009.4	*	1	1350	167	65.	25.2	3000.2	*	1	2210	267	0.	.0	2992.0
1	0535	68	85.	71.2	3009.5	*	1	1355	168	65.	24.8	3000.1	*	1	2215	268	0.	.0	2992.0
1	0540	69	85.	71.5	3009.6	*	1	1400	169	65.	24.3	3000.0	*	1	2220	269	0.	.0	2992.0
1	0545	70	85.	71.7	3009.6	*	1	1405	170	64.	23.9	2999.9	*	1	2225	270	0.	.0	2992.0
1	0550	71	85.	71.8	3009.6	*	1	1410	171	64.	23.4	2999.7	*	1	2230	271	0.	.0	2992.0
1	0555	72	85.	71.7	3009.6	*	1	1415	172	64.	23.0	2999.6	*	1	2235	272	0.	.0	2992.0
1	0600	73	85.	71.7	3009.6	*	1	1420	173	63.	22.6	2999.5	*	1	2240	273	0.	.0	2992.0
1	0605	74	85.	71.5	3009.6	*	1	1425	174	63.	22.1	2999.3	*	1	2245	274	0.	.0	2992.0
1	0610	75	85.	71.3	3009.5	*	1	1430	175	63.	21.7	2999.2	*	1	2250	275	0.	.0	2992.0
1	0615	76	85.	71.0	3009.5	*	1	1435	176	62.	21.3	2999.1	*	1	2255	276	0.	.0	2992.0
1	0620	77	85.	70.7	3009.4	*	1	1440	177	62.	20.8	2999.0	*	1	2300	277	0.	.0	2992.0
1	0625	78	84.	70.3	3009.4	*	1	1445	178	62.	20.4	2998.8	*	1	2305	278	0.	.0	2992.0
1	0630	79	84.	69.9	3009.3	*	1	1450	179	61.	20.0	2998.7	*	1	2310	279	0.	.0	2992.0
1	0635	80	84.	69.5	3009.2	*	1	1455	180	61.	19.6	2998.6	*	1	2315	280	0.	.0	2992.0
1	0640	81	84.	69.0	3009.1	*	1	1500	181	60.	19.1	2998.5	*	1	2320	281	0.	.0	2992.0
1	0645	82	84.	68.6	3009.1	*	1	1505	182	60.	18.7	2998.3	*	1	2325	282	0.	.0	2992.0
1	0650	83	84.	68.1	3009.0	*	1	1510	183	60.	18.3	2998.2	*	1	2330	283	0.	.0	2992.0
1	0655	84	84.	67.6	3008.9	*	1	1515	184	59.	17.9	2998.1	*	1	2335	284	0.	.0	2992.0
1	0700	85	83.	67.0	3008.8	*	1	1520	185	59.	17.5	2998.0	*	1	2340	285	0.	.0	2992.0
1	0705	86	83.	66.5	3008.7	*	1	1525	186	59.	17.1	2997.8	*	1	2345	286	0.	.0	2992.0
1	0710	87	83.	66.0	3008.6	*	1	1530	187	58.	16.7	2997.7	*	1	2350	287	0.	.0	2992.0
1	0715	88	83.	65.4	3008.5	*	1	1535	188	58.	16.3	2997.6	*	1	2355	288	0.	.0	2992.0
1	0720	89	83.	64.9	3008.4	*	1	1540	189	58.	15.9	2997.5	*	2	0000	289	0.	.0	2992.0
1	0725	90	82.	64.3	3008.3	*	1	1545	190	57.	15.5	2997.4	*	2	0005	290	0.	.0	2992.0
1	0730	91	82.	63.8	3008.2	*	1	1550	191	57.	15.1	2997.2	*	2	0010	291	0.	.0	2992.0
1	0735	92	82.	63.2	3008.1	*	1	1555	192	57.	14.7	2997.1	*	2	0015	292	0.	.0	2992.0
1	0740	93	82.	62.7	3008.0	*	1	1600	193	57.	14.3	2997.0	*	2	0020	293	0.	.0	2992.0
1	0745	94	81.	62.1	3007.9	*	1	1605	194	56.	13.9	2996.9	*	2	0025	294	0.	.0	2992.0
1	0750	95	81.	61.5	3007.8	*	1	1610	195	56.	13.5	2996.8	*	2	0030	295	0.	.0	2992.0
1	0755	96	81.	61.0	3007.7	*	1	1615	196	56.	13.1	2996.7	*	2	0035	296	0.	.0	2992.0
1	0800	97	81.	60.4	3007.6	*	1	1620	197	55.	12.8	2996.5	*	2	0040	297	0.	.0	2992.0
1	0805	98	81.	59.9	3007.5	*	1	1625	198	55.	12.4	2996.4	*	2	0045	298	0.	.0	2992.0
1	0810	99	80.	59.3	3007.4	*	1	1630	199	55.	12.0	2996.3	*	2	0050	299	0.	.0	2992.0
1	0815	100	80.	58.8	3007.3	*	1	1635	200	54.	11.6	2996.2	*	2	0055	300	0.	.0	2992.0

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EX

1	0000	1	0.	.0	2992.0	*	1	0820	101	79.	55.3	3006.6	*	1	1640	201	52.	9.3	2995.5
1	0005	2	0.	.0	2992.0	*	1	0825	102	79.	54.8	3006.5	*	1	1645	202	52.	8.9	2995.4
1	0010	3	0.	.0	2992.0	*	1	0830	103	78.	54.2	3006.4	*	1	1650	203	52.	8.6	2995.3
1	0015	4	0.	.0	2992.0	*	1	0835	104	78.	53.7	3006.3	*	1	1655	204	52.	8.2	2995.2
1	0020	5	0.	.0	2992.0	*	1	0840	105	78.	53.1	3006.2	*	1	1700	205	51.	7.9	2995.1
1	0025	6	0.	.0	2992.0	*	1	0845	106	78.	52.6	3006.2	*	1	1705	206	51.	7.5	2995.0
1	0030	7	1.	.1	2992.0	*	1	0850	107	78.	52.1	3006.1	*	1	1710	207	51.	7.2	2994.8
1	0035	8	2.	.1	2992.0	*	1	0855	108	77.	51.5	3006.0	*	1	1715	208	50.	6.8	2994.7
1	0040	9	2.	.1	2992.0	*	1	0900	109	77.	51.0	3005.9	*	1	1720	209	50.	6.5	2994.6
1	0045	10	2.	.1	2992.1	*	1	0905	110	77.	50.5	3005.8	*	1	1725	210	49.	6.1	2994.4
1	0050	11	3.	.1	2992.1	*	1	0910	111	77.	49.9	3005.7	*	1	1730	211	49.	5.8	2994.3
1	0055	12	3.	.2	2992.1	*	1	0915	112	77.	49.4	3005.6	*	1	1735	212	48.	5.5	2994.2
1	0100	13	3.	.2	2992.1	*	1	0920	113	76.	48.9	3005.5	*	1	1740	213	48.	5.1	2994.1
1	0105	14	3.	.2	2992.1	*	1	0925	114	76.	48.4	3005.4	*	1	1745	214	48.	4.8	2993.9
1	0110	15	4.	.2	2992.1	*	1	0930	115	76.	47.8	3005.3	*	1	1750	215	47.	4.5	2993.8
1	0115	16	4.	.2	2992.1	*	1	0935	116	76.	47.3	3005.2	*	1	1755	216	47.	4.2	2993.7
1	0120	17	4.	.2	2992.1	*	1	0940	117	76.	46.8	3005.1	*	1	1800	217	46.	3.8	2993.6
1	0125	18	5.	.3	2992.1	*	1	0945	118	75.	46.3	3005.0	*	1	1805	218	46.	3.5	2993.4
1	0130	19	6.	.3	2992.1	*	1	0950	119	75.	45.8	3004.9	*	1	1810	219	46.	3.2	2993.3
1	0135	20	7.	.4	2992.2	*	1	0955	120	75.	45.2	3004.8	*	1	1815	220	45.	2.9	2993.2
1	0140	21	9.	.5	2992.2	*	1	1000	121	75.	44.7	3004.6	*	1	1820	221	45.	2.6	2993.1
1	0145	22	11.	.6	2992.3	*	1	1005	122	74.	44.2	3004.5	*	1	1825	222	43.	2.3	2993.0
1	0150	23	14.	.7	2992.3	*	1	1010	123	74.	43.7	3004.4	*	1	1830	223	38.	2.0	2992.9
1	0155	24	16.	.8	2992.4	*	1	1015	124	74.	43.2	3004.3	*	1	1835	224	33.	1.8	2992.7
1	0200	25	18.	.9	2992.4	*	1	1020	125	74.	42.7	3004.2	*	1	1840	225	29.	1.5	2992.7
1	0205	26	19.	1.0	2992.4	*	1	1025	126	73.	42.2	3004.1	*	1	1845	226	26.	1.3	2992.6
1	0210	27	21.	1.1	2992.5	*	1	1030	127	73.	41.7	3004.0	*	1	1850	227	22.	1.2	2992.5
1	0215	28	22.	1.2	2992.5	*	1	1035	128	73.	41.2	3003.8	*	1	1855	228	20.	1.0	2992.4
1	0220	29	24.	1.3	2992.5	*	1	1040	129	73.	40.7	3003.7	*	1	1900	229	17.	.9	2992.4
1	0225	30	27.	1.4	2992.6	*	1	1045	130	72.	40.2	3003.6	*	1	1905	230	15.	.8	2992.3
1	0230	31	30.	1.6	2992.7	*	1	1050	131	72.	39.7	3003.5	*	1	1910	231	13.	.7	2992.3
1	0235	32	33.	1.7	2992.7	*	1	1055	132	72.	39.2	3003.4	*	1	1915	232	12.	.6	2992.3
1	0240	33	35.	1.9	2992.8	*	1	1100	133	72.	38.7	3003.3	*	1	1920	233	10.	.5	2992.2
1	0245	34	38.	2.0	2992.9	*	1	1105	134	71.	38.2	3003.2	*	1	1925	234	9.	.5	2992.2
1	0250	35	41.	2.2	2992.9	*	1	1110	135	71.	37.7	3003.0	*	1	1930	235	8.	.4	2992.2
1	0255	36	44.	2.3	2993.0	*	1	1115	136	71.	37.2	3002.9	*	1	1935	236	7.	.4	2992.2
1	0300	37	45.	2.5	2993.0	*	1	1120	137	71.	36.7	3002.8	*	1	1940	237	6.	.3	2992.1
1	0305	38	45.	2.6	2993.1	*	1	1125	138	70.	36.2	3002.7	*	1	1945	238	5.	.3	2992.1
1	0310	39	45.	2.9	2993.2	*	1	1130	139	70.	35.8	3002.6	*	1	1950	239	5.	.2	2992.1
1	0315	40	46.	3.4	2993.4	*	1	1135	140	70.	35.3	3002.5	*	1	1955	240	4.	.2	2992.1
1	0320	41	47.	4.3	2993.7	*	1	1140	141	70.	34.8	3002.4	*	1	2000	241	4.	.2	2992.1
1	0325	42	49.	5.8	2994.3	*	1	1145	142	70.	34.3	3002.3	*	1	2005	242	3.	.2	2992.1
1	0330	43	51.	8.1	2995.1	*	1	1150	143	69.	33.8	3002.2	*	1	2010	243	3.	.1	2992.1
1	0335	44	54.	11.3	2996.1	*	1	1155	144	69.	33.4	3002.1	*	1	2015	244	2.	.1	2992.1
1	0340	45	57.	15.2	2997.3	*	1	1200	145	69.	32.9	3002.0	*	1	2020	245	2.	.1	2992.0
1	0345	46	61.	19.5	2998.6	*	1	1205	146	69.	32.4	3001.8	*	1	2025	246	2.	.1	2992.0
1	0350	47	64.	24.0	2999.9	*	1	1210	147	68.	31.9	3001.7	*	1	2030	247	2.	.1	2992.0
1	0355	48	67.	28.4	3000.9	*	1	1215	148	68.	31.5	3001.6	*	1	2035	248	1.	.1	2992.0
1	0400	49	69.	32.7	3001.9	*	1	1220	149	68.	31.0	3001.5	*	1	2040	249	1.	.1	2992.0
1	0405	50	71.	36.8	3002.8	*	1	1225	150	68.	30.5	3001.4	*	1	2045	250	1.	.1	2992.0
1	0410	51	73.	40.6	3003.7	*	1	1230	151	67.	30.1	3001.3	*	1	2050	251	1.	.1	2992.0
1	0415	52	74.	43.9	3004.5	*	1	1235	152	67.	29.6	3001.2	*	1	2055	252	1.	.0	2992.0
1	0420	53	76.	46.9	3005.1	*	1	1240	153	67.	29.1	3001.1	*	1	2100	253	1.	.0	2992.0
1	0425	54	77.	49.5	3005.6	*	1	1245	154	67.	28.7	3001.0	*	1	2105	254	1.	.0	2992.0
1	0430	55	77.	51.7	3006.0	*	1	1250	155	67.	28.2	3000.9	*	1	2110	255	1.	.0	2992.0
1	0435	56	78.	53.8	3006.4	*	1	1255	156	66.	27.8	3000.8	*	1	2115	256	1.	.0	2992.0

EX

1	0440	57	79.	55.6	3006.7	*	1	1300	157	66.	27.3	3000.7	*	1	2120	257	0.	.0
2992.0																		
1	0445	58	80.	57.3	3007.0	*	1	1305	158	66.	26.9	3000.6	*	1	2125	258	0.	.0
2992.0																		
1	0450	59	80.	59.0	3007.3	*	1	1310	159	66.	26.4	3000.5	*	1	2130	259	0.	.0
2992.0																		
1	0455	60	81.	60.5	3007.6	*	1	1315	160	65.	25.9	3000.4	*	1	2135	260	0.	.0
2992.0																		
1	0500	61	81.	62.0	3007.9	*	1	1320	161	65.	25.5	3000.3	*	1	2140	261	0.	.0
2992.0																		
1	0505	62	82.	63.3	3008.1	*	1	1325	162	65.	25.0	3000.2	*	1	2145	262	0.	.0
2992.0																		
1	0510	63	82.	64.5	3008.3	*	1	1330	163	65.	24.6	3000.1	*	1	2150	263	0.	.0
2992.0																		
1	0515	64	83.	65.6	3008.5	*	1	1335	164	65.	24.2	3000.0	*	1	2155	264	0.	.0
2992.0																		
1	0520	65	83.	66.5	3008.7	*	1	1340	165	64.	23.7	2999.8	*	1	2200	265	0.	.0
2992.0																		
1	0525	66	83.	67.2	3008.8	*	1	1345	166	64.	23.3	2999.7	*	1	2205	266	0.	.0
2992.0																		
1	0530	67	84.	67.8	3008.9	*	1	1350	167	63.	22.8	2999.6	*	1	2210	267	0.	.0
2992.0																		
1	0535	68	84.	68.2	3009.0	*	1	1355	168	63.	22.4	2999.4	*	1	2215	268	0.	.0
2992.0																		
1	0540	69	84.	68.5	3009.0	*	1	1400	169	63.	22.0	2999.3	*	1	2220	269	0.	.0
2992.0																		
1	0545	70	84.	68.6	3009.1	*	1	1405	170	62.	21.5	2999.2	*	1	2225	270	0.	.0
2992.0																		
1	0550	71	84.	68.7	3009.1	*	1	1410	171	62.	21.1	2999.0	*	1	2230	271	0.	.0
2992.0																		
1	0555	72	84.	68.7	3009.1	*	1	1415	172	62.	20.7	2998.9	*	1	2235	272	0.	.0
2992.0																		
1	0600	73	84.	68.6	3009.1	*	1	1420	173	61.	20.3	2998.8	*	1	2240	273	0.	.0
2992.0																		
1	0605	74	84.	68.4	3009.0	*	1	1425	174	61.	19.8	2998.7	*	1	2245	274	0.	.0
2992.0																		
1	0610	75	84.	68.2	3009.0	*	1	1430	175	61.	19.4	2998.5	*	1	2250	275	0.	.0
2992.0																		
1	0615	76	84.	67.9	3008.9	*	1	1435	176	60.	19.0	2998.4	*	1	2255	276	0.	.0
2992.0																		
1	0620	77	84.	67.6	3008.9	*	1	1440	177	60.	18.6	2998.3	*	1	2300	277	0.	.0
2992.0																		
1	0625	78	83.	67.2	3008.8	*	1	1445	178	60.	18.2	2998.2	*	1	2305	278	0.	.0
2992.0																		
1	0630	79	83.	66.8	3008.7	*	1	1450	179	59.	17.8	2998.0	*	1	2310	279	0.	.0
2992.0																		
1	0635	80	83.	66.4	3008.7	*	1	1455	180	59.	17.3	2997.9	*	1	2315	280	0.	.0
2992.0																		
1	0640	81	83.	66.0	3008.6	*	1	1500	181	59.	16.9	2997.8	*	1	2320	281	0.	.0
2992.0																		
1	0645	82	83.	65.5	3008.5	*	1	1505	182	58.	16.5	2997.7	*	1	2325	282	0.	.0
2992.0																		
1	0650	83	83.	65.0	3008.4	*	1	1510	183	58.	16.1	2997.6	*	1	2330	283	0.	.0
2992.0																		
1	0655	84	82.	64.5	3008.3	*	1	1515	184	58.	15.7	2997.4	*	1	2335	284	0.	.0
2992.0																		
1	0700	85	82.	64.0	3008.2	*	1	1520	185	57.	15.3	2997.3	*	1	2340	285	0.	.0
2992.0																		
1	0705	86	82.	63.5	3008.1	*	1	1525	186	57.	15.0	2997.2	*	1	2345	286	0.	.0
2992.0																		
1	0710	87	82.	62.9	3008.0	*	1	1530	187	57.	14.6	2997.1	*	1	2350	287	0.	.0
2992.0																		
1	0715	88	82.	62.4	3007.9	*	1	1535	188	56.	14.2	2997.0	*	1	2355	288	0.	.0
2992.0																		
1	0720	89	81.	61.8	3007.8	*	1	1540	189	56.	13.8	2996.9	*	2	0000	289	0.	.0
2992.0																		
1	0725	90	81.	61.3	3007.7	*	1	1545	190	56.	13.4	2996.7	*	2	0005	290	0.	.0
2992.0																		
1	0730	91	81.	60.8	3007.6	*	1	1550	191	55.	13.0	2996.6	*	2	0010	291	0.	.0
2992.0																		
1	0735	92	81.	60.2	3007.5	*	1	1555	192	55.	12.6	2996.5	*	2	0015	292	0.	.0
2992.0																		
1	0740	93	81.	59.7	3007.4	*	1	1600	193	55.	12.3	2996.4	*	2	0020	293	0.	.0
2992.0																		
1	0745	94	80.	59.1	3007.3	*	1	1605	194	55.	11.9	2996.3	*	2	0025	294	0.	.0
2992.0																		
1	0750	95	80.	58.6	3007.2	*	1	1610	195	54.	11.5	2996.2	*	2	0030	295	0.	.0
2992.0																		
1	0755	96	80.	58.0	3007.1	*	1	1615	196	54.	11.1	2996.1	*	2	0035	296	0.	.0
2992.0																		
1	0800	97	80.	57.5	3007.0	*	1	1620	197	54.	10.8	2995.9	*	2	0040	297	0.	.0
2992.0																		
1	0805	98	79.	56.9	3006.9	*	1	1625	198	53.	10.4	2995.8	*	2	0045	298	0.	.0
2992.0																		
1	0810	99	79.	56.4	3006.8	*	1	1630	199	53.	10.0	2995.7	*	2	0050	299	0.	.0
2992.0																		
1	0815	100	79.	55.8	3006.7	*	1	1635	200	53.	9.7	2995.6	*	2	0055	300	0.	.0
2992.0						*							*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 84.	5.83		80.	46.	45.	45.
		(INCHES)	.733	1.702	1.702	1.702
		(AC-FT)	40.	92.	92.	92.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)					
69.	5.83		58.	23.	22.	22.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)					
3009.08	5.83		3007.12	2998.42	2998.19	2998.19

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = .54

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	1		0820	101	55.	12.2	2996.4	1		1640	201	0.	.0	2992.0
1		0005	2	0.	.0	2992.0	1		0825	102	55.	11.8	2996.3	1		1645	202	0.	.0	2992.0
1		0010	3	0.	.0	2992.0	1		0830	103	54.	11.5	2996.2	1		1650	203	0.	.0	2992.0
1		0015	4	0.	.0	2992.0	1		0835	104	54.	11.1	2996.0	1		1655	204	0.	.0	2992.0
1		0020	5	0.	.0	2992.0	1		0840	105	54.	10.7	2995.9	1		1700	205	0.	.0	2992.0
1		0025	6	0.	.0	2992.0	1		0845	106	53.	10.4	2995.8	1		1705	206	0.	.0	2992.0
1		0030	7	0.	.0	2992.0	1		0850	107	53.	10.0	2995.7	1		1710	207	0.	.0	2992.0
1		0035	8	0.	.0	2992.0	1		0855	108	53.	9.6	2995.6	1		1715	208	0.	.0	2992.0
1		0040	9	0.	.0	2992.0	1		0900	109	52.	9.3	2995.5	1		1720	209	0.	.0	2992.0
1		0045	10	0.	.0	2992.0	1		0905	110	52.	8.9	2995.4	1		1725	210	0.	.0	2992.0
1		0050	11	0.	.0	2992.0	1		0910	111	52.	8.5	2995.3	1		1730	211	0.	.0	2992.0
1		0055	12	0.	.0	2992.0	1		0915	112	52.	8.2	2995.2	1		1735	212	0.	.0	2992.0
1		0100	13	0.	.0	2992.0	1		0920	113	51.	7.8	2995.1	1		1740	213	0.	.0	2992.0
1		0105	14	0.	.0	2992.0	1		0925	114	51.	7.5	2995.0	1		1745	214	0.	.0	2992.0
1		0110	15	0.	.0	2992.0	1		0930	115	50.	7.1	2994.8	1		1750	215	0.	.0	2992.0
1		0115	16	0.	.0	2992.0	1		0935	116	50.	6.8	2994.7	1		1755	216	0.	.0	2992.0
1		0120	17	0.	.0	2992.0	1		0940	117	50.	6.4	2994.6	1		1800	217	0.	.0	2992.0
1		0125	18	0.	.0	2992.0	1		0945	118	49.	6.1	2994.4	1		1805	218	0.	.0	2992.0
1		0130	19	0.	.0	2992.0	1		0950	119	49.	5.8	2994.3	1		1810	219	0.	.0	2992.0
1		0135	20	0.	.0	2992.0	1		0955	120	48.	5.4	2994.2	1		1815	220	0.	.0	2992.0
1		0140	21	1.	.0	2992.0	1		1000	121	48.	5.1	2994.0	1		1820	221	0.	.0	2992.0
1		0145	22	1.	.0	2992.0	1		1005	122	47.	4.8	2993.9	1		1825	222	0.	.0	2992.0
1		0150	23	1.	.0	2992.0	1		1010	123	47.	4.4	2993.8	1		1830	223	0.	.0	2992.0
1		0155	24	1.	.1	2992.0	1		1015	124	47.	4.1	2993.7	1		1835	224	0.	.0	2992.0
1		0200	25	1.	.1	2992.0	1		1020	125	46.	3.8	2993.6	1		1840	225	0.	.0	2992.0
1		0205	26	1.	.1	2992.0	1		1025	126	46.	3.5	2993.4	1		1845	226	0.	.0	2992.0
1		0210	27	1.	.1	2992.0	1		1030	127	45.	3.2	2993.3	1		1850	227	0.	.0	2992.0
1		0215	28	2.	.1	2992.0	1		1035	128	45.	2.9	2993.2	1		1855	228	0.	.0	2992.0
1		0220	29	2.	.1	2992.0	1		1040	129	45.	2.5	2993.1	1		1900	229	0.	.0	2992.0
1		0225	30	3.	.1	2992.1	1		1045	130	43.	2.2	2993.0	1		1905	230	0.	.0	2992.0
1		0230	31	3.	.2	2992.1	1		1050	131	37.	2.0	2992.8	1		1910	231	0.	.0	2992.0
1		0235	32	4.	.2	2992.1	1		1055	132	33.	1.7	2992.7	1		1915	232	0.	.0	2992.0
1		0240	33	5.	.2	2992.1	1		1100	133	29.	1.5	2992.6	1		1920	233	0.	.0	2992.0
1		0245	34	5.	.3	2992.1	1		1105	134	25.	1.3	2992.6	1		1925	234	0.	.0	2992.0
1		0250	35	6.	.3	2992.1	1		1110	135	22.	1.2	2992.5	1		1930	235	0.	.0	2992.0
1		0255	36	7.	.4	2992.2	1		1115	136	19.	1.0	2992.4	1		1935	236	0.	.0	2992.0
1		0300	37	8.	.4	2992.2	1		1120	137	17.	.9	2992.4	1		1940	237	0.	.0	2992.0
1		0305	38	9.	.5	2992.2	1		1125	138	15.	.8	2992.3	1		1945	238	0.	.0	2992.0
1		0310	39	11.	.6	2992.2	1		1130	139	13.	.7	2992.3	1		1950	239	0.	.0	2992.0
1		0315	40	13.	.7	2992.3	1		1135	140	12.	.6	2992.3	1		1955	240	0.	.0	2992.0
1		0320	41	19.	1.0	2992.4	1		1140	141	10.	.5	2992.2	1		2000	241	0.	.0	2992.0
1		0325	42	27.	1.4	2992.6	1		1145	142	9.	.5	2992.2	1		2005	242	0.	.0	2992.0
1		0330	43	41.	2.2	2992.9	1		1150	143	8.	.4	2992.2	1		2010	243	0.	.0	2992.0
1		0335	44	46.	3.2	2993.3	1		1155	144	7.	.4	2992.2	1		2015	244	0.	.0	2992.0
1		0340	45	47.	4.6	2993.8	1		1200	145	6.	.3	2992.1	1		2020	245	0.	.0	2992.0
1		0345	46	49.	6.1	2994.4	1		1205	146	5.	.3	2992.1	1		2025	246	0.	.0	2992.0
1		0350	47	51.	7.7	2995.0	1		1210	147	5.	.2	2992.1	1		2030	247	0.	.0	2992.0
1		0355	48	52.	9.4	2995.5	1		1215	148	4.	.2	2992.1	1		2035	248	0.	.0	2992.0

1	0400	49	54.	10.9	2996.0	*	1	1220	149	4.	.2	2992.1	*	1	2040	249	0.	.0	2992.0
1	0405	50	55.	12.4	2996.5	*	1	1225	150	3.	.2	2992.1	*	1	2045	250	0.	.0	2992.0
1	0410	51	56.	13.8	2996.9	*	1	1230	151	3.	.1	2992.1	*	1	2050	251	0.	.0	2992.0
1	0415	52	57.	15.1	2997.2	*	1	1235	152	2.	.1	2992.1	*	1	2055	252	0.	.0	2992.0
1	0420	53	58.	16.2	2997.6	*	1	1240	153	2.	.1	2992.0	*	1	2100	253	0.	.0	2992.0
1	0425	54	59.	17.1	2997.8	*	1	1245	154	2.	.1	2992.0	*	1	2105	254	0.	.0	2992.0
1	0430	55	59.	17.9	2998.1	*	1	1250	155	2.	.1	2992.0	*	1	2110	255	0.	.0	2992.0
1	0435	56	60.	18.6	2998.3	*	1	1255	156	1.	.1	2992.0	*	1	2115	256	0.	.0	2992.0
1	0440	57	61.	19.2	2998.5	*	1	1300	157	1.	.1	2992.0	*	1	2120	257	0.	.0	2992.0
1	0445	58	61.	19.8	2998.7	*	1	1305	158	1.	.1	2992.0	*	1	2125	258	0.	.0	2992.0
1	0450	59	61.	20.4	2998.8	*	1	1310	159	1.	.1	2992.0	*	1	2130	259	0.	.0	2992.0
1	0455	60	62.	20.9	2999.0	*	1	1315	160	1.	.0	2992.0	*	1	2135	260	0.	.0	2992.0
1	0500	61	62.	21.4	2999.1	*	1	1320	161	1.	.0	2992.0	*	1	2140	261	0.	.0	2992.0
1	0505	62	63.	21.9	2999.3	*	1	1325	162	1.	.0	2992.0	*	1	2145	262	0.	.0	2992.0
1	0510	63	63.	22.2	2999.4	*	1	1330	163	1.	.0	2992.0	*	1	2150	263	0.	.0	2992.0
1	0515	64	63.	22.6	2999.5	*	1	1335	164	0.	.0	2992.0	*	1	2155	264	0.	.0	2992.0
1	0520	65	63.	22.8	2999.6	*	1	1340	165	0.	.0	2992.0	*	1	2200	265	0.	.0	2992.0
1	0525	66	64.	23.0	2999.6	*	1	1345	166	0.	.0	2992.0	*	1	2205	266	0.	.0	2992.0
1	0530	67	64.	23.1	2999.6	*	1	1350	167	0.	.0	2992.0	*	1	2210	267	0.	.0	2992.0
1	0535	68	64.	23.1	2999.6	*	1	1355	168	0.	.0	2992.0	*	1	2215	268	0.	.0	2992.0
1	0540	69	64.	23.1	2999.6	*	1	1400	169	0.	.0	2992.0	*	1	2220	269	0.	.0	2992.0
1	0545	70	64.	23.0	2999.6	*	1	1405	170	0.	.0	2992.0	*	1	2225	270	0.	.0	2992.0
1	0550	71	64.	22.8	2999.6	*	1	1410	171	0.	.0	2992.0	*	1	2230	271	0.	.0	2992.0
1	0555	72	63.	22.7	2999.5	*	1	1415	172	0.	.0	2992.0	*	1	2235	272	0.	.0	2992.0
1	0600	73	63.	22.5	2999.4	*	1	1420	173	0.	.0	2992.0	*	1	2240	273	0.	.0	2992.0
1	0605	74	63.	22.2	2999.4	*	1	1425	174	0.	.0	2992.0	*	1	2245	274	0.	.0	2992.0
1	0610	75	63.	22.0	2999.3	*	1	1430	175	0.	.0	2992.0	*	1	2250	275	0.	.0	2992.0
1	0615	76	63.	21.7	2999.2	*	1	1435	176	0.	.0	2992.0	*	1	2255	276	0.	.0	2992.0
1	0620	77	62.	21.4	2999.1	*	1	1440	177	0.	.0	2992.0	*	1	2300	277	0.	.0	2992.0
1	0625	78	62.	21.0	2999.0	*	1	1445	178	0.	.0	2992.0	*	1	2305	278	0.	.0	2992.0
1	0630	79	62.	20.7	2998.9	*	1	1450	179	0.	.0	2992.0	*	1	2310	279	0.	.0	2992.0
1	0635	80	61.	20.3	2998.8	*	1	1455	180	0.	.0	2992.0	*	1	2315	280	0.	.0	2992.0
1	0640	81	61.	20.0	2998.7	*	1	1500	181	0.	.0	2992.0	*	1	2320	281	0.	.0	2992.0
1	0645	82	61.	19.6	2998.6	*	1	1505	182	0.	.0	2992.0	*	1	2325	282	0.	.0	2992.0
1	0650	83	61.	19.2	2998.5	*	1	1510	183	0.	.0	2992.0	*	1	2330	283	0.	.0	2992.0
1	0655	84	60.	18.8	2998.4	*	1	1515	184	0.	.0	2992.0	*	1	2335	284	0.	.0	2992.0
1	0700	85	60.	18.4	2998.2	*	1	1520	185	0.	.0	2992.0	*	1	2340	285	0.	.0	2992.0
1	0705	86	60.	18.0	2998.1	*	1	1525	186	0.	.0	2992.0	*	1	2345	286	0.	.0	2992.0
1	0710	87	59.	17.7	2998.0	*	1	1530	187	0.	.0	2992.0	*	1	2350	287	0.	.0	2992.0
1	0715	88	59.	17.3	2997.9	*	1	1535	188	0.	.0	2992.0	*	1	2355	288	0.	.0	2992.0
1	0720	89	59.	16.9	2997.8	*	1	1540	189	0.	.0	2992.0	*	2	0000	289	0.	.0	2992.0
1	0725	90	58.	16.5	2997.7	*	1	1545	190	0.	.0	2992.0	*	2	0005	290	0.	.0	2992.0
1	0730	91	58.	16.1	2997.5	*	1	1550	191	0.	.0	2992.0	*	2	0010	291	0.	.0	2992.0
1	0735	92	58.	15.7	2997.4	*	1	1555	192	0.	.0	2992.0	*	2	0015	292	0.	.0	2992.0
1	0740	93	57.	15.3	2997.3	*	1	1600	193	0.	.0	2992.0	*	2	0020	293	0.	.0	2992.0
1	0745	94	57.	14.9	2997.2	*	1	1605	194	0.	.0	2992.0	*	2	0025	294	0.	.0	2992.0
1	0750	95	57.	14.5	2997.1	*	1	1610	195	0.	.0	2992.0	*	2	0030	295	0.	.0	2992.0
1	0755	96	56.	14.1	2997.0	*	1	1615	196	0.	.0	2992.0	*	2	0035	296	0.	.0	2992.0
1	0800	97	56.	13.7	2996.8	*	1	1620	197	0.	.0	2992.0	*	2	0040	297	0.	.0	2992.0
1	0805	98	56.	13.4	2996.7	*	1	1625	198	0.	.0	2992.0	*	2	0045	298	0.	.0	2992.0
1	0810	99	55.	13.0	2996.6	*	1	1630	199	0.	.0	2992.0	*	2	0050	299	0.	.0	2992.0
1	0815	100	55.	12.6	2996.5	*	1	1635	200	0.	.0	2992.0	*	2	0055	300	0.	.0	2992.0
						*							*						

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)					

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                                                                    EX
+     393.      3.83                    78.          20.          19.          19.
                        (INCHES)      1.695        1.698        1.698        1.698
                         (AC-FT)        39.          39.          39.          39.

                        CUMULATIVE AREA =     .43 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF1
                            FOR PLAN 1, RATIO =  .98

     TOTAL RAINFALL =    2.92, TOTAL LOSS =    1.27, TOTAL EXCESS =    1.66

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR         24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     385.      3.83                    76.          19.          18.          18.
                        (INCHES)      1.656        1.659        1.659        1.659
                         (AC-FT)        38.          38.          38.          38.

                        CUMULATIVE AREA =     .43 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF1
                            FOR PLAN 1, RATIO =  .95

     TOTAL RAINFALL =    2.85, TOTAL LOSS =    1.26, TOTAL EXCESS =    1.59

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR         24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     370.      3.83                    73.          18.          18.          18.
                        (INCHES)      1.592        1.594        1.594        1.594
                         (AC-FT)        36.          36.          36.          36.

                        CUMULATIVE AREA =     .43 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF1
                            FOR PLAN 1, RATIO =  .54

     TOTAL RAINFALL =    1.62, TOTAL LOSS =    1.01, TOTAL EXCESS =     .61

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR         24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                         (CFS)
+     143.      3.92                    28.           7.           7.           7.
                        (INCHES)       .610         .610         .610         .610
                         (AC-FT)        14.          14.          14.          14.

                        CUMULATIVE AREA =     .43 SQ MI


*** *** *** *
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TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.63, TOTAL EXCESS = 1.37

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
49.	3.58	(CFS)	6.	2.	1.	1.
		(INCHES)	1.366	1.366	1.366	1.366
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF2
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.63, TOTAL EXCESS = 1.37

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
49.	3.58	(CFS)	6.	2.	1.	1.
		(INCHES)	1.366	1.366	1.366	1.366
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF2
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.63, TOTAL EXCESS = 1.34

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
48.	3.58	(CFS)	6.	2.	1.	1.
		(INCHES)	1.342	1.342	1.342	1.342
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF2
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.62, TOTAL EXCESS = 1.31

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
47.	3.58	(CFS)	6.	1.	1.	1.
		(INCHES)	1.307	1.307	1.307	1.307
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF2
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.60, TOTAL EXCESS = 1.25

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
45.	3.58	(CFS)	6.	1.	1.	1.
		(INCHES)	1.249	1.249	1.249	1.249
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF2
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = 1.21, TOTAL EXCESS = .41

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
14.	3.58	(CFS)	2.	0.	0.	0.
		(INCHES)	.406	.406	.406	.406
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = .04 SQ MI

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  155 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

                SUBBASIN RUNOFF DATA

  156 BA          SUBBASIN CHARACTERISTICS
                       TAREA        .03  SUBBASIN AREA

                PRECIPITATION DATA

  132 PB               STORM        3.00  BASIN TOTAL PRECIPITATION

   33 PI            INCREMENTAL PRECIPITATION PATTERN
                      .02       .04       .01       .02       .02       .02       .01       .00       .00       .00
                      .00       .00       .00       .01       .00       .01       .01       .01       .01       .01
                      .01       .00       .00       .00       .00       .01       .02       .01       .01       .00
                      .01       .01       .01       .00       .00       .01       .03       .03       .06       .09
                      .09       .12       .03       .04       .03       .01       .02       .02       .00       .00
                      .01       .01       .01       .02       .02       .01       .01       .02       .01       .01
                      .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
                      .00       .00

  157 LS          SCS LOSS RATE
                       STRTL        .27  INITIAL ABSTRACTION
                      CRVNBR       88.00  CURVE NUMBER
                       RTIMP        .00  PERCENT IMPERVIOUS AREA

  158 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .11  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       9 END-OF-PERIOD ORDINATES
                    47.       82.       43.       17.        7.        3.        1.        1.        0.

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+    (CFS)       (HR)
                                    (CFS)
+       41.      3.50                 5.           1.           1.           1.
                                  (INCHES)      1.818        1.818        1.818        1.818
                                   (AC-FT)         3.           3.           3.           3.

                                  CUMULATIVE AREA =     .03 SQ MI

        ***              ***              ***              ***              ***

                            HYDROGRAPH AT STATION    *OFF3
                              FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+    (CFS)       (HR)
                                    (CFS)
+       41.      3.50                 5.           1.           1.           1.
                                  (INCHES)      1.818        1.818        1.818        1.818
                                   (AC-FT)         3.           3.           3.           3.

                                  CUMULATIVE AREA =     .03 SQ MI

        ***              ***              ***              ***              ***

                            HYDROGRAPH AT STATION    *OFF3
                              FOR PLAN 1, RATIO =  .99

     TOTAL RAINFALL =    2.97, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.79

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+    (CFS)       (HR)
                                    (CFS)
+       40.      3.50                 5.           1.           1.           1.
                                  (INCHES)      1.791        1.792        1.792        1.792
                                   (AC-FT)         2.           2.           2.           2.

                                  CUMULATIVE AREA =     .03 SQ MI

        ***              ***              ***              ***              ***

                            HYDROGRAPH AT STATION    *OFF3
                              FOR PLAN 1, RATIO =  .98

     TOTAL RAINFALL =    2.92, TOTAL LOSS =    1.17, TOTAL EXCESS =    1.75

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.92-HR
+    (CFS)       (HR)
                                    (CFS)
+       39.      3.50                 5.           1.           1.           1.
                                  (INCHES)      1.752        1.752        1.752        1.752
                                   (AC-FT)         2.           2.           2.           2.

                                  CUMULATIVE AREA =     .03 SQ MI

        ***              ***              ***              ***              ***

                            HYDROGRAPH AT STATION    *OFF3
                              FOR PLAN 1, RATIO =  .95
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EX

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
38.	3.58	(CFS)	5.	1.	1.	1.
		(INCHES)	1.685	1.685	1.685	1.685
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF3
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
16.	3.58	(CFS)	2.	0.	0.	0.
		(INCHES)	.670	.670	.670	.670
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF4
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)			
89.	3.58	11.	3.	3.	3.
		(INCHES) 1.791	1.792	1.792	1.792
		(AC-FT) 6.	6.	6.	6.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF4
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)			
87.	3.58	11.	3.	3.	3.
		(INCHES) 1.751	1.752	1.752	1.752
		(AC-FT) 5.	5.	5.	5.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF4
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)			
84.	3.58	11.	3.	3.	3.
		(INCHES) 1.685	1.685	1.685	1.685
		(AC-FT) 5.	5.	5.	5.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF4
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
		(CFS)			
35.	3.58	4.	1.	1.	1.
		(INCHES) .670	.670	.670	.670
		(AC-FT) 2.	2.	2.	2.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *

EX
RTIMP .00 PERCENT IMPERVIOUS AREA

175 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .42 LAG

***

UNIT HYDROGRAPH
27 END-OF-PERIOD ORDINATES

24.	72.	151.	231.	269.	268.	238.	196.	141.	102.
76.	58.	43.	32.	24.	17.	13.	10.	7.	5.
4.	3.	2.	2.	1.	1.	0.			

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 252.	3.83	(CFS) 50.	13.	12.	12.
		(INCHES) 1.814	1.818	1.818	1.818
		(AC-FT) 25.	25.	25.	25.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 252.	3.83	(CFS) 50.	13.	12.	12.
		(INCHES) 1.814	1.818	1.818	1.818
		(AC-FT) 25.	25.	25.	25.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 248.	3.83	(CFS) 49.	12.	12.	12.
		(INCHES) 1.788	1.792	1.792	1.792
		(AC-FT) 24.	25.	25.	25.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 243.	3.83	(CFS) 48.	12.	12.	12.
		(INCHES) 1.748	1.752	1.752	1.752
		(AC-FT) 24.	24.	24.	24.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 234.	3.83	(CFS) 46.	12.	11.	11.
		(INCHES) 1.682	1.685	1.685	1.685
		(AC-FT) 23.	23.	23.	23.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ 94.	3.83	(CFS) 19.	5.	4.	4.
		(INCHES) .670	.670	.670	.670
		(AC-FT) 9.	9.	9.	9.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *

+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
		(CFS)	8.	2.	2.	2.
+ 60.	3.58	(INCHES)	1.751	1.752	1.752	1.752
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF6
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	7.	2.	2.	2.
+ 58.	3.58	(INCHES)	1.685	1.685	1.685	1.685
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF6
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	3.	1.	1.	1.
+ 24.	3.58	(INCHES)	.670	.670	.670	.670
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = .04 SQ MI

*** *** *** *

1	0000	1	0.	.0	2797.3	*	1	0820	101	0.	.0	2797.3	*	1
2797.3														
1	0005	2	0.	.0	2797.3	*	1	0825	102	0.	.0	2797.3	*	1
2797.3														
1	0010	3	0.	.0	2797.3	*	1	0830	103	0.	.0	2797.3	*	1
2797.3														
1	0015	4	0.	.0	2797.3	*	1	0835	104	0.	.0	2797.3	*	1
2797.3														
1	0020	5	0.	.0	2797.3	*	1	0840	105	0.	.0	2797.3	*	1
2797.3														
1	0025	6	0.	.0	2797.3	*	1	0845	106	0.	.0	2797.3	*	1
2797.3														
1	0030	7	0.	.0	2797.3	*	1	0850	107	0.	.0	2797.3	*	1
2797.3														
1	0035	8	1.	.0	2797.4	*	1	0855	108	0.	.0	2797.3	*	1
2797.3														
1	0040	9	2.	.0	2797.5	*	1	0900	109	0.	.0	2797.3	*	1
2797.3														
1	0045	10	2.	.0	2797.5	*	1	0905	110	0.	.0	2797.3	*	1
2797.3														
1	0050	11	2.	.0	2797.5	*	1	0910	111	0.	.0	2797.3	*	1
2797.3														
1	0055	12	1.	.0	2797.4	*	1	0915	112	0.	.0	2797.3	*	1
2797.3														
1	0100	13	1.	.0	2797.4	*	1	0920	113	0.	.0	2797.3	*	1
2797.3														
1	0105	14	1.	.0	2797.4	*	1	0925	114	0.	.0	2797.3	*	1
2797.3														
1	0110	15	1.	.0	2797.4	*	1	0930	115	0.	.0	2797.3	*	1
2797.3														
1	0115	16	1.	.0	2797.4	*	1	0935	116	0.	.0	2797.3	*	1
2797.3														
1	0120	17	2.	.0	2797.4	*	1	0940	117	0.	.0	2797.3	*	1
2797.3														
1	0125	18	2.	.0	2797.5	*	1	0945	118	0.	.0	2797.3	*	1
2797.3														
1	0130	19	3.	.0	2797.6	*	1	0950	119	0.	.0	2797.3	*	1
2797.3														
1	0135	20	5.	.0	2797.7	*	1	0955	120	0.	.0	2797.3	*	1
2797.3														
1	0140	21	7.	.0	2797.9	*	1	1000	121	0.	.0	2797.3	*	1
2797.3														
1	0145	22	8.	.0	2798.0	*	1	1005	122	0.	.0	2797.3	*	1
2797.3														
1	0150	23	8.	.0	2798.0	*	1	1010	123	0.	.0	2797.3	*	1
2797.3														
1	0155	24	8.	.0	2798.0	*	1	1015	124	0.	.0	2797.3	*	1
2797.3														
1	0200	25	7.	.0	2797.9	*	1	1020	125	0.	.0	2797.3	*	1
2797.3														
1	0205	26	5.	.0	2797.8	*	1	1025	126	0.	.0	2797.3	*	1
2797.3														
1	0210	27	4.	.0	2797.7	*	1	1030	127	0.	.0	2797.3	*	1
2797.3														
1	0215	28	5.	.0	2797.8	*	1	1035	128	0.	.0	2797.3	*	1
2797.3														
1	0220	29	8.	.0	2798.0	*	1	1040	129	0.	.0	2797.3	*	1
2797.3														
1	0225	30	9.	.0	2798.1	*	1	1045	130	0.	.0	2797.3	*	1
2797.3														
1	0230	31	11.	.0	2798.3	*	1	1050	131	0.	.0	2797.3	*	1
2797.3														
1	0235	32	12.	.1	2798.4	*	1	1055	132	0.	.0	2797.3	*	1
2797.3														
1	0240	33	12.	.1	2798.4	*	1	1100	133	0.	.0	2797.3	*	1
2797.3														
1	0245	34	12.	.1	2798.4	*	1	1105	134	0.	.0	2797.3	*	1
2797.3														
1	0250	35	12.	.1	2798.4	*	1	1110	135	0.	.0	2797.3	*	1
2797.3														
1	0255	36	13.	.1	2798.4	*	1	1115	136	0.	.0	2797.3	*	1
2797.3														
1	0300	37	12.	.1	2798.4	*	1	1120	137	0.	.0	2797.3	*	1
2797.3														
1	0305	38	13.	.1	2798.4	*	1	1125	138	0.	.0	2797.3	*	1
2797.3														
1	0310	39	15.	.1	2798.6	*	1	1130	139	0.	.0	2797.3	*	1
2797.3														
1	0315	40	22.	.1	2799.2	*	1	1135	140	0.	.0	2797.3	*	1
2797.3														
1	0320	41	33.	.3	2800.1	*	1	1140	141	0.	.0	2797.3	*	1
2797.3														
1	0325	42	49.	.5	2801.5	*	1	1145	142	0.	.0	2797.3	*	1
2797.3														
1	0330	43	91.	.9	2803.0	*	1	1150	143	0.	.0	2797.3	*	1
2797.3														
1	0335	44	134.	1.3	2804.2	*	1	1155	144	0.	.0	2797.3	*	1
2797.3														
1	0340	45	154.	1.6	2805.2	*	1	1200	145	0.	.0	2797.3	*	1
2797.3														
1	0345	46	165.	1.8	2805.7	*	1	1205	146	0.	.0	2797.3	*	1
2797.3														
1	0350	47	167.	1.9	2805.8	*	1	1210	147	0.	.0	2797.3	*	1
2797.3														
1	0355	48	160.	1.7	2805.4	*	1	1215	148	0.	.0	2797.3	*	1
2797.3														
1	0400	49	145.	1.4	2804.7	*	1	1220	149	0.	.0	2797.3	*	1
2797.3														
1	0405	50	122.	1.1	2803.8	*	1	1225	150	0.	.0	2797.3	*	1
2797.3														
1	0410	51	88.	.9	2802.9	*	1	1230	151	0.	.0	2797.3	*	1
2797.3														
1	0415	52	67.	.7	2802.3	*	1	1235	152	0.	.0	2797.3	*	1
2797.3														
1	0420	53	53.	.6	2801.9	*	1	1240	153	0.	.0	2797.3	*	1
2797.3														
1	0425	54	47.	.5	2801.4	*	1	1245	154	0.	.0	2797.3	*	1
2797.3														
1	0430	55	42.	.4	2800.9	*	1	1250	155	0.	.0	2797.3	*	1
2797.3														
1	0435	56	40.	.4	2800.8	*	1	1255	156	0.	.0	2797.3	*	1

1640	201	0.	.0	2797.3	*	1								
1645	202	0.	.0	2797.3	*	1								
1650	203	0.	.0	2797.3	*	1								
1655	204	0.	.0	2797.3	*	1								
1700	205	0.	.0	2797.3	*	1								
1705	206	0.	.0	2797.3	*	1								
1710	207	0.	.0	2797.3	*	1								
1715	208	0.	.0	2797.3	*	1								
1720	209	0.	.0	2797.3	*	1								
1725	210	0.	.0	2797.3	*	1								
1730	211	0.	.0	2797.3	*	1								
1735	212	0.	.0	2797.3	*	1								
1740	213	0.	.0	2797.3	*	1								
1745	214	0.	.0	2797.3	*	1								
1750	215	0.	.0	2797.3	*	1								
1755	216	0.	.0	2797.3	*	1								
1800	217	0.	.0	2797.3	*	1								
1805	218	0.	.0	2797.3	*	1								
1810	219	0.	.0	2797.3	*	1								
1815	220	0.	.0	2797.3	*	1								
1820	221	0.	.0	2797.3	*	1								
1825	222	0.	.0	2797.3	*	1								
1830	223	0.	.0	2797.3	*	1								
1835	224	0.	.0	2797.3	*	1								
1840	225	0.	.0	2797.3	*	1								
1845	226	0.	.0	2797.3	*	1								
1850	227	0.	.0	2797.3	*	1								
1855	228	0.	.0	2797.3	*	1								
1900	229	0.	.0	2797.3	*	1								
1905	230	0.	.0	2797.3	*	1								
1910	231	0.	.0	2797.3	*	1								
1915	232	0.	.0	2797.3	*	1								
1920	233	0.	.0	2797.3	*	1								
1925	234	0.	.0	2797.3	*	1								
1930	235	0.	.0	2797.3	*	1								
1935	236	0.	.0	2797.3	*	1								
1940	237	0.	.0	2797.3	*	1								
1945	238	0.	.0	2797.3	*	1								
1950	239	0.	.0	2797.3	*	1								
1955	240	0.	.0	2797.3	*	1								
2000	241	0.	.0	2797.3	*	1								
2005	242	0.	.0	2797.3	*	1								
2010	243	0.	.0	2797.3	*	1								
2015	244	0.	.0	2797.3	*	1								
2020	245	0.	.0	2797.3	*	1								
2025	246	0.	.0	2797.3	*	1								
2030	247	0.	.0	2797.3	*	1								
2035	248	0.	.0	2797.3	*	1								
2040	249	0.	.0	2797.3	*	1								
2045	250	0.	.0	2797.3	*	1								
2050	251	0.	.0	2797.3	*	1								
2055	252	0.	.0	2797.3	*	1								
2100	253	0.	.0	2797.3	*	1								
2105	254	0.	.0	2797.3	*	1								
2110	255	0.	.0	2797.3	*	1								
2115	256	0.	.0	2797.3	*	1								

2797.3	1	0440	57	40.	.4	2800.8	*	1	1300	157	0.	.0	2797.3 * 1	2120 257	0. .0
2797.3	1	0445	58	42.	.4	2800.9	*	1	1305	158	0.	.0	2797.3 * 1	2125 258	0. .0
2797.3	1	0450	59	43.	.5	2801.0	*	1	1310	159	0.	.0	2797.3 * 1	2130 259	0. .0
2797.3	1	0455	60	44.	.5	2801.1	*	1	1315	160	0.	.0	2797.3 * 1	2135 260	0. .0
2797.3	1	0500	61	44.	.5	2801.1	*	1	1320	161	0.	.0	2797.3 * 1	2140 261	0. .0
2797.3	1	0505	62	43.	.5	2801.0	*	1	1325	162	0.	.0	2797.3 * 1	2145 262	0. .0
2797.3	1	0510	63	40.	.4	2800.8	*	1	1330	163	0.	.0	2797.3 * 1	2150 263	0. .0
2797.3	1	0515	64	35.	.3	2800.4	*	1	1335	164	0.	.0	2797.3 * 1	2155 264	0. .0
2797.3	1	0520	65	30.	.2	2799.9	*	1	1340	165	0.	.0	2797.3 * 1	2200 265	0. .0
2797.3	1	0525	66	23.	.2	2799.3	*	1	1345	166	0.	.0	2797.3 * 1	2205 266	0. .0
2797.3	1	0530	67	18.	.1	2798.8	*	1	1350	167	0.	.0	2797.3 * 1	2210 267	0. .0
2797.3	1	0535	68	13.	.1	2798.4	*	1	1355	168	0.	.0	2797.3 * 1	2215 268	0. .0
2797.3	1	0540	69	10.	.0	2798.2	*	1	1400	169	0.	.0	2797.3 * 1	2220 269	0. .0
2797.3	1	0545	70	7.	.0	2797.9	*	1	1405	170	0.	.0	2797.3 * 1	2225 270	0. .0
2797.3	1	0550	71	5.	.0	2797.7	*	1	1410	171	0.	.0	2797.3 * 1	2230 271	0. .0
2797.3	1	0555	72	5.	.0	2797.7	*	1	1415	172	0.	.0	2797.3 * 1	2235 272	0. .0
2797.3	1	0600	73	5.	.0	2797.7	*	1	1420	173	0.	.0	2797.3 * 1	2240 273	0. .0
2797.3	1	0605	74	4.	.0	2797.6	*	1	1425	174	0.	.0	2797.3 * 1	2245 274	0. .0
2797.3	1	0610	75	3.	.0	2797.6	*	1	1430	175	0.	.0	2797.3 * 1	2250 275	0. .0
2797.3	1	0615	76	2.	.0	2797.5	*	1	1435	176	0.	.0	2797.3 * 1	2255 276	0. .0
2797.3	1	0620	77	2.	.0	2797.4	*	1	1440	177	0.	.0	2797.3 * 1	2300 277	0. .0
2797.3	1	0625	78	1.	.0	2797.4	*	1	1445	178	0.	.0	2797.3 * 1	2305 278	0. .0
2797.3	1	0630	79	1.	.0	2797.4	*	1	1450	179	0.	.0	2797.3 * 1	2310 279	0. .0
2797.3	1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3 * 1	2315 280	0. .0
2797.3	1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3 * 1	2320 281	0. .0
2797.3	1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3 * 1	2325 282	0. .0
2797.3	1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3 * 1	2330 283	0. .0
2797.3	1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3 * 1	2335 284	0. .0
2797.3	1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3 * 1	2340 285	0. .0
2797.3	1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3 * 1	2345 286	0. .0
2797.3	1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3 * 1	2350 287	0. .0
2797.3	1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3 * 1	2355 288	0. .0
2797.3	1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3 * 2	0000 289	0. .0
2797.3	1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3 * 2	0005 290	0. .0
2797.3	1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3 * 2	0010 291	0. .0
2797.3	1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3 * 2	0015 292	0. .0
2797.3	1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3 * 2	0020 293	0. .0
2797.3	1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3 * 2	0025 294	0. .0
2797.3	1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3 * 2	0030 295	0. .0
2797.3	1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3 * 2	0035 296	0. .0
2797.3	1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3 * 2	0040 297	0. .0
2797.3	1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3 * 2	0045 298	0. .0
2797.3	1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3 * 2	0050 299	0. .0
2797.3	1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3 * 2	0055 300	0. .0
2797.3							*						*		

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)	31.	8.	8.	8.
+ 167.	3.83	(INCHES)	1.810	1.811	1.811	1.811
		(AC-FT)	15.	15.	15.	15.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)	0.	0.	0.	0.
2.	3.83				

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)	2799.42	2797.84	2797.82	2797.82
2805.80	3.83				

EX

CUMULATIVE AREA = .16 SQ MI

HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .99

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	1		0845	106	0.	.0	2797.3	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	1		0850	107	0.	.0	2797.3	1		1710	207	0.	.0	2797.3
1		0035	8	1.	.0	2797.4	1		0855	108	0.	.0	2797.3	1		1715	208	0.	.0	2797.3
1		0040	9	2.	.0	2797.4	1		0900	109	0.	.0	2797.3	1		1720	209	0.	.0	2797.3
1		0045	10	2.	.0	2797.5	1		0905	110	0.	.0	2797.3	1		1725	210	0.	.0	2797.3
1		0050	11	2.	.0	2797.5	1		0910	111	0.	.0	2797.3	1		1730	211	0.	.0	2797.3
1		0055	12	1.	.0	2797.4	1		0915	112	0.	.0	2797.3	1		1735	212	0.	.0	2797.3
1		0100	13	1.	.0	2797.4	1		0920	113	0.	.0	2797.3	1		1740	213	0.	.0	2797.3
1		0105	14	1.	.0	2797.3	1		0925	114	0.	.0	2797.3	1		1745	214	0.	.0	2797.3
1		0110	15	1.	.0	2797.4	1		0930	115	0.	.0	2797.3	1		1750	215	0.	.0	2797.3
1		0115	16	1.	.0	2797.4	1		0935	116	0.	.0	2797.3	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	1		0940	117	0.	.0	2797.3	1		1800	217	0.	.0	2797.3
1		0125	18	2.	.0	2797.5	1		0945	118	0.	.0	2797.3	1		1805	218	0.	.0	2797.3
1		0130	19	3.	.0	2797.6	1		0950	119	0.	.0	2797.3	1		1810	219	0.	.0	2797.3
1		0135	20	5.	.0	2797.7	1		0955	120	0.	.0	2797.3	1		1815	220	0.	.0	2797.3
1		0140	21	7.	.0	2797.9	1		1000	121	0.	.0	2797.3	1		1820	221	0.	.0	2797.3
1		0145	22	8.	.0	2798.0	1		1005	122	0.	.0	2797.3	1		1825	222	0.	.0	2797.3
1		0150	23	8.	.0	2798.0	1		1010	123	0.	.0	2797.3	1		1830	223	0.	.0	2797.3
1		0155	24	8.	.0	2798.0	1		1015	124	0.	.0	2797.3	1		1835	224	0.	.0	2797.3
1		0200	25	7.	.0	2797.9	1		1020	125	0.	.0	2797.3	1		1840	225	0.	.0	2797.3
1		0205	26	5.	.0	2797.8	1		1025	126	0.	.0	2797.3	1		1845	226	0.	.0	2797.3
1		0210	27	4.	.0	2797.7	1		1030	127	0.	.0	2797.3	1		1850	227	0.	.0	2797.3
1		0215	28	5.	.0	2797.7	1		1035	128	0.	.0	2797.3	1		1855	228	0.	.0	2797.3
1		0220	29	8.	.0	2798.0	1		1040	129	0.	.0	2797.3	1		1900	229	0.	.0	2797.3
1		0225	30	9.	.0	2798.1	1		1045	130	0.	.0	2797.3	1		1905	230	0.	.0	2797.3
1		0230	31	11.	.0	2798.3	1		1050	131	0.	.0	2797.3	1		1910	231	0.	.0	2797.3
1		0235	32	12.	.1	2798.3	1		1055	132	0.	.0	2797.3	1		1915	232	0.	.0	2797.3
1		0240	33	12.	.1	2798.3	1		1100	133	0.	.0	2797.3	1		1920	233	0.	.0	2797.3
1		0245	34	12.	.1	2798.3	1		1105	134	0.	.0	2797.3	1		1925	234	0.	.0	2797.3
1		0250	35	12.	.1	2798.4	1		1110	135	0.	.0	2797.3	1		1930	235	0.	.0	2797.3
1		0255	36	12.	.1	2798.4	1		1115	136	0.	.0	2797.3	1		1935	236	0.	.0	2797.3
1		0300	37	12.	.1	2798.4	1		1120	137	0.	.0	2797.3	1		1940	237	0.	.0	2797.3
1		0305	38	12.	.1	2798.4	1		1125	138	0.	.0	2797.3	1		1945	238	0.	.0	2797.3
1		0310	39	15.	.1	2798.6	1		1130	139	0.	.0	2797.3	1		1950	239	0.	.0	2797.3
1		0315	40	21.	.1	2799.2	1		1135	140	0.	.0	2797.3	1		1955	240	0.	.0	2797.3
1		0320	41	32.	.3	2800.1	1		1140	141	0.	.0	2797.3	1		2000	241	0.	.0	2797.3
1		0325	42	48.	.5	2801.5	1		1145	142	0.	.0	2797.3	1		2005	242	0.	.0	2797.3
1		0330	43	89.	.9	2802.9	1		1150	143	0.	.0	2797.3	1		2010	243	0.	.0	2797.3
1		0335	44	133.	1.2	2804.2	1		1155	144	0.	.0	2797.3	1		2015	244	0.	.0	2797.3
1		0340	45	152.	1.6	2805.1	1		1200	145	0.	.0	2797.3	1		2020	245	0.	.0	2797.3
1		0345	46	163.	1.8	2805.6	1		1205	146	0.	.0	2797.3	1		2025	246	0.	.0	2797.3
1		0350	47	165.	1.8	2805.7	1		1210	147	0.	.0	2797.3	1		2030	247	0.	.0	2797.3
1		0355	48	158.	1.7	2805.3	1		1215	148	0.	.0	2797.3	1		2035	248	0.	.0	2797.3

2797.3															
1	0400	49	142.	1.4	2804.6 *	1	1220	149	0.	.0	2797.3 *	1	2040	249	0.	.0
2797.3																
1	0405	50	118.	1.1	2803.7 *	1	1225	150	0.	.0	2797.3 *	1	2045	250	0.	.0
2797.3																
1	0410	51	87.	.9	2802.9 *	1	1230	151	0.	.0	2797.3 *	1	2050	251	0.	.0
2797.3																
1	0415	52	65.	.7	2802.3 *	1	1235	152	0.	.0	2797.3 *	1	2055	252	0.	.0
2797.3																
1	0420	53	52.	.6	2801.8 *	1	1240	153	0.	.0	2797.3 *	1	2100	253	0.	.0
2797.3																
1	0425	54	46.	.5	2801.3 *	1	1245	154	0.	.0	2797.3 *	1	2105	254	0.	.0
2797.3																
1	0430	55	41.	.4	2800.9 *	1	1250	155	0.	.0	2797.3 *	1	2110	255	0.	.0
2797.3																
1	0435	56	39.	.4	2800.7 *	1	1255	156	0.	.0	2797.3 *	1	2115	256	0.	.0
2797.3																
1	0440	57	40.	.4	2800.8 *	1	1300	157	0.	.0	2797.3 *	1	2120	257	0.	.0
2797.3																
1	0445	58	41.	.4	2800.9 *	1	1305	158	0.	.0	2797.3 *	1	2125	258	0.	.0
2797.3																
1	0450	59	43.	.4	2801.0 *	1	1310	159	0.	.0	2797.3 *	1	2130	259	0.	.0
2797.3																
1	0455	60	43.	.5	2801.1 *	1	1315	160	0.	.0	2797.3 *	1	2135	260	0.	.0
2797.3																
1	0500	61	44.	.5	2801.1 *	1	1320	161	0.	.0	2797.3 *	1	2140	261	0.	.0
2797.3																
1	0505	62	42.	.4	2801.0 *	1	1325	162	0.	.0	2797.3 *	1	2145	262	0.	.0
2797.3																
1	0510	63	39.	.4	2800.7 *	1	1330	163	0.	.0	2797.3 *	1	2150	263	0.	.0
2797.3																
1	0515	64	35.	.3	2800.3 *	1	1335	164	0.	.0	2797.3 *	1	2155	264	0.	.0
2797.3																
1	0520	65	29.	.2	2799.8 *	1	1340	165	0.	.0	2797.3 *	1	2200	265	0.	.0
2797.3																
1	0525	66	23.	.2	2799.3 *	1	1345	166	0.	.0	2797.3 *	1	2205	266	0.	.0
2797.3																
1	0530	67	17.	.1	2798.8 *	1	1350	167	0.	.0	2797.3 *	1	2210	267	0.	.0
2797.3																
1	0535	68	13.	.1	2798.4 *	1	1355	168	0.	.0	2797.3 *	1	2215	268	0.	.0
2797.3																
1	0540	69	10.	.0	2798.1 *	1	1400	169	0.	.0	2797.3 *	1	2220	269	0.	.0
2797.3																
1	0545	70	7.	.0	2797.9 *	1	1405	170	0.	.0	2797.3 *	1	2225	270	0.	.0
2797.3																
1	0550	71	5.	.0	2797.7 *	1	1410	171	0.	.0	2797.3 *	1	2230	271	0.	.0
2797.3																
1	0555	72	5.	.0	2797.7 *	1	1415	172	0.	.0	2797.3 *	1	2235	272	0.	.0
2797.3																
1	0600	73	4.	.0	2797.7 *	1	1420	173	0.	.0	2797.3 *	1	2240	273	0.	.0
2797.3																
1	0605	74	4.	.0	2797.6 *	1	1425	174	0.	.0	2797.3 *	1	2245	274	0.	.0
2797.3																
1	0610	75	3.	.0	2797.6 *	1	1430	175	0.	.0	2797.3 *	1	2250	275	0.	.0
2797.3																
1	0615	76	2.	.0	2797.5 *	1	1435	176	0.	.0	2797.3 *	1	2255	276	0.	.0
2797.3																
1	0620	77	2.	.0	2797.4 *	1	1440	177	0.	.0	2797.3 *	1	2300	277	0.	.0
2797.3																
1	0625	78	1.	.0	2797.4 *	1	1445	178	0.	.0	2797.3 *	1	2305	278	0.	.0
2797.3																
1	0630	79	1.	.0	2797.4 *	1	1450	179	0.	.0	2797.3 *	1	2310	279	0.	.0
2797.3																
1	0635	80	0.	.0	2797.3 *	1	1455	180	0.	.0	2797.3 *	1	2315	280	0.	.0
2797.3																
1	0640	81	0.	.0	2797.3 *	1	1500	181	0.	.0	2797.3 *	1	2320	281	0.	.0
2797.3																
1	0645	82	0.	.0	2797.3 *	1	1505	182	0.	.0	2797.3 *	1	2325	282	0.	.0
2797.3																
1	0650	83	0.	.0	2797.3 *	1	1510	183	0.	.0	2797.3 *	1	2330	283	0.	.0
2797.3																
1	0655	84	0.	.0	2797.3 *	1	1515	184	0.	.0	2797.3 *	1	2335	284	0.	.0
2797.3																
1	0700	85	0.	.0	2797.3 *	1	1520	185	0.	.0	2797.3 *	1	2340	285	0.	.0
2797.3																
1	0705	86	0.	.0	2797.3 *	1	1525	186	0.	.0	2797.3 *	1	2345	286	0.	.0
2797.3																
1	0710	87	0.	.0	2797.3 *	1	1530	187	0.	.0	2797.3 *	1	2350	287	0.	.0
2797.3																
1	0715	88	0.	.0	2797.3 *	1	1535	188	0.	.0	2797.3 *	1	2355	288	0.	.0
2797.3																
1	0720	89	0.	.0	2797.3 *	1	1540	189	0.	.0	2797.3 *	2	0000	289	0.	.0
2797.3																
1	0725	90	0.	.0	2797.3 *	1	1545	190	0.	.0	2797.3 *	2	0005	290	0.	.0
2797.3																
1	0730	91	0.	.0	2797.3 *	1	1550	191	0.	.0	2797.3 *	2	0010	291	0.	.0
2797.3																
1	0735	92	0.	.0	2797.3 *	1	1555	192	0.	.0	2797.3 *	2	0015	292	0.	.0
2797.3																
1	0740	93	0.	.0	2797.3 *	1	1600	193	0.	.0	2797.3 *	2	0020	293	0.	.0
2797.3																
1	0745	94	0.	.0	2797.3 *	1	1605	194	0.	.0	2797.3 *	2	0025	294	0.	.0
2797.3																
1	0750	95	0.	.0	2797.3 *	1	1610	195	0.	.0	2797.3 *	2	0030	295	0.	.0
2797.3																
1	0755	96	0.	.0	2797.3 *	1	1615	196	0.	.0	2797.3 *	2	0035	296	0.	.0
2797.3																
1	0800	97	0.	.0	2797.3 *	1	1620	197	0.	.0	2797.3 *	2	0040	297	0.	.0
2797.3																
1	0805	98	0.	.0	2797.3 *	1	1625	198	0.	.0	2797.3 *	2	0045	298	0.	.0
2797.3																
1	0810	99	0.	.0	2797.3 *	1	1630	199	0.	.0	2797.3 *	2	0050	299	0.	.0
2797.3																
1	0815	100	0.	.0	2797.3 *	1	1635	200	0.	.0	2797.3 *	2	0055	300	0.	.0
2797.3					*						*					

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR

EX

+ (CFS)	(HR)					
		(CFS)	31.	8.	7.	7.
+ 165.	3.83	(INCHES)	1.783	1.784	1.784	1.784
		(AC-FT)	15.	15.	15.	15.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
2.	3.83	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2805.70	3.83	2799.40	2797.83	2797.81	2797.81

CUMULATIVE AREA = .16 SQ MI

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HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .98

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	*	1		0820	101	0.	.0	2797.3	*	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	*	1		0825	102	0.	.0	2797.3	*	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	*	1		0830	103	0.	.0	2797.3	*	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	*	1		0835	104	0.	.0	2797.3	*	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	*	1		0840	105	0.	.0	2797.3	*	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	*	1		0845	106	0.	.0	2797.3	*	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	*	1		0850	107	0.	.0	2797.3	*	1		1710	207	0.	.0	2797.3
1		0035	8	1.	.0	2797.4	*	1		0855	108	0.	.0	2797.3	*	1		1715	208	0.	.0	2797.3
1		0040	9	2.	.0	2797.4	*	1		0900	109	0.	.0	2797.3	*	1		1720	209	0.	.0	2797.3
1		0045	10	2.	.0	2797.5	*	1		0905	110	0.	.0	2797.3	*	1		1725	210	0.	.0	2797.3
1		0050	11	2.	.0	2797.4	*	1		0910	111	0.	.0	2797.3	*	1		1730	211	0.	.0	2797.3
1		0055	12	1.	.0	2797.4	*	1		0915	112	0.	.0	2797.3	*	1		1735	212	0.	.0	2797.3
1		0100	13	1.	.0	2797.4	*	1		0920	113	0.	.0	2797.3	*	1		1740	213	0.	.0	2797.3
1		0105	14	1.	.0	2797.3	*	1		0925	114	0.	.0	2797.3	*	1		1745	214	0.	.0	2797.3
1		0110	15	1.	.0	2797.3	*	1		0930	115	0.	.0	2797.3	*	1		1750	215	0.	.0	2797.3
1		0115	16	1.	.0	2797.4	*	1		0935	116	0.	.0	2797.3	*	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	*	1		0940	117	0.	.0	2797.3	*	1		1800	217	0.	.0	2797.3
1		0125	18	2.	.0	2797.5	*	1		0945	118	0.	.0	2797.3	*	1		1805	218	0.	.0	2797.3
1		0130	19	3.	.0	2797.6	*	1		0950	119	0.	.0	2797.3	*	1		1810	219	0.	.0	2797.3
1		0135	20	5.	.0	2797.7	*	1		0955	120	0.	.0	2797.3	*	1		1815	220	0.	.0	2797.3
1		0140	21	6.	.0	2797.8	*	1		1000	121	0.	.0	2797.3	*	1		1820	221	0.	.0	2797.3
1		0145	22	8.	.0	2798.0	*	1		1005	122	0.	.0	2797.3	*	1		1825	222	0.	.0	2797.3
1		0150	23	8.	.0	2798.0	*	1		1010	123	0.	.0	2797.3	*	1		1830	223	0.	.0	2797.3
1		0155	24	8.	.0	2798.0	*	1		1015	124	0.	.0	2797.3	*	1		1835	224	0.	.0	2797.3
1		0200	25	6.	.0	2797.9	*	1		1020	125	0.	.0	2797.3	*	1		1840	225	0.	.0	2797.3
1		0205	26	5.	.0	2797.7	*	1		1025	126	0.	.0	2797.3	*	1		1845	226	0.	.0	2797.3
1		0210	27	4.	.0	2797.7	*	1		1030	127	0.	.0	2797.3	*	1		1850	227	0.	.0	2797.3
1		0215	28	5.	.0	2797.7	*	1		1035	128	0.	.0	2797.3	*	1		1855	228	0.	.0	2797.3
1		0220	29	7.	.0	2797.9	*	1		1040	129	0.	.0	2797.3	*	1		1900	229	0.	.0	2797.3
1		0225	30	9.	.0	2798.1	*	1		1045	130	0.	.0	2797.3	*	1		1905	230	0.	.0	2797.3
1		0230	31	11.	.0	2798.2	*	1		1050	131	0.	.0	2797.3	*	1		1910	231	0.	.0	2797.3
1		0235	32	12.	.1	2798.3	*	1		1055	132	0.	.0	2797.3	*	1		1915	232	0.	.0	2797.3
1		0240	33	12.	.1	2798.3	*	1		1100	133	0.	.0	2797.3	*	1		1920	233	0.	.0	2797.3
1		0245	34	11.	.1	2798.3	*	1		1105	134	0.	.0	2797.3	*	1		1925	234	0.	.0	2797.3
1		0250	35	12.	.1	2798.3	*	1		1110	135	0.	.0	2797.3	*	1		1930	235	0.	.0	2797.3
1		0255	36	12.	.1	2798.4	*	1		1115	136	0.	.0	2797.3	*	1		1935	236	0.	.0	2797.3
1		0300	37	12.	.1	2798.3	*	1		1120	137	0.	.0	2797.3	*	1		1940	237	0.	.0	2797.3
1		0305	38	12.	.1	2798.3	*	1		1125	138	0.	.0	2797.3	*	1		1945	238	0.	.0	2797.3
1		0310	39	14.	.1	2798.6	*	1		1130	139	0.	.0	2797.3	*	1		1950	239	0.	.0	2797.3
1		0315	40	21.	.1	2799.1	*	1		1135	140	0.	.0	2797.3	*	1		1955	240	0.	.0	2797.3

2797.3 1	0320	41	32.	.3	2800.1	*	1	1140	141	0.	.0	2797.3	*	1	2000 241	0.	.0
2797.3 1	0325	42	47.	.5	2801.4	*	1	1145	142	0.	.0	2797.3	*	1	2005 242	0.	.0
2797.3 1	0330	43	85.	.9	2802.8	*	1	1150	143	0.	.0	2797.3	*	1	2010 243	0.	.0
2797.3 1	0335	44	131.	1.2	2804.1	*	1	1155	144	0.	.0	2797.3	*	1	2015 244	0.	.0
2797.3 1	0340	45	150.	1.5	2805.0	*	1	1200	145	0.	.0	2797.3	*	1	2020 245	0.	.0
2797.3 1	0345	46	161.	1.7	2805.5	*	1	1205	146	0.	.0	2797.3	*	1	2025 246	0.	.0
2797.3 1	0350	47	162.	1.8	2805.6	*	1	1210	147	0.	.0	2797.3	*	1	2030 247	0.	.0
2797.3 1	0355	48	155.	1.6	2805.2	*	1	1215	148	0.	.0	2797.3	*	1	2035 248	0.	.0
2797.3 1	0400	49	139.	1.3	2804.5	*	1	1220	149	0.	.0	2797.3	*	1	2040 249	0.	.0
2797.3 1	0405	50	113.	1.1	2803.6	*	1	1225	150	0.	.0	2797.3	*	1	2045 250	0.	.0
2797.3 1	0410	51	84.	.8	2802.8	*	1	1230	151	0.	.0	2797.3	*	1	2050 251	0.	.0
2797.3 1	0415	52	64.	.7	2802.3	*	1	1235	152	0.	.0	2797.3	*	1	2055 252	0.	.0
2797.3 1	0420	53	52.	.6	2801.8	*	1	1240	153	0.	.0	2797.3	*	1	2100 253	0.	.0
2797.3 1	0425	54	46.	.5	2801.3	*	1	1245	154	0.	.0	2797.3	*	1	2105 254	0.	.0
2797.3 1	0430	55	41.	.4	2800.9	*	1	1250	155	0.	.0	2797.3	*	1	2110 255	0.	.0
2797.3 1	0435	56	39.	.4	2800.7	*	1	1255	156	0.	.0	2797.3	*	1	2115 256	0.	.0
2797.3 1	0440	57	39.	.4	2800.7	*	1	1300	157	0.	.0	2797.3	*	1	2120 257	0.	.0
2797.3 1	0445	58	40.	.4	2800.8	*	1	1305	158	0.	.0	2797.3	*	1	2125 258	0.	.0
2797.3 1	0450	59	42.	.4	2800.9	*	1	1310	159	0.	.0	2797.3	*	1	2130 259	0.	.0
2797.3 1	0455	60	43.	.5	2801.0	*	1	1315	160	0.	.0	2797.3	*	1	2135 260	0.	.0
2797.3 1	0500	61	43.	.5	2801.0	*	1	1320	161	0.	.0	2797.3	*	1	2140 261	0.	.0
2797.3 1	0505	62	42.	.4	2800.9	*	1	1325	162	0.	.0	2797.3	*	1	2145 262	0.	.0
2797.3 1	0510	63	39.	.4	2800.7	*	1	1330	163	0.	.0	2797.3	*	1	2150 263	0.	.0
2797.3 1	0515	64	34.	.3	2800.3	*	1	1335	164	0.	.0	2797.3	*	1	2155 264	0.	.0
2797.3 1	0520	65	28.	.2	2799.8	*	1	1340	165	0.	.0	2797.3	*	1	2200 265	0.	.0
2797.3 1	0525	66	22.	.2	2799.2	*	1	1345	166	0.	.0	2797.3	*	1	2205 266	0.	.0
2797.3 1	0530	67	17.	.1	2798.8	*	1	1350	167	0.	.0	2797.3	*	1	2210 267	0.	.0
2797.3 1	0535	68	13.	.1	2798.4	*	1	1355	168	0.	.0	2797.3	*	1	2215 268	0.	.0
2797.3 1	0540	69	10.	.0	2798.1	*	1	1400	169	0.	.0	2797.3	*	1	2220 269	0.	.0
2797.3 1	0545	70	7.	.0	2797.9	*	1	1405	170	0.	.0	2797.3	*	1	2225 270	0.	.0
2797.3 1	0550	71	5.	.0	2797.7	*	1	1410	171	0.	.0	2797.3	*	1	2230 271	0.	.0
2797.3 1	0555	72	5.	.0	2797.7	*	1	1415	172	0.	.0	2797.3	*	1	2235 272	0.	.0
2797.3 1	0600	73	4.	.0	2797.7	*	1	1420	173	0.	.0	2797.3	*	1	2240 273	0.	.0
2797.3 1	0605	74	4.	.0	2797.6	*	1	1425	174	0.	.0	2797.3	*	1	2245 274	0.	.0
2797.3 1	0610	75	3.	.0	2797.6	*	1	1430	175	0.	.0	2797.3	*	1	2250 275	0.	.0
2797.3 1	0615	76	2.	.0	2797.5	*	1	1435	176	0.	.0	2797.3	*	1	2255 276	0.	.0
2797.3 1	0620	77	2.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300 277	0.	.0
2797.3 1	0625	78	1.	.0	2797.4	*	1	1445	178	0.	.0	2797.3	*	1	2305 278	0.	.0
2797.3 1	0630	79	1.	.0	2797.4	*	1	1450	179	0.	.0	2797.3	*	1	2310 279	0.	.0
2797.3 1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315 280	0.	.0
2797.3 1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320 281	0.	.0
2797.3 1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325 282	0.	.0
2797.3 1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330 283	0.	.0
2797.3 1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335 284	0.	.0
2797.3 1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340 285	0.	.0
2797.3 1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345 286	0.	.0
2797.3 1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350 287	0.	.0
2797.3 1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355 288	0.	.0
2797.3 1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000 289	0.	.0
2797.3 1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005 290	0.	.0
2797.3 1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010 291	0.	.0
2797.3 1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015 292	0.	.0
2797.3 1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020 293	0.	.0
2797.3 1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025 294	0.	.0
2797.3 1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030 295	0.	.0
2797.3 1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035 296	0.	.0

EX

2797.3																			
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	
2797.3																			
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	
2797.3																			
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	
2797.3																			
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	
2797.3						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 162.	3.83		30.	8.	7.	7.
		(INCHES)	1.743	1.744	1.744	1.744
		(AC-FT)	15.	15.	15.	15.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
2.	3.83	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2805.56	3.83	2799.36	2797.82	2797.80	2797.80

CUMULATIVE AREA = .16 SQ MI

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HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .95

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
							*								*							
1		0000	1	0.	.0	2797.3	*	1		0820	101	0.	.0	2797.3	*	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	*	1		0825	102	0.	.0	2797.3	*	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	*	1		0830	103	0.	.0	2797.3	*	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	*	1		0835	104	0.	.0	2797.3	*	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	*	1		0840	105	0.	.0	2797.3	*	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	*	1		0845	106	0.	.0	2797.3	*	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	*	1		0850	107	0.	.0	2797.3	*	1		1710	207	0.	.0	2797.3
1		0035	8	1.	.0	2797.4	*	1		0855	108	0.	.0	2797.3	*	1		1715	208	0.	.0	2797.3
1		0040	9	1.	.0	2797.4	*	1		0900	109	0.	.0	2797.3	*	1		1720	209	0.	.0	2797.3
1		0045	10	2.	.0	2797.4	*	1		0905	110	0.	.0	2797.3	*	1		1725	210	0.	.0	2797.3
1		0050	11	1.	.0	2797.4	*	1		0910	111	0.	.0	2797.3	*	1		1730	211	0.	.0	2797.3
1		0055	12	1.	.0	2797.4	*	1		0915	112	0.	.0	2797.3	*	1		1735	212	0.	.0	2797.3
1		0100	13	1.	.0	2797.4	*	1		0920	113	0.	.0	2797.3	*	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	*	1		0925	114	0.	.0	2797.3	*	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	*	1		0930	115	0.	.0	2797.3	*	1		1750	215	0.	.0	2797.3
1		0115	16	1.	.0	2797.4	*	1		0935	116	0.	.0	2797.3	*	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	*	1		0940	117	0.	.0	2797.3	*	1		1800	217	0.	.0	2797.3
1		0125	18	2.	.0	2797.5	*	1		0945	118	0.	.0	2797.3	*	1		1805	218	0.	.0	2797.3
1		0130	19	3.	.0	2797.5	*	1		0950	119	0.	.0	2797.3	*	1		1810	219	0.	.0	2797.3
1		0135	20	4.	.0	2797.7	*	1		0955	120	0.	.0	2797.3	*	1		1815	220	0.	.0	2797.3
1		0140	21	6.	.0	2797.8	*	1		1000	121	0.	.0	2797.3	*	1		1820	221	0.	.0	2797.3
1		0145	22	7.	.0	2797.9	*	1		1005	122	0.	.0	2797.3	*	1		1825	222	0.	.0	2797.3
1		0150	23	8.	.0	2798.0	*	1		1010	123	0.	.0	2797.3	*	1		1830	223	0.	.0	2797.3
1		0155	24	7.	.0	2797.9	*	1		1015	124	0.	.0	2797.3	*	1		1835	224	0.	.0	2797.3
1		0200	25	6.	.0	2797.8	*	1		1020	125	0.	.0	2797.3	*	1		1840	225	0.	.0	2797.3
1		0205	26	5.	.0	2797.7	*	1		1025	126	0.	.0	2797.3	*	1		1845	226	0.	.0	2797.3
1		0210	27	4.	.0	2797.6	*	1		1030	127	0.	.0	2797.3	*	1		1850	227	0.	.0	2797.3
1		0215	28	5.	.0	2797.7	*	1		1035	128	0.	.0	2797.3	*	1		1855	228	0.	.0	2797.3
1		0220	29	7.	.0	2797.9	*	1		1040	129	0.	.0	2797.3	*	1		1900	229	0.	.0	2797.3
1		0225	30	9.	.0	2798.1	*	1		1045	130	0.	.0	2797.3	*	1		1905	230	0.	.0	2797.3
1		0230	31	10.	.0	2798.2	*	1		1050	131	0.	.0	2797.3	*	1		1910	231	0.	.0	2797.3
1		0235	32	11.	.0	2798.3	*	1		1055	132	0.	.0	2797.3	*	1		1915	232	0.	.0	2797.3

2797.3																			
1	0240	33	11.	.0	2798.2	*	1	1100	133	0.	.0	2797.3	*	1	1920	233	0.	.0
2797.3																			
1	0245	34	11.	.0	2798.2	*	1	1105	134	0.	.0	2797.3	*	1	1925	234	0.	.0
2797.3																			
1	0250	35	11.	.0	2798.3	*	1	1110	135	0.	.0	2797.3	*	1	1930	235	0.	.0
2797.3																			
1	0255	36	11.	.1	2798.3	*	1	1115	136	0.	.0	2797.3	*	1	1935	236	0.	.0
2797.3																			
1	0300	37	11.	.1	2798.3	*	1	1120	137	0.	.0	2797.3	*	1	1940	237	0.	.0
2797.3																			
1	0305	38	11.	.1	2798.3	*	1	1125	138	0.	.0	2797.3	*	1	1945	238	0.	.0
2797.3																			
1	0310	39	14.	.1	2798.5	*	1	1130	139	0.	.0	2797.3	*	1	1950	239	0.	.0
2797.3																			
1	0315	40	20.	.1	2799.0	*	1	1135	140	0.	.0	2797.3	*	1	1955	240	0.	.0
2797.3																			
1	0320	41	30.	.3	2800.0	*	1	1140	141	0.	.0	2797.3	*	1	2000	241	0.	.0
2797.3																			
1	0325	42	45.	.5	2801.2	*	1	1145	142	0.	.0	2797.3	*	1	2005	242	0.	.0
2797.3																			
1	0330	43	80.	.8	2802.7	*	1	1150	143	0.	.0	2797.3	*	1	2010	243	0.	.0
2797.3																			
1	0335	44	127.	1.2	2803.9	*	1	1155	144	0.	.0	2797.3	*	1	2015	244	0.	.0
2797.3																			
1	0340	45	146.	1.5	2804.8	*	1	1200	145	0.	.0	2797.3	*	1	2020	245	0.	.0
2797.3																			
1	0345	46	156.	1.6	2805.3	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0
2797.3																			
1	0350	47	158.	1.7	2805.3	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0
2797.3																			
1	0355	48	150.	1.5	2805.0	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0
2797.3																			
1	0400	49	134.	1.3	2804.2	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0
2797.3																			
1	0405	50	105.	1.0	2803.4	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0
2797.3																			
1	0410	51	80.	.8	2802.7	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0
2797.3																			
1	0415	52	61.	.7	2802.2	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0
2797.3																			
1	0420	53	51.	.6	2801.7	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0
2797.3																			
1	0425	54	45.	.5	2801.2	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0
2797.3																			
1	0430	55	40.	.4	2800.8	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0
2797.3																			
1	0435	56	38.	.4	2800.6	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0
2797.3																			
1	0440	57	38.	.4	2800.6	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0
2797.3																			
1	0445	58	39.	.4	2800.7	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0
2797.3																			
1	0450	59	40.	.4	2800.8	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0
2797.3																			
1	0455	60	41.	.4	2800.9	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0
2797.3																			
1	0500	61	42.	.4	2800.9	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0
2797.3																			
1	0505	62	40.	.4	2800.8	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0
2797.3																			
1	0510	63	37.	.4	2800.6	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0
2797.3																			
1	0515	64	33.	.3	2800.2	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0
2797.3																			
1	0520	65	27.	.2	2799.7	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0
2797.3																			
1	0525	66	21.	.1	2799.2	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0
2797.3																			
1	0530	67	16.	.1	2798.7	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0
2797.3																			
1	0535	68	12.	.1	2798.3	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0
2797.3																			
1	0540	69	9.	.0	2798.1	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0
2797.3																			
1	0545	70	6.	.0	2797.9	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0
2797.3																			
1	0550	71	5.	.0	2797.7	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0
2797.3																			
1	0555	72	5.	.0	2797.7	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0
2797.3																			
1	0600	73	4.	.0	2797.7	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0
2797.3																			
1	0605	74	4.	.0	2797.6	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0
2797.3																			
1	0610	75	3.	.0	2797.6	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0
2797.3																			
1	0615	76	2.	.0	2797.5	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0
2797.3																			
1	0620	77	2.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0
2797.3																			
1	0625	78	1.	.0	2797.4	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0
2797.3																			
1	0630	79	1.	.0	2797.4	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0
2797.3																			
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0
2797.3																			
1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0
2797.3																			
1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0
2797.3																			
1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0
2797.3																			
1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0
2797.3																			
1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0
2797.3																			
1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0
2797.3																			
1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0
2797.3																			
1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0

EX

2797.3																			
1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	
2797.3																			
1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	
2797.3																			
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	
2797.3																			
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	
2797.3																			
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	
2797.3																			
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	
2797.3																			
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	
2797.3																			
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	
2797.3																			
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	
2797.3																			
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	
2797.3																			
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	
2797.3																			
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	
2797.3																			

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)				
158.	3.83		29.	7.	7.	7.
		(INCHES)	1.677	1.678	1.678	1.678
		(AC-FT)	14.	14.	14.	14.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
2.	3.83	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2805.34	3.83	2799.29	2797.81	2797.79	2797.79

CUMULATIVE AREA = .16 SQ MI

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HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .54

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	1		0845	106	0.	.0	2797.3	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	1		0850	107	0.	.0	2797.3	1		1710	207	0.	.0	2797.3
1		0035	8	0.	.0	2797.3	1		0855	108	0.	.0	2797.3	1		1715	208	0.	.0	2797.3
1		0040	9	0.	.0	2797.3	1		0900	109	0.	.0	2797.3	1		1720	209	0.	.0	2797.3
1		0045	10	0.	.0	2797.3	1		0905	110	0.	.0	2797.3	1		1725	210	0.	.0	2797.3
1		0050	11	0.	.0	2797.3	1		0910	111	0.	.0	2797.3	1		1730	211	0.	.0	2797.3
1		0055	12	0.	.0	2797.3	1		0915	112	0.	.0	2797.3	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	1		0920	113	0.	.0	2797.3	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	1		0925	114	0.	.0	2797.3	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	1		0930	115	0.	.0	2797.3	1		1750	215	0.	.0	2797.3
1		0115	16	0.	.0	2797.3	1		0935	116	0.	.0	2797.3	1		1755	216	0.	.0	2797.3
1		0120	17	0.	.0	2797.3	1		0940	117	0.	.0	2797.3	1		1800	217	0.	.0	2797.3
1		0125	18	0.	.0	2797.3	1		0945	118	0.	.0	2797.3	1		1805	218	0.	.0	2797.3
1		0130	19	0.	.0	2797.3	1		0950	119	0.	.0	2797.3	1		1810	219	0.	.0	2797.3
1		0135	20	0.	.0	2797.3	1		0955	120	0.	.0	2797.3	1		1815	220	0.	.0	2797.3
1		0140	21	0.	.0	2797.3	1		1000	121	0.	.0	2797.3	1		1820	221	0.	.0	2797.3
1		0145	22	0.	.0	2797.3	1		1005	122	0.	.0	2797.3	1		1825	222	0.	.0	2797.3
1		0150	23	0.	.0	2797.3	1		1010	123	0.	.0	2797.3	1		1830	223	0.	.0	2797.3
1		0155	24	0.	.0	2797.3	1		1015	124	0.	.0	2797.3	1		1835	224	0.	.0	2797.3

2797.3																			
1	0200	25	0.	.0	2797.3	*	1	1020	125	0.	.0	2797.3	*	1	1840	225	0.	.0	
2797.3																			
1	0205	26	0.	.0	2797.3	*	1	1025	126	0.	.0	2797.3	*	1	1845	226	0.	.0	
2797.3																			
1	0210	27	0.	.0	2797.3	*	1	1030	127	0.	.0	2797.3	*	1	1850	227	0.	.0	
2797.3																			
1	0215	28	1.	.0	2797.3	*	1	1035	128	0.	.0	2797.3	*	1	1855	228	0.	.0	
2797.3																			
1	0220	29	1.	.0	2797.4	*	1	1040	129	0.	.0	2797.3	*	1	1900	229	0.	.0	
2797.3																			
1	0225	30	2.	.0	2797.4	*	1	1045	130	0.	.0	2797.3	*	1	1905	230	0.	.0	
2797.3																			
1	0230	31	2.	.0	2797.5	*	1	1050	131	0.	.0	2797.3	*	1	1910	231	0.	.0	
2797.3																			
1	0235	32	2.	.0	2797.5	*	1	1055	132	0.	.0	2797.3	*	1	1915	232	0.	.0	
2797.3																			
1	0240	33	2.	.0	2797.5	*	1	1100	133	0.	.0	2797.3	*	1	1920	233	0.	.0	
2797.3																			
1	0245	34	2.	.0	2797.5	*	1	1105	134	0.	.0	2797.3	*	1	1925	234	0.	.0	
2797.3																			
1	0250	35	3.	.0	2797.5	*	1	1110	135	0.	.0	2797.3	*	1	1930	235	0.	.0	
2797.3																			
1	0255	36	3.	.0	2797.5	*	1	1115	136	0.	.0	2797.3	*	1	1935	236	0.	.0	
2797.3																			
1	0300	37	3.	.0	2797.5	*	1	1120	137	0.	.0	2797.3	*	1	1940	237	0.	.0	
2797.3																			
1	0305	38	3.	.0	2797.6	*	1	1125	138	0.	.0	2797.3	*	1	1945	238	0.	.0	
2797.3																			
1	0310	39	4.	.0	2797.7	*	1	1130	139	0.	.0	2797.3	*	1	1950	239	0.	.0	
2797.3																			
1	0315	40	8.	.0	2798.0	*	1	1135	140	0.	.0	2797.3	*	1	1955	240	0.	.0	
2797.3																			
1	0320	41	11.	.0	2798.3	*	1	1140	141	0.	.0	2797.3	*	1	2000	241	0.	.0	
2797.3																			
1	0325	42	18.	.1	2798.9	*	1	1145	142	0.	.0	2797.3	*	1	2005	242	0.	.0	
2797.3																			
1	0330	43	28.	.2	2799.8	*	1	1150	143	0.	.0	2797.3	*	1	2010	243	0.	.0	
2797.3																			
1	0335	44	39.	.4	2800.7	*	1	1155	144	0.	.0	2797.3	*	1	2015	244	0.	.0	
2797.3																			
1	0340	45	50.	.6	2801.7	*	1	1200	145	0.	.0	2797.3	*	1	2020	245	0.	.0	
2797.3																			
1	0345	46	62.	.7	2802.2	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0	
2797.3																			
1	0350	47	66.	.7	2802.3	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0	
2797.3																			
1	0355	48	60.	.7	2802.2	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	
2797.3																			
1	0400	49	52.	.6	2801.8	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	
2797.3																			
1	0405	50	47.	.5	2801.4	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	
2797.3																			
1	0410	51	40.	.4	2800.8	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	
2797.3																			
1	0415	52	34.	.3	2800.3	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	
2797.3																			
1	0420	53	28.	.2	2799.7	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	
2797.3																			
1	0425	54	22.	.2	2799.2	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	
2797.3																			
1	0430	55	18.	.1	2798.9	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	
2797.3																			
1	0435	56	17.	.1	2798.8	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	
2797.3																			
1	0440	57	17.	.1	2798.8	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	
2797.3																			
1	0445	58	19.	.1	2798.9	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	
2797.3																			
1	0450	59	19.	.1	2799.0	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	
2797.3																			
1	0455	60	20.	.1	2799.0	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	
2797.3																			
1	0500	61	20.	.1	2799.0	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	
2797.3																			
1	0505	62	19.	.1	2798.9	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	
2797.3																			
1	0510	63	17.	.1	2798.8	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	
2797.3																			
1	0515	64	14.	.1	2798.5	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	
2797.3																			
1	0520	65	11.	.1	2798.3	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	
2797.3																			
1	0525	66	9.	.0	2798.1	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	
2797.3																			
1	0530	67	6.	.0	2797.8	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	
2797.3																			
1	0535	68	4.	.0	2797.6	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	
2797.3																			
1	0540	69	3.	.0	2797.6	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	
2797.3																			
1	0545	70	3.	.0	2797.5	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	
2797.3																			
1	0550	71	2.	.0	2797.5	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	
2797.3																			
1	0555	72	2.	.0	2797.5	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	
2797.3																			
1	0600	73	2.	.0	2797.5	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	
2797.3																			
1	0605	74	2.	.0	2797.5	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	
2797.3																			
1	0610	75	1.	.0	2797.4	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	
2797.3																			
1	0615	76	1.	.0	2797.4	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	
2797.3																			
1	0620	77	1.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	
2797.3																			
1	0625	78	0.	.0	2797.3	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	
2797.3																			
1	0630	79	0.	.0	2797.3	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	
2797.3																			
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	

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2797.3
   1  0640  81      0.      .0  2797.3 *  1    1500 181      0.      .0  2797.3 *  1    2320 281      0.      .0
2797.3
   1  0645  82      0.      .0  2797.3 *  1    1505 182      0.      .0  2797.3 *  1    2325 282      0.      .0
2797.3
   1  0650  83      0.      .0  2797.3 *  1    1510 183      0.      .0  2797.3 *  1    2330 283      0.      .0
2797.3
   1  0655  84      0.      .0  2797.3 *  1    1515 184      0.      .0  2797.3 *  1    2335 284      0.      .0
2797.3
   1  0700  85      0.      .0  2797.3 *  1    1520 185      0.      .0  2797.3 *  1    2340 285      0.      .0
2797.3
   1  0705  86      0.      .0  2797.3 *  1    1525 186      0.      .0  2797.3 *  1    2345 286      0.      .0
2797.3
   1  0710  87      0.      .0  2797.3 *  1    1530 187      0.      .0  2797.3 *  1    2350 287      0.      .0
2797.3
   1  0715  88      0.      .0  2797.3 *  1    1535 188      0.      .0  2797.3 *  1    2355 288      0.      .0
2797.3
   1  0720  89      0.      .0  2797.3 *  1    1540 189      0.      .0  2797.3 *  2    0000 289      0.      .0
2797.3
   1  0725  90      0.      .0  2797.3 *  1    1545 190      0.      .0  2797.3 *  2    0005 290      0.      .0
2797.3
   1  0730  91      0.      .0  2797.3 *  1    1550 191      0.      .0  2797.3 *  2    0010 291      0.      .0
2797.3
   1  0735  92      0.      .0  2797.3 *  1    1555 192      0.      .0  2797.3 *  2    0015 292      0.      .0
2797.3
   1  0740  93      0.      .0  2797.3 *  1    1600 193      0.      .0  2797.3 *  2    0020 293      0.      .0
2797.3
   1  0745  94      0.      .0  2797.3 *  1    1605 194      0.      .0  2797.3 *  2    0025 294      0.      .0
2797.3
   1  0750  95      0.      .0  2797.3 *  1    1610 195      0.      .0  2797.3 *  2    0030 295      0.      .0
2797.3
   1  0755  96      0.      .0  2797.3 *  1    1615 196      0.      .0  2797.3 *  2    0035 296      0.      .0
2797.3
   1  0800  97      0.      .0  2797.3 *  1    1620 197      0.      .0  2797.3 *  2    0040 297      0.      .0
2797.3
   1  0805  98      0.      .0  2797.3 *  1    1625 198      0.      .0  2797.3 *  2    0045 298      0.      .0
2797.3
   1  0810  99      0.      .0  2797.3 *  1    1630 199      0.      .0  2797.3 *  2    0050 299      0.      .0
2797.3
   1  0815 100      0.      .0  2797.3 *  1    1635 200      0.      .0  2797.3 *  2    0055 300      0.      .0
2797.3
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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 66.	3.83		11.	3.	3.	3.
		(INCHES)	.665	.665	.665	.665
		(AC-FT)	6.	6.	6.	6.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	3.83	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2802.31	3.83	2798.28	2797.55	2797.54	2797.54

CUMULATIVE AREA = .16 SQ MI

1

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 1.00	RATIO 2 .99	RATIO 3 .98	RATIO 4 .95	RATIO 5 .54
HYDROGRAPH AT									
+	*OFF7	.01	1	FLOW	9.	9.	9.	9.	4.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*OFF8	.21	1	FLOW	244.	241.	236.	227.	93.
				TIME	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT									
+	*CP2	.22	1	FLOW	249.	245.	240.	232.	95.
				TIME	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT									
+	*OFF9	.11	1	FLOW	153.	151.	148.	142.	58.
				TIME	3.58	3.58	3.58	3.58	3.67
2 COMBINED AT									
+	*CP2a	.33	1	FLOW	395.	390.	382.	368.	148.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*OFF10	.65	1	FLOW	508.	501.	490.	472.	191.
				TIME	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT									
+	*ON2	.03	1	FLOW	66.	65.	64.	62.	31.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*DB2	1.01	1	FLOW	774.	763.	746.	719.	290.
				TIME	3.83	3.83	3.83	3.83	3.83
ROUTED TO									
+	*RDB2	1.01	1	FLOW	86.	86.	85.	84.	64.
				TIME	5.83	5.83	5.83	5.83	5.58

			** PEAK STAGES IN FEET **						
			1	STAGE	3010.16	3009.97	3009.63	3009.08	2999.64
				TIME	5.83	5.83	5.83	5.83	5.58
HYDROGRAPH AT									
+	OFF1	.22	1	FLOW	287.	283.	277.	267.	109.
				TIME	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT									
+	CP1	1.24	1	FLOW	345.	341.	335.	324.	156.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	XON1	.03	1	FLOW	43.	43.	42.	40.	16.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	OFF11	.03	1	FLOW	38.	38.	37.	36.	15.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT									
+	CP10	1.29	1	FLOW	418.	413.	405.	392.	184.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF2	.03	1	FLOW	49.	48.	47.	45.	19.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	XON2	.06	1	FLOW	97.	96.	94.	90.	37.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	OFF12	.01	1	FLOW	21.	21.	20.	19.	8.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	CP11	.11	1	FLOW	165.	163.	160.	154.	64.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF1	.43	1	FLOW	399.	393.	385.	370.	143.
				TIME	3.83	3.83	3.83	3.83	3.92
HYDROGRAPH AT									
+	*OFF2	.04	1	FLOW	49.	48.	47.	45.	14.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF3	.03	1	FLOW	41.	40.	39.	38.	16.
				TIME	3.50	3.50	3.50	3.58	3.58
3 COMBINED AT									
+	*DUMMY	.50	1	FLOW	441.	435.	425.	409.	158.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	*OFF4	.06	1	FLOW	90.	89.	87.	84.	35.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF5	.26	1	FLOW	252.	248.	243.	234.	94.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	*OFF6	.04	1	FLOW	62.	62.	60.	58.	24.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*ON1	.03	1	FLOW	49.	49.	48.	46.	23.
				TIME	3.50	3.50	3.50	3.50	3.58
5 COMBINED AT									
+	*DB1	.88	1	FLOW	785.	774.	757.	729.	288.
				TIME	3.75	3.75	3.75	3.75	3.83
ROUTED TO									
+	*RDB1	.88	1	FLOW	71.	71.	71.	70.	57.
				TIME	5.58	5.58	5.58	5.58	5.42
			** PEAK STAGES IN FEET **						
			1	STAGE	3035.28	3035.13	3034.91	3034.53	3028.62
				TIME	5.67	5.58	5.58	5.58	5.42
HYDROGRAPH AT									
+	*WPF5	.00	1	FLOW	1.	1.	1.	1.	0.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WML2	.04	1	FLOW	78.	77.	76.	74.	36.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*WSHA5	.00	1	FLOW	8.	8.	8.	8.	4.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*WC20	.05	1	FLOW	86.	85.	83.	81.	40.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*WPF4	.01	1	FLOW	19.	18.	18.	18.	9.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WSHA4	.00	1	FLOW	6.	5.	5.	5.	3.
				TIME	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT									
+	CP6	.94	1	FLOW	159.	158.	156.	153.	100.
				TIME	3.58	3.58	3.58	3.58	3.58

ROUTED TO									
+	RCP6	.94	1	FLOW	157.	155.	153.	150.	99.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*WL4A	.01	1	FLOW	23.	23.	22.	21.	10.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*ON1D	.02	1	FLOW	42.	41.	40.	39.	18.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	CP7	.97	1	FLOW	213.	211.	208.	202.	122.
				TIME	3.58	3.58	3.58	3.58	3.58
ROUTED TO									
+	RCP7	.97	1	FLOW	207.	204.	201.	197.	119.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF5	.14	1	FLOW	182.	179.	175.	169.	69.
				TIME	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT									
+	CP8	1.11	1	FLOW	389.	383.	376.	366.	189.
				TIME	3.67	3.67	3.67	3.67	3.67
ROUTED TO									
+	RCP8	1.11	1	FLOW	387.	382.	375.	365.	187.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF4	.06	1	FLOW	82.	81.	80.	77.	32.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*OFF3	.00	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*D2	.02	1	FLOW	24.	24.	23.	23.	9.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*IOFF4	.01	1	FLOW	9.	9.	9.	9.	3.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*PARK	.02	1	FLOW	36.	35.	34.	33.	13.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	CP3	1.20	1	FLOW	491.	485.	475.	462.	227.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	XON5	.03	1	FLOW	50.	49.	48.	46.	20.
				TIME	3.50	3.50	3.50	3.58	3.58
2 COMBINED AT									
+	CP3a	1.23	1	FLOW	535.	527.	517.	500.	241.
				TIME	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT									
+	OFF3	.15	1	FLOW	189.	187.	183.	176.	71.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	XON4	.01	1	FLOW	13.	13.	12.	12.	5.
				TIME	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT									
+	CP2a	.16	1	FLOW	199.	196.	192.	185.	75.
				TIME	3.67	3.67	3.67	3.67	3.67
ROUTED TO									
+	DBN	.16	1	FLOW	167.	165.	162.	158.	66.
				TIME	3.83	3.83	3.83	3.83	3.83
			**	PEAK STAGES IN FEET **					
			1	STAGE	2805.80	2805.70	2805.56	2805.34	2802.31
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	*WSPD3	.00	1	FLOW	5.	5.	5.	5.	2.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WGC3	.04	1	FLOW	89.	88.	86.	84.	42.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	XON3	.01	1	FLOW	15.	14.	14.	14.	6.
				TIME	3.58	3.58	3.58	3.58	3.58
5 COMBINED AT									
+	WC9a	1.44	1	FLOW	765.	755.	741.	718.	322.
				TIME	3.58	3.58	3.58	3.58	3.67
HYDROGRAPH AT									
+	*ON1-D	.03	1	FLOW	47.	46.	45.	44.	20.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*ON2-D	.03	1	FLOW	45.	45.	44.	42.	18.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*HOR	.02	1	FLOW	30.	30.	29.	28.	14.
				TIME	3.50	3.50	3.50	3.50	3.50

+ 3 COMBINED AT	*WC7	.07	1	FLOW	121.	119.	117.	113.	51.
				TIME	3.58	3.58	3.58	3.58	3.58
+ HYDROGRAPH AT	*WGRC1A	.00	1	FLOW	4.	4.	4.	4.	2.
				TIME	3.50	3.50	3.50	3.50	3.50
+ HYDROGRAPH AT	*WSPD0	.00	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.50	3.50	3.50	3.50	3.50
+ 4 COMBINED AT	CP12	1.52	1	FLOW	891.	880.	863.	836.	372.
				TIME	3.58	3.58	3.58	3.58	3.58

1

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING

(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

						INTERPOLATED TO COMPUTATION INTERVAL			
ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	157.78	216.75	2.49	5.00	156.52	220.00	2.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1247E+03 EXCESS= .0000E+00 OUTFLOW= .1247E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	156.45	216.75	2.48	5.00	155.26	220.00	2.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+03 EXCESS= .0000E+00 OUTFLOW= .1242E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	154.46	216.75	2.47	5.00	153.39	220.00	2.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1235E+03 EXCESS= .0000E+00 OUTFLOW= .1235E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	151.14	216.75	2.45	5.00	150.26	220.00	2.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1224E+03 EXCESS= .0000E+00 OUTFLOW= .1224E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.75	99.76	218.50	2.16	5.00	98.97	220.00	2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1080E+03 EXCESS= .0000E+00 OUTFLOW= .1080E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP7 MANE	3.26	210.63	218.19	2.48	5.00	206.83	220.00	2.48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1288E+03 EXCESS= .0000E+00 OUTFLOW= .1288E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.27	206.97	218.81	2.47	5.00	204.30	220.00	2.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1281E+03 EXCESS= .0000E+00 OUTFLOW= .1281E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.28	203.93	216.47	2.46	5.00	200.62	220.00	2.46

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1274E+03 EXCESS= .0000E+00 OUTFLOW= .1274E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.30	200.58	218.04	2.43	5.00	197.06	220.00	2.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1262E+03 EXCESS= .0000E+00 OUTFLOW= .1262E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7	MANE	3.81	119.55	220.83	2.11	5.00	119.43	220.00	2.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1097E+03 EXCESS= .0000E+00 OUTFLOW= .1097E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.83	387.33	220.53	2.40	5.00	387.23	220.00	2.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1421E+03 EXCESS= .0000E+00 OUTFLOW= .1421E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.83	382.22	219.81	2.39	5.00	382.22	220.00	2.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1414E+03 EXCESS= .0000E+00 OUTFLOW= .1414E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.83	375.00	220.38	2.37	5.00	374.68	220.00	2.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1403E+03 EXCESS= .0000E+00 OUTFLOW= .1403E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.84	365.02	220.59	2.34	5.00	364.80	220.00	2.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1385E+03 EXCESS= .0000E+00 OUTFLOW= .1385E+03 BASIN STORAGE= .9852E-08 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	1.03	188.25	220.89	1.94	5.00	187.01	220.00	1.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1146E+03 EXCESS= .0000E+00 OUTFLOW= .1146E+03 BASIN STORAGE= .9852E-08 PERCENT ERROR= .0

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

Proposed Condition

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1****************************************
****************************************
 *                                      *
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *                                      *
 *              JUN  1998               *
 *                                      *
 *           VERSION 4.1                *
 *                                      *
 *                                      *
 *                                      *
 *  RUN DATE   30OCT17  TIME  10:27:30  *
 *                                      *
 *                                      *
 *                                      *
 ****************************************
****************************************
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U.S. ARMY CORPS OF ENGINEERS
HYDROLOGIC ENGINEERING CENTER
609 SECOND STREET
DAVIS, CALIFORNIA 95616
(916) 756-1104


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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X       XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX  XXXXX          XXX
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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 -AMSKK- 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 ***
                    *DIAGRAM
               1    ID     SLATER HANIFAN GROUP
               2    ID     NINETY-FIVE MANAGEMENT, LLC.
               3    ID     SKYE CANYON INFRASTRUCTURE PHASE 3A
               4    ID     TECHNICAL DRAINAGE STUDY
               5    ID
               6    ID     DRAINAGE CONDITION -- PROPOSED CONDITION
               7    ID     RETURN PERIOD ------- 100 & 10-YEAR
               8    ID     DISTRIBUTION -------- 6-HOUR SDN3
               9    ID     PROJECT NO. --------- OLY1609.000
              10    ID     FILENAME ------------ PRO.H1
              11    ID     DATE ----------------- OCTOBER 2017
              12    ID     MODELED BY ---------- ETM
              13    ID
              14    ID        RETURN PERIOD           RATIO
              15    ID        100-YR                  1.00
              16    ID        10-YR                   0.54
              17    ID
              18    ID        SIX HOUR DEPTH-AREA REDUCTION FACTORS
              19    ID        DRAINAGE AREA (MIA2)    DARF
              20    ID        0.00-0.49               0.990
              21    ID        0.50-0.99               0.975
              22    ID        1.00-1.99               0.950
              23    ID
              24    ID
              25    IT      5       0       0     300
              26    IO      5       0       0
              27    IN      5       0       0
              28    JR    PREC    1.00    0.99   0.975    0.95    0.54
                    *
              29    KK   *OFF7
              30    KM   REFERENCED FROM THE "DB2" STUDY
              31    KM   DISCHARGES INTO DETENTION BASIN "DB2"
              32    PB    3.00
              33    PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
              34    PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
              35    PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
              36    PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
              37    PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
              38    PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
              39    PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
              40    PC   0.998   0.999       1
              41    BA   .0058
              42    LS       0    88.0
              43    UD   0.100
                    *
              44    KK   *OFF8
              45    KM   REFERENCED FROM THE "DB2" STUDY
              46    KM   DISCHARGES INTO DETENTION BASIN "DB2"
              47    KO       3
              48    BA   .2122
              49    LS       0    88.0
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1 HEC-1 INPUT PAGE 2

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          LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
              50    UD   0.299
                    *
              51    KK    *CP2
              52    KM   REFERENCED FROM THE "DB2" STUDY
              53    KM   COMBINE OFF7, AND OFF8
```

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 54          HC       2
             *

 55          KK   *OFF9
 56          KM   REFERENCED FROM THE "DB2" STUDY
 57          KM   DISCHARGES INTO DETENTION BASIN "DB2"
 58          KO       3
 59          BA   .1137
 60          LS       0    88.0
 61          UD   0.200
             *

 62          KK   *CP2a
 63          KM   REFERENCED FROM THE "DB2" STUDY
 64          KM   COMBINE CP2, AND OFF9
 65          HC       2
             *

 66          KK  *OFF10
 67          KM   REFERENCED FROM THE "DB2" STUDY
 68          KM   DISCHARGES INTO DETENTION BASIN "DB2"
 69          KO       3
 70          BA   .6502
 71          LS       0    88.0
 72          UD   0.613
             *

 73          KK    *ON2
 74          KM   REFERENCED FROM THE "DB2" STUDY
 75          KM   DB2 BASIN
 76          BA   .0315
 77          LS       0    94.0
 78          UD   0.083
             *

 79          KK    *DB2
 80          KM   REFERENCED FROM THE "DB2" STUDY
 81          KM   COMBINE CP2a, OFF10 AND ON2
 82          KO       1
 83          HC       3
             *

 84          KK   *RDB2
 85          KM   REFERENCED FROM THE "DB2" STUDY
 86          KM   OUTLET = 25" ORIFICE @ INVERT ELEVATION = 2984.21-FT
 87          KO       1
 88          RS       1    ELEV  2992.0
 89          SV    0.00    2.34    7.60   24.30   46.28   73.78  107.11  146.75  193.03
 90          SE  2992.0  2993.0  2995.0  3000.0  3005.0  3010.0  3015.0  3020.0  3025.0
```

1 HEC-1 INPUT PAGE 3

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

 91          SQ    0.00   44.44   51.05   64.70   83.84   99.36   520.9  3465.5  7888.4
 92          SE  2992.0  2993.0  2995.0  3000.0  3009.0  3018.0  3019.0  3022.0  3025.0
             *

 93          KK    OFF1
 94          KM   OFFSITE BASIN
 95          BA   .2203
 96          PB    3.00
 97          LS       0    88.0
 98          UD   0.231
             *

 99          KK    OFF2
100          KM   OFFSITE BASIN
101          BA   .0290
102          PB    3.00
103          LS       0    88.0
104          UD   0.122
             *

105          KK   DUMMY
106          KM   COMBINES OFF1 AND OFF2
107          HC       2
             *

108          KK    OFF4
109          KM   OFFSITE BASIN
110          BA   .0609
111          PB    3.00
112          LS       0    88.0
113          UD   0.212
             *

114          KK      D1
115          KM   DIVERT FLOW TO CONCENTRATION POINT CP3
116          DT    DIV1
117          DI       0    1000
118          DQ       0     500
             *

119          KK    OFF3
120          KM   OFFSITE BASIN
121          BA   .1501
122          PB    3.00
123          LS       0    88.0
124          UD   0.250
             *

125          KK   DUMMY
126          KM   COMBINES OFF3 AND OFF4
127          HC       2
             *
```

1 HEC-1 INPUT PAGE 4

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

128          KK      D2
129          KM   DIVERT FLOW TO CONCENTRATION POINT CP2a
```

```
130          DT    DIV2
131          DI       0      228
132          DQ       0       70
             *

133          KK    SVR1
134          KM   ONSITE STREET BASIN
135          BA   .0043
136          PB    3.00
137          LS       0     98.0
138          UD   0.081
             *

139          KK    SVR2
140          KM   ONSITE STREET BASIN
141          BA   .0100
142          PB    3.00
143          LS       0     98.0
144          UD   0.161
             *

145          KK     CP1
146          KM   COMBINES *RDB2, OFF1, OFF2, OFF3, SVR1 AND SVR2
147          HC       5
             *

148          KK   2.05a
149          KM   ONSITE BASIN
150          BA   .0212
151          PB    3.00
152          LS       0     95.0
153          UD   0.154
             *

154          KK   OFF11
155          KM   OFFSITE BASIN
156          BA   .0292
157          PB    3.00
158          LS       0     88.0
159          UD   0.218
             *

160          KK    CP10
161          KM   COMBINES CP1, 2.05a AND OFF11
162          HC       3
             *
```


HEC-1 INPUT PAGE 5

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

163          KK    STR2
164          KM   ONSITE STREET BASIN
165          BA   .0024
166          PB    3.00
167          LS       0     98.0
168          UD   0.068
             *

169          KK    STR3
170          KM   ONSITE STREET BASIN
171          BA   .0034
172          PB    3.00
173          LS       0     98.0
174          UD   0.074
             *

175          KK    2.03
176          KM   ONSITE BASIN
177          BA   .0273
178          PB    3.00
179          LS       0     95.0
180          UD   0.120
             *

181          KK   2.04b
182          KM   ONSITE BASIN
183          BA   .0020
184          PB    3.00
185          LS       0     84.0
186          UD   0.100
             *

187          KK     CP4
188          KM   COMBINES STR2, STR3, 2.03 AND 2.04b
189          HC       4
             *

190          KK    2.02
191          KM   ONSITE BASIN
192          BA   .0279
193          PB    3.00
194          LS       0     95.0
195          UD   0.121
             *

196          KK    STR4
197          KM   ONSITE STREET BASIN
198          BA   .0030
199          PB    3.00
200          LS       0     98.0
201          UD   0.102
             *
```


HEC-1 INPUT PAGE 6

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

202          KK     CP5
203          KM   COMBINES CP4, 2.02 AND STR4
204          HC       3
             *
```

```
KK   OFF12
KM   OFFSITE BASIN
BA   .0128
PB    3.00
LS       0    88.0
UD   0.100
*

KK    CP11
KM   COMBINES OFF12 AND CP5
HC       2
*

KK   *OFF1
KM   REFERENCED FROM THE "DB1" STUDY
KM   DISCHARGES INTO DETENTION BASIN "DB1"
KO       3
BA   .4291
LS       0    86.8
UD   0.419
*

KK   *OFF2
KM   REFERENCED FROM THE "DB1" STUDY
KM   DISCHARGES INTO DETENTION BASIN "DB1"
KO       3
BA   .0419
LS       0    81.8
UD   0.154
*

KK   *OFF3
KM   REFERENCED FROM THE "DB1" STUDY
KM   DISCHARGES INTO DETENTION BASIN "DB1"
KO       3
BA   .0259
LS       0    88.0
UD   0.110
*

KK  *DUMMY
KM   COMBINE OFF1, OFF2, AND OFF3
HC       3
*
```

1

HEC-1 INPUT PAGE 7

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

KK   *OFF4
KM   REFERENCED FROM THE "DB1" STUDY
KM   DISCHARGES INTO DETENTION BASIN "DB1"
KO       3
BA   .0581
LS       0    88.0
UD   0.134
*

KK   *OFF5
KM   REFERENCED FROM THE "DB1" STUDY
KM   DISCHARGES INTO DETENTION BASIN "DB1"
KO       3
BA   .2569
LS       0    88.0
UD   0.416
*

KK   *OFF6
KM   REFERENCED FROM THE "DB1" STUDY
KM   DISCHARGES INTO DETENTION BASIN "DB1"
KO       3
BA   .0399
LS       0    88.0
UD   0.118
*

KK    *ON1
KM   REFERENCED FROM THE "DB1" STUDY
KM   DB1 BASIN
BA   .0261
LS       0    94.0
UD   0.115
*

KK    *DB1
KM   REFERENCED FROM THE "DB1" STUDY
KM   COMBINE DUMMY, OFF4, OFF5, OFF6 AND ON1
HC       5
*

KK   *RDB1
KM   REFERENCED FROM THE "DB1" STUDY
KM   OUTLET = 24" ORIFICE @ INVERT ELEVATION = 3013.8-FT
RS       1    ELEV  3025.5
SA    4.58    5.63    5.81    6.00    6.19    7.17    7.61    8.31    9.00    9.69
SE  3025.5    3027    3028    3029    3030    3035    3037    3040    3043    3046
SQ    49.7    60.6    70.8    74.5  1436.0  3920.5  7136.3
SE  3025.5    3030    3035    3037    3040    3043    3046
*
```

1

HEC-1 INPUT PAGE 8

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

KK   *WPF5
KM   WEST BASIN, WEST OF SHAUMBER RD
BA   .0006
PB    3.00
LS       0    86.0
UD   0.052
*
```

```
283          KK   *WML2
284          KM   WEST BASIN, WEST OF SHAUMBER ROAD
285          BA   .0428
286          PB    3.00
287          LS       0    93.5
288          UD   0.142
             *

289          KK  *WSHA5
290          KM   WEST BASIN, SHAUMBER ROAD
291          BA   .0037
292          PB    3.00
293          LS       0    98.0
294          UD   0.086
             *

295          KK   *WC20
296          KM   S OF EAGLE CANYON/SHAUMBER INTERSECTION
297          KM   COMBINE WPF5, WML2, WSHA5
298          HC       3
             *

299          KK   *WPF4
300          BA   .0090
301          PB    3.00
302          LS       0    94.0
303          UD   0.087
             *

304          KK  *WSHA4
305          BA   .0022
306          PB    3.00
307          LS       0    98.0
308          UD   0.051
             *

309          KK    CP6
310          KM   COMBINES *RDB1, *WC20, *WPF4 AND *WSHA4
311          HC       4
             *
```



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

312          KK    RCP6
313          KM   ROUTE CP6 TO CP7
314          KM   LENGTH SLOPE   n-VALUE          SHAPE   WIDTH   S-SLOPE
315          RD    2520    .039    .040       0   TRAP     50       2
             *

316          KK   *WL4A
317          KM   BASIN WEST OF PARCEL 2.16
318          BA   .0125
319          PB    3.00
320          LS       0    92.0
321          UD   0.106
             *

322          KK   *ON1D
323          KM   PARCEL 2.16
324          BA   .0222
325          PB    3.00
326          LS       0    92.0
327          UD   0.099
             *

328          KK    CP7
329          KM   COMBINES *RDB1, *WC20, *WPF4, *WSHA4, *WL4A AND *ON1D
330          HC       3
             *

331          KK    RCP7
332          KM   ROUTE CP7 TO CP8
333          KM   LENGTH SLOPE   n-VALUE          SHAPE   WIDTH   S-SLOPE
334          RD    1470    .039    .040       0   TRAP     50       2
             *

335          KK    OFF5
336          KM   OFFSITE BASIN
337          BA   .1388
338          PB    3.00
339          LS       0    88.0
340          UD   0.216
             *

341          KK    CP8
342          KM   COMBINES OFF5 AND CP7
343          HC       2
             *

344          KK    RCP8
345          KM   ROUTE CP8 TO CP3
346          KM   LENGTH SLOPE   n-VALUE          SHAPE   WIDTH   S-SLOPE
347          RD     450    .039    .040       0   TRAP     50       2
             *
```



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

348          KK   *OFF3
349          KM   REFERENCED FROM THE "SMITH'S" STUDY
350          PB    3.00
351          BA   .0012
352          LS       0    86.2
353          UD   0.100
             *

354          KK    *D2
355          KM   REFERENCED FROM THE "SMITH'S" STUDY
```

```
356          PB    3.00
357          BA   .0154
358          LS       0    86.0
359          UD   0.089
             *

360          KK  *IOFF4
361          KM   REFERENCED FROM THE "SMITH'S" STUDY
362          PB    3.00
363          BA   .0062
364          LS       0    86.2
365          UD   0.100
             *

366          KK   *PARK
367          KM   REFERENCED FROM THE "SMITH'S" STUDY
368          KM   COMBINES IOFF4, OFF3, D2
369          HC       3
             *

370          KK    DIV1
371          KM   CULVERT CROSSING FLOW INTO PARCEL 2.06
372          DR    DIV1
             *

373          KK     CP3
374          KM   COMBINES CP4, DIV1 AND *PARK
375          HC       3
             *

376          KK    RCP3
377          KM   ROUTE CP3 TO CP3a
378          KM   LENGTH SLOPE   n-VALUE           SHAPE   WIDTH   S-SLOPE
379          RD    1260    .039    .040       0    TRAP      50       2
             *

380          KK    2.06
381          KM   ONSITE BASIN
382          BA   .0310
383          PB    3.00
384          LS       0    95.0
385          UD   0.108
             *
```



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

386          KK    CP3a
387          KM   COMBINES CP3 AND 2.06
388          HC       2
             *

389          KK   2.05b
390          KM   ONSITE BASIN
391          BA   .0115
392          PB    3.00
393          LS       0    95.0
394          UD   0.154
             *

395          KK    STR1
396          KM   ONSITE STREET BASIN
397          BA   .0041
398          PB    3.00
399          LS       0    98.0
400          UD   0.050
             *

401          KK   2.04a
402          KM   ONSITE BASIN
403          BA   .0022
404          PB    3.00
405          LS       0    84.0
406          UD   0.100
             *

407          KK    DIV2
408          KM   CULVERT CROSSING FLOW TO CONCENTRATION POINT CP2a
409          DR    DIV2
             *

410          KK    CP2a
411          KM   COMBINES 2.05b, STR1, DIV2 AND 2.04a
412          HC       4
             *

413          KK    *DBN
414          KM   REFERENCED FROM THE "SMITH'S" STUDY
415          KM   OUTLET = 54" ORIFICE @ INVERT ELEVATION = 2997.3-FT
416          KO       1
417          RS       1    ELEV  2797.3
418          SA    0.00    0.09    0.12    0.15     .37    0.79    0.86
419          SE  2797.3    2798    2799    2800    2805    2812    2813
420          SQ    0.00      54     129     193     241     268
421          SE  2797.3    2802    2804    2807    2810    2812
             *
```



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

422          KK  *WSPD3
423          KM   REFERENCED FROM THE "SMITH'S" STUDY
424          BA   .0022
425          PB    2.93
426          LS       0    92.8
427          UD   0.056
             *

428          KK   *WGC3
429          KM   REFERENCED FROM THE "SMITH'S" STUDY
```

```
430          BA   .0444
431          PB    2.93
432          LS       0    94.6
433          UD   0.095
             *

434          KK  *WSPD0
435          KM   REFERENCED FROM THE "SMITH'S" STUDY
436          BA   .0010
437          PB    2.93
438          LS       0    93.4
439          UD   0.050
             *

440          KK    WC9a
441          HC       5
             *

442          KK  *ON1-D
443          KM   REFERENCED FROM THE "SMITH'S" STUDY
444          KM   PHASE 1, NORTHWEST QUAD ONSITE BASIN
445          BA   .0278
446          PB    2.93
447          LS       0    91.2
448          UD   0.114
             *

449          KK  *ON2-D
450          KM   REFERENCED FROM THE "SMITH'S" STUDY
451          KM   PHASE 1, NORTHEAST QUAD ONSITE BASIN
452          BA   .0301
453          PB    2.93
454          LS       0    88.8
455          UD   0.152
             *

456          KK    *HOR
457          KM   REFERENCED FROM THE "SMITH'S" STUDY
458          KM   PHASE 1, STREET BASIN SKYE CANYON PARK DRIVE
459          BA   .0163
460          PB    2.93
461          LS       0    93.3
462          UD   0.108
             *
```



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

463          KK    *WC7
464          KM   REFERENCED FROM THE "SMITH'S" STUDY
465          HC       3
             *

466          KK *WGRC1A
467          KM   REFERENCED FROM THE "SMITH'S" STUDY
468          BA   .0022
469          PB    2.93
470          LS       0    93.2
471          UD   0.095
             *

472          KK    CP12
473          HC       3
             *
474          ZZ
```

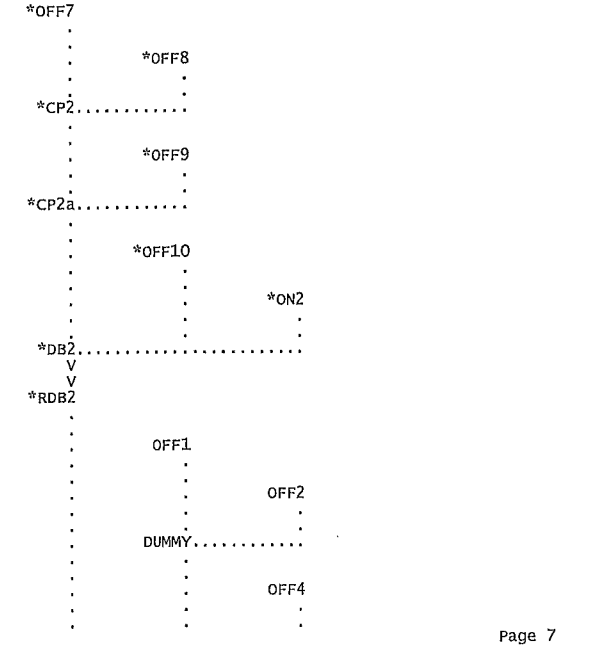
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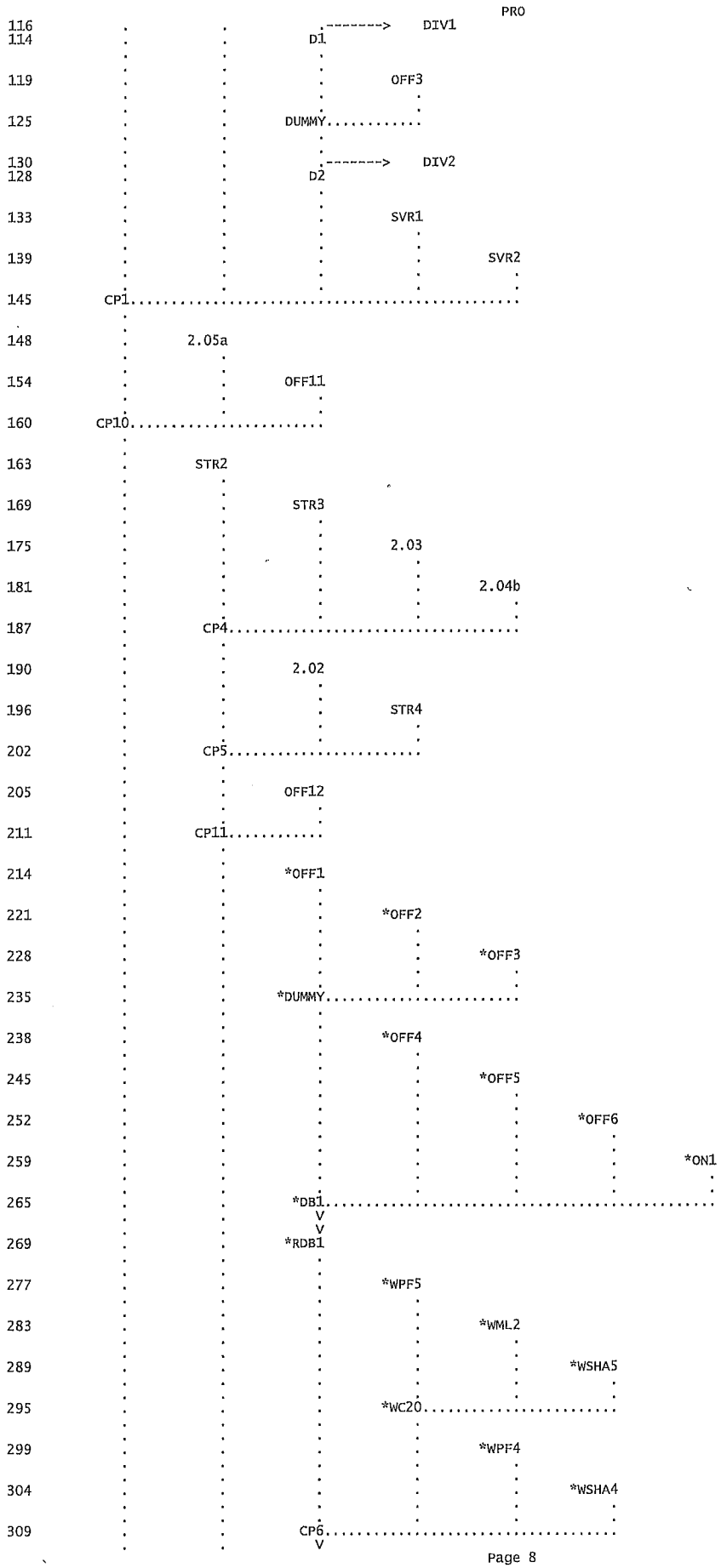
SCHEMATIC DIAGRAM OF STREAM NETWORK

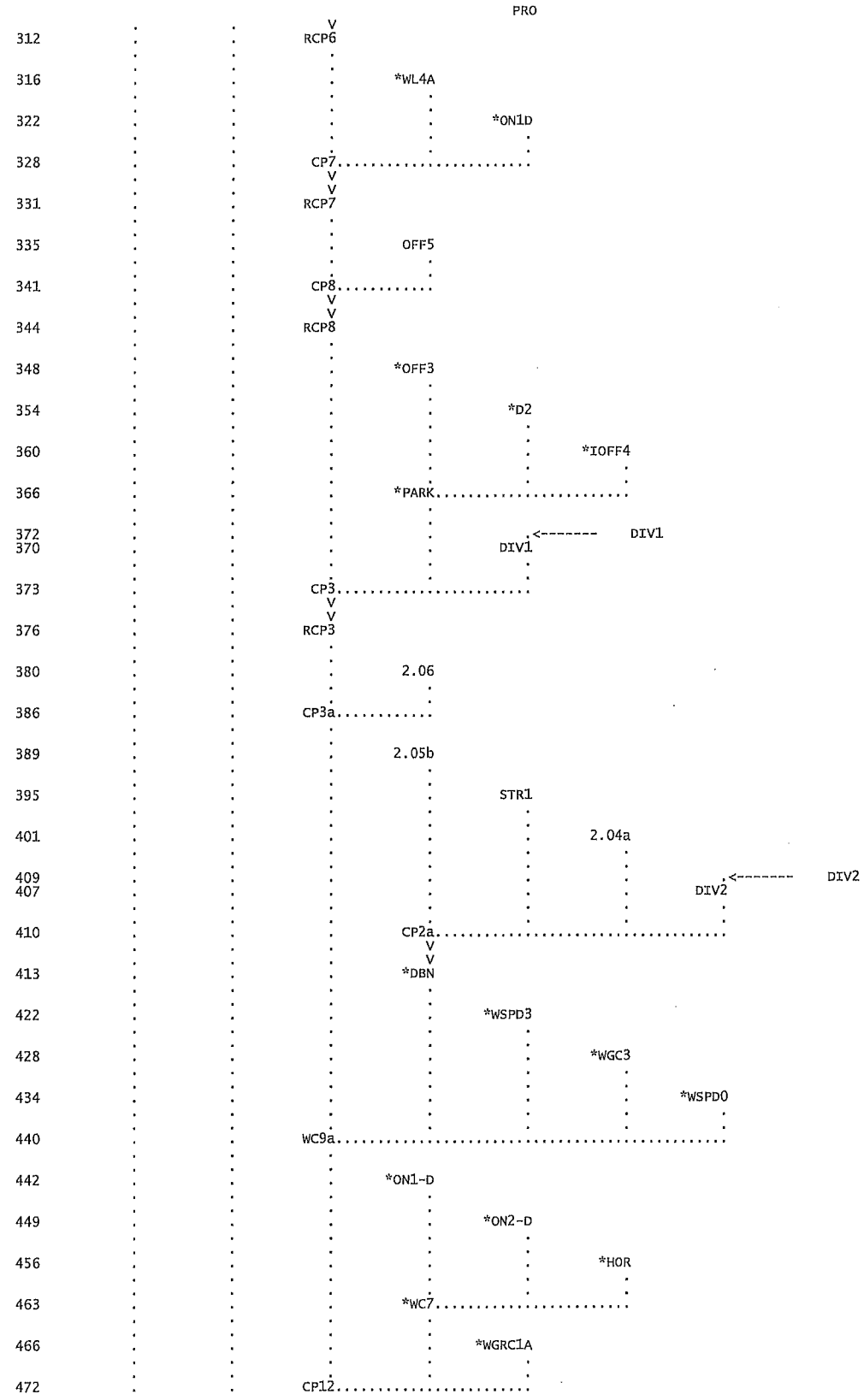
INPUT LINE NO.

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

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




PRO
116
114
DIV1
D1
119
OFF3
125
DUMMY
130
128
DIV2
D2
133
SVR1
139
SVR2
145
CP1
148
2.05a
154
OFF11
160
CP10
163
STR2
169
STR3
175
2.03
181
2.04b
187
CP4
190
2.02
196
STR4
202
CP5
205
OFF12
211
CP11
214
*OFF1
221
*OFF2
228
*OFF3
235
*DUMMY
238
*OFF4
245
*OFF5
252
*OFF6
259
*ON1
265
*DB1
269
*RDB1
277
*WPF5
283
*WML2
289
*WSHA5
295
*WC20
299
*WPF4
304
*WSHA4
309
CP6



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1**********

****

* * * *

* * * *

* FLOOD HYDROGRAPH PACKAGE (HEC-1) * * U.S. ARMY CORPS OF ENGINEERS

* * * *

* JUN 1998 * * HYDROLOGIC ENGINEERING CENTER

* * * *

* VERSION 4.1 * * 609 SECOND STREET

*

* DAVIS, CALIFORNIA 95616
* (916) 756-1104

* RUN DATE 30OCT17 TIME 10:27:30 *

SLATER HANIFAN GROUP
NINETY-FIVE MANAGEMENT, LLC.
SKYE CANYON INFRASTRUCTURE PHASE 3A
TECHNICAL DRAINAGE STUDY

DRAINAGE CONDITION -- PROPOSED CONDITION
RETURN PERIOD ------- 100 & 10-YEAR
DISTRIBUTION -------- 6-HOUR SDN3
PROJECT NO. --------- OLY1609.000
FILENAME ------------ PRO.H1
DATE ---------------- OCTOBER 2017
MODELED BY ---------- ETM

RETURN PERIOD	RATIO
100-YR	1.00
10-YR	0.54

SIX HOUR DEPTH-AREA REDUCTION FACTORS

DRAINAGE AREA (MI^2)	DARF
0.00-0.49	0.990
0.50-0.99	0.975
1.00-1.99	0.950

26 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 0 STARTING DATE
ITIME 0000 STARTING TIME
NQ 300 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 2 0 ENDING DATE
NDTIME 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
1.00 .99 .98 .95 .54

*** *** *** *

PRO

50 UD SCS DIMENSIONLESS UNITGRAPH
TLAG .30 LAG

***

UNIT HYDROGRAPH
20 END-OF-PERIOD ORDINATES

42. 137. 259. 301. 276. 215. 136. 91. 62. 42.
28. 19. 13. 8. 6. 4. 3. 2. 1. 0.

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)	(CFS)				
+ 244.	3.75	41.	10.	10.	10.	
		(INCHES) 1.816	1.818	1.818	1.818	
		(AC-FT) 21.	21.	21.	21.	

CUMULATIVE AREA = .21 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF8
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)	(CFS)				
+ 244.	3.75	41.	10.	10.	10.	
		(INCHES) 1.816	1.818	1.818	1.818	
		(AC-FT) 21.	21.	21.	21.	

CUMULATIVE AREA = .21 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF8
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)	(CFS)				
+ 241.	3.75	41.	10.	10.	10.	
		(INCHES) 1.790	1.792	1.792	1.792	
		(AC-FT) 20.	20.	20.	20.	

CUMULATIVE AREA = .21 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF8
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)	(CFS)				
+ 236.	3.75	40.	10.	10.	10.	
		(INCHES) 1.750	1.752	1.752	1.752	
		(AC-FT) 20.	20.	20.	20.	

CUMULATIVE AREA = .21 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF8
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)	(CFS)				
+ 227.	3.75	38.	10.	9.	9.	
		(INCHES) 1.684	1.685	1.685	1.685	
		(AC-FT) 19.	19.	19.	19.	

CUMULATIVE AREA = .21 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF8
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR	
+ (CFS)	(HR)	(CFS)				
+ 93.	3.75	15.	4.	4.	4.	
		(INCHES) .670	.670	.670	.670	
		(AC-FT) 8.	8.	8.	8.	

CUMULATIVE AREA = .21 SQ MI

*** *** *** *

```
                                                                    PRO
+     148.      3.58                    21.          5.          5.          5.
                            (INCHES)    1.751       1.752       1.752       1.752
                             (AC-FT)      11.         11.         11.         11.

