Appendix L
Flood Study (CLOMR)

FLOOD STUDY (CLOMR)

for

Carlton Oaks Country Club and Resort

TM 2019-1 & DR 2019-5

San Diego River (Upper) 060703
City of Santee, CA
County of San Diego

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Flood Study for Carlton Oaks

TABLE OF CONTENTS

SECTION

Chapter 1 INTRODUCTION I

1.1 PURPOSE

1.2 EXISTING CONDITIONS

1.3 PROJECT DESCRIPTION

Chapter 2 FLOOD HAZARD CONSIDERATIONS II

2.1 FLOODPLAIN MAPPING AND FLOODING SOURCES

2.2 TOPOGRAPHIC INFORMATION

2.3 HYDROLOGIC INFORMATION

2.4 HYDRAULIC ANALYSIS

Chapter 3 HYDRAULIC MODELS III

3.1 EFFECTIVE MODEDL

3.2 DUPLICATE EFFECTIVE MODEL

3.3 CORRECTED EFFECTIVE MODEL

3.4 EXISTING CONDITIONS MODEL

3.5 POST-PROJETC (PROPOSED) CONDITIONS MODEL

3.6 SYCAMORE CREEK MODEL

Chapter 4 HYDRAULIC RESULTS IV

Chapter 5 COMPLIANCE MEASURES V

5.1 FEMA

5.2 CITY OF SANTEE FLOOD DAMAGE PROTECTION ORDINANCE

5.3 CITY OF SAN DIEGO SUPPLEMENTAL REGULATIONS FOR SPECIAL FLOOD HAZARD AREAS

5.4 DESIGN MEASURES

Chapter 6 CONCLUSION VI

EXHIBITS

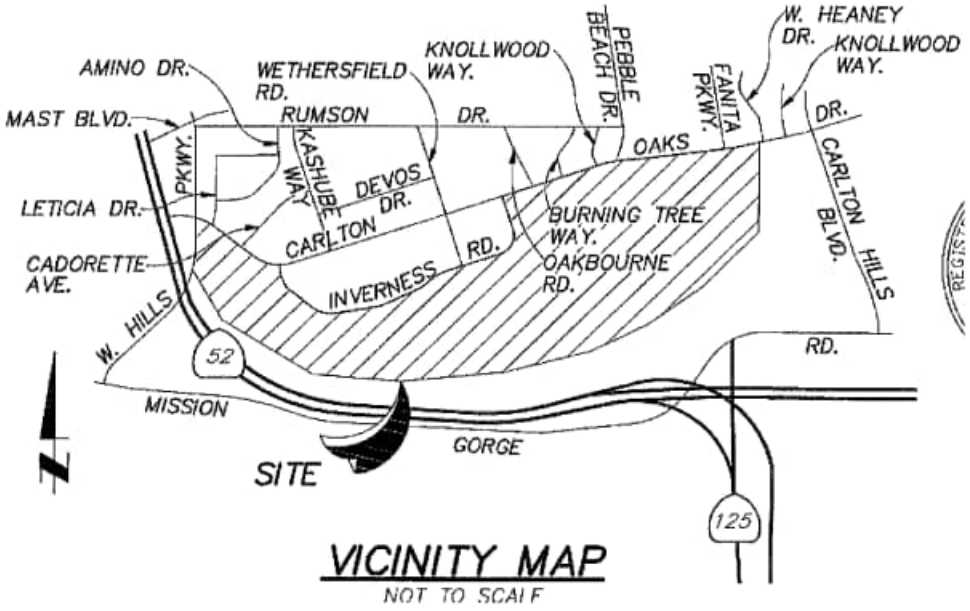
A- Aerial Site Photo
B- HEC-2 Effective Model from FEMA
C- HEC-2 Duplicate Effective Model
D- HEC-RAS Corrected Effective Model
E- HEC-RAS Existing Conditions Model
F- HEC-RAS post Project Conditions Model
G- Sycamore Creek Model
H- FIRM Panel 06073C1634G (NAVD88)
I- BSI Report Excerpts (FEMA & Santee Flows)
J- Floodplain Analysis for Fanita Lake Excerpts (Rick Engineering 05/25/2007)
K- Site Plan and off-Site Improvements Exhibit.

MAP POCKETS

- **Existing Conditions Work Map**.....**Pocket #1**
- **Proposed Conditions Work Map** .....**Pocket #2**
- **Annotated Firm** .....**Pocket #3**
- **Sycamore Work Map**.....**Pocket #4**
- **City BSI Flood Maps (Sheets 2 & 3)** .....**Pocket #5**
- **Site Plan and Preliminary Grading Plan** .....**Pocket #6**

APPENDICES

A- MT-2 Forms
B- Endangered Species Act Compliance (ESA)
C- Notifications and Support Documentation



1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this report is to provide flood modeling to evaluate the potential sources of flooding in conjunction with the Proposed Carlton Oaks Country Club and Resort Project. Two potential sources of flooding have been evaluated: San Diego River, and Sycamore Creek.

In line with that purpose, this report 1) provides documentation of the data collection, methodologies, and results related to San Diego River hydraulic analysis in existing and proposed conditions that will be used as the basis for preparing the project Conditional Letter of Map Revision (CLOMR) for processing through the City and ultimately Federal Emergency Management Agency (FEMA), 2) documents consistency with City of Santee, City of San Diego and FEMA Flood ordinance and regulations, and 3) utilizes the proposed condition model combined with the City specific 100-year flow rate to determine project Base Flood Elevations (BFEs), which buildings shall be appropriately elevated above.

The Sycamore Creek (adjacent to the western limits of the Santee lakes) conveys flows to the San Diego River and enters the site near the northeast end of the golf course under the existing Carlton Oaks Bridge (Carlton Oaks Drive crosses over Sycamore Creek northeast of the proposed Residential North PA-2). A hydraulic analysis for Sycamore

Creek is provided and documented in this report as well to verify that the proposed project would not increase flooding impacts on adjacent areas or upstream of Carlton Oaks Bridge, and would not adversely impact the hydraulic conveyance of Sycamore Creek (Carlton Oaks Drive crosses over Sycamore Creek northeast of the proposed Residential North PA-2). See Exhibit “A” for an Aerial Photo of the property showing the existing Carlton Oaks Bridge and Sycamore Creek locations.

Additionally, the hydraulic calculations and report outline design measures that will be required to ensure that flood impacts associated with the project have been mitigated; and the proposed project itself will be designed in a manner to be consistent with City and FEMA requirements which will avoid onsite hazards, minimize risk levels, protect public safety, and have no negative flooding impacts on adjacent properties.

Drainage, hydrology, and storm water quality mitigation are addresses in separate project’s report entitled “Drainage Report for Carlton Oaks Country Club and Resort” dated May 2025, and “Storm Water Quality Management Plan (SWQMP) for Carlton Oaks Country Club and Resort” dated May 2025, respectively.

1.2 EXISTING CONDITIONS

The existing Carlton Oaks Country Club and Resort is located in the City of Santee and City of San Diego, northwest of the State Route 52 / 125 interchange. The project site is bounded by the San Diego River and Forester Creek to the south and east, West Hills Parkway to the west, and Carlton Oaks Drive to the north. Most of the project limits are located within FEMA regulatory limits of San Diego River. The majority of the proposed Residential West (PA-1) is located with the existing floodplain, a small portion of the southwest corner of the proposed Residential North (PA-2) is also located in the existing floodplain, and the proposed Resort Area (PA-3) is located within the existing floodplain and floodway. The project receives runoff from the San Diego River, Sycamore (Santee Lakes) channel, plus several storm drain outfalls from the existing neighborhoods along the Carlton Oaks and Mast Blvd corridors. Runoff from Forester Creek enters at the southeasterly limits of the property. See Exhibit “A” for an Aerial Photo of the property.

South Channel: The property includes a vegetated earth berm along the southern and eastern limits, which directs “low flows” from the San Diego River and Forester Creek along the southerly golf course limits. The berm consists of loosely placed soil that was graded per 1995 grading plan G-378, and it is relatively small (compared to the overall river width). To be conservative, HEC-RAS proposed and existing models assumed no berm condition. The berm ends near the western limits of the golf course, just upstream of West Hills Parkway Bridge (West Hills Parkway crosses over San Diego River southwest of the proposed Residential West PA-1). See Exhibit “A” for an Aerial Photo of the property showing the existing West Hills Parkway Bridge location. The existing channel is vegetated with sensitive habitat.

North Channel: Runoff from Sycamore channel (adjacent to the western limits of the Santee Lakes) enters the site near the northeast end of the golf course under the Carlton Oaks Drive bridge. Flows are directed southerly and westerly through the northern limits of the golf course through a variety of golf course water features including streams, water hazards and manufactured ponds. The north channel provides drainage relief for overland flows from the majority of the golf course, and the existing neighborhoods north of the property.

Flows from the south and north channels confluence at the west end of the earth berm, approximately 500' upstream of West Hills Parkway bridge. According to the existing model, during larger storm events, the flood water levels will overtop the berm at one or more locations. Anecdotally, the berm has stood up to large flooding events in the past and has likely been reinforced by natural vegetation growth along the sides. The Proposed Project does not require or propose any modifications to the existing berm.

1.3 PROJECT DESCRIPTION

Lennar Homes and Carlton Oaks Golf Course, as joint project proponents, are proposing to redevelop the existing Carlton Oaks Country Club into a resort with residential accessory uses (proposed project). An existing clubhouse, restaurant/bar, pro shop, hotel and hotel cottages, and surface parking lot are currently located on the proposed project site and will be demolished as part of the initial project construction.

The proposed project site that will be developed is located on approximately 164.9 acres and would include the redesign of the existing Carlton Oaks Golf Course and the following components: (1)) redesign of the golf course, (2) reconstruction of the clubhouse and pro shop, practice area, and learning center structure; (3) a hotel and associated cottages; (4) residential accessory uses consisting of two residential neighborhoods (Residential West and Residential North) with open space areas; and (5) related on-site infrastructure. Approximately 3.4 acres consist of areas outside of the project site that will be developed with improvements associated with the Project and are located either in the City of San Diego or Santee (Off-site improvement areas). The off-site improvement areas and the proposed project site (developed and undeveloped) make up the CEQA Study area, totaling approximately168.3 acres. See Exhibit "K" for illustrating the onsite project area and offsite improvements.

Golf Course Redesign:

The proposed project would redesign the existing 145 -acre, 18-hole golf course to provide an improved experience for the users of the Carlton Oaks Country Club and Resort. The redesigned golf course would cover approximately 104 acres, and would provide 18 holes, similar to the existing course. The length of the golf course would be reduced from approximately 7,300 yards to 6,450 yards to provide a more engaging golfing experience. Under the current existing conditions, the golf course has a total of approximately 132 acres of turf irrigation with a 30-year-old block type irrigation system.

The new course design would only have approximately 66 acres of turf irrigation (a 50 percent decrease) and would utilize a new modem irrigation system with individual head controls.

The proposed golf course would reshape the existing man-made ponds on the golf course, and the existing maintenance facility in the eastern portion of the project site will remain in its current location. The existing drainage patterns and facilities would be updated within the golf course to improve the flow of drainage, which would reduce the amount of ponding that occurs on the site during rain events. The remaining out-of-play areas around the golf course would be planted with native grasses and smaller shrubs native to the region, which would be selected to require little or no maintenance. There are a number of riparian areas within the project site, providing an environment for native birds, small animals, and aquatic plant and animal species. These areas are planned to be avoided and retained in their current condition.

In addition to the golf course, the Carlton Oaks Golf Course owner would develop several golf amenities including a pro shop, cart barn, and a cart waiting area on the eastern end of the golf course, northeast of the golf resort, as well as two practice areas. A golf learning center structure would also be developed northeast of the pro shop. A new shared surface parking lot would provide parking spaces for users of the golf course, clubhouse, and hotel.

Carlton Oaks Country Club and Resort Area (PA-3):

The Carlton Oaks Country Club and Resort would consist of approximately 51,926 square feet of golf related resort amenities including 10 cottage-style hotel units, 42-room hotel, a clubhouse with a restaurant, event space, a golf learning center, a cart barn, a pro shop, and a store all located in the eastern portion of the project site. There would also be a golf cart waiting area and a shared, surface parking lot. The hotel and cottage buildings would be constructed as two-story structures. The clubhouse and resort would also provide an outdoor pool and deck area, a patio, and a courtyard.

Residential Development:

The Carlton Oaks Country Club and Resort would include a residential component in the western and northeastern portions of the project site. Residential West (PA-1), in the western portion of the project site, would consist of 86 multi-family detached residential units. Residential North (PA-2) would be located in the northern portion of the project site and would consist of 150 detached multi-family residential units. In addition, six single-family lots would front Carlton Oaks Drive and allow for single-story homes on a minimum of 6,000 square-foot lots. One existing home located at 9225 Inwood Drive has also been included within the project area to allow for minor driveway modifications but no changes to the structure are proposed. The applicant is requesting approval of required easements from the City of San Diego for grading, landscaping, utilities, access, and maintenance.

Access Points:

Access to Residential West would include a private driveway that would require access easements across two parcels owned by the City of San Diego, these parcels cross both City of San Diego and City of Santee jurisdictions. The proposed easements would allow private and emergency access onto the proposed subdivision.

Residential North and the resort would be accessed from Carlton Oaks Drive at the intersection of Burning Tree Way. This access would be approximately 200 feet west of the existing hotel access road (Inwood Drive). Inwood Drive would be closed and replaced with curb and sidewalk. Additionally, six existing driveway aprons along the project frontage would be closed and replaced with curb and landscaping.

Access to the golf course and resort would be provided by a private drive through Residential North from Carlton Oaks Drive southerly via a new bridge across the San Diego River (North Channel).

Also, a 26-foot-wide private emergency access road for the Residential North and resort parcels would be provided through the existing Vista del Verde condominiums located in the northeastern corner of the project site. This emergency access would comply with the requirements of the City of Santee's Fire Code and would be for the proposed project only and would not be open to the public. A new fence with an emergency access gate will be erected between buildings of the existing adjacent condominium complexes. A private emergency access roadway will also be provided to Residential West "PA-1" via an extension of Private Drive "C" westerly to West Hills Parkway. The emergency vehicle access will be 26 feet wide with curb and gutter and AC pavement and base, with grades and horizontal alignment that meet the City's Fire Code.

The project will also include a 26-foot private utility maintenance roadway between to Residential West "PA-1" and Residential North "PA-2", which will also serve as a pedestrian/golfcart passageway from PA-1 to the resort. The private roadway/pathway will be paved with 26 feet of AC pavement and base with a 2-foot shoulder and will meet the City Fire Code roadway grades and horizontal alignment requirements for firefighting apparatus and vehicles. Gates are located at the west and east limits of the roadway.

Project Trail Segments:

A multipurpose, public trail will be provided on the property on the north side of the San Diego River, linking with existing and planned trails to the east and west of the site (Project Trail Segment).

A portion of the Project Trail Segment on the eastern side of the project site will be provided beginning at the entrance of Residential North at Carlton Oaks Drive traversing through the resort and along the southeastern border of the project ending slightly west of the jurisdictional line between the City of Santee and the City of San Diego. This portion of the trail will link to the existing Mast Park West Trail, as well as the future

planned trail known as the Carlton Oaks Golf Course Segment.

A portion of the Project Trail Segment on the western side of the project site will be constructed beginning at the Santee jurisdictional line ending at the property line (Station 38+60). This portion of the trail will link to the future planned trail known as the Carlton Oaks Golf Course Segment.

Along the Residential West boundary, a graded bench (located within the Carlton Oaks Golf Course Segment) would also be provided within the easement areas that will be granted to the applicant by the City of San Diego as a part of this project.

In addition to the proposed trail alignment currently proposed through Residential North and the County Club and Resort Area, a supplemental trail offer of dedication is shown on the applicant's map should the City request this supplemental trail alignment. The supplemental trail offer of dedication starts from an area east of the Country Club and Resort parking lot to the property line of the Vista del Verde community. If the City of Santee were to request this supplemental segment, the applicant will agree to dedicate the trail alignment and construct this trail at a later date if the City determines that it desires to build this trail in the future.

Grading:

Fill will be placed to raise the Residential West (PA-1) and Residential North (PA-2) out of the floodplain, and the Resort Area (PA-3) above the 100-year flood levels of the floodway. Grades in a portion of the existing golf course, located approximately south of the proposed Resort Area, will be lowered to offset for the fill that is being placed in the residential and resort areas. Residential West (PA-1) is a residential development located at the west end of the existing golf course property, located north of the record floodway. Residential West (PA-1) and Residential North area (PA-2) do not encroach into the Floodway but are located in the existing floodplain. (Both PA-1 and PA-2 make up the Residential Area.)

The golf course will be regraded to enhance flows around the proposed Residential and Resort development areas. The Resort Area (PA-3) will encroach into the existing floodway. The Floodway and Floodplain is proposed to be remapped to reflect that Residential West and North are removed from the floodplain and and the Resort Area is fully removed from both the floodplain and floodway. Both residential areas will continue to remain out of the floodway consistent with the current FEMA mapping.

Offsite Improvements:

The following offsite improvements would be required as part of the implementation of the proposed project.

1. Emergency Vehicle Access: The project will include the construction of a 26-foot-wide emergency vehicle access roadway, pursuant to the City of Santee Fire Department's requirements. This work would include modifications to existing parking, as well as construction work at an offsite location within the

Vista del Verde community in order to construct the emergency vehicle access pathway. The emergency vehicle access roadway will run south from the condominium project onto the golf course property to the developed portion of the resort area. One parking spot that may be lost by such work will also be relocated on the Vista del Verde property subject to the approval of the City of Santee. The project also includes installation of a motorized gate and replacement of the existing chain link fence with a steel tubular fence, on the boundary of the Golf Course property.

2. West Hills Parkway: West Hills Parkway will be widened within the existing right-of-way from Carlton Oaks Drive approximately 700 feet southerly to the existing bridge, in order to provide a dedicated left-turn lane into the project driveway. The roadway will be widened within the existing right-of-way and therefore no additional dedication is required. New striping will include a striped median and increased width for bike lanes. Improvements will also include a new driveway entry for the proposed residential development. Trees are proposed on both sides of West Hills Parkway to provide source control of storm water, limit storm water transport and pollutant conveyance to the collection system, restore predevelopment hydrology to the extent possible, and provide environmentally enhanced roads. Green Street PDP Exempt SWQMP for Carlton Oaks has been prepared per City of San Diego Storm Water Standards\ BMP Design Manual and following the guidance in Appendix J of the Manual. This work falls within the boundaries of City of San Diego and follows their standards. Access into the project has been analyzed for sight-distance, signal warrants and traffic movements by the project engineering team.

3. Extension of a Padre Dam Municipal Water District (PDMWD) Public Water Main: A Padre Dam Municipal Water District public water main will be extended from the end of Carlton Oaks Drive and down West Hills Parkway and into the proposed subdivision to provide a connection to the private water system for Residential West.

4. Access to Residential North and the Resort Area: Residential North and the Resort Area will take access from Carlton Oaks Drive at the intersection of Burning Tree Way. This access point is approximately 200 feet east of the existing hotel access road (Inwood Drive). Inwood Drive will be closed and replaced with curb and sidewalk. Additionally, six existing driveway aprons along the project frontage, will be closed and replaced with curb and landscaping along with other miscellaneous frontage improvements such as overhead power undergrounding and landscaping. Overhead power undergrounding would extend north of Carlton Oaks Drive. Potable and recycled water will be connected to existing main lines in Carlton Oaks Drive and extended into the project.

5. Drainage Improvements: Existing drainage pipes discharge to the golf course at five locations along the north subdivision boundary. All improvements shall be done in a way that will maintain the existing flow and drainage patterns. Each location is described as follows:

A. Existing 42-inch storm drain discharges to the site from a headwall located approximately 15 feet offsite, located within a public easement (City of Santee) on an existing residential lot (Lot 17 of Map 4402). The offsite flows will be picked up onsite by proposed storm drain improvements and discharged into the San Diego River (North Channel).

B. Existing 27-inch storm drain extends onto the project site from an existing residential lot (Lot 14 of Map 5417): This pipe will be extended under the proposed access road to a new headwall and discharge onto the golf course.

C. Existing 18-inch storm drain discharges to the site from a headwall located approximately 15 feet offsite, located within a public easement (City of Santee) on an existing residential lot (Lot 230 of Map 6973): The offsite flows will be picked up onsite by proposed storm drain improvements and discharged onto the golf course.

D. Existing 47”x71” storm drain discharges to the site from a headwall located approximately 20 feet offsite, located within a public easement (City of Santee) on an existing residential lot (Lot 239 of Map 6973). Project proposes to remove the headwall and extend the pipe into the project.

E. An existing 72-inch diameter storm drainpipe discharges to the site from the headwall located approximately immediately offsite at the north property line of Residential West. The existing headwall includes a large concrete energy dissipator and concrete channel. These storm drain facilities are located offsite on existing residential lots (Lots 679 & 680 of Map 7295) and within an existing public easement (City of Santee). The offsite flows will be picked up onsite by proposed storm drain improvements and discharged onto the golf course. The project drainage study includes a hydraulic analysis of the extension of this pipe to ensure that no negative upstream impacts will occur as a result of this project.

6. Sewer Maintenance Hole Improvements: Three existing sewer maintenance holes located offsite within a public easement (Padre Dam Municipal Water District) in the northeast corner of the project within the Vista del Verde condominiums: Engineered sewer manhole liners may be needed in the three manholes between the 8-inch tie-in from the north and the 24-inch tie-in. The need for these liners will be determined in the project design phase. All work will be limited to within the public easement area.

2.0 FLOOD HAZARD CONSIDERATIONS

2.1 FLOODPLAIN MAPPING AND FLOODING SOURCES

FEMA Mapping: The residential areas and Resort Area are proposed to be located in the City of Santee. In addition, a portion of the golf course, the southwest corner of the Resort Area (PA-3), and the primary access to Residential West are proposed to be located in the City of San Diego. The proposed Residential areas are partially located

within the existing FEMA floodplain; and the proposed Resort Area (PA-3) is located within the existing FEMA floodplain and floodway of the San Diego River (Special Flood Hazard Area Zone AE as shown on FIRM Panel 06073Cl634G, dated May 16, 2012 located in Exhibit "H").The existing hotel is located outside of the existing floodplain and floodway and can be seen at cross section AY290. The initial FIRM Panel was prepared using the original flood model for San Diego River (Upper) in 1982. The existing development north of Forester Creek and south of Carlton Oaks golf course was mapped as Zone X as shown on FIRM Panels: 06073C1634G, and modeled as an ineffective area in the original effective model.

This report proposes revisions to FEMA floodplain, a portion of the floodway delineation, and base flood elevations. Changes and revisions comply with FEMA regulations and ordinances. Please refer to Work map in Map Pocket #2.

City of Santee San Diego River Flood Study (BSI): In 1992, BSI conducted a Citywide Drainage Study to evaluate the existing storm drain systems and the flood elevations for the San Diego River (BSI, 1992). This study showed that there would be increases in impervious area due to future development, and construction of related street improvements and drainage facilities will result in greater peak flow rates (approximately 30% larger) resulting in increased flood elevations ranging from 1' to 6' higher when compared to the FEMA elevations.

Flood modeling of the San Diego River (BSI July 1992) is shown on the City of Santee Drawing series # 92-165. See Map Pocket #4, Sheet 2 and 3 of the drawing series shows flood elevations for the "Santee Discharge Rates" shown along the project range from about 321.0 at the east end of the project to 310.2 at the west end of the project . This map shows the baseline flood elevations at each cross section being analyzed within this report. Any new construction should be elevated to a minimum of one-foot above the 100-year floodplain provided in this flood study. Residential Area North (PA-2), Residential Area West (PA-1), and Resort Area (PA-3) have been designed so the lowest finished floor elevation is a minimum of 1' above the base flood elevation and thus will meet this requirement in compliance with the City of Santee's ordinance.

Sycamore Creek: The upstream end of the golf course receives runoff from the San Diego River (east), Forester Creek (southeast) and Sycamore Creek (northeast). Peak flows are estimated based upon the confluence of hydrographs from all three sources. From the flow adjustments used in the record flood models, flow rates are primarily dependent upon the San Diego River. Runoff from Sycamore Creek enters the golf course site at the Carlton Oaks Bridge, between the proposed grading for PA-2 and PA-3. The drainage basin tributary to Sycamore Creek is estimated at 17 square miles, as documented in the Floodplain Analysis for Farina Lake, Rick Engineering Company, dated May 25, 2007. This report includes flood modeling for different scenarios, with a maximum peak flow of 13,407 CFS during a 100-year storm event determined by HEC-1 analysis (using the 2003 County of San Diego Hydrology Manual). The report includes water surface elevations calculated using the HEC-RAS computer program for a subcritical flow regime. The model begins downstream of Carlton Oaks Blvd at Cross section #100 with a starting water surface elevation equals to the 100-year FEMA

floodplain elevation (318.0), resulting in a water surface of 325.1 just upstream of the Carlton Oaks Drive, per Table 5 - 100-year scenario of the Rick Engineering Company report.

A separate flood model was prepared using Sycamore Creek peak flows to assess the flood elevations of Sycamore Creek through the proposed project area, situated upstream of the confluence with the San Diego River at Cross Section #290 (XS #290). This report presents modeling results for both existing and proposed conditions of the creek. For the Sycamore Creek reach, a tailwater condition was set equal to the 100-Year flood plain water surface elevation of the San Diego River (BSI flow rate) at the confluence cross section.

Specifically, the existing conditions model for Sycamore Creek used the downstream known water surface elevation (WSE) at XS #300, derived from the San Diego River's existing condition 100-Year flood plain model (BSI flows). This WSE served as the reach boundary condition for the Sycamore Creek existing condition model. Similarly, for the proposed conditions model of Sycamore Creek, the downstream known WSE at XS #290 was sourced from the San Diego River's proposed condition 100-Year flood plain model (BSI flows) and applied as the reach boundary condition for the Sycamore Creek proposed condition model.

The Sycamore Creek proposed condition model accounted for an increased flow from the project's proposed four-barrel reinforced concrete box (4x RCB) culvert. To assess this increase, the San Diego River tributary area at the confluence with Sycamore Creek was determined using the USGS StreamStats tool and compared with the drainage area to Sycamore Creek, resulting in an approximate area ratio of 100 to 5. According to Table 3-4 (Coincidental Frequency) from the San Diego County Hydraulic Design Manual (September 2014), when Sycamore Creek reaches its 100-year storm flow rate, the flow rate in the San Diego River at the 4x RCB culvert outfall will correspond to the 50-year peak. The BSI 50-year flow rate was estimated to be 31% higher than the FEMA Q50, based on the Q100 BSI and using a proportional scaling method in line with FEMA data patterns. This estimated flow was then applied in the San Diego River’s proposed condition model (profile PF6) to calculate the flow entering the 4x RCB culvert and subsequently added to the Sycamore Creek flow at Cross Section #100.

Exhibit G of this report presents the results of both existing and proposed condition modeling for Sycamore Creek The modeling aimed to ensure that the project would not negatively impact the hydraulic conveyance of the creek and would not cause increased flooding impacts on adjacent areas or upstream of Carton Oaks Bridge. Additionally, the modeling was conducted to confirm that the project would not be impacted by peak flows from the creek.

In the overall model revealed that the Sycamore Creek peak flows will pass by the time the peak flow event occurs within the San Diego River. However, to be more conservative, the known WSE at cross section 290 in Sycamore Creek model was obtained from San Diego River Flood Study-Proposed model (BSI 100-Year peak flow).

2.2 TOPOGRAPHIC INFORMATION

Topographic information for San Diego River is from 1-foot contour topography flown in June 12, 2014. The topographic data is on the National Geodetic Vertical Datum of 1929. This information was used for San Diego River Upper Reach, from 1400 feet west of hills BLVD upstream to 120 feet west of West Hills PKWY downstream. Areas outside of these limits were supplemented with topographic data available from SANDAG, SANGIS website (SANDAG Regional Data Warehouse).The topographic data from SANGIS is on the North American Vertical Datum of 1988 (NAVD88). 2.1' conversion factor was used to convert SANGIS topographic information from NAVD88 to NGVD 29.

The vegetated earth berm along the southern and eastern limits, which directs "low flows" from the San Diego River and Forester Creek along the southerly golf course limits, is relatively small (compared to the overall river width) and is comprised of loosely placed sandy materials. Therefore, HEC-RAS proposed and existing models assume no berm condition to be conservative. The berm ends near the western limits of the golf course, just upstream of West Hills Parkway Bridge.

Even though, the FIRM Panel was recently updated to reflect flood elevations based on NAVD88 datum, the topographic cross sections from FEMA effective model for San Diego River (Upper Reach) were digitized in 1982, based upon NGVD 29 datum. Therefore, no conversion was required.

For cross sections located out of the project area (XS# 330-355, and 242-220) in the proposed and existing models, cross sections from the corrected effective model were used to determine tie in locations.

Please note that a revised proposed model will be prepared based on NAVD88 prior to LOMR approval. Converting datum to NAVD88 will not change any of the current results or conclusions.

2.3 HYDROLOGIC INFORMATION

Current FEMA hydrologic information from the original flood modeling for San Diego River (Upper) 1982 was used for profile 1 (floodplain) and profile 2 (Floodway) of the hydraulic analysis . The peak flow from the Citywide Drainage Study for San Diego River (BSI 1992) was incorporated into the hydraulic analysis profile 3 (to determine project BFEs, which buildings shall be appropriately elevated above.)

Table 1 below summarizes the flow-rates as published by FEMA and the City of Santee/ BSI study:

Table 1 - Comparison of Peak Flow Rates (cfs)

San Diego River Location	10-Year FEMA	50-Year FEMA	100-Year FEMA	100-Year City / BSI	500-Year FEMA
W Hills Br (Mission Dam)	5,500	19,000	38,000	50,000	112,000

0.7 Mi Downstream of Sycamore Creek	5,000	17,000	37,000	49,000	112,000
Forester Creek Confluence	4,500	16,000	36,000	48,000	112,000

Floodplain Analysis for Fanita Lake, prepared by Rick Engineering Company, and dated May 25, 2007 included the Sycamore Creek Drainage Basin. The report used the 2003 San Diego County Hydrology Manual to calculate a peak 100-year flowrate of 13,407 cfs for the approximately 17 square mile of the drainage basin tributary to Sycamore Creek. This peak flow was used in Sycamore Creek hydraulic analysis for the existing and proposed conditions.

2.4 HYDRAULIC ANALYSIS

Hydraulics analysis performed for San Diego River (Upper) to compare existing and post project (proposed) conditions, and effective (corrected effective) and proposed conditions.

FEMA effective model was used for tie in locations and FEMA Effective floodplain/floodway limits. The **tie in locations** were selected at the cross sections where the changes to WSEL are within 0.5 feet and meets FEMA requirements. Effective known water surface elevation at section 220 was used for downstream **boundary conditions** for corrected effective model, existing conditions model, and proposed conditions models.
A floodway analysis run was included in the hydraulic analysis using Method 1. The proposed floodway will convey the base flood flow rate (no split flow) without an increase in water surface elevation compared to the existing condition and with no more than one foot of surcharge.

The original flood modeling for San Diego River (Upper) was prepared in 1982 using the HEC-2 computer program (1976 version) and was used to prepare the initial FIRM Panel. HEC-2 software (4.6.2 from 1991) was used to prepare the duplicate effective model. HEC-2 model was converted to HEC-RAS version 5.07 program and considered as a Corrected Effective model. HEC-RAS version 5.0.7 still used the same methodology for One Dimensional models used by HEC-2 program, but HEC-RAS is based on more current hydraulic modeling algorithm, which provides equivalent but not identical results. In addition, HEC-2 bridge methodology has been refined in HEC-RAS software from the older HEC-2 versions but requires modification. The current methodology for bridge modeling at West Hills Parkway Bridge (Normal bridge routine) was reflected in the Corrected Effective model. The descriptions in Chapter 3-Hydraulic Model go into further detail regarding the hydraulic models analysis.

A separate hydraulic analysis was prepared for Sycamore Creek with known water surface elevation for downstream boundary condition. The known WSE was obtained from San Diego River model (BSI flow) at the confluence location with San Diego River.

3.0 HYDRAULIC MODELS

The project must comply with local and federal regulatory standards in order to ensure that any structures which are permitted in the floodway or floodplain will be designed in manner that will avoid onsite hazards, minimize risk levels, and protect public safety.

This project is subject to three separate sets of regulatory standards, FEMA, Local (City of Santee), and Local (City of San Diego for the southwest corner of the Resort Area PA-3, and the golf course). The different standards require multiple flow models of the river to be constructed and analyzed to ensure that two primary objectives are met: 1) that all proposed structures are appropriately elevated above the 100-year flood water surface elevation and; 2) that the project does not create an increase in the upstream and downstream water surface elevations. The federal and local sets of standards are similar; however, the City of Santee requires a more conservative approach than FEMA and City of San Diego by increasing the amount of flow in the San Diego River for the 100-year flood models. This increase in flow results in an approximate 2-foot increase in the water surface elevation, as compared to the FEMA models. The City of San Diego defers to the FEMA modeling protocols, with elevating the lowest floor of the proposed structure, including basement, to be 2 feet above FEMA base flood elevation. Even though there are no structures within the portion of the Resort Area (PA-3) located within the City of San Diego, the entire PA-3 pad will still be elevated 2 feet above the base flood elevation.

The flood models for each agency [same models were used with two different flow rates: FEMA rates (profile1 and 2), and BSI flow rate (profile 3)] utilize the Army Corps of Engineers HEC-RAS software to simulate the flow of the river at various storm events.The software includes variables such as the capacity of the river, flow restrictions such as bridges, and friction within the river such as trees and other obstructions. There is an existing berm along the south edge of the golf course generally located outside the project boundary which was installed by others to deter flooding. The project does not require or propose any modifications to the existing berm. The drainage flow from the project will not impact the berm. For more information regarding drainage analysis, please refer to the Drainage Report for Carlton Oaks Country Club and Resort, prepared by Hunsaker and Associates and dated May 2025. The berm is not considered to be an engineered levy and was placed with loose material. The 100-year flood models have assumed no berm conditions, as the berm is relatively small (compared to the overall river width), comprised of loosely placed sandy materials, and water surface elevation is higher than the berm in most sections.

The Manning's Roughness Coefficients (Manning’s "n") were incorporated in line with the Corrected Effective Model. For the newly added cross section (XS# 315), Manning’s n values from the adjacent downstream and upstream sections were utilized. In the proposed condition model, Manning values for the channel bottom and slopes within the regraded golf course area vary between 0.035 (upstream of cross section #300, consistent with the effective model) and 0.06. This range accounts for differences in channel roughness and vegetation. For overland flow areas, including Residential West (PA-1), Residential North (PA-2), and the Resort Area (PA-3), Manning’s "n" values were averaged at 0.15. This reflects the mixed presence of multi-family residential

properties and a resort area, characterized by typical landscaping, parking, fencing, and hardscape features. Each cross section includes a description detailing where Manning values differ from those in the effective model.

3.1 EFFECTIVE MODEL

The record flood modeling for the San Diego River was requested from FEMA (May 8, 2017) and made available by FTP download on May 31, 2017. The original flood modeling for the San Diego River (Upper) was prepared in 1982 using the HEC-2 computer program (1976 version) and was used to prepare the initial FIRM Panel. The cross sections were digitized in 1982, which would be based upon the 1929 datum. The limits of the original study model are from the Mission Trails Dam to just below the Riverford Road Bridge.

The provided FEMA HEC-2 (dated 20-OCT-1982) results (after applying the NGVD29 to NAVD88 conversion of 2.1 feet per FIS Table 12) match the Floodway Data Table in the FIS, and thus this model appears to be the appropriate model to be considered the **Effective Model** for preparing the CLOMR. A copy of the HEC-2 model provided by FEMA are provided in Exhibit "B".

3.2 DUPLICATE EFFECTIVE MODEL

Producing the duplicate effective model is required to ensure the effective model's input data have been transferred correctly to the equipment, and to ensure the revised data will be integrated into the effective data to provide a continuous FIS model, upstream and downstream of the revised reach. However, the HEC-2 program is not supported by the current Windows environment, and the program is no longer available from the US Army Corps of Engineers. A newer legacy version of the HEC-2 software (4.6.2 from 1991) was located and installed on a computer capable of emulating a DOS environment. The effective model provided from FEMA was reproduced using HEC-2 software 4.6.2 from 1991 version to produce the **duplicate effective model**. The official copy available from DHS-FEMA was a poor quality, semi-complete, scanned copy in pdf format. Missing or illegible ground data points were supplemented using a more current version of the file provided by the City of Santee (San Diego River-City of Santee model, 06-24-1992), which is provided in Exhibit "I".
The Duplicate Effective Model is included in Exhibit "C".

3.3 CORRECTED EFFECTIVE MODEL

To create the corrected effective model, HEC-2 duplicate effective file (USDRFWY.DAT) was imported into HEC-RAS program. HEC-RAS uses the same methodology for One Dimensional models used by HEC-2 program, but HEC-RAS is based on more current hydraulic modeling algorithm, which improve the hydraulic computations. Therefore, when importing a HEC-2 file into the HEC-RAS program, it is important to ensure that any errors are identified and corrected. In this case, an error was detected and a corrective action was taken to adjust the effective model

accordingly. Specifically, at West Hills Parkway Bridge river station number 243, the corrected effective model was modified to include a positive distance between the upstream cross section (#244) and the face of the bridge/culvert, as well as to accurately reflect the actual width of the bridge.

Furthermore, during the evaluation of the West Hills Parkway Bridge at river station number 243 in the duplicate effective model (HEC-2), it was discovered that the piers information for the bridge had been included as part of the bridge deck. To rectify this, the corrected effective model (HEC-RAS) was adjusted to reflect the current methodology for bridge modeling (normal bridge software routine X2, BT). This adjustment required removing the piers information from the bridge deck and subsequently adding it back in using the Pier editor.

To ensure precise prediction of energy losses in the contraction reach upstream of the West Hills Parkway Bridge and the expansion reach downstream of the bridge, ineffective flow areas were added in the corrected effective model. These ineffective flow areas were added downstream of the bridge, in cross sections number 242, 239, 230, and 220 utilizing a 2:1 expansion ratio; and upstream of the bridge in cross section 244, and 245 with a 1:1 contraction ratio. The contraction and expansion ratios for the ineffective flow areas were determined in accordance with guidance found in the HEC-RAS Hydraulic Reference Manual, dated February 2016, published by USACOE (Tables B-3 and B-1, respectively). By incorporating these additional flow areas into the model, a more accurate estimation of energy losses can be obtained, which is crucial for achieving reliable results in hydraulic modeling.

In Addition, the cross sections in the HEC-2 duplicate effective model were arranged to read from right to left looking downstream. To correct this, the cross sections were reversed in the corrected effective model, so that they now read from left to right looking downstream. This includes reverse encroachments and infective area stations. The corrected effective model was truncated at section 220 downstream, and water surface elevation from the effective model was used as known water surface elevation in the downstream boundary conditions. The water surface elevations from the corrected effective model are consistent with the results from the effective model (typically< 0.2’, except for the cross section upstream of the bridge, where ineffective areas were incorporated).
The Corrected Effective Model is included in Exhibit "D".

3.4 EXISTING CONDITIONS MODEL

The project topographic mapping shows that the ground surface used in the original modeling has changed since 1982. Notable modifications include fill placement for SR-52 freeway, related Mission Gorge Road improvements, and ongoing modification of the golf course and water features. An Existing Conditions HEC-RAS model was prepared using the updated project topographic mapping for the cross sections within the project area (from cross section 350 upstream to 244 downstream). Cross sections outside the project area were obtained from the corrected effective model. The Existing Condition Models utilized three profiles, 100-year peak flow rates from FEMA was used for Profile

1(FEMA Floodplain), and Profile 2 (FEMA floodway), while BSI/City of Santee peak flow was used for Profile 3. Floodway encroachment for profile 2 were obtained from FEMA effective model floodway limits. Cross section 220 water surface elevation from the effective model was used as known water surface elevation in the downstream boundary conditions. A review of the results indicates that the Existing Conditions water surface elevations are higher than the Corrected Effective model output (less than 0.5' for most of cross sections and up to 0.9' for cross section 330).
The Existing Model is included in Exhibit "E".

3.5 POST PROJECT (PROPOSED) CONDITIONS MODEL

A post project model was prepared to modify the baseline flood modeling to show the proposed grading of the Resort and Residential Areas, golf course modifications, and the addition of a four barrels RCP box culvert crossing under the Resort Area (PA-3) entry road. Due to the location, orientation, flow line elevation, and capacity at the outlet, the proposed box culvert (four 12' wide x 8' high) was modeled as a "Lateral Structure" instead of an Inline Structure, Bridge or Split Flow option, Flows through the box culvert are removed just upstream of cross-sections XSEC 320 and returned between cross-sections XSEC 300 and 290, just downstream of the proposed bridge crossing from PA-2 to the Resort. To accommodate potential debris accumulations, a reduction in the culvert's hydraulic capacity was considered. This was achieved by reducing the culvert's width by 2 feet on each side of the vertical piers. With the culvert hydraulics modeled as inlet control, the calculated split flow ranges from 1,640.76 cubic feet per second (CFS) for the FEMA 100-year event (Profile 1) to 2,147.86 CFS for the BSI/Santee 100-year event (Profile 3).

The grading of the Resort Area (PA-3) is within the existing floodway north of the project. As such, the area north of the project for Cross Sections 320 and 310 were considered as ineffective flow areas (contraction ratios 1:1). Additionally, the downstream ineffective flow areas resulting from the Resort Area (PA-3) grading were extended through Cross Sections 300 and 290 (contraction ratios 2:1). Contraction ratios and expansion ratios for the ineffective flow areas were determined in accordance with guidance found in the HEC-RAS Hydraulic Reference Manual, dated February 2016, published by USACOE (Tables B-3 and B-1, respectively). The workmap clearly shows the ineffective flow areas. Floodway encroachments have been revised so that the proposed floodway limits are at, or inside (i.e., towards the channel centerline), the ineffective flow areas. These revised limits represent the boundaries of the river that will convey the base flood flow rate (without split flows) while ensuring no more than one foot of surcharge, and no increase in water surface elevation compared to existing conditions.

The flow profiles encompass the 100-year peak flow rates as defined by FEMA for delineating the 100-year FEMA Floodplain (Profile 1), the FEMA Floodway including the proposed encroachment (Profile 2), and the BSI/City of Santee flow data (Profile 3). Additionally, the BSI 50-year flow rate, estimated via a proportional scaling method based on Q100 BSI and FEMA data patterns, is incorporated as Profile 06 (PF06). This profile

(PF06) is utilized to calculate the split BSI 50-year peak flow from the project's proposed four-barrel reinforced concrete box (4x RCB) culvert, and to integrate it into the Sycamore Creek 100-year peak flow at Cross Section #100 in the proposed Sycamore Creek model.

The analysis of the San Diego River proposed model is organized into two distinct plans: Plan P01 addresses the 100-Year flood plain, incorporating both FEMA and BSI flow rates. Plan P04 is specifically for floodway analysis, designed without split flows.

The Post-Project Model is included in Exhibit "F".

3.6 SYCAMORE CREEK MODEL

The intent of Sycamore Creek modeling is to demonstrate that the project will not adversely impact the hydraulic conveyance of Sycamore Creek. As such, existing and proposed condition modeling was performed for the creek and presented in the report.

The existing condition model for Sycamore Creek uses a peak flow of 13,407 CFS, entering at the Carlton Oaks Bridge and terminating at Cross Section 300, where it merges with the San Diego River. In contrast, the proposed condition model accounts for increased flow resulting from the project's proposed four-barrel reinforced concrete box (4x RCB) culvert, introduced at Cross Section #100 and ending at Cross Section 290, also merging with the San Diego River. Additionally, the proposed model includes the one-span, skew bridge connecting PA-2 and PA-3, located between Cross Sections 64 and 69. The proposed three-barrel pipe culvert is modeled as a lateral structure, considering its location, orientation, flow line elevation, and outlet capacity. Both the existing and proposed models extend upstream of the Carlton Oaks Bridge, demonstrating that the project will not elevate water surface levels or increase flooding risks to upstream properties or infrastructure.

To maintain proper downstream control, water surface elevation data was obtained from both San Diego River post-project and existing models, specifically the BSI 100-year peak flow. This data was then implemented as a known water surface elevation for the reach downstream boundary conditions at cross section number 290 for the proposed model and number 300 for the existing model.

he Sycamore Creek model analysis is structured into three specific plans:

P08 - Existing Condition Model with Carlton Oaks Bridge: In this plan, of the total 13,407 cfs flow, 616.74 cfs enters through the upstream bridge opening, while the rest flows over the bridge. This model reveals significant flow overtopping the bridge. For the purpose of our project analysis, the flow rate estimated by this existing condition bridge model (Plan 08) is utilized for both the existing and proposed modeling scenarios (Plans 05 and 07).

P05 - Existing Condition Model with Carlton Oaks Bridge Modeled as a Weir: This model treats the bridge overtopping as a weir, accounting for the overtopping flow

(12,790.26 cfs) at both the upstream and downstream faces of the bridge. The total flow of 13,407 cfs is then continued past the bridge at Cross Section #100.

P07 - Proposed Condition Model with Carlton Oaks Bridge Modeled as a Weir: This model treats the bridge overtopping as a weir, accounting for the overtopping flow (12,790.26 cfs) at both the upstream and downstream faces of the bridge. The total flow of 13,407 cfs, along with an additional 966 cfs from the 4x RCP box culverts, is resumed at Cross Section #100.

The results indicate that in the proposed conditions for Sycamore Creek, water surface elevations will be reduced by 1.96 feet compared to the existing condition model at the downstream face of the Carlton Oaks Bridge. Importantly, there will be no increase in flood elevation upstream of this bridge. Furthermore, in the proposed conditions model for Sycamore Creek, water surface elevations remain below the proposed pad elevations. Therefore, the buildings in PA-2 and the Resort project will not be impacted.

The table below demonstrates that in the proposed conditions, the elevations upstream and at the downstream face of Carlton Oaks Bridge are either consistent with or lower than those in the existing condition model. This comparison is also valid when related to the elevations calculated in the Sycamore/Fanita Lake modeling prepared by Rick Engineering. The only exception is a minor increase (0.07 and 0.1 ft) at cross sections 450 and 500, attributable to the use of lower Manning values at these cross sections in the Sycamore Creek model prepared by Rick Engineering.

Table 2 – Sycamore Creek Flows; Comparison of Flood Elevations

Cross Section	Location	WSEL (Sycamore) Existing Conditions (HA Study) *	WSEL (Sycamore) Proposed Conditions (HA Study) *	Difference (Post Project -Existing) WSEL (ft)	WSEL (REC) ***	Comment
50 (290 San Diego River)	PA-2 North-Merging with San Diego River in Proposed condition	318.12**	317.23**	-0.89		
64	Proposed bridge	NA	316.58	NA		Downstream Face
69	Proposed bridge	NA	319.16	NA		Upstream Face
80	Sycamore Section	NA	320.84	NA		
70 (300 San Diego River)	Merging with San Diego River in Existing condition	319.30**	NA	NA		
90	Sycamore Section	NA	321.20	NA		
100	Sycamore Section (Merging with flows from	319.44	321.37	1.93	318.00	REC XSEC 100 (Please note that REC model was terminated

	4XRCP culvert in proposed Conditions)					at this cross section and REC used 318 as a known WSE obtained from San Diego River FEMA Flood plain effective model-cross section 310)
200	downstream of Carlton Oaks Bridge	322.49	320.53	-1.96	322.30	Carlton Oaks Bridge-downstream Face.
300	upstream of Carlton Oaks Bridge	324.62	324.62	0	325.06	Carlton Oaks Bridge-upstream Face.
400	Sycamore Section upstream of Carlton Oaks Bridge	325.28	325.28	0	325.32	REC XSEC 400
450	Sycamore Section upstream of Carlton Oaks Bridge	325.86	325.86	0	325.79	REC XSEC 450
500	Existing offsite upstream of Carlton Oaks Bridge	326.24	326.24	0	326.14	REC XSEC 500

* HA Study: Flood Study (CLOMR) for Carlton Oaks, Country Club and Resort prepared by Hunsaker and Associates; San Diego, Inc. and dated May 2025.
** Known water surface elevation obtained from Profile 3 (City of Santee BSI 100-year peak flow) in existing condition and proposed conditions. Please refer to table 5 of this report.
*** Floodplain Analysis for Fanita Lake Prepared by Rick Engineering and dated May 11, 2007.

Based upon the above comparison, the proposed project grading will not impact the Sycamore Creek flood levels upstream of the Carlton Oaks Bridge or adversely impact the hydraulic conveyance of Sycamore Creek.

The Sycamore Creek Models is included in Exhibit "G".

4.0 HYDRAULIC RESULTS

In order to fairly assess potential impacts, the Post-Project Model was compared to the Existing Conditions Model results. A comparison of the project models indicates that the proposed project grading will result in a decrease, no increase or a small increase of less than 0.5’ for all cross sections, except for XSEC#260 in which an increase of 0.61 ft was recorded. However, this increase has no negative impact on the proposed project or adjacent areas.

Please see Table 3 comparing Existing and Post Project water surface elevations (WSEL) for profile 1-FEMA floodplain.

Table 3: 100YR Storm Existing and Proposed WSEL Comparison (profile 1- FEMA Floodplain)

River	Reach	River Station	Existing Condition WSEL (ft)	Post Project Condition WSEL (ft)	Difference (Post Project - Existing) WSEL (ft)
San Diego River Upper	Main	220	300.76	300.76	0
		230	301.76	301.76	0
		239	303.29	303.29	0
		242	304.29	304.29	0
		243	Bridge		
		244	305.49	305.38	-0.11
		245	306.48	306.4	-0.08
		250	308.16	308.29	0.13
		260	309.84	310.45	0.61
		270	313.64	313.11	-0.53
		280	315.16	314.64	-0.52
		285	315.69	315.08	-0.61
		290	316.54	315.55	-0.99
		300	317.90	316.14	-1.76
		310	318.67	316.90	-1.77
		315	318.85	317.57	-1.28
		320	319.40	318.89	-0.51
		330	320.10	319.72	-0.38
		340	320.93	320.68	-0.25
		345	321.48	321.29	-0.19
		355	321.98	321.84	-0.14

To ensure compliance with FEMA regulations and ordinance, and to select the tie in locations, the results from Post Project Model were compared to the results from the Corrected Effective Model. The comparison indicates that the proposed project grading will result in less than 1' increase in the water surface elevations for all cross sections, and 0.17' at the tie in location upstream. Table 4 show the results of comparing Corrected Effective Model with Post Project Model. The tie-in location downstream was selected at XSEC# 230 using the effective WSE from the FSI Study as a base for comparison instead of the Corrected Effective model.

Table 4: 100YR Storm Corrected Effective Model and Proposed WSEL Comparison (profile 1-FEMA Floodplain)

River	Reach	River Station	Corrected Effective WSEL (ft)	Post Project Condition WSEL (ft)	Difference (Post Project - Existing) WSEL (ft)
San Diego River Upper	Main	220	300.76	300.76	0
		230	301.76	301.76	0
		239	303.29	303.29	0
		242	304.29	304.29	0
		243	Bridge		
		244	305.49	305.38	-0.11
		245	306.46	306.4	-0.06
		250	307.89	308.29	0.4
		260	309.82	310.45	0.63
		270	313.28	313.11	-0.17
		280	314.77	314.64	-0.13
		285	315.22	315.08	-0.14
		290	316.07	315.55	-0.52
		300	317.38	316.14	-1.24
		310	318.07	316.90	-1.17
		315	NA	317.57	-
		320	318.61	318.89	0.28
		330	319.20	319.72	0.52

		340	320.39	320.68	0.29
		345	321.07	321.29	0.22
		355	321.67	321.84	0.17

The City Flood Damage Prevention Ordinance (Santee Municipal Code l5.52) requires that for new construction, the lowest finished floor is elevated one foot above the base flood elevation provided in the San Diego River Flood Study. The proposed project has been designed so the lowest finished floor elevation is a minimum of 1' above the highest result between the City BSI Model, and Post Project with BSI/City of Santee flow (profile 3), and thus will meet this requirement in compliance with the City of Santee's ordinance. An expanded discussion of the City of Santee's Flood Damage Prevention Ordinance is provided in Section 5.2 below.

Table 5 show the results of comparing Post-Project Model with City of Santee BSI Study.

Table 5: 100YR Storm BSI Model and Proposed WSEL Comparison (profile 3- Floodplain with City of Santee BSI Flow Rates)

River	Reach	River Station	BSI WSEL (ft)	Post Project Condition WSEL (ft)	Difference (Post Project - BSI Study) WSEL (ft)
San Diego River Upper	Main	220	307.13	307.13	0
		230	307.25	307.28	0.03
		239	307.1	307.63	0.53
		242	309.14	308.02	-1.12
		243	Bridge		
		244	309.91	308.81	-1.1
		245	309.96	309.63	-0.33
		250	310.93	311.00	0.07
		260	312.56	312.61	0.05
		270	314.82	314.99	0.17
		280	316.53	316.44	-0.09
		285	317.04	316.83	-0.21

		290	317.51	317.23	-0.28
		300	318.24	317.73	-0.51
		310	319.19	318.37	-0.82
		315	NA	318.96	-
		320	320.71	320.12	-0.59
		330	323.86	320.99	-2.86
		340	325.21	322.04	-3.17
		345	325.96	322.68	-3.28
		355	327.04	323.21	-3.83

100-YEAR FLOODWAY ANALYSIS

The floodway was delineated in accordance with the National Flood Insurance Program (NFIP) Regulation 44 Code of Federal Regulations Ch.1, Section 65.7 (b). The floodway was analyzed using the full base flood flow rate, with no spill flows as outlined in Plan P04- profile PF2. Encroachments were adjusted to reflect the proposed conditions, ensuring that there is no increase in the proposed floodway water surface elevation compared to that of the existing condition, while also maintaining the surcharge below one foot.

All surcharges in water surface elevation are contained within the channel and remain below one foot. This ensures that there will be no potential negative impacts on adjacent structures within the project reach or those immediately upstream and downstream of the project.

The upstream and downstream limits for the study were selected based on the upstream and downstream extents of the project and the sections where there are minimal changes to the post project water surface elevations to allow tie-in with FEMA effective floodplain and floodway lines.

A summary of the post project floodway analysis and comparison to the FEMA flood plain Post Project model is located in Table 6.

Table 6: 100-Year Post Project Floodway WSEL and FEMA Floodplain Comparison

River	Reach	River Station	Post Project Condition FWY WSEL (ft)	Post Project Floodplain WSEL (ft)	Surcharge (Floodway - Floodplain) WSEL (ft)
San Diego	Main	220	301.66	300.76	0.9

		230	302.44	301.76	0.68
		239	303.79	303.29	0.5
		242	304.62	304.29	0.33
		243	Bridge		
		244	305.63	305.38	0.25
		245	306.51	306.4	0.11
		250	308.57	308.29	0.28
		260	310.61	310.45	0.16
		270	313.2	313.11	0.09
		280	314.85	314.64	0.21
		285	315.32	315.08	0.24
		290	315.76	315.55	0.21
		300	316.32	316.14	0.18
		310	317.05	316.90	0.15
		315	317.83	317.57	0.26
		320	319.36	318.89	0.47
		330	320.09	319.72	0.37
		340	321.01	320.68	0.33
		345	321.51	321.29	0.22
		355	321.98	321.84	0.14

Table 7 provides a summary of the post-project floodway water surface elevation, as well as a comparison to the existing condition floodway water surface elevation, in order to confirm that the no-rise condition for the floodway has been met.

Table 7: 100YR Floodway Existing and Floodway Proposed WSEL Comparison (profile 2- FEMA Floodway)

River	Reach	River Station	Existing Condition FWY WSEL (ft)	Post Project Condition FWY WSEL (ft)	FWY Increase (Post Project -Existing) FWY WSEL (ft)

San Diego River Upper	Main	220	301.66	301.66	0
		230	302.44	302.44	0
		239	303.79	303.79	0
		242	304.62	304.62	0
		243	Bridge		
		244	305.72	305.63	-0.09
		245	306.58	306.51	-0.07
		250	308.99	308.57	-0.42
		260	311.35	310.61	-0.74
		270	314.09	313.2	-0.89
		280	315.60	314.85	-0.75
		285	316.11	315.32	-0.79
		290	316.86	315.76	-1.10
		300	318.09	316.32	-1.77
		310	318.86	317.05	-1.81
		315	319.03	317.83	-1.20
		320	319.63	319.36	-0.27
		330	320.30	320.09	-0.21
		340	321.15	321.01	-0.14
		345	321.63	321.51	-0.12
		355	322.08	321.98	-0.10

Summary of Overall Results

The results of both the FEMA and the City of Santee analyses conclude that the project will have no significant or negative impacts on the upstream and downstream water surface elevations, as compared to the existing condition model. The results align with the requirements of both the City and FEMA, ensuring the avoidance of onsite hazards, minimization of risk levels, protection of public safety, and the prevention of negative flooding impacts on adjacent, upstream, and downstream properties and infrastructures. City of Santee's stricter requirements will assure the protection of public safety by requiring a higher building pad than FEMA. City of San Diego defers to the FEMA modeling protocols, and requires elevating the lowest floor elevation for all the proposed

structures within the City of San Diego 2 feet above FEMA base flood elevations. Even though no structures are proposed within the City of San Diego, all the proposed structures are actually designed to be elevated 2 feet above FEMA base flood elevation in order to meet City of Santee requirements.

5.0 Compliance Measures

5.1 FEMA

FEMA will require a CLOMR to be submitted with relevant mapping, calculations, forms and models. To ensure that the proposed project meets all of the design criteria for FEMA and City, the applicant must submit all reports and plans to all agencies for review. The City reviews all of the reports in-house and through independent consultants, and sign the MT-2 forms. Upon approval by all agencies, FEMA will issue a CLOMR, which allows the City to issue the grading permit so the project can proceed as shown on the preliminary drawings and models.

Upon completion of the project grading, FEMA requires that a certified survey be performed to verify that the limits and elevation of the grading are in conformance with the approved CLOMR. Upon certification of the grading, the last step is to submit a LOMR (Letter of Map Revision) to FEMA. The LOMR will officially revise the current NFIP map to show changes to the floodplain, floodway, and flood elevations. The revised maps and river modeling will be held at FEMA and at the City as an official record

5.2 CITY OF SANTEE FLOOD DAMAGE PROTECTION ORDINANCE

The following sections below reflect the applicable regulations within the City of Santee. A discussion of how the project complies with each section is provided after each applicable regulation.

All development will be consistent with the City's Flood Damage Prevention Ordinance. Municipal Code 11.36.200A, prohibits encroachment, fill, construction, etc. unless a registered professional engineer demonstrates that these improvements do not increase the flood elevation.

This report proposes revisions to FEMA floodplain, a portion of the floodway delineation, and base flood elevations. Changes and revisions comply with FEMA regulations and ordinances. The CLOMR must be approved by FEMA, City of Santee and City of San Diego (ie. Prepared, Reviewed and approved by registered Civil Engineers) prior to the issuance of a grading permit for the project. The flood map revision removes the proposed structures from the flood plain and flood way. However, the project proposes slopes adjacent to the revised floodway and flood plain. In compliance with the City's Flood Damage Protection Ordinance, the project will implement measures to eliminate potential scour and erosion to the proposed slopes adjacent to the floodway and the

floodplain by utilizing the latest proprietary technology in slope surface stabilization and slope reinforcement (such as a geotextile turf reinforcement mat that binds to the soil). Additionally, the project evaluates velocities of run-off from both proposed and extensions of existing outfalls and will eliminate the potential for scour and erosion by placing riprap at all storm drain outfalls. All ripraps have been sized and shown and on the Tentative Map and while most locations do not have an impact on environmental areas, any impacts to vegetation have been included within the environmental reports. These slope and erosion protection measures will not have any effect on the flood models or water surface elevations.

Section 11.36.150 of the City's Flood Damage Prevention Ordinance sets standards for construction within the floodplain and floodways.

This section of the code dictates that new construction shall be elevated out of the base flood elevations, which this project complies with by removing the Resort Area out of the floodway and the Residential Areas out of the floodplain. This has been achieved by creating a design that allows the river to naturally flow around them. Furthermore, this section requires flood proofing for all improvements within the floodplain and floodway. The proposed improvements include slopes adjacent to the floodway, utilities and a portion of the access road within the floodplain.). The project will implement measures to eliminate scour and erosion to the slopes adjacent to the floodways by placing riprap and utilizing the latest proprietary technology in slope surface stabilization and slope reinforcement. All service facilities (e.g. electrical, heating, ventilation, plumbing and air conditioning equipment .etc.) are designed and located to prevent water from entering or accumulating within the components during conditions of flooding. All elements that function as a part of the structures, such as furnace, hot water heater, air conditioner, etc., are elevated to or above the base flood elevation.

Table 11.36.070 of the Santee's Flood Damage Prevention Ordinance provides the required flow rates for the river that must be used in any flood analysis within the City of Santee.

City of Santee flow rates were combined with the proposed conditions model in this report to determine the project base flood elevations, which the proposed buildings are elevated 1 foot minimum above it. These flow rates are much higher than the required FEMA rates (by a factor of 30 percent), therefore adding additional safety protections for development within the City of Santee.

Section 11.36.200 outlines development standards within the Floodway. As stated in Section 11.36.200, all development within the floodway must be reviewed and certified by a registered civil engineer.

The project will be certified by a licensed and experienced professional engineer. Furthermore, several other registered civil engineers will be required to review the project specifically in regard to the flood calculations.

During the project reviewing process by City of Santee and City of San Diego, and before

signing the MT-2 form; a registered civil engineer will review and approve the project. FEMA's registered civil engineer will review and approve the CLOMR (including the proposed grading and improvement plans),prior CLOMR Letter issuance.

Section 11.36.170 requires that all utilities be designed to prohibit infiltration into or from potential flood waters.

In compliance with this section of the code, the project will be required to utilize water-tight pressure rated sewer pipe to avoid all infiltration associated with floods or groundwater.

Sections 11.38.180 outlines standards for subdivisions as it relates to flood hazards. The project reports and Tentative Map have demonstrated compliance with this section of the ordinance.

Per requirement, the flood hazard areas and elevations of the base flood models have been identified. The elevations of all proposed pads/structures have been provided and will be certified by a registered civil engineer during final engineering. As described above, the project will implement measures to minimize flood damage, will design utilities to minimize any potential impacts from flood damage, and will provide a certification of compliance illustrating how the designed drainage reduces exposure to flood damage.

5.3 CITY OF SAN DIEGO SUPPLEMENTAL REGULATIONS FOR SPECIAL FLOOD HAZARD AREAS

The following sections below reflect the applicable regulations for special flood hazard areas in the City of San Diego. A discussion of how the project complies with each section is provided after each applicable regulation.

All proposed development in a Special Flood Hazard Area, including substantial improvements, is subject to the following requirements and all other applicable requirements and regulations of FEMA. The applicant for each development project, including applicants for substantial improvement projects, shall obtain the federal and state permits required by 44 C. F. R. § 60.3(a)(l), as may be amended.

(a) Development and Permit Review

(3) In all cases where a watercourse is to be altered the City Engineer shall do the following:

(A) **Notify affected, adjacent communities and the California Department of Water Resources of any proposed alteration or relocation of a watercourse and submit evidence of the notice to the Federal Insurance Administration**. During CLOMR process, a public notice with a list of the impacted adjacent properties will be prepared and sent to the City to review and mail it to the property owners impacted by increased flood hazards (SFHA, BFE, and floodway). The City

will send the public notice prior to LOMR Approval.

(B) **Require that the flood carrying capacity of the altered or relocated portion of the watercourse is maintained**. This study provides all required calculations to confirm that the flood carrying of San Diego River will not be impacted by the project (ie. Carry the water of the base flood without increasing the water surface elevation of that flood more than one foot at any point)

(C) **Secure and maintain for public inspection and availability the certifications, appeals, and variances required by these regulations.**
This is not applicable as no structures are proposed within the City of San Diego boundary. Therefore, no low floor certification is required to be maintained for public inspection.

(4) The applicant shall grant a flowage easement to the City for that portion of the property within a floodway. The majority of the golf course is within the City of San Diego boundary. The applicant will grant a flowage easement to the City for that portion of the property (i.e. golf course) within the floodway.

(5) Appropriate agreements shall be secured between the applicant and the City to assure participation by the applicant or any successor in interest in financing of future flood control works.
This section of the Ordinance is not applicable because no future flood control works are required

(6) Development in a Special Flood Hazard Area shall not increase or expand a FIRM Zone A.
Not applicable, as the project is in AE zone.

(7) In all floodways, any encroachment, including fill, new construction, significant modifications, and other development is prohibited unless certification by a registered professional engineer is provided demonstrating that encroachments will not result in any increase in flood levels during the occurrence of the base flood discharge except as allowed under Code of Federal Regulations Title 44, Chapter 1, Part 60.3(c)(13).
This report proposes revisions to FEMA floodplain, a portion of the floodway delineation, and base flood elevations. Changes and revisions comply with FEMA regulations and ordinances. The CLOMR will be approved by FEMA, City of Santee and City of San Diego (ie. Prepared, Reviewed and approved by registered Civil Engineers) prior to the grading permit being issued for the project. No structures are proposed within the City of San Diego boundary. However, the project proposes slopes adjacent to the revised floodway and flood plain. In compliance with the City's Flood Damage Protection Ordinance, the project will implement measures to eliminate potential scour and erosion to the proposed

slopes adjacent to the floodway and the floodplain by utilizing the latest proprietary technology in slope surface stabilization and slope reinforcement (such as a geotextile turf reinforcement mat that binds to the soil). Additionally, the project evaluates velocities of run-off from both proposed and extensions of existing outfalls and eliminates the potential for scour and erosion by placing riprap at all storm drain outfalls. All ripraps have been sized and shown on the Tentative Map and while most locations do not have an impact on environmental areas, any impacts to vegetation have been included within the environmental reports. These slope and erosion protection measures will not have any effect on the flood models or water surface elevations.

(8) The applicant shall obtain, keep, and make available for inspection by the City Engineer the following certifications:

(A) certification required for lowest floor elevations; and

(B) certification required for elevation or flood proofing of nonresidential structures.

No structures are proposed within the City of San Diego Boundary.

(b) Standards for Subdivisions

(1) All preliminary subdivision proposals shall identify the Special Flood Hazard Area and the elevation of the base flood. All SPFHA and BFE were identified for this project

(2) All final subdivision maps shall provide the elevation of proposed structures and pads. If the site is filled above the base flood elevation, the lowest floor, including basement shall be certified to be 2 feet above the base flood elevation by a registered professional engineer or surveyor, and the certification shall be provided to the City Engineer. No structures are proposed in City of San Diego. However, all pad elevations were provided on the TM plans and they were elevated 2-ft above FEMA BFE.

(3) All subdivisions shall be designed to minimize flood damage.
The proposed project is designed in a manner to be consistent with City of Santee, City of San Diego, and FEMA requirements which will avoid onsite hazards, minimize risk levels, protect public safety, and have no negative flooding impacts on adjacent properties.

(4) All subdivisions shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
No public utilities or facilities are proposed in the floodway or flood plain within the City of San Diego boundary

(5) All subdivisions shall provide adequate drainage to reduce exposure to flood hazards.
The project provide adequate drainage to reduce exposure to flood hazards, by

following the City of Santee, City of San Diego, and The California Environmental Quality Act requirements for storm drain system design. Additionally, the Resort Area has been raised out of the floodway and the Residential Areas out of the floodplain by creating a design that allows the river to naturally flow around them.

(6) The final map shall bear the notation "Subject to Inundation" for those portions of the property with a grade lower than 2 feet above the base flood elevation.
The final map will provide the required notation where applicable. Please note that no proposed structures will be subject to inundation. However, portion of the property (i.e. The Golf Course) will be subject to inundation.

(c) Standards of Construction In all Special Flood Hazard Areas,

the following standards apply for all development.
(1) All permitted, permanent structures and other significant improvements shall be anchored to prevent flotation, collapse,or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
This requirement does not apply to the project. No structures or significant improvements are proposed within the City of San Diego

(2**) All permitted permanent structures and other significant improvements shall be constructed with materials and utility equipment resistant to flood damage.**
This requirement does not apply to the project. No structures or significant improvements are proposed within the City of San Diego

(3) Construction methods and practices that minimize flood damage shall be used.
The project will implement measures to eliminate scour and erosion to the slopes adjacent to the floodways by placing riprap and utilizing the latest proprietary technology in slope surface stabilization and slope reinforcement.

(4) All electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities shall be designed and located to prevent water from entering or accumulating within the equipment components during conditions of flooding.
No service facilities are propose within the City of San Diego boundary. However, In compliance with the City of Santee's Flood Damage Protection Ordinance, all proposed service facilities will be designed to prevent water from entering or accumulating within the equipment components during conditions of flooding.

(5) Breakaway walls shall be certified by a registered engineer or architect to meet all applicable FEMA requirements. The certification shall be provided to the City Engineer before final inspection approval.
This is not applicable, no breakaway walls are proposed

(**6) New construction or substantial improvement of any structure shall have the**

lowest floor, including basement, elevated at least 2 feet above the base flood elevation. Upon completion of the development, the elevation of the lowest floor, including basement, shall be certified by a registered professional engineer or surveyor to be properly elevated. The certification shall be provided to the City Engineer before final inspection approval. The City Engineer reserves the right to require a preliminary certification before foundation inspection approval.
No structures or significant improvements are proposed within the City of San Diego

(7) New construction or substantial improvement of any structure in FIRM Zone AH or AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least 2 feet higher than the depth number specified on the FIRM, or at least 4 feet if no depth number is specified. Upon the completion of the structure the elevation of the lowest floor, including basement, shall be certified by a registered professional engineer or surveyor, to be properly elevated. The certification shall be provided to the City Engineer before final inspection approval. The City Engineer may require a preliminary certification before foundation inspection approval.
The project is in AE zone.

(8) Permitted nonresidential construction shall either be elevated as required bySection 143.0146(c)(6) or (7) or, together with attendant utility and sanitary facilities, meet the flood proofing requirements of FEMA. Certification by a registered professional engineer or architect that such requirements are met shall be provided to the City Engineer before final inspection approval. The City Engineer may require a preliminary certification before foundation inspection approval.

This requirement does not apply to the project. The project doesn't propose any structures within the City of San Diego boundary.

(9) Fully enclosed areas below the lowest floor that are subject to flooding shall be certified by a registered professional engineer or architect that they comply with the flood proofing requirements of FEMA. The certification shall be provided to the City Engineer before final inspection approval. This is not applicable for the proposed project.

(10) Within FIRM Zones AH or AO, new construction and substantial improvements of any structure shall be constructed so that there are adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures. This requirement does not apply to the project, because the project is located in AE zone.

(**11) All new construction and substantial improvements of structures with fully enclosed areas below the lowest floor, excluding basements, that are usable solely for parking of vehicles, building access, or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater as required by 44 C. F. R. §60.3(c)(5), as may be amended. Designs for meeting this requirement**

must be certified by a registered professional engineer or architect, or meet or exceed the minimum criteria in the San Diego municipal Code 143.0146.c.11 (i-iii). This is not applicable for the proposed project, as no structures are proposed with fully enclosed areas below the lowest floor

5.4 Design Measures

In order to achieve compliance with both FEMA, City of San Diego Regulations and City of Santee's Flood Damage Prevention Ordinance, the project has incorporated a number of design features into the project that will encourage the protection of the proposed structures and the overall river corridor.

The layout of the Residential Areas, Resort Area and the configuration of the new golf course all take into consideration the natural resources that are located within and around the project. The proposed development areas are primarily located within the footprint of the existing hotel and golf course. The existing stream that runs through the golf course will maintain the existing flow capacities and natural resources.

The golf course will be redesigned to allow more flow to pass in flooding situations. The Southeast side of the golf course will be graded lower to provide more flood volume. Other sections of the course will be graded to remove existing hills and mounds that would otherwise be an impediment to flow. The overall contouring of the course will be graded with consideration of the San Diego River 100-year flows such that the project does not redirect flows or channelize the flows from the San Diego River.

The proposed shape and location of the hotel site is intentionally designed to avoid disruption to the flow of the San Diego River and to maintain the existing river flow capacity. The proposed Resort Area is located just upstream of where Forester Creek confluences with the San Diego River, therefore avoiding a section of the river that increases in flow volume. The hotel site is contoured to allow flows to pass freely to the south.

The city public storm drain system discharges into the golf course at several locations. The proposed project will improve these channels such that they will be discharged in a manner that will avoid erosion or standing water.

Slope surface stabilization and slope reinforcement will be implemented to ensure that the embankments around the development are engineered to be both aesthetic, stable, and resist erosion. Geotechnical soil reinforcement will be utilized to ensure that even high flow velocities will not erode or damage the proposed development embankments.

6. CONCLUSION

The analyses conducted for the proposed Carlton Oaks Country Club and Resort project conclude that the project will have no significant impact on the upstream or downstream water surface elevation, as compared to the effective base flood elevations (Effective

Model). When compared to the current existing conditions, the proposed fill placement and grading modifications to the golf course will result in less than 0.5’ increase to the current 100-year flood elevations (FEMA, FEMA Floodway, or City of Santee / BSI flow rates), except for XSEC#260 an increase of 0.61 ft was recorded. However, this increase has no negative impact on the proposed project or adjacent areas.

The project topographic mapping shows that the ground surfaces used in the original modeling have changed since 1982. Additional modifications include fill placement for SR-52 freeway, related Mission Gorge Road improvements, and modification of the golf course and water features. The modeling indicates that these changes have generally increased the flood elevations compared to the original flood mapping (FEMA 100-year). Similar, but variable differences, have occurred when compared to the City/BSI Study results.

The proposed project is subject to areas associated with flooding, and thus the proposed project pads would be elevated above flood levels (minimum of 1 foot above the BSI flood elevations) consistent with the requirements of the City of Santee Flood Damage Prevention Ordinance, City of San Diego and FEMA Regulations. No development on the project site would occur within the designated 100-year floodway in the post-project condition. A CLOMR will be completed that would demonstrate that if built as proposed, the project would meet minimum Federal Regulations. A LOMR will be completed upon completion of construction and upon FEMA's approval, the floodway will be re-mapped to exclude the proposed development site. The proposed development and grading will not alter the existing flood conditions upstream or downstream of the project and secondary emergency access roads will also be located out of the 100-year floodplain.

Exhibit A

Aerial Site Photo

Carlton Oaks Golf Course

Sycamore Creek

Carlton Oaks Bridge

San Diego River

Existing Hotel / Resort

West Hills Pkwy Bridge

North Channel

Forester Creek

Earth Berm

South Channel

Carlton Oaks Golf Course

Mast Blvd

Sycamore Landfill Rd

Kreiner Way

Amino Dr

Carlton Oaks Dr

Dunwoodie Rd

Inverness Rd

Lomker Way

Medina Dr

St Andrews Dr

Siwanoy Ct

Oakbourne Rd

Knollwood Way

Calle Del Verde

Santee Recreational Lakes

Stoyer Dr

Dunbarton Rd

Ruffin Rd

Granda Dr

Woodruff Way

E Heaney Ct

Carlton Hills Blvd

W Hills Pkwy

Via Montisi

Mission Gorge Rd

Willowgrove Ave

Gorge Ave

Glen Vista Way

Via De Victoria

52

125

Google Earth

© 2020 Google

© 2020 INEGI

2000 ft

N

EXHIBIT B
EFFECTIVE MODEL

Record HEC-2 Model (1982)

FEDERAL EMERGENCY MANAGEMENT AGENCY

PAYMENT INFORMATION FORM

Community Name: Cities of San Diego and Santee, San Diego County, California

Project Identifier: San Diego River / Carlton Oaks Golf Course Project 73122

THIS FORM MUST BE MAILED, ALONG WITH THE APPROPRIATE FEE, TO THE ADDRESS BELOW OR FAXED TO THE FAX NUMBER BELOW.

Please make check or money order payable to the National Flood Insurance Program.

Type of Request:

☐ MT-1 application
☐ MT-2 application

LOMC Clearinghouse
3601 Eisenhower Ave. Suite 500
Alexandria, VA 22304-6426
Attn.: LOMC Manager

☒ EDR application

FEMA Project Library
3601 Eisenhower Ave. Suite 500
Alexandria, VA 22304-6426
FAX (703) 960-9125

Request No. (if known): _____ **Check No.:** _____ **Amount:** _____

☐ INITIAL FEE* ☐ FINAL FEE ☐ FEE BALANCE** ☐ MASTER CARD ☐ VISA ☐ CHECK ☐ MONEY ORDER

*Note: Check only for EDR and/or Alluvial Fan requests (as appropriate).

****Note: Check only if submitting a corrected fee for an ongoing request.**

COMPLETE THIS SECTION *ONLY* IF PAYING BY CREDIT CARD

CARD NUMBER EXP. DATE

				–				–				–					–		
1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16	Month		Year

_____ _____

Date Signature

NAME *(AS IT APPEARS ON CARD)*: _____
(please print or type)

ADDRESS: 3990 Ruffin Road #120
(for your credit card receipt-please print or type) San Diego, CA 92123

DAYTIME PHONE: 858.560.1141

Federal Emergency Management Agency

Washington, D.C. 20472

Flood Insurance Study (FIS) Data Request

Please provide the following information as applicable for the area where you require data:

- Complete community name (including county and state):

  Cities of San Diego & Santee, San Diego County, California

- Community identification number, if known:

  06073

- Name(s) of flooding source(s) and specific location(s) for which data are needed (Attach FIRM panel showing subject area if available):

  San Diego River & Confluence w/ Forrester Creek
  Panel 1634G and portions of 1651G & 1653G
  See Attached

- Specific data needed (see list of available categories on page 1):

  Current Effective Hydraulic Models HEC-2/HEC-RAS

- Effective date of FIRM for which data are requested (enclose an annotated copy of FIRM/FBFM, if available, identifying area of interest):

  May 16, 2012

- Contact person's name:
  Allen Butcher

- Firm Name:
  SB&O, Inc

- Email Address:
  abutcher@sboinc.com

- Daytime Phone/fax number

  Phone #: 858.560.1141 x102

  Fax #:

- Mailing Address:
  3990 Ruffin Road, Suite 120
  San Diego, CA 92123

- I am employed by (choose one):

■ Private Firm ☐ State Agency ☐ Federal Agency ☐ Local Gov't ☐ FEMA Study Contractor* ☐ Other
* Please provide contract number

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from **aerial photography** dated 2009.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains *authoritative hydraulic data*) may reflect stream channel distances that differ from what is shown on this map.

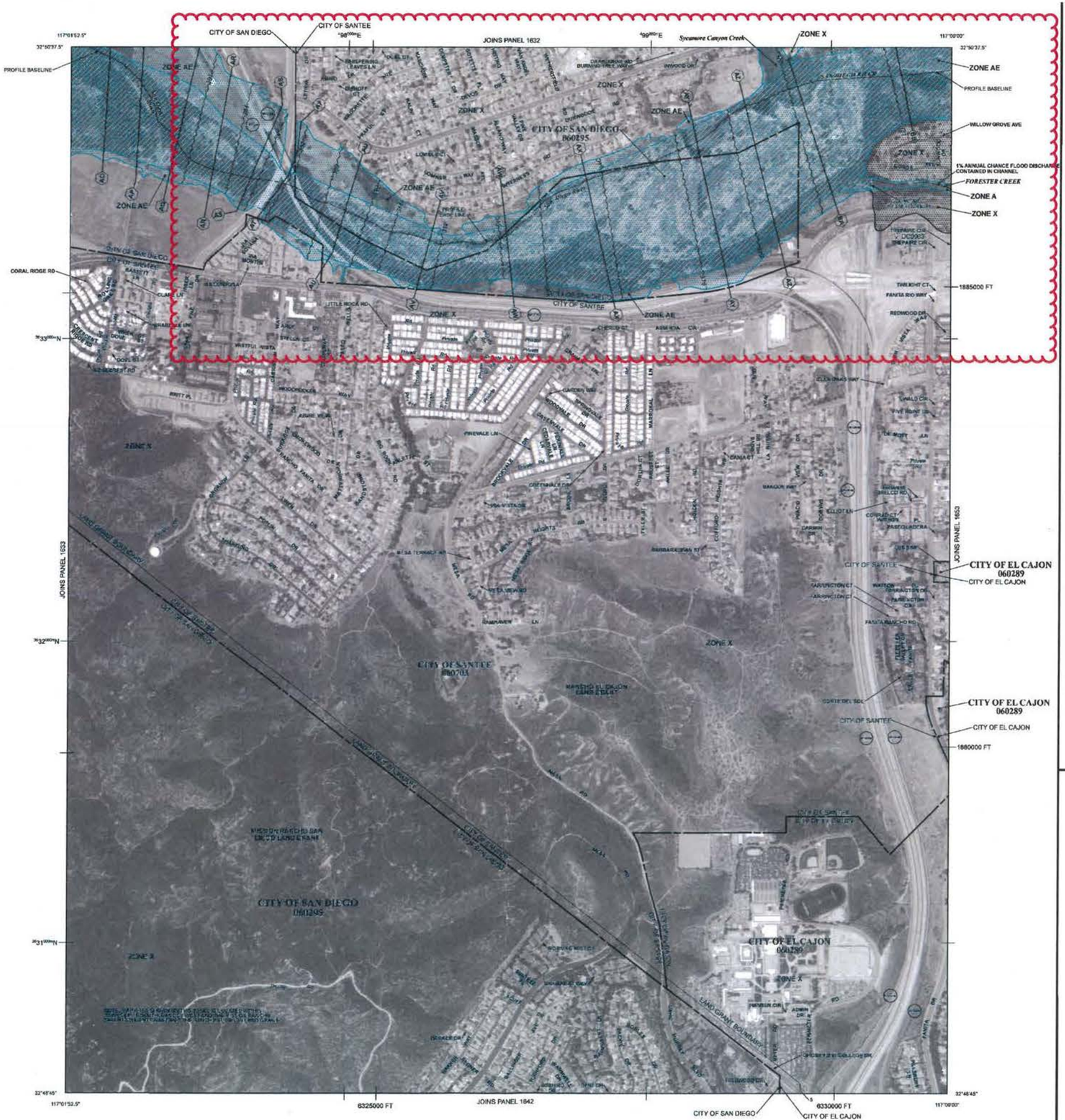
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-877-FEMA MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov/.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
- * Referenced to the North American Vertical Datum of 1988
- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT — 5000-foot grid values: California State Plane coordinate system, Zone VI (FIPSZONE = 406), Lambert projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
June 19, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
May 16, 2012 – to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to update map elevations to North American Vertical Datum of 1988.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
125 0 125 250 METERS

PANEL 1634G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1634 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL CAJON, CITY OF	060289	1634	G
SAN DIEGO, CITY OF	060295	1634	G
SANTEE, CITY OF	060703	1634	G

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

MAP NUMBER
06073C1634G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2009.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

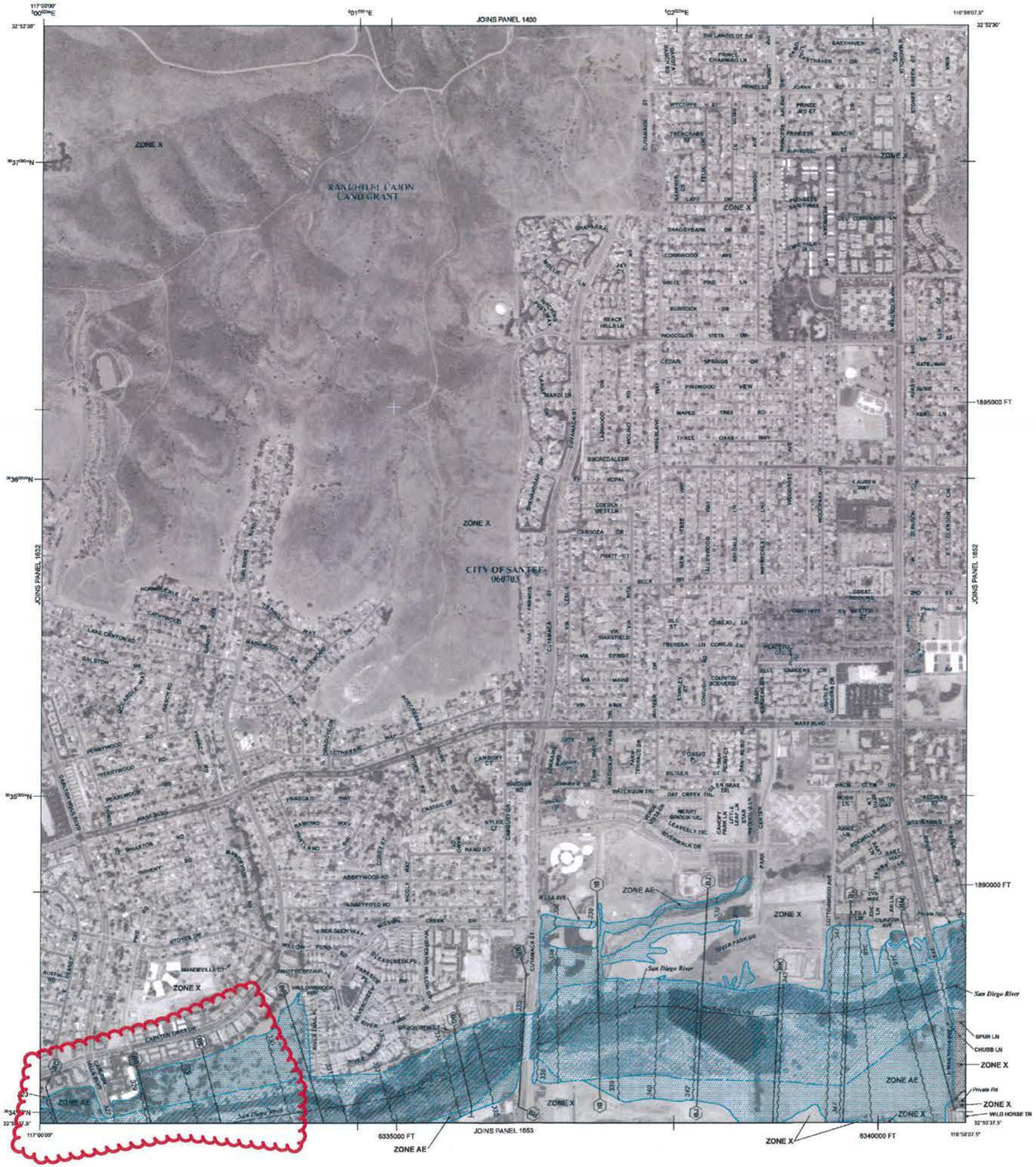
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Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-877-FEMA MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov/.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 FT — 5000-foot grid values: California State Plane coordinate system, Zone VI (FIPSZONE = 406), Lambert projection
- DX5610 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
June 19, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
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MAP SCALE 1" = 500'

500 0 500 1000 1500 FEET
150 0 150 300 METERS

PANEL 1651G

FIRM

FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1651 OF 2375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTEE, CITY OF	060703	1651	G

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

MAP NUMBER
06073C1651G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

NOTES TO USERS

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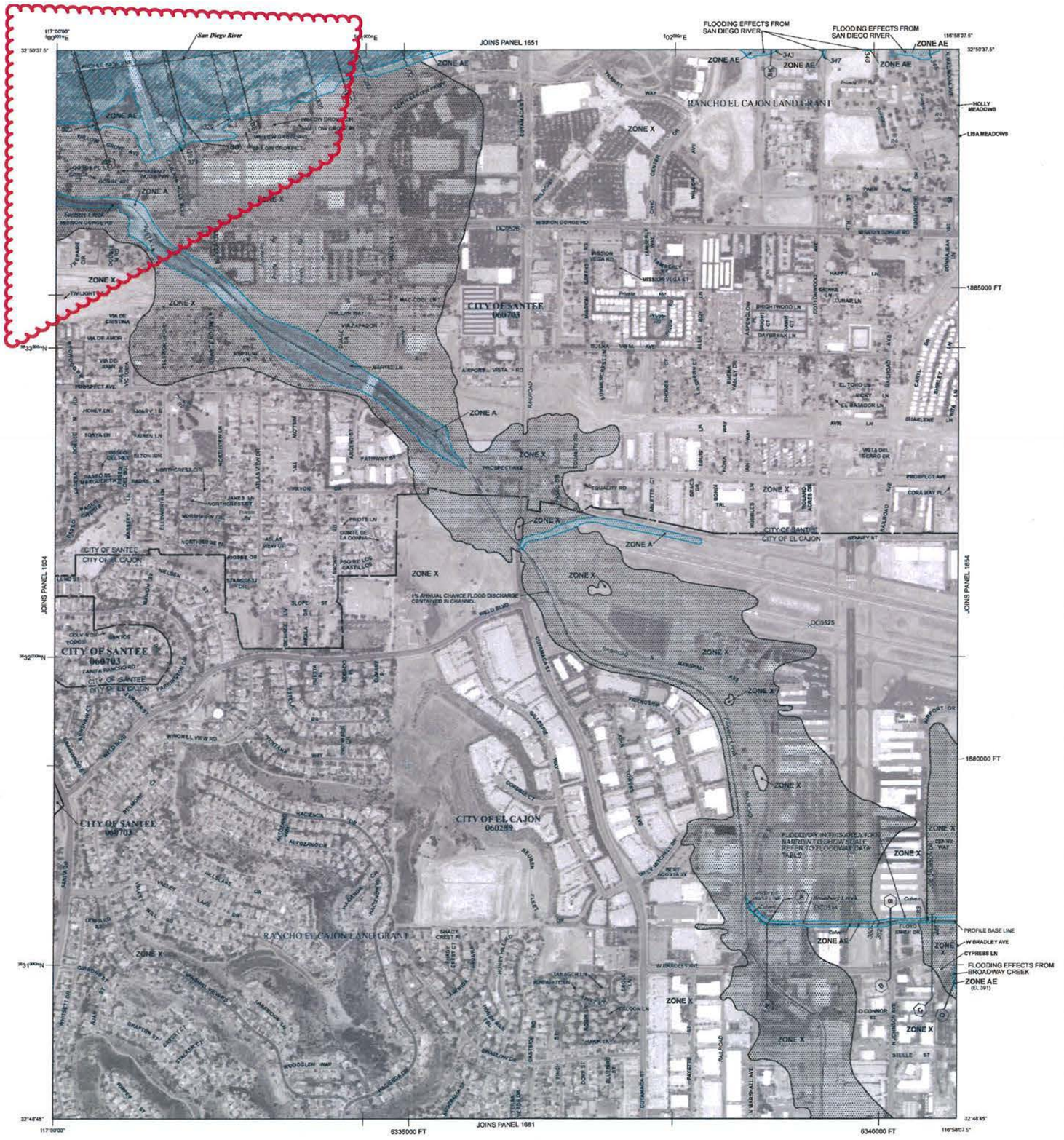
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* Referenced to the North American Vertical Datum of 1988

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- M1.5 — River Mile

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MAP SCALE 1" = 500'

PANEL 1653G

FIRM

FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1653 OF 2375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL CAJON, CITY OF	060284	1653	G
SANTEE, CITY OF	060703	1653	G

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

MAP NUMBER
06073C1653G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

San Diego River

****
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 51,52,53,54,55,56,,57,58
****

20-OCT-82 14:33:14

USDR.FWY
C
T1 UPPER SAN DIEGO RIVER
T2 SECTIONS DIGITIZED IN 1982
T3 100-YEAR

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ	
	0.	2.	0.	0.	0.000000	0.00	-1.0	0.	289.400	0.000	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE	
	1.000	0.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
GT	2.000	38000.000	38000.000	5500.000	0.000	0.000	0.000	0.000	0.000	0.000	
NC	0.125	@ 0.125	ch 0.125	0.100	0.300	0.000	0.000	0.000	0.000	0.000	
ET	0.000	0.000	7.100	0.000	0.000	0.000	120.000	400.000	0.000	0.000	
X1	100.000	37.000	121.500	400.100	0.000	0.000	0.000	0.000	0.000	0.000	
GR	295.100	0.000	306.000	23.700	313.400	46.800	314.500	64.400	307.300	90.000	
GR	301.600	108.400	288.500	121.500	277.200	136.900	272.600	155.200	269.000	164.100	
GR	269.000	207.500	269.000	215.500	272.600	222.000	271.600	231.800	272.100	242.700	
GR	274.800	251.800	273.100	266.400	274.100	293.700	274.500	314.100	272.500	327.800	
GR	272.100	356.100	272.100	368.300	275.600	376.900	278.500	395.200	281.800	400.100	
GR	281.300	412.700	282.600	424.200	289.200	439.100	289.500	456.000	300.200	474.700	
GR	300.800	493.400	300.900	508.200	301.700	524.000	305.700	542.800	310.400	567.500	
GR	317.000	592.900	326.100	636.900	0.000	0.000	0.000	0.000	0.000	0.000	
ET	0.000	0.000	7.100	0.000	0.000	0.000	120.000	395.000	0.000	0.000	
X1	110.000	30.000	123.100	433.800	40.000	50.000	46.000	0.000	0.000	0.000	
GR	319.700	0.000	320.800	25.600	323.700	39.100	323.400	56.600	316.200	85.600	
GR	307.400	100.700	295.100	113.300	285.400	123.100	280.000	143.000	278.600	159.700	
GR	276.900	231.400	278.800	308.800	275.000	314.500	275.000	322.100	279.800	324.700	
GR	279.700	342.200	275.900	346.200	275.500	359.700	276.800	377.500	282.200	400.800	
GR	282.900	413.900	288.800	433.800	275.300	461.100	298.500	477.900	300.600	493.300	
GR	300.100	507.200	301.200	530.400	306.500	561.400	313.900	593.100	322.800	640.400	
ET	0.000	0.000	7.100	0.000	0.000	0.000	115.000	395.000	0.000	0.000	
X1	120.000	26.000	96.600	419.200	55.000	50.000	52.000	0.000	0.000	0.000	
GR	320.300	0.000	316.200	26.200	310.400	51.500	299.400	75.100	290.200	96.600	
GR	284.300	116.200	280.700	141.400	277.900	165.500	275.700	201.300	275.700	228.800	
GR	275.700	276.200	277.100	291.900	276.000	319.100	275.800	337.400	276.900	348.400	
GR	276.300	366.400	282.100	396.000	286.900	419.200	292.400	446.600	297.500	470.600	
GR	298.900	488.800	299.800	510.500	302.400	550.500	302.500	574.100	305.800	604.700	
GR	30.500	646.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
NC	0.080	0.080	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
ET	0.000	0.000	7.100	0.000	0.000	0.000	225.000	500.000	0.000	0.000	

ATTACHMENT B

X1	130.000	30.000	189.100	506.500	530.000	530.000	520.000	0.000	0.000	0.000
GR	320.100	0.000	314.700	56.000	310.500	91.800	303.500	134.100	298.500	161.800
GR	289.900	189.100	284.300	216.800	284.500	242.400	276.500	258.000	275.400	274.700
GR	277.600	289.300	278.100	326.400	279.800	363.100	278.000	380.200	275.200	385.900
GR	275.200	412.900	275.200	444.500	277.500	451.100	277.500	482.100	280.500	496.000
GR	288.300	506.500	289.500	557.700	296.700	571.600	298.100	594.400	297.000	629.000
GR	299.300	644.900	297.100	651.900	297.200	680.400	302.500	712.100	308.700	751.200
ET	0.000	0.000	7.100	0.000	0.000	0.000	315.000	585.000	0.000	0.000
X1	140.000	24.000	275.000	604.100	550.000	550.000	552.000	0.000	0.000	0.000
GR	314.400	0.000	315.700	53.300	315.300	99.300	313.800	151.100	310.300	203.600
GR	305.200	245.900	297.500	275.000	288.800	305.900	284.100	322.600	280.200	345.000
GR	279.400	382.800	282.700	416.300	281.600	468.100	277.800	498.600	275.000	506.400
GR	274.700	511.700	274.800	556.100	283.600	580.100	293.800	604.100	292.700	627.800
GR	290.700	646.500	305.800	661.500	317.600	685.500	333.900	733.600	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	1231.900	655.000	1200.000	0.000	0.000
X1	150.000	34.000	734.900	1231.900	545.000	540.000	540.000	0.000	0.000	0.000
GR	307.200	0.000	303.700	106.400	303.000	237.900	299.000	313.100	297.400	382.400
GR	293.900	438.300	293.800	449.400	293.500	477.600	297.100	486.500	294.700	560.200
GR	295.300	632.300	293.800	689.100	296.100	710.800	294.600	734.900	287.200	754.000
GR	281.800	775.600	279.000	787.600	282.700	791.800	284.000	831.800	282.900	918.300
GR	279.100	929.000	279.200	976.600	283.800	995.000	282.900	1074.800	281.700	1149.200
GR	282.200	1191.100	293.400	1207.900	301.600	1231.900	300.400	1256.800	298.900	1277.900
GR	305.900	1293.500	317.000	1338.300	323.500	1374.900	326.800	1394.400	0.000	0.000
NC	0.035	0.035	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	570.000	1435.000	0.000	0.000
X1	160.000	51.000	727.400	1605.700	630.000	690.000	690.000	0.000	0.000	0.000
GR	306.200	0.000	305.100	102.800	305.700	125.300	305.700	183.500	302.800	206.300
GR	301.000	313.800	300.300	401.900	301.100	472.500	304.500	491.000	309.700	529.100
GR	295.500	551.600	289.700	569.200	282.700	576.500	281.700	593.000	282.500	601.900
GR	285.500	627.800	286.100	660.100	295.600	688.000	300.100	707.600	299.800	727.400
GR	294.100	762.100	292.000	788.000	290.100	804.400	289.000	863.400	289.500	916.600
GR	289.600	1008.300	289.000	1112.300	287.800	1178.600	286.200	1199.400	288.400	1215.400
GR	287.800	1276.500	286.000	1353.900	283.700	1379.300	283.800	1424.400	288.800	1431.400
GR	288.900	1517.300	289.900	1550.000	292.800	1579.000	302.800	1605.700	307.200	1633.100
GR	310.300	1664.600	310.800	1688.800	308.800	1695.800	314.400	1711.400	311.400	1721.600
GR	313.300	1732.300	310.900	1741.300	311.900	1768.300	311.100	1809.700	315.700	1833.900
GR	317.400	1896.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1040.000	2085.000	0.000	0.000
X1	170.000	38.000	1503.800	2158.800	390.000	350.000	350.000	0.000	0.000	0.000
GR	308.500	0.000	308.400	111.300	306.400	202.900	304.900	219.100	305.500	242.600
GR	304.300	343.900	301.100	471.700	299.000	600.600	296.700	723.400	293.700	831.400
GR	291.600	905.400	290.200	988.800	289.000	1049.700	284.400	1081.500	285.600	1085.200
GR	285.800	1109.700	292.000	1124.000	292.300	1187.700	294.100	1269.500	292.500	1379.600
GR	292.300	1449.000	294.400	1503.800	293.700	1582.100	291.400	1653.000	289.900	1761.700
GR	287.400	1784.000	286.000	1939.100	284.500	1951.800	284.400	1980.300	286.400	1987.300
GR	288.500	2053.800	292.100	2073.700	297.300	2158.800	305.200	2259.300	311.400	2329.500
GR	317.200	2402.700	321.200	2450.700	321.500	2520.800	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	500.000	2200.000	865.000	2065.000	0.000	0.000
X1	180.000	46.000	1566.500	2049.600	405.000	355.000	300.000	0.000	0.000	0.000
GR	312.400	0.000	310.600	82.000	307.300	149.600	306.600	142.800	302.100	157.200
GR	300.400	242.300	305.800	259.900	299.700	276.000	299.100	323.500	302.000	351.100
GR	297.200	388.300	297.400	423.500	304.500	442.700	301.700	564.700	299.800	654.700
GR	296.400	711.500	298.800	741.300	295.400	750.300	295.100	798.300	296.400	828.300
GR	297.800	853.100	286.200	869.900	284.900	880.300	284.000	896.200	284.900	915.000
GR	297.600	955.000	291.100	1011.400	290.400	1079.800	292.900	1155.400	292.000	1259.400
GR	291.200	1362.200	290.600	1499.300	289.500	1566.500	287.400	1593.300	287.400	1960.400
GR	289.000	2004.800	289.300	2020.400	295.700	2049.600	300.300	2102.000	301.200	2127.200
GR	307.600	2188.800	314.500	2265.200	319.700	2333.600	323.700	2399.900	326.100	2456.700
GR	325.000	2538.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	710.000	2000.000	0.000	0.000

X1	190.000	36.000	972.800	2041.300	785.000	550.000	550.000	0.000	0.000	0.000
GR	316.700	0.000	315.900	114.900	313.500	265.100	310.500	380.000	306.900	503.800
GR	305.900	560.700	297.900	573.900	296.400	604.700	300.300	611.900	299.600	642.000
GR	296.200	649.600	294.100	691.200	288.700	739.300	284.700	751.700	283.300	767.700
GR	284.800	780.200	285.700	851.500	298.100	881.500	297.300	972.800	286.600	1012.400
GR	286.600	1531.900	288.300	1542.300	288.300	1573.500	286.600	1606.000	286.600	1999.600
GR	292.200	2012.100	293.700	2031.700	297.100	2041.300	296.900	2060.100	301.200	2075.000
GR	307.700	2119.000	309.700	2152.300	308.400	2219.600	309.500	2266.800	313.400	2354.500
GR	317.500	2439.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	935.000	2025.000	0.000	0.000
X1	200.000	42.000	1056.700	2113.300	630.000	595.000	600.000	0.000	0.000	0.000
GR	316.900	0.000	313.900	56.200	312.600	122.400	310.100	216.700	307.600	324.700
GR	304.600	427.500	304.600	520.300	302.400	585.000	295.300	604.200	292.500	618.300
GR	293.400	669.200	293.100	728.300	296.200	755.500	295.500	775.600	293.100	788.900
GR	292.700	841.500	293.100	907.700	303.100	935.000	301.800	942.600	287.000	960.300
GR	286.000	994.400	285.300	1011.200	286.000	1037.400	296.900	1056.700	286.500	1085.600
GR	287.000	1164.600	288.700	1223.800	288.100	1403.900	288.500	1550.400	289.100	1745.600
GR	288.400	1904.500	286.600	1911.400	286.600	2019.700	293.500	2043.400	294.100	2065.400
GR	298.400	2092.400	301.100	2113.300	300.500	2137.800	305.300	2194.400	312.400	2283.500
GR	316.100	2372.600	318.500	2429.600	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1040.000	2080.000	0.000	0.000
X1	210.000	48.000	1355.000	2185.100	450.000	350.000	350.000	0.000	0.000	0.000
GR	318.800	0.000	319.500	35.300	317.300	62.200	311.700	79.900	309.500	108.800
GR	306.300	166.100	303.100	312.900	301.600	457.400	299.800	607.800	298.000	747.800
GR	298.600	839.700	298.100	875.400	294.400	891.900	294.400	974.900	294.200	1088.000
GR	297.800	1105.700	288.100	1117.800	285.500	1133.400	287.400	1144.100	287.800	1217.900
GR	287.400	1286.100	296.500	1313.300	299.600	1325.800	300.000	1355.000	294.200	1382.300
GR	292.700	1414.000	290.000	1438.500	289.800	1526.300	288.300	1571.400	288.500	1623.500
GR	288.500	1664.400	290.500	1686.300	289.100	1834.500	288.300	1958.500	288.200	2066.400
GR	294.500	2086.400	294.700	2128.600	298.300	2157.400	302.000	2185.100	302.300	2216.000
GR	305.200	2229.200	307.600	2251.800	308.800	2356.000	309.100	2371.300	315.300	2391.300
GR	316.500	2429.400	315.400	2472.300	318.700	2518.000	0.000	0.000	0.000	0.000
NC	0.045	0.100	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	650.000	1620.000	0.000	0.000
X1	220.000	44.000	1185.200	1638.700	620.000	385.000	450.000	0.000	0.000	0.000
GR	309.400	0.000	308.100	49.100	303.400	65.100	303.800	93.700	304.800	111.300
GR	300.400	135.400	298.200	205.600	295.600	275.800	296.400	311.700	299.200	325.600
GR	297.900	381.800	296.600	472.700	298.600	496.000	297.700	516.100	296.000	540.400
GR	296.000	619.400	297.000	659.300	297.100	778.200	297.000	828.000	294.100	852.700
GR	291.300	877.100	291.600	941.400	291.500	1078.800	292.800	1124.900	292.400	1185.200
GR	289.900	1220.500	289.800	1321.400	288.800	1344.800	290.000	1386.700	292.300	1429.000
GR	292.100	1467.400	293.800	1493.000	295.400	1567.700	296.300	1608.000	299.800	1658.700
GR	296.200	1677.400	295.900	1703.200	299.800	1722.600	301.500	1749.700	304.600	1768.400
GR	308.000	1845.600	314.800	1925.800	319.700	2049.100	324.000	2142.900	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	975.000	1710.000	0.000	0.000
X1	230.000	39.000	1177.300	1700.400	430.000	460.000	487.000	0.000	0.000	0.000
GR	320.600	0.000	315.600	98.600	310.700	248.500	307.700	349.800	304.400	453.100
GR	301.800	481.500	297.200	508.200	295.000	514.300	296.600	561.500	298.300	572.600
GR	299.600	589.300	296.900	598.800	296.000	661.100	296.000	732.000	298.000	803.000
GR	298.200	895.600	298.800	987.500	297.500	1007.200	294.600	1034.200	292.300	1049.000
GR	293.200	1074.800	294.100	1177.300	293.500	1277.700	293.600	1390.600	293.800	1477.500
GR	290.200	1497.200	289.800	1554.200	290.400	1569.500	291.800	1577.600	291.300	1624.400
GR	294.600	1642.800	295.400	1680.200	299.800	1700.400	300.100	1740.600	303.700	1766.400
GR	304.800	1824.300	306.500	1894.000	310.400	1966.200	312.000	2031.800	0.000	0.000
ET	0.000	5.100	0.000	5.100	450.000	1300.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	530.000	1190.000	0.000	0.000
X1	239.000	35.000	794.200	1194.900	515.000	385.000	413.000	0.000	0.000	0.000
GR	326.700	0.000	325.900	9.700	313.300	33.300	302.700	58.700	299.600	75.900
GR	298.800	146.300	296.400	181.400	295.900	292.800	296.400	340.100	298.600	359.000
GR	296.300	480.300	297.100	577.600	296.400	628.200	295.300	690.300	296.700	723.400
GR	296.300	773.800	299.600	794.200	295.700	807.300	293.200	815.500	292.700	884.900