                            CUMULATIVE AREA =     .11 SQ MI

       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF9
                            FOR PLAN 1, RATIO =  .95

     TOTAL RAINFALL =    2.85, TOTAL LOSS =    1.16, TOTAL EXCESS =    1.69

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                             (CFS)
+     142.      3.58                    21.          5.          5.          5.
                            (INCHES)    1.685       1.685       1.685       1.685
                             (AC-FT)      10.         10.         10.         10.

                            CUMULATIVE AREA =     .11 SQ MI

       ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF9
                            FOR PLAN 1, RATIO =  .54

     TOTAL RAINFALL =    1.62, TOTAL LOSS =     .95, TOTAL EXCESS =     .67

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                             (CFS)
+      58.      3.67                     8.          2.          2.          2.
                            (INCHES)     .670        .670        .670        .670
                             (AC-FT)      4.          4.          4.          4.

                            CUMULATIVE AREA =     .11 SQ MI


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FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
508.	4.08	127.	32.	31.	31.
		1.810	1.818	1.818	1.818
(INCHES)					
(AC-FT)		63.	63.	63.	63.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
501.	4.08	125.	31.	30.	30.
		1.784	1.792	1.792	1.792
(INCHES)					
(AC-FT)		62.	62.	62.	62.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
490.	4.08	122.	31.	29.	29.
		1.744	1.752	1.752	1.752
(INCHES)					
(AC-FT)		60.	61.	61.	61.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
472.	4.08	117.	29.	28.	28.
		1.679	1.685	1.685	1.685
(INCHES)					
(AC-FT)		58.	58.	58.	58.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF10
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
191.	4.08	47.	12.	11.	11.
		.669	.670	.670	.670
(INCHES)					
(AC-FT)		23.	23.	23.	23.

CUMULATIVE AREA = .65 SQ MI

*** *** *** *

HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
PLAN 1, RATIO = 1.00

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	43.	1		1230	151	0.	1		1845	226	0.
1		0005	2	0.	1		0620	77	36.	1		1235	152	0.	1		1850	227	0.
1		0010	3	0.	1		0625	78	30.	1		1240	153	0.	1		1855	228	0.
1		0015	4	1.	1		0630	79	25.	1		1245	154	0.	1		1900	229	0.
1		0020	5	2.	1		0635	80	20.	1		1250	155	0.	1		1905	230	0.
1		0025	6	4.	1		0640	81	17.	1		1255	156	0.	1		1910	231	0.
1		0030	7	6.	1		0645	82	13.	1		1300	157	0.	1		1915	232	0.
1		0035	8	7.	1		0650	83	11.	1		1305	158	0.	1		1920	233	0.
1		0040	9	7.	1		0655	84	9.	1		1310	159	0.	1		1925	234	0.
1		0045	10	7.	1		0700	85	7.	1		1315	160	0.	1		1930	235	0.
1		0050	11	7.	1		0705	86	6.	1		1320	161	0.	1		1935	236	0.
1		0055	12	7.	1		0710	87	4.	1		1325	162	0.	1		1940	237	0.
1		0100	13	6.	1		0715	88	4.	1		1330	163	0.	1		1945	238	0.
1		0105	14	6.	1		0720	89	3.	1		1335	164	0.	1		1950	239	0.
1		0110	15	8.	1		0725	90	2.	1		1340	165	0.	1		1955	240	0.
1		0115	16	8.	1		0730	91	2.	1		1345	166	0.	1		2000	241	0.
1		0120	17	10.	1		0735	92	1.	1		1350	167	0.	1		2005	242	0.
1		0125	18	13.	1		0740	93	1.	1		1355	168	0.	1		2010	243	0.
1		0130	19	18.	1		0745	94	1.	1		1400	169	0.	1		2015	244	0.
1		0135	20	23.	1		0750	95	1.	1		1405	170	0.	1		2020	245	0.
1		0140	21	29.	1		0755	96	0.	1		1410	171	0.	1		2025	246	0.
1		0145	22	34.	1		0800	97	0.	1		1415	172	0.	1		2030	247	0.
1		0150	23	36.	1		0805	98	0.	1		1420	173	0.	1		2035	248	0.
1		0155	24	36.	1		0810	99	0.	1		1425	174	0.	1		2040	249	0.
1		0200	25	35.	1		0815	100	0.	1		1430	175	0.	1		2045	250	0.
1		0205	26	34.	1		0820	101	0.	1		1435	176	0.	1		2050	251	0.
1		0210	27	36.	1		0825	102	0.	1		1440	177	0.	1		2055	252	0.
1		0215	28	42.	1		0830	103	0.	1		1445	178	0.	1		2100	253	0.
1		0220	29	49.	1		0835	104	0.	1		1450	179	0.	1		2105	254	0.
1		0225	30	56.	1		0840	105	0.	1		1455	180	0.	1		2110	255	0.
1		0230	31	58.	1		0845	106	0.	1		1500	181	0.	1		2115	256	0.
1		0235	32	59.	1		0850	107	0.	1		1505	182	0.	1		2120	257	0.
1		0240	33	64.	1		0855	108	0.	1		1510	183	0.	1		2125	258	0.
1		0245	34	69.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	71.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	71.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	73.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	85.	1		0920	113	0.	1		1535	188	0.	1		2150	263	0.
1		0310	39	107.	1		0925	114	0.	1		1540	189	0.	1		2155	264	0.
1		0315	40	149.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	229.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	343.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	494.	1		0945	118	0.	1		1600	193	0.	1		2215	268	0.
1		0335	44	625.	1		0950	119	0.	1		1605	194	0.	1		2220	269	0.
1		0340	45	710.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	762.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	774.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	760.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	731.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	690.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	636.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	574.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	512.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	454.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	411.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	383.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	361.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	342.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	332.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	321.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	305.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	286.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	263.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	239.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	213.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.
1		0525	66	189.	1		1140	141	0.	1		1755	216	0.	2		0010	291	0.
1		0530	67	166.	1		1145	142	0.	1		1800	217	0.	2		0015	292	0.
1		0535	68	143.	1		1150	143	0.	1		1805	218	0.	2		0020	293	0.
1		0540	69	123.	1		1155	144	0.	1		1810	219	0.	2		0025	294	0.
1		0545	70	107.	1		1200	145	0.	1		1815	220	0.	2		0030	295	0.
1		0550	71	92.	1		1205	146	0.	1		1820	221	0.	2		0035	296	0.
1		0555	72	79.	1		1210	147	0.	1		1825	222	0.	2		0040	297	0.
1		0600	73	68.	1		1215	148	0.	1		1830	223	0.	2		0045	298	0.
1		0605	74	59.	1		1220	149	0.	1		1835	224	0.	2		0050	299	0.
1		0610	75	51.	1		1225	150	0.	1		1840	225	0.	2		0055	300	0.

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 774.	3.83		199.	50.	48.	48.
		(INCHES)	1.824	1.835	1.835	1.835
		(AC-FT)	99.	99.	99.	99.

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
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	42.	1		1230	151	0.	1		1845	226	0.
1		0005	2	0.	1		0620	77	36.	1		1235	152	0.	1		1850	227	0.
1		0010	3	0.	1		0625	78	30.	1		1240	153	0.	1		1855	228	0.
1		0015	4	1.	1		0630	79	24.	1		1245	154	0.	1		1900	229	0.
1		0020	5	2.	1		0635	80	20.	1		1250	155	0.	1		1905	230	0.
1		0025	6	4.	1		0640	81	16.	1		1255	156	0.	1		1910	231	0.
1		0030	7	6.	1		0645	82	13.	1		1300	157	0.	1		1915	232	0.
1		0035	8	7.	1		0650	83	11.	1		1305	158	0.	1		1920	233	0.
1		0040	9	7.	1		0655	84	8.	1		1310	159	0.	1		1925	234	0.
1		0045	10	7.	1		0700	85	7.	1		1315	160	0.	1		1930	235	0.
1		0050	11	6.	1		0705	86	6.	1		1320	161	0.	1		1935	236	0.
1		0055	12	6.	1		0710	87	4.	1		1325	162	0.	1		1940	237	0.
1		0100	13	6.	1		0715	88	4.	1		1330	163	0.	1		1945	238	0.
1		0105	14	6.	1		0720	89	3.	1		1335	164	0.	1		1950	239	0.
1		0110	15	7.	1		0725	90	2.	1		1340	165	0.	1		1955	240	0.
1		0115	16	8.	1		0730	91	2.	1		1345	166	0.	1		2000	241	0.
1		0120	17	9.	1		0735	92	1.	1		1350	167	0.	1		2005	242	0.
1		0125	18	12.	1		0740	93	1.	1		1355	168	0.	1		2010	243	0.
1		0130	19	17.	1		0745	94	1.	1		1400	169	0.	1		2015	244	0.
1		0135	20	23.	1		0750	95	1.	1		1405	170	0.	1		2020	245	0.
1		0140	21	28.	1		0755	96	0.	1		1410	171	0.	1		2025	246	0.
1		0145	22	33.	1		0800	97	0.	1		1415	172	0.	1		2030	247	0.
1		0150	23	35.	1		0805	98	0.	1		1420	173	0.	1		2035	248	0.
1		0155	24	35.	1		0810	99	0.	1		1425	174	0.	1		2040	249	0.
1		0200	25	34.	1		0815	100	0.	1		1430	175	0.	1		2045	250	0.
1		0205	26	33.	1		0820	101	0.	1		1435	176	0.	1		2050	251	0.
1		0210	27	35.	1		0825	102	0.	1		1440	177	0.	1		2055	252	0.
1		0215	28	41.	1		0830	103	0.	1		1445	178	0.	1		2100	253	0.
1		0220	29	48.	1		0835	104	0.	1		1450	179	0.	1		2105	254	0.
1		0225	30	54.	1		0840	105	0.	1		1455	180	0.	1		2110	255	0.
1		0230	31	57.	1		0845	106	0.	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	62.	1		0855	108	0.	1		1510	183	0.	1		2125	258	0.
1		0245	34	67.	1		0900	109	0.	1		1515	184	0.	1		2130	259	0.
1		0250	35	70.	1		0905	110	0.	1		1520	185	0.	1		2135	260	0.
1		0255	36	70.	1		0910	111	0.	1		1525	186	0.	1		2140	261	0.
1		0300	37	71.	1		0915	112	0.	1		1530	187	0.	1		2145	262	0.
1		0305	38	83.	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	147.	1		0930	115	0.	1		1545	190	0.	1		2200	265	0.
1		0320	41	225.	1		0935	116	0.	1		1550	191	0.	1		2205	266	0.
1		0325	42	337.	1		0940	117	0.	1		1555	192	0.	1		2210	267	0.
1		0330	43	487.	1		0945	118	0.	1		1600	193	0.	1		2215	268	0.
1		0335	44	616.	1		0950	119	0.	1		1605	194	0.	1		2220	269	0.
1		0340	45	699.	1		0955	120	0.	1		1610	195	0.	1		2225	270	0.
1		0345	46	751.	1		1000	121	0.	1		1615	196	0.	1		2230	271	0.
1		0350	47	763.	1		1005	122	0.	1		1620	197	0.	1		2235	272	0.
1		0355	48	750.	1		1010	123	0.	1		1625	198	0.	1		2240	273	0.
1		0400	49	721.	1		1015	124	0.	1		1630	199	0.	1		2245	274	0.
1		0405	50	681.	1		1020	125	0.	1		1635	200	0.	1		2250	275	0.
1		0410	51	627.	1		1025	126	0.	1		1640	201	0.	1		2255	276	0.
1		0415	52	566.	1		1030	127	0.	1		1645	202	0.	1		2300	277	0.
1		0420	53	505.	1		1035	128	0.	1		1650	203	0.	1		2305	278	0.
1		0425	54	448.	1		1040	129	0.	1		1655	204	0.	1		2310	279	0.
1		0430	55	405.	1		1045	130	0.	1		1700	205	0.	1		2315	280	0.
1		0435	56	378.	1		1050	131	0.	1		1705	206	0.	1		2320	281	0.
1		0440	57	356.	1		1055	132	0.	1		1710	207	0.	1		2325	282	0.
1		0445	58	338.	1		1100	133	0.	1		1715	208	0.	1		2330	283	0.
1		0450	59	328.	1		1105	134	0.	1		1720	209	0.	1		2335	284	0.
1		0455	60	317.	1		1110	135	0.	1		1725	210	0.	1		2340	285	0.
1		0500	61	301.	1		1115	136	0.	1		1730	211	0.	1		2345	286	0.
1		0505	62	282.	1		1120	137	0.	1		1735	212	0.	1		2350	287	0.
1		0510	63	260.	1		1125	138	0.	1		1740	213	0.	1		2355	288	0.
1		0515	64	236.	1		1130	139	0.	1		1745	214	0.	2		0000	289	0.
1		0520	65	211.	1		1135	140	0.	1		1750	215	0.	2		0005	290	0.
1		0525	66	187.	1		1140	141	0.	1		1755	216	0.	2		0010	291	0.
1		0530	67	164.	1		1145	142	0.	1		1800	217	0.	2		0015	292	0.
1		0535	68	142.	1		1150	143	0.	1		1805	218	0.	2		0020	293	0.
1		0540	69	122.	1		1155	144	0.	1		1810	219	0.	2		0025	294	0.
1		0545	70	105.	1		1200	145	0.	1		1815	220	0.	2		0030	295	0.
1		0550	71	91.	1		1205	146	0.	1		1820	221	0.	2		0035	296	0.
1		0555	72	78.	1		1210	147	0.	1		1825	222	0.	2		0040	297	0.
1		0600	73	68.	1		1215	148	0.	1		1830	223	0.	2		0045	298	0.
1		0605	74	58.	1		1220	149	0.	1		1835	224	0.	2		0050	299	0.
1		0610	75	50.	1		1225	150	0.	1		1840	225	0.	2		0055	300	0.

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
763.	3.83	(CFS)	196.	49.	47.	47.
		(INCHES)	1.798	1.808	1.808	1.808
		(AC-FT)	97.	98.	98.	98.

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION *DB2
SUM OF 3 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	42.	1		1230	151	0.	1		1845	226	0.
1		0005	2	0.	1		0620	77	35.	1		1235	152	0.	1		1850	227	0.
1		0010	3	0.	1		0625	78	29.	1		1240	153	0.	1		1855	228	0.

PRO

1	0015	4	1.	*	1	0630	79	24.	*	1	1245	154	0.	*	1	1900	229	0.
1	0020	5	2.	*	1	0635	80	20.	*	1	1250	155	0.	*	1	1905	230	0.
1	0025	6	4.	*	1	0640	81	16.	*	1	1255	156	0.	*	1	1910	231	0.
1	0030	7	6.	*	1	0645	82	13.	*	1	1300	157	0.	*	1	1915	232	0.
1	0035	8	7.	*	1	0650	83	10.	*	1	1305	158	0.	*	1	1920	233	0.
1	0040	9	6.	*	1	0655	84	8.	*	1	1310	159	0.	*	1	1925	234	0.
1	0045	10	6.	*	1	0700	85	7.	*	1	1315	160	0.	*	1	1930	235	0.
1	0050	11	6.	*	1	0705	86	5.	*	1	1320	161	0.	*	1	1935	236	0.
1	0055	12	6.	*	1	0710	87	4.	*	1	1325	162	0.	*	1	1940	237	0.
1	0100	13	5.	*	1	0715	88	4.	*	1	1330	163	0.	*	1	1945	238	0.
1	0105	14	5.	*	1	0720	89	3.	*	1	1335	164	0.	*	1	1950	239	0.
1	0110	15	7.	*	1	0725	90	2.	*	1	1340	165	0.	*	1	1955	240	0.
1	0115	16	8.	*	1	0730	91	2.	*	1	1345	166	0.	*	1	2000	241	0.
1	0120	17	9.	*	1	0735	92	1.	*	1	1350	167	0.	*	1	2005	242	0.
1	0125	18	12.	*	1	0740	93	1.	*	1	1355	168	0.	*	1	2010	243	0.
1	0130	19	16.	*	1	0745	94	1.	*	1	1400	169	0.	*	1	2015	244	0.
1	0135	20	22.	*	1	0750	95	1.	*	1	1405	170	0.	*	1	2020	245	0.
1	0140	21	27.	*	1	0755	96	0.	*	1	1410	171	0.	*	1	2025	246	0.
1	0145	22	31.	*	1	0800	97	0.	*	1	1415	172	0.	*	1	2030	247	0.
1	0150	23	34.	*	1	0805	98	0.	*	1	1420	173	0.	*	1	2035	248	0.
1	0155	24	34.	*	1	0810	99	0.	*	1	1425	174	0.	*	1	2040	249	0.
1	0200	25	33.	*	1	0815	100	0.	*	1	1430	175	0.	*	1	2045	250	0.
1	0205	26	32.	*	1	0820	101	0.	*	1	1435	176	0.	*	1	2050	251	0.
1	0210	27	34.	*	1	0825	102	0.	*	1	1440	177	0.	*	1	2055	252	0.
1	0215	28	39.	*	1	0830	103	0.	*	1	1445	178	0.	*	1	2100	253	0.
1	0220	29	46.	*	1	0835	104	0.	*	1	1450	179	0.	*	1	2105	254	0.
1	0225	30	52.	*	1	0840	105	0.	*	1	1455	180	0.	*	1	2110	255	0.
1	0230	31	55.	*	1	0845	106	0.	*	1	1500	181	0.	*	1	2115	256	0.
1	0235	32	56.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.
1	0240	33	60.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	65.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	68.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	67.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	69.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	81.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	102.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	143.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	220.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	329.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	476.	*	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	684.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	735.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	746.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	734.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	706.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	667.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	614.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	554.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	494.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	438.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	397.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	371.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	349.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	331.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	321.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	311.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	296.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	277.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	255.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	231.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	207.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	184.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	161.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	139.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	120.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	103.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	89.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	77.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	66.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	57.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	49.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)					
		(CFS)				
746.	3.83		192.	48.	46.	46.
		(INCHES)	1.759	1.768	1.768	1.768
		(AC-FT)	95.	96.	96.	96.

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
PLAN 1, RATIO = .95

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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	40.	*	1	1230	151	0.	*	1	1845	226	0.
1	0005	2	0.	*	1	0620	77	34.	*	1	1235	152	0.	*	1	1850	227	0.
1	0010	3	0.	*	1	0625	78	28.	*	1	1240	153	0.	*	1	1855	228	0.
1	0015	4	1.	*	1	0630	79	23.	*	1	1245	154	0.	*	1	1900	229	0.
1	0020	5	2.	*	1	0635	80	19.	*	1	1250	155	0.	*	1	1905	230	0.
1	0025	6	3.	*	1	0640	81	16.	*	1	1255	156	0.	*	1	1910	231	0.
1	0030	7	5.	*	1	0645	82	13.	*	1	1300	157	0.	*	1	1915	232	0.
1	0035	8	6.	*	1	0650	83	10.	*	1	1305	158	0.	*	1	1920	233	0.
1	0040	9	5.	*	1	0655	84	8.	*	1	1310	159	0.	*	1	1925	234	0.
1	0045	10	5.	*	1	0700	85	6.	*	1	1315	160	0.	*	1	1930	235	0.

PRO

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1	0050	11	5.	*	1	0705	86	5.	*	1	1320	161	0.	*	1	1935	236	0.	
1	0055	12	5.	*	1	0710	87	4.	*	1	1325	162	0.	*	1	1940	237	0.	
1	0100	13	4.	*	1	0715	88	3.	*	1	1330	163	0.	*	1	1945	238	0.	
1	0105	14	4.	*	1	0720	89	3.	*	1	1335	164	0.	*	1	1950	239	0.	
1	0110	15	6.	*	1	0725	90	2.	*	1	1340	165	0.	*	1	1955	240	0.	
1	0115	16	7.	*	1	0730	91	2.	*	1	1345	166	0.	*	1	2000	241	0.	
1	0120	17	8.	*	1	0735	92	1.	*	1	1350	167	0.	*	1	2005	242	0.	
1	0125	18	10.	*	1	0740	93	1.	*	1	1355	168	0.	*	1	2010	243	0.	
1	0130	19	15.	*	1	0745	94	1.	*	1	1400	169	0.	*	1	2015	244	0.	
1	0135	20	20.	*	1	0750	95	1.	*	1	1405	170	0.	*	1	2020	245	0.	
1	0140	21	25.	*	1	0755	96	0.	*	1	1410	171	0.	*	1	2025	246	0.	
1	0145	22	29.	*	1	0800	97	0.	*	1	1415	172	0.	*	1	2030	247	0.	
1	0150	23	31.	*	1	0805	98	0.	*	1	1420	173	0.	*	1	2035	248	0.	
1	0155	24	31.	*	1	0810	99	0.	*	1	1425	174	0.	*	1	2040	249	0.	
1	0200	25	31.	*	1	0815	100	0.	*	1	1430	175	0.	*	1	2045	250	0.	
1	0205	26	30.	*	1	0820	101	0.	*	1	1435	176	0.	*	1	2050	251	0.	
1	0210	27	31.	*	1	0825	102	0.	*	1	1440	177	0.	*	1	2055	252	0.	
1	0215	28	37.	*	1	0830	103	0.	*	1	1445	178	0.	*	1	2100	253	0.	
1	0220	29	43.	*	1	0835	104	0.	*	1	1450	179	0.	*	1	2105	254	0.	
1	0225	30	49.	*	1	0840	105	0.	*	1	1455	180	0.	*	1	2110	255	0.	
1	0230	31	52.	*	1	0845	106	0.	*	1	1500	181	0.	*	1	2115	256	0.	
1	0235	32	53.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.	
1	0240	33	57.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	
1	0245	34	62.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	
1	0250	35	64.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	
1	0255	36	64.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	
1	0300	37	66.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	
1	0305	38	77.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	
1	0310	39	97.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	
1	0315	40	136.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	
1	0320	41	210.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	
1	0325	42	316.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	
1	0330	43	457.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	
1	0335	44	579.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	
1	0340	45	658.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	
1	0345	46	708.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	
1	0350	47	719.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	
1	0355	48	707.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	
1	0400	49	681.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	
1	0405	50	643.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	
1	0410	51	593.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	
1	0415	52	535.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	
1	0420	53	477.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	
1	0425	54	423.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	
1	0430	55	384.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	
1	0435	56	358.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.	
1	0440	57	338.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.	
1	0445	58	320.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.	
1	0450	59	311.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.	
1	0455	60	301.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.	
1	0500	61	286.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.	
1	0505	62	268.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.	
1	0510	63	247.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.	
1	0515	64	224.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.	
1	0520	65	200.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.	
1	0525	66	178.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.	
1	0530	67	156.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.	
1	0535	68	135.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.	
1	0540	69	116.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.	
1	0545	70	100.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.	
1	0550	71	86.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.	
1	0555	72	74.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.	
1	0600	73	64.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.	
1	0605	74	56.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.	
1	0610	75	48.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.	

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)				
719.	3.83		185.	46.	45.	45.
		(INCHES)	1.693	1.702	1.702	1.702
		(AC-FT)	92.	92.	92.	92.

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *DB2
SUM OF 3 HYDROGRAPHS
PLAN 1, RATIO = .54

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

									PRO										
1	0125	18	1.	*	1	0740	93	1.	*	1	1355	168	0.	*	1	2010	243	0.	
1	0130	19	1.	*	1	0745	94	0.	*	1	1400	169	0.	*	1	2015	244	0.	
1	0135	20	1.	*	1	0750	95	0.	*	1	1405	170	0.	*	1	2020	245	0.	
1	0140	21	2.	*	1	0755	96	0.	*	1	1410	171	0.	*	1	2025	246	0.	
1	0145	22	2.	*	1	0800	97	0.	*	1	1415	172	0.	*	1	2030	247	0.	
1	0150	23	2.	*	1	0805	98	0.	*	1	1420	173	0.	*	1	2035	248	0.	
1	0155	24	2.	*	1	0810	99	0.	*	1	1425	174	0.	*	1	2040	249	0.	
1	0200	25	2.	*	1	0815	100	0.	*	1	1430	175	0.	*	1	2045	250	0.	
1	0205	26	2.	*	1	0820	101	0.	*	1	1435	176	0.	*	1	2050	251	0.	
1	0210	27	3.	*	1	0825	102	0.	*	1	1440	177	0.	*	1	2055	252	0.	
1	0215	28	4.	*	1	0830	103	0.	*	1	1445	178	0.	*	1	2100	253	0.	
1	0220	29	6.	*	1	0835	104	0.	*	1	1450	179	0.	*	1	2105	254	0.	
1	0225	30	8.	*	1	0840	105	0.	*	1	1455	180	0.	*	1	2110	255	0.	
1	0230	31	8.	*	1	0845	106	0.	*	1	1500	181	0.	*	1	2115	256	0.	
1	0235	32	9.	*	1	0850	107	0.	*	1	1505	182	0.	*	1	2120	257	0.	
1	0240	33	10.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.	
1	0245	34	12.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.	
1	0250	35	13.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.	
1	0255	36	13.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.	
1	0300	37	14.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.	
1	0305	38	19.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.	
1	0310	39	26.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.	
1	0315	40	41.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.	
1	0320	41	69.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.	
1	0325	42	111.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.	
1	0330	43	171.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.	
1	0335	44	223.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.	
1	0340	45	258.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.	
1	0345	46	282.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.	
1	0350	47	290.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.	
1	0355	48	288.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.	
1	0400	49	280.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.	
1	0405	50	267.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.	
1	0410	51	248.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.	
1	0415	52	225.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.	
1	0420	53	203.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.	
1	0425	54	182.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.	
1	0430	55	167.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.	
1	0435	56	158.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.	
1	0440	57	150.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.	
1	0445	58	144.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.	
1	0450	59	141.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.	
1	0455	60	138.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.	
1	0500	61	132.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.	
1	0505	62	124.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.	
1	0510	63	114.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.	
1	0515	64	104.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.	
1	0520	65	93.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.	
1	0525	66	83.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.	
1	0530	67	73.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.	
1	0535	68	63.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.	
1	0540	69	54.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.	
1	0545	70	47.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.	
1	0550	71	41.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.	
1	0555	72	35.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.	
1	0600	73	30.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.	
1	0605	74	26.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.	
1	0610	75	23.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.	
				*					*					*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 290.	3.83		74.	19.	18.	18.
		(INCHES)	.680	.681	.681	.681
		(AC-FT)	37.	37.	37.	37.

CUMULATIVE AREA = 1.01 SQ MI

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          **************
          *            *
 84 KK    *     *RDB2  *
          *            *
          **************

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

              HYDROGRAPH ROUTING DATA

 88 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       ELEV  TYPE OF INITIAL CONDITION
                    RSVRIC    2992.00  INITIAL CONDITION
                         X        .00 WORKING R AND D COEFFICIENT

 89 SV            STORAGE         .0       2.3       7.6      24.3      46.3      73.8     107.1     146.8     193.0

 90 SE          ELEVATION    2992.00   2993.00   2995.00   3000.00   3005.00   3010.00   3015.00   3020.00   3025.00

 91 SQ          DISCHARGE         0.       44.       51.       65.       84.       99.      521.     3466.     7888.

 92 SE          ELEVATION    2992.00   2993.00   2995.00   3000.00   3009.00   3018.00   3019.00   3022.00   3025.00
                                                              ***

                                      COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE          .00      2.34      7.60     24.30     46.28     68.28     73.78    107.11    130.89    138.82
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PRO

OUTFLOW	.00	44.44	51.05	64.70	75.33	83.84	85.56	94.19	99.36	520.90
ELEVATION	2992.00	2993.00	2995.00	3000.00	3005.00	3009.00	3010.00	3015.00	3018.00	3019.00

STORAGE	146.75	165.26	193.03
OUTFLOW	1502.43	3465.50	7888.40
ELEVATION	3020.00	3022.00	3025.00

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HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = 1.00

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*

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	*	1		0820	101	81.	61.2	3007.7	*	1		1640	201	56.	13.3	2996.7
1		0005	2	0.	.0	2992.0	*	1		0825	102	81.	60.6	3007.6	*	1		1645	202	55.	12.9	2996.6
1		0010	3	0.	.0	2992.0	*	1		0830	103	81.	60.1	3007.5	*	1		1650	203	55.	12.5	2996.5
1		0015	4	0.	.0	2992.0	*	1		0835	104	80.	59.5	3007.4	*	1		1655	204	55.	12.1	2996.4
1		0020	5	0.	.0	2992.0	*	1		0840	105	80.	59.0	3007.3	*	1		1700	205	54.	11.8	2996.2
1		0025	6	1.	.0	2992.0	*	1		0845	106	80.	58.4	3007.2	*	1		1705	206	54.	11.4	2996.1
1		0030	7	1.	.1	2992.0	*	1		0850	107	80.	57.9	3007.1	*	1		1710	207	54.	11.0	2996.0
1		0035	8	2.	.1	2992.0	*	1		0855	108	80.	57.3	3007.0	*	1		1715	208	54.	10.7	2995.9
1		0040	9	3.	.1	2992.1	*	1		0900	109	79.	56.8	3006.9	*	1		1720	209	53.	10.3	2995.8
1		0045	10	3.	.2	2992.1	*	1		0905	110	79.	56.2	3006.8	*	1		1725	210	53.	9.9	2995.7
1		0050	11	4.	.2	2992.1	*	1		0910	111	79.	55.7	3006.7	*	1		1730	211	53.	9.6	2995.6
1		0055	12	4.	.2	2992.1	*	1		0915	112	79.	55.1	3006.6	*	1		1735	212	52.	9.2	2995.5
1		0100	13	4.	.2	2992.1	*	1		0920	113	79.	54.6	3006.5	*	1		1740	213	52.	8.8	2995.4
1		0105	14	4.	.2	2992.1	*	1		0925	114	78.	54.1	3006.4	*	1		1745	214	52.	8.5	2995.3
1		0110	15	5.	.3	2992.1	*	1		0930	115	78.	53.5	3006.3	*	1		1750	215	51.	8.1	2995.2
1		0115	16	5.	.3	2992.1	*	1		0935	116	78.	53.0	3006.2	*	1		1755	216	51.	7.8	2995.0
1		0120	17	6.	.3	2992.1	*	1		0940	117	78.	52.5	3006.1	*	1		1800	217	51.	7.4	2994.9
1		0125	18	6.	.3	2992.1	*	1		0945	118	78.	51.9	3006.0	*	1		1805	218	50.	7.1	2994.8
1		0130	19	7.	.4	2992.2	*	1		0950	119	77.	51.4	3005.9	*	1		1810	219	50.	6.7	2994.7
1		0135	20	9.	.5	2992.2	*	1		0955	120	77.	50.9	3005.8	*	1		1815	220	50.	6.4	2994.5
1		0140	21	11.	.6	2992.3	*	1		1000	121	77.	50.3	3005.7	*	1		1820	221	49.	6.0	2994.4
1		0145	22	14.	.7	2992.3	*	1		1005	122	77.	49.8	3005.6	*	1		1825	222	49.	5.7	2994.3
1		0150	23	16.	.9	2992.4	*	1		1010	123	76.	49.3	3005.5	*	1		1830	223	48.	5.4	2994.2
1		0155	24	19.	1.0	2992.4	*	1		1015	124	76.	48.7	3005.4	*	1		1835	224	48.	5.0	2994.0
1		0200	25	21.	1.1	2992.5	*	1		1020	125	76.	48.2	3005.4	*	1		1840	225	47.	4.7	2993.9
1		0205	26	23.	1.2	2992.5	*	1		1025	126	76.	47.7	3005.3	*	1		1845	226	47.	4.4	2993.8
1		0210	27	24.	1.3	2992.5	*	1		1030	127	76.	47.2	3005.2	*	1		1850	227	47.	4.1	2993.7
1		0215	28	26.	1.4	2992.6	*	1		1035	128	75.	46.6	3005.1	*	1		1855	228	46.	3.7	2993.5
1		0220	29	28.	1.5	2992.6	*	1		1040	129	75.	46.1	3005.0	*	1		1900	229	46.	3.4	2993.4
1		0225	30	31.	1.6	2992.7	*	1		1045	130	75.	45.6	3004.8	*	1		1905	230	45.	3.1	2993.3
1		0230	31	34.	1.8	2992.8	*	1		1050	131	75.	45.1	3004.7	*	1		1910	231	45.	2.8	2993.2
1		0235	32	37.	2.0	2992.8	*	1		1055	132	75.	44.6	3004.6	*	1		1915	232	45.	2.5	2993.1
1		0240	33	40.	2.1	2992.9	*	1		1100	133	74.	44.1	3004.5	*	1		1920	233	42.	2.2	2992.9
1		0245	34	44.	2.3	2993.0	*	1		1105	134	74.	43.6	3004.4	*	1		1925	234	37.	1.9	2992.8
1		0250	35	45.	2.5	2993.0	*	1		1110	135	74.	43.1	3004.3	*	1		1930	235	32.	1.7	2992.7
1		0255	36	45.	2.7	2993.1	*	1		1115	136	74.	42.5	3004.1	*	1		1935	236	28.	1.5	2992.6
1		0300	37	45.	2.8	2993.2	*	1		1120	137	73.	42.0	3004.0	*	1		1940	237	25.	1.3	2992.6
1		0305	38	45.	3.1	2993.3	*	1		1125	138	73.	41.5	3003.9	*	1		1945	238	22.	1.1	2992.5
1		0310	39	46.	3.4	2993.4	*	1		1130	139	73.	41.0	3003.8	*	1		1950	239	19.	1.0	2992.4
1		0315	40	47.	4.0	2993.6	*	1		1135	140	73.	40.5	3003.7	*	1		1955	240	17.	.9	2992.4
1		0320	41	48.	5.0	2994.0	*	1		1140	141	72.	40.0	3003.6	*	1		2000	241	15.	.8	2992.3
1		0325	42	50.	6.6	2994.6	*	1		1145	142	72.	39.5	3003.5	*	1		2005	242	13.	.7	2992.3
1		0330	43	52.	9.1	2995.5	*	1		1150	143	72.	39.0	3003.4	*	1		2010	243	11.	.6	2992.3
1		0335	44	55.	12.6	2996.5	*	1		1155	144	72.	38.5	3003.2	*	1		2015	244	10.	.5	2992.2
1		0340	45	59.	16.8	2997.8	*	1		1200	145	71.	38.1	3003.1	*	1		2020	245	9.	.5	2992.2
1		0345	46	62.	21.5	2999.2	*	1		1205	146	71.	37.6	3003.0	*	1		2025	246	8.	.4	

2992.2																
1	0350	47	66.	26.3	3000.5	*	1	1210	147	71.	37.1	3002.9	*	1	2030 247	7. .4
2992.1																
1	0355	48	68.	31.1	3001.6	*	1	1215	148	71.	36.6	3002.8	*	1	2035 248	6. .3
2992.1																
1	0400	49	70.	35.8	3002.6	*	1	1220	149	70.	36.1	3002.7	*	1	2040 249	5. .3
2992.1																
1	0405	50	72.	40.2	3003.6	*	1	1225	150	70.	35.6	3002.6	*	1	2045 250	4. .2
2992.1																
1	0410	51	74.	44.3	3004.5	*	1	1230	151	70.	35.1	3002.5	*	1	2050 251	4. .2
2992.1																
1	0415	52	76.	47.9	3005.3	*	1	1235	152	70.	34.7	3002.4	*	1	2055 252	3. .2
2992.1																
1	0420	53	77.	51.1	3005.9	*	1	1240	153	69.	34.2	3002.2	*	1	2100 253	3. .2
2992.1																
1	0425	54	78.	53.9	3006.4	*	1	1245	154	69.	33.7	3002.1	*	1	2105 254	3. .1
2992.1																
1	0430	55	79.	56.3	3006.8	*	1	1250	155	69.	33.2	3002.0	*	1	2110 255	2. .1
2992.1																
1	0435	56	80.	58.5	3007.2	*	1	1255	156	69.	32.7	3001.9	*	1	2115 256	2. .1
2992.0																
1	0440	57	81.	60.5	3007.6	*	1	1300	157	69.	32.3	3001.8	*	1	2120 257	2. .1
2992.0																
1	0445	58	82.	62.4	3007.9	*	1	1305	158	68.	31.8	3001.7	*	1	2125 258	2. .1
2992.0																
1	0450	59	82.	64.2	3008.2	*	1	1310	159	68.	31.3	3001.6	*	1	2130 259	1. .1
2992.0																
1	0455	60	83.	65.8	3008.6	*	1	1315	160	68.	30.9	3001.5	*	1	2135 260	1. .1
2992.0																
1	0500	61	84.	67.4	3008.8	*	1	1320	161	68.	30.4	3001.4	*	1	2140 261	1. .1
2992.0																
1	0505	62	84.	68.9	3009.1	*	1	1325	162	67.	29.9	3001.3	*	1	2145 262	1. .0
2992.0																
1	0510	63	84.	70.2	3009.3	*	1	1330	163	67.	29.5	3001.2	*	1	2150 263	1. .0
2992.0																
1	0515	64	85.	71.3	3009.6	*	1	1335	164	67.	29.0	3001.1	*	1	2155 264	1. .0
2992.0																
1	0520	65	85.	72.3	3009.7	*	1	1340	165	67.	28.5	3001.0	*	1	2200 265	1. .0
2992.0																
1	0525	66	85.	73.1	3009.9	*	1	1345	166	67.	28.1	3000.9	*	1	2205 266	1. .0
2992.0																
1	0530	67	86.	73.7	3010.0	*	1	1350	167	66.	27.6	3000.8	*	1	2210 267	0. .0
2992.0																
1	0535	68	86.	74.2	3010.1	*	1	1355	168	66.	27.2	3000.7	*	1	2215 268	0. .0
2992.0																
1	0540	69	86.	74.5	3010.1	*	1	1400	169	66.	26.7	3000.6	*	1	2220 269	0. .0
2992.0																
1	0545	70	86.	74.7	3010.1	*	1	1405	170	66.	26.3	3000.4	*	1	2225 270	0. .0
2992.0																
1	0550	71	86.	74.8	3010.2	*	1	1410	171	65.	25.8	3000.3	*	1	2230 271	0. .0
2992.0																
1	0555	72	86.	74.8	3010.2	*	1	1415	172	65.	25.4	3000.2	*	1	2235 272	0. .0
2992.0																
1	0600	73	86.	74.7	3010.1	*	1	1420	173	65.	24.9	3000.1	*	1	2240 273	0. .0
2992.0																
1	0605	74	86.	74.6	3010.1	*	1	1425	174	65.	24.5	3000.0	*	1	2245 274	0. .0
2992.0																
1	0610	75	86.	74.4	3010.1	*	1	1430	175	64.	24.0	2999.9	*	1	2250 275	0. .0
2992.0																
1	0615	76	86.	74.1	3010.1	*	1	1435	176	64.	23.6	2999.8	*	1	2255 276	0. .0
2992.0																
1	0620	77	86.	73.8	3010.0	*	1	1440	177	64.	23.1	2999.7	*	1	2300 277	0. .0
2992.0																
1	0625	78	85.	73.4	3009.9	*	1	1445	178	63.	22.7	2999.5	*	1	2305 278	0. .0
2992.0																
1	0630	79	85.	73.0	3009.9	*	1	1450	179	63.	22.3	2999.4	*	1	2310 279	0. .0
2992.0																
1	0635	80	85.	72.6	3009.8	*	1	1455	180	63.	21.8	2999.3	*	1	2315 280	0. .0
2992.0																
1	0640	81	85.	72.1	3009.7	*	1	1500	181	62.	21.4	2999.1	*	1	2320 281	0. .0
2992.0																
1	0645	82	85.	71.7	3009.6	*	1	1505	182	62.	21.0	2999.0	*	1	2325 282	0. .0
2992.0																
1	0650	83	85.	71.2	3009.5	*	1	1510	183	62.	20.6	2998.9	*	1	2330 283	0. .0
2992.0																
1	0655	84	85.	70.6	3009.4	*	1	1515	184	61.	20.1	2998.8	*	1	2335 284	0. .0
2992.0																
1	0700	85	84.	70.1	3009.3	*	1	1520	185	61.	19.7	2998.6	*	1	2340 285	0. .0
2992.0																
1	0705	86	84.	69.6	3009.2	*	1	1525	186	61.	19.3	2998.5	*	1	2345 286	0. .0
2992.0																
1	0710	87	84.	69.0	3009.1	*	1	1530	187	60.	18.9	2998.4	*	1	2350 287	0. .0
2992.0																
1	0715	88	84.	68.5	3009.0	*	1	1535	188	60.	18.5	2998.3	*	1	2355 288	0. .0
2992.0																
1	0720	89	84.	67.9	3008.9	*	1	1540	189	60.	18.0	2998.1	*	2	0000 289	0. .0
2992.0																
1	0725	90	83.	67.4	3008.8	*	1	1545	190	59.	17.6	2998.0	*	2	0005 290	0. .0
2992.0																
1	0730	91	83.	66.8	3008.7	*	1	1550	191	59.	17.2	2997.9	*	2	0010 291	0. .0
2992.0																
1	0735	92	83.	66.3	3008.6	*	1	1555	192	59.	16.8	2997.8	*	2	0015 292	0. .0
2992.0																
1	0740	93	83.	65.7	3008.5	*	1	1600	193	58.	16.4	2997.6	*	2	0020 293	0. .0
2992.0																
1	0745	94	83.	65.1	3008.4	*	1	1605	194	58.	16.0	2997.5	*	2	0025 294	0. .0
2992.0																
1	0750	95	82.	64.6	3008.3	*	1	1610	195	58.	15.6	2997.4	*	2	0030 295	0. .0
2992.0																
1	0755	96	82.	64.0	3008.2	*	1	1615	196	57.	15.2	2997.3	*	2	0035 296	0. .0
2992.0																
1	0800	97	82.	63.4	3008.1	*	1	1620	197	57.	14.8	2997.2	*	2	0040 297	0. .0
2992.0																
1	0805	98	82.	62.9	3008.0	*	1	1625	198	57.	14.4	2997.0	*	2	0045 298	0. .0
2992.0																
1	0810	99	82.	62.3	3007.9	*	1	1630	199	56.	14.1	2996.9	*	2	0050 299	0. .0
2992.0																
1	0815	100	81.	61.8	3007.8	*	1	1635	200	56.	13.7	2996.8	*	2	0055 300	0. .0
2992.0						*							*			

*

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 86.	5.83		82.	50.	48.	48.
		(INCHES)	.752	1.835	1.835	1.835
		(AC-FT)	41.	99.	99.	99.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)					
75.	5.83		64.	26.	25.	25.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)					
3010.16	5.83		3008.18	2999.20	2998.93	2998.93

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = .99

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	*	1		0820	101	81.	60.0	3007.5	*	1		1640	201	55.	12.5	2996.5
1		0005	2	0.	.0	2992.0	*	1		0825	102	80.	59.5	3007.4	*	1		1645	202	55.	12.1	2996.3
1		0010	3	0.	.0	2992.0	*	1		0830	103	80.	58.9	3007.3	*	1		1650	203	54.	11.7	2996.2
1		0015	4	0.	.0	2992.0	*	1		0835	104	80.	58.3	3007.2	*	1		1655	204	54.	11.3	2996.1
1		0020	5	0.	.0	2992.0	*	1		0840	105	80.	57.8	3007.1	*	1		1700	205	54.	11.0	2996.0
1		0025	6	1.	.0	2992.0	*	1		0845	106	80.	57.2	3007.0	*	1		1705	206	54.	10.6	2995.9
1		0030	7	1.	.1	2992.0	*	1		0850	107	79.	56.7	3006.9	*	1		1710	207	53.	10.2	2995.8
1		0035	8	2.	.1	2992.0	*	1		0855	108	79.	56.2	3006.8	*	1		1715	208	53.	9.9	2995.7
1		0040	9	2.	.1	2992.1	*	1		0900	109	79.	55.6	3006.7	*	1		1720	209	53.	9.5	2995.6
1		0045	10	3.	.2	2992.1	*	1		0905	110	79.	55.1	3006.6	*	1		1725	210	52.	9.1	2995.5
1		0050	11	3.	.2	2992.1	*	1		0910	111	79.	54.5	3006.5	*	1		1730	211	52.	8.8	2995.4
1		0055	12	4.	.2	2992.1	*	1		0915	112	78.	54.0	3006.4	*	1		1735	212	52.	8.4	2995.2
1		0100	13	4.	.2	2992.1	*	1		0920	113	78.	53.4	3006.3	*	1		1740	213	51.	8.1	2995.1
1		0105	14	4.	.2	2992.1	*	1		0925	114	78.	52.9	3006.2	*	1		1745	214	51.	7.7	2995.0
1		0110	15	5.	.2	2992.1	*	1		0930	115	78.	52.4	3006.1	*	1		1750	215	51.	7.4	2994.9
1		0115	16	5.	.3	2992.1	*	1		0935	116	77.	51.8	3006.0	*	1		1755	216	50.	7.0	2994.8
1		0120	17	5.	.3	2992.1	*	1		0940	117	77.	51.3	3005.9	*	1		1800	217	50.	6.7	2994.6
1		0125	18	6.	.3	2992.1	*	1		0945	118	77.	50.8	3005.8	*	1		1805	218	49.	6.3	2994.5
1		0130	19	7.	.4	2992.2	*	1		0950	119	77.	50.2	3005.7	*	1		1810	219	49.	6.0	2994.4
1		0135	20	9.	.5	2992.2	*	1		0955	120	77.	49.7	3005.6	*	1		1815	220	49.	5.7	2994.3
1		0140	21	11.	.6	2992.2	*	1		1000	121	76.	49.2	3005.5	*	1		1820	221	48.	5.3	2994.1
1		0145	22	13.	.7	2992.3	*	1		1005	122	76.	48.7	3005.4	*	1		1825	222	48.	5.0	2994.0
1		0150	23	16.	.8	2992.4	*	1		1010	123	76.	48.1	3005.3	*	1		1830	223	47.	4.7	2993.9
1		0155	24	18.	1.0	2992.4	*	1		1015	124	76.	47.6	3005.2	*	1		1835	224	47.	4.3	2993.8
1		0200	25	20.	1.1	2992.5	*	1		1020	125	76.	47.1	3005.1	*	1		1840	225	47.	4.0	2993.6
1		0205	26	22.	1.2	2992.5	*	1		1025	126	75.	46.6	3005.1	*	1		1845	226	46.	3.7	2993.5
1		0210	27	23.	1.2	2992.5	*	1		1030	127	75.	46.1	3004.9	*	1		1850	227	46.	3.4	2993.4
1		0215	28	25.	1.3	2992.6	*	1		1035	128	75.	45.5	3004.8	*	1		1855	228	45.	3.1	2993.3
1		0220	29	27.	1.4	2992.6	*	1		1040	129	75.	45.0	3004.7	*	1		1900	229	45.	2.8	2993.2
1		0225	30	30.	1.6	2992.7	*	1		1045	130	74.	44.5	3004.6	*	1		1905	230	45.	2.4	2993.0
1		0230	31	33.	1.8	2992.8	*	1		1050	131	74.	44.0	3004.5	*	1		1910	231	41.	2.2	2992.9
1		0235	32	36.	1.9	2992.8	*	1		1055	132	74.	43.5	3004.4	*	1		1915	232	36.	1.9	2992.8
1		0240	33	39.	2.1	2992.9	*	1		1100	133	74.	43.0	3004.2	*	1		1920	233	31.	1.7	2992.7
1		0245	34	42.	2.2	2993.0	*	1		1105	134	73.	42.5	3004.1	*	1		1925	234	28.	1.5	2992.6
1		0250	35	45.	2.4	2993.0	*	1		1110	135	73.	42.0	3004.0	*	1		1930	235	24.	1.3	2992.5
1		0255	36	45.	2.6	2993.1	*	1		1115	136	73.	41.5	3003.9	*	1		1935	236	21.	1.1	2992.5
1		0300	37	45.	2.8	2993.2	*	1		1120	137	73.	41.0	3003.8	*	1		1940	237	19.	1.0	2992.4
1		0305	38	45.	3.0	2993.2	*	1		1125	138	73.	40.5	3003.7	*	1		1945	238	16.	.9	

2992.4																
1	0310	39	46.	3.3	2993.4	*	1	1130	139	72.	40.0	3003.6	*	1	1950 239	14.	.8
2992.3																	
1	0315	40	46.	3.9	2993.6	*	1	1135	140	72.	39.5	3003.4	*	1	1955 240	13.	.7
2992.3																	
1	0320	41	48.	4.8	2993.9	*	1	1140	141	72.	39.0	3003.3	*	1	2000 241	11.	.6
2992.2																	
1	0325	42	50.	6.4	2994.6	*	1	1145	142	72.	38.5	3003.2	*	1	2005 242	10.	.5
2992.2																	
1	0330	43	52.	8.9	2995.4	*	1	1150	143	71.	38.0	3003.1	*	1	2010 243	8.	.4
2992.2																	
1	0335	44	55.	12.3	2996.4	*	1	1155	144	71.	37.5	3003.0	*	1	2015 244	7.	.4
2992.2																	
1	0340	45	58.	16.5	2997.7	*	1	1200	145	71.	37.0	3002.9	*	1	2020 245	7.	.3
2992.1																	
1	0345	46	62.	21.1	2999.0	*	1	1205	146	71.	36.5	3002.8	*	1	2025 246	6.	.3
2992.1																	
1	0350	47	65.	25.8	3000.3	*	1	1210	147	70.	36.0	3002.7	*	1	2030 247	5.	.3
2992.1																	
1	0355	48	68.	30.6	3001.4	*	1	1215	148	70.	35.5	3002.6	*	1	2035 248	4.	.2
2992.1																	
1	0400	49	70.	35.2	3002.5	*	1	1220	149	70.	35.1	3002.4	*	1	2040 249	4.	.2
2992.1																	
1	0405	50	72.	39.5	3003.5	*	1	1225	150	70.	34.6	3002.3	*	1	2045 250	3.	.2
2992.1																	
1	0410	51	74.	43.5	3004.4	*	1	1230	151	69.	34.1	3002.2	*	1	2050 251	3.	.2
2992.1																	
1	0415	52	76.	47.1	3005.2	*	1	1235	152	69.	33.6	3002.1	*	1	2055 252	3.	.1
2992.1																	
1	0420	53	77.	50.3	3005.7	*	1	1240	153	69.	33.2	3002.0	*	1	2100 253	2.	.1
2992.1																	
1	0425	54	78.	53.0	3006.2	*	1	1245	154	69.	32.7	3001.9	*	1	2105 254	2.	.1
2992.0																	
1	0430	55	79.	55.4	3006.7	*	1	1250	155	69.	32.2	3001.8	*	1	2110 255	2.	.1
2992.0																	
1	0435	56	80.	57.6	3007.1	*	1	1255	156	68.	31.7	3001.7	*	1	2115 256	2.	.1
2992.0																	
1	0440	57	80.	59.5	3007.4	*	1	1300	157	68.	31.3	3001.6	*	1	2120 257	1.	.1
2992.0																	
1	0445	58	81.	61.4	3007.7	*	1	1305	158	68.	30.8	3001.5	*	1	2125 258	1.	.1
2992.0																	
1	0450	59	82.	63.1	3008.1	*	1	1310	159	68.	30.3	3001.4	*	1	2130 259	1.	.1
2992.0																	
1	0455	60	82.	64.8	3008.4	*	1	1315	160	67.	29.9	3001.3	*	1	2135 260	1.	.0
2992.0																	
1	0500	61	83.	66.3	3008.6	*	1	1320	161	67.	29.4	3001.2	*	1	2140 261	1.	.0
2992.0																	
1	0505	62	84.	67.8	3008.9	*	1	1325	162	67.	28.9	3001.1	*	1	2145 262	1.	.0
2992.0																	
1	0510	63	84.	69.0	3009.1	*	1	1330	163	67.	28.5	3001.0	*	1	2150 263	1.	.0
2992.0																	
1	0515	64	84.	70.2	3009.3	*	1	1335	164	67.	28.0	3000.8	*	1	2155 264	1.	.0
2992.0																	
1	0520	65	85.	71.1	3009.5	*	1	1340	165	66.	27.6	3000.7	*	1	2200 265	0.	.0
2992.0																	
1	0525	66	85.	71.9	3009.7	*	1	1345	166	66.	27.1	3000.6	*	1	2205 266	0.	.0
2992.0																	
1	0530	67	85.	72.5	3009.8	*	1	1350	167	66.	26.7	3000.5	*	1	2210 267	0.	.0
2992.0																	
1	0535	68	85.	73.0	3009.9	*	1	1355	168	66.	26.2	3000.4	*	1	2215 268	0.	.0
2992.0																	
1	0540	69	85.	73.3	3009.9	*	1	1400	169	65.	25.8	3000.3	*	1	2220 269	0.	.0
2992.0																	
1	0545	70	85.	73.5	3010.0	*	1	1405	170	65.	25.3	3000.2	*	1	2225 270	0.	.0
2992.0																	
1	0550	71	86.	73.6	3010.0	*	1	1410	171	65.	24.9	3000.1	*	1	2230 271	0.	.0
2992.0																	
1	0555	72	86.	73.6	3010.0	*	1	1415	172	65.	24.4	3000.0	*	1	2235 272	0.	.0
2992.0																	
1	0600	73	85.	73.5	3009.9	*	1	1420	173	64.	24.0	2999.9	*	1	2240 273	0.	.0
2992.0																	
1	0605	74	85.	73.4	3009.9	*	1	1425	174	64.	23.5	2999.8	*	1	2245 274	0.	.0
2992.0																	
1	0610	75	85.	73.1	3009.9	*	1	1430	175	64.	23.1	2999.6	*	1	2250 275	0.	.0
2992.0																	
1	0615	76	85.	72.9	3009.8	*	1	1435	176	63.	22.6	2999.5	*	1	2255 276	0.	.0
2992.0																	
1	0620	77	85.	72.5	3009.8	*	1	1440	177	63.	22.2	2999.4	*	1	2300 277	0.	.0
2992.0																	
1	0625	78	85.	72.2	3009.7	*	1	1445	178	63.	21.8	2999.2	*	1	2305 278	0.	.0
2992.0																	
1	0630	79	85.	71.8	3009.6	*	1	1450	179	62.	21.3	2999.1	*	1	2310 279	0.	.0
2992.0																	
1	0635	80	85.	71.4	3009.6	*	1	1455	180	62.	20.9	2999.0	*	1	2315 280	0.	.0
2992.0																	
1	0640	81	85.	70.9	3009.5	*	1	1500	181	62.	20.5	2998.9	*	1	2320 281	0.	.0
2992.0																	
1	0645	82	85.	70.4	3009.4	*	1	1505	182	61.	20.1	2998.7	*	1	2325 282	0.	.0
2992.0																	
1	0650	83	84.	69.9	3009.3	*	1	1510	183	61.	19.6	2998.6	*	1	2330 283	0.	.0
2992.0																	
1	0655	84	84.	69.4	3009.2	*	1	1515	184	61.	19.2	2998.5	*	1	2335 284	0.	.0
2992.0																	
1	0700	85	84.	68.9	3009.1	*	1	1520	185	60.	18.8	2998.4	*	1	2340 285	0.	.0
2992.0																	
1	0705	86	84.	68.3	3009.0	*	1	1525	186	60.	18.4	2998.2	*	1	2345 286	0.	.0
2992.0																	
1	0710	87	84.	67.8	3008.9	*	1	1530	187	60.	18.0	2998.1	*	1	2350 287	0.	.0
2992.0																	
1	0715	88	83.	67.3	3008.8	*	1	1535	188	59.	17.6	2998.0	*	1	2355 288	0.	.0
2992.0																	
1	0720	89	83.	66.7	3008.7	*	1	1540	189	59.	17.2	2997.9	*	2	0000 289	0.	.0
2992.0																	
1	0725	90	83.	66.1	3008.6	*	1	1545	190	59.	16.8	2997.7	*	2	0005 290	0.	.0
2992.0																	
1	0730	91	83.	65.6	3008.5	*	1	1550	191	58.	16.4	2997.6	*	2	0010 291	0.	.0
2992.0																	
1	0735	92	83.	65.0	3008.4	*	1	1555	192	58.	16.0	2997.5	*	2	0015 292	0.	.0
2992.0																	
1	0740	93	82.	64.5	3008.3	*	1	1600	193	58.	15.6	2997.4	*	2	0020 293	0.	.0
2992.0																	
1	0745	94	82.	63.9	3008.2	*	1	1605	194	57.	15.2	2997.3	*	2	0025 294	0.	.0

												PRO							
2992.0																			
1	0750	95	82.	63.4	3008.1	*	1	1610	195	57.	14.8	2997.2	*	2	0030	295	0.	.0	
2992.0																			
1	0755	96	82.	62.8	3008.0	*	1	1615	196	57.	14.4	2997.0	*	2	0035	296	0.	.0	
2992.0																			
1	0800	97	82.	62.2	3007.9	*	1	1620	197	56.	14.0	2996.9	*	2	0040	297	0.	.0	
2992.0																			
1	0805	98	81.	61.7	3007.8	*	1	1625	198	56.	13.6	2996.8	*	2	0045	298	0.	.0	
2992.0																			
1	0810	99	81.	61.1	3007.7	*	1	1630	199	56.	13.2	2996.7	*	2	0050	299	0.	.0	
2992.0																			
1	0815	100	81.	60.6	3007.6	*	1	1635	200	55.	12.8	2996.6	*	2	0055	300	0.	.0	
2992.0						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 86.	5.83		82.	49.	47.	47.
		(INCHES)	.748	1.808	1.808	1.808
		(AC-FT)	40.	98.	98.	98.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
74.	5.83	63.	25.	24.	24.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
3009.97	5.83	3007.97	2999.04	2998.78	2998.78

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = .98

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
							*								*							
1	0000	1	0.	.0	2992.0	*	1	0820	101	80.	58.2	3007.2	*	1	1640	201	54.	11.3				
2996.1																						
1	0005	2	0.	.0	2992.0	*	1	0825	102	80.	57.7	3007.1	*	1	1645	202	54.	10.9				
2996.0																						
1	0010	3	0.	.0	2992.0	*	1	0830	103	80.	57.1	3007.0	*	1	1650	203	53.	10.5				
2995.9																						
1	0015	4	0.	.0	2992.0	*	1	0835	104	79.	56.6	3006.9	*	1	1655	204	53.	10.2				
2995.8																						
1	0020	5	0.	.0	2992.0	*	1	0840	105	79.	56.0	3006.8	*	1	1700	205	53.	9.8				
2995.7																						
1	0025	6	1.	.0	2992.0	*	1	0845	106	79.	55.5	3006.7	*	1	1705	206	53.	9.4				
2995.5																						
1	0030	7	1.	.1	2992.0	*	1	0850	107	79.	55.0	3006.6	*	1	1710	207	52.	9.1				
2995.4																						
1	0035	8	2.	.1	2992.0	*	1	0855	108	78.	54.4	3006.5	*	1	1715	208	52.	8.7				
2995.3																						
1	0040	9	2.	.1	2992.1	*	1	0900	109	78.	53.9	3006.4	*	1	1720	209	52.	8.4				
2995.2																						
1	0045	10	3.	.1	2992.1	*	1	0905	110	78.	53.3	3006.3	*	1	1725	210	51.	8.0				
2995.1																						
1	0050	11	3.	.2	2992.1	*	1	0910	111	78.	52.8	3006.2	*	1	1730	211	51.	7.6				
2995.0																						
1	0055	12	3.	.2	2992.1	*	1	0915	112	78.	52.3	3006.1	*	1	1735	212	51.	7.3				
2994.9																						
1	0100	13	4.	.2	2992.1	*	1	0920	113	77.	51.7	3006.0	*	1	1740	213	50.	6.9				
2994.8																						
1	0105	14	4.	.2	2992.1	*	1	0925	114	77.	51.2	3005.9	*	1	1745	214	50.	6.6				
2994.6																						
1	0110	15	4.	.2	2992.1	*	1	0930	115	77.	50.7	3005.8	*	1	1750	215	49.	6.3				
2994.5																						
1	0115	16	4.	.2	2992.1	*	1	0935	116	77.	50.1	3005.7	*	1	1755	216	49.	5.9				
2994.4																						
1	0120	17	5.	.3	2992.1	*	1	0940	117	77.	49.6	3005.6	*	1	1800	217	49.	5.6				
2994.2																						
1	0125	18	6.	.3	2992.1	*	1	0945	118	76.	49.1	3005.5	*	1	1805	218	48.	5.3				
2994.1																						
1	0130	19	7.	.3	2992.1	*	1	0950	119	76.	48.6	3005.4	*	1	1810	219	48.	4.9				
2994.0																						
1	0135	20	8.	.4	2992.2	*	1	0955	120	76.	48.0	3005.3	*	1	1815	220	47.	4.6				
2993.9																						
1	0140	21	10.	.5	2992.2	*	1	1000	121	76.	47.5	3005.2	*	1	1820	221	47.	4.3				
2993.7																						
1	0145	22	12.	.7	2992.3	*	1	1005	122	76.	47.0	3005.1	*	1	1825	222	46.	4.0				
2993.6																						
1	0150	23	15.	.8	2992.3	*	1	1010	123	75.	46.5	3005.0	*	1	1830	223	46.	3.6				
2993.5																						
1	0155	24	17.	.9	2992.4	*	1	1015	124	75.	45.9	3004.9	*	1	1835	224	46.	3.3				
2993.4																						
1	0200	25	19.	1.0	2992.4	*	1	1020	125	75.	45.4	3004.8	*	1	1840	225	45.	3.0				
2993.3																						
1	0205	26	21.	1.1	2992.5	*	1	1025	126	75.	44.9	3004.7	*	1	1845	226	45.	2.7				
2993.1																						
1	0210	27	22.	1.2	2992.5	*	1	1030	127	74.	44.4	3004.6	*	1	1850	227	44.	2.4				
2993.0																						
1	0215	28	24.	1.3	2992.5	*	1	1035	128	74.	43.9	3004.5	*	1	1855	228	40.	2.1				
2992.9																						
1	0220	29	26.	1.4	2992.6	*	1	1040	129	74.	43.4	3004.3	*	1	1900	229	35.	1.8				
2992.8																						
1	0225	30	29.	1.5	2992.7	*	1	1045	130	74.	42.9	3004.2	*	1	1905	230	31.	1.6				

2992.7																			
1	0230	31	32.	1.7	2992.7	*	1	1050	131	73.	42.4	3004.1	*	1	1910	231	27.	1.4
2992.6																			
1	0235	32	35.	1.8	2992.8	*	1	1055	132	73.	41.9	3004.0	*	1	1915	232	24.	1.2
2992.5																			
1	0240	33	38.	2.0	2992.9	*	1	1100	133	73.	41.4	3003.9	*	1	1920	233	21.	1.1
2992.5																			
1	0245	34	41.	2.2	2992.9	*	1	1105	134	73.	40.9	3003.8	*	1	1925	234	18.	1.0
2992.4																			
1	0250	35	44.	2.3	2993.0	*	1	1110	135	72.	40.4	3003.7	*	1	1930	235	16.	.8
2992.4																			
1	0255	36	45.	2.5	2993.1	*	1	1115	136	72.	39.9	3003.5	*	1	1935	236	14.	.7
2992.3																			
1	0300	37	45.	2.6	2993.1	*	1	1120	137	72.	39.4	3003.4	*	1	1940	237	12.	.6
2992.3																			
1	0305	38	45.	2.8	2993.2	*	1	1125	138	72.	38.9	3003.3	*	1	1945	238	11.	.6
2992.2																			
1	0310	39	45.	3.2	2993.3	*	1	1130	139	72.	38.4	3003.2	*	1	1950	239	9.	.5
2992.2																			
1	0315	40	46.	3.7	2993.5	*	1	1135	140	71.	37.9	3003.1	*	1	1955	240	8.	.4
2992.2																			
1	0320	41	47.	4.6	2993.9	*	1	1140	141	71.	37.4	3003.0	*	1	2000	241	7.	.4
2992.2																			
1	0325	42	49.	6.2	2994.5	*	1	1145	142	71.	36.9	3002.9	*	1	2005	242	6.	.3
2992.1																			
1	0330	43	52.	8.6	2995.3	*	1	1150	143	71.	36.4	3002.8	*	1	2010	243	6.	.3
2992.1																			
1	0335	44	55.	11.9	2996.3	*	1	1155	144	70.	35.9	3002.6	*	1	2015	244	5.	.3
2992.1																			
1	0340	45	58.	16.0	2997.5	*	1	1200	145	70.	35.4	3002.5	*	1	2020	245	4.	.2
2992.1																			
1	0345	46	62.	20.5	2998.9	*	1	1205	146	70.	35.0	3002.4	*	1	2025	246	4.	.2
2992.1																			
1	0350	47	65.	25.1	3000.2	*	1	1210	147	70.	34.5	3002.3	*	1	2030	247	3.	.2
2992.1																			
1	0355	48	67.	29.8	3001.2	*	1	1215	148	69.	34.0	3002.2	*	1	2035	248	3.	.2
2992.1																			
1	0400	49	70.	34.3	3002.3	*	1	1220	149	69.	33.5	3002.1	*	1	2040	249	3.	.1
2992.1																			
1	0405	50	72.	38.5	3003.2	*	1	1225	150	69.	33.1	3002.0	*	1	2045	250	2.	.1
2992.1																			
1	0410	51	73.	42.4	3004.1	*	1	1230	151	69.	32.6	3001.9	*	1	2050	251	2.	.1
2992.0																			
1	0415	52	75.	45.9	3004.9	*	1	1235	152	68.	32.1	3001.8	*	1	2055	252	2.	.1
2992.0																			
1	0420	53	76.	49.0	3005.5	*	1	1240	153	68.	31.6	3001.7	*	1	2100	253	2.	.1
2992.0																			
1	0425	54	77.	51.7	3006.0	*	1	1245	154	68.	31.2	3001.6	*	1	2105	254	1.	.1
2992.0																			
1	0430	55	78.	54.0	3006.4	*	1	1250	155	68.	30.7	3001.5	*	1	2110	255	1.	.1
2992.0																			
1	0435	56	79.	56.1	3006.8	*	1	1255	156	68.	30.2	3001.3	*	1	2115	256	1.	.1
2992.0																			
1	0440	57	80.	58.1	3007.1	*	1	1300	157	67.	29.8	3001.2	*	1	2120	257	1.	.0
2992.0																			
1	0445	58	81.	59.9	3007.5	*	1	1305	158	67.	29.3	3001.1	*	1	2125	258	1.	.0
2992.0																			
1	0450	59	81.	61.5	3007.8	*	1	1310	159	67.	28.8	3001.0	*	1	2130	259	1.	.0
2992.0																			
1	0455	60	82.	63.2	3008.1	*	1	1315	160	67.	28.4	3000.9	*	1	2135	260	1.	.0
2992.0																			
1	0500	61	82.	64.7	3008.3	*	1	1320	161	66.	27.9	3000.8	*	1	2140	261	1.	.0
2992.0																			
1	0505	62	83.	66.1	3008.6	*	1	1325	162	66.	27.5	3000.7	*	1	2145	262	0.	.0
2992.0																			
1	0510	63	83.	67.3	3008.8	*	1	1330	163	66.	27.0	3000.6	*	1	2150	263	0.	.0
2992.0																			
1	0515	64	84.	68.4	3009.0	*	1	1335	164	66.	26.6	3000.5	*	1	2155	264	0.	.0
2992.0																			
1	0520	65	84.	69.4	3009.2	*	1	1340	165	66.	26.1	3000.4	*	1	2200	265	0.	.0
2992.0																			
1	0525	66	84.	70.1	3009.3	*	1	1345	166	65.	25.7	3000.3	*	1	2205	266	0.	.0
2992.0																			
1	0530	67	85.	70.7	3009.4	*	1	1350	167	65.	25.2	3000.2	*	1	2210	267	0.	.0
2992.0																			
1	0535	68	85.	71.2	3009.5	*	1	1355	168	65.	24.8	3000.1	*	1	2215	268	0.	.0
2992.0																			
1	0540	69	85.	71.5	3009.6	*	1	1400	169	65.	24.3	3000.0	*	1	2220	269	0.	.0
2992.0																			
1	0545	70	85.	71.7	3009.6	*	1	1405	170	64.	23.9	2999.9	*	1	2225	270	0.	.0
2992.0																			
1	0550	71	85.	71.8	3009.6	*	1	1410	171	64.	23.4	2999.7	*	1	2230	271	0.	.0
2992.0																			
1	0555	72	85.	71.7	3009.6	*	1	1415	172	64.	23.0	2999.6	*	1	2235	272	0.	.0
2992.0																			
1	0600	73	85.	71.7	3009.6	*	1	1420	173	63.	22.6	2999.5	*	1	2240	273	0.	.0
2992.0																			
1	0605	74	85.	71.5	3009.6	*	1	1425	174	63.	22.1	2999.3	*	1	2245	274	0.	.0
2992.0																			
1	0610	75	85.	71.3	3009.5	*	1	1430	175	63.	21.7	2999.2	*	1	2250	275	0.	.0
2992.0																			
1	0615	76	85.	71.0	3009.5	*	1	1435	176	62.	21.3	2999.1	*	1	2255	276	0.	.0
2992.0																			
1	0620	77	85.	70.7	3009.4	*	1	1440	177	62.	20.8	2999.0	*	1	2300	277	0.	.0
2992.0																			
1	0625	78	84.	70.3	3009.4	*	1	1445	178	62.	20.4	2998.8	*	1	2305	278	0.	.0
2992.0																			
1	0630	79	84.	69.9	3009.3	*	1	1450	179	61.	20.0	2998.7	*	1	2310	279	0.	.0
2992.0																			
1	0635	80	84.	69.5	3009.2	*	1	1455	180	61.	19.6	2998.6	*	1	2315	280	0.	.0
2992.0																			
1	0640	81	84.	69.0	3009.1	*	1	1500	181	60.	19.1	2998.5	*	1	2320	281	0.	.0
2992.0																			
1	0645	82	84.	68.6	3009.1	*	1	1505	182	60.	18.7	2998.3	*	1	2325	282	0.	.0
2992.0																			
1	0650	83	84.	68.1	3009.0	*	1	1510	183	60.	18.3	2998.2	*	1	2330	283	0.	.0
2992.0																			
1	0655	84	84.	67.6	3008.9	*	1	1515	184	59.	17.9	2998.1	*	1	2335	284	0.	.0
2992.0																			
1	0700	85	83.	67.0	3008.8	*	1	1520	185	59.	17.5	2998.0	*	1	2340	285	0.	.0
2992.0																			
1	0705	86	83.	66.5	3008.7	*	1	1525	186	59.	17.1	2997.8	*	1	2345	286	0.	.0

PRO

2992.0																		
1	0710	87	83.	66.0	3008.6	*	1	1530	187	58.	16.7	2997.7	*	1	2350	287	0.	.0
2992.0																		
1	0715	88	83.	65.4	3008.5	*	1	1535	188	58.	16.3	2997.6	*	1	2355	288	0.	.0
2992.0																		
1	0720	89	83.	64.9	3008.4	*	1	1540	189	58.	15.9	2997.5	*	2	0000	289	0.	.0
2992.0																		
1	0725	90	82.	64.3	3008.3	*	1	1545	190	57.	15.5	2997.4	*	2	0005	290	0.	.0
2992.0																		
1	0730	91	82.	63.8	3008.2	*	1	1550	191	57.	15.1	2997.2	*	2	0010	291	0.	.0
2992.0																		
1	0735	92	82.	63.2	3008.1	*	1	1555	192	57.	14.7	2997.1	*	2	0015	292	0.	.0
2992.0																		
1	0740	93	82.	62.7	3008.0	*	1	1600	193	57.	14.3	2997.0	*	2	0020	293	0.	.0
2992.0																		
1	0745	94	81.	62.1	3007.9	*	1	1605	194	56.	13.9	2996.9	*	2	0025	294	0.	.0
2992.0																		
1	0750	95	81.	61.5	3007.8	*	1	1610	195	56.	13.5	2996.8	*	2	0030	295	0.	.0
2992.0																		
1	0755	96	81.	61.0	3007.7	*	1	1615	196	56.	13.1	2996.7	*	2	0035	296	0.	.0
2992.0																		
1	0800	97	81.	60.4	3007.6	*	1	1620	197	55.	12.8	2996.5	*	2	0040	297	0.	.0
2992.0																		
1	0805	98	81.	59.9	3007.5	*	1	1625	198	55.	12.4	2996.4	*	2	0045	298	0.	.0
2992.0																		
1	0810	99	80.	59.3	3007.4	*	1	1630	199	55.	12.0	2996.3	*	2	0050	299	0.	.0
2992.0																		
1	0815	100	80.	58.8	3007.3	*	1	1635	200	54.	11.6	2996.2	*	2	0055	300	0.	.0
2992.0						*							*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 85.	5.83		81.	48.	46.	46.
		(INCHES)	.743	1.768	1.768	1.768
		(AC-FT)	40.	96.	96.	96.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)					
72.	5.83		61.	24.	23.	23.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)					
3009.63	5.83		3007.65	2998.80	2998.55	2998.55

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = .95

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	*	1		0820	101	79.	55.3	3006.6	*	1		1640	201	52.	9.3	2995.5
1		0005	2	0.	.0	2992.0	*	1		0825	102	79.	54.8	3006.5	*	1		1645	202	52.	8.9	2995.4
1		0010	3	0.	.0	2992.0	*	1		0830	103	78.	54.2	3006.4	*	1		1650	203	52.	8.6	2995.3
1		0015	4	0.	.0	2992.0	*	1		0835	104	78.	53.7	3006.3	*	1		1655	204	52.	8.2	2995.2
1		0020	5	0.	.0	2992.0	*	1		0840	105	78.	53.1	3006.2	*	1		1700	205	51.	7.9	2995.1
1		0025	6	0.	.0	2992.0	*	1		0845	106	78.	52.6	3006.2	*	1		1705	206	51.	7.5	2995.0
1		0030	7	1.	.1	2992.0	*	1		0850	107	78.	52.1	3006.1	*	1		1710	207	51.	7.2	2994.8
1		0035	8	2.	.1	2992.0	*	1		0855	108	77.	51.5	3006.0	*	1		1715	208	50.	6.8	2994.7
1		0040	9	2.	.1	2992.0	*	1		0900	109	77.	51.0	3005.9	*	1		1720	209	50.	6.5	2994.6
1		0045	10	2.	.1	2992.1	*	1		0905	110	77.	50.5	3005.8	*	1		1725	210	49.	6.1	2994.4
1		0050	11	3.	.1	2992.1	*	1		0910	111	77.	49.9	3005.7	*	1		1730	211	49.	5.8	2994.3
1		0055	12	3.	.2	2992.1	*	1		0915	112	77.	49.4	3005.6	*	1		1735	212	48.	5.5	2994.2
1		0100	13	3.	.2	2992.1	*	1		0920	113	76.	48.9	3005.5	*	1		1740	213	48.	5.1	2994.1
1		0105	14	3.	.2	2992.1	*	1		0925	114	76.	48.4	3005.4	*	1		1745	214	48.	4.8	2993.9
1		0110	15	4.	.2	2992.1	*	1		0930	115	76.	47.8	3005.3	*	1		1750	215	47.	4.5	2993.8
1		0115	16	4.	.2	2992.1	*	1		0935	116	76.	47.3	3005.2	*	1		1755	216	47.	4.2	2993.7
1		0120	17	4.	.2	2992.1	*	1		0940	117	76.	46.8	3005.1	*	1		1800	217	46.	3.8	2993.6
1		0125	18	5.	.3	2992.1	*	1		0945	118	75.	46.3	3005.0	*	1		1805	218	46.	3.5	2993.4
1		0130	19	6.	.3	2992.1	*	1		0950	119	75.	45.8	3004.9	*	1		1810	219	46.	3.2	2993.3
1		0135	20	7.	.4	2992.2	*	1		0955	120	75.	45.2	3004.8	*	1		1815	220	45.	2.9	2993.2
1		0140	21	9.	.5	2992.2	*	1		1000	121	75.	44.7	3004.6	*	1		1820	221	45.	2.6	2993.1
1		0145	22	11.	.6	2992.3	*	1		1005	122	74.	44.2	3004.5	*	1		1825	222	43.	2.3	

2993.0																			
1	0150	23	14.	.7	2992.3	*	1	1010	123	74.	43.7	3004.4	*	1	1830	223	38.	2.0
2992.9																			
1	0155	24	16.	.8	2992.4	*	1	1015	124	74.	43.2	3004.3	*	1	1835	224	33.	1.8
2992.7																			
1	0200	25	18.	.9	2992.4	*	1	1020	125	74.	42.7	3004.2	*	1	1840	225	29.	1.5
2992.7																			
1	0205	26	19.	1.0	2992.4	*	1	1025	126	73.	42.2	3004.1	*	1	1845	226	26.	1.3
2992.6																			
1	0210	27	21.	1.1	2992.5	*	1	1030	127	73.	41.7	3004.0	*	1	1850	227	22.	1.2
2992.5																			
1	0215	28	22.	1.2	2992.5	*	1	1035	128	73.	41.2	3003.8	*	1	1855	228	20.	1.0
2992.4																			
1	0220	29	24.	1.3	2992.5	*	1	1040	129	73.	40.7	3003.7	*	1	1900	229	17.	.9
2992.4																			
1	0225	30	27.	1.4	2992.6	*	1	1045	130	72.	40.2	3003.6	*	1	1905	230	15.	.8
2992.3																			
1	0230	31	30.	1.6	2992.7	*	1	1050	131	72.	39.7	3003.5	*	1	1910	231	13.	.7
2992.3																			
1	0235	32	33.	1.7	2992.7	*	1	1055	132	72.	39.2	3003.4	*	1	1915	232	12.	.6
2992.3																			
1	0240	33	35.	1.9	2992.8	*	1	1100	133	72.	38.7	3003.3	*	1	1920	233	10.	.5
2992.2																			
1	0245	34	38.	2.0	2992.9	*	1	1105	134	71.	38.2	3003.2	*	1	1925	234	9.	.5
2992.2																			
1	0250	35	41.	2.2	2992.9	*	1	1110	135	71.	37.7	3003.0	*	1	1930	235	8.	.4
2992.2																			
1	0255	36	44.	2.3	2993.0	*	1	1115	136	71.	37.2	3002.9	*	1	1935	236	7.	.4
2992.2																			
1	0300	37	45.	2.5	2993.0	*	1	1120	137	71.	36.7	3002.8	*	1	1940	237	6.	.3
2992.1																			
1	0305	38	45.	2.6	2993.1	*	1	1125	138	70.	36.2	3002.7	*	1	1945	238	5.	.3
2992.1																			
1	0310	39	45.	2.9	2993.2	*	1	1130	139	70.	35.8	3002.6	*	1	1950	239	5.	.2
2992.1																			
1	0315	40	46.	3.4	2993.4	*	1	1135	140	70.	35.3	3002.5	*	1	1955	240	4.	.2
2992.1																			
1	0320	41	47.	4.3	2993.7	*	1	1140	141	70.	34.8	3002.4	*	1	2000	241	4.	.2
2992.1																			
1	0325	42	49.	5.8	2994.3	*	1	1145	142	70.	34.3	3002.3	*	1	2005	242	3.	.2
2992.1																			
1	0330	43	51.	8.1	2995.1	*	1	1150	143	69.	33.8	3002.2	*	1	2010	243	3.	.1
2992.1																			
1	0335	44	54.	11.3	2996.1	*	1	1155	144	69.	33.4	3002.1	*	1	2015	244	2.	.1
2992.1																			
1	0340	45	57.	15.2	2997.3	*	1	1200	145	69.	32.9	3002.0	*	1	2020	245	2.	.1
2992.0																			
1	0345	46	61.	19.5	2998.6	*	1	1205	146	69.	32.4	3001.8	*	1	2025	246	2.	.1
2992.0																			
1	0350	47	64.	24.0	2999.9	*	1	1210	147	68.	31.9	3001.7	*	1	2030	247	2.	.1
2992.0																			
1	0355	48	67.	28.4	3000.9	*	1	1215	148	68.	31.5	3001.6	*	1	2035	248	1.	.1
2992.0																			
1	0400	49	69.	32.7	3001.9	*	1	1220	149	68.	31.0	3001.5	*	1	2040	249	1.	.1
2992.0																			
1	0405	50	71.	36.8	3002.8	*	1	1225	150	68.	30.5	3001.4	*	1	2045	250	1.	.1
2992.0																			
1	0410	51	73.	40.6	3003.7	*	1	1230	151	67.	30.1	3001.3	*	1	2050	251	1.	.1
2992.0																			
1	0415	52	74.	43.9	3004.5	*	1	1235	152	67.	29.6	3001.2	*	1	2055	252	1.	.0
2992.0																			
1	0420	53	76.	46.9	3005.1	*	1	1240	153	67.	29.1	3001.1	*	1	2100	253	1.	.0
2992.0																			
1	0425	54	77.	49.5	3005.6	*	1	1245	154	67.	28.7	3001.0	*	1	2105	254	1.	.0
2992.0																			
1	0430	55	77.	51.7	3006.0	*	1	1250	155	67.	28.2	3000.9	*	1	2110	255	1.	.0
2992.0																			
1	0435	56	78.	53.8	3006.4	*	1	1255	156	66.	27.8	3000.8	*	1	2115	256	1.	.0
2992.0																			
1	0440	57	79.	55.6	3006.7	*	1	1300	157	66.	27.3	3000.7	*	1	2120	257	0.	.0
2992.0																			
1	0445	58	80.	57.3	3007.0	*	1	1305	158	66.	26.9	3000.6	*	1	2125	258	0.	.0
2992.0																			
1	0450	59	80.	59.0	3007.3	*	1	1310	159	66.	26.4	3000.5	*	1	2130	259	0.	.0
2992.0																			
1	0455	60	81.	60.5	3007.6	*	1	1315	160	65.	25.9	3000.4	*	1	2135	260	0.	.0
2992.0																			
1	0500	61	81.	62.0	3007.9	*	1	1320	161	65.	25.5	3000.3	*	1	2140	261	0.	.0
2992.0																			
1	0505	62	82.	63.3	3008.1	*	1	1325	162	65.	25.0	3000.2	*	1	2145	262	0.	.0
2992.0																			
1	0510	63	82.	64.5	3008.3	*	1	1330	163	65.	24.6	3000.1	*	1	2150	263	0.	.0
2992.0																			
1	0515	64	83.	65.6	3008.5	*	1	1335	164	65.	24.2	3000.0	*	1	2155	264	0.	.0
2992.0																			
1	0520	65	83.	66.5	3008.7	*	1	1340	165	64.	23.7	2999.8	*	1	2200	265	0.	.0
2992.0																			
1	0525	66	83.	67.2	3008.8	*	1	1345	166	64.	23.3	2999.7	*	1	2205	266	0.	.0
2992.0																			
1	0530	67	84.	67.8	3008.9	*	1	1350	167	63.	22.8	2999.6	*	1	2210	267	0.	.0
2992.0																			
1	0535	68	84.	68.2	3009.0	*	1	1355	168	63.	22.4	2999.4	*	1	2215	268	0.	.0
2992.0																			
1	0540	69	84.	68.5	3009.0	*	1	1400	169	63.	22.0	2999.3	*	1	2220	269	0.	.0
2992.0																			
1	0545	70	84.	68.6	3009.1	*	1	1405	170	62.	21.5	2999.2	*	1	2225	270	0.	.0
2992.0																			
1	0550	71	84.	68.7	3009.1	*	1	1410	171	62.	21.1	2999.0	*	1	2230	271	0.	.0
2992.0																			
1	0555	72	84.	68.7	3009.1	*	1	1415	172	62.	20.7	2998.9	*	1	2235	272	0.	.0
2992.0																			
1	0600	73	84.	68.6	3009.1	*	1	1420	173	61.	20.3	2998.8	*	1	2240	273	0.	.0
2992.0																			
1	0605	74	84.	68.4	3009.0	*	1	1425	174	61.	19.8	2998.7	*	1	2245	274	0.	.0
2992.0																			
1	0610	75	84.	68.2	3009.0	*	1	1430	175	61.	19.4	2998.5	*	1	2250	275	0.	.0
2992.0																			
1	0615	76	84.	67.9	3008.9	*	1	1435	176	60.	19.0	2998.4	*	1	2255	276	0.	.0
2992.0																			
1	0620	77	84.	67.6	3008.9	*	1	1440	177	60.	18.6	2998.3	*	1	2300	277	0.	.0
2992.0																			
1	0625	78	83.	67.2	3008.8	*	1	1445	178	60.	18.2	2998.2	*	1	2305	278	0.	.0

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2992.0																		
1	0630	79	83.	66.8	3008.7	*	1	1450	179	59.	17.8	2998.0	*	1	2310	279	0.	.0
2992.0																		
1	0635	80	83.	66.4	3008.7	*	1	1455	180	59.	17.3	2997.9	*	1	2315	280	0.	.0
2992.0																		
1	0640	81	83.	66.0	3008.6	*	1	1500	181	59.	16.9	2997.8	*	1	2320	281	0.	.0
2992.0																		
1	0645	82	83.	65.5	3008.5	*	1	1505	182	58.	16.5	2997.7	*	1	2325	282	0.	.0
2992.0																		
1	0650	83	83.	65.0	3008.4	*	1	1510	183	58.	16.1	2997.6	*	1	2330	283	0.	.0
2992.0																		
1	0655	84	82.	64.5	3008.3	*	1	1515	184	58.	15.7	2997.4	*	1	2335	284	0.	.0
2992.0																		
1	0700	85	82.	64.0	3008.2	*	1	1520	185	57.	15.3	2997.3	*	1	2340	285	0.	.0
2992.0																		
1	0705	86	82.	63.5	3008.1	*	1	1525	186	57.	15.0	2997.2	*	1	2345	286	0.	.0
2992.0																		
1	0710	87	82.	62.9	3008.0	*	1	1530	187	57.	14.6	2997.1	*	1	2350	287	0.	.0
2992.0																		
1	0715	88	82.	62.4	3007.9	*	1	1535	188	56.	14.2	2997.0	*	1	2355	288	0.	.0
2992.0																		
1	0720	89	81.	61.8	3007.8	*	1	1540	189	56.	13.8	2996.9	*	2	0000	289	0.	.0
2992.0																		
1	0725	90	81.	61.3	3007.7	*	1	1545	190	56.	13.4	2996.7	*	2	0005	290	0.	.0
2992.0																		
1	0730	91	81.	60.8	3007.6	*	1	1550	191	55.	13.0	2996.6	*	2	0010	291	0.	.0
2992.0																		
1	0735	92	81.	60.2	3007.5	*	1	1555	192	55.	12.6	2996.5	*	2	0015	292	0.	.0
2992.0																		
1	0740	93	81.	59.7	3007.4	*	1	1600	193	55.	12.3	2996.4	*	2	0020	293	0.	.0
2992.0																		
1	0745	94	80.	59.1	3007.3	*	1	1605	194	55.	11.9	2996.3	*	2	0025	294	0.	.0
2992.0																		
1	0750	95	80.	58.6	3007.2	*	1	1610	195	54.	11.5	2996.2	*	2	0030	295	0.	.0
2992.0																		
1	0755	96	80.	58.0	3007.1	*	1	1615	196	54.	11.1	2996.1	*	2	0035	296	0.	.0
2992.0																		
1	0800	97	80.	57.5	3007.0	*	1	1620	197	54.	10.8	2995.9	*	2	0040	297	0.	.0
2992.0																		
1	0805	98	79.	56.9	3006.9	*	1	1625	198	53.	10.4	2995.8	*	2	0045	298	0.	.0
2992.0																		
1	0810	99	79.	56.4	3006.8	*	1	1630	199	53.	10.0	2995.7	*	2	0050	299	0.	.0
2992.0																		
1	0815	100	79.	55.8	3006.7	*	1	1635	200	53.	9.7	2995.6	*	2	0055	300	0.	.0
2992.0						*							*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 84.	5.83		80.	46.	45.	45.
		(INCHES)	.733	1.702	1.702	1.702
		(AC-FT)	40.	92.	92.	92.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
69.	5.83	58.	23.	22.	22.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
3009.08	5.83	3007.12	2998.42	2998.19	2998.19

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION *RDB2
PLAN 1, RATIO = .54

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE
							*								*						
1		0000	1	0.	.0	2992.0	*	1		0820	101	55.	12.2	2996.4	*	1		1640	201	0.	.0
2992.0																					
1		0005	2	0.	.0	2992.0	*	1		0825	102	55.	11.8	2996.3	*	1		1645	202	0.	.0
2992.0																					
1		0010	3	0.	.0	2992.0	*	1		0830	103	54.	11.5	2996.2	*	1		1650	203	0.	.0
2992.0																					
1		0015	4	0.	.0	2992.0	*	1		0835	104	54.	11.1	2996.0	*	1		1655	204	0.	.0
2992.0																					
1		0020	5	0.	.0	2992.0	*	1		0840	105	54.	10.7	2995.9	*	1		1700	205	0.	.0
2992.0																					
1		0025	6	0.	.0	2992.0	*	1		0845	106	53.	10.4	2995.8	*	1		1705	206	0.	.0
2992.0																					
1		0030	7	0.	.0	2992.0	*	1		0850	107	53.	10.0	2995.7	*	1		1710	207	0.	.0
2992.0																					
1		0035	8	0.	.0	2992.0	*	1		0855	108	53.	9.6	2995.6	*	1		1715	208	0.	.0
2992.0																					
1		0040	9	0.	.0	2992.0	*	1		0900	109	52.	9.3	2995.5	*	1		1720	209	0.	.0
2992.0																					
1		0045	10	0.	.0	2992.0	*	1		0905	110	52.	8.9	2995.4	*	1		1725	210	0.	.0
2992.0																					
1		0050	11	0.	.0	2992.0	*	1		0910	111	52.	8.5	2995.3	*	1		1730	211	0.	.0
2992.0																					
1		0055	12	0.	.0	2992.0	*	1		0915	112	52.	8.2	2995.2	*	1		1735	212	0.	.0
2992.0																					
1		0100	13	0.	.0	2992.0	*	1		0920	113	51.	7.8	2995.1	*	1		1740	213	0.	.0
2992.0																					
1		0105	14	0.	.0	2992.0	*	1		0925	114	51.	7.5	2995.0	*	1		1745	214	0.	.0

2992.0																			
1	0110	15	0.	.0	2992.0	*	1	0930	115	50.	7.1	2994.8	*	1	1750	215	0.	.0
2992.0																			
1	0115	16	0.	.0	2992.0	*	1	0935	116	50.	6.8	2994.7	*	1	1755	216	0.	.0
2992.0																			
1	0120	17	0.	.0	2992.0	*	1	0940	117	50.	6.4	2994.6	*	1	1800	217	0.	.0
2992.0																			
1	0125	18	0.	.0	2992.0	*	1	0945	118	49.	6.1	2994.4	*	1	1805	218	0.	.0
2992.0																			
1	0130	19	0.	.0	2992.0	*	1	0950	119	49.	5.8	2994.3	*	1	1810	219	0.	.0
2992.0																			
1	0135	20	0.	.0	2992.0	*	1	0955	120	48.	5.4	2994.2	*	1	1815	220	0.	.0
2992.0																			
1	0140	21	1.	.0	2992.0	*	1	1000	121	48.	5.1	2994.0	*	1	1820	221	0.	.0
2992.0																			
1	0145	22	1.	.0	2992.0	*	1	1005	122	47.	4.8	2993.9	*	1	1825	222	0.	.0
2992.0																			
1	0150	23	1.	.0	2992.0	*	1	1010	123	47.	4.4	2993.8	*	1	1830	223	0.	.0
2992.0																			
1	0155	24	1.	.1	2992.0	*	1	1015	124	47.	4.1	2993.7	*	1	1835	224	0.	.0
2992.0																			
1	0200	25	1.	.1	2992.0	*	1	1020	125	46.	3.8	2993.6	*	1	1840	225	0.	.0
2992.0																			
1	0205	26	1.	.1	2992.0	*	1	1025	126	46.	3.5	2993.4	*	1	1845	226	0.	.0
2992.0																			
1	0210	27	1.	.1	2992.0	*	1	1030	127	45.	3.2	2993.3	*	1	1850	227	0.	.0
2992.0																			
1	0215	28	2.	.1	2992.0	*	1	1035	128	45.	2.9	2993.2	*	1	1855	228	0.	.0
2992.0																			
1	0220	29	2.	.1	2992.0	*	1	1040	129	45.	2.5	2993.1	*	1	1900	229	0.	.0
2992.0																			
1	0225	30	3.	.1	2992.1	*	1	1045	130	43.	2.2	2993.0	*	1	1905	230	0.	.0
2992.0																			
1	0230	31	3.	.2	2992.1	*	1	1050	131	37.	2.0	2992.8	*	1	1910	231	0.	.0
2992.0																			
1	0235	32	4.	.2	2992.1	*	1	1055	132	33.	1.7	2992.7	*	1	1915	232	0.	.0
2992.0																			
1	0240	33	5.	.2	2992.1	*	1	1100	133	29.	1.5	2992.6	*	1	1920	233	0.	.0
2992.0																			
1	0245	34	5.	.3	2992.1	*	1	1105	134	25.	1.3	2992.6	*	1	1925	234	0.	.0
2992.0																			
1	0250	35	6.	.3	2992.1	*	1	1110	135	22.	1.2	2992.5	*	1	1930	235	0.	.0
2992.0																			
1	0255	36	7.	.4	2992.2	*	1	1115	136	19.	1.0	2992.4	*	1	1935	236	0.	.0
2992.0																			
1	0300	37	8.	.4	2992.2	*	1	1120	137	17.	.9	2992.4	*	1	1940	237	0.	.0
2992.0																			
1	0305	38	9.	.5	2992.2	*	1	1125	138	15.	.8	2992.3	*	1	1945	238	0.	.0
2992.0																			
1	0310	39	11.	.6	2992.2	*	1	1130	139	13.	.7	2992.3	*	1	1950	239	0.	.0
2992.0																			
1	0315	40	13.	.7	2992.3	*	1	1135	140	12.	.6	2992.3	*	1	1955	240	0.	.0
2992.0																			
1	0320	41	19.	1.0	2992.4	*	1	1140	141	10.	.5	2992.2	*	1	2000	241	0.	.0
2992.0																			
1	0325	42	27.	1.4	2992.6	*	1	1145	142	9.	.5	2992.2	*	1	2005	242	0.	.0
2992.0																			
1	0330	43	41.	2.2	2992.9	*	1	1150	143	8.	.4	2992.2	*	1	2010	243	0.	.0
2992.0																			
1	0335	44	46.	3.2	2993.3	*	1	1155	144	7.	.4	2992.2	*	1	2015	244	0.	.0
2992.0																			
1	0340	45	47.	4.6	2993.8	*	1	1200	145	6.	.3	2992.1	*	1	2020	245	0.	.0
2992.0																			
1	0345	46	49.	6.1	2994.4	*	1	1205	146	5.	.3	2992.1	*	1	2025	246	0.	.0
2992.0																			
1	0350	47	51.	7.7	2995.0	*	1	1210	147	5.	.2	2992.1	*	1	2030	247	0.	.0
2992.0																			
1	0355	48	52.	9.4	2995.5	*	1	1215	148	4.	.2	2992.1	*	1	2035	248	0.	.0
2992.0																			
1	0400	49	54.	10.9	2996.0	*	1	1220	149	4.	.2	2992.1	*	1	2040	249	0.	.0
2992.0																			
1	0405	50	55.	12.4	2996.5	*	1	1225	150	3.	.2	2992.1	*	1	2045	250	0.	.0
2992.0																			
1	0410	51	56.	13.8	2996.9	*	1	1230	151	3.	.1	2992.1	*	1	2050	251	0.	.0
2992.0																			
1	0415	52	57.	15.1	2997.2	*	1	1235	152	2.	.1	2992.1	*	1	2055	252	0.	.0
2992.0																			
1	0420	53	58.	16.2	2997.6	*	1	1240	153	2.	.1	2992.0	*	1	2100	253	0.	.0
2992.0																			
1	0425	54	59.	17.1	2997.8	*	1	1245	154	2.	.1	2992.0	*	1	2105	254	0.	.0
2992.0																			
1	0430	55	59.	17.9	2998.1	*	1	1250	155	2.	.1	2992.0	*	1	2110	255	0.	.0
2992.0																			
1	0435	56	60.	18.6	2998.3	*	1	1255	156	1.	.1	2992.0	*	1	2115	256	0.	.0
2992.0																			
1	0440	57	61.	19.2	2998.5	*	1	1300	157	1.	.1	2992.0	*	1	2120	257	0.	.0
2992.0																			
1	0445	58	61.	19.8	2998.7	*	1	1305	158	1.	.1	2992.0	*	1	2125	258	0.	.0
2992.0																			
1	0450	59	61.	20.4	2998.8	*	1	1310	159	1.	.1	2992.0	*	1	2130	259	0.	.0
2992.0																			
1	0455	60	62.	20.9	2999.0	*	1	1315	160	1.	.0	2992.0	*	1	2135	260	0.	.0
2992.0																			
1	0500	61	62.	21.4	2999.1	*	1	1320	161	1.	.0	2992.0	*	1	2140	261	0.	.0
2992.0																			
1	0505	62	63.	21.9	2999.3	*	1	1325	162	1.	.0	2992.0	*	1	2145	262	0.	.0
2992.0																			
1	0510	63	63.	22.2	2999.4	*	1	1330	163	1.	.0	2992.0	*	1	2150	263	0.	.0
2992.0																			
1	0515	64	63.	22.6	2999.5	*	1	1335	164	0.	.0	2992.0	*	1	2155	264	0.	.0
2992.0																			
1	0520	65	63.	22.8	2999.6	*	1	1340	165	0.	.0	2992.0	*	1	2200	265	0.	.0
2992.0																			
1	0525	66	64.	23.0	2999.6	*	1	1345	166	0.	.0	2992.0	*	1	2205	266	0.	.0
2992.0																			
1	0530	67	64.	23.1	2999.6	*	1	1350	167	0.	.0	2992.0	*	1	2210	267	0.	.0
2992.0																			
1	0535	68	64.	23.1	2999.6	*	1	1355	168	0.	.0	2992.0	*	1	2215	268	0.	.0
2992.0																			
1	0540	69	64.	23.1	2999.6	*	1	1400	169	0.	.0	2992.0	*	1	2220	269	0.	.0
2992.0																			
1	0545	70	64.	23.0	2999.6	*	1	1405	170	0.	.0	2992.0	*	1	2225	270	0.	.0

2992.0																			
1	0550	71	64.	22.8	2999.6	*	1	1410	171	0.	.0	2992.0	*	1	2230	271	0.	.0	
2992.0																			
1	0555	72	63.	22.7	2999.5	*	1	1415	172	0.	.0	2992.0	*	1	2235	272	0.	.0	
2992.0																			
1	0600	73	63.	22.5	2999.4	*	1	1420	173	0.	.0	2992.0	*	1	2240	273	0.	.0	
2992.0																			
1	0605	74	63.	22.2	2999.4	*	1	1425	174	0.	.0	2992.0	*	1	2245	274	0.	.0	
2992.0																			
1	0610	75	63.	22.0	2999.3	*	1	1430	175	0.	.0	2992.0	*	1	2250	275	0.	.0	
2992.0																			
1	0615	76	63.	21.7	2999.2	*	1	1435	176	0.	.0	2992.0	*	1	2255	276	0.	.0	
2992.0																			
1	0620	77	62.	21.4	2999.1	*	1	1440	177	0.	.0	2992.0	*	1	2300	277	0.	.0	
2992.0																			
1	0625	78	62.	21.0	2999.0	*	1	1445	178	0.	.0	2992.0	*	1	2305	278	0.	.0	
2992.0																			
1	0630	79	62.	20.7	2998.9	*	1	1450	179	0.	.0	2992.0	*	1	2310	279	0.	.0	
2992.0																			
1	0635	80	61.	20.3	2998.8	*	1	1455	180	0.	.0	2992.0	*	1	2315	280	0.	.0	
2992.0																			
1	0640	81	61.	20.0	2998.7	*	1	1500	181	0.	.0	2992.0	*	1	2320	281	0.	.0	
2992.0																			
1	0645	82	61.	19.6	2998.6	*	1	1505	182	0.	.0	2992.0	*	1	2325	282	0.	.0	
2992.0																			
1	0650	83	61.	19.2	2998.5	*	1	1510	183	0.	.0	2992.0	*	1	2330	283	0.	.0	
2992.0																			
1	0655	84	60.	18.8	2998.4	*	1	1515	184	0.	.0	2992.0	*	1	2335	284	0.	.0	
2992.0																			
1	0700	85	60.	18.4	2998.2	*	1	1520	185	0.	.0	2992.0	*	1	2340	285	0.	.0	
2992.0																			
1	0705	86	60.	18.0	2998.1	*	1	1525	186	0.	.0	2992.0	*	1	2345	286	0.	.0	
2992.0																			
1	0710	87	59.	17.7	2998.0	*	1	1530	187	0.	.0	2992.0	*	1	2350	287	0.	.0	
2992.0																			
1	0715	88	59.	17.3	2997.9	*	1	1535	188	0.	.0	2992.0	*	1	2355	288	0.	.0	
2992.0																			
1	0720	89	59.	16.9	2997.8	*	1	1540	189	0.	.0	2992.0	*	2	0000	289	0.	.0	
2992.0																			
1	0725	90	58.	16.5	2997.7	*	1	1545	190	0.	.0	2992.0	*	2	0005	290	0.	.0	
2992.0																			
1	0730	91	58.	16.1	2997.5	*	1	1550	191	0.	.0	2992.0	*	2	0010	291	0.	.0	
2992.0																			
1	0735	92	58.	15.7	2997.4	*	1	1555	192	0.	.0	2992.0	*	2	0015	292	0.	.0	
2992.0																			
1	0740	93	57.	15.3	2997.3	*	1	1600	193	0.	.0	2992.0	*	2	0020	293	0.	.0	
2992.0																			
1	0745	94	57.	14.9	2997.2	*	1	1605	194	0.	.0	2992.0	*	2	0025	294	0.	.0	
2992.0																			
1	0750	95	57.	14.5	2997.1	*	1	1610	195	0.	.0	2992.0	*	2	0030	295	0.	.0	
2992.0																			
1	0755	96	56.	14.1	2997.0	*	1	1615	196	0.	.0	2992.0	*	2	0035	296	0.	.0	
2992.0																			
1	0800	97	56.	13.7	2996.8	*	1	1620	197	0.	.0	2992.0	*	2	0040	297	0.	.0	
2992.0																			
1	0805	98	56.	13.4	2996.7	*	1	1625	198	0.	.0	2992.0	*	2	0045	298	0.	.0	
2992.0																			
1	0810	99	55.	13.0	2996.6	*	1	1630	199	0.	.0	2992.0	*	2	0050	299	0.	.0	
2992.0																			
1	0815	100	55.	12.6	2996.5	*	1	1635	200	0.	.0	2992.0	*	2	0055	300	0.	.0	
2992.0																			

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 64.	5.58		58.	19.	18.	18.
		(INCHES)	.531	.681	.681	.681
		(AC-FT)	29.	37.	37.	37.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
23.	5.58	16.	4.	4.	4.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2999.64	5.58	2997.51	2993.50	2993.45	2993.45

CUMULATIVE AREA = 1.01 SQ MI

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33 PI INCREMENTAL PRECIPITATION PATTERN

.02	.04	.01	.02	.02	.02	.01	.00	.00	.00
.00	.00	.00	.01	.00	.01	.01	.01	.01	.01
.01	.00	.00	.00	.00	.01	.02	.01	.01	.00
.01	.01	.01	.00	.00	.01	.03	.03	.06	.09
.09	.12	.03	.04	.03	.01	.02	.02	.00	.00
.01	.01	.01	.02	.02	.01	.01	.02	.01	.01
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00								

219 LS SCS LOSS RATE

STRTL	.30	INITIAL ABSTRACTION
CRVNBR	86.80	CURVE NUMBER
RTIMP	.00	PERCENT IMPERVIOUS AREA

220 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	.42	LAG

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UNIT HYDROGRAPH
27 END-OF-PERIOD ORDINATES

39.	119.	248.	380.	445.	446.	397.	330.	239.	173.
128.	98.	73.	54.	40.	30.	22.	17.	12.	9.
7.	5.	4.	3.	2.	1.	1.			

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.28, TOTAL EXCESS = 1.72

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)			
+ 399.	3.83	79.	20.	19.	19.
		(INCHES) 1.721	1.724	1.724	1.724
		(AC-FT) 39.	39.	39.	39.

CUMULATIVE AREA = .43 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF1
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.28, TOTAL EXCESS = 1.72

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)			
+ 399.	3.83	79.	20.	19.	19.
		(INCHES) 1.721	1.724	1.724	1.724
		(AC-FT) 39.	39.	39.	39.

CUMULATIVE AREA = .43 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF1
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.27, TOTAL EXCESS = 1.70

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)			
+ 393.	3.83	78.	20.	19.	19.
		(INCHES) 1.695	1.698	1.698	1.698
		(AC-FT) 39.	39.	39.	39.

CUMULATIVE AREA = .43 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF1
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.27, TOTAL EXCESS = 1.66

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)			
+ 385.	3.83	76.	19.	18.	18.
		(INCHES) 1.656	1.659	1.659	1.659
		(AC-FT) 38.	38.	38.	38.

CUMULATIVE AREA = .43 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF1
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.26, TOTAL EXCESS = 1.59

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)			
+ 370.	3.83	73.	18.	18.	18.
		(INCHES) 1.592	1.594	1.594	1.594
		(AC-FT) 36.	36.	36.	36.

CUMULATIVE AREA = .43 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF1
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = 1.01, TOTAL EXCESS = .61

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)				
143.	3.92	28.	7.	7.	7.
	(CFS)				
	(INCHES)	.610	.610	.610	.610
	(AC-FT)	14.	14.	14.	14.

CUMULATIVE AREA = .43 SQ MI

*** *** *** *

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                                                                    PRO
                    (INCHES)      1.342        1.342        1.342        1.342
                    (AC-FT)         3.           3.           3.           3.

                    CUMULATIVE AREA =     .04 SQ MI

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION    *OFF2
                        FOR PLAN 1, RATIO =  .98

    TOTAL RAINFALL =    2.92, TOTAL LOSS =    1.62, TOTAL EXCESS =    1.31

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR         24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                    (CFS)
+      47.      3.58                6.           1.           1.           1.
                    (INCHES)      1.307        1.307        1.307        1.307
                    (AC-FT)         3.           3.           3.           3.

                    CUMULATIVE AREA =     .04 SQ MI

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION    *OFF2
                        FOR PLAN 1, RATIO =  .95

    TOTAL RAINFALL =    2.85, TOTAL LOSS =    1.60, TOTAL EXCESS =    1.25

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR         24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                    (CFS)
+      45.      3.58                6.           1.           1.           1.
                    (INCHES)      1.249        1.249        1.249        1.249
                    (AC-FT)         3.           3.           3.           3.

                    CUMULATIVE AREA =     .04 SQ MI

     ***            ***            ***            ***            ***

                      HYDROGRAPH AT STATION    *OFF2
                        FOR PLAN 1, RATIO =  .54

    TOTAL RAINFALL =    1.62, TOTAL LOSS =    1.21, TOTAL EXCESS =     .41

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR         24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                    (CFS)
+      14.      3.58                2.           0.           0.           0.
                    (INCHES)       .406         .406         .406         .406
                    (AC-FT)         1.           1.           1.           1.

                    CUMULATIVE AREA =     .04 SQ MI


 *** *** ***
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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			PRO
+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
+ 41.	3.50	(CFS)	5.	1.	1.	1.
		(INCHES)	1.818	1.818	1.818	1.818
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF3
FOR PLAN 1, RATIO = 1.00

TOTAL RAINFALL = 3.00, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.82

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
+ 41.	3.50	(CFS)	5.	1.	1.	1.
		(INCHES)	1.818	1.818	1.818	1.818
		(AC-FT)	3.	3.	3.	3.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF3
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
+ 40.	3.50	(CFS)	5.	1.	1.	1.
		(INCHES)	1.791	1.792	1.792	1.792
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF3
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
+ 39.	3.50	(CFS)	5.	1.	1.	1.
		(INCHES)	1.752	1.752	1.752	1.752
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF3
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
+ 38.	3.58	(CFS)	5.	1.	1.	1.
		(INCHES)	1.685	1.685	1.685	1.685
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .03 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF3
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)		6-HR	24-HR	72-HR	24.92-HR
+ 16.	3.58	(CFS)	2.	0.	0.	0.
		(INCHES)	.670	.670	.670	.670
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = .03 SQ MI

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241 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

              SUBBASIN RUNOFF DATA

242 BA          SUBBASIN CHARACTERISTICS
                     TAREA        .06  SUBBASIN AREA

                PRECIPITATION DATA

208 PB               STORM        3.00  BASIN TOTAL PRECIPITATION

 33 PI            INCREMENTAL PRECIPITATION PATTERN
                    .02     .04     .01     .02     .02     .02     .01     .00     .00     .00
                    .00     .00     .00     .01     .00     .01     .01     .01     .01     .01
                    .01     .00     .00     .00     .00     .01     .02     .01     .01     .00
                    .01     .01     .01     .00     .00     .01     .03     .03     .06     .09
                    .09     .12     .03     .04     .03     .01     .02     .02     .00     .00
                    .01     .01     .01     .02     .02     .01     .01     .02     .01     .01
                    .00     .00     .00     .00     .00     .00     .00     .00     .00     .00
                    .00     .00

243 LS          SCS LOSS RATE
                     STRTL         .27  INITIAL ABSTRACTION
                     CRVNBR      88.00  CURVE NUMBER
                     RTIMP         .00  PERCENT IMPERVIOUS AREA

244 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .13  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                       10 END-OF-PERIOD ORDINATES
                69.      160.      122.       53.       25.       12.        5.        2.        1.        0.

    TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                                (CFS)
+      90.      3.58                 11.         3.          3.          3.
                             (INCHES)  1.818       1.818       1.818       1.818
                              (AC-FT)    6.          6.          6.          6.

                            CUMULATIVE AREA =     .06 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF4
                            FOR PLAN 1, RATIO = 1.00

    TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                                (CFS)
+      90.      3.58                 11.         3.          3.          3.
                             (INCHES)  1.818       1.818       1.818       1.818
                              (AC-FT)    6.          6.          6.          6.

                            CUMULATIVE AREA =     .06 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF4
                            FOR PLAN 1, RATIO =  .99

    TOTAL RAINFALL =    2.97, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.79

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                                (CFS)
+      89.      3.58                 11.         3.          3.          3.
                             (INCHES)  1.791       1.792       1.792       1.792
                              (AC-FT)    6.          6.          6.          6.

                            CUMULATIVE AREA =     .06 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF4
                            FOR PLAN 1, RATIO =  .98

    TOTAL RAINFALL =    2.92, TOTAL LOSS =    1.17, TOTAL EXCESS =    1.75

  PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR       72-HR      24.92-HR
+   (CFS)       (HR)
                                (CFS)
+      87.      3.58                 11.         3.          3.          3.
                             (INCHES)  1.751       1.752       1.752       1.752
                              (AC-FT)    5.          5.          5.          5.

                            CUMULATIVE AREA =     .06 SQ MI

      ***             ***             ***             ***             ***

                          HYDROGRAPH AT STATION    *OFF4
                            FOR PLAN 1, RATIO =  .95

    TOTAL RAINFALL =    2.85, TOTAL LOSS =    1.16, TOTAL EXCESS =    1.69
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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)				
84.	3.58		11.	3.	3.	3.
		(INCHES)	1.685	1.685	1.685	1.685
		(AC-FT)	5.	5.	5.	5.

CUMULATIVE AREA = .06 SQ MI

*** *** *** ***

HYDROGRAPH AT STATION *OFF4
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)				
35.	3.58		4.	1.	1.	1.
		(INCHES)	.670	.670	.670	.670
		(AC-FT)	2.	2.	2.	2.

CUMULATIVE AREA = .06 SQ MI

*** *** *** *

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .99

TOTAL RAINFALL = 2.97, TOTAL LOSS = 1.18, TOTAL EXCESS = 1.79

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
248.	3.83	(CFS) 49.	12.	12.	12.
		(INCHES) 1.788	1.792	1.792	1.792
		(AC-FT) 24.	25.	25.	25.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .98

TOTAL RAINFALL = 2.92, TOTAL LOSS = 1.17, TOTAL EXCESS = 1.75

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
243.	3.83	(CFS) 48.	12.	12.	12.
		(INCHES) 1.748	1.752	1.752	1.752
		(AC-FT) 24.	24.	24.	24.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .95

TOTAL RAINFALL = 2.85, TOTAL LOSS = 1.16, TOTAL EXCESS = 1.69

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
234.	3.83	(CFS) 46.	12.	11.	11.
		(INCHES) 1.682	1.685	1.685	1.685
		(AC-FT) 23.	23.	23.	23.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *** ***

HYDROGRAPH AT STATION *OFF5
FOR PLAN 1, RATIO = .54

TOTAL RAINFALL = 1.62, TOTAL LOSS = .95, TOTAL EXCESS = .67

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
94.	3.83	(CFS) 19.	5.	4.	4.
		(INCHES) .670	.670	.670	.670
		(AC-FT) 9.	9.	9.	9.

CUMULATIVE AREA = .26 SQ MI

*** *** *** *

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                                                                    PRO
                    RTIMP         .00  PERCENT IMPERVIOUS AREA

  258 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG        .12  LAG

                                                                    ***

                                                          UNIT HYDROGRAPH
                                                       9 END-OF-PERIOD ORDINATES
                  62.      121.       73.       30.       13.        5.        2.        1.        0.

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR       72-HR      24.92-HR
+  (CFS)          (HR)          (CFS)
+       62.       3.58                       8.          2.          2.          2.
                              (INCHES)    1.818       1.818       1.818       1.818
                               (AC-FT)        4.          4.          4.          4.

                          CUMULATIVE AREA =     .04 SQ MI

        ***               ***             ***             ***             ***

                        HYDROGRAPH AT STATION     *OFF6
                          FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR       72-HR      24.92-HR
+  (CFS)          (HR)          (CFS)
+       62.       3.58                       8.          2.          2.          2.
                              (INCHES)    1.818       1.818       1.818       1.818
                               (AC-FT)        4.          4.          4.          4.

                          CUMULATIVE AREA =     .04 SQ MI

        ***               ***             ***             ***             ***

                        HYDROGRAPH AT STATION     *OFF6
                          FOR PLAN 1, RATIO =  .99

     TOTAL RAINFALL =    2.97, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.79

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR       72-HR      24.92-HR
+  (CFS)          (HR)          (CFS)
+       62.       3.58                       8.          2.          2.          2.
                              (INCHES)    1.791       1.792       1.792       1.792
                               (AC-FT)        4.          4.          4.          4.

                          CUMULATIVE AREA =     .04 SQ MI

        ***               ***             ***             ***             ***

                        HYDROGRAPH AT STATION     *OFF6
                          FOR PLAN 1, RATIO =  .98

     TOTAL RAINFALL =    2.92, TOTAL LOSS =    1.17, TOTAL EXCESS =    1.75

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR       72-HR      24.92-HR
+  (CFS)          (HR)          (CFS)
+       60.       3.58                       8.          2.          2.          2.
                              (INCHES)    1.751       1.752       1.752       1.752
                               (AC-FT)        4.          4.          4.          4.

                          CUMULATIVE AREA =     .04 SQ MI

        ***               ***             ***             ***             ***

                        HYDROGRAPH AT STATION     *OFF6
                          FOR PLAN 1, RATIO =  .95

     TOTAL RAINFALL =    2.85, TOTAL LOSS =    1.16, TOTAL EXCESS =    1.69

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR       72-HR      24.92-HR
+  (CFS)          (HR)          (CFS)
+       58.       3.58                       7.          2.          2.          2.
                              (INCHES)    1.685       1.685       1.685       1.685
                               (AC-FT)        4.          4.          4.          4.

                          CUMULATIVE AREA =     .04 SQ MI

        ***               ***             ***             ***             ***

                        HYDROGRAPH AT STATION     *OFF6
                          FOR PLAN 1, RATIO =  .54

     TOTAL RAINFALL =    1.62, TOTAL LOSS =     .95, TOTAL EXCESS =     .67

   PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR       24-HR       72-HR      24.92-HR
+  (CFS)          (HR)          (CFS)
+       24.       3.58                       3.          1.          1.          1.
                              (INCHES)     .670        .670        .670        .670
                               (AC-FT)        1.          1.          1.          1.