GR	290.700	929.700	291.800	952.300	294.400	972.500	293.100	1010.800	292.600	1033.000
GR	294.400	1056.600	292.900	1097.200	293.900	1121.500	296.800	1156.100	303.000	1194.900
GR	304.600	1220.800	306.400	1253.000	308.500	1284.900	311.200	1349.100	314.000	1436.200
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	5.100	5.100	1477.700	1977.200	0.000	0.000	0.000	0.000
X1	242.000	35.000	1477.700	1977.200	270.000	165.000	224.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	311.500	315.000	0.000	0.000	0.000	0.000	0.000
BT	22.000	1477.700	315.000	311.500	1557.000	315.000	311.500	1557.000	315.000	0.000
BT	1564.000	315.000	0.000	1564.000	315.000	311.500	1640.400	315.000	311.500	1640.400
BT	315.000	0.000	1647.400	315.000	0.000	1647.400	315.000	311.500	1723.700	315.000
BT	311.500	1723.700	315.000	0.000	1730.700	315.000	0.000	1730.700	315.000	311.500
BT	1807.000	315.000	311.500	1807.000	315.000	0.000	1814.000	315.000	0.000	1814.000
BT	315.000	311.500	1890.400	315.000	311.500	1890.400	315.000	0.000	1897.400	315.000
BT	0.000	1897.400	315.000	311.500	1977.200	315.000	311.500	0.000	0.000	0.000
GR	322.300	0.000	325.600	50.000	327.800	125.300	328.000	167.900	320.900	223.500
GR	317.600	265.900	313.700	374.700	316.200	478.100	320.700	644.200	321.600	741.100
GR	329.100	757.200	328.400	771.600	321.900	789.800	321.300	881.900	317.300	1023.600
GR	313.900	1127.300	310.600	1268.700	311.600	1384.500	309.600	1444.500	309.600	1477.700
GR	298.900	1496.500	292.900	1529.500	293.100	1544.400	293.800	1624.200	294.000	1694.900
GR	292.500	1762.900	293.000	1804.800	291.700	1829.100	292.100	1863.200	294.100	1921.800
GR	311.600	1977.200	312.900	2102.500	309.600	2169.800	313.000	2266.200	316.800	2378.200
ET	0.000	5.100	5.100	5.100	1538.300	2038.700	0.000	0.000	0.000	0.000
X1	244.000	36.000	1538.300	2038.700	95.000	95.000	95.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	311.500	315.000	0.000	0.000	0.000	0.000	0.000
BT	22.000	1538.300	315.000	311.500	1618.300	315.000	311.500	1618.300	315.000	0.000
BT	1625.300	315.000	0.000	1625.300	315.000	311.500	1701.700	315.000	311.500	1701.700
BT	315.000	0.000	1708.700	315.000	0.000	1708.700	315.000	311.500	1785.000	315.000
BT	311.500	1785.000	315.000	0.000	1792.000	315.000	0.000	1792.000	315.000	311.500
BT	1868.300	315.000	311.500	1868.300	315.000	0.000	1875.300	315.000	0.000	1875.300
BT	315.000	311.500	1951.700	315.000	311.500	1951.700	315.000	0.000	1958.700	315.000
BT	0.000	1958.700	315.000	311.500	2038.700	315.000	311.500	0.000	0.000	0.000
GR	333.700	0.000	332.900	112.500	325.100	205.800	318.300	337.400	315.900	476.300
GR	313.100	545.200	326.700	602.400	328.100	710.500	327.900	857.300	309.900	896.300
GR	307.600	960.700	300.300	995.700	300.400	1057.800	300.300	1138.400	300.500	1237.700
GR	300.400	1331.600	298.300	1412.700	296.800	1496.600	296.000	1538.300	293.500	1563.300
GR	294.600	1610.200	293.300	1726.300	293.100	1859.500	292.200	1881.300	293.100	1912.800
GR	294.900	1989.500	307.800	2038.700	307.600	2130.600	307.700	2162.900	312.800	2178.600
GR	311.600	2260.900	307.100	2281.900	307.100	2290.600	303.900	2297.100	308.100	2393.900
GR	312.500	2498.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.110	0.045	0.100	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	0.000	5.100	550.000	1550.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	730.000	1335.000	0.000	0.000
X1	245.000	46.000	733.900	1365.900	150.000	210.000	177.000	0.000	0.000	0.000
GR	329.600	0.000	329.000	34.700	332.300	59.700	341.600	62.400	341.600	117.500
GR	333.400	120.900	332.700	142.800	321.900	163.700	315.100	178.000	313.100	232.600
GR	307.800	301.100	304.400	332.200	299.600	356.700	299.600	421.600	294.000	495.500
GR	301.100	576.500	300.600	651.800	294.800	662.900	295.400	733.900	293.500	752.900
GR	294.300	779.000	293.900	881.800	293.600	956.600	293.600	1033.300	292.700	1075.700
GR	292.500	1095.100	292.700	1117.100	295.300	1147.300	295.700	1193.300	296.000	1231.500
GR	295.400	1310.200	296.100	1334.900	298.300	1353.300	302.800	1365.900	306.000	1410.900
GR	308.700	1503.800	312.000	1574.900	314.800	1645.600	316.800	1687.300	319.700	1720.000
GR	321.000	1804.800	323.300	1847.500	326.300	1898.900	329.300	1959.700	330.200	1973.300
GR	330.600	2021.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.050	0.050	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	560.000	1275.000	0.000	0.000
X1	250.000	44.000	618.100	1199.000	615.000	700.000	701.000	0.000	0.000	0.000
GR	326.900	0.000	326.600	34.200	329.600	54.800	330.100	87.400	341.800	89.900
GR	341.800	142.400	331.000	145.700	330.500	161.900	318.700	181.000	310.100	203.900
GR	308.000	213.000	307.200	227.900	303.700	261.600	301.600	281.200	302.500	289.400
GR	301.900	394.200	301.600	491.500	300.000	554.100	300.100	618.100	298.300	652.900
GR	295.900	707.600	296.900	759.600	297.700	846.000	298.000	941.200	297.900	1041.000
GR	295.500	1081.200	297.700	1096.200	295.400	1107.800	294.400	1124.000	293.700	1138.200

GR	294.300	1152.900	296.600	1182.000	300.000	1199.000	299.400	1238.200	299.900	1271.800
GR	305.000	1292.200	307.500	1315.500	308.700	1376.500	311.900	1466.700	314.700	1527.300
GR	315.600	1559.300	319.100	1564.800	320.100	1609.700	319.000	1652.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	365.000	565.000	0.000	0.000
X1	260.000	36.000	419.700	982.500	1000.000	1050.000	1031.000	0.000	0.000	0.000
GR	322.700	0.000	323.400	16.900	322.900	38.000	325.100	60.800	326.500	126.000
GR	326.800	165.900	320.200	181.300	316.500	185.800	314.200	236.300	313.200	295.300
GR	311.100	318.400	309.500	338.300	305.800	352.600	303.100	419.700	300.100	438.400
GR	299.100	465.200	298.600	492.100	300.100	500.600	299.900	611.300	301.500	708.200
GR	302.100	744.400	304.400	756.700	302.300	767.700	300.700	808.000	297.800	831.100
GR	297.600	838.500	297.800	857.200	302.600	885.200	302.900	939.800	305.300	962.100
GR	311.400	982.500	312.300	1006.900	313.700	1046.900	312.100	1089.900	313.300	1122.100
GR	314.300	1221.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	2.000	37000.000	37000.000	5500.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	100.000	1023.700	400.000	960.000	0.000	0.000
X1	270.000	42.000	400.400	958.700	815.000	1000.000	951.000	0.000	0.000	0.000
GR	320.800	0.000	320.400	21.000	322.300	40.800	323.200	57.700	333.800	63.400
GR	333.800	113.900	322.400	120.400	322.600	146.600	316.700	163.200	315.200	180.600
GR	312.600	282.900	310.400	354.800	308.600	400.400	301.000	413.000	299.800	467.100
GR	300.200	478.700	299.800	493.800	301.800	505.500	303.100	608.100	304.200	694.200
GR	306.300	711.100	301.800	728.400	303.100	761.500	304.800	788.200	306.600	799.900
GR	300.800	815.300	299.400	838.000	300.800	867.400	303.800	882.800	302.500	938.100
GR	307.700	956.700	310.000	988.200	313.800	1023.700	313.000	1089.600	311.800	1118.600
GR	309.100	1150.100	309.800	1163.900	312.600	1170.300	312.500	1212.800	312.200	1258.400
GR	314.000	1277.000	314.700	1301.700	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	330.000	1630.000	0.000	0.000
X1	280.000	50.000	216.800	1690.200	1060.000	1135.000	1021.000	0.000	0.000	0.000
GR	319.500	0.000	319.000	16.600	318.500	32.800	319.200	74.500	327.100	75.300
GR	327.100	110.500	319.600	113.900	318.100	175.100	312.200	192.400	308.800	202.300
GR	308.400	216.800	306.600	231.300	306.500	283.300	306.300	325.900	304.100	342.400
GR	300.700	355.700	300.100	376.600	303.200	385.900	304.300	466.400	304.800	556.900
GR	305.000	655.300	306.100	772.100	305.700	843.400	304.500	868.600	304.300	921.900
GR	306.400	953.700	305.900	1029.700	304.700	1074.300	305.600	1106.400	310.600	1125.000
GR	302.800	1139.500	301.100	1176.600	302.700	1207.300	307.400	1215.500	307.600	1300.900
GR	307.100	1398.900	306.600	1490.700	306.800	1547.800	307.600	1610.900	307.600	1646.100
GR	310.500	1690.200	310.700	1704.800	315.400	1711.700	316.900	1717.100	318.400	1760.500
GR	318.600	1801.400	321.500	1864.600	324.300	1990.300	328.800	2110.700	331.700	2238.400
ET	0.000	0.000	7.100	0.000	0.000	0.000	330.000	1765.000	0.000	0.000
X1	285.000	52.000	272.900	1768.000	660.000	640.000	688.000	0.000	0.000	0.000
GR	340.200	0.000	339.200	48.200	332.900	67.900	329.200	91.500	323.200	110.300
GR	321.200	145.300	317.800	179.900	314.300	205.000	311.400	272.900	307.500	295.200
GR	306.100	386.500	303.800	480.700	302.200	506.600	304.000	517.400	306.500	535.900
GR	306.800	640.400	308.400	693.100	309.100	803.100	309.300	900.800	308.900	961.700
GR	307.900	1023.300	304.800	1048.200	306.200	1086.400	307.200	1117.100	307.400	1215.200
GR	305.400	1282.800	306.600	1342.400	309.700	1380.700	310.300	1460.000	308.000	1479.000
GR	306.900	1507.000	308.200	1516.500	313.400	1523.600	312.700	1533.400	303.700	1553.200
GR	302.400	1573.100	303.300	1609.900	305.300	1634.100	304.900	1672.400	307.000	1680.900
GR	306.300	1706.800	310.400	1735.400	313.700	1768.000	314.600	1840.500	314.100	1920.400
GR	317.700	1931.100	318.100	1976.900	317.000	2020.400	318.200	2044.400	321.400	2094.100
GR	322.900	2127.800	324.400	2237.100	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	770.000	2340.000	0.000	0.000
X1	290.000	60.000	714.300	2568.800	645.000	695.000	653.000	0.000	0.000	0.000
GR	347.500	0.000	347.400	37.900	349.400	62.700	349.100	137.600	344.900	159.500
GR	342.100	249.700	339.700	337.800	339.100	383.000	335.600	408.700	350.100	415.800
GR	350.100	509.100	334.800	514.200	331.400	528.600	324.300	553.400	322.600	587.700
GR	318.200	603.100	317.800	635.300	318.600	549.000	317.900	714.300	314.400	749.300
GR	312.000	772.500	311.000	810.100	311.000	1087.600	311.600	1095.600	311.800	1185.300
GR	311.200	1273.700	308.900	1415.400	306.500	1439.500	308.400	1456.500	310.400	1529.900
GR	311.700	1636.700	309.100	1666.100	306.400	1683.900	307.100	1715.700	309.000	1750.500
GR	307.500	1829.000	308.900	1862.500	310.400	1886.700	310.800	1939.800	310.300	1978.300
GR	311.100	2056.400	309.200	2077.800	311.000	2113.600	316.900	2125.300	317.100	2136.800

GR	306.100	2149.900	304.700	2168.000	303.100	2177.000	304.600	2196.100	305.100	2232.500
GR	310.900	2243.800	310.700	2331.800	311.600	2378.300	308.500	2390.200	310.500	2404.200
GR	312.300	2455.500	313.000	2513.400	314.200	2557.600	316.900	2568.800	319.100	2610.700
ET	0.000	0.000	7.100	0.000	0.000	0.000	660.000	2130.000	0.000	0.000
X1	300.000	51.000	646.500	2117.400	605.000	790.000	654.000	0.000	0.000	0.000
GR	324.000	0.000	324.800	39.900	325.300	60.600	334.000	63.100	334.000	102.600
GR	325.500	106.900	324.800	156.700	322.400	167.100	321.200	311.500	318.900	446.400
GR	318.700	576.200	317.400	646.500	312.300	661.000	311.800	680.400	311.800	750.400
GR	313.700	757.100	313.400	794.500	310.200	809.100	311.800	841.900	310.800	907.500
GR	312.100	927.500	314.300	954.400	313.400	1051.200	312.200	1150.400	311.800	1200.400
GR	309.400	1236.100	310.600	1274.200	311.400	1338.200	311.800	1440.100	310.700	1538.500
GR	311.200	1612.100	308.600	1637.600	309.800	1697.100	309.500	1780.800	309.200	1852.900
GR	310.900	1899.600	310.800	1940.400	315.300	1952.800	314.100	1964.700	308.600	1987.000
GR	305.800	2003.100	305.100	2016.300	305.800	2068.800	310.400	2088.800	313.400	2117.400
GR	313.800	2190.600	316.100	2278.300	318.200	2369.600	320.100	2468.200	320.600	2519.000
GR	321.200	2564.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.045	0.060	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	600.000	2800.000	850.000	2395.000	0.000	0.000
X1	310.000	65.000	837.200	2348.300	640.000	610.000	610.000	0.000	0.000	0.000
GR	320.500	0.000	320.900	78.500	320.300	192.300	319.600	337.800	318.800	386.300
GR	316.000	402.300	315.100	410.800	316.500	420.900	318.800	432.200	319.300	497.200
GR	320.400	520.100	320.300	566.100	319.500	599.600	320.300	620.600	322.100	631.800
GR	320.700	661.700	320.700	709.300	321.300	727.100	318.600	750.100	319.900	783.100
GR	317.500	807.300	318.100	837.200	314.500	848.900	311.100	859.000	310.000	909.700
GR	310.500	1033.100	311.300	1106.900	310.800	1263.400	310.800	1360.600	312.700	1375.100
GR	313.600	1448.500	313.300	1482.000	311.100	1515.100	311.000	1540.000	312.900	1560.100
GR	314.800	1573.500	314.100	1622.600	311.300	1637.200	312.600	1645.300	312.000	1702.500
GR	313.100	1808.200	313.500	1863.800	312.900	1914.600	311.600	1949.800	312.200	1979.200
GR	312.400	2097.300	312.200	2173.900	311.500	2203.000	314.400	2212.700	316.700	2222.800
GR	316.000	2236.900	309.200	2244.500	306.900	2255.800	305.700	2273.800	306.400	2285.500
GR	307.900	2325.400	313.600	2334.600	316.000	2348.300	315.600	2396.700	317.100	2504.300
GR	317.600	2557.200	320.200	2662.800	321.700	2782.600	323.700	2904.000	324.300	2854.100
ET	0.000	5.100	7.100	5.100	1.000	1870.600	645.000	1870.000	0.000	0.000
X1	320.000	65.000	530.100	1870.600	660.000	640.000	711.000	0.000	0.000	0.000
GR	322.400	0.000	323.700	101.500	322.400	187.500	321.300	294.700	322.200	328.100
GR	322.400	372.300	322.300	415.600	321.100	449.400	318.300	499.600	317.500	530.100
GR	316.300	541.300	314.800	562.600	311.400	571.400	311.300	581.500	315.900	595.500
GR	312.900	610.800	313.300	683.900	313.600	766.600	313.500	843.700	314.900	881.400
GR	316.600	941.200	315.100	1011.100	313.700	1068.600	313.000	1150.900	312.800	1194.300
GR	311.700	1207.900	311.600	1253.300	312.400	1279.800	312.900	1311.500	315.800	1329.100
GR	318.200	1354.100	319.200	1384.600	312.300	1413.100	309.100	1446.800	308.500	1468.100
GR	308.700	1525.200	307.300	1576.900	307.200	1645.100	307.200	1755.300	309.600	1767.400
GR	312.000	1795.100	316.700	1828.400	319.000	1870.600	317.900	1940.900	319.200	2014.700
GR	318.300	2045.700	310.600	2057.300	307.400	2069.400	307.300	2098.700	311.700	2107.900
GR	317.900	2118.400	318.800	2181.000	315.100	2200.700	315.200	2251.700	312.200	2264.100
GR	312.700	2315.100	313.500	2393.000	314.600	2445.700	315.600	2525.600	318.900	2536.000
GR	323.900	2542.800	324.600	2611.100	326.300	2625.600	328.700	2631.200	328.200	2718.300
ET	0.000	5.100	7.100	5.100	1.000	1400.000	435.000	1280.000	0.000	0.000
X1	330.000	87.000	569.900	1334.000	620.000	620.000	588.000	0.000	0.000	0.000
GR	331.200	0.000	327.400	62.100	324.800	96.200	325.900	131.500	325.800	170.100
GR	328.400	184.900	346.600	191.300	346.600	242.700	329.800	244.000	330.500	304.200
GR	351.300	310.600	351.300	353.500	324.600	356.400	324.400	379.200	318.000	390.500
GR	315.900	407.300	314.900	431.000	312.500	441.800	312.500	532.600	316.700	547.800
GR	323.400	560.300	324.800	569.900	322.100	576.700	314.000	592.000	314.800	627.700
GR	313.500	683.800	316.500	693.900	321.400	711.900	317.800	729.200	313.300	737.200
GR	310.000	741.600	310.000	889.200	312.900	905.300	312.600	967.000	313.200	1017.600
GR	310.200	1052.500	310.200	1069.400	313.600	1085.800	313.800	1147.200	312.000	1194.100
GR	308.600	1203.400	308.500	1214.700	308.600	1219.700	311.300	1234.100	313.300	1263.800
GR	314.100	1301.500	316.300	1319.200	321.900	1334.000	326.000	1373.700	329.800	1416.300
GR	336.600	1421.900	336.600	1466.000	330.100	1469.300	329.300	1489.300	326.600	1495.700
GR	326.700	1547.900	327.200	1622.600	326.500	1666.300	324.300	1672.300	323.100	1715.600

GR	331.000	1720.500	331.000	1761.700	323.400	1766.700	322.400	1797.200	322.400	1834.100
GR	323.700	1861.300	332.000	1866.900	332.000	1899.500	323.100	1903.900	323.500	1953.300
GR	322.800	1972.900	316.600	1983.700	309.800	1992.600	309.900	2005.400	314.300	2033.500
GR	321.600	2048.400	320.100	2098.900	322.200	2194.000	324.100	2285.000	325.100	2330.400
GR	330.200	2342.100	328.300	2388.200	326.100	2432.400	328.300	2515.400	340.100	2518.600
GR	340.100	2567.200	329.400	2573.600	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.060	0.060	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	1500.000	425.000	1345.000	0.000	0.000
X1	340.000	82.000	361.300	1386.000	575.000	450.000	454.000	0.000	0.000	0.000
GR	332.500	0.000	331.800	43.200	330.300	70.000	331.300	104.000	331.000	144.400
GR	330.200	152.800	330.300	165.600	347.500	172.000	347.500	333.700	324.100	336.100
GR	323.400	361.300	319.800	378.100	316.600	395.700	314.700	420.900	312.200	438.900
GR	312.200	528.900	312.900	533.700	311.900	563.000	311.200	644.600	311.300	684.600
GR	314.200	693.000	317.300	709.400	317.400	739.800	315.600	758.600	314.400	769.800
GR	314.200	799.000	315.400	817.400	315.700	865.800	315.100	892.200	310.400	903.900
GR	310.400	1074.700	311.000	1083.500	311.800	1141.500	314.900	1160.300	315.700	1215.900
GR	310.600	1249.100	309.900	1285.100	310.600	1291.100	316.100	1296.700	315.600	1309.500
GR	311.900	1319.900	311.800	1326.000	317.500	1352.000	322.700	1372.800	324.800	1386.000
GR	326.000	1428.800	333.600	1436.000	333.600	1473.600	326.000	1476.000	325.000	1504.400
GR	324.100	1536.400	326.100	1569.200	334.300	1574.400	334.300	1596.800	326.100	1602.400
GR	325.700	1685.300	325.400	1723.700	324.900	1786.500	325.100	1862.100	325.800	1894.900
GR	325.700	1932.900	325.200	1950.500	324.400	1993.300	325.800	2033.300	335.500	2039.300
GR	335.500	2079.700	327.200	2084.100	325.400	2109.800	325.100	2130.600	317.700	2139.000
GR	313.400	2148.200	313.100	2180.200	321.000	2191.000	322.500	2205.000	323.600	2259.400
GR	323.100	2290.600	324.100	2362.200	324.900	2389.800	326.400	2397.800	327.900	2402.600
GR	327.000	2448.000	324.700	2468.200	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2000.000	595.000	1525.000	0.000	0.000
X1	345.000	87.000	448.000	1650.200	125.000	400.000	335.000	0.000	0.000	0.000
GR	337.400	0.000	333.800	83.900	329.700	155.300	329.300	168.100	330.600	201.600
GR	330.100	242.100	330.300	259.700	347.800	264.300	347.800	319.400	331.400	323.200
GR	331.200	375.500	351.500	382.000	351.500	420.900	325.500	423.000	324.200	448.000
GR	321.600	457.400	319.400	469.200	317.900	484.000	318.000	499.500	319.900	519.100
GR	319.100	562.000	316.100	582.000	312.200	598.400	312.200	676.400	312.900	680.900
GR	312.500	709.200	312.200	726.700	316.500	737.400	319.800	749.200	322.900	799.500
GR	323.500	842.500	319.800	860.500	315.100	877.300	313.700	894.400	315.100	914.900
GR	323.100	930.500	329.800	946.100	328.600	957.900	320.800	973.700	310.000	988.200
GR	310.000	1262.800	313.300	1269.000	313.900	1336.100	314.000	1384.800	310.600	1393.000
GR	309.800	1410.900	310.600	1433.900	312.500	1455.200	315.600	1464.600	315.700	1481.800
GR	313.400	1498.400	314.400	1523.900	319.000	1545.600	320.200	1571.200	320.100	1630.600
GR	322.800	1650.200	325.300	1699.400	333.100	1702.600	333.100	1741.900	324.300	1746.400
GR	323.600	1781.600	323.700	1822.800	325.400	1866.600	334.300	1871.500	334.300	1901.000
GR	325.500	1911.200	327.700	1981.100	327.700	2079.200	334.400	2087.700	334.400	2202.400
GR	328.100	2208.900	328.700	2262.900	329.400	2298.900	338.400	2305.400	338.400	2328.000
GR	329.700	2333.300	329.600	2390.100	322.600	2400.300	318.300	2409.700	318.700	2444.500
GR	324.000	2462.400	324.800	2520.100	324.700	2595.100	325.500	2631.500	328.500	2639.700
GR	329.100	2692.900	328.500	2742.300	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	591.700	1404.900	740.000	1404.900	0.000	0.000
X1	355.000	83.000	591.700	1404.900	350.000	360.000	310.000	0.000	0.000	0.000
GR	332.200	0.000	332.800	14.200	330.400	19.200	331.400	84.600	330.500	120.700
GR	328.900	128.000	329.100	171.900	328.300	209.800	328.700	236.100	326.000	276.100
GR	323.900	369.100	324.200	416.800	322.500	427.400	318.700	462.300	317.800	481.500
GR	317.900	522.100	318.900	544.600	320.500	591.700	319.900	643.800	319.200	678.700
GR	315.200	702.700	313.500	715.400	312.600	750.800	312.600	779.600	313.600	800.400
GR	318.600	813.000	321.800	845.100	320.200	864.200	316.400	872.400	314.200	897.200
GR	312.000	919.200	311.500	1076.100	311.400	1202.200	311.400	1276.300	313.800	1289.300
GR	315.100	1343.400	316.100	1392.600	319.700	1404.900	315.800	1419.100	314.900	1445.500
GR	310.800	1457.700	310.100	1472.200	310.800	1492.700	316.700	1502.900	316.300	1540.300
GR	316.600	1562.700	319.800	1590.800	321.000	1648.100	321.600	1734.300	323.700	1770.000
GR	325.600	1853.400	326.300	1918.600	336.300	1925.600	336.100	1943.000	326.600	1946.700
GR	325.000	1978.400	324.900	2028.700	326.600	2088.000	328.900	2172.700	328.900	2215.900
GR	336.500	2219.500	336.500	2262.600	329.500	2266.300	328.400	2337.400	329.100	2365.800
GR	337.400	2369.100	337.400	2394.300	330.000	2400.800	329.800	2457.500	331.400	2466.400
GR	330.100	2566.100	331.000	2666.000	330.200	2684.500	329.200	2702.500	330.400	2754.000

GR	330.500	2762.500	330.500	2809.700	321.900	2818.300	322.500	2884.100	322.700	2930.800
GR	325.600	2945.200	329.600	2955.300	328.600	3009.400	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	5.100	5.100	808.000	1290.300	0.000	0.000	0.000	0.000
X1	357.000	71.000	808.000	1290.300	220.000	240.000	275.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	326.000	329.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	808.000	329.000	326.000	835.700	329.000	326.000	835.700	329.000	0.000
BT	842.700	329.000	0.000	842.700	329.000	326.000	877.700	329.000	326.000	877.700
BT	329.000	0.000	884.700	329.000	0.000	884.700	329.000	326.000	919.700	329.000
BT	326.000	919.700	329.000	0.000	926.700	329.000	0.000	926.700	329.000	326.000
BT	960.200	329.000	326.000	960.200	329.000	0.000	970.200	329.000	0.000	970.200
BT	329.000	326.000	1003.700	329.000	326.000	1003.700	329.000	0.000	1010.700	329.000
BT	0.000	1010.700	329.000	326.000	1045.700	329.000	326.000	1045.700	329.000	0.000
BT	1052.700	329.000	0.000	1052.700	329.000	326.000	1087.700	329.000	326.000	1087.700
BT	329.000	0.000	1094.700	329.000	0.000	1094.700	329.000	326.000	1128.200	329.000
BT	326.000	1128.200	329.000	0.000	1138.200	329.000	0.000	1138.200	329.000	326.000
BT	1171.700	329.000	326.000	1171.700	329.000	0.000	1178.700	329.000	0.000	1178.700
BT	329.000	326.000	1213.700	329.000	326.000	1213.700	329.000	0.000	1220.700	329.000
BT	0.000	1220.700	329.000	326.000	1255.700	329.000	326.000	1255.700	329.000	0.000
BT	1262.700	329.000	0.000	1262.700	329.000	326.000	1290.300	329.000	326.000	0.000
GR	333.300	0.000	333.600	44.500	341.000	48.300	341.000	92.300	331.200	98.200
GR	330.400	148.900	330.800	180.300	329.500	269.800	327.900	367.600	325.100	380.900
GR	325.300	435.800	322.100	447.700	319.400	466.800	317.500	523.800	317.700	612.000
GR	316.900	712.200	316.100	808.000	316.900	895.700	317.400	951.600	317.000	1004.300
GR	315.700	1017.600	313.800	1029.500	313.200	1044.600	313.900	1066.300	316.500	1072.300
GR	318.100	1109.900	317.100	1138.300	316.100	1200.000	312.800	1223.800	313.400	1290.300
GR	313.600	1386.700	314.400	1440.600	314.200	1505.200	317.100	1520.700	321.900	1534.800
GR	321.500	1547.100	317.800	1554.100	317.800	1554.100	318.600	1607.300	320.900	1681.000
GR	320.800	1783.900	322.700	1886.400	323.300	1906.300	332.800	1910.500	332.800	1975.900
GR	323.400	1981.600	323.400	2054.000	325.500	2081.300	326.500	2150.700	335.800	2154.100
GR	335.500	2238.300	327.100	2241.200	328.100	2254.600	336.300	2256.700	335.900	2296.000
GR	327.200	2299.200	326.700	2354.200	327.400	2436.300	328.300	2530.900	329.000	2576.600
GR	337.300	2579.400	337.300	2617.400	328.200	2624.700	329.400	2684.300	351.700	2688.400
GR	351.700	2748.000	329.300	2754.300	329.700	2801.200	328.700	2842.800	329.400	2955.700
GR	329.400	3012.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	5.100	5.100	879.500	1355.300	0.000	0.000	0.000	0.000
X1	359.000	80.000	879.500	1355.300	150.000	150.000	150.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	326.000	329.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	879.500	329.000	326.000	903.900	329.000	326.000	903.900	329.000	0.000
BT	910.900	329.000	0.000	910.900	329.000	326.000	945.900	329.000	326.000	945.900
BT	329.000	0.000	952.900	329.000	0.000	952.900	329.000	326.000	987.900	329.000
BT	326.000	987.900	329.000	0.000	994.900	329.000	0.000	994.900	329.000	326.000
BT	1028.400	329.000	326.000	1028.400	329.000	0.000	1038.400	329.000	0.000	1038.400
BT	329.000	326.000	1071.900	329.000	326.000	1071.900	329.000	0.000	1078.900	329.000
BT	0.000	1078.900	329.000	326.000	1113.900	329.000	326.000	1113.900	329.000	0.000
BT	1121.100	329.000	0.000	1121.100	329.000	326.000	1155.900	329.000	326.000	1155.900
BT	329.000	0.000	1162.900	329.000	0.000	1162.900	329.000	326.000	1196.400	329.000
BT	326.000	1196.400	329.000	0.000	1206.400	329.000	0.000	1206.400	329.000	326.000
BT	1239.900	329.000	326.000	1239.900	329.000	0.000	1246.900	329.000	0.000	1246.900
BT	329.000	326.000	1281.900	329.000	326.000	1281.900	329.000	0.000	1288.900	329.000
BT	0.000	1288.900	329.000	326.000	1323.900	329.000	326.000	1323.900	329.000	0.000
BT	1330.900	329.000	0.000	1330.900	329.000	326.000	1355.300	329.000	326.000	0.000
GR	336.400	0.000	337.600	23.600	347.800	27.700	347.800	130.900	337.800	136.700
GR	332.600	154.300	330.800	163.400	331.100	200.600	331.000	242.200	330.100	344.200
GR	329.200	351.100	329.400	439.500	326.800	480.000	325.500	567.400	326.100	624.900
GR	328.100	638.600	328.000	724.900	328.200	735.900	325.900	742.400	326.600	802.200
GR	320.900	825.600	317.500	853.300	315.900	879.500	318.000	920.000	318.500	981.500
GR	316.500	1017.300	317.400	1042.100	317.800	1072.700	315.000	1087.400	314.200	1093.200
GR	313.700	1109.200	314.200	1127.800	317.200	1134.200	318.000	1165.900	316.900	1190.300
GR	318.100	1206.600	317.200	1261.500	314.800	1295.700	313.400	1334.900	315.000	1355.300
GR	314.900	1375.200	314.400	1381.500	314.000	1442.800	315.500	1485.200	315.400	1515.500
GR	314.500	1543.400	315.800	1603.800	315.400	1656.600	318.000	1680.300	323.100	1698.800
GR	326.300	1709.000	326.000	1780.800	325.900	1825.200	321.900	1839.700	322.800	1875.900
GR	323.200	1959.600	324.200	2033.900	323.600	2050.800	323.700	2085.700	325.300	2170.800

GR	326.100	2272.600	326.200	2377.800	326.700	2467.700	326.700	2562.300	328.100	2643.900
GR	328.100	2708.700	330.900	2781.000	342.400	2783.800	342.000	2919.400	330.700	2823.800
GR	329.200	2871.900	329.400	2911.500	329.200	2957.500	329.700	2973.600	342.500	2976.800
GR	342.500	3000.800	330.100	3005.600	329.200	3071.700	327.900	3103.400	329.100	3171.400
NC	0.065	0.060	0.055	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	666.000	1720.000	845.000	1720.000	0.000	0.000
X1	360.000	77.000	864.500	1720.000	345.000	550.000	303.000	0.000	0.000	0.000
GR	339.100	0.000	355.700	4.400	355.700	104.400	338.500	106.800	337.100	121.300
GR	337.100	163.200	336.600	201.000	335.200	286.800	334.300	430.200	330.600	439.600
GR	325.900	461.700	324.400	488.700	323.300	537.800	321.500	572.100	321.400	642.600
GR	319.800	700.200	318.000	715.100	318.900	754.500	319.400	793.200	318.400	811.700
GR	317.100	818.600	320.700	833.500	325.700	846.000	326.300	864.500	321.500	881.400
GR	318.600	901.600	317.800	962.400	316.500	984.900	318.500	1026.800	314.800	1034.400
GR	314.500	1046.900	314.800	1059.800	318.700	1066.700	319.400	1097.700	318.300	1148.000
GR	318.200	1190.000	318.000	1215.700	314.100	1223.400	314.000	1250.000	313.000	1285.800
GR	313.200	1318.400	315.300	1356.300	317.500	1387.300	317.600	1429.200	317.100	1485.500
GR	317.600	1554.900	318.100	1637.400	317.800	1665.200	317.300	1678.900	318.300	1702.300
GR	323.400	1720.000	323.600	1764.700	323.000	1828.300	321.100	1871.500	321.400	1912.500
GR	323.500	1927.000	323.900	1975.000	325.800	2022.100	327.200	2051.100	339.700	2054.400
GR	339.700	2204.600	339.700	2427.300	329.900	2443.800	328.100	2517.100	328.300	2626.300
GR	328.300	2735.500	327.400	2821.300	328.700	2845.800	329.000	2887.000	328.300	2928.800
GR	331.900	2969.100	332.100	3006.600	344.000	3015.800	344.000	3037.200	331.400	3040.800
GR	331.400	3082.300	332.400	3115.400	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.050	0.035	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.040	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2000.000	930.000	1855.000	0.000	0.000
X1	370.000	93.000	977.500	1929.500	360.000	310.000	361.000	0.000	0.000	0.000
X3	0.000	320.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	356.900	0.000	357.000	29.200	347.700	44.400	342.100	67.200	336.600	69.600
GR	335.100	152.500	335.100	195.700	335.100	212.900	334.900	241.800	334.800	296.600
GR	353.300	307.000	353.300	340.600	334.900	348.200	334.900	365.900	352.200	373.900
GR	352.200	407.900	333.700	413.900	332.700	465.600	332.400	501.200	328.100	516.400
GR	325.700	531.200	325.500	563.600	322.000	584.900	330.600	653.300	319.400	733.400
GR	318.900	801.000	318.400	844.600	318.700	878.700	320.300	896.300	319.600	928.700
GR	320.800	946.300	320.300	968.700	322.700	977.500	321.100	989.500	319.200	1007.600
GR	315.700	1022.400	314.600	1054.000	315.700	1078.400	319.300	1084.400	319.400	1129.700
GR	318.100	1151.700	317.300	1167.300	318.800	1179.300	321.600	1187.800	319.500	1197.800
GR	319.900	1259.400	318.900	1349.900	319.300	1436.300	318.500	1500.400	317.500	1595.300
GR	314.600	1617.900	314.500	1648.100	314.900	1701.700	317.800	1709.300	319.300	1750.200
GR	318.700	1822.600	320.000	1852.600	317.300	1869.800	318.500	1878.300	321.300	1887.500
GR	322.300	1911.100	324.800	1929.500	326.900	1984.700	334.600	1989.500	334.600	2019.100
GR	326.300	2023.200	325.700	2053.200	325.800	2090.000	327.100	2120.400	335.000	2123.700
GR	335.000	2150.500	326.900	2152.900	326.900	2207.300	326.000	2248.200	325.600	2289.400
GR	325.400	2319.400	322.200	2345.400	320.700	2364.600	320.900	2427.500	322.100	2447.500
GR	325.600	2469.100	326.900	2499.900	329.200	2525.900	329.000	2590.800	328.800	2692.000
GR	329.300	2802.500	328.100	2897.000	327.500	2958.600	328.700	2973.000	329.400	3019.100
GR	329.000	3063.900	330.300	3137.500	330.800	3231.600	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2000.000	945.000	1935.000	0.000	0.000
X1	380.000	91.000	988.000	1948.900	310.000	420.000	323.000	0.000	0.000	0.000
X3	0.000	322.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	357.400	0.000	357.500	43.500	349.900	56.800	340.400	76.300	334.000	84.000
GR	333.400	162.100	332.800	224.100	332.800	255.400	332.900	290.600	333.200	368.800
GR	332.700	476.500	332.500	512.100	327.900	528.700	329.500	543.400	323.600	562.400
GR	322.200	581.400	322.400	636.000	320.900	657.500	319.600	721.100	319.400	774.200
GR	320.000	803.700	319.800	857.500	320.700	901.300	322.500	988.000	320.900	1028.500
GR	319.600	1056.900	315.600	1062.100	314.700	1079.000	315.600	1099.800	319.100	1105.800
GR	319.100	1188.100	318.800	1256.000	316.900	1281.500	319.900	1300.200	323.500	1320.900
GR	327.000	1335.000	327.000	1386.000	322.600	1416.800	319.700	1433.400	320.000	1469.900
GR	320.300	1513.200	318.300	1527.400	318.100	1556.100	321.200	1565.100	319.700	1610.300
GR	319.400	1633.400	320.500	1667.200	318.400	1681.300	316.700	1696.200	316.200	1711.700
GR	316.900	1731.100	319.300	1749.400	320.300	1808.400	320.200	1873.200	320.200	1927.900
GR	325.000	1938.000	328.800	1948.900	329.300	2027.400	329.200	2091.800	337.300	2098.200
GR	337.300	2143.600	328.700	2148.100	328.600	2205.600	330.400	2229.500	337.000	2236.900

GR	337.000	2278.400	328.800	2286.600	328.600	2362.200	326.500	2372.900	323.200	2401.300
GR	322.700	2453.500	323.300	2520.300	324.600	2544.700	328.200	2584.400	329.100	2614.800
GR	330.000	2719.900	328.900	2835.800	328.000	2901.800	337.700	2906.700	337.700	2934.600
GR	330.300	2940.700	330.000	2959.700	332.600	2963.000	329.800	3001.900	329.100	3061.700
GR	330.300	3097.800	332.900	3108.800	333.300	3157.400	332.900	3227.900	334.400	3309.300
GR	334.300	3389.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2200.000	1010.000	1980.000	0.000	0.000
X1	390.000	92.000	1103.000	1987.900	315.000	400.000	318.000	0.000	0.000	0.000
X3	0.000	322.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	359.100	0.000	359.300	78.100	351.300	94.400	342.200	108.100	335.500	125.600
GR	334.800	143.400	334.900	205.300	332.500	259.800	333.100	326.200	335.700	349.300
GR	344.700	352.600	344.700	472.500	334.700	476.300	334.500	511.400	332.700	540.000
GR	330.100	556.000	324.800	574.600	322.700	595.300	320.300	640.300	319.100	704.900
GR	319.900	748.000	319.100	783.400	319.900	828.600	322.000	876.600	323.500	941.600
GR	324.100	1031.800	324.700	1103.000	322.800	1111.300	320.900	1134.400	316.000	1141.100
GR	315.300	1167.900	316.000	1179.500	320.400	1187.800	322.700	1217.400	321.900	1284.400
GR	321.100	1375.200	319.700	1442.600	321.100	1508.500	321.200	1613.400	320.200	1681.500
GR	315.400	1698.000	316.000	1713.800	318.400	1738.000	321.600	1793.400	321.600	1882.500
GR	320.600	1943.500	320.900	1967.200	325.800	1987.900	326.700	2037.200	329.400	2058.300
GR	332.200	2076.900	332.000	2098.200	339.900	2104.400	339.900	2165.300	332.100	2167.300
GR	332.200	2179.500	340.600	2185.300	340.600	2242.900	331.400	2246.200	330.300	2321.800
GR	330.900	2381.000	332.300	2420.800	339.400	2422.500	339.400	2466.100	332.100	2469.600
GR	331.000	2482.400	327.300	2494.000	325.800	2511.400	324.300	2558.100	324.100	2598.800
GR	327.000	2634.500	329.900	2694.200	326.400	2719.500	327.800	2731.200	332.100	2747.700
GR	333.600	2819.100	333.000	2902.400	331.800	2930.100	329.400	2953.000	329.400	2987.000
GR	330.000	3037.300	330.300	3090.600	331.000	3179.700	331.500	3258.900	332.800	3299.800
GR	335.200	3314.000	335.900	3370.800	335.800	3416.400	337.300	3475.700	338.800	3591.400
GR	355.400	3597.900	355.300	3638.700	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.035	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NC	0.040	0.040	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1110.000	1840.000	0.000	0.000
X1	400.000	75.000	1110.000	1840.000	700.000	650.000	701.000	0.000	0.000	0.000
X3	10.000	321.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	342.600	0.000	342.900	56.400	352.900	63.300	352.900	161.100	342.400	164.200
GR	340.500	215.200	339.000	242.100	335.700	277.800	331.200	330.200	328.700	365.500
GR	328.700	401.300	328.300	463.700	325.800	491.100	323.300	519.500	322.200	578.600
GR	323.300	640.000	325.100	711.600	324.800	774.400	325.900	851.600	327.500	949.000
GR	328.200	1054.600	327.400	1080.200	330.200	1090.000	330.200	1110.000	318.800	1150.000
GR	318.500	1225.000	318.400	1300.000	318.500	1400.000	319.000	1700.000	319.500	1780.000
GR	319.700	1810.000	329.300	1840.000	329.300	1870.000	320.100	1890.000	318.700	1901.600
GR	318.500	1921.100	324.700	1929.600	328.800	1939.500	329.800	1975.200	336.700	1993.000
GR	341.800	2005.100	340.700	2019.000	340.600	2068.200	335.000	2080.700	331.500	2087.600
GR	331.800	2170.900	333.200	2266.800	334.300	2300.500	357.200	2305.000	357.200	2352.000
GR	357.200	2410.800	334.000	2415.800	333.600	2470.600	331.600	2560.300	329.600	2592.000
GR	328.700	2642.400	325.600	2663.500	326.800	2691.500	329.600	2731.700	332.700	2768.600
GR	332.200	2879.900	332.900	3013.000	331.600	3089.300	329.400	3146.200	330.900	3216.400
GR	332.400	3302.900	333.100	3391.900	334.100	3491.800	337.700	3496.800	338.500	3545.900
GR	338.500	3593.700	356.700	3600.300	356.700	3765.500	340.900	3770.000	340.100	3818.800
ET	0.000	0.000	7.100	0.000	0.000	0.000	1745.000	2415.000	0.000	0.000
X1	410.000	76.000	1745.000	2415.000	730.000	660.000	720.000	0.000	0.000	0.000
X3	10.000	323.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	339.400	0.000	338.800	34.700	340.600	60.500	349.500	66.100	349.500	96.300
GR	342.800	98.500	340.200	136.800	338.100	155.300	334.600	180.600	333.400	222.500
GR	334.800	260.100	336.500	345.000	335.700	436.600	335.500	526.000	329.900	543.300
GR	326.400	565.100	326.400	579.200	326.900	600.100	327.400	666.600	328.300	706.900
GR	330.800	735.100	330.400	858.000	330.600	943.800	331.500	1061.400	332.800	1173.400
GR	332.300	1284.600	332.000	1356.700	331.700	1462.300	331.800	1569.900	330.700	1613.800
GR	331.300	1697.200	334.300	1707.700	334.600	1721.000	333.000	1725.000	333.000	1745.000
GR	320.100	1790.000	320.000	1810.000	319.500	1890.000	319.000	1990.000	318.900	2045.000
GR	319.000	2100.000	319.500	2200.000	320.000	2305.000	320.300	2385.000	332.800	2415.000
GR	332.800	2450.000	325.100	2455.200	324.900	2486.500	327.100	2495.400	336.300	2514.300
GR	332.700	2530.500	341.700	2535.700	343.500	2592.900	344.700	2638.000	345.800	2692.100
GR	346.700	2731.100	342.400	2741.600	338.000	2750.100	337.000	2775.500	335.200	2821.000

GR	334.400	2873.400	334.500	2956.000	335.000	3024.500	334.400	3131.600	331.200	3178.800
GR	329.400	3257.300	328.000	3320.100	331.800	3358.000	334.000	3423.100	334.500	3542.100
GR	332.900	3662.500	331.200	3717.300	331.600	3766.900	332.100	3854.300	332.400	3961.500
GR	333.300	4033.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1750.000	2525.000	0.000	0.000
X1	415.000	80.000	1750.000	2525.000	895.000	820.000	850.000	0.000	0.000	0.000
X3	10.000	323.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	345.900	0.000	344.600	48.000	343.300	87.200	341.600	90.000	341.400	104.000
GR	340.300	137.600	342.900	150.100	343.200	167.600	352.500	172.000	352.500	224.500
GR	344.000	227.800	342.700	299.800	349.600	308.200	349.600	347.800	341.300	350.600
GR	339.600	383.000	339.300	418.600	342.100	444.600	350.500	450.200	350.300	478.700
GR	341.400	481.100	340.900	509.500	334.500	519.100	331.600	531.900	330.800	541.900
GR	329.100	547.900	329.100	557.500	330.700	566.700	330.700	626.700	330.400	716.300
GR	330.000	812.000	331.500	840.800	331.000	891.200	333.300	907.600	333.800	1027.600
GR	332.700	1147.200	333.600	1242.900	334.000	1346.100	333.800	1388.900	332.900	1486.900
GR	330.600	1544.200	329.100	1592.200	329.700	1647.800	328.800	1683.000	333.400	1720.000
GR	333.400	1750.000	321.300	1800.000	320.500	1960.000	320.000	2065.000	319.900	2120.000
GR	320.000	2190.000	320.500	2290.000	321.000	2400.000	321.300	2450.000	333.400	2525.000
GR	330.400	2533.000	329.600	2578.200	332.000	2589.800	337.300	2601.400	339.600	2613.400
GR	342.400	2755.900	346.100	2909.500	348.700	3015.100	341.500	3032.400	339.900	3043.200
GR	335.600	3048.800	335.300	3116.800	335.600	3214.400	336.600	3290.800	334.800	3312.000
GR	332.800	3337.600	331.200	3373.700	332.500	3452.100	332.700	3534.900	334.500	3594.500
GR	335.400	3648.500	333.800	3713.700	333.400	3748.200	335.200	3797.800	335.300	3858.600
ET	0.000	0.000	7.100	0.000	0.000	0.000	1292.000	1972.000	0.000	0.000
X1	420.000	77.000	1292.000	1972.000	425.000	425.000	425.000	0.000	0.000	0.000
X3	10.000	323.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	345.200	0.000	344.500	27.200	354.600	29.200	354.600	92.400	343.100	95.200
GR	341.100	122.400	341.100	156.800	342.300	185.900	352.000	193.500	352.000	226.700
GR	343.500	228.300	341.300	251.100	335.100	259.900	332.300	269.100	331.800	293.100
GR	334.200	301.100	332.500	329.100	333.400	351.500	334.400	386.300	333.000	419.900
GR	330.900	436.300	329.900	455.500	330.900	507.100	331.500	607.000	331.800	681.000
GR	333.100	747.800	335.300	784.600	334.900	914.100	335.300	986.100	334.000	1055.300
GR	333.200	1120.500	331.300	1130.100	329.700	1162.500	330.800	1239.200	333.700	1272.000
GR	333.700	1292.000	321.500	1337.000	320.000	1627.000	321.500	1932.000	333.700	1972.000
GR	335.100	1972.900	334.800	1996.500	340.000	2008.500	339.900	2050.100	339.900	2082.500
GR	335.600	2092.900	331.400	2099.700	331.700	2152.900	331.700	2186.500	334.700	2198.300
GR	335.800	2259.300	336.400	2363.600	337.000	2483.200	336.600	2591.600	336.200	2760.700
GR	336.700	2809.900	337.000	2896.300	335.700	2923.500	333.100	2937.800	331.900	2989.000
GR	332.900	3062.200	335.300	3114.600	336.200	3217.800	335.400	3276.500	336.100	3352.100
GR	336.100	3472.500	335.100	3552.500	336.000	3649.200	336.800	3704.800	338.500	3711.200
GR	339.600	3777.200	357.500	3779.600	357.500	3885.500	339.000	3889.500	337.900	3948.700
GR	338.400	3991.500	340.700	4000.700	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1661.000	2133.700	0.000	0.000
X1	422.000	54.000	1661.000	2133.700	350.000	275.000	321.000	0.000	0.000	0.000
X3	10.000	324.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	1661.000	345.000	342.000	1689.300	345.000	342.000	1689.300	345.000	0.000
BT	1696.300	345.000	0.000	1696.300	345.000	342.000	1731.300	345.000	342.000	1731.300
BT	345.000	0.000	1738.300	345.000	0.000	1738.300	345.000	342.000	1773.300	345.000
BR	342.000	1773.300	345.000	0.000	1780.300	345.000	0.000	1780.300	345.000	342.000
BT	1813.800	345.000	342.000	1813.800	345.000	0.000	1823.800	345.000	0.000	1823.800
BT	345.000	342.000	1857.300	345.000	342.000	1857.300	345.000	0.000	1864.300	345.000
BT	0.000	1864.300	345.000	342.000	1899.300	345.000	342.000	1899.300	345.000	0.000
BT	1906.300	345.000	0.000	1906.300	345.000	342.000	1941.300	345.000	342.000	1941.300
BT	345.000	0.000	1948.300	345.000	0.000	1948.300	345.000	342.000	1981.800	345.000
BT	342.000	1981.800	345.000	0.000	1991.800	345.000	0.000	1991.800	345.000	342.000
BT	2025.300	345.000	342.000	2025.300	345.000	0.000	2032.300	345.000	0.000	2032.300
BT	345.000	342.000	2067.300	345.000	342.000	2067.300	345.000	0.000	2074.300	345.000
BT	0.000	2074.300	345.000	342.000	2109.300	345.000	342.000	2109.300	345.000	0.000
BT	2116.300	345.000	0.000	2116.300	345.000	342.000	2133.700	345.000	342.000	0.000
GR	349.200	0.000	345.500	97.600	342.300	188.500	339.900	293.000	337.800	404.900
GR	335.100	523.600	333.400	612.500	334.400	641.800	337.900	653.000	337.200	678.600
GR	335.700	696.300	335.700	731.800	335.500	780.200	338.600	831.400	337.900	854.700