                          CUMULATIVE AREA =     .04 SQ MI
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*** *** *** *

1	0145	22	5.	.0	2797.8	*	1	1005	122	0.	.0	2797.3	*	1	1825	222	0.	.0	
2797.3																			
1	0150	23	5.	.0	2797.8	*	1	1010	123	0.	.0	2797.3	*	1	1830	223	0.	.0	
2797.3																			
1	0155	24	4.	.0	2797.7	*	1	1015	124	0.	.0	2797.3	*	1	1835	224	0.	.0	
2797.3																			
1	0200	25	3.	.0	2797.6	*	1	1020	125	0.	.0	2797.3	*	1	1840	225	0.	.0	
2797.3																			
1	0205	26	3.	.0	2797.5	*	1	1025	126	0.	.0	2797.3	*	1	1845	226	0.	.0	
2797.3																			
1	0210	27	3.	.0	2797.5	*	1	1030	127	0.	.0	2797.3	*	1	1850	227	0.	.0	
2797.3																			
1	0215	28	4.	.0	2797.6	*	1	1035	128	0.	.0	2797.3	*	1	1855	228	0.	.0	
2797.3																			
1	0220	29	6.	.0	2797.8	*	1	1040	129	0.	.0	2797.3	*	1	1900	229	0.	.0	
2797.3																			
1	0225	30	7.	.0	2797.9	*	1	1045	130	0.	.0	2797.3	*	1	1905	230	0.	.0	
2797.3																			
1	0230	31	7.	.0	2797.9	*	1	1050	131	0.	.0	2797.3	*	1	1910	231	0.	.0	
2797.3																			
1	0235	32	7.	.0	2797.9	*	1	1055	132	0.	.0	2797.3	*	1	1915	232	0.	.0	
2797.3																			
1	0240	33	6.	.0	2797.9	*	1	1100	133	0.	.0	2797.3	*	1	1920	233	0.	.0	
2797.3																			
1	0245	34	7.	.0	2797.9	*	1	1105	134	0.	.0	2797.3	*	1	1925	234	0.	.0	
2797.3																			
1	0250	35	7.	.0	2797.9	*	1	1110	135	0.	.0	2797.3	*	1	1930	235	0.	.0	
2797.3																			
1	0255	36	7.	.0	2797.9	*	1	1115	136	0.	.0	2797.3	*	1	1935	236	0.	.0	
2797.3																			
1	0300	37	6.	.0	2797.8	*	1	1120	137	0.	.0	2797.3	*	1	1940	237	0.	.0	
2797.3																			
1	0305	38	8.	.0	2798.0	*	1	1125	138	0.	.0	2797.3	*	1	1945	238	0.	.0	
2797.3																			
1	0310	39	10.	.0	2798.2	*	1	1130	139	0.	.0	2797.3	*	1	1950	239	0.	.0	
2797.3																			
1	0315	40	15.	.1	2798.6	*	1	1135	140	0.	.0	2797.3	*	1	1955	240	0.	.0	
2797.3																			
1	0320	41	23.	.2	2799.3	*	1	1140	141	0.	.0	2797.3	*	1	2000	241	0.	.0	
2797.3																			
1	0325	42	34.	.3	2800.2	*	1	1145	142	0.	.0	2797.3	*	1	2005	242	0.	.0	
2797.3																			
1	0330	43	47.	.5	2801.4	*	1	1150	143	0.	.0	2797.3	*	1	2010	243	0.	.0	
2797.3																			
1	0335	44	67.	.7	2802.4	*	1	1155	144	0.	.0	2797.3	*	1	2015	244	0.	.0	
2797.3																			
1	0340	45	85.	.9	2802.8	*	1	1200	145	0.	.0	2797.3	*	1	2020	245	0.	.0	
2797.3																			
1	0345	46	87.	.9	2802.9	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0	
2797.3																			
1	0350	47	80.	.8	2802.7	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0	
2797.3																			
1	0355	48	68.	.7	2802.4	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	
2797.3																			
1	0400	49	55.	.6	2802.0	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	
2797.3																			
1	0405	50	48.	.5	2801.5	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	
2797.3																			
1	0410	51	42.	.4	2800.9	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	
2797.3																			
1	0415	52	35.	.3	2800.3	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	
2797.3																			
1	0420	53	28.	.2	2799.8	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	
2797.3																			
1	0425	54	23.	.2	2799.3	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	
2797.3																			
1	0430	55	19.	.1	2799.0	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	
2797.3																			
1	0435	56	19.	.1	2798.9	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	
2797.3																			
1	0440	57	19.	.1	2799.0	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	
2797.3																			
1	0445	58	20.	.1	2799.1	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	
2797.3																			
1	0450	59	21.	.1	2799.1	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	
2797.3																			
1	0455	60	21.	.1	2799.1	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	
2797.3																			
1	0500	61	21.	.1	2799.1	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	
2797.3																			
1	0505	62	19.	.1	2799.0	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	
2797.3																			
1	0510	63	17.	.1	2798.7	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	
2797.3																			
1	0515	64	14.	.1	2798.5	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	
2797.3																			
1	0520	65	11.	.0	2798.2	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	
2797.3																			
1	0525	66	8.	.0	2798.0	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	
2797.3																			
1	0530	67	5.	.0	2797.7	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	
2797.3																			
1	0535	68	4.	.0	2797.6	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	
2797.3																			
1	0540	69	3.	.0	2797.6	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	
2797.3																			
1	0545	70	3.	.0	2797.5	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	
2797.3																			
1	0550	71	2.	.0	2797.5	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	
2797.3																			
1	0555	72	2.	.0	2797.5	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	
2797.3																			
1	0600	73	2.	.0	2797.5	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	
2797.3																			
1	0605	74	2.	.0	2797.4	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	
2797.3																			
1	0610	75	1.	.0	2797.4	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	
2797.3																			
1	0615	76	1.	.0	2797.4	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	
2797.3																			
1	0620	77	1.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	
2797.3																			

												PRO							
1	0625	78	0.	.0	2797.3	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	
2797.3																			
1	0630	79	0.	.0	2797.3	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	
2797.3																			
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	
2797.3																			
1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	
2797.3																			
1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	
2797.3																			
1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	
2797.3																			
1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	
2797.3																			
1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	
2797.3																			
1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	
2797.3																			
1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	
2797.3																			
1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	
2797.3																			
1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	
2797.3																			
1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	
2797.3																			
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	
2797.3																			
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	
2797.3																			
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	
2797.3																			
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	
2797.3																			
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	
2797.3																			
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	
2797.3																			
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	
2797.3																			
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	
2797.3																			
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	
2797.3																			
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	
2797.3																			

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 87.	3.75		15.	4.	4.	4.
		(INCHES)	8.045	8.070	8.070	8.070
		(AC-FT)	8.	8.	8.	8.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	3.75	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2802.89	3.75	2798.54	2797.62	2797.61	2797.61

CUMULATIVE AREA = .02 SQ MI

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HYDROGRAPH AT STATION *DBN
PLAN 1, RATIO = .99

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	*	1		0820	101	0.	.0	2797.3	*	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	*	1		0825	102	0.	.0	2797.3	*	1		1645	202	0.	.0	2797.3
1		0010	3	1.	.0	2797.4	*	1		0830	103	0.	.0	2797.3	*	1		1650	203	0.	.0	2797.3
1		0015	4	1.	.0	2797.4	*	1		0835	104	0.	.0	2797.3	*	1		1655	204	0.	.0	2797.3
1		0020	5	1.	.0	2797.4	*	1		0840	105	0.	.0	2797.3	*	1		1700	205	0.	.0	2797.3
1		0025	6	2.	.0	2797.5	*	1		0845	106	0.	.0	2797.3	*	1		1705	206	0.	.0	2797.3
1		0030	7	3.	.0	2797.6	*	1		0850	107	0.	.0	2797.3	*	1		1710	207	0.	.0	2797.3
1		0035	8	3.	.0	2797.6	*	1		0855	108	0.	.0	2797.3	*	1		1715	208	0.	.0	2797.3
1		0040	9	3.	.0	2797.5	*	1		0900	109	0.	.0	2797.3	*	1		1720	209	0.	.0	2797.3
1		0045	10	2.	.0	2797.5	*	1		0905	110	0.	.0	2797.3	*	1		1725	210	0.	.0	2797.3
1		0050	11	1.	.0	2797.4	*	1		0910	111	0.	.0	2797.3	*	1		1730	211	0.	.0	2797.3
1		0055	12	1.	.0	2797.4	*	1		0915	112	0.	.0	2797.3	*	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	*	1		0920	113	0.	.0	2797.3	*	1		1740	213	0.	.0	2797.3

1	0105	14	0.	.0	2797.3	*	1	0925	114	0.	.0	2797.3	*	1	1745	214	0.	.0	2797.3
1	0110	15	1.	.0	2797.4	*	1	0930	115	0.	.0	2797.3	*	1	1750	215	0.	.0	2797.3
1	0115	16	1.	.0	2797.4	*	1	0935	116	0.	.0	2797.3	*	1	1755	216	0.	.0	2797.3
1	0120	17	1.	.0	2797.4	*	1	0940	117	0.	.0	2797.3	*	1	1800	217	0.	.0	2797.3
1	0125	18	2.	.0	2797.5	*	1	0945	118	0.	.0	2797.3	*	1	1805	218	0.	.0	2797.3
1	0130	19	3.	.0	2797.6	*	1	0950	119	0.	.0	2797.3	*	1	1810	219	0.	.0	2797.3
1	0135	20	4.	.0	2797.7	*	1	0955	120	0.	.0	2797.3	*	1	1815	220	0.	.0	2797.3
1	0140	21	5.	.0	2797.7	*	1	1000	121	0.	.0	2797.3	*	1	1820	221	0.	.0	2797.3
1	0145	22	5.	.0	2797.8	*	1	1005	122	0.	.0	2797.3	*	1	1825	222	0.	.0	2797.3
1	0150	23	5.	.0	2797.7	*	1	1010	123	0.	.0	2797.3	*	1	1830	223	0.	.0	2797.3
1	0155	24	4.	.0	2797.7	*	1	1015	124	0.	.0	2797.3	*	1	1835	224	0.	.0	2797.3
1	0200	25	3.	.0	2797.6	*	1	1020	125	0.	.0	2797.3	*	1	1840	225	0.	.0	2797.3
1	0205	26	3.	.0	2797.5	*	1	1025	126	0.	.0	2797.3	*	1	1845	226	0.	.0	2797.3
1	0210	27	3.	.0	2797.5	*	1	1030	127	0.	.0	2797.3	*	1	1850	227	0.	.0	2797.3
1	0215	28	4.	.0	2797.6	*	1	1035	128	0.	.0	2797.3	*	1	1855	228	0.	.0	2797.3
1	0220	29	6.	.0	2797.8	*	1	1040	129	0.	.0	2797.3	*	1	1900	229	0.	.0	2797.3
1	0225	30	7.	.0	2797.9	*	1	1045	130	0.	.0	2797.3	*	1	1905	230	0.	.0	2797.3
1	0230	31	7.	.0	2797.9	*	1	1050	131	0.	.0	2797.3	*	1	1910	231	0.	.0	2797.3
1	0235	32	7.	.0	2797.9	*	1	1055	132	0.	.0	2797.3	*	1	1915	232	0.	.0	2797.3
1	0240	33	6.	.0	2797.8	*	1	1100	133	0.	.0	2797.3	*	1	1920	233	0.	.0	2797.3
1	0245	34	7.	.0	2797.9	*	1	1105	134	0.	.0	2797.3	*	1	1925	234	0.	.0	2797.3
1	0250	35	7.	.0	2797.9	*	1	1110	135	0.	.0	2797.3	*	1	1930	235	0.	.0	2797.3
1	0255	36	6.	.0	2797.9	*	1	1115	136	0.	.0	2797.3	*	1	1935	236	0.	.0	2797.3
1	0300	37	6.	.0	2797.8	*	1	1120	137	0.	.0	2797.3	*	1	1940	237	0.	.0	2797.3
1	0305	38	8.	.0	2798.0	*	1	1125	138	0.	.0	2797.3	*	1	1945	238	0.	.0	2797.3
1	0310	39	10.	.0	2798.2	*	1	1130	139	0.	.0	2797.3	*	1	1950	239	0.	.0	2797.3
1	0315	40	14.	.1	2798.5	*	1	1135	140	0.	.0	2797.3	*	1	1955	240	0.	.0	2797.3
1	0320	41	23.	.2	2799.3	*	1	1140	141	0.	.0	2797.3	*	1	2000	241	0.	.0	2797.3
1	0325	42	33.	.3	2800.2	*	1	1145	142	0.	.0	2797.3	*	1	2005	242	0.	.0	2797.3
1	0330	43	46.	.5	2801.3	*	1	1150	143	0.	.0	2797.3	*	1	2010	243	0.	.0	2797.3
1	0335	44	66.	.7	2802.3	*	1	1155	144	0.	.0	2797.3	*	1	2015	244	0.	.0	2797.3
1	0340	45	84.	.8	2802.8	*	1	1200	145	0.	.0	2797.3	*	1	2020	245	0.	.0	2797.3
1	0345	46	86.	.9	2802.9	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0	2797.3
1	0350	47	79.	.8	2802.7	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0	2797.3
1	0355	48	67.	.7	2802.3	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	2797.3
1	0400	49	54.	.6	2802.0	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	2797.3
1	0405	50	48.	.5	2801.5	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	2797.3
1	0410	51	41.	.4	2800.9	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	2797.3
1	0415	52	35.	.3	2800.3	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	2797.3
1	0420	53	28.	.2	2799.7	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	2797.3
1	0425	54	22.	.2	2799.2	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	2797.3
1	0430	55	19.	.1	2799.0	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	2797.3
1	0435	56	18.	.1	2798.9	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	2797.3
1	0440	57	19.	.1	2799.0	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	2797.3
1	0445	58	20.	.1	2799.0	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	2797.3
1	0450	59	21.	.1	2799.1	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	2797.3
1	0455	60	21.	.1	2799.1	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	2797.3
1	0500	61	20.	.1	2799.1	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	2797.3
1	0505	62	19.	.1	2799.0	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	2797.3
1	0510	63	16.	.1	2798.7	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	2797.3
1	0515	64	13.	.1	2798.5	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	2797.3
1	0520	65	10.	.0	2798.2	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	2797.3
1	0525	66	8.	.0	2798.0	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	2797.3
1	0530	67	4.	.0	2797.7	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	2797.3
1	0535	68	4.	.0	2797.6	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	2797.3
1	0540	69	3.	.0	2797.6	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	2797.3

PRO

1	0545	70	2.	.0	2797.5	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	2797.3
1	0550	71	2.	.0	2797.5	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	2797.3
1	0555	72	2.	.0	2797.5	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	2797.3
1	0600	73	2.	.0	2797.5	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	2797.3
1	0605	74	2.	.0	2797.4	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	2797.3
1	0610	75	1.	.0	2797.4	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	2797.3
1	0615	76	1.	.0	2797.4	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	2797.3
1	0620	77	1.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	2797.3
1	0625	78	0.	.0	2797.3	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	2797.3
1	0630	79	0.	.0	2797.3	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	2797.3
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	2797.3
1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	2797.3
1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	2797.3
1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	2797.3
1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	2797.3
1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	2797.3
1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	2797.3
1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	2797.3
1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	2797.3
1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	2797.3
1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	2797.3
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	2797.3
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	2797.3
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	2797.3
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	2797.3
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	2797.3
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	2797.3
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	2797.3
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	2797.3
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	2797.3
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	2797.3

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)				
86.	3.75		15.	4.	4.	4.
		(INCHES)	7.933	7.958	7.958	7.958
		(AC-FT)	8.	8.	8.	8.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)				
1.	3.75	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)				
2802.86	3.75	2798.53	2797.62	2797.61	2797.61

CUMULATIVE AREA = .02 SQ MI

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HYDROGRAPH AT STATION *DBN
PLAN 1, RATIO = .98

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	1.	.0	2797.4	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	1.	.0	2797.4	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	1.	.0	2797.4	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3

1	0025	6	2.	.0	2797.5	*	1	0845	106	0.	.0	2797.3	*	1	1705	206	0.	.0	2797.3
1	0030	7	3.	.0	2797.5	*	1	0850	107	0.	.0	2797.3	*	1	1710	207	0.	.0	2797.3
1	0035	8	3.	.0	2797.6	*	1	0855	108	0.	.0	2797.3	*	1	1715	208	0.	.0	2797.3
1	0040	9	3.	.0	2797.5	*	1	0900	109	0.	.0	2797.3	*	1	1720	209	0.	.0	2797.3
1	0045	10	2.	.0	2797.5	*	1	0905	110	0.	.0	2797.3	*	1	1725	210	0.	.0	2797.3
1	0050	11	1.	.0	2797.4	*	1	0910	111	0.	.0	2797.3	*	1	1730	211	0.	.0	2797.3
1	0055	12	1.	.0	2797.4	*	1	0915	112	0.	.0	2797.3	*	1	1735	212	0.	.0	2797.3
1	0100	13	0.	.0	2797.3	*	1	0920	113	0.	.0	2797.3	*	1	1740	213	0.	.0	2797.3
1	0105	14	0.	.0	2797.3	*	1	0925	114	0.	.0	2797.3	*	1	1745	214	0.	.0	2797.3
1	0110	15	1.	.0	2797.4	*	1	0930	115	0.	.0	2797.3	*	1	1750	215	0.	.0	2797.3
1	0115	16	1.	.0	2797.4	*	1	0935	116	0.	.0	2797.3	*	1	1755	216	0.	.0	2797.3
1	0120	17	1.	.0	2797.4	*	1	0940	117	0.	.0	2797.3	*	1	1800	217	0.	.0	2797.3
1	0125	18	2.	.0	2797.5	*	1	0945	118	0.	.0	2797.3	*	1	1805	218	0.	.0	2797.3
1	0130	19	3.	.0	2797.6	*	1	0950	119	0.	.0	2797.3	*	1	1810	219	0.	.0	2797.3
1	0135	20	4.	.0	2797.7	*	1	0955	120	0.	.0	2797.3	*	1	1815	220	0.	.0	2797.3
1	0140	21	5.	.0	2797.7	*	1	1000	121	0.	.0	2797.3	*	1	1820	221	0.	.0	2797.3
1	0145	22	5.	.0	2797.7	*	1	1005	122	0.	.0	2797.3	*	1	1825	222	0.	.0	2797.3
1	0150	23	5.	.0	2797.7	*	1	1010	123	0.	.0	2797.3	*	1	1830	223	0.	.0	2797.3
1	0155	24	4.	.0	2797.7	*	1	1015	124	0.	.0	2797.3	*	1	1835	224	0.	.0	2797.3
1	0200	25	3.	.0	2797.6	*	1	1020	125	0.	.0	2797.3	*	1	1840	225	0.	.0	2797.3
1	0205	26	2.	.0	2797.5	*	1	1025	126	0.	.0	2797.3	*	1	1845	226	0.	.0	2797.3
1	0210	27	2.	.0	2797.5	*	1	1030	127	0.	.0	2797.3	*	1	1850	227	0.	.0	2797.3
1	0215	28	4.	.0	2797.6	*	1	1035	128	0.	.0	2797.3	*	1	1855	228	0.	.0	2797.3
1	0220	29	5.	.0	2797.8	*	1	1040	129	0.	.0	2797.3	*	1	1900	229	0.	.0	2797.3
1	0225	30	7.	.0	2797.9	*	1	1045	130	0.	.0	2797.3	*	1	1905	230	0.	.0	2797.3
1	0230	31	7.	.0	2797.9	*	1	1050	131	0.	.0	2797.3	*	1	1910	231	0.	.0	2797.3
1	0235	32	6.	.0	2797.9	*	1	1055	132	0.	.0	2797.3	*	1	1915	232	0.	.0	2797.3
1	0240	33	6.	.0	2797.8	*	1	1100	133	0.	.0	2797.3	*	1	1920	233	0.	.0	2797.3
1	0245	34	7.	.0	2797.9	*	1	1105	134	0.	.0	2797.3	*	1	1925	234	0.	.0	2797.3
1	0250	35	7.	.0	2797.9	*	1	1110	135	0.	.0	2797.3	*	1	1930	235	0.	.0	2797.3
1	0255	36	6.	.0	2797.8	*	1	1115	136	0.	.0	2797.3	*	1	1935	236	0.	.0	2797.3
1	0300	37	6.	.0	2797.8	*	1	1120	137	0.	.0	2797.3	*	1	1940	237	0.	.0	2797.3
1	0305	38	7.	.0	2797.9	*	1	1125	138	0.	.0	2797.3	*	1	1945	238	0.	.0	2797.3
1	0310	39	10.	.0	2798.1	*	1	1130	139	0.	.0	2797.3	*	1	1950	239	0.	.0	2797.3
1	0315	40	14.	.1	2798.5	*	1	1135	140	0.	.0	2797.3	*	1	1955	240	0.	.0	2797.3
1	0320	41	22.	.2	2799.2	*	1	1140	141	0.	.0	2797.3	*	1	2000	241	0.	.0	2797.3
1	0325	42	33.	.3	2800.2	*	1	1145	142	0.	.0	2797.3	*	1	2005	242	0.	.0	2797.3
1	0330	43	45.	.5	2801.2	*	1	1150	143	0.	.0	2797.3	*	1	2010	243	0.	.0	2797.3
1	0335	44	64.	.7	2802.3	*	1	1155	144	0.	.0	2797.3	*	1	2015	244	0.	.0	2797.3
1	0340	45	82.	.8	2802.7	*	1	1200	145	0.	.0	2797.3	*	1	2020	245	0.	.0	2797.3
1	0345	46	84.	.9	2802.8	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0	2797.3
1	0350	47	77.	.8	2802.6	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0	2797.3
1	0355	48	65.	.7	2802.3	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	2797.3
1	0400	49	53.	.6	2801.9	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	2797.3
1	0405	50	47.	.5	2801.4	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	2797.3
1	0410	51	41.	.4	2800.8	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	2797.3
1	0415	52	34.	.3	2800.3	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	2797.3
1	0420	53	28.	.2	2799.7	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	2797.3
1	0425	54	22.	.2	2799.2	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	2797.3
1	0430	55	19.	.1	2798.9	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	2797.3
1	0435	56	18.	.1	2798.9	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	2797.3
1	0440	57	19.	.1	2798.9	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	2797.3
1	0445	58	20.	.1	2799.0	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	2797.3
1	0450	59	20.	.1	2799.1	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	2797.3
1	0455	60	21.	.1	2799.1	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	2797.3
1	0500	61	20.	.1	2799.1	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	2797.3

																	PRO		
1	0505	62	19.	.1	2798.9	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	
2797.3																			
1	0510	63	16.	.1	2798.7	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	
2797.3																			
1	0515	64	13.	.1	2798.4	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	
2797.3																			
1	0520	65	10.	.0	2798.2	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	
2797.3																			
1	0525	66	8.	.0	2798.0	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	
2797.3																			
1	0530	67	4.	.0	2797.7	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	
2797.3																			
1	0535	68	4.	.0	2797.6	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	
2797.3																			
1	0540	69	3.	.0	2797.5	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	
2797.3																			
1	0545	70	2.	.0	2797.5	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	
2797.3																			
1	0550	71	2.	.0	2797.5	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	
2797.3																			
1	0555	72	2.	.0	2797.5	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	
2797.3																			
1	0600	73	2.	.0	2797.5	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	
2797.3																			
1	0605	74	2.	.0	2797.4	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	
2797.3																			
1	0610	75	1.	.0	2797.4	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	
2797.3																			
1	0615	76	1.	.0	2797.4	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	
2797.3																			
1	0620	77	1.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	
2797.3																			
1	0625	78	0.	.0	2797.3	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	
2797.3																			
1	0630	79	0.	.0	2797.3	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	
2797.3																			
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	
2797.3																			
1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	
2797.3																			
1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	
2797.3																			
1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	
2797.3																			
1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	
2797.3																			
1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	
2797.3																			
1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	
2797.3																			
1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	
2797.3																			
1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	
2797.3																			
1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	
2797.3																			
1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	
2797.3																			
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	
2797.3																			
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	
2797.3																			
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	
2797.3																			
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	
2797.3																			
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	
2797.3																			
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	
2797.3																			
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	
2797.3																			
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	
2797.3																			
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	
2797.3																			
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	
2797.3																			
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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 84.	3.75		15.	4.	4.	4.
		(INCHES)	7.767	7.790	7.790	7.790
		(AC-FT)	7.	7.	7.	7.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	3.75	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2802.81	3.75	2798.51	2797.61	2797.60	2797.60

CUMULATIVE AREA = .02 SQ MI

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HYDROGRAPH AT STATION *DBN
PLAN 1, RATIO = .95

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	1.	.0	2797.4	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	1.	.0	2797.4	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	1.	.0	2797.4	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3
1		0025	6	2.	.0	2797.5	1		0845	106	0.	.0	2797.3	1		1705	206	0.	.0	2797.3
1		0030	7	3.	.0	2797.5	1		0850	107	0.	.0	2797.3	1		1710	207	0.	.0	2797.3
1		0035	8	3.	.0	2797.5	1		0855	108	0.	.0	2797.3	1		1715	208	0.	.0	2797.3
1		0040	9	2.	.0	2797.5	1		0900	109	0.	.0	2797.3	1		1720	209	0.	.0	2797.3
1		0045	10	2.	.0	2797.4	1		0905	110	0.	.0	2797.3	1		1725	210	0.	.0	2797.3
1		0050	11	1.	.0	2797.4	1		0910	111	0.	.0	2797.3	1		1730	211	0.	.0	2797.3
1		0055	12	1.	.0	2797.4	1		0915	112	0.	.0	2797.3	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	1		0920	113	0.	.0	2797.3	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	1		0925	114	0.	.0	2797.3	1		1745	214	0.	.0	2797.3
1		0110	15	1.	.0	2797.4	1		0930	115	0.	.0	2797.3	1		1750	215	0.	.0	2797.3
1		0115	16	1.	.0	2797.4	1		0935	116	0.	.0	2797.3	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	1		0940	117	0.	.0	2797.3	1		1800	217	0.	.0	2797.3
1		0125	18	2.	.0	2797.5	1		0945	118	0.	.0	2797.3	1		1805	218	0.	.0	2797.3
1		0130	19	3.	.0	2797.5	1		0950	119	0.	.0	2797.3	1		1810	219	0.	.0	2797.3
1		0135	20	4.	.0	2797.6	1		0955	120	0.	.0	2797.3	1		1815	220	0.	.0	2797.3
1		0140	21	5.	.0	2797.7	1		1000	121	0.	.0	2797.3	1		1820	221	0.	.0	2797.3
1		0145	22	5.	.0	2797.7	1		1005	122	0.	.0	2797.3	1		1825	222	0.	.0	2797.3
1		0150	23	5.	.0	2797.7	1		1010	123	0.	.0	2797.3	1		1830	223	0.	.0	2797.3
1		0155	24	4.	.0	2797.6	1		1015	124	0.	.0	2797.3	1		1835	224	0.	.0	2797.3
1		0200	25	3.	.0	2797.6	1		1020	125	0.	.0	2797.3	1		1840	225	0.	.0	2797.3
1		0205	26	2.	.0	2797.5	1		1025	126	0.	.0	2797.3	1		1845	226	0.	.0	2797.3
1		0210	27	2.	.0	2797.5	1		1030	127	0.	.0	2797.3	1		1850	227	0.	.0	2797.3
1		0215	28	3.	.0	2797.6	1		1035	128	0.	.0	2797.3	1		1855	228	0.	.0	2797.3
1		0220	29	5.	.0	2797.7	1		1040	129	0.	.0	2797.3	1		1900	229	0.	.0	2797.3
1		0225	30	6.	.0	2797.9	1		1045	130	0.	.0	2797.3	1		1905	230	0.	.0	2797.3
1		0230	31	7.	.0	2797.9	1		1050	131	0.	.0	2797.3	1		1910	231	0.	.0	2797.3
1		0235	32	6.	.0	2797.8	1		1055	132	0.	.0	2797.3	1		1915	232	0.	.0	2797.3
1		0240	33	6.	.0	2797.8	1		1100	133	0.	.0	2797.3	1		1920	233	0.	.0	2797.3
1		0245	34	6.	.0	2797.8	1		1105	134	0.	.0	2797.3	1		1925	234	0.	.0	2797.3
1		0250	35	6.	.0	2797.9	1		1110	135	0.	.0	2797.3	1		1930	235	0.	.0	2797.3
1		0255	36	6.	.0	2797.8	1		1115	136	0.	.0	2797.3	1		1935	236	0.	.0	2797.3
1		0300	37	6.	.0	2797.8	1		1120	137	0.	.0	2797.3	1		1940	237	0.	.0	2797.3
1		0305	38	7.	.0	2797.9	1		1125	138	0.	.0	2797.3	1		1945	238	0.	.0	2797.3
1		0310	39	9.	.0	2798.1	1		1130	139	0.	.0	2797.3	1		1950	239	0.	.0	2797.3
1		0315	40	14.	.1	2798.5	1		1135	140	0.	.0	2797.3	1		1955	240	0.	.0	2797.3
1		0320	41	21.	.1	2799.2	1		1140	141	0.	.0	2797.3	1		2000	241	0.	.0	2797.3
1		0325	42	32.	.3	2800.1	1		1145	142	0.	.0	2797.3	1		2005	242	0.	.0	2797.3
1		0330	43	44.	.5	2801.1	1		1150	143	0.	.0	2797.3	1		2010	243	0.	.0	2797.3
1		0335	44	60.	.7	2802.2	1		1155	144	0.	.0	2797.3	1		2015	244	0.	.0	2797.3
1		0340	45	78.	.8	2802.6	1		1200	145	0.	.0	2797.3	1		2020	245	0.	.0	2797.3
1		0345	46	81.	.8	2802.7	1		1205	146	0.	.0	2797.3	1		2025	246	0.	.0	2797.3
1		0350	47	75.	.8	2802.6	1		1210	147	0.	.0	2797.3	1		2030	247	0.	.0	2797.3
1		0355	48	63.	.7	2802.2	1		1215	148	0.	.0	2797.3	1		2035	248	0.	.0	2797.3
1		0400	49	52.	.6	2801.9	1		1220	149	0.	.0	2797.3	1		2040	249	0.	.0	2797.3
1		0405	50	46.	.5	2801.3	1		1225	150	0.	.0	2797.3	1		2045	250	0.	.0	2797.3
1		0410	51	40.	.4	2800.8	1		1230	151	0.	.0	2797.3	1		2050	251	0.	.0	2797.3
1		0415	52	33.	.3	2800.2	1		1235	152	0.	.0	2797.3	1		2055	252	0.	.0	2797.3
1		0420	53	26.	.2	2799.6	1		1240	153	0.	.0	2797.3	1		2100	253	0.	.0	2797.3

PRO

1	0425	54	21.	.1	2799.1	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	2797.3
1	0430	55	18.	.1	2798.9	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	2797.3
1	0435	56	17.	.1	2798.8	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	2797.3
1	0440	57	18.	.1	2798.9	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	2797.3
1	0445	58	19.	.1	2799.0	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	2797.3
1	0450	59	20.	.1	2799.0	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	2797.3
1	0455	60	20.	.1	2799.0	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	2797.3
1	0500	61	20.	.1	2799.0	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	2797.3
1	0505	62	18.	.1	2798.9	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	2797.3
1	0510	63	16.	.1	2798.7	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	2797.3
1	0515	64	13.	.1	2798.4	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	2797.3
1	0520	65	10.	.0	2798.2	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	2797.3
1	0525	66	7.	.0	2797.9	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	2797.3
1	0530	67	4.	.0	2797.7	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	2797.3
1	0535	68	4.	.0	2797.6	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	2797.3
1	0540	69	3.	.0	2797.5	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	2797.3
1	0545	70	2.	.0	2797.5	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	2797.3
1	0550	71	2.	.0	2797.5	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	2797.3
1	0555	72	2.	.0	2797.5	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	2797.3
1	0600	73	2.	.0	2797.5	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	2797.3
1	0605	74	2.	.0	2797.4	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	2797.3
1	0610	75	1.	.0	2797.4	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	2797.3
1	0615	76	1.	.0	2797.4	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	2797.3
1	0620	77	1.	.0	2797.4	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	2797.3
1	0625	78	0.	.0	2797.3	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	2797.3
1	0630	79	0.	.0	2797.3	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	2797.3
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	2797.3
1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	2797.3
1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	2797.3
1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	2797.3
1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	2797.3
1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	2797.3
1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	2797.3
1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	2797.3
1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	2797.3
1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	2797.3
1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	2797.3
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	2797.3
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	2797.3
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	2797.3
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	2797.3
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	2797.3
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	2797.3
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	2797.3
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	2797.3
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	2797.3
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	2797.3
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)	(CFS)				
+ 81.	3.75		14.	4.	3.	3.
		(INCHES)	7.490	7.512	7.512	7.512
		(AC-FT)	7.	7.	7.	7.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
1.	3.75	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	PRO 24.92-HR
+ 2802.73	3.75	2798.47	2797.60	2797.59	2797.59

CUMULATIVE AREA = .02 SQ MI

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HYDROGRAPH AT STATION *DBN
PLAN 1, RATIO = .54

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3
1		0025	6	1.	.0	2797.4	1		0845	106	0.	.0	2797.3	1		1705	206	0.	.0	2797.3
1		0030	7	1.	.0	2797.4	1		0850	107	0.	.0	2797.3	1		1710	207	0.	.0	2797.3
1		0035	8	1.	.0	2797.4	1		0855	108	0.	.0	2797.3	1		1715	208	0.	.0	2797.3
1		0040	9	1.	.0	2797.3	1		0900	109	0.	.0	2797.3	1		1720	209	0.	.0	2797.3
1		0045	10	0.	.0	2797.3	1		0905	110	0.	.0	2797.3	1		1725	210	0.	.0	2797.3
1		0050	11	0.	.0	2797.3	1		0910	111	0.	.0	2797.3	1		1730	211	0.	.0	2797.3
1		0055	12	0.	.0	2797.3	1		0915	112	0.	.0	2797.3	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	1		0920	113	0.	.0	2797.3	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	1		0925	114	0.	.0	2797.3	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	1		0930	115	0.	.0	2797.3	1		1750	215	0.	.0	2797.3
1		0115	16	0.	.0	2797.3	1		0935	116	0.	.0	2797.3	1		1755	216	0.	.0	2797.3
1		0120	17	0.	.0	2797.3	1		0940	117	0.	.0	2797.3	1		1800	217	0.	.0	2797.3
1		0125	18	0.	.0	2797.3	1		0945	118	0.	.0	2797.3	1		1805	218	0.	.0	2797.3
1		0130	19	1.	.0	2797.4	1		0950	119	0.	.0	2797.3	1		1810	219	0.	.0	2797.3
1		0135	20	1.	.0	2797.4	1		0955	120	0.	.0	2797.3	1		1815	220	0.	.0	2797.3
1		0140	21	1.	.0	2797.4	1		1000	121	0.	.0	2797.3	1		1820	221	0.	.0	2797.3
1		0145	22	1.	.0	2797.4	1		1005	122	0.	.0	2797.3	1		1825	222	0.	.0	2797.3
1		0150	23	1.	.0	2797.4	1		1010	123	0.	.0	2797.3	1		1830	223	0.	.0	2797.3
1		0155	24	1.	.0	2797.4	1		1015	124	0.	.0	2797.3	1		1835	224	0.	.0	2797.3
1		0200	25	0.	.0	2797.3	1		1020	125	0.	.0	2797.3	1		1840	225	0.	.0	2797.3
1		0205	26	0.	.0	2797.3	1		1025	126	0.	.0	2797.3	1		1845	226	0.	.0	2797.3
1		0210	27	1.	.0	2797.3	1		1030	127	0.	.0	2797.3	1		1850	227	0.	.0	2797.3
1		0215	28	1.	.0	2797.4	1		1035	128	0.	.0	2797.3	1		1855	228	0.	.0	2797.3
1		0220	29	2.	.0	2797.4	1		1040	129	0.	.0	2797.3	1		1900	229	0.	.0	2797.3
1		0225	30	2.	.0	2797.5	1		1045	130	0.	.0	2797.3	1		1905	230	0.	.0	2797.3
1		0230	31	2.	.0	2797.5	1		1050	131	0.	.0	2797.3	1		1910	231	0.	.0	2797.3
1		0235	32	2.	.0	2797.4	1		1055	132	0.	.0	2797.3	1		1915	232	0.	.0	2797.3
1		0240	33	2.	.0	2797.4	1		1100	133	0.	.0	2797.3	1		1920	233	0.	.0	2797.3
1		0245	34	2.	.0	2797.5	1		1105	134	0.	.0	2797.3	1		1925	234	0.	.0	2797.3
1		0250	35	2.	.0	2797.5	1		1110	135	0.	.0	2797.3	1		1930	235	0.	.0	2797.3
1		0255	36	2.	.0	2797.5	1		1115	136	0.	.0	2797.3	1		1935	236	0.	.0	2797.3
1		0300	37	2.	.0	2797.5	1		1120	137	0.	.0	2797.3	1		1940	237	0.	.0	2797.3
1		0305	38	2.	.0	2797.5	1		1125	138	0.	.0	2797.3	1		1945	238	0.	.0	2797.3
1		0310	39	4.	.0	2797.7	1		1130	139	0.	.0	2797.3	1		1950	239	0.	.0	2797.3
1		0315	40	7.	.0	2797.9	1		1135	140	0.	.0	2797.3	1		1955	240	0.	.0	2797.3
1		0320	41	10.	.0	2798.2	1		1140	141	0.	.0	2797.3	1		2000	241	0.	.0	2797.3
1		0325	42	15.	.1	2798.6	1		1145	142	0.	.0	2797.3	1		2005	242	0.	.0	2797.3
1		0330	43	21.	.1	2799.2	1		1150	143	0.	.0	2797.3	1		2010	243	0.	.0	2797.3
1		0335	44	28.	.2	2799.7	1		1155	144	0.	.0	2797.3	1		2015	244	0.	.0	2797.3
1		0340	45	32.	.3	2800.1	1		1200	145	0.	.0	2797.3	1		2020	245	0.	.0	2797.3

1	0345	46	34.	.3	2800.2	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0	2797.3
1	0350	47	33.	.3	2800.2	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0	2797.3
1	0355	48	30.	.2	2799.9	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	2797.3
1	0400	49	25.	.2	2799.5	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	2797.3
1	0405	50	21.	.1	2799.1	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	2797.3
1	0410	51	17.	.1	2798.8	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	2797.3
1	0415	52	13.	.1	2798.4	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	2797.3
1	0420	53	10.	.0	2798.2	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	2797.3
1	0425	54	8.	.0	2798.0	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	2797.3
1	0430	55	7.	.0	2797.9	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	2797.3
1	0435	56	8.	.0	2798.0	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	2797.3
1	0440	57	9.	.0	2798.1	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	2797.3
1	0445	58	9.	.0	2798.1	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	2797.3
1	0450	59	10.	.0	2798.1	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	2797.3
1	0455	60	10.	.0	2798.2	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	2797.3
1	0500	61	10.	.0	2798.1	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	2797.3
1	0505	62	9.	.0	2798.1	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	2797.3
1	0510	63	7.	.0	2797.9	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	2797.3
1	0515	64	5.	.0	2797.7	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	2797.3
1	0520	65	4.	.0	2797.6	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	2797.3
1	0525	66	3.	.0	2797.5	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	2797.3
1	0530	67	2.	.0	2797.5	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	2797.3
1	0535	68	2.	.0	2797.4	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	2797.3
1	0540	69	1.	.0	2797.4	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	2797.3
1	0545	70	1.	.0	2797.4	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	2797.3
1	0550	71	1.	.0	2797.4	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	2797.3
1	0555	72	1.	.0	2797.4	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	2797.3
1	0600	73	1.	.0	2797.4	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	2797.3
1	0605	74	1.	.0	2797.4	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	2797.3
1	0610	75	1.	.0	2797.4	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	2797.3
1	0615	76	0.	.0	2797.3	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	2797.3
1	0620	77	0.	.0	2797.3	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	2797.3
1	0625	78	0.	.0	2797.3	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	2797.3
1	0630	79	0.	.0	2797.3	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	2797.3
1	0635	80	0.	.0	2797.3	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	2797.3
1	0640	81	0.	.0	2797.3	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	2797.3
1	0645	82	0.	.0	2797.3	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	2797.3
1	0650	83	0.	.0	2797.3	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	2797.3
1	0655	84	0.	.0	2797.3	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	2797.3
1	0700	85	0.	.0	2797.3	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	2797.3
1	0705	86	0.	.0	2797.3	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	2797.3
1	0710	87	0.	.0	2797.3	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	2797.3
1	0715	88	0.	.0	2797.3	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	2797.3
1	0720	89	0.	.0	2797.3	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	2797.3
1	0725	90	0.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	2797.3
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	2797.3
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	2797.3
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	2797.3
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	2797.3
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	2797.3
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	2797.3
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	2797.3
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	2797.3
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	2797.3
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	2797.3

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.92-HR
(CFS)	(HR)	(CFS)				
34.	3.75		6.	2.	1.	1.
		(INCHES)	3.185	3.194	3.194	3.194
		(AC-FT)	3.	3.	3.	3.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	24.92-HR
(AC-FT)	(HR)					
0.	3.75		0.	0.	0.	0.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	24.92-HR
(FEET)	(HR)					
2800.22	3.75		2797.83	2797.44	2797.44	2797.44

CUMULATIVE AREA = .02 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 1.00	RATIO 2 .99	RATIO 3 .98	RATIO 4 .95	RATIO 5 .54
HYDROGRAPH AT									
+	*OFF7	.01	1	FLOW	9.	9.	9.	9.	4.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*OFF8	.21	1	FLOW	244.	241.	236.	227.	93.
				TIME	3.75	3.75	3.75	3.75	3.75
2 COMBINED AT									
+	*CP2	.22	1	FLOW	249.	245.	240.	232.	95.
				TIME	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT									
+	*OFF9	.11	1	FLOW	153.	151.	148.	142.	58.
				TIME	3.58	3.58	3.58	3.58	3.67
2 COMBINED AT									
+	*CP2a	.33	1	FLOW	395.	390.	382.	368.	148.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*OFF10	.65	1	FLOW	508.	501.	490.	472.	191.
				TIME	4.08	4.08	4.08	4.08	4.08
HYDROGRAPH AT									
+	*ON2	.03	1	FLOW	66.	65.	64.	62.	31.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*DB2	1.01	1	FLOW	774.	763.	746.	719.	290.
				TIME	3.83	3.83	3.83	3.83	3.83
ROUTED TO									
+	*RDB2	1.01	1	FLOW	86.	86.	85.	84.	64.
				TIME	5.83	5.83	5.83	5.83	5.58
			** PEAK STAGES IN FEET **						
			1	STAGE	3010.16	3009.97	3009.63	3009.08	2999.64
				TIME	5.83	5.83	5.83	5.83	5.58
HYDROGRAPH AT									
+	OFF1	.22	1	FLOW	284.	280.	274.	264.	108.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF2	.03	1	FLOW	45.	45.	44.	42.	18.
				TIME	3.58	3.58	3.58	3.58	3.58
2 COMBINED AT									
+	DUMMY	.25	1	FLOW	318.	314.	307.	296.	121.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF4	.06	1	FLOW	80.	79.	77.	74.	31.
				TIME	3.67	3.67	3.67	3.67	3.67
DIVERSION TO									
+	DIV1	.06	1	FLOW	40.	39.	39.	37.	15.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	D1	.06	1	FLOW	40.	39.	39.	37.	15.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF3	.15	1	FLOW	188.	185.	181.	175.	71.
				TIME	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT									
+	DUMMY	.21	1	FLOW	228.	225.	220.	212.	86.
				TIME	3.67	3.67	3.67	3.67	3.67
DIVERSION TO									
+	DIV2	.21	1	FLOW	70.	69.	68.	65.	26.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	D2	.21	1	FLOW	158.	156.	153.	147.	60.

				TIME	3.67	PRO 3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	SVR1	.00	1	FLOW	10.	10.	10.	9.	5.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	SVR2	.01	1	FLOW	20.	19.	19.	19.	10.
				TIME	3.58	3.58	3.58	3.58	3.58
5 COMBINED AT									
+	CP1	1.49	1	FLOW	557.	549.	539.	521.	240.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	2.05a	.02	1	FLOW	40.	39.	38.	37.	19.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	OFF11	.03	1	FLOW	38.	38.	37.	36.	15.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT									
+	CP10	1.54	1	FLOW	628.	620.	608.	588.	271.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	STR2	.00	1	FLOW	6.	6.	6.	5.	3.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	STR3	.00	1	FLOW	8.	8.	8.	8.	4.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	2.03	.03	1	FLOW	52.	52.	51.	49.	26.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	2.04b	.00	1	FLOW	3.	3.	3.	3.	1.
				TIME	3.50	3.50	3.50	3.50	3.58
4 COMBINED AT									
+	CP4	.04	1	FLOW	68.	67.	66.	64.	33.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	2.02	.03	1	FLOW	53.	53.	52.	50.	26.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	STR4	.00	1	FLOW	6.	6.	6.	6.	3.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	CP5	.07	1	FLOW	127.	126.	124.	120.	62.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	OFF12	.01	1	FLOW	21.	21.	20.	19.	8.
				TIME	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT									
+	CP11	.08	1	FLOW	148.	147.	144.	140.	70.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*OFF1	.43	1	FLOW	399.	393.	385.	370.	143.
				TIME	3.83	3.83	3.83	3.83	3.92
HYDROGRAPH AT									
+	*OFF2	.04	1	FLOW	49.	48.	47.	45.	14.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF3	.03	1	FLOW	41.	40.	39.	38.	16.
				TIME	3.50	3.50	3.50	3.58	3.58
3 COMBINED AT									
+	*DUMMY	.50	1	FLOW	441.	435.	425.	409.	158.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	*OFF4	.06	1	FLOW	90.	89.	87.	84.	35.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*OFF5	.26	1	FLOW	252.	248.	243.	234.	94.
				TIME	3.83	3.83	3.83	3.83	3.83
HYDROGRAPH AT									
+	*OFF6	.04	1	FLOW	62.	62.	60.	58.	24.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*ON1	.03	1	FLOW	49.	49.	48.	46.	23.
				TIME	3.50	3.50	3.50	3.50	3.58
5 COMBINED AT									
+	*DB1	.88	1	FLOW	785.	774.	757.	729.	288.
				TIME	3.75	3.75	3.75	3.75	3.83
ROUTED TO									
+	*RDB1	.88	1	FLOW	71.	71.	71.	70.	57.
				TIME	5.58	5.58	5.58	5.58	5.42
				** PEAK STAGES IN FEET **					
			1	STAGE	3035.28	3035.13	3034.91	3034.53	3028.62
				TIME	5.67	5.58	5.58	5.58	5.42
HYDROGRAPH AT									
+	*WPF5	.00	1	FLOW	1.	1.	1.	1.	0.

				TIME	3.50	PRO 3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WML2	.04	1	FLOW	78.	77.	76.	74.	36.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*WSHA5	.00	1	FLOW	8.	8.	8.	8.	4.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*WC20	.05	1	FLOW	86.	85.	83.	81.	40.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*WPF4	.01	1	FLOW	19.	18.	18.	18.	9.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WSHA4	.00	1	FLOW	6.	5.	5.	5.	3.
				TIME	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT									
+	CP6	.94	1	FLOW	159.	158.	156.	153.	100.
				TIME	3.58	3.58	3.58	3.58	3.58
ROUTED TO									
+	RCP6	.94	1	FLOW	157.	155.	153.	150.	99.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*WL4A	.01	1	FLOW	23.	23.	22.	21.	10.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*ON1D	.02	1	FLOW	42.	41.	40.	39.	18.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	CP7	.97	1	FLOW	213.	211.	208.	202.	122.
				TIME	3.58	3.58	3.58	3.58	3.58
ROUTED TO									
+	RCP7	.97	1	FLOW	207.	204.	201.	197.	119.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	OFF5	.14	1	FLOW	182.	179.	175.	169.	69.
				TIME	3.67	3.67	3.67	3.67	3.67
2 COMBINED AT									
+	CP8	1.11	1	FLOW	389.	383.	376.	366.	189.
				TIME	3.67	3.67	3.67	3.67	3.67
ROUTED TO									
+	RCP8	1.11	1	FLOW	387.	382.	375.	365.	187.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*OFF3	.00	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*D2	.02	1	FLOW	24.	24.	23.	23.	9.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*IOFF4	.01	1	FLOW	9.	9.	9.	9.	3.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*PARK	.02	1	FLOW	36.	35.	34.	33.	13.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	DIV1	.00	1	FLOW	40.	39.	39.	37.	15.
				TIME	3.67	3.67	3.67	3.67	3.67
3 COMBINED AT									
+	CP3	1.13	1	FLOW	449.	443.	434.	422.	211.
				TIME	3.67	3.67	3.67	3.67	3.67
ROUTED TO									
+	RCP3	1.13	1	FLOW	447.	442.	432.	420.	206.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	2.06	.03	1	FLOW	61.	61.	60.	58.	30.
				TIME	3.50	3.50	3.50	3.50	3.50
2 COMBINED AT									
+	CP3a	1.16	1	FLOW	487.	482.	471.	458.	226.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	2.05b	.01	1	FLOW	21.	21.	21.	20.	10.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	STR1	.00	1	FLOW	10.	10.	10.	10.	5.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	2.04a	.00	1	FLOW	3.	3.	3.	3.	1.
				TIME	3.50	3.50	3.50	3.50	3.58
HYDROGRAPH AT									
+	DIV2	.00	1	FLOW	70.	69.	68.	65.	26.
				TIME	3.67	3.67	3.67	3.67	3.67
4 COMBINED AT									
+	CP2a	.02	1	FLOW	95.	93.	92.	88.	38.

						PRO			
				TIME	3.58	3.58	3.58	3.58	3.67
ROUTED TO									
+	*DBN	.02	1	FLOW	87.	86.	84.	81.	34.
				TIME	3.75	3.75	3.75	3.75	3.75
			** PEAK STAGES IN FEET **						
			1	STAGE	2802.89	2802.86	2802.81	2802.73	2800.22
				TIME	3.75	3.75	3.75	3.75	3.75
HYDROGRAPH AT									
+	*WSPD3	.00	1	FLOW	5.	5.	5.	5.	2.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WGC3	.04	1	FLOW	89.	88.	86.	84.	42.
				TIME	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT									
+	*WSPD0	.00	1	FLOW	2.	2.	2.	2.	1.
				TIME	3.50	3.50	3.50	3.50	3.50
5 COMBINED AT									
+	WC9a	1.23	1	FLOW	627.	620.	606.	588.	285.
				TIME	3.67	3.67	3.67	3.67	3.67
HYDROGRAPH AT									
+	*ON1-D	.03	1	FLOW	47.	46.	45.	44.	20.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*ON2-D	.03	1	FLOW	45.	45.	44.	42.	18.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*HOR	.02	1	FLOW	30.	30.	29.	28.	14.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	*WC7	.07	1	FLOW	121.	119.	117.	113.	51.
				TIME	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT									
+	*WGRC1A	.00	1	FLOW	4.	4.	4.	4.	2.
				TIME	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT									
+	CP12	1.31	1	FLOW	747.	738.	722.	697.	330.
				TIME	3.58	3.58	3.58	3.58	3.58

1

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING

(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

						INTERPOLATED TO COMPUTATION INTERVAL			
ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	157.78	216.75	2.49	5.00	156.52	220.00	2.50

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1247E+03 EXCESS= .0000E+00 OUTFLOW= .1247E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	156.45	216.75	2.48	5.00	155.26	220.00	2.49

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+03 EXCESS= .0000E+00 OUTFLOW= .1242E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00									
	RCP6 MANE	4.25	154.46	216.75	2.47	5.00	153.39	220.00	2.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1235E+03 EXCESS= .0000E+00 OUTFLOW= .1235E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP6 MANE	4.25	151.14	216.75	2.45	5.00	150.26	220.00	2.45

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1224E+03 EXCESS= .0000E+00 OUTFLOW= .1224E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP6 MANE	4.75	99.76	218.50	2.16	5.00	98.97	220.00	2.16

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1080E+03 EXCESS= .0000E+00 OUTFLOW= .1080E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7 MANE	3.26	210.63	218.19	2.48	5.00	206.83	220.00	2.48

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1288E+03 EXCESS= .0000E+00 OUTFLOW= .1288E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7 MANE	3.27	206.97	218.81	2.47	5.00	204.30	220.00	2.47

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1281E+03 EXCESS= .0000E+00 OUTFLOW= .1281E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7 MANE	3.28	203.93	216.47	2.46	5.00	200.62	220.00	2.46

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1274E+03 EXCESS= .0000E+00 OUTFLOW= .1274E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7 MANE	3.30	200.58	218.04	2.43	5.00	197.06	220.00	2.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1262E+03 EXCESS= .0000E+00 OUTFLOW= .1262E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP7 MANE	3.81	119.55	220.83	2.11	5.00	119.43	220.00	2.12

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1097E+03 EXCESS= .0000E+00 OUTFLOW= .1097E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8 MANE	.83	387.33	220.53	2.40	5.00	387.23	220.00	2.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1421E+03 EXCESS= .0000E+00 OUTFLOW= .1421E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.83	382.22	219.81	2.39	5.00	382.22	220.00	2.39

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1414E+03 EXCESS= .0000E+00 OUTFLOW= .1414E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.83	375.00	220.38	2.37	5.00	374.68	220.00	2.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1403E+03 EXCESS= .0000E+00 OUTFLOW= .1403E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	.84	365.02	220.59	2.34	5.00	364.80	220.00	2.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1385E+03 EXCESS= .0000E+00 OUTFLOW= .1385E+03 BASIN STORAGE= .9852E-08 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP8	MANE	1.03	188.25	220.89	1.94	5.00	187.01	220.00	1.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1146E+03 EXCESS= .0000E+00 OUTFLOW= .1146E+03 BASIN STORAGE= .9852E-08 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	2.21	447.55	218.38	2.43	5.00	446.64	220.00	2.43

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1471E+03 EXCESS= .0000E+00 OUTFLOW= .1471E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	2.22	444.40	219.33	2.42	5.00	441.99	220.00	2.42

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1463E+03 EXCESS= .0000E+00 OUTFLOW= .1463E+03 BASIN STORAGE=-.2759E-07 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	2.23	433.23	218.56	2.40	5.00	431.82	220.00	2.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1452E+03 EXCESS= .0000E+00 OUTFLOW= .1452E+03 BASIN STORAGE=-.5517E-07 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

RCP3	MANE	2.25	419.89	220.58	2.37	5.00	419.77	220.00	2.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1433E+03 EXCESS= .0000E+00 OUTFLOW= .1433E+03 BASIN STORAGE= .2759E-07 PERCENT ERROR= .0

FOR PLAN = 1 RATIO= .00

					PRO				
RCP3	MANE	2.80	208.53	221.14	1.93	5.00	205.61	220.00	1.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1165E+03 EXCESS= .0000E+00 OUTFLOW= .1165E+03 BASIN STORAGE= .0000E+00 PERCENT ERROR= .0

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

APPENDIX D

Surface Flow Hydraulic Computations

Street Hydraulics

Section - 1 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 1 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	
Channel Slope	0.58 %
Discharge	5.00 cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results	
Mannings Coefficient	0.014
Water Surface Elevation	0.35 ft
Elevation Range	0.00 to 0.99
Flow Area	2.5 ft²
Wetted Perimeter	22.15 ft
Top Width	21.34 ft
Actual Depth	0.35 ft
Critical Elevation	0.35 ft
Critical Slope	0.63 %
Velocity	1.96 ft/s
Velocity Head	0.06 ft
Specific Energy	0.41 ft
Froude Number	1.00
Flow Type	Supercritical

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+39.00	0.016
0+39.00	0+52.00	0.013
0+52.00	0+89.00	0.016
0+89.00	0+91.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99

Section - 1 (100-Yr)
Worksheet for Irregular Channel

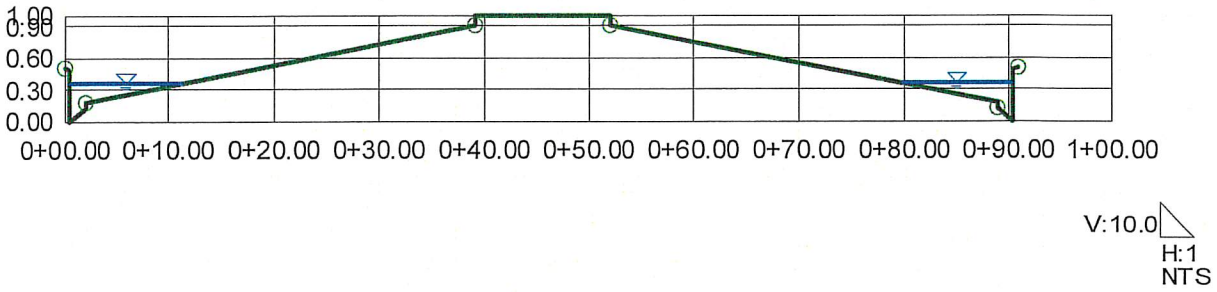
Natural Channel Points	
Station (ft)	Elevation (ft)
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Notes: Q = 1/2 (SVR1)

Section - 1 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 1 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.014
Channel Slope	0.58 %
Water Surface Elevation	0.35 ft
Elevation Range	0.00 to 0.99
Discharge	5.00 cfs



Section - 2 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 2 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	0.58	%
Discharge	7.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.013	
Water Surface Elevation	0.38	ft
Elevation Range	0.00 to 0.99	
Flow Area	3.3	ft²
Wetted Perimeter	25.34	ft
Top Width	24.47	ft
Actual Depth	0.38	ft
Critical Elevation	0.39	ft
Critical Slope	0.54	%
Velocity	2.14	ft/s
Velocity Head	0.07	ft
Specific Energy	0.46	ft
Froude Number	1.04	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+39.00	0.016
0+39.00	0+52.00	0.013
0+52.00	0+89.00	0.016
0+89.00	0+91.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99

Section - 2 (100-Yr)
Worksheet for Irregular Channel

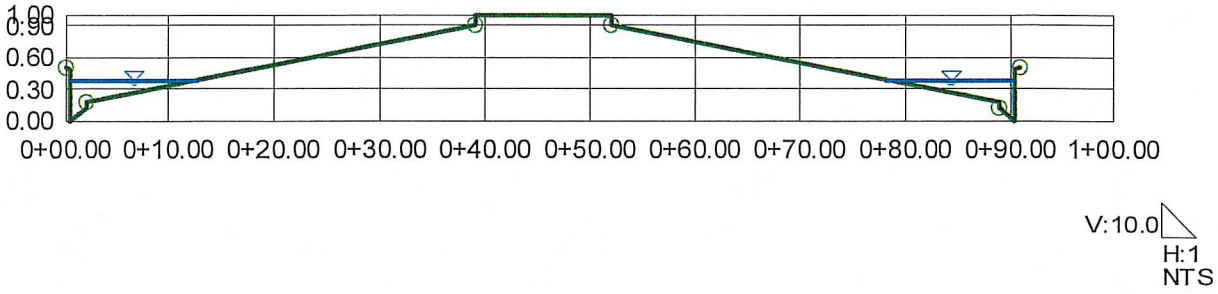
Natural Channel Points	
Station (ft)	Elevation (ft)
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Notes: Q = 1/2 (SVR1) + Facility P18 Bypass

Section - 2 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 2 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.013	
Channel Slope	0.58	%
Water Surface Elevation	0.38	ft
Elevation Range	0.00 to 0.99	
Discharge	7.00	cfs



Section - 3 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 3 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	0.58	%
Discharge	13.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.014	
Water Surface Elevation	0.46	ft
Elevation Range	0.00 to 0.99	
Flow Area	5.5	ft²
Wetted Perimeter	33.23	ft
Top Width	32.21	ft
Actual Depth	0.46	ft
Critical Elevation	0.47	ft
Critical Slope	0.55	%
Velocity	2.38	ft/s
Velocity Head	0.09	ft
Specific Energy	0.55	ft
Froude Number	1.02	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+39.00	0.016
0+39.00	0+52.00	0.013
0+52.00	0+89.00	0.016
0+89.00	0+91.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99

Section - 3 (100-Yr)
Worksheet for Irregular Channel

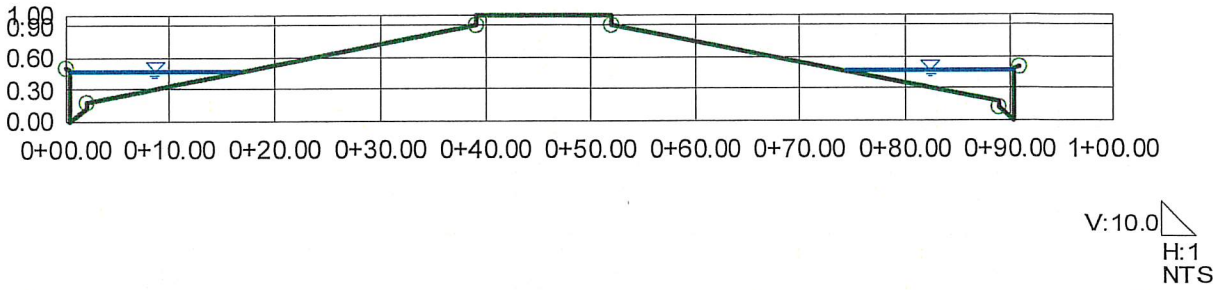
Natural Channel Points	
Station (ft)	Elevation (ft)
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Notes: Q = 1/2 (SVR2) + Facility P20 Bypass

Section - 3 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 3 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.014	
Channel Slope	0.58	%
Water Surface Elevation	0.46	ft
Elevation Range	0.00 to 0.99	
Discharge	13.00	cfs



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Section - 4 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 4 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	0.58	%
Discharge	17.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	0.51	ft
Elevation Range	0.00 to 0.99	
Flow Area	7.0	ft²
Wetted Perimeter	38.69	ft
Top Width	37.62	ft
Actual Depth	0.51	ft
Critical Elevation	0.51	ft
Critical Slope	0.59	%
Velocity	2.43	ft/s
Velocity Head	0.09	ft
Specific Energy	0.60	ft
Froude Number	0.99	
Flow Type	Subcritical	

Calculation Messages:
Flow is divided.
Water elevation exceeds lowest end station by 0.62366286e-2 ft.

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+39.00	0.016
0+39.00	0+52.00	0.013
0+52.00	0+89.00	0.016
0+89.00	0+91.00	0.013

Natural Channel Points

Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91

Section - 4 (100-Yr)
Worksheet for Irregular Channel

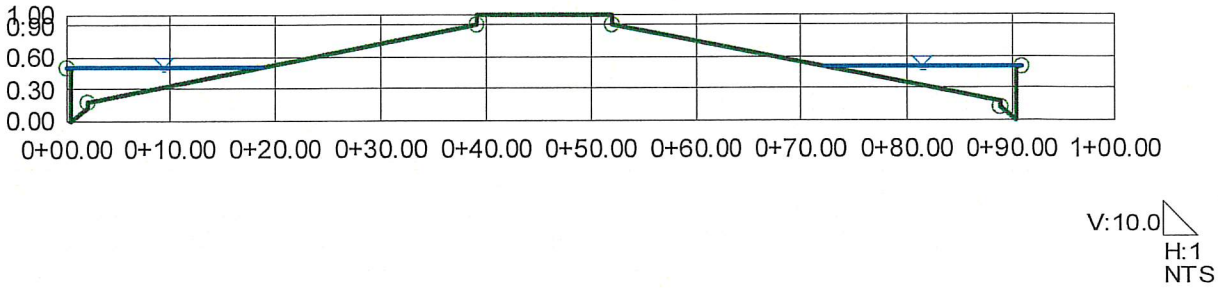
Natural Channel Points	
Station (ft)	Elevation (ft)
0+39.00	0.99
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Notes: Q = 1/2 (SVR2) + Facility P23 Bypass

Section - 4 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 4 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Channel Slope	0.58	%
Water Surface Elevation	0.51	ft
Elevation Range	0.00 to 0.99	
Discharge	17.00	cfs



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Section - 5 (100-Yr) Max Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 5 (100-Yr) Max Slope
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	3.24	%
Discharge	6.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.014	
Water Surface Elevation	0.30	ft
Elevation Range	0.00 to 0.56	
Flow Area	1.5	ft²
Wetted Perimeter	16.34	ft
Top Width	15.66	ft
Actual Depth	0.30	ft
Critical Elevation	0.37	ft
Critical Slope	0.56	%
Velocity	4.01	ft/s
Velocity Head	0.25	ft
Specific Energy	0.55	ft
Froude Number	2.29	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+41.00	0.016
0+41.00	0+43.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+21.50	0.56
0+41.00	0.17
0+41.00	0.13
0+42.50	0.00

Section - 5 (100-Yr) Max Slope
Worksheet for Irregular Channel

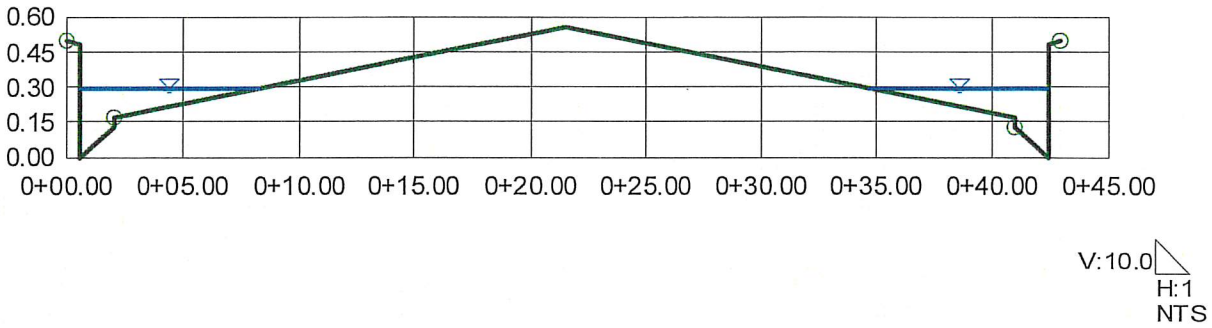
Natural Channel Points	
Station (ft)	Elevation (ft)
0+42.50	0.48
0+43.00	0.50

Notes: Q = STR2

Section - 5 (100-Yr) Max Slope
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 5 (100-Yr) Max Slope
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.014
Channel Slope	3.24 %
Water Surface Elevation	0.30 ft
Elevation Range	0.00 to 0.56
Discharge	6.00 cfs



Section - 5 (100-Yr) Min Slope
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 5 (100-Yr) Min Slope
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	1.56	%
Discharge	6.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.014	
Water Surface Elevation	0.33	ft
Elevation Range	0.00 to 0.56	
Flow Area	2.0	ft²
Wetted Perimeter	19.59	ft
Top Width	18.84	ft
Actual Depth	0.33	ft
Critical Elevation	0.37	ft
Critical Slope	0.60	%
Velocity	2.94	ft/s
Velocity Head	0.13	ft
Specific Energy	0.46	ft
Froude Number	1.57	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+41.00	0.016
0+41.00	0+43.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+21.50	0.56
0+41.00	0.17
0+41.00	0.13
0+42.50	0.00

Section - 5 (100-Yr) Min Slope
Worksheet for Irregular Channel

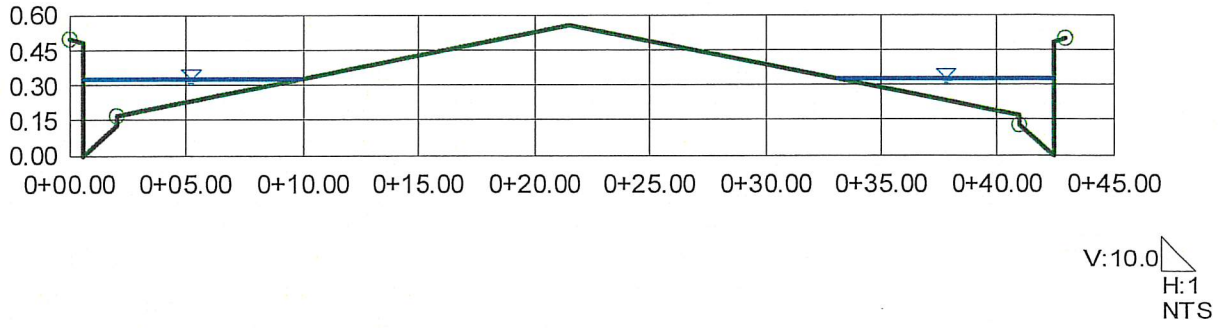
Natural Channel Points	
Station (ft)	Elevation (ft)
0+42.50	0.48
0+43.00	0.50

Notes: Q = STR2

Section - 5 (100-Yr) Min Slope
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 5 (100-Yr) Min Slope
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.014
Channel Slope	1.56 %
Water Surface Elevation	0.33 ft
Elevation Range	0.00 to 0.56
Discharge	6.00 cfs



Section - 6 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 6 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	2.30	%
Discharge	9.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.014	
Water Surface Elevation	0.42	ft
Elevation Range	0.00 to 0.56	
Flow Area	2.0	ft²
Wetted Perimeter	14.22	ft
Top Width	13.75	ft
Actual Depth	0.42	ft
Critical Elevation	0.51	ft
Critical Slope	0.50	%
Velocity	4.44	ft/s
Velocity Head	0.31	ft
Specific Energy	0.72	ft
Froude Number	2.04	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+21.50	0.016

Natural Channel Points

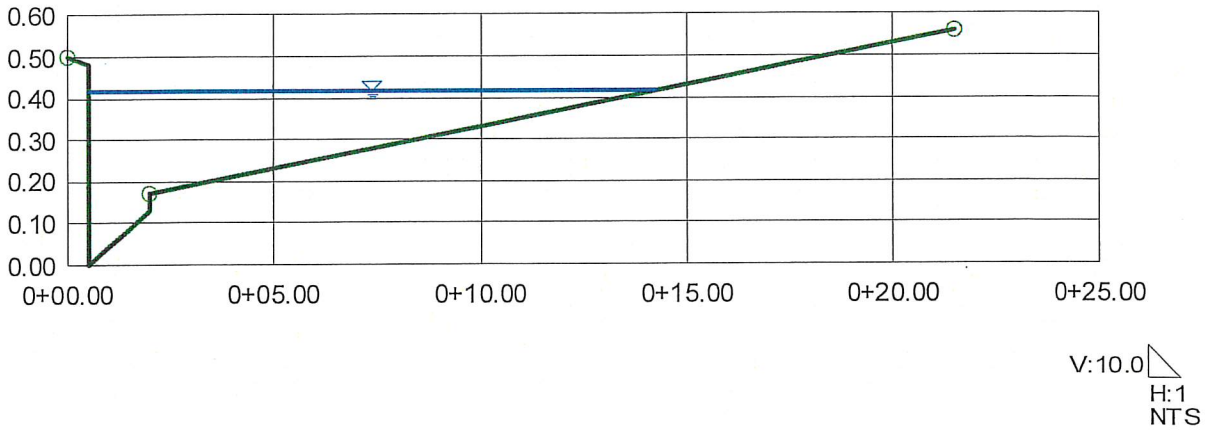
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+21.50	0.56

Notes: Q = 2.05b + STR1 - Half Street Capacity

Section - 6 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 6 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.014	
Channel Slope	2.30	%
Water Surface Elevation	0.42	ft
Elevation Range	0.00 to 0.56	
Discharge	9.00	cfs



Section - 6 (Half Street Capacity)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 6 (Half Street Capacity)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	2.30	%
Discharge	22.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	0.56	ft
Elevation Range	0.00 to 0.60	
Flow Area	4.6	ft²
Wetted Perimeter	24.75	ft
Top Width	24.22	ft
Actual Depth	0.56	ft
Critical Elevation	0.66	ft
Critical Slope	0.55	%
Velocity	4.78	ft/s
Velocity Head	0.36	ft
Specific Energy	0.91	ft
Froude Number	1.93	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
-0+05.00	0+02.00	0.013
0+02.00	0+21.50	0.016

Natural Channel Points

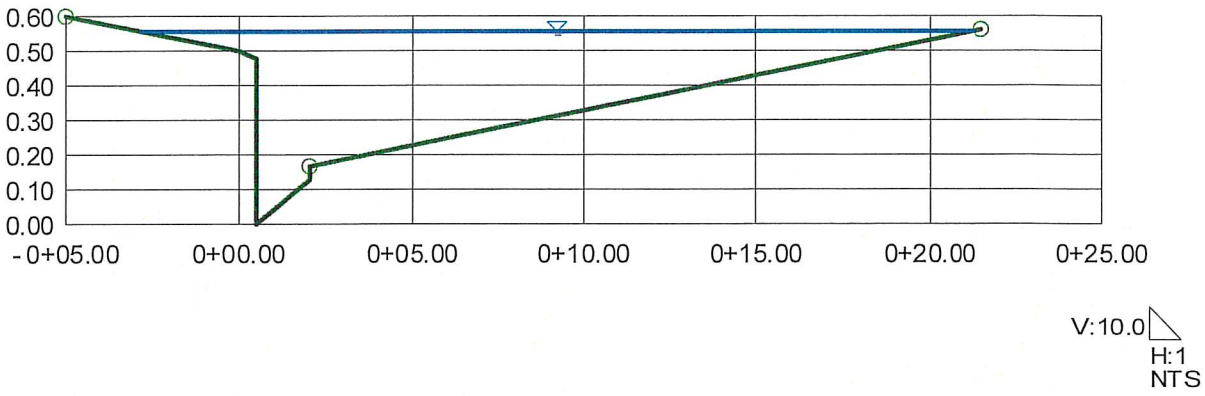
Station (ft)	Elevation (ft)
-0+05.00	0.60
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+21.50	0.56

Notes: Q = Capacity

Section - 6 (Half Street Capacity)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 6 (Half Street Capacity)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Channel Slope	2.30	%
Water Surface Elevation	0.56	ft
Elevation Range	0.00 to 0.60	
Discharge	22.00	cfs



Section - GC1 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - GC1 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	2.73	%
Discharge	14.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.014	
Water Surface Elevation	0.46	ft
Elevation Range	0.00 to 1.08	
Flow Area	2.7	ft²
Wetted Perimeter	16.58	ft
Top Width	16.07	ft
Actual Depth	0.46	ft
Critical Elevation	0.59	ft
Critical Slope	0.50	%
Velocity	5.15	ft/s
Velocity Head	0.41	ft
Specific Energy	0.87	ft
Froude Number	2.21	
Flow Type	Supercritical	

Roughness Segments

Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+27.00	0.016
0+27.00	0+27.70	0.013

Natural Channel Points

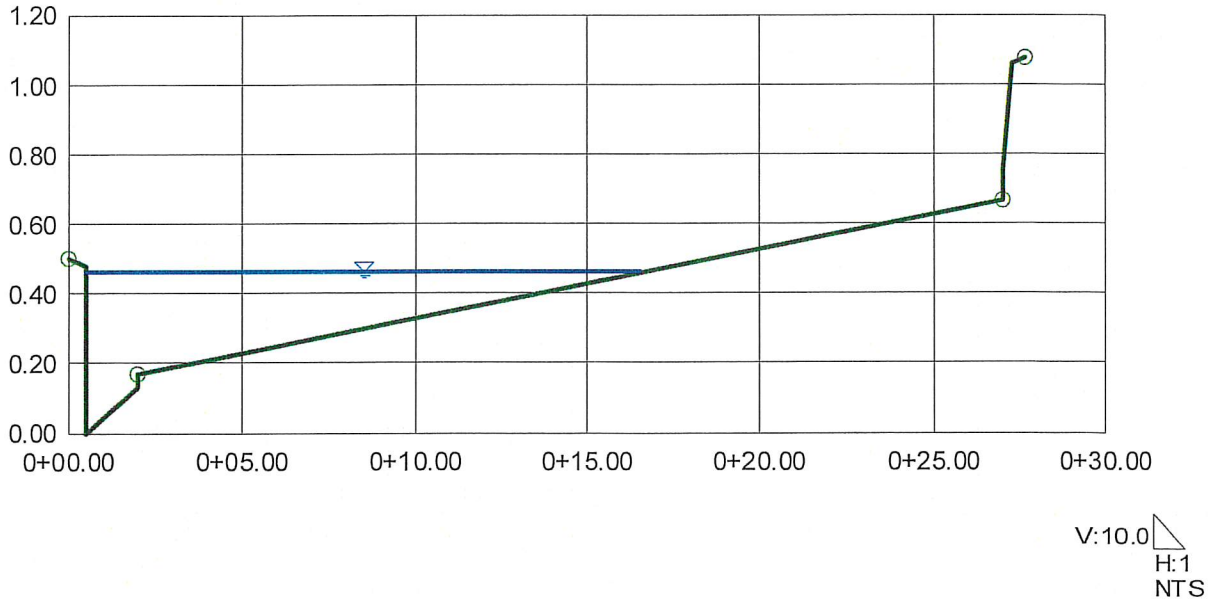
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+27.00	0.67
0+27.00	0.75
0+27.30	1.06
0+27.70	1.08

Notes: Q = STR2 + STR3

Section - GC1 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - GC1 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data	
Mannings Coefficient	0.014
Channel Slope	2.73 %
Water Surface Elevation	0.46 ft
Elevation Range	0.00 to 1.08
Discharge	14.00 cfs



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Section - GC2 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - GC2 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	1.48	%
Discharge	16.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	0.53	ft
Elevation Range	0.00 to 1.08	
Flow Area	4.0	ft²
Wetted Perimeter	20.59	ft
Top Width	20.03	ft
Actual Depth	0.53	ft
Critical Elevation	0.61	ft
Critical Slope	0.54	%
Velocity	4.03	ft/s
Velocity Head	0.25	ft
Specific Energy	0.78	ft
Froude Number	1.60	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.30515872e-1 ft.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+27.00	0.016
0+27.00	0+27.70	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+27.00	0.67
0+27.00	0.75
0+27.30	1.06
0+27.70	1.08

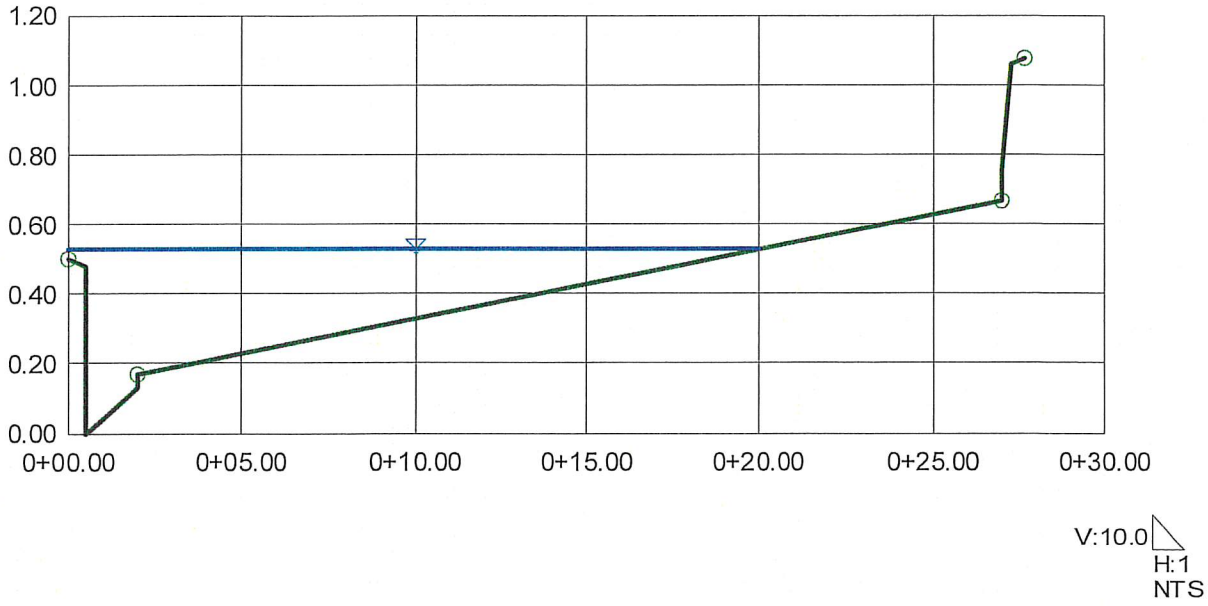
Section - GC2 (100-Yr)
Worksheet for Irregular Channel

Notes: Q = STR2 + STR3 + 1/3 (STR4)

Section - GC2 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - GC2 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Channel Slope	1.48	%
Water Surface Elevation	0.53	ft
Elevation Range	0.00 to 1.08	
Discharge	16.00	cfs



Section - GC3 (100-Yr)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - GC3 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	1.48	%
Discharge	15.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.015	
Water Surface Elevation	0.52	ft
Elevation Range	0.00 to 1.08	
Flow Area	3.8	ft²
Wetted Perimeter	20.09	ft
Top Width	19.54	ft
Actual Depth	0.52	ft
Critical Elevation	0.60	ft
Critical Slope	0.55	%
Velocity	3.97	ft/s
Velocity Head	0.25	ft
Specific Energy	0.77	ft
Froude Number	1.59	
Flow Type	Supercritical	

Calculation Messages:
Water elevation exceeds lowest end station by 0.20839736e-1 ft.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+27.00	0.016
0+27.00	0+27.70	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+27.00	0.67
0+27.00	0.75
0+27.30	1.06
0+27.70	1.08

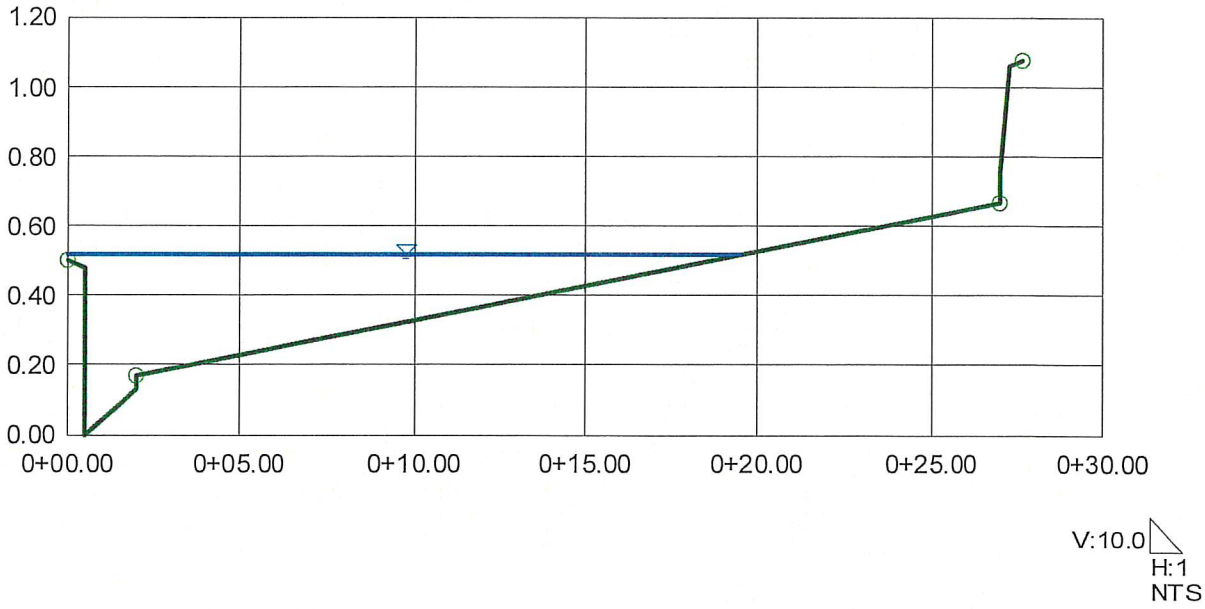
Section - GC3 (100-Yr)
Worksheet for Irregular Channel

Notes: Q = Faclility P5 Bypass + 2/3 (STR4)

Section - GC3 (100-Yr)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - GC3 (100-Yr)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.015	
Channel Slope	1.48	%
Water Surface Elevation	0.52	ft
Elevation Range	0.00 to 1.08	
Discharge	15.00	cfs



Section - 10YR (Full Street)
Worksheet for Irregular Channel

Project Description	
Worksheet	Section - 10YR (Full Street)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		
Channel Slope	0.58	%
Discharge	15.00	cfs

Options	
Current Roughness Method	Improved Lotter's Method
Open Channel Weighting Method	Improved Lotter's Method
Closed Channel Weighting Method	Horton's Method

Results		
Mannings Coefficient	0.014	
Water Surface Elevation	0.48	ft
Elevation Range	0.00 to 0.99	
Flow Area	6.2	ft²
Wetted Perimeter	35.60	ft
Top Width	34.54	ft
Actual Depth	0.48	ft
Critical Elevation	0.49	ft
Critical Slope	0.56	%
Velocity	2.43	ft/s
Velocity Head	0.09	ft
Specific Energy	0.58	ft
Froude Number	1.01	
Flow Type	Supercritical	

Calculation Messages:
Flow is divided.

Roughness Segments		
Start Station	End Station	Mannings Coefficient
0+00.00	0+02.00	0.013
0+02.00	0+39.00	0.016
0+39.00	0+52.00	0.013
0+52.00	0+89.00	0.016
0+89.00	0+91.00	0.013

Natural Channel Points	
Station (ft)	Elevation (ft)
0+00.00	0.50
0+00.50	0.48
0+00.50	0.00
0+02.00	0.13
0+02.00	0.17
0+39.00	0.91
0+39.00	0.99

Section - 10YR (Full Street)
Worksheet for Irregular Channel

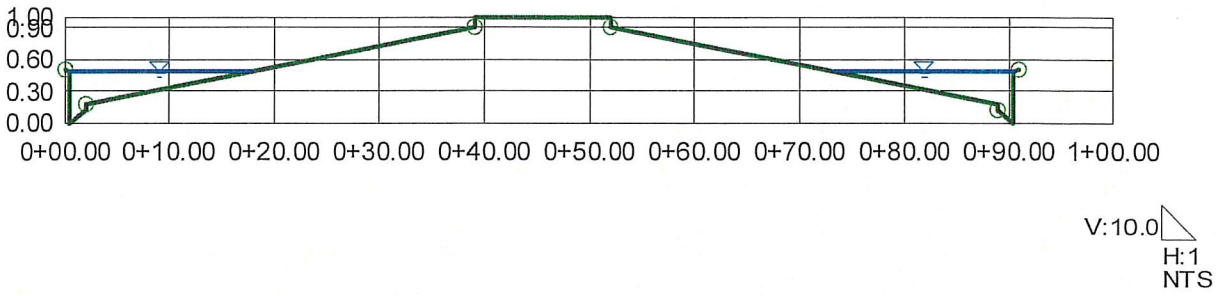
Natural Channel Points	
Station (ft)	Elevation (ft)
0+52.00	0.99
0+52.00	0.91
0+89.00	0.17
0+89.00	0.13
0+90.50	0.00
0+90.50	0.48
0+91.00	0.50

Notes: Q = SVR1 + SVR2

Section - 10YR (Full Street)
Cross Section for Irregular Channel

Project Description	
Worksheet	Section - 10YR (Full Street)
Flow Element	Irregular Channel
Method	Manning's Formula
Solve For	Channel Depth

Section Data		
Mannings Coefficient	0.014	
Channel Slope	0.58	%
Water Surface Elevation	0.48	ft
Elevation Range	0.00 to 0.99	
Discharge	15.00	cfs



Drop Inlets

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A
Date:	10/26/2017
By:	ETM

	Notes:		
	Facility ID:	Facility P5	
	Drainage Condition:	Proposed	
	Source of Flow:	Q100 = Basin STR2 + STR3 + 1/3 (STR4)	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	5.-ft	
	Number of Grates	1	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	16.0
	Longitudinal Slope (ft/ft)	S_o	0.0148
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	4.03
	Street Flow Depth (ft)	D	0.53
	Street Cross Slope (ft/ft)	S_x	0.02
	Grate Width (ft)	W	1.5
	Grate Depression (in)	D_g	2.0
	Length of Grate (ft)	L_g	2.5
	Length of Curb Opening (ft)	L_c	5.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	1.3
	Effective Curb Opening Length (ft)	L_{ce}	2.50
	Output (Grate):	**Equation:**	**Output (Grate):**
[1]	R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2]	V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	4.61
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.21
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	3.29
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	12.7
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	18.17
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.02
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	3.5
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.043
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	12.485
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	38.74
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	1.4
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**5**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**11**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A
Date:	10/26/2017
By:	ETM

	Notes:		
	Facility ID:	Facility P10	
	Drainage Condition:	Proposed	
	Source of Flow:	Q100 = Facility P5 Bypass + 2/3 (STR4)	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	15.-ft	
	Number of Grates	5	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	15.0
	Longitudinal Slope (ft/ft)	S_o	0.0148
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	3.97
	Street Flow Depth (ft)	D	0.52
	Street Cross Slope (ft/ft)	S_x	0.02
	Grate Width (ft)	W	1.5
	Grate Depression (in)	D_g	2.0
	Length of Grate (ft)	L_g	12.5
	Length of Curb Opening (ft)	L_c	15.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	6.3
	Effective Curb Opening Length (ft)	L_{ce}	7.50
	Output (Grate):	**Equation:**	**Output (Grate):**
[1]	R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2]	V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	16.06
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.21
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	3.16
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	11.8
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	17.67
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.43
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	8.3
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.043
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	6.746
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	29.67
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	2.8
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**11**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**4**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A
Date:	10/26/2017
By:	ETM

	Notes:		
	Facility ID:	Facility P18	
	Drainage Condition:	Proposed	
	Source of Flow:	Q100 = 1/2 (SVR1)	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	5.-ft	
	Number of Grates	1	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	2.5
	Longitudinal Slope (ft/ft)	S_o	0.0058
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	1.96
	Street Flow Depth (ft)	D	0.35
	Street Cross Slope (ft/ft)	S_x	0.02
	Grate Width (ft)	W	1.5
	Grate Depression (in)	D_g	2.0
	Length of Grate (ft)	L_g	2.5
	Length of Curb Opening (ft)	L_c	5.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	1.3
	Effective Curb Opening Length (ft)	L_{ce}	2.50
	Output (Grate):	**Equation:**	**Output (Grate):**
[1]	R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2]	V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	4.61
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.38
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	0.95
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	1.6
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	9.17
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.06
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	1.0
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.062
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	1.455
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	9.48
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	0.6
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**1.7**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**1**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A	
Date:	10/26/2017	
By:	ETM	
Notes:		
Facility ID:	Facility P20	
Drainage Condition:	Proposed	
Source of Flow:	Q100 = 1/2 (SVR1) + Facility P18 Bypass	
Inlet Type:	Type CM2 (Continuous Grade)	
Inlet Length:	5.-ft	
Number of Grates	1	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	3.5
Longitudinal Slope (ft/ft)	S_o	0.0058
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	2.14
Street Flow Depth (ft)	D	0.38
Street Cross Slope (ft/ft)	S_x	0.02
Grate Width (ft)	W	1.5
Grate Depression (in)	D_g	2.0
Length of Grate (ft)	L_g	2.5
Length of Curb Opening (ft)	L_c	5.00
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	1.3
Effective Curb Opening Length (ft)	L_{ce}	2.50
Output (Grate):	**Equation:**	**Output (Grate):**
[1] R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2] V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	4.61
	p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.33
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	1.16
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	2.3
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	10.67
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.05
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	1.3
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.057
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	2.210
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	11.91
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	0.8
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):	**Equation:**	**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**2**
Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**1.4**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A	
Date:	10/26/2017	
By:	ETM	
Notes:		
Facility ID:	Facility P23	
Drainage Condition:	Proposed	
Source of Flow:	Q100 = 1/2 (SVR2) + Facility P20 Bypass	
Inlet Type:	Type CM2 (Continuous Grade)	
Inlet Length:	5.-ft	
Number of Grates	1	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	6.5
Longitudinal Slope (ft/ft)	S_o	0.0058
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	2.38
Street Flow Depth (ft)	D	0.46
Street Cross Slope (ft/ft)	S_x	0.02
Grate Width (ft)	W	1.5
Grate Depression (in)	D_g	2.0
Length of Grate (ft)	L_g	2.5
Length of Curb Opening (ft)	L_c	5.00
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	1.3
Effective Curb Opening Length (ft)	L_{ce}	2.50
Output (Grate):	**Equation:**	**Output (Grate):**
[1] R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2] V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	4.61
	p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.25
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	1.63
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	4.9
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	14.67
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.04
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	1.8
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.048
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	4.655
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	18.09
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	1.1
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):	**Equation:**	**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**3**
Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**3.6**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A
Date:	10/26/2017
By:	ETM

	Notes:		
	Facility ID:	Facility P29	
	Drainage Condition:	Proposed	
	Source of Flow:	Q100 = 1/2 (SVR2) + Facility P23 Bypass	
	Inlet Type:	Type CM2 (Continuous Grade)	
	Inlet Length:	20.-ft	
	Number of Grates	7	
	Input:	**Variable:**	**Input:**
	Street Flow (cfs)	Q	8.5
	Longitudinal Slope (ft/ft)	S_o	0.0058
	Manning's Coefficient	n	0.016
	Street Flow Velocity (fps)	V	2.43
	Street Flow Depth (ft)	D	0.51
	Street Cross Slope (ft/ft)	S_x	0.02
	Grate Width (ft)	W	1.5
	Grate Depression (in)	D_g	2.0
	Length of Grate (ft)	L_g	17.5
	Length of Curb Opening (ft)	L_c	20.00
	Clogging Factor - Grate (%)	CF_g	50%
	Clogging Factor - Curb (%)	CF_c	50%
	Effective Grate Length (ft)	L_{ge}	8.8
	Effective Curb Opening Length (ft)	L_{ce}	10.00
	Output (Grate):	**Equation:**	**Output (Grate):**
[1]	R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2]	V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	42.93
		p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1]	E - Grate Flow Ratio	Frontal Flow/Side Flow	0.22
[2]	Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	1.84
[1]	Q_s - Side Flow (cfs)	Q_s = Q-Qw	6.7
	T - Side Flow Spread (ft)	$(D-D_g)/S_x$	17.17
[1]	R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.80
[1]	Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	7.2
	Output (Curb):	**Equation:**	**Output (Curb):**
[1]	S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.044
	Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	1.343
	S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1]	L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	11.27
[1]	Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	1.3
		or Q_{sx} if L_t is less than L_{ce}	
	Output (Combination):	**Equation:**	**Output (Combination):**
	Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**8.5**
	Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**0.0**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A	
Date:	11/1/2017	
By:	ETM	
Notes:		
Facility ID:	Facility P34	
Drainage Condition:	Proposed	
Source of Flow:	Q100 = 2.05b + STR1 - Half Street Capacity	
Inlet Type:	Type CM2 (Continuous Grade)	
Inlet Length:	15.-ft	
Number of Grates	5	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	9.0
Longitudinal Slope (ft/ft)	S_o	0.0230
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	4.44
Street Flow Depth (ft)	D	0.42
Street Cross Slope (ft/ft)	S_x	0.02
Grate Width (ft)	W	1.5
Grate Depression (in)	D_g	2.0
Length of Grate (ft)	L_g	12.5
Length of Curb Opening (ft)	L_c	15.00
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	6.3
Effective Curb Opening Length (ft)	L_{ce}	7.50
Output (Grate):	**Equation:**	**Output (Grate):**
[1] R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2] V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	16.06
	p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.29
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	2.57
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	6.4
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	12.67
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.38
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	5.0
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.052
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	3.976
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	24.41
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	1.9
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):	**Equation:**	**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**7**
Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**2**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Curb Inlet Sizing Computation

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Project Name & Number:	SKYE CANYON INFRASTRUCTURE PHASE 3A	
Date:	10/26/2017	
By:	ETM	
Notes:		
Facility ID:	Facility P36	
Drainage Condition:	Proposed	
Source of Flow:	Q100 = Half Street Capacity	
Inlet Type:	Type CM2 (Continuous Grade)	
Inlet Length:	20.-ft	
Number of Grates	7	
Input:	**Variable:**	**Input:**
Street Flow (cfs)	Q	22.0
Longitudinal Slope (ft/ft)	S_o	0.0230
Manning's Coefficient	n	0.016
Street Flow Velocity (fps)	V	4.78
Street Flow Depth (ft)	D	0.56
Street Cross Slope (ft/ft)	S_x	0.02
Grate Width (ft)	W	1.5
Grate Depression (in)	D_g	2.0
Length of Grate (ft)	L_g	17.5
Length of Curb Opening (ft)	L_c	20.00
Clogging Factor - Grate (%)	CF_g	50%
Clogging Factor - Curb (%)	CF_c	50%
Effective Grate Length (ft)	L_{ge}	8.8
Effective Curb Opening Length (ft)	L_{ce}	10.00
Output (Grate):	**Equation:**	**Output (Grate):**
[1] R_f - Frontal Flow Factor	1-0.09*(V-V_x) if V>V_x; else Frontal Flow Factor=1	1.00
[2] V_o - Splash Over Velocity (fps)	V_x=p+q*Lg-r*L_{ge}^2+sy*L_{ge}^3 ; where	42.93
	p=0.30,q=4.85,r=1.31,sy=0.15 (for Vane Grate)	
[1] E - Grate Flow Ratio	Frontal Flow/Side Flow	0.19
[2] Q_w - Frontal Flow (cfs)	$Q_w = Q[1-(1-(W/T))^{2.67}]$	4.20
[1] Q_s - Side Flow (cfs)	Q_s = Q-Qw	17.8
T - Side Flow Spread (ft)	$(D-D_g)/S_x$	19.67
[1] R_s - Side Flow Factor	$1/(1+(0.15*V^{1.8})/(S_x*L_{ge}^{2.3}))$	0.54
[1] Q_{gi} - Intercepted Flow (cfs)	$(R_f*E+R_s*(1-E))*Q$	13.8
Output (Curb):	**Equation:**	**Output (Curb):**
[1] S_e - Equivalent Cross Slope (ft/ft)	S_x+S_g*E	0.041
Q_{sx} - Remaining Flow After Grate Interception (cfs)	$Q-Q_{gi}$	8.199
S_g - Gutter Cross Slope (ft/ft)	D_g/W	0.111
[1] L_t - Effective Interception Length (ft)	$0.60*Q_{sx}^{0.42}*S_o^{0.30}*(1/n*S_e)^{0.6}$	37.93
[1] Q_{ci} - Intercepted Flow (cfs)	$(1-(1-L_{ce}/L_t)^{1.8})*Q_{sx}$	3.5
	or Q_{sx} if L_t is less than L_{ce}	
Output (Combination):	**Equation:**	**Output (Combination):**
Total Intercepted Flow (cfs)	Intercepted (Grate) + Intercepted (Curb)	**17**
Bypass Flow (cfs)	Street Flow - Total Intercepted Flow	**5**

[1] Formula referenced from the CCRFCD Manual

[2] Formula referenced from FHWA Urban Drainage Design Manual (HEC-22)

Ditches

Worksheet for OFF1-A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.10	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.00	ft
Discharge	27.00	ft^3/s

Results

Normal Depth	0.82	ft
Flow Area	6.10	ft^2
Wetted Perimeter	10.17	ft
Hydraulic Radius	0.60	ft
Top Width	9.91	ft
Critical Depth	0.82	ft
Critical Slope	0.01110	ft/ft
Velocity	4.43	ft/s
Velocity Head	0.30	ft
Specific Energy	1.12	ft
Froude Number	1.00	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.82	ft
Critical Depth	0.82	ft
Channel Slope	1.10	%

Worksheet for OFF1-A

GVF Output Data

Critical Slope	0.01110 ft/ft

Cross Section for OFF1-A

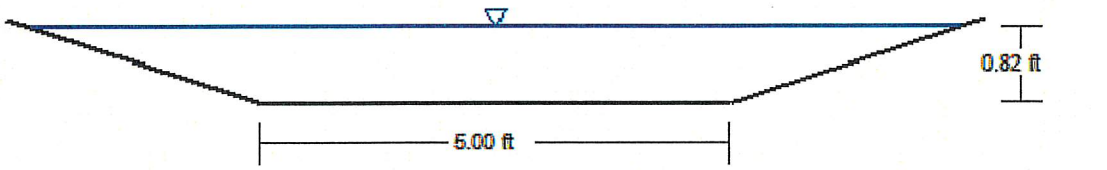
Project Description

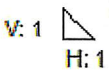
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.10	%
Normal Depth	0.82	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.00	ft
Discharge	27.00	ft³/s

Cross Section Image





Worksheet for OFF2

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.90	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.00	ft
Discharge	45.00	ft^3/s

Results

Normal Depth	1.13	ft
Flow Area	9.43	ft^2
Wetted Perimeter	12.12	ft
Hydraulic Radius	0.78	ft
Top Width	11.76	ft
Critical Depth	1.09	ft
Critical Slope	0.01030	ft/ft
Velocity	4.77	ft/s
Velocity Head	0.35	ft
Specific Energy	1.48	ft
Froude Number	0.94	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.13	ft
Critical Depth	1.09	ft
Channel Slope	0.90	%

Worksheet for OFF2

GVF Output Data

Critical Slope	0.01030	ft/ft

Cross Section for OFF2

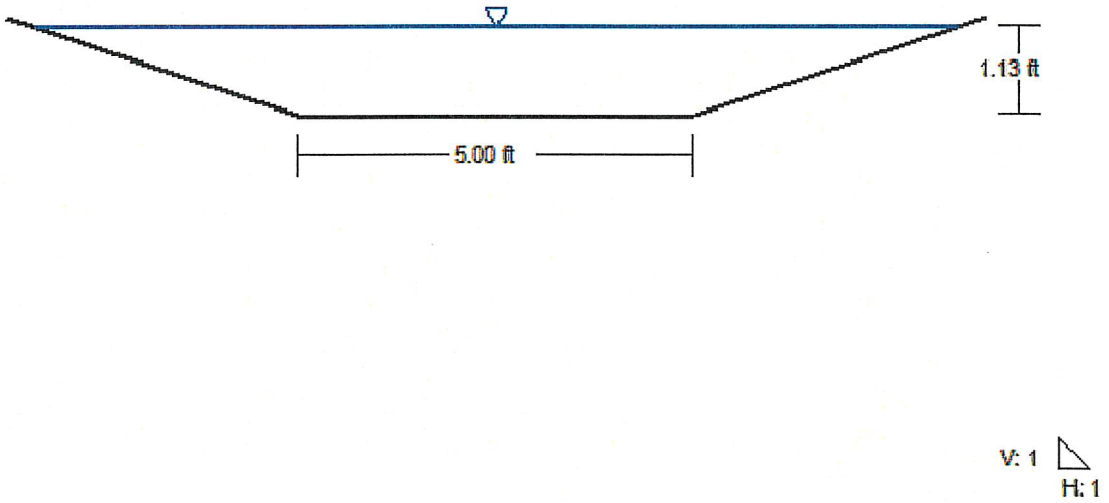
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.90	%
Normal Depth	1.13	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	5.00	ft
Discharge	45.00	ft³/s

Cross Section Image



Worksheet for OFF3

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.70	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	10.00	ft^3/s

Results

Normal Depth	0.88	ft
Flow Area	2.31	ft^2
Wetted Perimeter	5.55	ft
Hydraulic Radius	0.42	ft
Top Width	5.27	ft
Critical Depth	0.93	ft
Critical Slope	0.01262	ft/ft
Velocity	4.32	ft/s
Velocity Head	0.29	ft
Specific Energy	1.17	ft
Froude Number	1.15	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.88	ft
Critical Depth	0.93	ft
Channel Slope	1.70	%
Critical Slope	0.01262	ft/ft

Cross Section for OFF3

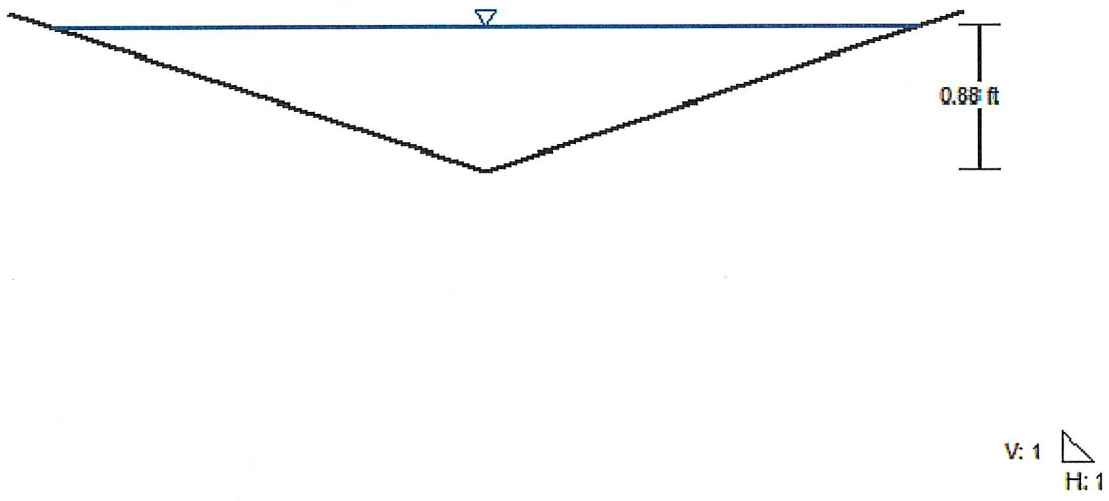
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.70	%
Normal Depth	0.88	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	10.00	ft³/s

Cross Section Image



Worksheet for OFF4

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	5.00	ft^3/s

Results

Normal Depth	0.85	ft
Flow Area	2.18	ft^2
Wetted Perimeter	5.39	ft
Hydraulic Radius	0.40	ft
Top Width	5.11	ft
Critical Depth	0.70	ft
Critical Slope	0.01384	ft/ft
Velocity	2.30	ft/s
Velocity Head	0.08	ft
Specific Energy	0.93	ft
Froude Number	0.62	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.85	ft
Critical Depth	0.70	ft
Channel Slope	0.50	%
Critical Slope	0.01384	ft/ft

Cross Section for OFF4

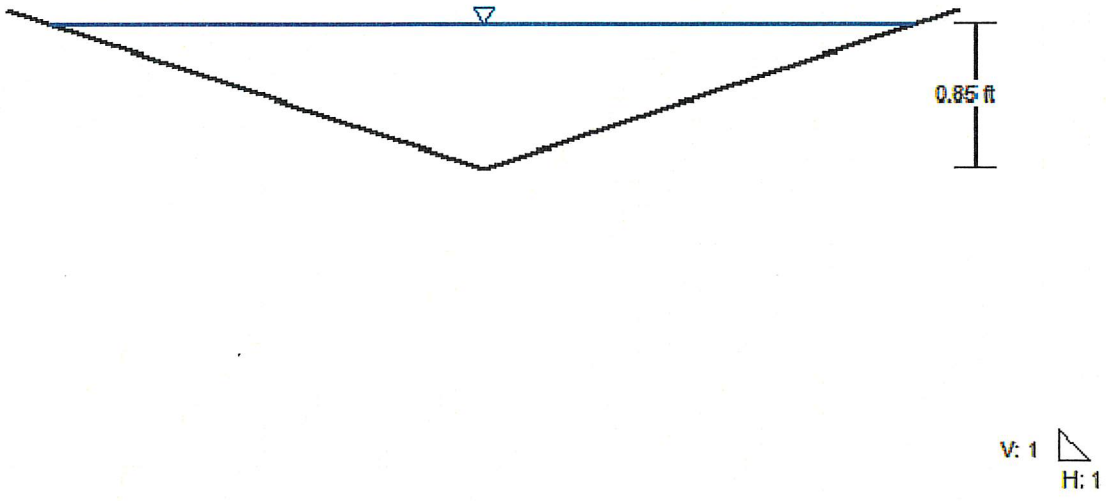
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.50	%
Normal Depth	0.85	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	5.00	ft^3/s

Cross Section Image



Worksheet for 205a-A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	5.00	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	2.00	ft^3/s

Results

Normal Depth	0.39	ft
Flow Area	0.46	ft^2
Wetted Perimeter	2.48	ft
Hydraulic Radius	0.19	ft
Top Width	2.35	ft
Critical Depth	0.49	ft
Critical Slope	0.01564	ft/ft
Velocity	4.33	ft/s
Velocity Head	0.29	ft
Specific Energy	0.68	ft
Froude Number	1.72	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.39	ft
Critical Depth	0.49	ft
Channel Slope	5.00	%
Critical Slope	0.01564	ft/ft

Cross Section for 205a-A

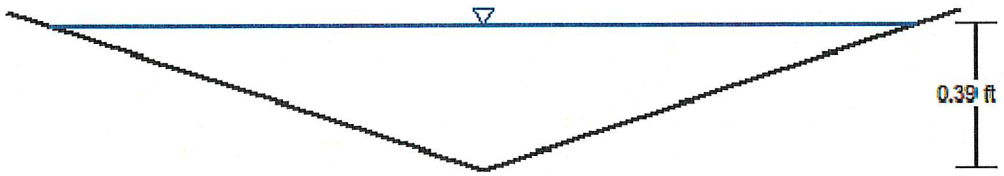
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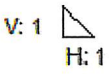
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	5.00	%
Normal Depth	0.39	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	2.00	ft^3/s

Cross Section Image





Worksheet for 205a-B

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.70	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	7.00	ft^3/s

Results

Normal Depth	0.70	ft
Flow Area	1.49	ft^2
Wetted Perimeter	4.45	ft
Hydraulic Radius	0.33	ft
Top Width	4.23	ft
Critical Depth	0.81	ft
Critical Slope	0.01323	ft/ft
Velocity	4.71	ft/s
Velocity Head	0.34	ft
Specific Energy	1.05	ft
Froude Number	1.40	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.70	ft
Critical Depth	0.81	ft
Channel Slope	2.70	%
Critical Slope	0.01323	ft/ft

Cross Section for 205a-B

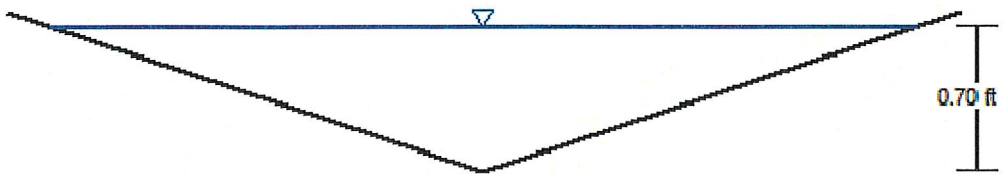
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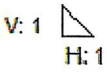
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.70	%
Normal Depth	0.70	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	7.00	ft³/s

Cross Section Image





Worksheet for 205a-C

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.00	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	33.00	ft^3/s

Results

Normal Depth	1.52	ft
Flow Area	6.91	ft^2
Wetted Perimeter	9.60	ft
Hydraulic Radius	0.72	ft
Top Width	9.11	ft
Critical Depth	1.50	ft
Critical Slope	0.01076	ft/ft
Velocity	4.77	ft/s
Velocity Head	0.35	ft
Specific Energy	1.87	ft
Froude Number	0.97	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.52	ft
Critical Depth	1.50	ft
Channel Slope	1.00	%
Critical Slope	0.01076	ft/ft

Cross Section for 205a-C

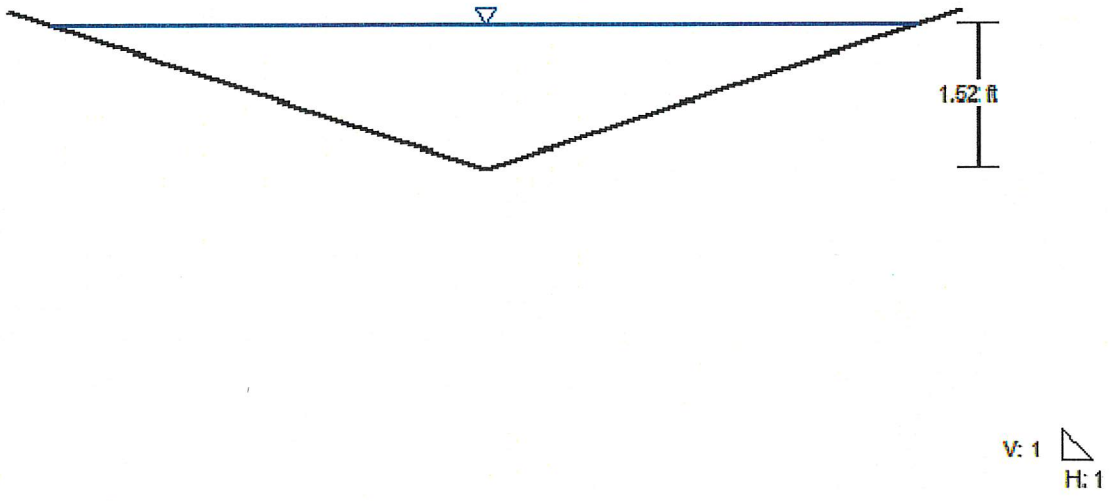
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.00	%
Normal Depth	1.52	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	33.00	ft³/s

Cross Section Image



Worksheet for 203-A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	9.00	ft^3/s

Results

Normal Depth	0.86	ft
Flow Area	2.24	ft^2
Wetted Perimeter	5.47	ft
Hydraulic Radius	0.41	ft
Top Width	5.19	ft
Critical Depth	0.89	ft
Critical Slope	0.01280	ft/ft
Velocity	4.02	ft/s
Velocity Head	0.25	ft
Specific Energy	1.11	ft
Froude Number	1.08	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.86	ft
Critical Depth	0.89	ft
Channel Slope	1.50	%
Critical Slope	0.01280	ft/ft

Cross Section for 203-A

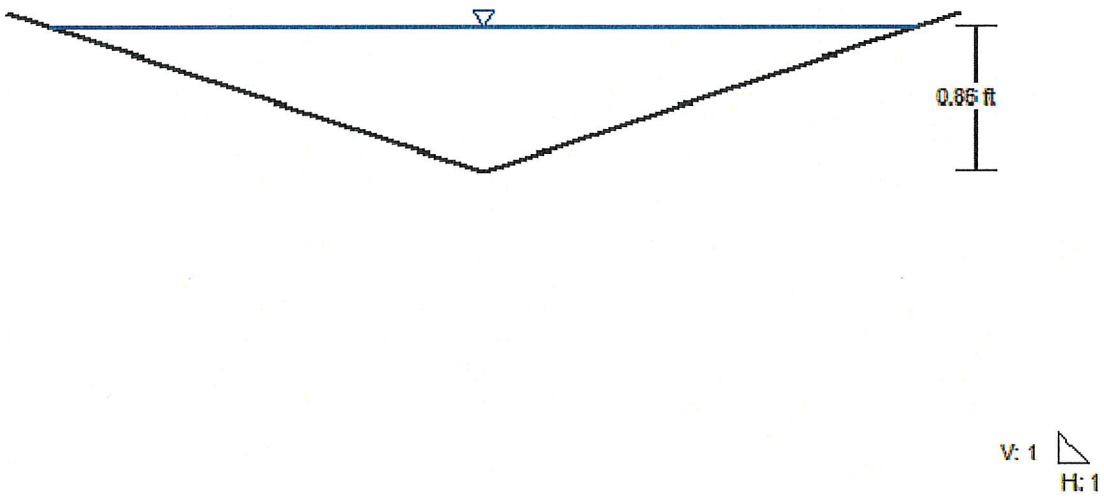
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.50	%
Normal Depth	0.86	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	9.00	ft³/s

Cross Section Image



Worksheet for 203-B

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	43.00	ft^3/s

Results

Normal Depth	1.91	ft
Flow Area	10.93	ft^2
Wetted Perimeter	12.07	ft
Hydraulic Radius	0.91	ft
Top Width	11.45	ft
Critical Depth	1.66	ft
Critical Slope	0.01039	ft/ft
Velocity	3.93	ft/s
Velocity Head	0.24	ft
Specific Energy	2.15	ft
Froude Number	0.71	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.91	ft
Critical Depth	1.66	ft
Channel Slope	0.50	%
Critical Slope	0.01039	ft/ft

Cross Section for 203-B

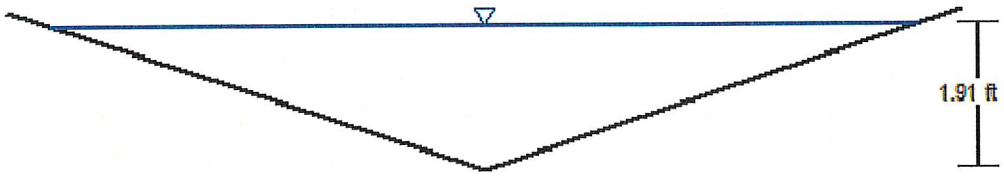
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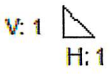
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.50	%
Normal Depth	1.91	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	43.00	ft³/s

Cross Section Image





Worksheet for 203-C

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	12.00	ft^3/s

Results

Normal Depth	0.96	ft
Flow Area	2.78	ft^2
Wetted Perimeter	6.09	ft
Hydraulic Radius	0.46	ft
Top Width	5.78	ft
Critical Depth	1.00	ft
Critical Slope	0.01231	ft/ft
Velocity	4.32	ft/s
Velocity Head	0.29	ft
Specific Energy	1.25	ft
Froude Number	1.10	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.96	ft
Critical Depth	1.00	ft
Channel Slope	1.50	%
Critical Slope	0.01231	ft/ft

Cross Section for 203-C

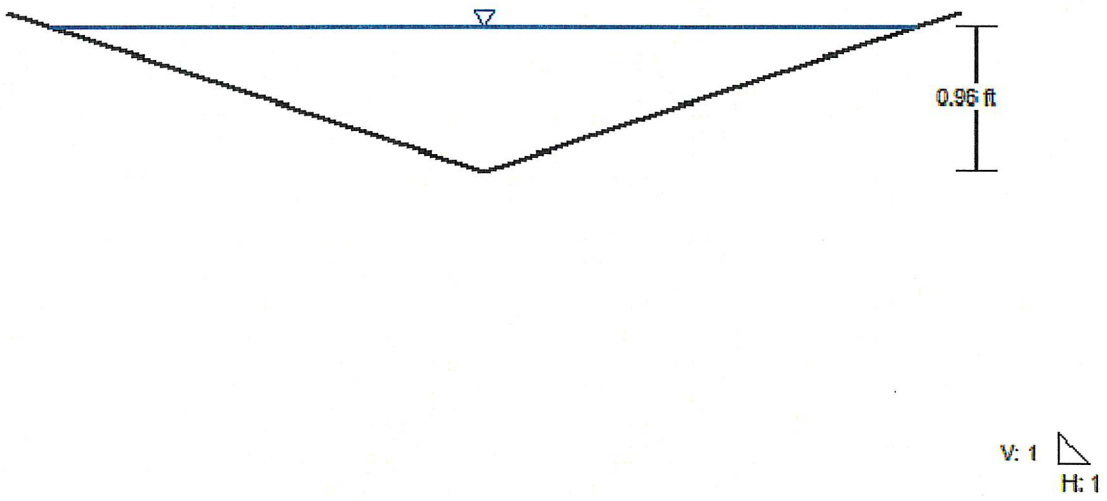
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	1.50	%
Normal Depth	0.96	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	12.00	ft^3/s

Cross Section Image



Worksheet for 202-A

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	9.00	ft^3/s

Results

Normal Depth	0.79	ft
Flow Area	1.85	ft^2
Wetted Perimeter	4.97	ft
Hydraulic Radius	0.37	ft
Top Width	4.71	ft
Critical Depth	0.89	ft
Critical Slope	0.01280	ft/ft
Velocity	4.87	ft/s
Velocity Head	0.37	ft
Specific Energy	1.15	ft
Froude Number	1.37	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.79	ft
Critical Depth	0.89	ft
Channel Slope	2.50	%
Critical Slope	0.01280	ft/ft

Cross Section for 202-A

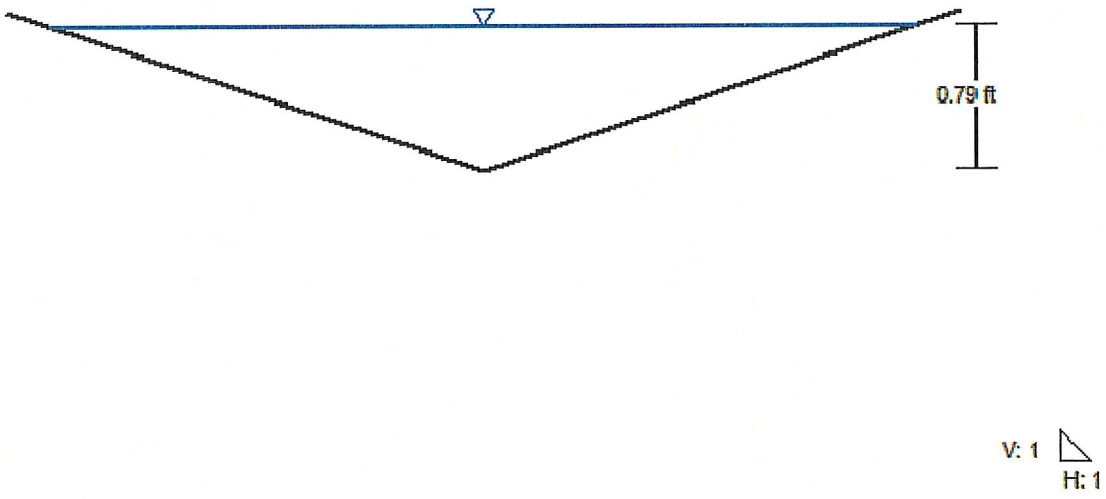
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.50	%
Normal Depth	0.79	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	9.00	ft^3/s

Cross Section Image



Worksheet for 202-B

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.00	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	12.00	ft^3/s

Results

Normal Depth	0.91	ft
Flow Area	2.50	ft^2
Wetted Perimeter	5.77	ft
Hydraulic Radius	0.43	ft
Top Width	5.47	ft
Critical Depth	1.00	ft
Critical Slope	0.01231	ft/ft
Velocity	4.81	ft/s
Velocity Head	0.36	ft
Specific Energy	1.27	ft
Froude Number	1.25	
Flow Type	Supercritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.91	ft
Critical Depth	1.00	ft
Channel Slope	2.00	%
Critical Slope	0.01231	ft/ft

Cross Section for 202-B

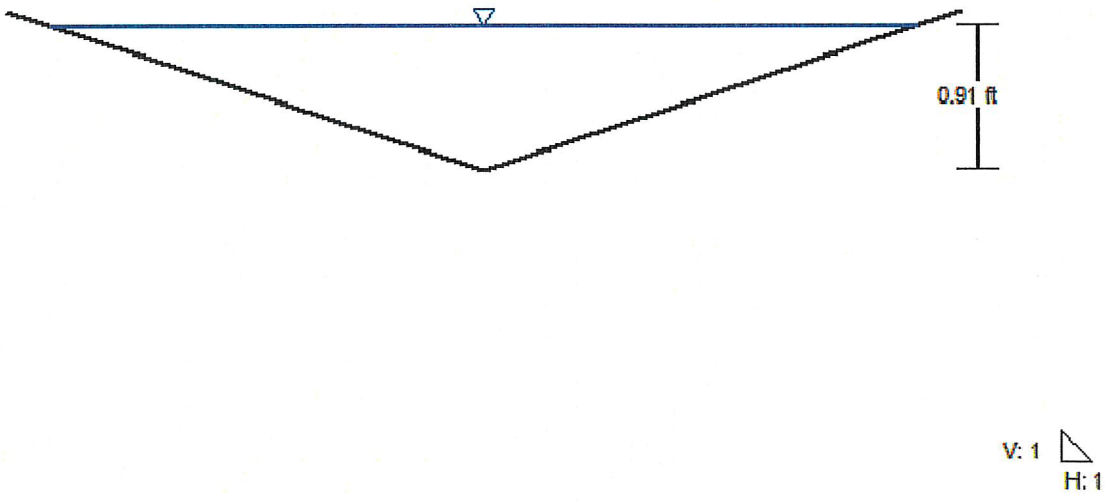
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	2.00	%
Normal Depth	0.91	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	12.00	ft³/s

Cross Section Image



Worksheet for 202-C

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	31.00	ft^3/s

Results

Normal Depth	1.69	ft
Flow Area	8.55	ft^2
Wetted Perimeter	10.68	ft
Hydraulic Radius	0.80	ft
Top Width	10.13	ft
Critical Depth	1.46	ft
Critical Slope	0.01085	ft/ft
Velocity	3.62	ft/s
Velocity Head	0.20	ft
Specific Energy	1.89	ft
Froude Number	0.70	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	1.69	ft
Critical Depth	1.46	ft
Channel Slope	0.50	%
Critical Slope	0.01085	ft/ft

Cross Section for 202-C

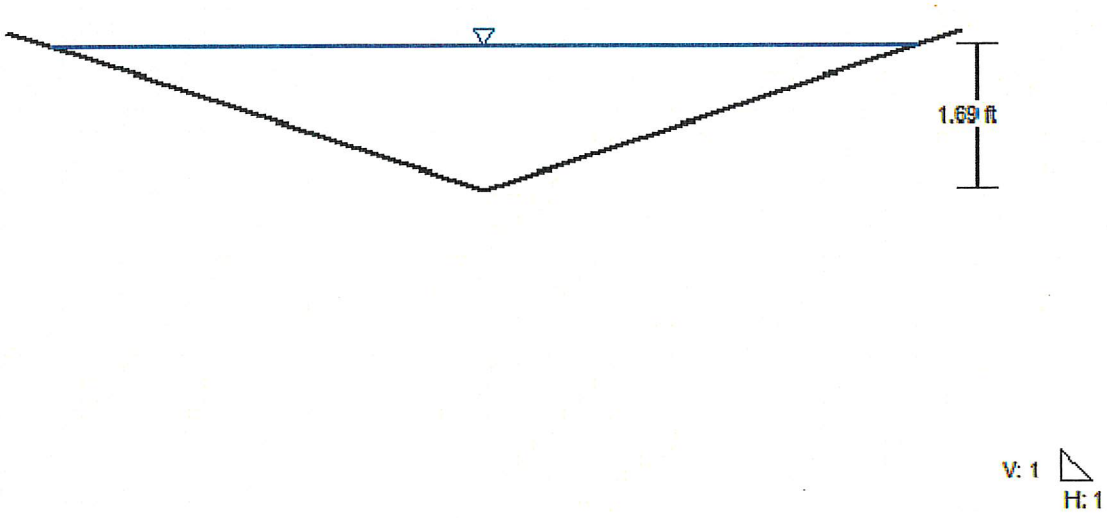
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.025	
Channel Slope	0.50	%
Normal Depth	1.69	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Discharge	31.00	ft³/s

Cross Section Image



Worksheet for MPU Interim Outlet - Riprap

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.037	
Channel Slope	0.50	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	18.00	ft
Discharge	521.00	ft^3/s

Results

Normal Depth	3.50	ft
Flow Area	99.92	ft^2
Wetted Perimeter	40.16	ft
Hydraulic Radius	2.49	ft
Top Width	39.03	ft
Critical Depth	2.55	ft
Critical Slope	0.01645	ft/ft
Velocity	5.21	ft/s
Velocity Head	0.42	ft
Specific Energy	3.93	ft
Froude Number	0.57	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	3.50	ft
Critical Depth	2.55	ft
Channel Slope	0.50	%

Worksheet for MPU Interim Outlet - Riprap

GVF Output Data

Critical Slope	0.01645	ft/ft

Cross Section for MPU Interim Outlet - Riprap

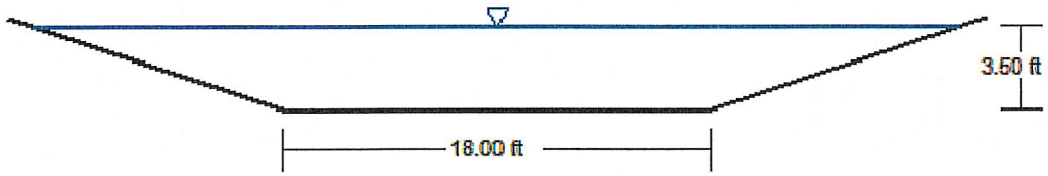
Project Description

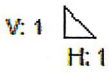
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.037	
Channel Slope	0.50	%
Normal Depth	3.50	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	18.00	ft
Discharge	521.00	ft³/s

Cross Section Image





Worksheet for MPU Interim Outlet - Earthen

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.022	
Channel Slope	0.25	%
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	45.00	ft
Discharge	521.00	ft^3/s

Results

Normal Depth	2.04	ft
Flow Area	104.24	ft^2
Wetted Perimeter	57.90	ft
Hydraulic Radius	1.80	ft
Top Width	57.24	ft
Critical Depth	1.55	ft
Critical Slope	0.00635	ft/ft
Velocity	5.00	ft/s
Velocity Head	0.39	ft
Specific Energy	2.43	ft
Froude Number	0.65	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	2.04	ft
Critical Depth	1.55	ft
Channel Slope	0.25	%

Worksheet for MPU Interim Outlet - Earthen

GVF Output Data

Critical Slope	0.00635	ft/ft

Cross Section for MPU Interim Outlet - Earthen

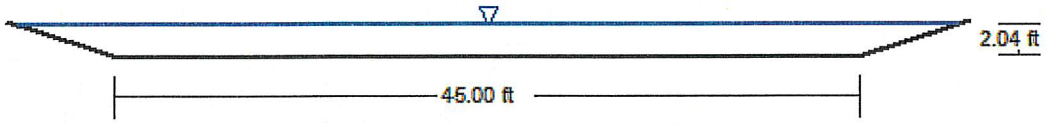
Project Description

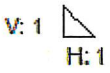
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.022	
Channel Slope	0.25	%
Normal Depth	2.04	ft
Left Side Slope	3.00	ft/ft (H:V)
Right Side Slope	3.00	ft/ft (H:V)
Bottom Width	45.00	ft
Discharge	521.00	ft³/s

Cross Section Image

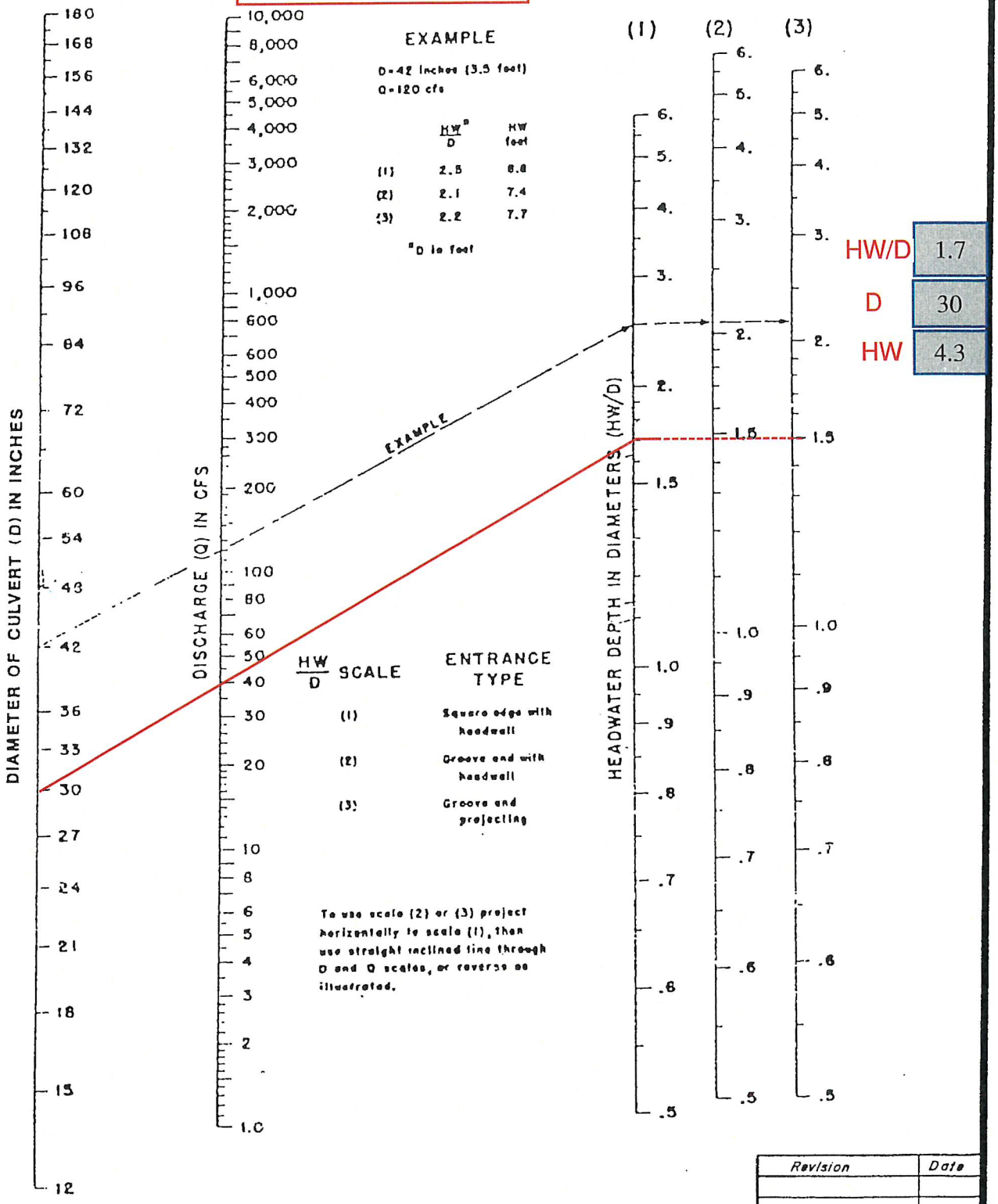




Inlet Control Nomographs

NOMOGRAPH – INLET CONTROL RCP

FACILITY P1: Q=40 CFS

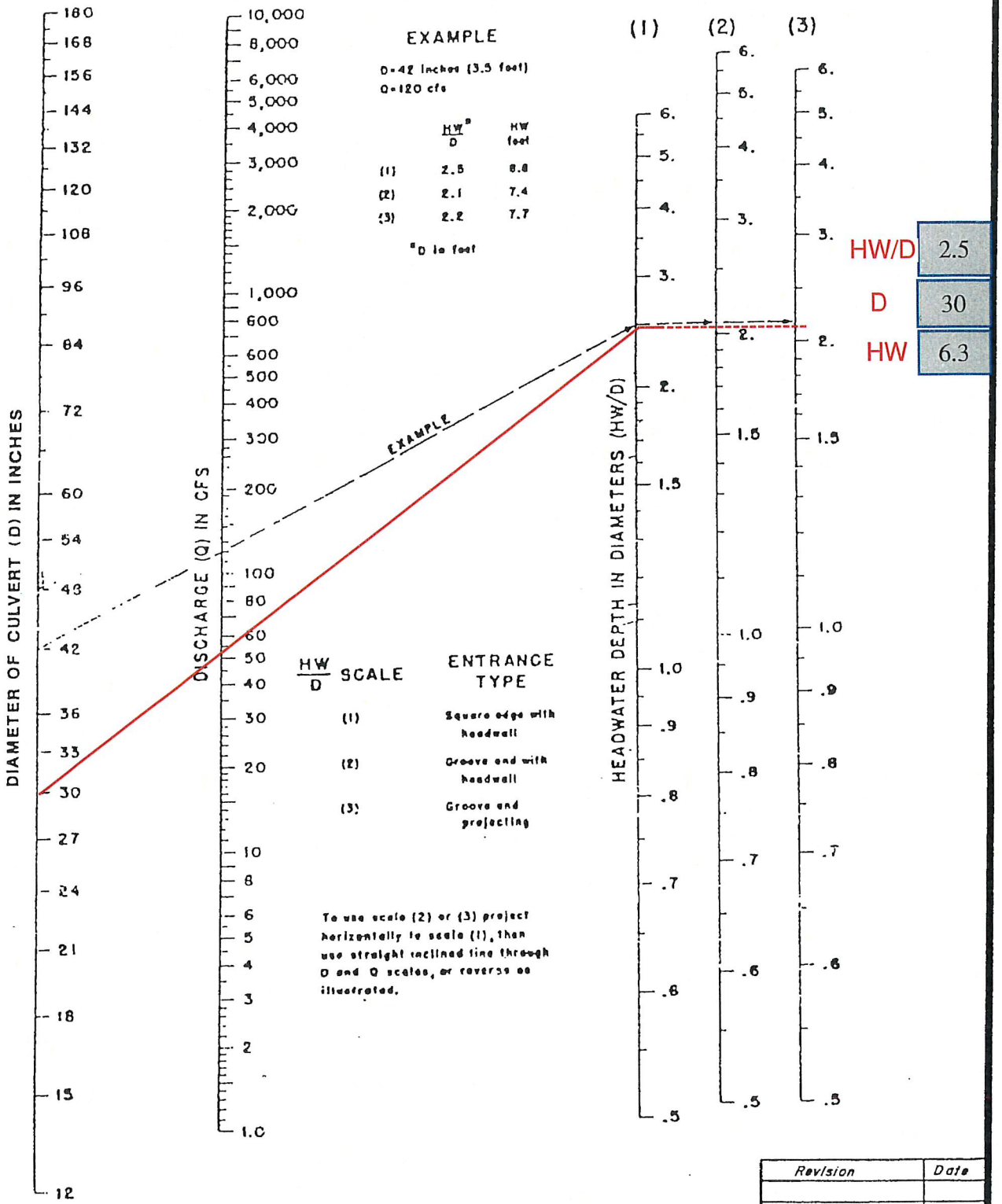


Revision	Date

WRC ENGINEERING	REFERENCE: USDOT, FHWA, HDS, No. 5, 1985	FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P2: Q=55 CFS



Revision	Date

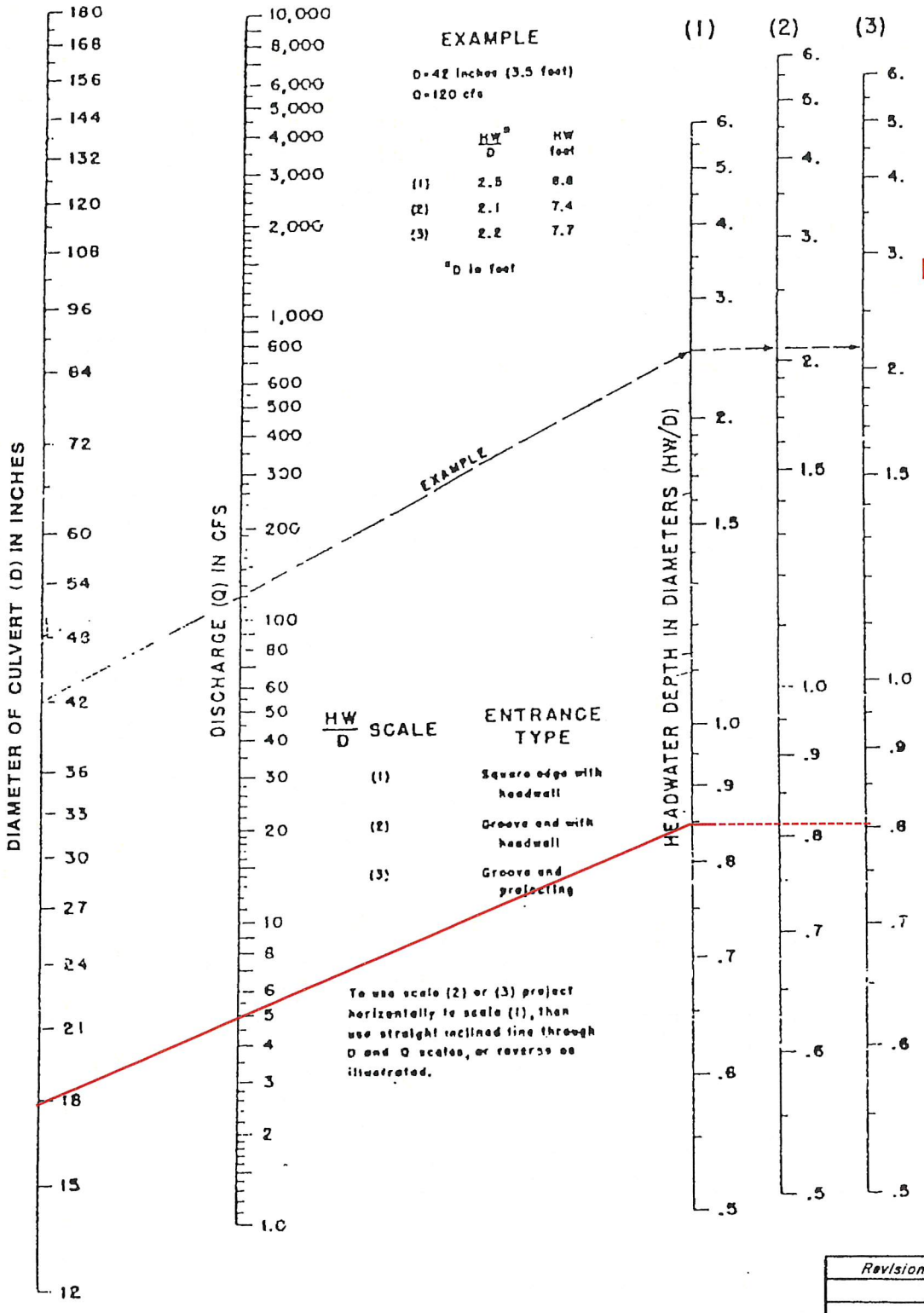
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P5: Q=5 CFS



HW/D .85

D 18

HW 1.3

Revision	Date

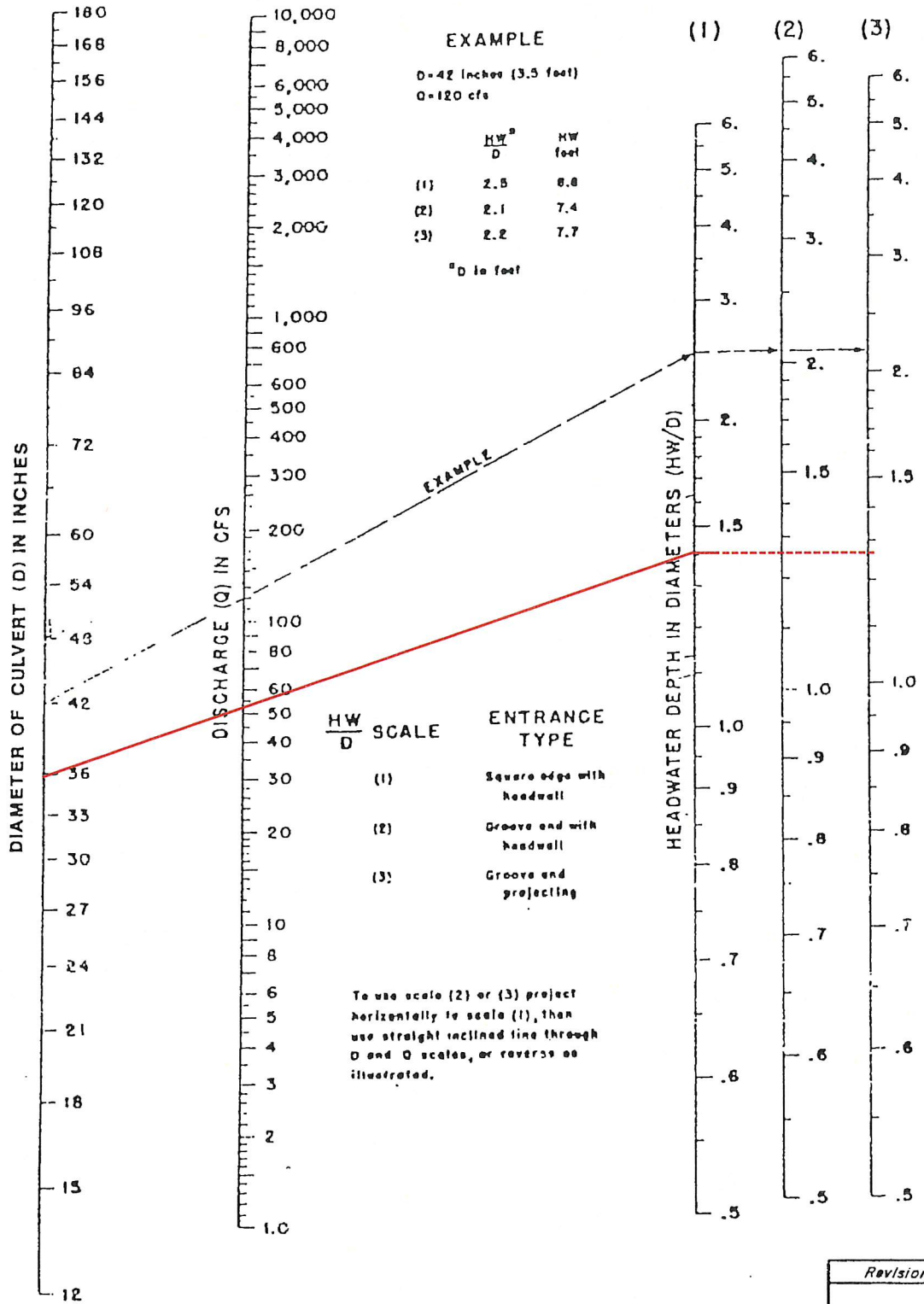
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P7: Q=53 CFS



HW/D 1.4

D 36

HW 4.2

Revision	Date

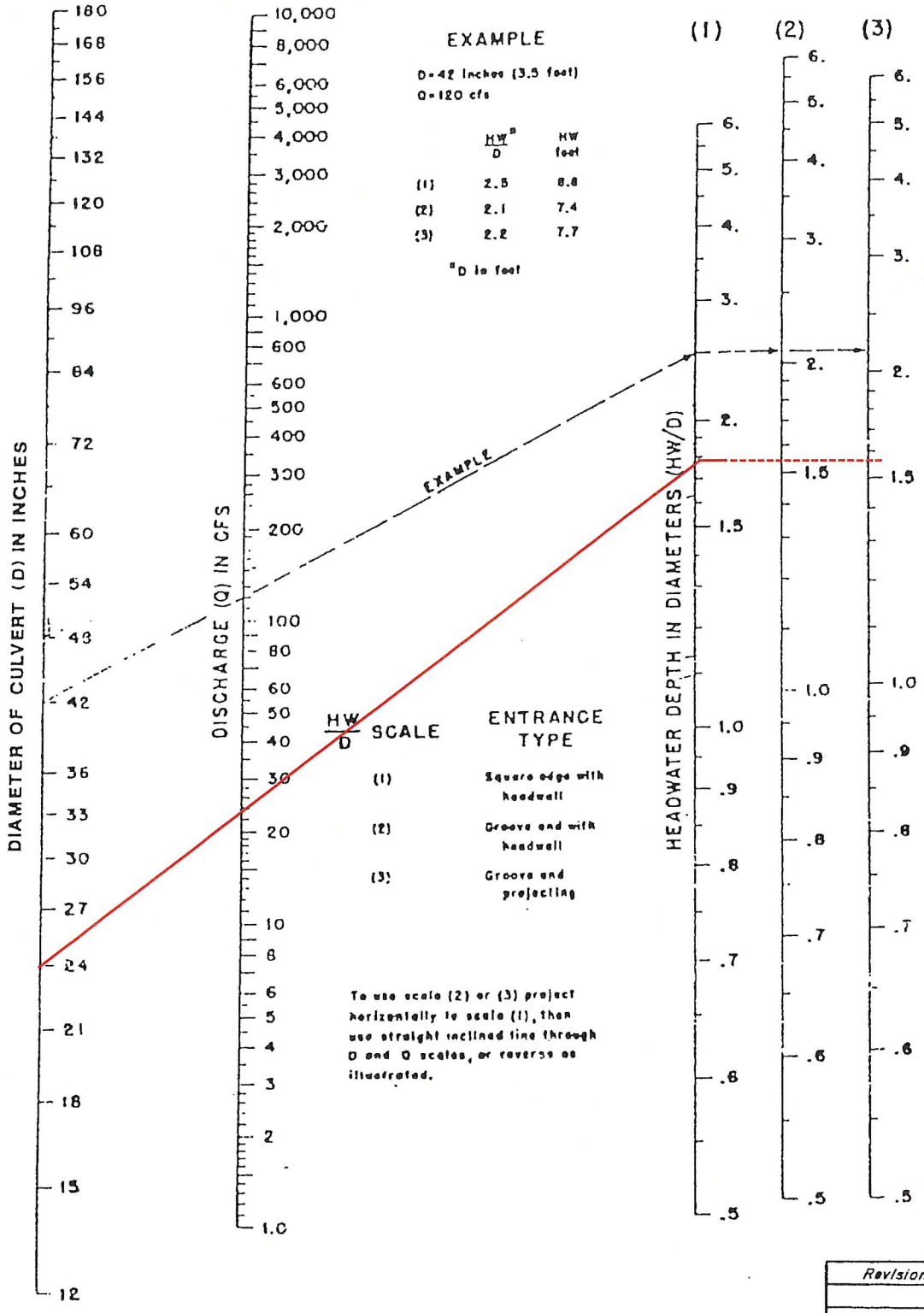
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P10: Q=21 CFS



HW/D	1.8
D	24
HW	3.6

Revision	Date

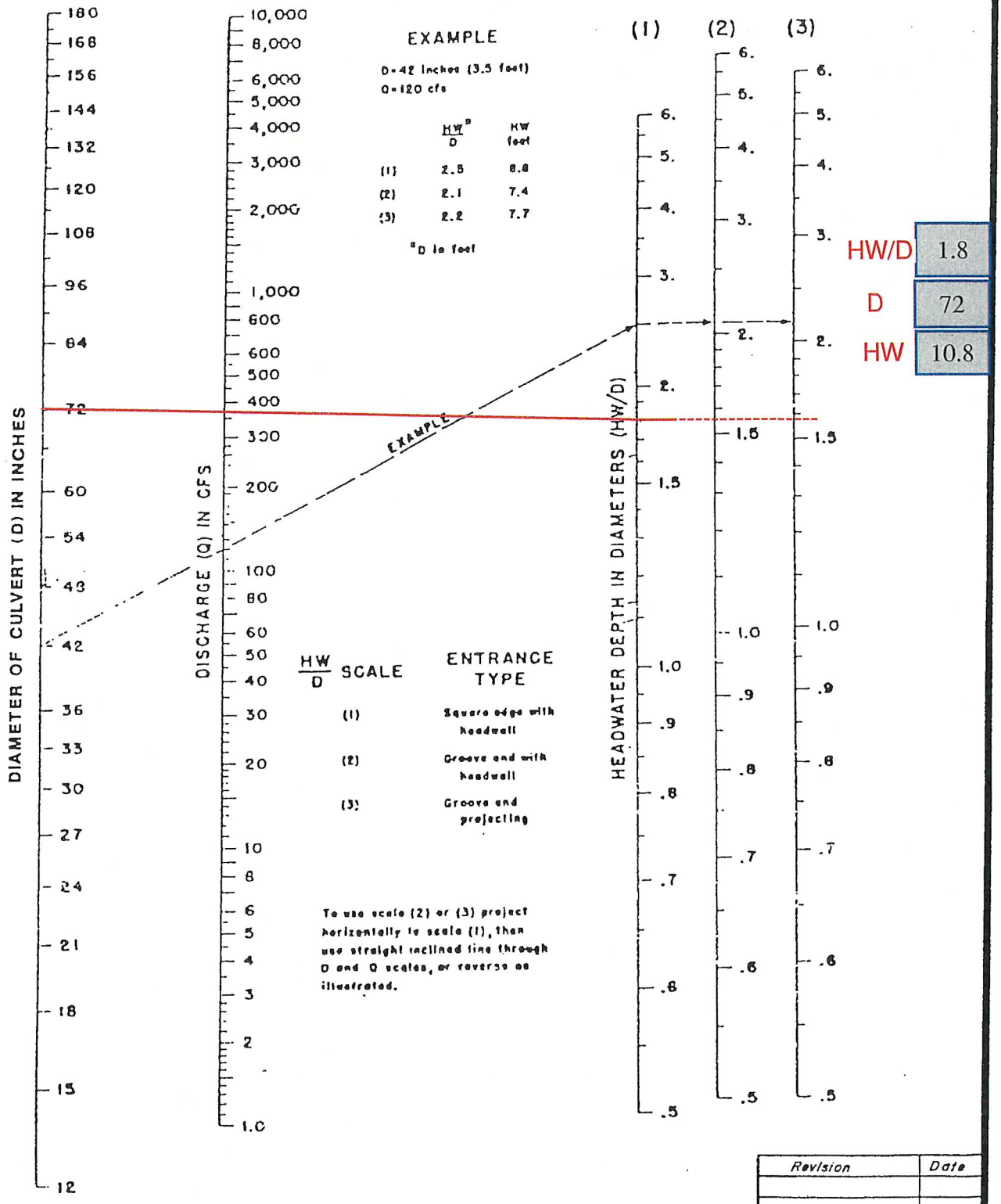
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P11: Q=366 CFS

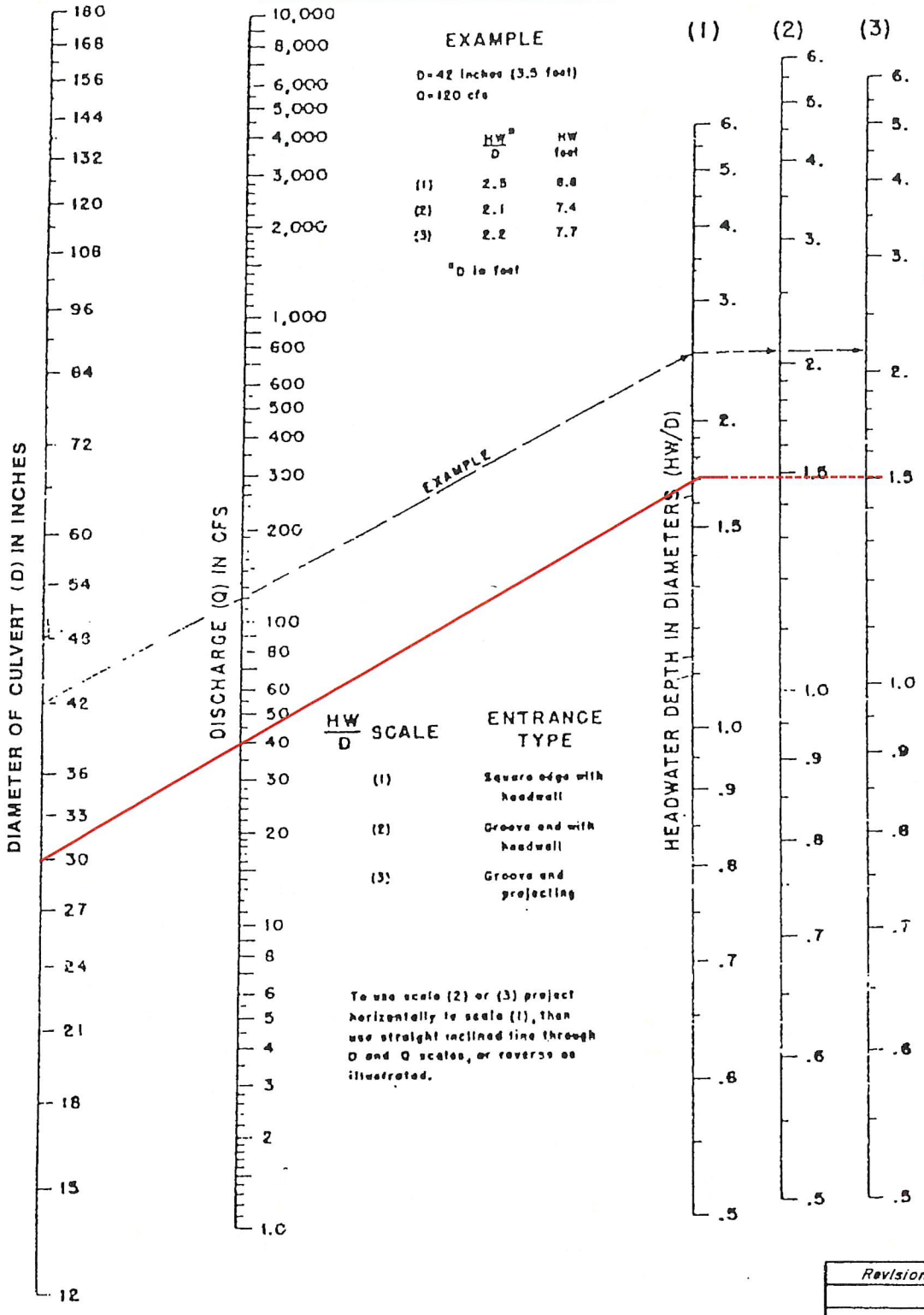


Revision	Date

WRC ENGINEERING	REFERENCE: USDOT, FHWA, HDS, No. 5, 1985	FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P13: Q=40 CFS



HW/D	1.7
D	30
HW	4.3

Revision	Date

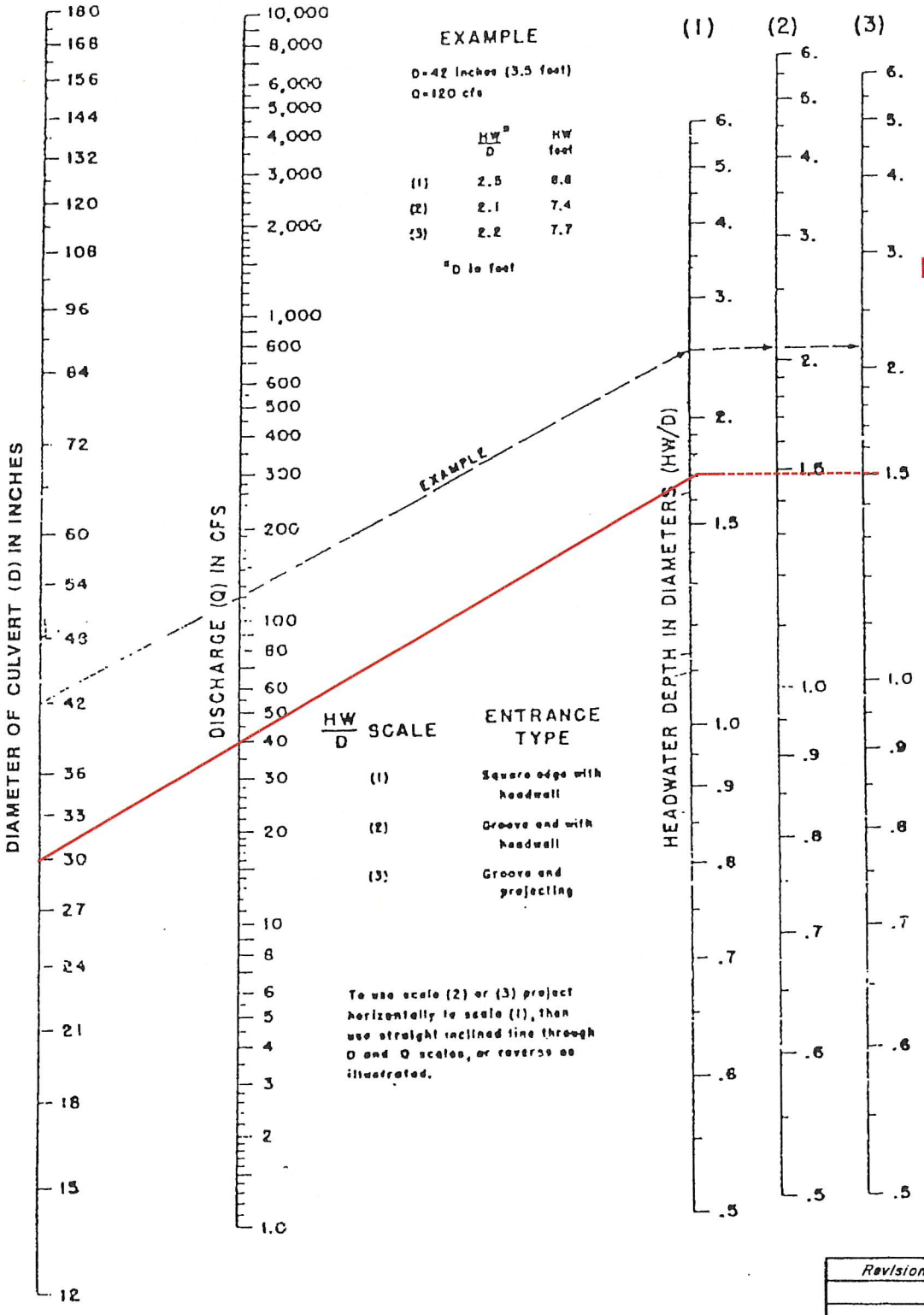
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P14: Q=40 CFS



HW/D	1.7
D	30
HW	4.3

Revision	Date

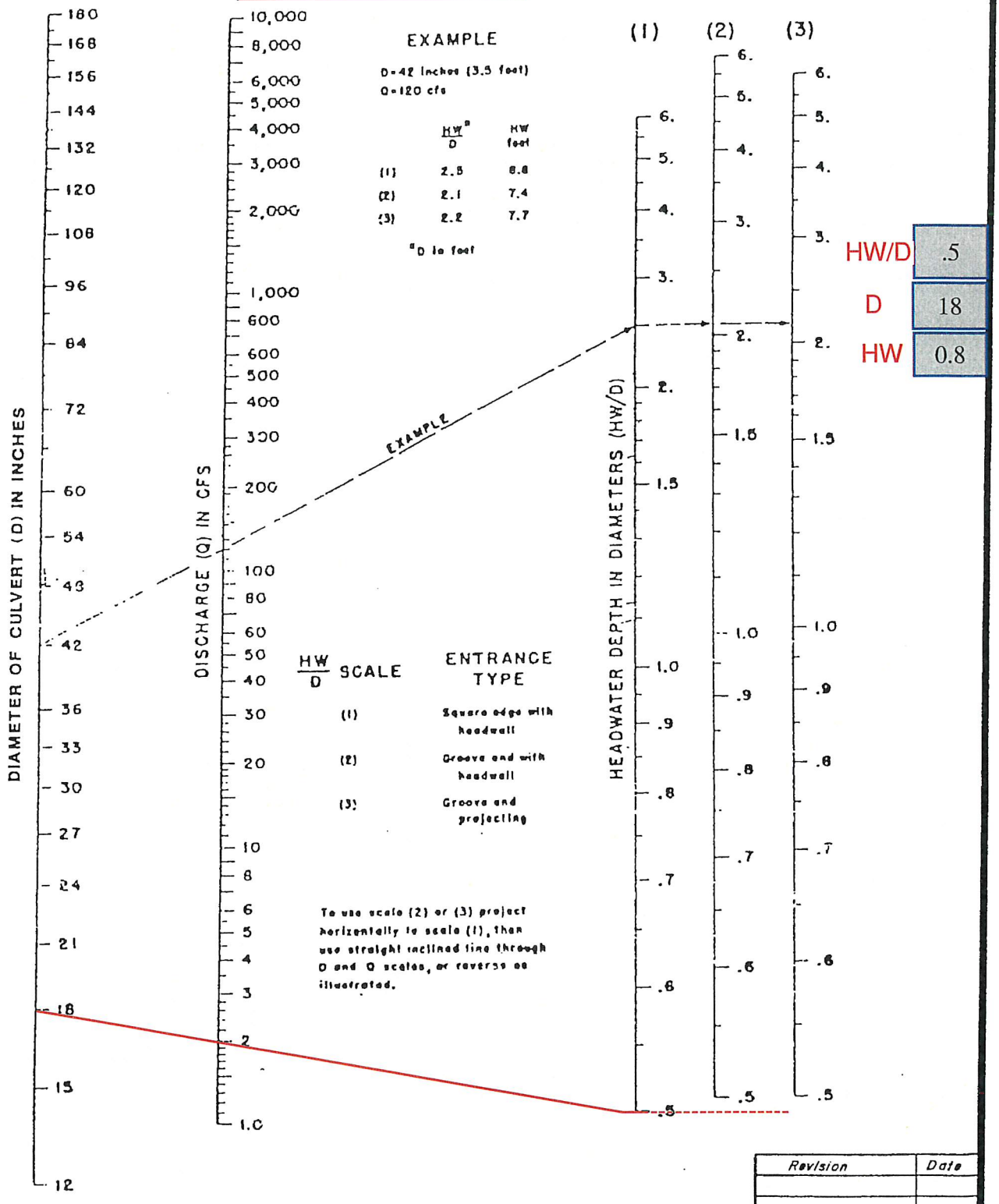
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P18: Q=2 CFS



Revision	Date

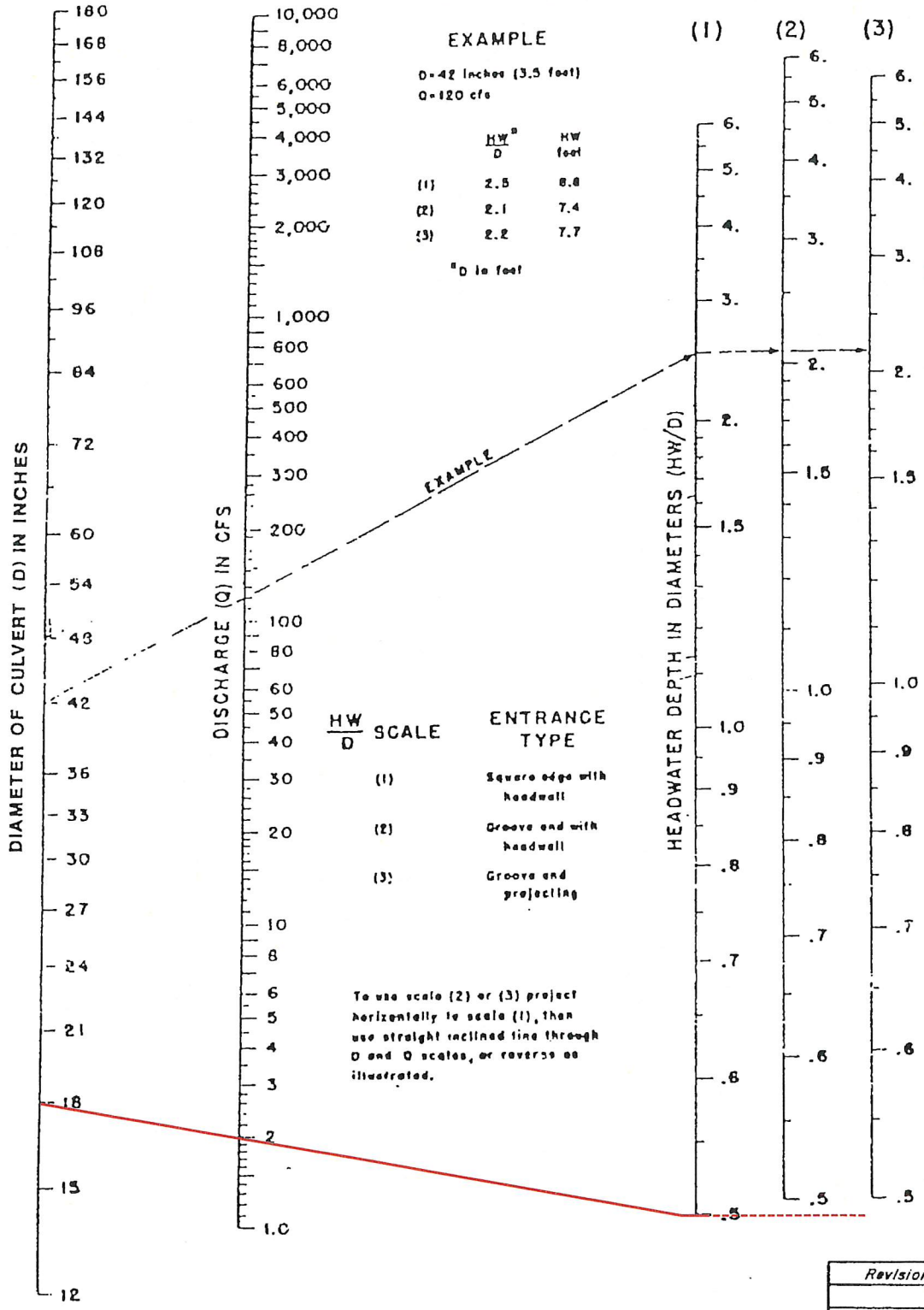
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P20: Q=2 CFS



HW/D .5

D 18

HW 0.8

Revision	Date

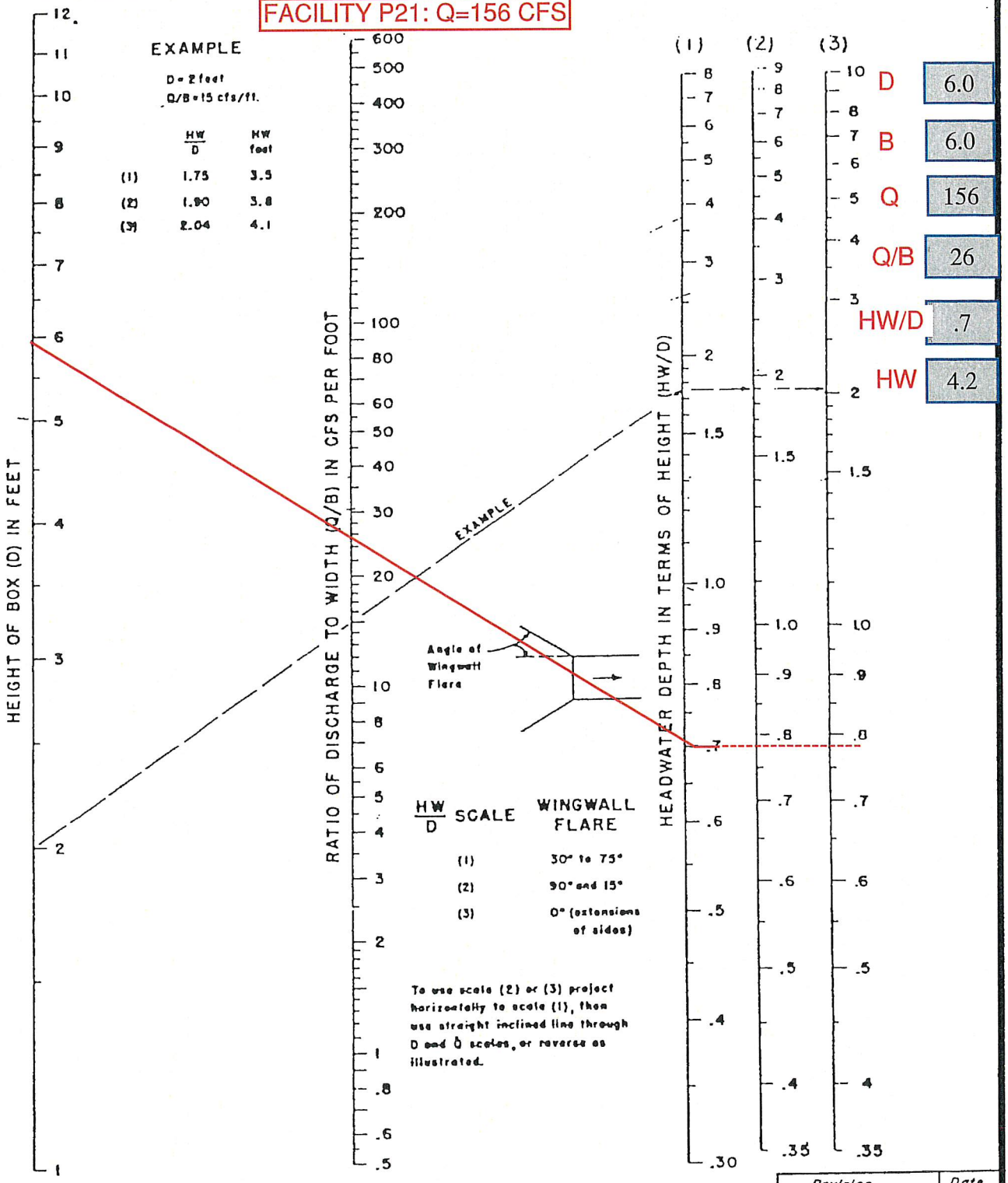
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL BOX CULVERT

FACILITY P21: Q=156 CFS



Revision	Date

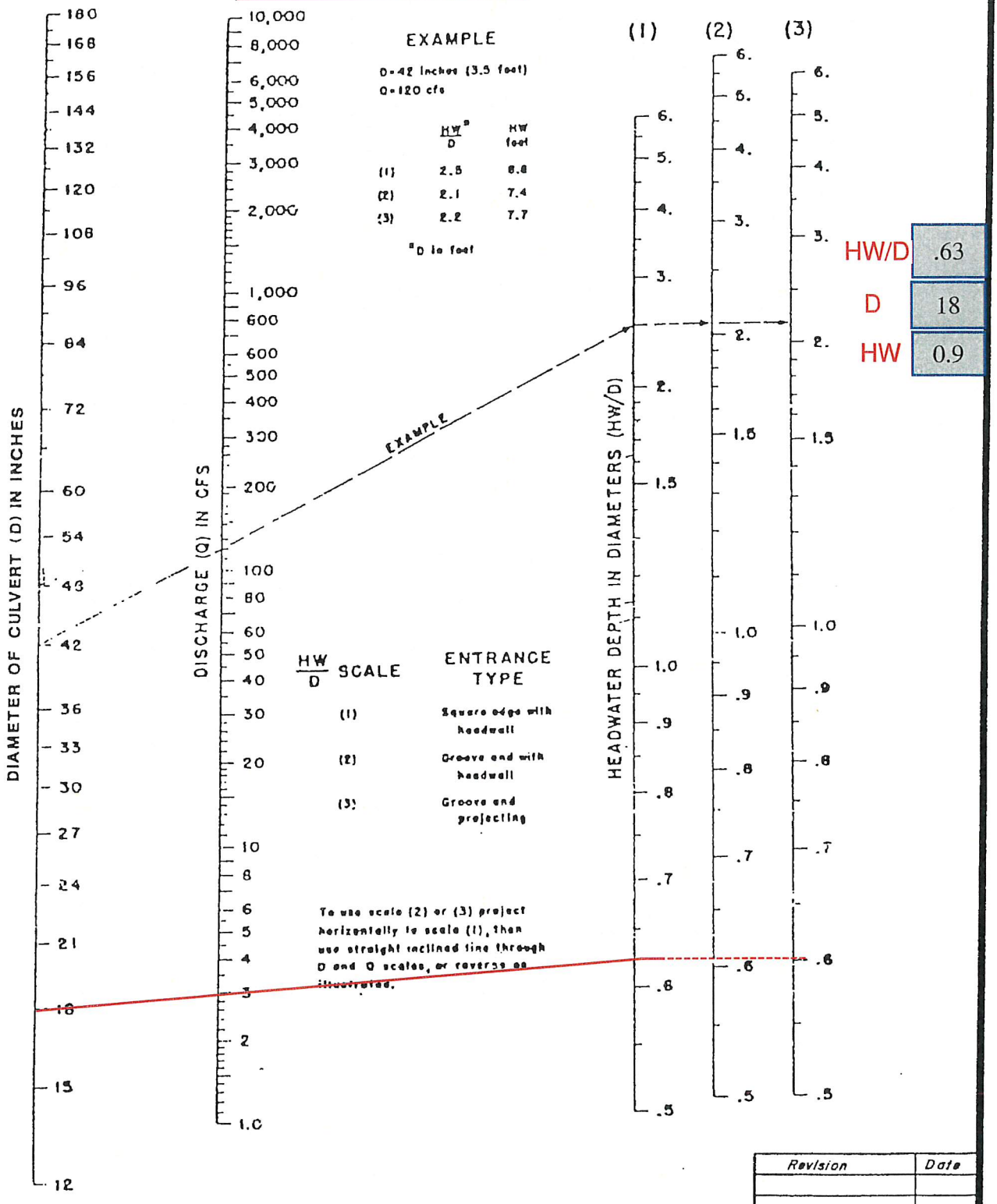
WRC ENGINEERING

REFERENCE: USDOT, FHWA, HDS No.5, 1985

FIGURE 1004

NOMOGRAPH – INLET CONTROL RCP

FACILITY P23: Q=3 CFS



Revision	Date

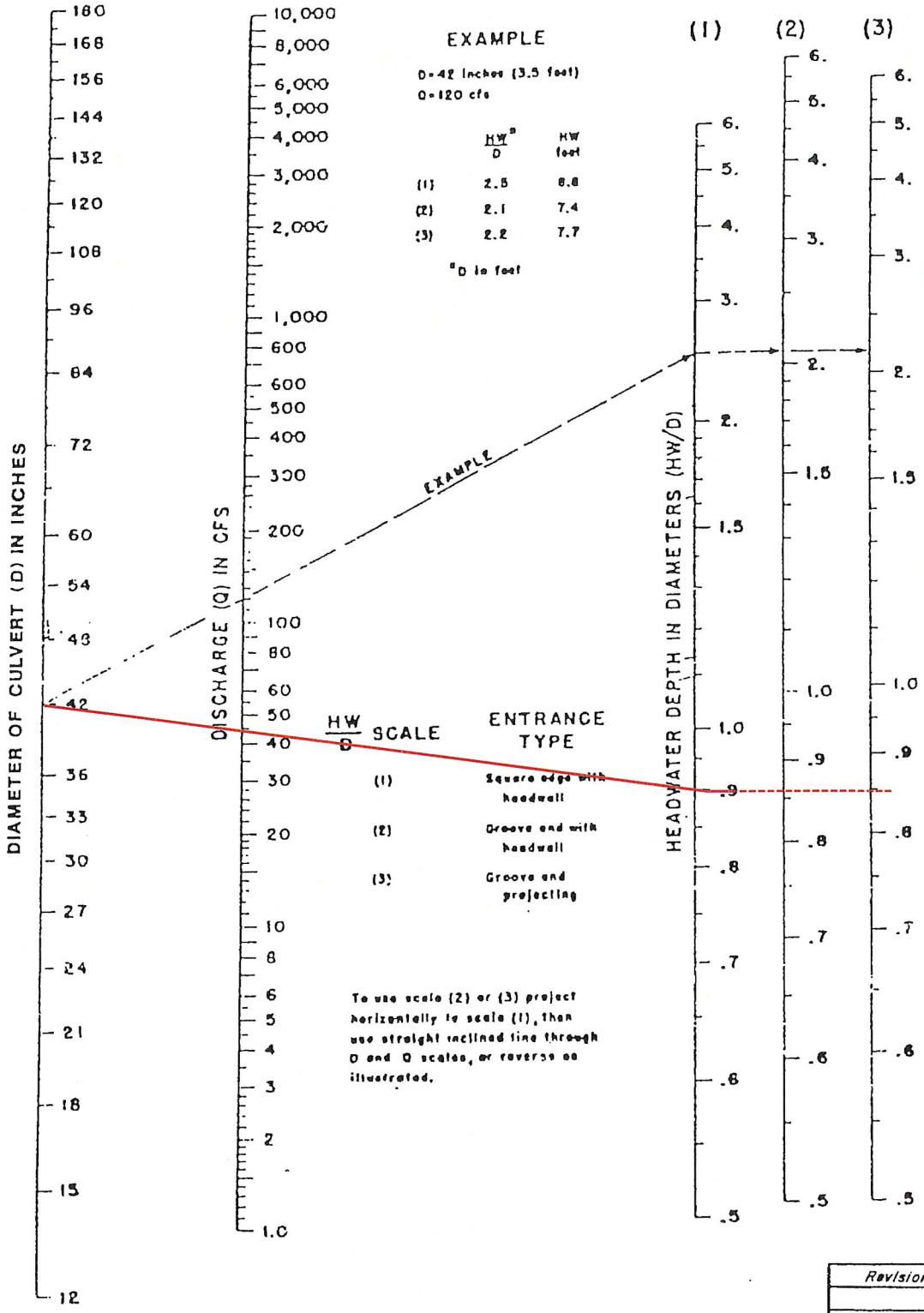
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P25: Q=45 CFS



HW/D .9

D 42

HW 3.2

Revision	Date

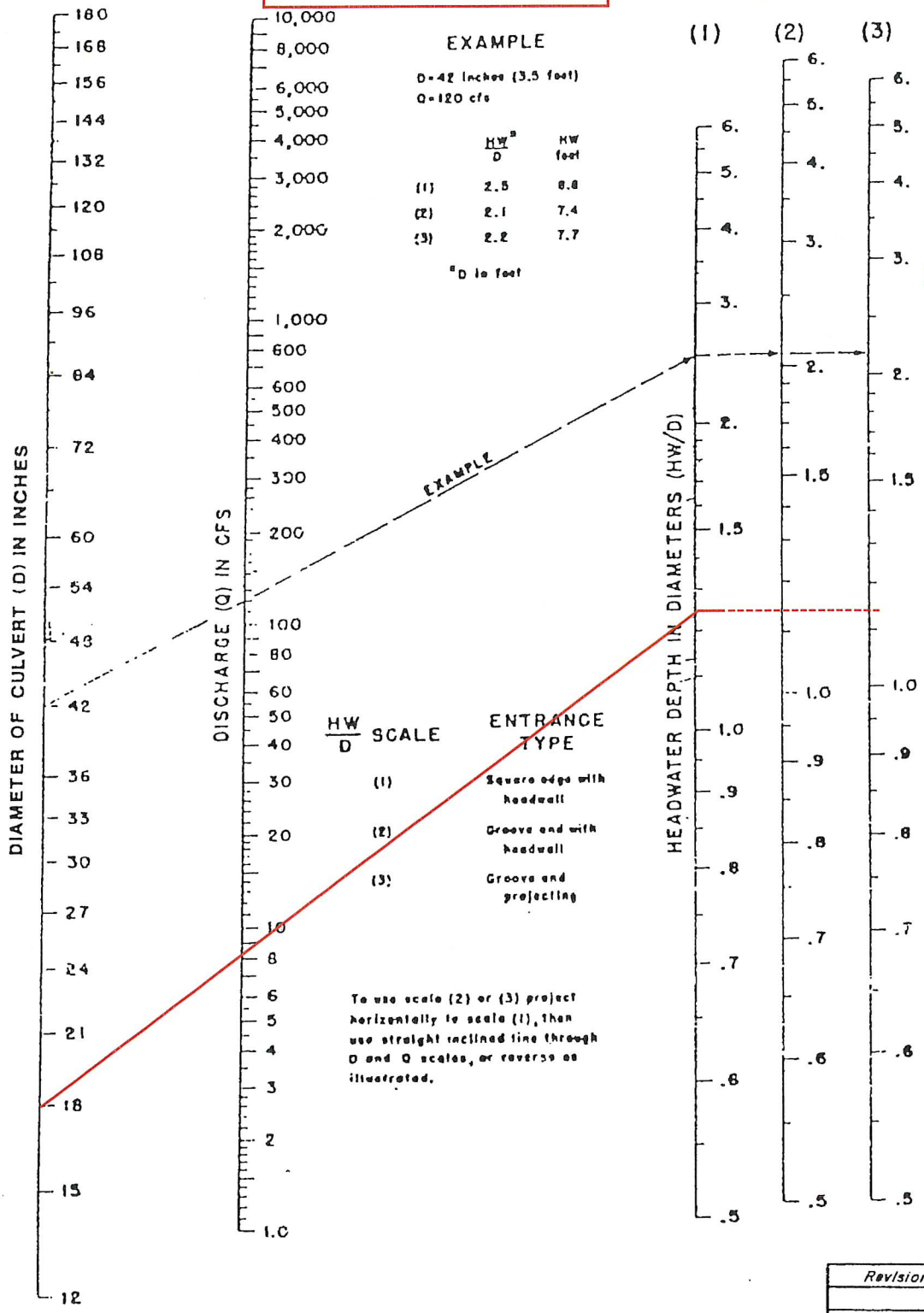
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P29: Q=8.5 CFS



HW/D 1.25

D 18

HW 1.9

Revision	Date

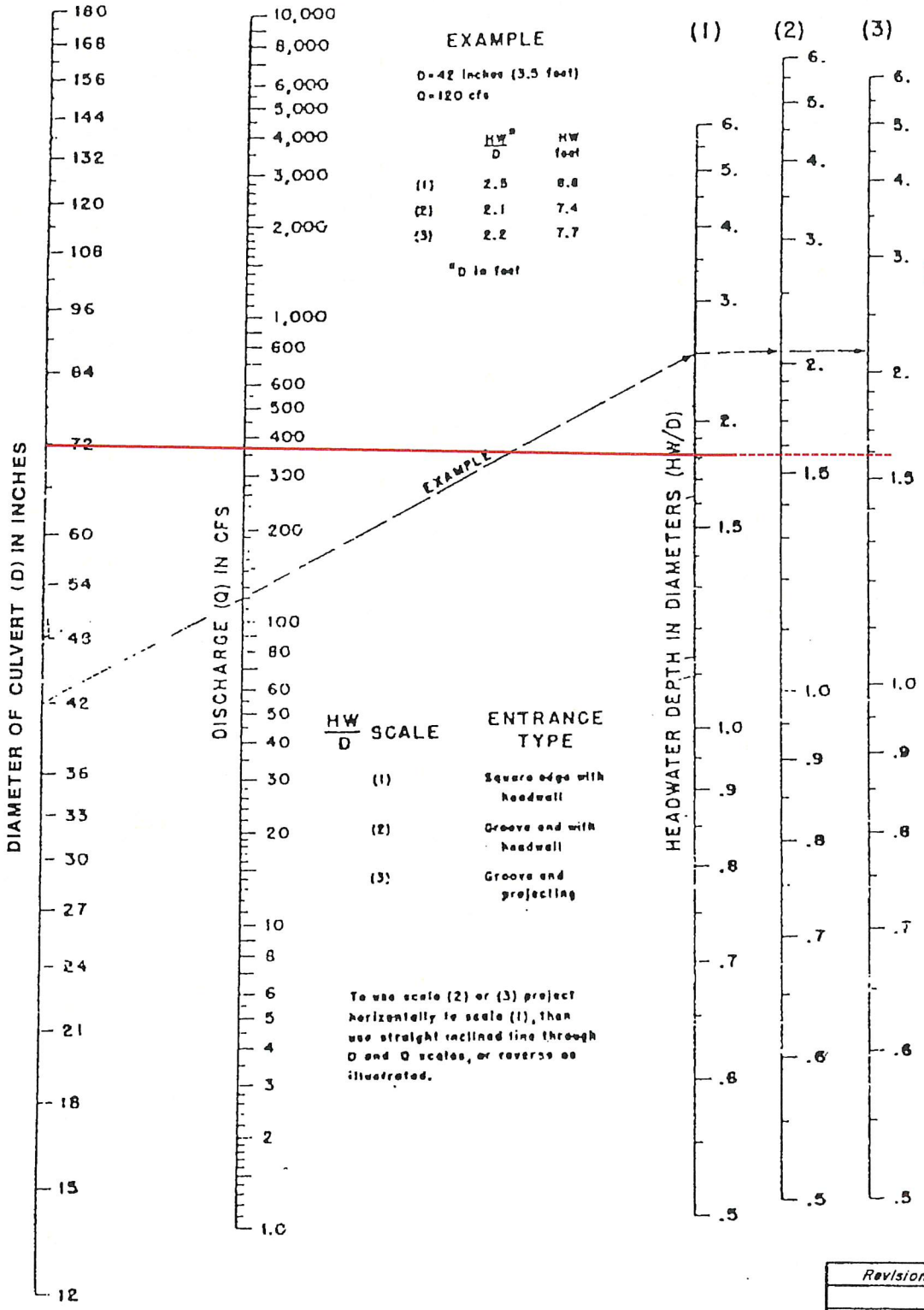
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P31: Q=364 CFS



HW/D	1.8
D	72
HW	10.8

Revision	Date

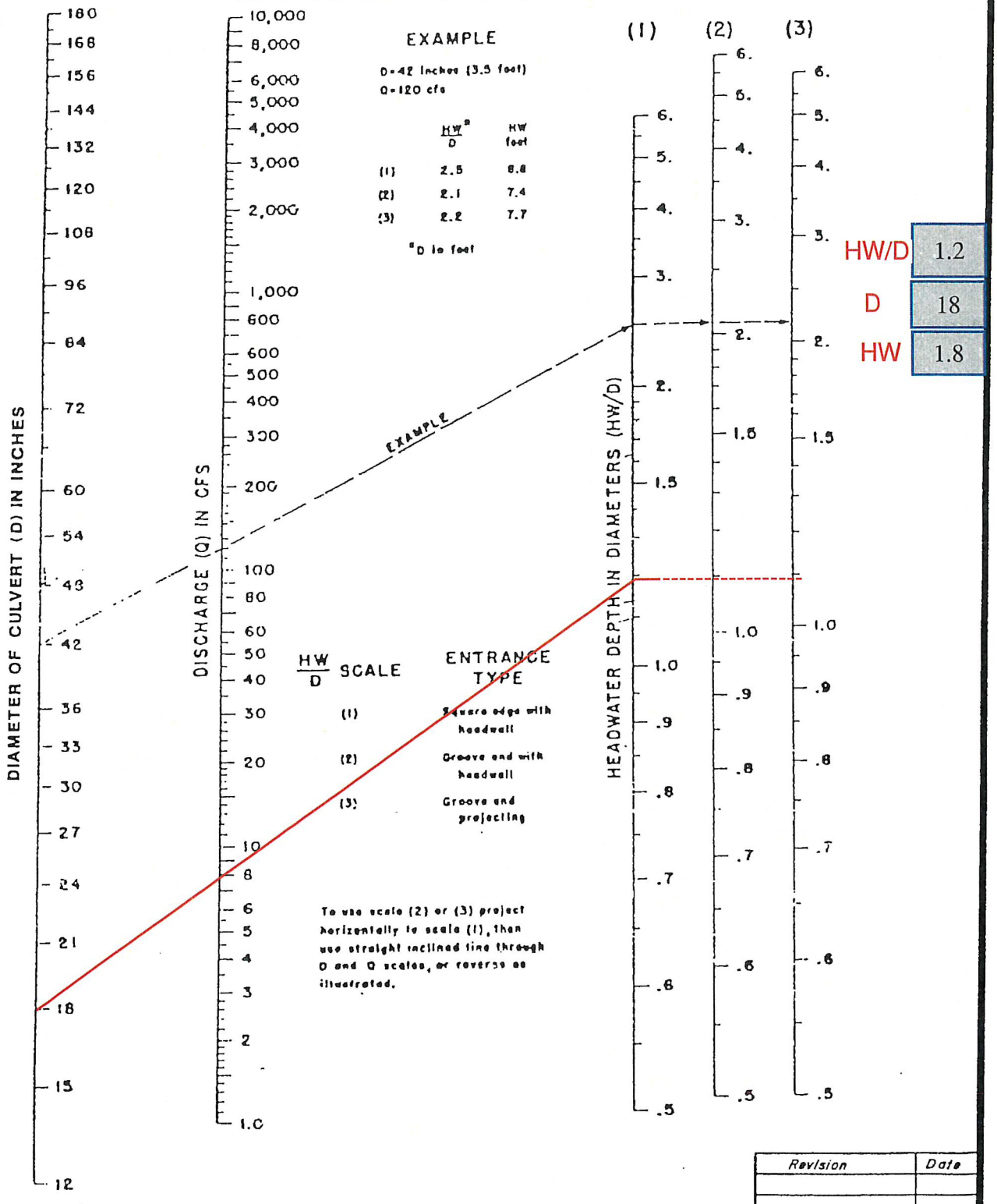
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P34: Q=8 CFS



HW/D 1.2

D 18

HW 1.8

Revision	Date

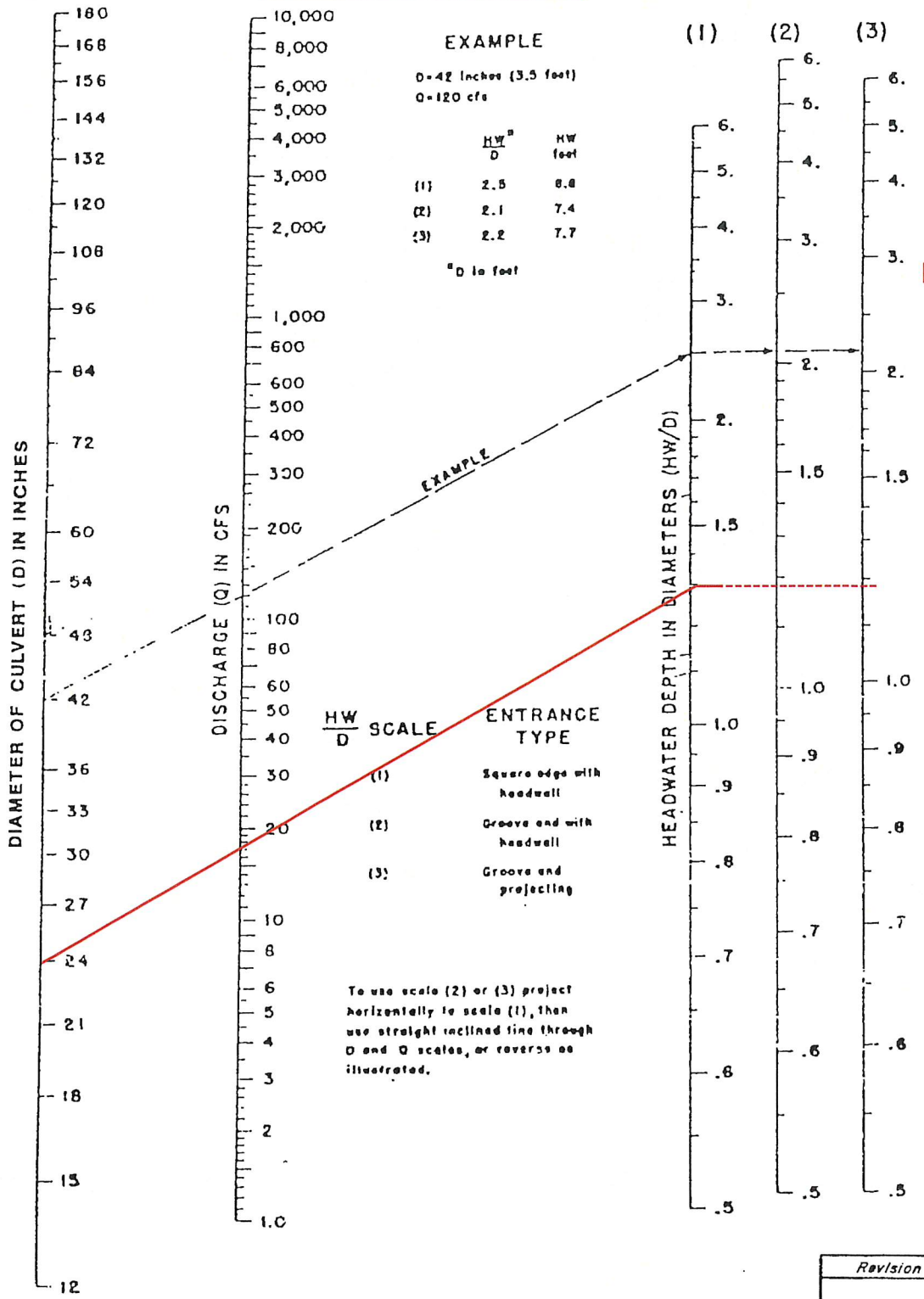
WRC ENGINEERING

REFERENCE: USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P36: Q=17 CFS



HW/D	1.3
D	24
HW	2.6

Revision	Date

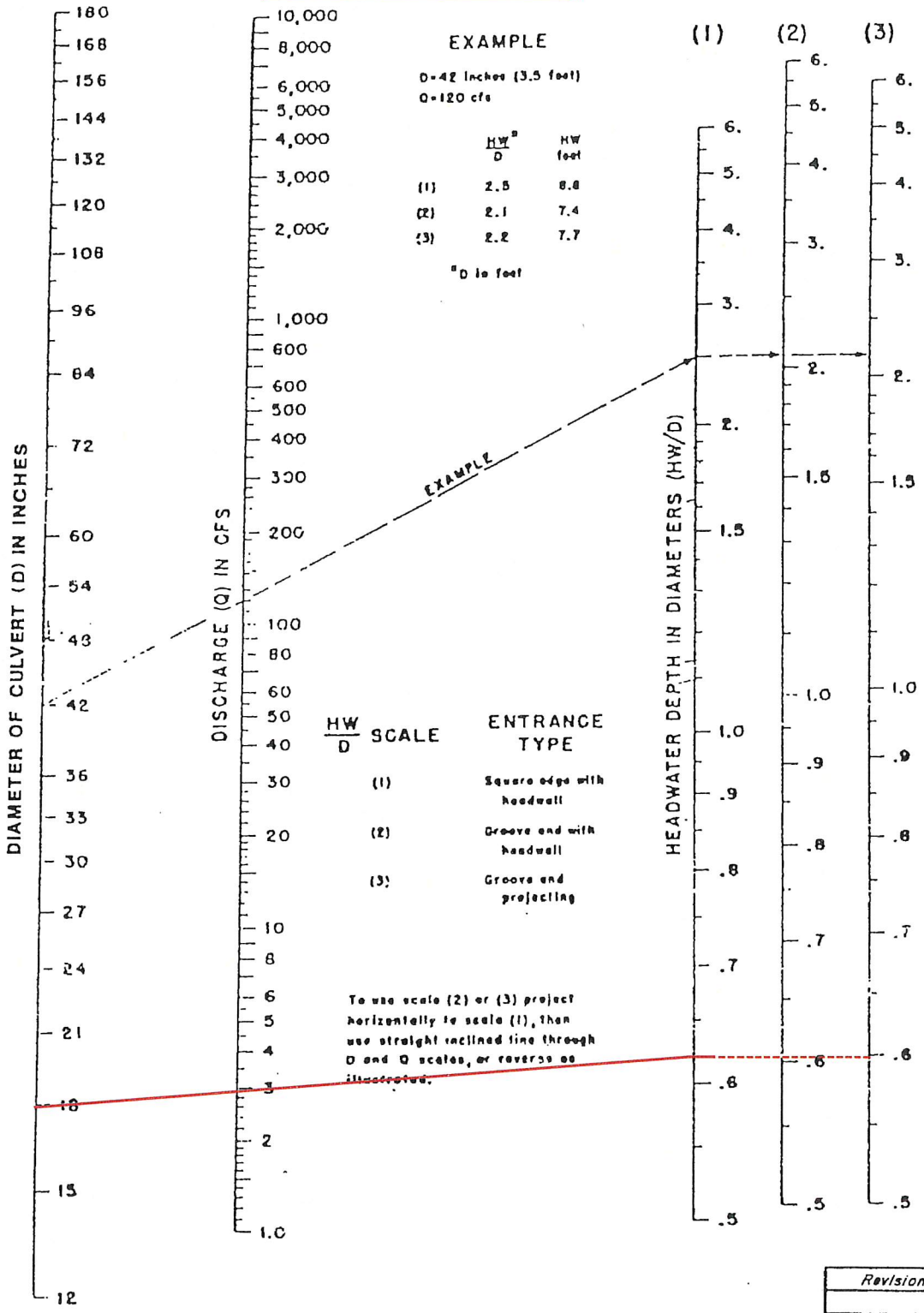
WRC ENGINEERING

REFERENCE:
USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

NOMOGRAPH – INLET CONTROL RCP

FACILITY P38: Q=3 CFS



HW/D	.63
D	18
HW	0.9

Revision	Date

WRC ENGINEERING

REFERENCE: USDOT, FHWA, HDS, No. 5, 1985

FIGURE 1005

Riprap Computations

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Pipe Culvert Outlet Protection Computation

FACILITY P1

Project Name: **Skye Canyon Infrastructure - Phase 3A**
Project Number: **OLY1609.000**
Date: **10/31/2017**
By: **ETM**

Equations:

$(d_{50}/D)*(Y_t/D)^{1.2}/(Q/D^{2.5}) = 0.023$ — Equation 760*
$D_a = 1/2(D+Y_n)$ (used in place of D if Fr>1) — Equation 762*
$L = (1/(2 \tan q))(A_t/Y_t-W)$ — Equation 764*
$A_t = Q/V$ — Equation 765*

Known Information:

Q =	40	Flow (cfs)
D =	2.5	Diameter of Pipe (ft)
q =	20	Expansion angle of the culvert flow (typ=20°)
V =	5	Allowable downstream velocity (typ=5 ft/s)
Fr =	0.0	Froude Number (0 if full)
Y_n =	2.5	Normal Depth of flow in Pipe Culvert (ft)*
		* Not necessary if Fr<1 (Enter 0 if unknown)
Y_t =	1.0	Tailwater Depth (Enter 0.4D if unknown)

Riprap Erosion Protection Check (Figure 712):

Applicable only if $Q/D^{2.5} \leq 6$

$Q/D^{2.5}$ = ***4.05*** ← ***See Figure 712 for Recommended Riprap Type***
$Q/D^{1.5}$ = 10.12
Y_t/D 0.40

Solve For:

D_{50} = 0.70	**Average Size Riprap (ft)**
D_{50} = 8	**Average Size Riprap (in)**

A_t = 8.0	Req'd Area of flow at allowable velocity (ft2)
Y_t = 1.00	Tailwater Depth (ft)
D_a = 2.5	only used if Fr>=1
L = 7.6	**Length of Protection (ft)**
***L = 7.6**	***For: D<3.5-ft, L_{min}=3D. For: D>=3.5-ft, L_{min}>= 4D. $L_{max(required)}$=10D**

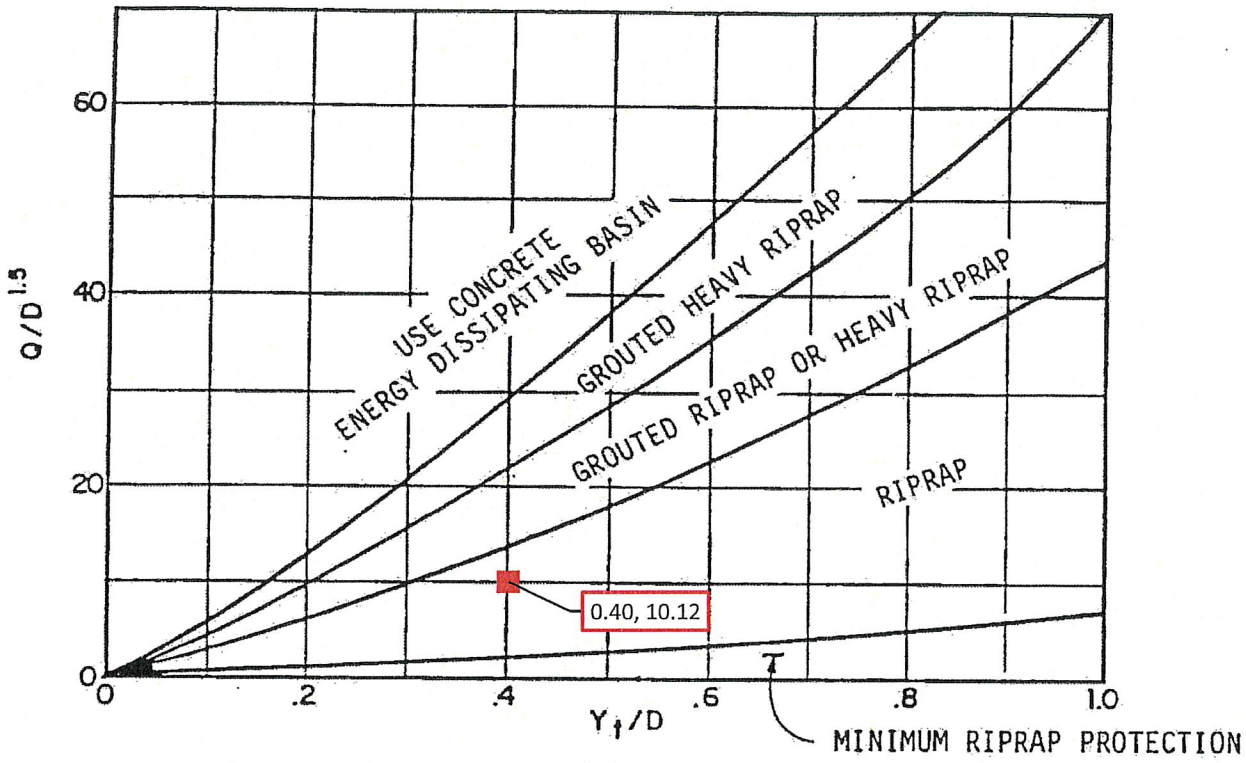
Notes:

Provide D_{50} = 8-inch riprap for a length of 8-ft

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

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RIPRAP EROSION PROTECTION AT CIRCULAR CONDUIT OUTLET



Notes:

1. Use H_a instead of H whenever culvert has supercritical flow in the barrel.
2. Minimum Riprap Protection: Use Riprap for a distance of 3H downstream for 18" to 36" equivalent round pipe size and 4D downstream for 42" and larger equivalent round pipe size.

Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 712

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Pipe Culvert Outlet Protection Computation

FACILITY P8

Project Name: **Skye Canyon Infrastructure - Phase 3A**
Project Number: **OLY1609.000**
Date: **10/31/2017**
By: **ETM**

Equations:

$(d_{50}/D)*(Y_t/D)^{1.2}/(Q/D^{2.5}) = 0.023$ — Equation 760*
$D_a = 1/2(D+Y_n)$ (used in place of D if Fr>1) — Equation 762*
$L = (1/(2 \tan q))(A_t/Y_t-W)$ — Equation 764*
$A_t = Q/V$ — Equation 765*

Known Information:

Q =	113	Flow (cfs)
D =	3.5	Diameter of Pipe (ft)
q =	20	Expansion angle of the culvert flow (typ=20°)
V =	5	Allowable downstream velocity (typ=5 ft/s)
Fr =	0.0	Froude Number (0 if full)
Y_n =	3.5	Normal Depth of flow in Pipe Culvert (ft)*
		* Not necessary if Fr<1 (Enter 0 if unknown)
Y_t =	1.4	Tailwater Depth (Enter 0.4D if unknown)

Riprap Erosion Protection Check (Figure 712):

Applicable only if $Q/D^{2.5} \leq 6$

$Q/D^{2.5}$ = ***4.93*** ← ***See Figure 712 for Recommended Riprap Type***
$Q/D^{1.5}$ = 17.26
Y_t/D 0.40

Solve For:

D_{50} = 1.19	**Average Size Riprap (ft)**
D_{50} = 14	**Average Size Riprap (in)**

A_t = 22.6	Req'd Area of flow at allowable velocity (ft2)
Y_t = 1.40	Tailwater Depth (ft)
D_a = 3.5	only used if Fr>=1
L = 17.4	**Length of Protection (ft)**
***L = 17.4**	***For: D<3.5-ft, L_{min}=3D. For: D>=3.5-ft, L_{min}>= 4D. $L_{max(required)}$=10D**

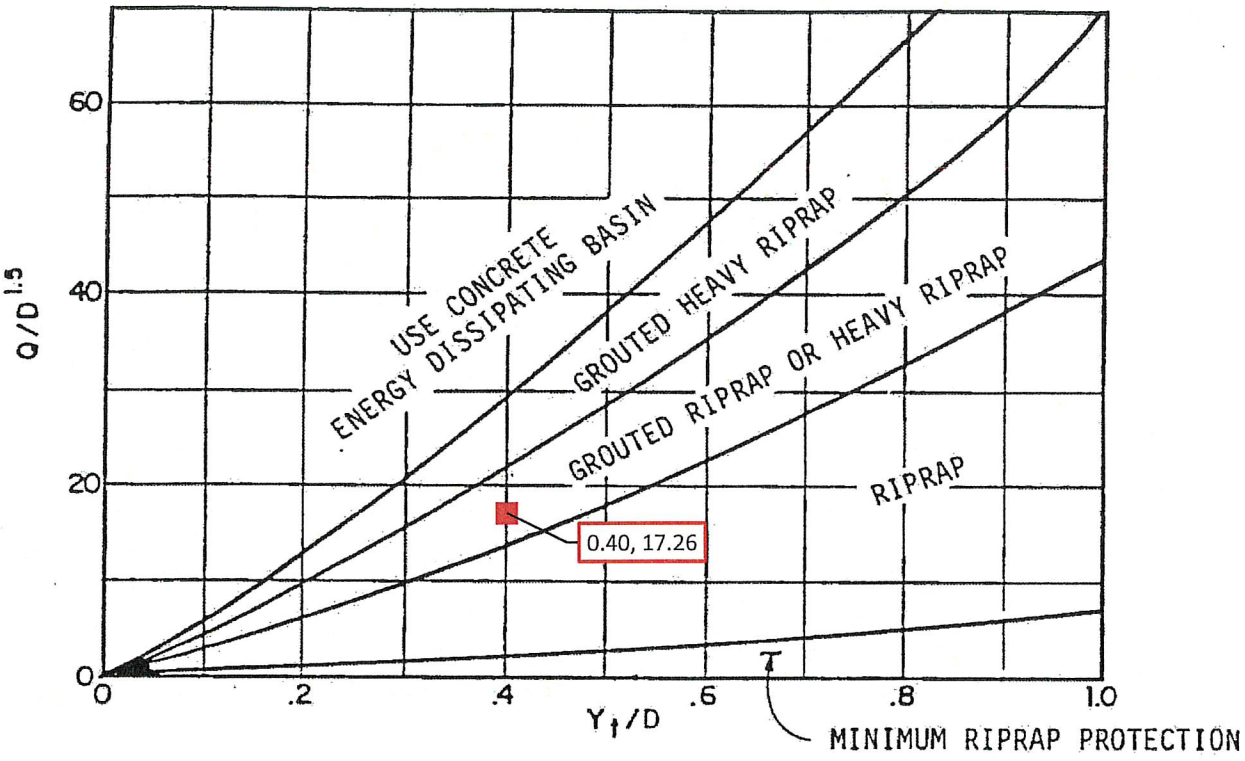
Notes:

Provide D_{50} = 14-inch riprap for a length of 18-ft

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

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RIPRAP EROSION PROTECTION AT CIRCULAR CONDUIT OUTLET



Notes:

1. Use H_a instead of H whenever culvert has supercritical flow in the barrel.
2. Minimum Riprap Protection: Use Riprap for a distance of 3H downstream for 18" to 36" equivalent round pipe size and 4D downstream for 42" and larger equivalent round pipe size.

Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 712

SLATER HANIFAN GROUP
CONSULTING ENGINEERS & PLANNERS

Pipe Culvert Outlet Protection Computation

FACILITY P15

Project Name: **Skye Canyon Infrastructure - Phase 3A**
Project Number: **OLY1609.000**
Date: **10/31/2017**
By: **ETM**

Equations:

$(d_{50}/D)*(Y_t/D)^{1.2}/(Q/D^{2.5}) = 0.023$ — Equation 760*
$D_a = 1/2(D+Y_n)$ (used in place of D if Fr>1) — Equation 762*
$L = (1/(2 \tan q))(A_t/Y_t-W)$ — Equation 764*
$A_t = Q/V$ — Equation 765*

Known Information:

Q =	422	Flow (cfs)
D =	6.0	Diameter of Pipe (ft)
q =	20	Expansion angle of the culvert flow (typ=20°)
V =	5	Allowable downstream velocity (typ=5 ft/s)
Fr =	2.4	Froude Number (0 if full)
Y_n =	3.1	Normal Depth of flow in Pipe Culvert (ft)*
		* Not necessary if Fr<1 (Enter 0 if unknown)
Y_t =	2.4	Tailwater Depth (Enter 0.4D if unknown)

Riprap Erosion Protection Check (Figure 712):

Applicable only if $Q/D^{2.5} \leq 6$

$Q/D^{2.5}$ = ***4.79*** ← ***See Figure 712 for Recommended Riprap Type***
$Q/D^{1.5}$ = 28.71
Y_t/D 0.53

Solve For:

D_{50} = 3.03	**Average Size Riprap (ft)**
D_{50} = 36	**Average Size Riprap (in)**

A_t = 84.4	Req'd Area of flow at allowable velocity (ft2)
Y_t = 2.40	Tailwater Depth (ft)
D_a = 4.5	only used if Fr>=1
L = 40.1	**Length of Protection (ft)**
***L = 40.1**	***For: D<3.5-ft, L_{min}=3D. For: D>=3.5-ft, L_{min}>= 4D. $L_{max(required)}$=10D**

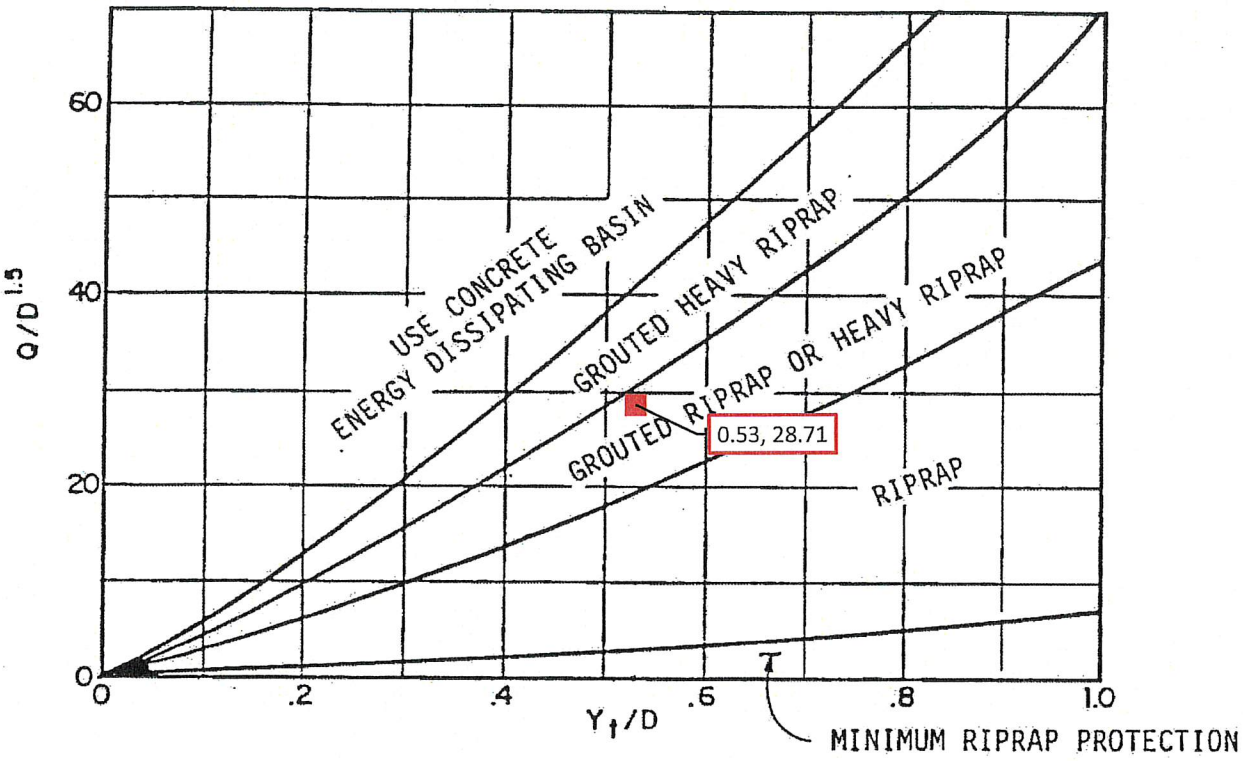
Notes:

Provide D_{50} = 36-inch grouted riprap for a length of 40-ft

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

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RIPRAP EROSION PROTECTION AT CIRCULAR CONDUIT OUTLET



Notes:

1. Use H_a instead of H whenever culvert has supercritical flow in the barrel.
2. Minimum Riprap Protection: Use Riprap for a distance of 3H downstream for 18" to 36" equivalent round pipe size and 4D downstream for 42" and larger equivalent round pipe size.

Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 712

SLATER HANIFAN GROUP
CONSULTING ENGINEERS AND PLANNERS

RCA Outlet Protection Computation

FACILITY P32

Project Name: **Skye Canyon Infrastructure - Phase 3A**
Date: **10/31/2017**
File Name: OLY1609 TDS Outlet Protection Calcs.xlsx
By: **ETM**

Equations:

$(d_{50}/H)*(Y_t/H)/(Q/WH^{1.5}) = 0.0014$	(for $(Q/WH^{1.5})$ <4)	Equation 761a*
$(d_{50}/H)*(Y_t/H)^2/(Q/WH^{1.5})^{2.5} = 0.0019$	(for $(Q/WH^{1.5})$>=4)	Equation 761b*
$D_a = 1/2(D+Y_n)$ (used in place of D if Fr>1)		Equation 762*
$L = (1/(2 \tan q))(A_t/Y_t-W)$		Equation 764*
$A_t = Q/V$		Equation 765*

Known Information:

Q =	521	Flow (cfs)
H =	9	RCA Height
W =	10.0	RCA Width
q =	20	Expansion angle of the RCA flow (typ=20°)
V =	5	Allowable downstream velocity
Fr =	0.0	Froude Number (0 if full)
Y_n =	4.72	Normal Depth of flow in RCA (ft)* **(Referenced from WSPGW Analysis)**
		* Not necessary if Fr<1 (Enter 0 if unknown)
Y_t =	3.6	Tailwater Depth (Enter 0.4H if unknown)

Riprap Erosion Protection Check (Figure 713):

Applicable only if $Q/WH^{1.5} \leq 8$

$Q/WH^{1.5}$ =	***1.93***	← ***See Figure 713 for Recommended Riprap Type***
$Q/WH^{0.5}$ =	17.37	
Y_t/H	0.40	

Solve For:

$Q/WH^{1.5}$ =	2		
D_{50} =	0.608	Average Size Riprap (ft)	(for $(Q/WH^{1.5})$ <4)
D_{50} =	0.553	Average Size Riprap (ft)	(for $(Q/WH^{1.5})$>=4)
D_{50} =	**0.6**	**Average Size Riprap (ft)**	
D_{50} =	**7**	**Average Size Riprap (in)**	
A_t =	104.2	Req'd Area of flow at allowable velocity (ft2)	
Y_t =	3.60	Tailwater depth (ft)	
H_a =	6.86	only used if Fr>=1	
L =	**26.0**	**Length of Protection (ft)**	
***L =**	**36.0**	***For: D<3.5-ft, L_{min}=3H. For: D>=3.5-ft, L_{min}>= 4H. $L_{max(required)}$=10H**	

D = Equivalent round pipe size

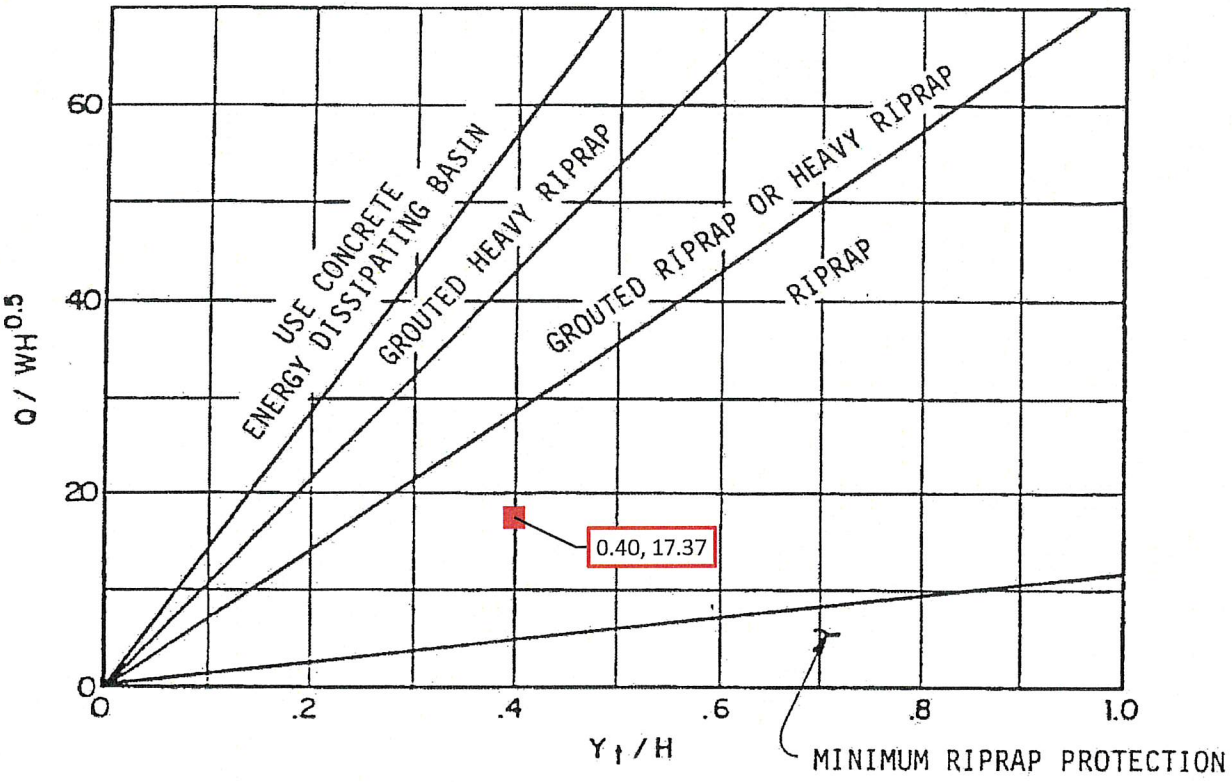
Notes:

Provide D_{50} = 8-inch riprap for a length of 36-ft

* Equations taken from the Clark County Regional Flood Control District - Hydrologic Criteria and Drainage Design Manual

5740 S. Arville St., Suite 216 - Las Vegas, NV 89118
Ph. 702-284-5300 - Fx. 702-284-5399

RIPRAP EROSION PROTECTION AT RECTANGULAR CONDUIT OUTLET



Notes:

1. Use H_a instead of H whenever culvert has supercritical flow in the barrel.
2. Minimum Riprap Protection: Use Riprap for a distance of 3H downstream for 18" to 36" equivalent round pipe size and 4D downstream for 42" and larger equivalent round pipe size.

Revision	Date

WRC ENGINEERING	REFERENCE: USDCM, DRCOG, March 1969 (with modifications)	FIGURE 713

APPENDIX E

Storm Drain Analyses

Arch Sections

8' E x 7' - ARCH CULVERT

Min Height=3.0' Low profile arch

Geometric Properties

Arch Height: 7.00 ft
Width, B: 8.00 ft
Center Radius, R: 10.00 ft
Haunch Radius, r: 1.67 ft
Stem Wall Height, h: 5.00 ft

Formulas

$$\alpha_1 = \sin^{-1}[(B/2-r)/(R-r)]$$

$$\alpha_2 = \frac{\pi}{2} - \alpha_1$$

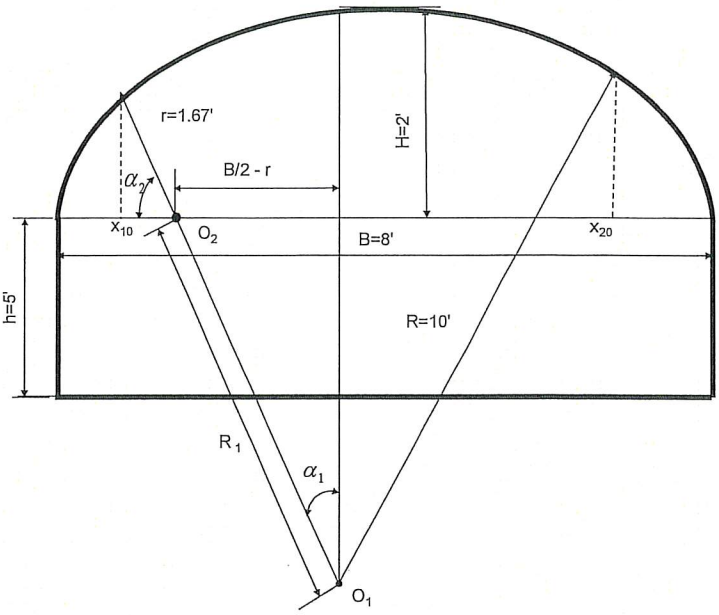
$$A = \alpha_1 R^2 + \alpha_2 r^2 - (B/2-r)\sqrt{(R-r)^2-(B/2-r)^2} + Bh$$

$$P = 2(\alpha_1 R + \alpha_2 r) + B + 2h$$

$$R_h = A/P$$

$$K = \frac{1.486}{n} AR^{2/3}$$

α_1: 0.28 rad => 16.260 °
α_2: 1.29 rad => 73.740 °
x_{10}: 1.20 ft
x_{20}: 6.80 ft
H: 2.00 ft

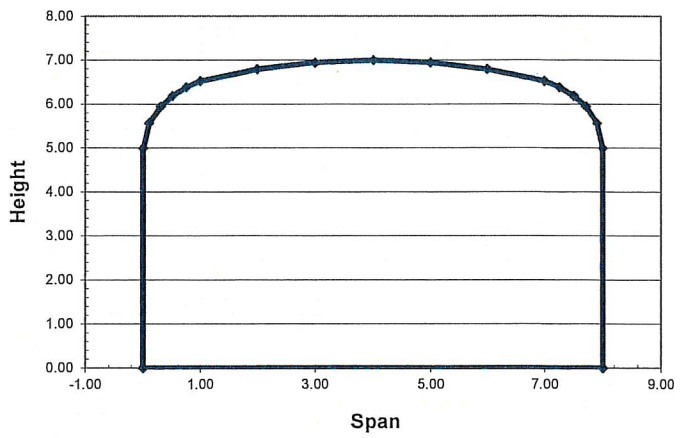


Hydraulic Properties

Area, A:	53.29 ft^2	$AR_h^{2/3}$:	81.90
Perimeter, P:	27.97 ft	Mannings n:	0.013
Hydraulic Radius, R_h:	1.91 ft	Flow Coefficient K:	9362.00

Arch Profile Coordinate Points

Radius	*Point #	X-Coordinate ft (Span)	8x7 Y-Coordinate ft
N/A	1	0.00	0.00
N/A	2	8.00	0.00
N/A	3	8.00	0.01
N/A	4	8.00	5.00
r	5	7.90	5.57
r	6	7.70	5.95
r	7	7.50	6.19
r	8	7.25	6.39
r	9	7.00	6.53
R	10	6.00	6.80
R	11	5.00	6.95
R	12	4.00	7.00
R	13	3.00	6.95
R	14	2.00	6.80
r	15	1.00	6.53
r	16	0.75	6.39
r	17	0.50	6.19
r	18	0.30	5.95
r	19	0.10	5.57
N/A	20	0.00	5.00
N/A	21	0.00	0.01



10' E x 9' - ARCH CULVERT

Min Height=3.0' Low profile arch

Geometric Properties

Arch Height: 9.00 ft
Width, B: 10.00 ft
Center Radius, R: 12.50 ft
Haunch Radius, r: 2.08 ft
Stem Wall Height, h: 6.50 ft

Formulas

$$\alpha_1 = \sin^{-1}[(B/2-r)/(R-r)]$$

$$\alpha_2 = \frac{\pi}{2} - \alpha_1$$

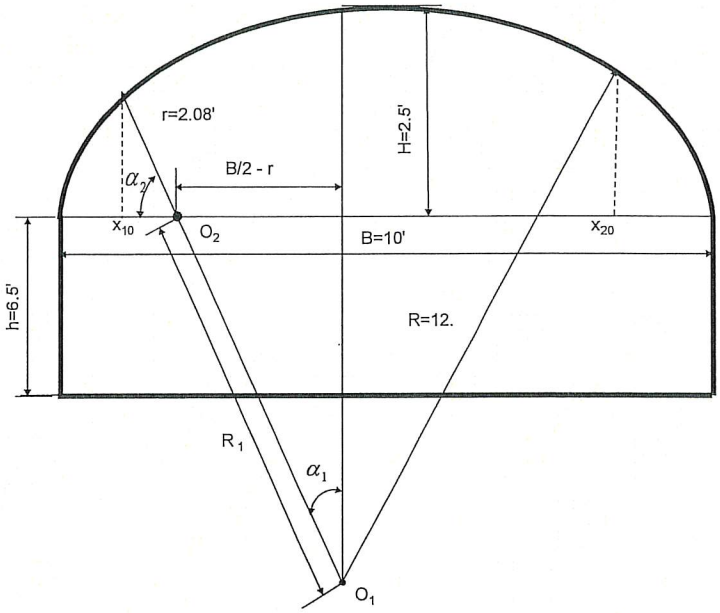
$$A = \alpha_1 R^2 + \alpha_2 r^2 - (B/2-r)\sqrt{(R-r)^2-(B/2-r)^2} + Bh$$

$$P = 2(\alpha_1 R + \alpha_2 r) + B + 2h$$

$$R_h = A/P$$

$$K = \frac{1.486}{n} A R^{2/3}$$

α_1: 0.28 rad => 16.260 °
α_2: 1.29 rad => 73.740 °
x_{10}: 1.50 ft
x_{20}: 8.50 ft
H: 2.50 ft

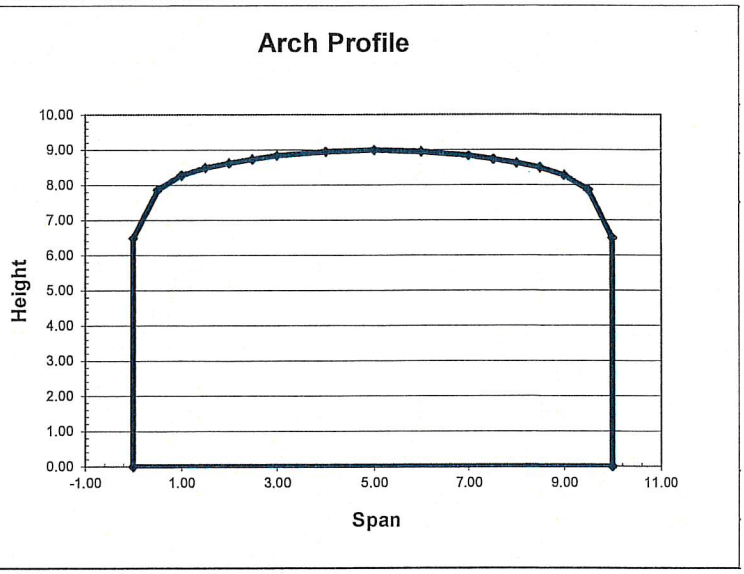


Hydraulic Properties

Area, A: 85.76 ft^2 — $AR_h^{2/3}$: 154.53
Perimeter, P: 35.46 ft — Mannings n: 0.013
Hydraulic Radius, R_h: 2.42 ft — Flow Coefficient K: 17664.32

Arch Profile Coordinate Points

Radius	*Point #	X-Coordinate ft (Span)	10x9 Y-Coordinate ft
N/A	1	0.00	0.00
N/A	2	10.00	0.00
N/A	3	10.00	0.01
N/A	4	10.00	6.50
r	5	9.49	7.87
r	6	9.00	8.28
R	7	8.50	8.50
R	8	8.00	8.63
R	9	7.52	8.74
R	10	7.00	8.84
R	11	6.00	8.96
R	12	5.00	9.00
R	13	4.00	8.96
R	14	3.00	8.84
R	15	2.48	8.74
R	16	2.00	8.63
R	17	1.50	8.50
r	18	1.00	8.28
r	19	0.51	7.87
N/A	20	0.00	6.50
N/A	21	0.00	0.01



Grand Canyon Way

Proposed Condition

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 PARCEL 2.05a TO BASIN OFF11 - STORM DRAIN
SO    1000.0002806.440 30       .013                    2808.94
R     1056.0002806.780 30       .013                              45.00 1
R     1206.0002807.990 30       .013                              60.00 1
R     1267.0002808.290 30       .013
SH    1267.0002808.290 30       .013
CD     1  2   0    .000   4.000   10.000  .000  .000   .00
CD    18  4   1    .000   1.500     .000  .000  .000   .00
CD    24  4   1    .000   2.000     .000  .000  .000   .00
CD    30  4   1    .000   2.500     .000  .000  .000   .00
CD    36  4   1    .000   3.000     .000  .000  .000   .00
CD    42  4   1    .000   3.500     .000  .000  .000   .00
CD    48  4   1    .000   4.000     .000  .000  .000   .00
CD    54  4   1    .000   4.500     .000  .000  .000   .00
CD    60  4   1    .000   5.000     .000  .000  .000   .00
Q             40.000   .0
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FILE: 205a.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-19-2017 Time: 8:45: 6

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	0	.000	4.000	10.000			.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

PARCEL 2.05a TO BASIN OFF11 - STORM DRAIN

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2806.440	30	2808.940

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1056.000	2806.780	30	.013	.000	.000	45.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1206.000	2807.990	30	.013	.000	.000	60.000	1

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1267.000	2808.290	30	.013	.000	.000	.000	0

ELEMENT NO 5 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1267.000	2808.290	30	.000

FILE: 205a.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-19-2017 Time: 8:45:12

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.05a TO BASIN OFF11 - STORM DRAIN

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2806.440	2.500	2808.940	40.00	8.15	1.03	2809.97	.00	2.13	.00	2.500	.000	.00	1 .0
56.000	.0061					.0095	.53	2.50	.00	2.50	.013	.00	.00	PIPE
1056.000	2806.780	2.897	2809.677	40.00	8.15	1.03	2810.71	.00	2.13	.00	2.500	.000	.00	1 .0
150.000	.0081					.0095	1.43	2.90	.00	2.50	.013	.00	.00	PIPE
1206.000	2807.990	3.369	2811.359	40.00	8.15	1.03	2812.39	.00	2.13	.00	2.500	.000	.00	1 .0
61.000	.0049					.0095	.58	3.37	.00	2.50	.013	.00	.00	PIPE
1267.000	2808.290	3.649	2811.939	40.00	8.15	1.03	2812.97	.00	2.13	.00	2.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.05a TO BASIN OFF11 - STORM DRAIN

1000.00 .I C H E . R

1005.45 .

1010.90 .

1016.35 .

1021.80 .

1027.24 .

1032.69 .

1038.14 .

1043.59 .

1049.04 .

1054.49 .

1059.94 . I C H W E . R

1065.39 .

1070.84 .

1076.29 .

1081.73 .

1087.18 .

1092.63 .

1098.08 .

1103.53 .

1108.98 .

1114.43 .

1119.88 .

1125.33 .

1130.78 .

1136.22 .

1141.67 .

1147.12 .

1152.57 .

1158.02 .

1163.47 .

1168.92 .

1174.37 .

1179.82 .

1185.27 .

1190.71 .

1196.16 .

```
1201.61   .                                                                .
1207.06   .          I                        C    H          W            E        .   R
1212.51   .                                                                .
1217.96   .                                                                .
1223.41   .                                                                .
1228.86   .                                                                .
1234.31   .                                                                .
1239.76   .                                                                .
1245.20   .                                                                .
1250.65   .                                                                .
1256.10   .                                                                .
1261.55   .                                                                .
1267.00   .                    I                        C    H          W        E .   R

        2806.440  2807.093  2807.746  2808.399  2809.052  2809.705  2810.358  2811.011  2811.665  2812.318  2812.970
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 GRAND CANYON SOUTH INLETS
SO   1000.0002750.440 66      .013                2754.00
R    1078.0002750.830 66      .013                                  1
R    1098.0002750.930 66      .013                                  1
JX   1098.0002754.430 24      .013
R    1127.0002754.580 18      .013                                  1
SH   1127.0002754.580 18      .013
CD   1  2   0    .000   4.000   10.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  66  4   1    .000   5.500     .000  .000  .000   .00
Q            11.000   .0
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FILE: P10.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10- 8-2017 Time:10:38:42

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	0	.000	4.000	10.000			.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -
BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -
GRAND CANYON SOUT INLETS

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2750.440	66	2754.000

ELEMENT NO 2 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1078.000	2750.830	66	.013	.000	.000	.000	1

ELEMENT NO 3 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1098.000	2750.930	66	.013	.000	.000	.000	1

ELEMENT NO 4 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1098.000	2754.430	24	0	0	.013	.000	.000	.000	.000	.000	.000

RADIUS	ANGLE
.000	.000

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 5 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1127.000	2754.580	18	.013	.000	.000	.000	1

ELEMENT NO 6 IS A SYSTEM HEADWORKS

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1127.000	2754.580	18	.000

♀ FILE: P10.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10- 8-2017 Time:10:38:48

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

GRAND CANYON SOUT INLETS

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2750.440	3.560	2754.000	11.00	.68	.01	2754.01	.00	.89	5.26	5.500	.000	.00	1 .0
28.553	.0050					.0000	.00	3.56	.07	.81	.013	.00	.00	PIPE
1028.553	2750.583	3.417	2754.000	11.00	.71	.01	2754.01	.00	.89	5.34	5.500	.000	.00	1 .0
26.857	.0050					.0000	.00	3.42	.07	.81	.013	.00	.00	PIPE
1055.410	2750.717	3.283	2754.000	11.00	.74	.01	2754.01	.00	.89	5.40	5.500	.000	.00	1 .0
22.590	.0050					.0000	.00	3.28	.08	.81	.013	.00	.00	PIPE
1078.000	2750.830	3.169	2754.000	11.00	.78	.01	2754.01	.00	.89	5.44	5.500	.000	.00	1 .0
20.000	.0050					.0000	.00	3.17	.08	.81	.013	.00	.00	PIPE
1098.000	2750.930	3.069	2753.999	11.00	.81	.01	2754.01	.00	.89	5.46	5.500	.000	.00	1 .0
JUNCT STR	.0000							3.07	.09		.013	.00	.00	PIPE
1098.000	2754.430	1.189	2755.619	11.00	5.65	.50	2756.11	.00	1.19	1.96	2.000	.000	.00	1 .0
1098.000	2754.430	1.270	2755.700	11.00	6.89	.74	2756.44	.00	1.27	1.08	1.500	.000	.00	1 .0
2.249	.0052					.0100	.02	1.27	1.00	1.50	.013	.00	.00	PIPE
1100.249	2754.442	1.348	2755.790	11.00	6.57	.67	2756.46	.00	1.27	.91	1.500	.000	.00	1 .0
11.717	.0052					.0097	.11	1.35	.85	1.50	.013	.00	.00	PIPE
1111.966	2754.502	1.462	2755.964	11.00	6.27	.61	2756.57	.00	1.27	.47	1.500	.000	.00	1 .0
6.225	.0052					.0100	.06	1.46	.57	1.50	.013	.00	.00	PIPE
1118.191	2754.534	1.500	2756.034	11.00	6.22	.60	2756.64	.00	1.27	.00	1.500	.000	.00	1 .0
8.809	.0052					.0106	.09	1.50	.00	1.50	.013	.00	.00	PIPE

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1127.000	2754.580	1.560	2756.140	11.00	6.22	.60	2756.74	.00	1.27	.00	1.500	.000	.00	1 .0

♀
♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

GRAND CANYON SOUT INLETS

1000.00 .I C W H . R

1002.59 .

1005.18 .

1007.78 .

1010.37 .

1012.96 .

1015.55 .

1018.14 .

1020.73 .

1023.33 .

1025.92 .

1028.51 .

1031.10 . I C W H . R

1033.69 .

1036.29 .

1038.88 .

1041.47 .

1044.06 .

1046.65 .

1049.24 .

1051.84 .

1054.43 .

1057.02 . I C W H . R

1059.61 .

1062.20 .

1064.80 .

1067.39 .

1069.98 .

```
1072.57   .                                                                                .
1075.16   .                                                                                .
1077.76   .                                                                                .
1080.35   .     I            C                          W                        H        .   R
1082.94   .                                                                                .
1085.53   .                                                                                .
1088.12   .                                                                                .
1090.71   .                                                                                .
1093.31   .                                                                                .
1095.90   .                                                                                .
1098.49   .      I            C                          W                        H        .   JX
1101.08   .                                        I                  W       E    H      .   JX
1103.67   .                                        I                  W   H       E      .   R
1106.27   .                                        I                  CW  H       E      .   R
1108.86   .                                                                               .
1111.45   .                                                                               .
1114.04   .                                        I                  C  WH        E     .   R
1116.63   .                                                                               .
1119.22   .                                        I                  C  H         E     .   R
1121.82   .                                                                               .
1124.41   .                                                                               .
1127.00   .                                        I                  C   HW       E     .   R

          2750.440  2751.070  2751.700  2752.330  2752.960  2753.591  2754.221  2754.851  2755.481  2756.111  2756.742
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT

Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN
SO    1000.0002760.190 42       .013                  2763.69
R     1076.0002760.570 42       .013                              69.00 1
JX    1076.0002761.070 36 36    .013    53.0            2761.07
R     1276.0002764.070 36       .013                               6.00 1
JX    1276.0002764.570 30 18    .013     5.0            2765.57          48.0
R     1476.0002767.580 30       .013                               6.00 1
R     1676.0002772.580 30       .013                               6.00 1
R     1876.0002777.590 30       .013                               4.00 1
R     1946.0002779.340 30       .013                              60.00 1
R     2022.0002781.240 30       .013                                    1
SH    2022.0002781.240 30       .013
CD    1  2   0     .000    4.000   10.000  .000  .000   .00
CD   18  4   1     .000    1.500     .000  .000  .000   .00
CD   24  4   1     .000    2.000     .000  .000  .000   .00
CD   30  4   1     .000    2.500     .000  .000  .000   .00
CD   36  4   1     .000    3.000     .000  .000  .000   .00
CD   42  4   1     .000    3.500     .000  .000  .000   .00
CD   48  4   1     .000    4.000     .000  .000  .000   .00
CD   54  4   1     .000    4.500     .000  .000  .000   .00
CD   60  4   1     .000    5.000     .000  .000  .000   .00
Q             55.000   .0
```

FILE: P203.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10- 8-2017 Time:10: 5:29

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	0	.000	4.000	10.000			.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2760.190	42	2763.690

ELEMENT NO 2 IS A REACH * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1076.000	2760.570	42	.013	.000	.000	69.000	1

ELEMENT NO 3 IS A JUNCTION * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1076.000	2761.070	36	36	0	.013	53.000	.000	2761.070	.000	.000	.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1276.000	2764.070	36	.013	.000	.000	6.000	1

ELEMENT NO 5 IS A JUNCTION * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1276.000	2764.570	30	18	0	.013	5.000	.000	2765.570	.000	48.000	.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1476.000	2767.580	30	.013	.000	.000	6.000	1

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1676.000	2772.580	30	.013	.000	.000	6.000	1

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1876.000	2777.590	30	.013	.000	.000	4.000	1

ELEMENT NO 9 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1946.000	2779.340	30	.013	.000	.000	60.000	1

ELEMENT NO 10 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2022.000	2781.240	30	.013	.000	.000	.000	1

W S P G W PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 11 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	2022.000	2781.240	30	.000

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10- 8-2017 Time:10: 5:35

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2760.190	3.500	2763.690	113.00	11.74	2.14	2765.83	.00	3.20	.00	3.500	.000	.00	1 .0
76.000	.0050					.0126	.96	3.50	.00	3.50	.013	.00	.00	PIPE
1076.000	2760.570	4.673	2765.243	113.00	11.74	2.14	2767.39	.00	3.20	.00	3.500	.000	.00	1 .0
JUNCT STR	.0000					.0104	.00	4.67	.00		.013	.00	.00	PIPE
1076.000	2761.070	5.738	2766.808	60.00	8.49	1.12	2767.93	.00	2.50	.00	3.000	.000	.00	1 .0
200.000	.0150					.0081	1.62	5.74	.00	1.91	.013	.00	.00	PIPE
1276.000	2764.070	4.435	2768.505	60.00	8.49	1.12	2769.62	.00	2.50	.00	3.000	.000	.00	1 .0
JUNCT STR	.0000					.0130	.00	4.43	.00		.013	.00	.00	PIPE
1276.000	2764.570	3.331	2767.901	55.00	11.20	1.95	2769.85	.00	2.35	.00	2.500	.000	.00	1 .0
200.000	.0151					.0180	3.60	3.33	.00	2.50	.013	.00	.00	PIPE
1476.000	2767.580	4.053	2771.633	55.00	11.20	1.95	2773.58	.00	2.35	.00	2.500	.000	.00	1 .0
149.834	.0250					.0180	2.69	4.05	.00	1.77	.013	.00	.00	PIPE
1625.834	2771.326	3.102	2774.428	55.00	11.20	1.95	2776.38	.00	2.35	.00	2.500	.000	.00	1 .0
HYDRAULIC JUMP														
1625.834	2771.326	1.766	2773.092	55.00	14.84	3.42	2776.51	.00	2.35	2.28	2.500	.000	.00	1 .0
50.166	.0250					.0251	1.26	1.77	2.05	1.77	.013	.00	.00	PIPE
1676.000	2772.580	1.766	2774.346	55.00	14.84	3.42	2777.76	.00	2.35	2.28	2.500	.000	.00	1 .0
25.516	.0251					.0251	.64	1.77	2.05	1.77	.013	.00	.00	PIPE

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10- 8-2017 Time:10: 5:35

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1701.516	2773.219	1.766	2774.985	55.00	14.84	3.42	2778.40	.00	2.35	2.28	2.500	.000	.00	1 .0
174.484	.0251					.0242	4.23	1.77	2.05	1.77	.013	.00	.00	PIPE
1876.000	2777.590	1.813	2779.403	55.00	14.43	3.23	2782.63	.00	2.35	2.23	2.500	.000	.00	1 .0
70.000	.0250					.0224	1.57	1.81	1.95	1.77	.013	.00	.00	PIPE
1946.000	2779.340	1.886	2781.227	55.00	13.84	2.97	2784.20	.00	2.35	2.15	2.500	.000	.00	1 .0
35.813	.0250					.0203	.73	1.89	1.79	1.77	.013	.00	.00	PIPE
1981.813	2780.235	1.972	2782.208	55.00	13.24	2.72	2784.93	.00	2.35	2.04	2.500	.000	.00	1 .0
22.082	.0250					.0185	.41	1.97	1.64	1.77	.013	.00	.00	PIPE

P203

2003.895	2780.787	2.076	2782.863	55.00	12.63	2.48	2785.34	.00	2.35	1.88	2.500	.000	.00	1	.0
12.872	.0250					.0169	.22	2.08	1.46	1.77	.013	.00	.00	PIPE	
2016.767	2781.109	2.196	2783.305	55.00	12.04	2.25	2785.56	.00	2.35	1.63	2.500	.000	.00	1	.0
5.233	.0250					.0159	.08	2.20	1.27	1.77	.013	.00	.00	PIPE	
2022.000	2781.240	2.354	2783.594	55.00	11.47	2.04	2785.64	.00	2.35	1.17	2.500	.000	.00	1	.0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

1000.00	.I CH E	.	R
1020.86	.	.	
1041.71	.	.	
1062.57	.	.	
1083.43	. I CH W E	.	JX
1104.29	. I C H W E	.	R
1125.14	.	.	
1146.00	.	.	
1166.86	.	.	
1187.71	.	.	
1208.57	.	.	
1229.43	.	.	
1250.29	.	.	
1271.14	.	.	
1292.00	. I C H W E	.	JX
1312.86	. I CH W E	.	R
1333.71	.	.	

1354.57 .
1375.43 .
1396.29 .
1417.14 .
1438.00 .
1458.86 .
1479.71 . I H W E . R
1500.57 .
1521.43 .
1542.29 .
1563.14 .
1584.00 .
1604.86 .
1625.71 .
1646.57 . I H W E . R
1667.43 . I W H E . R
1688.29 . I W CH E . R
1709.14 . I W CH E . R
1730.00 .
1750.86 .
1771.71 .
1792.57 .
1813.43 .
1834.29 .
1855.14 .

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Grand Canyon Way

Ultimate Condition

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN
SO   1000.0002760.190 42      .013                2763.69
R    1076.0002760.570 42      .013                                    69.00 1
JX   1076.0002761.070 36 36   .013   53.0           2761.07
R    1276.0002764.070 36      .013                                     6.00 1
JX   1276.0002764.570 30 18 18.013    5.0      5.0  2765.57 2765.57  48.0 48.0
R    1476.0002767.580 30      .013                                     6.00 1
R    1676.0002772.580 30      .013                                     6.00 1
R    1876.0002777.590 30      .013                                     4.00 1
R    1946.0002779.340 30      .013                                    60.00 1
JX   1946.0002779.340 30 18   .013    3.0           2780.34          90.0
R    2022.0002781.240 30      .013                                         1
SH   2022.0002781.240 30      .013
CD   1  2   0    .000   4.000   10.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
Q           52.000   .0
```

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	0	.000	4.000	10.000			.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														

W S P G W
WATER SURFACE PROFILE - TITLE CARD LISTING PAGE NO 1

HEADING LINE NO 1 IS -

HEADING LINE NO 2 IS - SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 3 IS - BY OLYMPIA COMPANIES

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING PAGE NO 2

ELEMENT NO 1 IS A SYSTEM OUTLET

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2760.190	42	2763.690

ELEMENT NO 2 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1076.000	2760.570	42	.013	.000	.000	69.000	1

ELEMENT NO 3 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1076.000	2761.070	36	36	0	.013	53.000	.000	2761.070	.000	.000	.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 4 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1276.000	2764.070	36	.013	.000	.000	6.000	1

ELEMENT NO 5 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1276.000	2764.570	30	18	18	.013	5.000	5.000	2765.570	2765.570	48.000	48.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 6 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1476.000	2767.580	30	.013	.000	.000	6.000	1

ELEMENT NO 7 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1676.000	2772.580	30	.013	.000	.000	6.000	1

ELEMENT NO 8 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1876.000	2777.590	30	.013	.000	.000	4.000	1

ELEMENT NO 9 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1946.000	2779.340	30	.013	.000	.000	60.000	1

ELEMENT NO 10 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1946.000	2779.340	30	18	0	.013	3.000	.000	2780.340	.000	90.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

W S P G W
WATER SURFACE PROFILE - ELEMENT CARD LISTING PAGE NO 3

ELEMENT NO 11 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2022.000	2781.240	30	.013	.000	.000	.000	1

ELEMENT NO 12 IS A SYSTEM HEADWORKS

U/S DATA	STATION	INVERT	SECT	W S ELEV
	2022.000	2781.240	30	.000

♀ FILE: U203.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10- 8-2017 Time:10:56:12

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type	Ch
1000.000	2760.190	3.500	2763.690	118.00	12.26	2.34	2766.03	.00	3.24	.00	3.500	.000	.00	1	.0
76.000	.0050					.0138	1.05	3.50	.00	3.50	.013	.00	.00	PIPE	
1076.000	2760.570	4.814	2765.384	118.00	12.26	2.34	2767.72	.00	3.24	.00	3.500	.000	.00	1	.0
JUNCT STR	.0000					.0116	.00	4.81	.00		.013	.00	.00	PIPE	
1076.000	2761.070	5.997	2767.067	65.00	9.20	1.31	2768.38	.00	2.59	.00	3.000	.000	.00	1	.0
200.000	.0150					.0095	1.90	6.00	.00	2.02	.013	.00	.00	PIPE	
1276.000	2764.070	4.988	2769.058	65.00	9.20	1.31	2770.37	.00	2.59	.00	3.000	.000	.00	1	.0
JUNCT STR	.0000					.0137	.00	4.99	.00		.013	.00	.00	PIPE	
1276.000	2764.570	4.293	2768.864	55.00	11.20	1.95	2770.81	.00	2.35	.00	2.500	.000	.00	1	.0
200.000	.0151					.0180	3.60	4.29	.00	2.50	.013	.00	.00	PIPE	
1476.000	2767.580	5.016	2772.596	55.00	11.20	1.95	2774.54	.00	2.35	.00	2.500	.000	.00	1	.0
200.000	.0250					.0180	3.60	5.02	.00	1.77	.013	.00	.00	PIPE	
1676.000	2772.580	3.748	2776.328	55.00	11.20	1.95	2778.28	.00	2.35	.00	2.500	.000	.00	1	.0
114.331	.0251					.0180	2.06	3.75	.00	1.77	.013	.00	.00	PIPE	
1790.331	2775.444	3.010	2778.455	55.00	11.20	1.95	2780.40	.00	2.35	.00	2.500	.000	.00	1	.0
HYDRAULIC JUMP															
1790.331	2775.444	1.809	2777.253	55.00	14.46	3.25	2780.50	.00	2.35	2.24	2.500	.000	.00	1	.0
7.904	.0251					.0236	.19	1.81	1.95	1.77	.013	.00	.00	PIPE	

♀ FILE: U203.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10- 8-2017 Time:10:56:12

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type	Ch
1798.235	2775.642	1.809	2777.451	55.00	14.46	3.25	2780.70	.00	2.35	2.24	2.500	.000	.00	1	.0
77.765	.0251					.0223	1.74	1.81	1.95	1.77	.013	.00	.00	PIPE	
1876.000	2777.590	1.894	2779.484	55.00	13.78	2.95	2782.43	.00	2.35	2.14	2.500	.000	.00	1	.0
13.434	.0250					.0208	.28	1.89	1.78	1.77	.013	.00	.00	PIPE	
1889.434	2777.926	1.921	2779.847	55.00	13.59	2.87	2782.71	.00	2.35	2.11	2.500	.000	.00	1	.0
29.714	.0250					.0195	.58	1.92	1.73	1.77	.013	.00	.00	PIPE	
1919.148	2778.669	2.018	2780.687	55.00	12.96	2.61	2783.29	.00	2.35	1.97	2.500	.000	.00	1	.0
17.359	.0250					.0177	.31	2.02	1.56	1.77	.013	.00	.00	PIPE	
1936.507	2779.103	2.128	2781.231	55.00	12.35	2.37	2783.60	.00	2.35	1.78	2.500	.000	.00	1	.0
9.493	.0250					.0163	.16	2.13	1.38	1.77	.013	.00	.00	PIPE	
1946.000	2779.340	2.261	2781.601	55.00	11.78	2.15	2783.76	.00	2.35	1.47	2.500	.000	.00	1	.0

JUNCT STR	.0000					.0184	.00	2.26	1.16			.013		.00	.00	PIPE	
1946.000	2779.340	1.814	2781.154	52.00	13.63	2.89	2784.04	.00	2.32	2.23	2.500	.000	.00	1	.0		
24.002	.0250					.0202	.49	1.81	1.84	1.69	.013	.00	.00	PIPE			
1970.002	2779.940	1.866	2781.806	52.00	13.23	2.72	2784.53	.00	2.32	2.18	2.500	.000	.00	1	.0		
24.417	.0250					.0186	.45	1.87	1.74	1.69	.013	.00	.00	PIPE			
1994.418	2780.551	1.956	2782.507	52.00	12.62	2.47	2784.98	.00	2.32	2.06	2.500	.000	.00	1	.0		
15.031	.0250					.0168	.25	1.96	1.57	1.69	.013	.00	.00	PIPE			

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10- 8-2017 Time:10:56:12

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2009.450	2780.926	2.057	2782.984	52.00	12.03	2.25	2785.23	.00	2.32	1.91	2.500	.000	.00	1 .0
9.006	.0250					.0153	.14	2.06	1.41	1.69	.013	.00	.00	PIPE
2018.456	2781.151	2.174	2783.326	52.00	11.47	2.04	2785.37	.00	2.32	1.68	2.500	.000	.00	1 .0
3.544	.0250					.0143	.05	2.17	1.23	1.69	.013	.00	.00	PIPE
2022.000	2781.240	2.323	2783.563	52.00	10.93	1.86	2785.42	.00	2.32	1.28	2.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

PARCEL 2.03 TO BASIN OFF12 - STORM DRAIN

1000.00	.I	CH	E	.	R	
1020.86	.			.		
1041.71	.			.		
1062.57	.			.		
1083.43	. I	CH	W E	.	JX	
1104.29	. I	C H	W E	.	R	
1125.14	.			.		
1146.00	.			.		
1166.86	.			.		
1187.71	.			.		

1208.57	.		.
1229.43	.		.
1250.29	.		.
1271.14	.		.
1292.00	.	I C H W E	. JX
1312.86	.	I CH W E	. R
1333.71	.		.
1354.57	.		.
1375.43	.		.
1396.29	.		.
1417.14	.		.
1438.00	.		.
1458.86	.		.
1479.71	.	I CH W E	. R
1500.57	.		.
1521.43	.		.
1542.29	.		.
1563.14	.		.
1584.00	.		.
1604.86	.		.
1625.71	.		.
1646.57	.		.
1667.43	.		.
1688.29	.	I CH W E	. R
1709.14	.		.
1730.00	.		.
1750.86	.		.
1771.71	.		.

U203

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1792.57   .                                                I       CH W       E                .   R
1813.43   .                                                I     W CH         E                .   R
1834.29   .                                                 I    W CH         E                .   R
1855.14   .                                                                                      .
1876.00   .                                                      I      W H         E          .   R
1896.86   .                                                        I     W CH        E         .   R
1917.71   .                                                                                      .
1938.57   .                                                           I       WCH       E      .   R
1959.43   .                                                           I        WH       E      .   R
1980.29   .                                                            I       WH       E      .   JX
2001.14   .                                                            I       W H        E     .   R
2022.00   .                                                               I      W CH       E   .   R

          2760.190  2762.713  2765.236  2767.759  2770.282  2772.805  2775.328  2777.851  2780.374  2782.896  2785.420
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N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 GRAND CANYON SOUTH INLETS
SO    1000.0002750.440 66       .013                  2754.00
R     1078.0002750.830 66       .013                                                  1
R     1098.0002750.930 66       .013                                                  1
JX    1098.0002754.430 24 18    .013    11.0          2754.93          45.0
R     1127.0002754.580 18       .013                                                  1
JX    1127.0002754.580 18 18    .013    11.0          2754.58          45.0
R     1137.0002755.180 18       .013                                        60.00 1
SH    1137.0002755.180 18       .013
CD     1  2   0     .000   4.000   10.000  .000  .000   .00
CD    18  4   1     .000   1.500     .000  .000  .000   .00
CD    24  4   1     .000   2.000     .000  .000  .000   .00
CD    30  4   1     .000   2.500     .000  .000  .000   .00
CD    36  4   1     .000   3.000     .000  .000  .000   .00
CD    42  4   1     .000   3.500     .000  .000  .000   .00
CD    48  4   1     .000   4.000     .000  .000  .000   .00
CD    54  4   1     .000   4.500     .000  .000  .000   .00
CD    60  4   1     .000   5.000     .000  .000  .000   .00
CD    66  4   1     .000   5.500     .000  .000  .000   .00
Q             10.000   .0
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FILE: UP10.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10- 8-2017 Time:10:38:58

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	0	.000	4.000	10.000			.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

GRAND CANYON SOUT INLETS

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2750.440	66	2754.000

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1078.000	2750.830	66	.013	.000	.000	.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1098.000	2750.930	66	.013	.000	.000	.000	1

ELEMENT NO 4 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1098.000	2754.430	24	18	0	.013	11.000	.000	2754.930	.000	45.000	.000

RADIUS	ANGLE
.000	.000

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1127.000	2754.580	18	.013	.000	.000	.000	1

ELEMENT NO 6 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1127.000	2754.580	18	18	0	.013	11.000	.000	2754.580	.000	45.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 7 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1137.000	2755.180	18	.013	.000	.000	60.000	1

ELEMENT NO 8 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1137.000	2755.180	18	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
GRAND CANYON SOUT INLETS

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2750.440	3.560	2754.000	32.00	1.97	.06	2754.06	.00	1.53	5.26	5.500	.000	.00	1 .0
28.347	.0050					.0002	.00	3.56	.20	1.36	.013	.00	.00	PIPE
1028.347	2750.582	3.417	2753.999	32.00	2.06	.07	2754.06	.00	1.53	5.34	5.500	.000	.00	1 .0
26.594	.0050					.0002	.01	3.42	.21	1.36	.013	.00	.00	PIPE
1054.942	2750.715	3.283	2753.998	32.00	2.16	.07	2754.07	.00	1.53	5.40	5.500	.000	.00	1 .0
23.058	.0050					.0002	.00	3.28	.23	1.36	.013	.00	.00	PIPE
1078.000	2750.830	3.166	2753.996	32.00	2.26	.08	2754.07	.00	1.53	5.44	5.500	.000	.00	1 .0
20.000	.0050					.0002	.00	3.17	.25	1.36	.013	.00	.00	PIPE
1098.000	2750.930	3.064	2753.994	32.00	2.35	.09	2754.08	.00	1.53	5.46	5.500	.000	.00	1 .0
JUNCT STR	.0000							3.06	.26		.013	.00	.00	PIPE
1098.000	2754.430	1.642	2756.072	21.00	7.61	.90	2756.97	.00	1.64	1.53	2.000	.000	.00	1 .0
1098.000	2754.430	1.473	2755.903	21.00	11.93	2.21	2758.11	.00	1.47	.40	1.500	.000	.00	1 .0
.287	.0052					.0366	.01	1.47	1.00	1.50	.013	.00	.00	PIPE
1098.287	2754.431	1.500	2755.931	21.00	11.88	2.19	2758.12	.00	1.47	.00	1.500	.000	.00	1 .0
28.713	.0052					.0386	1.11	1.50	.00	1.50	.013	.00	.00	PIPE
1127.000	2754.580	2.607	2757.188	21.00	11.88	2.19	2759.38	.00	1.47	.00	1.500	.000	.00	1 .0
JUNCT STR	.0000					.0245	.00	2.61	.00		.013	.00	.00	PIPE
1127.000	2754.580	5.148	2759.728	10.00	5.66	.50	2760.23	.00	1.22	.00	1.500	.000	.00	1 .0
10.000	.0600					.0091	.09	5.15	.00	.65	.013	.00	.00	PIPE

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
GRAND CANYON SOUT INLETS

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1137.000	2755.180	4.762	2759.942	10.00	5.66	.50	2760.44	.00	1.22	.00	1.500	.000	.00	1 .0

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♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

GRAND CANYON SOUT INLETS

1000.00	.I	C	WE	H	.	R
1002.80	.				.	
1005.59	.				.	
1008.39	.				.	
1011.18	.				.	
1013.98	.				.	
1016.78	.				.	
1019.57	.				.	
1022.37	.				.	
1025.16	.				.	
1027.96	.				.	
1030.76	. I	C	WE	H	.	R
1033.55	.				.	
1036.35	.				.	
1039.14	.				.	
1041.94	.				.	
1044.73	.				.	
1047.53	.				.	
1050.33	.				.	
1053.12	.				.	
1055.92	. I	C	WE	H	.	R
1058.71	.				.	
1061.51	.				.	
1064.31	.				.	

```
1067.10 .                                                                .
1069.90 .                                                                .
1072.69 .                                                                .
1075.49 .                                                                .
1078.29 . I            C          WE              H                      . R
1081.08 .                                                                .
1083.88 .                                                                .
1086.67 .                                                                .
1089.47 .                                                                .
1092.27 .                                                                .
1095.06 .                                                                .
1097.86 .                                                                .
1100.65 .  I           C          WE              H                      . JX
1103.45 .                         I            W H   E                   . JX
1106.24 .                         I          H              E            . R
1109.04 .                         I          H              E            . R
1111.84 .                                                                .
1114.63 .                                                                .
1117.43 .                                                                .
1120.22 .                                                                .
1123.02 .                                                                .
1125.82 .                                                                .
1128.61 .                           I          H        W          E     . JX
1131.41 .                           I        C H                  W  E  . R
1134.20 .                                                                .
```

UP10

1137.00 . I C H W E. R

2750.440 2751.440 2752.440 2753.440 2754.440 2755.440 2756.440 2757.440 2758.440 2759.440 2760.439

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Skye Village Road

Proposed Condition

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE (SOUTH ALIGNMENT)
SO   3338.3402830.250 72      .015                2836.250
R    3442.3402835.430 72      .015                                    -47.00
TS   3448.4002835.450  2      .015
R    3457.1002835.470  2      .015                                8.308
R    3475.1002835.560  2      .015
R    3485.5302835.640  2      .015                               -9.960
JX   3485.5302835.640  2 30   .015   40.000         2835.640          27.0
R    3521.4702835.790  2      .015                              -34.320
R    3564.4702836.010  2      .015
TS   3574.4702836.060  8      .015
R    3648.4702836.810  8      .015                                    45.00 1
JX   3648.4702836.810 60 30   .015   16.000         2836.810          00.0
R    3703.9702838.470 60      .015                                    45.00 1
R    3739.4102839.490 60      .015                                          1
R    4044.3302846.840 60      .015                                          1
R    4121.3302848.690 60      .015                                    -46.00
SH   4121.3302848.690 60      .015
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   5.000    8.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  66  4   1    .000   5.500     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0      0.0      0.0     0.0     0.0     0.0     0.0
CD   2  6   0     0.0      0.0      0.0     0.0     0.0     0.0     0.0
CD   3  6   0     0.0      0.0      0.0     0.0     0.0     0.0     0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q           366.000   .0
```

FILE: PSVR1.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 3:26:11

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	66	4	1		5.500														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 3:26:11

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE (SOUTH ALIGNMENT)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	3338.340	2830.250	72	2836.250

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3442.340	2835.430	72	.015	.000	.000	-47.000	0

ELEMENT NO 3 IS A TRANSITION * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE
	3448.400	2835.450	2	.015	.000	.000

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3457.100	2835.470	2	.015	60.001	8.308	.000	0

ELEMENT NO 5 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3475.100	2835.560	2	.015	.000	.000	.000	0

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3485.530	2835.640	2	.015	59.999	-9.960	.000	0

ELEMENT NO 7 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3485.530	2835.640	2	30	0	.015	40.000	.000	2835.640	.000	27.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3521.470	2835.790	2	.015	60.000	-34.320	.000	0

ELEMENT NO 9 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	3564.470	2836.010	2	.015	.000	.000	.000	0

ELEMENT NO 10 IS A TRANSITION * * *