GR	338.800	930.900	337.500	965.800	335.600	1004.000	332.700	1048.200	334.300	1123.700
GR	332.700	1225.700	334.200	1344.100	334.000	1416.700	332.400	1470.600	332.300	1574.400
GR	332.400	1618.000	333.900	1627.700	333.600	1661.000	327.700	1675.500	322.400	1687.800
GR	323.100	1717.400	322.200	1821.500	322.300	1966.100	322.300	2087.800	331.900	2110.100
GR	335.900	2133.700	334.600	2209.200	332.900	2292.100	333.300	2390.700	335.400	2458.300
GR	335.500	2560.300	336.300	2667.400	337.100	2793.300	337.100	2955.700	337.200	3097.500
GR	337.700	3198.100	335.100	3247.400	333.800	3275.800	332.500	3374.800	334.100	3444.800
GR	336.400	3544.600	336.600	3663.600	336.600	3749.700	336.800	3828.200	0.000	0.000
SB	1.000	1.500	2.700	0.000	432.000	83.000	6500.000	2.000	325.000	325.000
ET	0.000	5.100	5.100	5.100	1664.800	2135.500	0.000	0.000	0.000	0.000
X1	424.000	62.000	1664.800	2135.500	170.000	170.000	170.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	342.000	345.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	325.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	1664.800	345.000	342.000	1689.300	345.000	342.000	1689.300	345.000	0.000
BT	1696.300	345.000	0.000	1696.300	345.000	342.000	1731.300	345.000	342.000	1731.300
BT	345.000	0.000	1738.300	345.000	0.000	1738.300	345.000	342.000	1773.300	345.000
BT	342.000	1773.300	345.000	0.000	1780.300	345.000	0.000	1780.300	345.000	342.000
BT	1813.800	345.000	342.000	1813.800	345.000	0.000	1823.800	345.000	0.000	1823.800
BT	345.000	342.000	1857.300	345.000	342.000	1857.300	345.000	0.000	1864.300	345.000
BT	0.000	1864.300	345.000	342.000	1899.300	345.000	342.000	1899.300	345.000	0.000
BT	1906.300	345.000	0.000	1906.300	345.000	342.000	1941.300	345.000	342.000	1941.300
BT	345.000	0.000	1948.300	345.000	0.000	1948.300	345.000	342.000	1981.800	345.000
BT	342.000	1981.800	345.000	0.000	1991.800	345.000	0.000	1991.800	345.000	342.000
BT	2025.300	345.000	342.000	2025.300	345.000	0.000	2032.300	345.000	0.000	2032.300
BT	345.000	342.000	2067.300	345.000	342.000	2067.300	345.000	0.000	2074.300	345.000
BT	0.000	2074.300	345.000	342.000	2109.300	345.000	342.000	2109.300	345.000	0.000
BT	2116.300	345.000	0.000	2116.300	345.000	342.000	2135.500	345.000	342.000	0.000
GR	344.700	0.000	345.200	84.500	344.700	137.400	343.600	270.500	341.500	377.400
GR	341.100	475.400	339.900	591.000	340.400	631.800	338.600	643.800	337.400	691.100
GR	335.200	701.500	333.800	718.900	333.300	733.800	335.800	744.600	335.500	822.100
GR	336.900	899.200	335.400	950.400	332.500	973.200	332.500	1045.400	332.300	1091.100
GR	333.900	1118.700	334.900	1172.400	333.100	1211.200	332.800	1264.400	330.300	1282.100
GR	330.600	1362.600	329.800	1471.200	328.300	1546.100	327.600	1621.100	326.000	1664.800
GR	324.900	1722.400	324.300	1747.600	323.100	1753.200	323.100	1788.600	323.100	1820.400
GR	324.400	1830.400	324.000	1945.900	325.700	2020.400	325.900	2067.400	324.500	2093.600
GR	323.500	2135.500	326.300	2185.800	327.300	2260.800	327.100	2328.800	325.500	2370.800
GR	326.000	2386.200	327.800	2391.700	329.200	2482.100	328.600	2572.200	330.800	2650.800
GR	330.400	2742.200	331.400	2837.900	331.300	2933.800	331.700	3031.300	332.100	3142.300
GR	331.700	3228.800	332.600	3332.300	332.900	3440.500	333.900	3548.800	333.800	3671.900
GR	333.000	3757.200	332.900	3851.300	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.035	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1312.700	2800.000	1540.000	2490.000	0.000	0.000
X1	425.000	81.000	1393.900	2499.400	400.000	350.000	210.000	0.000	0.000	0.000
GR	343.500	0.000	344.900	130.400	344.900	239.700	344.000	352.100	343.700	467.400
GR	341.600	519.400	340.600	645.500	339.400	758.400	337.400	779.600	336.500	816.400
GR	334.100	830.800	333.700	843.600	335.500	865.600	335.600	901.700	335.300	946.900
GR	336.600	966.100	336.900	1043.700	335.100	1107.000	333.300	1125.800	331.800	1174.600
GR	333.600	1223.000	334.100	1272.700	334.800	1312.700	333.300	1357.900	333.800	1393.900
GR	331.300	1408.300	329.600	1453.600	329.900	1514.400	329.900	1611.300	328.600	1708.500
GR	327.000	1766.500	326.200	1848.200	327.600	1883.000	329.000	1905.000	328.900	1929.400
GR	325.900	1935.800	326.800	1955.800	324.100	1988.600	323.100	1995.400	322.400	2015.800
GR	323.000	2038.400	324.900	2049.200	327.900	2056.400	328.100	2104.400	329.100	2179.200
GR	329.600	2255.700	330.200	2360.500	331.600	2429.300	332.600	2468.900	335.100	2490.200
GR	336.800	2499.400	337.800	2649.800	337.700	2792.700	337.700	2935.900	338.200	3076.000
GR	338.300	3169.600	336.200	3187.200	334.200	3238.500	332.800	3303.300	334.000	3371.700
GR	334.100	3458.200	336.900	3467.800	337.900	3568.600	337.900	3699.000	338.200	3839.100
GR	337.900	3974.000	337.800	4092.000	337.400	4210.100	337.200	4327.700	337.400	4445.400
GR	337.500	4541.800	337.200	4623.000	338.000	4704.300	339.900	4717.100	341.300	4762.700
GR	340.100	4810.700	342.000	4820.700	343.100	4834.300	352.200	4837.900	352.400	4912.000
GR	343.500	4919.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1000.000	2800.000	1520.000	2515.000	0.000	0.000
X1	430.000	75.000	1087.400	1913.400	550.000	770.000	465.000	0.000	0.000	0.000

GR	345.300	0.000	343.900	130.500	343.300	268.600	342.900	405.600	342.100	532.100
GR	341.100	682.600	339.800	806.000	339.000	882.400	336.400	892.500	336.900	939.300
GR	339.800	973.700	339.700	1057.000	338.500	1087.400	333.800	1095.400	330.600	1136.700
GR	330.700	1194.300	330.200	1290.000	330.200	1385.300	329.200	1473.800	327.200	1544.600
GR	330.400	1556.700	330.500	1616.300	330.300	1703.200	328.800	1721.600	327.200	1733.700
GR	326.800	1788.900	324.700	1869.400	324.000	1882.400	324.700	1893.300	328.100	1896.500
GR	329.300	1905.300	332.300	1913.400	333.000	1952.600	332.100	2047.500	333.400	2058.700
GR	334.900	2081.100	335.100	2195.200	335.800	2304.900	334.500	2430.700	333.500	2516.300
GR	335.900	2531.900	335.400	2574.000	335.300	2601.600	337.800	2627.200	338.800	2643.200
GR	337.900	2736.900	337.100	2847.800	335.000	2905.500	335.500	2955.100	337.000	3007.200
GR	336.600	3120.500	336.200	3231.700	335.600	3367.000	334.700	3451.100	334.800	3471.500
GR	338.800	3512.400	339.600	3576.400	339.800	3708.900	339.400	3820.600	339.500	3948.400
GR	338.700	4058.400	339.200	4182.900	339.100	4309.000	338.800	4443.600	338.700	4549.200
GR	339.000	4692.200	337.800	4754.500	339.000	4775.300	341.500	4781.700	342.200	4827.300
GR	341.100	4874.500	343.200	4889.300	343.600	4900.900	353.500	4901.700	353.500	4945.700
GT	2.000	34000.000	34000.000	3800.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1400.000	3000.000	1505.000	2500.000	0.000	0.000
X1	440.000	86.000	1643.300	1855.200	760.000	540.000	542.000	0.000	0.000	0.000
GR	366.000	0.000	365.100	64.600	364.100	118.400	362.600	169.000	359.900	213.900
GR	354.100	262.500	352.800	289.800	348.100	321.100	346.100	350.400	344.800	384.100
GR	344.000	445.900	343.300	512.600	343.100	602.900	342.500	692.800	342.500	775.900
GR	342.100	817.600	336.000	832.500	334.300	847.800	333.500	879.000	331.700	897.100
GR	333.500	909.600	337.500	921.600	338.200	955.300	338.200	1015.500	337.500	1085.000
GR	338.200	1131.100	339.600	1163.200	337.000	1202.200	338.800	1233.900	339.000	1292.500
GR	338.400	1331.800	339.500	1347.500	339.500	1431.300	338.900	1500.000	336.600	1522.400
GR	334.700	1562.200	336.400	1593.500	334.900	1643.300	329.700	1658.100	329.700	1675.800
GR	328.100	1687.800	326.400	1697.800	326.900	1741.300	326.100	1809.000	324.700	1818.800
GR	325.800	1829.200	331.600	1842.000	335.100	1855.200	336.300	1890.500	336.700	1990.900
GR	335.400	2099.700	334.300	2191.500	334.700	2233.300	337.500	2241.300	338.000	2253.000
GR	337.600	2327.600	335.900	2447.600	337.100	2518.700	337.200	2575.300	338.000	2633.500
GR	337.800	2742.700	340.000	2765.900	340.000	2857.900	340.200	2964.400	340.300	3137.300
GR	340.000	3233.300	337.100	3261.700	335.300	3298.300	336.000	3352.100	336.900	3466.800
GR	337.500	3497.700	340.100	3528.300	340.400	3669.100	341.200	3831.300	340.900	3956.900
GR	341.500	4073.700	340.800	4223.800	339.900	4360.700	340.100	4479.500	340.400	4590.300
GR	339.900	4690.600	340.500	4799.400	343.400	4807.800	343.700	4855.200	342.700	4900.200
GR	339.900	4932.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1400.000	3000.000	1535.000	2535.000	0.000	0.000
X1	450.000	77.000	1542.400	2095.600	580.000	590.000	534.000	0.000	0.000	0.000
GR	349.200	0.000	348.600	39.800	348.700	156.000	346.700	259.300	345.300	395.300
GR	344.000	516.200	343.600	611.000	343.200	652.200	340.200	664.700	339.000	688.100
GR	339.100	701.400	341.600	711.500	343.800	720.000	343.300	766.000	343.200	830.200
GR	342.300	849.900	342.600	883.000	341.500	897.100	339.300	911.600	339.500	955.600
GR	338.500	986.600	341.300	997.500	340.800	1089.100	341.300	1158.800	340.900	1253.600
GR	338.600	1341.200	339.900	1388.800	341.000	1415.000	340.500	1474.200	341.100	1503.700
GR	339.100	1523.900	339.900	1542.400	332.700	1555.700	327.100	1571.500	324.800	1574.300
GR	324.800	1773.300	324.800	2067.300	328.300	2077.100	336.600	2095.600	333.600	2110.200
GR	331.900	2192.400	331.800	2293.300	331.600	2390.900	332.700	2431.300	336.700	2447.400
GR	335.800	2454.600	337.800	2465.900	338.800	2540.500	338.200	2613.500	339.700	2651.900
GR	338.700	2706.700	339.200	2729.400	340.200	2743.100	341.300	2844.700	341.300	2931.500
GR	341.200	3036.400	340.300	3092.400	338.900	3138.400	336.700	3164.600	336.600	3194.100
GR	338.900	3204.600	340.600	3233.200	340.400	3316.700	339.800	3372.800	338.700	3436.100
GR	337.900	3457.100	339.900	3492.900	341.100	3574.900	342.800	3651.500	343.100	3804.400
GR	342.600	3952.000	343.000	4067.800	341.500	4208.200	341.100	4373.100	340.900	4513.100
GR	340.800	4636.100	342.100	4774.500	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2700.000	1295.000	2230.000	0.000	0.000
X1	460.000	77.000	1298.200	2042.900	450.000	475.000	423.000	0.000	0.000	0.000
GR	346.900	0.000	347.100	52.900	342.000	75.400	341.100	106.100	340.800	128.700
GR	341.900	154.900	341.000	204.200	342.400	244.000	345.300	260.200	345.900	282.800
GR	346.600	355.800	346.400	435.400	343.000	452.700	340.700	468.400	341.600	532.500
GR	341.100	628.500	342.500	735.100	342.500	800.000	341.400	888.700	341.400	1002.900
GR	339.600	1090.900	339.200	1174.700	336.400	1213.100	339.600	1255.400	339.400	1298.200
GR	334.100	1304.600	327.800	1318.300	327.400	1376.900	325.700	1404.300	327.400	1423.200
GR	327.400	1453.100	325.100	1458.000	324.900	1461.700	325.100	1474.900	326.200	1516.900

GR	325.800	1589.900	324.800	1602.000	324.800	2017.400	329.400	2026.700	336.800	2042.900
GR	334.900	2057.800	334.400	2138.100	334.300	2231.600	332.800	2276.000	335.100	2345.000
GR	337.000	2359.900	337.200	2422.400	337.800	2454.300	339.600	2470.400	340.800	2531.400
GR	340.100	2589.500	339.600	2650.800	341.300	2674.900	341.500	2727.400	341.200	2790.400
GR	339.100	2803.700	339.200	2835.200	342.700	2843.200	343.300	2886.400	343.500	2987.200
GR	343.200	3113.100	342.300	3203.800	343.700	3263.500	344.000	3304.300	342.900	3325.200
GR	342.000	3428.100	340.700	3511.200	342.800	3593.800	344.200	3725.700	344.200	3934.200
GR	343.900	4035.000	343.100	4156.900	343.500	4281.500	343.300	4369.300	343.800	4457.600
GR	346.100	4500.400	346.400	4541.900	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	300.000	3200.000	1235.000	2250.000	0.000	0.000
X1	470.000	86.000	1237.900	2138.600	390.000	385.000	423.000	0.000	0.000	0.000
GR	342.200	0.000	342.400	38.700	341.700	76.200	343.600	100.400	344.100	166.200
GR	345.800	177.500	348.500	186.700	349.100	270.200	349.000	363.800	348.600	382.400
GR	345.200	394.500	343.600	422.300	342.200	458.200	342.400	557.500	342.600	651.800
GR	343.000	745.400	343.100	847.100	343.500	920.500	342.600	1033.400	342.700	1148.400
GR	341.400	1214.500	340.900	1237.900	334.000	1249.200	325.900	1260.900	324.800	1305.700
GR	325.500	1321.400	326.600	1345.200	329.200	1360.500	327.300	1380.300	327.600	1401.200
GR	328.800	1433.100	331.300	1456.500	332.200	1524.200	332.400	1549.700	328.500	1565.000
GR	328.800	1598.100	331.000	1613.000	329.100	1656.600	330.700	1711.000	330.300	1757.800
GR	328.900	1779.600	328.600	1798.500	333.400	1807.800	332.400	1824.700	328.900	1834.000
GR	328.900	1844.900	332.600	1855.400	332.300	1892.900	327.600	1918.300	327.000	1951.400
GR	326.500	2027.200	326.400	2110.700	331.600	2124.800	337.300	2138.600	338.100	2184.500
GR	338.000	2309.600	338.800	2437.400	338.300	2533.000	338.900	2649.500	337.800	2680.600
GR	337.600	2708.100	342.500	2719.400	342.500	2752.400	342.800	2824.600	343.900	2923.800
GR	342.800	3009.000	345.100	3017.800	344.600	3103.300	345.200	3227.600	345.700	3327.700
GR	343.500	3415.100	342.900	3525.300	343.500	3613.100	343.400	3718.000	343.600	3810.800
GR	343.200	3892.300	345.200	3918.500	344.300	3983.000	340.900	4025.800	337.800	4078.200
GR	338.100	4139.900	339.000	4188.300	343.600	4193.900	343.600	4291.600	344.100	4388.300
GR	345.500	4509.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1180.000	2190.000	0.000	0.000
X1	480.000	80.000	1186.500	1441.100	270.000	700.000	281.000	0.000	0.000	0.000
GR	345.300	0.000	343.900	35.400	350.000	50.300	349.500	116.700	349.900	205.300
GR	349.500	295.000	347.400	301.900	344.100	308.300	343.300	370.800	342.400	456.500
GR	344.600	539.400	344.400	636.000	344.400	741.000	343.600	862.900	343.900	971.300
GR	343.300	1083.500	343.400	1130.300	341.300	1154.400	340.800	1186.500	334.700	1198.200
GR	329.200	1207.100	326.700	1219.200	326.900	1257.400	325.900	1286.500	325.300	1296.500
GR	326.000	1318.800	328.900	1330.000	329.900	1354.900	327.800	1383.200	326.000	1390.000
GR	326.100	1418.900	328.200	1423.400	331.400	1432.200	335.000	1438.700	340.900	1441.100
GR	341.200	1511.900	340.600	1604.900	342.400	1656.800	343.100	1738.100	342.600	1844.600
GR	342.500	1944.300	341.200	1990.400	339.600	2019.000	338.900	2089.100	339.200	2174.800
GR	339.000	2278.600	338.900	2364.300	339.100	2454.100	339.300	2477.800	342.400	2502.400
GR	343.500	2577.200	343.600	2669.800	343.800	2781.700	343.800	2875.500	345.300	2884.300
GR	345.500	2964.800	346.200	3053.800	344.700	3151.600	347.400	3223.600	361.700	3227.600
GR	361.700	3293.600	348.500	3300.100	347.700	3366.500	347.900	3472.800	347.100	3562.500
GR	347.600	3678.800	347.600	3793.100	347.100	3837.800	345.200	3856.700	346.100	3874.400
GR	369.000	3879.200	369.000	3920.700	348.900	3924.300	348.100	3988.700	340.200	4039.000
GR	349.600	4080.900	350.300	4187.500	350.300	4289.000	351.900	4369.000	351.500	4422.600
ET	0.000	0.000	7.100	0.000	0.000	0.000	1200.000	2180.000	0.000	0.000
X1	483.000	80.000	1214.500	1486.300	129.000	165.000	153.000	0.000	0.000	0.000
GR	344.200	0.000	345.600	31.400	350.000	40.300	350.800	100.700	350.400	181.200
GR	350.000	273.700	345.900	286.700	344.200	297.200	343.700	362.400	343.500	449.700
GR	344.700	545.200	344.300	668.700	344.600	765.300	344.900	910.600	344.900	1017.600
GR	343.600	1087.600	342.300	1141.200	341.300	1177.000	342.000	1214.500	335.700	1228.500
GR	330.900	1238.600	330.500	1287.300	331.100	1317.500	327.300	1336.400	326.500	1353.300
GR	326.200	1372.900	326.700	1388.500	326.600	1430.800	332.300	1444.500	336.800	1461.700
GR	342.400	1486.300	343.600	1551.900	342.700	1610.200	343.500	1691.600	342.900	1804.700
GR	342.200	1875.900	340.300	1925.400	339.300	2029.000	339.300	2136.700	339.300	2253.300
GR	339.900	2352.000	341.300	2414.300	344.200	2426.000	344.900	2473.900	343.600	2573.700
GR	343.800	2700.500	343.700	2793.500	343.900	2842.100	345.700	2850.200	345.800	2941.100
GR	346.300	3055.000	347.800	3097.700	348.400	3157.700	348.300	3219.600	362.100	3223.200
GR	362.100	3335.500	347.400	3337.900	347.300	3430.500	347.200	3533.900	358.300	3535.500
GR	358.300	3729.900	347.700	3737.600	346.400	3819.000	345.800	3852.300	350.200	3868.800
GR	350.300	3876.900	365.200	3878.100	365.200	3914.300	352.800	3918.300	352.500	3955.800

GR	363.300	3960.200	345.300	3987.900	351.700	3990.800	350.800	4031.100	353.600	4035.100
GR	355.700	4100.200	355.900	4167.900	353.600	4235.900	352.800	4319.600	353.100	4400.100
ET	0.000	0.000	7.100	0.000	0.000	0.000	845.000	1810.000	0.000	0.000
X1	485.000	48.000	894.000	1118.800	135.000	145.000	130.000	0.000	0.000	0.000
GR	346.600	0.000	345.400	127.400	345.400	303.100	344.700	446.600	344.700	595.000
GR	343.200	715.100	342.900	813.200	339.900	894.000	337.500	953.100	335.800	980.800
GR	339.200	1031.700	335.500	1103.500	340.700	1118.800	342.900	1179.000	343.900	1269.400
GR	343.400	1356.300	342.900	1486.200	340.400	1529.600	339.700	1628.100	339.500	1732.600
GR	340.300	1850.300	340.200	1931.500	341.900	1954.400	343.900	2004.300	343.100	2102.700
GR	344.400	2206.100	343.400	2313.800	343.400	2389.700	345.600	2450.000	346.300	2561.700
GR	346.400	2636.900	345.400	2651.300	345.100	2673.900	345.300	2791.600	345.600	2890.900
GR	345.900	2995.800	346.200	3105.200	346.400	3225.300	346.300	3325.400	347.500	3429.900
GR	348.300	3482.500	351.300	3539.200	355.500	3618.000	356.800	3672.600	357.000	3752.600
GR	355.100	3866.300	353.900	3954.200	352.400	4010.200	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1000.000	2700.000	1330.000	2280.000	0.000	0.000
X1	490.000	82.000	1404.800	1564.500	200.000	190.000	192.000	0.000	0.000	0.000
GR	351.500	0.000	351.100	109.300	351.300	208.400	352.500	312.000	351.700	361.600
GR	349.400	379.700	349.300	417.200	361.600	422.800	361.600	490.100	349.000	491.800
GR	347.200	526.600	346.000	594.700	349.600	606.300	346.100	620.400	346.200	674.000
GR	345.500	740.500	346.300	819.200	346.400	899.300	356.100	903.800	356.100	1099.600
GR	345.800	1102.100	345.400	1179.500	345.000	1257.200	344.900	1338.600	344.300	1404.800
GR	338.500	1415.300	332.600	1424.100	331.300	1450.700	327.700	1455.600	327.600	1485.700
GR	327.700	1524.600	333.800	1534.300	337.200	1564.500	338.800	1606.000	341.800	1648.700
GR	343.400	1698.700	340.300	1720.100	338.400	1742.700	338.000	1770.500	338.700	1785.800
GR	343.600	1796.700	342.000	1868.800	340.800	1918.800	340.700	2019.200	340.300	2135.200
GR	341.000	2229.200	342.100	2270.300	344.100	2289.200	345.100	2397.700	344.700	2497.600
GR	344.900	2600.400	344.700	2660.900	346.600	2671.400	349.400	2681.900	350.400	2712.100
GR	349.200	2731.900	345.300	2746.000	344.600	2815.700	344.500	2891.600	346.200	2962.200
GR	347.100	3064.600	346.600	3165.800	346.600	3241.100	346.700	3328.600	346.300	3406.000
GR	345.700	3528.200	345.400	3655.900	345.200	3749.700	344.900	3875.300	345.900	3933.700
GR	347.600	3990.600	351.400	4045.300	352.700	4115.500	353.300	4151.800	352.600	4178.400
GR	345.700	3528.200	345.400	3655.900	345.200	3749.700	344.900	3875.300	345.900	3933.700
GR	347.600	3990.600	351.400	4045.300	352.700	4115.500	353.300	4151.800	352.600	4178.400
GR	351.900	4196.500	352.700	4272.300	352.100	4320.300	354.000	4379.500	353.700	4423.800
GR	361.400	4425.800	361.400	4454.400	0.000	0.000	0.000	0.000	0.000	0.000
GT	2.000	33000.000	33000.000	3500.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	993.600	2800.000	1100.000	1910.000	0.000	0.000
X1	500.000	92.000	1253.900	1528.900	495.000	470.000	472.000	0.000	0.000	0.000
GR	353.700	0.000	353.200	23.700	354.700	41.400	352.600	112.300	351.700	193.600
GR	351.700	239.100	353.000	253.200	351.500	268.900	360.300	271.700	360.300	364.800
GR	351.000	366.800	351.000	368.000	359.100	370.800	359.100	430.300	349.800	431.200
GR	349.800	433.600	359.300	436.400	359.300	523.800	349.700	526.200	348.300	581.400
GR	351.400	594.600	349.700	616.400	345.300	627.300	345.400	634.500	350.700	643.700
GR	349.600	647.800	349.100	680.400	344.100	684.800	344.100	820.400	347.600	832.100
GR	348.100	846.600	347.900	863.900	343.400	879.200	341.600	905.500	341.400	924.700
GR	341.900	993.600	341.200	1055.900	340.700	1132.000	340.300	1181.100	337.500	1208.000
GR	335.900	1246.700	339.200	1253.900	333.700	1265.200	329.600	1273.200	329.600	1361.000
GR	332.200	1363.000	331.600	1380.000	329.100	1415.000	328.200	1432.100	328.900	1453.700
GR	329.700	1485.900	333.800	1497.100	333.600	1516.100	338.800	1528.900	342.900	1582.500
GR	344.500	1641.200	344.600	1671.400	343.200	1694.800	342.300	1782.100	342.600	1889.600
GR	343.900	1906.500	345.100	1969.300	345.100	2082.800	344.400	2190.200	345.300	2292.400
GR	345.300	2419.600	346.100	2540.000	346.700	2587.800	346.900	2620.000	349.200	2632.500
GR	350.200	2662.300	360.700	2666.300	360.700	2966.200	350.500	2970.200	348.400	3051.900
GR	358.000	3055.900	357.800	3173.500	349.500	3175.900	348.400	3260.400	348.000	3332.100
GR	347.600	3447.600	347.800	3576.300	348.200	3644.000	346.700	3685.800	346.600	3783.600
GR	345.600	3930.800	347.900	4020.500	350.300	4101.400	352.000	4198.000	354.600	4215.300
GR	355.300	4317.500	356.100	4399.500	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1000.000	1800.000	1105.000	1680.000	0.000	0.000
X1	505.000	92.000	1258.700	1556.500	290.000	380.000	346.000	0.000	0.000	0.000
GR	352.000	262.500	351.900	310.700	360.500	315.300	360.500	385.200	352.600	387.200
GR	352.600	392.100	361.100	397.000	361.100	415.200	351.800	418.600	350.100	490.400
GR	349.500	561.000	348.400	636.800	349.000	695.300	350.400	705.800	348.400	815.000
GR	345.700	857.700	346.500	924.600	346.400	1016.700	355.300	1025.700	355.300	1037.000

GR	351.500	1039.900	348.100	1059.700	346.000	1074.800	345.900	1131.300	344.100	1186.800
GR	342.300	1226.600	342.100	1258.700	336.300	1270.000	338.100	1288.600	335.000	1315.900
GR	332.100	1353.600	330.300	1369.900	328.900	1401.600	329.700	1425.700	332.800	1450.900
GR	333.600	1537.700	339.700	1556.500	340.600	1582.000	344.900	1612.500	345.500	1666.100
GR	344.800	1679.500	347.000	1687.600	347.100	1742.400	348.600	1779.500	349.400	1849.300
GR	348.700	1944.600	345.800	2002.600	347.100	2021.900	346.200	2117.600	346.400	2203.700
GR	348.300	2287.000	349.600	2297.300	350.400	2494.900	350.200	2612.500	350.500	2660.900
GR	355.100	2700.600	355.700	2751.800	366.300	2755.000	366.300	2784.600	354.600	2788.300
GR	354.600	2811.800	364.100	2817.500	364.100	2884.100	354.600	2890.200	354.900	2906.100
GR	364.000	2907.700	364.000	2950.300	354.400	2953.200	354.400	2964.600	363.800	2967.800
GR	363.300	3011.200	355.000	3012.700	355.000	3021.200	364.600	3024.500	364.600	3054.900
GR	356.000	3057.800	356.500	3065.900	365.900	3067.100	365.900	3153.600	354.200	3156.900
GR	354.500	3233.600	365.300	3236.400	365.300	3259.200	355.300	3262.900	354.400	3275.800
GR	349.800	3287.600	350.000	3366.400	350.400	3481.700	350.500	3580.800	350.200	3626.000
GR	347.600	3648.700	349.800	3667.400	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1000.000	1800.000	1120.000	1605.000	0.000	0.000
X1	508.000	52.000	1094.300	1605.100	175.000	185.000	160.000	0.000	0.000	0.000
BT	46.000	1094.300	355.000	352.000	1144.000	355.000	352.000	1144.000	355.000	0.000
BT	1151.000	355.000	0.000	1151.000	355.000	352.000	1186.000	355.000	352.000	1186.000
BT	355.000	0.000	1193.000	355.000	0.000	1193.000	355.000	352.000	1228.000	355.000
BT	352.000	1228.000	355.000	0.000	1235.000	355.000	0.000	1235.000	355.000	352.000
BT	1268.500	355.000	352.000	1268.500	355.000	0.000	1278.500	355.000	0.000	1278.500
BT	355.000	352.000	1312.000	355.000	352.000	1312.000	355.000	0.000	1319.000	355.000
BT	0.000	1319.000	355.000	352.000	1354.000	355.000	352.000	1354.000	355.000	0.000
BT	1361.000	355.000	0.000	1361.000	355.000	352.000	1396.000	355.000	352.000	1396.000
BT	355.000	0.000	1403.000	355.000	0.000	1403.000	355.000	352.000	1436.500	355.000
BT	352.000	1436.500	355.000	0.000	1446.500	355.000	0.000	1446.300	355.000	352.000
BT	1480.000	355.000	352.000	1480.000	355.000	0.000	1487.000	355.000	0.000	1487.000
BT	355.000	352.000	1522.000	355.000	352.000	1522.000	355.000	0.000	1529.000	355.000
BT	0.000	1529.000	355.000	352.000	1564.000	355.000	352.000	1564.000	355.000	0.000
BT	1571.000	355.000	0.000	1571.000	355.000	352.000	1605.100	355.000	352.000	0.000
GR	354.500	0.000	353.300	64.600	353.400	129.300	353.100	227.700	351.900	327.200
GR	349.900	454.000	350.400	551.300	351.300	641.000	351.300	665.000	351.100	762.500
GR	351.100	789.100	348.600	860.500	346.000	975.900	348.700	1051.100	348.900	1094.300
GR	345.500	1111.900	343.900	1130.400	342.600	1173.300	344.300	1180.800	338.400	1192.000
GR	335.600	1200.100	335.700	1289.600	334.900	1352.100	336.100	1445.200	336.100	1492.400
GR	337.800	1512.800	336.700	1546.200	336.300	1570.700	342.500	1588.300	348.100	1605.100
GR	347.400	1668.300	347.900	1707.900	350.900	1720.300	351.300	1751.100	349.800	1791.200
GR	351.200	1826.400	349.500	1944.800	347.800	2040.400	346.900	2156.300	347.900	2279.100
GR	347.500	2399.000	347.500	2507.300	347.600	2589.800	347.500	2683.000	346.800	2782.100
GR	347.400	2866.500	348.900	2878.500	348.600	2927.700	350.200	3035.300	350.100	3130.800
GR	350.000	3258.800	349.600	3350.400	0.000	0.000	0.000	0.000	0.000	0.000
SB	1.000	1.500	2.700	0.000	428.000	83.000	6850.000	2.000	334.000	334.000
NC	0.000	0.000	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	5.100	5.100	1110.500	1603.900	0.000	0.000	0.000	0.000
X1	510.000	55.000	1110.500	1603.900	115.000	115.000	115.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	352.000	355.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	334.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	1110.500	355.000	352.000	1144.000	355.000	352.000	1144.000	355.000	0.000
BT	1151.000	355.000	0.000	1151.000	355.000	352.000	1186.000	355.000	352.000	1186.000
BT	355.000	0.000	1193.000	355.000	0.000	1193.000	355.000	352.000	1228.000	355.000
BT	352.000	1228.000	355.000	0.000	1235.000	355.000	0.000	1235.000	355.000	352.000
BT	1268.500	355.000	352.000	1268.500	355.000	0.000	1278.500	355.000	0.000	1278.500
BT	355.000	352.000	1312.000	355.000	352.000	1312.000	355.000	0.000	1319.000	355.000
BT	0.000	1319.000	355.000	352.000	1354.000	355.000	352.000	1354.000	355.000	0.000
BT	1361.000	355.000	0.000	1361.000	355.000	352.000	1396.000	355.000	352.000	1396.000
BT	355.000	0.000	1403.000	355.000	0.000	1403.000	355.000	352.000	1436.500	355.000
BT	352.000	1436.500	355.000	0.000	1446.500	355.000	0.000	1446.500	355.000	352.000
BT	1480.000	355.000	352.000	1480.000	355.000	0.000	1487.000	355.000	0.000	1487.000
BT	355.000	352.000	1522.000	355.000	352.000	1522.000	355.000	0.000	1529.000	355.000
BT	0.000	1529.000	355.000	352.000	1564.000	355.000	352.000	1564.000	355.000	0.000
BT	1571.000	355.000	0.000	1571.000	355.000	352.000	1603.900	355.000	352.000	0.000
GR	358.200	0.000	358.300	114.000	357.800	234.800	356.400	341.900	355.900	463.200

GR	355.500	590.900	355.000	663.300	352.100	673.400	351.700	774.600	348.700	784.300
GR	348.400	861.400	346.600	966.100	346.300	1046.500	345.300	1110.500	343.300	1144.400
GR	344.200	1179.600	340.700	1189.700	335.500	1196.500	335.900	1255.300	336.000	1297.500
GR	335.400	1308.300	333.400	1346.400	335.400	1422.400	337.500	1434.800	336.500	1526.900
GR	336.800	1562.400	339.800	1603.900	340.200	1655.500	343.300	1713.500	344.300	1744.300
GR	350.800	1753.500	351.600	1786.300	350.500	1812.400	345.700	1817.800	345.400	1847.900
GR	344.400	1921.800	344.600	2013.900	344.400	2115.400	344.600	2201.600	345.000	2292.800
GR	345.200	2396.100	345.100	2489.000	344.800	2537.100	349.300	2541.600	349.700	2617.900
GR	350.900	2678.300	355.400	2715.600	355.600	2808.700	356.000	2923.500	356.500	3013.500
GR	355.800	3126.200	355.800	3233.000	354.900	3298.200	350.100	3311.400	348.900	3373.000
NC	0.000	0.000	0.000	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	1700.000	650.000	1505.000	0.000	0.000
X1	515.000	95.000	622.300	1523.400	400.000	200.000	399.000	0.000	0.000	0.000
GR	354.100	128.000	371.100	131.300	371.100	164.000	354.100	167.200	354.100	177.100
GR	368.200	179.100	368.200	226.900	353.500	229.100	353.900	246.500	370.800	248.200
GR	370.800	285.500	353.700	287.100	353.400	296.100	364.900	298.600	364.900	320.600
GR	353.100	322.700	352.000	354.200	352.300	396.300	362.500	401.000	362.500	470.500
GR	362.500	470.500	352.700	472.900	353.500	494.500	349.600	502.700	349.800	542.500
GR	347.900	555.200	350.900	563.300	346.200	572.000	345.400	606.000	344.200	622.300
GR	331.500	649.000	331.500	782.500	331.500	984.600	332.600	997.000	332.400	1080.300
GR	331.500	1086.900	331.500	1216.600	332.900	1225.100	332.800	1253.000	334.500	1259.500
GR	333.500	1284.900	331.500	1295.500	331.500	1475.800	333.600	1497.300	338.800	1510.300
GR	346.800	1523.400	346.700	1570.000	345.200	1619.100	345.100	1646.900	347.100	1677.700
GR	356.700	1682.100	356.700	1744.300	346.000	1750.000	346.600	1777.000	355.700	1781.500
GR	355.700	1808.100	346.900	1812.200	346.900	1829.100	357.900	1829.100	357.900	1898.500
GR	345.500	1902.100	346.300	1997.000	347.500	2058.400	348.000	2087.500	347.000	2106.700
GR	347.200	2136.000	348.600	2156.400	358.300	2160.400	358.300	2229.500	350.200	2241.500
GR	349.600	2283.600	358.700	2285.600	358.700	2356.700	350.100	2360.400	351.200	2382.900
GR	352.500	2451.600	352.900	2485.100	361.800	2488.000	361.800	2571.000	352.200	2574.300
GR	351.800	2614.700	361.200	2617.600	361.200	2753.400	353.700	2755.800	354.000	2787.300
GR	365.000	2789.800	365.000	2856.400	354.800	2858.900	355.100	2878.500	365.900	2881.400
GR	365.900	2968.100	354.700	2971.300	354.800	3002.400	363.900	3005.300	363.900	3063.300
ET	0.000	5.100	7.100	5.100	1.000	1450.000	735.000	1390.000	0.000	0.000
X1	520.000	95.000	712.000	1389.600	500.000	525.000	587.000	0.000	0.000	0.000
GR	355.100	228.500	354.000	252.600	353.700	293.700	353.700	310.000	354.200	369.500
GR	354.500	401.800	353.600	411.700	353.300	477.800	353.400	541.000	353.600	619.100
GR	353.900	659.700	351.800	688.500	347.900	694.400	347.000	712.000	343.100	722.300
GR	336.500	733.400	331.500	775.000	331.500	836.800	331.500	938.200	335.700	942.900
GR	336.100	977.600	335.500	1050.500	334.500	1124.700	331.500	1129.300	331.500	1265.500
GR	332.800	1269.500	333.200	1309.700	332.300	1320.500	334.400	1337.200	334.800	1368.800
GR	339.900	1380.100	346.900	1389.600	347.200	1417.500	357.900	1420.000	357.900	1506.600
GR	346.400	1509.100	346.400	1536.600	356.000	1541.700	356.000	1618.000	347.200	1620.500
GR	346.700	1729.800	345.900	1743.900	345.700	1788.100	346.400	1859.600	347.000	1974.200
GR	347.600	2076.800	348.700	2189.300	360.000	2191.900	360.000	2297.500	349.500	2299.600
GR	350.500	2354.400	351.900	2387.100	352.400	2468.100	352.600	2506.700	361.200	2508.900
GR	361.200	2566.900	352.900	2569.800	352.700	2620.400	363.200	2624.700	362.500	2653.500
GR	353.200	2659.800	353.700	2719.400	363.700	2721.900	363.700	2784.500	354.500	2786.800
GR	354.900	2817.200	365.700	2820.600	365.700	2883.600	356.100	2885.800	356.200	2912.200
GR	366.800	2914.600	366.800	2995.100	355.400	2998.900	355.500	3033.700	366.000	3035.800
GR	365.500	3096.600	354.500	3100.500	354.400	3116.900	365.000	3118.900	364.600	3175.100
GR	354.200	3177.700	353.000	3223.600	353.500	3320.900	353.600	3396.700	352.500	3476.900
GR	351.100	3487.600	352.700	3497.100	352.100	3554.800	352.100	3597.900	352.700	3678.900
GR	353.000	3764.500	353.400	3869.500	354.100	3944.100	354.200	4019.000	353.200	4110.700
ET	0.000	5.100	7.100	5.100	500.000	3500.000	720.000	1260.000	0.000	0.000
X1	530.000	88.000	893.000	1437.600	610.000	645.000	624.000	0.000	0.000	0.000
GR	352.600	0.000	353.100	140.900	353.400	238.000	355.100	322.300	356.100	386.100
GR	354.900	410.500	357.000	437.900	357.500	512.200	358.600	560.700	357.800	592.200
GR	355.400	624.600	352.000	660.600	350.100	685.200	348.900	709.200	351.600	719.100
GR	351.200	744.800	351.900	765.600	348.800	773.500	348.000	798.400	341.900	815.400
GR	335.900	828.700	334.000	846.900	335.000	871.700	341.200	882.100	343.300	893.000
GR	340.600	902.100	336.400	911.600	331.500	922.800	331.500	1011.300	331.500	1229.100
GR	335.700	1237.400	335.000	1314.400	334.700	1385.400	336.000	1410.300	344.100	1420.200
GR	343.300	1429.300	348.700	1437.600	349.400	1460.000	348.600	1533.700	348.700	1564.900

GR	364.600	252.000	362.400	351.300	361.600	394.900	362.200	437.700	363.200	457.500
GR	379.900	462.800	379.900	509.600						
GR	359.900	1570.200	359.900	1661.800	349.200	1664.800	349.200	1671.900	360.000	1674.900
GR	360.000	1713.000	349.400	1715.800	349.000	1744.400	359.400	1748.100	359.400	1809.100
GR	349.300	1912.400	348.800	1888.000	349.600	1981.600	350.400	2025.400	350.300	2111.400
GR	350.900	2222.900	350.800	2302.100	350.900	2421.600	350.600	2473.800	351.700	2491.000
GR	351.600	2626.300	351.800	2726.600	353.400	2736.600	352.700	2851.100	352.100	3002.800
GR	350.800	3117.700	352.000	3223.800	352.200	3298.700	354.100	3345.600	355.200	3433.500
GR	356.200	3468.300	366.200	3470.900	366.200	3521.900	356.500	3526.800	356.400	3566.600
GR	355.700	3632.600	354.800	3644.600	356.500	3656.200	368.400	3659.900	368.400	3691.500
GR	357.900	3683.600	358.400	3698.500	367.600	3701.800	367.600	3737.500	358.300	3740.000
GR	358.200	3793.400	360.500	3831.200	360.400	3866.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	1350.000	720.000	1230.000	0.000	0.000
T										
X1	535.000	62.000	890.300	1242.500	270.000	340.000	326.000	0.000	0.000	0.000
GR	353.600	0.000	353.100	85.800	352.500	206.900	353.100	331.100	353.300	453.400
GR	354.000	523.300	351.400	586.700	351.400	675.600	349.200	685.400	347.500	723.400
GR	344.900	731.600	345.900	750.800	344.300	756.900	343.500	771.300	342.500	784.300
GR	341.500	811.000	343.700	824.600	347.100	841.200	345.900	853.600	345.000	890.300
GR	340.500	906.700	337.100	935.300	339.800	961.900	337.100	968.400	333.600	972.200
GR	333.900	1011.100	334.500	1079.400	334.400	1112.900	331.500	1116.500	331.500	1148.600
GR	331.500	1198.300	334.500	1213.400	340.600	1231.500	348.000	1242.500	348.600	1304.300
GR	348.900	1351.700	348.400	1424.100	348.800	1523.900	347.600	1626.500	348.000	1690.700
GR	347.800	1797.900	348.000	1856.300	348.700	1913.700	349.500	1970.700	350.100	2109.800
GR	351.200	2223.000	352.300	2319.900	351.900	2362.100	353.700	2373.900	353.900	2471.700
GR	353.400	2495.800	354.300	2502.700	353.700	2566.100	353.500	2617.200	353.200	2690.800
GR	353.900	2782.300	352.400	2862.200	353.700	2968.300	354.300	3027.200	357.200	3100.000
GR	358.800	3167.900	359.400	3236.200	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	400.000	2300.000	600.000	1110.000	0.000	0.000
X1	540.000	68.000	647.600	1162.700	345.000	375.000	358.000	0.000	0.000	0.000
GR	355.400	0.000	356.000	26.500	354.000	60.800	353.600	99.100	352.700	187.000
GR	353.900	259.600	355.800	312.000	356.100	399.200	356.600	443.900	353.900	499.200
GR	353.100	564.900	353.100	598.000	352.300	608.900	352.600	647.600	350.200	669.000
GR	346.900	690.800	343.800	719.400	340.300	766.200	339.200	796.500	337.100	801.700
GR	335.900	828.000	337.900	839.600	337.600	869.900	335.300	932.900	333.700	944.100
GR	331.500	948.900	331.500	1003.500	331.500	1061.000	334.800	1070.800	336.900	1090.500
GR	337.300	1134.900	342.400	1148.200	350.200	1162.700	351.200	1247.400	351.600	1303.900
GR	352.400	1381.700	352.400	1433.800	353.700	1445.100	353.400	1507.200	352.400	1593.800
GR	353.100	1689.100	353.300	1795.200	352.400	1835.500	353.000	1898.000	354.600	1911.000
GR	354.900	2057.700	353.700	2076.700	354.300	2098.500	355.300	2219.500	356.000	2319.500
GR	356.300	2411.900	354.700	2424.800	354.700	2447.400	355.700	2451.800	356.300	2591.300
GR	354.000	2599.400	354.300	2613.900	356.200	2621.600	356.300	2678.000	354.700	2686.500
GR	354.900	2759.500	356.300	2814.100	360.700	2822.500	359.900	2838.200	363.100	2893.400
GR	365.300	2969.700	363.600	2995.100	367.000	3062.800	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	1800.000	550.000	1180.000	0.000	0.000
X1	550.000	74.000	580.000	1274.600	660.000	640.000	670.000	0.000	0.000	0.000
GR	364.800	0.000	376.600	17.800	376.600	83.500	364.700	91.500	362.800	185.300
GR	362.000	209.200	360.000	221.700	359.400	282.200	358.000	324.800	358.000	364.500
GR	359.200	400.600	372.000	405.500	372.000	442.000	360.200	443.300	360.000	507.000
GR	355.900	517.100	355.500	533.800	352.900	544.000	349.200	551.600	348.900	580.000
GR	344.100	589.400	342.800	628.800	342.000	686.500	340.300	719.800	339.500	774.600
GR	335.700	783.900	332.300	789.600	332.300	826.800	332.300	865.900	334.200	872.000
GR	334.400	906.100	337.900	916.300	338.200	925.100	336.200	940.200	334.400	967.400
GR	334.800	1008.400	336.000	1067.600	337.200	1122.400	341.400	1155.700	343.700	1182.100
GR	346.400	1217.800	349.400	1247.400	352.700	1274.600	353.900	1353.000	354.000	1460.100
GR	354.300	1606.600	356.500	1755.800	356.600	1821.300	358.100	1829.000	358.500	1883.600
GR	358.200	1941.400	355.300	1952.000	354.900	1989.100	355.700	2011.700	356.800	2018.200
GR	357.600	2059.600	357.500	2093.300	352.000	2107.900	356.900	2117.600	357.300	2205.300
GR	358.500	2304.800	358.400	2347.400	355.400	2359.500	355.700	2472.300	355.500	2567.800
GR	356.400	2625.400	357.400	2645.700	358.600	2672.600	364.500	2688.300	365.200	2743.100
GR	366.200	2772.300	369.400	2783.300	372.100	2793.000	371.200	2843.800	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	600.000	1265.000	0.000	0.000
X1	560.000	81.000	649.800	1269.500	565.000	580.000	628.000	0.000	0.000	0.000
GR	384.300	0.000	384.200	45.500	373.800	47.100	371.700	52.400	383.600	59.600
GR	383.600	149.700	369.800	152.100	368.000	175.200	366.800	181.600	365.900	231.300

GR	364.600	252.000	362.400	351.300	361.600	394.900	362.200	437.700	363.200	457.500
GR	379.900	462.800	379.900	509.600	364.200	511.600	363.500	533.900	359.200	541.200
GR	358.500	561.000	353.100	569.000	349.700	601.300	344.600	611.900	343.400	641.700
GR	344.900	649.800	339.600	659.100	336.100	667.900	335.700	722.500	337.000	737.800
GR	336.300	759.700	338.000	789.100	338.000	821.000	341.500	829.100	341.100	853.400
GR	337.200	867.900	335.100	873.600	335.100	976.500	337.800	983.400	338.000	1025.100
GR	335.100	1035.900	335.100	1066.200	335.100	1132.600	339.100	1148.300	342.300	1169.700
GR	342.400	1193.900	344.800	1210.900	344.800	1234.000	341.500	1247.200	344.200	1258.600
GR	352.000	1269.500	352.000	1282.400	354.100	1293.300	354.800	1364.800	355.400	1428.200
GR	357.100	1485.900	357.500	1589.800	357.900	1677.400	359.200	1785.700	357.700	1814.700
GR	356.600	1834.900	357.000	1895.500	356.800	1973.100	356.200	2065.600	356.800	2161.300
GR	356.800	2233.100	359.000	2255.000	357.900	2280.000	358.400	2352.000	361.300	2362.000
GR	362.500	2402.800	362.600	2427.100	366.500	2444.000	367.600	2489.700	366.700	2526.400
GR	367.800	2578.900	367.400	2601.500	362.900	2618.100	362.300	2635.900	362.500	2686.700
GR	363.300	2730.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	175.000	912.000	0.000	0.000
X1	562.000	60.000	225.000	917.000	250.000	290.000	309.000	0.000	0.000	0.000
GR	363.700	0.000	363.500	27.000	364.700	51.500	379.100	55.900	379.100	95.200
GR	364.800	97.300	365.100	122.200	361.200	129.400	359.800	148.300	356.000	159.500
GR	348.200	169.900	343.100	185.700	344.200	217.700	348.900	225.000	343.900	234.600
GR	340.400	241.100	338.300	254.300	335.000	257.500	335.100	273.200	339.800	276.800
GR	339.700	344.700	339.300	443.500	339.000	484.000	335.700	493.300	335.700	557.500
GR	336.400	565.600	337.000	619.000	337.000	682.800	337.100	744.700	335.600	751.500
GR	335.600	773.600	335.600	796.100	337.400	804.900	338.900	845.900	342.800	855.100
GR	343.800	880.500	342.600	890.900	344.700	903.700	353.500	917.000	356.400	942.700
GR	358.300	1005.800	359.200	1068.000	386.300	1074.800	386.300	1194.000	360.300	1198.500
GR	357.800	1269.600	357.000	1333.400	358.500	1396.100	358.400	1484.000	358.100	1568.700
GR	358.300	1604.100	372.200	1607.700	372.200	1674.000	359.600	1682.400	358.600	1759.900
GR	360.200	1792.000	360.800	1839.000	364.000	1850.300	366.200	1859.500	367.200	1884.400
ET	0.000	0.000	7.100	0.000	0.000	0.000	190.000	945.000	0.000	0.000
X1	564.000	58.000	222.000	957.500	195.000	245.000	229.000	0.000	0.000	0.000
GR	361.900	0.000	362.000	25.600	364.000	62.400	373.500	66.000	373.500	112.400
GR	364.800	1[illegible]00	364.400	133.200	362.600	156.000	357.300	167.600	348.700	184.000
GR	346.500	20[illegible]	346.900	222.000	343.700	233.700	342.900	277.700	342.500	299.700
GR	339.900	320.100	341.800	330.500	340.300	343.700	336.500	354.100	335.800	359.300
GR	335.800	379.700	338.400	387.700	343.400	412.100	337.200	425.300	336.400	432.500
GR	338.000	453.700	337.800	480.200	336.100	493.800	336.100	531.400	337.500	538.200
GR	338.000	581.800	338.300	612.200	335.700	618.200	335.700	751.400	335.700	805.100
GR	339.500	811.500	343.200	832.300	341.600	876.300	343.300	898.300	341.300	916.700
GR	341.700	936.300	350.200	947.900	355.800	957.500	357.400	987.200	358.000	1064.400
GR	358.400	1140.800	358.300	1230.000	358.300	1328.800	358.200	1407.600	374.200	1412.000
GR	374.200	1567.700	359.000	1571.700	358.400	1635.300	360.600	1645.700	361.400	1688.100
GR	361.000	1708.900	365.700	1723.300	366.600	1759.400	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	1000.000	225.000	780.000	0.000	0.000
X1	566.000	59.000	284.100	789.900	345.000	275.000	285.000	0.000	0.000	0.000
GR	388.900	0.000	380.000	27.200	372.800	60.400	366.900	77.600	367.400	120.400
GR	369.600	149.600	369.000	158.800	362.100	168.800	354.600	180.400	352.400	196.000
GR	349.900	228.900	347.500	246.900	346.300	251.700	343.400	284.100	340.900	296.100
GR	338.700	305.300	336.500	308.100	336.500	323.300	338.500	328.500	338.200	339.700
GR	344.400	348.100	343.000	353.700	337.100	368.900	335.300	376.500	335.200	409.700
GR	338.000	418.500	337.800	462.500	337.900	492.100	336.100	498.100	336.100	568.600
GR	336.100	642.200	338.800	645.800	338.900	655.900	341.800	664.700	342.000	708.700
GR	341.700	740.300	343.400	761.900	350.500	777.500	353.900	789.900	354.900	806.300
GR	355.900	854.700	356.200	949.200	352.800	1009.600	354.500	1028.000	354.400	1036.800
GR	355.200	1049.200	355.200	1070.400	354.900	1079.600	358.000	1092.400	358.800	1157.600
GR	359.000	1200.000	359.500	1266.800	360.400	1366.100	359.900	1408.100	358.900	1425.700
GR	361.300	1432.900	362.200	1479.300	365.000	1492.500	366.000	1532.500	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	890.000	1340.000	0.000	0.000
X1	570.000	80.000	932.600	1358.200	220.000	245.000	232.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	385.400	651.800	383.000	659.000	381.600	681.800	377.200	691.000	376.600	706.600
GR	372.100	718.200	369.300	739.000	365.600	774.600	363.000	802.600	359.700	847.800

Moore Business Forms, Inc.