```
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                             3574.470 2836.060    8             .015                           .000     .000
ELEMENT NO  11 IS A REACH                *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             3648.470 2836.810    8             .015                           .000     .000     45.000     1
                                                  W S P G W                                                        PAGE NO   3
                          WATER SURFACE PROFILE - ELEMENT CARD LISTING
ELEMENT NO  12 IS A JUNCTION             *         *     *     *                 *                  *                *
                  U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3   PHI 4
                             3648.470 2836.810   60    30     0   .015    16.000      .000  2836.810     .000    .000     .000
                                                                                          RADIUS    ANGLE
                                                                                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
ELEMENT NO  13 IS A REACH                *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             3703.970 2838.470   60             .015                           .000     .000     45.000     1
ELEMENT NO  14 IS A REACH                *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             3739.410 2839.490   60             .015                           .000     .000      .000      1
ELEMENT NO  15 IS A REACH                *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             4044.330 2846.840   60             .015                           .000     .000      .000      1
ELEMENT NO  16 IS A REACH                *         *     *
                  U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                             4121.330 2848.690   60             .015                           .000     .000   -46.000      0
ELEMENT NO  17 IS A SYSTEM HEADWORKS                 *                       *
                  U/S DATA   STATION    INVERT  SECT                                  W S ELEV
                             4121.330 2848.690   60                                      .000
```

♀ FILE: PSVR1.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 3:26:17

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (SOUTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3338.340	2830.250	3.642	2833.892	422.00	23.50	8.58	2842.47	.00	5.43	5.86	6.000	.000	.00	1 .0
14.096	.0498					.0275	.39	3.64	2.37	3.05	.015	.00	.00	PIPE
3352.436	2830.952	3.713	2834.665	422.00	22.97	8.19	2842.86	.00	5.43	5.83	6.000	.000	.00	1 .0
23.940	.0498					.0252	.60	3.71	2.28	3.05	.015	.00	.00	PIPE
3376.376	2832.145	3.868	2836.012	422.00	21.90	7.45	2843.46	.00	5.43	5.74	6.000	.000	.00	1 .0
18.634	.0498					.0223	.42	3.87	2.11	3.05	.015	.00	.00	PIPE
3395.010	2833.073	4.033	2837.105	422.00	20.88	6.77	2843.88	.00	5.43	5.63	6.000	.000	.00	1 .0
14.643	.0498					.0199	.29	4.03	1.94	3.05	.015	.00	.00	PIPE
3409.653	2833.802	4.210	2838.012	422.00	19.91	6.15	2844.17	.00	5.43	5.49	6.000	.000	.00	1 .0
11.475	.0498					.0177	.20	4.21	1.79	3.05	.015	.00	.00	PIPE
3421.128	2834.373	4.402	2838.775	422.00	18.98	5.60	2844.37	.00	5.43	5.30	6.000	.000	.00	1 .0
8.831	.0498					.0159	.14	4.40	1.63	3.05	.015	.00	.00	PIPE
3429.959	2834.813	4.611	2839.424	422.00	18.10	5.09	2844.51	.00	5.43	5.06	6.000	.000	.00	1 .0
6.490	.0498					.0143	.09	4.61	1.49	3.05	.015	.00	.00	PIPE
3436.449	2835.136	4.843	2839.979	422.00	17.26	4.62	2844.60	.00	5.43	4.73	6.000	.000	.00	1 .0
4.233	.0498					.0130	.06	4.84	1.34	3.05	.015	.00	.00	PIPE
3440.683	2835.347	5.108	2840.455	422.00	16.45	4.20	2844.66	.00	5.43	4.27	6.000	.000	.00	1 .0
1.657	.0498					.0120	.02	5.11	1.18	3.05	.015	.00	.00	PIPE

♀ FILE: PSVR1.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 3:26:17

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (SOUTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3442.340	2835.430	5.428	2840.858	422.00	15.69	3.82	2844.68	.00	5.43	3.52	6.000	.000	.00	1 .0
TRANS STR	.0033					.0027	.02	5.43	1.00		.015	.00	.00	PIPE
3448.400	2835.450	9.006	2844.456	422.00	7.93	.98	2845.43	.00	4.42	.00		2		0 .0
8.700	.0023					.0027	.02	.00	.00	6.300	.015			IR-COV
3457.100	2835.470	9.069	2844.539	422.00	7.93	.98	2845.52	.00	4.42	.00		2		0 .0
18.000	.0050					.0027	.05	9.07	.00	4.549	.015			IR-COV
3475.100	2835.560	9.027	2844.587	422.00	7.93	.98	2845.56	.00	4.42	.00		2		0 .0
10.430	.0077					.0027	.03	.00	.00	3.875	.015			IR-COV
3485.530	2835.640	9.041	2844.681	422.00	7.93	.98	2845.66	.00	4.42	.00		2		0 .0
JUNCT STR	.0000					.0022	.00	.00	.00		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

3485.530	2835.640	9.224	2844.864	382.00	7.18	.80	2845.67	.00	4.14	.00			2	0	.0
35.940	.0042					.0022	.08	.00	.00	4.517	.015			IR-COV	
3521.470	2835.790	9.253	2845.043	382.00	7.18	.80	2845.84	.00	4.14	.00			2	0	.0
43.000	.0051					.0022	.10	9.25	.00	4.183	.015			IR-COV	
3564.470	2836.010	9.129	2845.139	382.00	7.18	.80	2845.94	.00	4.14	.00			2	0	.0
TRANS STR	.0050					.0022	.02	9.13	.00		.015			IR-COV	

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 3:26:17

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (SOUTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3574.470	2836.060	8.809	2844.869	382.00	9.55	1.42	2846.28	.00	4.14	8.00	5.000	8.000	.00	0 .0
74.000	.0101					.0052	.39	8.81	.75	3.25	.015	.00	.00	BOX
3648.470	2836.810	8.727	2845.537	382.00	9.55	1.42	2846.95	.00	4.14	8.00	5.000	8.000	.00	0 .0
JUNCT STR	.0000							8.73	.75		.015	.00	.00	BOX
3648.470	2836.810	4.120	2840.930	366.00	21.14	6.94	2847.87	.00	4.84	3.81	5.000	.000	.00	1 .0
55.500	.0299					.0254	1.41	4.12	1.75	3.84	.015	.00	.00	PIPE
3703.970	2838.470	4.257	2842.727	366.00	20.55	6.55	2849.28	.00	4.84	3.56	5.000	.000	.00	1 .0
HYDRAULIC DROP														
3703.970	2838.470	6.237	2844.707	366.00	18.64	5.40	2850.10	.00	4.84	.00	5.000	.000	.00	1 .0
35.440	.0288					.0263	.93	6.24	.00	3.91	.015	.00	.00	PIPE
3739.410	2839.490	6.418	2845.908	366.00	18.64	5.40	2851.30	.00	4.84	.00	5.000	.000	.00	1 .0
304.920	.0241					.0263	8.02	6.42	.00	4.33	.015	.00	.00	PIPE
4044.330	2846.840	7.355	2854.195	366.00	18.64	5.40	2859.59	.00	4.84	.00	5.000	.000	.00	1 .0
77.000	.0240					.0263	2.02	7.36	.00	4.34	.015	.00	.00	PIPE
4121.330	2848.690	8.349	2857.039	366.00	18.64	5.40	2862.43	.00	4.84	.00	5.000	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE (SOUTH ALIGNMENT)

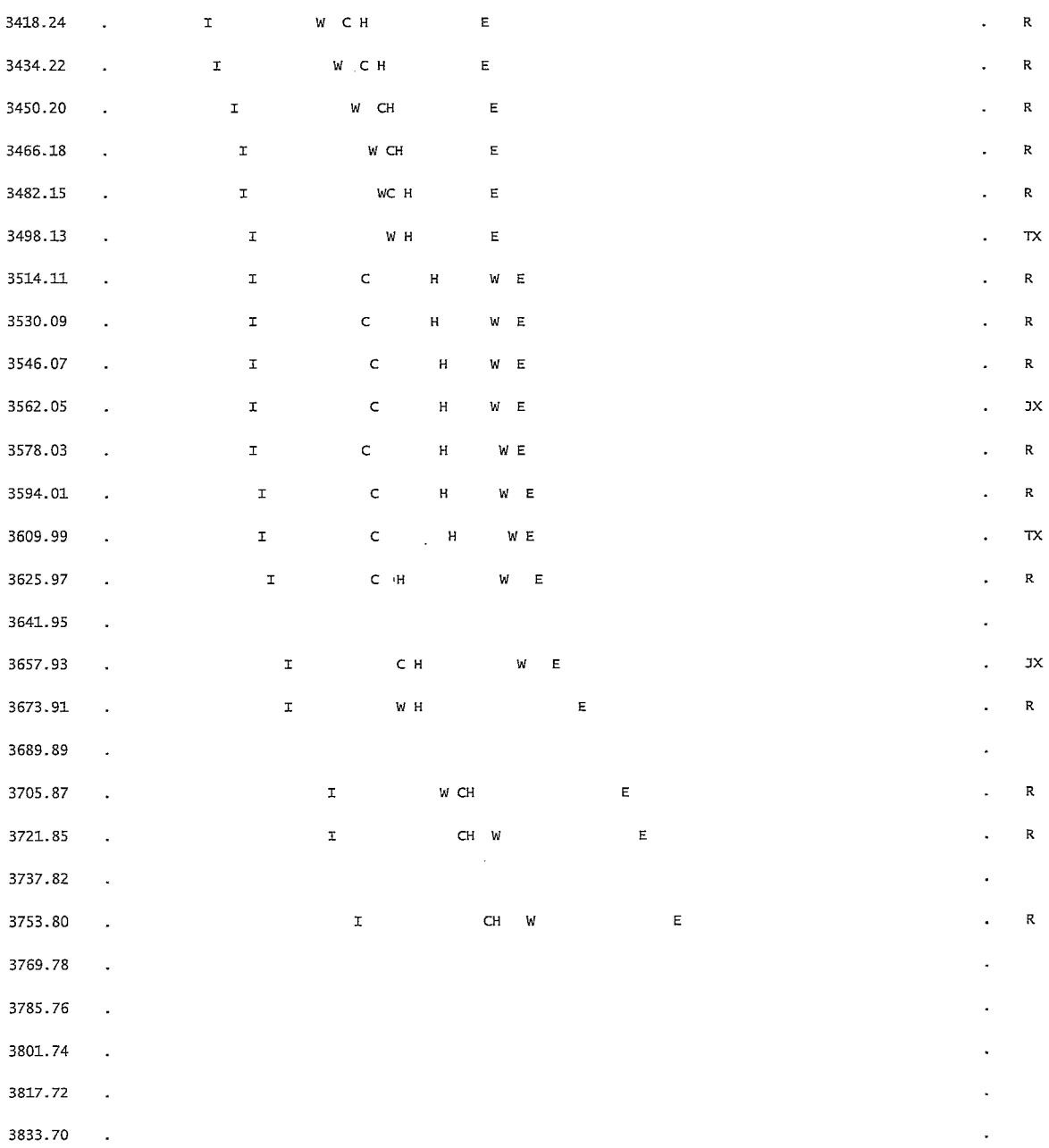
3338.34 .I W C H E . R

3354.32 . I W CH E . R

3370.30 . .

3386.28 . I W C H E . R

3402.26 . I W C H E . R


3418.24 I W C H E R
3434.22 I W C H E R
3450.20 I W CH E R
3466.18 I W CH E R
3482.15 I WC H E R
3498.13 I W H E TX
3514.11 I C H W E R
3530.09 I C H W E R
3546.07 I C H W E R
3562.05 I C H W E JX
3578.03 I C H W E R
3594.01 I C H W E R
3609.99 I C H W E TX
3625.97 I C H W E R
3641.95
3657.93 I C H W E JX
3673.91 I W H E R
3689.89
3705.87 I W CH E R
3721.85 I CH W E R
3737.82
3753.80 I CH W E R
3769.78
3785.76
3801.74
3817.72
3833.70

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3849.68    .                                                
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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)
SO   1000.0002824.930  3       .015                2833.930
R    1035.8302825.140  3       .015
JX   1035.8302825.140  3 60    .015  249.000         2329.130          45.0
R    1129.1902825.450  3       .015
JX   1129.1902825.450  3 18    .015    8.500         2826.440          45.0
R    1318.7202826.200  3       .015
JX   1318.7202826.200  3 18    .015    8.500         2826.200          60.0
R    1759.8502827.970  3       .015
JX   1759.8502827.970  3       .015
R    1932.8502828.660  3       .015
JX   1932.8502828.660  3 42    .015   48.000         2828.660          45.0
R    1993.5002828.900  3       .015
JX   1993.5002828.900  3 18    .015    3.0           2828.90           60.0
R    2726.0602831.830  3       .015
JX   2726.0602831.830  3  6    .015  156.000         2831.830          45.0
R    2738.3202831.880  3       .015
TS   2758.3202831.980  2       .015
R    2829.0702832.330  2       .015
JX   2829.0702832.330  2 18 18.015    2.0      2.0  2732.30 2732.30  60.0 60.0
R    3035.3902833.360  2       .015
JX   3035.3902833.360  2 18    .015    2.000         2833.360          46.0
R    3077.9302833.570  2       .015
JX   3077.9302833.570  2 18    .015    2.000         2833.570          60.0
R    3363.0402835.000  2       .015                                        45.00
JX   3363.0402835.000 30       .015
R    3413.0402837.990 30       .015                                        45.00
R    3523.0402844.610 30       .015
SH   3523.0402844.610 30       .015
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   8.000    5.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD   2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD   3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321  0.000  0.000 10.000  0.000 10.000  0.010 10.000  6.500  9.490  7.870
PTS       9.000  8.280  8.500  8.500  8.000  8.630  7.520  8.740  7.000  8.840
PTS       6.000  8.960  5.000  9.000  4.000  8.960  3.000  8.840  2.480  8.740
PTS       2.000  8.630  1.500  8.500  1.000  8.280  0.510  7.870  0.000  6.500
PTS       0.000  0.010
Q           40.000   .0
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FILE: PSVR2.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 4: 0:41

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	8.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 4: 0:41

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	10.000	.000	10.000	.010	10.000	6.500	9.490	7.870	9.000	8.280	8.500	8.500
PTS			8.000	8.630	7.520	8.740	7.000	8.840	6.000	8.960	5.000	9.000	4.000	8.960	3.000	8.840
PTS			2.480	8.740	2.000	8.630	1.500	8.500	1.000	8.280	.510	7.870	.000	6.500	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

	STATION	INVERT	SECT	W S ELEV
U/S DATA	1000.000	2824.930	3	2833.930

ELEMENT NO 2 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1035.830	2825.140	3	.015	.000	.000	.000	0

ELEMENT NO 3 IS A JUNCTION * * * * * * *

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	1035.830	2825.140	3	60	0	.015	249.000	.000	2329.130	.000	45.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1129.190	2825.450	3	.015	.000	.000	.000	0

ELEMENT NO 5 IS A JUNCTION * * * * * * *

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	1129.190	2825.450	3	18	0	.015	8.500	.000	2826.440	.000	45.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1318.720	2826.200	3	.015	.000	.000	.000	0

ELEMENT NO 7 IS A JUNCTION * * * * * * *

	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
U/S DATA	1318.720	2826.200	3	18	0	.015	8.500	.000	2826.200	.000	60.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
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W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 8 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1759.850	2827.970	3	.015	.000	.000	.000	0

ELEMENT NO 9 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1759.850	2827.970	3	0	0	.015	.000	.000	.000	.000	.000	.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 10 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	1932.850	2828.660	3			.015			.000	.000	.000	0

ELEMENT NO 11 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1932.850	2828.660	3	42	0	.015	48.000	.000	2828.660	.000	45.000	.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 12 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	1993.500	2828.900	3			.015			.000	.000	.000	0

ELEMENT NO 13 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1993.500	2828.900	3	18	0	.015	3.000	.000	2828.900	.000	60.000	.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 14 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	2726.060	2831.830	3			.015			.000	.000	.000	0

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 15 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2726.060	2831.830	3	6	0	.015	156.000	.000	2831.830	.000	45.000	.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 16 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	2738.320	2831.880	3			.015			.000	.000	.000	0

ELEMENT NO 17 IS A TRANSITION

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE		
	2758.320	2831.980	2			.015			.000	.000		

ELEMENT NO 18 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	2829.070	2832.330	2			.015			.000	.000	.000	0

ELEMENT NO 19 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2829.070	2832.330	2	18	18	.015	2.000	2.000	2732.300	2732.300	60.000	60.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 20 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	3035.390	2833.360	2			.015			.000	.000	.000	0

ELEMENT NO 21 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3035.390	2833.360	2	18	0	.015	2.000	.000	2833.360	.000	46.000	.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
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WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 22 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	3077.930	2833.570	2			.015			.000	.000	.000	0

ELEMENT NO 23 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3077.930	2833.570	2	18	0	.015	2.000	.000	2833.570	.000	60.000	.000
									RADIUS	ANGLE		
									.000	.000		

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 24 IS A REACH

U/S DATA	STATION	INVERT	SECT			N			RADIUS	ANGLE	ANG PT	MAN H
	3363.040	2835.000	2			.015			.000	.000	45.000	0

ELEMENT NO 25 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	3363.040	2835.000	30	0	0	.015	.000	.000	.000	.000	.000	.000

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                                                                                                                RADIUS    ANGLE
                                                                                                                  .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  26 IS A REACH                *        *     *
                    U/S DATA   STATION     INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               3413.040 2837.990   30              .015                           .000     .000    45.000     0
 ELEMENT NO  27 IS A REACH                *        *     *
                    U/S DATA   STATION     INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               3523.040 2844.610   30              .015                           .000     .000     .000      0
 ELEMENT NO  28 IS A SYSTEM HEADWORKS                  *                 *
                    U/S DATA   STATION     INVERT  SECT                                  W S ELEV
                               3523.040 2844.610   30                                      .000
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Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2824.930	9.000	2833.930	521.00	6.10	.58	2834.51	.00	4.38	.00		3		0 .0
.000	.0059					.0012	.00	9.00	.00	4.025	.015			IR-COV
1000.000	2824.930	9.000	2833.930	521.00	6.10	.58	2834.51	.00	4.38	.00		3		0 .0
35.830	.0059					.0012	.04	9.00	.00	4.025	.015			IR-COV
1035.830	2825.140	8.822	2833.962	521.00	6.13	.58	2834.55	.00	4.38	4.19		3		0 .0
JUNCT STR	.0000					.0003	.00	8.82	.24		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
1035.830	2825.140	9.248	2834.388	272.00	3.18	.16	2834.55	.00	2.84	.00		3		0 .0
82.715	.0033					.0003	.03	9.25	.00	3.094	.015			IR-COV
1118.545	2825.415	9.000	2834.415	272.00	3.18	.16	2834.57	.00	2.84	.00		3		0 .0
10.645	.0033					.0003	.00	9.00	.00	3.094	.015			IR-COV
JUNCT STR	.0000					.0003	.00	8.97	.08		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
1129.190	2825.450	8.976	2834.426	263.50	3.08	.15	2834.57	.00	2.78	1.21		3		0 .0
185.723	.0040					.0003	.05	8.98	.06	2.844	.015			IR-COV

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1314.913	2826.185	8.276	2834.460	263.50	3.24	.16	2834.62	.00	2.78	8.01		3		0 .0
3.807	.0040					.0002	.00	8.28	.18	2.844	.015			IR-COV
1318.720	2826.200	8.261	2834.461	263.50	3.24	.16	2834.62	.00	2.78	8.04		3		0 .0
JUNCT STR	.0000					.0002	.00	8.26	.18		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
1318.720	2826.200	8.274	2834.474	255.00	3.13	.15	2834.63	.00	2.72	8.01		3		0 .0
113.670	.0040					.0002	.03	8.27	.17	2.766	.015			IR-COV
1432.390	2826.656	7.831	2834.487	255.00	3.28	.17	2834.65	.00	2.72	9.01		3		0 .0
100.958	.0040					.0003	.03	7.83	.20	2.766	.015			IR-COV
1533.348	2827.061	7.436	2834.497	255.00	3.44	.18	2834.68	.00	2.72	9.30		3		0 .0
93.400	.0040					.0003	.03	7.44	.22	2.766	.015			IR-COV
1626.748	2827.436	7.071	2834.507	255.00	3.61	.20	2834.71	.00	2.72	9.57		3		0 .0
86.670	.0040					.0003	.03	7.07	.23	2.766	.015			IR-COV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1713.418	2827.783	6.732	2834.516	255.00	3.79	.22	2834.74	.00	2.72	9.83		3		0 .0
46.432	.0040					.0004	.02	6.73	.26	2.766	.015			IR-COV
JUNCT STR	.0000					.0004	.00	6.55	.27		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1759.850	2827.970	6.551	2834.521	255.00	3.89	.24	2834.76	.00	2.72	9.96		3		0 .0
78.666	.0040					.0004	.03	6.55	.27	2.772	.015			IR-COV
1838.516	2828.284	6.246	2834.529	255.00	4.08	.26	2834.79	.00	2.72	10.00		3		0 .0
75.113	.0040					.0004	.03	6.25	.29	2.772	.015			IR-COV
1913.629	2828.583	5.955	2834.538	255.00	4.28	.28	2834.82	.00	2.72	10.00		3		0 .0
19.221	.0040					.0005	.01	5.96	.31	2.772	.015			IR-COV
1932.850	2828.660	5.881	2834.541	255.00	4.34	.29	2834.83	.00	2.72	10.00		3		0 .0
JUNCT STR	.0000					.0003	.00	5.88	.32		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1932.850	2828.660	5.997	2834.656	207.00	3.45	.19	2834.84	.00	2.37	10.00		3		0 .0
60.650	.0040					.0003	.02	6.00	.25	2.405	.015			IR-COV
1993.500	2828.900	5.762	2834.662	207.00	3.59	.20	2834.86	.00	2.37	10.00		3		0 .0
JUNCT STR	.0000					.0003	.00	5.76	.26		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1993.500	2828.900	5.772	2834.672	204.00	3.53	.19	2834.87	.00	2.35	10.00		3		0 .0
68.571	.0040					.0003	.02	5.77	.26	2.372	.015			IR-COV
2062.071	2829.174	5.503	2834.677	204.00	3.71	.21	2834.89	.00	2.35	10.00		3		0 .0
65.462	.0040					.0004	.03	5.50	.28	2.372	.015			IR-COV
2127.533	2829.436	5.247	2834.683	204.00	3.89	.23	2834.92	.00	2.35	10.00		3		0 .0
62.521	.0040					.0004	.03	5.25	.30	2.372	.015			IR-COV
2190.054	2829.686	5.003	2834.689	204.00	4.08	.26	2834.95	.00	2.35	10.00		3		0 .0
59.702	.0040					.0005	.03	5.00	.32	2.372	.015			IR-COV
2249.756	2829.925	4.770	2834.695	204.00	4.28	.28	2834.98	.00	2.35	10.00		3		0 .0
57.039	.0040					.0006	.03	4.77	.35	2.372	.015			IR-COV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2306.795	2830.153	4.548	2834.701	204.00	4.49	.31	2835.01	.00	2.35	10.00		3		0 .0
54.502	.0040					.0006	.04	4.55	.37	2.372	.015			IR-COV
2361.297	2830.371	4.337	2834.708	204.00	4.70	.34	2835.05	.00	2.35	10.00		3		0 .0
52.064	.0040					.0007	.04	4.34	.40	2.372	.015			IR-COV
2413.361	2830.579	4.135	2834.714	204.00	4.93	.38	2835.09	.00	2.35	10.00		3		0 .0
49.760	.0040					.0008	.04	4.13	.43	2.372	.015			IR-COV
2463.121	2830.778	3.942	2834.721	204.00	5.17	.42	2835.14	.00	2.35	10.00		3		0 .0
47.590	.0040					.0010	.05	3.94	.46	2.372	.015			IR-COV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2510.711	2830.969	3.759	2834.728	204.00	5.43	.46	2835.18	.00	2.35	10.00		3		0 .0
45.495	.0040					.0011	.05	3.76	.49	2.372	.015			IR-COV
2556.206	2831.151	3.584	2834.735	204.00	5.69	.50	2835.24	.00	2.35	10.00		3		0 .0
43.551	.0040					.0012	.05	3.58	.53	2.372	.015			IR-COV
2599.757	2831.325	3.417	2834.742	204.00	5.97	.55	2835.30	.00	2.35	10.00		3		0 .0
41.694	.0040					.0014	.06	3.42	.57	2.372	.015			IR-COV
2641.451	2831.492	3.258	2834.750	204.00	6.26	.61	2835.36	.00	2.35	10.00		3		0 .0
39.977	.0040					.0016	.06	3.26	.61	2.372	.015			IR-COV
2681.428	2831.652	3.107	2834.758	204.00	6.57	.67	2835.43	.00	2.35	10.00		3		0 .0
38.430	.0040					.0018	.07	3.11	.66	2.372	.015			IR-COV
2719.858	2831.805	2.962	2834.767	204.00	6.89	.74	2835.50	.00	2.35	10.00		3		0 .0
6.202	.0040					.0021	.01	2.96	.71	2.372	.015			IR-COV
2726.060	2831.830	2.939	2834.769	204.00	6.94	.75	2835.52	.00	2.35	10.00		3		0 .0
JUNCT STR	.0000					.0011	.00	2.94	.71		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2726.060	2831.830	3.661	2835.491	48.00	1.31	.03	2835.52	.00	.89	10.00		3		0 .0
12.260	.0041					.0001	.00	3.66	.12	.907	.015			IR-COV

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2738.320	2831.880	3.611	2835.491	48.00	1.33	.03	2835.52	.00	.89	10.00		3		0 .0

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
TRANS STR	.0050					.0001	.00	3.61	.12		.015			IR-COV
2758.320	2831.980	3.499	2835.479	48.00	1.71	.05	2835.52	.00	1.04	8.00			2	0 .0
32.925	.0049					.0001	.00	3.50	.16	.999	.015			IR-COV
2791.245	2832.143	3.336	2835.479	48.00	1.80	.05	2835.53	.00	1.04	8.00			2	0 .0
31.355	.0049					.0002	.00	3.34	.17	.999	.015			IR-COV
2822.600	2832.298	3.181	2835.479	48.00	1.89	.06	2835.53	.00	1.04	8.00			2	0 .0
6.470	.0049					.0002	.00	3.18	.19	.999	.015			IR-COV
2829.070	2832.330	3.149	2835.479	48.00	1.91	.06	2835.54	.00	1.04	8.00			2	0 .0
JUNCT STR	.0000					.0002	.00	3.15	.19		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

2829.070	2832.330	3.164	2835.494	44.00	1.74	.05	2835.54	.00	.98	8.00			2	0 .0
29.486	.0050					.0002	.00	3.16	.17	.942	.015			IR-COV
2858.556	2832.477	3.017	2835.494	44.00	1.82	.05	2835.55	.00	.98	8.00			2	0 .0
28.079	.0050					.0002	.00	3.02	.18	.942	.015			IR-COV
2886.635	2832.617	2.877	2835.494	44.00	1.91	.06	2835.55	.00	.98	8.00			2	0 .0
26.739	.0050					.0002	.01	2.88	.20	.942	.015			IR-COV

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2913.374	2832.751	2.743	2835.494	44.00	2.01	.06	2835.56	.00	.98	8.00			2	0 .0
25.500	.0050					.0002	.01	2.74	.21	.942	.015			IR-COV
2938.874	2832.878	2.615	2835.493	44.00	2.10	.07	2835.56	.00	.98	8.00			2	0 .0
24.276	.0050					.0003	.01	2.62	.23	.942	.015			IR-COV
2963.150	2832.999	2.493	2835.493	44.00	2.21	.08	2835.57	.00	.98	8.00			2	0 .0
23.111	.0050					.0003	.01	2.49	.25	.942	.015			IR-COV
2986.261	2833.115	2.377	2835.492	44.00	2.31	.08	2835.58	.00	.98	8.00			2	0 .0
22.024	.0050					.0003	.01	2.38	.26	.942	.015			IR-COV
3008.284	2833.225	2.267	2835.491	44.00	2.43	.09	2835.58	.00	.98	8.00			2	0 .0
20.932	.0050					.0004	.01	2.27	.28	.942	.015			IR-COV
3029.216	2833.329	2.161	2835.490	44.00	2.54	.10	2835.59	.00	.98	8.00			2	0 .0
6.174	.0050					.0004	.00	2.16	.31	.942	.015			IR-COV
3035.390	2833.360	2.130	2835.490	44.00	2.58	.10	2835.59	.00	.98	8.00			2	0 .0
JUNCT STR	.0000					.0004	.00	2.13	.31		.015			IR-COV

---------- WARNING - Junction Analysis - Irregular Channel----------

3035.390	2833.360	2.147	2835.507	42.00	2.45	.09	2835.60	.00	.95	8.00			2	0 .0
20.064	.0049					.0004	.01	2.15	.29	.917	.015			IR-COV

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING
Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3055.454	2833.459	2.047	2835.506	42.00	2.56	.10	2835.61	.00	.95	8.00		2		0 .0
19.098	.0049					.0005	.01	2.05	.32	.917	.015			IR-COV
3074.552	2833.553	1.952	2835.505	42.00	2.69	.11	2835.62	.00	.95	8.00		2		0 .0
3.378	.0049					.0005	.00	1.95	.34	.917	.015			IR-COV
3077.930	2833.570	1.935	2835.505	42.00	2.71	.11	2835.62	.00	.95	8.00		2		0 .0
JUNCT STR	.0000					.0005	.00	1.93	.34		.015			IR-COV
			WARNING - Junction Analysis - Irregular Channel											
3077.930	2833.570	1.956	2835.526	40.00	2.56	.10	2835.63	.00	.92	8.00		2		0 .0
17.915	.0050					.0005	.01	1.96	.32	.884	.015			IR-COV
3095.845	2833.660	1.865	2835.525	40.00	2.68	.11	2835.64	.00	.92	8.00		2		0 .0
17.019	.0050					.0006	.01	1.86	.35	.884	.015			IR-COV
3112.864	2833.745	1.778	2835.523	40.00	2.81	.12	2835.65	.00	.92	8.00		2		0 .0
16.156	.0050					.0007	.01	1.78	.37	.884	.015			IR-COV
3129.020	2833.826	1.695	2835.522	40.00	2.95	.14	2835.66	.00	.92	8.00		2		0 .0
15.350	.0050					.0008	.01	1.70	.40	.884	.015			IR-COV
3144.370	2833.903	1.616	2835.520	40.00	3.09	.15	2835.67	.00	.92	8.00		2		0 .0
14.554	.0050					.0009	.01	1.62	.43	.884	.015			IR-COV

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING
Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3158.924	2833.976	1.541	2835.518	40.00	3.24	.16	2835.68	.00	.92	8.00		2		0 .0
13.814	.0050					.0010	.01	1.54	.46	.884	.015			IR-COV
3172.738	2834.046	1.469	2835.515	40.00	3.40	.18	2835.69	.00	.92	8.00		2		0 .0
13.031	.0050					.0012	.02	1.47	.49	.884	.015			IR-COV
3185.769	2834.111	1.401	2835.512	40.00	3.57	.20	2835.71	.00	.92	8.00		2		0 .0
12.325	.0050					.0013	.02	1.40	.53	.884	.015			IR-COV
3198.094	2834.173	1.336	2835.509	40.00	3.74	.22	2835.73	.00	.92	8.00		2		0 .0
11.619	.0050					.0015	.02	1.34	.57	.884	.015			IR-COV
3209.713	2834.231	1.274	2835.505	40.00	3.93	.24	2835.74	.00	.92	8.00		2		0 .0
10.903	.0050					.0018	.02	1.27	.61	.884	.015			IR-COV

3220.616	2834.286	1.214	2835.500	40.00	4.12	.26	2835.76	.00	.92	8.00		2	0 .0
10.162	.0050					.0020	.02	1.21	.66	.884	.015		IR-COV
3230.779	2834.337	1.158	2835.495	40.00	4.32	.29	2835.78	.00	.92	8.00		2	0 .0
9.409	.0050					.0024	.02	1.16	.71	.884	.015		IR-COV
3240.187	2834.384	1.104	2835.488	40.00	4.53	.32	2835.81	.00	.92	8.00		2	0 .0
8.567	.0050					.0027	.02	1.10	.76	.884	.015		IR-COV
3248.754	2834.427	1.053	2835.479	40.00	4.75	.35	2835.83	.00	.92	8.00		2	0 .0
3248.763	2834.427	1.053	2835.479	40.00	4.75	.35	2835.83	.00	.92	8.00		2	0 .0

HYDRAULIC JUMP

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3248.763	2834.427	.794	2835.220	40.00	6.30	.62	2835.84	.00	.92	8.00		2		0 .0
1.384	.0050					.0070	.01	.79	1.25	.884	.015			IR-COV
3250.147	2834.434	.794	2835.227	40.00	6.30	.62	2835.84	.00	.92	8.00		2		0 .0
9.647	.0050					.0076	.07	.79	1.25	.884	.015			IR-COV
3259.794	2834.482	.757	2835.239	40.00	6.61	.68	2835.92	.00	.92	8.00		2		0 .0
8.653	.0050					.0088	.08	.76	1.34	.884	.015			IR-COV
3268.447	2834.526	.721	2835.247	40.00	6.93	.75	2835.99	.00	.92	8.00		2		0 .0
7.930	.0050					.0102	.08	.72	1.44	.884	.015			IR-COV
3276.377	2834.565	.688	2835.253	40.00	7.27	.82	2836.07	.00	.92	8.00		2		0 .0
7.332	.0050					.0118	.09	.69	1.54	.884	.015			IR-COV
3283.708	2834.602	.656	2835.258	40.00	7.62	.90	2836.16	.00	.92	8.00		2		0 .0
6.824	.0050					.0138	.09	.66	1.66	.884	.015			IR-COV
3290.533	2834.636	.625	2835.262	40.00	8.00	.99	2836.25	.00	.92	8.00		2		0 .0
6.396	.0050					.0160	.10	.63	1.78	.884	.015			IR-COV
3296.929	2834.668	.596	2835.265	40.00	8.39	1.09	2836.36	.00	.92	8.00		2		0 .0
6.006	.0050					.0186	.11	.60	1.91	.884	.015			IR-COV
3302.935	2834.698	.568	2835.267	40.00	8.80	1.20	2836.47	.00	.92	8.00		2		0 .0
5.640	.0050					.0216	.12	.57	2.06	.884	.015			IR-COV

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip

L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3308.575	2834.727	.542	2835.269	40.00	9.23	1.32	2836.59	.00	.92	8.00		2		0 .0
5.313	.0050					.0251	.13	.54	2.21	.884	.015			IR-COV
3313.888	2834.753	.517	2835.270	40.00	9.68	1.45	2836.72	.00	.92	8.00		2		0 .0
5.005	.0050					.0293	.15	.52	2.37	.884	.015			IR-COV
3318.893	2834.779	.493	2835.271	40.00	10.15	1.60	2836.87	.00	.92	8.00		2		0 .0
4.713	.0050					.0341	.16	.49	2.55	.884	.015			IR-COV
3323.606	2834.802	.470	2835.272	40.00	10.64	1.76	2837.03	.00	.92	8.00		2		0 .0
4.448	.0050					.0397	.18	.47	2.74	.884	.015			IR-COV
3328.054	2834.824	.448	2835.272	40.00	11.16	1.93	2837.21	.00	.92	8.00		2		0 .0
4.191	.0050					.0462	.19	.45	2.94	.884	.015			IR-COV
3332.245	2834.845	.427	2835.272	40.00	11.71	2.13	2837.40	.00	.92	8.00		2		0 .0
3.955	.0050					.0538	.21	.43	3.16	.884	.015			IR-COV
3336.200	2834.865	.407	2835.272	40.00	12.28	2.34	2837.61	.00	.92	8.00		2		0 .0
3.728	.0050					.0627	.23	.41	3.39	.884	.015			IR-COV
3339.928	2834.884	.388	2835.272	40.00	12.88	2.58	2837.85	.00	.92	8.00		2		0 .0
3.517	.0050					.0731	.26	.39	3.64	.884	.015			IR-COV
3343.445	2834.902	.370	2835.272	40.00	13.51	2.83	2838.10	.00	.92	8.00		2		0 .0
3.317	.0050					.0852	.28	.37	3.91	.884	.015			IR-COV

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3346.762	2834.918	.353	2835.271	40.00	14.17	3.12	2838.39	.00	.92	8.00		2		0 .0
3.128	.0050					.0994	.31	.35	4.20	.884	.015			IR-COV
3349.890	2834.934	.337	2835.270	40.00	14.86	3.43	2838.70	.00	.92	8.00		2		0 .0
2.949	.0050					.1159	.34	.34	4.51	.884	.015			IR-COV
3352.839	2834.949	.321	2835.270	40.00	15.58	3.77	2839.04	.00	.92	8.00		2		0 .0
2.781	.0050					.1352	.38	.32	4.85	.884	.015			IR-COV
3355.620	2834.963	.306	2835.269	40.00	16.34	4.15	2839.42	.00	.92	8.00		2		0 .0
2.621	.0050					.1578	.41	.31	5.21	.884	.015			IR-COV
3358.241	2834.976	.292	2835.267	40.00	17.14	4.56	2839.83	.00	.92	8.00		2		0 .0
2.471	.0050					.1842	.46	.29	5.59	.884	.015			IR-COV
3360.712	2834.988	.278	2835.266	40.00	17.98	5.02	2840.28	.00	.92	8.00		2		0 .0
2.328	.0050					.2150	.50	.28	6.01	.884	.015			IR-COV

3363.040	2835.000	.265	2835.265	40.00	18.86	5.52	2840.79	.00	.92	8.00			2		0	.0		
JUNCT STR	.0000					.1447	.00	.27	6.45		.015						IR-COV	

---------- WARNING - Junction Analysis - Irregular Channel----------
---------- WARNING - Junction Analysis - Change in Channel Type ----------

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3363.040	2835.000	1.203	2836.203	40.00	17.12	4.55	2840.75	.00	2.13	2.50	2.500	.000	.00	1 .0
50.000	.0598					.0560	2.80	1.20	3.12	1.19	.015	.00	.00	PIPE
3413.040	2837.990	1.225	2839.215	40.00	16.72	4.34	2843.56	.00	2.13	2.50	2.500	.000	.00	1 .0
2.472	.0602					.0541	.13	1.22	3.01	1.19	.015	.00	.00	PIPE
3415.511	2838.139	1.227	2839.365	40.00	16.70	4.33	2843.69	.00	2.13	2.50	2.500	.000	.00	1 .0
36.927	.0602					.0508	1.88	1.23	3.01	1.19	.015	.00	.00	PIPE
3452.438	2840.361	1.273	2841.635	40.00	15.92	3.93	2845.57	.00	2.13	2.50	2.500	.000	.00	1 .0
19.997	.0602					.0447	.89	1.27	2.80	1.19	.015	.00	.00	PIPE
3472.436	2841.565	1.322	2842.887	40.00	15.18	3.58	2846.46	.00	2.13	2.50	2.500	.000	.00	1 .0
13.201	.0602					.0395	.52	1.32	2.60	1.19	.015	.00	.00	PIPE
3485.637	2842.359	1.374	2843.733	40.00	14.47	3.25	2846.99	.00	2.13	2.49	2.500	.000	.00	1 .0
9.514	.0602					.0348	.33	1.37	2.42	1.19	.015	.00	.00	PIPE
3495.151	2842.932	1.428	2844.360	40.00	13.80	2.96	2847.32	.00	2.13	2.47	2.500	.000	.00	1 .0
7.187	.0602					.0308	.22	1.43	2.25	1.19	.015	.00	.00	PIPE
3502.337	2843.365	1.486	2844.850	40.00	13.16	2.69	2847.54	.00	2.13	2.46	2.500	.000	.00	1 .0
5.572	.0602					.0272	.15	1.49	2.08	1.19	.015	.00	.00	PIPE
3507.909	2843.700	1.547	2845.246	40.00	12.54	2.44	2847.69	.00	2.13	2.43	2.500	.000	.00	1 .0
4.368	.0602					.0241	.11	1.55	1.93	1.19	.015	.00	.00	PIPE

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4: 0:47

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3512.277	2843.963	1.611	2845.574	40.00	11.96	2.22	2847.79	.00	2.13	2.39	2.500	.000	.00	1 .0
3.434	.0602					.0214	.07	1.61	1.78	1.19	.015	.00	.00	PIPE
3515.711	2844.169	1.680	2845.849	40.00	11.40	2.02	2847.87	.00	2.13	2.35	2.500	.000	.00	1 .0
2.667	.0602					.0191	.05	1.68	1.64	1.19	.015	.00	.00	PIPE
3518.378	2844.330	1.754	2846.084	40.00	10.87	1.84	2847.92	.00	2.13	2.29	2.500	.000	.00	1 .0

2.017	.0602							.0170	.03	1.75	1.51	1.19	.015	.00	.00	PIPE			
3520.395	2844.451	1.834	2846.285	40.00	10.37	1.67	2847.95	.00	2.13	2.21	2.500	.000	.00	1	.0				
1.438	.0602							.0152	.02	1.83	1.38	1.19	.015	.00	.00	PIPE			
3521.833	2844.538	1.921	2846.458	40.00	9.88	1.52	2847.98	.00	2.13	2.11	2.500	.000	.00	1	.0				
.889	.0602							.0137	.01	1.92	1.26	1.19	.015	.00	.00	PIPE			
3522.722	2844.591	2.017	2846.608	40.00	9.42	1.38	2847.99	.00	2.13	1.97	2.500	.000	.00	1	.0				
.318	.0602							.0125	.00	2.02	1.13	1.19	.015	.00	.00	PIPE			
3523.040	2844.610	2.129	2846.739	40.00	8.98	1.25	2847.99	.00	2.13	1.78	2.500	.000	.00	1	.0				

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE (NORTH ALIGNMENT)

1000.00	.I		C		H	E		.	R
1011.42	.I		C		H	E		.	R
1022.83	.							.	
1034.25	.							.	
1045.67	.I		C		H	E		.	JX
1057.08	.I	C			H	W		.	R
1068.50	.							.	
1079.92	.							.	
1091.33	.							.	
1102.75	.							.	
1114.16	.							.	
1125.58	. I	C			H			.	R
1137.00	. I	C			H			.	R
1148.41	.							.	
1159.83	.							.	

1171.25	.							.	
1182.66	.							.	
1194.08	.							.	
1205.50	.							.	
1216.91	.							.	
1228.33	.							.	
1239.75	.							.	
1251.16	.							.	
1262.58	.							.	
1274.00	.							.	
1285.41	.							.	
1296.83	.							.	
1308.24	.							.	
1319.66	.	I		C		WE	H	.	R
1331.08	.	I		C		WE	H	.	JX
1342.49	.	I		C		WE	H	.	R
1353.91	.							.	
1365.33	.							.	
1376.74	.							.	
1388.16	.							.	
1399.58	.							.	
1410.99	.							.	
1422.41	.							.	
1433.83	.	I		C		WE	H	.	R
1445.24	.							.	
1456.66	.							.	

1468.08	.								.	
1479.49	.								.	
1490.91	.								.	
1502.32	.								.	
1513.74	.								.	
1525.16	.								.	
1536.57	.		I		C		WE	H	.	R
1547.99	.								.	
1559.41	.								.	
1570.82	.								.	
1582.24	.								.	
1593.66	.								.	
1605.07	.								.	
1616.49	.								.	
1627.91	.		I		C		WE	H	.	R
1639.32	.								.	
1650.74	.								.	
1662.16	.								.	
1673.57	.								.	
1684.99	.								.	
1696.40	.								.	
1707.82	.								.	
1719.24	.		I		C		WE	H	.	R
1730.65	.								.	
1742.07	.								.	

1753.49	.					.	
1764.90	.	I	C	WE	H	.	R
1776.32	.					.	
1787.74	.					.	
1799.15	.					.	
1810.57	.					.	
1821.99	.					.	
1833.40	.					.	
1844.82	.	I	C	WE	H	.	R
1856.24	.					.	
1867.65	.					.	
1879.07	.					.	
1890.48	.					.	
1901.90	.					.	
1913.32	.					.	
1924.73	.	I	C	WE	H	.	R
1936.15	.	I	C	WE	H	.	JX
1947.57	.	I	C	W	H	.	R
1958.98	.					.	
1970.40	.					.	
1981.82	.					.	
1993.23	.					.	
2004.65	.	I	C	WE	H	.	JX
2016.07	.	I	C	WE	H	.	R
2027.48	.					.	

2038.90	.							.	
2050.32	.							.	
2061.73	.							.	
2073.15	.	I	C	WE	H			.	R
2084.56	.							.	
2095.98	.							.	
2107.40	.							.	
2118.81	.							.	
2130.23	.	I	C	WE	H			.	R
2141.65	.							.	
2153.06	.							.	
2164.48	.							.	
2175.90	.							.	
2187.31	.							.	
2198.73	.	I	C	WE	H			.	R
2210.15	.							.	
2221.56	.							.	
2232.98	.							.	
2244.40	.							.	
2255.81	.	I	C	WE	H			.	R
2267.23	.							.	
2278.64	.							.	
2290.06	.							.	
2301.48	.							.	
2312.89	.	I	C	WE	H			.	R
2324.31	.							.	

2335.73	.								.	
2347.14	.								.	
2358.56	.								.	
2369.98	.		I		C		WE	H	.	R
2381.39	.								.	
2392.81	.								.	
2404.23	.								.	
2415.64	.		I		C		W E	H	.	R
2427.06	.								.	
2438.48	.								.	
2449.89	.								.	
2461.31	.								.	
2472.72	.		I		C		W E	H	.	R
2484.14	.								.	
2495.56	.								.	
2506.97	.								.	
2518.39	.		I		C		W E	H	.	R
2529.81	.								.	
2541.22	.								.	
2552.64	.								.	
2564.06	.		I		C		W E	H	.	R
2575.47	.								.	
2586.89	.								.	
2598.31	.								.	
2609.72	.		I		C		W E	H	.	R

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2621.14  .                                                                .
2632.56  .                                                                .
2643.97  .          I        C  W  E                  H                   .  R
2655.39  .                                                                .
2666.80  .                                                                .
2678.22  .                                                                .
2689.64  .          I        C  W  E                  H                   .  R
2701.05  .                                                                .
2712.47  .                                                                .
2723.89  .          I        C  W  E                  H                   .  R
2735.30  .          I         C W  E                  H                   .  JX
2746.72  .          I  C          W                  H                   .  R
2758.14  .           I  C         W                   H                   .  TX
2769.55  .           I   C        W            H                         .  R
2780.97  .                                                                .
2792.39  .            I  C        W            H                         .  R
2803.80  .                                                                .
2815.22  .                                                                .
2826.64  .            I   C       W            H                         .  R
2838.05  .             I  C       W            H                         .  JX
2849.47  .             I  C       WE           H                         .  R
2860.88  .             I  C       WE            H                        .  R
2872.30  .                                                                .
2883.72  .                                                                .
2895.13  .               I  C      WE           H                         .  R
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2906.55	.							.	
2917.97	.	I	C		WE		H	.	R
2929.38	.							.	
2940.80	.	I	C		WE		H	.	R
2952.22	.							.	
2963.63	.	I	C		WE		H	.	R
2975.05	.							.	
2986.47	.	I	C		WE		H	.	R
2997.88	.							.	
3009.30	.	I	C		WE		H	.	R
3020.72	.							.	
3032.13	.	I	C		WE		H	.	R
3043.55	.	I	C		WE		H	.	JX
3054.96	.	I	C		WE		H	.	R
3066.38	.	I	C		WE		H	.	R
3077.80	.	I	C		WE		H	.	R
3089.21	.	I	C		WE		H	.	JX
3100.63	.	I	C		WE		H	.	R
3112.05	.	I	C		WE		H	.	R
3123.46	.	I	C		WE		H	.	R
3134.88	.	I	C		WE		H	.	R
3146.30	.	I	C		WE		H	.	R
3157.71	.							.	
3169.13	.	I	C		WE		H	.	R
3180.55	.	I	C		WE		H	.	R
3191.96	.	I	C		WE		H	.	R

3203.38	.	I CWE	H	.	R
3214.80	.	I CWE	H	.	R
3226.21	.	I CWE	H	.	R
3237.63	.	I CW E	H	.	R
3249.04	.	I CW E	H	.	R
3260.46	.	I W E	H	.	R
3271.88	.	I W E	H	.	R
3283.29	.	I WC E	H	.	R
3294.71	.	I WC E	H	.	R
3306.13	.	I WC E	H	.	R
3317.54	.	I WC E	H	.	R
3328.96	.	I WC E	H	.	R
3340.38	.	I WC E	H	.	R
3351.79	.	I W C E	H	.	R
3363.21	.	I W C E	H	.	R
3374.63	.	I W C E	H	.	R
3386.04	.	I W C E	H	.	R
3397.46	.	I W C E	H	.	R
3408.88	.	I W C E	H	.	R
3420.29	.	I W C E	H	.	R
3431.71	.	I W C E	H	.	R
3443.12	.	I W C E	H	.	R
3454.54	.	IW C E	H	.	R
3465.96	.	IW C E	H	.	R
3477.37	.	IW C E	H	.	R

3488.79	.			IW	C		E		H		.	R
3500.21	.			IW	C		E		H		.	R
3511.62	.			IW	C			E	H		.	R
3523.04	.			IW	C			E	H		.	R

2824.930 2827.236 2829.542 2831.848 2834.155 2836.461 2838.767 2841.073 2843.379 2845.685 2847.991

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Skye Village Road

Proposed Condition-Laterals

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)
SO    1000.0002835.640 30       .013                    2844.860
R     1018.0002836.090 30       .013                                        30.00 1
R     1129.0002838.890 30       .013
SH    1129.0002838.890 30       .013
CD    6  3   0     .000   6.000    6.000  .000  .000   .00
CD    8  3   0     .000   5.000    8.000  .000  .000   .00
CD   18  4   1     .000   1.500     .000  .000  .000   .00
CD   24  4   1     .000   2.000     .000  .000  .000   .00
CD   30  4   1     .000   2.500     .000  .000  .000   .00
CD   36  4   1     .000   3.000     .000  .000  .000   .00
CD   42  4   1     .000   3.500     .000  .000  .000   .00
CD   48  4   1     .000   4.000     .000  .000  .000   .00
CD   54  4   1     .000   4.500     .000  .000  .000   .00
CD   60  4   1     .000   5.000     .000  .000  .000   .00
CD   72  4   1     .000   6.000     .000  .000  .000   .00
CD    1  6   0      0.0     0.0      0.0    0.0    0.0   0.0
CD    2  6   0      0.0     0.0      0.0    0.0    0.0   0.0
CD    3  6   0      0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q           40.000   .0
```

FILE: P13.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 5:49:51

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 5:49:51

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)			
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500			
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840			
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010			
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190			
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800			
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010			
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190			
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800			
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010			

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT		W S ELEV
	1000.000	2835.640	30		2844.860

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1018.000	2836.090	30	.013	.000	.000	30.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1129.000	2838.890	30	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1129.000	2838.890	30	.000

♀ FILE: P13.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 5:49:56

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2835.640	9.220	2844.860	40.00	8.15	1.03	2845.89	.00	2.13	.00	2.500	.000	.00	1 .0
18.000	.0250					.0095	.17	9.22	.00	1.42	.013	.00	.00	PIPE
1018.000	2836.090	9.095	2845.185	40.00	8.15	1.03	2846.22	.00	2.13	.00	2.500	.000	.00	1 .0
111.000	.0252					.0095	1.06	9.09	.00	1.42	.013	.00	.00	PIPE
1129.000	2838.890	7.351	2846.240	40.00	8.15	1.03	2847.27	.00	2.13	.00	2.500	.000	.00	1 .0

♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)

1000.00 .I C H W E . R

1002.63 .

1005.27 .

1007.90 .

1010.53 .

1013.16 .

1015.80 .

1018.43 . I C H W E . R

1021.06 .

1023.69 .

1026.33 .

1028.96 .

1031.59 .

1034.22 .

1036.86 .

1039.49 .

1042.12 .

1044.76 .

1047.39 .

1050.02 .

1052.65 .

1055.29 .

1057.92 .

1060.55 .

1063.18 .

1065.82 .

1068.45 .

1071.08 .

1073.71 .

1076.35 .

1078.98 .

1081.61 .

1084.24 .

1086.88 .

1089.51 .

1092.14 .

1094.78 .

1097.41 .

1100.04 .

1102.67 .

1105.31 .

1107.94 .

P13

```
1110.57  .                                                                .
1113.20  .                                                                .
1115.84  .                                                                .
1118.47  .                                                                .
1121.10  .                                                                .
1123.73  .                                                                .
1126.37  .                                                                .
1129.00  .                        I              C H                  W    E .  R
       2835.640  2836.803  2837.966  2839.129  2840.292  2841.455  2842.618  2843.781  2844.945  2846.108  2847.271
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)
SO    1000.0002833.570 18       .013                  2835.530
R     1008.0002836.520 18       .013
SH    1008.0002836.520 18       .013
CD    6  3    0     .000    6.000     6.000  .000  .000   .00
CD    8  3    0     .000    5.000     8.000  .000  .000   .00
CD   18  4    1     .000    1.500      .000  .000  .000   .00
CD   24  4    1     .000    2.000      .000  .000  .000   .00
CD   30  4    1     .000    2.500      .000  .000  .000   .00
CD   36  4    1     .000    3.000      .000  .000  .000   .00
CD   42  4    1     .000    3.500      .000  .000  .000   .00
CD   48  4    1     .000    4.000      .000  .000  .000   .00
CD   54  4    1     .000    4.500      .000  .000  .000   .00
CD   60  4    1     .000    5.000      .000  .000  .000   .00
CD   72  4    1     .000    6.000      .000  .000  .000   .00
CD    1  6    0      0.0      0.0       0.0     0.0    0.0    0.0
CD    2  6    0      0.0      0.0       0.0     0.0    0.0    0.0
CD    3  6    0      0.0      0.0       0.0     0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q            1.500   .0
```

FILE: P18E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 5:50:14

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 5:50:14

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000
PTS	3	21	.000	.000	8.000	.000	8.000	.010	8.000	3.000	7.900	3.570	7.700
PTS			7.250	4.390	7.000	4.530	6.000	4.800	5.000	4.950	4.000	5.000	3.000
PTS			1.000	4.530	.750	4.390	.500	4.190	.300	3.950	.100	3.570	.000

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS										7.280	8.500	7.500	
PTS										7.960	3.000	7.840	
PTS										5.500	.000	.010	
PTS										5.950	7.500	6.190	
PTS										6.950	2.000	6.800	
PTS										5.000	.000	.010	
PTS										3.950	7.500	4.190	
PTS										4.950	2.000	4.800	
PTS										3.000	.000	.010	

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

	STATION	INVERT	SECT	W S ELEV
U/S DATA	1000.000	2833.570	18	2835.530

ELEMENT NO 2 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1008.000	2836.520	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

	STATION	INVERT	SECT	W S ELEV
U/S DATA	1008.000	2836.520	18	.000

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Program Package Serial Number: 1704
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SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2833.570	1.960	2835.530	1.50	.85	.01	2835.54	.00	.46	.00	1.500	.000	.00	1 .0
1.248	.3687					.0002	.00	1.96	.00	.16	.013	.00	.00	PIPE
1001.248	2834.030	1.500	2835.530	1.50	.85	.01	2835.54	.00	.46	.00	1.500	.000	.00	1 .0
.372	.3687					.0002	.00	1.50	.00	.16	.013	.00	.00	PIPE
1001.620	2834.167	1.361	2835.528	1.50	.89	.01	2835.54	.00	.46	.87	1.500	.000	.00	1 .0
.216	.3687					.0002	.00	1.36	.11	.16	.013	.00	.00	PIPE
1001.836	2834.247	1.280	2835.527	1.50	.93	.01	2835.54	.00	.46	1.06	1.500	.000	.00	1 .0
.177	.3687					.0002	.00	1.28	.13	.16	.013	.00	.00	PIPE
1002.013	2834.312	1.214	2835.526	1.50	.98	.01	2835.54	.00	.46	1.18	1.500	.000	.00	1 .0
.154	.3687					.0002	.00	1.21	.15	.16	.013	.00	.00	PIPE
1002.167	2834.369	1.155	2835.524	1.50	1.03	.02	2835.54	.00	.46	1.26	1.500	.000	.00	1 .0
.138	.3687					.0002	.00	1.16	.17	.16	.013	.00	.00	PIPE
1002.305	2834.420	1.103	2835.522	1.50	1.08	.02	2835.54	.00	.46	1.32	1.500	.000	.00	1 .0
.126	.3687					.0003	.00	1.10	.19	.16	.013	.00	.00	PIPE
1002.430	2834.466	1.055	2835.521	1.50	1.13	.02	2835.54	.00	.46	1.37	1.500	.000	.00	1 .0
.115	.3687					.0003	.00	1.05	.20	.16	.013	.00	.00	PIPE
1002.546	2834.509	1.010	2835.519	1.50	1.18	.02	2835.54	.00	.46	1.41	1.500	.000	.00	1 .0
.106	.3687					.0003	.00	1.01	.22	.16	.013	.00	.00	PIPE

♀ FILE: P18E.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2
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SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1002.652	2834.548	.969	2835.517	1.50	1.24	.02	2835.54	.00	.46	1.43	1.500	.000	.00	1 .0
.089	.3687					.0004	.00	.97	.24	.16	.013	.00	.00	PIPE
1002.741	2834.581	.930	2835.510	1.50	1.30	.03	2835.54	.00	.46	1.46	1.500	.000	.00	1 .0
HYDRAULIC JUMP														
1002.741	2834.581	.193	2834.773	1.50	11.32	1.99	2836.76	.00	.46	1.00	1.500	.000	.00	1 .0
.528	.3687					.1542	.08	.19	5.49	.16	.013	.00	.00	PIPE
1003.269	2834.776	.199	2834.975	1.50	10.79	1.81	2836.78	.00	.46	1.02	1.500	.000	.00	1 .0
.674	.3687					.1346	.09	.20	5.15	.16	.013	.00	.00	PIPE

1003.943	2835.024	.206	2835.230	1.50	10.29	1.64	2836.87	.00	.46	1.03	1.500	.000	.00	1	.0
.568	.3687					.1175	.07	.21	4.82	.16	.013	.00	.00	PIPE	
1004.511	2835.234	.212	2835.446	1.50	9.81	1.49	2836.94	.00	.46	1.05	1.500	.000	.00	1	.0
.484	.3687					.1025	.05	.21	4.52	.16	.013	.00	.00	PIPE	
1004.995	2835.412	.219	2835.632	1.50	9.36	1.36	2836.99	.00	.46	1.06	1.500	.000	.00	1	.0
.416	.3687					.0895	.04	.22	4.24	.16	.013	.00	.00	PIPE	
1005.411	2835.566	.227	2835.792	1.50	8.92	1.24	2837.03	.00	.46	1.07	1.500	.000	.00	1	.0
.360	.3687					.0782	.03	.23	3.97	.16	.013	.00	.00	PIPE	
1005.771	2835.698	.234	2835.933	1.50	8.50	1.12	2837.06	.00	.46	1.09	1.500	.000	.00	1	.0
.314	.3687					.0683	.02	.23	3.72	.16	.013	.00	.00	PIPE	

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SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1006.085	2835.814	.242	2836.056	1.50	8.11	1.02	2837.08	.00	.46	1.10	1.500	.000	.00	1	.0
.274	.3687					.0596	.02	.24	3.49	.16	.013	.00	.00	PIPE	
1006.359	2835.915	.250	2836.166	1.50	7.73	.93	2837.09	.00	.46	1.12	1.500	.000	.00	1	.0
.240	.3687					.0521	.01	.25	3.27	.16	.013	.00	.00	PIPE	
1006.599	2836.004	.259	2836.262	1.50	7.37	.84	2837.11	.00	.46	1.13	1.500	.000	.00	1	.0
.210	.3687					.0455	.01	.26	3.07	.16	.013	.00	.00	PIPE	
1006.810	2836.081	.267	2836.349	1.50	7.03	.77	2837.12	.00	.46	1.15	1.500	.000	.00	1	.0
.184	.3687					.0397	.01	.27	2.87	.16	.013	.00	.00	PIPE	
1006.994	2836.149	.277	2836.426	1.50	6.70	.70	2837.12	.00	.46	1.16	1.500	.000	.00	1	.0
.162	.3687					.0347	.01	.28	2.69	.16	.013	.00	.00	PIPE	
1007.156	2836.209	.286	2836.495	1.50	6.39	.63	2837.13	.00	.46	1.18	1.500	.000	.00	1	.0
.142	.3687					.0303	.00	.29	2.52	.16	.013	.00	.00	PIPE	
1007.298	2836.261	.295	2836.557	1.50	6.09	.58	2837.13	.00	.46	1.19	1.500	.000	.00	1	.0
.124	.3687					.0265	.00	.30	2.36	.16	.013	.00	.00	PIPE	
1007.421	2836.307	.306	2836.612	1.50	5.81	.52	2837.14	.00	.46	1.21	1.500	.000	.00	1	.0
.108	.3687					.0231	.00	.31	2.21	.16	.013	.00	.00	PIPE	
1007.529	2836.347	.316	2836.663	1.50	5.54	.48	2837.14	.00	.46	1.22	1.500	.000	.00	1	.0
.093	.3687					.0202	.00	.32	2.07	.16	.013	.00	.00	PIPE	

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SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

	Invert	Depth	Water	Q	Vel	Vel	Energy	Super	Critical	Flow Top	Height/	Base Wt		No Wth

Station	Elev	(FT)	Elev	(CFS)	(FPS)	Head	Grd.El.	Elev	Depth	Width	Dia.-FT	or I.D.	ZL	Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1007.623	2836.381	.327	2836.708	1.50	5.28	.43	2837.14	.00	.46	1.24	1.500	.000	.00	1 .0
.081	.3687					.0177	.00	.33	1.94	.16	.013	.00	.00	PIPE
1007.703	2836.411	.338	2836.749	1.50	5.03	.39	2837.14	.00	.46	1.25	1.500	.000	.00	1 .0
.069	.3687					.0155	.00	.34	1.82	.16	.013	.00	.00	PIPE
1007.772	2836.436	.349	2836.785	1.50	4.80	.36	2837.14	.00	.46	1.27	1.500	.000	.00	1 .0
.058	.3687					.0135	.00	.35	1.70	.16	.013	.00	.00	PIPE
1007.830	2836.458	.361	2836.819	1.50	4.58	.33	2837.14	.00	.46	1.28	1.500	.000	.00	1 .0
.048	.3687					.0118	.00	.36	1.60	.16	.013	.00	.00	PIPE
1007.878	2836.475	.374	2836.849	1.50	4.36	.30	2837.14	.00	.46	1.30	1.500	.000	.00	1 .0
.039	.3687					.0103	.00	.37	1.49	.16	.013	.00	.00	PIPE
1007.917	2836.490	.386	2836.876	1.50	4.16	.27	2837.15	.00	.46	1.31	1.500	.000	.00	1 .0
.031	.3687					.0090	.00	.39	1.40	.16	.013	.00	.00	PIPE
1007.948	2836.501	.400	2836.901	1.50	3.97	.24	2837.15	.00	.46	1.33	1.500	.000	.00	1 .0
.023	.3687					.0079	.00	.40	1.31	.16	.013	.00	.00	PIPE
1007.971	2836.510	.414	2836.923	1.50	3.78	.22	2837.15	.00	.46	1.34	1.500	.000	.00	1 .0
.016	.3687					.0069	.00	.41	1.23	.16	.013	.00	.00	PIPE
1007.987	2836.515	.428	2836.943	1.50	3.61	.20	2837.15	.00	.46	1.35	1.500	.000	.00	1 .0
.010	.3687					.0061	.00	.43	1.15	.16	.013	.00	.00	PIPE

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SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1007.997	2836.519	.443	2836.962	1.50	3.44	.18	2837.15	.00	.46	1.37	1.500	.000	.00	1 .0
.003	.3687					.0053	.00	.44	1.07	.16	.013	.00	.00	PIPE
1008.000	2836.520	.459	2836.979	1.50	3.27	.17	2837.15	.00	.46	1.38	1.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

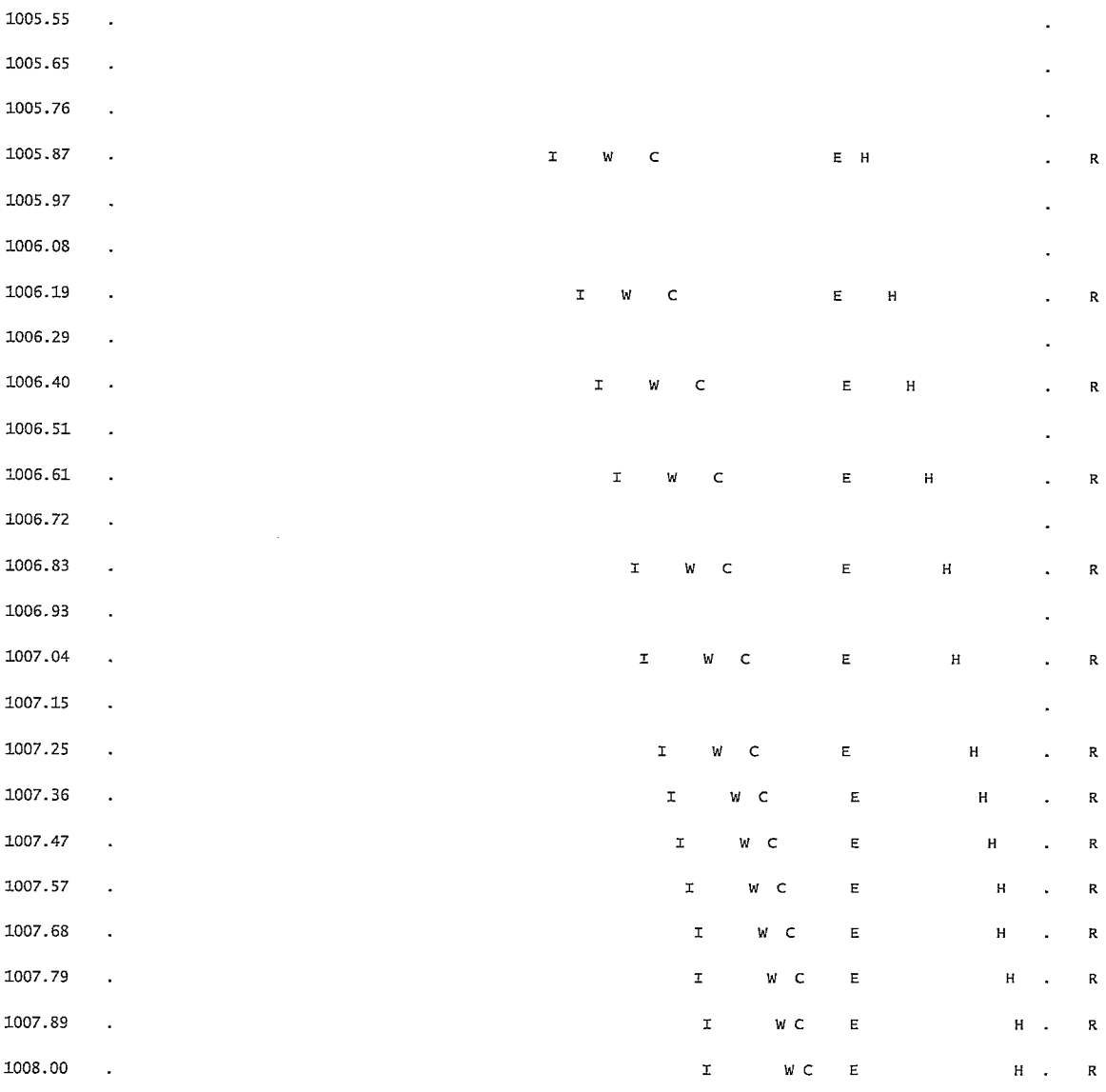
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

1000.00 .I C H W . R

```
1000.11  .                                                                .
1000.21  .                                                                .
1000.32  .                                                                .
1000.43  .                                                                .
1000.53  .                                                                .
1000.64  .                                                                .
1000.75  .                                                                .
1000.85  .                                                                .
1000.96  .                                                                .
1001.07  .                                                                .
1001.17  .                                                                .
1001.28  .        I        C                  H                         .  R
1001.39  .                                                                .
1001.49  .                                                                .
1001.60  .                                                                .
1001.71  .           I        C                W  H                      .  R
1001.81  .                                                                .
1001.92  .              I        C             WE  H                     .  R
1002.03  .              I        C             WE    H                   .  R
1002.13  .                                                                .
1002.24  .              I         C            WE     H                  .  R
1002.35  .                I        C           WE      H                 .  R
1002.45  .                I        C           WE       H                .  R
1002.56  .                I        C           WE        H               .  R
1002.67  .                I         C          WE         H              .  R
```

P18E

| | | |


1005.55 . .
1005.65 . .
1005.76 . .
1005.87 . I W C E H . R
1005.97 . .
1006.08 . .
1006.19 . I W C E H . R
1006.29 . .
1006.40 . I W C E H . R
1006.51 . .
1006.61 . I W C E H . R
1006.72 . .
1006.83 . I W C E H . R
1006.93 . .
1007.04 . I W C E H . R
1007.15 . .
1007.25 . I W C E H . R
1007.36 . I W C E H . R
1007.47 . I W C E H . R
1007.57 . I W C E H . R
1007.68 . I W C E H . R
1007.79 . I W C E H . R
1007.89 . I W C E H . R
1008.00 . I W C E H . R
2833.570 2834.015 2834.460 2834.905 2835.350 2835.795 2836.240 2836.686 2837.131 2837.576 2838.020

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)
SO   1000.0002833.360 18      .013                2835.510
R    1057.0002833.640 18      .013                                    1
R    1102.0002840.600 18      .013
SH   1102.0002840.600 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS        9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS        6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS        2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS         .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS        7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS        5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS         .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS         .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS        7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS        5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS         .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS         .000  .010
Q            1.500  .0
```

FILE: P18W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 5:50:37

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 5:50:37

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2833.360	18	2835.510

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1057.000	2833.640	18	.013	.000	.000	.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1102.000	2840.600	18	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1102.000	2840.600	18	.000

♀ FILE: P18W.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 5:50:42
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT) / SF Ave	Water Elev / HF	Q (CFS) / SE Dpth	Vel (FPS) / Froude N	Vel Head / Norm Dp	Energy Grd.El. / "N"	Super Elev / X-Fall	Critical Depth / ZR	Flow Top Width / Type Ch	Height/Dia.-FT / Base Wt or I.D. / ZL	No Wth Prs/Pip
1000.000	2833.360	2.150	2835.510	1.50	.85	.01	2835.52	.00	.46	.00	1.500 .000 .00	1 .0
57.000	.0049					.0002	.01	2.15	.00	.46	.013 .00 .00	PIPE
1057.000	2833.640	1.882	2835.522	1.50	.85	.01	2835.53	.00	.46	.00	1.500 .000 .00	1 .0
2.475	.1547					.0002	.00	1.88	.00	.20	.013 .00 .00	PIPE
1059.475	2834.023	1.500	2835.523	1.50	.85	.01	2835.53	.00	.46	.00	1.500 .000 .00	1 .0
.887	.1547					.0002	.00	1.50	.00	.20	.013 .00 .00	PIPE
1060.362	2834.160	1.361	2835.521	1.50	.89	.01	2835.53	.00	.46	.87	1.500 .000 .00	1 .0
.515	.1547					.0002	.00	1.36	.11	.20	.013 .00 .00	PIPE
1060.877	2834.240	1.280	2835.520	1.50	.93	.01	2835.53	.00	.46	1.06	1.500 .000 .00	1 .0
.422	.1547					.0002	.00	1.28	.13	.20	.013 .00 .00	PIPE
1061.299	2834.305	1.214	2835.519	1.50	.98	.01	2835.53	.00	.46	1.18	1.500 .000 .00	1 .0
.368	.1547					.0002	.00	1.21	.15	.20	.013 .00 .00	PIPE
1061.667	2834.362	1.155	2835.517	1.50	1.03	.02	2835.53	.00	.46	1.26	1.500 .000 .00	1 .0
.329	.1547					.0002	.00	1.16	.17	.20	.013 .00 .00	PIPE
1061.996	2834.413	1.103	2835.516	1.50	1.08	.02	2835.53	.00	.46	1.32	1.500 .000 .00	1 .0
.300	.1547					.0003	.00	1.10	.19	.20	.013 .00 .00	PIPE
1062.296	2834.459	1.055	2835.514	1.50	1.13	.02	2835.53	.00	.46	1.37	1.500 .000 .00	1 .0
.275	.1547					.0003	.00	1.05	.20	.20	.013 .00 .00	PIPE

♀ FILE: P18W.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 5:50:42
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT) / SF Ave	Water Elev / HF	Q (CFS) / SE Dpth	Vel (FPS) / Froude N	Vel Head / Norm Dp	Energy Grd.El. / "N"	Super Elev / X-Fall	Critical Depth / ZR	Flow Top Width / Type Ch	Height/Dia.-FT / Base Wt or I.D. / ZL	No Wth Prs/Pip
1062.571	2834.502	1.010	2835.512	1.50	1.18	.02	2835.53	.00	.46	1.41	1.500 .000 .00	1 .0
.254	.1547					.0003	.00	1.01	.22	.20	.013 .00 .00	PIPE
1062.825	2834.541	.969	2835.510	1.50	1.24	.02	2835.53	.00	.46	1.43	1.500 .000 .00	1 .0
.235	.1547					.0004	.00	.97	.24	.20	.013 .00 .00	PIPE
1063.060	2834.577	.930	2835.507	1.50	1.30	.03	2835.53	.00	.46	1.46	1.500 .000 .00	1 .0
HYDRAULIC JUMP												
1063.060	2834.577	.195	2834.773	1.50	11.07	1.90	2836.68	.00	.46	1.01	1.500 .000 .00	1 .0
15.110	.1547					.1492	2.25	.20	5.33	.20	.013 .00 .00	PIPE
1078.170	2836.914	.199	2837.113	1.50	10.79	1.81	2838.92	.00	.46	1.02	1.500 .000 .00	1 .0
7.858	.1547					.1346	1.06	.20	5.15	.20	.013 .00 .00	PIPE
1086.028	2838.129	.206	2838.335	1.50	10.29	1.64	2839.98	.00	.46	1.03	1.500 .000 .00	1 .0

3.835	.1547					.1175	.45	.21	4.82	.20	.013	.00	.00	PIPE					
1089.863	2838.723	.212	2838.935	1.50	9.81	1.49	2840.43	.00	.46	1.05	1.500	.000	.00	1	.0				
2.471	.1547					.1025	.25	.21	4.52	.20	.013	.00	.00	PIPE					
1092.334	2839.105	.219	2839.324	1.50	9.36	1.36	2840.68	.00	.46	1.06	1.500	.000	.00	1	.0				
1.783	.1547					.0895	.16	.22	4.24	.20	.013	.00	.00	PIPE					
1094.117	2839.381	.227	2839.607	1.50	8.92	1.24	2840.84	.00	.46	1.07	1.500	.000	.00	1	.0				
1.369	.1547					.0782	.11	.23	3.97	.20	.013	.00	.00	PIPE					

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 5:50:42

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1095.486	2839.592	.234	2839.827	1.50	8.50	1.12	2840.95	.00	.46	1.09	1.500	.000	.00	1 .0
1.091	.1547					.0683	.07	.23	3.72	.20	.013	.00	.00	PIPE
1096.578	2839.761	.242	2840.003	1.50	8.11	1.02	2841.02	.00	.46	1.10	1.500	.000	.00	1 .0
.891	.1547					.0596	.05	.24	3.49	.20	.013	.00	.00	PIPE
1097.469	2839.899	.250	2840.149	1.50	7.73	.93	2841.08	.00	.46	1.12	1.500	.000	.00	1 .0
.740	.1547					.0521	.04	.25	3.27	.20	.013	.00	.00	PIPE
1098.209	2840.013	.259	2840.272	1.50	7.37	.84	2841.12	.00	.46	1.13	1.500	.000	.00	1 .0
.623	.1547					.0455	.03	.26	3.07	.20	.013	.00	.00	PIPE
1098.832	2840.110	.267	2840.377	1.50	7.03	.77	2841.14	.00	.46	1.15	1.500	.000	.00	1 .0
.527	.1547					.0397	.02	.27	2.87	.20	.013	.00	.00	PIPE
1099.359	2840.191	.277	2840.468	1.50	6.70	.70	2841.17	.00	.46	1.16	1.500	.000	.00	1 .0
.451	.1547					.0347	.02	.28	2.69	.20	.013	.00	.00	PIPE
1099.810	2840.261	.286	2840.547	1.50	6.39	.63	2841.18	.00	.46	1.18	1.500	.000	.00	1 .0
.386	.1547					.0303	.01	.29	2.52	.20	.013	.00	.00	PIPE
1100.197	2840.321	.295	2840.616	1.50	6.09	.58	2841.19	.00	.46	1.19	1.500	.000	.00	1 .0
.330	.1547					.0265	.01	.30	2.36	.20	.013	.00	.00	PIPE
1100.527	2840.372	.306	2840.677	1.50	5.81	.52	2841.20	.00	.46	1.21	1.500	.000	.00	1 .0
.284	.1547					.0231	.01	.31	2.21	.20	.013	.00	.00	PIPE

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 5:50:42

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1100.810	2840.416	.316	2840.732	1.50	5.54	.48	2841.21	.00	.46	1.22	1.500	.000	.00	1 .0
.242	.1547					.0202	.00	.32	2.07	.20	.013	.00	.00	PIPE
1101.052	2840.453	.327	2840.780	1.50	5.28	.43	2841.21	.00	.46	1.24	1.500	.000	.00	1 .0
.206	.1547					.0177	.00	.33	1.94	.20	.013	.00	.00	PIPE

1101.258	2840.485	.338	2840.823	1.50	5.03	.39	2841.22	.00	.46	1.25	1.500	.000	.00	1	.0
.174	.1547					.0155	.00	.34	1.82	.20	.013	.00	.00	PIPE	
1101.433	2840.512	.349	2840.862	1.50	4.80	.36	2841.22	.00	.46	1.27	1.500	.000	.00	1	.0
.146	.1547					.0135	.00	.35	1.70	.20	.013	.00	.00	PIPE	
1101.578	2840.535	.361	2840.896	1.50	4.58	.33	2841.22	.00	.46	1.28	1.500	.000	.00	1	.0
.120	.1547					.0118	.00	.36	1.60	.20	.013	.00	.00	PIPE	
1101.699	2840.553	.374	2840.927	1.50	4.36	.30	2841.22	.00	.46	1.30	1.500	.000	.00	1	.0
.098	.1547					.0103	.00	.37	1.49	.20	.013	.00	.00	PIPE	
1101.796	2840.569	.386	2840.955	1.50	4.16	.27	2841.22	.00	.46	1.31	1.500	.000	.00	1	.0
.076	.1547					.0090	.00	.39	1.40	.20	.013	.00	.00	PIPE	
1101.872	2840.580	.400	2840.980	1.50	3.97	.24	2841.22	.00	.46	1.33	1.500	.000	.00	1	.0
.057	.1547					.0079	.00	.40	1.31	.20	.013	.00	.00	PIPE	
1101.929	2840.589	.414	2841.003	1.50	3.78	.22	2841.22	.00	.46	1.34	1.500	.000	.00	1	.0
.039	.1547					.0069	.00	.41	1.23	.20	.013	.00	.00	PIPE	

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 5:50:42

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1101.969	2840.595	.428	2841.023	1.50	3.61	.20	2841.23	.00	.46	1.35	1.500	.000	.00	1 .0
.023	.1547					.0061	.00	.43	1.15	.20	.013	.00	.00	PIPE
1101.992	2840.599	.443	2841.042	1.50	3.44	.18	2841.23	.00	.46	1.37	1.500	.000	.00	1 .0
.008	.1547					.0053	.00	.44	1.07	.20	.013	.00	.00	PIPE
1102.000	2840.600	.459	2841.060	1.50	3.27	.17	2841.23	.00	.46	1.38	1.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

1000.00 .I C H W . R

1001.32 .

1002.65 .

1003.97 .

1005.30 .

1006.62 .

1007.95 .

1009.27 .

1010.60 .

1011.92 .

1013.25 .

1014.57 .

1015.90 .

1017.22 .

1018.55 .

1019.87 .

1021.19 .

1022.52 .

1023.84 .

1025.17 .

1026.49 .

1027.82 .

1029.14 .

1030.47 .

1031.79 .

1033.12 .

1034.44 .

1035.77 .

1037.09 .

1038.42 .

1039.74 .

1041.06 .

1042.39 .

```
1043.71  .                                                                .
1045.04  .                                                                .
1046.36  .                                                                .
1047.69  .                                                                .
1049.01  .                                                                .
1050.34  .                                                                .
1051.66  .                                                                .
1052.99  .                                                                .
1054.31  .                                                                .
1055.64  .                                                                .
1056.96  .                                                                .
1058.29  .  I   C          H  W                                           .  R
1059.61  .     I   C          H                                           .  R
1060.94  .       I   C        W H                                         .  R
1062.26  .        I   C       W  H                                        .  R
1063.58  .        I    C      W  H                                        .  R
1064.91  .         I   C      W   H                                       .  R
1066.23  .          I   C     W    H                                      .  R
1067.56  .          I   C     W    H                                      .  R
1068.88  .           I   C    W     H                                     .  R
1070.21  .           I   C    W     H                                     .  R
1071.53  .           I    C   W      H                                    .  R
1072.86  .           I W C         H     E                                .  R
1074.18  .                                                               .
1075.51  .                                                               .
1076.83  .                                                               .
1078.16  .                                                               .
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                                                                P18W
1079.48  .                          I W  C          H    E                          .   R
1080.81  .                                                                         .
1082.13  .                                                                         .
1083.45  .                                                                         .
1084.78  .                                                                         .
1086.10  .                                    I W  C          H   E                .   R
1087.43  .                                                                         .
1088.75  .                                                                         .
1090.08  .                                          I W  C          H E            .   R
1091.40  .                                                                         .
1092.73  .                                             I  W C          HE          .   R
1094.05  .                                                                         .
1095.38  .                                                I  W  C         EH      .   R
1096.70  .                                                   I W  C        E H     .   R
1098.03  .                                                     I  W C       E  H    .   R
1099.35  .                                                      I  W  C      E  H   .   R
1100.68  .                                                        I  W C     E   H  .   R
1102.00  .                                                         I  W C     E   H .   R

         2833.360  2834.234  2835.108  2835.982  2836.856  2837.730  2838.604  2839.478  2840.352  2841.226  2842.100
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)
SO    1000.0002832.330 18       .013                2835.490
R     1008.0002835.060 18       .013
SH    1008.0002835.060 18       .013
CD     6  3   0     .000    6.000     6.000  .000  .000   .00
CD     8  3   0     .000    5.000     8.000  .000  .000   .00
CD    18  4   1     .000    1.500      .000  .000  .000   .00
CD    24  4   1     .000    2.000      .000  .000  .000   .00
CD    30  4   1     .000    2.500      .000  .000  .000   .00
CD    36  4   1     .000    3.000      .000  .000  .000   .00
CD    42  4   1     .000    3.500      .000  .000  .000   .00
CD    48  4   1     .000    4.000      .000  .000  .000   .00
CD    54  4   1     .000    4.500      .000  .000  .000   .00
CD    60  4   1     .000    5.000      .000  .000  .000   .00
CD    72  4   1     .000    6.000      .000  .000  .000   .00
CD     1  6   0      0.0       0.0       0.0     0.0    0.0    0.0
CD     2  6   0      0.0       0.0       0.0     0.0    0.0    0.0
CD     3  6   0      0.0       0.0       0.0     0.0    0.0    0.0
PTS   121   .000    .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS         9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS         6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS         2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS          .000   .010
PTS   221   .000    .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS         7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS         5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS          .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS          .000   .010
PTS   321   .000    .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS         7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS         5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS          .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS          .000   .010
Q              2.000   .0
```

FILE: P20E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6: 0:38

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6: 0:38

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	8.000	.000	8.000	.010	8.000	3.000	7.900	3.570	7.700	3.950	7.500	4.190
PTS			7.250	4.390	7.000	4.530	6.000	4.800	5.000	4.950	4.000	5.000	3.000	4.950	2.000	4.800
PTS			1.000	4.530	.750	4.390	.500	4.190	.300	3.950	.100	3.570	.000	3.000	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2832.330	18	2835.490

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1008.000	2835.060	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1008.000	2835.060	18	.000

♀ FILE: P20E.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:41
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2832.330	3.160	2835.490	2.00	1.13	.02	2835.51	.00	.53	.00	1.500	.000	.00	1 .0
4.869	.3412					.0004	.00	3.16	.00	.19	.013	.00	.00	PIPE
1004.869	2833.992	1.500	2835.492	2.00	1.13	.02	2835.51	.00	.53	.00	1.500	.000	.00	1 .0
.399	.3412					.0003	.00	1.50	.00	.19	.013	.00	.00	PIPE
1005.269	2834.128	1.361	2835.489	2.00	1.19	.02	2835.51	.00	.53	.87	1.500	.000	.00	1 .0
.231	.3412					.0003	.00	1.36	.15	.19	.013	.00	.00	PIPE
1005.499	2834.207	1.280	2835.487	2.00	1.24	.02	2835.51	.00	.53	1.06	1.500	.000	.00	1 .0
.188	.3412					.0004	.00	1.28	.18	.19	.013	.00	.00	PIPE
1005.688	2834.271	1.214	2835.484	2.00	1.31	.03	2835.51	.00	.53	1.18	1.500	.000	.00	1 .0
.163	.3412					.0004	.00	1.21	.20	.19	.013	.00	.00	PIPE
1005.851	2834.326	1.155	2835.482	2.00	1.37	.03	2835.51	.00	.53	1.26	1.500	.000	.00	1 .0
.146	.3412					.0004	.00	1.16	.22	.19	.013	.00	.00	PIPE
1005.996	2834.376	1.103	2835.479	2.00	1.44	.03	2835.51	.00	.53	1.32	1.500	.000	.00	1 .0
.132	.3412					.0005	.00	1.10	.25	.19	.013	.00	.00	PIPE
1006.128	2834.421	1.055	2835.476	2.00	1.51	.04	2835.51	.00	.53	1.37	1.500	.000	.00	1 .0
.120	.3412					.0005	.00	1.05	.27	.19	.013	.00	.00	PIPE
1006.248	2834.462	1.010	2835.472	2.00	1.58	.04	2835.51	.00	.53	1.41	1.500	.000	.00	1 .0
.110	.3412					.0006	.00	1.01	.29	.19	.013	.00	.00	PIPE

♀ FILE: P20E.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:41
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1006.359	2834.500	.969	2835.468	2.00	1.66	.04	2835.51	.00	.53	1.43	1.500	.000	.00	1 .0
.102	.3412					.0007	.00	.97	.32	.19	.013	.00	.00	PIPE
1006.460	2834.534	.930	2835.464	2.00	1.74	.05	2835.51	.00	.53	1.46	1.500	.000	.00	1 .0
.093	.3412					.0008	.00	.93	.34	.19	.013	.00	.00	PIPE
1006.554	2834.566	.893	2835.459	2.00	1.82	.05	2835.51	.00	.53	1.47	1.500	.000	.00	1 .0
.086	.3412					.0009	.00	.89	.37	.19	.013	.00	.00	PIPE
1006.640	2834.596	.859	2835.454	2.00	1.91	.06	2835.51	.00	.53	1.48	1.500	.000	.00	1 .0
.043	.3412					.0010	.00	.86	.40	.19	.013	.00	.00	PIPE

P20E

1006.683	2834.610	.826	2835.436	2.00	2.01	.06	2835.50	.00	.53	1.49	1.500	.000	.00	1	.0	
HYDRAULIC JUMP																
1006.683	2834.610	.309	2834.919	2.00	7.64	.91	2835.82	.00	.53	1.21	1.500	.000	.00	1	.0	
.023	.3412					.0395	.00	.31	2.90	.19	.013	.00	.00	PIPE		
1006.706	2834.619	.319	2834.938	2.00	7.28	.82	2835.76	.00	.53	1.23	1.500	.000	.00	1	.0	
.208	.3412					.0345	.01	.32	2.71	.19	.013	.00	.00	PIPE		
1006.915	2834.690	.330	2835.020	2.00	6.94	.75	2835.77	.00	.53	1.24	1.500	.000	.00	1	.0	
.183	.3412					.0302	.01	.33	2.54	.19	.013	.00	.00	PIPE		
1007.097	2834.752	.341	2835.093	2.00	6.62	.68	2835.77	.00	.53	1.26	1.500	.000	.00	1	.0	
.159	.3412					.0264	.00	.34	2.38	.19	.013	.00	.00	PIPE		

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:41

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1007.257	2834.806	.353	2835.159	2.00	6.31	.62	2835.78	.00	.53	1.27	1.500	.000	.00	1 .0
.139	.3412					.0231	.00	.35	2.23	.19	.013	.00	.00	PIPE
1007.395	2834.854	.365	2835.219	2.00	6.02	.56	2835.78	.00	.53	1.29	1.500	.000	.00	1 .0
.120	.3412					.0202	.00	.36	2.09	.19	.013	.00	.00	PIPE
1007.515	2834.895	.377	2835.272	2.00	5.74	.51	2835.78	.00	.53	1.30	1.500	.000	.00	1 .0
.103	.3412					.0176	.00	.38	1.95	.19	.013	.00	.00	PIPE
1007.619	2834.930	.390	2835.320	2.00	5.47	.46	2835.78	.00	.53	1.32	1.500	.000	.00	1 .0
.088	.3412					.0154	.00	.39	1.83	.19	.013	.00	.00	PIPE
1007.707	2834.960	.404	2835.364	2.00	5.21	.42	2835.79	.00	.53	1.33	1.500	.000	.00	1 .0
.074	.3412					.0135	.00	.40	1.71	.19	.013	.00	.00	PIPE
1007.781	2834.985	.418	2835.403	2.00	4.97	.38	2835.79	.00	.53	1.34	1.500	.000	.00	1 .0
.062	.3412					.0118	.00	.42	1.60	.19	.013	.00	.00	PIPE
1007.843	2835.006	.432	2835.439	2.00	4.74	.35	2835.79	.00	.53	1.36	1.500	.000	.00	1 .0
.050	.3412					.0103	.00	.43	1.50	.19	.013	.00	.00	PIPE
1007.893	2835.023	.448	2835.471	2.00	4.52	.32	2835.79	.00	.53	1.37	1.500	.000	.00	1 .0
.040	.3412					.0091	.00	.45	1.40	.19	.013	.00	.00	PIPE
1007.933	2835.037	.463	2835.500	2.00	4.31	.29	2835.79	.00	.53	1.39	1.500	.000	.00	1 .0
.030	.3412					.0079	.00	.46	1.31	.19	.013	.00	.00	PIPE

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:41

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip

P20E

Station	Elev	(FT)	Elev	(CFS)	(FPS)	Head	Grd.El.	Elev	Depth	Width	Dia.-FT	or I.D.	ZL	Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1007.963	2835.047	.479	2835.527	2.00	4.11	.26	2835.79	.00	.53	1.40	1.500	.000	.00	1 .0
.021	.3412					.0069	.00	.48	1.23	.19	.013	.00	.00	PIPE
1007.984	2835.054	.496	2835.551	2.00	3.92	.24	2835.79	.00	.53	1.41	1.500	.000	.00	1 .0
.012	.3412					.0061	.00	.50	1.15	.19	.013	.00	.00	PIPE
1007.996	2835.059	.514	2835.573	2.00	3.74	.22	2835.79	.00	.53	1.42	1.500	.000	.00	1 .0
.004	.3412					.0053	.00	.51	1.07	.19	.013	.00	.00	PIPE
1008.000	2835.060	.533	2835.593	2.00	3.55	.20	2835.79	.00	.53	1.44	1.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

1000.00 .I C H WE . R

1000.13 .

1000.26 .

1000.39 .

1000.52 .

1000.66 .

1000.79 .

1000.92 .

1001.05 .

1001.18 .

1001.31 .

1001.44 .

1001.57 .

1001.70 .

1001.84 .

1001.97 .

1002.10 .

1002.23 .

1002.36 .

1002.49 .

1002.62 .

1002.75 .

1002.89 .

1003.02 .

1003.15 .

1003.28 .

1003.41 .

1003.54 .

1003.67 .

1003.80 .

1003.93 .

1004.07 .

1004.20 .

1004.33 .

1004.46 .

1004.59 .

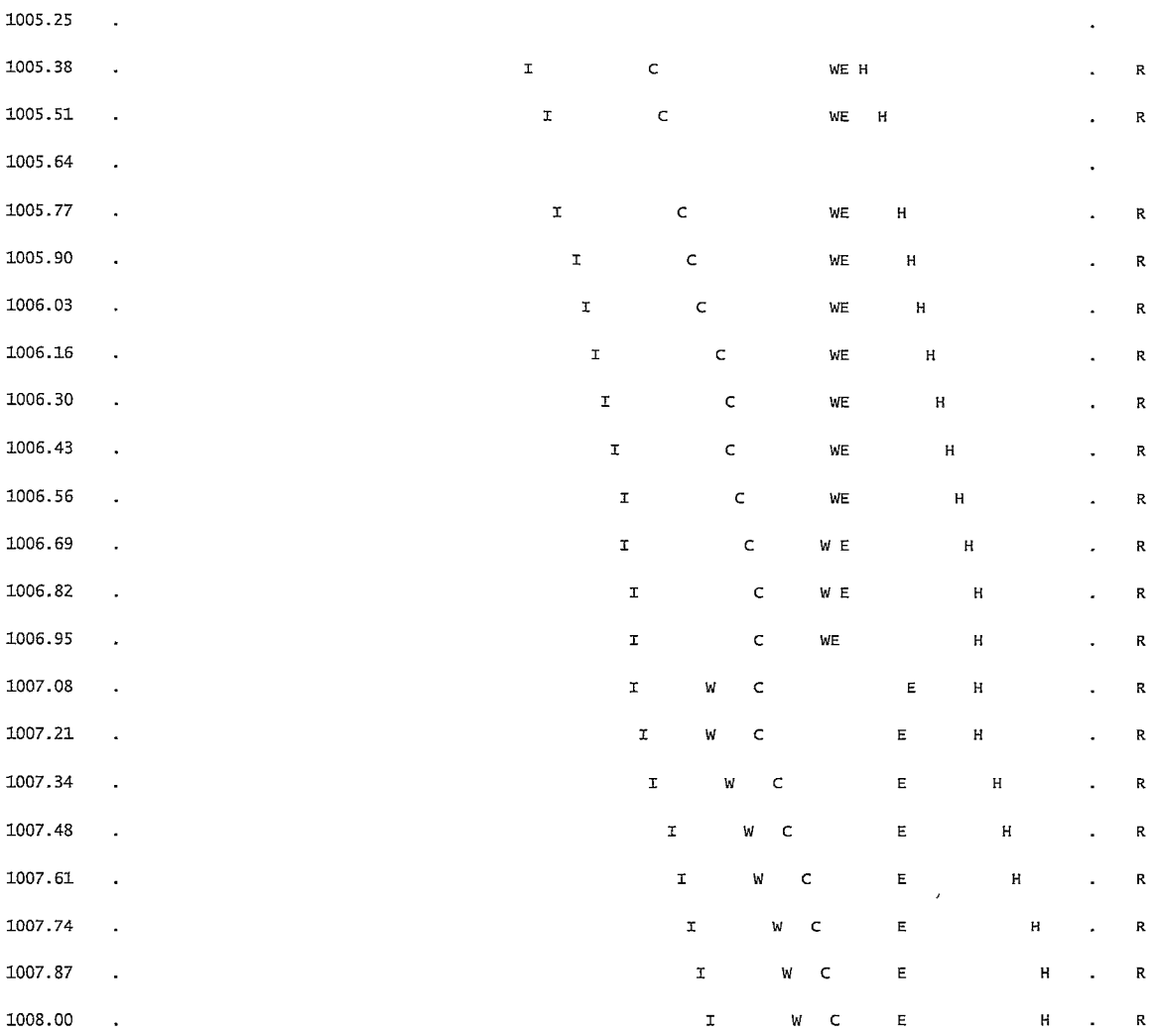
1004.72 .

1004.85 .

1004.98 . I C HE . R

1005.11 .

P20E



NOTES
1. GLOSSARY
   I = INVERT ELEVATION

C = CRITICAL DEPTH
W = WATER SURFACE ELEVATION
S = SUPER-ELEVATION
H = HEIGHT OF CHANNEL
E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)
SO   1000.0002832.330 18      .013                2835.490
R    1083.0002839.250 18      .013
SH   1083.0002839.250 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0   0.0    0.0   0.0
CD    2  6   0     0.0     0.0      0.0   0.0    0.0   0.0
CD    3  6   0     0.0     0.0      0.0   0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS        9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS        6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS        2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS         .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS        7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS        5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS         .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS         .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS        7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS        5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS         .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS         .000  .010
Q             2.000  .0
```

FILE: P20W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6: 0:21

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6: 0:21

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	8.000	.000	8.000	.010	8.000	3.000	7.900	3.570	7.700	3.950	7.500	4.190
PTS			7.250	4.390	7.000	4.530	6.000	4.800	5.000	4.950	4.000	5.000	3.000	4.950	2.000	4.800
PTS			1.000	4.530	.750	4.390	.500	4.190	.300	3.950	.100	3.570	.000	3.000	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2832.330	18	2835.490

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1083.000	2839.250	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1083.000	2839.250	18	.000

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:25
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT) / SF Ave	Water Elev / HF	Q (CFS) / SE Dpth	Vel (FPS) / Froude N	Vel Head / Norm Dp	Energy Grd.El. / "N"	Super Elev / X-Fall	Critical Depth / ZR	Flow Top Width	Height/ Dia.-FT /	Base Wt or I.D. /	ZL	No Wth Prs/Pip / Type Ch
1000.000	2832.330	3.160	2835.490	2.00	1.13	.02	2835.51	.00	.53	.00	1.500	.000	.00	1 .0
19.997	.0834					.0004	.01	3.16	.00	.26	.013	.00	.00	PIPE
1019.997	2833.997	1.500	2835.497	2.00	1.13	.02	2835.52	.00	.53	.00	1.500	.000	.00	1 .0
1.639	.0834					.0003	.00	1.50	.00	.26	.013	.00	.00	PIPE
1021.636	2834.134	1.361	2835.495	2.00	1.19	.02	2835.52	.00	.53	.87	1.500	.000	.00	1 .0
.947	.0834					.0003	.00	1.36	.15	.26	.013	.00	.00	PIPE
1022.582	2834.213	1.280	2835.493	2.00	1.24	.02	2835.52	.00	.53	1.06	1.500	.000	.00	1 .0
.773	.0834					.0004	.00	1.28	.18	.26	.013	.00	.00	PIPE
1023.355	2834.277	1.214	2835.491	2.00	1.31	.03	2835.52	.00	.53	1.18	1.500	.000	.00	1 .0
.671	.0834					.0004	.00	1.21	.20	.26	.013	.00	.00	PIPE
1024.026	2834.333	1.155	2835.489	2.00	1.37	.03	2835.52	.00	.53	1.26	1.500	.000	.00	1 .0
.598	.0834					.0004	.00	1.16	.22	.26	.013	.00	.00	PIPE
1024.624	2834.383	1.103	2835.486	2.00	1.44	.03	2835.52	.00	.53	1.32	1.500	.000	.00	1 .0
.542	.0834					.0005	.00	1.10	.25	.26	.013	.00	.00	PIPE
1025.166	2834.428	1.055	2835.483	2.00	1.51	.04	2835.52	.00	.53	1.37	1.500	.000	.00	1 .0
.495	.0834					.0005	.00	1.05	.27	.26	.013	.00	.00	PIPE
1025.660	2834.469	1.010	2835.479	2.00	1.58	.04	2835.52	.00	.53	1.41	1.500	.000	.00	1 .0
.342	.0834					.0006	.00	1.01	.29	.26	.013	.00	.00	PIPE

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:25
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT) / SF Ave	Water Elev / HF	Q (CFS) / SE Dpth	Vel (FPS) / Froude N	Vel Head / Norm Dp	Energy Grd.El. / "N"	Super Elev / X-Fall	Critical Depth / ZR	Flow Top Width	Height/ Dia.-FT /	Base Wt or I.D. /	ZL	No Wth Prs/Pip / Type Ch
1026.003	2834.498	.969	2835.467	2.00	1.66	.04	2835.51	.00	.53	1.43	1.500	.000	.00	1 .0
HYDRAULIC JUMP														
1026.003	2834.498	.261	2834.759	2.00	9.71	1.46	2836.22	.00	.53	1.14	1.500	.000	.00	1 .0
10.819	.0834					.0831	.90	.26	4.02	.26	.013	.00	.00	PIPE
1036.821	2835.400	.261	2835.661	2.00	9.69	1.46	2837.12	.00	.53	1.14	1.500	.000	.00	1 .0
21.445	.0834					.0776	1.66	.26	4.01	.26	.013	.00	.00	PIPE
1058.266	2837.188	.270	2837.458	2.00	9.24	1.33	2838.78	.00	.53	1.15	1.500	.000	.00	1 .0
7.146	.0834					.0678	.48	.27	3.76	.26	.013	.00	.00	PIPE
1065.412	2837.783	.279	2838.063	2.00	8.81	1.20	2839.27	.00	.53	1.17	1.500	.000	.00	1 .0
4.142	.0834					.0592	.25	.28	3.52	.26	.013	.00	.00	PIPE
1069.554	2838.129	.289	2838.417	2.00	8.40	1.10	2839.51	.00	.53	1.18	1.500	.000	.00	1 .0

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1072.395	2838.365	.298	2838.664	2.00	8.01	1.00	2839.66	.00	.53	1.20	1.500	.000	.00	1 .0
2.841	.0834					.0517	.15	.29	3.30	.26	.013	.00	.00	PIPE
1074.502	2838.541	.309	2838.850	2.00	7.63	.91	2839.75	.00	.53	1.21	1.500	.000	.00	1 .0
2.107	.0834					.0452	.10	.30	3.09	.26	.013	.00	.00	PIPE
1076.138	2838.678	.319	2838.997	2.00	7.28	.82	2839.82	.00	.53	1.23	1.500	.000	.00	1 .0
1.636	.0834					.0395	.06	.31	2.89	.26	.013	.00	.00	PIPE
1077.446	2838.787	.330	2839.117	2.00	6.94	.75	2839.86	.00	.53	1.24	1.500	.000	.00	1 .0
1.308	.0834					.0345	.05	.32	2.71	.26	.013	.00	.00	PIPE

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:25

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1077.446	2838.787	.330	2839.117	2.00	6.94	.75	2839.86	.00	.53	1.24	1.500	.000	.00	1 .0
1.068	.0834					.0302	.03	.33	2.54	.26	.013	.00	.00	PIPE
1078.514	2838.876	.341	2839.217	2.00	6.62	.68	2839.90	.00	.53	1.26	1.500	.000	.00	1 .0
.880	.0834					.0264	.02	.34	2.38	.26	.013	.00	.00	PIPE
1079.394	2838.949	.353	2839.302	2.00	6.31	.62	2839.92	.00	.53	1.27	1.500	.000	.00	1 .0
.731	.0834					.0231	.02	.35	2.23	.26	.013	.00	.00	PIPE
1080.125	2839.010	.365	2839.375	2.00	6.02	.56	2839.94	.00	.53	1.29	1.500	.000	.00	1 .0
.611	.0834					.0202	.01	.36	2.09	.26	.013	.00	.00	PIPE
1080.736	2839.061	.377	2839.439	2.00	5.74	.51	2839.95	.00	.53	1.30	1.500	.000	.00	1 .0
.509	.0834					.0176	.01	.38	1.95	.26	.013	.00	.00	PIPE
1081.245	2839.104	.390	2839.494	2.00	5.47	.46	2839.96	.00	.53	1.32	1.500	.000	.00	1 .0
.423	.0834					.0154	.01	.39	1.83	.26	.013	.00	.00	PIPE
1081.667	2839.139	.404	2839.543	2.00	5.21	.42	2839.97	.00	.53	1.33	1.500	.000	.00	1 .0
.349	.0834					.0135	.00	.40	1.71	.26	.013	.00	.00	PIPE
1082.016	2839.168	.418	2839.586	2.00	4.97	.38	2839.97	.00	.53	1.34	1.500	.000	.00	1 .0
.285	.0834					.0118	.00	.42	1.60	.26	.013	.00	.00	PIPE
1082.302	2839.192	.432	2839.624	2.00	4.74	.35	2839.97	.00	.53	1.36	1.500	.000	.00	1 .0
.228	.0834					.0103	.00	.43	1.50	.26	.013	.00	.00	PIPE

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6: 0:25

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1082.529	2839.211	.448	2839.658	2.00	4.52	.32	2839.98	.00	.53	1.37	1.500	.000	.00	1 .0
.178	.0834					.0091	.00	.45	1.40	.26	.013	.00	.00	PIPE
1082.707	2839.226	.463	2839.689	2.00	4.31	.29	2839.98	.00	.53	1.39	1.500	.000	.00	1 .0
.131	.0834					.0079	.00	.46	1.31	.26	.013	.00	.00	PIPE

P20W

1082.839	2839.237	.479	2839.716	2.00	4.11	.26	2839.98	.00	.53	1.40	1.500	.000	.00	1	.0
.091	.0834					.0069	.00	.48	1.23	.26	.013	.00	.00	PIPE	
1082.929	2839.244	.496	2839.740	2.00	3.92	.24	2839.98	.00	.53	1.41	1.500	.000	.00	1	.0
.053	.0834					.0061	.00	.50	1.15	.26	.013	.00	.00	PIPE	
1082.982	2839.249	.514	2839.762	2.00	3.74	.22	2839.98	.00	.53	1.42	1.500	.000	.00	1	.0
.018	.0834					.0053	.00	.51	1.07	.26	.013	.00	.00	PIPE	
1083.000	2839.250	.533	2839.783	2.00	3.55	.20	2839.98	.00	.53	1.44	1.500	.000	.00	1	.0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

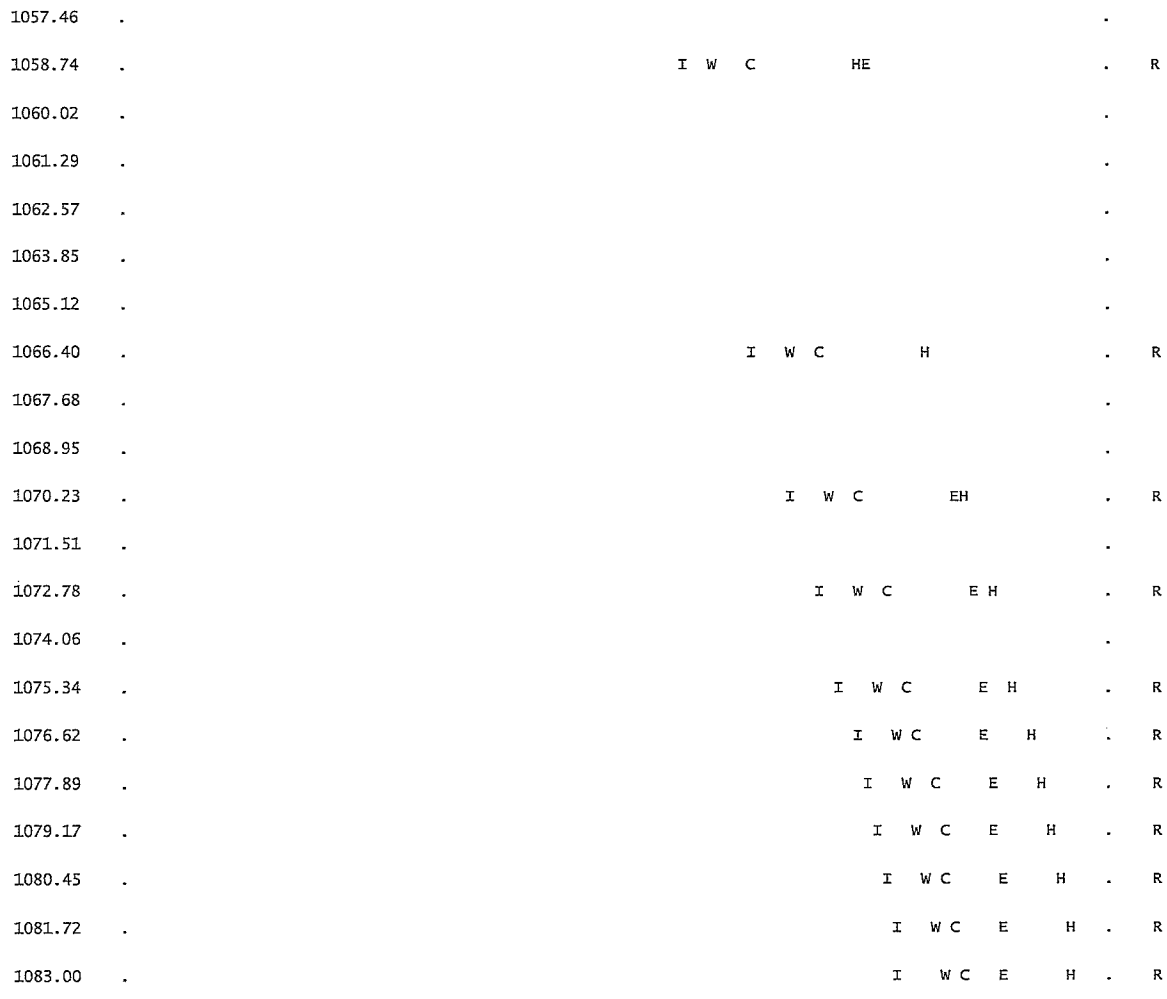
BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

1000.00	.I	C	H	W	.	R	
1001.28	.				.		
1002.55	.				.		
1003.83	.				.		
1005.11	.				.		
1006.38	.				.		
1007.66	.				.		
1008.94	.				.		
1010.22	.				.		
1011.49	.				.		
1012.77	.				.		
1014.05	.				.		
1015.32	.				.		
1016.60	.				.		
1017.88	.				.		
1019.15	.				.		
1020.43	.	I	C	H	.	R	
1021.71	.	I	C	W H	.	R	

| | | |

P20W



N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)
SO    1000.0002831.830  6      .013                2835.490
R     1016.0002834.100  6      .013
R     1058.1002836.980  6      .013                                    43.857    .000 0
R     1125.1002841.470  6      .013
SH    1125.1002841.470  6      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   8.000    5.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000 10.000   .000 10.000   .010 10.000  6.500  9.490  7.870
PTS       9.000  8.280  8.500  8.500  8.000  8.630  7.520  8.740  7.000  8.840
PTS       6.000  8.960  5.000  9.000  4.000  8.960  3.000  8.840  2.480  8.740
PTS       2.000  8.630  1.500  8.500  1.000  8.280   .510  7.870   .000  6.500
PTS        .000   .010
Q          156.000   .0
```

FILE: P21.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:16:29

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	8.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:16:29

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500					
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840					
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010					
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190					
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800					
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010					
PTS	3	21	.000 .000	10.000 .000	10.000 .010	10.000 6.500	9.490 7.870	9.000 8.280	8.500 8.500					
PTS			8.000 8.630	7.520 8.740	7.000 8.840	6.000 8.960	5.000 9.000	4.000 8.960	3.000 8.840					
PTS			2.480 8.740	2.000 8.630	1.500 8.500	1.000 8.280	.510 7.870	.000 6.500	.000 .010					

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -
BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2831.830	6	2835.490

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1016.000	2834.100	6	.013	.000	.000	.000	0

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1058.100	2836.980	6	.013	55.000	43.857	.000	0

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1125.100	2841.470	6	.013	.000	.000	.000	0

ELEMENT NO 5 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1125.100	2841.470	6	.000

♀ FILE: P21.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:16:34
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2831.830	1.088	2832.919	156.00	23.89	8.86	2841.78	.00	2.76	6.00	6.000	6.000	.00	0 .0
.190	.1419					.0589	.01	1.09	4.04	.81	.013	.00	.00	BOX
1000.190	2831.857	1.089	2832.946	156.00	23.87	8.85	2841.79	.00	2.76	6.00	6.000	6.000	.00	0 .0
8.639	.1419					.0549	.47	1.09	4.03	.81	.013	.00	.00	BOX
1008.829	2833.083	1.142	2834.225	156.00	22.76	8.04	2842.27	.00	2.76	6.00	6.000	6.000	.00	0 .0
7.171	.1419					.0477	.34	1.14	3.75	.81	.013	.00	.00	BOX
1016.000	2834.100	1.198	2835.298	156.00	21.70	7.31	2842.61	1.60	2.76	6.00	6.000	6.000	.00	0 .0
5.080	.0684					.0437	.22	2.79	3.49	1.04	.013	.00	.00	BOX
1021.080	2834.448	1.209	2835.657	156.00	21.50	7.18	2842.83	1.57	2.76	6.00	6.000	6.000	.00	0 .0
21.106	.0684					.0403	.85	2.78	3.44	1.04	.013	.00	.00	BOX
1042.186	2835.891	1.268	2837.160	156.00	20.50	6.52	2843.68	1.42	2.76	6.00	6.000	6.000	.00	0 .0
15.914	.0684					.0350	.56	2.69	3.21	1.04	.013	.00	.00	BOX
1058.100	2836.980	1.330	2838.311	156.00	19.54	5.93	2844.24	.00	2.76	6.00	6.000	6.000	.00	0 .0
4.245	.0670					.0319	.14	1.33	2.99	1.04	.013	.00	.00	BOX
1062.345	2837.265	1.349	2838.614	156.00	19.27	5.76	2844.38	.00	2.76	6.00	6.000	6.000	.00	0 .0
12.129	.0670					.0292	.35	1.35	2.92	1.04	.013	.00	.00	BOX
1074.473	2838.078	1.415	2839.493	156.00	18.37	5.24	2844.73	.00	2.76	6.00	6.000	6.000	.00	0 .0
9.801	.0670					.0255	.25	1.42	2.72	1.04	.013	.00	.00	BOX

♀ FILE: P21.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:16:34
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1084.275	2838.734	1.484	2840.219	156.00	17.52	4.76	2844.98	.00	2.76	6.00	6.000	6.000	.00	0 .0
8.044	.0670					.0222	.18	1.48	2.53	1.04	.013	.00	.00	BOX
1092.318	2839.273	1.557	2840.830	156.00	16.70	4.33	2845.16	.00	2.76	6.00	6.000	6.000	.00	0 .0
6.664	.0670					.0193	.13	1.56	2.36	1.04	.013	.00	.00	BOX
1098.982	2839.720	1.633	2841.353	156.00	15.92	3.94	2845.29	.00	2.76	6.00	6.000	6.000	.00	0 .0
5.548	.0670					.0169	.09	1.63	2.20	1.04	.013	.00	.00	BOX
1104.531	2840.092	1.713	2841.804	156.00	15.18	3.58	2845.38	.00	2.76	6.00	6.000	6.000	.00	0 .0
4.625	.0670					.0147	.07	1.71	2.04	1.04	.013	.00	.00	BOX

1109.155	2840.402	1.796	2842.198	156.00	14.48	3.25	2845.45	.00	2.76	6.00	6.000	6.000	.00	0	.0
3.844	.0670					.0129	.05	1.80	1.90	1.04	.013	.00	.00	BOX	
1112.999	2840.659	1.884	2842.543	156.00	13.80	2.96	2845.50	.00	2.76	6.00	6.000	6.000	.00	0	.0
3.173	.0670					.0112	.04	1.88	1.77	1.04	.013	.00	.00	BOX	
1116.173	2840.872	1.976	2842.847	156.00	13.16	2.69	2845.54	.00	2.76	6.00	6.000	6.000	.00	0	.0
2.589	.0670					.0098	.03	1.98	1.65	1.04	.013	.00	.00	BOX	
1118.762	2841.045	2.072	2843.117	156.00	12.55	2.44	2845.56	.00	2.76	6.00	6.000	6.000	.00	0	.0
2.074	.0670					.0086	.02	2.07	1.54	1.04	.013	.00	.00	BOX	
1120.836	2841.184	2.173	2843.358	156.00	11.96	2.22	2845.58	.00	2.76	6.00	6.000	6.000	.00	0	.0
1.614	.0670					.0075	.01	2.17	1.43	1.04	.013	.00	.00	BOX	

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:16:34

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1122.450	2841.292	2.279	2843.572	156.00	11.41	2.02	2845.59	.00	2.76	6.00	6.000	6.000	.00	0	.0
1.199	.0670					.0066	.01	2.28	1.33	1.04	.013	.00	.00	BOX	
1123.649	2841.373	2.391	2843.763	156.00	10.88	1.84	2845.60	.00	2.76	6.00	6.000	6.000	.00	0	.0
.822	.0670					.0058	.00	2.39	1.24	1.04	.013	.00	.00	BOX	
1124.470	2841.428	2.507	2843.935	156.00	10.37	1.67	2845.60	.00	2.76	6.00	6.000	6.000	.00	0	.0
.475	.0670					.0051	.00	2.51	1.15	1.04	.013	.00	.00	BOX	
1124.946	2841.460	2.630	2844.089	156.00	9.89	1.52	2845.61	.00	2.76	6.00	6.000	6.000	.00	0	.0
.154	.0670					.0045	.00	2.63	1.07	1.04	.013	.00	.00	BOX	
1125.100	2841.470	2.759	2844.229	156.00	9.42	1.38	2845.61	.00	2.76	6.00	6.000	6.000	.00	0	.0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

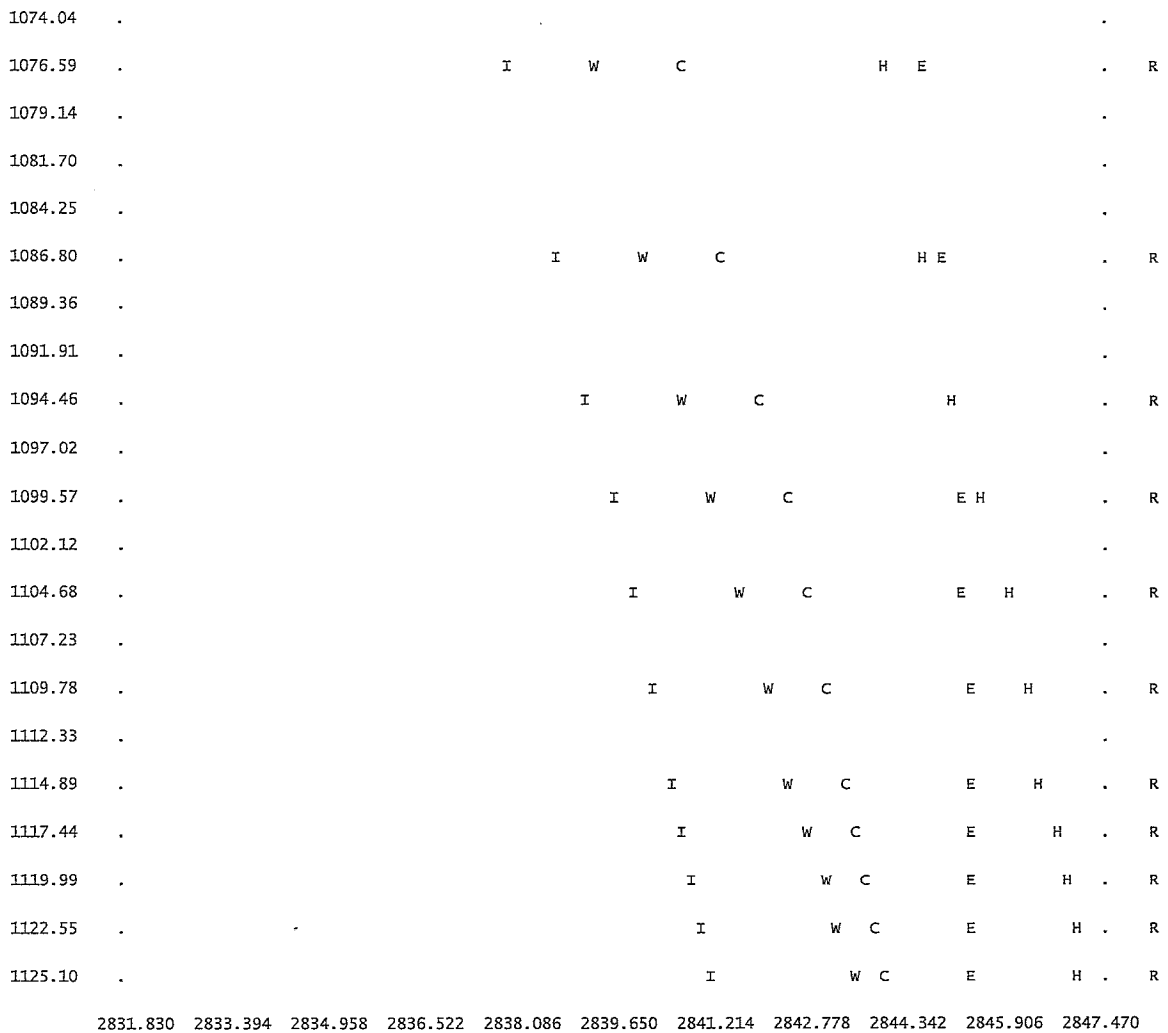
1000.00 .I W C H E . R

1002.55 .I W C H E . R

1005.11 . .

1007.66 . .

| | | |



N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL

E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)
SO   1000.0002828.900 18      .013                2834.670
R    1007.0002831.220 18      .013
SH   1007.0002831.220 18      .013
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   5.000    8.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0   0.0    0.0   0.0
CD   2  6   0     0.0     0.0      0.0   0.0    0.0   0.0
CD   3  6   0     0.0     0.0      0.0   0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            3.000   .0
```

FILE: P23E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:33: 3

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:33: 3

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2828.900	18	2834.670

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1007.000	2831.220	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1007.000	2831.220	18	.000

♀ FILE: P23E.WSW W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:33: 8

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2828.900	5.770	2834.670	3.00	1.70	.04	2834.71	.00	.66	.00	1.500	.000	.00	1 .0
7.000	.3314					.0008	.01	5.77	.00	.23	.013	.00	.00	PIPE
1007.000	2831.220	3.456	2834.676	3.00	1.70	.04	2834.72	.00	.66	.00	1.500	.000	.00	1 .0

♀
** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD P25 LATERAL (FACILITY P23)
SO   1000.0002833.450 18      .013                2832.620
R    1045.0002835.300 18      .013
SH   1045.0002835.300 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            3.000   .0
```

FILE: P23W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:35:14

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:35:14

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -
SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -
BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2833.450	18	2832.620

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1045.000	2835.300	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1045.000	2835.300	18	.000

♀ FILE: P23W.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:35:19
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1000.000	2833.450	.387	2833.837	3.00	8.31	1.07	2834.91	.00	.66	1.31	1.500	.000	.00	1 .0
6.846	.0411					.0379	.26	.39	2.79	.38	.013	.00	.00	PIPE
1006.846	2833.732	.390	2834.121	3.00	8.23	1.05	2835.17	.00	.66	1.32	1.500	.000	.00	1 .0
13.519	.0411					.0350	.47	.39	2.75	.38	.013	.00	.00	PIPE
1020.365	2834.288	.403	2834.691	3.00	7.85	.96	2835.65	.00	.66	1.33	1.500	.000	.00	1 .0
6.983	.0411					.0307	.21	.40	2.58	.38	.013	.00	.00	PIPE
1027.348	2834.575	.417	2834.992	3.00	7.48	.87	2835.86	.00	.66	1.34	1.500	.000	.00	1 .0
4.515	.0411					.0268	.12	.42	2.41	.38	.013	.00	.00	PIPE
1031.863	2834.760	.431	2835.192	3.00	7.13	.79	2835.98	.00	.66	1.36	1.500	.000	.00	1 .0
3.217	.0411					.0235	.08	.43	2.26	.38	.013	.00	.00	PIPE
1035.080	2834.893	.447	2835.339	3.00	6.80	.72	2836.06	.00	.66	1.37	1.500	.000	.00	1 .0
2.418	.0411					.0206	.05	.45	2.11	.38	.013	.00	.00	PIPE
1037.498	2834.992	.462	2835.454	3.00	6.48	.65	2836.11	.00	.66	1.39	1.500	.000	.00	1 .0
1.867	.0411					.0180	.03	.46	1.98	.38	.013	.00	.00	PIPE
1039.365	2835.069	.478	2835.547	3.00	6.18	.59	2836.14	.00	.66	1.40	1.500	.000	.00	1 .0
1.462	.0411					.0158	.02	.48	1.85	.38	.013	.00	.00	PIPE
1040.828	2835.129	.495	2835.624	3.00	5.90	.54	2836.16	.00	.66	1.41	1.500	.000	.00	1 .0
1.156	.0411					.0138	.02	.50	1.73	.38	.013	.00	.00	PIPE

♀ FILE: P23W.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:35:19
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1041.984	2835.176	.513	2835.689	3.00	5.62	.49	2836.18	.00	.66	1.42	1.500	.000	.00	1 .0
.910	.0411					.0121	.01	.51	1.62	.38	.013	.00	.00	PIPE
1042.894	2835.214	.531	2835.745	3.00	5.36	.45	2836.19	.00	.66	1.43	1.500	.000	.00	1 .0
.706	.0411					.0106	.01	.53	1.51	.38	.013	.00	.00	PIPE
1043.600	2835.243	.550	2835.792	3.00	5.11	.41	2836.20	.00	.66	1.45	1.500	.000	.00	1 .0
.539	.0411					.0093	.01	.55	1.41	.38	.013	.00	.00	PIPE
1044.139	2835.265	.570	2835.834	3.00	4.87	.37	2836.20	.00	.66	1.46	1.500	.000	.00	1 .0
.392	.0411					.0082	.00	.57	1.32	.38	.013	.00	.00	PIPE

P23W

1044.531	2835.281	.590	2835.871	3.00	4.65	.34	2836.21	.00	.66	1.47	1.500	.000	.00	1	.0			
.264	.0411					.0072	.00	.59	1.23	.38	.013	.00	.00	PIPE				
1044.795	2835.292	.612	2835.904	3.00	4.43	.30	2836.21	.00	.66	1.47	1.500	.000	.00	1	.0			
.155	.0411					.0063	.00	.61	1.15	.38	.013	.00	.00	PIPE				
1044.950	2835.298	.634	2835.932	3.00	4.22	.28	2836.21	.00	.66	1.48	1.500	.000	.00	1	.0			
.050	.0411					.0055	.00	.63	1.07	.38	.013	.00	.00	PIPE				
1045.000	2835.300	.658	2835.958	3.00	4.02	.25	2836.21	.00	.66	1.49	1.500	.000	.00	1	.0			

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

1000.00	.I		W		C				EH							.	R	
1000.92	.															.		
1001.84	.															.		
1002.76	.															.		
1003.67	.															.		
1004.59	.															.		
1005.51	.															.		
1006.43	.															.		
1007.35	.		I		W		C				E H					.	R	
1008.27	.															.		
1009.18	.															.		
1010.10	.															.		
1011.02	.															.		
1011.94	.															.		
1012.86	.															.		
1013.78	.															.		

```
1014.69  .                                                                .
1015.61  .                                                                .
1016.53  .                                                                .
1017.45  .                                                                .
1018.37  .                                                                .
1019.29  .                                                                .
1020.20  .                                                                .
1021.12  .                I         W     C               E  H           .  R
1022.04  .                                                                .
1022.96  .                                                                .
1023.88  .                                                                .
1024.80  .                                                                .
1025.71  .                                                                .
1026.63  .                                                                .
1027.55  .                    I         W     C             E     H       .  R
1028.47  .                                                                .
1029.39  .                                                                .
1030.31  .                                                                .
1031.22  .                                                                .
1032.14  .                         I         W     C            E     H   .  R
1033.06  .                                                                .
1033.98  .                                                                .
1034.90  .                                                                .
1035.82  .                              I         W    C          E      H .  R
1036.73  .                                                                .
```

P23W

```
1037.65  .                                    I          W    C          E         H        .   R
1038.57  .                                                                                  .
1039.49  .                                   I           W   C          E          H       .   R
1040.41  .                                                                                  .
1041.33  .                                    I           W   C         E          H       .   R
1042.24  .                                    I            W   C        E           H      .   R
1043.16  .                                    I            W   C        E           H      .   R
1044.08  .                                     I            W   C       E           H      .   R
1045.00  .                                     I            W C        E           H      .   R

         2833.450  2833.785  2834.120  2834.455  2834.790  2835.125  2835.460  2835.795  2836.130  2836.465  2836.800
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)
SO   1000.0002828.660 42      .013                  2834.660
R    1056.0002831.450 42      .013                                  45.00 1
JX   1056.0002831.450 42 18   .015    3.000         2833.450          00.0
R    1147.0002837.670 42      .013
SH   1147.0002837.670 42      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0     0.0    0.0    0.0
CD    2  6   0     0.0     0.0      0.0     0.0    0.0    0.0
CD    3  6   0     0.0     0.0      0.0     0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q           45.000   .0
```

FILE: P25.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:33:19

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:33:19

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	8.000	.000	8.000	.010	8.000	3.000	7.900	3.570	7.700	3.950	7.500	4.190
PTS			7.250	4.390	7.000	4.530	6.000	4.800	5.000	4.950	4.000	5.000	3.000	4.950	2.000	4.800
PTS			1.000	4.530	.750	4.390	.500	4.190	.300	3.950	.100	3.570	.000	3.000	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2828.660	42	2834.660

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1056.000	2831.450	42	.013	.000	.000	45.000	1

ELEMENT NO 3 IS A JUNCTION * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1056.000	2831.450	42	18	0	.015	3.000	.000	2833.450	.000	.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1147.000	2837.670	42	.013	.000	.000	.000	0

ELEMENT NO 5 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1147.000	2837.670	42	.000

♀ FILE: P25.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:33:24

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2828.660	6.000	2834.660	48.00	4.99	.39	2835.05	.00	2.16	.00	3.500	.000	.00	1 .0
48.434	.0498					.0023	.11	6.00	.00	1.10	.013	.00	.00	PIPE
1048.434	2831.073	3.765	2834.838	48.00	4.99	.39	2835.22	.00	2.16	.00	3.500	.000	.00	1 .0
HYDRAULIC JUMP														
1048.434	2831.073	1.166	2832.239	48.00	17.11	4.54	2836.78	.00	2.16	3.30	3.500	.000	.00	1 .0
7.566	.0498					.0392	.30	1.17	3.27	1.10	.013	.00	.00	PIPE
1056.000	2831.450	1.174	2832.624	48.00	16.95	4.46	2837.09	.00	2.16	3.30	3.500	.000	.00	1 .0
JUNCT STR	.0000					.0592	.00	1.17	3.23		.015	.00	.00	PIPE
1056.000	2831.450	1.060	2832.510	45.00	18.30	5.20	2837.71	.00	2.09	3.22	3.500	.000	.00	1 .0
15.366	.0684					.0481	.74	1.06	3.69	.98	.013	.00	.00	PIPE
1071.366	2832.500	1.086	2833.586	45.00	17.69	4.86	2838.45	.00	2.09	3.24	3.500	.000	.00	1 .0
15.916	.0684					.0430	.68	1.09	3.52	.98	.013	.00	.00	PIPE
1087.282	2833.588	1.124	2834.712	45.00	16.87	4.42	2839.13	.00	2.09	3.27	3.500	.000	.00	1 .0
11.791	.0684					.0376	.44	1.12	3.29	.98	.013	.00	.00	PIPE
1099.073	2834.394	1.164	2835.558	45.00	16.09	4.02	2839.58	.00	2.09	3.30	3.500	.000	.00	1 .0
9.162	.0684					.0330	.30	1.16	3.08	.98	.013	.00	.00	PIPE
1108.234	2835.021	1.205	2836.225	45.00	15.34	3.65	2839.88	.00	2.09	3.33	3.500	.000	.00	1 .0
7.330	.0684					.0289	.21	1.20	2.88	.98	.013	.00	.00	PIPE

♀ FILE: P25.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:33:24

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1115.565	2835.521	1.248	2836.769	45.00	14.62	3.32	2840.09	.00	2.09	3.35	3.500	.000	.00	1 .0
5.981	.0684					.0253	.15	1.25	2.69	.98	.013	.00	.00	PIPE
1121.546	2835.930	1.292	2837.223	45.00	13.94	3.02	2840.24	.00	2.09	3.38	3.500	.000	.00	1 .0
4.941	.0684					.0222	.11	1.29	2.51	.98	.013	.00	.00	PIPE
1126.487	2836.268	1.339	2837.607	45.00	13.29	2.74	2840.35	.00	2.09	3.40	3.500	.000	.00	1 .0
4.116	.0684					.0195	.08	1.34	2.35	.98	.013	.00	.00	PIPE
1130.602	2836.549	1.387	2837.937	45.00	12.68	2.49	2840.43	.00	2.09	3.42	3.500	.000	.00	1 .0
3.440	.0684					.0171	.06	1.39	2.19	.98	.013	.00	.00	PIPE
1134.043	2836.784	1.438	2838.222	45.00	12.09	2.27	2840.49	.00	2.09	3.44	3.500	.000	.00	1 .0
2.880	.0684					.0150	.04	1.44	2.05	.98	.013	.00	.00	PIPE
1136.922	2836.981	1.490	2838.471	45.00	11.52	2.06	2840.53	.00	2.09	3.46	3.500	.000	.00	1 .0

2.403	.0684				.0132	.03	1.49	1.91	.98	.013	.00	.00	PIPE		
1139.325	2837.146	1.545	2838.691	45.00	10.99	1.87	2840.57	.00	2.09	3.48	3.500	.000	.00	1	.0
1.991	.0684				.0116	.02	1.55	1.78	.98	.013	.00	.00	PIPE		
1141.316	2837.281	1.603	2838.884	45.00	10.48	1.70	2840.59	.00	2.09	3.49	3.500	.000	.00	1	.0
1.630	.0684				.0102	.02	1.60	1.66	.98	.013	.00	.00	PIPE		
1142.946	2837.393	1.663	2839.055	45.00	9.99	1.55	2840.60	.00	2.09	3.50	3.500	.000	.00	1	.0
1.314	.0684				.0090	.01	1.66	1.55	.98	.013	.00	.00	PIPE		

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:33:24

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL		No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type	Ch
1144.260	2837.483	1.726	2839.208	45.00	9.52	1.41	2840.62	.00	2.09	3.50	3.500	.000	.00	1	.0
1.028	.0684					.0079	.01	1.73	1.44	.98	.013	.00	.00	PIPE	
1145.288	2837.553	1.791	2839.344	45.00	9.08	1.28	2840.62	.00	2.09	3.50	3.500	.000	.00	1	.0
.769	.0684					.0070	.01	1.79	1.34	.98	.013	.00	.00	PIPE	
1146.057	2837.605	1.861	2839.466	45.00	8.66	1.16	2840.63	.00	2.09	3.49	3.500	.000	.00	1	.0
.531	.0684					.0061	.00	1.86	1.25	.98	.013	.00	.00	PIPE	
1146.587	2837.642	1.933	2839.575	45.00	8.25	1.06	2840.63	.00	2.09	3.48	3.500	.000	.00	1	.0
.311	.0684					.0054	.00	1.93	1.16	.98	.013	.00	.00	PIPE	
1146.899	2837.663	2.010	2839.673	45.00	7.87	.96	2840.64	.00	2.09	3.46	3.500	.000	.00	1	.0
.101	.0684					.0048	.00	2.01	1.08	.98	.013	.00	.00	PIPE	
1147.000	2837.670	2.092	2839.762	45.00	7.50	.87	2840.64	.00	2.09	3.43	3.500	.000	.00	1	.0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

1000.00 .I C H W E . R

1003.00 .

1006.00 .

1009.00 .

1012.00 .

1015.00 .

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1018.00  .                                                                .
1021.00  .                                                                .
1024.00  .                                                                .
1027.00  .                                                                .
1030.00  .                                                                .
1033.00  .                                                                .
1036.00  .                                                                .
1039.00  .                                                                .
1042.00  .                                                                .
1045.00  .                                                                .
1048.00  .                                                                .
1051.00  .          I          C       H W E                              .  R
1054.00  .          I     W    C       H          E                       .  R
1057.00  .             I     W    C       H          E                    .  JX
1060.00  .             I     W    C       H               E               .  R
1063.00  .                                                                .
1066.00  .                                                                .
1069.00  .                                                                .
1072.00  .                I     W    C       H               E           .  R
1075.00  .                                                                .
1078.00  .                                                                .
1081.00  .                                                                .
1084.00  .                                                                .
1087.00  .                                                                .
1090.00  .                     I     W    C       H          E            .  R
1093.00  .                                                                .
1096.00  .                                                                .
1099.00  .                                                                .
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1102.00   .                                    I        W     C         H           E          .   R
1105.00   .                                                                                    .
1108.00   .                                                                                    .
1111.00   .                                 I        W     C         H         E              .   R
1114.00   .                                                                                    .
1117.00   .                                    I        W     C         H       E              .   R
1120.00   .                                                                                    .
1123.00   .                                       I        W    C          H    E              .   R
1126.00   .                                                                                    .
1129.00   .                                       I         W    C         H    E              .   R
1132.00   .                                          I         W   C          H E              .   R
1135.00   .                                          I          W   C         H E              .   R
1138.00   .                                             I          W   C         H              .   R
1141.00   .                                             I          W   C         H              .   R
1144.00   .                                             I          W   C         EH             .   R
1147.00   .                                              I           W C        E H            .   R

          2828.660  2829.911  2831.162  2832.413  2833.664  2834.915  2836.166  2837.417  2838.668  2839.919  2841.170
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)
SO   1000.0002825.440 18      .013                2834.430
R    1008.0002829.290 18      .013
SH   1008.0002829.290 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0   0.0    0.0
CD    2  6   0     0.0     0.0      0.0    0.0   0.0    0.0
CD    3  6   0     0.0     0.0      0.0    0.0   0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q             8.500   .0
```

FILE: P29E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:48:40

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:48:40

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2825.440	18	2834.430

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1008.000	2829.290	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1008.000	2829.290	18	.000

♀ FILE: P29E.WSW W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:48:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2825.440	8.990	2834.430	8.50	4.81	.36	2834.79	.00	1.13	.00	1.500	.000	.00	1 .0
8.000	.4813					.0065	.05	8.99	.00	.35	.013	.00	.00	PIPE
1008.000	2829.290	5.192	2834.482	8.50	4.81	.36	2834.84	.00	1.13	.00	1.500	.000	.00	1 .0

♀ ** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)
SO   1000.0002826.200 18      .013                2834.470
R    1046.0002826.430 18      .013                                    30.00 1
R    1078.0002830.370 18      .013
SH   1078.0002830.370 18      .013
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   5.000    8.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD   2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD   3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q            8.500   .0
```

FILE: P29W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:48:51

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 6:48:51

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2826.200	18	2834.470

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1046.000	2826.430	18	.013	.000	.000	30.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1078.000	2830.370	18	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1078.000	2830.370	18	.000

♀ FILE: P29W.WSW W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 6:48:55

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2826.200	8.270	2834.470	8.50	4.81	.36	2834.83	.00	1.13	.00	1.500	.000	.00	1 .0
46.000	.0050					.0065	.30	8.27	.00	1.50	.013	.00	.00	PIPE
1046.000	2826.430	8.395	2834.825	8.50	4.81	.36	2835.18	.00	1.13	.00	1.500	.000	.00	1 .0
32.000	.1231					.0065	.21	8.39	.00	.49	.013	.00	.00	PIPE
1078.000	2830.370	4.664	2835.034	8.50	4.81	.36	2835.39	.00	1.13	.00	1.500	.000	.00	1 .0

♀
♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

1000.00 .I C H W E . R

1001.59 .

1003.18 .

1004.78 .

1006.37 .

1007.96 .

1009.55 .

1011.14 .

1012.73 .

1014.33 .

1015.92 .

1017.51 .

1019.10 .

1020.69 .

1022.29 .

1023.88 .
1025.47 .
1027.06 .
1028.65 .
1030.24 .
1031.84 .
1033.43 .
1035.02 .
1036.61 .
1038.20 .
1039.80 .
1041.39 .
1042.98 .
1044.57 .
1046.16 . I C H W E . R
1047.76 .
1049.35 .
1050.94 .
1052.53 .
1054.12 .
1055.71 .
1057.31 .
1058.90 .
1060.49 .
1062.08 .
1063.67 .
1065.27 .

P29W

```
1066.86    .                                                                .
1068.45    .                                                                .
1070.04    .                                                                .
1071.63    .                                                                .
1073.22    .                                                                .
1074.82    .                                                                .
1076.41    .                                                                .
1078.00    .                                  I          C  H                W  E.   R
        2826.200  2827.119  2828.039  2828.958  2829.878  2830.797  2831.717  2832.636  2833.555  2834.475  2835.394
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)
SO    1000.0002829.130 60      .013                  2834.390
R     1035.0002830.310 60      .013                                    51.00 1
JX    1035.0002830.310 60      .013
R     1119.0002830.640 60      .013
JX    1119.0002830.640 72      .013
R     1135.0002830.720 72      .013
SH    1135.0002830.720 72      .013
CD    6  3   0     .000   6.000    6.000  .000  .000   .00
CD    8  3   0     .000   5.000    8.000  .000  .000   .00
CD   18  4   1     .000   1.500     .000  .000  .000   .00
CD   24  4   1     .000   2.000     .000  .000  .000   .00
CD   30  4   1     .000   2.500     .000  .000  .000   .00
CD   36  4   1     .000   3.000     .000  .000  .000   .00
CD   42  4   1     .000   3.500     .000  .000  .000   .00
CD   48  4   1     .000   4.000     .000  .000  .000   .00
CD   54  4   1     .000   4.500     .000  .000  .000   .00
CD   60  4   1     .000   5.000     .000  .000  .000   .00
CD   72  4   1     .000   6.000     .000  .000  .000   .00
CD    1  6   0      0.0      0.0     0.0     0.0     0.0     0.0
CD    2  6   0      0.0      0.0     0.0     0.0     0.0     0.0
CD    3  6   0      0.0      0.0     0.0     0.0     0.0     0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q          364.000   .0
```

FILE: P31.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7: 6: 1

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7: 6: 1

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2829.130	60	2834.390

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1035.000	2830.310	60	.013	.000	.000	51.000	1

ELEMENT NO 3 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1035.000	2830.310	60	0	0	.013	.000	.000	.000	.000	.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1119.000	2830.640	60	.013	.000	.000	.000	0

ELEMENT NO 5 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1119.000	2830.640	72	0	0	.013	.000	.000	.000	.000	.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1135.000	2830.720	72	.013	.000	.000	.000	0

ELEMENT NO 7 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1135.000	2830.720	72	.000

♀ FILE: P31.WSW W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 7: 6: 6

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT or "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1000.000	2829.130	4.199	2833.329	364.00	20.68	6.64	2839.97	.00	4.84	3.67	5.000	.000	.00	1 .0
2.139	.0337					.0187	.04	4.20	1.66	3.26	.013	.00	.00	PIPE
1002.139	2829.202	4.217	2833.419	364.00	20.60	6.59	2840.01	.00	4.84	3.63	5.000	.000	.00	1 .0
21.753	.0337					.0180	.39	4.22	1.65	3.26	.013	.00	.00	PIPE
1023.892	2829.936	4.473	2834.408	364.00	19.64	5.99	2840.40	.00	4.84	3.07	5.000	.000	.00	1 .0
11.108	.0337					.0172	.19	4.47	1.41	3.26	.013	.00	.00	PIPE
JUNCT STR	.0000					.0171	.00	4.84	1.00		.013	.00	.00	PIPE
1035.000	2830.310	4.835	2835.145	364.00	18.73	5.45	2840.59	.00	4.84	1.79	5.000	.000	.00	1 .0
3.976	.0039					.0180	.07	4.84	1.00	5.00	.013	.00	.00	PIPE
1038.976	2830.326	5.000	2835.326	364.00	18.54	5.34	2840.66	.00	4.84	.00	5.000	.000	.00	1 .0
80.024	.0039					.0192	1.53	5.00	.00	5.00	.013	.00	.00	PIPE
1119.000	2830.640	6.249	2836.889	364.00	18.54	5.34	2842.23	.00	4.84	.00	5.000	.000	.00	1 .0
JUNCT STR	.0000					.0135	.00	6.25	.00		.013	.00	.00	PIPE
1119.000	2830.640	9.012	2839.652	364.00	12.87	2.57	2842.23	.00	5.15	.00	6.000	.000	.00	1 .0
16.000	.0050					.0074	.12	9.01	.00	6.00	.013	.00	.00	PIPE
1135.000	2830.720	9.050	2839.770	364.00	12.87	2.57	2842.34	.00	5.15	.00	6.000	.000	.00	1 .0

♀♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)

1000.00	.I	W	CH	E	.	R
1002.76	.I	W	CH	E	.	R
1005.51	.				.	
1008.27	.				.	
1011.02	.				.	
1013.78	.				.	

| | | |

```
1085.41   .                                                                .
1088.16   .                                                                .
1090.92   .                                                                .
1093.67   .                                                                .
1096.43   .                                                                .
1099.18   .                                                                .
1101.94   .                                                                .
1104.69   .                                                                .
1107.45   .                                                                .
1110.20   .                                                                .
1112.96   .                                                                .
1115.71   .                                                                .
1118.47   .                                                                .
1121.22   .          I                          CH        W                 E .    JX
1123.98   .          I                            C     H                   W      E .    R
1126.73   .                                                                .
1129.49   .                                                                .
1132.24   .                                                                .
1135.00   .           I                            C     H                   W      E.    R

        2829.130  2830.451  2831.772  2833.094  2834.415  2835.736  2837.058  2838.379  2839.700  2841.021  2842.344
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Skye Village Road

Ultimate Condition

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)
SO    1000.0002824.930  3       .015                  2833.930
R     1035.8302825.140  3       .015
JX    1035.8302825.140  3 60    .015  325.000         2329.130          45.0
R     1129.1902825.450  3       .015
JX    1129.1902825.450  3 18    .015    8.500         2826.440          45.0
R     1318.7202826.200  3       .015
JX    1318.7202826.200  3 18    .015    8.500         2826.200          60.0
R     1759.8502827.970  3       .015
JX    1759.8502827.970  3 36    .015   51.000         2827.970          45.0
R     1932.8502828.660  3       .015
JX    1932.8502828.660  3 42    .015   53.000         2828.660          45.0
R     1993.5002828.900  3       .015
JX    1993.5002828.900  3 18    .015    3.0           2828.90           60.0
R     2726.0602831.830  3       .015
JX    2726.0602831.830  3  6    .015  389.000         2831.830          45.0
R     2738.3202831.880  3       .015
TS    2758.3202831.980  2       .015
R     2829.0702832.330  2       .015
JX    2829.0702832.330  2 18 18.015    2.0      2.0  2732.30 2732.30  60.0 60.0
R     3035.3902833.360  2       .015
JX    3035.3902833.360  2 18    .015    2.000         2833.360          46.0
R     3077.9302833.570  2       .015
JX    3077.9302833.570  2 18    .015    2.000         2833.570          60.0
R     3363.0402835.000  2       .015
JX    3363.0402835.000  2 30    .015   33.500         2835.000          45.0
R     3409.9802835.230  2       .015
R     3457.1002835.470  2       .015                                  44.996    .000 0
R     3475.1002835.560  2       .015
R     3485.5302835.640  2       .015                                  -9.960    .000 0
JX    3485.5302835.640  2 30    .015   33.500         2835.640           27.0
R     3521.4702835.790  2       .015                                 -34.320    .000 0
R     3564.4702836.010  2       .015
TS    3574.4702836.060  8       .015
R     3648.4702836.810  8       .015                                        45.00
JX    3648.4702836.810 60 30    .015   53.000         2836.810           00.0
R     3703.9702838.470 60       .015                                       45.00 1
R     3739.4102839.490 60       .015                                             1
R     4044.3302846.840 60       .015                                             1
R     4121.3302848.690 60       .015                                      -46.00
SH    4121.3302848.690 60       .015
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0    0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0    0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0    0.0
CD    4  6   0     0.0     0.0      0.0    0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS      9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS      6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS      2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS       .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS      7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS      5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS       .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS       .000   .010
PTS  321  0.000  0.000 10.000  0.000 10.000  0.010 10.000  6.500  9.490  7.870
PTS      9.000  8.280  8.500  8.500  8.000  8.630  7.520  8.740  7.000  8.840
PTS      6.000  8.960  5.000  9.000  4.000  8.960  3.000  8.840  2.480  8.740
PTS      2.000  8.630  1.500  8.500  1.000  8.280  0.510  7.870  0.000  6.500
PTS      0.000  0.010

PTS  421  0.000  0.000  8.000  0.000  8.000  0.010  8.000  6.000  7.900  6.570
PTS      7.700  6.950  7.500  7.190  7.250  7.390  7.000  7.530  6.000  7.800
PTS      5.000  7.950  4.000  8.000  3.000  7.950  2.000  7.800  1.000  7.530
PTS      0.750  7.390  0.500  7.190  0.300  6.950  0.100  6.570  0.000  6.000
PTS      0.000  0.010
Q          359.000   .0
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WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															
CD	4	6	0	.000															

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WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	10.000 .000	10.000 .010	10.000 6.500	9.490 7.870	9.000 8.280	8.500 8.500				
PTS			8.000 8.630	7.520 8.740	7.000 8.840	6.000 8.960	5.000 9.000	4.000 8.960	3.000 8.840				
PTS			2.480 8.740	2.000 8.630	1.500 8.500	1.000 8.280	.510 7.870	.000 6.500	.000 .010				
PTS	4	21	.000 .000	8.000 .000	8.000 .010	8.000 6.000	7.900 6.570	7.700 6.950	7.500 7.190				
PTS			7.250 7.390	7.000 7.530	6.000 7.800	5.000 7.950	4.000 8.000	3.000 7.950	2.000 7.800				
PTS			1.000 7.530	.750 7.390	.500 7.190	.300 6.950	.100 6.570	.000 6.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2824.930	3	2833.930

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1035.830	2825.140	3	.015	.000	.000	.000	0

ELEMENT NO 3 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1035.830	2825.140	3	60	0	.015	325.000	.000	2329.130	.000	45.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1129.190	2825.450	3	.015	.000	.000	.000	0

ELEMENT NO 5 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1129.190	2825.450	3	18	0	.015	8.500	.000	2826.440	.000	45.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1318.720	2826.200	3	.015	.000	.000	.000	0

ELEMENT NO 7 IS A JUNCTION * * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1318.720	2826.200	3	18	0	.015	8.500	.000	2826.200	.000	60.000	.000

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                                                                                                    USVR
                                                                                                    RADIUS    ANGLE
                                                                                                    .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
                                                    W S P G W                                                                    PAGE NO   3
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO   8 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               1759.850 2827.970    3              .015                          .000      .000      .000     0
 ELEMENT NO   9 IS A JUNCTION             *         *      *      *                *              *                  *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N       Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               1759.850 2827.970    3    36     0   .015    51.000       .000  2827.970      .000  45.000      .000
                                                                                               RADIUS    ANGLE
                                                                                               .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  10 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               1932.850 2828.660    3              .015                          .000      .000      .000     0
 ELEMENT NO  11 IS A JUNCTION             *         *      *      *                *              *                  *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N       Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               1932.850 2828.660    3    42     0   .015    53.000       .000  2828.660      .000  45.000      .000
                                                                                               RADIUS    ANGLE
                                                                                               .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  12 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               1993.500 2828.900    3              .015                          .000      .000      .000     0
 ELEMENT NO  13 IS A JUNCTION             *         *      *      *                *              *                  *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N       Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               1993.500 2828.900    3    18     0   .015     3.000       .000  2828.900      .000  60.000      .000
                                                                                               RADIUS    ANGLE
                                                                                               .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  14 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2726.060 2831.830    3              .015                          .000      .000      .000     0
                                                    W S P G W                                                                    PAGE NO   4
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
 ELEMENT NO  15 IS A JUNCTION             *         *      *      *                *              *                  *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N       Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2726.060 2831.830    3     6     0   .015   389.000       .000  2831.830      .000  45.000      .000
                                                                                               RADIUS    ANGLE
                                                                                               .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  16 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2738.320 2831.880    3              .015                          .000      .000      .000     0
 ELEMENT NO  17 IS A TRANSITION           *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE
                               2758.320 2831.980    2              .015                          .000      .000
 ELEMENT NO  18 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               2829.070 2832.330    2              .015                          .000      .000      .000     0
 ELEMENT NO  19 IS A JUNCTION             *         *      *      *                *              *                  *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N       Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               2829.070 2832.330    2    18    18   .015     2.000     2.000  2732.300 2732.300  60.000   60.000
                                                                                               RADIUS    ANGLE
                                                                                               .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
 ELEMENT NO  20 IS A REACH                *         *      *
                    U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                               3035.390 2833.360    2              .015                          .000      .000      .000     0
 ELEMENT NO  21 IS A JUNCTION             *         *      *      *                *              *                  *
                    U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N       Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                               3035.390 2833.360    2    18     0   .015     2.000       .000  2833.360      .000  46.000      .000
                                                                                               RADIUS    ANGLE
                                                                                               .000      .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
                                                    W S P G W                                                                    PAGE NO   5
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
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ELEMENT NO  22 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3077.930 2833.570    2              .015                            .000     .000      .000      0
ELEMENT NO  23 IS A JUNCTION             *         *     *     *          *                     *                    *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                           3077.930 2833.570    2    18     0   .015     2.000      .000  2833.570      .000  60.000      .000
                                                                                          RADIUS    ANGLE
                                                                                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
ELEMENT NO  24 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3363.040 2835.000    2              .015                            .000     .000      .000      0
ELEMENT NO  25 IS A JUNCTION             *         *     *     *          *                     *                    *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                           3363.040 2835.000    2    30     0   .015    33.500      .000  2835.000      .000  45.000      .000
                                                                                          RADIUS    ANGLE
                                                                                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
ELEMENT NO  26 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3409.980 2835.230    2              .015                            .000     .000      .000      0
ELEMENT NO  27 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3457.100 2835.470    2              .015                         60.001   44.996      .000      0
ELEMENT NO  28 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3475.100 2835.560    2              .015                            .000     .000      .000      0
ELEMENT NO  29 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3485.530 2835.640    2              .015                         59.999   -9.960      .000      0
ELEMENT NO  30 IS A JUNCTION             *         *     *     *          *                     *                    *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                           3485.530 2835.640    2    30     0   .015    33.500      .000  2835.640      .000  27.000      .000
                                                                                          RADIUS    ANGLE
                                                                                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
                                                  W S P G W                                                    PAGE NO   6
                                WATER SURFACE PROFILE - ELEMENT CARD LISTING
ELEMENT NO  31 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3521.470 2835.790    2              .015                         60.000  -34.320      .000      0
ELEMENT NO  32 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3564.470 2836.010    2              .015                            .000     .000      .000      0
ELEMENT NO  33 IS A TRANSITION           *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS   ANGLE
                           3574.470 2836.060    8              .015                            .000     .000
ELEMENT NO  34 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3648.470 2836.810    8              .015                            .000     .000    45.000      0
ELEMENT NO  35 IS A JUNCTION             *         *     *     *          *                     *                    *
                U/S DATA   STATION    INVERT  SECT LAT-1 LAT-2   N      Q3        Q4     INVERT-3 INVERT-4  PHI 3  PHI 4
                           3648.470 2836.810   60    30     0   .015    53.000      .000  2836.810      .000      .000      .000
                                                                                          RADIUS    ANGLE
                                                                                            .000     .000
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
ELEMENT NO  36 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3703.970 2838.470   60              .015                            .000     .000    45.000      1
ELEMENT NO  37 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           3739.410 2839.490   60              .015                            .000     .000      .000      1
ELEMENT NO  38 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           4044.330 2846.840   60              .015                            .000     .000      .000      1
ELEMENT NO  39 IS A REACH                *         *     *
                U/S DATA   STATION    INVERT  SECT              N                          RADIUS    ANGLE     ANG PT  MAN H
                           4121.330 2848.690   60              .015                            .000     .000   -46.000      0
ELEMENT NO  40 IS A SYSTEM HEADWORKS                 *                *
                U/S DATA   STATION    INVERT  SECT                                    W S ELEV
                           4121.330 2848.690   60                                        .000
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♀ FILE: USVR.WSW

W S P G W - CIVILDESIGN Version 14.07
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 4:26:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2824.930	9.000	2833.930	1325.00	15.51	3.73	2837.66	.00	7.92	.00			3	0 .0
35.830	.0059					.0076	.27	9.00	.00	8.500	.015			IR-COV
1035.830	2825.140	9.061	2834.201	1325.00	15.51	3.73	2837.94	.00	7.92	.00			3	0 .0
JUNCT STR	.0000					.0043	.00	9.06	.00		.015			IR-COV
		---------- WARNING - Junction Analysis - Irregular Channel----------												
1035.830	2825.140	10.893	2836.033	1000.00	11.70	2.13	2838.16	.00	6.74	.00			3	0 .0
93.360	.0033					.0043	.40	10.89	.00	8.500	.015			IR-COV
1129.190	2825.450	10.986	2836.436	1000.00	11.70	2.13	2838.56	.00	6.74	.00			3	0 .0
JUNCT STR	.0000					.0042	.00	10.99	.00		.015			IR-COV
		---------- WARNING - Junction Analysis - Irregular Channel----------												
1129.190	2825.450	11.047	2836.497	991.50	11.61	2.09	2838.59	.00	6.70	.00			3	0 .0
189.530	.0040					.0042	.80	11.05	.00	7.716	.015			IR-COV
1318.720	2826.200	11.100	2837.300	991.50	11.61	2.09	2839.39	.00	6.70	.00			3	0 .0
JUNCT STR	.0000					.0042	.00	11.10	.00		.015			IR-COV
		---------- WARNING - Junction Analysis - Irregular Channel----------												

♀ FILE: USVR.WSW

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Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 4:26:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1318.720	2826.200	11.164	2837.364	983.00	11.51	2.06	2839.42	.00	6.67	.00			3	0 .0
441.130	.0040					.0042	1.84	11.16	.00	7.608	.015			IR-COV
1759.850	2827.970	11.231	2839.201	983.00	11.51	2.06	2841.26	.00	6.67	.00			3	0 .0
JUNCT STR	.0000					.0037	.00	11.23	.00		.015			IR-COV
		---------- WARNING - Junction Analysis - Irregular Channel----------												
1759.850	2827.970	11.552	2839.522	932.00	10.91	1.85	2841.37	.00	6.46	.00			3	0 .0
173.000	.0040					.0037	.65	11.55	.00	7.278	.015			IR-COV
1932.850	2828.660	11.510	2840.170	932.00	10.91	1.85	2842.02	.00	6.46	.00			3	0 .0
JUNCT STR	.0000					.0033	.00	11.51	.00		.015			IR-COV
		---------- WARNING - Junction Analysis - Irregular Channel----------												
1932.850	2828.660	11.843	2840.503	879.00	10.29	1.64	2842.15	.00	6.22	.00			3	0 .0
60.650	.0040					.0033	.20	11.84	.00	6.948	.015			IR-COV
1993.500	2828.900	11.805	2840.705	879.00	10.29	1.64	2842.35	.00	6.22	.00			3	0 .0
JUNCT STR	.0000					.0033	.00	11.80	.00		.015			IR-COV
		---------- WARNING - Junction Analysis - Irregular Channel----------												

♀ FILE: USVR.WSW

W S P G W - CIVILDESIGN Version 14.07
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 4:26:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1993.500	2828.900	11.826	2840.726	876.00	10.25	1.63	2842.36	.00	6.20	.00		3		0 .0
732.560	.0040					.0033	2.42	11.83	.00	6.897	.015			IR-COV
2726.060	2831.830	11.319	2843.149	876.00	10.25	1.63	2844.78	.00	6.20	.00		3		0 .0
JUNCT STR	.0000					.0010	.00	11.32	.00		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
2726.060	2831.830	12.494	2844.324	487.00	5.70	.50	2844.83	.00	4.19	.00		3		0 .0
12.260	.0041					.0010	.01	12.49	.00	4.382	.015			IR-COV
2738.320	2831.880	12.457	2844.337	487.00	5.70	.50	2844.84	.00	4.19	.00		3		0 .0
TRANS STR	.0050					.0010	.02	12.46	.00		.015			IR-COV
2758.320	2831.980	11.766	2843.746	487.00	9.16	1.30	2845.05	.00	4.87	.00		2		0 .0
70.750	.0049					.0036	.26	11.77	.00	5.101	.015			IR-COV
2829.070	2832.330	11.672	2844.002	487.00	9.16	1.30	2845.30	.00	4.87	.00		2		0 .0
JUNCT STR	.0000					.0036	.00	11.67	.00		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
2829.070	2832.330	11.713	2844.043	483.00	9.08	1.28	2845.32	.00	4.84	.00		2		0 .0
206.320	.0050					.0036	.73	11.71	.00	5.050	.015			IR-COV

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4:26:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
3035.390	2833.360	11.418	2844.778	483.00	9.08	1.28	2846.06	.00	4.84	.00		2		0 .0
JUNCT STR	.0000					.0035	.00	11.42	.00		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
3035.390	2833.360	11.438	2844.798	481.00	9.04	1.27	2846.07	.00	4.82	.00		2		0 .0
42.540	.0049					.0035	.15	11.44	.00	5.057	.015			IR-COV
3077.930	2833.570	11.379	2844.949	481.00	9.04	1.27	2846.22	.00	4.82	.00		2		0 .0
JUNCT STR	.0000					.0035	.00	11.38	.00		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
3077.930	2833.570	11.399	2844.969	479.00	9.00	1.26	2846.23	.00	4.81	.00		2		0 .0
285.110	.0050					.0035	1.00	11.40	.00	5.009	.015			IR-COV
3363.040	2835.000	10.968	2845.968	479.00	9.00	1.26	2847.23	.00	4.81	.00		2		0 .0
JUNCT STR	.0000					.0030	.00	10.97	.00		.015			IR-COV
WARNING - Junction Analysis - Irregular Channel														
3363.040	2835.000	11.213	2846.213	445.50	8.38	1.09	2847.30	.00	4.58	.00		2		0 .0
46.940	.0049					.0030	.14	11.21	.00	4.780	.015			IR-COV

Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4:26:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3409.980	2835.230	11.126	2846.356	445.50	8.38	1.09	2847.44	.00	4.58	.00		2		0 .0
47.120	.0051					.0030	.14	.00	.00	4.710	.015			IR-COV
3457.100	2835.470	11.183	2846.653	445.50	8.38	1.09	2847.74	.00	4.58	.00		2		0 .0
18.000	.0050					.0030	.05	11.18	.00	4.741	.015			IR-COV
3475.100	2835.560	11.147	2846.707	445.50	8.38	1.09	2847.80	.00	4.58	.00		2		0 .0
10.430	.0077					.0030	.03	.00	.00	4.036	.015			IR-COV
3485.530	2835.640	11.171	2846.811	445.50	8.38	1.09	2847.90	.00	4.58	.00		2		0 .0
JUNCT STR	.0000					.0026	.00	.00	.00		.015			IR-COV

WARNING - Junction Analysis - Irregular Channel

3485.530	2835.640	11.368	2847.008	412.00	7.75	.93	2847.94	.00	4.35	.00		2		0 .0
35.940	.0042					.0026	.09	.00	.00	4.786	.015			IR-COV
3521.470	2835.790	11.426	2847.216	412.00	7.75	.93	2848.15	.00	4.35	.00		2		0 .0
43.000	.0051					.0026	.11	11.43	.00	4.430	.015			IR-COV
3564.470	2836.010	11.317	2847.327	412.00	7.75	.93	2848.26	.00	4.35	.00		2		0 .0
TRANS STR	.0050					.0026	.03	11.32	.00		.015			IR-COV
3574.470	2836.060	10.953	2847.013	412.00	10.30	1.65	2848.66	.00	4.35	8.00	5.000	8.000	.00	0 .0
74.000	.0101					.0061	.45	10.95	.81	3.43	.015	.00	.00	BOX

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 4:26:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3648.470	2836.810	10.898	2847.708	412.00	10.30	1.65	2849.35	.00	4.35	8.00	5.000	8.000	.00	0 .0
JUNCT STR	.0000					.0157	.00	10.90	.81		.015	.00	.00	BOX

WARNING - Junction Analysis - Change in Channel Type

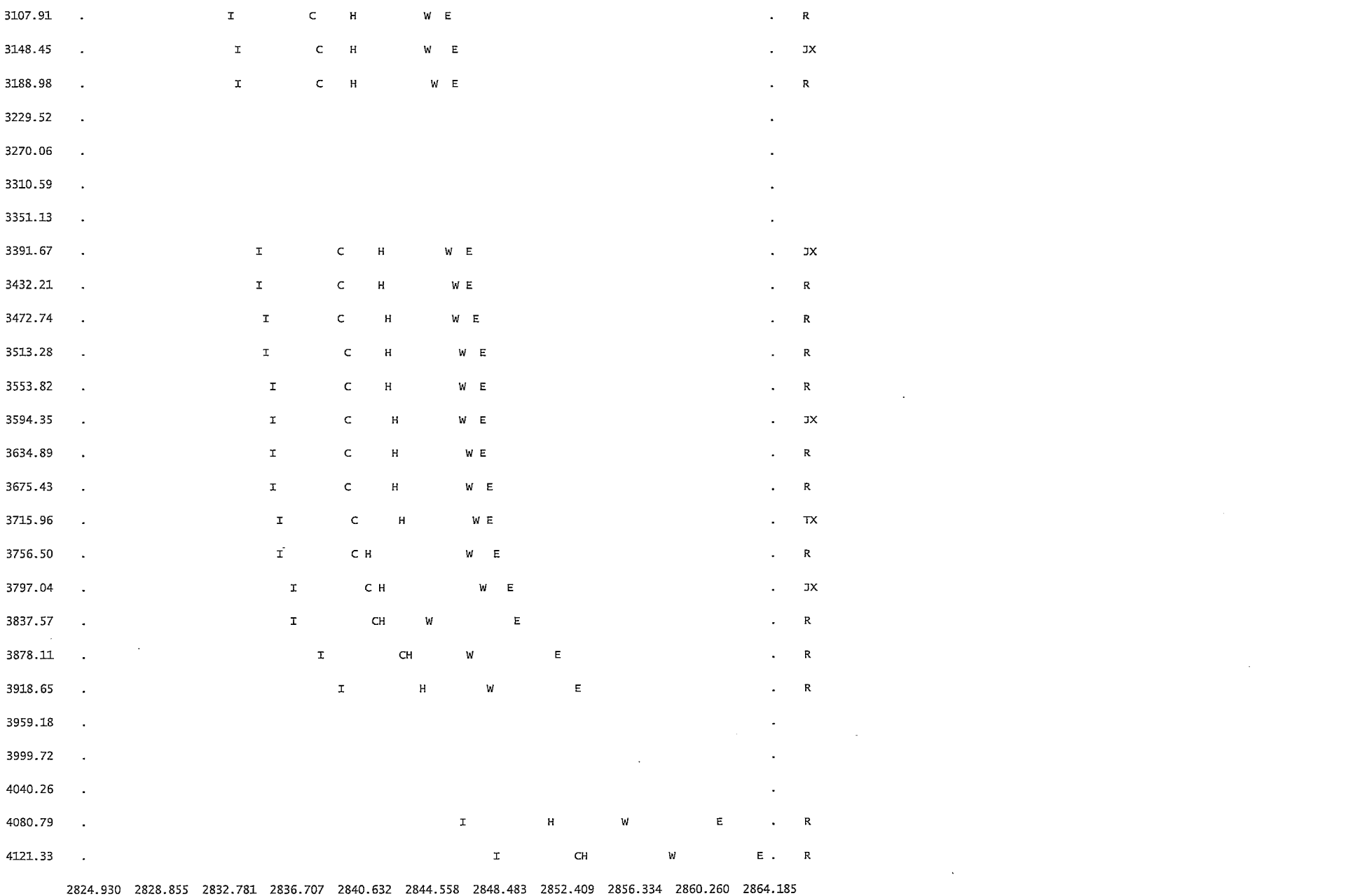
3648.470	2836.810	7.885	2844.695	359.00	18.28	5.19	2849.89	.00	4.83	.00	5.000	.000	.00	1 .0
55.500	.0299					.0253	1.40	7.89	.00	3.78	.015	.00	.00	PIPE
3703.970	2838.470	8.659	2847.129	359.00	18.28	5.19	2852.32	.00	4.83	.00	5.000	.000	.00	1 .0
35.440	.0288					.0253	.90	8.66	.00	3.84	.015	.00	.00	PIPE
3739.410	2839.490	8.795	2848.285	359.00	18.28	5.19	2853.48	.00	4.83	.00	5.000	.000	.00	1 .0
304.920	.0241					.0253	7.71	8.80	.00	4.22	.015	.00	.00	PIPE
4044.330	2846.840	9.418	2856.258	359.00	18.28	5.19	2861.45	.00	4.83	.00	5.000	.000	.00	1 .0
77.000	.0240					.0253	1.95	9.42	.00	4.23	.015	.00	.00	PIPE
4121.330	2848.690	10.304	2858.994	359.00	18.28	5.19	2864.19	.00	4.83	.00	5.000	.000	.00	1 .0

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE (ULTIMATE CONDITION)

1000.00	.I C H E	.	R
1040.54	.I C H E	.	JX
1081.07	.I C H W E	.	R
1121.61	.	.	
1162.15	. I C H W E	.	JX
1202.68	. I C H W E	.	R
1243.22	.	.	
1283.76	.	.	
1324.29	. I C H W E	.	JX
1364.83	. I C H W E	.	R
1405.37	.	.	
1445.90	.	.	
1486.44	.	.	
1526.98	.	.	
1567.51	.	.	
1608.05	.	.	
1648.59	.	.	
1689.12	.	.	
1729.66	.	.	
1770.20	. I C H W E	.	JX
1810.74	. I C H W E	.	R
1851.27	.	.	
1891.81	.	.	
1932.35	.	.	
1972.88	. I C H W E	.	JX

| | | |


3107.91 . I C H W E . R
3148.45 . I C H W E . JX
3188.98 . I C H W E . R
3229.52 .
3270.06 .
3310.59 .
3351.13 .
3391.67 . I C H W E . JX
3432.21 . I C H W E . R
3472.74 . I C H W E . R
3513.28 . I C H W E . R
3553.82 . I C H W E . R
3594.35 . I C H W E . JX
3634.89 . I C H W E . R
3675.43 . I C H W E . R
3715.96 . I C H W E . TX
3756.50 . I C H W E . R
3797.04 . I C H W E . JX
3837.57 . I CH W E . R
3878.11 . I CH W E . R
3918.65 . I H W E . R
3959.18 .
3999.72 .
4040.26 .
4080.79 . I H W E . R
4121.33 . I CH W E . R
2824.930 2828.855 2832.781 2836.707 2840.632 2844.558 2848.483 2852.409 2856.334 2860.260 2864.185

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Skye Village Road

Ultimate Condition-Laterals

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)
SO    1000.0002835.640 30      .013                2847.010
R     1018.0002836.090 30      .013                                    30.00 1
R     1129.0002838.890 30      .013
SH    1129.0002838.890 30      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0     0.0     0.0     0.0
CD    2  6   0     0.0     0.0      0.0     0.0     0.0     0.0
CD    3  6   0     0.0     0.0      0.0     0.0     0.0     0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS        9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS        6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS        2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS         .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS        7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS        5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS         .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS         .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS        7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS        5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS         .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS         .000  .010
Q            29.500   .0
```

FILE: U13.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:37:40

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:37:40

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS - BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS - SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2835.640	30	2847.010

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1018.000	2836.090	30	.013	.000	.000	30.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1129.000	2838.890	30	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1129.000	2838.890	30	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2835.640	11.370	2847.010	29.50	6.01	.56	2847.57	.00	1.85	.00	2.500	.000	.00	1 .0
18.000	.0250					.0052	.09	11.37	.00	1.18	.013	.00	.00	PIPE
1018.000	2836.090	11.097	2847.187	29.50	6.01	.56	2847.75	.00	1.85	.00	2.500	.000	.00	1 .0
111.000	.0252					.0052	.57	11.10	.00	1.18	.013	.00	.00	PIPE
1129.000	2838.890	8.871	2847.761	29.50	6.01	.56	2848.32	.00	1.85	.00	2.500	.000	.00	1 .0

♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P13)

1000.00 .I C H W E . R
1002.63 . .
1005.27 . .
1007.90 . .
1010.53 . .
1013.16 . .
1015.80 . .
1018.43 . I C H W E . R
1021.06 . .
1023.69 . .
1026.33 . .
1028.96 . .
1031.59 . .

1034.22 .

1036.86 .

1039.49 .

1042.12 .

1044.76 .

1047.39 .

1050.02 .

1052.65 .

1055.29 .

1057.92 .

1060.55 .

1063.18 .

1065.82 .

1068.45 .

1071.08 .

1073.71 .

1076.35 .

1078.98 .

1081.61 .

1084.24 .

1086.88 .

1089.51 .

1092.14 .

1094.78 .

1097.41 .

```
1100.04   .                                                                .
1102.67   .                                                                .
1105.31   .                                                                .
1107.94   .                                                                .
1110.57   .                                                                .
1113.20   .                                                                .
1115.84   .                                                                .
1118.47   .                                                                .
1121.10   .                                                                .
1123.73   .                                                                .
1126.37   .                                                                .
1129.00   .                      I          C   H                      W   E.   R

        2835.640  2836.908  2838.177  2839.445  2840.713  2841.981  2843.250  2844.518  2845.786  2847.055  2848.322
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P14)
SO   1000.0002835.000 30      .013                    2846.210
R    1050.0002837.990 30      .013                                                30.00 1
R    1160.0002844.610 30      .013
SH   1160.0002844.610 30      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0   0.0   0.0    0.0
CD    2  6   0     0.0     0.0      0.0   0.0   0.0    0.0
CD    3  6   0     0.0     0.0      0.0   0.0   0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000  .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000 7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000 7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000 7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000  .010  8.000  5.000  7.900  5.570
PTS      7.700 5.950  7.500  6.190  7.250 6.390  7.000  6.530  6.000  6.800
PTS      5.000 6.950  4.000  7.000  3.000 6.950  2.000  6.800  1.000  6.530
PTS       .750 6.390   .500  6.190   .300 5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000  .010  8.000  3.000  7.900  3.570
PTS      7.700 3.950  7.500  4.190  7.250 4.390  7.000  4.530  6.000  4.800
PTS      5.000 4.950  4.000  5.000  3.000 4.950  2.000  4.800  1.000  4.530
PTS       .750 4.390   .500  4.190   .300 3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q           29.500   .0
```

FILE: U14.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:48:33

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:48:33

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P14)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2835.000	30	2846.210

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1050.000	2837.990	30	.013	.000	.000	30.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1160.000	2844.610	30	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1160.000	2844.610	30	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P14)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2835.000	11.210	2846.210	29.50	6.01	.56	2846.77	.00	1.85	.00	2.500	.000	.00	1 .0
50.000	.0598					.0052	.26	11.21	.00	.93	.013	.00	.00	PIPE
1050.000	2837.990	8.562	2846.552	29.50	6.01	.56	2847.11	.00	1.85	.00	2.500	.000	.00	1 .0
110.000	.0602					.0052	.57	8.56	.00	.93	.013	.00	.00	PIPE
1160.000	2844.610	2.511	2847.121	29.50	6.01	.56	2847.68	.00	1.85	.00	2.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P14)

```
1000.00   .I          C    H                                          W   E       .   R
1003.27   .                                                                        .
1006.53   .                                                                        .
1009.80   .                                                                        .
1013.06   .                                                                        .
1016.33   .                                                                        .
1019.59   .                                                                        .
1022.86   .                                                                        .
1026.12   .                                                                        .
1029.39   .                                                                        .
1032.65   .                                                                        .
1035.92   .                                                                        .
1039.18   .                                                                        .
1042.45   .                                                                        .
1045.71   .                                                                        .
```

1048.98 .

1052.24 . I C H W E . R

1055.51 .

1058.78 .

1062.04 .

1065.31 .

1068.57 .

1071.84 .

1075.10 .

1078.37 .

1081.63 .

1084.90 .

1088.16 .

1091.43 .

1094.69 .

1097.96 .

1101.22 .

1104.49 .

1107.76 .

1111.02 .

1114.29 .

1117.55 .

1120.82 .

1124.08 .

1127.35 .

1130.61 .

1133.88 .

U14

```
1137.14    .                                                                                                                .
1140.41    .                                                                                                                .
1143.67    .                                                                                                                .
1146.94    .                                                                                                                .
1150.20    .                                                                                                                .
1153.47    .                                                                                                                .
1156.73    .                                                                                                                .
1160.00    .                                                                                I               C   H   E .   R

           2835.000  2836.268  2837.537  2838.805  2840.073  2841.342  2842.610  2843.878  2845.146  2846.415  2847.682
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)
SO   1000.0002833.570 18      .013                2844.970
R    1008.0002836.520 18      .013
SH   1008.0002836.520 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0   0.0   0.0
CD    2  6   0     0.0     0.0      0.0    0.0   0.0   0.0
CD    3  6   0     0.0     0.0      0.0    0.0   0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            1.500   .0
```

FILE: U18E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:37:55

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:37:55

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2833.570	18	2844.970

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1008.000	2836.520	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1008.000	2836.520	18	.000

♀ FILE: U18E.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:37:59

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2833.570	11.400	2844.970	1.50	.85	.01	2844.98	.00	.46	.00	1.500	.000	.00	1 .0
8.000	.3687					.0002	.00	11.40	.00	.16	.013	.00	.00	PIPE
1008.000	2836.520	8.452	2844.972	1.50	.85	.01	2844.98	.00	.46	.00	1.500	.000	.00	1 .0

♀

** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)
SO   1000.0002833.360 18      .013                2844.800
R     1057.0002833.640 18      .013                                    1
R     1102.0002840.600 18      .013
SH    1102.0002840.600 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0    0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0    0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q            1.500   .0
```

FILE: U18W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:38: 9

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:38: 9

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2833.360	18	2844.800

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1057.000	2833.640	18	.013	.000	.000	.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1102.000	2840.600	18	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1102.000	2840.600	18	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2833.360	11.440	2844.800	1.50	.85	.01	2844.81	.00	.46	.00	1.500	.000	.00	1 .0
57.000	.0049					.0002	.01	11.44	.00	.46	.013	.00	.00	PIPE
1057.000	2833.640	11.172	2844.812	1.50	.85	.01	2844.82	.00	.46	.00	1.500	.000	.00	1 .0
45.000	.1547					.0002	.01	11.17	.00	.20	.013	.00	.00	PIPE
1102.000	2840.600	4.221	2844.822	1.50	.85	.01	2844.83	.00	.46	.00	1.500	.000	.00	1 .0

† †

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P18)

1000.00 .I C H W . R
1002.08 . .
1004.16 . .
1006.24 . .
1008.33 . .
1010.41 . .
1012.49 . .
1014.57 . .
1016.65 . .
1018.73 . .
1020.82 . .
1022.90 . .
1024.98 . .
1027.06 . .
1029.14 . .

1031.22 .
1033.31 .
1035.39 .
1037.47 .
1039.55 .
1041.63 .
1043.71 .
1045.80 .
1047.88 .
1049.96 .
1052.04 .
1054.12 .
1056.20 .
1058.29 . I C H W . R
1060.37 .
1062.45 .
1064.53 .
1066.61 .
1068.69 .
1070.78 .
1072.86 .
1074.94 .
1077.02 .
1079.10 .
1081.18 .
1083.27 .
1085.35 .

```
1087.43   .                                                
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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)
SO   1000.0002832.330 18       .013                    2844.040
R    1008.0002835.060 18       .013
SH   1008.0002835.060 18       .013
CD    6  3   0     .000    6.000     6.000  .000  .000   .00
CD    8  3   0     .000    5.000     8.000  .000  .000   .00
CD   18  4   1     .000    1.500      .000  .000  .000   .00
CD   24  4   1     .000    2.000      .000  .000  .000   .00
CD   30  4   1     .000    2.500      .000  .000  .000   .00
CD   36  4   1     .000    3.000      .000  .000  .000   .00
CD   42  4   1     .000    3.500      .000  .000  .000   .00
CD   48  4   1     .000    4.000      .000  .000  .000   .00
CD   54  4   1     .000    4.500      .000  .000  .000   .00
CD   60  4   1     .000    5.000      .000  .000  .000   .00
CD   72  4   1     .000    6.000      .000  .000  .000   .00
CD    1  6   0      0.0      0.0       0.0     0.0    0.0    0.0
CD    2  6   0      0.0      0.0       0.0     0.0    0.0    0.0
CD    3  6   0      0.0      0.0       0.0     0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            2.000   .0
```

FILE: U20E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:38:33

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:38:33

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)			
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500			
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840			
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010			
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190			
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800			
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010			
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190			
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800			
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010			

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2832.330	18	2844.040

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1008.000	2835.060	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1008.000	2835.060	18	.000

♀ FILE: U20E.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:38:39

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2832.330	11.710	2844.040	2.00	1.13	.02	2844.06	.00	.53	.00	1.500	.000	.00	1 .0
8.000	.3412					.0004	.00	11.71	.00	.19	.013	.00	.00	PIPE
1008.000	2835.060	8.983	2844.043	2.00	1.13	.02	2844.06	.00	.53	.00	1.500	.000	.00	1 .0

♀

** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)
SO   1000.0002832.330 18      .013                2844.040
R    1083.0002839.250 18      .013
SH   1083.0002839.250 18      .013
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   5.000    8.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0   0.0   0.0   0.0
CD   2  6   0     0.0     0.0      0.0   0.0   0.0   0.0
CD   3  6   0     0.0     0.0      0.0   0.0   0.0   0.0
PTS 121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS 221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS 321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            2.000   .0
```

FILE: U20W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:38:49

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:38:49

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2832.330	18	2844.040

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1083.000	2839.250	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1083.000	2839.250	18	.000

FILE: U20W.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:38:53

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P20)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS) / SF Ave	Vel Head / HF	Energy Grd.El. / SE Dpth	Super Elev / Froude N	Critical Depth / Norm Dp	Flow Top Width / "N"	Height/ Dia.-FT or I.D. / X-Fall	Base Wt / ZR	ZL	No Wth Prs/Pip / Type Ch
1000.000	2832.330	11.710	2844.040	2.00	1.13	.02	2844.06	.00	.53	.00	1.500	.000	.00	1 .0
83.000	.0834				.0004	.03	11.71	.00	.26	.013	.00	.00		PIPE
1083.000	2839.250	4.820	2844.070	2.00	1.13	.02	2844.09	.00	.53	.00	1.500	.000	.00	1 .0

** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)
SO   1000.0002831.830  6      .013                2844.320
R    1016.0002834.100  6      .013
R    1058.1002836.980  6      .013                                    43.857    .000 0
R    1125.1002841.470  6      .013
SH   1125.1002841.470  6      .013
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   8.000    5.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD   2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD   3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000 10.000   .000 10.000   .010 10.000  6.500  9.490  7.870
PTS       9.000  8.280  8.500  8.500  8.000  8.630  7.520  8.740  7.000  8.840
PTS       6.000  8.960  5.000  9.000  4.000  8.960  3.000  8.840  2.480  8.740
PTS       2.000  8.630  1.500  8.500  1.000  8.280   .510  7.870   .000  6.500
PTS        .000   .010
Q           359.000   .0
```

FILE: U21.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:39:27

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	8.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:39:27

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	10.000	.000	10.000	.010	10.000	6.500	9.490	7.870	9.000	8.280	8.500	8.500
PTS			8.000	8.630	7.520	8.740	7.000	8.840	6.000	8.960	5.000	9.000	4.000	8.960	3.000	8.840
PTS			2.480	8.740	2.000	8.630	1.500	8.500	1.000	8.280	.510	7.870	.000	6.500	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2831.830	6	2844.320

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1016.000	2834.100	6	.013	.000	.000	.000	0

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1058.100	2836.980	6	.013	55.000	43.857	.000	0

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1125.100	2841.470	6	.013	.000	.000	.000	0

ELEMENT NO 5 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1125.100	2841.470	6	.000

♀ FILE: U21.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 7:39:31

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1000.000	2831.830	12.490	2844.320	359.00	9.97	1.54	2845.86	.00	4.81	6.00	6.000	6.000	.00	0 .0
16.000	.1419					.0044	.07	12.49	.72	1.42	.013	.00	.00	BOX
1016.000	2834.100	10.291	2844.391	359.00	9.97	1.54	2845.94	.00	4.81	6.00	6.000	6.000	.00	0 .0
42.100	.0684					.0044	.19	.00	.72	1.84	.013	.00	.00	BOX
1058.100	2836.980	7.813	2844.793	359.00	9.97	1.54	2846.34	.00	4.81	6.00	6.000	6.000	.00	0 .0
7.253	.0670					.0044	.03	7.81	.72	1.85	.013	.00	.00	BOX
1065.353	2837.466	7.358	2844.824	359.00	9.97	1.54	2846.37	.00	4.81	6.00	6.000	6.000	.00	0 .0
HYDRAULIC JUMP														
1065.353	2837.466	2.707	2840.173	359.00	22.10	7.58	2847.76	.00	4.81	6.00	6.000	6.000	.00	0 .0
.258	.0670					.0233	.01	2.71	2.37	1.85	.013	.00	.00	BOX
1065.610	2837.484	2.713	2840.197	359.00	22.05	7.55	2847.75	.00	4.81	6.00	6.000	6.000	.00	0 .0
12.255	.0670					.0218	.27	2.71	2.36	1.85	.013	.00	.00	BOX
1077.866	2838.305	2.846	2841.151	359.00	21.02	6.86	2848.01	.00	4.81	6.00	6.000	6.000	.00	0 .0
10.144	.0670					.0192	.19	2.85	2.20	1.85	.013	.00	.00	BOX
1088.010	2838.985	2.985	2841.969	359.00	20.05	6.24	2848.21	.00	4.81	6.00	6.000	6.000	.00	0 .0
8.413	.0670					.0169	.14	2.98	2.04	1.85	.013	.00	.00	BOX
1096.422	2839.548	3.130	2842.679	359.00	19.11	5.67	2848.35	.00	4.81	6.00	6.000	6.000	.00	0 .0
6.963	.0670					.0149	.10	3.13	1.90	1.85	.013	.00	.00	BOX

♀ FILE: U21.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 7:39:31

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip Type Ch
1103.385	2840.015	3.283	2843.298	359.00	18.22	5.16	2848.46	.00	4.81	6.00	6.000	6.000	.00	0 .0
5.727	.0670					.0131	.08	3.28	1.77	1.85	.013	.00	.00	BOX
1109.112	2840.399	3.444	2843.842	359.00	17.38	4.69	2848.53	.00	4.81	6.00	6.000	6.000	.00	0 .0
4.657	.0670					.0116	.05	3.44	1.65	1.85	.013	.00	.00	BOX
1113.769	2840.711	3.612	2844.322	359.00	16.57	4.26	2848.58	.00	4.81	6.00	6.000	6.000	.00	0 .0
3.719	.0670					.0102	.04	3.61	1.54	1.85	.013	.00	.00	BOX
1117.489	2840.960	3.788	2844.748	359.00	15.80	3.87	2848.62	.00	4.81	6.00	6.000	6.000	.00	0 .0
2.887	.0670					.0091	.03	3.79	1.43	1.85	.013	.00	.00	BOX

U21

1120.376	2841.153	3.973	2845.126	359.00	15.06	3.52	2848.65	.00	4.81	6.00	6.000	6.000	.00	0	.0
2.140	.0670					.0080	.02	3.97	1.33	1.85	.013	.00	.00	BOX	
1122.516	2841.297	4.167	2845.464	359.00	14.36	3.20	2848.67	.00	4.81	6.00	6.000	6.000	.00	0	.0
1.464	.0670					.0071	.01	4.17	1.24	1.85	.013	.00	.00	BOX	
1123.980	2841.395	4.370	2845.765	359.00	13.69	2.91	2848.68	.00	4.81	6.00	6.000	6.000	.00	0	.0
.845	.0670					.0063	.01	4.37	1.15	1.85	.013	.00	.00	BOX	
1124.825	2841.452	4.583	2846.035	359.00	13.05	2.65	2848.68	.00	4.81	6.00	6.000	6.000	.00	0	.0
.275	.0670					.0056	.00	4.58	1.07	1.85	.013	.00	.00	BOX	
1125.100	2841.470	4.808	2846.278	359.00	12.44	2.40	2848.68	.00	4.81	6.00	6.000	6.000	.00	0	.0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

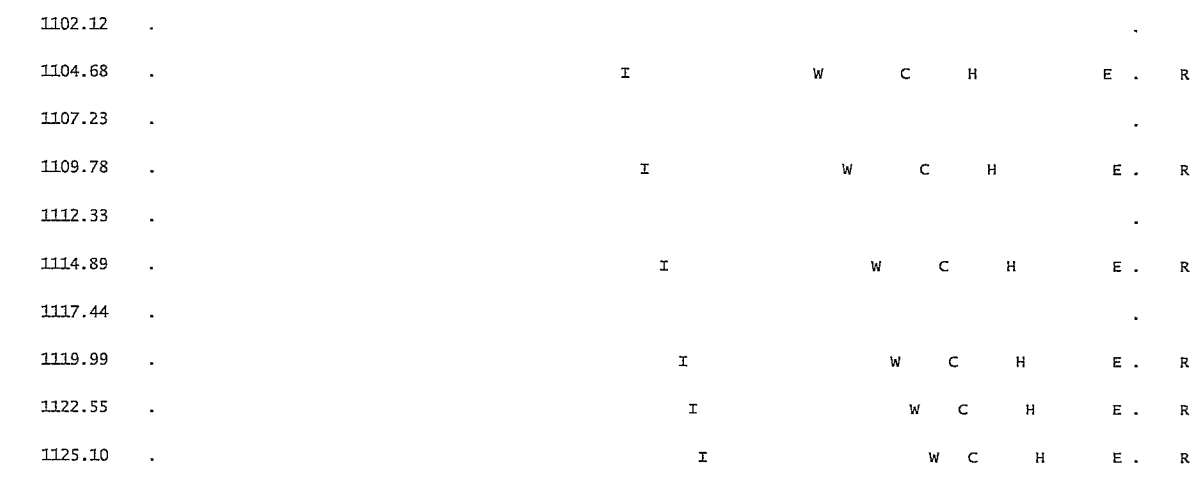
BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P21)

1000.00 .I C H W E . R
1002.55 . .
1005.11 . .
1007.66 . .
1010.21 . .
1012.77 . .
1015.32 . .
1017.87 . I C H W E . R
1020.42 . .
1022.98 . .
1025.53 . .
1028.08 . .
1030.64 . .
1033.19 . .

```
1035.74 .                                                                .
1038.30 .                                                                .
1040.85 .                                                                .
1043.40 .                                                                .
1045.96 .                                                                .
1048.51 .                                                                .
1051.06 .                                                                .
1053.61 .                                                                .
1056.17 .                                                                .
1058.72 .          I                 C     H       W       E             .   R
1061.27 .                                                                .
1063.83 .                                                                .
1066.38 .            I                C     H       W       E             .   R
1068.93 .            I          W     C     H                       E     .   R
1071.49 .            I          W      C    H                       E     .   R
1074.04 .                                                                .
1076.59 .                                                                .
1079.14 .               I           W       C       H                E    .   R
1081.70 .                                                                .
1084.25 .                                                                .
1086.80 .                                                                .
1089.36 .                  I            W       C       H               E .   R
1091.91 .                                                                .
1094.46 .                                                                .
1097.02 .                     I             W       C     H             E .   R
1099.57 .                                                                .
```

U21



N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)
SO   1000.0002828.900 18      .013                2840.730
R    1007.0002831.220 18      .013
SH   1007.0002831.220 18      .013
CD   6  3   0     .000   6.000    6.000  .000  .000   .00
CD   8  3   0     .000   5.000    8.000  .000  .000   .00
CD  18  4   1     .000   1.500     .000  .000  .000   .00
CD  24  4   1     .000   2.000     .000  .000  .000   .00
CD  30  4   1     .000   2.500     .000  .000  .000   .00
CD  36  4   1     .000   3.000     .000  .000  .000   .00
CD  42  4   1     .000   3.500     .000  .000  .000   .00
CD  48  4   1     .000   4.000     .000  .000  .000   .00
CD  54  4   1     .000   4.500     .000  .000  .000   .00
CD  60  4   1     .000   5.000     .000  .000  .000   .00
CD  72  4   1     .000   6.000     .000  .000  .000   .00
CD   1  6   0      0.0     0.0      0.0    0.0    0.0   0.0
CD   2  6   0      0.0     0.0      0.0    0.0    0.0   0.0
CD   3  6   0      0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            3.000   .0
```

FILE: U23E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:58:50

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:58:50

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)			
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500			
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840			
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010			
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190			
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800			
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010			
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190			
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800			
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010			

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2828.900	18	2840.730

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1007.000	2831.220	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1007.000	2831.220	18	.000

♀ FILE: U23E.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:58:53

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P23)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2828.900	11.830	2840.730	3.00	1.70	.04	2840.77	.00	.66	.00	1.500	.000	.00	1 .0
7.000	.3314					.0008	.01	11.83	.00	.23	.013	.00	.00	PIPE
1007.000	2831.220	9.516	2840.736	3.00	1.70	.04	2840.78	.00	.66	.00	1.500	.000	.00	1 .0

♀

** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD P25 LATERAL (FACILITY P23)
SO   1000.0002833.450 18      .013                    2841.090
R    1045.0002835.300 18      .013
SH   1045.0002835.300 18      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0     0.0    0.0    0.0
CD    2  6   0     0.0     0.0      0.0     0.0    0.0    0.0
CD    3  6   0     0.0     0.0      0.0     0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            3.000   .0
```

FILE: U23W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:40:53

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:40:53

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	8.000	.000	8.000	.010	8.000	3.000	7.900	3.570	7.700	3.950	7.500	4.190
PTS			7.250	4.390	7.000	4.530	6.000	4.800	5.000	4.950	4.000	5.000	3.000	4.950	2.000	4.800
PTS			1.000	4.530	.750	4.390	.500	4.190	.300	3.950	.100	3.570	.000	3.000	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD P25 LATERAL (FACILITY P23)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2833.450	18	2841.090

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1045.000	2835.300	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1045.000	2835.300	18	.000

WATER SURFACE PROFILE LISTING Date:10-30-2017 Time: 7:40:58

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD P25 LATERAL (FACILITY P23)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2833.450	7.640	2841.090	3.00	1.70	.04	2841.13	.00	.66	.00	1.500	.000	.00	1 .0
45.000	.0411					.0008	.04	7.64	.00	.38	.013	.00	.00	PIPE
1045.000	2835.300	5.827	2841.127	3.00	1.70	.04	2841.17	.00	.66	.00	1.500	.000	.00	1 .0

♀
** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)
SO   1000.0002828.660 42       .013                2840.500
R    1056.0002831.450 42       .013                                    45.00 1
JX   1056.0002831.450 42 18    .015     3.000          2833.450            00.0
R    1147.0002837.670 42       .013
SH   1147.0002837.670 42       .013
CD    6  3   0     .000    6.000     6.000  .000  .000   .00
CD    8  3   0     .000    5.000     8.000  .000  .000   .00
CD   18  4   1     .000    1.500      .000  .000  .000   .00
CD   24  4   1     .000    2.000      .000  .000  .000   .00
CD   30  4   1     .000    2.500      .000  .000  .000   .00
CD   36  4   1     .000    3.000      .000  .000  .000   .00
CD   42  4   1     .000    3.500      .000  .000  .000   .00
CD   48  4   1     .000    4.000      .000  .000  .000   .00
CD   54  4   1     .000    4.500      .000  .000  .000   .00
CD   60  4   1     .000    5.000      .000  .000  .000   .00
CD   72  4   1     .000    6.000      .000  .000  .000   .00
CD    1  6   0      0.0      0.0       0.0      0.0     0.0     0.0
CD    2  6   0      0.0      0.0       0.0      0.0     0.0     0.0
CD    3  6   0      0.0      0.0       0.0      0.0     0.0     0.0
PTS  121    .000    .000 10.000    .000 10.000    .010 10.000  5.500  9.490  6.870
PTS        9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS        6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS        2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS         .000   .010
PTS  221    .000    .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS        7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS        5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS         .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS         .000   .010
PTS  321    .000    .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS        7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS        5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS         .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS         .000   .010
Q            69.000   .0
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FILE: U25.WSW

W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:39:39

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE:

W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:39:39

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS - BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS - SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2828.660	42	2840.500

ELEMENT NO 2 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1056.000	2831.450	42	.013	.000	.000	45.000	1

ELEMENT NO 3 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1056.000	2831.450	42	18	0	.015	3.000	.000	2833.450	.000	.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1147.000	2837.670	42	.013	.000	.000	.000	0

ELEMENT NO 5 IS A SYSTEM HEADWORKS

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1147.000	2837.670	42	.000

♀ FILE: U25.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:39:43

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2828.660	11.840	2840.500	72.00	7.48	.87	2841.37	.00	2.66	.00	3.500	.000	.00	1 .0
56.000	.0498					.0051	.29	11.84	.00	1.36	.013	.00	.00	PIPE
1056.000	2831.450	9.509	2840.959	72.00	7.48	.87	2841.83	.00	2.66	.00	3.500	.000	.00	1 .0
JUNCT STR	.0000					.0065	.00	9.51	.00		.015	.00	.00	PIPE
1056.000	2831.450	9.635	2841.085	69.00	7.17	.80	2841.88	.00	2.60	.00	3.500	.000	.00	1 .0
91.000	.0684					.0047	.43	9.63	.00	1.22	.013	.00	.00	PIPE
1147.000	2837.670	3.843	2841.513	69.00	7.17	.80	2842.31	.00	2.60	.00	3.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P25)

1000.00 .I C H W E . R

1003.00 .

1006.00 .

1009.00 .

1012.00 .

1015.00 .

1018.00 .

1021.00 .

1024.00 .

1027.00 .

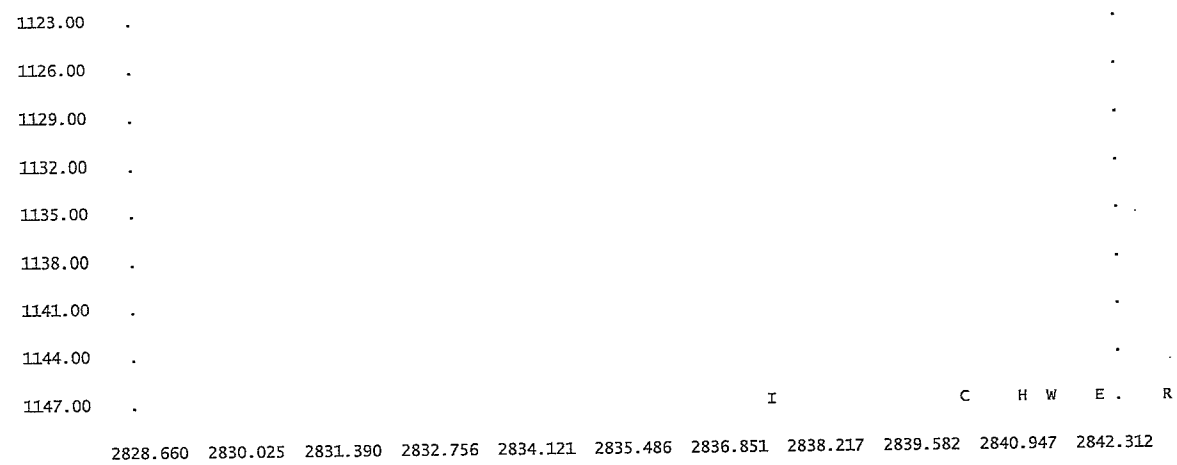
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1051.00  .                                                    .
1054.00  .                                                    .
1057.00  .          I         C    H              W    E    .   JX
1060.00  .          I         C    H              W    E    .   R
1063.00  .                                                    .
1066.00  .                                                    .
1069.00  .                                                    .
1072.00  .                                                    .
1075.00  .                                                    .
1078.00  .                                                    .
1081.00  .                                                    .
1084.00  .                                                    .
1087.00  .                                                    .
1090.00  .                                                    .
1093.00  .                                                    .
1096.00  .                                                    .
1099.00  .                                                    .
1102.00  .                                                    .
1105.00  .                                                    .
1108.00  .                                                    .
1111.00  .                                                    .
1114.00  .                                                    .
1117.00  .                                                    .
1120.00  .                                                    .
```



N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P27)
SO   1000.0002827.970 36      .013                2839.520
R    1056.0002830.200 36      .013                                    45.00 1
R    1127.0002833.740 36      .013
SH   1127.0002833.740 36      .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0   0.0   0.0    0.0
CD    2  6   0     0.0     0.0      0.0    0.0   0.0   0.0    0.0
CD    3  6   0     0.0     0.0      0.0    0.0   0.0   0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q           51.000   .0
```

FILE: U27.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:41:33

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:41:33

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P27)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2827.970	36	2839.520

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1056.000	2830.200	36	.013	.000	.000	45.000	1

ELEMENT NO 3 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1127.000	2833.740	36	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1127.000	2833.740	36	.000

FILE: U27.WSW

W S P G W - CIVILDESIGN Version 14.07
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:41:37

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P27)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT or "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2827.970	11.550	2839.520	51.00	7.22	.81	2840.33	.00	2.32	.00	3.000	.000	.00	1 .0
56.000	.0398					.0058	.33	11.55	.00	1.29	.013	.00	.00	PIPE
1056.000	2830.200	9.808	2840.008	51.00	7.22	.81	2840.82	.00	2.32	.00	3.000	.000	.00	1 .0
71.000	.0499					.0058	.42	9.81	.00	1.21	.013	.00	.00	PIPE
1127.000	2833.740	6.683	2840.423	51.00	7.22	.81	2841.23	.00	2.32	.00	3.000	.000	.00	1 .0

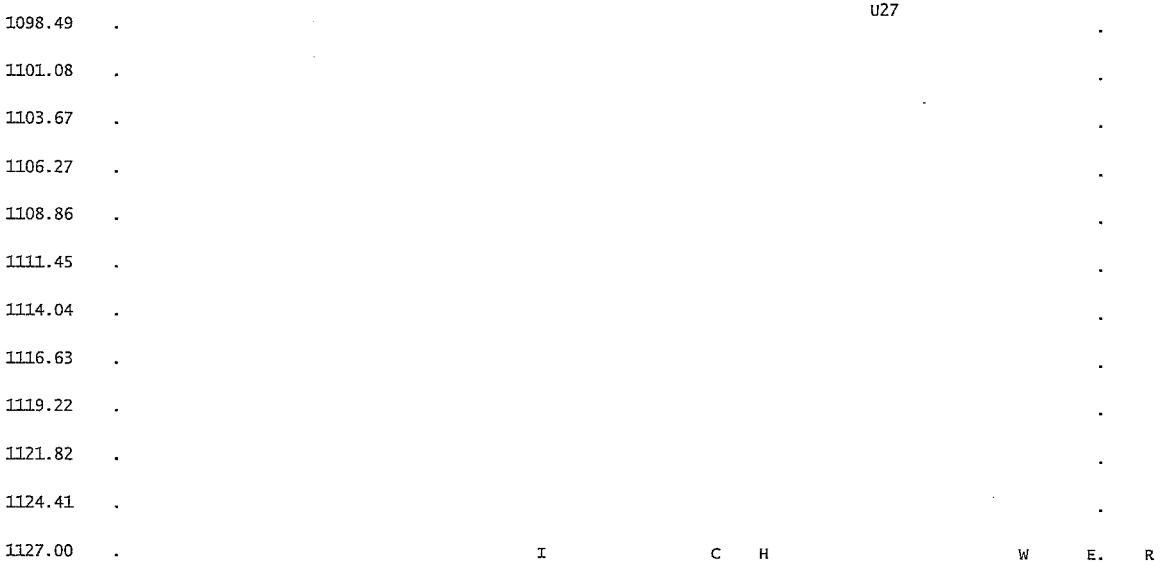
SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P27)

```
1000.00    .I              C    H                                    W    E       .    R
1002.59    .                                                                      .
1005.18    .                                                                      .
1007.78    .                                                                      .
1010.37    .                                                                      .
1012.96    .                                                                      .
1015.55    .                                                                      .
1018.14    .                                                                      .
1020.73    .                                                                      .
1023.33    .                                                                      .
1025.92    .                                                                      .
1028.51    .                                                                      .
1031.10    .                                                                      .
```

1033.69 .
1036.29 .
1038.88 .
1041.47 .
1044.06 .
1046.65 .
1049.24 .
1051.84 .
1054.43 .
1057.02 . I C H W E . R
1059.61 .
1062.20 .
1064.80 .
1067.39 .
1069.98 .
1072.57 .
1075.16 .
1077.76 .
1080.35 .
1082.94 .
1085.53 .
1088.12 .
1090.71 .
1093.31 . .
1095.90 .



N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)
SO   1000.0002825.440 18      .013                2836.500
R    1008.0002829.290 18      .013
SH   1008.0002829.290 18      .013
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   5.000    8.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0   0.0    0.0   0.0
CD   2  6   0     0.0     0.0      0.0   0.0    0.0   0.0
CD   3  6   0     0.0     0.0      0.0   0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q            8.500  .0
```

FILE: U29E.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:41:47

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:41:47

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)		X(2) , Y(2) X(9) , Y(9)		X(3) , Y(3) X(10) ,Y(10)		X(4) , Y(4) X(11) ,Y(11)		X(5) , Y(5) X(N) , Y(N)		X(6) , Y(6) X(N+1),Y(N+1)		X(7) , Y(7) X(35) ,Y(35)			
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500		
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840		
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010		
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190		
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800		
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010		
PTS	3	21	.000	.000	8.000	.000	8.000	.010	8.000	3.000	7.900	3.570	7.700	3.950	7.500	4.190		
PTS			7.250	4.390	7.000	4.530	6.000	4.800	5.000	4.950	4.000	5.000	3.000	4.950	2.000	4.800		
PTS			1.000	4.530	.750	4.390	.500	4.190	.300	3.950	.100	3.570	.000	3.000	.000	.010		

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2825.440	18	2836.500

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1008.000	2829.290	18	.013	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1008.000	2829.290	18	.000

♀ FILE: U29E.WSW

W S P G W - CIVILDESIGN Version 14.07

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING

Date:10-30-2017 Time: 7:41:51

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	2825.440	11.060	2836.500	8.50	4.81	.36	2836.86	.00	1.13	.00	1.500	.000	.00	1 .0
8.000	.4813					.0065	.05	11.06	.00	.35	.013	.00	.00	PIPE
1008.000	2829.290	7.262	2836.552	8.50	4.81	.36	2836.91	.00	1.13	.00	1.500	.000	.00	1 .0

♀

** WARNING NO. 22 ** - NO PLOT GENERATED, BAD DATA OR NOT ENOUGH POINTS, 3 OR LESS

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)
SO   1000.0002826.200 18       .013                  2837.360
R    1046.0002826.430 18       .013                                  30.00 1
R    1078.0002830.370 18       .013
SH   1078.0002830.370 18       .013
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   5.000    8.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   4.500     .000  .000  .000   .00
CD   60  4   1    .000   5.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700  3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000  4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750  4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000   .010
Q            8.500   .0
```

FILE: U29W.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:41:59

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:41:59

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 5.500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

	STATION	INVERT	SECT	W S ELEV
U/S DATA	1000.000	2826.200	18	2837.360

ELEMENT NO 2 IS A REACH * * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1046.000	2826.430	18	.013	.000	.000	30.000	1

ELEMENT NO 3 IS A REACH * *

	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
U/S DATA	1078.000	2830.370	18	.013	.000	.000	.000	0

ELEMENT NO 4 IS A SYSTEM HEADWORKS * *

	STATION	INVERT	SECT	W S ELEV
U/S DATA	1078.000	2830.370	18	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2826.200	11.160	2837.360	8.50	4.81	.36	2837.72	.00	1.13	.00	1.500	.000	.00	1 .0
46.000	.0050					.0065	.30	11.16	.00	1.50	.013	.00	.00	PIPE
1046.000	2826.430	11.285	2837.715	8.50	4.81	.36	2838.07	.00	1.13	.00	1.500	.000	.00	1 .0
32.000	.1231					.0065	.21	11.28	.00	.49	.013	.00	.00	PIPE
1078.000	2830.370	7.554	2837.924	8.50	4.81	.36	2838.28	.00	1.13	.00	1.500	.000	.00	1 .0

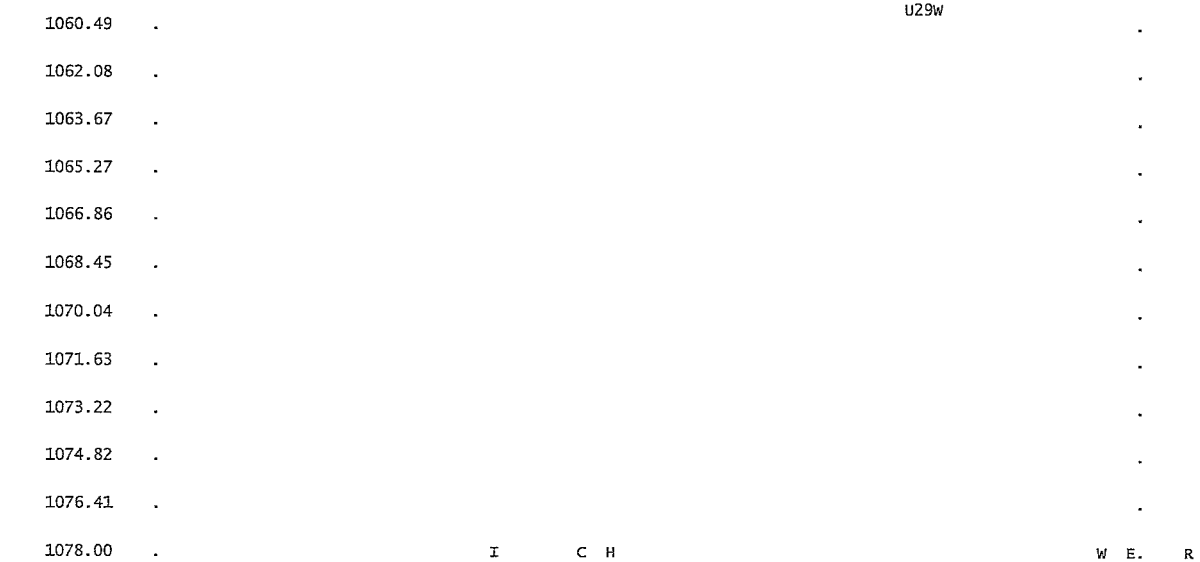
SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P29)

```
1000.00   .I       C  H                                                  W  E    .   R
1001.59   .                                                                       .
1003.18   .                                                                       .
1004.78   .                                                                       .
1006.37   .                                                                       .
1007.96   .                                                                       .
1009.55   .                                                                       .
1011.14   .                                                                       .
1012.73   .                                                                       .
1014.33   .                                                                       .
1015.92   .                                                                       .
1017.51   .                                                                       .
1019.10   .                                                                       .
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1020.69 .
1022.29 .
1023.88 .
1025.47 .
1027.06 .
1028.65 .
1030.24 .
1031.84 .
1033.43 .
1035.02 .
1036.61 .
1038.20 .
1039.80 .
1041.39 .
1042.98 .
1044.57 .
1046.16 . I C H W E . R
1047.76 .
1049.35 .
1050.94 .
1052.53 .
1054.12 .
1055.71 .
1057.31 .
1058.90 .



N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)
SO   1000.0002829.130 60      .013                    2836.030
R    1035.0002830.310 60      .013                                    51.00 1
JX   1035.0002830.310 60      .013
R    1119.0002830.640 60      .013
SH   1119.0002830.640 60      .013
CD   6  3   0    .000   6.000    6.000  .000  .000   .00
CD   8  3   0    .000   5.000    8.000  .000  .000   .00
CD  18  4   1    .000   1.500     .000  .000  .000   .00
CD  24  4   1    .000   2.000     .000  .000  .000   .00
CD  30  4   1    .000   2.500     .000  .000  .000   .00
CD  36  4   1    .000   3.000     .000  .000  .000   .00
CD  42  4   1    .000   3.500     .000  .000  .000   .00
CD  48  4   1    .000   4.000     .000  .000  .000   .00
CD  54  4   1    .000   4.500     .000  .000  .000   .00
CD  60  4   1    .000   5.000     .000  .000  .000   .00
CD  72  4   1    .000   6.000     .000  .000  .000   .00
CD   1  6   0     0.0     0.0      0.0     0.0    0.0    0.0
CD   2  6   0     0.0     0.0      0.0     0.0    0.0    0.0
CD   3  6   0     0.0     0.0      0.0     0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000  .010
PTS  321   .000   .000  8.000   .000  8.000   .010  8.000  3.000  7.900  3.570
PTS       7.700 3.950  7.500  4.190  7.250  4.390  7.000  4.530  6.000  4.800
PTS       5.000 4.950  4.000  5.000  3.000  4.950  2.000  4.800  1.000  4.530
PTS        .750 4.390   .500  4.190   .300  3.950   .100  3.570   .000  3.000
PTS        .000  .010
Q           364.000   .0
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FILE: U31.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:42:13

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	5.000	8.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-30-2017 Time: 7:42:13

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)				
PTS	1	21	.000 .000	10.000 .000	10.000 .010	10.000 .500	9.490 6.870	9.000 7.280	8.500 7.500				
PTS			8.000 7.630	7.520 7.740	7.000 7.840	6.000 7.960	5.000 8.000	4.000 7.960	3.000 7.840				
PTS			2.480 7.740	2.000 7.630	1.500 7.500	1.000 7.280	.510 6.870	.000 5.500	.000 .010				
PTS	2	21	.000 .000	8.000 .000	8.000 .010	8.000 5.000	7.900 5.570	7.700 5.950	7.500 6.190				
PTS			7.250 6.390	7.000 6.530	6.000 6.800	5.000 6.950	4.000 7.000	3.000 6.950	2.000 6.800				
PTS			1.000 6.530	.750 6.390	.500 6.190	.300 5.950	.100 5.570	.000 5.000	.000 .010				
PTS	3	21	.000 .000	8.000 .000	8.000 .010	8.000 3.000	7.900 3.570	7.700 3.950	7.500 4.190				
PTS			7.250 4.390	7.000 4.530	6.000 4.800	5.000 4.950	4.000 5.000	3.000 4.950	2.000 4.800				
PTS			1.000 4.530	.750 4.390	.500 4.190	.300 3.950	.100 3.570	.000 3.000	.000 .010				

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2829.130	60	2836.030

ELEMENT NO 2 IS A REACH * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1035.000	2830.310	60	.013	.000	.000	51.000	1

ELEMENT NO 3 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1035.000	2830.310	60	0	0	.013	.000	.000	.000	.000	.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1119.000	2830.640	60	.013	.000	.000	.000	0

ELEMENT NO 5 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1119.000	2830.640	60	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2829.130	6.900	2836.030	364.00	18.54	5.34	2841.37	.00	4.84	.00	5.000	.000	.00	1 .0
35.000	.0337					.0195	.68	6.90	.00	3.26	.013	.00	.00	PIPE
JUNCT STR	.0000					.0195	.00	7.57	.00		.013	.00	.00	PIPE
1035.000	2830.310	7.569	2837.879	364.00	18.54	5.34	2843.22	.00	4.84	.00	5.000	.000	.00	1 .0
84.000	.0039					.0195	1.64	7.57	.00	5.00	.013	.00	.00	PIPE
1119.000	2830.640	8.880	2839.520	364.00	18.54	5.34	2844.86	.00	4.84	.00	5.000	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SKYE VILLAGE ROAD MAINLINE LATERAL (FACILITY P31)

1000.00 .I CH W E . R
1002.43 . .
1004.86 . .
1007.29 . .
1009.71 . .
1012.14 . .
1014.57 . .
1017.00 . .
1019.43 . .
1021.86 . .
1024.29 . .
1026.71 . .
1029.14 . .
1031.57 . .
1034.00 . .

1036.43 . I CH W E . R

1038.86 .

1041.29 .

1043.71 .

1046.14 .

1048.57 .

1051.00 .

1053.43 .

1055.86 .

1058.29 .

1060.71 .

1063.14 .

1065.57 .

1068.00 .

1070.43 .

1072.86 .

1075.29 .

1077.71 .

1080.14 .

1082.57 .

1085.00 .

1087.43 .

1089.86 .

1092.29 .

1094.71 .

1097.14 .

1099.57 .

```
1102.00    .                                                                .
1104.43    .                                                                .
1106.86    .                                                                .
1109.29    .                                                                .
1111.71    .                                                                .
1114.14    .                                                                .
1116.57    .                                                                .
1119.00    .        I                          CH                    W                          E .    R

         2829.130  2830.702  2832.275  2833.847  2835.420  2836.992  2838.565  2840.137  2841.710  2843.282  2844.856
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Street E and Skye Park Drive

Proposed Condition

```
T1 SKYE CANYON PHASE 3A
T2 STREET E & SKYE PARK DRIVE
T3 42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)
SO    1000.0002795.460 54       .013                    2799.000
R     1090.0002797.270 54       .013                                    .0     1
WX    1090.0002797.270 54       .013
R     1105.0002798.800 54       .013                                    .0     1
JX    1105.0002798.800 36 18    .013     3.000          2799.000        .0       90.000
JX    1226.0002811.080 36 24    .013    17.000          2811.080        .0       48.000
JX    1277.0002812.200 36 18    .013     8.000          2812.200       45.0         .000
R     1420.0002815.350 36       .013                                             1
R     1435.0002815.590 36       .013                                        45.0 1
R     1619.0002819.640 36       .013                                        45.0 1
R     1862.0002829.540 36       .013                                         .0 1
R     2135.0002840.650 36       .013                                         .0 1
WE    2135.0002840.650 36       .013
R     2240.0002841.180 42       .013                                         .0 1
R     2297.0002841.470 42       .013
SH    2297.0002841.470 42       .013                    2846.000
CD  18  4  1    .000   1.500     .000  .000  .000   .00
CD  24  4  1    .000   2.000     .000  .000  .000   .00
CD  36  4  1    .000   3.000     .000  .000  .000   .00
CD  42  4  1    .000   3.500     .000  .000  .000   .00
CD  54  4  1    .000   4.500     .000  .000  .000   .00
Q             70.000    .0
```

FILE: PRO.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-20-2017 Time: 4:30:41

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	54	4	1		4.500														

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON PHASE 3A

HEADING LINE NO 2 IS -

STREET E & SKYE PARK DRIVE

HEADING LINE NO 3 IS -

42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2795.460	54	2799.000

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1090.000	2797.270	54	.013	.000	.000	.010	0

ELEMENT NO 3 IS A WALL EXIT *

U/S DATA	STATION	INVERT	SECT
	1090.000	2797.270	54

ELEMENT NO 4 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1105.000	2798.800	54	.013	.000	.000	.010	0

ELEMENT NO 5 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1105.000	2798.800	36	18	0	.013	3.000	.000	2799.000	.000	.000	.000

RADIUS	ANGLE
.000	90.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1226.000	2811.080	36	24	0	.013	17.000	.000	2811.080	.000	.000	.000

RADIUS	ANGLE
144.433	48.000

ELEMENT NO 7 IS A JUNCTION * * * * * *

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1277.000	2812.200	36	18	0	.013	8.000	.000	2812.200	.000	45.000	.000

RADIUS	ANGLE
.000	.000

ELEMENT NO 8 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1420.000	2815.350	36	.013	.000	.000	.001	0

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 9 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1435.000	2815.590	36	.013	.000	.000	45.010	0

ELEMENT NO 10 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1619.000	2819.640	36	.013	.000	.000	45.010	0

ELEMENT NO 11 IS A REACH * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1862.000	2829.540	36	.013	.000	.000	.010	0

ELEMENT NO 12 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2135.000	2840.650	36	.013	.000	.000	.010	0

ELEMENT NO 13 IS A WALL ENTRANCE *

U/S DATA	STATION	INVERT	SECT	FP
	2135.000	2840.650	36	.013

WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS

ELEMENT NO 14 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2240.000	2841.180	42	.013	.000	.000	.010	0

ELEMENT NO 15 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2297.000	2841.470	42	.013	.000	.000	.000	0

ELEMENT NO 16 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	2297.000	2841.470	42	2846.000

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Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-20-2017 Time: 4:30:46

SKYE CANYON PHASE 3A
STREET E & SKYE PARK DRIVE
42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2795.460	1.872	2797.332	98.00	15.65	3.80	2801.14	.00	2.91	4.44	4.500	.000	.00	1 .0
90.000	.0201					.0183	1.64	1.87	2.32	1.84	.013	.00	.00	PIPE
1090.000	2797.270	1.911	2799.181	98.00	15.23	3.60	2802.78	.00	2.91	4.45	4.500	.000	.00	0 .0
WALL	EXIT													
1090.000	2797.270	1.910	2799.180	98.00	15.25	3.61	2802.79	.00	2.91	4.45	4.500	.000	.00	1 .0
.041	.1020					.0176	.00	1.91	2.24	1.20	.013	.00	.00	PIPE
1090.041	2797.274	1.911	2799.185	98.00	15.24	3.61	2802.79	.00	2.91	4.45	4.500	.000	.00	1 .0
3.013	.1020					.0165	.05	1.91	2.23	1.20	.013	.00	.00	PIPE
1093.054	2797.582	1.981	2799.563	98.00	14.53	3.28	2802.84	.00	2.91	4.47	4.500	.000	.00	1 .0
2.566	.1020					.0145	.04	1.98	2.08	1.20	.013	.00	.00	PIPE
1095.620	2797.843	2.055	2799.898	98.00	13.85	2.98	2802.88	.00	2.91	4.48	4.500	.000	.00	1 .0
2.175	.1020					.0128	.03	2.05	1.94	1.20	.013	.00	.00	PIPE
1097.795	2798.065	2.131	2800.197	98.00	13.21	2.71	2802.91	.00	2.91	4.49	4.500	.000	.00	1 .0
1.827	.1020					.0112	.02	2.13	1.81	1.20	.013	.00	.00	PIPE
1099.622	2798.251	2.212	2800.463	98.00	12.59	2.46	2802.93	.00	2.91	4.50	4.500	.000	.00	1 .0
1.515	.1020					.0099	.01	2.21	1.69	1.20	.013	.00	.00	PIPE
1101.137	2798.406	2.296	2800.702	98.00	12.01	2.24	2802.94	.00	2.91	4.50	4.500	.000	.00	1 .0
1.233	.1020					.0087	.01	2.30	1.57	1.20	.013	.00	.00	PIPE

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Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-20-2017 Time: 4:30:46

SKYE CANYON PHASE 3A
STREET E & SKYE PARK DRIVE
42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1102.370	2798.532	2.385	2800.917	98.00	11.45	2.04	2802.95	.00	2.91	4.49	4.500	.000	.00	1 .0
.975	.1020					.0077	.01	2.38	1.46	1.20	.013	.00	.00	PIPE
1103.345	2798.631	2.478	2801.109	98.00	10.92	1.85	2802.96	.00	2.91	4.48	4.500	.000	.00	1 .0
.737	.1020					.0068	.01	2.48	1.36	1.20	.013	.00	.00	PIPE
1104.082	2798.706	2.576	2801.282	98.00	10.41	1.68	2802.96	.00	2.91	4.45	4.500	.000	.00	1 .0
.514	.1020					.0060	.00	2.58	1.26	1.20	.013	.00	.00	PIPE
1104.596	2798.759	2.680	2801.438	98.00	9.92	1.53	2802.97	.00	2.91	4.42	4.500	.000	.00	1 .0
.303	.1020					.0053	.00	2.68	1.17	1.20	.013	.00	.00	PIPE

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
											PRO			
1104.899	2798.790	2.789	2801.579	98.00	9.46	1.39	2802.97	.00	2.91	4.37	4.500	.000	.00	1 .0
.101	.1020					.0047	.00	2.79	1.08	1.20	.013	.00	.00	PIPE
1105.000	2798.800	2.907	2801.707	98.00	9.02	1.26	2802.97	.08	2.91	4.30	4.500	.000	.00	1 .0
JUNCT STR	.0000							2.98	1.00		.013	.00	.00	PIPE
1105.000	2798.800	1.733	2800.533	95.00	22.45	7.83	2808.36	.00	2.87	2.96	3.000	.000	.00	1 .0
JUNCT STR	.1015					.0330	4.00	2.05	3.31		.013	.00	.00	PIPE
1226.000	2811.080	2.306	2813.386	78.00	13.38	2.78	2816.17	.00	2.75	2.53	3.000	.000	.00	1 .0
JUNCT STR	.0220					.0189	.96	2.31	1.55		.013	.00	.00	PIPE
1277.000	2812.200	1.855	2814.055	70.00	15.25	3.61	2817.67	.00	2.66	2.91	3.000	.000	.00	1 .0
143.000	.0220					.0229	3.27	1.86	2.14	1.86	.013	.00	.00	PIPE

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:10-20-2017 Time: 4:30:46

SKYE CANYON PHASE 3A
STREET E & SKYE PARK DRIVE
42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1420.000	2815.350	1.822	2817.172	70.00	15.58	3.77	2820.94	.00	2.66	2.93	3.000	.000	.00	1 .0
15.000	.0160					.0241	.36	1.82	2.22	2.09	.013	.00	.00	PIPE
1435.000	2815.590	1.792	2817.382	70.00	15.90	3.92	2821.31	.00	2.66	2.94	3.000	.000	.00	1 .0
73.901	.0220					.0264	1.95	1.79	2.29	1.86	.013	.00	.00	PIPE
1508.901	2817.217	1.722	2818.939	70.00	16.67	4.32	2823.25	.00	2.66	2.97	3.000	.000	.00	1 .0
46.751	.0220					.0298	1.39	1.72	2.47	1.86	.013	.00	.00	PIPE
1555.653	2818.246	1.657	2819.902	70.00	17.48	4.75	2824.65	.00	2.66	2.98	3.000	.000	.00	1 .0
34.980	.0220					.0338	1.18	1.66	2.66	1.86	.013	.00	.00	PIPE
1590.633	2819.016	1.594	2820.610	70.00	18.34	5.22	2825.83	.00	2.66	2.99	3.000	.000	.00	1 .0
28.367	.0220					.0383	1.09	1.59	2.86	1.86	.013	.00	.00	PIPE
1619.000	2819.640	1.535	2821.175	70.00	19.23	5.74	2826.92	.00	2.66	3.00	3.000	.000	.00	1 .0
52.375	.0407					.0407	2.13	1.54	3.08	1.54	.013	.00	.00	PIPE
1671.375	2821.774	1.535	2823.309	70.00	19.23	5.74	2829.05	.00	2.66	3.00	3.000	.000	.00	1 .0
190.625	.0407					.0399	7.60	1.54	3.08	1.54	.013	.00	.00	PIPE
1862.000	2829.540	1.555	2831.095	70.00	18.93	5.56	2836.66	.00	2.66	3.00	3.000	.000	.00	1 .0
47.556	.0407					.0385	1.83	1.55	3.00	1.54	.013	.00	.00	PIPE
1909.556	2831.475	1.568	2833.043	70.00	18.73	5.45	2838.49	.00	2.66	3.00	3.000	.000	.00	1 .0
87.637	.0407					.0357	3.13	1.57	2.96	1.54	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING Date:10-20-2017 Time: 4:30:46

SKYE CANYON PHASE 3A
STREET E & SKYE PARK DRIVE
42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)

	Invert	Depth	Water	Q	Vel	Vel	Energy	Super	Critical	Flow Top	Height/	Base Wt		No Wth

Station	Elev	(FT)	Elev	(CFS)	(FPS)	Head	Grd.El.	Elev	Depth	PRO Width	Dia.-FT	or I.D.	ZL	Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1997.193	2835.042	1.629	2836.670	70.00	17.86	4.95	2841.62	.00	2.66	2.99	3.000	.000	.00	1 .0
42.149	.0407					.0315	1.33	1.63	2.75	1.54	.013	.00	.00	PIPE
2039.342	2836.757	1.693	2838.450	70.00	17.03	4.50	2842.95	.00	2.66	2.98	3.000	.000	.00	1 .0
26.599	.0407					.0279	.74	1.69	2.55	1.54	.013	.00	.00	PIPE
2065.941	2837.840	1.760	2839.600	70.00	16.24	4.09	2843.69	.00	2.66	2.95	3.000	.000	.00	1 .0
18.712	.0407					.0246	.46	1.76	2.37	1.54	.013	.00	.00	PIPE
2084.653	2838.601	1.832	2840.433	70.00	15.48	3.72	2844.15	.00	2.66	2.93	3.000	.000	.00	1 .0
13.891	.0407					.0218	.30	1.83	2.19	1.54	.013	.00	.00	PIPE
2098.544	2839.166	1.908	2841.074	70.00	14.76	3.38	2844.46	.00	2.66	2.89	3.000	.000	.00	1 .0
10.623	.0407					.0194	.21	1.91	2.03	1.54	.013	.00	.00	PIPE
2109.167	2839.599	1.989	2841.587	70.00	14.07	3.08	2844.66	.00	2.66	2.84	3.000	.000	.00	1 .0
8.215	.0407					.0172	.14	1.99	1.87	1.54	.013	.00	.00	PIPE
2117.383	2839.933	2.075	2842.008	70.00	13.42	2.80	2844.80	.00	2.66	2.77	3.000	.000	.00	1 .0
6.344	.0407					.0153	.10	2.08	1.72	1.54	.013	.00	.00	PIPE
2123.726	2840.191	2.169	2842.360	70.00	12.79	2.54	2844.90	.00	2.66	2.69	3.000	.000	.00	1 .0
4.803	.0407					.0137	.07	2.17	1.58	1.54	.013	.00	.00	PIPE
2128.529	2840.386	2.270	2842.656	70.00	12.20	2.31	2844.97	.00	2.66	2.57	3.000	.000	.00	1 .0
3.461	.0407					.0123	.04	2.27	1.44	1.54	.013	.00	.00	PIPE

SKYE CANYON PHASE 3A
STREET E & SKYE PARK DRIVE
42" RCP --> 36" RCP --> EX. 54" RCP (PROPOSED CONDITION)

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2131.990	2840.527	2.382	2842.909	70.00	11.63	2.10	2845.01	.00	2.66	2.43	3.000	.000	.00	1 .0
2.193	.0407					.0112	.02	2.38	1.30	1.54	.013	.00	.00	PIPE
2134.183	2840.617	2.508	2843.125	70.00	11.09	1.91	2845.03	.00	2.66	2.22	3.000	.000	.00	1 .0
.817	.0407					.0102	.01	2.51	1.16	1.54	.013	.00	.00	PIPE
WALL ENTRANCE														
2135.000	2840.650	2.659	2843.309	70.00	8.93	1.24	2844.55	.00	2.62	2.99	3.500	.000	.00	1 .0
58.547	.0050					.0054	.31	2.66	.97	2.81	.013	.00	.00	PIPE
2193.547	2840.946	2.791	2843.736	70.00	8.51	1.12	2844.86	.00	2.62	2.81	3.500	.000	.00	1 .0
46.453	.0050					.0051	.24	2.79	.88	2.81	.013	.00	.00	PIPE
2240.000	2841.180	2.798	2843.978	70.00	8.49	1.12	2845.10	.00	2.62	2.80	3.500	.000	.00	1 .0
56.385	.0051					.0051	.29	2.80	.87	2.79	.013	.00	.00	PIPE
2296.385	2841.467	2.794	2844.261	70.00	8.50	1.12	2845.38	.00	2.62	2.81	3.500	.000	.00	1 .0

| | | |

PRO

1289.92	.	I W H	. JX
1305.18	.	I W H E	. JX
1320.44	.	I WCH E	. JX
1335.69	.	I WCH E	. R
1350.95	.		.
1366.21	.		.
1381.47	.		.
1396.73	.		.
1411.99	.		.
1427.25	.	I W H E	. R
1442.51	.	I W CH E	. R
1457.76	.		.
1473.02	.		.
1488.28	.		.
1503.54	.		.
1518.80	.	I WCH E	. R
1534.06	.		.
1549.32	.		.
1564.58	.	I W CH E	. R
1579.84	.		.
1595.09	.	I W CH E	. R
1610.35	.		.
1625.61	.	I W CH E	. R
1640.87	.		.
1656.13	.		.
1671.39	.	I W H E	. R

1686.65 .
1701.91 .
1717.16 .
1732.42 .
1747.68 .
1762.94 .
1778.20 .
1793.46 .
1808.72 .
1823.98 .
1839.24 .
1854.49 .
1869.75 . I W CH E . R
1885.01 .
1900.27 .
1915.53 . I W CH E . R
1930.79 .
1946.05 .
1961.31 .
1976.56 .
1991.82 .
2007.08 . I W CH E . R
2022.34 .
2037.60 .
2052.86 . I W H E . R

PRO

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2068.12   .                                                    I  W H    E   .   R
2083.38   .                                                                .
2098.64   .                                                   I  WCH    E   .   R
2113.89   .                                                    I  WCH    E  .   R
2129.15   .                                                     I  WCH   E  .   R
2144.41   .                                                      I  WCH  E  .   R
2159.67   .                                                      I  WCH   E .   R
2174.93   .                                                      I   WH   E .   R
2190.19   .                                                       I  WH  E .   R
2205.45   .                                                       I  WH  E .   R
2220.71   .                                                       I  W HE  .   R
2235.96   .                                                        I  W H  .   R
2251.22   .                                                        I  CWHE .   R
2266.48   .                                                                .
2281.74   .                                                                .
2297.00   .                                                        I  W H .   R

        2795.460  2800.453  2805.445  2810.438  2815.431  2820.423  2825.416  2830.409  2835.401  2840.394  2845.386
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N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Street E and Skye Park Drive

Proposed Condition-Laterals

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T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 STREET E LATERAL (FACILITY P34)
SO   1000.0002812.200 18      .015                2814.060
R    1023.0002813.810 18      .015
SH   1023.0002813.810 18      .015
CD    6  3   0    .000   6.000    6.000  .000  .000   .00
CD    8  3   0    .000   8.000    5.000  .000  .000   .00
CD   18  4   1    .000   1.500     .000  .000  .000   .00
CD   24  4   1    .000   2.000     .000  .000  .000   .00
CD   30  4   1    .000   2.500     .000  .000  .000   .00
CD   36  4   1    .000   3.000     .000  .000  .000   .00
CD   42  4   1    .000   3.500     .000  .000  .000   .00
CD   48  4   1    .000   4.000     .000  .000  .000   .00
CD   54  4   1    .000   5.000     .000  .000  .000   .00
CD   60  4   1    .000   6.000     .000  .000  .000   .00
CD   72  4   1    .000   6.000     .000  .000  .000   .00
CD    1  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    2  6   0     0.0     0.0      0.0    0.0    0.0   0.0
CD    3  6   0     0.0     0.0      0.0    0.0    0.0   0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS        9.000 7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS        6.000 7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS        2.000 7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS         .000  .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS        7.700 5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS        5.000 6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS         .750 6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS         .000  .010
PTS  321  0.000 0.000 10.000 0.000 10.000 0.010 10.000  6.500  9.490  7.870
PTS        9.000 8.280  8.500  8.500  8.000  8.630  7.520  8.740  7.000  8.840
PTS        6.000 8.960  5.000  9.000  4.000  8.960  3.000  8.840  2.480  8.740
PTS        2.000 8.630  1.500  8.500  1.000  8.280  0.510  7.870  0.000  6.500
PTS        0.000 0.010
Q            8.000   .0
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FILE: P34.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-20-2017 Time: 4:40:46

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	8.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-20-2017 Time: 4:40:46

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	10.000	.000	10.000	.010	10.000	6.500	9.490	7.870	9.000	8.280	8.500	8.500
PTS			8.000	8.630	7.520	8.740	7.000	8.840	6.000	8.960	5.000	9.000	4.000	8.960	3.000	8.840
PTS			2.480	8.740	2.000	8.630	1.500	8.500	1.000	8.280	.510	7.870	.000	6.500	.000	.010

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

STREET E LATERAL (FACILITY P34)

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2812.200	18	2814.060

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1023.000	2813.810	18	.015	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1023.000	2813.810	18	.000

♀ FILE: P34.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 1
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-20-2017 Time: 4:40:51
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
STREET E LATERAL (FACILITY P34)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2812.200	1.860	2814.060	8.00	4.53	.32	2814.38	.00	1.10	.00	1.500	.000	.00	1 .0
2.333	.0700					.0077	.02	1.86	.00	.60	.015	.00	.00	PIPE
1002.333	2812.363	1.713	2814.076	8.00	4.53	.32	2814.39	.00	1.10	.00	1.500	.000	.00	1 .0
HYDRAULIC JUMP														
1002.333	2812.363	.658	2813.021	8.00	10.73	1.79	2814.81	.00	1.10	1.49	1.500	.000	.00	1 .0
3.163	.0700					.0460	.15	.66	2.67	.60	.015	.00	.00	PIPE
1005.495	2812.585	.681	2813.266	8.00	10.26	1.63	2814.90	.00	1.10	1.49	1.500	.000	.00	1 .0
4.184	.0700					.0406	.17	.68	2.50	.60	.015	.00	.00	PIPE
1009.679	2812.878	.706	2813.584	8.00	9.78	1.49	2815.07	.00	1.10	1.50	1.500	.000	.00	1 .0
3.157	.0700					.0357	.11	.71	2.33	.60	.015	.00	.00	PIPE
1012.836	2813.099	.733	2813.832	8.00	9.32	1.35	2815.18	.00	1.10	1.50	1.500	.000	.00	1 .0
2.458	.0700					.0314	.08	.73	2.17	.60	.015	.00	.00	PIPE
1015.295	2813.271	.761	2814.031	8.00	8.89	1.23	2815.26	.00	1.10	1.50	1.500	.000	.00	1 .0
1.944	.0700					.0277	.05	.76	2.02	.60	.015	.00	.00	PIPE
1017.239	2813.407	.790	2814.197	8.00	8.48	1.12	2815.31	.00	1.10	1.50	1.500	.000	.00	1 .0
1.549	.0700					.0244	.04	.79	1.88	.60	.015	.00	.00	PIPE
1018.788	2813.515	.821	2814.336	8.00	8.08	1.01	2815.35	.00	1.10	1.49	1.500	.000	.00	1 .0
1.234	.0700					.0215	.03	.82	1.75	.60	.015	.00	.00	PIPE

♀ FILE: P34.WSW W S P G W - CIVILDESIGN Version 14.07 PAGE 2
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING Date:10-20-2017 Time: 4:40:51
SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
STREET E LATERAL (FACILITY P34)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1020.022	2813.602	.853	2814.455	8.00	7.71	.92	2815.38	.00	1.10	1.49	1.500	.000	.00	1 .0
.974	.0700					.0190	.02	.85	1.62	.60	.015	.00	.00	PIPE
1020.996	2813.670	.888	2814.557	8.00	7.35	.84	2815.40	.00	1.10	1.47	1.500	.000	.00	1 .0
.753	.0700					.0168	.01	.89	1.51	.60	.015	.00	.00	PIPE
1021.748	2813.722	.924	2814.646	8.00	7.01	.76	2815.41	.00	1.10	1.46	1.500	.000	.00	1 .0
.559	.0700					.0149	.01	.92	1.40	.60	.015	.00	.00	PIPE
1022.307	2813.761	.962	2814.724	8.00	6.68	.69	2815.42	.00	1.10	1.44	1.500	.000	.00	1 .0
.387	.0700					.0132	.01	.96	1.29	.60	.015	.00	.00	PIPE
1022.694	2813.789	1.003	2814.792	8.00	6.37	.63	2815.42	.00	1.10	1.41	1.500	.000	.00	1 .0
.229	.0700					.0118	.00	1.00	1.19	.60	.015	.00	.00	PIPE
1022.924	2813.805	1.047	2814.852	8.00	6.07	.57	2815.42	.00	1.10	1.38	1.500	.000	.00	1 .0

									P34					
.076	.0700					.0105	.00	1.05	1.09	.60	.015	.00	.00	PIPE
1023.000	2813.810	1.096	2814.906	8.00	5.78	.52	2815.43	.00	1.10	1.33	1.500	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

STREET E LATERAL (FACILITY P34)

| | | | | | | | | |

```
1009.86 .                I                W          C          H                E          .  R
1010.33 .                                                                                  .
1010.80 .                                                                                  .
1011.27 .                                                                                  .
1011.73 .                                                                                  .
1012.20 .                                                                                  .
1012.67 .                                                                                  .
1013.14 .           I                W          C          H                E          .  R
1013.61 .                                                                                  .
1014.08 .                                                                                  .
1014.55 .                                                                                  .
1015.02 .                                                                                  .
1015.49 .      I                W          C          H                E          .  R
1015.96 .                                                                                  .
1016.43 .                                                                                  .
1016.90 .                                                                                  .
1017.37 .      I                W          C          H                E          .  R
1017.84 .                                                                                  .
1018.31 .                                                                                  .
1018.78 .                                                                                  .
1019.24 .      I                W          C          H                E          .  R
1019.71 .                                                                                  .
1020.18 .      I                W          C          H                E          .  R
1020.65 .                                                                                  .
1021.12 .      I                W          C          H                E          .  R
1021.59 .                                                                                  .
1022.06 .      I                W          C          H                E          .  R
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P34

1022.53 . I W C H E . R

1023.00 . I W C H E . R

2812.200 2812.522 2812.845 2813.167 2813.490 2813.813 2814.135 2814.458 2814.780 2815.103 2815.425

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

```
T1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
T2 BY OLYMPIA COMPANIES
T3 STREET E LATERAL (FACILITY P36)
SO    1000.0002812.080 24       .015                2813.390
R     1027.0002812.620 24       .015
SH    1027.0002812.620 24       .015
CD    6  3   0     .000   6.000    6.000  .000  .000   .00
CD    8  3   0     .000   8.000    5.000  .000  .000   .00
CD   18  4   1     .000   1.500     .000  .000  .000   .00
CD   24  4   1     .000   2.000     .000  .000  .000   .00
CD   30  4   1     .000   2.500     .000  .000  .000   .00
CD   36  4   1     .000   3.000     .000  .000  .000   .00
CD   42  4   1     .000   3.500     .000  .000  .000   .00
CD   48  4   1     .000   4.000     .000  .000  .000   .00
CD   54  4   1     .000   4.500     .000  .000  .000   .00
CD   60  4   1     .000   5.000     .000  .000  .000   .00
CD   72  4   1     .000   6.000     .000  .000  .000   .00
CD    1  6   0      0.0     0.0      0.0     0.0    0.0    0.0
CD    2  6   0      0.0     0.0      0.0     0.0    0.0    0.0
CD    3  6   0      0.0     0.0      0.0     0.0    0.0    0.0
PTS  121   .000   .000 10.000   .000 10.000   .010 10.000  5.500  9.490  6.870
PTS       9.000  7.280  8.500  7.500  8.000  7.630  7.520  7.740  7.000  7.840
PTS       6.000  7.960  5.000  8.000  4.000  7.960  3.000  7.840  2.480  7.740
PTS       2.000  7.630  1.500  7.500  1.000  7.280   .510  6.870   .000  5.500
PTS        .000   .010
PTS  221   .000   .000  8.000   .000  8.000   .010  8.000  5.000  7.900  5.570
PTS       7.700  5.950  7.500  6.190  7.250  6.390  7.000  6.530  6.000  6.800
PTS       5.000  6.950  4.000  7.000  3.000  6.950  2.000  6.800  1.000  6.530
PTS        .750  6.390   .500  6.190   .300  5.950   .100  5.570   .000  5.000
PTS        .000   .010
PTS  321  0.000  0.000 10.000  0.000 10.000  0.010 10.000  6.500  9.490  7.870
PTS       9.000  8.280  8.500  8.500  8.000  8.630  7.520  8.740  7.000  8.840
PTS       6.000  8.960  5.000  9.000  4.000  8.960  3.000  8.840  2.480  8.740
PTS       2.000  8.630  1.500  8.500  1.000  8.280  0.510  7.870  0.000  6.500
PTS       0.000  0.010
Q           17.000   .0
```

FILE: P36.WSW W S P G W - EDIT LISTING - Version 14.07 Date:10-20-2017 Time: 4:45:33

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	6	3	0	.000	6.000	6.000	.000	.000	.00										
CD	8	3	0	.000	8.000	5.000	.000	.000	.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														
CD	1	6	0	.000															
CD	2	6	0	.000															
CD	3	6	0	.000															

FILE: W S P G W - EDIT LISTING - Version 14.07 Date:10-20-2017 Time: 4:45:33

WATER SURFACE PROFILE - CROSS SECTION POINT LISTING PAGE 2

CARD CODE	SECT NO	NO OF POINTS	X(1) , Y(1) X(8) , Y(8)	X(2) , Y(2) X(9) , Y(9)	X(3) , Y(3) X(10) ,Y(10)	X(4) , Y(4) X(11) ,Y(11)	X(5) , Y(5) X(N) , Y(N)	X(6) , Y(6) X(N+1),Y(N+1)	X(7) , Y(7) X(35) ,Y(35)					
PTS	1	21	.000	.000	10.000	.000	10.000	.010	10.000	5.500	9.490	6.870	9.000	7.280	8.500	7.500
PTS			8.000	7.630	7.520	7.740	7.000	7.840	6.000	7.960	5.000	8.000	4.000	7.960	3.000	7.840
PTS			2.480	7.740	2.000	7.630	1.500	7.500	1.000	7.280	.510	6.870	.000	5.500	.000	.010
PTS	2	21	.000	.000	8.000	.000	8.000	.010	8.000	5.000	7.900	5.570	7.700	5.950	7.500	6.190
PTS			7.250	6.390	7.000	6.530	6.000	6.800	5.000	6.950	4.000	7.000	3.000	6.950	2.000	6.800
PTS			1.000	6.530	.750	6.390	.500	6.190	.300	5.950	.100	5.570	.000	5.000	.000	.010
PTS	3	21	.000	.000	10.000	.000	10.000	.010	10.000	6.500	9.490	7.870	9.000	8.280	8.500	8.500
PTS			8.000	8.630	7.520	8.740	7.000	8.840	6.000	8.960	5.000	9.000	4.000	8.960	3.000	8.840
PTS			2.480	8.740	2.000	8.630	1.500	8.500	1.000	8.280	.510	7.870	.000	6.500	.000	.010

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

STREET E LATERAL (FACILITY P36)

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET * * *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2812.080	24	2813.390

ELEMENT NO 2 IS A REACH * * *

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1027.000	2812.620	24	.015	.000	.000	.000	0

ELEMENT NO 3 IS A SYSTEM HEADWORKS *

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1027.000	2812.620	24	.000

♀ FILE: P36.WSW

W S P G W - CIVILDESIGN Version 14.07
Program Package Serial Number: 1704
WATER SURFACE PROFILE LISTING

Date:10-20-2017 Time: 4:45:39

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
STREET E LATERAL (FACILITY P36)

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2812.080	1.200	2813.280	17.00	8.64	1.16	2814.44	.00	1.49	1.96	2.000	.000	.00	1 .0
.538	.0200					.0166	.01	1.20	1.52	1.13	.015	.00	.00	PIPE
1000.538	2812.091	1.201	2813.292	17.00	8.63	1.16	2814.45	.00	1.49	1.96	2.000	.000	.00	1 .0
12.768	.0200					.0156	.20	1.20	1.52	1.13	.015	.00	.00	PIPE
1013.306	2812.346	1.251	2813.597	17.00	8.22	1.05	2814.65	.00	1.49	1.94	2.000	.000	.00	1 .0
7.008	.0200					.0139	.10	1.25	1.40	1.13	.015	.00	.00	PIPE
1020.315	2812.486	1.303	2813.790	17.00	7.84	.95	2814.74	.00	1.49	1.91	2.000	.000	.00	1 .0
3.996	.0200					.0123	.05	1.30	1.30	1.13	.015	.00	.00	PIPE
1024.310	2812.566	1.359	2813.926	17.00	7.48	.87	2814.79	.00	1.49	1.87	2.000	.000	.00	1 .0
2.060	.0200					.0110	.02	1.36	1.19	1.13	.015	.00	.00	PIPE
1026.370	2812.607	1.420	2814.027	17.00	7.13	.79	2814.82	.00	1.49	1.82	2.000	.000	.00	1 .0
.630	.0200					.0098	.01	1.42	1.10	1.13	.015	.00	.00	PIPE
1027.000	2812.620	1.486	2814.106	17.00	6.79	.72	2814.82	.00	1.49	1.75	2.000	.000	.00	1 .0

♀♀

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

STREET E LATERAL (FACILITY P36)

1000.00	.I	W	C	H	E	.	R
1000.55	.I	W	C	H	E	.	R
1001.10	.					.	
1001.65	.					.	
1002.20	.					.	
1002.76	.					.	
1003.31	.					.	
1003.86	.					.	

1004.41 .
1004.96 .
1005.51 .
1006.06 .
1006.61 .
1007.16 .
1007.71 .
1008.27 .
1008.82 .
1009.37 .
1009.92 .
1010.47 .
1011.02 .
1011.57 .
1012.12 .
1012.67 .
1013.22 .
1013.78 . I W C H E . R
1014.33 .
1014.88 .
1015.43 .
1015.98 .
1016.53 .
1017.08 .
1017.63 .

```
1018.18  .                                                                                                                .
1018.73  .                                                                                                                .
1019.29  .                                                                                                                .
1019.84  .                                                                                                                .
1020.39  .              I                                                W     C                 H         E  .    R
1020.94  .                                                                                                                .
1021.49  .                                                                                                                .
1022.04  .                                                                                                                .
1022.59  .                                                                                                                .
1023.14  .                                                                                                                .
1023.69  .                                                                                                                .
1024.24  .                                                                                                                .
1024.80  .                 I                                                   W   C                 H         E  .    R
1025.35  .                                                                                                                .
1025.90  .                                                                                                                .
1026.45  .                   I                                                    W C                  H       E .    R
1027.00  .                   I                                                     W                   H        E.    R
         2812.080  2812.354  2812.628  2812.903  2813.177  2813.451  2813.725  2813.999  2814.273  2814.548  2814.822
```

N O T E S
1. GLOSSARY
   I = INVERT ELEVATION
   C = CRITICAL DEPTH
   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL
   E = ENERGY GRADE LINE
   X = CURVES CROSSING OVER
   B = BRIDGE ENTRANCE OR EXIT
   Y = WALL ENTRANCE OR EXIT
2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

Smith's Storm Drain Evaluation

Proposed Condition

```
IT1 SKYE CANYON INFRASTRUCTURE - PHASE 3A
IT2 BY OLYMPIA COMPANIES
IT3 SMITH'S STORM DRAIN ASSESSMENT
SO    1000.0002749.890 72       .013                2753.00
R     1222.8002762.580 72       .013                                          11.00 1
JX    1222.8002762.580 72 24    .013   25.000          2863.280          45.0
R     1569.9002770.040 72       .013                                           9.00 1
JX    1569.9002770.040 72 18    .013   19.000          2770.240          90.0
R     1856.0002775.050 72       .013                                           1
JX    1856.0002775.050 60 24 18.013    11.5      8.0  2779.05 2779.55  45.0 45.0
R     2225.2002787.500 60       .013                                           1
TS    2230.2002787.650 72       .013
R     2333.2002789.720 72       .013                                          15.00 1
JX    2333.2002789.720 72       .013    5.000         2793.220          90.0
R     2480.2002792.660 72       .013
SH    2480.2002792.660 72       .013
CD     1  2   0    .000   4.000   10.000  .000  .000   .00
CD    18  4   1    .000   1.500     .000  .000  .000   .00
CD    24  4   1    .000   2.000     .000  .000  .000   .00
CD    30  4   1    .000   2.500     .000  .000  .000   .00
CD    36  4   1    .000   3.000     .000  .000  .000   .00
CD    42  4   1    .000   3.500     .000  .000  .000   .00
CD    48  4   1    .000   4.000     .000  .000  .000   .00
CD    54  4   1    .000   4.500     .000  .000  .000   .00
CD    60  4   1    .000   5.000     .000  .000  .000   .00
CD    72  4   1    .000   6.000     .000  .000  .000   .00
Q             458.000   .0
```

FILE: SMTH.WSW W S P G W - EDIT LISTING - Version 14.07 Date:11- 1-2017 Time: 3:57: 6

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING PAGE 1

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV DROP	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CD	1	2	0	.000	4.000	10.000			.00										
CD	18	4	1		1.500														
CD	24	4	1		2.000														
CD	30	4	1		2.500														
CD	36	4	1		3.000														
CD	42	4	1		3.500														
CD	48	4	1		4.000														
CD	54	4	1		4.500														
CD	60	4	1		5.000														
CD	72	4	1		6.000														

W S P G W PAGE NO 1

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

SKYE CANYON INFRASTRUCTURE - PHASE 3A

HEADING LINE NO 2 IS -

BY OLYMPIA COMPANIES

HEADING LINE NO 3 IS -

SMITH'S STORM DRAIN ASSESSMENT

W S P G W PAGE NO 2

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 1 IS A SYSTEM OUTLET

U/S DATA	STATION	INVERT	SECT	W S ELEV
	1000.000	2749.890	72	2753.000

ELEMENT NO 2 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1222.800	2762.580	72	.013	.000	.000	11.000	1

ELEMENT NO 3 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1222.800	2762.580	72	24	0	.013	25.000	.000	2863.280	.000	45.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 4 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1569.900	2770.040	72	.013	.000	.000	9.000	1

ELEMENT NO 5 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1569.900	2770.040	72	18	0	.013	19.000	.000	2770.240	.000	90.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 6 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	1856.000	2775.050	72	.013	.000	.000	.000	1

ELEMENT NO 7 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	1856.000	2775.050	60	24	18	.013	11.500	8.000	2779.050	2779.550	45.000	45.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

W S P G W PAGE NO 3

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO 8 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2225.200	2787.500	60	.013	.000	.000	.000	1

ELEMENT NO 9 IS A TRANSITION

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE
	2230.200	2787.650	72	.013	.000	.000

ELEMENT NO 10 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2333.200	2789.720	72	.013	.000	.000	15.000	1

ELEMENT NO 11 IS A JUNCTION

U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
	2333.200	2789.720	72	0	0	.013	5.000	.000	2793.220	.000	90.000	.000

RADIUS	ANGLE
.000	.000

THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING

ELEMENT NO 12 IS A REACH

U/S DATA	STATION	INVERT	SECT	N	RADIUS	ANGLE	ANG PT	MAN H
	2480.200	2792.660	72	.013	.000	.000	.000	0

ELEMENT NO 13 IS A SYSTEM HEADWORKS

U/S DATA	STATION	INVERT	SECT	W S ELEV
	2480.200	2792.660	72	.000

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SMITH'S STORM DRAIN ASSESSMENT

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	2749.890	3.465	2753.355	526.50	31.12	15.04	2768.39	.00	5.73	5.93	6.000	.000	.00	1 .0
20.937	.0570					.0378	.79	3.47	3.25	3.07	.013	.00	.00	PIPE
1020.937	2751.082	3.508	2754.591	526.50	30.66	14.60	2769.19	.00	5.73	5.91	6.000	.000	.00	1 .0
53.812	.0570					.0349	1.88	3.51	3.17	3.07	.013	.00	.00	PIPE
1074.749	2754.147	3.651	2757.798	526.50	29.23	13.27	2771.07	.00	5.73	5.86	6.000	.000	.00	1 .0
40.569	.0570					.0309	1.26	3.65	2.94	3.07	.013	.00	.00	PIPE
1115.318	2756.458	3.802	2760.260	526.50	27.87	12.06	2772.32	.00	5.73	5.78	6.000	.000	.00	1 .0
31.715	.0570					.0275	.87	3.80	2.72	3.07	.013	.00	.00	PIPE
1147.032	2758.264	3.963	2762.227	526.50	26.57	10.97	2773.19	.00	5.73	5.68	6.000	.000	.00	1 .0
25.335	.0570					.0244	.62	3.96	2.51	3.07	.013	.00	.00	PIPE
1172.368	2759.708	4.135	2763.842	526.50	25.34	9.97	2773.81	.00	5.73	5.55	6.000	.000	.00	1 .0
20.478	.0570					.0217	.45	4.13	2.31	3.07	.013	.00	.00	PIPE
1192.845	2760.874	4.320	2765.194	526.50	24.16	9.06	2774.26	.00	5.73	5.39	6.000	.000	.00	1 .0
16.600	.0570					.0195	.32	4.32	2.12	3.07	.013	.00	.00	PIPE
1209.445	2761.819	4.521	2766.341	526.50	23.03	8.24	2774.58	.00	5.73	5.17	6.000	.000	.00	1 .0
13.355	.0570					.0175	.23	4.52	1.93	3.07	.013	.00	.00	PIPE
1222.800	2762.580	4.743	2767.323	526.50	21.96	7.49	2774.81	.00	5.73	4.88	6.000	.000	.00	1 .0
JUNCT STR	.0000					.0184	.00	4.74	1.75		.013	.00	.00	PIPE

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SMITH'S STORM DRAIN ASSESSMENT

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1222.800	2762.580	4.175	2766.755	501.50	23.88	8.85	2775.61	.00	5.67	5.52	6.000	.000	.00	1 .0
162.344	.0215					.0198	3.22	4.18	2.16	4.09	.013	.00	.00	PIPE
1385.144	2766.069	4.252	2770.321	501.50	23.41	8.51	2778.83	.00	5.67	5.45	6.000	.000	.00	1 .0
184.756	.0215					.0184	3.39	4.25	2.08	4.09	.013	.00	.00	PIPE
1569.900	2770.040	4.447	2774.487	501.50	22.32	7.74	2782.22	.00	5.67	5.26	6.000	.000	.00	1 .0
JUNCT STR	.0000					.0189	.00	4.45	1.90		.013	.00	.00	PIPE
1569.900	2770.040	4.050	2774.090	482.50	23.76	8.77	2782.86	.00	5.63	5.62	6.000	.000	.00	1 .0
169.077	.0175					.0217	3.67	4.05	2.20	4.29	.013	.00	.00	PIPE

1738.977	2773.001	3.884	2776.885	482.50	24.92	9.64	2786.53	.00	5.63	5.73	6.000	.000	.00	1 .0
117.023	.0175					.0244	2.86	3.88	2.39	4.29	.013	.00	.00	PIPE
1856.000	2775.050	3.728	2778.778	482.50	26.14	10.61	2789.39	.00	5.63	5.82	6.000	.000	.00	1 .0
JUNCT STR	.0000					.0286	.00	3.73	2.59		.013	.00	.00	PIPE
1856.000	2775.050	4.120	2779.170	463.00	26.75	11.11	2790.28	.00	4.94	3.81	5.000	.000	.00	1 .0
148.297	.0337					.0305	4.52	4.12	2.21	3.96	.013	.00	.00	PIPE
2004.297	2780.051	4.255	2784.305	463.00	26.00	10.50	2794.81	.00	4.94	3.56	5.000	.000	.00	1 .0
137.751	.0337					.0287	3.96	4.25	2.05	3.96	.013	.00	.00	PIPE
2142.048	2784.696	4.520	2789.216	463.00	24.79	9.55	2798.76	.00	4.94	2.95	5.000	.000	.00	1 .0
83.152	.0337					.0283	2.35	4.52	1.74	3.96	.013	.00	.00	PIPE

Program Package Serial Number: 1704

WATER SURFACE PROFILE LISTING Date:11- 1-2017 Time: 3:57:12

SKYE CANYON INFRASTRUCTURE - PHASE 3A
BY OLYMPIA COMPANIES
SMITH'S STORM DRAIN ASSESSMENT

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2225.200	2787.500	4.935	2792.435	463.00	23.64	8.68	2801.11	.00	4.94	1.13	5.000	.000	.00	1 .0
TRANS STR	.0300					.0204	.10	4.94	1.00		.013	.00	.00	PIPE
2230.200	2787.650	9.852	2797.502	463.00	16.38	4.16	2801.67	.00	5.57	.00	6.000	.000	.00	1 .0
103.000	.0201					.0120	1.23	9.85	.00	3.95	.013	.00	.00	PIPE
2333.200	2789.720	9.427	2799.147	463.00	16.38	4.16	2803.31	.00	5.57	.00	6.000	.000	.00	1 .0
JUNCT STR	.0000					.0118	.00	9.43	.00		.013	.00	.00	PIPE
2333.200	2789.720	9.606	2799.326	458.00	16.20	4.07	2803.40	.00	5.56	.00	6.000	.000	.00	1 .0
147.000	.0200					.0117	1.72	9.61	.00	3.93	.013	.00	.00	PIPE
2480.200	2792.660	8.385	2801.045	458.00	16.20	4.07	2805.12	.00	5.56	.00	6.000	.000	.00	1 .0

SKYE CANYON INFRASTRUCTURE - PHASE 3A

BY OLYMPIA COMPANIES

SMITH'S STORM DRAIN ASSESSMENT

1000.00 .I W H E . R

1030.21 . I W CH E . R

1060.42 . .

1090.62 . I W H E . R

1120.83	.	I W H E	. R
1151.04	.	I W CH E	. R
1181.25	.	I W H E	. R
1211.46	.	I W H E	. R
1241.67	.	I W CH E	. R
1271.87	.	I W H E	. JX
1302.08	.	I W H E	. R
1332.29	.		.
1362.50	.		.
1392.71	.	I W CH E	. R
1422.91	.		.
1453.12	.		.
1483.33	.		.
1513.54	.		.
1543.75	.		.
1573.96	.	I W CH E	. JX
1604.16	.	I W CH E	. R
1634.37	.		.
1664.58	.		.
1694.79	.		.
1725.00	.		.
1755.20	.	I W H E	. R
1785.41	.		.
1815.62	.		.
1845.83	.		.

SMTH

1876.04	.			I	W	CH		E				.	JX
1906.24	.			I	WH			E				.	R
1936.45	.											.	
1966.66	.											.	
1996.87	.											.	
2027.08	.				I		WH			E		.	R
2057.29	.											.	
2087.49	.											.	
2117.70	.											.	
2147.91	.						I		WH		E	.	R
2178.12	.											.	
2208.33	.											.	
2238.53	.							I		H	E	.	TX
2268.74	.							I		CH	W E	.	R
2298.95	.											.	
2329.16	.											.	
2359.37	.								I	H	W E	.	JX
2389.58	.								I	H	W E	.	R
2419.78	.											.	
2449.99	.											.	
2480.20	.									I	CH W	E.	R

2749.890 2755.413 2760.936 2766.459 2771.982 2777.505 2783.028 2788.551 2794.073 2799.596 2805.120

N O T E S
1. GLOSSARY
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   W = WATER SURFACE ELEVATION
   S = SUPER-ELEVATION
   H = HEIGHT OF CHANNEL

E = ENERGY GRADE LINE
X = CURVES CROSSING OVER
B = BRIDGE ENTRANCE OR EXIT
Y = WALL ENTRANCE OR EXIT

2. STATIONS FOR POINTS AT A JUMP MAY NOT BE PLOTTED EXACTLY

APPENDIX F

Reference Material

Master Drainage Study for Skye Canyon Update #4, by SHG

Approval Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: October 12, 2017
TO: **Land Development Services** Department of Public Works			FROM: Oh Sang Kwon, P.E. Flood Control Section Department of Public Works
SUBJECT:	Drainage Study for:		**COPIES TO:**
Skye Canyon Master Drainage Study – Update #4			Slater Hanifan Group
Cross Streets:	Fort Apache Road & Moccasin Road		KAG Development South, LLC
File Number:	F:\Depot\DSMemos\DS4420O.doc		Bart Anderson, P.E., DevCo
Parcel Number:	125-06-001-001		CCRFCD
Zoning Action:			CCPW
FEMA Flood Zone	YES	NO X	NDOT; NV Energy
Proposed Storm Drain	YES X	NO	PB America, Inc.

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Transaction #
1st Submittal	6/22/2010	7/13/2010	Not Approved	$1,000.00	147216: $1000
2nd Submittal	9/17/2010	10/4/2010	Not Approved	$400.00	153788: $400
3rd Submittal	10/15/2011	11/14/2011	Not Approved	$400.00	153788: $400
4th Submittal	2/13/2012	3/1/2012	Conditional Approval	$400.00	274196: $400
CCRFCD	5/23/2012	5/24/2012	Concurrence Recv'd	N/C	N/C
5th Submittal NDOT Comments	9/10/2012	9/19/2012	Conditional Approval	N/C	N/C
6th Submittal	12/4/2014	12/30/2014	Conditional Approval	$400.00	378889: $400
7th Submittal	2/17/2015	3/3/2015	Conditional Approval	$400.00	385987: $400
8th Submittal	3/16/2015	4/6/2015	See Comments Below	$400.00	388961: $400
CCRFCD	4/2/2015	4/6/2015	Concurrence Recv'd	N/C	N/C
9th Submittal	6/23/2015	7/21/2015	See Comments Below	$400.00	403025: $400
Revised Memo	8/12/2015	8/12/2015	See Comments Below	N/A	N/A
10th Submittal	10/19/2015	11/23/2015	Conditional Approval	$400.00	N/A
11th Submittal	4/19/2016	5/16/2016 & 8/15/2016	See Comments Below	$400.00	440941: $400
12th Submittal	7/25/2017	9/7/2017 & 10/11/2017	See Comments Below	$400.00	488746: $400
			TOTAL FEES (LDDRS):	**$4,600.00**	----

REMARKS: 12th Submittal: Update # 4 – Overall Master Plan Revision of Skye Canyon development. A new MPA must be submitted to *City of Las Vegas* and *CCRFCD* for approval and shall be adopted by the *City of Las Vegas City Council* prior to the final approval of the subject Overall Master Study.

The City of Las Vegas will not allow further residential development outside of the limits of Phase 2 at this time until the New Master Plan is approved.

The Master Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
X	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
X	is conditionally approved subject to Clark County Department of Public Works concurrence.
X	is conditionally approved subject to Nevada Department of Transportation concurrence.
X	is conditionally approved subject to BLM concurrence/approval.

1. The overall concept presented in the Master Plan Update #4 for Skye Canyon appears to satisfy the intent of providing regional connectivity of proposed Master Planned facilities without impacting the National Monument. Specific Technical Drainage Studies shall be required to address the specific impacts of each proposed Master Planned facility and the interaction with proposed facilities needed for each phase of development.

2. The Master Plan Update #4 includes a revised Concept for the Regional Flood Control Master Plan Facilities that are identified to be constructed by the Master Developer. Generally these MPU Facilities are shown on Exhibit J, dated July 24, 2017 and include the following general alignments; Skye Village Road - from W. Skye Canyon Park Dr. to Oso Blanca Rd., Iron Mountain Rd. - from the DB #2 outfall to Skye Village Rd., Oso Blanco Rd. – from Skye Village Rd. through the Kyle Canyon/US-95 Interchange to Log Cabin Way., Log Cabin Way – from east of US-95 to N. Skye Canyon Park Dr., and N. Skye Canyon Park Dr. – from Log Cabin Way to Moccasin Rd. The proposed MPU Facility within the Moccasin Rd. alignment – from N. Skye Canyon Park Dr. to the existing Upper Las Vegas Wash MPU Facility is identified to be constructed by the City.

3. Update #4 discussed that *due to the updated plan of constructing the ultimate MPU facilities with the infrastructure improvements, there are no longer interim facilities proposed in place of ultimate facilities*. Based upon that premise, Flood Control requests that Exhibit J be revised to show that flows west of US-95 are routed south to connect into the existing MPU facility that was extended with the Horse Interchange project. This flow connection matches the CCRFCD Master Plan and basin routing. The facilities between CHD02B and CHD06B along the west side of US-95 are local facilities that shall be constructed by the Master Developer and identified as such on a Revised Exhibit J. The result will reduce the impacts to the east side of US-95. Review and revise the flows for facilities 26 thru 26-3 and 17 thru 17-2.

4. The provided Phasing Plan (Exhibit O) has identified the schematic facilities necessary within each Phase. Flood Control concurs that the construction of Phase 3 & 4 MPU infrastructure is critical to the success of the Phased developments. Changes and timing of the Phases and the corresponding infrastructure improvements shall require Updated Phasing Plans that are approved by the City of Las Vegas and Regional Flood Control prior to the approval of future Master Drainage Study updates.

5. The implementation of the CCRFCD Master Plan is being progressed with the recent bid opening of the NDOT US-95 facilities from the CC-215 interchange north to the Kyle Canyon interchange. Construction of the associated CCRFCD MPU facilities allows for the utilization of the existing MPU facilities constructed with the Horse Interchange. Phased development west of US-95 shall maximize the flow collection into this facility prior to allowing flows to cross US-95 using the existing culvert system. The Ultimate Condition will have the west side of these culvert systems removed, no longer having flows cross US-95 as per the CCRFCD Master Plan.

6. The premise of the Master Plan Update #4 for Skye Canyon is to continue to show a new CCRFCD Master Plan Detention Basin that is located outside of the Skye Canyon development. The City of Las Vegas is in the process of applying for BLM grants for this detention basin site located along Kyle

Canyon Road west of the Skye Canyon Development. This ultimate facility shall be included in the MPA as a CCRFCD facility. The intent of the Detention Basin (157DB) is to reduce developed flows to maintain the existing condition flow rate in the ultimate condition and reduce the size of the downstream regional facilities. The concept for the addition of this detention basin to the CCRFCD Master Plan is acceptable to the City and will require the submittal of technical studies to refine the facility parameters.

7. The ultimate condition Exhibit J shows that a portion of the developed flows will drain north of Moccasin into the BLM land and the National Monument to mimic existing drainage patterns. Concentrated flow discharges at EC19 and EC20 to the north shall still require BLM and National Park Service concurrence. Detailed drainage studies that specifically address the impacts of development and storm discharge along the Moccasin corridor west of Skye Canyon Park Dr. shall be provided prior to the City considering the removal of BLM and National Park Service concurrence.

8. The ***Master Land Use Plan*** has been provided however, any further changes to the adopted Master Land Use Plan shall require a complete update to the Master Drainage Study.

9. A copy of the approved 404 Permit from the Army Corps of Engineers has been provided.

10. Flood Control requires an interim condition drainage analysis in support of the Phasing Plan that clearly shows the impacts to each Phase, existing washes, upstream concentration points and the downstream concentration points. Flood Control needs to make sure that each Phase of Development is protected during the interim and full build-out of this overall project.

11. The interim conditions of the detention basin outfall impacts are being addressed with the technical drainage studies for each basin. This discharge impact must be accounted for in the interim condition without negatively impacting the existing downstream neighborhoods.

12. CCRFCD concurrence has previously been provided. A new concurrence for Update #4 shall be provided from CCRFCD after Conditional Approval by the City of Las Vegas.

13. CCPW concurrence has previously been provided. A new concurrence for Update #4 shall be provided from CCPW after Conditional Approval by the City of Las Vegas.

14. NDOT concurrence has previously been provided. A new concurrence for Update #4 shall be provided from NDOT after Conditional Approval by the City of Las Vegas.

<u>The following comments are repeated until they are complete:</u>

1. Please note that the Traffic Study must be approved prior to final approval of the Master Drainage Study. If the street layout does not match the Master Drainage Study, an update to the Master Drainage Study must be submitted to address the changes.

2. Per a meeting held in August 18, 2011 between the developer and the *City of Las Vegas*, it was agreed that NV Energy's approval of any proposed drainage facilities within their access easements (such as the proposed detention basins) must be obtained prior to the final approval of the Master Drainage Study. Please provide documentation for such approval or acknowledgment.

3. Please note that any future technical drainage study submittals that differ from the Master Drainage Study (ie. Changes in pods, infrastructure, flows etc.) will require an update to the Master Drainage Study and this update must be approved by the *City of Las Vegas Flood Control Section* prior to final approval of technical drainage study.

4. The proposed detention basins will require coordination with the State of Nevada, Division of Water Resources Dam Safety and will require the State's approval prior to permitting.

5. Please note that the proposed 100-year flood protection facilities identified on Exhibit J must be constructed by the Master Developer as a part of the master planned infrastructure. Technical drainage studies are required for each phase of the master planned infrastructure improvements. The technical drainage studies for the infrastructure improvements may be submitted with conditional approval of this Master Drainage Study. However, final approval for the Master Drainage Study must be obtained prior to conditional approval of the infrastructure drainage studies.
6. Technical drainage studies are required for each of the Pod's. The technical drainage studies for the Pod's may not be submitted until the conditional approval of the pertinent infrastructure drainage study is obtained. Final approval for the infrastructure drainage study must be obtained prior to conditional approval of the impacted Pod drainage studies.
7. Building permits for the homes within the individual Pod's will not be issued until construction of the street and flood control infrastructure around the Pod is substantially complete or interim protection is provided per the approved technical drainage study.
8. The design of debris basins at all major culvert entrances to limit the amount of sediment and debris entering the storm drain facilities will be required in a future infrastructure study.
9. Please note that all detention basins must be designed per CCRFCD criteria including a low flow facility around the detention basin.
10. Please note that all proposed interim facilities must be maintained by the master developer.
11. Provide a legal description of the proposed detention basins prior to recordation of the parent final map.
12. Continue to coordinate the proposed drainage facilities with *Sheep Mountain Parkway* project. Please contact Greg McDermott, P.E., at (702)-229-2143 to coordinate the proposed drainage facilities. The detention basin outfall facilities need to account for the future *Sheep Mountain Parkway* improvements.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved master drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Amendment and accepted by the *City of Las Vegas Flood Control Section.* Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the Nevada Division of Environmental Protection a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
Osk/pbj

T/R/S: T19S/R60E/6 & 7
AREA G-6, 7, & F-12

Ultimate Condition Drainage Map & Pertinent HEC-1 Excerpts

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*            VERSION 4.1                *
*                                       *
*   RUN DATE   21JUL17  TIME  09:09:44  *
*                                       *
*****************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*         609 SECOND STREET         *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

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 -AMSKK- 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


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

              *DIAGRAM
    1         ID     SLATER HANIFAN GROUP
    2         ID     OLYMPIA COMPANIES
    3         ID     SKYE CANYON
    4         ID     MASTER DRAINAGE STUDY - UPDATE #4
    5         ID     ULTIMATE DRAINAGE CONDITION - REVISED TO ROUTE REGIONAL FLOW TO MOCCASIN RD
    6         ID     INCLUDES FULL WATERSHED WITH AREA UPSTREAM OF DB1, DB2 AND 157DB
    7         ID
    8         ID     RETURN PERIOD ------- 100-YEAR
    9         ID     DISTRIBUTION -------- 6-HOUR SDN3
   10         ID     PROJECT NO. --------- OLY1603.000
   11         ID     FILENAME ------------ ULT3.H1
   12         ID     DATE ---------------- July 2017
   13         ID     MODELED BY ---------- SMJ, updated by LKL
   14         ID
   15         ID        SIX HOUR DEPTH-AREA REDUCTION FACTORS
   16         ID        DRAINAGE AREA (MI^2)     DARF
   17         ID        0.0-0.49                 1.00
   18         ID        0.5-0.99                 0.98
   19         ID        1.0-1.99                 0.97
   20         ID        2.0-3.99                 0.93
   21         ID        4.0-5.99                 0.91
   22         ID        6.0-7.99                 0.90
   23         ID
   24         IT       5       0       0    2000
   25         IO       5       0       0
   26         IN       5       0       0
   27         JR    PREC    1.00    0.98    0.97    0.93    0.91    0.90
              *

   28         KK   WUS95
   29         KM   KYLE CANYON INTERCHANGE - WEST HALF
   30         BA   .0133
   31         PB    2.77
   32         PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
   33         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
   34         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
   35         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
   36         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
   37         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
   38         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
   39         PC   0.998   0.999   1.000
   40         LS       0    98.0
   41         UD   0.082
              *

   42         KK  DHD01B
   43         KM   FACILITY E-9
   44         KM   FLOW SPLIT AT VTN CULVERT 1
   45         KM   FLOW SPLITS TO BETWEEN NB AND SB ROADS OF US-95
   46         KM   REFERENCED FROM GCW MASTER DRAINAGE STUDY
   47         DT  DCHD1B
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```
878          KK     CP1
879          KM   COMBINE WOFF1, WOFF2, WOFF3, WOFF11
880          HC       4
             *

881          KK   WOFF4
882          KM   DISCHARGES INTO DETENTION BASIN "DB1"
883          BA   .0581
884          LS       0     86.2
885          UD   0.136
             *

886          KK   WOFF5
887          KM   DISCHARGES INTO DETENTION BASIN "DB1"
888          BA   .2569
889          LS       0     86.5
890          UD   0.419
             *

891          KK   WOFF6
892          KM   DISCHARGES INTO DETENTION BASIN "DB1"
893          BA   .0399
894          LS       0     86.2
895          UD   0.121
             *

896          KK   WPF1B
897          KM   WEST BASIN, WEST OF SHEEP MT ROAD
898          BA   .0295
899          PB    3.00
900          LS       0     94.0
901          UD   0.077
             *
```



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

902          KK     DB1
903          KM   COMBINE CP1, WOFF4, WOFF5, WOFF6 AND WPF1B
904          HC       5
             *

905          KK    RDB1
906          KM   OUTLET = 24" ORIFICE @ INVERT ELEVATION = 3013.8-FT
907          KO       1
908          RS       1    ELEV  3025.5
909          SA    4.68    5.56    5.74    5.92    6.10    7.01    7.46    8.36    9.32   10.68
910          SE  3025.5    3027    3028    3029    3030    3035    3037    3040    3043    3046
911          SQ       0    13.7    31.5    48.3    60.6    70.8    74.5  1436.0  3920.5  7136.3
912          SE  3013.8    3017    3020    3025    3030    3035    3037    3040    3043    3046
             *

913          KK   WSHP3
914          KM   WEST BASIN, SHEEP MT ROAD
915          BA   .0163
916          PB    3.00
917          LS       0     94.0
918          UD   0.110
             *

919          KK    WPF2
920          KM   WEST BASIN, WEST OF SHEEP MT
921          BA   .0048
922          PB    3.00
923          LS       0     94.0
924          UD   0.074
             *

925          KK    WC19
926          KM   FAR N OF GRAND TETON/SHEEP MT INTERSECTION
927          KM   COMBINE RDB1, WSHP3, WPF2
928          HC       3
             *

929          KK    WPF5
930          KM   WEST BASIN, WEST OF SHAUMBER RD
931          BA   .0006
932          PB    3.00
933          LS       0     86.0
934          UD   0.052
             *

935          KK    WML2
936          KM   WEST BASIN, WEST OF SHAUMBER ROAD
937          BA   .0428
938          PB    3.00
939          LS       0     93.5
940          UD   0.142
             *
```

REFERENCED

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

 941          KK   WSHA5
 942          KM   WEST BASIN, SHAUMBER ROAD
 943          BA   .0037
 944          PB    3.00
 945          LS       0    98.0
 946          UD   0.086
              *

 947          KK    WC20
 948          KM   S OF EAGLE CANYON/SHAUMBER INTERSECTION
 949          KM   COMBINE WPF5, WML2, WSHA5
 950          HC       3
              *

 951          KK   WARR4
 952          KM   WEST BASIN, WEST OF SHAUMBER ROAD
 953          BA   .0020
 954          PB    3.00
 955          LS       0    88.0
 956          UD   0.100
              *

 957          KK    WPF4
 958          BA   .0090
 959          PB    3.00
 960          LS       0    94.0
 961          UD   0.087
              *

 962          KK   WSHA4
 963          BA   .0022
 964          PB    3.00
 965          LS       0    98.0
 966          UD   0.051
              *

 967          KK    WC21
 968          KM   S OF SHAUMBER SPLIT INTERSECTION
 969          HC       5
              *

 970          KK    WL4A
 971          KM   WEST BASIN, WEST OF EGAN CREB DRIVE
 972          BA   .0125
 973          PB    3.00
 974          LS       0    92.0
 975          UD   0.106
              *
```

REFERENCED


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

 976          KK    WL5A
 977          KM   WEST BASIN, WEST OF EGAN CREB DRIVE
 978          BA   .0170
 979          PB    3.00
 980          LS       0    92.0
 981          UD   0.099
              *

 982          KK    WL5B
 983          BA   .0059
 984          PB    3.00
 985          LS       0    92.0
 986          UD   0.085
              *

 987          KK   WC22A
 988          HC       3
              *

 989          KK   WPRK4
 990          KM   WEST BASIN, WEST OF EGAN CREB DRIVE
 991          BA   .0016
 992          PB    3.00
 993          LS       0    84.0
 994          UD   0.067
              *