GR	355.500	869.400	353.900	889.800	348.800	899.000	347.500	923.000	348.800	932.600
GR	344.200	942.600	341.700	975.800	341.400	995.800	343.000	1008.200	339.100	1020.200
GR	335.600	1027.400	335.600	1050.600	339.600	1055.800	339.200	1088.600	338.800	1123.300
GR	336.400	1128.900	336.400	1179.800	336.400	1219.000	339.600	1229.400	343.500	1237.800
GR	343.600	1283.000	342.400	1308.200	344.100	1332.600	352.300	1346.200	358.400	1358.200
GR	356.900	1437.300	356.700	1531.700	356.500	1624.900	357.200	1734.100	359.200	1744.100
GR	357.800	1757.700	356.800	1768.100	360.700	1782.100	357.300	1792.100	354.600	1802.100
GR	357.500	1811.700	360.000	1822.900	360.500	1868.100	368.200	1874.900	368.200	1905.700
GR	359.900	1907.300	359.900	1944.100	361.500	1948.500	363.100	1986.500	362.000	1999.300
GR	364.300	2009.700	365.100	2040.100	365.000	2067.700	363.700	2085.200	363.800	2105.200
GR	365.000	2120.400	365.600	2140.000	364.500	2164.000	361.700	2180.000	363.000	2193.200
GR	364.800	2219.200	364.500	2266.000	366.100	2275.600	367.200	2313.200	369.100	2370.400
GR	371.600	2429.200	373.500	2480.300	375.900	2531.500	378.700	2564.300	383.400	2576.700
GR	387.000	2585.900	388.100	2644.700	387.000	2687.900	390.400	2715.900	394.600	2725.100
ET	0.000	0.000	7.100	0.000	0.000	0.000	240.000	645.000	0.000	0.000
X1	572.000	40.000	281.200	655.600	165.000	190.000	178.000	0.000	0.000	0.000
GR	387.200	0.000	382.300	9.600	382.100	30.500	377.900	42.900	372.000	67.400
GR	369.800	80.600	365.900	119.100	364.300	138.000	361.400	149.600	358.500	178.500
GR	352.500	219.400	350.500	243.100	348.500	253.100	346.900	281.200	340.400	296.100
GR	338.000	322.900	337.800	338.200	339.800	345.400	339.600	390.700	338.800	435.700
GR	336.400	444.500	336.400	509.100	336.400	592.900	339.100	600.100	343.700	614.200
GR	344.900	627.800	350.300	644.700	356.800	655.600	357.700	739.800	359.100	846.900
GR	358.100	950.000	356.700	1042.600	357.200	1122.800	358.600	1147.300	358.600	1204.200
GR	362.100	1215.500	363.700	1248.800	362.600	1262.000	363.600	1274.400	364.900	1306.100
ET	0.000	0.000	7.100	0.000	0.000	0.000	230.000	640.000	0.000	0.000
X1	574.000	39.000	240.800	658.300	180.000	200.000	198.000	0.000	0.000	0.000
GR	400.000	0.000	391.400	9.300	387.200	25.500	386.200	50.600	379.200	65.100
GR	376.900	71.500	374.100	95.200	368.300	108.000	367.800	132.700	368.000	151.800
GR	361.900	170.000	357.800	183.400	355.500	207.600	351.900	215.700	350.400	240.800
GR	345.500	258.300	339.200	272.400	336.800	277.600	336.900	296.300	340.800	306.000
GR	340.800	346.400	340.300	377.600	336.400	384.800	336.400	478.800	336.400	577.100
GR	340.900	586.900	343.400	598.500	345.100	622.300	345.300	637.300	352.100	649.000
GR	358.100	658.300	359.800	742.100	359.500	890.200	359.400	1018.000	359.600	1107.400
GR	359.600	1154.000	363.800	1165.300	364.400	1221.100	363.000	1247.800	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	220.000	630.000	0.000	0.000
X1	576.000	42.000	200.700	636.700	150.000	195.000	179.000	0.000	0.000	0.000
GR	392.500	0.000	383.100	23.800	376.500	42.300	368.800	65.200	366.700	75.200
GR	364.400	114.900	363.600	133.600	357.400	148.200	356.500	175.500	356.400	200.700
GR	352.100	222.700	346.100	249.700	342.800	274.900	337.600	284.000	338.900	295.700
GR	341.400	304.800	341.500	333.400	339.700	350.700	336.600	355.300	336.500	402.400
GR	336.500	492.600	343.300	505.700	344.500	525.900	347.300	543.400	347.900	561.200
GR	344.500	581.000	344.000	593.000	345.800	613.400	352.200	628.100	360.300	636.700
GR	359.400	659.700	359.600	764.200	361.000	867.300	361.200	947.500	361.100	997.900
GR	376.100	1002.200	376.100	1055.600	361.600	1057.600	360.600	1077.500	363.000	1085.900
GR	364.300	1145.500	365.900	1195.200	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	750.000	1175.000	0.000	0.000
X1	580.000	88.000	804.900	1181.900	190.000	200.000	183.000	0.000	0.000	0.000
GR	597.100	0.000	598.500	14.000	594.900	36.600	589.700	57.400	578.700	83.700
GR	563.100	117.800	546.900	153.200	529.800	189.500	508.000	229.900	487.200	266.800
GR	466.800	297.800	454.700	330.500	430.300	382.400	419.400	401.000	407.000	418.200
GR	405.900	424.200	403.600	453.500	392.400	477.500	382.800	508.800	377.500	524.100
GR	376.100	552.400	365.000	572.500	358.700	595.400	359.500	640.500	358.600	674.100
GR	355.700	681.300	355.200	697.700	351.500	710.200	349.100	768.600	349.800	804.900
GR	346.300	832.800	339.600	853.100	338.200	889.800	337.000	900.800	338.300	935.400
GR	341.800	951.100	342.700	984.900	343.400	1022.800	345.900	1066.700	346.400	1117.700
GR	346.000	1153.200	351.100	1168.400	359.900	1181.900	360.600	1211.900	361.000	1322.400
GR	361.200	1401.400	378.300	1406.500	378.300	1505.200	362.300	1509.400	362.100	1573.600
GR	359.600	1579.500	363.400	1587.200	365.300	1632.200	365.200	1655.300	366.600	1700.500
GR	364.700	1735.100	365.900	1755.700	368.300	1771.400	368.800	1812.900	364.500	1838.200
GR	364.500	1884.100	364.500	1914.800	367.200	1960.500	369.300	1988.800	386.400	1990.400
GR	386.400	2042.800	370.300	2047.500	370.400	2086.900	387.200	2089.800	387.200	2128.500
GR	370.600	2130.500	368.800	2143.700	371.300	2153.100	372.800	2171.100	379.200	2219.200

GR	384.600	2248.500	385.500	2284.300	[illegible]3.200	2268.900	398.200	2312.100	388.700	2319.400
GR	390.000	2338.800	400.600	2359.200	[illegible]01.600	2371.500	408.100	2382.800	411.800	2402.700
GR	412.100	2419.400	420.600	2448.600	432.900	2506.400	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	320.000	755.000	0.000	0.000
X1	582.000	39.000	305.700	762.500	130.000	145.000	154.000	0.000	0.000	0.000
GR	386.800	0.000	382.100	12.900	376.600	24.300	374.900	55.600	367.700	73.700
GR	362.800	96.300	359.100	112.200	359.200	153.900	358.700	197.500	357.300	239.100
GR	359.100	260.400	359.100	283.300	356.300	306.700	347.100	328.600	344.400	348.800
GR	344.400	384.200	344.300	416.200	342.800	453.100	339.700	504.100	338.600	511.100
GR	337.500	527.800	338.600	550.700	339.000	586.800	340.000	637.600	344.900	666.400
GR	346.700	697.900	345.300	736.600	350.800	747.300	360.400	762.500	361.600	778.500
GR	361.700	830.700	378.100	835.700	378.100	1055.900	360.700	1057.700	360.700	1123.500
GR	360.900	1134.300	364.600	1143.400	365.600	1197.400	367.100	1233.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	225.000	835.000	0.000	0.000
X1	584.000	39.000	208.000	838.400	195.000	215.000	260.000	0.000	0.000	0.000
GR	383.100	0.000	369.500	33.100	361.500	55.000	361.800	80.900	359.700	97.800
GR	358.800	128.200	356.600	155.200	359.700	190.800	359.400	208.000	349.100	229.300
GR	344.000	251.400	345.500	291.600	345.400	362.900	345.900	415.200	347.200	464.100
GR	347.300	501.500	343.000	520.100	343.700	569.300	343.600	649.200	342.500	675.700
GR	339.500	687.800	339.400	721.800	339.600	743.300	339.800	784.900	342.900	809.000
GR	344.600	816.900	354.100	829.600	360.100	838.400	361.200	882.300	361.500	943.200
GR	370.300	946.600	370.300	998.000	361.700	1008.200	361.000	1084.500	361.400	1156.500
GR	364.200	1166.800	366.000	1217.700	367.200	1230.300	367.700	1261.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	245.000	950.000	0.000	0.000
X1	586.000	36.000	225.800	967.800	115.000	210.000	214.000	0.000	0.000	0.000
GR	387.300	0.000	372.500	30.700	362.500	63.300	361.000	95.100	357.700	128.900
GR	359.000	158.900	359.600	225.800	352.200	245.600	346.800	266.200	346.400	346.800
GR	346.500	442.200	346.700	552.700	348.300	651.300	348.300	736.800	347.500	784.200
GR	345.900	818.000	340.900	837.500	339.500	850.700	339.400	874.100	339.500	897.300
GR	340.700	915.700	342.100	929.100	351.800	943.700	359.800	959.500	362.500	967.800
GR	361.200	1022.100	361.700	1091.700	374.500	1092.800	374.500	1183.400	361.500	1188.000
GR	361.200	1218.800	365.000	1231.500	366.100	1263.600	366.400	1275.900	367.900	1289.900
GR	368.800	1321.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	300.000	1000.000	390.000	960.000	0.000	0.000
X1	590.000	60.000	345.400	977.200	230.000	180.000	191.000	0.000	0.000	0.000
GR	360.000	0.000	356.400	19.300	355.200	37.700	357.100	64.800	357.700	97.500
GR	360.400	124.200	363.100	156.600	364.000	208.100	362.600	254.400	364.700	280.300
GR	364.600	345.400	360.100	362.500	352.000	389.800	348.000	420.200	348.100	467.700
GR	348.100	532.200	348.800	609.700	348.900	697.800	349.600	765.800	348.400	792.800
GR	345.600	801.900	345.600	842.500	341.700	853.000	339.700	864.700	339.300	905.200
GR	339.400	926.400	341.600	936.100	351.000	949.900	360.800	968.400	363.400	977.200
GR	362.900	1007.500	356.100	1026.000	352.600	1046.200	350.000	1067.500	349.100	1089.400
GR	350.500	1120.200	351.500	1143.500	355.900	1160.300	361.800	1180.400	365.900	1187.900
GR	366.700	1236.400	368.500	1250.400	369.200	1291.600	368.500	1318.600	369.200	1351.300
GR	369.300	1384.000	368.600	1401.700	363.600	1417.800	364.300	1444.300	378.800	1445.800
GR	378.800	1504.900	367.800	1512.100	367.600	1546.100	368.700	1572.300	368.500	1595.900
GR	369.500	1647.300	381.000	1654.000	381.000	1707.700	370.100	1710.800	370.100	1749.000
ET	0.000	5.100	7.100	5.100	700.000	1250.000	910.000	1225.000	0.000	0.000
X1	592.000	62.000	874.600	1243.800	220.000	185.000	198.000	0.000	0.000	0.000
GR	381.900	0.000	371.200	7.600	368.600	13.000	369.400	35.200	367.600	65.500
GR	365.600	81.900	360.400	92.200	359.300	111.500	358.300	133.000	356.600	164.800
GR	354.100	186.100	354.800	197.500	358.800	206.600	361.100	216.500	361.100	237.800
GR	362.800	248.300	364.200	301.900	364.400	348.200	366.600	353.700	370.700	362.700
GR	370.400	377.700	364.600	388.800	364.200	475.200	364.200	565.700	364.300	622.400
GR	366.100	633.500	370.700	651.300	370.300	670.400	366.300	682.500	364.100	715.300
GR	361.600	746.800	360.800	773.700	360.900	830.300	359.900	874.600	356.200	891.400
GR	351.100	917.200	350.500	949.800	349.900	1019.700	349.700	1060.900	346.200	1068.600
GR	343.400	1080.500	344.100	1108.900	345.300	1118.200	343.000	1135.000	340.300	1150.600
GR	339.500	1177.900	340.200	1195.200	348.400	1209.100	358.600	1228.700	366.700	1243.800
GR	367.300	1271.000	358.600	1286.300	353.800	1297.700	354.400	1323.500	354.800	1346.500
GR	354.400	1370.400	361.600	1384.000	365.700	1393.900	366.500	1422.500	366.600	1444.200

GR	371.000	1456.600	372.000	1490.200	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1130.000	1410.000	0.000	0.000
X1	594.000	71.000	1150.100	1437.900	430.000	210.000	179.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	352.000	355.600	0.000	0.000	0.000	0.000	0.000
BT	50.000	1156.000	355.600	352.000	1170.000	355.600	352.000	1171.000	356.700	0.000
BT	1176.000	356.700	0.000	1176.000	355.600	352.000	1190.000	355.600	352.000	1190.000
BT	356.700	0.000	1196.000	356.700	0.000	1196.000	355.600	352.000	1210.000	355.600
BT	352.000	1210.000	356.700	0.000	1216.000	356.700	0.000	1216.000	355.600	352.000
BT	1230.000	355.600	352.000	1230.000	356.700	0.000	1236.000	356.700	0.000	1236.000
BT	355.600	352.000	1250.000	355.600	352.000	1250.000	356.700	0.000	1256.000	356.700
BT	0.000	1256.000	355.600	352.000	1270.000	355.600	352.000	1270.000	356.700	0.000
BT	1276.000	356.700	0.000	1276.000	355.600	352.000	1290.000	355.600	352.000	1290.000
BT	356.700	0.000	1296.000	356.700	0.000	1296.000	355.600	352.000	1310.000	355.600
BT	352.000	1310.000	356.700	0.000	1316.000	356.700	0.000	1316.000	355.600	352.000
BT	1330.000	355.600	352.000	1330.000	356.700	0.000	1336.000	356.700	0.000	1336.000
BT	355.600	352.000	1350.000	355.600	352.000	1350.000	356.700	0.000	1356.000	356.700
BT	0.000	1356.000	355.600	352.000	1370.000	355.600	352.000	1370.000	356.700	0.000
BT	1376.000	356.700	0.000	1376.000	355.600	352.000	1390.000	355.600	352.000	1390.000
BT	356.700	0.000	1396.000	356.700	0.000	1396.000	355.600	352.000	1413.000	355.600
BT	352.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	382.300	0.000	376.700	6.800	369.300	11.900	367.800	54.600	366.400	86.900
GR	363.500	104.500	358.600	114.400	358.600	133.700	356.500	156.100	356.600	177.900
GR	358.200	188.400	357.000	224.600	358.400	248.100	360.600	269.100	364.900	285.300
GR	365.900	349.200	366.500	358.100	370.700	367.800	371.100	381.900	365.100	394.900
GR	364.200	404.600	364.300	467.700	364.500	548.000	363.800	686.000	364.200	797.000
GR	364.600	840.100	370.500	850.600	369.700	871.900	365.700	880.900	364.600	895.400
GR	358.100	908.700	356.400	913.800	357.100	960.600	357.400	984.900	360.500	992.900
GR	365.700	1005.900	365.900	1055.700	364.300	1077.300	358.500	1087.800	357.600	1105.100
GR	358.400	1130.000	359.800	1150.100	352.900	1161.700	347.900	1181.300	344.600	1199.100
GR	343.100	1240.200	340.100	1261.700	339.900	1281.600	340.100	1297.200	342.200	1308.800
GR	344.800	1336.000	348.900	1349.100	350.300	1362.400	347.500	1377.700	346.200	1391.900
GR	350.200	1403.800	360.900	1422.000	366.800	1437.900	366.000	1494.200	365.600	1562.200
GR	371.800	1574.100	375.900	1585.200	377.500	1636.400	376.500	1670.100	377.800	1703.000
GR	377.300	1754.200	371.400	1773.200	365.900	1789.900	365.400	1795.600	369.000	1810.600
GR	369.600	1895.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1150.000	1410.000	0.000	0.000
X1	595.000	0.000	0.000	0.000	6.000	6.000	6.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	352.000	355.600	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1400.000	2200.000	1586.000	1983.000	0.000	0.000
X1	600.000	75.000	1585.500	1983.900	144.000	174.000	139.000	0.000	0.000	0.000
GR	462.000	0.000	446.400	50.700	432.900	96.200	418.400	151.900	405.000	205.500
GR	389.800	259.700	382.800	286.400	377.800	304.900	368.400	315.100	368.400	351.200
GR	368.000	396.300	367.400	409.900	360.600	422.400	358.600	434.100	360.300	469.500
GR	361.800	493.100	358.100	506.500	355.900	525.500	358.500	565.200	360.100	611.300
GR	360.900	641.900	363.500	658.700	364.700	671.900	365.600	709.000	371.800	723.200
GR	371.100	734.300	365.900	748.500	363.800	759.900	363.800	854.900	363.700	969.600
GR	363.700	1083.800	364.000	1181.400	363.800	1264.900	364.100	1294.400	367.700	1305.100
GR	367.500	1378.600	367.100	1441.300	366.100	1481.600	366.100	1548.600	364.600	1585.500
GR	356.000	1599.700	347.600	1611.900	343.900	1622.200	343.300	1651.400	342.100	1678.900
GR	340.200	1690.000	340.000	1710.500	340.300	1725.000	342.700	1734.700	344.800	1771.400
GR	344.900	1814.400	350.600	1840.500	351.400	1861.200	347.400	1883.400	349.300	1894.800
GR	354.600	1903.600	355.800	1954.700	363.500	1969.200	366.000	1983.900	366.100	2034.200
GR	373.400	2047.800	380.000	2059.800	381.800	2110.600	380.400	2144.100	382.200	2176.400
GR	381.600	2241.500	374.900	2262.500	366.500	2283.400	365.800	2288.300	370.900	2297.600
GR	371.100	2370.300	371.900	2435.600	371.600	2459.700	377.100	2470.600	377.800	2502.300
ET	0.000	5.100	7.100	5.100	1600.000	2400.000	1740.000	2165.000	0.000	0.000
X1	605.000	89.000	1769.300	2177.400	220.000	235.000	228.000	0.000	0.000	0.000
GR	430.300	0.000	427.000	48.900	419.700	103.600	412.100	155.600	401.900	208.300
GR	392.000	261.500	383.800	311.100	376.800	360.300	369.300	400.300	365.100	418.600
GR	365.700	444.700	361.400	461.100	359.900	482.100	360.900	517.500	363.300	542.600

GR	363.500	560.800	361.500	576.600	362.100	631.600	361.800	672.300	364.600	713.700
GR	363.100	732.600	365.000	766.600	366.500	831.400	368.000	890.800	368.000	939.300
GR	369.200	970.700	371.200	989.700	370.700	1012.600	368.000	1030.800	365.100	1047.000
GR	364.900	1087.700	363.400	1230.100	363.000	1341.600	366.100	1367.600	366.200	1376.100
GR	371.300	1391.400	370.900	1404.100	368.200	1421.700	369.800	1432.200	365.900	1443.500
GR	372.900	1450.300	357.000	1452.300	356.900	1512.300	373.100	1515.400	366.500	1521.400
GR	367.300	1557.600	368.100	1593.800	367.000	1671.400	366.600	1734.800	365.900	1769.300
GR	355.500	1782.100	344.500	1799.100	343.600	1844.400	340.700	1856.200	340.200	1873.600
GR	340.700	1886.000	343.800	1893.900	344.000	1947.100	347.900	1962.000	343.700	1983.200
GR	344.200	2054.900	344.900	2104.100	353.700	2122.500	355.700	2159.300	360.500	2169.500
GR	365.900	2177.400	366.200	2221.300	364.500	2230.100	367.300	2241.000	380.600	2272.000
GR	392.500	2296.100	392.300	2344.400	390.600	2368.800	386.800	2392.200	389.400	2421.700
GR	387.500	2467.300	388.500	2489.900	388.800	2511.700	380.800	2534.100	372.500	2559.300
GR	371.400	2567.000	375.400	2580.000	376.200	2641.800	379.300	2672.900	380.400	2700.100
GR	380.100	2723.200	383.700	2741.100	386.900	2774.500	396.800	2791.500	0.000	0.000
ET	0.000	5.100	7.100	5.100	2320.000	3000.000	2320.000	2750.000	0.000	0.000
X1	610.000	94.000	2339.500	2772.900	240.000	240.000	241.000	0.000	0.000	0.000
GR	391.300	155.100	386.700	200.900	385.600	233.200	385.900	279.100	383.800	317.000
GR	379.700	388.300	376.400	429.900	373.500	469.000	370.500	540.600	368.500	595.800
GR	366.600	642.300	363.300	673.100	362.000	694.900	362.900	714.800	361.500	760.100
GR	364.200	781.900	365.600	830.300	365.100	898.500	363.300	984.000	366.100	1043.600
GR	366.100	1103.700	365.300	1131.400	363.000	1143.900	364.300	1196.900	364.700	1251.300
GR	360.800	1270.500	354.500	1295.400	352.700	1328.300	356.800	1343.500	364.100	1368.400
GR	362.800	1392.800	367.800	1409.200	366.800	1458.200	353.900	1486.200	348.000	1525.000
GR	348.000	1567.500	346.300	1655.800	346.100	1761.400	346.400	1799.700	359.400	1838.100
GR	370.600	1870.900	371.200	1922.500	370.900	1957.400	367.900	1998.100	369.500	2043.100
GR	368.200	2066.600	369.700	2087.400	368.000	2098.400	367.900	2144.900	353.500	2169.500
GR	345.900	2180.400	342.300	2197.000	343.200	2214.600	349.900	2231.000	355.500	2240.600
GR	356.500	2271.700	356.500	2295.200	365.600	2312.300	364.700	2339.500	353.300	2356.500
GR	345.500	2370.400	342.300	2387.600	342.400	2420.400	340.200	2427.500	340.100	2436.500
GR	340.200	2449.500	344.900	2459.000	344.700	2506.200	345.900	2564.800	342.000	2586.600
GR	343.000	2608.100	348.800	2622.300	349.500	2673.800	349.800	2710.300	358.300	2729.300
GR	358.700	2750.800	360.800	2759.300	366.300	2772.900	368.200	2824.700	365.600	2830.600
GR	369.600	2840.500	385.300	2865.700	400.600	2897.100	398.200	2930.200	399.900	2942.100
GR	398.000	2989.900	395.000	3005.500	393.000	3027.000	394.700	3048.800	393.800	3083.600
GR	391.400	3121.600	390.200	3179.600	389.200	3301.000	387.000	3345.200	0.000	0.000
ET	0.000	5.100	7.100	5.100	2150.000	2470.000	2150.000	2470.000	0.000	0.000
X1	620.000	85.000	2200.000	2325.800	340.000	470.000	336.000	0.000	0.000	0.000
GR	371.300	0.000	371.800	177.500	371.400	292.700	371.500	413.900	370.400	514.800
GR	367.700	535.400	366.400	573.800	367.100	641.800	367.700	723.200	368.100	784.200
GR	368.100	911.300	367.600	1050.100	366.900	1142.800	366.300	1207.800	366.500	1229.000
GR	360.100	1240.100	352.200	1254.400	348.500	1263.700	348.400	1320.700	349.900	1426.300
GR	350.000	1512.600	350.200	1572.000	348.300	1612.800	346.700	1620.200	347.400	1661.900
GR	352.100	1675.900	357.400	1705.700	356.300	1726.100	359.800	1734.200	362.800	1742.400
GR	362.900	1766.700	366.600	1776.100	367.500	1831.600	366.100	1883.400	361.300	1894.400
GR	351.300	1915.300	346.700	1925.200	346.800	1939.900	346.700	2001.700	343.000	2017.300
GR	343.000	2088.300	347.400	2096.000	347.000	2148.000	360.000	2150.000	360.000	2200.000
GR	360.000	2210.000	360.000	2220.000	342.000	2235.000	342.000	2285.000	342.000	2315.000
GR	348.500	2325.800	343.100	2347.500	341.200	2359.800	340.700	2385.800	339.800	2396.400
GR	340.700	2410.000	342.200	2418.400	343.100	2493.700	342.800	2588.100	343.400	2630.800
GR	352.400	2638.000	353.500	2661.100	354.600	2690.900	362.300	2712.200	365.700	2738.200
GR	368.000	2753.600	368.200	2799.800	366.900	2812.600	373.800	2825.500	385.300	2843.000
GR	388.800	2854.900	388.700	2888.400	393.200	2909.200	399.300	2934.700	404.000	2947.200
GR	401.400	2991.100	397.400	3017.800	397.900	3037.200	398.500	3051.500	395.900	3096.700
GR	390.500	3144.700	388.300	3177.000	388.400	3228.800	391.000	3274.500	390.800	3329.700
ET	0.000	5.100	7.100	5.100	2080.000	2390.000	2080.000	2350.000	0.000	0.000
X1	630.000	95.000	2196.000	2356.000	380.000	300.000	362.000	0.000	0.000	0.000
GR	382.000	222.700	377.800	303.800	376.000	381.000	373.600	461.200	372.400	551.400
GR	380.100	555.200	380.100	579.800	371.900	583.600	372.200	659.600	371.500	695.200
GR	368.900	712.000	368.300	729.600	366.800	754.800	367.200	782.900	368.100	817.600
GR	369.200	848.900	369.800	896.200	370.600	966.700	371.100	1053.500	370.600	1153.600
GR	370.600	1240.600	367.500	1317.800	366.900	1352.200	364.800	1374.400	365.400	1401.300
GR	368.300	1438.200	369.300	1481.700	371.500	1501.600	371.000	1584.700	368.600	1603.000

GR	362.000	1614.800	362.200	1638.700	362.100	1652.000	357.500	1662.600	356.400	1724.700
GR	356.900	1778.400	358.300	1836.900	356.500	1880.700	355.200	1900.100	353.800	1965.800
GR	353.000	2005.300	348.600	2011.400	345.600	2019.300	344.300	2032.700	346.800	2051.900
GR	351.400	2064.900	360.000	2080.000	360.000	2154.000	360.000	2176.000	360.000	2186.000
GR	360.000	2196.000	343.000	2230.000	343.000	2260.000	343.000	2280.000	343.000	2310.000
GR	366.000	2356.000	365.000	2361.900	370.200	2372.000	369.700	2392.500	360.600	2403.300
GR	350.100	2417.100	344.800	2429.300	342.700	2454.900	341.000	2460.000	342.200	2475.000
GR	346.800	2490.400	345.700	2534.900	343.300	2545.100	343.700	2556.700	345.200	2563.000
GR	346.000	2605.400	348.600	2618.800	358.200	2624.600	358.500	2664.100	359.500	2684.700
GR	366.500	2701.900	368.100	2747.800	368.400	2799.400	368.300	2844.200	368.500	2882.400
GR	370.200	2897.100	372.600	2909.200	372.700	2941.500	381.400	2963.400	391.100	2995.300
GR	402.300	3023.300	403.800	3040.100	402.600	3082.500	394.600	3125.300	390.900	3139.100
GR	399.600	3143.700	397.000	3183.900	383.300	3189.500	381.800	3205.700	384.100	3243.500
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1200.000	2000.000	1500.000	1875.000	0.000	0.000
X1	631.000	45.000	1721.000	1875.000	285.000	110.000	211.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	368.000	372.000	0.000	0.000	0.000	0.000	0.000
BT	17.000	1306.000	372.000	0.000	1500.000	372.000	0.000	1500.000	372.000	368.000
BT	1628.500	372.000	368.000	1628.500	372.000	0.000	1635.500	372.000	0.000	1635.500
BT	372.000	368.000	1746.500	372.000	368.000	1746.500	372.000	0.000	1753.500	372.000
BT	0.000	1753.500	372.000	368.000	1875.000	372.000	368.000	1875.000	372.000	0.000
BT	1912.600	372.000	0.000	1922.400	372.000	0.000	1947.200	372.000	0.000	1956.400
BT	372.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	373.600	0.000	373.800	64.200	373.500	168.600	373.600	277.100	373.500	422.000
GR	374.500	533.900	373.000	631.200	371.700	776.600	372.100	894.100	373.000	978.300
GR	373.100	1098.100	373.200	1209.400	372.000	1306.100	367.000	1500.000	360.000	1514.000
GR	360.000	1628.500	360.000	1635.500	360.000	1721.000	345.000	1746.500	345.000	1753.500
GR	345.000	1831.000	367.000	1875.000	371.000	1912.600	370.000	1922.400	370.500	1947.200
GR	372.700	1956.400	371.400	1969.600	369.300	1979.700	370.000	2019.100	368.700	2042.800
GR	366.200	2050.000	364.100	2066.900	357.900	2081.900	355.300	2096.600	351.500	2105.000
GR	348.900	2118.500	348.200	2150.000	349.200	2170.100	351.000	2182.700	358.100	2195.400
GR	363.400	2211.000	365.700	2231.800	366.900	2279.900	367.600	2349.500	367.800	2408.900
ET	0.000	5.100	7.100	5.100	1200.000	2000.000	1500.000	1875.000	0.000	0.000
X1	633.000	46.000	1721.000	1875.000	60.000	60.000	60.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	368.000	372.000	0.000	0.000	0.000	0.000	0.000
BT	16.000	1306.000	372.000	0.000	1500.000	372.000	0.000	1500.000	372.000	368.000
BT	1628.500	372.000	368.000	1628.500	372.000	0.000	1635.500	372.000	0.000	1635.500
BT	372.000	368.000	1746.500	372.000	368.000	1746.500	372.000	0.000	1753.500	372.000
BT	0.000	1753.500	372.000	368.000	1875.000	372.000	368.000	1875.000	372.000	0.000
BT	1912.600	372.000	0.000	1958.300	372.000	0.000	1972.000	371.500	0.000	0.000
GR	373.200	0.000	373.600	91.300	373.900	224.500	373.700	376.900	373.600	464.900
GR	373.000	498.000	374.100	520.700	373.900	555.400	373.800	607.200	373.800	730.900
GR	373.600	838.300	373.900	963.400	373.900	1071.400	372.900	1184.700	372.500	1269.500
GR	372.100	1298.200	372.700	1378.000	372.500	1488.600	367.000	1500.000	360.000	1514.000
GR	360.000	1628.500	360.000	1635.500	360.000	1721.000	345.000	1746.500	345.000	1753.500
GR	345.000	1831.000	367.000	1875.000	369.500	1875.000	369.500	1912.700	369.000	1958.300
GR	371.500	1972.000	370.100	2000.400	368.500	2062.000	367.200	2085.800	363.400	2099.800
GR	352.000	2121.900	352.000	2142.300	352.000	2158.600	357.100	2167.800	356.900	2189.300
GR	364.200	2203.600	366.400	2243.000	367.400	2278.500	367.900	2340.900	367.900	2405.700
GR	368.300	2426.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 51,52,53,54,55,56,,57,58
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20-OCT-82    14:49:57


EzE8?UA:DvitO
T1       UFPER SAN DIEGO RIVER
T2       SECTIONS DIGITIZED IN 1982
T3       FLOODWAY

J1  ICHECK     ING        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
          0.         3.         0.         0.  0.000000       0.00      -1.0          0.   290.400      0.000
J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE
     15.000      0.000     -1.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
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SUMMARY PRINTOUT FOR MULTIPLE PROFILES

FLOODWAY

	SECTION NUMBER	DISCHARGE CFS	CWSEL	CRIWS	EG	HL	STENCL	STENCR	TOPWID	QLOB	QCH	QROB	SSTA	ENDST
1 X	100.000	38000.00	289.40	0.00	290.43	0.00	0.00	0.00	329.77	0.25	36909.38	1090.38	120.60	450.37
	100.000	38000.00	290.40	0.00	291.39	0.00	120.00	400.00	280.00	1.88	37998.12	0.00	120.00	400.00
2	110.000	38000.00	289.65	0.00	291.65	0.93	0.00	0.00	318.65	28.47	37969.47	2.06	118.80	437.45
	110.000	38000.00	290.54	0.00	292.50	0.82	120.00	395.00	275.00	45.69	37954.31	0.00	120.00	395.00
3	120.000	38000.00	291.84	0.00	293.03	1.30	0.00	0.00	351.08	4.11	37824.01	171.88	92.75	443.84
	120.000	38000.00	292.52	0.00	293.76	1.19	115.00	395.00	280.00	0.00	38000.00	0.00	115.00	395.00
4 X	130.000	38000.00	295.70	0.00	296.42	3.34	0.00	0.00	399.00	112.83	36470.14	1417.03	170.68	569.68
	130.000	38000.00	296.51	0.00	297.36	3.56	225.00	500.00	275.00	0.00	38000.00	0.00	225.00	500.00
5 X	140.000	38000.00	297.62	0.00	298.40	1.97	0.00	0.00	378.85	0.00	37216.45	783.55	274.53	653.38
	140.000	38000.00	298.55	0.00	299.42	2.05	315.00	585.00	270.00	0.00	38000.00	0.00	315.00	585.00
6 X	150.000	38000.00	299.35	0.00	299.94	1.18	1.00	1231.90	922.43	2658.60	35341.40	0.00	306.51	1228.93
	150.000	38000.00	300.32	0.00	300.63	1.16	655.00	1200.00	545.00	965.13	37034.87	0.00	655.00	1200.00
7 X	160.000	38000.00	299.90	0.00	300.09	0.45	0.00	0.00	1038.84	8549.23	29450.77	0.00	544.64	1597.94
	160.000	38000.00	300.87	0.00	301.09	0.45	570.00	1435.00	865.00	9214.54	23785.46	0.00	570.00	1435.00
8	170.000	38000.00	300.09	0.00	300.22	0.13	0.00	0.00	1660.76	19841.60	18111.65	46.75	533.56	2194.32
	170.000	38000.00	301.05	0.00	301.23	0.14	1040.00	2085.00	1045.00	15886.15	22113.85	0.00	1040.00	2085.00
9 X	180.000	38000.00	300.20	0.00	300.32	0.10	500.00	2200.00	1465.30	21905.55	15966.11	129.34	635.60	2100.90
	180.000	38000.00	301.22	0.00	301.33	0.09	865.00	2065.00	1200.00	21713.69	16163.88	122.43	865.00	2065.00
10 X	190.000	38000.00	300.36	0.00	300.44	0.11	0.00	0.00	1502.29	7337.14	30577.65	85.21	569.83	2072.12
	190.000	38000.00	301.35	0.00	301.43	0.09	710.00	2000.00	1290.00	6975.22	31024.78	0.00	710.00	2000.00
11 X	200.000	38000.00	300.45	0.00	300.54	0.10	0.00	0.00	1501.26	9136.06	28863.94	0.00	590.27	2108.27
	200.000	38000.00	301.42	0.00	301.53	0.09	935.00	2025.00	1081.86	5027.13	32972.88	0.00	943.14	2025.00
12	210.000	38000.00	300.51	0.00	300.65	0.10	0.00	0.00	1625.77	14619.28	23380.72	0.00	548.20	2173.97
	210.000	38000.00	301.47	0.00	301.64	0.09	1040.00	2080.00	1040.00	12626.19	25373.81	0.00	1040.00	2080.00
13 X	220.000	38000.00	300.76	0.00	301.01	0.33	0.00	0.00	1604.52	23749.55	13933.35	317.10	133.42	1737.93
	220.000	38000.00	301.66	0.00	301.99	0.30	650.00	1620.00	970.00	21760.58	16239.42	0.00	650.00	1620.00
14 X	230.000	38000.00	301.52	0.00	301.88	0.84	0.00	0.00	1267.67	17575.36	20358.44	66.20	483.12	1750.79
	230.000	38000.00	302.39	0.00	302.96	0.90	975.00	1710.00	735.00	11439.47	26523.63	36.90	975.00	1710.00
15	239.000	38000.00	302.74	0.00	303.49	1.49	450.00	1300.00	743.26	14674.98	23325.02	0.00	450.00	1193.26
	239.000	38000.00	303.75	0.00	304.43	1.43	530.00	1190.00	660.00	13769.28	24230.72	0.00	530.00	1190.00
16	242.000	38000.00	303.83	0.00	304.88	1.24	1477.70	1977.20	464.76	0.00	38000.00	0.00	1487.84	1952.60
	242.000	38000.00	304.59	0.00	305.49	0.95	1477.70	1977.20	468.49	0.00	38000.00	0.00	1486.51	1955.00
A 17	244.000	38000.00	304.59	0.00	305.44	0.51	1538.30	2038.70	488.16	0.00	38000.00	0.00	1538.30	2026.46
	244.000	38000.00	305.18	0.00	305.95	0.41	1538.30	2038.70	490.42	0.00	38000.00			

SECTION NUMBER	DISCHARGE CFS	CWSEL	CRIWS	EG	HL	STENCL	STENCR	TOPWID	QLOB	QCH	QROB	SSTA	ENDST
245.000	38000.00	305.92	0.00	306.23	0.73	550.00	1550.00	859.84	4664.02	33149.52	186.46	550.00	1409.84
245.000	38000.00	306.31	0.00	306.74	0.76	730.00	1335.00	605.00	193.12	37806.88	0.00	730.00	1335.00
250.000	38000.00	307.47	0.00	307.76	1.52	0.00	0.00	1092.29	8233.26	26863.81	2902.93	222.91	1315.20
250.000	38000.00	308.21	0.00	308.62	1.88	580.00	1275.00	695.00	1563.71	33081.51	3354.78	580.00	1275.00
260.000	38000.00	309.62	0.00	310.46	2.54	0.00	0.00	639.78	2280.21	35719.79	0.00	336.78	976.55
260.000	38000.00	310.53	0.00	311.23	2.52	365.00	965.00	600.00	2125.12	35874.88	0.00	365.00	965.00
270.000	37000.00	313.23	0.00	313.77	3.29	100.00	1023.70	760.21	882.39	35503.05	614.57	258.15	1018.36
270.000	37000.00	313.52	0.00	314.09	2.84	400.00	960.00	560.00	8.43	36935.85	35.72	400.00	960.00
280.000	37000.00	314.85	0.00	314.97	1.15	0.00	0.00	1526.28	322.42	36541.88	135.71	184.62	1710.90
280.000	37000.00	315.22	0.00	315.35	1.22	330.00	1630.00	1300.00	0.00	37000.00	0.00	330.00	1630.00
285.000	37000.00	315.35	0.00	315.50	0.52	0.00	0.00	1726.69	285.06	36551.73	163.21	197.44	1924.13
285.000	37000.00	315.74	0.00	315.89	0.53	330.00	1765.00	1435.00	0.00	37000.00	0.00	330.00	1765.00
290.000	37000.00	316.16	0.00	316.35	0.84	0.00	0.00	1819.92	0.00	37000.00	0.00	731.72	2565.72
290.000	37000.00	316.49	0.00	316.70	0.80	770.00	2340.00	1556.97	0.00	37000.00	0.00	770.00	2340.00
300.000	37000.00	317.42	0.00	317.64	1.28	0.00	0.00	1690.10	0.00	35530.59	1469.41	645.51	2335.61
300.000	37000.00	317.69	0.00	317.91	1.21	660.00	2130.00	1470.00	0.00	36818.93	181.06	660.00	2130.00
310.000	37000.00	318.09	0.00	318.32	0.68	600.00	2800.00	1774.98	4.03	36667.75	328.22	801.37	2577.01
310.000	37000.00	318.32	0.00	318.54	0.62	850.00	2395.00	1545.00	0.00	36864.31	135.69	850.00	2395.00
320.000	37000.00	318.63	0.00	318.95	0.60	1.00	1870.60	1350.29	19.16	36980.84	0.00	493.71	1863.78
320.000	37000.00	318.80	0.00	319.15	0.57	645.00	1870.00	1208.10	0.00	37000.00	0.00	645.00	1866.94
330.000	36000.00	319.21	0.00	319.84	0.80	1.00	1400.00	890.21	4096.06	31903.94	0.00	388.37	1326.88
330.000	36000.00	319.38	0.00	320.06	0.81	435.00	1280.00	798.85	3772.82	32227.18	0.00	435.00	1280.00
340.000	36000.00	320.38	0.00	320.76	0.90	1.00	1500.00	988.12	0.00	36000.00	0.00	375.40	1363.52
340.000	36000.00	320.57	0.00	320.96	0.87	425.00	1345.00	920.00	0.00	36000.00	0.00	425.00	1345.00
345.000	36000.00	321.06	0.00	321.44	0.67	1.00	2000.00	1046.01	0.00	36000.00	0.00	460.28	1637.59
345.000	36000.00	321.16	0.00	321.58	0.62	595.00	1525.00	801.15	0.00	36000.00	0.00	595.00	1525.00
355.000	36000.00	321.67	0.00	322.22	0.73	591.70	1404.90	810.41	0.00	36000.00	0.00	591.70	1404.90
355.000	36000.00	321.70	0.00	322.36	0.71	740.00	1404.90	662.72	0.00	36000.00	0.00	740.00	1404.90
357.000	36000.00	322.28	0.00	324.70	1.54	808.00	1290.30	482.30	0.00	36000.00	0.00	808.00	1290.30
357.000	36000.00	322.45	0.00	324.74	1.57	808.00	1290.30	482.30	0.00	36000.00	0.00	808.00	1290.30
359.000	36000.00	325.15	0.00	326.49	1.47	879.50	1355.30	475.80	0.00	36000.00	0.00	879.50	1355.30
359.000	36000.00	325.09	0.00	326.45	1.44	879.50	1355.30	475.80	0.00	36000.00	0.00	879.50	1355.30
360.000	36000.00	327.01	0.00	327.23	0.63	666.00	1720.00	1054.00	3902.32	32097.68	0.00	666.00	1720.00
360.000	36000.00	327.00	0.00	327.29	0.73	845.00	1720.00	875.00	16.61	35983.39	0.00	845.00	1720.00
370.000	36000.00	327.35	0.00	327.58	0.35	1.00	2000.00	1463.90	8914.37	26963.71	121.93	521.07	1984.98
370.000	36000.00	327.40	0.00	327.85	0.51	930.00	1885.00	955.00	1327.37	34672.63	0.00	930.00	1885.00
380.000	36000.00	327.68	0.00	328.07	0.44	1.00	2000.00	1415.64	10413.40	25586.60	0.00	530.04	1945.69
380.000	36000.00	327.96	0.00	328.65	0.73	945.00	1935.00	990.00	1354.75	34645.25	0.00	945.00	1935.00

SECTION NUMBER	DISCHARGE CFS	CWSEL	CRIWS	EG	HL	STENCL	STENCR	TOPWID	QLOB	QCH	QROB	SSTA	ENDST
390.000	36000.00	328.34	0.00	328.63	0.55	1.00	2200.00	1487.80	10177.25	25579.87	242.88	562.19	2049.99
390.000	36000.00	328.96	0.00	329.45	0.78	1010.00	1980.00	970.00	1528.09	34471.91	0.00	1010.00	1980.00
400.000	36000.00	329.28	0.00	330.01	1.25	0.00	0.00	725.62	0.00	36000.00	0.00	1114.31	1839.93
400.000	36000.00	330.13	0.00	330.71	1.23	1110.00	1840.00	729.66	0.00	36000.00	0.00	1110.34	1840.00
410.000	36000.00	331.04	0.00	331.88	1.84	0.00	0.00	655.53	0.00	36000.00	0.00	1753.98	2409.51
410.000	36000.00	331.42	0.00	332.18	1.41	1745.00	2415.00	658.44	0.00	36000.00	0.00	1752.25	2410.69
415.000	36000.00	332.94	0.00	333.39	1.48	0.00	0.00	769.07	0.00	36000.00	0.00	1752.37	2521.44
415.000	36000.00	333.10	0.00	333.54	1.33	1750.00	2525.00	771.22	0.00	36000.00	0.00	1751.51	2522.73
420.000	36000.00	333.41	0.00	333.89	0.49	0.00	0.00	677.68	0.00	36000.00	0.00	1293.23	1970.91
420.000	36000.00	333.55	0.00	334.02	0.46	1292.00	1972.00	678.60	0.00	36000.00	0.00	1292.63	1971.44
422.000	36000.00	332.97	332.22	336.07	0.87	0.00	0.00	453.89	0.00	36000.00	0.00	1662.54	2116.43
422.000	36000.00	333.12	332.22	336.11	0.83	1661.00	2133.70	455.09	0.00	36000.00	0.00	1662.19	2117.28
424.000	36000.00	334.73	0.00	336.07	0.00	1664.80	2135.50	470.70	0.00	36000.00	0.00	1664.80	2135.50
424.000	36000.00	334.73	0.00	336.11	0.00	1664.80	2135.50	470.70	0.00	36000.00	0.00	1664.80	2135.50
425.000	36000.00	336.16	0.00	336.46	0.32	1312.70	2800.00	1183.27	391.85	35608.15	0.00	1312.70	2495.97
425.000	36000.00	336.15	0.00	336.54	0.37	1540.00	2490.00	950.00	0.00	36000.00	0.00	1540.00	2490.00
430.000	36000.00	336.66	0.00	337.06	0.56	1000.00	2800.00	1525.00	0.00	32008.57	3991.43	1090.53	2615.53
430.000	36000.00	336.59	0.00	337.72	0.96	1520.00	2515.00	995.00	0.00	30160.04	5839.96	1520.00	2515.00
440.000	34000.00	338.16	338.16	340.00	1.28	1400.00	3000.00	1239.34	1495.37	26521.60	5983.03	1507.18	2746.52
440.000	34000.00	338.38	0.00	340.07	2.18	1505.00	2500.00	995.00	1638.92	26047.01	6314.06	1505.00	2500.00
450.000	34000.00	340.35	0.00	340.50	0.33	1400.00	3000.00	1245.60	10.97	27233.79	6755.23	1511.28	2756.88
450.000	34000.00	340.39	0.00	340.54	0.32	1535.00	2535.00	1000.00	1.99	27395.72	6602.29	1535.00	2535.00
460.000	34000.00	340.47	0.00	340.58	0.08	1.00	2700.00	1571.16	149.02	30447.42	3403.57	1048.23	2663.17
460.000	34000.00	340.50	0.00	340.63	0.09	1295.00	2230.00	935.00	1.84	32206.40	1791.76	1295.00	2230.00
470.000	34000.00	340.53	0.00	340.68	0.09	300.00	3200.00	1476.40	0.00	32595.89	1404.11	1238.49	2714.88
470.000	34000.00	340.57	0.00	340.74	0.10	1235.00	2250.00	1011.57	0.00	33630.88	369.12	1238.42	2250.00
480.000	34000.00	339.31	336.09	341.51	0.21	0.00	0.00	628.75	0.00	33905.88	94.13	1189.36	2477.85
480.000	34000.00	339.37	0.00	341.56	0.21	1180.00	2190.00	399.02	0.00	33957.30	42.70	1189.25	2190.00
483.000	34000.00	339.58	338.01	342.57	0.82	0.00	0.00	553.64	0.00	33908.34	91.66	1219.88	2299.07
483.000	34000.00	339.64	338.04	342.59	0.81	1200.00	2180.00	441.53	0.00	33916.09	83.91	1219.74	2180.00
485.000	34000.00	343.86	343.86	345.24	0.91	0.00	0.00	1625.07	1340.68	18514.65	14144.66	661.96	2402.41
485.000	34000.00	343.97	343.97	345.84	0.99	845.00	1810.00	965.00	1118.58	20911.27	11966.15	845.00	1810.00
490.000	34000.00	345.33	0.00	345.99	0.68	1000.00	2700.00	1471.70	102.96	17448.02	16449.02	1192.69	2664.39
490.000	34000.00	346.03	0.00	346.57	0.60	1330.00	2280.00	950.00	19[illegible].24	16317.62	17486.14	1330.00	2280.00
500.000	33000.00	346.29	0.00	346.63	0.61	993.60	2800.00	1561.85	6050.[illegible]2	22564.77	4384.71	993.60	2555.45
500.000	33000.00	346.74	0.00	347.12	0.54	1100.00	1910.00	810.00	4923.21	23876.08	4200.71	1100.00	1910.00

SECTION NUMBER	DISCHARGE CFS	CWSEL	CRIWS	EG	HL	STENCL	STENCR	TOPWID	QLOB	QCH	QROB	SSTA	ENDST
505.000	33000.00	346.35	0.00	347.23	0.44	1000.00	1800.00	612.98	1263.80	30188.46	1547.74	1072.25	1685.23
505.000	33000.00	346.88	0.00	347.66	0.42	1105.00	1680.00	575.00	1542.63	29683.20	1774.17	1105.00	1680.00
508.000	33000.00	346.70	0.00	348.10	0.61	1000.00	1800.00	495.19	0.00	33000.00	0.00	1105.70	1600.89
508.000	33000.00	347.14	0.00	348.43	0.51	1120.00	1605.00	482.22	0.00	33000.00	0.00	1120.00	1602.22
510.000	33000.00	347.54	0.00	348.22	0.12	1110.50	1603.90	493.40	0.00	33000.00	0.00	1110.50	1603.90
510.000	33000.00	347.85	0.00	348.48	0.06	1110.50	1603.90	493.40	0.00	33000.00	0.00	1110.50	1603.90
515.000	33000.00	348.27	0.00	348.35	0.07	1.00	1700.00	1113.52	89.36	32726.70	183.94	552.74	1678.24
515.000	33000.00	348.53	0.00	348.61	0.07	650.00	1505.00	855.00	0.00	33000.00	0.00	650.00	1505.00
520.000	33000.00	348.26	0.00	348.44	0.06	1.00	1450.00	723.90	6.16	32974.83	19.01	693.85	1417.75
520.000	33000.00	348.53	0.00	348.70	0.06	735.00	1390.00	655.00	0.00	32999.57	0.43	735.00	1390.00
530.000	33000.00	348.36	0.00	348.57	0.12	500.00	3500.00	649.55	2603.51	30396.49	0.00	787.51	1437.06
530.000	33000.00	348.54	0.00	348.91	0.15	720.00	1260.00	478.44	3367.27	29632.73	0.00	781.56	1260.00
535.000	33000.00	348.14	0.00	348.85	0.13	1.00	1350.00	548.22	1806.58	31193.22	0.20	709.02	1257.25
535.000	33000.00	348.49	0.00	349.17	0.17	720.00	1230.00	510.00	1984.51	31015.49	0.00	720.00	1230.00
540.000	33000.00	348.61	0.00	349.16	0.30	400.00	2300.00	480.20	0.00	33000.00	0.00	679.53	1159.74
540.000	33000.00	348.84	0.00	349.47	0.30	600.00	1110.00	432.01	0.00	33000.00	0.00	677.99	1110.00
550.000	33000.00	349.27	0.00	349.60	0.42	1.00	1800.00	694.69	1.94	32998.06	0.00	551.45	1246.14
550.000	33000.00	349.58	0.00	349.91	0.41	550.00	1180.00	629.17	7.73	32992.27	0.00	550.82	1180.00
560.000	33000.00	349.59	0.00	349.90	0.29	0.00	0.00	664.59	542.75	32457.25	0.00	601.54	1266.13
560.000	33000.00	349.88	0.00	350.18	0.26	600.00	1265.00	665.00	570.46	32429.54	0.00	600.00	1265.00
562.000	33000.00	349.76	0.00	350.03	0.12	0.00	0.00	743.54	623.00	32377.00	0.00	167.81	911.35
562.000	33000.00	350.05	0.00	350.30	0.11	175.00	912.00	736.78	638.31	32361.69	0.00	175.00	911.78
564.000	33000.00	349.85	0.00	350.12	0.09	0.00	0.00	765.63	142.18	32857.82	0.00	181.80	947.43
564.000	33000.00	350.13	0.00	350.38	0.08	190.00	945.00	755.00	151.02	32848.98	0.00	190.00	945.00
566.000	33000.00	349.82	0.00	350.35	0.15	1.00	1000.00	546.52	534.11	32465.89	0.00	229.49	776.01
566.000	33000.00	350.09	0.00	350.59	0.14	225.00	780.00	550.27	569.70	32430.30	0.00	226.34	776.61
570.000	33000.00	349.69	0.00	350.79	0.27	0.00	0.00	444.47	115.33	32884.66	0.00	897.40	1341.87
570.000	33000.00	349.96	0.00	351.01	0.25	890.00	1340.00	443.10	145.10	32854.89	0.00	896.90	1340.00
572.000	33000.00	350.12	0.00	351.11	0.30	0.00	0.00	399.11	179.12	32820.88	0.00	245.02	644.13
572.000	33000.00	350.34	0.00	351.29	0.28	240.00	645.00	400.90	203.43	32796.57	0.00	243.88	644.78
574.000	33000.00	350.58	0.00	351.38	0.25	0.00	0.00	408.52	0.06	32999.93	0.00	237.86	646.38
574.000	33000.00	350.77	0.00	351.55	0.24	230.00	640.00	405.36	0.45	32999.55	0.00	234.63	640.00
576.000	33000.00	350.53	0.00	351.81	0.29	0.00	0.00	394.54	0.00	33000.00	0.00	229.74	624.28
576.000	33000.00	350.73	0.00	351.95	0.27	220.00	630.00	395.87	0.00	33000.00	0.00	228.85	624.73
580.000	33000.00	350.33	0.00	352.88	0.69	0.00	0.00	427.55	131.46	32868.54	0.00	738.57	1166.12
580.000	33000.00	350.55	0.00	352.94	0.64	750.00	1175.00	416.78	185.23	32814.77	0.00	750.00	1166.78

SECTION NUMBER	DISCHARGE CFS	CWSEL	CRIWS	EG	HL	STENCL	STENCR	TOPWID	GLOB	GCH	GROB	SSTA	ENDST
582.000	33000.00	352.55	0.00	353.50	0.46	0.00	0.00	434.44	0.00	33000.00	0.00	315.63	750.07
582.000	33000.00	352.58	0.00	353.52	0.44	320.00	755.00	430.11	0.00	33000.00	0.00	320.00	750.11
584.000	33000.00	353.33	0.00	353.87	0.33	0.00	0.00	608.03	0.00	33000.00	0.00	220.55	828.57
584.000	33000.00	353.35	0.00	353.88	0.32	225.00	835.00	603.60	0.00	33000.00	0.00	225.00	828.60
586.000	33000.00	353.53	0.00	354.16	0.27	0.00	0.00	705.07	0.00	33000.00	0.00	242.04	947.11
586.000	33000.00	353.55	0.00	354.18	0.26	245.00	950.00	702.15	0.00	33000.00	0.00	245.00	947.15
590.000	33000.00	353.55	0.00	354.79	0.45	300.00	1000.00	570.16	0.00	33000.00	0.00	384.56	954.72
590.000	33000.00	353.56	0.00	354.80	0.44	390.00	60.00	564.74	0.00	33000.00	0.00	390.00	954.74
592.000	33000.00	353.79	353.79	357.33	1.13	700.00	1250.00	315.90	0.00	33000.00	0.00	903.57	1219.47
592.000	33000.00	353.74	353.74	357.35	1.13	910.00	1225.00	309.36 NO	0.00	33000.00	0.00	910.00	1219.36
594.000	33000.00	356.11	352.00	362.32	3.65	0.00	0.00	257.59	0.00	33000.00	0.00	1156.28	1413.87
594.000	33000.00	356.11	352.00	362.35	3.68	1150.00	1410.00	253.70	0.00	33000.00	0.00	1156.29	1410.00
595.000	33000.00	363.54	352.00	364.06	0.04	0.00	0.00	629.24	10271.49	22728.51	0.00	104.27	1429.11
595.000	33000.00	362.54	352.00	363.90	0.09	1150.00	1410.00	260.00	1.56	32998.43	0.00	1150.00	1410.00
600.000	33000.00	363.74	0.00	364.18	0.11	1400.00	2200.00	383.66	0.00	33000.00	0.00	1586.93	1970.59
600.000	33000.00	363.68	0.00	364.13	0.14	1586.00	1983.00	383.27 NO	0.00	33000.00	0.00	1587.01	1970.28
605.000	33000.00	363.93	0.00	364.27	0.08	1600.00	2400.00	402.80	0.00	33000.00	0.00	1771.72	2174.52
605.000	33000.00	363.88	0.00	364.22	0.08	1740.00	2165.00	393.21	0.00	33000.00	0.00	1771.79	2165.00
610.000	33000.00	364.00	0.00	364.34	0.07	2320.00	3000.00	426.69	0.00	33000.00	0.00	2340.54	2767.23
610.000	33000.00	363.94	0.00	364.29	0.07	2320.00	2750.00	409.38	0.00	33000.00	0.00	2340.62	2750.00
620.000	33000.00	363.98	0.00	364.54	0.14	2150.00	2470.00	320.00	397.94	13159.03	19443.03	2150.00	2470.00
620.000	33000.00	363.92	0.00	364.50	0.14	2150.00	2470.00	320.00	391.08	13154.64	19454.28	2150.00	2470.00
630.000	33000.00	362.80	0.00	365.51	0.32	2080.00	2390.00	269.61	1275.92	31724.08	0.00	2080.00	2349.61
630.000	33000.00	362.73	0.00	365.47	0.33	2080.00	2350.00	269.46	1233.00	31767.00	0.00	2080.00	2349.46
631.000	33000.00	364.66	364.66	368.67	0.98	1200.00	2000.00	365.64	6394.83	26605.17	0.00	1504.68	1870.32
631.000	33000.00	364.66	364.66	368.67	0.99	1500.00	1875.00	365.63	6389.29	26610.71	0.00	1504.69	1870.31
633.000	33000.00	367.49	364.66	369.56	0.31	1200.00	2000.00	376.01	9465.34	23534.65	0.00	1498.99	1875.00
633.000	33000.00	367.50	364.66	369.56	0.31	1500.00	1875.00	375.00	9496.15	23503.85	0.00	1500.00	1875.00