 995          KK   WARR5
 996          KM   WEST BASIN, WEST OF EGAN CREB DRIVE
 997          BA   .0100
 998          PB    3.00
 999          LS       0    90.0
```

HYDROGRAPH AT										
+	WPF5	.00	1	FLOW	1.	1.	1.	1.	1.	1.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
	WML2	.04	1	FLOW	78.	76.	75.	72.	70.	69.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT										
+	WSHA5	.00	1	FLOW	8.	8.	8.	8.	8.	7.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT										
+	WC20	.05	1	FLOW	86.	84.	83.	79.	77.	76.
				TIME	3.58	3.58	3.58	3.58	3.58	3.58
HYDROGRAPH AT										
+	WARR4	.00	1	FLOW	3.	3.	3.	3.	3.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPF4	.01	1	FLOW	19.	18.	18.	17.	17.	17.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WSHA4	.00	1	FLOW	6.	5.	5.	5.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
5 COMBINED AT										
+	WC21	.96	1	FLOW	204.	201.	199.	191.	188.	186.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL4A	.01	1	FLOW	23.	22.	22.	21.	20.	20.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL5A	.02	1	FLOW	32.	31.	31.	29.	28.	28.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL5B	.01	1	FLOW	12.	11.	11.	11.	10.	10.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
3 COMBINED AT										
	WC22A	.04	1	FLOW	67.	65.	64.	61.	59.	58.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPRK4	.00	1	FLOW	3.	2.	2.	2.	2.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WARR5	.01	1	FLOW	18.	17.	17.	16.	15.	15.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
4 COMBINED AT										
+	WC22	1.01	1	FLOW	291.	285.	282.	270.	264.	262.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WML8	.02	1	FLOW	34.	33.	32.	31.	30.	30.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPF6	.00	1	FLOW	4.	4.	4.	3.	3.	3.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WEGN1	.00	1	FLOW	2.	2.	2.	2.	2.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WEGN2	.00	1	FLOW	2.	2.	2.	2.	2.	2.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
5 COMBINED AT										
+	WC23	1.03	1	FLOW	332.	325.	322.	308.	301.	298.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WARR6	.00	1	FLOW	6.	6.	6.	6.	5.	5.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WPF7	.01	1	FLOW	14.	14.	14.	13.	13.	13.
				TIME	3.50	3.50	3.50	3.50	3.50	3.50
HYDROGRAPH AT										
+	WL6A	.01	1	FLOW	19.	18.	18.	17.	16.	16.

RECEIVED

APPENDIX G

Reference Material

Technical Drainage Study for Skye Canyon Phase 1 Infrastructure, by Slater Hanifan Group

Approval Letter

CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

DATE: July 11, 2015

TO:
Land Development Services
Department of Building & Safety

FROM:
Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

SUBJECT: Drainage Study for:
Skye Canyon – Phase 1 Infrastructure - Update #6

COPIES TO:
Slater Hanifan Group
K A G Development South, LLC / Ninety-Five Management, LLC
Bart Anderson, P.E., DevCo
CCRFCD

Cross Streets:	NEC of Grand Teton Blvd. & Hualapai Way
File Number:	F:\Depot\DSMemos\DS4661K.doc
Parcel Number:	125-07-301-001 & 125-07-301-002; 125-07-401-001 & 125-07-401-002
Zoning Action:	TMP-53058

FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES X	NO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	3/19/2014	4/17/2014	Not Approved	$400.00	351277: $400
2nd Submittal	5/14/2014	6/12/2014	Conditionally Approved	$400.00	356797: $400
Supplemental	8/25/2014	9/15/2014	Approved	-----	-----
3rd Submittal	11/25/2014	12/10/2014	See Comments Below	$100.00	377769: $100
4th Submittal	12/10/2014	1/7/2015	Approved	$100.00	379537: $100
5th Submittal	12/18/2014	1/8/2015	Approved	$100.00	380446: $100
6th Submittal	3/5/2015	3/9/2015	Approved	$100.00	388162: $100
7th Submittal	5/18/2015	6/2/2015	Approved	$100.00	397877: $100
8th Submittal	6/8/2015	6/22/2015	Approved	$100.00	400871: $100
9th Submittal	7/5/2016	7/11/2016	See Comments Below	$100.00	449985: $100
			TOTAL FEES (LDDRS):	**$1,500.00**	-----

REMARKS:

9th Submittal: Update #6 for As-Built Final Location of Storm Drain System in Horse Drive

8th Submittal: Update #5 for Phasing a Stockpile Permit

7th Submittal: Update #4 for minor lateral profile revision in *Skye Canyon Parkway* at Sta. 95+28

6th Submittal: Update #3 for minor storm drain profile revision in *Skye Park Drive* at *Skye Canyon Drive* (aka Horse Drive)

5th Submittal: Update #2 for Stockpile Permit at additional locations

4th Submittal: Update for revision of storm drains alignment in *Grand Canyon Drive, Eagle Canyon Avenue, Mountain Landing Street* and *Hualapai Way*

3rd Submittal: Update for Stockpile Permit Only

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

The following comments are repeated until they are complete:

1. The *Kyle Canyon Master Drainage Study* is proposing to revise the hydrology and facilities indentified in the *Clark County Regional Flood Control District's (CCRFCD) 2008 Las Vegas Valley Flood Control Master Plan Update.* A *Master Plan Amendment* (MPA) must be submitted to the *City of Las Vegas* for approval. The *City of Las Vegas* will coordinate the MPA submittal to CCRFCD for approval. The Master Developer will be responsible for preparing all submittals needed for CCRFCD along with any and all presentations. The MPU must be approved by the *City of Las Vegas City Council* prior to the final approval of the *Master Drainage Study.*
2. For all culvert entrances or exits located outside of the Public Right-of-Way or dedicated "Public Drainage Easement to be Privately Maintained" must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map. Also, show the easement on the grading plan.
3. In an overview perspective for the proposed *Phase 1 Infrastructures, Racel Street* with its regional storm drain act as the sole perpetuation pathway for offsite flows during a major storm event in the interim condition (reference Sheets GR-01 & GR-02).

   In a worst case scenario that the upstream culvert entrance is completely clogged, ie, the 100-year flow will be conveyed on the *Racel Street* surface. Provide a hydraulic calculation for the worst case 100-year water surface in *Racel Street.* The finish floor elevation of future houses in the PODs adjacent to *Racel* shall be above the corresponding water surface or flood wall for protection to that effect. This shall serve as a guideline in the future technical drainage studies for the PODs.
4. Provide a detail grading around the culvert entrance at Racel Street Storm Drain and make sure freeboard requirements are satisfied.
5. All drainage facilities proposed in this *Phase 1 Infrastructure Study* are considered interim facilities and must be maintained by the master developer until the facilities are formally accepted by the *City of Las Vegas.*
6. Structural plans for the storm drain improvements must be submitted for review. Provide a soil report, structural calculations and specifications, wet stamped structural sets and a grading plan to the *City of Las Vegas Building Department* for processing (call *Building Department* to confirm their submittal requirements). The engineer must provide a copy of *Building Department* approval of the structures to *Flood Control* prior to final acceptance of the technical drainage study.
7. The project proposes to build a temporary drainage facility on the west side of *Hualapai Way.* Prior to final plan approval the developer must complete a ***Maintenance and Liability Agreement*** for the interim drainage improvements (off-site berms or channels) and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an exhibit that adequately shows the location and limits of the drainage facility to *Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (229-6371) to begin the agreement process.

   In order for the maintenance bond to be released in the future, a drainage update / letter will be required to justify that the offsite berms / channels are no longer necessary and can be removed.
8. **Sheet SD-09**: Review and revise an appeared low point "61.95TC" in *Grand Canyon Drive* at the intersection with *Grand Teton Drive.*
9. Technical drainage studies are required for each of the POD's. The technical drainage studies for the POD's may not be conditional approved until the final approval of the pertinent infrastructure drainage study is obtained.
10. Building permits for the homes within the individual POD's will not be issued until construction of the street and flood control infrastructure around the POD is substantially complete or interim protection is provided per the approved technical drainage study.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section.* Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

END OF REMARKS
ays

T/R/S: T19S/R60E/07
AREA G-07

Plan and Profile Sheets

Street Hydraulic Condition Map

APPENDIX H

Reference Material

Technical Drainage Study for Skye Canyon Park, by Slater Hanifan Group

Approval Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: September 2, 2015
TO: Land Development Services Department of Building & Safety				FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: Skye Canyon Park – Phase 1			COPIES TO: Slater Hanifan Group
Cross Streets:	SWC Skye Canyon Park Bl & Skye Village Dr			Section 12, LLC / Ninety-Five Mgmt.
File Number:	F:\Depot\DSMemos\DS4707D.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-12-000-001			CCRFCD
Zoning Action:	*Skye Canyon Development Agreement*			
FEMA Flood Zone	YES	NO	X	
Proposed Storm Drain	YES	NO	X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	10/30/2014	12/10/2014	Not Approved	$400.00	375470: $400
2nd Submittal	2/3/2015	2/19/2015	Not Approved	$400.00	384502: $400
Revised Memo	3/3/2015	3/3/2015	Conditional Approval	N/C	N/C
Supplement	5/14/2015	6/1/2015	Approved	N/C	N/C
3rd Submittal & Supplement	8/19/2015 & 9/1/2015	9/2/2015	See Comments Below	$100.00	411589: $100
			TOTAL FEES (LDDRS):	$900.00	

REMARKS:

3rd Submittal: Update #1 for Minor Site Layout Changes

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved until the *Skye Canyon Development Agreement* is approved by the *City of Las Vegas City Council*

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS

ays

T/R/S: T19S/R59E/07

AREA F-12

Plan and Profile Sheets

APPENDIX I

Reference Material

Technical Drainage Study for Skye Canyon Phase 3 Infrastructure, by Slater Hanifan Group

Approval Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: September 22, 2016
TO: **Land Development Services** Department of Building & Safety			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Skye Canyon – Phase 3 Infrastructure**		**COPIES TO:** Slater Hanifan Group
Cross Streets:	NWC of Grand Canyon & Skye Canyon Park		MF Land / Ninety Five Management
File Number:	F:\Depot\DSMemos\DS4796C.doc		Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-003		
Zoning Action:	MOD-62679; SUP-63594; SUP-63597; SDR-63598; VAR-63963 & GPA-64013		
FEMA Flood Zone	YES	NO X	
Proposed Storm Drain	YES X	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	4/28/2016	5/24/2016 & 6/28/2016	Not Approved	$400.00	442241: $400
2nd Submittal & Supplement	7/21/2016 & 7/25/2016	8/18/2016	Not Approved	$400.00	452170: $400
3rd Submittal	8/31/2016 & 9/16/2016	9/22/2016	See Comments Below	$400.00	456806: $400
			TOTAL FEES (LDDRS):	**$1,200.00**	**----**

REMARKS: Infrastructure necessary for the 38 acre Commercial Development known as Phase 3.

The Drainage Study for the subject project has been reviewed and:

	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
X	is conditionally approved subject to the satisfaction of the following conditions:

1. The ***Phase 3 Infrastructure*** drainage study addresses the included street improvements of *Grand Canyon Drive*, *Skye Park Drive*, *Street "D"*, a local minor detention basin, culvert crossings and storm drain systems within the perimeter streets. A separate technical drainage study will be required for the future onsite commercial developments.

2. The proposed local detention basin near concentration point "CPN" is a minor and temporary facility which will be removed by the developer upon the construction of the ultimate upstream *Regional Flood Control* facilities. This detention basin is to be privately owned and privately maintained by the master developer. The developer shall provide maintenance access to the public storm drain outfall and shall provide a public drainage easement, to be privately maintained. The public drainage easement (privately maintained) must be dedicated and recorded prior to the final approval of the improvement plans.

3. The proposed debris/sediment basins at concentration points "CPN" and "CPS" shall be privately owned and privately maintained by the master developer. These facilities are considered to be temporary in nature and the City understands that the future development and the ultimate *Regional Flood Control* facilities will require that these facilities may be removed by the developer upon the City's approval of a Technical Drainage Study that addresses the impacts of those improvements.

4. The proposed culvert crossings at the concentration points "CPN", "CPS" and "WC9" are oversized interim facilities that are not required in the ultimate condition. All drainage facilities proposed in this ***Phase 3 Infrastructure Study*** are considered interim facilities and must be maintained by the Master Developer until the upstream ultimate facilities are completed and accepted by the *City of Las Vegas. The City of Las Vegas* will not maintain the culverts during all interim conditions. Interim facilities will require an Encroachment Agreement for those facilities within public right-of-way.

5. Future development of the site will require storm drain extensions from "CPN" and "CPS" and the corresponding public drainage easements (privately maintained) traversing the *Skye Canyon Village* site. Dedication shall be provided using the mapping process or by separate legal description and must be approved by *Flood Control* prior to recordation. The easements must be recorded prior to the final approval of the subject improvement plans.

6. The provided Phase 3 Infrastructure plans only show the proposed drainage facilities. The complete improvement plans will require additional review for impacts with other needed infrastructure; i.e. sanitary sewer, water, gas, etc. Any changes to the proposed storm drain system shall require a drainage study update.

7. Since the streets network and the associated storm drain facilities will eventually be accepted by the City, the engineer must coordinate with *City of Las Vegas Streets & Sanitation Department* for their review and approval prior to the final approval of the improvement plans.

8. Structural plans for the storm drain improvements must be submitted for review. Provide a soil report, structural calculations and specifications, wet stamped structural sets and a grading plan to the *City of Las Vegas Building Department* for processing (call *Building Department* to confirm their submittal requirements). The engineer must provide a copy of *Building Department* approval of the structures to *City Flood Control Section* prior to the final acceptance of the improvement plans.

9. The project proposes to build temporary drainage facilities including; detention basins, debris/sediment basins, drainage berms/swales over the *Phase 3* site. Prior to final plan approval the developer must complete a ***Maintenance and Liability Agreement*** for the interim drainage improvements and post a minimum maintenance bond of $50,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for construction the facility and an exhibit that adequately shows the location and limits of the drainage facility to *City Flood Control* for approval. Once the drainage study is conditionally approved, the engineer/developer should contact the *City's Land Development Section* (702-229-6371) to begin the agreement process.

   In order for the maintenance bond to be released in the future, a drainage update/letter will be required to justify that the berms/swales are no longer necessary and can be removed.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS

ays

T/R/S: T19S/R60E/07
AREA G-07

Referenced Basins (HEC-1)

Proposed Condition (100-Yr & 10-Yr)

PRO

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *             JUN  1998                 *
 *           VERSION 4.1                 *
 *                                       *
 *  RUN DATE   19JUL16  TIME  16:29:56   *
 *                                       *
 *****************************************
```

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

```
X    X XXXXXXX  XXXXX          X
X    X X       X    X        XX
X    X X       X              X
XXXXXX XXXX    X       XXXXX  X
X    X X       X              X
X    X X       X    X         X
X    X XXXXXXX  XXXXX        XXX
```

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 -AMSKK- 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

```
         LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
                   *DIAGRAM
*** FREE ***
             1     ID    SKYE CANYON
             2     ID    PHASE 3 INFRASTRUCTURE - PROPOSED CONDITION
             3     ID    PRIOR TO DETENTION BASIN 1 & PHASE 2 BUILD-OUT
             4     ID
             5     ID    RETURN PERIOD -------- 100-YEAR & 10-YEAR
             6     ID    DISTRIBUTION --------- 6-HOUR SDN3
             7     ID    PROJECT NO. ---------- OLY1602.000
             8     ID    FILENAME ------------- EX.H1
             9     ID    DATE ----------------- 7/20/2016
            10     ID    MODELED BY ----------- SMJ
            11     ID
            12     ID       SIX HOUR DEPTH-AREA REDUCTION FACTORS
            13     ID       DRAINAGE AREA (MI^2)    DARF
            14     ID       0.0-0.49                1.00
            15     ID       0.5-0.99                0.98
            16     ID       1.0-1.99                0.97
            17     ID       10-YEAR                 0.55
            18     ID
            19     IT      5       0       0     300
            20     IO      5       0       0
            21     IN      5       0       0
            22     JR    PREC    1.00    0.98    0.97    0.55
                   *
            23     KK   WOFF5
            24     KM   EXISTING OFFSITE DRAINAGE BASIN
            25     KM   REFERENCED FROM DB1 STUDY
            26     PC      0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
            27     PC  0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
            28     PC  0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
            29     PC  0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
            30     PC  0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
            31     PC  0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
            32     PC  0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
            33     PC  0.998   0.999   1.000
            34     PB   3.00
            35     BA  .2569
            36     LS     0    86.5
            37     UD  0.419
                   *
            38     KK  RWOFF5
            39     KM   ROUTE TO CPS
            40     RD   7360   0.035   0.040       0   TRAP      15       1
                   *
            41     KK   WOFF6
            42     KM   EXISTING OFFSITE DRAINAGE BASIN
            43     KM   REFERENCED FROM DB1 STUDY
            44     PB   3.00
            45     BA  .0399
            46     LS     0    86.2
            47     UD  0.121
                   *
```

1 HEC-1 INPUT PAGE 2

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         LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
            48     KK  EX-W5S
            49     PB   3.00
            50     BA  .2364
            51     LS     0    85.3
            52     UD  0.321
                   *
```

```
 53          KK    OFF3
 54          KM    REFERENCED FROM SKYE PARK STUDY
 55          PB     3.00
 56          BA    .0012
 57          LS       0     86.2
 58          UD    0.100
             *

 59          KK       D2
 60          KM    REFERENCED FROM SKYE PARK STUDY
 61          PB     3.00
 62          BA    .0154
 63          LS       0     86.0
 64          UD    0.089
             *

 65          KK    IOFF4
 66          KM    REFERENCED FROM SKYE PARK STUDY
 67          PB     3.00
 68          BA    .0062
 69          LS       0     86.2
 70          UD    0.100
             *

 71          KK     PARK
 72          KM    COMBINES IOFF4, OFF3, D2
 73          HC       3
             *

 74          KK      CPS
 75          HC       4
             *

 76          KK    WOFF7
 77          KM    EXISTING OFFSITE DRAINAGE BASIN
 78          KM    REFERENCED FROM SKYE CANYON MASTER STUDY
 79          PB     3.00
 80          BA    .0068
 81          LS       0     86.2
 82          UD    0.100
             *
```



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

 83          KK    WOFF8
 84          KM    EXISTING OFFSITE DRAINAGE BASIN
 85          KM    REFERENCED FROM SKYE CANYON MASTER STUDY
 86          PB     3.00
 87          BA    .2141
 88          LS       0     86.3
 89          UD    0.302
             *

 90          KK   RWOFF8
 91          KM    ROUTE TO CPN
 92          RD    7850   0.028   0.040       0    TRAP      15       3
             *

 93          KK   EX-W5N
 94          PB     3.00
 95          BA    .1425
 96          LS       0     86.3
 97          UD    0.366
             *

 98          KK      CPN
 99          KM    COMBINATION POINT CPN
100          HC       3
             *

101          KK      DBN
102          KM    OUTLET = 54" ORIFICE @ INVERT ELEVATION = 2997.3-FT
103          KO       1
104          RS       1    ELEV  2797.3
105          SA    0.00    0.09    0.12    0.15     .37    0.79    0.86
106          SE  2797.3    2798    2799    2800    2805    2812    2813
107          SQ    0.00      54     129     193     241     268
108          SE  2797.3    2802    2804    2807    2810    2812
             *

109          KK   WSPD3
110          BA    .0022
111          PB     2.93
112          LS       0     92.8
113          UD    0.056
             *

114          KK   ON1-E
115          PB     2.93
116          BA    .0324
117          LS       0     86.5
118          UD    0.105
             *
```



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

119          KK     WC9a
120          HC       4
             *

121          KK   ON1-D
122          KM    PHASE 1, NORTHWEST QUAD ONSITE BASIN
```

```
 123          KM   REFERENCED FROM PHASE 1 STUDY
 124          BA   .0278
 125          PB    2.93
 126          LS      0    91.2
 127          UD   0.114
              *

 128          KK   ON2-D
 129          KM   PHASE 1, NORTHEAST QUAD ONSITE BASIN
 130          KM   REFERENCED FROM PHASE 1 STUDY
 131          BA   .0301
 132          PB    2.93
 133          LS      0    88.8
 134          UD   0.152
              *

 135          KK     HOR
 136          KM   PHASE 1, STREET BASIN SKYE CANYON PARK DRIVE
 137          KM   REFERENCED FROM PHASE 1 STUDY
 138          BA   .0163
 139          PB    2.93
 140          LS      0    93.3
 141          UD   0.108
              *

 142          KK     WC7
 143          HC       3
              *

 144          KK  WGRC1A
 145          BA   .0022
 146          PB    2.93
 147          LS      0    93.2
 148          UD   0.095
              *

 149          KK   EX-W6
 150          PB    2.93
 151          BA   .0120
 152          LS      0    86.9
 153          UD   0.101
              *
```



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

 154          KK   WSPD0
 155          BA   .0010
 156          PB    2.93
 157          LS      0    93.4
 158          UD   0.050
              *

 159          KK     WC9
 160          HC       5
              *
 161          ZZ
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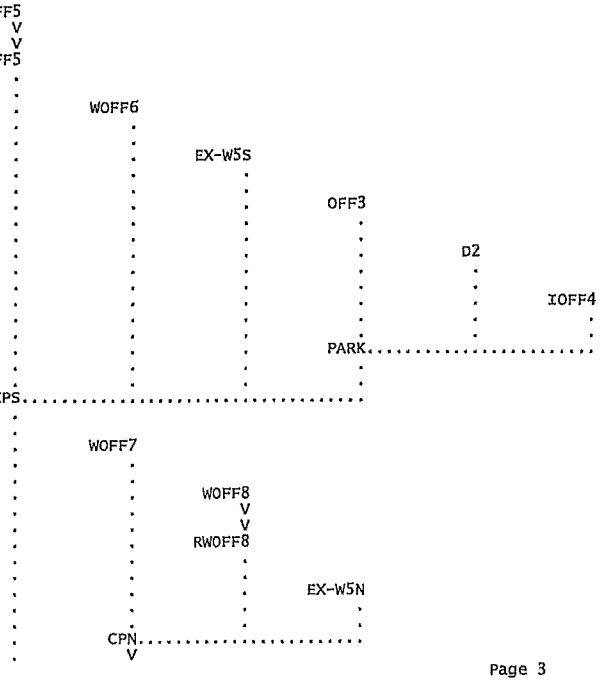
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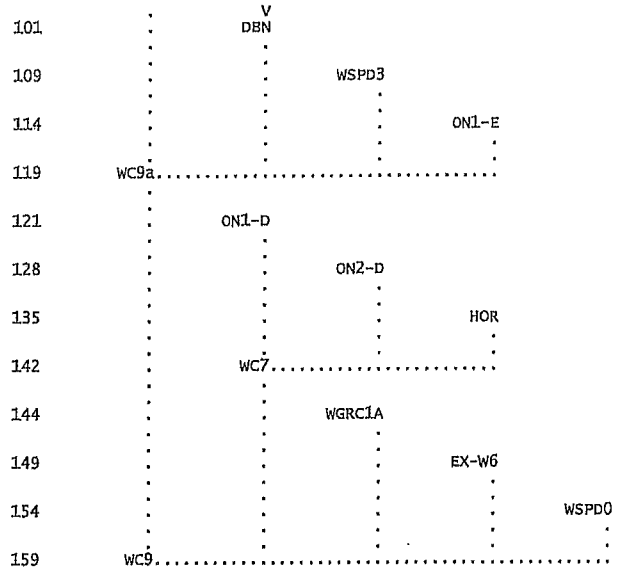
SCHEMATIC DIAGRAM OF STREAM NETWORK

INPUT LINE NO.

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

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





(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*          VERSION 4.1                  *
*                                       *
*  RUN DATE   19JUL16  TIME  16:29:56   *
*                                       *
*****************************************
```

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

SKYE CANYON
PHASE 3 INFRASTRUCTURE - PROPOSED CONDITION
PRIOR TO DETENTION BASIN 1 & PHASE 2 BUILD-OUT

RETURN PERIOD -------- 100-YEAR
DISTRIBUTION -------- 6-HOUR SDN3
PROJECT NO. --------- OLY1602.000
FILENAME ------------ EX.H1
DATE ---------------- 7/20/2016
MODELED BY ---------- SMJ

SIX HOUR DEPTH-AREA REDUCTION FACTORS

DRAINAGE AREA (MI^2)	DARF
0.0-0.49	1.00
0.5-0.99	0.98
1.0-1.99	0.97
10-YEAR	0.55

```
20 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    0  STARTING DATE
                   ITIME         0000  STARTING TIME
                      NQ          300  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE      2    0  ENDING DATE
                  NDTIME         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
                 1.00       .98       .97       .55
```

*** ***

```
          **************
          *            *
101 KK    *     DBN    *
          *            *
          **************

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

              HYDROGRAPH ROUTING DATA

104 RS          STORAGE ROUTING
                     NSTPS         1  NUMBER OF SUBREACHES
                      ITYP      ELEV  TYPE OF INITIAL CONDITION
                    RSVRIC   2797.30  INITIAL CONDITION
                         X       .00  WORKING R AND D COEFFICIENT

105 SA          AREA          .0       .1       .1       .2       .4       .8       .9

106 SE          ELEVATION  2797.30  2798.00  2799.00  2800.00  2805.00  2812.00  2813.00

107 SQ          DISCHARGE      0.       54.     129.     193.     241.     268.

108 SE          ELEVATION  2797.30  2802.00  2804.00  2807.00  2810.00  2812.00
                                                      ***

                          COMPUTED STORAGE-ELEVATION DATA

              STORAGE        .00      .02      .13      .26     1.52     5.49     6.31
            ELEVATION    2797.30  2798.00  2799.00  2800.00  2805.00  2812.00  2813.00

                       COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

              STORAGE        .00      .02      .13      .26      .63     1.18     1.52     2.36     4.05     5.49
              OUTFLOW        .00     8.04    19.53    31.02    54.00   129.00   150.33   193.00   241.00   268.00
            ELEVATION    2797.30  2798.00  2799.00  2800.00  2802.00  2804.00  2805.00  2807.00  2810.00  2812.00

              STORAGE       6.31
              OUTFLOW     281.50
            ELEVATION    2813.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO       8.
                THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
                THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
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HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = 1.00

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	1		0845	106	0.	.0	2797.3	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	1		0850	107	0.	.0	2797.3	1		1710	207	0.	.0	2797.3
1		0035	8	0.	.0	2797.3	1		0855	108	0.	.0	2797.3	1		1715	208	0.	.0	2797.3
1		0040	9	0.	.0	2797.3	1		0900	109	0.	.0	2797.3	1		1720	209	0.	.0	2797.3
1		0045	10	0.	.0	2797.3	1		0905	110	0.	.0	2797.3	1		1725	210	0.	.0	2797.3
1		0050	11	1.	.0	2797.3	1		0910	111	0.	.0	2797.3	1		1730	211	0.	.0	2797.3
1		0055	12	1.	.0	2797.3	1		0915	112	0.	.0	2797.3	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	1		0920	113	0.	.0	2797.3	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	1		0925	114	0.	.0	2797.3	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	1		0930	115	0.	.0	2797.3	1		1750	215	0.	.0	2797.3
1		0115	16	1.	.0	2797.4	1		0935	116	0.	.0	2797.3	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	1		0940	117	0.	.0	2797.3	1		1800	217	0.	.0	2797.3
1		0125	18	2.	.0	2797.4	1		0945	118	0.	.0	2797.3	1		1805	218	0.	.0	2797.3
1		0130	19	2.	.0	2797.5	1		0950	119	0.	.0	2797.3	1		1810	219	0.	.0	2797.3
1		0135	20	3.	.0	2797.5	1		0955	120	0.	.0	2797.3	1		1815	220	0.	.0	2797.3
1		0140	21	4.	.0	2797.6	1		1000	121	0.	.0	2797.3	1		1820	221	0.	.0	2797.3
1		0145	22	4.	.0	2797.7	1		1005	122	0.	.0	2797.3	1		1825	222	0.	.0	2797.3
1		0150	23	5.	.0	2797.8	1		1010	123	0.	.0	2797.3	1		1830	223	0.	.0	2797.3
1		0155	24	6.	.0	2797.8	1		1015	124	0.	.0	2797.3	1		1835	224	0.	.0	2797.3
1		0200	25	7.	.0	2797.9	1		1020	125	0.	.0	2797.3	1		1840	225	0.	.0	2797.3
1		0205	26	7.	.0	2797.9	1		1025	126	0.	.0	2797.3	1		1845	226	0.	.0	2797.3
1		0210	27	8.	.0	2798.0	1		1030	127	0.	.0	2797.3	1		1850	227	0.	.0	2797.3
1		0215	28	9.	.0	2798.1	1		1035	128	0.	.0	2797.3	1		1855	228	0.	.0	2797.3
1		0220	29	11.	.0	2798.2	1		1040	129	0.	.0	2797.3	1		1900	229	0.	.0	2797.3
1		0225	30	12.	.1	2798.4	1		1045	130	0.	.0	2797.3	1		1905	230	0.	.0	2797.3
1		0230	31	14.	.1	2798.5	1		1050	131	0.	.0	2797.3	1		1910	231	0.	.0	2797.3
1		0235	32	15.	.1	2798.6	1		1055	132	0.	.0	2797.3	1		1915	232	0.	.0	2797.3
1		0240	33	15.	.1	2798.6	1		1100	133	0.	.0	2797.3	1		1920	233	0.	.0	2797.3
1		0245	34	15.	.1	2798.6	1		1105	134	0.	.0	2797.3	1		1925	234	0.	.0	2797.3
1		0250	35	15.	.1	2798.6	1		1110	135	0.	.0	2797.3	1		1930	235	0.	.0	2797.3
1		0255	36	17.	.1	2798.8	1		1115	136	0.	.0	2797.3	1		1935	236	0.	.0	2797.3
1		0300	37	19.	.1	2799.0	1		1120	137	0.	.0	2797.3	1		1940	237	0.	.0	2797.3
1		0305	38	21.	.1	2799.1	1		1125	138	0.	.0	2797.3	1		1945	238	0.	.0	2797.3
1		0310	39	23.	.2	2799.3	1		1130	139	0.	.0	2797.3	1		1950	239	0.	.0	2797.3
1		0315	40	26.	.2	2799.6	1		1135	140	0.	.0	2797.3	1		1955	240	0.	.0	2797.3
1		0320	41	32.	.3	2800.1	1		1140	141	0.	.0	2797.3	1		2000	241	0.	.0	2797.3
1		0325	42	40.	.4	2800.8	1		1145	142	0.	.0	2797.3	1		2005	242	0.	.0	2797.3
1		0330	43	54.	.6	2802.0	1		1150	143	0.	.0	2797.3	1		2010	243	0.	.0	2797.3
1		0335	44	88.	.9	2802.9	1		1155	144	0.	.0	2797.3	1		2015	244	0.	.0	2797.3
1		0340	45	127.	1.2	2804.0	1		1200	145	0.	.0	2797.3	1		2020	245	0.	.0	2797.3
1		0345	46	159.	1.7	2805.4	1		1205	146	0.	.0	2797.3	1		2025	246	0.	.0	2797.3
1		0350	47	198.	2.5	2807.3	1		1210	147	0.	.0	2797.3	1		2030	247	0.	.0	2797.3

												PRO											
1	0355	48	225.	3.5	2809.0	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	2797.3
1	0400	49	246.	4.3	2810.3	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	2797.3
1	0405	50	255.	4.8	2811.1	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	2797.3
1	0410	51	258.	5.0	2811.3	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	2797.3
1	0415	52	256.	4.8	2811.1	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	2797.3
1	0420	53	249.	4.5	2810.6	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	2797.3
1	0425	54	238.	3.9	2809.8	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	2797.3
1	0430	55	220.	3.3	2808.7	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	2797.3
1	0435	56	203.	2.7	2807.6	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	2797.3
1	0440	57	181.	2.1	2806.4	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	2797.3
1	0445	58	156.	1.6	2805.2	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	2797.3
1	0450	59	134.	1.3	2804.2	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	2797.3
1	0455	60	109.	1.0	2803.5	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	2797.3
1	0500	61	97.	.9	2803.2	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	2797.3
1	0505	62	95.	.9	2803.1	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	2797.3
1	0510	63	95.	.9	2803.1	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	2797.3
1	0515	64	92.	.9	2803.0	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	2797.3
1	0520	65	88.	.9	2802.9	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	2797.3
1	0525	66	81.	.8	2802.7	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	2797.3
1	0530	67	73.	.8	2802.5	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	2797.3
1	0535	68	64.	.7	2802.3	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	2797.3
1	0540	69	55.	.6	2802.0	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	2797.3
1	0545	70	50.	.6	2801.6	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	2797.3
1	0550	71	44.	.5	2801.1	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	2797.3
1	0555	72	39.	.4	2800.7	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	2797.3
1	0600	73	34.	.3	2800.2	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	2797.3
1	0605	74	29.	.2	2799.8	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	2797.3
1	0610	75	23.	.2	2799.3	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	2797.3
1	0615	76	19.	.1	2799.0	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	2797.3
1	0620	77	15.	.1	2798.6	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	2797.3
1	0625	78	13.	.1	2798.4	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	2797.3
1	0630	79	11.	.0	2798.2	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	2797.3
1	0635	80	9.	.0	2798.1	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	2797.3
1	0640	81	7.	.0	2797.9	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	2797.3
1	0645	82	5.	.0	2797.8	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	2797.3
1	0650	83	4.	.0	2797.7	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	2797.3
1	0655	84	3.	.0	2797.6	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	2797.3
1	0700	85	2.	.0	2797.5	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	2797.3
1	0705	86	2.	.0	2797.5	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	2797.3
1	0710	87	1.	.0	2797.4	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	2797.3
1	0715	88	1.	.0	2797.4	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	2797.3
1	0720	89	1.	.0	2797.4	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	2797.3
1	0725	90	1.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	2797.3
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	2797.3
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	2797.3
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	2797.3
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	2797.3
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	2797.3
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	2797.3
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	2797.3
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	2797.3
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	2797.3
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	2797.3
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 258.	4.17		66.	16.	16.	16.
		(INCHES)	1.685	1.687	1.687	1.687
		(AC-FT)	33.	33.	33.	33.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
5.	4.17	1.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
2811.29	4.17	2801.25	2798.30	2798.26	2798.26

CUMULATIVE AREA = .36 SQ MI

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HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .98

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE		DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE		DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	*	1		0820	101	0.	.0	2797.3	*	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	*	1		0825	102	0.	.0	2797.3	*	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	*	1		0830	103	0.	.0	2797.3	*	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	*	1		0835	104	0.	.0	2797.3	*	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	*	1		0840	105	0.	.0	2797.3	*	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	*	1		0845	106	0.	.0	2797.3	*	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	*	1		0850	107	0.	.0	2797.3	*	1		1710	207	0.	.0	2797.3
1		0035	8	0.	.0	2797.3	*	1		0855	108	0.	.0	2797.3	*	1		1715	208	0.	.0	2797.3
1		0040	9	0.	.0	2797.3	*	1		0900	109	0.	.0	2797.3	*	1		1720	209	0.	.0	2797.3
1		0045	10	0.	.0	2797.3	*	1		0905	110	0.	.0	2797.3	*	1		1725	210	0.	.0	2797.3
1		0050	11	0.	.0	2797.3	*	1		0910	111	0.	.0	2797.3	*	1		1730	211	0.	.0	2797.3
1		0055	12	0.	.0	2797.3	*	1		0915	112	0.	.0	2797.3	*	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	*	1		0920	113	0.	.0	2797.3	*	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	*	1		0925	114	0.	.0	2797.3	*	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	*	1		0930	115	0.	.0	2797.3	*	1		1750	215	0.	.0	2797.3
1		0115	16	1.	.0	2797.4	*	1		0935	116	0.	.0	2797.3	*	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	*	1		0940	117	0.	.0	2797.3	*	1		1800	217	0.	.0	2797.3
1		0125	18	1.	.0	2797.4	*	1		0945	118	0.	.0	2797.3	*	1		1805	218	0.	.0	2797.3
1		0130	19	2.	.0	2797.5	*	1		0950	119	0.	.0	2797.3	*	1		1810	219	0.	.0	2797.3
1		0135	20	2.	.0	2797.5	*	1		0955	120	0.	.0	2797.3	*	1		1815	220	0.	.0	2797.3

											PRO												
1	0140	21	3.	.0	2797.6	*	1	1000	121	0.	.0	2797.3	*	1	1820	221	0.	.0	2797.3
1	0145	22	4.	.0	2797.7	*	1	1005	122	0.	.0	2797.3	*	1	1825	222	0.	.0	2797.3
1	0150	23	5.	.0	2797.7	*	1	1010	123	0.	.0	2797.3	*	1	1830	223	0.	.0	2797.3
1	0155	24	6.	.0	2797.8	*	1	1015	124	0.	.0	2797.3	*	1	1835	224	0.	.0	2797.3
1	0200	25	6.	.0	2797.8	*	1	1020	125	0.	.0	2797.3	*	1	1840	225	0.	.0	2797.3
1	0205	26	7.	.0	2797.9	*	1	1025	126	0.	.0	2797.3	*	1	1845	226	0.	.0	2797.3
1	0210	27	8.	.0	2798.0	*	1	1030	127	0.	.0	2797.3	*	1	1850	227	0.	.0	2797.3
1	0215	28	9.	.0	2798.1	*	1	1035	128	0.	.0	2797.3	*	1	1855	228	0.	.0	2797.3
1	0220	29	10.	.0	2798.2	*	1	1040	129	0.	.0	2797.3	*	1	1900	229	0.	.0	2797.3
1	0225	30	12.	.1	2798.3	*	1	1045	130	0.	.0	2797.3	*	1	1905	230	0.	.0	2797.3
1	0230	31	13.	.1	2798.4	*	1	1050	131	0.	.0	2797.3	*	1	1910	231	0.	.0	2797.3
1	0235	32	14.	.1	2798.5	*	1	1055	132	0.	.0	2797.3	*	1	1915	232	0.	.0	2797.3
1	0240	33	14.	.1	2798.5	*	1	1100	133	0.	.0	2797.3	*	1	1920	233	0.	.0	2797.3
1	0245	34	14.	.1	2798.5	*	1	1105	134	0.	.0	2797.3	*	1	1925	234	0.	.0	2797.3
1	0250	35	15.	.1	2798.6	*	1	1110	135	0.	.0	2797.3	*	1	1930	235	0.	.0	2797.3
1	0255	36	16.	.1	2798.7	*	1	1115	136	0.	.0	2797.3	*	1	1935	236	0.	.0	2797.3
1	0300	37	18.	.1	2798.9	*	1	1120	137	0.	.0	2797.3	*	1	1940	237	0.	.0	2797.3
1	0305	38	20.	.1	2799.1	*	1	1125	138	0.	.0	2797.3	*	1	1945	238	0.	.0	2797.3
1	0310	39	22.	.2	2799.2	*	1	1130	139	0.	.0	2797.3	*	1	1950	239	0.	.0	2797.3
1	0315	40	25.	.2	2799.5	*	1	1135	140	0.	.0	2797.3	*	1	1955	240	0.	.0	2797.3
1	0320	41	31.	.3	2800.0	*	1	1140	141	0.	.0	2797.3	*	1	2000	241	0.	.0	2797.3
1	0325	42	39.	.4	2800.7	*	1	1145	142	0.	.0	2797.3	*	1	2005	242	0.	.0	2797.3
1	0330	43	52.	.6	2801.8	*	1	1150	143	0.	.0	2797.3	*	1	2010	243	0.	.0	2797.3
1	0335	44	84.	.8	2802.8	*	1	1155	144	0.	.0	2797.3	*	1	2015	244	0.	.0	2797.3
1	0340	45	122.	1.1	2803.8	*	1	1200	145	0.	.0	2797.3	*	1	2020	245	0.	.0	2797.3
1	0345	46	155.	1.6	2805.2	*	1	1205	146	0.	.0	2797.3	*	1	2025	246	0.	.0	2797.3
1	0350	47	194.	2.4	2807.1	*	1	1210	147	0.	.0	2797.3	*	1	2030	247	0.	.0	2797.3
1	0355	48	220.	3.3	2808.7	*	1	1215	148	0.	.0	2797.3	*	1	2035	248	0.	.0	2797.3
1	0400	49	242.	4.1	2810.0	*	1	1220	149	0.	.0	2797.3	*	1	2040	249	0.	.0	2797.3
1	0405	50	251.	4.6	2810.7	*	1	1225	150	0.	.0	2797.3	*	1	2045	250	0.	.0	2797.3
1	0410	51	253.	4.7	2810.9	*	1	1230	151	0.	.0	2797.3	*	1	2050	251	0.	.0	2797.3
1	0415	52	251.	4.6	2810.7	*	1	1235	152	0.	.0	2797.3	*	1	2055	252	0.	.0	2797.3
1	0420	53	244.	4.2	2810.2	*	1	1240	153	0.	.0	2797.3	*	1	2100	253	0.	.0	2797.3
1	0425	54	231.	3.7	2809.4	*	1	1245	154	0.	.0	2797.3	*	1	2105	254	0.	.0	2797.3
1	0430	55	214.	3.1	2808.3	*	1	1250	155	0.	.0	2797.3	*	1	2110	255	0.	.0	2797.3
1	0435	56	197.	2.5	2807.2	*	1	1255	156	0.	.0	2797.3	*	1	2115	256	0.	.0	2797.3
1	0440	57	172.	1.9	2806.0	*	1	1300	157	0.	.0	2797.3	*	1	2120	257	0.	.0	2797.3
1	0445	58	149.	1.5	2804.9	*	1	1305	158	0.	.0	2797.3	*	1	2125	258	0.	.0	2797.3
1	0450	59	127.	1.2	2803.9	*	1	1310	159	0.	.0	2797.3	*	1	2130	259	0.	.0	2797.3
1	0455	60	101.	1.0	2803.3	*	1	1315	160	0.	.0	2797.3	*	1	2135	260	0.	.0	2797.3
1	0500	61	93.	.9	2803.0	*	1	1320	161	0.	.0	2797.3	*	1	2140	261	0.	.0	2797.3
1	0505	62	92.	.9	2803.0	*	1	1325	162	0.	.0	2797.3	*	1	2145	262	0.	.0	2797.3
1	0510	63	92.	.9	2803.0	*	1	1330	163	0.	.0	2797.3	*	1	2150	263	0.	.0	2797.3
1	0515	64	90.	.9	2803.0	*	1	1335	164	0.	.0	2797.3	*	1	2155	264	0.	.0	2797.3
1	0520	65	86.	.9	2802.8	*	1	1340	165	0.	.0	2797.3	*	1	2200	265	0.	.0	2797.3
1	0525	66	79.	.8	2802.7	*	1	1345	166	0.	.0	2797.3	*	1	2205	266	0.	.0	2797.3
1	0530	67	71.	.8	2802.5	*	1	1350	167	0.	.0	2797.3	*	1	2210	267	0.	.0	2797.3
1	0535	68	62.	.7	2802.2	*	1	1355	168	0.	.0	2797.3	*	1	2215	268	0.	.0	2797.3
1	0540	69	54.	.6	2802.0	*	1	1400	169	0.	.0	2797.3	*	1	2220	269	0.	.0	2797.3
1	0545	70	49.	.6	2801.6	*	1	1405	170	0.	.0	2797.3	*	1	2225	270	0.	.0	2797.3
1	0550	71	44.	.5	2801.1	*	1	1410	171	0.	.0	2797.3	*	1	2230	271	0.	.0	2797.3
1	0555	72	38.	.4	2800.6	*	1	1415	172	0.	.0	2797.3	*	1	2235	272	0.	.0	2797.3
1	0600	73	33.	.3	2800.2	*	1	1420	173	0.	.0	2797.3	*	1	2240	273	0.	.0	2797.3
1	0605	74	28.	.2	2799.7	*	1	1425	174	0.	.0	2797.3	*	1	2245	274	0.	.0	2797.3
1	0610	75	23.	.2	2799.3	*	1	1430	175	0.	.0	2797.3	*	1	2250	275	0.	.0	2797.3
1	0615	76	19.	.1	2798.9	*	1	1435	176	0.	.0	2797.3	*	1	2255	276	0.	.0	2797.3
1	0620	77	15.	.1	2798.6	*	1	1440	177	0.	.0	2797.3	*	1	2300	277	0.	.0	2797.3
1	0625	78	12.	.1	2798.4	*	1	1445	178	0.	.0	2797.3	*	1	2305	278	0.	.0	2797.3
1	0630	79	10.	.0	2798.2	*	1	1450	179	0.	.0	2797.3	*	1	2310	279	0.	.0	2797.3
1	0635	80	9.	.0	2798.1	*	1	1455	180	0.	.0	2797.3	*	1	2315	280	0.	.0	2797.3
1	0640	81	7.	.0	2797.9	*	1	1500	181	0.	.0	2797.3	*	1	2320	281	0.	.0	2797.3
1	0645	82	5.	.0	2797.7	*	1	1505	182	0.	.0	2797.3	*	1	2325	282	0.	.0	2797.3
1	0650	83	4.	.0	2797.7	*	1	1510	183	0.	.0	2797.3	*	1	2330	283	0.	.0	2797.3
1	0655	84	3.	.0	2797.6	*	1	1515	184	0.	.0	2797.3	*	1	2335	284	0.	.0	2797.3
1	0700	85	2.	.0	2797.5	*	1	1520	185	0.	.0	2797.3	*	1	2340	285	0.	.0	2797.3
1	0705	86	2.	.0	2797.5	*	1	1525	186	0.	.0	2797.3	*	1	2345	286	0.	.0	2797.3
1	0710	87	1.	.0	2797.4	*	1	1530	187	0.	.0	2797.3	*	1	2350	287	0.	.0	2797.3
1	0715	88	1.	.0	2797.4	*	1	1535	188	0.	.0	2797.3	*	1	2355	288	0.	.0	2797.3
1	0720	89	1.	.0	2797.4	*	1	1540	189	0.	.0	2797.3	*	2	0000	289	0.	.0	2797.3
1	0725	90	1.	.0	2797.3	*	1	1545	190	0.	.0	2797.3	*	2	0005	290	0.	.0	2797.3
1	0730	91	0.	.0	2797.3	*	1	1550	191	0.	.0	2797.3	*	2	0010	291	0.	.0	2797.3
1	0735	92	0.	.0	2797.3	*	1	1555	192	0.	.0	2797.3	*	2	0015	292	0.	.0	2797.3
1	0740	93	0.	.0	2797.3	*	1	1600	193	0.	.0	2797.3	*	2	0020	293	0.	.0	2797.3
1	0745	94	0.	.0	2797.3	*	1	1605	194	0.	.0	2797.3	*	2	0025	294	0.	.0	2797.3
1	0750	95	0.	.0	2797.3	*	1	1610	195	0.	.0	2797.3	*	2	0030	295	0.	.0	2797.3
1	0755	96	0.	.0	2797.3	*	1	1615	196	0.	.0	2797.3	*	2	0035	296	0.	.0	2797.3
1	0800	97	0.	.0	2797.3	*	1	1620	197	0.	.0	2797.3	*	2	0040	297	0.	.0	2797.3
1	0805	98	0.	.0	2797.3	*	1	1625	198	0.	.0	2797.3	*	2	0045	298	0.	.0	2797.3
1	0810	99	0.	.0	2797.3	*	1	1630	199	0.	.0	2797.3	*	2	0050	299	0.	.0	2797.3
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	2797.3
						*							*						

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	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	24.92-HR
+	(CFS)	(HR)	(CFS)				
+	253.	4.17		64.	16.	15.	15.
			(INCHES)	1.633	1.635	1.635	1.635
			(AC-FT)	32.	32.	32.	32.

	PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	24.92-HR
+	(AC-FT)	(HR)				
	5.	4.17	1.	0.	0.	0.

	PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	24.92-HR
+	(FEET)	(HR)				
	2810.92	4.17	2801.14	2798.27	2798.23	2798.23

CUMULATIVE AREA = .36 SQ MI

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PRO
HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .97

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	1		0820	101	0.	.0	2797.3	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	1		0825	102	0.	.0	2797.3	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	1		0830	103	0.	.0	2797.3	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	1		0835	104	0.	.0	2797.3	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	1		0840	105	0.	.0	2797.3	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	1		0845	106	0.	.0	2797.3	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	1		0850	107	0.	.0	2797.3	1		1710	207	0.	.0	2797.3
1		0035	8	0.	.0	2797.3	1		0855	108	0.	.0	2797.3	1		1715	208	0.	.0	2797.3
1		0040	9	0.	.0	2797.3	1		0900	109	0.	.0	2797.3	1		1720	209	0.	.0	2797.3
1		0045	10	0.	.0	2797.3	1		0905	110	0.	.0	2797.3	1		1725	210	0.	.0	2797.3
1		0050	11	0.	.0	2797.3	1		0910	111	0.	.0	2797.3	1		1730	211	0.	.0	2797.3
1		0055	12	0.	.0	2797.3	1		0915	112	0.	.0	2797.3	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	1		0920	113	0.	.0	2797.3	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	1		0925	114	0.	.0	2797.3	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	1		0930	115	0.	.0	2797.3	1		1750	215	0.	.0	2797.3
1		0115	16	0.	.0	2797.3	1		0935	116	0.	.0	2797.3	1		1755	216	0.	.0	2797.3
1		0120	17	1.	.0	2797.4	1		0940	117	0.	.0	2797.3	1		1800	217	0.	.0	2797.3
1		0125	18	1.	.0	2797.4	1		0945	118	0.	.0	2797.3	1		1805	218	0.	.0	2797.3
1		0130	19	2.	.0	2797.4	1		0950	119	0.	.0	2797.3	1		1810	219	0.	.0	2797.3
1		0135	20	2.	.0	2797.5	1		0955	120	0.	.0	2797.3	1		1815	220	0.	.0	2797.3
1		0140	21	3.	.0	2797.6	1		1000	121	0.	.0	2797.3	1		1820	221	0.	.0	2797.3
1		0145	22	4.	.0	2797.6	1		1005	122	0.	.0	2797.3	1		1825	222	0.	.0	2797.3
1		0150	23	5.	.0	2797.7	1		1010	123	0.	.0	2797.3	1		1830	223	0.	.0	2797.3
1		0155	24	5.	.0	2797.7	1		1015	124	0.	.0	2797.3	1		1835	224	0.	.0	2797.3
1		0200	25	5.	.0	2797.8	1		1020	125	0.	.0	2797.3	1		1840	225	0.	.0	2797.3
1		0205	26	6.	.0	2797.8	1		1025	126	0.	.0	2797.3	1		1845	226	0.	.0	2797.3
1		0210	27	6.	.0	2797.8	1		1030	127	0.	.0	2797.3	1		1850	227	0.	.0	2797.3
1		0215	28	8.	.0	2798.0	1		1035	128	0.	.0	2797.3	1		1855	228	0.	.0	2797.3
1		0220	29	9.	.0	2798.1	1		1040	129	0.	.0	2797.3	1		1900	229	0.	.0	2797.3
1		0225	30	11.	.0	2798.2	1		1045	130	0.	.0	2797.3	1		1905	230	0.	.0	2797.3
1		0230	31	12.	.1	2798.4	1		1050	131	0.	.0	2797.3	1		1910	231	0.	.0	2797.3
1		0235	32	14.	.1	2798.5	1		1055	132	0.	.0	2797.3	1		1915	232	0.	.0	2797.3
1		0240	33	14.	.1	2798.5	1		1100	133	0.	.0	2797.3	1		1920	233	0.	.0	2797.3
1		0245	34	14.	.1	2798.5	1		1105	134	0.	.0	2797.3	1		1925	234	0.	.0	2797.3
1		0250	35	14.	.1	2798.5	1		1110	135	0.	.0	2797.3	1		1930	235	0.	.0	2797.3
1		0255	36	15.	.1	2798.6	1		1115	136	0.	.0	2797.3	1		1935	236	0.	.0	2797.3
1		0300	37	16.	.1	2798.7	1		1120	137	0.	.0	2797.3	1		1940	237	0.	.0	2797.3
1		0305	38	19.	.1	2798.9	1		1125	138	0.	.0	2797.3	1		1945	238	0.	.0	2797.3
1		0310	39	21.	.1	2799.2	1		1130	139	0.	.0	2797.3	1		1950	239	0.	.0	2797.3
1		0315	40	24.	.2	2799.4	1		1135	140	0.	.0	2797.3	1		1955	240	0.	.0	2797.3
1		0320	41	30.	.2	2799.9	1		1140	141	0.	.0	2797.3	1		2000	241	0.	.0	2797.3
1		0325	42	38.	.4	2800.6	1		1145	142	0.	.0	2797.3	1		2005	242	0.	.0	2797.3
1		0330	43	51.	.6	2801.7	1		1150	143	0.	.0	2797.3	1		2010	243	0.	.0	2797.3
1		0335	44	82.	.8	2802.7	1		1155	144	0.	.0	2797.3	1		2015	244	0.	.0	2797.3
1		0340	45	119.	1.1	2803.7	1		1200	145	0.	.0	2797.3	1		2020	245	0.	.0	2797.3
1		0345	46	153.	1.6	2805.1	1		1205	146	0.	.0	2797.3	1		2025	246	0.	.0	2797.3
1		0350	47	192.	2.3	2806.9	1		1210	147	0.	.0	2797.3	1		2030	247	0.	.0	2797.3
1		0355	48	217.	3.2	2808.5	1		1215	148	0.	.0	2797.3	1		2035	248	0.	.0	2797.3
1		0400	49	239.	4.0	2809.9	1		1220	149	0.	.0	2797.3	1		2040	249	0.	.0	2797.3
1		0405	50	248.	4.4	2810.5	1		1225	150	0.	.0	2797.3	1		2045	250	0.	.0	2797.3
1		0410	51	251.	4.6	2810.7	1		1230	151	0.	.0	2797.3	1		2050	251	0.	.0	2797.3
1		0415	52	248.	4.4	2810.6	1		1235	152	0.	.0	2797.3	1		2055	252	0.	.0	2797.3
1		0420	53	242.	4.1	2810.0	1		1240	153	0.	.0	2797.3	1		2100	253	0.	.0	2797.3
1		0425	54	227.	3.6	2809.1	1		1245	154	0.	.0	2797.3	1		2105	254	0.	.0	2797.3
1		0430	55	211.	3.0	2808.1	1		1250	155	0.	.0	2797.3	1		2110	255	0.	.0	2797.3
1		0435	56	194.	2.4	2807.1	1		1255	156	0.	.0	2797.3	1		2115	256	0.	.0	2797.3
1		0440	57	168.	1.9	2805.8	1		1300	157	0.	.0	2797.3	1		2120	257	0.	.0	2797.3
1		0445	58	145.	1.4	2804.7	1		1305	158	0.	.0	2797.3	1		2125	258	0.	.0	2797.3
1		0450	59	121.	1.1	2803.8	1		1310	159	0.	.0	2797.3	1		2130	259	0.	.0	2797.3
1		0455	60	98.	1.0	2803.2	1		1315	160	0.	.0	2797.3	1		2135	260	0.	.0	2797.3
1		0500	61	91.	.9	2803.0	1		1320	161	0.	.0	2797.3	1		2140	261	0.	.0	2797.3
1		0505	62	90.	.9	2803.0	1		1325	162	0.	.0	2797.3	1		2145	262	0.	.0	2797.3
1		0510	63	91.	.9	2803.0	1		1330	163	0.	.0	2797.3	1		2150	263	0.	.0	2797.3
1		0515	64	89.	.9	2802.9	1		1335	164	0.	.0	2797.3	1		2155	264	0.	.0	2797.3
1		0520	65	84.	.9	2802.8	1		1340	165	0.	.0	2797.3	1		2200	265	0.	.0	2797.3
1		0525	66	78.	.8	2802.6	1		1345	166	0.	.0	2797.3	1		2205	266	0.	.0	2797.3
1		0530	67	71.	.8	2802.4	1		1350	167	0.	.0	2797.3	1		2210	267	0.	.0	2797.3
1		0535	68	62.	.7	2802.2	1		1355	168	0.	.0	2797.3	1		2215	268	0.	.0	2797.3
1		0540	69	53.	.6	2801.9	1		1400	169	0.	.0	2797.3	1		2220	269	0.	.0	2797.3
1		0545	70	49.	.5	2801.5	1		1405	170	0.	.0	2797.3	1		2225	270	0.	.0	2797.3
1		0550	71	43.	.5	2801.1	1		1410	171	0.	.0	2797.3	1		2230	271	0.	.0	2797.3
1		0555	72	38.	.4	2800.6	1		1415	172	0.	.0	2797.3	1		2235	272	0.	.0	2797.3
1		0600	73	33.	.3	2800.2	1		1420	173	0.	.0	2797.3	1		2240	273	0.	.0	2797.3
1		0605	74	28.	.2	2799.7	1		1425	174	0.	.0	2797.3	1		2245	274	0.	.0	2797.3
1		0610	75	23.	.2	2799.3	1		1430	175	0.	.0	2797.3	1		2250	275	0.	.0	2797.3
1		0615	76	19.	.1	2799.0	1		1435	176	0.	.0	2797.3	1		2255	276	0.	.0	2797.3
1		0620	77	15.	.1	2798.6	1		1440	177	0.	.0	2797.3	1		2300	277	0.	.0	2797.3
1		0625	78	13.	.1	2798.4	1		1445	178	0.	.0	2797.3	1		2305	278	0.	.0	2797.3
1		0630	79	11.	.0	2798.2	1		1450	179	0.	.0	2797.3	1		2310	279	0.	.0	2797.3
1		0635	80	9.	.0	2798.1	1		1455	180	0.	.0	2797.3	1		2315	280	0.	.0	2797.3
1		0640	81	8.	.0	2798.0	1		1500	181	0.	.0	2797.3	1		2320	281	0.	.0	2797.3
1		0645	82	6.	.0	2797.8	1		1505	182	0.	.0	2797.3	1		2325	282	0.	.0	2797.3
1		0650	83	5.	.0	2797.7	1		1510	183	0.	.0	2797.3	1		2330	283	0.	.0	2797.3
1		0655	84	4.	.0	2797.6	1		1515	184	0.	.0	2797.3	1		2335	284	0.	.0	2797.3
1		0700	85	3.	.0	2797.6	1		1520	185	0.	.0	2797.3	1		2340	285	0.	.0	2797.3
1		0705	86	2.	.0	2797.5	1		1525	186	0.	.0	2797.3	1		2345	286	0.	.0	2797.3
1		0710	87	2.	.0	2797.4	1		1530	187	0.	.0	2797.3	1		2350	287	0.	.0	2797.3
1		0715	88	1.	.0	2797.4	1		1535	188	0.	.0	2797.3	1		2355	288	0.	.0	2797.3
1		0720	89	1.	.0	2797.4	1		1540	189	0.	.0	2797.3	2		0000	289	0.	.0	2797.3
1		0725	90	1.	.0	2797.4	1		1545	190	0.	.0	2797.3	2		0005	290	0.	.0	2797.3
1		0730	91	1.	.0	2797.3	1		1550	191	0.	.0	2797.3	2		0010	291	0.	.0	2797.3
1		0735	92	0.	.0	2797.3	1		1555	192	0.	.0	2797.3	2		0015	292	0.	.0	2797.3
1		0740	93	0.	.0	2797.3	1		1600	193	0.	.0	2797.3	2		0020	293	0.	.0	2797.3
1		0745	94	0.	.0	2797.3	1		1605	194	0.	.0	2797.3	2		0025	294	0.	.0	2797.3
1		0750	95	0.	.0	2797.3	1		1610	195	0.	.0	2797.3	2		0030	295	0.	.0	2797.3
1		0755	96	0.	.0	2797.3	1		1615	196	0.	.0	2797.3	2		0035	296	0.	.0	2797.3
1		0800	97	0.	.0	2797.3	1		1620	197	0.	.0	2797.3	2		0040	297	0.	.0	2797.3
1		0805	98	0.	.0	2797.3	1		1625	198	0.	.0	2797.3	2		0045	298	0.	.0	2797.3
1		0810	99	0.	.0	2797.3	1		1630	199	0.	.0	2797.3	2		0050	299	0.	.0	2797.3

												PRO											
1	0815	100	0.	.0	2797.3	*	1	1635	200	0.	.0	2797.3	*	2	0055	300	0.	.0	2797.3
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 251.	4.17		63.	16.	15.	15.
		(INCHES)	1.607	1.610	1.610	1.610
		(AC-FT)	31.	31.	31.	31.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)					
5.	4.17		1.	0.	0.	0.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)					
2810.75	4.17		2801.08	2798.26	2798.22	2798.22

CUMULATIVE AREA = .36 SQ MI

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HYDROGRAPH AT STATION DBN
PLAN 1, RATIO = .55

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2797.3	*	1		0820	101	0.	.0	2797.3	*	1		1640	201	0.	.0	2797.3
1		0005	2	0.	.0	2797.3	*	1		0825	102	0.	.0	2797.3	*	1		1645	202	0.	.0	2797.3
1		0010	3	0.	.0	2797.3	*	1		0830	103	0.	.0	2797.3	*	1		1650	203	0.	.0	2797.3
1		0015	4	0.	.0	2797.3	*	1		0835	104	0.	.0	2797.3	*	1		1655	204	0.	.0	2797.3
1		0020	5	0.	.0	2797.3	*	1		0840	105	0.	.0	2797.3	*	1		1700	205	0.	.0	2797.3
1		0025	6	0.	.0	2797.3	*	1		0845	106	0.	.0	2797.3	*	1		1705	206	0.	.0	2797.3
1		0030	7	0.	.0	2797.3	*	1		0850	107	0.	.0	2797.3	*	1		1710	207	0.	.0	2797.3
1		0035	8	0.	.0	2797.3	*	1		0855	108	0.	.0	2797.3	*	1		1715	208	0.	.0	2797.3
1		0040	9	0.	.0	2797.3	*	1		0900	109	0.	.0	2797.3	*	1		1720	209	0.	.0	2797.3
1		0045	10	0.	.0	2797.3	*	1		0905	110	0.	.0	2797.3	*	1		1725	210	0.	.0	2797.3
1		0050	11	0.	.0	2797.3	*	1		0910	111	0.	.0	2797.3	*	1		1730	211	0.	.0	2797.3
1		0055	12	0.	.0	2797.3	*	1		0915	112	0.	.0	2797.3	*	1		1735	212	0.	.0	2797.3
1		0100	13	0.	.0	2797.3	*	1		0920	113	0.	.0	2797.3	*	1		1740	213	0.	.0	2797.3
1		0105	14	0.	.0	2797.3	*	1		0925	114	0.	.0	2797.3	*	1		1745	214	0.	.0	2797.3
1		0110	15	0.	.0	2797.3	*	1		0930	115	0.	.0	2797.3	*	1		1750	215	0.	.0	2797.3
1		0115	16	0.	.0	2797.3	*	1		0935	116	0.	.0	2797.3	*	1		1755	216	0.	.0	2797.3
1		0120	17	0.	.0	2797.3	*	1		0940	117	0.	.0	2797.3	*	1		1800	217	0.	.0	2797.3
1		0125	18	0.	.0	2797.3	*	1		0945	118	0.	.0	2797.3	*	1		1805	218	0.	.0	2797.3
1		0130	19	0.	.0	2797.3	*	1		0950	119	0.	.0	2797.3	*	1		1810	219	0.	.0	2797.3
1		0135	20	0.	.0	2797.3	*	1		0955	120	0.	.0	2797.3	*	1		1815	220	0.	.0	2797.3
1		0140	21	0.	.0	2797.3	*	1		1000	121	0.	.0	2797.3	*	1		1820	221	0.	.0	2797.3
1		0145	22	0.	.0	2797.3	*	1		1005	122	0.	.0	2797.3	*	1		1825	222	0.	.0	2797.3
1		0150	23	0.	.0	2797.3	*	1		1010	123	0.	.0	2797.3	*	1		1830	223	0.	.0	2797.3
1		0155	24	0.	.0	2797.3	*	1		1015	124	0.	.0	2797.3	*	1		1835	224	0.	.0	2797.3
1		0200	25	0.	.0	2797.3	*	1		1020	125	0.	.0	2797.3	*	1		1840	225	0.	.0	2797.3
1		0205	26	0.	.0	2797.3	*	1		1025	126	0.	.0	2797.3	*	1		1845	226	0.	.0	2797.3
1		0210	27	0.	.0	2797.3	*	1		1030	127	0.	.0	2797.3	*	1		1850	227	0.	.0	2797.3
1		0215	28	0.	.0	2797.3	*	1		1035	128	0.	.0	2797.3	*	1		1855	228	0.	.0	2797.3
1		0220	29	0.	.0	2797.3	*	1		1040	129	0.	.0	2797.3	*	1		1900	229	0.	.0	2797.3
1		0225	30	0.	.0	2797.3	*	1		1045	130	0.	.0	2797.3	*	1		1905	230	0.	.0	2797.3
1		0230	31	1.	.0	2797.4	*	1		1050	131	0.	.0	2797.3	*	1		1910	231	0.	.0	2797.3
1		0235	32	1.	.0	2797.4	*	1		1055	132	0.	.0	2797.3	*	1		1915	232	0.	.0	2797.3
1		0240	33	1.	.0	2797.4	*	1		1100	133	0.	.0	2797.3	*	1		1920	233	0.	.0	2797.3
1		0245	34	1.	.0	2797.4	*	1		1105	134	0.	.0	2797.3	*	1		1925	234	0.	.0	2797.3
1		0250	35	1.	.0	2797.4	*	1		1110	135	0.	.0	2797.3	*	1		1930	235	0.	.0	2797.3
1		0255	36	1.	.0	2797.4	*	1		1115	136	0.	.0	2797.3	*	1		1935	236	0.	.0	2797.3
1		0300	37	2.	.0	2797.4	*	1		1120	137	0.	.0	2797.3	*	1		1940	237	0.	.0	2797.3
1		0305	38	2.	.0	2797.5	*	1		1125	138	0.	.0	2797.3	*	1		1945	238	0.	.0	2797.3
1		0310	39	3.	.0	2797.5	*	1		1130	139	0.	.0	2797.3	*	1		1950	239	0.	.0	2797.3
1		0315	40	4.	.0	2797.7	*	1		1135	140	0.	.0	2797.3	*	1		1955	240	0.	.0	2797.3
1		0320	41	8.	.0	2798.0	*	1		1140	141	0.	.0	2797.3	*	1		2000	241	0.	.0	2797.3
1		0325	42	11.	.0	2798.2	*	1		1145	142	0.	.0	2797.3	*	1		2005	242	0.	.0	2797.3
1		0330	43	16.	.1	2798.7	*	1		1150	143	0.	.0	2797.3	*	1		2010	243	0.	.0	2797.3
1		0335	44	24.	.2	2799.4	*	1		1155	144	0.	.0	2797.3	*	1		2015	244	0.	.0	2797.3
1		0340	45	32.	.3	2800.1	*	1		1200	145	0.	.0	2797.3	*	1		2020	245	0.	.0	2797.3
1		0345	46	39.	.4	2800.7	*	1		1205	146	0.	.0	2797.3	*	1		2025	246	0.	.0	2797.3
1		0350	47	45.	.5	2801.3	*	1		1210	147	0.	.0	2797.3	*	1		2030	247	0.	.0	2797.3
1		0355	48	65.	.7	2802.3	*	1		1215	148	0.	.0	2797.3	*	1		2035	248	0.	.0	2797.3
1		0400	49	101.	1.0	2803.3	*	1		1220	149	0.	.0	2797.3	*	1		2040	249	0.	.0	2797.3
1		0405	50	118.	1.1	2803.7	*	1		1225	150	0.	.0	2797.3	*	1		2045	250	0.	.0	2797.3
1		0410	51	117.	1.1	2803.7	*	1		1230	151	0.	.0	2797.3	*	1		2050	251	0.	.0	2797.3
1		0415	52	108.	1.0	2803.4	*	1		1235	152	0.	.0	2797.3	*	1		2055	252	0.	.0	2797.3
1		0420	53	95.	.9	2803.1	*	1		1240	153	0.	.0	2797.3	*	1		2100	253	0.	.0	2797.3
1		0425	54	82.	.8	2802.8	*	1		1245	154	0.	.0	2797.3	*	1		2105	254	0.	.0	2797.3
1		0430	55	71.	.8	2802.4	*	1		1250	155	0.	.0	2797.3	*	1		2110	255	0.	.0	2797.3
1		0435	56	61.	.7	2802.2	*	1		1255	156	0.	.0	2797.3	*	1		2115	256	0.	.0	2797.3
1		0440	57	54.	.6	2802.0	*	1		1300	157	0.	.0	2797.3	*	1		2120	257	0.	.0	2797.3
1		0445	58	51.	.6	2801.7	*	1		1305	158	0.	.0	2797.3	*	1		2125	258	0.	.0	2797.3
1		0450	59	48.	.5	2801.5	*	1		1310	159	0.	.0	2797.3	*	1		2130	259	0.	.0	2797.3
1		0455	60	45.	.5	2801.2	*	1		1315	160	0.	.0	2797.3	*	1		2135	260	0.	.0	2797.3
1		0500	61	43.	.5	2801.0	*	1		1320	161	0.	.0	2797.3	*	1		2140	261	0.	.0	2797.3
1		0505	62	41.	.4	2800.9	*	1		1325	162	0.	.0	2797.3	*	1		2145	262	0.	.0	2797.3
1		0510	63	40.	.4	2800.8	*	1		1330	163	0.	.0	2797.3	*	1		2150	263	0.	.0	2797.3
1		0515	64	40.	.4	2800.8	*	1		1335	164	0.	.0	2797.3	*	1		2155	264	0.	.0	2797.3
1		0520	65	39.	.4	2800.7	*	1		1340	165	0.	.0	2797.3	*	1		2200	265	0.	.0	2797.3
1		0525	66	38.	.4	2800.6	*	1		1345	166	0.	.0	2797.3	*	1		2205	266	0.	.0	2797.3
1		0530	67	36.	.3	2800.4	*	1		1350	167	0.	.0	2797.3	*	1		2210	267	0.	.0	2797.3
1		0535	68	34.	.3	2800.2	*	1		1355	168	0.	.0	2797.3	*	1		2215	268	0.	.0	2797.3
1		0540	69	31.	.3	2800.0	*	1		1400	169	0.	.0	2797.3	*	1		2220	269	0.	.0	2797.3
1		0545	70	27.	.2	2799.6	*	1		1405	170	0.	.0	2797.3	*	1		2225	270	0.	.0	2797.3
1		0550	71	23.	.2	2799.3	*	1		1410	171	0.	.0	2797.3	*	1		2230	271	0.	.0	2797.3
1		0555	72	20.	.1	2799.0	*	1		1415	172	0.	.0	2797.3	*	1		2235	272	0.	.0	2797.3

PRO

ROUTED TO								
+	RWOFF8	.21	1	FLOW	230.	222.	220.	88.
				TIME	3.92	4.00	4.00	4.00
HYDROGRAPH AT								
+	EX-W5N	.14	1	FLOW	139.	135.	133.	51.
				TIME	3.83	3.83	3.83	3.83
3 COMBINED AT								
+	CPN	.36	1	FLOW	361.	350.	345.	133.
				TIME	3.92	3.92	3.92	4.00
ROUTED TO								
+	DBN	.36	1	FLOW	258.	253.	251.	118.
				TIME	4.17	4.17	4.17	4.08
			** PEAK STAGES IN FEET **					
			1	STAGE	2811.29	2810.92	2810.75	2803.70
				TIME	4.17	4.17	4.17	4.08
HYDROGRAPH AT								
+	WSPD3	.00	1	FLOW	5.	5.	5.	2.
				TIME	3.50	3.50	3.50	3.50
HYDROGRAPH AT								
+	ON1-E	.03	1	FLOW	47.	46.	45.	18.
				TIME	3.50	3.50	3.50	3.58
4 COMBINED AT								
+	WC9a	.95	1	FLOW	684.	665.	656.	269.
				TIME	3.92	4.00	4.00	4.08
HYDROGRAPH AT								
+	ON1-D	.03	1	FLOW	47.	46.	45.	21.
				TIME	3.58	3.58	3.58	3.58
HYDROGRAPH AT								
+	ON2-D	.03	1	FLOW	45.	44.	44.	18.
				TIME	3.58	3.58	3.58	3.58
HYDROGRAPH AT								
+	HOR	.02	1	FLOW	30.	29.	29.	14.
				TIME	3.50	3.50	3.50	3.50
3 COMBINED AT								
+	WC7	.07	1	FLOW	121.	118.	116.	53.
				TIME	3.58	3.58	3.58	3.58
HYDROGRAPH AT								
+	WGRC1A	.00	1	FLOW	4.	4.	4.	2.
				TIME	3.50	3.50	3.50	3.50
HYDROGRAPH AT								
+	EX-W6	.01	1	FLOW	18.	18.	17.	7.
				TIME	3.50	3.50	3.50	3.50
HYDROGRAPH AT								
+	WSPD0	.00	1	FLOW	2.	2.	2.	1.
				TIME	3.50	3.50	3.50	3.50
5 COMBINED AT								
+	WC9	1.04	1	FLOW	724.	704.	694.	281.
				TIME	3.92	3.92	3.92	4.08

1

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

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
FOR PLAN = 1 RATIO= .00									
RWOFF5	MANE	5.00	237.34	240.00	1.70	5.00	237.34	240.00	1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2330E+02 EXCESS= .0000E+00 OUTFLOW= .2332E+02 BASIN STORAGE= .7632E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00									
RWOFF5	MANE	5.00	230.22	240.00	1.65	5.00	230.22	240.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2259E+02 EXCESS= .0000E+00 OUTFLOW= .2261E+02 BASIN STORAGE= .7531E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00									
RWOFF5	MANE	5.00	226.67	240.00	1.62	5.00	226.67	240.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2224E+02 EXCESS= .0000E+00 OUTFLOW= .2226E+02 BASIN STORAGE= .7480E-02 PERCENT ERROR= -.1

FOR PLAN = 1 RATIO= .00									
RWOFF5	MANE	5.00	87.59	245.00	.62	5.00	87.59	245.00	.62

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8461E+01 EXCESS= .0000E+00 OUTFLOW= .8484E+01 BASIN STORAGE= .7208E-02 PERCENT ERROR= -.4

FOR PLAN = 1 RATIO= .00									
RWOFF8	MANE	5.00	229.71	235.00	1.69	5.00	229.71	235.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1924E+02 EXCESS= .0000E+00 OUTFLOW= .1928E+02 BASIN STORAGE= .6283E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00									
RWOFF8	MANE	5.00	222.50	240.00	1.64	5.00	222.50	240.00	1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1865E+02 EXCESS= .0000E+00 OUTFLOW= .1869E+02 BASIN STORAGE= .6205E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00									
RWOFF8	MANE	5.00	219.78	240.00	1.61	5.00	219.78	240.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1836E+02 EXCESS= .0000E+00 OUTFLOW= .1840E+02 BASIN STORAGE= .7178E-02 PERCENT ERROR= -.2

FOR PLAN = 1 RATIO= .00									
RWOFF8	MANE	5.00	88.48	240.00	.61	5.00	88.48	240.00	.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6943E+01 EXCESS= .0000E+00 OUTFLOW= .6979E+01 BASIN STORAGE= .7050E-02 PERCENT ERROR= -.6

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

Drainage Exhibit

Pertinent Improvement Plans

APPENDIX J

Reference Material

Technical Drainage Study for Skye Canyon Village (Smith's Marketplace), by Slater Hanifan Group

Approval Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM			DATE: November 4, 2016
TO: **Land Development Services** Department of Building & Safety			FROM: Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Skye Canyon Village**		**COPIES TO:** Anderson, Wahlen & Associates
Cross Streets:	NWC of Grand Canyon & Skye Canyon Park		MF Land,LLC
File Number:	F:\Depot\DSMemos\DS4812B.doc		Bart Anderson, P.E., DevCo
Parcel Number:	125-07-201-003		
Zoning Action:	MOD-62679; SUP-63594; SUP-63597; SDR-63598; VAR-63963 & GPA-64013		
FEMA Flood Zone	YES	NO **X**	
Proposed Storm Drain	YES **X**	NO	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	7/06/2016	8/19/2016	Not Approved	$400.00	450103: $400
2nd Submittal	10/24/2016	11/04/2016	See Comments Below	$400.00	462830: $400
			TOTAL FEES (LDDRS):	**$800.00**	----

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.
	is conditionally approved subject to Clark County Public Works Department concurrence.

1. Please note the Skye Canyon - Phase 3 Infrastructure must be approved prior to final approval of the Skye Canyon Village.

2. Please note that public drainage easements must be recorded by separate document prior to the final acceptance of the improvement plans unless they are to be recorded by parcel or final map.

3. Please note that all drainage improvements within Public Drainage Easements must be bonded and inspected.

4. Show and label existing offsite storm drain pipes proposed by others in the grading plan and plan & profile sheets.

5. Show HGL in the 72-inch RCP. It appears that the AutoCAD layer is turned off.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For

more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
OSK

T/R/S: T19S/R60E/07
AREA G-07

Drainage Exhibit

Summary of 100-Year Flows

ANDERSON WAHLEN & ASSOCIATES

Onsite Storm Drain Network Flows

Company: Anderson Wahlen & Associates	Project Name: Skye Canyon Village
By: JTC	Description: Proposed/Ultimate Flows
Date: 07/05/2016	File Name: Onsite SD Flows

Skye Canyon Village Onsite Facilities

Facility ID	Facility Description	Hydrologic Condition	Facility Conveyance Flow (cfs)
NM1P1	60" RCP	Proposed	286.07
		Ultimate	0.25
NM1P2	60" RCP	Proposed	296.54
		Ultimate	12.52
NM1P3	60" RCP	Proposed	298.99
		Ultimate	14.93
NM1P4	60" RCP	Proposed	298.97
		Ultimate	14.93
NM1P5	60" RCP	Proposed	304.64
		Ultimate	20.7
NM1P6	60" RCP	Proposed	307.6
		Ultimate	23.46
NM1P7	60" RCP	Proposed	308.78
		Ultimate	24.63
NM1P8	60" RCP	Proposed	310.33
		Ultimate	26.3
NM1P9	60" RCP	Proposed	312.08
		Ultimate	27.81
NM1P10	60" RCP	Proposed	313.59
		Ultimate	29.11
NM1P11	60" RCP	Proposed	314.53
		Ultimate	29.99
NM1P12	60" RCP	Proposed	316.95
		Ultimate	31.86
NM2P1	12" PVC	Proposed	9.02
		Ultimate	9.02
NM2P2	24" RCP	Proposed	10.89
		Ultimate	10.89
NM2P3	24" RCP	Proposed	12.36
		Ultimate	12.36
NL1P1	12" PVC	Proposed	1.91
		Ultimate	1.91
NL2P1	12" PVC	Proposed	1.49
		Ultimate	1.49
NL3P1	12" PVC	Proposed	2.47
		Ultimate	2.47

Facility ID	Facility Description	Hydrologic Condition	Facility Conveyance Flow (cfs)
NL4P1	12" PVC	Proposed	3.68
		Ultimate	3.68
NL4P2	15" RCP	Proposed	5.75
		Ultimate	5.75
NL5P1	18" RCP	Proposed	1.23
		Ultimate	1.23
NL6P1	24" RCP	Proposed	0.99
		Ultimate	0.99
FCM1P1	12" PVC	Proposed	1.22
		Ultimate	1.22
FCM1P2	12" PVC	Proposed	1.7
		Ultimate	1.7
FCM1P3	12" PVC	Proposed	1.94
		Ultimate	1.94
FCL1P1	12" PVC	Proposed	0.49
		Ultimate	0.49
FCL2P1	12" PVC	Proposed	0.25
		Ultimate	0.25
FCM2P1	12" PVC	Proposed	1.22
		Ultimate	1.22
FCM2P2	12" PVC	Proposed	1.46
		Ultimate	1.46
FCM2P3	12" PVC	Proposed	2.69
		Ultimate	2.69
FCL3P1	12" PVC	Proposed	0.25
		Ultimate	0.25
FCL4P1	12" PVC	Proposed	1.23
		Ultimate	1.23
PMP1	60" RCP	Proposed	423.06
		Ultimate	106.7
PMP2	72" RCP	Proposed	439.82
		Ultimate	125.81
PMP3	72" RCP	Proposed	458.71
		Ultimate	144.32
PMP4	72" RCP	Proposed	483.61
		Ultimate	169.23
SM1P1	8" PVC	Proposed	0.49
		Ultimate	0.49
SM1P2	8" PVC	Proposed	0.48
		Ultimate	0.48
SM1P3	15" RCP	Proposed	2.67
		Ultimate	2.67
SM1P4	15" RCP	Proposed	4.86
		Ultimate	4.86

Facility ID	Facility Description	Hydrologic Condition	Facility Conveyance Flow (cfs)
SM1P5	24" RCP	Proposed	11.33
		Ultimate	11.33
SL1P1	12" PVC	Proposed	2.19
		Ultimate	2.19
SL2P1	12" PVC	Proposed	2.22
		Ultimate	2.22
SL2P2	12" PVC	Proposed	2.19
		Ultimate	2.19
SL3P1	12" PVC	Proposed	2.69
		Ultimate	2.69
SL4P1	12" PVC	Proposed	3.87
		Ultimate	3.87
SM2P1	12" PVC	Proposed	3.19
		Ultimate	3.19
SM2P2	12" PVC	Proposed	4.63
		Ultimate	4.63
SM2P3	18" RCP	Proposed	8.25
		Ultimate	8.25
SL5P1	12" PVC	Proposed	1.48
		Ultimate	1.48
SL6P1	15" RCP	Proposed	3.66
		Ultimate	3.66
SM3P1	12" PVC	Proposed	3.15
		Ultimate	3.15
SM3P2	15" RCP	Proposed	3.14
		Ultimate	3.14
SM3P3	15" RCP	Proposed	6.77
		Ultimate	6.77
SM3P4	18" RCP	Proposed	10.62
		Ultimate	10.62
SM3P5	18" RCP	Proposed	13.75
		Ultimate	13.75
SM3P6	18" RCP	Proposed	18.04
		Ultimate	18.04
SL7P1	12" PVC	Proposed	3.63
		Ultimate	3.63
SL8P1	12" PVC	Proposed	3.87
		Ultimate	3.87
SL9P1	12" PVC	Proposed	3.14
		Ultimate	3.14
SL10P1	12" PVC	Proposed	1.97
		Ultimate	1.97
SL11P1	12" PVC	Proposed	0.98
		Ultimate	0.98

Facility ID	Facility Description	Hydrologic Condition	Facility Conveyance Flow (cfs)
SM4P1	12" PVC	Proposed	0.73
		Ultimate	0.73
SM4P2	12" PVC	Proposed	0.73
		Ultimate	0.73
SM4P3	12" PVC	Proposed	1.46
		Ultimate	1.46
SM4P4	15" RCP	Proposed	5.02
		Ultimate	5.02
SM4P5	15" RCP	Proposed	6.71
		Ultimate	6.71
SM4P6	18" RCP	Proposed	7.2
		Ultimate	7.2
SM4P7	24" RCP	Proposed	8.87
		Ultimate	8.87
SM4P8	24" RCP	Proposed	12.67
		Ultimate	12.67
SM4P9	24" RCP	Proposed	13.38
		Ultimate	13.38
SM4P10	24" RCP	Proposed	15.24
		Ultimate	15.24
SM4P11	24" RCP	Proposed	17.11
		Ultimate	17.11
SM4P12	24" RCP	Proposed	23.54
		Ultimate	23.54
SL12P1	12" PVC	Proposed	0.74
		Ultimate	0.74
SL13P1	12" PVC	Proposed	3.1
		Ultimate	3.1
SL14P1	12" PVC	Proposed	0.49
		Ultimate	0.49
SL15P1	12" PVC	Proposed	1.72
		Ultimate	1.72
SL16P1	12" PVC	Proposed	0.49
		Ultimate	0.49
SL17P1	12" PVC	Proposed	1.71
		Ultimate	1.71
SL18P1	15" RCP	Proposed	3.87
		Ultimate	3.87
SL20P1	12" PVC	Proposed	0.98
		Ultimate	0.98
SL21P1	15" RCP	Proposed	0.98
		Ultimate	0.98
SL22P1	12" PVC	Proposed	1.97
		Ultimate	1.97

Facility ID	Facility Description	Hydrologic Condition	Facility Conveyance Flow (cfs)
SM5P1	12" PVC	Proposed	0.49
		Ultimate	0.49
SM5P2	12" PVC	Proposed	0.73
		Ultimate	0.73
SL19P1	12" PVC	Proposed	0.25
		Ultimate	0.25
SM6P1	12" PVC	Proposed	2.2
		Ultimate	2.2
SM6P2	12" PVC	Proposed	4.13
		Ultimate	4.13
SM6P3	15" RCP	Proposed	6.56
		Ultimate	6.56
SL23P1	12" PVC	Proposed	1.96
		Ultimate	1.96
SL24P1	12" PVC	Proposed	2.44
		Ultimate	2.44
SL25P1	12" PVC	Proposed	1.45
		Ultimate	1.45
SL26P1	15" RCP	Proposed	2.46
		Ultimate	2.46

Pertinent Improvement Plans

APPENDIX K

Reference Material

Technical Drainage Study for Skye Canyon Parcel 2.16, by Slater Hanifan Group

Approval Letter

CITY OF LAS VEGAS INTER-OFFICE MEMORANDUM				DATE: March 8, 2017
TO: **Land Development Services** Department of Building & Safety				**FROM:** Albert Sung, P.E. Flood Control Project Engineer Department of Public Works
SUBJECT:	Drainage Study for: **Skye Canyon Parcel 2.16**			**COPIES TO:** Slater Hanifan Group
Cross Streets:	NWC of Egan Crest Dr. & Eagle Canyon Av.			Section 12, LLC / Ninety Five Mangt.
File Number:	F:\Depot\DSMemos\DS4842C.doc			Bart Anderson, P.E., DevCo
Parcel Number:	126-12-000-001			CCRFCD
Zoning Action:	TMP-65809			
FEMA Flood Zone	YES	NO	X	
Proposed Storm Drain	YES	NO	X	

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	11/3/2016	11/29/2016	Not Approved	$400.00	464250: $400
2nd Submittal	12/20/2016	1/5/2017	Conditional Approval	$400.00	469488: $400
Revised	1/23/2017	1/23/2017	Conditional Approval	N/C	N/C
CCRFCD	2/22/2017	3/8/2017	Concurrence Recv'd	N/C	N/C
			TOTAL FEES (LDDRS):	**$800.00**	----

REMARKS:

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

All Onsite ***Skye Canyon Phase 2 Developments*** such as **Parcel 2.xx series** are allowed to proceed with the following conditions:

1. Per the response to previous Comment #1, the developer/engineer has elected to construct the ultimate ***Detention Basin 1*** for adequate flood protection of the ***Phase 2 Developments***.
2. No ***Certificate of Occupancy*** on the houses will be issued until after the detention basin has been accepted for Substantial Completion by the City.
3. The *Developer* provides a bond for the detention basin now, showing good faith that the *Developer*'s intentions are to get started with the final detention basin as soon as permitting allows.

The following are comments pertaining to the subject site specific drainage study and grading plans:

4. All roadways and flood control facilities as proposed and approved in ***Skye Canyon Phase 2 Infrastructures*** must be substantially constructed prior to the issuance of building permits for the subject development.

5. All drainage easements must be public drainage easements to be privately maintained and common lots to be labeled on the grading plans and to be dedicated as such in the final map.

6. The engineer must provide a table on the grading plans that shows a quantity estimate of all drainage improvements within Public Drainage Easements. All drainage improvements within Public Drainage Easements must be bonded and inspected.

7. Private streets must be public drainage easements. Provide a note on the grading plans: "Note: All private streets are P.U.E., Public Sewer Easements and Public Drainage Easements to be privately maintained by HOA".

8. Add a note in all pertinent sheets for the construction of all storm drain drop inlets per a newly adopted USDCCA Drawing No. 421 (*Stormwater Quality Management Stamp and Sign Detail*).

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section*. Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS

ays

T/R/S: T19S/R59E/12
AREA F-12

Referenced Basins (HEC-1)

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   24OCT16  TIME  10:48:56   *
*                                       *
*****************************************
```

DEV

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

```
X    X XXXXXXX  XXXXX          X
X    X X       X     X        XX
X    X X       X              X
XXXXXXX XXXX   X        XXXXX  X
X    X X       X              X
X    X X       X     X        X
X    X XXXXXXX  XXXXX         XXX
```

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 -AMSKK- 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

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
              *DIAGRAM
    1         ID     SLATER HANIFAN GROUP
    2         ID     SKYE CANYON PARCEL 2.16
    3         ID     DEVELOPED CONDITION
    4         ID
    5         ID     RETURN PERIOD -------- 100-YR & 10-YR
    6         ID     DISTRIBUTION --------- 6-HOUR SDN3
    7         ID     PROJECT NO. ---------- OLY1607.001
    8         ID     FILENAME ------------- DEV.H1
    9         ID     DATE ----------------- 10/24/2016
   10         ID     MODELED BY ----------- CWB
   11         ID
   12         ID        PRECIPITATION STORM EVENT RATIOS
   13         ID        STORM EVENT              RATIO
   14         ID        10-YR                     0.56
   15         ID        100-YR                       1
   16         ID
   17         IT       5       0       0     300
   18         IO       5       0       0
   19         IN       5       0       0
   20         JR    PREC    1.00    0.56
              *
   21         KK    ON1D
   22         KM   DEVELOPED ONSITE BASIN
   23         BA  0.0222
   24         PB    3.00
   25         PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
   26         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
   27         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
   28         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
   29         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
   30         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
   31         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
   32         PC   0.998   0.999       1
   33         LS       0    92.0
   34         UD   0.099
              *
   35         ZZ
```

1 SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

   21       ON1D

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


```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             JUN  1998                 *
*           VERSION 4.1                 *
*                                       *
*  RUN DATE   24OCT16  TIME  10:48:56   *
*                                       *
*****************************************
```

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

```
DISTRIBUTION -------- 6-HOUR SDN3
PROJECT NO. --------- OLY1607.001
FILENAME ------------ DEV.H1
DATE ---------------- 10/24/2016
MODELED BY ---------- CWB

   PRECIPITATION STORM EVENT RATIOS
   STORM EVENT            RATIO
   10-YR                   0.56
   100-YR                     1


 18 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   0  STARTING DATE
                ITIME         0000  STARTING TIME
                NQ           300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     2   0  ENDING DATE
                NDTIME        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
               1.00       .56
1


          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

                                                                  RATIOS APPLIED TO PRECIPITATION
 OPERATION      STATION      AREA     PLAN                 RATIO 1  RATIO 2
                                                             1.00      .56

 HYDROGRAPH AT
+                ON1D         .02      1   FLOW              42.      19.
                                           TIME              3.50     3.50


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

REFERENCED

Drainage Exhibit

APPENDIX L

Reference Material

Technical Drainage Study for Skye Canyon Detention Basin 1, by Slater Hanifan Group

Approval Letter

CITY OF LAS VEGAS
INTER-OFFICE MEMORANDUM

DATE: REVISED January 12, 2017
REVISED December 19, 2016
November 23, 2016

TO:
Land Development Services
Department of Building & Safety

FROM:
Albert Sung, P.E.
Flood Control Project Engineer
Department of Public Works

SUBJECT: Drainage Study for:
Skye Canyon – Detention Basin 1
Update #3 – Supplemental Final DB Plans

COPIES TO:
Slater Hanifan Group
Section 12 LLC/Ninety-Five Manag.
Bart Anderson, P.E., DevCo
CCRFCD
CCPW
NV Energy
Eddy Quaglieri, P.E., State of Nevada, Division of Water Resources - Dam Safety

Cross Streets:	NEC of Grand Teton Boulevard & Puli Road	
File Number:	F:\Depot\DSMemos\DS4698I- Revised.doc	
Parcel Number:	126-12-000-001	
Zoning Action:	Development Agreement	
FEMA Flood Zone	YES	NO X
Proposed Storm Drain	YES X	NO

HISTORY	DATE RECEIVED	DATE REVIEWED	COMMENTS	REVIEW FEES	FEES PAID Payment Trn #
1st Submittal	9/16/2014	10/23/2014	Not Approved	$400.00	370355: $400
2nd Submittal	12/24/2014	2/12/2015	Not Approved	$400.00	380976: $400
3rd Submittal	5/7/2015 & 6/01/2015	6/24/2015	Not Approved	$400.00	396675: $400
4th Submittal	10/28/201, 12/17/2015 & 1/11/2016	1/13/2016	Conditional Approval	$400.00	420475: $400
CCPW & CCRFCD	2/17/2016 & 3/1/2016	3/15/2016	Concurrence Recv'd	N/C	N/C
State of Nevada – DWR and NV Energy	5/16/2016 & 6/1/2016	6/1/2016	Approval	N/C	N/C
5th Submittal – UPDATE #1	8/8/2016	8/17/2016	Approval	$100.00	453987: $100
6th Submittal – UPDATE #2	8/16/2016, 10/10/2016 & 10/17/2016	10/19/2016	Conditional Approval	$400.00	455060: $100
7th Submittal – UPDATE #3	11/14/2016	11/23/2016	Conditional Approval	$100.00	465214: $100
7th Submittal – UPDATE #3 Revised & Supplemental	12/19/2016 & 1/05/2017	01/12/2016	Approval Concurrence from CCRFCD & State of Nevada – DWR Recv'd	N/C	N/C
			TOTAL FEES (LDDRS):	**$2,100.00**	----

REMARKS: State Dam Safety & CCRFCD approvals with Updated Plans.

7th Submittal is Update #3 and includes Supplemental Final Plans.

7th Submittal Revised Mass Grading Plans, No Protection for Phase 2. Mass Grading Excavation Only as per the Developers' request.

A Flood Control Master Plan Amendment (MPA) shall be updated to reflect the latest Master Plan for the Skye Canyon Development and approved by the City prior to submitting residential development plans outside of the shadow of protection from Detention Basin #1 and outside of the limits of the Phase 2 pods.

The Drainage Study for the subject project has been reviewed and:

X	is approved subject to conformance to all City standards and the following conditions:
	must be resubmitted or supplemented including the following:
	is conditionally approved subject to Clark County Regional Flood Control District concurrence.

	is conditionally approved subject to Clark County Public Works Department concurrence. Provide updated concurrence.
	is conditionally approved subject to State of Nevada, Division of Water Resources, Dam Safety concurrence.
	is conditionally approved subject to US Army Corps of Engineers, 404 Permit concurrence.

Detention Basin #1 is required to be substantially complete prior to the final inspection of the first Unit in Phase 2. No Certificate of Occupancy on the houses will be issued until after the detention basin has been accepted for Substantial Completion by the City.

The Detention Basin has been redesigned to eliminate the stepped spillway structure and increase the amount of fill placement downstream of the spillway to accommodate the Sheep Mountain Parkway (SMP) alignment and associated grading impacts. Portions of the Detention Basin have been regraded to reduce slope impacts. The outfall facility has been extended to the east past the SMP and discharges into a natural arroyo. The overall intent of the Detention Basin has been maintained and should function as intended.

1. Approval of the revised design of the Detention Basin has been provided by the *State of Nevada, Division of Water Resources Dam Safety (DWR)* dated January 5, 2017. The revised plans and specifications shall comply with all DWR requirements.

2. The Building Department has approved the updated structural plans as required prior to final approval of the drainage study and improvement plans.

3. The current design has identified the limits of the Proposed Drainage Easement and Future Detention Basin Dedication as Flood Control Right-of-Way. With the revised design impacts, the updated drainage easement exhibit is approved by Flood Control. The new easement has been submitted to the City as required, prior to permit approval. A copy of the Recorded Drainage Easement necessary for the Detention Basin and channel construction shall be provided. The Detention Basin shall be dedicated to the City of Las Vegas as Drainage Right-of-Way prior to acceptance of the facility for City Maintenance.

4. Updated concurrence from *NV Energy* has been provided based upon the revised design impacts of the proposed drainage facilities for *Detention Basin 1* within their existing 48-foot easements. Provide copies of the access easements necessary to replace access lost due to the revised plans prior to substantial completion of the Detention Basin.

5. The revised Detention Basin includes modifying a portion of the basin's slopes from 3:1 to a flatter 4:1 slope. All slopes steeper than 4:1 shall include the soil cement lining.

6. Provide a complete set of the revised *Plans and Project Specifications* for approval by the *City of Las Vegas*. Provide a copy of the updated Geotechnical Report for the detention basin that addresses the revised 4:1 slopes and the extended embankment fill downstream toward the proposed Sheep Mountain Parkway. Update the Structural Plans and Details to reflect the revised plans. The Structural Plans and Details shall be a part of the Civil Improvement Plan set. This project is considered as a *Capital Improvement Project* (CIP) with developer funding.

7. The revised channel improvements included increasing the channel depth to mitigate super-elevation and freeboard requirements. The revised channel depth is 5.50 feet.

8. The ***Skye Canyon Master Drainage Study*** must be fully approved and shall include the location of the Ultimate Facility conveyance to the downstream MPU facilities prior to the substantial completion of the *Skye Canyon Detention Basin 1.*

9. The connectivity of the outfall from Skye Canyon DB1 to a downstream Regional facility shall be addressed for the Ultimate Condition based upon the Overall Skye Canyon Master Plan. The City understands the concept of the proposed interim solution with the included storm drain plans for

Brent Lane that collect and route the long term discharge from DB1 into the existing storm drain at Brent & Skye Canyon; however the overall Master Plan facility connectivity needs to be finalized with the overall ***Skye Canyon Master Drainage Study*** and approved by the City of Las Vegas and CCRFCD prior to the substantial completion of the DB1 improvements.

10. The Clark County Regional Flood Control District's concurrence of the Update #2 for Skye Canyon Master Drainage Study included conditions that required modifications to the interim outfall facility. The interim outfall facility was extended west to US 95 and incorporated a sediment basin. The proposed interim outfall facility shows a storm drain extension at Brent Lane west to US 95 to convey the 70 cfs discharge from DB1, this is an acceptable concept. The Brent Lane storm drain extension has been included as a part of the Skye Canyon Detention Basin #1 Improvement Plan package and an updated estimate has been provided to include this storm drain and sediment basin as a part of the improvement bond.

11. The included Dam Failure Hazard Evaluation shall be expanded as a part of the required Emergency Action Plan (EAP) submittal. The flows used in Section 3 shall match the Dam Safety Permit # J-728 flow rate of 6,052 cfs. Review and revise accordingly. Flood Control recommends a review meeting to go over the EAP requirements and format prior to moving forward with the EAP process.

12. The subject ***Skye Canyon Detention Basin #1*** is a facility proposed in the approved MPA that covers the Skye Canyon Development. Future changes to the identified Master Plan facilities shall require further review and/or the submittal of an MPA based upon CCRFCD requirements.

13. A copy of the approved 404 Permit from the Army Corps of Engineers has been provided.

14. This proposed Detention Basin identifies a 10-foot buffer adjacent to the Red Rock Canyon National Conservation Area (RRCA), a critical area of no disturbance. No grading impacts are allowed to the RRCA and an appropriate buffer with block and cable fencing has been provided.

15. The intent of the Master Developer is to construct the Detention Basins with associated collection facilities as CCRFCD Master Plan facilities and to then dedicate them to the City of Las Vegas. The Detention Basins shall be dedicated to the City as *Flood Control Right-of-Way*. The proposed dedication should exclude the City's existing BLM Grant N-77772 area. The total area of the dedication shall be of sufficient size to meet the public operational needs and address expansion of the facility. The dedication needs to include the entire impact area of the dam construction as well as incorporate access and maintenance activities. The maintenance activities include staging for equipment and a temporary storage area for sediment removal.

16. The City understands that the limits of the Detention Basin Easement/Dedication may be reduced by a future Vacation request based upon future development grading impacts. The actual limits of any future vacation request shall be set based upon the City's approval of a Technical Drainage Study that addresses the impacts to the Detention Basin.

17. The westerly 76-feet of the site is encumbered with existing Nevada Power Grants and fiber optic Grants (N-57071, N-78122, and N-75351). This project proposes a 10-foot buffer from the Red Rock Canyon National Conservation Area boundary and provides for a new access road within the existing Power and fiber optic Grants.

18. The westerly access is being provided to service the existing Grants and is not the Flood Control access road. This area is however proposed to be included within the future dedication of the regional basin and therefore the responsibility for this maintenance by *NV Energy* and the owner of the fiber optic shall be provided.

19. All proposed improvements associated with *Detention Basin 1* shall be bonded and inspected. This project shall require Special Inspection. Coordinate the requirements of and the Agreements needed for Special Inspection with the Building Department.

20. The project proposes to build a temporary drainage facility. Prior to final plan approval the developer must complete a maintenance and liability agreement for the interim drainage improvements and post a minimum maintenance bond of $100,000 or 50-percent of the construction cost for the improvements, whichever is greater. The engineer must submit an estimate of the quantities for constructing the facility and an 8.5-inch by 11-inch exhibit that adequately shows the location and limit of the drainage facility to Flood Control for approval. Once the drainage study is conditionally approved, the engineer should contact the *City's Land Development Section* (229-6371) to begin the agreement process.

21. Prior to the adoption and acceptance of the detention basin as a regional facility by the *City of Las Vegas, Department of Public Works*, the proposed *Detention Basin 1* shall remain a private facility owned and maintained by the master developer.

22. Provide the legal description with an exhibit of the proposed detention basin to *City Right-of-Way Section* for the dedication as Flood Control Right-of-Way to the *City of Las Vegas* after final acceptance of the basin by the *City of Las Vegas, Department of Public Works.*

23. The detention basin will require the submittal and approval of an *Emergency Action Plan* (EAP) for this regional facility. The EAP format shall meet the City of Las Vegas submittal requirements for inclusion with our overall EAP. Contact Flood Control for sample format requirements. The EAP must be approved by the *City of Las Vegas* and then submitted and approved by the *State of Nevada, Division of Water Resources - Dam Safety* prior to the release of any improvement bonds for the related detention basin improvements. The bonded improvements shall include a line item for the EAP in the amount of $50,000.

24. The approved plans shall include the complete Specifications approved by DWR and the Building Department.

NOTE: Any future changes to the proposed design (or design assumptions) as outlined in the approved drainage study and attached preliminary grading plan which affect drainage must be addressed in a Drainage Study Update and accepted by the *City of Las Vegas Flood Control Section.* Additionally, conditional acceptance of a drainage study is valid for a period of one (1) year. If the proposed construction has not been completed in that time period, the *City of Las Vegas* reserves the right to require additional conditions and/or submission and acceptance of a complete drainage study update prior to further construction of a project.

NOTE: Please be advised that all land surface area disturbances over 1 acre or any area adjacent to a water way must submit to the *Nevada Division of Environmental Protection* a "Notice of Intent" to discharge that certifies a stormwater pollution prevention plan has been developed and is maintained on site; for inclusion in the Stormwater General Permit No. NVR100000. A phased construction unit in a contiguous subdivision is considered under construction until all stripped or disturbed surface areas have been covered by paving, building construction or planting. For more information, including forms and applications see http://ndep.nv.gov/bwpc/storm01.htm or call (775) 687-9429.

END OF REMARKS
AYS/PBJ

T/R/S: T19S/R59E/12
AREA F-12

Referenced Basins (HEC-1)

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN  1998                *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   07OCT16  TIME  08:39:49   *
*                                       *
*****************************************
```

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

```
X    X XXXXXXX  XXXXX          X
X    X X       X     X        XX
X    X X       X              X
XXXXXX XXXX    X       XXXXX  X
X    X X       X              X
X    X X       X     X        X
X    X XXXXXXX  XXXXX         XXX
```

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 -AMSKK- 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


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

          *DIAGRAM
    1     ID     SLATER HANIFAN GROUP
    2     ID     NINETY-FIVE MANAGEMENT, LLC.
    3     ID     SKYE CANYON - DETENTION BASIN #1
    4     ID     UPDATE (SHEEP MOUNTAIN) - SUPPLEMENT
    5     ID     ULTIMATE DRAINAGE CONDITION
    6     ID
    7     ID     RETURN PERIOD ------- 100-YEAR
    8     ID     DISTRIBUTION -------- 6-HOUR SDN3
    9     ID     PROJECT NO. --------- OLY1401.004
   10     ID     FILENAME ------------ ULT1.H1
   11     ID     DATE ----------------- 10/7/2016
   12     ID     MODELED BY ---------- SMJ
   13     ID
   14     ID        SIX HOUR DEPTH-AREA REDUCTION FACTORS
   15     ID        DRAINAGE AREA (MIA2)     RATIO
   16     ID        0.0-0.49                 1.00
   17     ID        0.5-0.99                 0.98
   18     ID
   19     IT      5       0       0     500
   20     IO      5       0       0
   21     IN      5       0       0
   22     JR    PREC    1.00    0.98
          *

   23     KK    OFF1
   24     KM    EXISTING OFFSITE DRAINAGE BASIN
   25     KM    DISCHARGES INTO DETENTION BASIN "DB1"
   26     PB     3.00
   27     PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
   28     PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
   29     PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
   30     PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
   31     PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
   32     PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
   33     PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
   34     PC   0.998   0.999   1.000
   35     BA   .4072
   36     LS       0    87.6
   37     UD   0.354
          *

   38     KK    OFF7
   39     KM    FUTURE DEVELOPED OFFSITE DRAINAGE BASIN
   40     KM    DISCHARGES INTO DETENTION BASIN "DB1"
   41     BA   .0281
   42     LS       0    96.0
   43     UD   0.118
          *
```



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

   44     KK     CP2
   45     KM    COMBINE OFF1, OFF7
   46     HC       2
          *

   47     KK    OFF2
   48     KM    EXISTING OFFSITE DRAINAGE BASIN
   49     KM    DISCHARGES INTO DETENTION BASIN "DB1"
   50     BA   .0355
   51     LS       0    84.5
   52     UD   0.149
          *

   53     KK    OFF3
   54     KM    EXISTING OFFSITE DRAINAGE BASIN
   55     KM    DISCHARGES INTO DETENTION BASIN "DB1"
   56     BA   .0259
   57     LS       0    88.0
   58     UD   0.110
          *

   59     KK     CP1
   60     KM    COMBINE CP2, OFF2, AND OFF3
   61     HC       3
          *

   62     KK    OFF4
   63     KM    EXISTING OFFSITE DRAINAGE BASIN
   64     KM    DISCHARGES INTO DETENTION BASIN "DB1"
   65     BA   .0581
   66     LS       0    88.0
   67     UD   0.134
          *

   68     KK    OFF5
   69     KM    EXISTING OFFSITE DRAINAGE BASIN
   70     KM    DISCHARGES INTO DETENTION BASIN "DB1"
```

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          71          BA   .2569
          72          LS      0    88.0
          73          UD   0.416
                      *

          74          KK    OFF6
          75          KM   EXISTING OFFSITE DRAINAGE BASIN
          76          KM   DISCHARGES INTO DETENTION BASIN "DB1"
          77          BA   .0399
          78          LS      0    88.0
          79          UD   0.118
                      *
1                                          HEC-1 INPUT                                                    PAGE  3

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

          80          KK     ON1
          81          KM   PROPOSED ONSITE DRAINAGE BASIN
          82          BA   .0261
          83          LS      0    94.0
          84          UD   0.115
                      *

          85          KK     DB1
          86          KM   COMBINE CP1, OFF4, OFF5, OFF6 AND ON1
          87          KO      1
          88          HC      5
                      *

          89          KK    RDB1
          90          KM   OUTLET = 24" ORIFICE @ INVERT ELEVATION = 3013.8-FT
          91          KO      1
          92          RS      1    ELEV  3025.5
          93          SA    4.58    5.63    5.81    6.00    6.19    6.77    7.17    7.37    7.61    8.31
          94          SE  3025.5    3027    3028    3029    3030    3033    3035    3036    3037    3040
          95          SQ    49.7    60.6    70.8    74.5  1436.0  3920.5  7136.3
          96          SE  3025.5    3030    3035    3037    3040    3043    3046
                      *
          97          ZZ
1
                 SCHEMATIC DIAGRAM OF STREAM NETWORK

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

    23         OFF1
                 .
                 .
    38           .         OFF7
                 .           .
                 .           .
    44          CP2.............
                 .
                 .
    47           .         OFF2
                 .           .
                 .           .
    53           .           .         OFF3
                 .           .           .
                 .           .           .
    59          CP1.........................
                 .
                 .
    62           .         OFF4
                 .           .
                 .           .
    68           .           .         OFF5
                 .           .           .
                 .           .           .
    74           .           .           .         OFF6
                 .           .           .           .
                 .           .           .           .
    80           .           .           .           .         ON1
                 .           .           .           .           .
                 .           .           .           .           .
    85          DB1.....................................................
                  V
                  V
    89         RDB1

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUN  1998                *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   07OCT16  TIME  08:39:49  *
*                                      *
****************************************

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

                        SLATER HANIFAN GROUP
                        NINETY-FIVE MANAGEMENT, LLC.
                        SKYE CANYON - DETENTION BASIN #1
                        UPDATE (SHEEP MOUNTAIN) - SUPPLEMENT
                        ULTIMATE DRAINAGE CONDITION

                        RETURN PERIOD ------- 100-YEAR
                        DISTRIBUTION -------- 6-HOUR SDN3
                        PROJECT NO. --------- OLY1401.004
                        FILENAME ------------ ULT1.H1
                        DATE ---------------- 10/7/2016
                        MODELED BY ---------- SMJ

                           SIX HOUR DEPTH-AREA REDUCTION FACTORS
                           DRAINAGE AREA (MI^2)     RATIO
                           0.0-0.49                 1.00
                           0.5-0.99                 0.98

  20 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   0  STARTING DATE
                       ITIME       0000  STARTING TIME
                         NQ         500  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      2   0  ENDING DATE
                      NDTIME       1735  ENDING TIME
                      ICENT          19  CENTURY MARK
```

```
                COMPUTATION INTERVAL      .08 HOURS
                  TOTAL TIME BASE    41.58 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
               1.00      .98

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


         ***************
         *             *
 85 KK   *      DB1    *
         *             *
         ***************

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

 88 HC       HYDROGRAPH COMBINATION
                 ICOMP          5  NUMBER OF HYDROGRAPHS TO COMBINE
                                                        ***

*****************************************************************************************************************************************************

                                        HYDROGRAPH AT STATION      DB1
                                          SUM OF  5 HYDROGRAPHS
                                        PLAN 1,   RATIO =  1.00

*****************************************************************************************************************************************************
```

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		1025	126	0.	1		2050	251	0.	2		0715	376	0.
1		0005	2	0.	1		1030	127	0.	1		2055	252	0.	2		0720	377	0.
1		0010	3	1.	1		1035	128	0.	1		2100	253	0.	2		0725	378	0.
1		0015	4	2.	1		1040	129	0.	1		2105	254	0.	2		0730	379	0.
1		0020	5	4.	1		1045	130	0.	1		2110	255	0.	2		0735	380	0.
1		0025	6	8.	1		1050	131	0.	1		2115	256	0.	2		0740	381	0.
1		0030	7	12.	1		1055	132	0.	1		2120	257	0.	2		0745	382	0.
1		0035	8	14.	1		1100	133	0.	1		2125	258	0.	2		0750	383	0.
1		0040	9	12.	1		1105	134	0.	1		2130	259	0.	2		0755	384	0.
1		0045	10	9.	1		1110	135	0.	1		2135	260	0.	2		0800	385	0.
1		0050	11	8.	1		1115	136	0.	1		2140	261	0.	2		0805	386	0.
1		0055	12	6.	1		1120	137	0.	1		2145	262	0.	2		0810	387	0.
1		0100	13	5.	1		1125	138	0.	1		2150	263	0.	2		0815	388	0.
1		0105	14	5.	1		1130	139	0.	1		2155	264	0.	2		0820	389	0.
1		0110	15	7.	1		1135	140	0.	1		2200	265	0.	2		0825	390	0.
1		0115	16	8.	1		1140	141	0.	1		2205	266	0.	2		0830	391	0.
1		0120	17	10.	1		1145	142	0.	1		2210	267	0.	2		0835	392	0.
1		0125	18	14.	1		1150	143	0.	1		2215	268	0.	2		0840	393	0.
1		0130	19	22.	1		1155	144	0.	1		2220	269	0.	2		0845	394	0.
1		0135	20	31.	1		1200	145	0.	1		2225	270	0.	2		0850	395	0.
1		0140	21	36.	1		1205	146	0.	1		2230	271	0.	2		0855	396	0.
1		0145	22	41.	1		1210	147	0.	1		2235	272	0.	2		0900	397	0.
1		0150	23	42.	1		1215	148	0.	1		2240	273	0.	2		0905	398	0.
1		0155	24	38.	1		1220	149	0.	1		2245	274	0.	2		0910	399	0.
1		0200	25	34.	1		1225	150	0.	1		2250	275	0.	2		0915	400	0.
1		0205	26	30.	1		1230	151	0.	1		2255	276	0.	2		0920	401	0.
1		0210	27	31.	1		1235	152	0.	1		2300	277	0.	2		0925	402	0.
1		0215	28	40.	1		1240	153	0.	1		2305	278	0.	2		0930	403	0.
1		0220	29	51.	1		1245	154	0.	1		2310	279	0.	2		0935	404	0.
1		0225	30	59.	1		1250	155	0.	1		2315	280	0.	2		0940	405	0.
1		0230	31	61.	1		1255	156	0.	1		2320	281	0.	2		0945	406	0.
1		0235	32	59.	1		1300	157	0.	1		2325	282	0.	2		0950	407	0.
1		0240	33	64.	1		1305	158	0.	1		2330	283	0.	2		0955	408	0.
1		0245	34	72.	1		1310	159	0.	1		2335	284	0.	2		1000	409	0.
1		0250	35	71.	1		1315	160	0.	1		2340	285	0.	2		1005	410	0.
1		0255	36	65.	1		1320	161	0.	1		2345	286	0.	2		1010	411	0.
1		0300	37	65.	1		1325	162	0.	1		2350	287	0.	2		1015	412	0.
1		0305	38	84.	1		1330	163	0.	1		2355	288	0.	2		1020	413	0.
1		0310	39	119.	1		1335	164	0.	2		0000	289	0.	2		1025	414	0.
1		0315	40	179.	1		1340	165	0.	2		0005	290	0.	2		1030	415	0.
1		0320	41	297.	1		1345	166	0.	2		0010	291	0.	2		1035	416	0.
1		0325	42	460.	1		1350	167	0.	2		0015	292	0.	2		1040	417	0.
1		0330	43	660.	1		1355	168	0.	2		0020	293	0.	2		1045	418	0.
1		0335	44	810.	1		1400	169	0.	2		0025	294	0.	2		1050	419	0.
1		0340	45	853.	1		1405	170	0.	2		0030	295	0.	2		1055	420	0.
1		0345	46	861.	1		1410	171	0.	2		0035	296	0.	2		1100	421	0.
1		0350	47	818.	1		1415	172	0.	2		0040	297	0.	2		1105	422	0.
1		0355	48	729.	1		1420	173	0.	2		0045	298	0.	2		1110	423	0.
1		0400	49	638.	1		1425	174	0.	2		0050	299	0.	2		1115	424	0.
1		0405	50	539.	1		1430	175	0.	2		0055	300	0.	2		1120	425	0.
1		0410	51	440.	1		1435	176	0.	2		0100	301	0.	2		1125	426	0.
1		0415	52	361.	1		1440	177	0.	2		0105	302	0.	2		1130	427	0.
1		0420	53	302.	1		1445	178	0.	2		0110	303	0.	2		1135	428	0.
1		0425	54	261.	1		1450	179	0.	2		0115	304	0.	2		1140	429	0.
1		0430	55	247.	1		1455	180	0.	2		0120	305	0.	2		1145	430	0.
1		0435	56	249.	1		1500	181	0.	2		0125	306	0.	2		1150	431	0.
1		0440	57	247.	1		1505	182	0.	2		0130	307	0.	2		1155	432	0.
1		0445	58	244.	1		1510	183	0.	2		0135	308	0.	2		1200	433	0.
1		0450	59	252.	1		1515	184	0.	2		0140	309	0.	2		1205	434	0.
1		0455	60	254.	1		1520	185	0.	2		0145	310	0.	2		1210	435	0.
1		0500	61	238.	1		1525	186	0.	2		0150	311	0.	2		1215	436	0.
1		0505	62	214.	1		1530	187	0.	2		0155	312	0.	2		1220	437	0.
1		0510	63	186.	1		1535	188	0.	2		0200	313	0.	2		1225	438	0.
1		0515	64	158.	1		1540	189	0.	2		0205	314	0.	2		1230	439	0.
1		0520	65	130.	1		1545	190	0.	2		0210	315	0.	2		1235	440	0.
1		0525	66	106.	1		1550	191	0.	2		0215	316	0.	2		1240	441	0.
1		0530	67	86.	1		1555	192	0.	2		0220	317	0.	2		1245	442	0.
1		0535	68	68.	1		1600	193	0.	2		0225	318	0.	2		1250	443	0.
1		0540	69	55.	1		1605	194	0.	2		0230	319	0.	2		1255	444	0.
1		0545	70	47.	1		1610	195	0.	2		0235	320	0.	2		1300	445	0.
1		0550	71	42.	1		1615	196	0.	2		0240	321	0.	2		1305	446	0.
1		0555	72	35.	1		1620	197	0.	2		0245	322	0.	2		1310	447	0.
1		0600	73	31.	1		1625	198	0.	2		0250	323	0.	2		1315	448	0.
1		0605	74	27.	1		1630	199	0.	2		0255	324	0.	2		1320	449	0.
1		0610	75	22.	1		1635	200	0.	2		0300	325	0.	2		1325	450	0.
1		0615	76	17.	1		1640	201	0.	2		0305	326	0.	2		1330	451	0.
1		0620	77	13.	1		1645	202	0.	2		0310	327	0.	2		1335	452	0.
1		0625	78	10.	1		1650	203	0.	2		0315	328	0.	2		1340	453	0.

1	0630	79	7.	*	1	1655	204	0.	*	2	0320	329	0.	*	2	1345	454	0.
1	0635	80	5.	*	1	1700	205	0.	*	2	0325	330	0.	*	2	1350	455	0.
1	0640	81	4.	*	1	1705	206	0.	*	2	0330	331	0.	*	2	1355	456	0.
1	0645	82	3.	*	1	1710	207	0.	*	2	0335	332	0.	*	2	1400	457	0.
1	0650	83	2.	*	1	1715	208	0.	*	2	0340	333	0.	*	2	1405	458	0.
1	0655	84	1.	*	1	1720	209	0.	*	2	0345	334	0.	*	2	1410	459	0.
1	0700	85	1.	*	1	1725	210	0.	*	2	0350	335	0.	*	2	1415	460	0.
1	0705	86	1.	*	1	1730	211	0.	*	2	0355	336	0.	*	2	1420	461	0.
1	0710	87	0.	*	1	1735	212	0.	*	2	0400	337	0.	*	2	1425	462	0.
1	0715	88	0.	*	1	1740	213	0.	*	2	0405	338	0.	*	2	1430	463	0.
1	0720	89	0.	*	1	1745	214	0.	*	2	0410	339	0.	*	2	1435	464	0.
1	0725	90	0.	*	1	1750	215	0.	*	2	0415	340	0.	*	2	1440	465	0.
1	0730	91	0.	*	1	1755	216	0.	*	2	0420	341	0.	*	2	1445	466	0.
1	0735	92	0.	*	1	1800	217	0.	*	2	0425	342	0.	*	2	1450	467	0.
1	0740	93	0.	*	1	1805	218	0.	*	2	0430	343	0.	*	2	1455	468	0.
1	0745	94	0.	*	1	1810	219	0.	*	2	0435	344	0.	*	2	1500	469	0.
1	0750	95	0.	*	1	1815	220	0.	*	2	0440	345	0.	*	2	1505	470	0.
1	0755	96	0.	*	1	1820	221	0.	*	2	0445	346	0.	*	2	1510	471	0.
1	0800	97	0.	*	1	1825	222	0.	*	2	0450	347	0.	*	2	1515	472	0.
1	0805	98	0.	*	1	1830	223	0.	*	2	0455	348	0.	*	2	1520	473	0.
1	0810	99	0.	*	1	1835	224	0.	*	2	0500	349	0.	*	2	1525	474	0.
1	0815	100	0.	*	1	1840	225	0.	*	2	0505	350	0.	*	2	1530	475	0.
1	0820	101	0.	*	1	1845	226	0.	*	2	0510	351	0.	*	2	1535	476	0.
1	0825	102	0.	*	1	1850	227	0.	*	2	0515	352	0.	*	2	1540	477	0.
1	0830	103	0.	*	1	1855	228	0.	*	2	0520	353	0.	*	2	1545	478	0.
1	0835	104	0.	*	1	1900	229	0.	*	2	0525	354	0.	*	2	1550	479	0.
1	0840	105	0.	*	1	1905	230	0.	*	2	0530	355	0.	*	2	1555	480	0.
1	0845	106	0.	*	1	1910	231	0.	*	2	0535	356	0.	*	2	1600	481	0.
1	0850	107	0.	*	1	1915	232	0.	*	2	0540	357	0.	*	2	1605	482	0.
1	0855	108	0.	*	1	1920	233	0.	*	2	0545	358	0.	*	2	1610	483	0.
1	0900	109	0.	*	1	1925	234	0.	*	2	0550	359	0.	*	2	1615	484	0.
1	0905	110	0.	*	1	1930	235	0.	*	2	0555	360	0.	*	2	1620	485	0.
1	0910	111	0.	*	1	1935	236	0.	*	2	0600	361	0.	*	2	1625	486	0.
1	0915	112	0.	*	1	1940	237	0.	*	2	0605	362	0.	*	2	1630	487	0.
1	0920	113	0.	*	1	1945	238	0.	*	2	0610	363	0.	*	2	1635	488	0.
1	0925	114	0.	*	1	1950	239	0.	*	2	0615	364	0.	*	2	1640	489	0.
1	0930	115	0.	*	1	1955	240	0.	*	2	0620	365	0.	*	2	1645	490	0.
1	0935	116	0.	*	1	2000	241	0.	*	2	0625	366	0.	*	2	1650	491	0.
1	0940	117	0.	*	1	2005	242	0.	*	2	0630	367	0.	*	2	1655	492	0.
1	0945	118	0.	*	1	2010	243	0.	*	2	0635	368	0.	*	2	1700	493	0.
1	0950	119	0.	*	1	2015	244	0.	*	2	0640	369	0.	*	2	1705	494	0.
1	0955	120	0.	*	1	2020	245	0.	*	2	0645	370	0.	*	2	1710	495	0.
1	1000	121	0.	*	1	2025	246	0.	*	2	0650	371	0.	*	2	1715	496	0.
1	1005	122	0.	*	1	2030	247	0.	*	2	0655	372	0.	*	2	1720	497	0.
1	1010	123	0.	*	1	2035	248	0.	*	2	0700	373	0.	*	2	1725	498	0.
1	1015	124	0.	*	1	2040	249	0.	*	2	0705	374	0.	*	2	1730	499	0.
1	1020	125	0.	*	1	2045	250	0.	*	2	0710	375	0.	*	2	1735	500	0.

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	41.58-HR
+ (CFS)	(HR)	(CFS)				
+ 861.	3.75		172.	43.	25.	25.
		(INCHES)	1.826	1.832	1.832	1.832
		(AC-FT)	85.	86.	86.	86.

CUMULATIVE AREA = .88 SQ MI

HYDROGRAPH AT STATION DB1
SUM OF 5 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	1025	126	0.	1	2050	251	0.	2	0715	376	0.				
1	0005	2	0.	1	1030	127	0.	1	2055	252	0.	2	0720	377	0.				
1	0010	3	1.	1	1035	128	0.	1	2100	253	0.	2	0725	378	0.				
1	0015	4	2.	1	1040	129	0.	1	2105	254	0.	2	0730	379	0.				
1	0020	5	4.	1	1045	130	0.	1	2110	255	0.	2	0735	380	0.				
1	0025	6	7.	1	1050	131	0.	1	2115	256	0.	2	0740	381	0.				
1	0030	7	11.	1	1055	132	0.	1	2120	257	0.	2	0745	382	0.				
1	0035	8	13.	1	1100	133	0.	1	2125	258	0.	2	0750	383	0.				
1	0040	9	11.	1	1105	134	0.	1	2130	259	0.	2	0755	384	0.				
1	0045	10	8.	1	1110	135	0.	1	2135	260	0.	2	0800	385	0.				
1	0050	11	7.	1	1115	136	0.	1	2140	261	0.	2	0805	386	0.				
1	0055	12	6.	1	1120	137	0.	1	2145	262	0.	2	0810	387	0.				
1	0100	13	5.	1	1125	138	0.	1	2150	263	0.	2	0815	388	0.				
1	0105	14	4.	1	1130	139	0.	1	2155	264	0.	2	0820	389	0.				
1	0110	15	6.	1	1135	140	0.	1	2200	265	0.	2	0825	390	0.				
1	0115	16	8.	1	1140	141	0.	1	2205	266	0.	2	0830	391	0.				
1	0120	17	9.	1	1145	142	0.	1	2210	267	0.	2	0835	392	0.				
1	0125	18	13.	1	1150	143	0.	1	2215	268	0.	2	0840	393	0.				
1	0130	19	21.	1	1155	144	0.	1	2220	269	0.	2	0845	394	0.				
1	0135	20	29.	1	1200	145	0.	1	2225	270	0.	2	0850	395	0.				
1	0140	21	34.	1	1205	146	0.	1	2230	271	0.	2	0855	396	0.				
1	0145	22	39.	1	1210	147	0.	1	2235	272	0.	2	0900	397	0.				
1	0150	23	39.	1	1215	148	0.	1	2240	273	0.	2	0905	398	0.				
1	0155	24	36.	1	1220	149	0.	1	2245	274	0.	2	0910	399	0.				
1	0200	25	32.	1	1225	150	0.	1	2250	275	0.	2	0915	400	0.				
1	0205	26	29.	1	1230	151	0.	1	2255	276	0.	2	0920	401	0.				
1	0210	27	30.	1	1235	152	0.	1	2300	277	0.	2	0925	402	0.				
1	0215	28	38.	1	1240	153	0.	1	2305	278	0.	2	0930	403	0.				
1	0220	29	49.	1	1245	154	0.	1	2310	279	0.	2	0935	404	0.				
1	0225	30	56.	1	1250	155	0.	1	2315	280	0.	2	0940	405	0.				
1	0230	31	58.	1	1255	156	0.	1	2320	281	0.	2	0945	406	0.				
1	0235	32	57.	1	1300	157	0.	1	2325	282	0.	2	0950	407	0.				
1	0240	33	62.	1	1305	158	0.	1	2330	283	0.	2	0955	408	0.				
1	0245	34	69.	1	1310	159	0.	1	2335	284	0.	2	1000	409	0.				
1	0250	35	68.	1	1315	160	0.	1	2340	285	0.	2	1005	410	0.				
1	0255	36	62.	1	1320	161	0.	1	2345	286	0.	2	1010	411	0.				
1	0300	37	62.	1	1325	162	0.	1	2350	287	0.	2	1015	412	0.				
1	0305	38	81.	1	1330	163	0.	1	2355	288	0.	2	1020	413	0.				
1	0310	39	115.	1	1335	164	0.	2	0000	289	0.	2	1025	414	0.				
1	0315	40	173.	1	1340	165	0.	2	0005	290	0.	2	1030	415	0.				
1	0320	41	288.	1	1345	166	0.	2	0010	291	0.	2	1035	416	0.				
1	0325	42	446.	1	1350	167	0.	2	0015	292	0.	2	1040	417	0.				
1	0330	43	640.	1	1355	168	0.	2	0020	293	0.	2	1045	418	0.				
1	0335	44	787.	1	1400	169	0.	2	0025	294	0.	2	1050	419	0.				
1	0340	45	828.	1	1405	170	0.	2	0030	295	0.	2	1055	420	0.				
1	0345	46	837.	1	1410	171	0.	2	0035	296	0.	2	1100	421	0.				
1	0350	47	796.	1	1415	172	0.	2	0040	297	0.	2	1105	422	0.				
1	0355	48	709.	1	1420	173	0.	2	0045	298	0.	2	1110	423	0.				
1	0400	49	621.	1	1425	174	0.	2	0050	299	0.	2	1115	424	0.				
1	0405	50	525.	1	1430	175	0.	2	0055	300	0.	2	1120	425	0.				
1	0410	51	429.	1	1435	176	0.	2	0100	301	0.	2	1125	426	0.				
1	0415	52	351.	1	1440	177	0.	2	0105	302	0.	2	1130	427	0.				
1	0420	53	294.	1	1445	178	0.	2	0110	303	0.	2	1135	428	0.				
1	0425	54	255.	1	1450	179	0.	2	0115	304	0.	2	1140	429	0.				
1	0430	55	240.	1	1455	180	0.	2	0120	305	0.	2	1145	430	0.				
1	0435	56	242.	1	1500	181	0.	2	0125	306	0.	2	1150	431	0.				
1	0440	57	241.	1	1505	182	0.	2	0130	307	0.	2	1155	432	0.				
1	0445	58	238.	1	1510	183	0.	2	0135	308	0.	2	1200	433	0.				

1	0450	59	246.	*	1	1515	184	0.	*	2	0140	309	0.	*	2	1205	434	0.
1	0455	60	248.	*	1	1520	185	0.	*	2	0145	310	0.	*	2	1210	435	0.
1	0500	61	232.	*	1	1525	186	0.	*	2	0150	311	0.	*	2	1215	436	0.
1	0505	62	209.	*	1	1530	187	0.	*	2	0155	312	0.	*	2	1220	437	0.
1	0510	63	182.	*	1	1535	188	0.	*	2	0200	313	0.	*	2	1225	438	0.
1	0515	64	154.	*	1	1540	189	0.	*	2	0205	314	0.	*	2	1230	439	0.
1	0520	65	127.	*	1	1545	190	0.	*	2	0210	315	0.	*	2	1235	440	0.
1	0525	66	103.	*	1	1550	191	0.	*	2	0215	316	0.	*	2	1240	441	0.
1	0530	67	84.	*	1	1555	192	0.	*	2	0220	317	0.	*	2	1245	442	0.
1	0535	68	66.	*	1	1600	193	0.	*	2	0225	318	0.	*	2	1250	443	0.
1	0540	69	54.	*	1	1605	194	0.	*	2	0230	319	0.	*	2	1255	444	0.
1	0545	70	46.	*	1	1610	195	0.	*	2	0235	320	0.	*	2	1300	445	0.
1	0550	71	41.	*	1	1615	196	0.	*	2	0240	321	0.	*	2	1305	446	0.
1	0555	72	34.	*	1	1620	197	0.	*	2	0245	322	0.	*	2	1310	447	0.
1	0600	73	30.	*	1	1625	198	0.	*	2	0250	323	0.	*	2	1315	448	0.
1	0605	74	26.	*	1	1630	199	0.	*	2	0255	324	0.	*	2	1320	449	0.
1	0610	75	21.	*	1	1635	200	0.	*	2	0300	325	0.	*	2	1325	450	0.
1	0615	76	17.	*	1	1640	201	0.	*	2	0305	326	0.	*	2	1330	451	0.
1	0620	77	13.	*	1	1645	202	0.	*	2	0310	327	0.	*	2	1335	452	0.
1	0625	78	10.	*	1	1650	203	0.	*	2	0315	328	0.	*	2	1340	453	0.
1	0630	79	7.	*	1	1655	204	0.	*	2	0320	329	0.	*	2	1345	454	0.
1	0635	80	5.	*	1	1700	205	0.	*	2	0325	330	0.	*	2	1350	455	0.
1	0640	81	4.	*	1	1705	206	0.	*	2	0330	331	0.	*	2	1355	456	0.
1	0645	82	3.	*	1	1710	207	0.	*	2	0335	332	0.	*	2	1400	457	0.
1	0650	83	2.	*	1	1715	208	0.	*	2	0340	333	0.	*	2	1405	458	0.
1	0655	84	1.	*	1	1720	209	0.	*	2	0345	334	0.	*	2	1410	459	0.
1	0700	85	1.	*	1	1725	210	0.	*	2	0350	335	0.	*	2	1415	460	0.
1	0705	86	1.	*	1	1730	211	0.	*	2	0355	336	0.	*	2	1420	461	0.
1	0710	87	0.	*	1	1735	212	0.	*	2	0400	337	0.	*	2	1425	462	0.
1	0715	88	0.	*	1	1740	213	0.	*	2	0405	338	0.	*	2	1430	463	0.
1	0720	89	0.	*	1	1745	214	0.	*	2	0410	339	0.	*	2	1435	464	0.
1	0725	90	0.	*	1	1750	215	0.	*	2	0415	340	0.	*	2	1440	465	0.
1	0730	91	0.	*	1	1755	216	0.	*	2	0420	341	0.	*	2	1445	466	0.
1	0735	92	0.	*	1	1800	217	0.	*	2	0425	342	0.	*	2	1450	467	0.
1	0740	93	0.	*	1	1805	218	0.	*	2	0430	343	0.	*	2	1455	468	0.
1	0745	94	0.	*	1	1810	219	0.	*	2	0435	344	0.	*	2	1500	469	0.
1	0750	95	0.	*	1	1815	220	0.	*	2	0440	345	0.	*	2	1505	470	0.
1	0755	96	0.	*	1	1820	221	0.	*	2	0445	346	0.	*	2	1510	471	0.
1	0800	97	0.	*	1	1825	222	0.	*	2	0450	347	0.	*	2	1515	472	0.
1	0805	98	0.	*	1	1830	223	0.	*	2	0455	348	0.	*	2	1520	473	0.
1	0810	99	0.	*	1	1835	224	0.	*	2	0500	349	0.	*	2	1525	474	0.
1	0815	100	0.	*	1	1840	225	0.	*	2	0505	350	0.	*	2	1530	475	0.
1	0820	101	0.	*	1	1845	226	0.	*	2	0510	351	0.	*	2	1535	476	0.
1	0825	102	0.	*	1	1850	227	0.	*	2	0515	352	0.	*	2	1540	477	0.
1	0830	103	0.	*	1	1855	228	0.	*	2	0520	353	0.	*	2	1545	478	0.
1	0835	104	0.	*	1	1900	229	0.	*	2	0525	354	0.	*	2	1550	479	0.
1	0840	105	0.	*	1	1905	230	0.	*	2	0530	355	0.	*	2	1555	480	0.
1	0845	106	0.	*	1	1910	231	0.	*	2	0535	356	0.	*	2	1600	481	0.
1	0850	107	0.	*	1	1915	232	0.	*	2	0540	357	0.	*	2	1605	482	0.
1	0855	108	0.	*	1	1920	233	0.	*	2	0545	358	0.	*	2	1610	483	0.
1	0900	109	0.	*	1	1925	234	0.	*	2	0550	359	0.	*	2	1615	484	0.
1	0905	110	0.	*	1	1930	235	0.	*	2	0555	360	0.	*	2	1620	485	0.
1	0910	111	0.	*	1	1935	236	0.	*	2	0600	361	0.	*	2	1625	486	0.
1	0915	112	0.	*	1	1940	237	0.	*	2	0605	362	0.	*	2	1630	487	0.
1	0920	113	0.	*	1	1945	238	0.	*	2	0610	363	0.	*	2	1635	488	0.
1	0925	114	0.	*	1	1950	239	0.	*	2	0615	364	0.	*	2	1640	489	0.
1	0930	115	0.	*	1	1955	240	0.	*	2	0620	365	0.	*	2	1645	490	0.
1	0935	116	0.	*	1	2000	241	0.	*	2	0625	366	0.	*	2	1650	491	0.
1	0940	117	0.	*	1	2005	242	0.	*	2	0630	367	0.	*	2	1655	492	0.
1	0945	118	0.	*	1	2010	243	0.	*	2	0635	368	0.	*	2	1700	493	0.
1	0950	119	0.	*	1	2015	244	0.	*	2	0640	369	0.	*	2	1705	494	0.
1	0955	120	0.	*	1	2020	245	0.	*	2	0645	370	0.	*	2	1710	495	0.
1	1000	121	0.	*	1	2025	246	0.	*	2	0650	371	0.	*	2	1715	496	0.
1	1005	122	0.	*	1	2030	247	0.	*	2	0655	372	0.	*	2	1720	497	0.
1	1010	123	0.	*	1	2035	248	0.	*	2	0700	373	0.	*	2	1725	498	0.
1	1015	124	0.	*	1	2040	249	0.	*	2	0705	374	0.	*	2	1730	499	0.
1	1020	125	0.	*	1	2045	250	0.	*	2	0710	375	0.	*	2	1735	500	0.
				*					*					*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	41.58-HR
+ (CFS)	(HR)	(CFS)				
+ 837.	3.75		167.	42.	24.	24.
		(INCHES)	1.773	1.779	1.779	1.779
		(AC-FT)	83.	83.	83.	83.