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
100.000	38000.000	289.400	0.000	0.000	0.000	329.766	0.000	0.000
100.000	38000.000	290.400	1.000	0.000	0.000	279.999	49.767	0.000
110.000	38000.000	289.654	0.000	0.204	0.000	318.649	0.000	46.000
110.000	38000.000	290.538	0.884	0.138	0.000	274.999	43.650	46.000
120.000	38000.000	291.843	0.000	2.189	0.000	351.082	0.000	52.000
120.000	38000.000	292.518	0.675	1.980	0.000	279.999	71.083	52.000
130.000	38000.000	295.703	0.000	3.860	0.000	399.000	0.000	520.000
130.000	38000.000	296.505	0.802	3.987	0.000	274.999	124.001	520.000
140.000	38000.000	297.623	0.000	1.920	0.000	378.849	0.000	552.000

140. 000	38000. 000	298. 547	0. 924	2. 042	0. 000	269. 999	108. 850	552. 000
150. 000	38000. 000	299. 351	0. 000	1. 728	0. 000	922. 428	0. 000	540. 000
150. 000	38000. 000	300. 318	0. 967	1. 771	0. 000	544. 999	377. 429	540. 000
160. 000	38000. 000	299. 899	0. 000	0. 548	0. 000	1038. 840	0. 000	690. 000
160. 000	38000. 000	300. 866	0. 967	0. 548	0. 000	864. 999	173. 841	690. 000
170. 000	38000. 000	300. 092	0. 000	0. 193	0. 000	1660. 764	0. 000	350. 000
170. 000	38000. 000	301. 049	0. 957	0. 183	0. 000	1044. 999	615. 765	350. 000
180. 000	38000. 000	300. 199	0. 000	0. 107	0. 000	1465. 299	0. 000	300. 000
180. 000	38000. 000	301. 217	1. 018	0. 168	0. 000	1199. 999	265. 300	300. 000
190. 000	38000. 000	300. 362	0. 000	0. 163	0. 000	1502. 294	0. 000	550. 000
190. 000	38000. 000	301. 354	0. 992	0. 137	0. 000	1289. 999	212. 295	550. 000
200. 000	38000. 000	300. 450	0. 000	0. 088	0. 000	1501. 256	0. 000	600. 000
200. 000	38000. 000	301. 416	0. 966	0. 062	0. 000	1081. 857	419. 399	600. 000
210. 000	38000. 000	300. 509	0. 000	0. 059	0. 000	1625. 767	0. 000	350. 000
210. 000	38000. 000	301. 469	0. 960	0. 053	0. 000	1039. 999	585. 768	350. 000
220. 000	38000. 000	300. 762	0. 000	0. 253	0. 000	1604. 516	0. 000	450. 000
220. 000	38000. 000	301. 656	0. 894	0. 187	0. 000	969. 999	634. 517	450. 000
230. 000	38000. 000	301. 521	0. 000	0. 759	0. 000	1267. 667	0. 000	487. 000
230. 000	38000. 000	302. 394	0. 873	0. 738	0. 000	734. 999	532. 668	487. 000
239. 000	38000. 000	302. 738	0. 000	1. 217	0. 000	743. 263	0. 000	413. 000
239. 000	38000. 000	303. 746	1. 008	1. 352	0. 000	659. 999	83. 264	413. 000
242. 000	38000. 000	303. 829	0. 000	1. 091	0. 000	464. 761	0. 000	224. 000
242. 000	38000. 000	304. 586	0. 757	0. 840	0. 000	468. 486	-3. 725	224. 000
244. 000	38000. 000	304. 589	0. 000	0. 760	0. 000	488. 157	0. 000	95. 000
244. 000	38000. 000	305. 182	0. 593	0. 596	0. 000	490. 415	-2. 258	95. 000
245. 000	38000. 000	305. 925	0. 000	1. 336	0. 000	859. 840	0. 000	177. 000
245. 000	38000. 000	306. 312	0. 387	1. 130	0. 000	604. 999	254. 841	177. 000
250. 000	38000. 000	307. 468	0. 000	1. 543	0. 000	1092. 291	0. 000	701. 000
250. 000	38000. 000	308. 211	0. 743	1. 899	0. 000	694. 999	397. 292	701. 000
260. 000	38000. 000	309. 622	0. 000	2. 154	0. 000	639. 776	0. 000	1031. 000
260. 000	38000. 000	310. 531	0. 909	2. 320	0. 000	599. 999	39. 777	1031. 000
270. 000	37000. 000	313. 233	0. 000	3. 611	0. 000	760. 211	0. 000	951. 000
270. 000	37000. 000	313. 521	0. 288	2. 990	0. 000	559. 999	200. 212	951. 000
280. 000	37000. 000	314. 852	0. 000	1. 619	0. 000	1526. 278	0. 000	1021. 000
280. 000	37000. 000	315. 216	0. 364	1. 695	0. 000	1299. 999	226. 279	1021. 000
285. 000	37000. 000	315. 355	0. 000	0. 503	0. 000	1726. 687	0. 000	688. 000
285. 000	37000. 000	315. 744	0. 389	0. 528	0. 000	1434. 999	291. 688	688. 000
290. 000	37000. 000	316. 159	0. 000	0. 804	0. 000	1819. 915	0. 000	653. 000
290. 000	37000. 000	316. 493	0. 334	0. 749	0. 000	1556. 969	262. 946	653. 000
300. 000	37000. 000	317. 419	0. 000	1. 260	0. 000	1690. 102	0. 000	654. 000
300. 000	37000. 000	317. 691	0. 272	1. 198	0. 000	1469. 999	220. 103	654. 000
310. 000	37000. 000	318. 094	0. 000	0. 675	0. 000	1774. 981	0. 000	610. 000
310. 000	37000. 000	318. 319	0. 225	0. 628	0. 000	1544. 999	229. 982	610. 000
320. 000	37000. 000	318. 629	0. 000	0. 535	0. 000	1350. 288	0. 000	711. 000

320.000	37000.000	318.799	0.170	0.480	0.000	1208.095	142.193	711.000
330.000	36000.000	319.206	0.000	0.577	0.000	890.215	0.000	588.000
330.000	36000.000	319.382	0.176	0.583	0.000	798.853	91.362	588.000
340.000	36000.000	320.379	0.000	1.173	0.000	988.119	0.000	454.000
340.000	36000.000	320.567	0.188	1.185	0.000	919.999	68.120	454.000
345.000	36000.000	321.064	0.000	0.685	0.000	1046.009	0.000	335.000
345.000	36000.000	321.161	0.097	0.594	0.000	801.147	244.862	335.000
355.000	36000.000	321.673	0.000	0.609	0.000	810.410	0.000	310.000
355.000	36000.000	321.701	0.028	0.540	0.000	662.720	147.690	310.000
357.000	36000.000	322.278	0.000	0.605	0.000	482.299	0.000	275.000
357.000	36000.000	322.452	0.174	0.751	0.000	482.299	0.000	275.000
359.000	36000.000	325.146	0.000	2.868	0.000	475.799	0.000	150.000
359.000	36000.000	325.090	-0.056	2.638	0.000	475.799	0.000	150.000
360.000	36000.000	327.011	0.000	1.865	0.000	1053.999	0.000	303.000
360.000	36000.000	327.004	-0.007	1.914	0.000	874.999	179.000	303.000
370.000	36000.000	327.347	0.000	0.336	0.000	1463.904	0.000	361.000
370.000	36000.000	327.401	0.054	0.397	0.000	954.999	508.905	361.000
380.000	36000.000	327.683	0.000	0.336	0.000	1415.645	0.000	323.000
380.000	36000.000	327.955	0.272	0.554	0.000	989.999	425.646	323.000
390.000	36000.000	328.336	0.000	0.653	0.000	1487.796	0.000	318.000
390.000	36000.000	328.961	0.625	1.006	0.000	969.999	517.797	318.000
400.000	36000.000	329.281	0.000	0.945	0.000	725.619	0.000	701.000
400.000	36000.000	330.130	0.849	1.169	0.000	729.663	-4.044	701.000
410.000	36000.000	331.044	0.000	1.763	0.000	655.526	0.000	720.000
410.000	36000.000	331.421	0.377	1.291	0.000	658.437	-2.911	720.000
415.000	36000.000	332.936	0.000	1.892	0.000	769.069	0.000	850.000
415.000	36000.000	333.104	0.168	1.683	0.000	771.219	-2.150	850.000
420.000	36000.000	333.414	0.000	0.478	0.000	677.685	0.000	425.000
420.000	36000.000	333.553	0.139	0.449	0.000	678.804	-1.119	425.000
422.000	36000.000	332.970	0.000	-0.444	0.000	453.887	0.000	321.000
422.000	36000.000	333.116	0.146	-0.437	0.000	455.092	-1.205	321.000
424.000	36000.000	334.726	0.000	1.756	0.000	470.699	0.000	170.000
424.000	36000.000	334.726	0.000	1.610	0.000	470.699	0.000	170.000
425.000	36000.000	336.164	0.000	1.438	0.000	1183.273	0.000	218.000
425.000	36000.000	336.150	-0.014	1.424	0.000	949.999	233.274	218.000
430.000	36000.000	336.659	0.000	0.495	0.000	1525.000	0.000	465.000
430.000	36000.000	336.588	-0.071	0.438	0.000	994.999	530.001	465.000
440.000	34000.000	338.163	0.000	1.504	0.000	1239.343	0.000	542.000
440.000	34000.000	338.380	0.217	1.792	0.000	994.999	244.344	542.000
450.000	34000.000	340.350	0.000	2.187	0.000	1245.597	0.000	534.000
450.000	34000.000	340.389	0.039	2.009	0.000	999.999	245.600	534.000
460.000	34000.000	340.472	0.000	0.122	0.000	1571.157	0.000	423.000
460.000	34000.000	340.499	0.027	0.110	0.000	934.999	636.158	423.000
470.000	34000.000	340.533	0.000	0.061	0.000	1476.396	0.000	423.000

470.000	34000.000	340.572	0.039	0.073	0.000	1011.575	464.321	423.000
480.000	34000.000	339.307	0.000	-1.226	0.000	628.753	0.000	281.000
480.000	34000.000	339.368	0.061	-1.204	0.000	399.022	229.731	281.000
483.000	34000.000	339.578	0.000	0.271	0.000	553.638	0.000	153.000
483.000	34000.000	339.642	0.064	0.274	0.000	441.525	112.113	153.000
485.000	34000.000	343.864	0.000	4.286	0.000	1625.067	0.000	130.000
485.000	34000.000	343.973	0.109	4.331	0.000	964.999	660.068	130.000
490.000	34000.000	345.331	0.000	1.467	0.000	1471.704	0.000	192.000
490.000	34000.000	346.026	0.695	2.053	0.000	949.999	521.705	192.000
500.000	33000.000	346.288	0.000	0.957	0.000	1561.846	0.000	472.000
500.000	33000.000	346.739	0.451	0.713	0.000	809.999	751.847	472.000
505.000	33000.000	346.353	0.000	0.065	0.000	612.979	0.000	346.000
505.000	33000.000	346.882	0.529	0.143	0.000	574.999	37.980	346.000
508.000	33000.000	346.697	0.000	0.344	0.000	495.187	0.000	160.000
508.000	33000.000	347.140	0.443	0.256	0.000	482.219	12.968	160.000
510.000	33000.000	347.541	0.000	0.844	0.000	493.399	0.000	115.000
510.000	33000.000	347.849	0.308	0.709	0.000	493.399	0.000	115.000
515.000	33000.000	348.268	0.000	0.727	0.000	1113.516	0.000	399.000
515.000	33000.000	348.528	0.260	0.679	0.000	854.999	258.517	399.000
520.000	33000.000	348.265	0.000	-0.003	0.000	723.900	0.000	587.000
520.000	33000.000	348.528	0.263	0.000	0.000	654.999	68.901	587.000
						SEATTLE	SEATTLE	TOPEKA
530.000	33000.000	348.358	0.000	0.093	0.000	649.553	0.000	624.000
530.000	33000.000	348.541	0.183	0.013	0.000	478.442	171.111	624.000
535.000	33000.000	348.143	0.000	-0.215	0.000	548.224	0.000	326.000
535.000	33000.000	348.490	0.347	-0.051	0.000	509.999	38.225	326.000
540.000	33000.000	348.605	0.000	0.462	0.000	480.204	0.000	358.000
540.000	33000.000	348.839	0.234	0.349	0.000	432.012	48.192	358.000
550.000	33000.000	349.273	0.000	0.668	0.000	694.691	0.000	670.000
550.000	33000.000	349.578	0.305	0.739	0.000	629.175	65.516	670.000
560.000	33000.000	349.586	0.000	0.313	0.000	664.591	0.000	628.000
560.000	33000.000	349.883	0.297	0.305	0.000	664.999	-0.408	628.000
562.000	33000.000	349.764	0.000	0.178	0.000	743.540	0.000	309.000
562.000	33000.000	350.047	0.283	0.164	0.000	736.781	6.759	309.000
564.000	33000.000	349.852	0.000	0.088	0.000	765.630	0.000	229.000
564.000	33000.000	350.128	0.276	0.081	0.000	754.999	10.631	229.000
566.000	33000.000	349.821	0.000	-0.031	0.000	546.517	0.000	285.000
566.000	33000.000	350.094	0.273	-0.034	0.000	550.268	-3.751	285.000
570.000	33000.000	349.686	0.000	-0.135	0.000	444.466	0.000	232.000
570.000	33000.000	349.963	0.277	-0.131	0.000	443.098	1.368	232.000
572.000	33000.000	350.116	0.000	0.430	0.000	399.110	0.000	178.000
572.000	33000.000	350.345	0.229	0.382	0.000	400.900	-1.790	178.000
574.000	33000.000	350.576	0.000	0.460	0.000	408.518	0.000	198.000
574.000	33000.000	350.768	0.192	0.423	0.000	405.365	3.153	198.000
576.000	33000.000	350.535	0.000	-0.041	0.000	394.538	0.000	179.000

576.000	33000.000	350.731	0.196	-0.037	0.000	395.874	-1.336	179.000
580.000	33000.000	350.333	0.000	-0.202	0.000	427.549	0.000	183.000
580.000	33000.000	350.555	0.222	-0.176	0.000	416.776	10.773	183.000
582.000	33000.000	352.550	0.000	2.217	0.000	434.440	0.000	154.000
582.000	33000.000	352.575	0.025	2.020	0.000	430.109	4.331	154.000
584.000	33000.000	353.332	0.000	0.782	0.000	608.026	0.000	260.000
584.000	33000.000	353.352	0.020	0.777	0.000	603.600	4.426	260.000
586.000	33000.000	353.529	0.000	0.197	0.000	705.070	0.000	214.000
586.000	33000.000	353.547	0.018	0.195	0.000	702.149	2.921	214.000
590.000	33000.000	353.552	0.000	0.023	0.000	570.156	0.000	191.000
590.000	33000.000	353.564	0.012	0.017	0.000	564.743	5.413	191.000
592.000	33000.000	353.795	0.000	0.243	0.000	315.898	0.000	198.000
592.000	33000.000	353.738	-0.057	0.174	0.000	309.356	6.542	198.000
594.000	33000.000	356.112	0.000	2.317	0.000	257.590	0.000	179.000
594.000	33000.000	356.106	-0.006	2.368	0.000	253.705	3.885	179.000
595.000	33000.000	363.542	0.000	7.430	0.000	629.241	0.000	6.000
595.000	33000.000	362.543	-0.999	6.437	0.000	259.999	369.242	6.000
600.000	33000.000	363.736	0.000	0.194	0.000	383.659	0.000	139.000
600.000	33000.000	363.684	-0.052	1.141	0.000	383.268	0.391	139.000
605.000	33000.000	363.931	0.000	0.195	0.000	402.797	0.000	228.000
605.000	33000.000	363.878	-0.053	0.194	0.000	393.211	9.586	228.000
610.000	33000.000	363.997	0.000	0.066	0.000	426.689	0.000	241.000
610.000	33000.000	363.942	-0.055	0.064	0.000	409.383	17.306	241.000
620.000	33000.000	363.976	0.000	-0.021	0.000	319.999	0.000	336.000
620.000	33000.000	363.924	-0.052	-0.018	0.000	319.999	0.000	336.000
630.000	33000.000	362.802	0.000	-1.174	0.000	269.607	0.000	362.000
630.000	33000.000	362.731	-0.071	-1.193	0.000	269.465	0.142	362.000
631.000	33000.000	364.661	0.000	1.859	0.000	365.643	0.000	211.000
631.000	33000.000	364.657	-0.004	1.926	0.000	365.625	0.018	211.000
633.000	33000.000	367.492	0.000	2.831	0.000	376.011	0.000	60.000
633.000	33000.000	367.505	0.013	2.848	0.000	374.999	1.012	60.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	1.000	800.000	755.626	0.000
2	1.000	375.000	599.518	-156.109

****
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 51,52,53,54,55,56,,57,58
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20-OCT-82 15:05:34

;EjE`@7DO

ATTACHMENT III

Recd 8-15-83
cg

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 51,52,53,54,55,56,,57,58
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19-OCT-82   17:24:44

BB,BB
T1      UPPER SAN DIEGO RIVER
T2      SECTIONS DIGITIZED IN 1982
T3      100-YEAR

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.      2.        0.        0.  0.000000      0.00     -1.0       0.   327.011     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    1.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.125     0.125     0.125     0.100     0.300     0.000     0.000     0.000     0.000     0.000
QT      2.000 36000.000 36000.000  4500.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      0.065     0.060     0.055     0.100     0.300     0.000     0.000     0.000     0.000     0.000
ET      0.000     5.100     7.100     5.100   666.000  1720.000   845.000  1720.000     0.000     0.000

X1    360.000    77.000   864.500  1720.000   365.000   550.000   303.000     0.000     0.000     0.000
GR    339.100     0.000   355.700     4.400   355.700   104.400   338.600   106.800   337.100   121.300
GR    337.100   163.200   336.600   201.000   335.200   286.800   334.300   420.200   330.600   439.600
GR    325.900   461.700   324.400   488.700   323.300   537.800   321.500   572.100   321.400   642.600
GR    319.800   700.200   318.000   715.100   318.900   754.500   319.400   795.200   318.400   811.700
GR    317.100   818.600   320.700   833.500   325.700   846.000   326.300   864.500   321.500   881.400
GR    318.600   901.600   317.800   962.400   316.500   984.900   318.500  1026.800   314.800  1034.400
GR    314.500  1046.900   314.800  1059.600   318.700  1066.700   319.400  1097.700   318.300  1148.000
GR    318.200  1190.000   318.000  1215.700   314.100  1223.400   314.000  1250.000   313.000  1285.800
GR    313.200  1318.400   315.300  1356.300   317.500  1387.300   317.600  1429.200   317.100  1485.500
GR    317.600  1554.900   318.100  1637.400   317.800  1665.200   317.300  1678.900   318.300  1702.300
GR    323.400  1720.000   323.600  1764.700   323.000  1828.300   321.100  1871.500   321.400  1912.500
GR    323.500  1927.000   323.900  1975.000   325.800  2022.100   327.200  2051.100   339.700  2054.400
GR    339.700  2204.600   339.700  2427.300   329.900  2443.800   328.100  2517.100   328.300  2626.300
GR    328.300  2735.500   327.400  2821.300   328.700  2845.800   329.000  2887.300   328.300  2928.800
GR    331.900  2969.100   332.100  3006.600   344.000  3015.800   344.000  3037.200   331.400  3040.800
GR    331.400  3082.300   332.400  3115.400     0.000     0.000     0.000     0.000     0.000     0.000
NC      0.050     0.035     0.035     0.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      0.000     0.040     0.040     0.000     0.000     0.000     0.000     0.000     0.000     0.000
ET      0.000     5.100     7.100     5.100     1.000  2000.000   930.000  1885.000     0.000     0.000

X1    370.000    93.000   977.500  1929.500   360.000   310.000   361.000     0.000     0.000     0.000
GR    356.900     0.000   357.000    29.200   347.700    44.400   342.100    57.200   336.600    69.600
GR    335.100   152.500   335.100   195.700   335.100   212.900   334.900   241.800   334.800   296.600
GR    353.300   307.000   353.300   340.600   334.900   348.200   334.900   365.900   352.200   373.900
GR    352.200   407.900   333.700   413.900   332.700   465.600   332.400   501.200   328.100   516.400
GR    325.700   531.200   325.500   563.600   322.000   584.900   320.600   653.300   319.400   733.400
GR    318.900   801.000   318.400   844.600   318.700   878.700   320.300   896.300   319.600   928.700
GR    320.800   946.300   320.300   968.700   322.700   977.500   321.100   989.500   319.200  1007.600
GR    315.700  1022.400   314.600  1054.000   315.700  1078.400   319.300  1084.400   319.400  1129.700
GR    318.100  1151.700   317.300  1167.300   317.800  1179.300   321.600  1187.800   319.500  1197.800
GR    319.900  1259.400   318.900  1349.900   319.300  1436.300   318.500  1500.400   317.500  1595.300
GR    314.600  1612.900   314.500  1648.100   314.900  1701.700   317.800  1709.300   319.300  1750.200
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GR	318.700	1822.600	320.000	1852.600	317.300	1869.800	318.500	1878.300	321.300	1887.900
GR	322.300	1911.100	324.800	1929.500	326.900	1984.700	334.600	1989.500	334.600	2019.100
GR	326.300	2023.200	325.700	2053.200	325.800	2090.000	327.100	2120.400	335.000	2123.700
GR	335.000	2150.500	326.900	2152.900	326.900	2207.300	326.000	2248.200	325.600	2289.400
GR	325.400	2319.400	322.200	2345.400	320.700	2364.600	320.900	2427.500	322.100	2447.500
GR	325.600	2469.100	326.900	2499.900	329.200	2525.900	329.000	2590.800	328.800	2692.000
GR	329.300	2802.500	329.100	2897.000	327.500	2958.600	328.700	2973.000	329.400	3019.100
GR	329.000	3063.900	330.300	3137.500	330.800	3231.600	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2000.000	945.000	1935.000	0.000	0.000
X1	380.000	91.000	988.000	1948.900	310.000	420.000	323.000	0.000	0.000	0.000
GR	357.400	0.000	357.500	43.500	349.900	56.800	340.400	76.300	334.000	84.000
GR	333.400	162.100	332.800	224.100	332.800	255.400	332.900	290.600	333.200	369.800
GR	332.700	476.500	332.500	512.100	327.900	528.700	325.500	543.400	323.600	562.400
GR	322.200	581.400	322.400	636.000	320.900	657.500	319.600	721.100	319.400	774.200
GR	320.000	803.700	319.800	857.500	320.700	901.300	322.500	988.000	320.900	1028.500
GR	319.600	1056.900	315.600	1062.100	314.700	1079.000	315.600	1099.800	319.100	1105.800
GR	319.100	1188.100	318.800	1256.000	316.900	1281.500	319.900	1300.200	323.500	1320.900
GR	327.000	1335.000	327.000	1386.000	322.600	1416.800	319.700	1433.400	320.000	1469.900
GR	320.300	1513.200	318.300	1527.400	318.100	1556.100	321.200	1565.100	319.700	1610.300
GR	319.400	1633.400	320.500	1667.200	318.400	1681.300	316.700	1696.200	316.200	1711.700
GR	316.900	1731.100	319.300	1749.400	320.300	1808.400	320.200	1873.200	320.200	1927.900
GR	325.000	1938.000	328.800	1948.900	329.300	2027.400	329.200	2091.800	337.300	2098.200
GR	337.300	2143.600	328.700	2148.100	328.600	2205.600	330.400	2229.500	337.000	2236.900
GR	337.000	2278.400	328.800	2286.600	328.600	2362.200	326.500	2372.900	323.200	2401.300
GR	322.700	2453.500	323.300	2520.300	324.600	2544.700	328.200	2584.400	329.100	2614.800
GR	330.000	2719.900	328.900	2835.800	328.000	2901.800	337.700	2906.700	337.700	2934.600
GR	330.300	2940.700	330.000	2959.700	332.600	2963.000	329.800	3001.900	329.100	3061.700
GR	330.300	3097.800	332.900	3108.800	333.300	3157.400	332.900	3227.900	334.400	3309.300
GR	334.300	3389.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1.000	2200.000	1010.000	1980.000	0.000	0.000
X1	390.000	92.000	1103.000	1987.900	315.000	400.000	318.000	0.000	0.000	0.000
GR	359.100	0.000	359.300	78.100	351.300	94.400	342.200	108.100	335.500	125.600
GR	334.800	143.400	334.900	205.300	332.500	259.800	333.100	326.200	335.700	349.300
GR	344.700	352.600	344.700	472.500	334.700	476.300	334.500	511.400	332.700	540.000
GR	330.100	556.000	324.800	574.600	322.700	595.300	320.300	640.300	319.100	704.900
GR	319.900	748.000	319.100	783.400	319.900	828.600	322.000	876.600	323.500	941.600
GR	324.100	1031.800	324.700	1103.000	322.800	1111.300	320.900	1134.400	316.000	1141.100
GR	315.300	1167.900	316.000	1179.500	320.400	1187.800	322.700	1217.400	321.900	1284.400
GR	321.100	1375.200	319.700	1442.600	321.100	1508.500	321.200	1613.400	320.200	1681.500
GR	315.400	1698.000	316.000	1713.800	318.400	1738.000	321.600	1793.400	321.600	1882.500
GR	320.600	1943.500	320.900	1967.200	325.900	1987.900	326.700	2037.200	329.400	2058.300
GR	332.200	2076.900	332.000	2098.200	339.900	2104.400	339.900	2165.300	332.100	2167.300
GR	332.200	2179.500	340.600	2185.300	340.600	2242.900	331.400	2246.200	330.800	2321.800
GR	330.900	2387.000	332.300	2420.800	339.400	2422.500	339.400	2466.100	332.100	2469.600
GR	331.000	2482.400	327.300	2494.000	325.800	2511.400	324.300	2558.100	329.100	2598.800
GR	327.000	2634.500	329.900	2693.200	326.400	2719.500	327.800	2731.200	332.100	2747.700
GR	333.600	2819.100	333.000	2902.400	331.800	2930.100	329.400	2953.000	329.400	2987.000
GR	330.000	3037.300	330.300	3090.600	331.000	3179.700	331.500	3258.900	332.800	3299.800
GR	335.200	3314.000	335.900	3370.800	335.000	3416.400	337.300	3475.700	338.800	3591.400
GR	355.400	3597.900	355.300	3638.700	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.035	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NC	0.040	0.040	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	0.000	1106.700	2400.000	1110.000	1840.000	0.000	0.000
X1	400.000	85.000	1106.700	1939.500	700.000	630.000	701.000	0.000	0.000	0.000
GR	342.600	0.000	342.900	56.400	352.900	63.300	352.900	161.100	342.400	164.200
GR	340.500	215.200	339.000	242.100	335.700	277.800	331.200	330.200	328.700	365.500
GR	328.700	401.300	328.300	463.700	325.800	491.100	323.300	519.500	322.200	578.600
GR	323.300	640.000	325.100	711.600	324.800	774.400	325.900	851.600	327.500	949.000
GR	328.200	1054.600	327.400	1080.200	330.600	1087.600	330.900	1106.700	324.300	1125.700
GR	318.200	1142.000	318.300	1237.300	318.200	1293.500	318.000	1304.700	318.100	1317.100
GR	318.500	1364.300	318.900	1401.200	323.100	1413.800	323.400	1443.400	326.700	1454.800
GR	327.400	1513.700	327.200	1570.100	325.600	1615.600	321.200	1635.200	322.600	1681.500
GR	323.500	1752.500	323.500	1809.400	320.600	1844.000	321.700	1871.500	318.700	1901.600

GR	318.300	1921.100	324.700	1929.600	328.800	1939.500	329.800	1975.200	336.700	1993.000
GR	341.800	2005.100	340.700	2019.000	340.600	2068.200	335.000	2080.700	331.500	2087.600
GR	331.800	2170.900	333.200	2266.800	334.300	2300.500	357.200	2305.000	357.200	2352.000
GR	357.200	2410.800	334.000	2415.800	333.600	2470.600	331.600	2560.300	329.600	2592.000
GR	328.700	2642.400	325.600	2663.500	326.800	2691.500	329.600	2731.700	332.700	2768.600
GR	332.200	2879.900	332.900	3013.000	331.600	3089.300	329.400	3146.200	330.900	3216.400
GR	332.400	3302.900	333.100	3391.900	334.100	3491.800	337.700	3496.800	338.500	3545.900
GR	338.500	3593.700	356.700	3600.300	356.700	3765.500	340.900	3770.000	340.100	3818.800
ET	0.000	5.100	7.100	0.000	1200.000	2800.000	1745.000	2415.000	0.000	0.000
X1	410.000	91.000	1721.000	2183.500	700.000	700.000	701.000	0.000	0.000	0.000
GR	339.400	0.000	338.800	34.700	340.600	60.500	349.500	66.100	349.500	96.300
GR	342.800	98.500	340.200	136.800	338.100	155.300	334.600	180.600	333.400	222.500
GR	334.800	260.100	336.500	345.000	335.700	436.600	335.500	526.000	329.900	543.300
GR	326.400	565.100	326.400	579.200	326.900	600.100	327.400	666.600	328.300	706.900
GR	330.800	735.100	330.400	858.000	330.600	943.800	331.500	1061.400	332.800	1173.400
GR	332.300	1284.600	332.000	1356.700	331.700	1462.300	331.800	1569.900	330.700	1613.800
GR	331.300	1697.200	334.300	1707.700	334.600	1721.000	327.000	1747.600	320.900	1770.900
GR	319.400	1782.600	319.900	1845.400	318.700	1850.300	318.300	1858.700	318.700	1868.000
GR	317.900	1873.300	320.600	1957.000	320.900	2034.000	321.600	2130.300	321.700	2162.900
GR	327.500	2174.600	333.300	2178.300	334.100	2183.500	331.400	2190.400	330.900	2215.000
GR	329.700	2236.700	325.900	2250.800	325.800	2264.500	325.300	2317.700	325.300	2344.700
GR	327.400	2364.000	331.900	2381.700	333.300	2389.000	332.600	2406.300	328.000	2417.300
GR	325.400	2425.300	325.100	2450.200	324.900	2486.500	327.100	2495.400	336.300	2514.300
GR	342.700	2530.500	341.700	2535.700	342.500	2592.900	344.700	2638.000	345.800	2692.100
GR	346.700	2731.100	342.400	2741.600	338.000	2750.100	337.000	2775.500	335.200	2821.000
GR	334.400	2873.400	334.500	2956.000	335.000	3024.500	334.400	3131.600	331.200	3178.900
GR	329.400	3257.300	328.000	3320.100	331.800	3358.000	334.000	3429.100	334.500	3542.100
GR	332.900	3662.500	331.200	3717.300	331.600	3766.900	332.100	3854.300	332.400	3961.500
GR	333.300	4033.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	0.000	1300.000	2800.000	1750.000	2525.000	0.000	0.000
X1	415.000	95.000	1739.400	2028.100	880.000	910.000	893.000	0.000	0.000	0.000
GR	345.900	0.000	344.600	48.000	343.300	87.200	341.600	90.000	341.400	104.000
GR	340.300	137.600	342.900	150.100	343.200	167.600	352.500	172.000	352.500	224.500
GR	344.000	227.800	342.700	299.800	349.600	308.200	349.600	347.800	341.300	350.600
GR	339.600	383.000	339.300	418.600	342.100	444.600	350.500	450.200	350.500	478.700
GR	341.400	481.100	340.900	509.500	334.500	519.100	331.600	531.900	330.800	541.900
GR	329.100	547.900	329.100	557.500	330.700	566.700	330.700	626.700	330.400	716.300
GR	330.000	812.000	331.500	840.800	331.000	891.200	333.300	907.600	333.800	1027.600
GR	332.700	1147.200	333.600	1242.900	334.000	1346.100	333.800	1368.900	332.900	1486.900
GR	330.600	1544.200	329.100	1592.200	329.700	1647.800	328.800	1683.000	329.600	1739.400
GR	322.600	1743.800	320.600	1753.900	320.100	1799.100	319.200	1801.900	319.200	1816.800
GR	319.200	1876.800	321.400	1842.000	327.100	1853.200	323.700	1875.600	321.600	1935.700
GR	323.000	1975.600	327.200	1996.000	329.100	2028.100	328.100	2055.700	326.300	2071.300
GR	329.600	2093.300	328.300	2148.500	328.400	2240.500	329.000	2332.100	328.100	2403.400
GR	327.400	2451.000	330.600	2459.400	332.500	2467.800	332.300	2482.600	330.100	2488.200
GR	330.400	2533.000	329.600	2578.200	332.000	2589.800	337.300	2601.400	339.600	2613.400
GR	342.400	2755.900	346.100	2909.500	348.700	3015.100	341.500	3032.400	339.900	3043.200
GR	335.600	3048.800	335.300	3116.800	335.600	3214.400	336.600	3290.800	334.500	3312.000
GR	332.800	3337.600	331.200	3373.700	332.500	3452.100	332.700	3534.900	334.500	3594.500
GR	335.400	3648.500	333.800	3713.700	333.400	3748.200	335.200	3797.800	335.300	3858.600
ET	0.000	5.100	7.100	0.000	1000.000	2400.000	1292.000	1972.000	0.000	0.000
X1	420.000	92.000	1372.800	1803.000	400.000	390.000	399.000	0.000	0.000	0.000
GR	345.200	0.000	344.500	27.200	354.600	29.200	354.600	92.400	343.100	95.200
GR	341.100	122.400	341.100	156.800	342.300	185.900	352.000	193.500	352.000	226.700
GR	343.500	228.300	341.300	251.100	335.100	259.900	332.300	269.100	331.800	293.100
GR	334.200	301.100	332.500	329.100	333.400	351.500	334.400	386.300	333.000	419.900
GR	330.900	436.300	329.900	455.500	330.900	507.100	331.500	607.000	331.800	681.000
GR	333.100	747.800	335.300	784.600	334.900	914.100	335.300	986.100	334.000	1055.300
GR	333.200	1120.500	331.300	1130.100	329.700	1162.500	330.800	1239.200	329.600	1298.800
GR	327.100	1337.200	326.500	1372.800	322.900	1386.400	322.400	1414.000	319.500	1418.000
GR	319.200	1465.700	319.400	1495.300	321.500	1502.300	322.200	1539.100	320.600	1582.300
GR	322.300	1609.300	323.100	1656.600	321.400	1684.600	321.400	1740.600	321.700	1757.400
GR	324.600	1775.000	326.800	1803.000	328.600	1897.800	328.400	1950.600	330.100	1960.300

GR	335.100	1779.900	334.800	1996.500	340.000	2008.500	339.900	2050.100	339.900	2082.500
GR	335.600	2072.900	331.400	2099.700	331.700	2152.900	331.700	2186.500	334.700	2195.700
GR	335.800	2259.300	334.400	2363.600	337.000	2483.200	336.600	2591.600	336.200	2760.700
GR	336.700	2809.900	337.000	2896.300	335.700	2923.500	333.100	2937.800	331.900	2989.000
GR	332.900	3062.200	335.300	3114.600	336.200	3217.800	335.400	3276.500	336.100	3352.100
GR	336.100	3472.500	335.100	3552.500	336.000	3649.200	336.800	3704.800	338.500	3711.200
GR	339.600	3777.200	357.500	3779.600	357.500	3885.500	339.000	3889.500	337.900	3948.700
GR	338.400	3991.500	340.700	4000.700	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	7.100	0.000	0.000	0.000	1661.000	2133.700	0.000	0.000
X1	422.000	54.000	1661.000	2133.700	350.000	275.000	321.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	1661.000	345.000	342.000	1689.300	345.000	342.000	1689.300	345.000	0.000
BT	1696.300	345.000	0.000	1696.300	345.000	342.000	1731.300	345.000	342.000	1731.300
BT	345.000	0.000	1738.300	345.000	0.000	1738.300	345.000	342.000	1773.300	345.000
BR	342.000	1773.300	345.000	0.000	1780.300	345.000	0.000	1780.300	345.000	342.000
BT	1813.800	345.000	342.000	1813.800	345.000	0.000	1823.800	345.000	0.000	1823.800
BT	345.000	342.000	1857.300	345.000	342.000	1857.300	345.000	0.000	1864.300	345.000
BT	0.000	1864.300	345.000	342.000	1899.300	345.000	342.000	1899.300	345.000	0.000
BT	1906.300	345.000	0.000	1906.300	345.000	342.000	1941.300	345.000	342.000	1941.300
BT	345.000	0.000	1948.300	345.000	0.000	1948.300	345.000	342.000	1981.800	345.000
BT	342.000	1981.800	345.000	0.000	1991.800	345.000	0.000	1991.800	345.000	342.000
BT	2025.300	345.000	342.000	2025.300	345.000	0.000	2032.300	345.000	0.000	2032.300
BT	345.000	342.000	2067.300	345.000	342.000	2067.300	345.000	0.000	2074.300	345.000
BT	0.000	2074.300	345.000	342.000	2109.300	345.000	342.000	2109.300	345.000	0.000
BT	2116.300	345.000	0.000	2116.300	345.000	342.000	2133.700	345.000	342.000	0.000
GR	349.200	0.000	345.500	97.600	342.300	188.500	339.900	293.000	337.800	404.900
GR	335.100	523.600	333.400	612.500	334.400	641.800	337.900	653.000	337.200	678.600
GR	335.700	696.300	335.700	731.800	335.500	780.200	338.600	831.400	337.900	854.700
GR	338.800	930.900	337.500	965.800	335.600	1004.000	332.700	1048.200	334.300	1123.700
GR	332.700	1225.700	334.200	1344.100	334.000	1416.700	332.400	1470.600	332.300	1574.400
GR	332.400	1618.000	333.900	1627.700	333.600	1661.000	327.700	1673.500	322.400	1687.800
GR	323.100	1717.400	322.200	1821.500	322.300	1966.100	322.300	2087.800	331.900	2110.100
GR	335.900	2133.700	334.600	2209.200	332.900	2292.100	333.300	2390.700	335.400	2458.300
GR	335.500	2560.300	336.300	2667.400	337.100	2793.300	337.100	2955.700	337.200	3097.500
GR	337.700	3198.100	335.100	3247.400	333.800	3275.800	332.500	3374.800	334.100	3444.800
GR	336.400	3544.600	336.600	3663.600	336.600	3749.700	336.800	3828.200	0.000	0.000
BB	1.000	1.500	2.700	0.000	432.000	83.000	6500.000	2.000	325.000	325.000
ET	0.000	5.100	5.100	5.100	1664.800	2135.500	0.000	0.000	0.000	0.000
X1	424.000	62.000	1664.800	2135.500	170.000	170.000	170.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	342.000	345.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	325.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	46.000	1664.800	345.000	342.000	1689.300	345.000	342.000	1689.300	345.000	0.000
BT	1696.300	345.000	0.000	1696.300	345.000	342.000	1731.300	345.000	342.000	1731.300
BT	345.000	0.000	1738.300	345.000	0.000	1738.300	345.000	342.000	1773.300	345.000
BT	342.000	1773.300	345.000	0.000	1780.300	345.000	0.000	1780.300	345.000	342.000
BT	1813.800	345.000	342.000	1813.800	345.000	0.000	1823.800	345.000	0.000	1823.800
BT	345.000	342.000	1857.300	345.000	342.000	1857.300	345.000	0.000	1864.300	345.000
BT	0.000	1864.300	345.000	342.000	1899.300	345.000	342.000	1899.300	345.000	0.000
BT	1906.300	345.000	0.000	1906.300	345.000	342.000	1941.300	345.000	342.000	1941.300
BT	345.000	0.000	1948.300	345.000	0.000	1948.300	345.000	342.000	1981.800	345.000
BT	342.000	1981.800	345.000	0.000	1991.800	345.000	0.000	1991.800	345.000	342.000
BT	2025.300	345.000	342.000	2025.300	345.000	0.000	2032.300	345.000	0.000	2032.300
BT	345.000	342.000	2067.300	345.000	342.000	2067.300	345.000	0.000	2074.300	345.000
BT	0.000	2074.300	345.000	342.000	2109.300	345.000	342.000	2109.300	345.000	0.000
BT	2116.300	345.000	0.000	2116.300	345.000	342.000	2135.500	345.000	342.000	0.000
GR	344.700	0.000	345.200	84.500	344.700	137.400	343.600	270.500	341.500	377.400
GR	341.100	475.400	339.900	591.000	340.400	631.800	338.600	643.800	337.400	691.100
GR	335.200	701.500	333.800	718.900	333.300	733.800	335.800	744.600	335.500	822.100
GR	336.900	899.200	335.400	950.400	332.500	973.200	332.500	1045.400	332.300	1091.100
GR	333.900	1118.700	334.900	1172.400	333.100	1211.200	332.800	1264.400	330.300	1282.100
GR	330.600	1362.600	329.800	1471.200	328.300	1546.100	327.600	1621.100	326.000	1664.800
GR	324.900	1722.400	324.300	1747.600	323.100	1753.200	323.100	1788.600	323.100	1820.400
GR	324.400	1830.400	324.000	1945.900	325.700	2020.400	325.900	2067.400	324.500	2093.600

GR	323.500	2135.500	326.300	2185.800	327.300	2260.800	327.100	2328.800	329.500	2370.800
GR	326.000	2386.200	327.800	2391.700	329.200	2482.100	328.600	2572.200	330.800	2650.800
GR	330.400	2742.200	331.400	2837.900	331.300	2933.800	331.700	3031.300	332.100	3142.300
GR	331.700	3228.800	332.600	3332.300	332.900	3440.500	333.900	3548.800	333.800	3671.900
GR	333.000	3757.200	332.900	3851.300	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.035	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1312.700	2800.000	1540.000	2490.000	0.000	0.000
X1	425.000	81.000	1393.900	2499.400	400.000	350.000	218.000	0.000	0.000	0.000
GR	343.500	0.000	344.900	130.400	344.900	239.700	344.000	352.100	343.700	467.400
GR	341.600	519.400	340.600	645.500	339.400	758.400	337.400	779.600	336.500	816.400
GR	334.100	830.800	333.700	843.600	335.500	865.600	335.600	901.700	335.300	946.900
GR	336.600	966.100	336.900	1043.700	335.100	1107.000	333.300	1125.800	331.800	1174.600
GR	333.600	1223.000	334.100	1272.700	334.800	1312.700	333.300	1357.900	333.800	1393.900
GR	331.300	1408.300	329.600	1453.600	329.900	1514.400	329.900	1611.300	328.600	1708.500
GR	327.000	1766.500	326.200	1848.200	327.600	1883.000	329.000	1905.000	328.900	1929.400
GR	325.900	1935.800	326.800	1955.800	324.100	1988.600	323.100	1995.400	322.400	2015.800
GR	323.000	2038.400	324.900	2049.200	327.900	2056.400	328.100	2104.400	329.100	2179.200
GR	329.600	2255.700	330.200	2360.500	331.600	2429.300	332.600	2468.900	335.100	2490.200
GR	336.800	2499.400	337.800	2649.800	337.700	2792.700	337.700	2935.900	338.200	3076.000
GR	338.300	3169.600	336.200	3187.200	334.200	3238.500	332.800	3303.300	334.000	3371.700
GR	334.100	3458.200	336.900	3467.800	337.900	3568.600	337.900	3699.000	338.200	3839.100
GR	337.900	3974.000	337.800	4092.000	337.400	4210.100	337.200	4327.700	337.400	4445.400
GR	337.500	4541.800	337.200	4623.000	338.000	4704.300	339.900	4717.100	341.300	4762.700
GR	340.100	4810.700	342.000	4820.700	343.100	4834.300	352.200	4837.900	352.400	4912.000
GR	343.500	4919.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1000.000	2800.000	1520.000	2515.000	0.000	0.000
X1	430.000	75.000	1087.400	1913.400	550.000	770.000	465.000	0.000	0.000	0.000
GR	345.300	0.000	343.900	130.500	343.300	268.600	342.900	405.600	342.100	532.100
GR	341.100	682.600	339.800	806.000	339.000	882.400	336.400	892.500	336.900	939.300
GR	339.800	973.700	339.700	1057.000	338.500	1087.400	333.800	1095.400	330.600	1136.700
GR	330.700	1194.300	330.200	1290.000	330.200	1385.300	329.200	1473.800	327.200	1544.600
GR	330.400	1556.700	330.500	1616.300	330.300	1703.200	328.800	1721.600	327.200	1733.700
GR	326.800	1788.900	324.700	1869.400	324.000	1882.400	324.700	1893.300	328.100	1896.500
GR	329.300	1905.300	332.300	1913.400	333.000	1952.600	332.100	2047.500	333.400	2058.700
GR	334.900	2081.100	335.100	2195.200	335.800	2304.900	334.500	2430.700	333.500	2516.300
GR	335.900	2531.900	335.400	2574.000	335.300	2601.600	337.800	2627.200	338.800	2643.200
GR	337.900	2736.900	337.100	2847.800	335.000	2905.500	335.500	2955.100	337.000	3007.200
GR	336.600	3120.500	336.200	3231.700	335.600	3367.000	334.700	3451.100	334.800	3471.500
GR	338.800	3512.400	339.600	3576.400	339.800	3708.900	339.400	3820.600	339.500	3948.400
GR	338.700	4059.400	339.200	4182.900	339.100	4309.000	338.800	4443.600	338.700	4549.200
GR	339.000	4692.200	337.800	4754.500	339.000	4775.300	341.500	4781.700	342.200	4827.300
GR	341.100	4874.500	343.200	4809.300	343.600	4900.900	353.500	4901.700	353.500	4945.700
GT	2.000	34000.000	34000.000	3800.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	5.100	7.100	5.100	1400.000	3000.000	1505.000	2500.000	0.000	0.000
X1	440.000	86.000	1643.300	1855.200	760.000	540.000	542.000	0.000	0.000	0.000
GR	366.000	0.000	365.100	64.600	364.100	118.400	362.600	169.000	359.900	213.900
GR	354.100	262.500	352.800	289.800	348.100	321.100	346.100	350.400	344.800	384.100
GR	344.000	445.900	343.300	512.600	343.100	602.900	342.500	692.800	342.500	775.900
GR	342.100	817.600	336.000	832.500	334.300	847.800	333.500	879.000	331.700	897.100
GR	333.500	909.600	337.500	921.600	338.200	955.300	338.200	1015.500	337.500	1085.000
GR	338.200	1131.100	339.600	1163.200	337.000	1202.200	338.800	1233.900	339.000	1292.500
GR	338.400	1331.800	339.500	1347.500	339.500	1431.300	338.900	1500.000	336.600	1522.400
GR	334.700	1562.200	336.400	1593.500	334.900	1643.000	329.700	1658.100	329.700	1675.800
GR	328.100	1687.800	326.400	1697.800	326.900	1741.300	326.100	1809.000	324.700	1818.800
GR	325.800	1829.200	331.600	1842.000	335.100	1855.200	336.300	1890.500	336.700	1990.900
GR	335.400	2099.700	334.300	2191.500	334.700	2233.300	337.500	2241.300	338.000	2253.000
GR	337.600	2327.600	335.900	2447.600	337.100	2518.700	337.200	2575.300	338.000	2633.500
GR	337.800	2742.700	340.000	2765.900	340.000	2857.900	340.200	2964.400	340.300	3137.300
GR	340.000	3233.300	337.100	3261.700	335.300	3298.300	336.000	3352.100	336.900	3466.800
GR	337.500	3497.700	340.100	3528.300	340.400	3669.100	341.200	3631.300	340.900	3956.900
GR	341.500	4073.700	340.800	4223.800	339.900	4360.700	340.100	4479.300	340.400	4590.300
GR	339.900	4690.600	340.500	4799.400	343.400	4807.800	343.700	4855.200	342.700	4900.200

GR	339.900	4932.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CCHV= 0.100 CEHV= 0.300
CCHV= 0.100 CEHV= 0.300

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	GLOB	GCH	GROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 666.0 1720.0 TYPE= 1 TARGET= 1054.000

360.000	14.01	327.01	0.00	327.01	327.23	0.22	0.00	0.00	326.30
36000.	3902.	32098.	0.	1393.	8319.	0.	0.	0.	100000.00
0.00	2.80	3.86	0.00	0.065	0.055	0.060	0.000	313.00	666.00
0.000995	365.	303.	550.	0	0	1	0.00	1054.00	1720.00

3470 ENCROACHMENT STATIONS= 1.0 2000.0 TYPE= 1 TARGET= 1999.000

370.000	12.81	327.31	0.00	0.00	327.47	0.16	0.23	0.01	322.70
36000.	7322.	28595.	82.	3066.	8437.	81.	88.	10.	324.80
0.03	2.39	3.39	1.02	0.050	0.040	0.040	0.040	314.50	521.27
0.000456	360.	361.	310.	2	0	1	0.00	1463.69	1984.96

3470 ENCROACHMENT STATIONS= 1.0 2000.0 TYPE= 1 TARGET= 1999.000

380.000	12.76	327.46	0.00	0.00	327.67	0.21	0.19	0.02	322.50
36000.	8531.	27469.	0.	2902.	7044.	0.	167.	21.	328.80
0.06	2.94	3.90	0.00	0.050	0.040	0.040	0.040	314.70	531.39
0.000777	310.	323.	420.	2	0	1	0.00	1413.68	1945.06

3470 ENCROACHMENT STATIONS= 1.0 2200.0 TYPE= 1 TARGET= 2199.000

390.000	12.41	327.71	0.00	0.00	327.95	0.24	0.27	0.01	324.70
36000.	9852.	26040.	108.	3147.	6262.	76.	238.	32.	325.80
0.08	3.13	4.16	1.42	0.050	0.040	0.040	0.040	315.30	564.37
0.000929	315.	318.	400.	2	0	1	0.00	1480.75	2045.12

CCHV= 0.100 CEHV= 0.300

3470 ENCROACHMENT STATIONS= 1106.7 2400.0 TYPE= 1 TARGET= 1293.300

400.000	10.43	328.43	0.00	0.00	329.15	0.72	1.06	0.15	330.90
36000.	0.	36000.	0.	0.	5287.	0.	357.	50.	328.80
0.11	0.00	6.81	0.00	0.040	0.040	0.040	0.040	318.00	1113.81
0.002851	700.	701.	630.	2	0	1	0.00	824.80	1938.61

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1200.0 2800.0 TYPE= 1 TARGET= 1600.000

410.000	11.84	330.14	0.00	0.00	331.02	0.88	1.82	0.05	334.60
36000.	0.	31424.	4576.	0.	4004.	942.	439.	62.	334.10
0.13	0.00	7.85	4.86	0.040	0.040	0.040	0.040	318.30	1736.62
0.002379	700.	701.	700.	2	0	1	0.00	675.12	2501.64

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**************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 51,52,53,54,55,56,,57,58
**************************


19-OCT-82   17:27:25


G;F @<a)D@Z
T1       UPPER SAN DIEGO RIVER
T2       SECTIONS DIGITIZED IN 1982
T3.      FLOODWAY

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

          0.        3.        0.        0.  0.000000      0.00     -1.0        0.   327.004     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
```

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

FLOODWAY

SECTION NUMBER	DISCHARGE CFS	CWSEL	CRIWS	EG	HL	STENCL	STENCR	TOPWID	QLOB	QCH	QROB	SSTA	ENDST
360.000	36000.00	327.01	0.00	327.23	0.00	666.00	1720.00	1054.00	3902.13	32097.85	0.00	666.00	1720.00
360.000	36000.00	327.00	0.00	327.29	0.00	845.00	1720.00	875.00	16.59	35983.41	0.00	845.00	1720.00
370.000	36000.00	327.31	0.00	327.47	0.23	1.00	2000.00	1463.69	7022.49	28595.15	82.36	521.27	1984.96
370.000	36000.00	327.35	0.00	327.63	0.33	930.00	1885.00	955.00	894.52	35105.48	0.00	930.00	1885.00
380.000	36000.00	327.46	0.00	327.67	0.19	1.00	2000.00	1413.68	8531.39	27468.61	0.00	531.39	1945.06
380.000	36000.00	327.57	0.00	327.95	0.29	945.00	1935.00	990.00	767.84	35232.16	0.00	945.00	1935.00
390.000	36000.00	327.71	0.00	327.95	0.27	1.00	2200.00	1480.75	9851.91	26039.90	108.19	564.37	2045.12
390.000	36000.00	327.95	0.00	328.40	0.43	1010.00	1980.00	970.00	928.24	35071.76	0.00	1010.00	1980.00
400.000	36000.00	328.43	0.00	329.15	1.06	1106.70	2400.00	824.80	0.00	36000.00	0.00	1113.81	1938.61
400.000	36000.00	329.14	0.00	329.92	1.42	1110.00	1840.00	728.22	0.00	36000.00	0.00	1111.78	1840.00
410.000	36000.00	330.14	0.00	331.02	1.82	1200.00	2800.00	675.12	0.00	31423.76	4576.24	1736.62	2501.64
410.000	36000.00	330.77	0.00	331.64	1.69	1745.00	2415.00	595.84	0.00	32880.52	3119.48	1745.00	2415.00
415.000	36000.00	332.43	0.00	333.33	2.30	1300.00	2800.00	1086.48	2479.84	24181.63	9338.53	1498.65	2590.74
415.000	36000.00	332.83	0.00	333.87	2.19	1750.00	2525.00	775.00	0.00	25250.69	10749.31	1750.00	2525.00
420.000	36000.00	333.51	0.00	333.97	0.60	1000.00	2400.00	969.18	3019.97	29618.85	3361.18	1095.52	2192.04
420.000	36000.00	334.03	0.00	334.51	0.58	1292.00	1972.00	678.24	1906.87	30655.32	3437.81	1292.00	1970.24
422.000	36000.00	333.44	0.00	335.31	0.63	0.00	0.00	457.78	0.00	36000.00	0.00	1661.40	2119.18
422.000	36000.00	334.00	0.00	335.68	0.57	1661.00	2133.70	461.48	0.00	36000.00	0.00	1661.00	2122.48
424.000	36000.00	334.73	0.00	335.73	0.43	1664.80	2135.50	470.70	0.00	36000.00	0.00	1664.80	2135.50
424.000	36000.00	334.73	0.00	335.73	0.05	1664.80	2135.50	470.70	0.00	36000.00	0.00	1664.80	2135.50
425.000	36000.00	335.83	0.00	336.15	0.36	1312.70	2800.00	1181.43	327.09	35672.91	0.00	1312.70	2494.13
425.000	36000.00	335.77	0.00	336.19	0.40	1540.00	2490.00	950.00	0.00	36000.00	0.00	1540.00	2490.00
430.000	36000.00	336.40	0.00	336.84	0.65	1000.00	2800.00	1521.93	0.00	32411.72	3588.28	1090.97	2612.90
430.000	36000.00	336.30	0.00	337.59	1.13	1520.00	2515.00	995.00	0.00	30808.11	5191.89	1520.00	2515.00
440.000	34000.00	338.17	338.17	340.00	1.40	1400.00	3000.00	1239.52	1500.18	26490.29	6009.53	1507.10	2746.61
440.000	34000.00	338.39	0.00	340.07	2.36	1505.00	2500.00	995.00	1642.17	26029.62	6328.21	1505.00	2500.00

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
360.000	36000.000	327.011	0.000	0.000	0.000	1053.999	0.000	303.000
360.000	36000.000	327.004	-0.007	0.000	0.000	874.999	179.000	303.000
370.000	36000.000	327.311	0.000	0.300	0.000	1463.689	0.000	361.000
370.000	36000.000	327.351	0.040	0.347	0.000	954.999	508.690	361.000
380.000	36000.000	327.462	0.000	0.151	0.000	1413.676	0.000	323.000
380.000	36000.000	327.574	0.112	0.223	0.000	989.999	423.677	323.000
390.000	36000.000	327.714	0.000	0.252	0.000	1480.748	0.000	318.000
390.000	36000.000	327.951	0.237	0.377	0.000	969.999	510.749	318.000
400.000	36000.000	328.430	0.000	0.716	0.000	824.798	0.000	701.000

400.000	36000.000	329.135	0.705	1.184	0.000	728.220	96.578	701.000
410.000	36000.000	330.139	0.000	1.709	0.000	675.117	0.000	701.000
410.000	36000.000	330.767	0.628	1.632	0.000	595.838	79.279	701.000
415.000	36000.000	332.428	0.000	2.289	0.000	1086.478	0.000	893.000
415.000	36000.000	332.854	0.426	2.087	0.000	774.999	311.479	893.000
420.000	36000.000	333.507	0.000	1.079	0.000	969.182	0.000	399.000
420.000	36000.000	334.027	0.520	1.173	0.000	678.238	290.944	399.000
422.000	36000.000	333.438	0.000	-0.069	0.000	457.778	0.000	321.000
422.000	36000.000	333.996	0.558	-0.031	0.000	461.485	-3.707	321.000
424.000	36000.000	334.726	0.000	1.288	0.000	470.699	0.000	170.000
424.000	36000.000	334.726	0.000	0.730	0.000	470.699	0.000	170.000
425.000	36000.000	335.825	0.000	1.099	0.000	1181.427	0.000	218.000
425.000	36000.000	335.765	-0.060	1.039	0.000	949.999	231.428	218.000
430.000	36000.000	336.402	0.000	0.577	0.000	1521.927	0.000	465.000
430.000	36000.000	336.296	-0.106	0.531	0.000	994.999	526.928	465.000
440.000	34000.000	338.171	0.000	1.769	0.000	1239.517	0.000	542.000
440.000	34000.000	338.386	0.215	2.090	0.000	994.999	244.518	542.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	1.000	1600.000	135.415	0.000
2	1.000	995.000	101.711	-33.705

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01, 02, 03, 04, 05, 06, 07, 08, 09
MODIFICATIONS 51, 52, 53, 54, 55, 56, , 57, 58
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19-OCT-82 17:28:49

]E F@d?9)D!1(Z

Exhibit C

HEC-2 Model (Duplicate Effective Model)

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES           *
 *                                         *
 *  Version   4.6.2;  May 1991             *
 *                                         *
 *  RUN DATE    21APR23    TIME   12:00:07  *
 *****************************************
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 ***************************************
 *  U.S. ARMY CORPS OF ENGINEERS       *
 *  HYDROLOGIC ENGINEERING CENTER      *
 *  609 SECOND STREET, SUITE D         *
 *  DAVIS, CALIFORNIA 95616-4687       *
 *          (916) 756-1104             *
 ***************************************
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                                        X     X  XXXXXXX   XXXXX             XXXXX
                                        X     X  X        X     X           X     X
                                        X     X  X        X                       X
                                        XXXXXXX  XXXX     X          XXXXX    XXXXX
                                        X     X  X        X                  X
                                        X     X  X        X     X            X
                                        X     X  XXXXXXX   XXXXX             XXXXXXX
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1
    21APR23      12:00:07                                                                                  PAGE    1
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                                                                                    THIS RUN EXECUTED 21APR23    12:00:07
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************
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 T1        UPPER SAN DIEGO RIVER   RECREATE ORIGINAL HEC-2 MODEL MAY 2020 Hunsaker
 T2        SECTIONS DIGITIZED IN 1982   20-OCT-82
 T3        100-YEAR

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0       0.0      0.00      -1.0         0     289.4         0

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1         0         0         0         0         0         0         0


 QT        2      38000      38000          0          0          0          0          0          0          0
 NC     .125       .125       .125         .1         .3          0          0          0          0          0
 ET        0          0        7.1          0          0          0        120        400          0          0
 X1      100         37      121.5      400.1
 GR    295.1          0      306.0       23.7      313.4       46.8      314.5       64.4      307.3       90.0
 GR    301.6      108.4      288.5      121.5      277.2      136.9      272.6      155.2      269.0      164.1
 GR    269.0      207.5      269.0      215.5      272.6      222.0      271.6      231.8      272.1      242.7
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GR    274.8      251.8      273.1      266.4      274.1      293.7      274.5      314.1      272.5      327.8
GR    272.1      356.1      272.1      368.3      275.6      376.9      278.5      395.2      281.8      400.1
GR    281.3      412.7      282.6      424.2      289.2      439.1      289.5      456.0      300.2      474.7
GR    300.8      493.4      300.9      508.2      301.7      524.0      305.7      542.8      310.4      567.5
GR    317.0      592.9      326.1      636.9

ET      0          0        7.1          0          0          0        120        395          0          0
X1    110         30      123.1      433.8         40         50         46
GR    319.7          0      320.8       25.6      323.7       39.1      323.4       56.6      316.2       85.6
GR    307.4      100.7      295.1      113.3      285.4      123.1      280.0      143.0      278.6      159.7
GR    276.9      231.4      278.8      308.8      275.0      314.5      275.0      322.1      279.8      324.7
GR    279.7      342.2      275.9      346.2      275.5      359.7      276.8      377.5      282.2      400.8
GR    282.9      413.9      288.8      433.8      295.2      461.1      298.5      477.9      300.6      493.3
GR    300.1      507.2      301.2      530.4      306.5      561.4      313.9      593.1      322.8      640.4

ET      0          0        7.1          0          0          0        115        395          0          0
X1    120         26       96.6      419.2         55         50         52          0          0          0
GR    320.3          0      316.2       26.2      310.4       51.5      299.4       75.1      290.2       96.6
GR    284.3      116.2      280.7      141.4      277.9      165.5      275.7      201.3      275.7      228.8
GR    275.7      276.2      277.1      291.9      276.0      319.1      275.8      337.4      276.9      348.8
GR    276.3      366.4      282.1      396.0      286.9      419.2      292.4      446.6      297.5      470.6
GR    298.9      488.8      299.8      510.5      302.4      550.5      302.5      574.1      305.8      604.7
GR    309.5      646.5
1
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NC     0.08       0.08       0.08
ET      0          0        7.1          0          0          0      225.0      500.0
X1    130         30      189.1      506.5      530.0      520.0      520.0
GR    320.1          0      314.7       56.0      310.5       91.8      303.5      134.1      298.5      161.8
GR    289.9      189.1      284.3      216.8      284.5      242.4      276.5      258.0      275.4      274.7
GR    277.6      289.3      278.1      326.4      279.8      363.1      278.0      380.2      275.2      385.9
GR    275.2      412.9      275.2      444.5      277.5      451.1      277.5      482.1      280.5      496.0
GR    288.3      506.5      289.5      557.7      296.7      571.6      298.1      594.4      297.0      629.0
GR    299.3      644.9      297.1      651.9      297.2      680.4      302.5      712.1      308.7      751.2

ET      0          0        7.1          0          0          0      315.0      585.0
X1    140         24      275.0      604.1      550.0      550.0      552.0
GR    314.4          0      315.7       53.3      315.3       99.3      313.8      151.1      310.3      203.6
GR    305.2      245.9      297.5      275.0      288.8      305.9      284.1      322.6      280.2      345.0
GR    279.4      382.8      282.7      416.3      281.6      468.1      277.8      498.6      275.0      506.4
GR    274.7      511.7      274.8      556.1      283.6      580.1      293.8      604.1      292.7      627.8
GR    290.7      646.5      305.8      661.5      317.6      685.5      333.9      733.6

ET      0        5.1        7.1          0          1     1231.9      655.0     1200.0
X1    150         34      734.9     1231.9      545.0      540.0      540.0
GR    307.2          0      303.7      106.4      303.0      237.9      299.0      313.1      297.4      382.4
GR    295.9      438.3      293.8      449.4      293.5      477.6      297.1      486.5      294.7      560.2
GR    295.3      632.3      293.8      689.1      296.1      710.8      294.6      734.9      287.2      754.0
GR    281.8      775.6      279.0      787.6      282.7      791.8      284.0      831.8      282.9      918.3
GR    279.1      929.0      279.2      976.6      283.8      995.0      282.9     1074.8      281.7     1149.2
GR    282.2     1191.1      283.4     1207.9      301.6     1231.9      300.4     1256.8      298.9     1277.9
GR    305.9     1293.5      317.0     1338.3      323.5     1374.9      326.8     1394.4
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 NC    0.035      0.035      0.045
 ET        0          0        7.1          0          0          0      570.0     1435.0
 X1      160         51      727.4     1605.7      630.0      690.0      690.0
 GR    306.2          0      305.1      102.8      305.7      125.3      305.7       183.5      302.8       206.3
 GR    301.0      313.8      300.3      401.9      301.1      472.5      304.5       491.0      309.7       529.1
 GR    295.5      551.6      289.7      569.2      282.7      576.5      281.7       593.0      282.5       601.9
 GR    285.5      627.8      286.1      660.1      295.6      688.0      300.1       707.6      299.8       727.4
 GR    294.1      762.1      292.0      788.0      290.1      804.4      289.0       863.4      289.5       916.6
 GR    289.6     1008.3      289.0     1112.3      287.8     1178.6      286.2      1199.4      288.4      1215.4
 GR    287.8     1276.5      286.0     1353.9      283.7     1379.3      283.8      1424.4      288.8      1431.4
 GR    288.9     1517.3      289.9     1550.0      292.8     1579.0      302.8      1605.7      307.2      1633.1
 GR    310.3     1664.6      310.8     1688.8      308.8     1695.8      314.4      1711.4      311.4      1721.6
 GR    313.3     1732.3      310.9     1741.3      311.9     1768.3      311.1      1809.7      315.7      1833.9
 GR    317.4     1896.1

 ET        0          0        7.1          0          0          0     1040.0     2085.0
 X1      170         38     1503.8     2158.8      390.0      350.0      350.0
 GR    308.5          0      308.4      111.3      306.4      202.9      304.9       219.1      305.5       242.6
 GR    304.3      343.9      301.1      471.7      299.0      600.6      296.7       723.4      293.7       831.4
 GR    291.6      905.4      290.2      988.8      289.0     1049.7      284.4      1081.5      285.6      1085.2
 GR    285.8     1109.7      292.0     1124.0      292.3     1187.7      294.1      1269.5      292.5      1379.6
 GR    292.3     1449.0      294.4     1503.8      293.7     1582.1      291.4      1653.0      289.8      1761.7
 GR    287.4     1784.0      286.0     1939.1      284.5     1951.8      284.4      1980.3      286.4      1987.3
 GR    288.5     2053.8      292.1     2073.7      297.3     2158.8      305.2      2259.3      311.4      2329.5
 GR    317.2     2402.7      321.2     2450.7      321.5     2520.8
1
    21APR23      12:00:07                                                                                    PAGE    3


 ET        0        5.1        7.1          0      500.0     2200.0      865.0     2065.0
 X1      180         46     1566.5     2049.6      405.0      255.0      300.0
 GR    312.4          0      310.6       82.0      307.3       99.6      306.6       142.8      302.1       157.2
 GR    300.4      242.3      305.8      259.9      299.7      276.0      299.1       323.5      302.0       351.1
 GR    297.2      388.3      297.4      423.5      304.5      442.7      301.7       564.7      299.8       654.7
 GR    296.4      711.5      298.8      741.5      295.4      750.3      295.1       798.3      298.4       828.3
 GR    297.8      853.1      286.2      869.9      284.9      880.3      284.0       896.2      284.9       915.0
 GR    287.6      955.0      291.1     1011.4      290.4     1079.8      292.9      1155.4      292.0      1259.4
 GR    291.2     1362.2      290.6     1499.3      289.5     1566.5      287.4      1593.3      287.4      1960.4
 GR    289.0     2004.8      289.3     2020.4      295.7     2049.6      300.3      2102.0      301.2      2127.2
 GR    307.6     2188.8      314.5     2265.2      319.7     2333.6      323.7      2399.9      326.1      2456.7
 GR    325.0     2538.7

 ET        0          0        7.1          0          0          0      710.0     2000.0
 X1      190         36      972.8     2041.3      785.0      550.0      550.0
 GR    316.7          0      315.9      114.9      313.5      265.1      310.5       380.0      306.9       503.8
 GR    305.9      560.7      297.9      573.9      296.4      604.7      300.3       611.9      299.6       642.0
 GR    296.2      649.6      294.1      691.2      288.7      739.3      284.7       751.7      283.3       767.7
 GR    284.8      780.2      285.7      851.5      298.1      881.5      297.3       972.8      286.6      1012.4
 GR    286.6     1531.9      288.3     1542.3      288.3     1573.5      286.6      1606.0      286.6      1999.6
 GR    292.2     2012.1      293.7     2031.7      297.1     2041.3      296.9      2060.1      301.2      2075.0
 GR    307.7     2119.0      309.7     2152.3      308.4     2219.6      309.5      2266.8      313.4      2354.5
 GR    317.5     2439.9
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ET        0         0       7.1         0         0         0     935.0    2025.0
X1      200        42    1056.7    2113.3     630.0     595.0     600.0
GR    316.9         0     313.9      56.2     312.6     122.4     310.1     216.7     307.6     324.4
GR    306.6     427.5     304.6     520.3     302.4     585.0     295.3     604.2     292.5     618.3
GR    293.4     669.2     293.1     728.3     296.2     755.5     295.5     775.6     293.1     788.9
GR    292.7     841.5     293.1     907.7     303.1     935.0     301.8     942.6     287.0     963.5
GR    286.0     994.4     285.3    1011.2     286.0    1037.4     296.9    1056.7     286.6    1085.6
GR    287.0    1164.6     288.7    1223.8     288.1    1403.9     288.5    1550.4     289.1    1765.6
GR    288.4    1904.5     286.6    1911.4     286.6    2019.7     293.5    2043.4     294.1    2065.1
GR    298.4    2092.4     301.1    2113.3     300.5    2137.8     305.3    2194.4     312.4    2283.5
GR    316.1    2372.6     318.5    2429.6

ET        0         0       7.1         0         0         0    1040.0    2080.0
X1      210        48    1355.0    2185.1     450.0     350.0     350.0
GR    318.8         0     319.5      35.3     317.3      62.2     311.7      79.9     309.5     108.8
GR    306.3     166.1     303.1     312.9     301.6     457.4     299.8     607.8     298.0     747.8
GR    298.6     839.7     298.1     875.4     294.4     891.9     294.4     974.9     294.2    1088.0
GR    297.8    1105.7     288.1    1117.8     285.5    1133.4     287.6    1144.1     287.8    1217.9
GR    287.4    1286.1     296.5    1313.3     299.6    1325.8     300.0    1355.0     294.2    1382.3
GR    292.7    1414.0     290.0    1438.5     289.8    1526.3     289.3    1571.4     288.5    1623.5
GR    288.5    1664.4     290.5    1686.8     289.1    1834.5     288.3    1958.5     288.2    2066.4
GR    294.5    2086.4     294.7    2128.6     298.3    2157.4     302.0    2185.1     302.3    2216.0
GR    305.2    2229.2     307.6    2291.8     308.8    2356.0     309.1    2371.3     315.3    2391.3
GR    316.5    2429.4     315.4    2472.3     318.7    2518.0
1
   21APR23      12:00:07                                                                          PAGE     4


NC    0.045        .1      0.065
ET        0         0       7.1         0         0         0     650.0    1620.0
X1      220        44    1185.2    1658.7     620.0     385.0     450.0
GR    309.4         0     308.1      49.1     303.4      65.1     303.8      93.7     304.8     111.3
GR    300.4     135.4     298.2     205.6     295.6     275.8     296.4     311.7     299.2     325.6
GR    297.9     381.8     296.6     472.7     298.6     496.0     297.7     516.1     296.0     540.4
GR    296.0     619.4     297.0     659.3     297.1     778.2     297.0     828.0     294.1     852.7
GR    291.3     877.1     291.6     961.4     291.5    1078.8     292.8    1124.9     292.4    1185.2
GR    289.9    1220.5     289.8    1321.4     288.8    1344.8     290.0    1386.7     292.3    1429.0
GR    292.1    1467.4     293.8    1493.0     295.4    1567.7     296.3    1608.0     299.8    1658.7
GR    296.2    1677.4     295.9    1703.2     299.8    1722.6     301.5    1749.7     304.6    1768.4
GR    308.0    1845.6     314.8    1925.8     319.7    2049.1     324.0    2142.9

ET        0         0       7.1         0         0         0     975.0    1710.0
X1      230        39    1177.3    1700.4     430.0     460.0     487.0
GR    320.6         0     315.6      98.6     310.7     248.5     307.7     349.8     304.4     453.1
GR    301.8     481.5     297.2     508.2     295.0     514.3     296.6     561.5     298.3     572.6
GR    299.6     589.3     296.9     598.8     296.0     661.1     296.0     732.0     298.0     803.0
GR    298.2     895.6     298.8     987.5     297.5    1007.2     294.6    1034.2     292.3    1049.0
GR    293.2    1074.8     294.1    1177.3     293.5    1277.7     293.6    1390.6     293.8    1477.5
GR    290.2    1497.2     289.8    1554.2     290.4    1569.5     291.8    1577.6     291.3    1624.4
GR    294.6    1642.8     295.4    1680.2     299.8    1700.4     300.1    1740.6     303.7    1766.4
GR    304.8    1824.3     306.5    1894.0     310.4    1966.2     312.0    2031.8

ET        0       5.1       7.1         0     450.0    1300.0     530.0    1190.0
X1      239        35     794.2    1194.9     515.0       385       413         0         0         0
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GR    326.7         0      325.9       9.7      313.3       33.3      302.7       58.7      299.6       75.9
GR    298.8       146.3    296.4     184.4      295.9      292.8      296.4      340.1      298.6      359.0
GR    298.3       480.3    297.1     577.6      296.4      628.2      295.3      690.3      296.7      723.4
GR    296.3       773.8    299.6     794.2      295.7      807.3      293.2      815.5      292.7      884.9
GR    290.7       929.7    291.8     952.3      294.4      972.5      293.1     1010.8      292.6     1033.0
GR    294.4      1056.6    292.9    1097.2      293.9     1121.5      296.8     1156.1      303.0     1194.9
GR    304.6      1220.8    306.4    1253.0      308.5     1284.9      311.2     1349.1      314.0     1436.2

NC        0          0         0       0.3        0.5
ET        0        5.1       5.1         0     1477.7     1977.2
X1      242         35    1477.7    1977.2        270        165        224
X2        0          0         0     311.5      315.0
BT       22     1477.7     315.0     311.5     1557.0      315.0      311.5     1557.0      315.0          0
BT   1564.0      315.0         0    1564.0      315.0      311.5     1640.4      315.0      311.5     1640.4
BT    315.0          0    1647.4     315.0          0     1647.4      315.0      311.5     1723.7      315.0
BT    311.5     1723.7     315.0         0     1730.7      315.0          0     1730.7      315.0      311.5
BT   1807.0      315.0     311.5    1807.0      315.0          0     1814.0      315.0          0     1814.0
BT    315.0      311.5    1890.4     315.0      311.5     1890.4      315.0          0     1897.4      315.0
BT        0     1897.4     315.0     311.5     1977.2      315.0      311.5          0          0          0
GR    322.3          0     325.6      50.0      327.8      125.3      328.0      167.9      320.9      223.5
GR    317.6      265.9     313.7     374.7      316.2      478.1      320.7      644.2      321.6      741.1
GR    329.1      757.2     328.4     771.6      321.9      789.8      321.3      881.9      317.3     1023.6
GR    313.9     1127.3     310.6    1268.7      311.6     1384.5      309.6     1444.5      309.6     1477.7
GR    298.9     1496.5     292.9    1529.5      293.1     1544.4      293.8     1624.2      294.0     1694.9
GR    292.5     1762.9     293.0    1804.8      291.7     1829.1      292.1     1863.2      294.1     1921.8
GR    311.6     1977.2     312.9    2102.5      309.6     2169.8      313.0     2266.2      316.8     2378.2
1
   21APR23      12:00:07                                                                              PAGE    5


ET        0        5.1       5.1         0     1538.3     2038.7
X1      244         36    1538.3    2038.7         95         95         95
X2        0          0         0     311.5      315.0
BT       22     1538.3     315.0     311.5     1618.3      315.0      311.5     1618.3      315.0          0
BT   1625.3      315.0         0    1625.3      315.0      311.5     1701.7      315.0      311.5     1701.7
BT    315.0          0    1708.7     315.0          0     1708.7      315.0      311.5     1785.0      315.0
BT    311.5     1785.0     315.0         0     1792.0      315.0          0     1792.0      315.0      311.5
BT   1868.3      315.0     311.5    1868.3      315.0          0     1875.3      315.0          0     1875.3
BT    315.0      311.5    1951.7     315.0      311.5     1951.7      315.0          0     1958.7      315.0
BT        0     1958.7     315.0     311.5     2038.7      315.0      311.5          0          0          0
GR    333.7          0     332.9     112.5      325.1      205.8      318.3      337.4      315.9      476.3
GR    313.1      545.2     326.7     602.4      328.1      710.5      327.9      857.3      309.9      896.3
GR    307.6      960.7     300.3     995.7      300.4     1057.8      300.3     1138.4      300.5     1237.7
GR    300.4     1331.6     298.3    1412.7      296.8     1496.6      296.0     1538.3      293.5     1563.3
GR    294.6     1610.2     293.3    1726.3      293.1     1859.5      292.2     1881.3      293.1     1912.8
GR    294.9     1989.5     307.8    2038.7      307.6     2130.6      307.7     2162.9      312.8     2178.6
GR    311.6     2260.9     307.1    2281.9      307.1     2290.6      303.9     2297.1      308.1     2393.9
GR    312.5     2498.4

NC     0.11      0.045       0.1       0.1        0.3
ET        0        5.1       7.1         0      550.0     1550.0      730.0     1335.0
X1      245         46     733.9    1365.9        150        210        177
GR    329.6          0     329.0      34.7      332.3       59.7      341.6       62.4      341.6      117.5
GR    333.4      120.9     332.7     142.8      321.9      163.7      315.1      178.0      313.1      232.6
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 GR    307.8      301.1      304.4      332.2      299.6      356.7      299.6      421.6      299.0      495.5
 GR    301.1      576.5      300.6      651.8      294.8      662.9      295.4      733.9      293.5      752.9
 GR    294.3      779.0      293.9      881.8      293.6      956.6      293.6     1033.3      292.7     1075.7
 GR    292.5     1095.1      292.7     1117.1      295.3     1147.3      295.7     1193.3      296.0     1231.5
 GR    295.4     1310.2      296.1     1334.9      298.3     1353.3      302.8     1365.9      306.0     1410.9
 GR    308.7     1503.8      312.0     1574.9      314.8     1645.6      316.8     1687.3      319.7     1720.0
 GR    321.0     1804.8      323.3     1847.5      326.3     1898.9      329.3     1959.7      330.2     1973.3
 GR    330.6     2021.6

 NC     0.05       0.05       0.06
 ET        0          0        7.1          0          0          0      580.0     1275.0
 X1      250         44      618.1     1199.0      615.0      700.0      701.0
 GR    326.9          0      326.6       34.2      329.6       54.8      330.1       87.4      341.8       89.9
 GR    341.8      142.4      331.0      145.7      330.5      161.9      318.7      181.0      310.1      203.9
 GR    308.0      213.0      307.2      227.9      303.7      261.6      301.6      281.2      302.5      289.4
 GR    301.9      394.2      301.6      491.5      300.0      554.1      300.1      618.1      298.3      652.9
 GR    295.9      707.6      296.9      759.6      297.7      846.0      298.0      941.2      297.9     1041.0
 GR    295.5     1081.2      297.7     1096.2      295.4     1107.8      294.4     1124.0      293.7     1138.2
 GR    294.3     1152.9      296.6     1182.0      300.0     1199.0      299.4     1238.2      299.9     1271.8
 GR    305.0     1292.2      307.5     1315.5      308.7     1376.5      311.9     1466.7      314.7     1527.3
 GR    315.6     1559.3      319.1     1564.8      320.1     1609.7      319.0     1632.0          0          0

 ET        0          0        7.1          0          0          0      365.0      965.0
 X1      260         36      419.7      982.5     1000.0     1050.0     1031.0
 GR    322.7          0      323.4       16.9      322.9       38.0      325.1       60.8      326.5      126.0
 GR    326.8      165.9      320.2      181.3      316.5      185.8      314.2      236.3      313.2      295.3
 GR    311.1      318.4      309.5      338.3      305.8      352.6      303.1      419.7      300.1      438.4
 GR    299.1      465.2      298.6      492.1      300.1      500.6      299.9      611.3      301.5      708.2
 GR    302.1      744.4      304.4      756.7      302.3      767.7      300.7      808.0      297.8      831.1
1
    21APR23      12:00:07                                                                                 PAGE    6


 GR    297.6      838.5      297.8      857.2      302.6      885.2      302.9      939.8      305.3      962.1
 GR    311.4      982.5      312.3     1006.9      313.7     1046.9      312.1     1089.9      313.3     1122.1
 GR    314.3     1221.7

 QT        2      37000      37000
 ET        0        5.1        7.1          0        100     1023.7        400        960
 X1      270         42      400.4      958.7      815.0     1000.0      951.0
 GR    320.8          0      320.4       21.0      322.3       40.8      323.2       57.7      333.8       63.4
 GR    333.8      113.9      322.4      120.4      322.6      146.6      316.7      163.2      315.2      180.6
 GR    312.6      282.9      310.4      354.8      308.6      400.4      301.0      413.0      299.8      467.1
 GR    300.2      478.7      299.8      493.8      301.8      505.5      303.1      608.1      304.2      694.2
 GR    306.3      711.1      301.8      728.4      303.1      761.5      304.8      788.2      306.6      799.9
 GR    300.8      815.3      299.4      838.0      300.8      867.4      303.8      882.8      302.5      938.1
 GR    307.7      958.7      310.0      988.2      313.8     1023.7      313.0     1089.6      311.8     1118.6
 GR    309.1     1150.1      309.8     1163.9      312.6     1170.3      312.5     1212.8      312.2     1258.4
 GR    314.0     1277.0      314.7     1301.7

 ET        0          0        7.1          0          0          0      330.0     1630.0
 X1      280         50      216.8     1690.2     1060.0     1135.0     1021.0
 GR    319.5          0      319.0       16.6      318.5       32.8      319.2       74.5      327.1       75.3
 GR    327.1      110.5      319.6      113.9      318.1      175.1      312.2      192.4      308.8      202.3
 GR    308.4      216.8      306.6      231.3      306.5      283.3      306.3      325.9      304.1      342.4
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GR    300.7     355.7     300.1     376.6     303.2     385.9     304.3     466.4     304.8     556.9
GR    305.0     655.3     306.1     772.1     305.7     843.4     304.5     868.6     304.3     921.9
GR    306.4     953.7     305.9    1029.7     304.7    1074.3     305.6    1106.4     310.6    1125.0
GR    302.8    1139.5     301.1    1176.6     302.7    1207.3     307.4    1215.5     307.6    1300.9
GR    307.1    1398.9     306.6    1490.7     306.8    1547.8     307.6    1610.9     307.6    1646.1
GR    310.5    1690.2     310.7    1704.8     315.4    1711.7     316.9    1717.1     318.4    1760.5
GR    318.6    1801.4     321.3    1864.6     324.3    1990.3     328.8    2110.7     331.7    2238.4

ET       0         0       7.1         0         0         0     330.0    1765.0
X1     285        52     272.9    1768.0     660.0     640.0     688.0
GR    340.2         0     339.2      48.2     332.9      67.9     329.2      91.5     323.2     110.3
GR    321.2     145.3     317.8     179.9     314.3     205.0     311.4     272.9     307.5     295.2
GR    306.1     386.5     303.8     480.7     302.2     506.6     304.0     517.4     306.5     535.9
GR    306.8     640.4     308.4     693.1     309.1     803.1     309.3     900.8     308.9     961.7
GR    307.9    1023.3     304.8    1048.2     306.2    1086.4     307.2    1117.1     307.4    1215.2
GR    305.4    1282.8     306.6    1342.4     309.7    1380.7     310.3    1460.0     308.0    1479.0
GR    306.9    1507.0     308.2    1516.5     313.4    1523.6     312.7    1533.4     303.7    1553.2
GR    302.4    1573.1     303.3    1609.9     305.3    1634.1     304.9    1672.4     307.0    1680.9
GR    306.3    1706.8     310.4    1735.4     313.7    1768.0     314.6    1840.5     314.1    1920.4
GR    317.7    1931.1     318.1    1976.9     317.0    2020.4     318.2    2044.4     321.4    2094.1
GR    322.9    2127.8     324.4    2237.1

ET       0         0       7.1         0         0         0     770.0    2340.0
X1     290        60     714.3    2568.8     645.0     695.0     653.0
GR    347.5         0     347.4      37.9     349.4      62.7     349.1     137.6     344.9     159.5
GR    342.1     249.7     339.7     337.8     339.1     383.0     335.6     408.7     350.1     415.8
GR    350.1     509.1     334.8     514.2     331.4     528.6     342.3     553.4     322.6     587.7
GR    318.2     603.1     317.8     635.3     318.6     649.0     317.9     714.3     314.4     749.3
GR    312.0     772.5     311.0     810.1     311.0    1087.6     311.6    1095.6     311.8    1185.3
GR    311.2    1273.7     308.9    1415.4     306.5    1439.5     308.4    1456.5     310.4    1529.9
GR    311.7    1636.7     309.1    1666.1     306.4    1683.9     307.1    1715.7     309.0    1750.5
GR    307.5    1829.0     308.9    1862.5     310.4    1886.7     310.8    1939.8     310.3    1978.3
1
   21APR23      12:00:07                                                                    PAGE    7


GR    311.1    2056.4     309.2    2077.8     311.0    2113.6     316.9    2125.3     317.1    2136.8
GR    306.1    2149.9     304.7    2168.0     303.1    2177.0     304.6    2196.1     305.1    2232.5
GR    310.9    2243.8     310.7    2331.8     311.6    2378.3     308.5    2390.2     310.5    2404.2
GR    312.3    2455.5     313.0    2513.4     314.2    2557.6     316.9    2568.8     319.1    2610.7

ET       0         0       7.1         0         0         0     660.0    2130.0
X1     300        51     646.5    2117.4     605.0     790.0     654.0
GR    324.0         0     324.8      39.9     325.3      60.6     334.0      63.1     334.0     102.6
GR    325.5     106.9     324.8     156.7     322.4     167.1     321.2     311.5     318.9     446.4
GR    318.7     576.2     317.4     646.5     312.3     661.0     311.8     680.4     311.8     750.4
GR    313.7     757.1     313.4     794.5     310.2     809.1     311.8     841.9     310.8     907.5
GR    312.1     927.5     314.3     954.4     313.4    1051.2     312.2    1150.4     311.8    1200.4
GR    309.4    1236.1     310.6    1274.2     311.4    1338.2     311.8    1440.1     310.7    1538.5
GR    311.2    1612.1     308.6    1637.6     309.8    1697.1     309.5    1780.8     309.2    1852.9
GR    310.9    1899.6     310.8    1940.4     315.3    1952.8     314.1    1964.7     308.6    1987.0
GR    305.8    2003.1     305.1    2016.3     305.8    2068.8     310.4    2088.8     313.4    2117.4
GR    313.8    2190.6     316.1    2278.3     318.2    2369.6     320.1    2468.2     320.6    2519.0
GR    321.2    2564.3
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NC    0.045       0.06      0.035
ET        0        5.1        7.1          0       600.0      2800.0       850.0      2395.0
X1      310         65      837.2       2348.3       640.0       610.0       610.0
GR    320.5          0      320.9         78.5       320.3       192.3       319.6       337.8       318.8       386.3
GR    316.0      402.3      315.1        410.8       316.5       420.9       318.8       432.2       319.3       497.2
GR    320.4      520.1      320.3        566.1       319.5       599.6       320.3       620.6       322.1       631.8
GR    320.7      661.7      320.7        709.3       321.3       727.1       318.6       750.1       319.9       783.1
GR    317.5      807.3      318.1        837.2       314.5       848.9       311.1       859.0       310.0       909.7
GR    310.5     1033.1      311.3       1106.9       310.8      1263.4       310.8      1360.6       312.7      1375.1
GR    313.6     1448.5      313.3       1482.0       311.1      1515.1       311.0      1540.0       312.9      1560.1
GR    314.8     1573.5      314.1       1622.6       311.3      1637.2       312.6      1645.3       312.0      1702.0
GR    313.1     1808.2      313.5       1863.8       312.9      1914.6       311.6      1949.8       312.2      1979.2
GR    312.4     2097.3      312.2       2173.9       311.5      2203.0       314.6      2212.7       316.7      2222.8
GR    316.0     2236.9      309.2       2244.5       306.9      2255.8       305.7      2273.8       306.4      2285.5
GR    307.9     2325.4      313.6       2334.6       316.0      2348.3       315.6      2396.7       317.1      2504.3
GR    317.6     2557.2      320.2       2662.8       321.7      2782.6       323.7      2904.0       324.3      2954.1

ET        0        5.1        7.1          0          1      1870.6       645.0      1870.0
X1      320         65      530.1       1870.6       660.0       640.0       711.0
GR    322.4          0      323.7        101.5       322.4       187.5       321.3       294.7       322.2       328.1
GR    322.4      372.3      322.3        415.6       321.1       449.4       318.3       499.6       317.5       530.1
GR    316.3      541.3      314.8        562.6       311.4       571.4       311.3       581.5       315.9       595.5
GR    312.9      610.8      313.3        683.9       313.6       766.6       313.5       843.7       314.9       881.4
GR    316.6      941.2      315.1       1011.1       313.7      1068.6       313.0      1150.9       312.8      1194.3
GR    311.7     1207.9      311.6       1253.3       312.4      1279.8       312.9      1311.5       315.8      1329.1
GR    318.2     1354.1      319.2       1384.6       312.3      1413.1       309.1      1446.8       308.5      1468.1
GR    308.7     1525.2      307.3       1576.9       307.2      1645.1       307.2      1755.3       309.6      1767.4
GR    312.0     1795.1      316.7       1828.4       319.0      1870.6       317.9      1940.9       319.2      2014.7
GR    318.3     2045.7      310.6       2057.3       307.4      2069.4       307.3      2098.7       311.7      2107.9
GR    317.9     2118.4      318.8       2181.0       315.1      2200.7       315.2      2251.7       312.2      2264.1
GR    312.7     2315.1      313.5       2393.0       314.6      2445.7       315.6      2525.6       318.9      2536.0
GR    323.9     2542.8      324.6       2611.1       326.3      2625.6       328.7      2631.2       328.2      2718.3
1
    21APR23      12:00:07                                                                                          PAGE     8


QT        2      36000      36000
ET        0        5.1        7.1          0          1      1400.0       435.0      1280.0
X1      330         87      569.9       1334.0       620.0       620.0       588.0
GR    331.2          0      327.4         62.1       324.8        96.2       325.9       131.5       325.8       170.1
GR    328.4      184.9      346.6        191.3       346.6       242.7       329.8       244.0       330.5       304.2
GR    351.3      310.6      351.3        353.5       324.6       356.4       324.4       379.2       318.0       390.5
GR    315.9      407.3      314.9        431.0       312.5       441.8       312.5       532.6       316.7       547.8
GR    323.4      560.3      324.8        569.9       322.1       576.7       314.0       592.0       314.8       627.7
GR    313.5      683.8      316.5        693.9       321.4       711.9       317.8       729.2       313.3       737.2
GR    310.0      741.6      310.0        889.2       312.9       905.3       312.6       967.0       313.2      1017.6
GR    310.2     1052.5      310.2       1069.4       313.6      1085.8       313.8      1147.2       312.0      1194.1
GR    308.6     1203.4      308.5       1214.7       308.6      1219.7       311.3      1234.1       313.3      1263.8
GR    314.1     1301.5      316.3       1319.2       321.9      1334.0       326.0      1373.7       329.8      1416.3
GR    336.6     1421.9      336.6       1466.0       330.1      1469.3       329.3      1489.3       326.6      1495.7
GR    326.7     1547.9      327.2       1622.6       326.5      1666.3       324.3      1672.3       323.1      1715.6
GR    331.0     1720.5      331.0       1761.7       323.4      1766.7       322.4      1797.2       322.4      1834.1
GR    323.7     1861.3      332.0       1866.9       332.0      1899.5       323.1      1903.9       323.5      1953.3
GR    322.8     1972.9      316.6       1983.7       309.8      1992.6       309.9      2005.4       314.3      2033.5
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GR    321.6     2048.4     320.1     2098.9     322.2     2194.0     324.1     2285.0     325.1     2330.4
GR    330.2     2342.1     328.3     2388.2     326.1     2432.4     328.3     2515.4     340.1     2518.6
GR    340.1     2567.2     329.4     2573.6

NC     0.06       0.06       0.05
ET        0        5.1        7.1          0        1.0     1500.0      425.0     1345.0
X1      340         82      361.3     1386.0      575.0      450.0      454.0
GR    332.5          0      331.8       43.2      330.3       70.0      331.3      104.0      331.0      144.4
GR    330.2      152.8      330.3      165.6      347.5      172.0      347.5      333.7      324.1      336.1
GR    323.4      361.3      319.8      378.1      316.6      395.7      314.7      420.9      312.2      438.9
GR    312.2      528.9      312.9      533.7      311.9      563.0      311.2      644.6      311.3      684.6
GR    314.2      693.0      317.3      709.4      317.4      739.8      315.6      758.6      314.4      769.8
GR    314.2      799.0      315.4      817.4      315.7      865.8      315.1      892.2      310.4      903.9
GR    310.4     1074.7      311.0     1083.5      311.8     1141.5      314.9     1160.3      315.7     1215.9
GR    310.6     1249.1      309.9     1285.1      310.6     1291.1      316.1     1296.7      315.6     1309.5
GR    311.9     1319.9      311.8     1326.0      317.5     1352.0      322.7     1372.8      324.8     1386.0
GR    326.0     1428.8      333.6     1436.0      336.0     1473.6      326.0     1476.0      325.0     1504.4
GR    324.1     1536.4      326.1     1569.2      334.3     1574.4      334.3     1596.8      326.1     1602.4
GR    325.7     1685.3      325.4     1723.7      324.9     1786.5      325.1     1862.1      325.8     1894.9
GR    325.7     1932.9      325.2     1950.5      324.4     1993.3      325.8     2033.3      335.5     2039.3
GR    335.5     2079.7      327.2     2084.1      325.4     2109.8      325.1     2130.6      317.7     2139.0
GR    313.4     2148.2      313.1     2180.2      321.0     2191.0      322.5     2205.0      323.6     2259.4
GR    323.1     2290.6      324.1     2362.2      324.9     2389.8      326.4     2397.8      327.9     2402.6
GR    327.0     2449.0      326.7     2492.2

ET        0        5.1        7.1          0        1.0     2000.0      595.0     1525.0
X1      345         87      448.0     1650.2      125.0      400.0      335.0
GR    337.4          0      333.8       83.9      329.7      155.3      329.3      168.1      330.6      201.6
GR    330.1      242.1      330.3      259.7      347.8      264.3      347.8      319.4      331.4      323.2
GR    331.2      375.5      351.5      382.0      351.5      420.9      325.5      423.0      324.2      448.0
GR    321.6      457.4      319.4      469.2      317.9      484.0      318.0      499.5      319.9      519.1
GR    319.1      562.0      316.1      582.0      312.2      594.4      312.2      676.4      312.9      680.9
GR    312.5      709.2      312.2      726.7      316.5      737.4      319.8      749.2      322.9      799.5
GR    323.5      842.5      319.8      860.5      315.1      877.3      313.7      894.4      315.1      914.9
GR    323.1      930.5      329.8      946.1      328.6      957.9      320.8      973.7      310.0      988.2
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GR    310.0     1262.8      313.3     1269.0      313.9     1336.1      314.0     1384.8      310.6     1393.0
GR    309.8     1410.8      310.6     1433.9      312.5     1455.2      315.6     1464.6      315.7     1481.8
GR    313.4     1498.4      314.4     1523.9      319.0     1545.6      320.2     1571.2      320.1     1630.6
GR    322.8     1650.2      325.3     1699.4      333.1     1702.6      333.1     1741.9      324.3     1746.4
GR    323.6     1781.6      323.7     1822.8      325.4     1866.6      334.3     1871.5      334.3     1901.0
GR    325.5     1911.2      327.7     1981.1      327.7     2079.2      334.4     2087.7      334.4     2202.4
GR    328.1     2208.9      328.7     2262.9      329.4     2298.9      338.4     2305.4      338.4     2328.0
GR    329.7     2333.3      328.6     2390.1      322.6     2400.3      318.3     2409.7      318.7     2444.5
GR    324.0     2462.4      324.8     2520.1      324.7     2595.1      325.5     2631.5      328.5     2639.7
GR    329.1     2692.9      328.5     2742.3

ET        0        5.1        7.1          0      591.7     1404.9      740.0     1404.9
X1      355         83      591.7     1404.9      350.0      360.0      310.0
GR    332.2          0      332.8       14.2      330.4       19.2      331.4       84.6      330.5      120.7
GR    328.9      128.0      329.1      171.9      328.3      209.8      328.7      236.1      326.0      276.1
GR    323.9      369.1      324.2      416.8      322.5      427.4      318.7      462.3      317.8      481.5
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 GR    317.9      522.1      318.9      544.6      320.5      591.7      319.9      643.8      319.2      678.7
 GR    315.2      702.7      313.5      715.4      312.6      750.8      312.6      779.6      313.6      800.4
 GR    318.6      813.0      321.8      845.1      320.2      864.2      316.4      872.4      314.2      897.2
 GR    312.0      919.2      311.5     1076.1      311.4     1202.2      311.4     1276.3      313.8     1289.3
 GR    315.1     1343.4      316.1     1392.6      319.7     1404.9      315.8     1419.1      314.9     1445.5
 GR    310.8     1457.7      310.1     1472.2      310.8     1492.7      316.7     1502.9      316.3     1540.3
 GR    316.6     1562.7      319.8     1590.8      321.0     1648.1      321.6     1734.3      323.7     1770.0
 GR    325.6     1853.4      326.3     1918.6      336.3     1925.6      336.1     1943.0      326.6     1946.7
 GR    325.0     1978.4      324.9     2028.7      326.6     2088.0      328.9     2172.7      328.9     2215.9
 GR    336.5     2219.5      336.5     2262.6      329.5     2266.3      328.4     2337.4      329.1     2365.8
 GR    337.4     2369.1      337.4     2394.3      330.0     2400.8      329.8     2457.5      331.4     2466.4
 GR    330.1     2566.1      331.0     2666.0      330.2     2694.5      328.2     2703.5      330.6     2706.3
 GR    330.5     2762.5      330.5     2809.7      321.9     2818.3      322.5     2884.1      322.7     2930.8
 GR    325.6     2945.2      329.6     2955.3      328.6     3009.4
1
    21APR23      12:00:07                                                                                  PAGE   10


     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *PROF 1
0

 CCHV=     .100 CEHV=     .300
 *SECNO 100.000
    100.000     20.40    289.40       .00    289.40    290.43      1.03       .00       .00    288.50
    38000.0        .2   36909.5    1090.3        .4    4490.0     237.9        .0        .0    281.80
        .00       .61      8.22      4.58      .125      .125      .125      .000    269.00    120.60
    .012226        0.        0.        0.         0         0         0       .00    329.77    450.37


 *SECNO 110.000

 3301 HV CHANGED MORE THAN HVINS


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .56

    110.000     14.65    289.65       .00       .00    291.65      1.99       .93       .29    285.40
    38000.0      28.5   37969.5       2.1       9.1    3349.6       1.6       4.3        .3    288.80
        .00      3.11     11.34      1.32      .125      .125      .125      .000    275.00    118.80
    .039468       40.       46.       50.         2         0         0       .00    318.65    437.45


 *SECNO 120.000

 3301 HV CHANGED MORE THAN HVINS


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.51
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120.000	16.14	291.84	.00	.00	293.03	1.19	1.30	.08	290.20
38000.0	4.1	37824.1	171.8	3.2	4315.7	60.9	8.9	.7	286.90
.00	1.30	8.76	2.82	.125	.125	.125	.000	275.70	92.76
.017292	55.	52.	50.	2	0	0	.00	351.08	443.84

*SECNO 130.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.28

130.000	20.50	295.70	.00	.00	296.42	.72	3.34	.05	289.90
38000.0	112.8	36470.4	1416.8	53.5	5292.8	385.5	69.3	5.2	288.30
.02	2.11	6.89	3.68	.080	.080	.080	.000	275.20	170.68
.003322	530.	520.	520.	4	0	0	.00	399.00	569.68

1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 140.000

140.000	22.92	297.62	.00	.00	298.40	.78	1.97	.02	297.50
38000.0	.0	37216.6	783.4	.0	5206.8	238.2	140.1	10.1	293.80
.05	.01	7.15	3.29	.080	.080	.080	.000	274.70	274.53
.003830	550.	552.	550.	3	0	0	.00	378.85	653.38

*SECNO 150.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.65

3470 ENCROACHMENT STATIONS= 1.0 1231.9 TYPE= 1 TARGET= 1230.900

150.000	20.35	299.35	.00	.00	299.63	.28	1.18	.05	294.60
38000.0	2657.8	35342.1	.0	1511.0	8009.1	.0	232.9	18.2	100000.00
.08	1.76	4.41	.00	.080	.080	.000	.000	279.00	306.52
.001414	545.	540.	540.	2	0	0	.00	922.41	1228.93

*SECNO 160.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.94

160.000	18.20	299.90	.00	.00	300.09	.19	.45	.01	299.80
38000.0	8548.8	29451.2	.0	1853.6	9421.4	.0	395.3	33.4	302.80
.14	4.61	3.13	.00	.035	.045	.000	.000	281.70	544.64

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   .000377      630.      690.      690.         2         0         0       .00   1038.79   1597.94


 *SECNO 170.000
   170.000     15.69    300.09       .00       .00    300.22       .13       .13       .01    294.40
   38000.0   19840.6   18112.6      46.7    6511.3    6604.3      49.6     497.3      44.7    297.30
       .17      3.05      2.74       .94      .035      .045      .035      .000    284.40    533.59
   .000317      390.      350.      350.         2         0         0       .00   1660.72   2194.31


 *SECNO 180.000

 3470 ENCROACHMENT STATIONS=      500.0    2200.0  TYPE=      1  TARGET=     1700.000
   180.000     16.20    300.20       .00       .00    300.32       .12       .10       .00    289.50
   38000.0   21904.6   15967.1     128.3    7570.5    5945.1     115.5     606.5      57.7    295.70
       .21      2.89      2.69      1.11      .035      .045      .035      .000    284.00    635.63
   .000233      405.      300.      255.         0         0         0       .00   1465.26   2100.89


1
   21APR23      12:00:07                                                                                                PAGE   12

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *SECNO 190.000
   190.000     17.06    300.36       .00       .00    300.44       .08       .11       .00    297.30
   38000.0    7336.1   30578.8      85.1    3008.5   14163.7      84.1     830.0      80.1    297.10
       .29      2.44      2.16      1.01      .035      .045      .035      .000    283.30    569.83
   .000137      785.      550.      550.         1         0         0       .00   1502.28   2072.11


 *SECNO 200.000

 3265 DIVIDED FLOW

   200.000     15.15    300.45       .00       .00    300.54       .09       .10       .00    296.90
   38000.0    9135.3   28864.7        .0    3606.9   12268.7        .0    1060.5     101.0    301.10
       .36      2.53      2.35       .00      .035      .045      .000      .000    285.30    590.27
   .000193      630.      600.      595.         2         0         0       .00   1501.25   2108.27


 *SECNO 210.000
   210.000     15.01    300.51       .00       .00    300.65       .14       .10       .02    300.00
   38000.0   14618.4   23381.6        .0    4453.4    8247.7        .0    1184.5     115.1    302.00
       .39      3.28      2.83       .00      .035      .045      .000      .000    285.50    548.24
   .000340      450.      350.      350.         0         0         0       .00   1625.72   2173.97


 *SECNO 220.000
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 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .48

    220.000     11.96    300.76       .00       .00    301.01       .25       .33       .03    292.40
    38000.0   23748.7   13934.3     317.1    5504.0    3915.4     237.0    1319.3     135.3    299.80
        .43      4.31      3.56      1.34      .045      .065      .100      .000    288.80    133.42
    .001451      620.      450.      385.         2         0         0       .00   1604.51   1737.93


 *SECNO 230.000
    230.000     11.72    301.52       .00       .00    301.88       .36       .84       .03    294.10
    38000.0   17574.3   20359.5      66.2    3465.7    4405.5      70.4    1411.7     150.2    299.80
        .46      5.07      4.62       .94      .045      .065      .100      .000    289.80    483.12
    .002392      430.      487.      460.         2         0         0       .00   1267.66   1750.78


 *SECNO 239.000
1
    21APR23      12:00:07                                                                          PAGE   13


     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST



 3470 ENCROACHMENT STATIONS=      450.0    1300.0  TYPE=      1  TARGET=      850.000
    239.000     12.04    302.74       .00       .00    303.49       .75      1.49       .12    299.60
    38000.0   14633.3   23366.7        .0    1990.2    3507.3        .0    1481.7     160.9    303.00
        .47      7.35      6.66       .00      .045      .065      .000      .000    290.70    450.00
    .004712      515.      413.      385.         2         0         0       .00    743.28   1193.28


 CCHV=     .300 CEHV=     .500
 *SECNO 242.000

 3370 NORMAL BRIDGE, NRD=  22 MIN ELTRD=   315.00 MAX ELLC=   311.50


 3470 ENCROACHMENT STATIONS=     1477.7    1977.2  TYPE=      1  TARGET=      499.500
    242.000     12.13    303.83       .00       .00    304.88      1.05      1.24       .15    309.60
    38000.0        .0   38000.0        .0        .0    4623.9        .0    1508.8     164.2 100000.00
        .48       .00      8.22       .00      .000      .065      .000      .000    291.70   1487.83
    .006098      270.      224.      165.         2         0         0       .00    464.77   1952.61


 *SECNO 244.000

 3370 NORMAL BRIDGE, NRD=  22 MIN ELTRD=   315.00 MAX ELLC=   311.50


 3470 ENCROACHMENT STATIONS=     1538.3    2038.7  TYPE=      1  TARGET=      500.400
    244.000     12.39    304.59       .00       .00    305.45       .85       .51       .06    296.00
    38000.0        .0   38000.0        .0        .0    5121.5        .0    1519.4     165.2 100000.00
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       .49       .00      7.42       .00      .000      .065      .000      .000    292.20   1538.30
   .004712       95.       95.       95.         2         0         0       .00    488.16   2026.46


CCHV=     .100 CEHV=     .300
*SECNO 245.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      550.0    1550.0  TYPE=      1  TARGET=     1000.000
   245.000     13.43    305.93       .00       .00    306.24       .31       .74       .05    295.40
   38000.0    4628.9   33184.3     186.9    1379.2    7206.5      68.7    1547.0     167.9    302.80
       .50      3.36      4.60      2.72      .110      .100      .045      .000    292.50    550.00
   .003750      150.      177.      210.         2         0         0       .00    859.86   1409.86


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   21APR23      12:00:07                                                                                PAGE   14


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 250.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.60

   250.000     13.77    307.47       .00       .00    307.76       .29      1.52       .00    300.10
   38000.0    8234.4   26862.5    2903.1    2209.0    5995.9     698.2    1684.8     183.1    300.00
       .54      3.73      4.48      4.16      .050      .060      .050      .000    293.70    222.87
   .001459      615.      701.      700.         3         0         0       .00   1092.35   1315.22


*SECNO 260.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .54

   260.000     12.02    309.62       .00       .00    310.46       .83      2.53       .16    303.10
   38000.0    2280.1   35719.9        .0     375.4    4827.7        .0    1850.9     203.4    311.40
       .58      6.07      7.40       .00      .050      .060      .000      .000    297.60    336.78
   .005037     1000.     1031.     1050.         2         0         0       .00    639.78    976.56


*SECNO 270.000

3470 ENCROACHMENT STATIONS=      100.0    1023.7  TYPE=      1  TARGET=      923.700
   270.000     13.83    313.23       .00       .00    313.77       .54      3.29       .03    308.60
   37000.0     882.2   35503.3     614.5     302.1    5939.6     177.9    1976.8     218.4    307.70
```