CUMULATIVE AREA = .88 SQ MI

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         **************
         *            *
89 KK    *    RDB1    *
         *            *
         **************

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

           HYDROGRAPH ROUTING DATA

92 RS        STORAGE ROUTING
                  NSTPS        1  NUMBER OF SUBREACHES
                   ITYP     ELEV  TYPE OF INITIAL CONDITION
                 RSVRIC  3025.50  INITIAL CONDITION
                      X      .00 WORKING R AND D COEFFICIENT

93 SA            AREA        4.6       5.6       5.8       6.0       6.2       6.8       7.2       7.4       7.6       8.3

94 SE            ELEVATION   3025.50   3027.00   3028.00   3029.00   3030.00   3033.00   3035.00   3036.00   3037.00   3040.00

95 SQ            DISCHARGE     50.       61.       71.       75.     1436.     3921.     7136.

96 SE            ELEVATION   3025.50   3030.00   3035.00   3037.00   3040.00   3043.00   3046.00
                                                           ***

                                 COMPUTED STORAGE-ELEVATION DATA

          STORAGE        .00      7.64     13.36     19.27     25.36     44.80     58.73     66.00     73.49     97.37
        ELEVATION    3025.50   3027.00   3028.00   3029.00   3030.00   3033.00   3035.00   3036.00   3037.00   3040.00

                              COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

          STORAGE        .00      7.64     13.36     19.27     25.36     44.80     58.73     66.00     73.49     97.37
          OUTFLOW      49.70     53.33     55.76     58.18     60.60     66.72     70.80     72.65     74.50   1436.00
        ELEVATION    3025.50   3027.00   3028.00   3029.00   3030.00   3033.00   3035.00   3036.00   3037.00   3040.00
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STORAGE	123.39	151.64
OUTFLOW	3920.50	7136.30
ELEVATION	3043.00	3046.00

HYDROGRAPH AT STATION RDB1
PLAN 1, RATIO = 1.00

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	50.	.0	3025.5	1		1355	168	59.	20.4	3029.2	2		0350	335	50.	-.2	3025.5
1		0005	2	50.	-.2	3025.5	1		1400	169	58.	20.0	3029.1	2		0355	336	50.	-.2	3025.5
1		0010	3	50.	-.2	3025.5	1		1405	170	58.	19.6	3029.1	2		0400	337	50.	-.2	3025.5
1		0015	4	50.	-.2	3025.5	1		1410	171	58.	19.2	3029.0	2		0405	338	50.	-.2	3025.5
1		0020	5	50.	-.2	3025.5	1		1415	172	58.	18.8	3028.9	2		0410	339	50.	-.2	3025.5
1		0025	6	50.	-.2	3025.5	1		1420	173	58.	18.4	3028.9	2		0415	340	50.	-.2	3025.5
1		0030	7	50.	-.2	3025.5	1		1425	174	58.	18.0	3028.8	2		0420	341	50.	-.2	3025.5
1		0035	8	50.	-.2	3025.5	1		1430	175	58.	17.6	3028.7	2		0425	342	50.	-.2	3025.5
1		0040	9	50.	-.2	3025.5	1		1435	176	57.	17.2	3028.7	2		0430	343	50.	-.2	3025.5
1		0045	10	50.	-.2	3025.5	1		1440	177	57.	16.8	3028.6	2		0435	344	50.	-.2	3025.5
1		0050	11	50.	-.2	3025.5	1		1445	178	57.	16.4	3028.5	2		0440	345	50.	-.2	3025.5
1		0055	12	50.	-.2	3025.5	1		1450	179	57.	16.1	3028.5	2		0445	346	50.	-.2	3025.5
1		0100	13	50.	-.2	3025.5	1		1455	180	57.	15.7	3028.4	2		0450	347	50.	-.2	3025.5
1		0105	14	50.	-.2	3025.5	1		1500	181	57.	15.3	3028.3	2		0455	348	50.	-.2	3025.5
1		0110	15	50.	-.2	3025.5	1		1505	182	56.	14.9	3028.3	2		0500	349	50.	-.2	3025.5
1		0115	16	50.	-.2	3025.5	1		1510	183	56.	14.5	3028.2	2		0505	350	50.	-.2	3025.5
1		0120	17	50.	-.2	3025.5	1		1515	184	56.	14.1	3028.1	2		0510	351	50.	-.2	3025.5
1		0125	18	50.	-.2	3025.5	1		1520	185	56.	13.7	3028.1	2		0515	352	50.	-.2	3025.5
1		0130	19	50.	-.2	3025.5	1		1525	186	56.	13.3	3028.0	2		0520	353	50.	-.2	3025.5
1		0135	20	50.	-.2	3025.5	1		1530	187	56.	13.0	3027.9	2		0525	354	50.	-.2	3025.5
1		0140	21	50.	-.2	3025.5	1		1535	188	55.	12.6	3027.9	2		0530	355	50.	-.2	3025.5
1		0145	22	50.	-.2	3025.5	1		1540	189	55.	12.2	3027.8	2		0535	356	50.	-.2	3025.5
1		0150	23	50.	-.2	3025.5	1		1545	190	55.	11.8	3027.7	2		0540	357	50.	-.2	3025.5
1		0155	24	50.	-.2	3025.5	1		1550	191	55.	11.4	3027.7	2		0545	358	50.	-.2	3025.5
1		0200	25	50.	-.2	3025.5	1		1555	192	55.	11.1	3027.6	2		0550	359	50.	-.2	3025.5
1		0205	26	50.	-.2	3025.5	1		1600	193	55.	10.7	3027.5	2		0555	360	50.	-.2	3025.5
1		0210	27	50.	-.2	3025.5	1		1605	194	54.	10.3	3027.5	2		0600	361	50.	-.2	3025.5
1		0215	28	50.	-.2	3025.5	1		1610	195	54.	9.9	3027.4	2		0605	362	50.	-.2	3025.5
1		0220	29	50.	-.2	3025.5	1		1615	196	54.	9.6	3027.3	2		0610	363	50.	-.2	3025.5
1		0225	30	50.	-.1	3025.5	1		1620	197	54.	9.2	3027.3	2		0615	364	50.	-.2	3025.5
1		0230	31	50.	-.1	3025.5	1		1625	198	54.	8.8	3027.2	2		0620	365	50.	-.2	3025.5
1		0235	32	50.	.0	3025.5	1		1630	199	54.	8.4	3027.1	2		0625	366	50.	-.2	3025.5
1		0240	33	50.	.1	3025.5	1		1635	200	54.	8.1	3027.1	2		0630	367	50.	-.2	3025.5
1		0245	34	50.	.2	3025.5	1		1640	201	53.	7.7	3027.0	2		0635	368	50.	-.2	3025.5
1		0250	35	50.	.4	3025.6	1		1645	202	53.	7.3	3026.9	2		0640	369	50.	-.2	3025.5
1		0255	36	50.	.5	3025.6	1		1650	203	53.	7.0	3026.9	2		0645	370	50.	-.2	3025.5
1		0300	37	50.	.6	3025.6	1		1655	204	53.	6.6	3026.8	2		0650	371	50.	-.2	3025.5
1		0305	38	50.	.8	3025.6	1		1700	205	53.	6.2	3026.7	2		0655	372	50.	-.2	3025.5
1		0310	39	50.	1.1	3025.7	1		1705	206	52.	5.9	3026.7	2		0700	373	50.	-.2	3025.5
1		0315	40	51.	1.8	3025.9	1		1710	207	52.	5.5	3026.6	2		0705	374	50.	-.2	3025.5
1		0320	41	51.	3.1	3026.1	1		1715	208	52.	5.2	3026.5	2		0710	375	50.	-.2	3025.5
1		0325	42	52.	5.3	3026.5	1		1720	209	52.	4.8	3026.4	2		0715	376	50.	-.2	3025.5
1		0330	43	54.	8.8	3027.2	1		1725	210	52.	4.4	3026.4	2		0720	377	50.	-.2	3025.5
1		0335	44	56.	13.5	3028.0	1		1730	211	52.	4.1	3026.3	2		0725	378	50.	-.2	3025.5
1		0340	45	58.	18.8	3028.9	1		1735	212	51.	3.7	3026.2	2		0730	379	50.	-.2	3025.5
1		0345	46	60.	24.3	3029.8	1		1740	213	51.	3.4	3026.2	2		0735	380	50.	-.2	3025.5
1		0350	47	62.	29.7	3030.7	1		1745	214	51.	3.0	3026.1	2		0740	381	50.	-.2	3025.5
1		0355	48	64.	34.6	3031.4	1		1750	215	51.	2.7	3026.0	2		0745	382	50.	-.2	3025.5
1		0400	49	65.	38.9	3032.1	1		1755	216	51.	2.3	3026.0	2		0750	383	50.	-.2	3025.5
1		0405	50	66.	42.5	3032.6	1		1800	217	51.	2.0	3025.9	2		0755	384	50.	-.2	3025.5
1		0410	51	67.	45.4	3033.1	1		1805	218	50.	1.6	3025.8	2		0800	385	50.	-.2	3025.5
1		0415	52	68.	47.7	3033.4	1		1810	219	50.	1.3	3025.8	2		0805	386	50.	-.2	3025.5
1		0420	53	68.	49.5	3033.7	1		1815	220	50.	.9	3025.7	2		0810	387	50.	-.2	3025.5
1		0425	54	69.	51.0	3033.9	1		1820	221	50.	.6	3025.6	2		0815	388	50.	-.2	3025.5
1		0430	55	69.	52.2	3034.1	1		1825	222	50.	.2	3025.5	2		0820	389	50.	-.2	3025.5
1		0435	56	69.	53.5	3034.2	1		1830	223	50.	-.1	3025.5	2		0825	390	50.	-.2	3025.5
1		0440	57	70.	54.7	3034.4	1		1835	224	50.	-.2	3025.5	2		0830	391	50.	-.2	3025.5
1		0445	58	70.	55.9	3034.6	1		1840	225	50.	-.2	3025.5	2		0835	392	50.	-.2	3025.5
1		0450	59	70.	57.1	3034.8	1		1845	226	50.	-.2	3025.5	2		0840	393	50.	-.2	3025.5
1		0455	60	71.	58.4	3034.9	1		1850	227	50.	-.2	3025.5	2		0845	394	50.	-.2	3025.5
1		0500	61	71.	59.6	3035.1	1		1855	228	50.	-.2	3025.5	2		0850	395	50.	-.2	3025.5
1		0505	62	71.	60.7	3035.3	1		1900	229	50.	-.2	3025.5	2		0855	396	50.	-.2	3025.5
1		0510	63	72.	61.5	3035.4	1		1905	230	50.	-.2	3025.5	2		0900	397	50.	-.2	3025.5
1		0515	64	72.	62.2	3035.5	1		1910	231	50.	-.2	3025.5	2		0905	398	50.	-.2	3025.5
1		0520	65	72.	62.7	3035.5	1		1915	232	50.	-.2	3025.5	2		0910	399	50.	-.2	3025.5
1		0525	66	72.	63.0	3035.6	1		1920	233	50.	-.2	3025.5	2		0915	400	50.	-.2	3025.5
1		0530	67	72.	63.2	3035.6	1		1925	234	50.	-.2	3025.5	2		0920	401	50.	-.2	3025.5
1		0535	68	72.	63.2	3035.6	1		1930	235	50.	-.2	3025.5	2		0925	402	50.	-.2	3025.5
1		0540	69	72.	63.2	3035.6	1		1935	236	50.	-.2	3025.5	2		0930	403	50.	-.2	3025.5
1		0545	70	72.	63.0	3035.6	1		1940	237	50.	-.2	3025.5	2		0935	404	50.	-.2	3025.5
1		0550	71	72.	62.8	3035.6	1		1945	238	50.	-.2	3025.5	2		0940	405	50.	-.2	3025.5
1		0555	72	72.	62.6	3035.5	1		1950	239	50.	-.2	3025.5	2		0945	406	50.	-.2	3025.5
1		0600	73	72.	62.3	3035.5	1		1955	240	50.	-.2	3025.5	2		0950	407	50.	-.2	3025.5
1		0605	74	72.	62.0	3035.5	1		2000	241	50.	-.2	3025.5	2		0955	408	50.	-.2	3025.5
1		0610	75	72.	61.7	3035.4	1		2005	242	50.	-.2	3025.5	2		1000	409	50.	-.2	3025.5
1		0615	76	71.	61.4	3035.4	1		2010	243	50.	-.2	3025.5	2		1005	410	50.	-.2	3025.5
1		0620	77	71.	61.0	3035.3	1		2015	244	50.	-.2	3025.5	2		1010	411	50.	-.2	3025.5
1		0625	78	71.	60.6	3035.3	1		2020	245	50.	-.2	3025.5	2		1015	412	50.	-.2	3025.5
1		0630	79	71.	60.1	3035.2	1		2025	246	50.	-.2	3025.5	2		1020	413	50.	-.2	3025.5
1		0635	80	71.	59.7	3035.1	1		2030	247	50.	-.2	3025.5	2		1025	414	50.	-.2	3025.5
1		0640	81	71.	59.2	3035.1	1		2035	248	50.	-.2	3025.5	2		1030	415	50.	-.2	3025.5
1		0645	82	71.	58.8	3035.0	1		2040	249	50.	-.2	3025.5	2		1035	416	50.	-.2	3025.5
1		0650	83	71.	58.3	3034.9	1		2045	250	50.	-.2	3025.5	2		1040	417	50.	-.2	3025.5
1		0655	84	71.	57.8	3034.9	1		2050	251	50.	-.2	3025.5	2		1045	418	50.	-.2	3025.5
1		0700	85	70.	57.3	3034.8	1		2055	252	50.	-.2	3025.5	2		1050	419	50.	-.2	3025.5
1		0705	86	70.	56.9	3034.7	1		2100	253	50.	-.2	3025.5	2		1055	420	50.	-.2	3025.5
1		0710	87	70.	56.4	3034.7	1		2105	254	50.	-.2	3025.5	2		1100	421	50.	-.2	3025.5
1		0715	88	70.	55.9	3034.6	1		2110	255	50.	-.2	3025.5	2		1105	422	50.	-.2	3025.5
1		0720	89	70.	55.4	3034.5	1		2115	256	50.	-.2	3025.5	2		1110	423	50.	-.2	3025.5
1		0725	90	70.	54.9	3034.5	1		2120	257	50.	-.2	3025.5	2		1115	424	50.	-.2	3025.5
1		0730	91	70.	54.5	3034.4	1		2125	258	50.	-.2	3025.5	2		1120	425	50.	-.2	3025.5
1		0735	92	69.	54.0	3034.3	1		2130	259	50.	-.2	3025.5	2		1125	426	50.	-.2	3025.5
1		0740	93	69.	53.5	3034.3	1		2135	260	50.	-.2	3025.5	2		1130	427	50.	-.2	3025.5
1		0745	94	69.	53.0	3034.2	1		2140	261	50.	-.2	3025.5	2		1135	428	50.	-.2	3025.5
1		0750	95	69.	52.6	3034.1	1		2145	262	50.	-.2	3025.5	2		1140	429	50.	-.2	3025.5
1		0755	96	69.	52.1	3034.0	1		2150	263	50.	-.2	3025.5	2		1145	430	50.	-.2	3025.5
1		0800	97	69.	51.6	3034.0	1		2155	264	50.	-.2	3025.5	2		1150	431	50.	-.2	3025.5
1		0805	98	69.	51.1	3033.9	1		2200	265	50.	-.2	3025.5	2		1155	432	50.	-.2	3025.5
1		0810	99	68.	50.7	3033.8	1		2205	266	50.	-.2	3025.5	2		1200	433	50.	-.2	3025.5
1		0815	100	68.	50.2	3033.8	1		2210	267	50.	-.2	3025.5	2		1205	434	50.	-.2	3025.5
1		0820	101	68.	49.7	3033.7	1		2215	268	50.	-.2	3025.5	2		1210	435	50.	-.2	3025.5
1		0825	102	68.	49.3	3033.6	1		2220	269	50.	-.2	3025.5	2		1215	436	50.	-.2	3025.5
1		0830	103	68.	48.8	3033.6	1		2225	270	50.	-.2	3025.5	2		1220	437	50.	-.2	3025.5
1		0835	104	68.	48.3	3033.5	1		2230	271	50.	-.2	3025.5	2		1225	438	50.	-.2	3025.5
1		0840	105	68.	47.9	3033.4	1		2235	272	50.	-.2	3025.5	2		1230	439	50.	-.2	3025.5
1		0845	106	67.	47.4	3033.4	1		2240	273	50.	-.2	3025.5	2		1235	440	50.	-.2	3025.5
1		0850	107	67.	46.9	3033.3	1		2245	274	50.	-.2	3025.5	2		1240	441	50.	-.2	3025.5
1		0855	108	67.	46.5	3033.2	1		2250	275	50.	-.2	3025.5	2		1245	442	50.	-.2	3025.5
1		0900	109	67.	46.0	3033.2	1		2255	276	50.	-.2	3025.5	2		1250	443	50.	-.2	3025.5
1		0905	110	67.	45.5	3033.1	1		2300	277	50.	-.2	3025.5	2		1255	444	50.	-.2	3025.5
1		0910	111	67.	45.1	3033.0	1		2305	278	50.	-.2	3025.5	2		1300	445	50.	-.2	3025.5
1		0915	112	67.	44.6	3033.0	1		2310	279	50.	-.2	3025.5	2		1305	446	50.	-.2	3025.5
1		0920	113	67.	44.2	3032.9	1		2315	280	50.	-.2	3025.5	2		1310	447	50.	-.2	3025.5
1		0925	114	66.	43.7	3032.8	1		2320	281	50.	-.2	3025.5	2		1315	448	50.	-.2	3025.5
1		0930	115	66.	43.3	3032.8	1		2325	282	50.	-.2	3025.5	2		1320	449	50.	-.2	3025.5
1		0935	116	66.	42.8	3032.7	1		2330	283	50.	-.2	3025.5	2		1325	450	50.	-.2	3025.5

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0940	117	66.	42.3	3032.6	1		2335	284	50.	-.2	3025.5	2		1330	451	50.	-.2	3025.5
1		0945	118	66.	41.9	3032.6	1		2340	285	50.	-.2	3025.5	2		1335	452	50.	-.2	3025.5
1		0950	119	66.	41.4	3032.5	1		2345	286	50.	-.2	3025.5	2		1340	453	50.	-.2	3025.5
1		0955	120	66.	41.0	3032.4	1		2350	287	50.	-.2	3025.5	2		1345	454	50.	-.2	3025.5
1		1000	121	65.	40.5	3032.3	1		2355	288	50.	-.2	3025.5	2		1350	455	50.	-.2	3025.5
1		1005	122	65.	40.1	3032.3	2		0000	289	50.	-.2	3025.5	2		1355	456	50.	-.2	3025.5
1		1010	123	65.	39.6	3032.2	2		0005	290	50.	-.2	3025.5	2		1400	457	50.	-.2	3025.5
1		1015	124	65.	39.2	3032.1	2		0010	291	50.	-.2	3025.5	2		1405	458	50.	-.2	3025.5
1		1020	125	65.	38.7	3032.1	2		0015	292	50.	-.2	3025.5	2		1410	459	50.	-.2	3025.5
1		1025	126	65.	38.3	3032.0	2		0020	293	50.	-.2	3025.5	2		1415	460	50.	-.2	3025.5
1		1030	127	65.	37.8	3031.9	2		0025	294	50.	-.2	3025.5	2		1420	461	50.	-.2	3025.5
1		1035	128	64.	37.4	3031.9	2		0030	295	50.	-.2	3025.5	2		1425	462	50.	-.2	3025.5
1		1040	129	64.	37.0	3031.8	2		0035	296	50.	-.2	3025.5	2		1430	463	50.	-.2	3025.5
1		1045	130	64.	36.5	3031.7	2		0040	297	50.	-.2	3025.5	2		1435	464	50.	-.2	3025.5
1		1050	131	64.	36.1	3031.7	2		0045	298	50.	-.2	3025.5	2		1440	465	50.	-.2	3025.5
1		1055	132	64.	35.6	3031.6	2		0050	299	50.	-.2	3025.5	2		1445	466	50.	-.2	3025.5
1		1100	133	64.	35.2	3031.5	2		0055	300	50.	-.2	3025.5	2		1450	467	50.	-.2	3025.5
1		1105	134	64.	34.8	3031.5	2		0100	301	50.	-.2	3025.5	2		1455	468	50.	-.2	3025.5
1		1110	135	63.	34.3	3031.4	2		0105	302	50.	-.2	3025.5	2		1500	469	50.	-.2	3025.5
1		1115	136	63.	33.9	3031.3	2		0110	303	50.	-.2	3025.5	2		1505	470	50.	-.2	3025.5
1		1120	137	63.	33.5	3031.2	2		0115	304	50.	-.2	3025.5	2		1510	471	50.	-.2	3025.5
1		1125	138	63.	33.0	3031.2	2		0120	305	50.	-.2	3025.5	2		1515	472	50.	-.2	3025.5
1		1130	139	63.	32.6	3031.1	2		0125	306	50.	-.2	3025.5	2		1520	473	50.	-.2	3025.5
1		1135	140	63.	32.2	3031.0	2		0130	307	50.	-.2	3025.5	2		1525	474	50.	-.2	3025.5
1		1140	141	63.	31.7	3031.0	2		0135	308	50.	-.2	3025.5	2		1530	475	50.	-.2	3025.5
1		1145	142	62.	31.3	3030.9	2		0140	309	50.	-.2	3025.5	2		1535	476	50.	-.2	3025.5
1		1150	143	62.	30.9	3030.8	2		0145	310	50.	-.2	3025.5	2		1540	477	50.	-.2	3025.5
1		1155	144	62.	30.4	3030.8	2		0150	311	50.	-.2	3025.5	2		1545	478	50.	-.2	3025.5
1		1200	145	62.	30.0	3030.7	2		0155	312	50.	-.2	3025.5	2		1550	479	50.	-.2	3025.5
1		1205	146	62.	29.6	3030.7	2		0200	313	50.	-.2	3025.5	2		1555	480	50.	-.2	3025.5
1		1210	147	62.	29.1	3030.6	2		0205	314	50.	-.2	3025.5	2		1600	481	50.	-.2	3025.5
1		1215	148	62.	28.7	3030.5	2		0210	315	50.	-.2	3025.5	2		1605	482	50.	-.2	3025.5
1		1220	149	62.	28.3	3030.5	2		0215	316	50.	-.2	3025.5	2		1610	483	50.	-.2	3025.5
1		1225	150	61.	27.9	3030.4	2		0220	317	50.	-.2	3025.5	2		1615	484	50.	-.2	3025.5
1		1230	151	61.	27.5	3030.3	2		0225	318	50.	-.2	3025.5	2		1620	485	50.	-.2	3025.5
1		1235	152	61.	27.0	3030.3	2		0230	319	50.	-.2	3025.5	2		1625	486	50.	-.2	3025.5
1		1240	153	61.	26.6	3030.2	2		0235	320	50.	-.2	3025.5	2		1630	487	50.	-.2	3025.5
1		1245	154	61.	26.2	3030.1	2		0240	321	50.	-.2	3025.5	2		1635	488	50.	-.2	3025.5
1		1250	155	61.	25.8	3030.1	2		0245	322	50.	-.2	3025.5	2		1640	489	50.	-.2	3025.5
1		1255	156	61.	25.4	3030.0	2		0250	323	50.	-.2	3025.5	2		1645	490	50.	-.2	3025.5
1		1300	157	60.	24.9	3029.9	2		0255	324	50.	-.2	3025.5	2		1650	491	50.	-.2	3025.5
1		1305	158	60.	24.5	3029.9	2		0300	325	50.	-.2	3025.5	2		1655	492	50.	-.2	3025.5
1		1310	159	60.	24.1	3029.8	2		0305	326	50.	-.2	3025.5	2		1700	493	50.	-.2	3025.5
1		1315	160	60.	23.7	3029.7	2		0310	327	50.	-.2	3025.5	2		1705	494	50.	-.2	3025.5
1		1320	161	60.	23.3	3029.7	2		0315	328	50.	-.2	3025.5	2		1710	495	50.	-.2	3025.5
1		1325	162	60.	22.9	3029.6	2		0320	329	50.	-.2	3025.5	2		1715	496	50.	-.2	3025.5
1		1330	163	59.	22.5	3029.5	2		0325	330	50.	-.2	3025.5	2		1720	497	50.	-.2	3025.5
1		1335	164	59.	22.1	3029.5	2		0330	331	50.	-.2	3025.5	2		1725	498	50.	-.2	3025.5
1		1340	165	59.	21.6	3029.4	2		0335	332	50.	-.2	3025.5	2		1730	499	50.	-.2	3025.5
1		1345	166	59.	21.2	3029.3	2		0340	333	50.	-.2	3025.5	2		1735	500	50.	-.2	3025.5
1		1350	167	59.	20.8	3029.3	2		0345	334	50.	-.2	3025.5							

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	41.58-HR
+ (CFS)	(HR)	(CFS)				
+ 72.	5.58		69.	58.	54.	54.
		(INCHES)	.733	2.445	3.988	3.988
		(AC-FT)	34.	114.	187.	187.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	41.58-HR
+ (AC-FT)	(HR)				
+ 63.	5.58	53.	21.	12.	12.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	41.58-HR
+ (FEET)	(HR)				
+ 3035.62	5.58	3034.23	3028.99	3027.52	3027.52

CUMULATIVE AREA = .88 SQ MI

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HYDROGRAPH AT STATION RDB1
PLAN 1, RATIO = .98

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	50.	.0	3025.5	1		1355	168	58.	18.7	3028.9	2		0350	335	50.	-.2	3025.5
1		0005	2	50.	-.2	3025.5	1		1400	169	58.	18.3	3028.8	2		0355	336	50.	-.2	3025.5
1		0010	3	50.	-.2	3025.5	1		1405	170	58.	17.9	3028.8	2		0400	337	50.	-.2	3025.5
1		0015	4	50.	-.2	3025.5	1		1410	171	57.	17.5	3028.7	2		0405	338	50.	-.2	3025.5
1		0020	5	50.	-.2	3025.5	1		1415	172	57.	17.1	3028.6	2		0410	339	50.	-.2	3025.5
1		0025	6	50.	-.2	3025.5	1		1420	173	57.	16.7	3028.6	2		0415	340	50.	-.2	3025.5
1		0030	7	50.	-.2	3025.5	1		1425	174	57.	16.3	3028.5	2		0420	341	50.	-.2	3025.5
1		0035	8	50.	-.2	3025.5	1		1430	175	57.	15.9	3028.4	2		0425	342	50.	-.2	3025.5
1		0040	9	50.	-.2	3025.5	1		1435	176	57.	15.5	3028.4	2		0430	343	50.	-.2	3025.5
1		0045	10	50.	-.2	3025.5	1		1440	177	56.	15.1	3028.3	2		0435	344	50.	-.2	3025.5
1		0050	11	50.	-.2	3025.5	1		1445	178	56.	14.7	3028.2	2		0440	345	50.	-.2	3025.5
1		0055	12	50.	-.2	3025.5	1		1450	179	56.	14.3	3028.2	2		0445	346	50.	-.2	3025.5
1		0100	13	50.	-.2	3025.5	1		1455	180	56.	13.9	3028.1	2		0450	347	50.	-.2	3025.5
1		0105	14	50.	-.2	3025.5	1		1500	181	56.	13.6	3028.0	2		0455	348	50.	-.2	3025.5
1		0110	15	50.	-.2	3025.5	1		1505	182	56.	13.2	3028.0	2		0500	349	50.	-.2	3025.5
1		0115	16	50.	-.2	3025.5	1		1510	183	56.	12.8	3027.9	2		0505	350	50.	-.2	3025.5
1		0120	17	50.	-.2	3025.5	1		1515	184	55.	12.4	3027.8	2		0510	351	50.	-.2	3025.5
1		0125	18	50.	-.2	3025.5	1		1520	185	55.	12.0	3027.8	2		0515	352	50.	-.2	3025.5
1		0130	19	50.	-.2	3025.5	1		1525	186	55.	11.7	3027.7	2		0520	353	50.	-.2	3025.5
1		0135	20	50.	-.2	3025.5	1		1530	187	55.	11.3	3027.6	2		0525	354	50.	-.2	3025.5
1		0140	21	50.	-.2	3025.5	1		1535	188	55.	10.9	3027.6	2		0530	355	50.	-.2	3025.5
1		0145	22	50.	-.2	3025.5	1		1540	189	55.	10.5	3027.5	2		0535	356	50.	-.2	3025.5
1		0150	23	50.	-.2	3025.5	1		1545	190	54.	10.1	3027.4	2		0540	357	50.	-.2	3025.5
1		0155	24	50.	-.2	3025.5	1		1550	191	54.	9.8	3027.4	2		0545	358	50.	-.2	3025.5
1		0200	25	50.	-.2	3025.5	1		1555	192	54.	9.4	3027.3	2		0550	359	50.	-.2	3025.5
1		0205	26	50.	-.2	3025.5	1		1600	193	54.	9.0	3027.2	2		0555	360	50.	-.2	3025.5
1		0210	27	50.	-.2	3025.5	1		1605	194	54.	8.7	3027.2	2		0600	361	50.	-.2	3025.5
1		0215	28	50.	-.2	3025.5	1		1610	195	54.	8.3	3027.1	2		0605	362	50.	-.2	3025.5
1		0220	29	50.	-.2	3025.5	1		1615	196	53.	7.9	3027.0	2		0610	363	50.	-.2	3025.5
1		0225	30	50.	-.2	3025.5	1		1620	197	53.	7.5	3027.0	2		0615	364	50.	-.2	3025.5
1		0230	31	50.	-.1	3025.5	1		1625	198	53.	7.2	3026.9	2		0620	365	50.	-.2	3025.5
1		0235	32	50.	.0	3025.5	1		1630	199	53.	6.8	3026.8	2		0625	366	50.	-.2	3025.5
1		0240	33	50.	.0	3025.5	1		1635	200	53.	6.5	3026.8	2		0630	367	50.	-.2	3025.5
1		0245	34	50.	.1	3025.5	1		1640	201	53.	6.1	3026.7	2		0635	368	50.	-.2	3025.5
1		0250	35	50.	.3	3025.6	1		1645	202	52.	5.7	3026.6	2		0640	369	50.	-.2	3025.5
1		0255	36	50.	.4	3025.6	1		1650	203	52.	5.4	3026.6	2		0645	370	50.	-.2	3025.5
1		0300	37	50.	.4	3025.6	1		1655	204	52.	5.0	3026.5	2		0650	371	50.	-.2	3025.5
1		0305	38	50.	.6	3025.6	1		1700	205	52.	4.7	3026.4	2		0655	372	50.	-.2	3025.5
1		0310	39	50.	.9	3025.7	1		1705	206	52.	4.3	3026.3	2		0700	373	50.	-.2	3025.5
1		0315	40	50.	1.6	3025.8	1		1710	207	52.	3.9	3026.3	2		0705	374	50.	-.2	3025.5
1		0320	41	51.	2.8	3026.1	1		1715	208	51.	3.6	3026.2	2		0710	375	50.	-.2	3025.5
1		0325	42	52.	5.0	3026.5	1		1720	209	51.	3.2	3026.1	2		0715	376	50.	-.2	3025.5
1		0330	43	54.	8.4	3027.1	1		1725	210	51.	2.9	3026.1	2		0720	377	50.	-.2	3025.5
1		0335	44	56.	12.9	3027.9	1		1730	211	51.	2.5	3026.0	2		0725	378	50.	-.2	3025.5
1		0340	45	58.	18.1	3028.8	1		1735	212	51.	2.2	3025.9	2		0730	379	50.	-.2	3025.5

1	0345	46	60.	23.4	3029.7	*	1	1740	213	51.	1.8	3025.9	*	2	0735	380	50.	-.2	3025.5
1	0350	47	62.	28.6	3030.5	*	1	1745	214	50.	1.5	3025.8	*	2	0740	381	50.	-.2	3025.5
1	0355	48	63.	33.4	3031.2	*	1	1750	215	50.	1.1	3025.7	*	2	0745	382	50.	-.2	3025.5
1	0400	49	64.	37.5	3031.9	*	1	1755	216	50.	.8	3025.7	*	2	0750	383	50.	-.2	3025.5
1	0405	50	66.	41.0	3032.4	*	1	1800	217	50.	.4	3025.6	*	2	0755	384	50.	-.2	3025.5
1	0410	51	66.	43.8	3032.8	*	1	1805	218	50.	.1	3025.5	*	2	0800	385	50.	-.2	3025.5
1	0415	52	67.	46.0	3033.2	*	1	1810	219	50.	-.2	3025.5	*	2	0805	386	50.	-.2	3025.5
1	0420	53	68.	47.8	3033.4	*	1	1815	220	50.	-.2	3025.5	*	2	0810	387	50.	-.2	3025.5
1	0425	54	68.	49.2	3033.6	*	1	1820	221	50.	-.2	3025.5	*	2	0815	388	50.	-.2	3025.5
1	0430	55	68.	50.5	3033.8	*	1	1825	222	50.	-.2	3025.5	*	2	0820	389	50.	-.2	3025.5
1	0435	56	69.	51.7	3034.0	*	1	1830	223	50.	-.2	3025.5	*	2	0825	390	50.	-.2	3025.5
1	0440	57	69.	52.8	3034.2	*	1	1835	224	50.	-.2	3025.5	*	2	0830	391	50.	-.2	3025.5
1	0445	58	69.	54.0	3034.3	*	1	1840	225	50.	-.2	3025.5	*	2	0835	392	50.	-.2	3025.5
1	0450	59	70.	55.2	3034.5	*	1	1845	226	50.	-.2	3025.5	*	2	0840	393	50.	-.2	3025.5
1	0455	60	70.	56.4	3034.7	*	1	1850	227	50.	-.2	3025.5	*	2	0845	394	50.	-.2	3025.5
1	0500	61	70.	57.6	3034.8	*	1	1855	228	50.	-.2	3025.5	*	2	0850	395	50.	-.2	3025.5
1	0505	62	71.	58.6	3035.0	*	1	1900	229	50.	-.2	3025.5	*	2	0855	396	50.	-.2	3025.5
1	0510	63	71.	59.5	3035.1	*	1	1905	230	50.	-.2	3025.5	*	2	0900	397	50.	-.2	3025.5
1	0515	64	71.	60.1	3035.2	*	1	1910	231	50.	-.2	3025.5	*	2	0905	398	50.	-.2	3025.5
1	0520	65	71.	60.6	3035.3	*	1	1915	232	50.	-.2	3025.5	*	2	0910	399	50.	-.2	3025.5
1	0525	66	71.	60.9	3035.3	*	1	1920	233	50.	-.2	3025.5	*	2	0915	400	50.	-.2	3025.5
1	0530	67	71.	61.1	3035.3	*	1	1925	234	50.	-.2	3025.5	*	2	0920	401	50.	-.2	3025.5
1	0535	68	71.	61.1	3035.3	*	1	1930	235	50.	-.2	3025.5	*	2	0925	402	50.	-.2	3025.5
1	0540	69	71.	61.0	3035.3	*	1	1935	236	50.	-.2	3025.5	*	2	0930	403	50.	-.2	3025.5
1	0545	70	71.	60.9	3035.3	*	1	1940	237	50.	-.2	3025.5	*	2	0935	404	50.	-.2	3025.5
1	0550	71	71.	60.7	3035.3	*	1	1945	238	50.	-.2	3025.5	*	2	0940	405	50.	-.2	3025.5
1	0555	72	71.	60.5	3035.2	*	1	1950	239	50.	-.2	3025.5	*	2	0945	406	50.	-.2	3025.5
1	0600	73	71.	60.2	3035.2	*	1	1955	240	50.	-.2	3025.5	*	2	0950	407	50.	-.2	3025.5
1	0605	74	71.	59.9	3035.2	*	1	2000	241	50.	-.2	3025.5	*	2	0955	408	50.	-.2	3025.5
1	0610	75	71.	59.6	3035.1	*	1	2005	242	50.	-.2	3025.5	*	2	1000	409	50.	-.2	3025.5
1	0615	76	71.	59.2	3035.1	*	1	2010	243	50.	-.2	3025.5	*	2	1005	410	50.	-.2	3025.5
1	0620	77	71.	58.8	3035.0	*	1	2015	244	50.	-.2	3025.5	*	2	1010	411	50.	-.2	3025.5
1	0625	78	71.	58.4	3035.0	*	1	2020	245	50.	-.2	3025.5	*	2	1015	412	50.	-.2	3025.5
1	0630	79	71.	58.0	3034.9	*	1	2025	246	50.	-.2	3025.5	*	2	1020	413	50.	-.2	3025.5
1	0635	80	70.	57.5	3034.8	*	1	2030	247	50.	-.2	3025.5	*	2	1025	414	50.	-.2	3025.5
1	0640	81	70.	57.1	3034.8	*	1	2035	248	50.	-.2	3025.5	*	2	1030	415	50.	-.2	3025.5
1	0645	82	70.	56.6	3034.7	*	1	2040	249	50.	-.2	3025.5	*	2	1035	416	50.	-.2	3025.5
1	0650	83	70.	56.2	3034.6	*	1	2045	250	50.	-.2	3025.5	*	2	1040	417	50.	-.2	3025.5
1	0655	84	70.	55.7	3034.6	*	1	2050	251	50.	-.2	3025.5	*	2	1045	418	50.	-.2	3025.5
1	0700	85	70.	55.2	3034.5	*	1	2055	252	50.	-.2	3025.5	*	2	1050	419	50.	-.2	3025.5
1	0705	86	70.	54.7	3034.4	*	1	2100	253	50.	-.2	3025.5	*	2	1055	420	50.	-.2	3025.5
1	0710	87	69.	54.3	3034.4	*	1	2105	254	50.	-.2	3025.5	*	2	1100	421	50.	-.2	3025.5
1	0715	88	69.	53.8	3034.3	*	1	2110	255	50.	-.2	3025.5	*	2	1105	422	50.	-.2	3025.5
1	0720	89	69.	53.3	3034.2	*	1	2115	256	50.	-.2	3025.5	*	2	1110	423	50.	-.2	3025.5
1	0725	90	69.	52.8	3034.2	*	1	2120	257	50.	-.2	3025.5	*	2	1115	424	50.	-.2	3025.5
1	0730	91	69.	52.4	3034.1	*	1	2125	258	50.	-.2	3025.5	*	2	1120	425	50.	-.2	3025.5
1	0735	92	69.	51.9	3034.0	*	1	2130	259	50.	-.2	3025.5	*	2	1125	426	50.	-.2	3025.5
1	0740	93	69.	51.4	3033.9	*	1	2135	260	50.	-.2	3025.5	*	2	1130	427	50.	-.2	3025.5
1	0745	94	69.	50.9	3033.9	*	1	2140	261	50.	-.2	3025.5	*	2	1135	428	50.	-.2	3025.5
1	0750	95	68.	50.5	3033.8	*	1	2145	262	50.	-.2	3025.5	*	2	1140	429	50.	-.2	3025.5
1	0755	96	68.	50.0	3033.7	*	1	2150	263	50.	-.2	3025.5	*	2	1145	430	50.	-.2	3025.5
1	0800	97	68.	49.5	3033.7	*	1	2155	264	50.	-.2	3025.5	*	2	1150	431	50.	-.2	3025.5
1	0805	98	68.	49.1	3033.6	*	1	2200	265	50.	-.2	3025.5	*	2	1155	432	50.	-.2	3025.5
1	0810	99	68.	48.6	3033.5	*	1	2205	266	50.	-.2	3025.5	*	2	1200	433	50.	-.2	3025.5
1	0815	100	68.	48.1	3033.4	*	1	2210	267	50.	-.2	3025.5	*	2	1205	434	50.	-.2	3025.5
1	0820	101	68.	47.7	3033.4	*	1	2215	268	50.	-.2	3025.5	*	2	1210	435	50.	-.2	3025.5
1	0825	102	67.	47.2	3033.3	*	1	2220	269	50.	-.2	3025.5	*	2	1215	436	50.	-.2	3025.5
1	0830	103	67.	46.7	3033.3	*	1	2225	270	50.	-.2	3025.5	*	2	1220	437	50.	-.2	3025.5
1	0835	104	67.	46.3	3033.2	*	1	2230	271	50.	-.2	3025.5	*	2	1225	438	50.	-.2	3025.5
1	0840	105	67.	45.8	3033.1	*	1	2235	272	50.	-.2	3025.5	*	2	1230	439	50.	-.2	3025.5
1	0845	106	67.	45.3	3033.1	*	1	2240	273	50.	-.2	3025.5	*	2	1235	440	50.	-.2	3025.5
1	0850	107	67.	44.9	3033.0	*	1	2245	274	50.	-.2	3025.5	*	2	1240	441	50.	-.2	3025.5
1	0855	108	67.	44.4	3032.9	*	1	2250	275	50.	-.2	3025.5	*	2	1245	442	50.	-.2	3025.5
1	0900	109	66.	44.0	3032.9	*	1	2255	276	50.	-.2	3025.5	*	2	1250	443	50.	-.2	3025.5
1	0905	110	66.	43.5	3032.8	*	1	2300	277	50.	-.2	3025.5	*	2	1255	444	50.	-.2	3025.5
1	0910	111	66.	43.1	3032.7	*	1	2305	278	50.	-.2	3025.5	*	2	1300	445	50.	-.2	3025.5
1	0915	112	66.	42.6	3032.7	*	1	2310	279	50.	-.2	3025.5	*	2	1305	446	50.	-.2	3025.5
1	0920	113	66.	42.1	3032.6	*	1	2315	280	50.	-.2	3025.5	*	2	1310	447	50.	-.2	3025.5
1	0925	114	66.	41.7	3032.5	*	1	2320	281	50.	-.2	3025.5	*	2	1315	448	50.	-.2	3025.5
1	0930	115	66.	41.2	3032.5	*	1	2325	282	50.	-.2	3025.5	*	2	1320	449	50.	-.2	3025.5
1	0935	116	65.	40.8	3032.4	*	1	2330	283	50.	-.2	3025.5	*	2	1325	450	50.	-.2	3025.5
1	0940	117	65.	40.3	3032.3	*	1	2335	284	50.	-.2	3025.5	*	2	1330	451	50.	-.2	3025.5
1	0945	118	65.	39.9	3032.2	*	1	2340	285	50.	-.2	3025.5	*	2	1335	452	50.	-.2	3025.5
1	0950	119	65.	39.4	3032.2	*	1	2345	286	50.	-.2	3025.5	*	2	1340	453	50.	-.2	3025.5
1	0955	120	65.	39.0	3032.1	*	1	2350	287	50.	-.2	3025.5	*	2	1345	454	50.	-.2	3025.5
1	1000	121	65.	38.5	3032.0	*	1	2355	288	50.	-.2	3025.5	*	2	1350	455	50.	-.2	3025.5
1	1005	122	65.	38.1	3032.0	*	2	0000	289	50.	-.2	3025.5	*	2	1355	456	50.	-.2	3025.5
1	1010	123	64.	37.7	3031.9	*	2	0005	290	50.	-.2	3025.5	*	2	1400	457	50.	-.2	3025.5
1	1015	124	64.	37.2	3031.8	*	2	0010	291	50.	-.2	3025.5	*	2	1405	458	50.	-.2	3025.5
1	1020	125	64.	36.8	3031.8	*	2	0015	292	50.	-.2	3025.5	*	2	1410	459	50.	-.2	3025.5
1	1025	126	64.	36.3	3031.7	*	2	0020	293	50.	-.2	3025.5	*	2	1415	460	50.	-.2	3025.5
1	1030	127	64.	35.9	3031.6	*	2	0025	294	50.	-.2	3025.5	*	2	1420	461	50.	-.2	3025.5
1	1035	128	64.	35.5	3031.6	*	2	0030	295	50.	-.2	3025.5	*	2	1425	462	50.	-.2	3025.5
1	1040	129	64.	35.0	3031.5	*	2	0035	296	50.	-.2	3025.5	*	2	1430	463	50.	-.2	3025.5
1	1045	130	64.	34.6	3031.4	*	2	0040	297	50.	-.2	3025.5	*	2	1435	464	50.	-.2	3025.5
1	1050	131	63.	34.1	3031.4	*	2	0045	298	50.	-.2	3025.5	*	2	1440	465	50.	-.2	3025.5
1	1055	132	63.	33.7	3031.3	*	2	0050	299	50.	-.2	3025.5	*	2	1445	466	50.	-.2	3025.5
1	1100	133	63.	33.3	3031.2	*	2	0055	300	50.	-.2	3025.5	*	2	1450	467	50.	-.2	3025.5
1	1105	134	63.	32.8	3031.2	*	2	0100	301	50.	-.2	3025.5	*	2	1455	468	50.	-.2	3025.5
1	1110	135	63.	32.4	3031.1	*	2	0105	302	50.	-.2	3025.5	*	2	1500	469	50.	-.2	3025.5
1	1115	136	63.	32.0	3031.0	*	2	0110	303	50.	-.2	3025.5	*	2	1505	470	50.	-.2	3025.5
1	1120	137	63.	31.5	3031.0	*	2	0115	304	50.	-.2	3025.5	*	2	1510	471	50.	-.2	3025.5
1	1125	138	62.	31.1	3030.9	*	2	0120	305	50.	-.2	3025.5	*	2	1515	472	50.	-.2	3025.5
1	1130	139	62.	30.7	3030.8	*	2	0125	306	50.	-.2	3025.5	*	2	1520	473	50.	-.2	3025.5
1	1135	140	62.	30.2	3030.8	*	2	0130	307	50.	-.2	3025.5	*	2	1525	474	50.	-.2	3025.5
1	1140	141	62.	29.8	3030.7	*	2	0135	308	50.	-.2	3025.5	*	2	1530	475	50.	-.2	3025.5
1	1145	142	62.	29.4	3030.6	*	2	0140	309	50.	-.2	3025.5	*	2	1535	476	50.	-.2	3025.5
1	1150	143	62.	29.0	3030.6	*	2	0145	310	50.	-.2	3025.5	*	2	1540	477	50.	-.2	3025.5
1	1155	144	62.	28.5	3030.5	*	2	0150	311	50.	-.2	3025.5	*	2	1545	478	50.	-.2	3025.5
1	1200	145	61.	28.1	3030.4	*	2	0155	312	50.	-.2	3025.5	*	2	1550	479	50.	-.2	3025.5
1	1205	146	61.	27.7	3030.4	*	2	0200	313	50.	-.2	3025.5	*	2	1555	480	50.	-.2	3025.5
1	1210	147	61.	27.3	3030.3	*	2	0205	314	50.	-.2	3025.5	*	2	1600	481	50.	-.2	3025.5
1	1215	148	61.	26.9	3030.2	*	2	0210	315	50.	-.2	3025.5	*	2	1605	482	50.	-.2	3025.5
1	1220	149	61.	26.4	3030.2	*	2	0215	316	50.	-.2	3025.5	*	2	1610	483	50.	-.2	3025.5
1	1225	150	61.	26.0	3030.1	*	2	0220	317	50.	-.2	3025.5	*	2	1615	484	50.	-.2	3025.5
1	1230	151	61.	25.6	3030.0	*	2	0225	318	50.	-.2	3025.5	*	2	1620	485	50.	-.2	3025.5
1	1235	152	61.	25.2	3030.0	*	2	0230	319	50.	-.2	3025.5	*	2	1625	486	50.	-.2	3025.5
1	1240	153	60.	24.8	3029.9	*	2	0235	320	50.	-.2	3025.5	*	2	1630	487	50.	-.2	3025.5
1	1245	154	60.	24.3	3029.8	*	2	0240	321	50.	-.2	3025.5	*	2	1635	488	50.	-.2	3025.5
1	1250	155	60.	23.9	3029.8	*	2	0245	322	50.	-.2	3025.5	*	2	1640	489	50.	-.2	3025.5
1	1255	156	60.	23.5	3029.7	*	2	0250	323	50.	-.2	3025.5	*	2	1645	490	50.	-.2	3025.5
1	1300	157	60.	23.1	3029.6	*	2	0255	324	50.	-.2	3025.5	*	2	1650	491	50.	-.2	3025.5
1	1305	158	60.	22.7	3029.6	*	2	0300	325	50.	-.2	3025.5	*	2	1655	492	50.	-.2	3025.5
1	1310	159	59.	22.3	3029.5	*	2	0305	326	50.	-.2	3025.5	*	2	1700	493	50.	-.2	3025.5
1	1315	160	59.	21.9	3029.4	*	2	0310	327	50.	-.2	3025.5	*	2	1705	494	50.	-.2	3025.5
1	1320	161	59.	21.5	3029.4	*	2	0315	328	50.	-.2	3025.5	*	2	1710	495	50.	-.2	3025.5
1	1325	162	59.	21.1	3029.3	*	2	0320	329	50.	-.2	3025.5	*	2	1715	496	50.	-.2	3025.5
1	1330	163	59.	20.7	3029.2	*	2	0325	330	50.	-.2	3025.5	*	2	1720	497	50.	-.2	3025.5
1	1335	164	59.	20.3	3029.2	*	2	0330	331	50.	-.2	3025.5	*	2	1725	498	50.	-.2	3025.5
1	1340	165	58.	19.9	3029.1	*	2	0335	332	50.	-.2	3025.5	*	2	1730	499	50.	-.2	3025.5
1	1345	166	58.	19.5	3029.0	*	2	0340	333	50.	-.2	3025.5	*	2	1735	500	50.	-.2	3025.5
1	1350	167	58.	19.1	3029.0	*	2	0345	334	50.	-.2	3025.5	*						

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PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	41.58-HR	
+ (CFS)	(HR)	(CFS)				

+	71.	5.58		69.	57.	54.	54.
			(INCHES)	.727	2.428	3.971	3.971
			(AC-FT)	34.	114.	186.	186.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	41.58-HR
+ (AC-FT)	(HR)				
61.	5.58	51.	20.	11.	11.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	41.58-HR
+ (FEET)	(HR)				
3035.33	5.58	3033.93	3028.81	3027.41	3027.41

CUMULATIVE AREA = .88 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

					RATIOS APPLIED TO PRECIPITATION	
OPERATION	STATION	AREA	PLAN		RATIO 1 1.00	RATIO 2 .98
HYDROGRAPH AT						
+	OFF1	.41	1	FLOW	425.	413.
				TIME	3.75	3.75
HYDROGRAPH AT						
+	OFF7	.03	1	FLOW	55.	54.
				TIME	3.50	3.50
2 COMBINED AT						
+	CP2	.44	1	FLOW	454.	441.
				TIME	3.75	3.75
HYDROGRAPH AT						
+	OFF2	.04	1	FLOW	47.	46.
				TIME	3.58	3.58
HYDROGRAPH AT						
+	OFF3	.03	1	FLOW	41.	39.
				TIME	3.50	3.50
3 COMBINED AT						
+	CP1	.50	1	FLOW	507.	493.
				TIME	3.75	3.75
HYDROGRAPH AT						
+	OFF4	.06	1	FLOW	90.	88.
				TIME	3.58	3.58
HYDROGRAPH AT						
+	OFF5	.26	1	FLOW	252.	245.
				TIME	3.83	3.83
HYDROGRAPH AT						
+	OFF6	.04	1	FLOW	62.	61.
				TIME	3.58	3.58
HYDROGRAPH AT						
+	ON1	.03	1	FLOW	49.	48.
				TIME	3.50	3.50
5 COMBINED AT						
+	DB1	.88	1	FLOW	861.	837.
				TIME	3.75	3.75
ROUTED TO						
+	RDB1	.88	1	FLOW	72.	71.
				TIME	5.58	5.58

** PEAK STAGES IN FEET **

1	STAGE	3035.62	3035.33
	TIME	5.58	5.58

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

Drainage Exhibits

APPENDIX M

Reference Material

Technical Drainage Study for Skye Canyon Detention Basin 2, by Slater Hanifan Group

Referenced Basins (HEC-1)

TECHNICAL DRAINAGE STUDY
ADDENDUM NO. 1

Skye Canyon
Detention Basin 2

City of Las Vegas, Nevada

Job No.: OLY1505.000
Date: June 2017

Prepared By:
Slater Hanifan Group, Inc.
5740 S. Arville Street, Suite 216
Las Vegas, Nevada 89118
Phone: 702-284-5300 ▪ Fax: 702-284-5399

Prepared For:
Ninety-Five Management, LLC
11411 Southern Highlands Parkway, Suite 300
Las Vegas, NV 89141
Phone: 702-220-6565 ▪ Fax: 702-220-6566



Lant Leavitt, P.E.
NV Professional Engineer No. 18287

```
1*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              JUN   1998               *
*            VERSION 4.1                *
*                                       *
*  RUN DATE   18JUN17  TIME  15:05:36   *
*                                       *
*****************************************
```

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

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

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 -AMSKK- 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


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

              *DIAGRAM
    1         ID     SLATER HANIFAN GROUP
    2         ID     NINETY-FIVE MANAGEMENT, LLC.
    3         ID     SKYE CANYON - DETENTION BASIN 2
    4         ID     TECHNICAL DRAINAGE STUDY
    5         ID     PROPOSED DRAINAGE CONDITION
    6         ID
    7         ID     RETURN PERIOD -------- 100-YEAR
    8         ID     DISTRIBUTION -------- 6-HOUR SDN3
    9         ID     PROJECT NO. ---------- OLY1505.000
   10         ID     FILENAME ------------ PRO2.H1
   11         ID     DATE ---------------- 5/23/2016
   12         ID     MODELED BY ---------- EM/SJ/CB
   13         ID
   14         ID        SIX HOUR DEPTH-AREA REDUCTION FACTORS
   15         ID        DRAINAGE AREA (MI^2)     RATIO
   16         ID        0.0-0.49                 1.00
   17         ID        0.5-0.99                 0.98
   18         ID        1.0-1.99                 0.97
   19         ID
   20         IT       5       0       0     300
   21         IO       5       0       0
   22         IN       5       0       0
   23         JR    PREC    1.00    0.98    0.97
              *

   24         KK    OFF7
   25         KM    EXISTING OFFSITE DRAINAGE BASIN
   26         KM    DISCHARGES INTO DETENTION BASIN "DB2"
   27         PB    3.00
   28         PC       0   0.020   0.057   0.070   0.087   0.108   0.124   0.130   0.130   0.130
   29         PC   0.130   0.130   0.130   0.133   0.140   0.142   0.148   0.158   0.172   0.181
   30         PC   0.190   0.197   0.199   0.200   0.201   0.204   0.214   0.229   0.241   0.249
   31         PC   0.251   0.256   0.270   0.278   0.281   0.283   0.295   0.322   0.352   0.409
   32         PC   0.499   0.590   0.710   0.744   0.781   0.812   0.819   0.835   0.851   0.856
   33         PC   0.860   0.868   0.876   0.888   0.910   0.926   0.937   0.950   0.970   0.976
   34         PC   0.982   0.985   0.987   0.989   0.990   0.993   0.993   0.994   0.995   0.998
   35         PC   0.998   0.999       1
   36         BA   .0058
   37         LS       0    88.0
   38         UD   0.100
              *

   39         KK    OFF8
   40         KM    EXISTING OFFSITE DRAINAGE BASIN
   41         KM    DISCHARGES INTO DETENTION BASIN "DB2"
   42         KO       3
   43         BA   .2122
```

```
          44          LS       0    88.0
          45          UD   0.299
                      *
1                                        HEC-1 INPUT                                                    PAGE  2

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

          46          KK     CP2
          47          KM   COMBINE OFF7, AND OFF8
          48          HC       2
                      *

          49          KK    OFF9
          50          KM   EXISTING OFFSITE DRAINAGE BASIN
          51          KM   DISCHARGES INTO DETENTION BASIN "DB2"
          52          KO       3
          53          BA   .1137
          54          LS       0    88.0
          55          UD   0.200
                      *

          56          KK    CP2a
          57          KM   COMBINE CP2, AND OFF9
          58          HC       2
                      *

          59          KK   OFF10
          60          KM   EXISTING OFFSITE DRAINAGE BASIN
          61          KM   DISCHARGES INTO DETENTION BASIN "DB2"
          62          KO       3
          63          BA   .6502
          64          LS       0    88.0
          65          UD   0.613
                      *

          66          KK     ON2
          67          KM   PROPOSED ONSITE DRAINAGE BASIN
          68          BA   .0315
          69          LS       0    94.0
          70          UD   0.083
                      *

          71          KK     DB2
          72          KM   COMBINE CP2a, OFF10 AND ON2
          73          KO       1
          74          HC       3
                      *

          75          KK    RDB2
          76          KM   OUTLET = 25" ORIFICE @ INVERT ELEVATION = 2984.21-FT
          77          KO       1
          78          RS       1    ELEV  2992.0
          79          SV    0.00    2.34    7.60   24.30   46.28   73.78  107.11  146.75  193.03
          80          SE  2992.0  2993.0  2995.0  3000.0  3005.0  3010.0  3015.0  3020.0  3025.0
          81          SQ    0.00   44.44   51.05   64.70   83.84   99.36   520.9  3465.5  7888.4
          82          SE  2992.0  2993.0  2995.0  3000.0  3009.0  3018.0  3019.0  3022.0  3025.0
                      *
          83          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

    24        OFF7
                .
                .
    39          .         OFF8
                .           .
                .           .
    46         CP2.............
                .
                .
    49          .         OFF9
                .           .
                .           .
    56        CP2a............
                .
                .
    59          .        OFF10
                .           .
                .           .
    66          .           .          ON2
                .           .           .
```

```
   71          DB2.....................
                V
                V
   75         RDB2

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*               JUN  1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   18JUN17  TIME  15:05:36  *
*                                      *
****************************************
```

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

SLATER HANIFAN GROUP
NINETY-FIVE MANAGEMENT, LLC.
SKYE CANYON - DETENTION BASIN 2
TECHNICAL DRAINAGE STUDY
PROPOSED DRAINAGE CONDITION

RETURN PERIOD -------- 100-YEAR
DISTRIBUTION --------- 6-HOUR SDN3
PROJECT NO. ---------- OLY1505.000
FILENAME ------------- PRO2.H1
DATE ----------------- 5/23/2016
MODELED BY ----------- EM/SJ/CB

SIX HOUR DEPTH-AREA REDUCTION FACTORS

DRAINAGE AREA (MI^2)	RATIO
0.0-0.49	1.00
0.5-0.99	0.98
1.0-1.99	0.97

```
  21 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   0  STARTING DATE
                       ITIME        0000  STARTING TIME
                         NQ          300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE       2   0  ENDING DATE
                      NDTIME        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
                   1.00       .98       .97

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

              **************
              *            *
  39 KK       *      OFF8  *
              *            *
              **************

  42 KO          OUTPUT CONTROL VARIABLES
```

```
                    IPRNT          3  PRINT CONTROL
                    IPLOT          0  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

               SUBBASIN RUNOFF DATA

   43 BA         SUBBASIN CHARACTERISTICS
                    TAREA        .21  SUBBASIN AREA

               PRECIPITATION DATA

   27 PB            STORM       3.00  BASIN TOTAL PRECIPITATION

   28 PI          INCREMENTAL PRECIPITATION PATTERN
                   .02    .04    .01    .02    .02    .01    .00    .00    .00
                   .00    .00    .00    .01    .00    .01    .01    .01    .01
                   .01    .00    .00    .00    .00    .01    .02    .01    .01
                   .01    .01    .01    .00    .00    .01    .03    .03    .06
                   .09    .12    .03    .04    .03    .01    .02    .02    .00
                   .01    .01    .01    .02    .02    .01    .01    .02    .01
                   .00    .00    .00    .00    .00    .00    .00    .00    .00
                   .00    .00

   44 LS         SCS LOSS RATE
                    STRTL        .27  INITIAL ABSTRACTION
                   CRVNBR       88.00  CURVE NUMBER
                    RTIMP        .00  PERCENT IMPERVIOUS AREA

   45 UD         SCS DIMENSIONLESS UNITGRAPH
                    TLAG         .30  LAG

                                                        ***

                                                  UNIT HYDROGRAPH
                                              20 END-OF-PERIOD ORDINATES
                  42.    137.    259.    301.    276.    215.    136.    91.    62.    42.
                  28.     19.     13.      8.      6.      4.      3.     2.     1.     0.

      TOTAL RAINFALL =   3.00, TOTAL LOSS =   1.18, TOTAL EXCESS =   1.82

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+    (CFS)       (HR)
                                    (CFS)
+     244.       3.75                 41.         10.         10.         10.
                                  (INCHES)      1.816       1.818       1.818       1.818
                                  (AC-FT)         21.         21.         21.         21.

                                CUMULATIVE AREA =     .21 SQ MI


       ***             ***             ***             ***             ***

                              HYDROGRAPH AT STATION     OFF8
                                FOR PLAN 1, RATIO = 1.00

      TOTAL RAINFALL =   3.00, TOTAL LOSS =   1.18, TOTAL EXCESS =   1.82

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+    (CFS)       (HR)
                                    (CFS)
+     244.       3.75                 41.         10.         10.         10.
                                  (INCHES)      1.816       1.818       1.818       1.818
                                  (AC-FT)         21.         21.         21.         21.

                                CUMULATIVE AREA =     .21 SQ MI


       ***             ***             ***             ***             ***

                              HYDROGRAPH AT STATION     OFF8
                                FOR PLAN 1, RATIO =  .98

      TOTAL RAINFALL =   2.94, TOTAL LOSS =   1.18, TOTAL EXCESS =   1.76

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.92-HR
+    (CFS)       (HR)
                                    (CFS)
      237.       3.75                 40.         10.         10.         10.
                                  (INCHES)      1.763       1.765       1.765       1.765
                                  (AC-FT)         20.         20.         20.         20.

                                CUMULATIVE AREA =     .21 SQ MI
```

```
    ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION     OFF8
                          FOR PLAN 1, RATIO =  .97

     TOTAL RAINFALL =    2.91, TOTAL LOSS =    1.17, TOTAL EXCESS =    1.74

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    234.       3.75                40.          10.          10.          10.
                        (INCHES)    1.737        1.738        1.738        1.738
                        (AC-FT)      20.          20.          20.          20.

                        CUMULATIVE AREA =     .21 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
   49 KK    *     OFF9   *
            *            *
            **************

   52 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

              SUBBASIN RUNOFF DATA

   53 BA          SUBBASIN CHARACTERISTICS
                       TAREA        .11  SUBBASIN AREA

              PRECIPITATION DATA

   27 PB               STORM       3.00  BASIN TOTAL PRECIPITATION

   28 PI            INCREMENTAL PRECIPITATION PATTERN
                      .02      .04      .01      .02      .02      .01      .00      .00      .00
                      .00      .00      .00      .01      .00      .01      .01      .01      .01      .01
                      .01      .00      .00      .00      .00      .01      .02      .01      .01      .00
                      .01      .01      .01      .00      .00      .01      .03      .03      .06      .09
                      .09      .12      .03      .04      .03      .01      .02      .02      .00      .00
                      .01      .01      .01      .02      .02      .01      .01      .02      .01      .01
                      .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                      .00      .00

   54 LS          SCS LOSS RATE
                       STRTL       .27  INITIAL ABSTRACTION
                      CRVNBR     88.00  CURVE NUMBER
                       RTIMP       .00  PERCENT IMPERVIOUS AREA

   55 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG        .20  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            14 END-OF-PERIOD ORDINATES
                     55.      183.     227.     181.     101.      58.      33.      19.      11.      6.
                      3.        2.       1.       0.

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+   (CFS)       (HR)
                          (CFS)
+    153.       3.58                22.          6.           5.           5.
                        (INCHES)    1.817        1.818        1.818        1.818
                        (AC-FT)      11.          11.          11.          11.

                        CUMULATIVE AREA =     .11 SQ MI

    ***             ***             ***             ***             ***

                        HYDROGRAPH AT STATION     OFF9
                          FOR PLAN 1, RATIO = 1.00
```

```
      TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+    (CFS)       (HR)
                   (CFS)
+      153.      3.58                 22.          6.           5.          5.
                (INCHES)           1.817        1.818        1.818       1.818
                 (AC-FT)            11.          11.          11.         11.

                CUMULATIVE AREA =     .11 SQ MI


       ***             ***             ***             ***             ***

                  HYDROGRAPH AT STATION     OFF9
                    FOR PLAN 1, RATIO =  .98

      TOTAL RAINFALL =    2.94, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.76

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
+    (CFS)       (HR)
                   (CFS)
+      149.      3.58                 22.          5.           5.          5.
                (INCHES)           1.764        1.765        1.765       1.765
                 (AC-FT)            11.          11.          11.         11.

                CUMULATIVE AREA =     .11 SQ MI


       ***             ***             ***             ***             ***

                  HYDROGRAPH AT STATION     OFF9
                    FOR PLAN 1, RATIO =  .97

      TOTAL RAINFALL =    2.91, TOTAL LOSS =    1.17, TOTAL EXCESS =    1.74

   PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     24.92-HR
     (CFS)       (HR)
                   (CFS)
+      147.      3.58                 21.          5.           5.          5.
                (INCHES)           1.738        1.738        1.738       1.738
                 (AC-FT)            11.          11.          11.         11.

                CUMULATIVE AREA =     .11 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***


            **************
            *            *
   59 KK    *     OFF10  *
            *            *
            **************

   62 KO          OUTPUT CONTROL VARIABLES
                       IPRNT          3  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL          0.  HYDROGRAPH PLOT SCALE

              SUBBASIN RUNOFF DATA

   63 BA          SUBBASIN CHARACTERISTICS
                       TAREA        .65  SUBBASIN AREA

                  PRECIPITATION DATA

   27 PB                STORM       3.00  BASIN TOTAL PRECIPITATION

   28 PI            INCREMENTAL PRECIPITATION PATTERN
                      .02      .04      .01      .02      .02      .02      .01      .00      .00      .00
                      .00      .00      .00      .01      .00      .01      .01      .01      .01      .01
                      .01      .00      .00      .00      .00      .01      .02      .01      .01      .00
                      .01      .01      .01      .00      .00      .01      .03      .03      .06      .09
                      .09      .12      .03      .04      .03      .01      .02      .02      .00      .00
                      .01      .01      .01      .02      .02      .01      .01      .02      .01      .01
                      .00      .00      .00      .00      .00      .00      .00      .00      .00      .00
                      .00      .00

   64 LS          SCS LOSS RATE
```

```
                    STRTL        .27  INITIAL ABSTRACTION
                    CRVNBR     88.00  CURVE NUMBER
                    RTIMP        .00  PERCENT IMPERVIOUS AREA

 65 UD          SCS DIMENSIONLESS UNITGRAPH
                    TLAG         .61  LAG

                                                                  ***

                                                          UNIT HYDROGRAPH
                                                      39 END-OF-PERIOD ORDINATES
                  24.      72.     138.     234.     345.     427.     473.     479.     462.     422.
                 374.     311.     242.     193.     156.     128.     106.      86.      69.      57.
                  46.      37.      30.      24.      20.      16.      13.      11.       9.       7.
                   6.       5.       4.       3.       3.       2.       1.       1.       0.

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR        72-HR      24.92-HR
+    (CFS)        (HR)
                    (CFS)
+     508.        4.08                    127.          32.          31.          31.
                 (INCHES)                1.810        1.818        1.818        1.818
                 (AC-FT)                    63.          63.          63.          63.

                 CUMULATIVE AREA =      .65 SQ MI

       ***             ***             ***             ***             ***

                    HYDROGRAPH AT STATION     OFF10
                      FOR PLAN 1, RATIO = 1.00

     TOTAL RAINFALL =    3.00, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.82

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR        72-HR      24.92-HR
+    (CFS)        (HR)
                    (CFS)
      508.        4.08                    127.          32.          31.          31.
                 (INCHES)                1.810        1.818        1.818        1.818
                 (AC-FT)                    63.          63.          63.          63.

                 CUMULATIVE AREA =      .65 SQ MI

       ***             ***             ***             ***             ***

                    HYDROGRAPH AT STATION     OFF10
                      FOR PLAN 1, RATIO =  .98

     TOTAL RAINFALL =    2.94, TOTAL LOSS =    1.18, TOTAL EXCESS =    1.76

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR        72-HR      24.92-HR
+    (CFS)        (HR)
                    (CFS)
+     494.        4.08                    123.          31.          30.          30.
                 (INCHES)                1.757        1.765        1.765        1.765
                 (AC-FT)                    61.          61.          61.          61.

                 CUMULATIVE AREA =      .65 SQ MI

       ***             ***             ***             ***             ***

                    HYDROGRAPH AT STATION     OFF10
                      FOR PLAN 1, RATIO =  .97

     TOTAL RAINFALL =    2.91, TOTAL LOSS =    1.17, TOTAL EXCESS =    1.74

   PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                          6-HR        24-HR        72-HR      24.92-HR
+    (CFS)        (HR)
                    (CFS)
+     486.        4.08                    121.          30.          29.          29.
                 (INCHES)                1.731        1.738        1.738        1.738
                 (AC-FT)                    60.          60.          60.          60.

                 CUMULATIVE AREA =      .65 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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          **************
          *            *
71 KK     *     DB2    *
          *            *
          **************

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

74 HC          HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                
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1	0450	59	332.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	321.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	305.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	286.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	263.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	239.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	213.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	189.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	166.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	143.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	123.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	107.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	92.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	79.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	68.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	59.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	51.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 774.	3.83		199.	50.	48.	48.
		(INCHES)	1.824	1.835	1.835	1.835
		(AC-FT)	99.	99.	99.	99.

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION DB2
SUM OF 3 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	42.	*	1		1230	151	0.	*	1		1845	226	0.
1		0005	2	0.	*	1		0620	77	35.	*	1		1235	152	0.	*	1		1850	227	0.
1		0010	3	0.	*	1		0625	78	29.	*	1		1240	153	0.	*	1		1855	228	0.
1		0015	4	1.	*	1		0630	79	24.	*	1		1245	154	0.	*	1		1900	229	0.
1		0020	5	2.	*	1		0635	80	20.	*	1		1250	155	0.	*	1		1905	230	0.
1		0025	6	4.	*	1		0640	81	16.	*	1		1255	156	0.	*	1		1910	231	0.
1		0030	7	6.	*	1		0645	82	13.	*	1		1300	157	0.	*	1		1915	232	0.
1		0035	8	7.	*	1		0650	83	10.	*	1		1305	158	0.	*	1		1920	233	0.
1		0040	9	7.	*	1		0655	84	8.	*	1		1310	159	0.	*	1		1925	234	0.
1		0045	10	6.	*	1		0700	85	7.	*	1		1315	160	0.	*	1		1930	235	0.
1		0050	11	6.	*	1		0705	86	5.	*	1		1320	161	0.	*	1		1935	236	0.
1		0055	12	6.	*	1		0710	87	4.	*	1		1325	162	0.	*	1		1940	237	0.
1		0100	13	5.	*	1		0715	88	4.	*	1		1330	163	0.	*	1		1945	238	0.
1		0105	14	5.	*	1		0720	89	3.	*	1		1335	164	0.	*	1		1950	239	0.
1		0110	15	7.	*	1		0725	90	2.	*	1		1340	165	0.	*	1		1955	240	0.
1		0115	16	8.	*	1		0730	91	2.	*	1		1345	166	0.	*	1		2000	241	0.
1		0120	17	9.	*	1		0735	92	1.	*	1		1350	167	0.	*	1		2005	242	0.
1		0125	18	12.	*	1		0740	93	1.	*	1		1355	168	0.	*	1		2010	243	0.
1		0130	19	17.	*	1		0745	94	1.	*	1		1400	169	0.	*	1		2015	244	0.
1		0135	20	22.	*	1		0750	95	1.	*	1		1405	170	0.	*	1		2020	245	0.
1		0140	21	27.	*	1		0755	96	0.	*	1		1410	171	0.	*	1		2025	246	0.
1		0145	22	32.	*	1		0800	97	0.	*	1		1415	172	0.	*	1		2030	247	0.
1		0150	23	34.	*	1		0805	98	0.	*	1		1420	173	0.	*	1		2035	248	0.
1		0155	24	34.	*	1		0810	99	0.	*	1		1425	174	0.	*	1		2040	249	0.
1		0200	25	34.	*	1		0815	100	0.	*	1		1430	175	0.	*	1		2045	250	0.
1		0205	26	33.	*	1		0820	101	0.	*	1		1435	176	0.	*	1		2050	251	0.
1		0210	27	34.	*	1		0825	102	0.	*	1		1440	177	0.	*	1		2055	252	0.
1		0215	28	40.	*	1		0830	103	0.	*	1		1445	178	0.	*	1		2100	253	0.
1		0220	29	47.	*	1		0835	104	0.	*	1		1450	179	0.	*	1		2105	254	0.
1		0225	30	53.	*	1		0840	105	0.	*	1		1455	180	0.	*	1		2110	255	0.
1		0230	31	56.	*	1		0845	106	0.	*	1		1500	181	0.	*	1		2115	256	0.
1		0235	32	57.	*	1		0850	107	0.	*	1		1505	182	0.	*	1		2120	257	0.
1		0240	33	61.	*	1		0855	108	0.	*	1		1510	183	0.	*	1		2125	258	0.
1		0245	34	66.	*	1		0900	109	0.	*	1		1515	184	0.	*	1		2130	259	0.
1		0250	35	68.	*	1		0905	110	0.	*	1		1520	185	0.	*	1		2135	260	0.
1		0255	36	68.	*	1		0910	111	0.	*	1		1525	186	0.	*	1		2140	261	0.
1		0300	37	70.	*	1		0915	112	0.	*	1		1530	187	0.	*	1		2145	262	0.
1		0305	38	82.	*	1		0920	113	0.	*	1		1535	188	0.	*	1		2150	263	0.
1		0310	39	103.	*	1		0925	114	0.	*	1		1540	189	0.	*	1		2155	264	0.
1		0315	40	144.	*	1		0930	115	0.	*	1		1545	190	0.	*	1		2200	265	0.
1		0320	41	222.	*	1		0935	116	0.	*	1		1550	191	0.	*	1		2205	266	0.
1		0325	42	332.	*	1		0940	117	0.	*	1		1555	192	0.	*	1		2210	267	0.
1		0330	43	479.	*	1		0945	118	0.	*	1		1600	193	0.	*	1		2215	268	0.
1		0335	44	607.	*	1		0950	119	0.	*	1		1605	194	0.	*	1		2220	269	0.
1		0340	45	689.	*	1		0955	120	0.	*	1		1610	195	0.	*	1		2225	270	0.

1	0345	46	740.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	752.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	739.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	711.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	671.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	619.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	558.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	498.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	441.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	400.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	373.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	352.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	333.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	324.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	313.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	297.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	279.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	257.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	233.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	208.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	185.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	162.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	140.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	120.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	104.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	90.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	77.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	67.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	58.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	49.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.
				*					*					*				

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 752.	3.83		193.	49.	47.	47.
		(INCHES)	1.772	1.781	1.781	1.781
		(AC-FT)	96.	96.	96.	96.

CUMULATIVE AREA = 1.01 SQ MI

****

HYDROGRAPH AT STATION DB2
SUM OF 3 HYDROGRAPHS
PLAN 1, RATIO = .97

****

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	41.	*	1		1230	151	0.	*	1		1845	226	0.
1		0005	2	0.	*	1		0620	77	35.	*	1		1235	152	0.	*	1		1850	227	0.
1		0010	3	0.	*	1		0625	78	29.	*	1		1240	153	0.	*	1		1855	228	0.
1		0015	4	1.	*	1		0630	79	24.	*	1		1245	154	0.	*	1		1900	229	0.
1		0020	5	2.	*	1		0635	80	20.	*	1		1250	155	0.	*	1		1905	230	0.
1		0025	6	4.	*	1		0640	81	16.	*	1		1255	156	0.	*	1		1910	231	0.
1		0030	7	6.	*	1		0645	82	13.	*	1		1300	157	0.	*	1		1915	232	0.
1		0035	8	6.	*	1		0650	83	10.	*	1		1305	158	0.	*	1		1920	233	0.
1		0040	9	6.	*	1		0655	84	8.	*	1		1310	159	0.	*	1		1925	234	0.
1		0045	10	6.	*	1		0700	85	7.	*	1		1315	160	0.	*	1		1930	235	0.
1		0050	11	6.	*	1		0705	86	5.	*	1		1320	161	0.	*	1		1935	236	0.
1		0055	12	5.	*	1		0710	87	4.	*	1		1325	162	0.	*	1		1940	237	0.
1		0100	13	5.	*	1		0715	88	4.	*	1		1330	163	0.	*	1		1945	238	0.
1		0105	14	5.	*	1		0720	89	3.	*	1		1335	164	0.	*	1		1950	239	0.
1		0110	15	6.	*	1		0725	90	2.	*	1		1340	165	0.	*	1		1955	240	0.
1		0115	16	7.	*	1		0730	91	2.	*	1		1345	166	0.	*	1		2000	241	0.
1		0120	17	9.	*	1		0735	92	1.	*	1		1350	167	0.	*	1		2005	242	0.
1		0125	18	11.	*	1		0740	93	1.	*	1		1355	168	0.	*	1		2010	243	0.
1		0130	19	16.	*	1		0745	94	1.	*	1		1400	169	0.	*	1		2015	244	0.
1		0135	20	21.	*	1		0750	95	1.	*	1		1405	170	0.	*	1		2020	245	0.
1		0140	21	26.	*	1		0755	96	0.	*	1		1410	171	0.	*	1		2025	246	0.
1		0145	22	31.	*	1		0800	97	0.	*	1		1415	172	0.	*	1		2030	247	0.
1		0150	23	33.	*	1		0805	98	0.	*	1		1420	173	0.	*	1		2035	248	0.
1		0155	24	33.	*	1		0810	99	0.	*	1		1425	174	0.	*	1		2040	249	0.
1		0200	25	33.	*	1		0815	100	0.	*	1		1430	175	0.	*	1		2045	250	0.
1		0205	26	32.	*	1		0820	101	0.	*	1		1435	176	0.	*	1		2050	251	0.
1		0210	27	33.	*	1		0825	102	0.	*	1		1440	177	0.	*	1		2055	252	0.
1		0215	28	39.	*	1		0830	103	0.	*	1		1445	178	0.	*	1		2100	253	0.
1		0220	29	46.	*	1		0835	104	0.	*	1		1450	179	0.	*	1		2105	254	0.
1		0225	30	52.	*	1		0840	105	0.	*	1		1455	180	0.	*	1		2110	255	0.
1		0230	31	54.	*	1		0845	106	0.	*	1		1500	181	0.	*	1		2115	256	0.
1		0235	32	55.	*	1		0850	107	0.	*	1		1505	182	0.	*	1		2120	257	0.

1	0240	33	59.	*	1	0855	108	0.	*	1	1510	183	0.	*	1	2125	258	0.
1	0245	34	65.	*	1	0900	109	0.	*	1	1515	184	0.	*	1	2130	259	0.
1	0250	35	67.	*	1	0905	110	0.	*	1	1520	185	0.	*	1	2135	260	0.
1	0255	36	67.	*	1	0910	111	0.	*	1	1525	186	0.	*	1	2140	261	0.
1	0300	37	69.	*	1	0915	112	0.	*	1	1530	187	0.	*	1	2145	262	0.
1	0305	38	80.	*	1	0920	113	0.	*	1	1535	188	0.	*	1	2150	263	0.
1	0310	39	101.	*	1	0925	114	0.	*	1	1540	189	0.	*	1	2155	264	0.
1	0315	40	141.	*	1	0930	115	0.	*	1	1545	190	0.	*	1	2200	265	0.
1	0320	41	218.	*	1	0935	116	0.	*	1	1550	191	0.	*	1	2205	266	0.
1	0325	42	327.	*	1	0940	117	0.	*	1	1555	192	0.	*	1	2210	267	0.
1	0330	43	472.	*	1	0945	118	0.	*	1	1600	193	0.	*	1	2215	268	0.
1	0335	44	597.	*	1	0950	119	0.	*	1	1605	194	0.	*	1	2220	269	0.
1	0340	45	679.	*	1	0955	120	0.	*	1	1610	195	0.	*	1	2225	270	0.
1	0345	46	729.	*	1	1000	121	0.	*	1	1615	196	0.	*	1	2230	271	0.
1	0350	47	741.	*	1	1005	122	0.	*	1	1620	197	0.	*	1	2235	272	0.
1	0355	48	728.	*	1	1010	123	0.	*	1	1625	198	0.	*	1	2240	273	0.
1	0400	49	701.	*	1	1015	124	0.	*	1	1630	199	0.	*	1	2245	274	0.
1	0405	50	662.	*	1	1020	125	0.	*	1	1635	200	0.	*	1	2250	275	0.
1	0410	51	610.	*	1	1025	126	0.	*	1	1640	201	0.	*	1	2255	276	0.
1	0415	52	550.	*	1	1030	127	0.	*	1	1645	202	0.	*	1	2300	277	0.
1	0420	53	491.	*	1	1035	128	0.	*	1	1650	203	0.	*	1	2305	278	0.
1	0425	54	435.	*	1	1040	129	0.	*	1	1655	204	0.	*	1	2310	279	0.
1	0430	55	394.	*	1	1045	130	0.	*	1	1700	205	0.	*	1	2315	280	0.
1	0435	56	368.	*	1	1050	131	0.	*	1	1705	206	0.	*	1	2320	281	0.
1	0440	57	347.	*	1	1055	132	0.	*	1	1710	207	0.	*	1	2325	282	0.
1	0445	58	329.	*	1	1100	133	0.	*	1	1715	208	0.	*	1	2330	283	0.
1	0450	59	319.	*	1	1105	134	0.	*	1	1720	209	0.	*	1	2335	284	0.
1	0455	60	309.	*	1	1110	135	0.	*	1	1725	210	0.	*	1	2340	285	0.
1	0500	61	294.	*	1	1115	136	0.	*	1	1730	211	0.	*	1	2345	286	0.
1	0505	62	275.	*	1	1120	137	0.	*	1	1735	212	0.	*	1	2350	287	0.
1	0510	63	253.	*	1	1125	138	0.	*	1	1740	213	0.	*	1	2355	288	0.
1	0515	64	230.	*	1	1130	139	0.	*	1	1745	214	0.	*	2	0000	289	0.
1	0520	65	205.	*	1	1135	140	0.	*	1	1750	215	0.	*	2	0005	290	0.
1	0525	66	182.	*	1	1140	141	0.	*	1	1755	216	0.	*	2	0010	291	0.
1	0530	67	160.	*	1	1145	142	0.	*	1	1800	217	0.	*	2	0015	292	0.
1	0535	68	138.	*	1	1150	143	0.	*	1	1805	218	0.	*	2	0020	293	0.
1	0540	69	119.	*	1	1155	144	0.	*	1	1810	219	0.	*	2	0025	294	0.
1	0545	70	103.	*	1	1200	145	0.	*	1	1815	220	0.	*	2	0030	295	0.
1	0550	71	89.	*	1	1205	146	0.	*	1	1820	221	0.	*	2	0035	296	0.
1	0555	72	76.	*	1	1210	147	0.	*	1	1825	222	0.	*	2	0040	297	0.
1	0600	73	66.	*	1	1215	148	0.	*	1	1830	223	0.	*	2	0045	298	0.
1	0605	74	57.	*	1	1220	149	0.	*	1	1835	224	0.	*	2	0050	299	0.
1	0610	75	49.	*	1	1225	150	0.	*	1	1840	225	0.	*	2	0055	300	0.
				*					*					*					

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 741.	3.83		190.	48.	46.	46.
		(INCHES)	1.745	1.755	1.755	1.755
		(AC-FT)	94.	95.	95.	95.

CUMULATIVE AREA = 1.01 SQ MI

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          *            *
 75 KK    *      RDB2  *
          *            *
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 77 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

              HYDROGRAPH ROUTING DATA

 78 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       ELEV  TYPE OF INITIAL CONDITION
                     RSVRIC    2992.00  INITIAL CONDITION
                         X         .00 WORKING R AND D COEFFICIENT

 79 SV            STORAGE          .0       2.3       7.6      24.3      46.3      73.8     107.1     146.8     193.0

 80 SE          ELEVATION     2992.00   2993.00   2995.00   3000.00   3005.00   3010.00   3015.00   3020.00   3025.00

 81 SQ          DISCHARGE          0.       44.       51.       65.       84.       99.      521.     3466.     7888.
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82 SE ELEVATION 2992.00 2993.00 2995.00 3000.00 3009.00 3018.00 3019.00 3022.00 3025.00

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COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	2.34	7.60	24.30	46.28	68.28	73.78	107.11	130.89	138.82
OUTFLOW	.00	44.44	51.05	64.70	75.33	83.84	85.56	94.19	99.36	520.90
ELEVATION	2992.00	2993.00	2995.00	3000.00	3005.00	3009.00	3010.00	3015.00	3018.00	3019.00

STORAGE	146.75	165.26	193.03
OUTFLOW	1502.43	3465.50	7888.40
ELEVATION	3020.00	3022.00	3025.00

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HYDROGRAPH AT STATION RDB2
PLAN 1, RATIO = 1.00

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	1		0820	101	81.	61.2	3007.7	1		1640	201	56.	13.3	2996.7
1		0005	2	0.	.0	2992.0	1		0825	102	81.	60.6	3007.6	1		1645	202	55.	12.9	2996.6
1		0010	3	0.	.0	2992.0	1		0830	103	81.	60.1	3007.5	1		1650	203	55.	12.5	2996.5
1		0015	4	0.	.0	2992.0	1		0835	104	80.	59.5	3007.4	1		1655	204	55.	12.1	2996.4
1		0020	5	0.	.0	2992.0	1		0840	105	80.	59.0	3007.3	1		1700	205	54.	11.8	2996.2
1		0025	6	1.	.0	2992.0	1		0845	106	80.	58.4	3007.2	1		1705	206	54.	11.4	2996.1
1		0030	7	1.	.1	2992.0	1		0850	107	80.	57.9	3007.1	1		1710	207	54.	11.0	2996.0
1		0035	8	2.	.1	2992.0	1		0855	108	80.	57.3	3007.0	1		1715	208	54.	10.7	2995.9
1		0040	9	3.	.1	2992.1	1		0900	109	79.	56.8	3006.9	1		1720	209	53.	10.3	2995.8
1		0045	10	3.	.2	2992.1	1		0905	110	79.	56.2	3006.8	1		1725	210	53.	9.9	2995.7
1		0050	11	4.	.2	2992.1	1		0910	111	79.	55.7	3006.7	1		1730	211	53.	9.6	2995.6
1		0055	12	4.	.2	2992.1	1		0915	112	79.	55.1	3006.6	1		1735	212	52.	9.2	2995.5
1		0100	13	4.	.2	2992.1	1		0920	113	79.	54.6	3006.5	1		1740	213	52.	8.8	2995.4
1		0105	14	4.	.2	2992.1	1		0925	114	78.	54.1	3006.4	1		1745	214	52.	8.5	2995.3
1		0110	15	5.	.3	2992.1	1		0930	115	78.	53.5	3006.3	1		1750	215	51.	8.1	2995.2
1		0115	16	5.	.3	2992.1	1		0935	116	78.	53.0	3006.2	1		1755	216	51.	7.8	2995.0
1		0120	17	6.	.3	2992.1	1		0940	117	78.	52.5	3006.1	1		1800	217	51.	7.4	2994.9
1		0125	18	6.	.3	2992.1	1		0945	118	78.	51.9	3006.0	1		1805	218	50.	7.1	2994.8
1		0130	19	7.	.4	2992.2	1		0950	119	77.	51.4	3005.9	1		1810	219	50.	6.7	2994.7
1		0135	20	9.	.5	2992.2	1		0955	120	77.	50.9	3005.8	1		1815	220	50.	6.4	2994.5
1		0140	21	11.	.6	2992.3	1		1000	121	77.	50.3	3005.7	1		1820	221	49.	6.0	2994.4
1		0145	22	14.	.7	2992.3	1		1005	122	77.	49.8	3005.6	1		1825	222	49.	5.7	2994.3
1		0150	23	16.	.9	2992.4	1		1010	123	76.	49.3	3005.5	1		1830	223	48.	5.4	2994.2
1		0155	24	19.	1.0	2992.4	1		1015	124	76.	48.7	3005.4	1		1835	224	48.	5.0	2994.0
1		0200	25	21.	1.1	2992.5	1		1020	125	76.	48.2	3005.4	1		1840	225	47.	4.7	2993.9
1		0205	26	23.	1.2	2992.5	1		1025	126	76.	47.7	3005.3	1		1845	226	47.	4.4	2993.8
1		0210	27	24.	1.3	2992.5	1		1030	127	76.	47.2	3005.2	1		1850	227	47.	4.1	2993.7
1		0215	28	26.	1.4	2992.6	1		1035	128	75.	46.6	3005.1	1		1855	228	46.	3.7	2993.5
1		0220	29	28.	1.5	2992.6	1		1040	129	75.	46.1	3005.0	1		1900	229	46.	3.4	2993.4
1		0225	30	31.	1.6	2992.7	1		1045	130	75.	45.6	3004.8	1		1905	230	45.	3.1	2993.3
1		0230	31	34.	1.8	2992.8	1		1050	131	75.	45.1	3004.7	1		1910	231	45.	2.8	2993.2
1		0235	32	37.	2.0	2992.8	1		1055	132	75.	44.6	3004.6	1		1915	232	45.	2.5	2993.1
1		0240	33	40.	2.1	2992.9	1		1100	133	74.	44.1	3004.5	1		1920	233	42.	2.2	2992.9
1		0245	34	44.	2.3	2993.0	1		1105	134	74.	43.6	3004.4	1		1925	234	37.	1.9	2992.8
1		0250	35	45.	2.5	2993.0	1		1110	135	74.	43.1	3004.3	1		1930	235	32.	1.7	2992.7
1		0255	36	45.	2.7	2993.1	1		1115	136	74.	42.5	3004.1	1		1935	236	28.	1.5	2992.6
1		0300	37	45.	2.8	2993.2	1		1120	137	73.	42.0	3004.0	1		1940	237	25.	1.3	2992.6
1		0305	38	45.	3.1	2993.3	1		1125	138	73.	41.5	3003.9	1		1945	238	22.	1.1	2992.5
1		0310	39	46.	3.4	2993.4	1		1130	139	73.	41.0	3003.8	1		1950	239	19.	1.0	2992.4
1		0315	40	47.	4.0	2993.6	1		1135	140	73.	40.5	3003.7	1		1955	240	17.	.9	2992.4
1		0320	41	48.	5.0	2994.0	1		1140	141	72.	40.0	3003.6	1		2000	241	15.	.8	2992.3
1		0325	42	50.	6.6	2994.6	1		1145	142	72.	39.5	3003.5	1		2005	242	13.	.7	2992.3
1		0330	43	52.	9.1	2995.5	1		1150	143	72.	39.0	3003.4	1		2010	243	11.	.6	2992.3
1		0335	44	55.	12.6	2996.5	1		1155	144	72.	38.5	3003.2	1		2015	244	10.	.5	2992.2
1		0340	45	59.	16.8	2997.8	1		1200	145	71.	38.1	3003.1	1		2020	245	9.	.5	2992.2
1		0345	46	62.	21.5	2999.2	1		1205	146	71.	37.6	3003.0	1		2025	246	8.	.4	2992.2
1		0350	47	66.	26.3	3000.5	1		1210	147	71.	37.1	3002.9	1		2030	247	7.	.4	2992.1
1		0355	48	68.	31.1	3001.6	1		1215	148	71.	36.6	3002.8	1		2035	248	6.	.3	2992.1
1		0400	49	70.	35.8	3002.6	1		1220	149	70.	36.1	3002.7	1		2040	249	5.	.3	2992.1
1		0405	50	72.	40.2	3003.6	1		1225	150	70.	35.6	3002.6	1		2045	250	4.	.2	2992.1
1		0410	51	74.	44.3	3004.5	1		1230	151	70.	35.1	3002.5	1		2050	251	4.	.2	2992.1
1		0415	52	76.	47.9	3005.3	1		1235	152	70.	34.7	3002.4	1		2055	252	3.	.2	2992.1
1		0420	53	77.	51.1	3005.9	1		1240	153	69.	34.2	3002.2	1		2100	253	3.	.2	2992.1
1		0425	54	78.	53.9	3006.4	1		1245	154	69.	33.7	3002.1	1		2105	254	3.	.1	2992.1
1		0430	55	79.	56.3	3006.8	1		1250	155	69.	33.2	3002.0	1		2110	255	2.	.1	2992.1
1		0435	56	80.	58.5	3007.2	1		1255	156	69.	32.7	3001.9	1		2115	256	2.	.1	2992.0
1		0440	57	81.	60.5	3007.6	1		1300	157	69.	32.3	3001.8	1		2120	257	2.	.1	2992.0
1		0445	58	82.	62.4	3007.9	1		1305	158	68.	31.8	3001.7	1		2125	258	2.	.1	2992.0
1		0450	59	82.	64.2	3008.2	1		1310	159	68.	31.3	3001.6	1		2130	259	1.	.1	2992.0
1		0455	60	83.	65.8	3008.6	1		1315	160	68.	30.9	3001.5	1		2135	260	1.	.1	2992.0
1		0500	61	84.	67.4	3008.8	1		1320	161	68.	30.4	3001.4	1		2140	261	1.	.1	2992.0
1		0505	62	84.	68.9	3009.1	1		1325	162	67.	29.9	3001.3	1		2145	262	1.	.0	2992.0

1	0510	63	84.	70.2	3009.3	*	1	1330	163	67.	29.5	3001.2	*	1	2150	263	1.	.0	2992.0
1	0515	64	85.	71.3	3009.6	*	1	1335	164	67.	29.0	3001.1	*	1	2155	264	1.	.0	2992.0
1	0520	65	85.	72.3	3009.7	*	1	1340	165	67.	28.5	3001.0	*	1	2200	265	1.	.0	2992.0
1	0525	66	85.	73.1	3009.9	*	1	1345	166	67.	28.1	3000.9	*	1	2205	266	1.	.0	2992.0
1	0530	67	86.	73.7	3010.0	*	1	1350	167	66.	27.6	3000.8	*	1	2210	267	0.	.0	2992.0
1	0535	68	86.	74.2	3010.1	*	1	1355	168	66.	27.2	3000.7	*	1	2215	268	0.	.0	2992.0
1	0540	69	86.	74.5	3010.1	*	1	1400	169	66.	26.7	3000.6	*	1	2220	269	0.	.0	2992.0
1	0545	70	86.	74.7	3010.1	*	1	1405	170	66.	26.3	3000.4	*	1	2225	270	0.	.0	2992.0
1	0550	71	86.	74.8	3010.2	*	1	1410	171	65.	25.8	3000.3	*	1	2230	271	0.	.0	2992.0
1	0555	72	86.	74.8	3010.2	*	1	1415	172	65.	25.4	3000.2	*	1	2235	272	0.	.0	2992.0
1	0600	73	86.	74.7	3010.1	*	1	1420	173	65.	24.9	3000.1	*	1	2240	273	0.	.0	2992.0
1	0605	74	86.	74.6	3010.1	*	1	1425	174	65.	24.5	3000.0	*	1	2245	274	0.	.0	2992.0
1	0610	75	86.	74.4	3010.1	*	1	1430	175	64.	24.0	2999.9	*	1	2250	275	0.	.0	2992.0
1	0615	76	86.	74.1	3010.1	*	1	1435	176	64.	23.6	2999.8	*	1	2255	276	0.	.0	2992.0
1	0620	77	86.	73.8	3010.0	*	1	1440	177	64.	23.1	2999.7	*	1	2300	277	0.	.0	2992.0
1	0625	78	85.	73.4	3009.9	*	1	1445	178	63.	22.7	2999.5	*	1	2305	278	0.	.0	2992.0
1	0630	79	85.	73.0	3009.9	*	1	1450	179	63.	22.3	2999.4	*	1	2310	279	0.	.0	2992.0
1	0635	80	85.	72.6	3009.8	*	1	1455	180	63.	21.8	2999.3	*	1	2315	280	0.	.0	2992.0
1	0640	81	85.	72.1	3009.7	*	1	1500	181	62.	21.4	2999.1	*	1	2320	281	0.	.0	2992.0
1	0645	82	85.	71.7	3009.6	*	1	1505	182	62.	21.0	2999.0	*	1	2325	282	0.	.0	2992.0
1	0650	83	85.	71.2	3009.5	*	1	1510	183	62.	20.6	2998.9	*	1	2330	283	0.	.0	2992.0
1	0655	84	85.	70.6	3009.4	*	1	1515	184	61.	20.1	2998.8	*	1	2335	284	0.	.0	2992.0
1	0700	85	84.	70.1	3009.3	*	1	1520	185	61.	19.7	2998.6	*	1	2340	285	0.	.0	2992.0
1	0705	86	84.	69.6	3009.2	*	1	1525	186	61.	19.3	2998.5	*	1	2345	286	0.	.0	2992.0
1	0710	87	84.	69.0	3009.1	*	1	1530	187	60.	18.9	2998.4	*	1	2350	287	0.	.0	2992.0
1	0715	88	84.	68.5	3009.0	*	1	1535	188	60.	18.5	2998.3	*	1	2355	288	0.	.0	2992.0
1	0720	89	84.	67.9	3008.9	*	1	1540	189	60.	18.0	2998.1	*	2	0000	289	0.	.0	2992.0
1	0725	90	83.	67.4	3008.8	*	1	1545	190	59.	17.6	2998.0	*	2	0005	290	0.	.0	2992.0
1	0730	91	83.	66.8	3008.7	*	1	1550	191	59.	17.2	2997.9	*	2	0010	291	0.	.0	2992.0
1	0735	92	83.	66.3	3008.6	*	1	1555	192	59.	16.8	2997.8	*	2	0015	292	0.	.0	2992.0
1	0740	93	83.	65.7	3008.5	*	1	1600	193	58.	16.4	2997.6	*	2	0020	293	0.	.0	2992.0
1	0745	94	83.	65.1	3008.4	*	1	1605	194	58.	16.0	2997.5	*	2	0025	294	0.	.0	2992.0
1	0750	95	82.	64.6	3008.3	*	1	1610	195	58.	15.6	2997.4	*	2	0030	295	0.	.0	2992.0
1	0755	96	82.	64.0	3008.2	*	1	1615	196	57.	15.2	2997.3	*	2	0035	296	0.	.0	2992.0
1	0800	97	82.	63.4	3008.1	*	1	1620	197	57.	14.8	2997.2	*	2	0040	297	0.	.0	2992.0
1	0805	98	82.	62.9	3008.0	*	1	1625	198	57.	14.4	2997.0	*	2	0045	298	0.	.0	2992.0
1	0810	99	82.	62.3	3007.9	*	1	1630	199	56.	14.1	2996.9	*	2	0050	299	0.	.0	2992.0
1	0815	100	81.	61.8	3007.8	*	1	1635	200	56.	13.7	2996.8	*	2	0055	300	0.	.0	2992.0

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 86.	5.83		82.	50.	48.	48.
		(INCHES)	.752	1.835	1.835	1.835
		(AC-FT)	41.	99.	99.	99.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
75.	5.83	64.	26.	25.	25.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
3010.16	5.83	3008.18	2999.20	2998.93	2998.93

CUMULATIVE AREA = 1.01 SQ MI

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HYDROGRAPH AT STATION RDB2
PLAN 1, RATIO = .98

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DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	1		0820	101	80.	58.8	3007.3	1		1640	201	54.	11.7	2996.2
1		0005	2	0.	.0	2992.0	1		0825	102	80.	58.3	3007.2	1		1645	202	54.	11.3	2996.1
1		0010	3	0.	.0	2992.0	1		0830	103	80.	57.7	3007.1	1		1650	203	54.	10.9	2996.0
1		0015	4	0.	.0	2992.0	1		0835	104	80.	57.2	3007.0	1		1655	204	53.	10.5	2995.9
1		0020	5	0.	.0	2992.0	1		0840	105	79.	56.6	3006.9	1		1700	205	53.	10.2	2995.8
1		0025	6	1.	.0	2992.0	1		0845	106	79.	56.1	3006.8	1		1705	206	53.	9.8	2995.7
1		0030	7	1.	.1	2992.0	1		0850	107	79.	55.5	3006.7	1		1710	207	53.	9.5	2995.6
1		0035	8	2.	.1	2992.0	1		0855	108	79.	55.0	3006.6	1		1715	208	52.	9.1	2995.4
1		0040	9	2.	.1	2992.1	1		0900	109	78.	54.5	3006.5	1		1720	209	52.	8.7	2995.3
1		0045	10	3.	.1	2992.1	1		0905	110	78.	53.9	3006.4	1		1725	210	52.	8.4	2995.2
1		0050	11	3.	.2	2992.1	1		0910	111	78.	53.4	3006.3	1		1730	211	51.	8.0	2995.1
1		0055	12	4.	.2	2992.1	1		0915	112	78.	52.8	3006.2	1		1735	212	51.	7.7	2995.0
1		0100	13	4.	.2	2992.1	1		0920	113	78.	52.3	3006.1	1		1740	213	51.	7.3	2994.9
1		0105	14	4.	.2	2992.1	1		0925	114	77.	51.8	3006.0	1		1745	214	50.	7.0	2994.8
1		0110	15	4.	.2	2992.1	1		0930	115	77.	51.2	3005.9	1		1750	215	50.	6.6	2994.6

1	0115	16	5.	.2	2992.1	*	1	0935	116	77.	50.7	3005.8	*	1	1755	216	49.	6.3	2994.5
1	0120	17	5.	.3	2992.1	*	1	0940	117	77.	50.2	3005.7	*	1	1800	217	49.	5.9	2994.4
1	0125	18	6.	.3	2992.1	*	1	0945	118	77.	49.6	3005.6	*	1	1805	218	49.	5.6	2994.2
1	0130	19	7.	.4	2992.2	*	1	0950	119	76.	49.1	3005.5	*	1	1810	219	48.	5.3	2994.1
1	0135	20	8.	.4	2992.2	*	1	0955	120	76.	48.6	3005.4	*	1	1815	220	48.	4.9	2994.0
1	0140	21	10.	.5	2992.2	*	1	1000	121	76.	48.1	3005.3	*	1	1820	221	47.	4.6	2993.9
1	0145	22	13.	.7	2992.3	*	1	1005	122	76.	47.5	3005.2	*	1	1825	222	47.	4.3	2993.7
1	0150	23	15.	.8	2992.3	*	1	1010	123	76.	47.0	3005.1	*	1	1830	223	46.	4.0	2993.6
1	0155	24	17.	.9	2992.4	*	1	1015	124	75.	46.5	3005.0	*	1	1835	224	46.	3.7	2993.5
1	0200	25	20.	1.0	2992.4	*	1	1020	125	75.	46.0	3004.9	*	1	1840	225	46.	3.3	2993.4
1	0205	26	21.	1.1	2992.5	*	1	1025	126	75.	45.5	3004.8	*	1	1845	226	45.	3.0	2993.3
1	0210	27	23.	1.2	2992.5	*	1	1030	127	75.	45.0	3004.7	*	1	1850	227	45.	2.7	2993.1
1	0215	28	24.	1.3	2992.5	*	1	1035	128	74.	44.4	3004.6	*	1	1855	228	45.	2.4	2993.0
1	0220	29	27.	1.4	2992.6	*	1	1040	129	74.	43.9	3004.5	*	1	1900	229	40.	2.1	2992.9
1	0225	30	30.	1.6	2992.7	*	1	1045	130	74.	43.4	3004.3	*	1	1905	230	35.	1.9	2992.8
1	0230	31	33.	1.7	2992.7	*	1	1050	131	74.	42.9	3004.2	*	1	1910	231	31.	1.6	2992.7
1	0235	32	35.	1.9	2992.8	*	1	1055	132	73.	42.4	3004.1	*	1	1915	232	27.	1.4	2992.6
1	0240	33	38.	2.0	2992.9	*	1	1100	133	73.	41.9	3004.0	*	1	1920	233	24.	1.3	2992.5
1	0245	34	41.	2.2	2992.9	*	1	1105	134	73.	41.4	3003.9	*	1	1925	234	21.	1.1	2992.5
1	0250	35	44.	2.3	2993.0	*	1	1110	135	73.	40.9	3003.8	*	1	1930	235	18.	1.0	2992.4
1	0255	36	45.	2.5	2993.1	*	1	1115	136	72.	40.4	3003.7	*	1	1935	236	16.	.8	2992.4
1	0300	37	45.	2.7	2993.1	*	1	1120	137	72.	39.9	3003.5	*	1	1940	237	14.	.7	2992.3
1	0305	38	45.	2.9	2993.2	*	1	1125	138	72.	39.4	3003.4	*	1	1945	238	12.	.7	2992.3
1	0310	39	46.	3.2	2993.3	*	1	1130	139	72.	38.9	3003.3	*	1	1950	239	11.	.6	2992.2
1	0315	40	46.	3.7	2993.5	*	1	1135	140	72.	38.4	3003.2	*	1	1955	240	10.	.5	2992.2
1	0320	41	47.	4.7	2993.9	*	1	1140	141	71.	37.9	3003.1	*	1	2000	241	8.	.4	2992.2
1	0325	42	49.	6.3	2994.5	*	1	1145	142	71.	37.4	3003.0	*	1	2005	242	7.	.4	2992.2
1	0330	43	52.	8.7	2995.3	*	1	1150	143	71.	36.9	3002.9	*	1	2010	243	6.	.3	2992.1
1	0335	44	55.	12.1	2996.3	*	1	1155	144	71.	36.5	3002.8	*	1	2015	244	6.	.3	2992.1
1	0340	45	58.	16.1	2997.6	*	1	1200	145	70.	36.0	3002.7	*	1	2020	245	5.	.3	2992.1
1	0345	46	62.	20.7	2998.9	*	1	1205	146	70.	35.5	3002.5	*	1	2025	246	4.	.2	2992.1
1	0350	47	65.	25.4	3000.2	*	1	1210	147	70.	35.0	3002.4	*	1	2030	247	4.	.2	2992.1
1	0355	48	67.	30.0	3001.3	*	1	1215	148	70.	34.5	3002.3	*	1	2035	248	3.	.2	2992.1
1	0400	49	70.	34.6	3002.3	*	1	1220	149	69.	34.0	3002.2	*	1	2040	249	3.	.2	2992.1
1	0405	50	72.	38.8	3003.3	*	1	1225	150	69.	33.6	3002.1	*	1	2045	250	3.	.1	2992.1
1	0410	51	74.	42.8	3004.2	*	1	1230	151	69.	33.1	3002.0	*	1	2050	251	2.	.1	2992.1
1	0415	52	75.	46.3	3005.0	*	1	1235	152	69.	32.6	3001.9	*	1	2055	252	2.	.1	2992.0
1	0420	53	77.	49.4	3005.6	*	1	1240	153	68.	32.1	3001.8	*	1	2100	253	2.	.1	2992.0
1	0425	54	78.	52.1	3006.1	*	1	1245	154	68.	31.7	3001.7	*	1	2105	254	2.	.1	2992.0
1	0430	55	79.	54.5	3006.5	*	1	1250	155	68.	31.2	3001.6	*	1	2110	255	1.	.1	2992.0
1	0435	56	79.	56.6	3006.9	*	1	1255	156	68.	30.7	3001.5	*	1	2115	256	1.	.1	2992.0
1	0440	57	80.	58.6	3007.2	*	1	1300	157	68.	30.3	3001.4	*	1	2120	257	1.	.1	2992.0
1	0445	58	81.	60.4	3007.6	*	1	1305	158	67.	29.8	3001.3	*	1	2125	258	1.	.0	2992.0
1	0450	59	81.	62.1	3007.9	*	1	1310	159	67.	29.3	3001.1	*	1	2130	259	1.	.0	2992.0
1	0455	60	82.	63.7	3008.2	*	1	1315	160	67.	28.9	3001.0	*	1	2135	260	1.	.0	2992.0
1	0500	61	83.	65.2	3008.4	*	1	1320	161	67.	28.4	3000.9	*	1	2140	261	1.	.0	2992.0
1	0505	62	83.	66.6	3008.7	*	1	1325	162	66.	28.0	3000.8	*	1	2145	262	1.	.0	2992.0
1	0510	63	84.	67.9	3008.9	*	1	1330	163	66.	27.5	3000.7	*	1	2150	263	0.	.0	2992.0
1	0515	64	84.	69.0	3009.1	*	1	1335	164	66.	27.0	3000.6	*	1	2155	264	0.	.0	2992.0
1	0520	65	84.	70.0	3009.3	*	1	1340	165	66.	26.6	3000.5	*	1	2200	265	0.	.0	2992.0
1	0525	66	85.	70.7	3009.4	*	1	1345	166	66.	26.1	3000.4	*	1	2205	266	0.	.0	2992.0
1	0530	67	85.	71.3	3009.6	*	1	1350	167	65.	25.7	3000.3	*	1	2210	267	0.	.0	2992.0
1	0535	68	85.	71.8	3009.6	*	1	1355	168	65.	25.2	3000.2	*	1	2215	268	0.	.0	2992.0
1	0540	69	85.	72.1	3009.7	*	1	1400	169	65.	24.8	3000.1	*	1	2220	269	0.	.0	2992.0
1	0545	70	85.	72.3	3009.7	*	1	1405	170	65.	24.3	3000.0	*	1	2225	270	0.	.0	2992.0
1	0550	71	85.	72.4	3009.7	*	1	1410	171	64.	23.9	2999.9	*	1	2230	271	0.	.0	2992.0
1	0555	72	85.	72.4	3009.7	*	1	1415	172	64.	23.5	2999.7	*	1	2235	272	0.	.0	2992.0
1	0600	73	85.	72.3	3009.7	*	1	1420	173	64.	23.0	2999.6	*	1	2240	273	0.	.0	2992.0
1	0605	74	85.	72.1	3009.7	*	1	1425	174	63.	22.6	2999.5	*	1	2245	274	0.	.0	2992.0
1	0610	75	85.	71.9	3009.7	*	1	1430	175	63.	22.1	2999.4	*	1	2250	275	0.	.0	2992.0
1	0615	76	85.	71.6	3009.6	*	1	1435	176	63.	21.7	2999.2	*	1	2255	276	0.	.0	2992.0
1	0620	77	85.	71.3	3009.6	*	1	1440	177	62.	21.3	2999.1	*	1	2300	277	0.	.0	2992.0
1	0625	78	85.	70.9	3009.5	*	1	1445	178	62.	20.9	2999.0	*	1	2305	278	0.	.0	2992.0
1	0630	79	85.	70.5	3009.4	*	1	1450	179	62.	20.4	2998.8	*	1	2310	279	0.	.0	2992.0
1	0635	80	84.	70.1	3009.3	*	1	1455	180	61.	20.0	2998.7	*	1	2315	280	0.	.0	2992.0
1	0640	81	84.	69.7	3009.3	*	1	1500	181	61.	19.6	2998.6	*	1	2320	281	0.	.0	2992.0
1	0645	82	84.	69.2	3009.2	*	1	1505	182	61.	19.2	2998.5	*	1	2325	282	0.	.0	2992.0
1	0650	83	84.	68.7	3009.1	*	1	1510	183	60.	18.8	2998.3	*	1	2330	283	0.	.0	2992.0
1	0655	84	84.	68.2	3009.0	*	1	1515	184	60.	18.3	2998.2	*	1	2335	284	0.	.0	2992.0
1	0700	85	84.	67.6	3008.9	*	1	1520	185	59.	17.9	2998.1	*	1	2340	285	0.	.0	2992.0
1	0705	86	83.	67.1	3008.8	*	1	1525	186	59.	17.5	2998.0	*	1	2345	286	0.	.0	2992.0
1	0710	87	83.	66.6	3008.7	*	1	1530	187	59.	17.1	2997.8	*	1	2350	287	0.	.0	2992.0
1	0715	88	83.	66.0	3008.6	*	1	1535	188	58.	16.7	2997.7	*	1	2355	288	0.	.0	2992.0
1	0720	89	83.	65.5	3008.5	*	1	1540	189	58.	16.3	2997.6	*	2	0000	289	0.	.0	2992.0
1	0725	90	83.	64.9	3008.4	*	1	1545	190	58.	15.9	2997.5	*	2	0005	290	0.	.0	2992.0
1	0730	91	82.	64.4	3008.3	*	1	1550	191	58.	15.5	2997.4	*	2	0010	291	0.	.0	2992.0
1	0735	92	82.	63.8	3008.2	*	1	1555	192	57.	15.1	2997.3	*	2	0015	292	0.	.0	2992.0
1	0740	93	82.	63.3	3008.1	*	1	1600	193	57.	14.7	2997.1	*	2	0020	293	0.	.0	2992.0
1	0745	94	82.	62.7	3008.0	*	1	1605	194	57.	14.3	2997.0	*	2	0025	294	0.	.0	2992.0
1	0750	95	81.	62.1	3007.9	*	1	1610	195	56.	13.9	2996.9	*	2	0030	295	0.	.0	2992.0
1	0755	96	81.	61.6	3007.8	*	1	1615	196	56.	13.6	2996.8	*	2	0035	296	0.	.0	2992.0
1	0800	97	81.	61.0	3007.7	*	1	1620	197	56.	13.2	2996.7	*	2	0040	297	0.	.0	2992.0
1	0805	98	81.	60.5	3007.6	*	1	1625	198	55.	12.8	2996.6	*	2	0045	298	0.	.0	2992.0
1	0810	99	81.	59.9	3007.5	*	1	1630	199	55.	12.4	2996.4	*	2	0050	299	0.	.0	2992.0
1	0815	100	80.	59.4	3007.4	*	1	1635	200	55.	12.0	2996.3	*	2	0055	300	0.	.0	2992.0
						*							*							

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 85.	5.83		81.	49.	47.	47.
		(INCHES)	.744	1.781	1.781	1.781
		(AC-FT)	40.	96.	96.	96.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)				
72.	5.83	61.	25.	24.	24.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)				
3009.74	5.83	3007.76	2998.88	2998.63	2998.63

CUMULATIVE AREA = 1.01 SQ MI

HYDROGRAPH AT STATION RDB2
PLAN 1, RATIO = .97

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	.0	2992.0	1		0820	101	80.	57.6	3007.1	1		1640	201	54.	10.9	2996.0
1		0005	2	0.	.0	2992.0	1		0825	102	80.	57.1	3007.0	1		1645	202	53.	10.5	2995.9
1		0010	3	0.	.0	2992.0	1		0830	103	79.	56.5	3006.9	1		1650	203	53.	10.1	2995.8
1		0015	4	0.	.0	2992.0	1		0835	104	79.	56.0	3006.8	1		1655	204	53.	9.8	2995.6
1		0020	5	0.	.0	2992.0	1		0840	105	79.	55.5	3006.7	1		1700	205	53.	9.4	2995.5
1		0025	6	1.	.0	2992.0	1		0845	106	79.	54.9	3006.6	1		1705	206	52.	9.0	2995.4
1		0030	7	1.	.1	2992.0	1		0850	107	78.	54.4	3006.5	1		1710	207	52.	8.7	2995.3
1		0035	8	2.	.1	2992.0	1		0855	108	78.	53.8	3006.4	1		1715	208	52.	8.3	2995.2
1		0040	9	2.	.1	2992.1	1		0900	109	78.	53.3	3006.3	1		1720	209	51.	8.0	2995.1
1		0045	10	3.	.1	2992.1	1		0905	110	78.	52.8	3006.2	1		1725	210	51.	7.6	2995.0
1		0050	11	3.	.2	2992.1	1		0910	111	78.	52.2	3006.1	1		1730	211	51.	7.3	2994.9
1		0055	12	3.	.2	2992.1	1		0915	112	77.	51.7	3006.0	1		1735	212	50.	6.9	2994.7
1		0100	13	4.	.2	2992.1	1		0920	113	77.	51.2	3005.9	1		1740	213	50.	6.6	2994.6
1		0105	14	4.	.2	2992.1	1		0925	114	77.	50.6	3005.8	1		1745	214	49.	6.2	2994.5
1		0110	15	4.	.2	2992.1	1		0930	115	77.	50.1	3005.7	1		1750	215	49.	5.9	2994.4
1		0115	16	4.	.2	2992.1	1		0935	116	77.	49.6	3005.6	1		1755	216	48.	5.6	2994.2
1		0120	17	5.	.3	2992.1	1		0940	117	76.	49.0	3005.5	1		1800	217	48.	5.2	2994.1
1		0125	18	5.	.3	2992.1	1		0945	118	76.	48.5	3005.4	1		1805	218	48.	4.9	2994.0
1		0130	19	6.	.3	2992.1	1		0950	119	76.	48.0	3005.3	1		1810	219	47.	4.6	2993.8
1		0135	20	8.	.4	2992.2	1		0955	120	76.	47.5	3005.2	1		1815	220	47.	4.2	2993.7
1		0140	21	10.	.5	2992.2	1		1000	121	76.	47.0	3005.1	1		1820	221	46.	3.9	2993.6
1		0145	22	12.	.6	2992.3	1		1005	122	75.	46.4	3005.0	1		1825	222	46.	3.6	2993.5
1		0150	23	15.	.8	2992.3	1		1010	123	75.	45.9	3004.9	1		1830	223	46.	3.3	2993.4
1		0155	24	17.	.9	2992.4	1		1015	124	75.	45.4	3004.8	1		1835	224	45.	3.0	2993.2
1		0200	25	19.	1.0	2992.4	1		1020	125	75.	44.9	3004.7	1		1840	225	45.	2.7	2993.1
1		0205	26	20.	1.1	2992.5	1		1025	126	74.	44.4	3004.6	1		1845	226	44.	2.4	2993.0
1		0210	27	22.	1.2	2992.5	1		1030	127	74.	43.9	3004.4	1		1850	227	39.	2.1	2992.9
1		0215	28	24.	1.2	2992.5	1		1035	128	74.	43.3	3004.3	1		1855	228	35.	1.8	2992.8
1		0220	29	26.	1.4	2992.6	1		1040	129	74.	42.8	3004.2	1		1900	229	30.	1.6	2992.7
1		0225	30	29.	1.5	2992.6	1		1045	130	73.	42.3	3004.1	1		1905	230	27.	1.4	2992.6
1		0230	31	32.	1.7	2992.7	1		1050	131	73.	41.8	3004.0	1		1910	231	23.	1.2	2992.5
1		0235	32	35.	1.8	2992.8	1		1055	132	73.	41.3	3003.9	1		1915	232	20.	1.1	2992.5
1		0240	33	37.	2.0	2992.8	1		1100	133	73.	40.8	3003.8	1		1920	233	18.	.9	2992.4
1		0245	34	40.	2.1	2992.9	1		1105	134	72.	40.3	3003.6	1		1925	234	16.	.8	2992.4
1		0250	35	44.	2.3	2993.0	1		1110	135	72.	39.8	3003.5	1		1930	235	14.	.7	2992.3
1		0255	36	45.	2.4	2993.0	1		1115	136	72.	39.3	3003.4	1		1935	236	12.	.6	2992.3
1		0300	37	45.	2.6	2993.1	1		1120	137	72.	38.8	3003.3	1		1940	237	11.	.6	2992.2
1		0305	38	45.	2.8	2993.2	1		1125	138	71.	38.3	3003.2	1		1945	238	9.	.5	2992.2
1		0310	39	45.	3.1	2993.3	1		1130	139	71.	37.8	3003.1	1		1950	239	8.	.4	2992.2
1		0315	40	46.	3.6	2993.5	1		1135	140	71.	37.4	3003.0	1		1955	240	7.	.4	2992.2
1		0320	41	47.	4.6	2993.8	1		1140	141	71.	36.9	3002.9	1		2000	241	6.	.3	2992.1
1		0325	42	49.	6.1	2994.4	1		1145	142	71.	36.4	3002.7	1		2005	242	6.	.3	2992.1
1		0330	43	52.	8.5	2995.3	1		1150	143	70.	35.9	3002.6	1		2010	243	5.	.3	2992.1
1		0335	44	54.	11.8	2996.3	1		1155	144	70.	35.4	3002.5	1		2015	244	4.	.2	2992.1
1		0340	45	58.	15.8	2997.5	1		1200	145	70.	34.9	3002.4	1		2020	245	4.	.2	2992.1
1		0345	46	61.	20.3	2998.8	1		1205	146	70.	34.5	3002.3	1		2025	246	3.	.2	2992.1
1		0350	47	65.	24.9	3000.1	1		1210	147	69.	34.0	3002.2	1		2030	247	3.	.2	2992.1
1		0355	48	67.	29.5	3001.2	1		1215	148	69.	33.5	3002.1	1		2035	248	3.	.1	2992.1
1		0400	49	69.	33.9	3002.2	1		1220	149	69.	33.0	3002.0	1		2040	249	2.	.1	2992.0
1		0405	50	71.	38.2	3003.2	1		1225	150	69.	32.5	3001.9	1		2045	250	2.	.1	2992.0
1		0410	51	73.	42.0	3004.0	1		1230	151	68.	32.1	3001.8	1		2050	251	2.	.1	2992.0
1		0415	52	75.	45.5	3004.8	1		1235	152	68.	31.6	3001.7	1		2055	252	1.	.1	2992.0
1		0420	53	76.	48.6	3005.4	1		1240	153	68.	31.1	3001.6	1		2100	253	1.	.1	2992.0
1		0425	54	77.	51.2	3005.9	1		1245	154	68.	30.7	3001.4	1		2105	254	1.	.1	2992.0

1	0430	55	78.	53.6	3006.3	*	1	1250	155	68.	30.2	3001.3	*	1	2110	255	1.	.1	2992.0
1	0435	56	79.	55.7	3006.7	*	1	1255	156	67.	29.7	3001.2	*	1	2115	256	1.	.0	2992.0
1	0440	57	80.	57.6	3007.1	*	1	1300	157	67.	29.3	3001.1	*	1	2120	257	1.	.0	2992.0
1	0445	58	80.	59.3	3007.4	*	1	1305	158	67.	28.8	3001.0	*	1	2125	258	1.	.0	2992.0
1	0450	59	81.	61.0	3007.7	*	1	1310	159	67.	28.4	3000.9	*	1	2130	259	1.	.0	2992.0
1	0455	60	82.	62.6	3008.0	*	1	1315	160	66.	27.9	3000.8	*	1	2135	260	1.	.0	2992.0
1	0500	61	82.	64.1	3008.2	*	1	1320	161	66.	27.4	3000.7	*	1	2140	261	0.	.0	2992.0
1	0505	62	83.	65.5	3008.5	*	1	1325	162	66.	27.0	3000.6	*	1	2145	262	0.	.0	2992.0
1	0510	63	83.	66.8	3008.7	*	1	1330	163	66.	26.5	3000.5	*	1	2150	263	0.	.0	2992.0
1	0515	64	84.	67.9	3008.9	*	1	1335	164	66.	26.1	3000.4	*	1	2155	264	0.	.0	2992.0
1	0520	65	84.	68.8	3009.1	*	1	1340	165	65.	25.6	3000.3	*	1	2200	265	0.	.0	2992.0
1	0525	66	84.	69.5	3009.2	*	1	1345	166	65.	25.2	3000.2	*	1	2205	266	0.	.0	2992.0
1	0530	67	84.	70.1	3009.3	*	1	1350	167	65.	24.7	3000.1	*	1	2210	267	0.	.0	2992.0
1	0535	68	85.	70.6	3009.4	*	1	1355	168	65.	24.3	3000.0	*	1	2215	268	0.	.0	2992.0
1	0540	69	85.	70.9	3009.5	*	1	1400	169	64.	23.8	2999.9	*	1	2220	269	0.	.0	2992.0
1	0545	70	85.	71.1	3009.5	*	1	1405	170	64.	23.4	2999.7	*	1	2225	270	0.	.0	2992.0
1	0550	71	85.	71.1	3009.5	*	1	1410	171	64.	23.0	2999.6	*	1	2230	271	0.	.0	2992.0
1	0555	72	85.	71.1	3009.5	*	1	1415	172	63.	22.5	2999.5	*	1	2235	272	0.	.0	2992.0
1	0600	73	85.	71.0	3009.5	*	1	1420	173	63.	22.1	2999.3	*	1	2240	273	0.	.0	2992.0
1	0605	74	85.	70.9	3009.5	*	1	1425	174	63.	21.7	2999.2	*	1	2245	274	0.	.0	2992.0
1	0610	75	85.	70.7	3009.4	*	1	1430	175	62.	21.2	2999.1	*	1	2250	275	0.	.0	2992.0
1	0615	76	85.	70.4	3009.4	*	1	1435	176	62.	20.8	2999.0	*	1	2255	276	0.	.0	2992.0
1	0620	77	84.	70.1	3009.3	*	1	1440	177	61.	20.4	2998.8	*	1	2300	277	0.	.0	2992.0
1	0625	78	84.	69.7	3009.3	*	1	1445	178	61.	20.0	2998.7	*	1	2305	278	0.	.0	2992.0
1	0630	79	84.	69.3	3009.2	*	1	1450	179	61.	19.5	2998.6	*	1	2310	279	0.	.0	2992.0
1	0635	80	84.	68.9	3009.1	*	1	1455	180	60.	19.1	2998.4	*	1	2315	280	0.	.0	2992.0
1	0640	81	84.	68.4	3009.0	*	1	1500	181	60.	18.7	2998.3	*	1	2320	281	0.	.0	2992.0
1	0645	82	84.	67.9	3008.9	*	1	1505	182	60.	18.3	2998.2	*	1	2325	282	0.	.0	2992.0
1	0650	83	84.	67.4	3008.8	*	1	1510	183	59.	17.9	2998.1	*	1	2330	283	0.	.0	2992.0
1	0655	84	83.	66.9	3008.8	*	1	1515	184	59.	17.5	2998.0	*	1	2335	284	0.	.0	2992.0
1	0700	85	83.	66.4	3008.7	*	1	1520	185	59.	17.1	2997.8	*	1	2340	285	0.	.0	2992.0
1	0705	86	83.	65.9	3008.6	*	1	1525	186	58.	16.7	2997.7	*	1	2345	286	0.	.0	2992.0
1	0710	87	83.	65.3	3008.5	*	1	1530	187	58.	16.3	2997.6	*	1	2350	287	0.	.0	2992.0
1	0715	88	82.	64.8	3008.4	*	1	1535	188	58.	15.9	2997.5	*	1	2355	288	0.	.0	2992.0
1	0720	89	82.	64.3	3008.3	*	1	1540	189	57.	15.5	2997.4	*	2	0000	289	0.	.0	2992.0
1	0725	90	82.	63.7	3008.2	*	1	1545	190	57.	15.1	2997.2	*	2	0005	290	0.	.0	2992.0
1	0730	91	82.	63.2	3008.1	*	1	1550	191	57.	14.7	2997.1	*	2	0010	291	0.	.0	2992.0
1	0735	92	82.	62.6	3008.0	*	1	1555	192	57.	14.3	2997.0	*	2	0015	292	0.	.0	2992.0
1	0740	93	81.	62.1	3007.9	*	1	1600	193	56.	13.9	2996.9	*	2	0020	293	0.	.0	2992.0
1	0745	94	81.	61.5	3007.8	*	1	1605	194	56.	13.5	2996.8	*	2	0025	294	0.	.0	2992.0
1	0750	95	81.	61.0	3007.7	*	1	1610	195	56.	13.1	2996.7	*	2	0030	295	0.	.0	2992.0
1	0755	96	81.	60.4	3007.6	*	1	1615	196	55.	12.7	2996.5	*	2	0035	296	0.	.0	2992.0
1	0800	97	81.	59.8	3007.5	*	1	1620	197	55.	12.4	2996.4	*	2	0040	297	0.	.0	2992.0
1	0805	98	80.	59.3	3007.4	*	1	1625	198	55.	12.0	2996.3	*	2	0045	298	0.	.0	2992.0
1	0810	99	80.	58.7	3007.3	*	1	1630	199	54.	11.6	2996.2	*	2	0050	299	0.	.0	2992.0
1	0815	100	80.	58.2	3007.2	*	1	1635	200	54.	11.2	2996.1	*	2	0055	300	0.	.0	2992.0
						*							*						

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PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	24.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 85.	5.83		81.	48.	46.	46.
		(INCHES)	.741	1.755	1.755	1.755
		(AC-FT)	40.	95.	95.	95.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (AC-FT)	(HR)					
71.	5.83		60.	24.	23.	23.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	24.92-HR
+ (FEET)	(HR)					
3009.52	5.83		3007.55	2998.73	2998.48	2998.48

CUMULATIVE AREA = 1.01 SQ MI

1

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

					RATIOS APPLIED TO PRECIPITATION		
OPERATION	STATION	AREA	PLAN		RATIO 1	RATIO 2	RATIO 3
					1.00	.98	.97
HYDROGRAPH AT							
+	OFF7	.01	1	FLOW	9.	9.	9.
				TIME	3.50	3.50	3.50
HYDROGRAPH AT							
+	OFF8	.21	1	FLOW	244.	237.	234.

Location Map

30% DESIGN REPORT
Moccasin Rd CCRFCD Flood Control Facility
U.S. 95/ Rd Interchange to CCRFCD Facility LVUP 1076/1077

Las Vegas, Nevada

SHG Job No.: OLY1715.000
Date: October 2017

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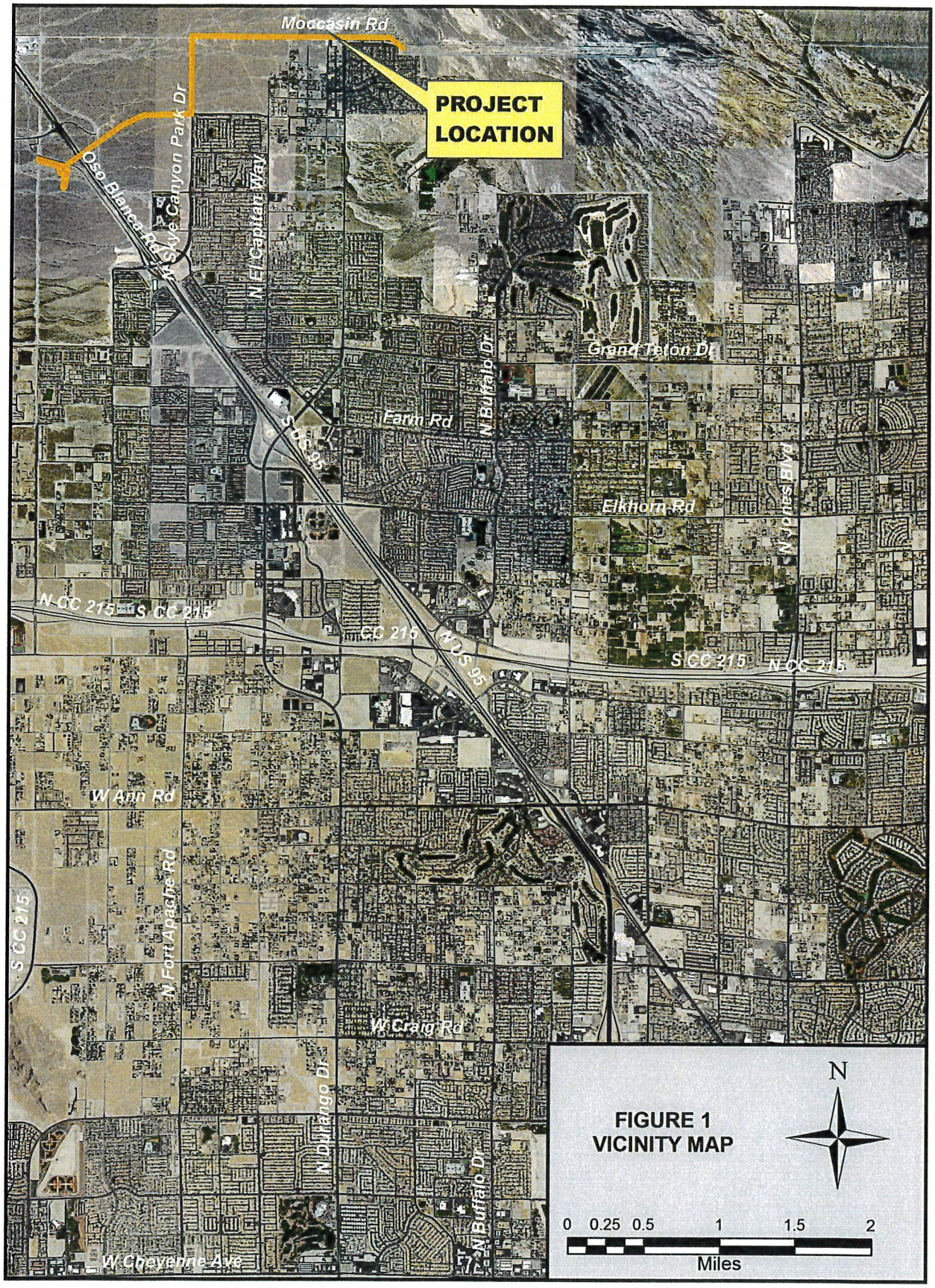


FIGURE 1
VICINITY MAP

APPENDIX O

CD of Electronic Files, Grading Plan, Storm Drain Profiles and Detail Sheets