.62	2.92	5.98	3.45	.050	.060	.050	.000	299.40	258.16
.002521	815.	951.	1000.	2	0	0	.00	760.20	1018.36

*SECNO 280.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.99

280.000	14.75	314.85	.00	.00	314.97	.11	1.15	.04	308.40
37000.0	322.4	36541.9	135.7	144.1	13441.2	74.8	2212.7	245.4	310.50
.73	2.24	2.72	1.82	.050	.060	.050	.000	300.10	184.62
.000635	1060.	1021.	1135.	3	0	0	.00	1526.28	1710.90

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 285.000

285.000	13.15	315.35	.00	.00	315.49	.14	.52	.01	311.40
37000.0	285.0	36551.9	163.1	174.0	12095.0	169.8	2418.6	270.9	313.70
.79	1.64	3.02	.96	.050	.060	.050	.000	302.20	197.44
.000922	660.	688.	640.	2	0	0	.00	1726.68	1924.13

*SECNO 290.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

290.000	13.06	316.16	.00	.00	316.35	.19	.84	.01	317.90
37000.0	.0	37000.0	.0	.0	10597.1	.0	2591.3	297.6	316.90
.85	.00	3.49	.00	.000	.060	.000	.000	303.10	731.72
.001909	645.	653.	695.	2	0	0	.00	1819.91	2565.72

*SECNO 300.000

300.000	12.32	317.42	.00	.00	317.64	.22	1.28	.01	317.40
37000.0	.0	35530.8	1469.2	.0	9365.7	533.7	2746.0	324.3	313.40
.89	.01	3.79	2.75	.050	.060	.050	.000	305.10	645.52
.001996	605.	654.	790.	2	0	0	.00	1690.08	2335.60

*SECNO 310.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.67

3470 ENCROACHMENT STATIONS=   600.0   2800.0 TYPE=   1 TARGET=   2200.000

310.000	12.39	318.09	.00	.00	318.32	.23	.68	.00	318.10
37000.0	4.0	36667.7	328.3	10.3	9512.3	341.5	2884.4	348.5	316.00
.94	.39	3.85	.96	.045	.035	.060	.000	305.70	801.37
.000714	640.	610.	610.	2	0	0	.00	1774.97	2577.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 320.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=   1.0   1870.6 TYPE=   1 TARGET=   1869.600

320.000	11.43	318.63	.00	.00	318.95	.32	.60	.03	317.50
37000.0	19.2	36980.8	.0	23.2	8147.6	.0	3031.3	373.8	100000.00
.98	.83	4.54	.00	.045	.035	.000	.000	307.20	493.70
.001007	660.	711.	640.	2	0	0	.00	1350.30	1863.79

*SECNO 330.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=   1.0   1400.0 TYPE=   1 TARGET=   1399.000

330.000	10.71	319.21	.00	.00	319.84	.63	.80	.09	324.80
36000.0	4095.9	31904.1	.0	873.6	4857.5	.0	3125.4	389.0	321.90
1.01	4.69	6.57	.00	.045	.035	.000	.000	308.50	388.37
.001922	620.	588.	620.	2	0	0	.00	890.22	1326.88

*SECNO 340.000

3470 ENCROACHMENT STATIONS=   1.0   1500.0 TYPE=   1 TARGET=   1499.000

340.000	10.48	320.38	.00	.00	320.76	.38	.90	.02	323.40
36000.0	.0	36000.0	.0	.0	7250.2	.0	3194.3	399.0	324.80
1.03	.00	4.97	.00	.000	.050	.000	.000	309.90	375.40
.001976	575.	454.	450.	2	0	0	.00	988.12	1363.52

*SECNO 345.000

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 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=        1.0    2000.0  TYPE=      1  TARGET=     1999.000
    345.000     11.26    321.06       .00       .00    321.43       .37       .67       .00    324.20
    36000.0        .0   36000.0        .0        .0    7361.8        .0    3250.5     406.9    322.80
       1.05       .00      4.89       .00      .000      .050      .000      .000    309.80    460.28
    .002036      125.      335.      400.         2         0         0       .00   1046.01   1637.59


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    21APR23      12:00:07                                                                                PAGE   17

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


 *SECNO 355.000

 3265 DIVIDED FLOW


 3470 ENCROACHMENT STATIONS=      591.7    1404.9  TYPE=      1  TARGET=      813.200
    355.000     11.57    321.67       .00       .00    322.22       .55       .73       .05    320.50
    36000.0        .0   36000.0        .0        .0    6060.2        .0    3298.2     413.5 100000.00
       1.07       .00      5.94       .00      .000      .050      .000      .000    310.10    591.70
    .002761      350.      310.      360.         2         0         0       .00    810.36   1404.90


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    21APR23      12:00:07                                                                                PAGE   18

 T1         UPPER SAN DIEGO RIVER   RECREATE ORIGINAL HEC-2 MODEL MAY 2020 Hunsak
 T2         SECTIONS DIGITIZED IN 1982   20-OCT-82
 T3         100-YEAR FLOODWAY

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

        0         3         0         0       0.0      0.00      -1.0         0     290.4         0

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      15         0        -1         0         0         0         0         0         0         0

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    21APR23      12:00:07                                                                                PAGE   19

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
```

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*PROF 2
0

CCHV= .100 CEHV= .300
*SECNO 100.000

3470 ENCROACHMENT STATIONS= 120.0 400.0 TYPE= 1 TARGET= 280.000

100.000	21.40	290.40	.00	289.40	291.39	.99	.00	.00	288.50
38000.0	1.7	37998.3	.0	1.7	4767.8	.0	.0	.0	100000.00
.00	.97	7.97	.00	.125	.125	.000	.000	269.00	120.00
.011032	0.	0.	0.	0	0	0	.00	280.00	400.00

*SECNO 110.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .57

3470 ENCROACHMENT STATIONS= 120.0 395.0 TYPE= 1 TARGET= 275.000

110.000	15.54	290.54	.00	289.65	292.50	1.96	.82	.29	285.40
38000.0	35.3	37964.7	.0	11.2	3373.7	.0	4.3	.3	100000.00
.00	3.16	11.25	.00	.125	.125	.000	.000	275.00	120.00
.033743	40.	46.	50.	2	0	0	.00	275.00	395.00

*SECNO 120.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

3470 ENCROACHMENT STATIONS= 115.0 395.0 TYPE= 1 TARGET= 280.000

120.000	16.82	292.52	.00	291.84	293.76	1.24	1.19	.07	100000.00
38000.0	.0	38000.0	.0	.0	4243.8	.0	8.9	.6	100000.00
.00	.00	8.95	.00	.000	.125	.000	.000	275.70	115.00
.016558	55.	52.	50.	2	0	0	.00	280.00	395.00

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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 130.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.11

3470 ENCROACHMENT STATIONS=   225.0   500.0 TYPE=   1 TARGET=   275.000

130.000	21.31	296.51	.00	295.70	297.36	.86	3.56	.04	100000.00	
38000.0	.0	38000.0	.0	.0	5118.1	.0	64.7	3.9	100000.00	
.02	.00	7.42	.00	.000	.080	.000	.000	275.20	225.00	
.003715	530.	520.	520.	4	0	0	.00	275.00	500.00	

*SECNO 140.000

3470 ENCROACHMENT STATIONS=   315.0   585.0 TYPE=   1 TARGET=   270.000

140.000	23.85	298.55	.00	297.62	299.42	.87	2.05	.00	100000.00	
38000.0	.0	38000.0	.0	.0	5075.4	.0	129.3	7.4	100000.00	
.04	.00	7.49	.00	.000	.080	.000	.000	274.70	315.00	
.003719	550.	552.	550.	3	0	0	.00	270.00	585.00	

*SECNO 150.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.63

3470 ENCROACHMENT STATIONS=   655.0   1200.0 TYPE=   1 TARGET=   545.000

150.000	21.32	300.32	.00	299.35	300.63	.31	1.16	.06	294.60	
38000.0	920.1	37079.9	.0	443.1	8163.3	.0	214.2	12.4	100000.00	
.08	2.08	4.54	.00	.080	.080	.000	.000	279.00	655.00	
.001396	545.	540.	540.	2	0	0	.00	545.00	1200.00	

*SECNO 160.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.89

3470 ENCROACHMENT STATIONS=   570.0   1435.0 TYPE=   1 TARGET=   865.000

160.000	19.17	300.87	.00	299.90	301.10	.22	.45	.01	299.80	
38000.0	9081.9	28918.1	.0	1853.7	8545.8	.0	363.1	23.5	100000.00	
.13	4.90	3.38	.00	.035	.045	.000	.000	281.70	570.00	
.000389	630.	690.	690.	2	0	0	.00	865.00	1435.00	

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Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 170.000

3470 ENCROACHMENT STATIONS= 1040.0 2085.0 TYPE= 1 TARGET= 1045.000

170.000	16.65	301.05	.00	300.09	301.24	.19	.14	.00	294.40
38000.0	15766.7	22233.3	.0	4268.1	6791.4	.0	452.1	31.4	100000.00
.16	3.69	3.27	.00	.035	.045	.000	.000	284.40	1040.00
.000378	390.	350.	350.	2	0	0	.00	1045.00	2085.00

*SECNO 180.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

3470 ENCROACHMENT STATIONS= 865.0 2065.0 TYPE= 1 TARGET= 1200.000

180.000	17.22	301.22	.00	300.20	301.34	.11	.09	.01	289.50
38000.0	21683.5	16211.7	104.8	7586.2	6437.6	74.6	553.0	40.5	295.70
.19	2.86	2.52	1.40	.035	.045	.035	.000	284.00	865.00
.000184	405.	300.	255.	2	0	0	.00	1200.00	2065.00

*SECNO 190.000

3470 ENCROACHMENT STATIONS= 710.0 2000.0 TYPE= 1 TARGET= 1290.000

190.000	18.06	301.36	.00	300.36	301.43	.07	.09	.00	297.30
38000.0	6875.2	31124.8	.0	2765.3	14860.1	.0	781.2	58.9	100000.00
.27	2.49	2.09	.00	.035	.045	.000	.000	283.30	710.00
.000117	785.	550.	550.	2	0	0	.00	1290.00	2000.00

*SECNO 200.000

3470 ENCROACHMENT STATIONS= 935.0 2025.0 TYPE= 1 TARGET= 1090.000

200.000	16.12	301.42	.00	300.45	301.54	.11	.09	.01	296.90
38000.0	5026.5	32973.4	.0	1478.7	12758.4	.0	1002.1	75.3	100000.00
.34	3.40	2.58	.00	.035	.045	.000	.000	285.30	943.13
.000201	630.	600.	595.	2	0	0	.00	1081.87	2025.00

*SECNO 210.000

3470 ENCROACHMENT STATIONS= 1040.0 2080.0 TYPE= 1 TARGET= 1040.000

210.000	15.98	301.48	.00	300.51	301.65	.17	.09	.02	300.00
38000.0	12567.7	25432.3	.0	3252.1	8523.0	.0	1112.0	84.3	100000.00
.37	3.86	2.98	.00	.035	.045	.000	.000	285.50	1040.00
.000311	450.	350.	350.	0	0	0	.00	1040.00	2080.00

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 220.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .47


3470 ENCROACHMENT STATIONS=      650.0    1620.0  TYPE=      1  TARGET=      970.000
   220.000     12.86    301.66       .00    300.76    302.00       .33       .30       .05    292.40
   38000.0   21745.3   16254.7        .0    4225.6    4218.6        .0    1231.1      96.4 100000.00
       .40      5.15      3.85       .00      .045      .065      .000      .000    288.80    650.00
   .001393      620.      450.      385.         2         0         0       .00    970.00   1620.00


*SECNO 230.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .69


3470 ENCROACHMENT STATIONS=      975.0    1710.0  TYPE=      1  TARGET=      735.000
   230.000     12.60    302.40       .00    301.52    302.97       .57       .90       .07    294.10
   38000.0   11420.6   26547.7      31.7    1579.2    4865.9      24.6    1310.6     105.4    299.80
       .42      7.23      5.46      1.29      .045      .065      .100      .000    289.80    975.00
   .002920      430.      487.      460.         2         0         0       .00    735.00   1710.00


*SECNO 239.000

3470 ENCROACHMENT STATIONS=      530.0    1190.0  TYPE=      1  TARGET=      660.000
   239.000     13.06    303.76       .00    302.74    304.43       .68      1.43       .03    299.60
   38000.0   13674.2   24325.8        .0    1889.0    3908.1        .0    1372.8     112.6 100000.00
       .44      7.24      6.22       .00      .045      .065      .000      .000    290.70    530.00
   .003539      515.      413.      385.         2         0         0       .00    660.00   1190.00


CCHV=     .300 CEHV=     .500
*SECNO 242.000

3370 NORMAL BRIDGE, NRD=  22 MIN ELTRD=   315.00 MAX ELLC=   311.50


3470 ENCROACHMENT STATIONS=     1477.7    1977.2  TYPE=      1  TARGET=      499.500
   242.000     12.90    304.60       .00    303.83    305.50       .90       .95       .11    309.60
   38000.0        .0   38000.0        .0        .0    4980.4        .0    1401.5     115.6 100000.00
       .45       .00      7.63       .00      .000      .065      .000      .000    291.70   1486.49
   .004816      270.      224.      165.         2         0         0       .00    468.53   1955.03


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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 244.000

3370 NORMAL BRIDGE, NRD= 22 MIN ELTRD= 315.00 MAX ELLC= 311.50

3470 ENCROACHMENT STATIONS= 1538.3 2038.7 TYPE= 1 TARGET= 500.400

244.000	12.99	305.19	.00	304.59	305.95	.76	.41	.04	296.00
38000.0	.0	38000.0	.0	.0	5414.2	.0	1412.9	116.7	100000.00
.45	.00	7.02	.00	.000	.065	.000	.000	292.20	1538.30
.003946	95.	95.	95.	2	0	0	.00	490.45	2028.75

CCHV= .100 CEHV= .300
*SECNO 245.000

3470 ENCROACHMENT STATIONS= 730.0 1335.0 TYPE= 1 TARGET= 605.000

245.000	13.82	306.32	.00	305.93	306.75	.43	.76	.03	295.40
38000.0	79.4	37920.6	.0	42.6	7214.5	.0	1438.6	118.9	100000.00
.46	1.86	5.26	.00	.110	.100	.000	.000	292.50	730.00
.004658	150.	177.	210.	2	0	0	.00	605.00	1335.00

*SECNO 250.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.62

3470 ENCROACHMENT STATIONS= 580.0 1275.0 TYPE= 1 TARGET= 695.000

250.000	14.53	308.23	.00	307.47	308.64	.41	1.90	.00	300.10
38000.0	1383.6	33304.9	3311.5	310.6	6433.6	647.6	1556.1	129.3	300.00
.50	4.45	5.18	5.11	.050	.060	.050	.000	293.70	580.00
.001774	615.	701.	700.	2	0	0	.00	695.00	1275.00

*SECNO 260.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .70

3470 ENCROACHMENT STATIONS= 365.0 965.0 TYPE= 1 TARGET= 600.000

260.000	12.96	310.56	.00	309.62	311.27	.70	2.53	.09	303.10
38000.0	2011.5	35988.5	.0	347.9	5319.2	.0	1710.6	144.6	100000.00
.54	5.78	6.77	.00	.050	.060	.000	.000	297.60	365.00
.003634	1000.	1031.	1050.	2	0	0	.00	600.00	965.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 270.000

3470 ENCROACHMENT STATIONS= 400.0 960.0 TYPE= 1 TARGET= 560.000

270.000	14.14	313.54	.00	313.23	314.11	.57	2.83	.01	308.60
37000.0	1.5	36986.9	11.6	2.0	6112.1	7.5	1838.7	157.2	307.70
.59	.76	6.05	1.55	.050	.060	.050	.000	299.40	400.00
.002487	815.	951.	1000.	2	0	0	.00	560.00	960.00

*SECNO 280.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.90

3470 ENCROACHMENT STATIONS= 330.0 1630.0 TYPE= 1 TARGET= 1300.000

280.000	15.13	315.23	.00	314.85	315.36	.13	1.21	.04	100000.00
37000.0	.0	37000.0	.0	.0	12622.9	.0	2058.4	179.0	100000.00
.68	.00	2.93	.00	.000	.060	.000	.000	300.10	330.00
.000692	1060.	1021.	1135.	3	0	0	.00	1300.00	1630.00

*SECNO 285.000

3470 ENCROACHMENT STATIONS= 330.0 1765.0 TYPE= 1 TARGET= 1435.000

285.000	13.55	315.75	.00	315.35	315.90	.14	.53	.00	100000.00
37000.0	.0	37000.0	.0	.0	12244.7	.0	2254.8	200.6	100000.00
.75	.00	3.02	.00	.000	.060	.000	.000	302.20	330.00
.000867	660.	688.	640.	2	0	0	.00	1435.00	1765.00

*SECNO 290.000

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .69

3470 ENCROACHMENT STATIONS= 770.0 2340.0 TYPE= 1 TARGET= 1570.000

290.000	13.40	316.50	.00	316.16	316.71	.21	.79	.02	100000.00
37000.0	.0	37000.0	.0	.0	10132.7	.0	2422.5	223.0	100000.00
.80	.00	3.65	.00	.000	.060	.000	.000	303.10	770.00
.001816	645.	653.	695.	2	0	0	.00	1556.99	2340.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 300.000

3470 ENCROACHMENT STATIONS= 660.0 2130.0 TYPE= 1 TARGET= 1470.000

300.000	12.60	317.70	.00	317.42	317.92	.22	1.21	.00	100000.00
37000.0	.0	36850.5	149.5	.0	9736.7	53.7	2572.2	245.8	313.40
.84	.00	3.78	2.79	.000	.060	.050	.000	305.10	660.00
.001870	605.	654.	790.	2	0	0	.00	1470.00	2130.00

*SECNO 310.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.71

3470 ENCROACHMENT STATIONS= 850.0 2395.0 TYPE= 1 TARGET= 1545.000

310.000	12.62	318.32	.00	318.09	318.54	.22	.62	.00	100000.00
37000.0	.0	36869.1	130.9	.0	9835.6	117.4	2710.4	266.9	316.00
.89	.00	3.75	1.12	.000	.035	.060	.000	305.70	850.00
.000640	640.	610.	610.	2	0	0	.00	1545.00	2395.00

*SECNO 320.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 645.0 1870.0 TYPE= 1 TARGET= 1225.000

320.000	11.60	318.80	.00	318.63	319.15	.35	.57	.04	100000.00
37000.0	.0	37000.0	.0	.0	7822.9	.0	2855.4	289.3	100000.00
.93	.00	4.73	.00	.000	.035	.000	.000	307.20	645.00
.001037	660.	711.	640.	2	0	0	.00	1208.26	1866.99

*SECNO 330.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 435.0 1280.0 TYPE= 1 TARGET= 845.000

330.000	10.88	319.38	.00	319.21	320.06	.67	.81	.10	324.80
36000.0	3716.4	32283.6	.0	746.2	4781.6	.0	2945.8	302.9	100000.00
.96	4.98	6.75	.00	.045	.035	.000	.000	308.50	435.00
.001925	620.	588.	620.	2	0	0	.00	798.88	1280.00

1
21APR23 12:00:07 PAGE 26

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 340.000

3470 ENCROACHMENT STATIONS= 425.0 1345.0 TYPE= 1 TARGET= 920.000

340.000	10.67	320.57	.00	320.38	320.96	.39	.87	.03	100000.00
36000.0	.0	36000.0	.0	.0	7202.0	.0	3013.1	312.0	100000.00
.98	.00	5.00	.00	.000	.050	.000	.000	309.90	425.00
.001865	575.	454.	450.	2	0	0	.00	920.00	1345.00

*SECNO 345.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 595.0 1525.0 TYPE= 1 TARGET= 930.000

345.000	11.36	321.16	.00	321.06	321.59	.42	.62	.01	100000.00
36000.0	.0	36000.0	.0	.0	6899.9	.0	3067.3	318.6	100000.00
1.00	.00	5.22	.00	.000	.050	.000	.000	309.80	595.00
.001819	125.	335.	400.	2	0	0	.00	801.23	1525.00

*SECNO 355.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 740.0 1404.9 TYPE= 1 TARGET= 664.900

355.000	11.60	321.70	.00	321.67	322.36	.66	.71	.07	100000.00
36000.0	.0	36000.0	.0	.0	5522.3	.0	3111.6	323.8	100000.00
1.01	.00	6.52	.00	.000	.050	.000	.000	310.10	740.00
.002928	350.	310.	360.	2	0	0	.00	662.78	1404.90

1
21APR23 12:00:07 PAGE 27

THIS RUN EXECUTED 21APR23 12:00:19

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YEAR

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	100.000	.00	.00	.00	269.00	38000.00	289.40	.00	290.43	122.26	8.22	4728.29	3436.70
	100.000	.00	.00	.00	269.00	38000.00	290.40	.00	291.39	110.32	7.97	4769.48	3617.97
*	110.000	46.00	.00	.00	275.00	38000.00	289.65	.00	291.65	394.68	11.34	3360.34	1912.77
*	110.000	46.00	.00	.00	275.00	38000.00	290.54	.00	292.50	337.43	11.25	3384.92	2068.66
*	120.000	52.00	.00	.00	275.70	38000.00	291.84	.00	293.03	172.92	8.76	4379.82	2889.74
*	120.000	52.00	.00	.00	275.70	38000.00	292.52	.00	293.76	165.58	8.95	4243.83	2953.10
*	130.000	520.00	.00	.00	275.20	38000.00	295.70	.00	296.42	33.22	6.89	5731.76	6593.43
*	130.000	520.00	.00	.00	275.20	38000.00	296.51	.00	297.36	37.15	7.42	5118.10	6234.76
	140.000	552.00	.00	.00	274.70	38000.00	297.62	.00	298.40	38.30	7.15	5445.05	6140.57
	140.000	552.00	.00	.00	274.70	38000.00	298.55	.00	299.42	37.19	7.49	5075.37	6231.44
*	150.000	540.00	.00	.00	279.00	38000.00	299.35	.00	299.63	14.14	4.41	9520.11	10105.13
*	150.000	540.00	.00	.00	279.00	38000.00	300.32	.00	300.63	13.96	4.54	8606.42	10170.08
*	160.000	690.00	.00	.00	281.70	38000.00	299.90	.00	300.09	3.77	3.13	11274.98	19581.09
*	160.000	690.00	.00	.00	281.70	38000.00	300.87	.00	301.10	3.89	3.38	10399.56	19256.20
	170.000	350.00	.00	.00	284.40	38000.00	300.09	.00	300.22	3.17	2.74	13165.21	21333.05
	170.000	350.00	.00	.00	284.40	38000.00	301.05	.00	301.24	3.78	3.27	11059.56	19534.04
	180.000	300.00	.00	.00	284.00	38000.00	300.20	.00	300.32	2.33	2.69	13631.07	24878.27
*	180.000	300.00	.00	.00	284.00	38000.00	301.22	.00	301.34	1.84	2.52	14098.45	27979.19
	190.000	550.00	.00	.00	283.30	38000.00	300.36	.00	300.44	1.37	2.16	17256.31	32487.74
	190.000	550.00	.00	.00	283.30	38000.00	301.36	.00	301.43	1.17	2.09	17625.34	35203.34
	200.000	600.00	.00	.00	285.30	38000.00	300.45	.00	300.54	1.93	2.35	15875.64	27378.20
	200.000	600.00	.00	.00	285.30	38000.00	301.42	.00	301.54	2.01	2.58	14237.02	26802.23

1

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	210.000	350.00	.00	.00	285.50	38000.00	300.51	.00	300.65	3.40	2.83	12701.04	20606.26
	210.000	350.00	.00	.00	285.50	38000.00	301.48	.00	301.65	3.11	2.98	11775.14	21535.14
*	220.000	450.00	.00	.00	288.80	38000.00	300.76	.00	301.01	14.51	3.56	9656.47	9977.33

*	220.000	450.00	.00	.00	288.80	38000.00	301.66	.00	302.00	13.93	3.85	8444.19	10181.71
	230.000	487.00	.00	.00	289.80	38000.00	301.52	.00	301.88	23.92	4.62	7941.62	7769.66
*	230.000	487.00	.00	.00	289.80	38000.00	302.40	.00	302.97	29.20	5.46	6469.71	7032.21
	239.000	413.00	.00	.00	290.70	38000.00	302.74	.00	303.49	47.12	6.66	5497.43	5535.78
	239.000	413.00	.00	.00	290.70	38000.00	303.76	.00	304.43	35.39	6.22	5797.05	6387.40
	242.000	224.00	315.00	311.50	291.70	38000.00	303.83	.00	304.88	60.98	8.22	4623.88	4866.15
	242.000	224.00	315.00	311.50	291.70	38000.00	304.60	.00	305.50	48.16	7.63	4980.35	5475.57
	244.000	95.00	315.00	311.50	292.20	38000.00	304.59	.00	305.45	47.12	7.42	5121.51	5536.03
	244.000	95.00	315.00	311.50	292.20	38000.00	305.19	.00	305.95	39.46	7.02	5414.17	6049.36
	245.000	177.00	.00	.00	292.50	38000.00	305.93	.00	306.24	37.50	4.60	8654.41	6205.38
	245.000	177.00	.00	.00	292.50	38000.00	306.32	.00	306.75	46.58	5.26	7257.15	5567.82
*	250.000	701.00	.00	.00	293.70	38000.00	307.47	.00	307.76	14.59	4.48	8903.12	9947.28
*	250.000	701.00	.00	.00	293.70	38000.00	308.23	.00	308.64	17.74	5.18	7391.84	9022.86
*	260.000	1031.00	.00	.00	297.60	38000.00	309.62	.00	310.46	50.37	7.40	5203.05	5354.18
*	260.000	1031.00	.00	.00	297.60	38000.00	310.56	.00	311.27	36.34	6.77	5667.06	6304.01
	270.000	951.00	.00	.00	299.40	37000.00	313.23	.00	313.77	25.21	5.98	6419.55	7369.38
	270.000	951.00	.00	.00	299.40	37000.00	313.54	.00	314.11	24.87	6.05	6121.56	7419.49
*	280.000	1021.00	.00	.00	300.10	37000.00	314.85	.00	314.97	6.35	2.72	13660.08	14681.43
*	280.000	1021.00	.00	.00	300.10	37000.00	315.23	.00	315.36	6.92	2.93	12622.94	14069.83
	285.000	688.00	.00	.00	302.20	37000.00	315.35	.00	315.49	9.22	3.02	12438.79	12187.96
	285.000	688.00	.00	.00	302.20	37000.00	315.75	.00	315.90	8.67	3.02	12244.70	12566.59
*	290.000	653.00	.00	.00	303.10	37000.00	316.16	.00	316.35	19.09	3.49	10597.10	8468.76
*	290.000	653.00	.00	.00	303.10	37000.00	316.50	.00	316.71	18.16	3.65	10132.65	8682.78
	300.000	654.00	.00	.00	305.10	37000.00	317.42	.00	317.64	19.96	3.79	9899.45	8282.00
	300.000	654.00	.00	.00	305.10	37000.00	317.70	.00	317.92	18.70	3.78	9790.35	8555.31
*	310.000	610.00	.00	.00	305.70	37000.00	318.09	.00	318.32	7.14	3.85	9864.22	13849.45
*	310.000	610.00	.00	.00	305.70	37000.00	318.32	.00	318.54	6.40	3.75	9952.92	14621.57
	320.000	711.00	.00	.00	307.20	37000.00	318.63	.00	318.95	10.07	4.54	8170.80	11659.34
	320.000	711.00	.00	.00	307.20	37000.00	318.80	.00	319.15	10.37	4.73	7822.88	11488.39
	330.000	588.00	.00	.00	308.50	36000.00	319.21	.00	319.84	19.22	6.57	5731.14	8210.62
	330.000	588.00	.00	.00	308.50	36000.00	319.38	.00	320.06	19.25	6.75	5527.78	8204.36

1

21APR23 12:00:07 PAGE 29

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
340.000	454.00	.00	.00	309.90	36000.00	320.38	.00	320.76	19.76	4.97	7250.19	8097.84
340.000	454.00	.00	.00	309.90	36000.00	320.57	.00	320.96	18.65	5.00	7202.04	8335.81

345.000	335.00	.00	.00	309.80	36000.00	321.06	.00	321.43	20.36	4.89	7361.82	7978.11
345.000	335.00	.00	.00	309.80	36000.00	321.16	.00	321.59	18.19	5.22	6899.91	8440.01
355.000	310.00	.00	.00	310.10	36000.00	321.67	.00	322.22	27.61	5.94	6060.24	6851.06
355.000	310.00	.00	.00	310.10	36000.00	321.70	.00	322.36	29.28	6.52	5522.25	6653.42

1

21APR23 12:00:07 PAGE 30

100-YEAR

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	100.000	38000.00	289.40	.00	.00	.00	329.77	.00
	100.000	38000.00	290.40	1.00	.00	1.00	280.00	.00
*	110.000	38000.00	289.65	.00	.25	.00	318.65	46.00
*	110.000	38000.00	290.54	.88	.14	.88	275.00	46.00
*	120.000	38000.00	291.84	.00	2.19	.00	351.08	52.00
*	120.000	38000.00	292.52	.68	1.98	.68	280.00	52.00
*	130.000	38000.00	295.70	.00	3.86	.00	399.00	520.00
*	130.000	38000.00	296.51	.80	3.99	.80	275.00	520.00
	140.000	38000.00	297.62	.00	1.92	.00	378.85	552.00
	140.000	38000.00	298.55	.92	2.04	.92	270.00	552.00
*	150.000	38000.00	299.35	.00	1.73	.00	922.41	540.00
*	150.000	38000.00	300.32	.97	1.77	.97	545.00	540.00
*	160.000	38000.00	299.90	.00	.55	.00	1038.79	690.00
*	160.000	38000.00	300.87	.97	.55	.97	865.00	690.00
	170.000	38000.00	300.09	.00	.19	.00	1660.72	350.00
	170.000	38000.00	301.05	.96	.18	.96	1045.00	350.00
	180.000	38000.00	300.20	.00	.11	.00	1465.26	300.00
*	180.000	38000.00	301.22	1.02	.17	1.02	1200.00	300.00
	190.000	38000.00	300.36	.00	.16	.00	1502.28	550.00
	190.000	38000.00	301.36	1.00	.14	1.00	1290.00	550.00
	200.000	38000.00	300.45	.00	.09	.00	1501.25	600.00
	200.000	38000.00	301.42	.97	.06	.97	1081.87	600.00
	210.000	38000.00	300.51	.00	.06	.00	1625.72	350.00
	210.000	38000.00	301.48	.97	.05	.97	1040.00	350.00
*	220.000	38000.00	300.76	.00	.25	.00	1604.51	450.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	220.000	38000.00	301.66	.90	.19	.90	970.00	450.00
	230.000	38000.00	301.52	.00	.76	.00	1267.66	487.00
*	230.000	38000.00	302.40	.88	.74	.88	735.00	487.00
	239.000	38000.00	302.74	.00	1.22	.00	743.28	413.00
	239.000	38000.00	303.76	1.02	1.35	1.02	660.00	413.00
	242.000	38000.00	303.83	.00	1.09	.00	464.77	224.00
	242.000	38000.00	304.60	.76	.84	.76	468.53	224.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	244.000	38000.00	304.59	.00	.76	.00	488.16	95.00
	244.000	38000.00	305.19	.60	.59	.60	490.45	95.00
	245.000	38000.00	305.93	.00	1.34	.00	859.86	177.00
	245.000	38000.00	306.32	.39	1.13	.39	605.00	177.00
*	250.000	38000.00	307.47	.00	1.54	.00	1092.35	701.00
*	250.000	38000.00	308.23	.76	1.92	.76	695.00	701.00
*	260.000	38000.00	309.62	.00	2.15	.00	639.78	1031.00
*	260.000	38000.00	310.56	.94	2.33	.94	600.00	1031.00
	270.000	37000.00	313.23	.00	3.61	.00	760.20	951.00
	270.000	37000.00	313.54	.31	2.98	.31	560.00	951.00
*	280.000	37000.00	314.85	.00	1.62	.00	1526.28	1021.00
*	280.000	37000.00	315.23	.38	1.69	.38	1300.00	1021.00
	285.000	37000.00	315.35	.00	.50	.00	1726.68	688.00
	285.000	37000.00	315.75	.40	.53	.40	1435.00	688.00
*	290.000	37000.00	316.16	.00	.80	.00	1819.91	653.00
*	290.000	37000.00	316.50	.34	.75	.34	1556.99	653.00
	300.000	37000.00	317.42	.00	1.26	.00	1690.08	654.00
	300.000	37000.00	317.70	.28	1.20	.28	1470.00	654.00
*	310.000	37000.00	318.09	.00	.68	.00	1774.97	610.00
*	310.000	37000.00	318.32	.23	.63	.23	1545.00	610.00
	320.000	37000.00	318.63	.00	.53	.00	1350.30	711.00
	320.000	37000.00	318.80	.17	.48	.17	1208.26	711.00
	330.000	36000.00	319.21	.00	.58	.00	890.22	588.00
	330.000	36000.00	319.38	.18	.58	.18	798.88	588.00
	340.000	36000.00	320.38	.00	1.17	.00	988.12	454.00
	340.000	36000.00	320.57	.19	1.19	.19	920.00	454.00

345.000	36000.00	321.06	.00	.68	.00	1046.01	335.00
345.000	36000.00	321.16	.10	.59	.10	801.23	335.00
355.000	36000.00	321.67	.00	.61	.00	810.36	310.00
355.000	36000.00	321.70	.03	.54	.03	662.78	310.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 110.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 110.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 120.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 120.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 130.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 130.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 150.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 150.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 160.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 160.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 180.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 220.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 220.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 230.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 250.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 250.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 260.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 260.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 280.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 280.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 290.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 290.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 310.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 310.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Duplicate Effective Model
Project File : DuplicateEffective.prj
Run Date and Time: 8/17/2022 4:06:58 PM

Project in English units

Project Description:
UPPER SAN DIEGO RIVER   RECREATE ORIGINAL HEC-2 MODEL

SECTIONS DIGITIZED IN 1982   20-OCT-82
       100-YEAR

PLAN DATA

Plan Title: Imported Plan 01
Plan File : r:\1759\Hyd\CLOMR\Calcs\Duplicate Effective Model\DuplicateEffective.p01

          Geometry Title: Imported Geom 01
          Geometry File : r:\1759\Hyd\CLOMR\Calcs\Duplicate Effective Model\DuplicateEffective.g01

          Flow Title   : Imported Flow 01
          Flow File   : r:\1759\Hyd\CLOMR\Calcs\Duplicate Effective Model\DuplicateEffective.f01

Plan Summary Information:
Number of: Cross Sections =   31   Multiple Openings =   0
            Culverts   =   0   Inline Structures =   0
            Bridges   =   1   Lateral Structures =   0

Computational Information
    Water surface calculation tolerance = 0.01
    Critical depth calculation tolerance = 0.01
    Maximum number of iterations   = 20
    Maximum difference tolerance   = 0.3
    Flow tolerance factor   = 0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method: Average Conveyance
    Computational Flow Regime: Subcritical Flow

Encroachment Data
   Equal Conveyance = True
   Left Offset   =   0
   Right Offset   =   0

River = RIVER-1   Reach = Reach-1

RS	Profile	Method	Value1	Value2
100	PF 2	1	120	400
110	PF 2	1	120	395
120	PF 2	1	115	395
130	PF 2	1	225	500
140	PF 2	1	315	585
150	PF 2	1	655	1200
160	PF 2	1	570	1435
170	PF 2	1	1040	2085
180	PF 2	1	865	2065
190	PF 2	1	710	2000
200	PF 2	1	935	2025
210	PF 2	1	1040	2080
220	PF 2	1	650	1620
230	PF 2	1	975	1710
239	PF 2	1	530	1190
242	PF 2	1	1477.7	1977.2
243	PF 2	0		
244	PF 2	1	1538.3	2038.7
245	PF 2	1	730	1335
250	PF 2	1	580	1275
260	PF 2	1	365	965
270	PF 2	1	400	960
280	PF 2	1	330	1630
285	PF 2	1	330	1765
290	PF 2	1	770	2340
300	PF 2	1	660	2130
310	PF 2	1	850	2395
320	PF 2	1	645	1870
330	PF 2	1	435	1280
340	PF 2	1	425	1345
345	PF 2	1	595	1525
355	PF 2	1	740	1404.9

FLOW DATA

Flow Title: Imported Flow 01
Flow File : r:\1759\Hyd\CLOMR\Calcs\Duplicate Effective Model\DuplicateEffective.f01

Flow Data (cfs)

River	Reach	RS	PF 1	PF 2
RIVER-1	Reach-1	355	36000	36000
RIVER-1	Reach-1	320	37000	37000
RIVER-1	Reach-1	260	38000	38000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1		Known WS = 289.4
RIVER-1	Reach-1	PF 2		Known WS = 290.4

GEOMETRY DATA

Geometry Title: Imported Geom 01
Geometry File : r:\1759\Hyd\CLOMR\Calcs\Duplicate Effective Model\DuplicateEffective.g01

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 355

INPUT
Description:
Station Elevation Data num= 83

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.2	14.2	332.8	19.2	330.4	84.6	331.4	120.7	330.5
128	328.9	171.9	329.1	209.8	328.3	236.1	328.7	276.1	326
369.1	323.9	416.8	324.2	427.4	322.5	462.3	318.7	481.5	317.8
522.1	317.9	544.6	318.9	591.7	320.5	643.8	319.9	678.7	319.2
702.7	315.2	715.4	313.5	750.8	312.6	779.6	312.6	800.4	313.6
813	318.6	845.1	321.8	864.2	320.2	872.4	316.4	897.2	314.2
919.2	312	1076.1	311.5	1202.2	311.4	1276.3	311.4	1289.3	313.8
1343.4	315.1	1392.6	316.1	1404.9	319.7	1419.1	315.8	1445.5	314.9
1457.7	310.8	1472.2	310.1	1492.7	310.8	1502.9	316.7	1540.3	316.3
1562.7	316.6	1590.8	319.8	1648.1	321	1734.3	321.6	1770	323.7

1853.4	325.6	1918.6	326.3	1925.6	336.3	1943	336.1	1946.7	326.6
1978.4	325	2028.7	324.9	2088	326.6	2172.7	328.9	2215.9	328.9
2219.5	336.5	2262.6	336.5	2266.3	329.5	2337.4	328.4	2365.8	329.1
2369.1	337.4	2394.3	337.4	2400.8	330	2457.5	329.8	2466.4	331.4
2566.1	330.1	2666	331	2694.5	330.2	2703.5	328.2	2706.3	330.6
2762.5	330.5	2809.7	330.5	2818.3	321.9	2884.1	322.5	2930.8	322.7
2945.2	325.6	2955.3	329.6	3009.4	328.6				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	591.7	.05	1404.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
591.7	1404.9	350	310	360	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	321.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.060	0.050	0.060
W.S. Elev (ft)	321.58	Reach Len. (ft)	350.00	310.00	360.00
Crit W.S. (ft)		Flow Area (sq ft)	414.31	5990.69	1288.00
E.G. Slope (ft/ft)	0.002166	Area (sq ft)	414.31	5990.69	1288.00
Q Total (cfs)	36000.00	Flow (cfs)	915.40	31405.91	3678.69
Top Width (ft)	1291.58	Top Width (ft)	155.89	808.47	327.21
Vel Total (ft/s)	4.68	Avg. Vel. (ft/s)	2.21	5.24	2.86
Max Chl Dpth (ft)	11.48	Hydr. Depth (ft)	2.66	7.41	3.94
Conv. Total (cfs)	773448.0	Conv. (cfs)	19667.0	674745.5	79035.5
Length Wtd. (ft)	313.19	Wetted Per. (ft)	156.12	811.93	330.24
Min Ch El (ft)	311.40	Shear (lb/sq ft)	0.36	1.00	0.53
Alpha	1.14	Stream Power (lb/ft s)	0.79	5.23	1.51
Frctn Loss (ft)	0.68	Cum Volume (acre-ft)	606.39	2679.32	102.27
C & E Loss (ft)	0.00	Cum SA (acres)	103.88	301.74	34.23

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	322.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.71	Reach Len. (ft)	350.00	310.00	360.00
Crit W.S. (ft)		Flow Area (sq ft)		5525.76	
E.G. Slope (ft/ft)	0.002923	Area (sq ft)		5525.76	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	662.89	Top Width (ft)		662.89	
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)		6.51	
Max Chl Dpth (ft)	10.31	Hydr. Depth (ft)		8.34	
Conv. Total (cfs)	665879.3	Conv. (cfs)		665879.3	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		676.74	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.49	
Alpha	1.00	Stream Power (lb/ft s)		9.71	
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	384.18	2722.83	17.01

C & E Loss (ft)	0.07	Cum SA (acres)	40.81	280.30	2.67

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 345

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	337.4	83.9	333.8	155.3	329.7	168.1	329.3	201.6	330.6
242.1	330.1	259.7	330.3	264.3	347.8	319.4	347.8	323.2	331.4
375.5	331.2	382	351.5	420.9	351.5	423	325.5	448	324.2
457.4	321.6	469.2	319.4	484	317.9	499.5	318	519.1	319.9
562	319.1	582	316.1	594.4	312.2	676.4	312.2	680.9	312.9
709.2	312.5	726.7	312.2	737.4	316.5	749.2	319.8	799.5	322.9
842.5	323.5	860.5	319.8	877.3	315.1	894.4	313.7	914.9	315.1
930.5	323.1	946.1	329.8	957.9	328.6	973.7	320.8	988.2	310
1262.8	310	1269	313.3	1336.1	313.9	1384.8	314	1393	310.6
1410.8	309.8	1433.9	310.6	1455.2	312.5	1464.6	315.6	1481.8	315.7
1498.4	313.4	1523.9	314.4	1545.6	319	1571.2	320.2	1630.6	320.1
1650.2	322.8	1699.4	325.3	1702.6	333.1	1741.9	333.1	1746.4	324.3
1781.6	323.6	1822.8	323.7	1866.6	325.4	1871.5	334.3	1901	334.3
1911.2	325.5	1981.1	327.7	2079.2	327.7	2087.7	334.4	2202.4	334.4
2208.9	328.1	2262.9	328.7	2298.9	329.4	2305.4	338.4	2328	338.4
2333.3	329.7	2390.1	328.6	2400.3	322.6	2409.7	318.3	2444.5	318.7
2462.4	324	2520.1	324.8	2595.1	324.7	2631.5	325.5	2639.7	328.5
2692.9	329.1	2742.3	328.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	448	.05	1650.2	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
448	1650.2	125	335	400	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.29	Element			
Vel Head (ft)	0.38	Wt. n-Val.		0.050	0.060
W.S. Elev (ft)	320.91	Reach Len. (ft)	125.00	335.00	400.00
Crit W.S. (ft)		Flow Area (sq ft)		7204.14	99.65
E.G. Slope (ft/ft)	0.002151	Area (sq ft)		7204.14	99.65
Q Total (cfs)	36000.00	Flow (cfs)		35815.97	184.03
Top Width (ft)	1088.29	Top Width (ft)		1040.31	47.98
Vel Total (ft/s)	4.93	Avg. Vel. (ft/s)		4.97	1.85
Max Chl Dpth (ft)	11.11	Hydr. Depth (ft)		6.93	2.08

Conv. Total (cfs)	776245.2	Conv. (cfs)		772277.1	3968.1
Length Wtd. (ft)	336.09	Wetted Per. (ft)		1051.56	48.87
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.92	0.27
Alpha	1.01	Stream Power (lb/ft s)		4.57	0.51
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	604.72	2632.37	96.54
C & E Loss (ft)	0.00	Cum SA (acres)	103.25	295.16	32.68

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	321.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.17	Reach Len. (ft)	125.00	335.00	400.00
Crit W.S. (ft)		Flow Area (sq ft)		6905.25	
E.G. Slope (ft/ft)	0.001816	Area (sq ft)		6905.25	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	801.39	Top Width (ft)		801.39	
Vel Total (ft/s)	5.21	Avg. Vel. (ft/s)		5.21	
Max Chl Dpth (ft)	11.37	Hydr. Depth (ft)		8.62	
Conv. Total (cfs)	844858.0	Conv. (cfs)		844858.0	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		826.63	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.95	
Alpha	1.00	Stream Power (lb/ft s)		4.94	
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	384.18	2678.59	17.01
C & E Loss (ft)	0.01	Cum SA (acres)	40.81	275.09	2.67

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 340

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.5	43.2	331.8	70	330.3	104	331.3	144.4	331
152.8	330.2	165.6	330.3	172	347.5	333.7	347.5	336.1	324.1
361.3	323.4	378.1	319.8	395.7	316.6	420.9	314.7	438.9	312.2
528.9	312.2	533.7	312.9	563	311.9	644.6	311.2	684.6	311.3
693	314.2	709.4	317.3	739.8	317.4	758.6	315.6	769.8	314.4
799	314.2	817.4	315.4	865.8	315.7	892.2	315.1	903.9	310.4
1074.7	310.4	1083.5	311	1141.5	311.8	1160.3	314.9	1215.9	315.7
1249.1	310.6	1285.1	309.9	1291.1	310.6	1296.7	316.1	1309.5	315.6
1319.9	311.9	1326	311.8	1352	317.5	1372.8	322.7	1386	324.8
1428.8	326	1436	333.6	1473.6	336	1476	326	1504.4	325
1536.4	324.1	1569.2	326.1	1574.4	334.3	1596.8	334.3	1602.4	326.1

1685.3	325.7	1723.7	325.4	1786.5	324.9	1862.1	325.1	1894.9	325.8
1932.9	325.7	1950.5	325.2	1993.3	324.4	2033.3	325.8	2039.3	335.5
2079.7	335.5	2084.1	327.2	2109.8	325.4	2130.6	325.1	2139	317.7
2148.2	313.4	2180.2	313.1	2191	321	2205	322.5	2259.4	323.6
2290.6	323.1	2362.2	324.1	2389.8	324.9	2397.8	326.4	2402.6	327.9
2449	327	2492.2	326.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	361.3	.05	1386	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
361.3	1386	575	454	450	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	320.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.050	0.060
W.S. Elev (ft)	320.22	Reach Len. (ft)	575.00	454.00	450.00
Crit W.S. (ft)		Flow Area (sq ft)		7094.07	304.31
E.G. Slope (ft/ft)	0.002003	Area (sq ft)		7094.07	304.31
Q Total (cfs)	36000.00	Flow (cfs)		34981.86	1018.14
Top Width (ft)	1040.55	Top Width (ft)		986.75	53.80
Vel Total (ft/s)	4.87	Avg. Vel. (ft/s)		4.93	3.35
Max Chl Dpth (ft)	10.32	Hydr. Depth (ft)		7.19	5.66
Conv. Total (cfs)	804320.7	Conv. (cfs)		781573.2	22747.5
Length Wtd. (ft)	460.05	Wetted Per. (ft)		993.85	58.03
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.89	0.66
Alpha	1.01	Stream Power (lb/ft s)		4.40	2.19
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	604.72	2577.39	94.68
C & E Loss (ft)	0.02	Cum SA (acres)	103.25	287.37	32.21

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	320.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.050	
W.S. Elev (ft)	320.58	Reach Len. (ft)	575.00	454.00	450.00
Crit W.S. (ft)		Flow Area (sq ft)		7209.77	
E.G. Slope (ft/ft)	0.001859	Area (sq ft)		7209.77	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	920.00	Top Width (ft)		920.00	
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)		4.99	
Max Chl Dpth (ft)	10.68	Hydr. Depth (ft)		7.84	
Conv. Total (cfs)	834959.4	Conv. (cfs)		834959.4	
Length Wtd. (ft)	460.02	Wetted Per. (ft)		937.22	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.89	
Alpha	1.00	Stream Power (lb/ft s)		4.46	
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	384.18	2624.32	17.01
C & E Loss (ft)	0.03	Cum SA (acres)	40.81	268.47	2.67

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 330

INPUT
Description:
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	331.2	62.1	327.4	96.2	324.8	131.5	325.9	170.1	325.8
184.9	328.4	191.3	346.6	242.7	346.6	244	329.8	304.2	330.5
310.6	351.3	353.5	351.3	356.4	324.6	379.2	324.4	390.5	318
407.3	315.9	431	314.9	441.8	312.5	532.6	312.5	547.8	316.7
560.3	323.4	569.9	324.8	576.7	322.1	592	314	627.7	314.8
683.8	313.5	693.9	316.5	711.9	321.4	729.2	317.8	737.2	313.3
741.6	310	889.2	310	905.3	312.9	967	312.6	1017.6	313.2
1052.5	310.2	1069.4	310.2	1085.8	313.6	1147.2	313.8	1194.1	312
1203.4	308.6	1214.7	308.5	1219.7	308.6	1234.1	311.3	1263.8	313.3
1301.5	314.1	1319.2	316.3	1334	321.9	1373.7	326	1416.3	329.8
1421.9	336.6	1466	336.6	1469.3	330.1	1489.3	329.3	1495.7	326.6
1547.9	326.7	1622.6	327.2	1666.3	326.5	1672.3	324.3	1715.6	323.1
1720.5	331	1761.7	331	1766.7	323.4	1797.2	322.4	1834.1	322.4
1861.3	323.7	1866.9	332	1899.5	332	1903.9	323.1	1953.3	323.5
1972.9	322.8	1983.7	316.6	1992.6	309.8	2005.4	309.9	2033.5	314.3
2048.4	321.6	2098.9	320.1	2194	322.2	2285	324.1	2330.4	325.1
2342.1	330.2	2388.2	328.3	2432.4	326.1	2515.4	328.3	2518.6	340.1
2567.2	340.1	2573.6	329.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	569.9	.035	1334	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
569.9	1334	620	588	620	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	319.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.60	Wt. n-Val.	0.045	0.035	0.060
W.S. Elev (ft)	319.06	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)		Flow Area (sq ft)	849.70	4751.54	394.01
E.G. Slope (ft/ft)	0.001939	Area (sq ft)	849.70	4751.54	394.01
Q Total (cfs)	36000.00	Flow (cfs)	3678.05	30938.52	1383.43
Top Width (ft)	951.59	Top Width (ft)	163.57	724.21	63.80
Vel Total (ft/s)	6.00	Avg. Vel. (ft/s)	4.33	6.51	3.51
Max Chl Dpth (ft)	10.56	Hydr. Depth (ft)	5.19	6.56	6.18
Conv. Total (cfs)	817522.1	Conv. (cfs)	83524.5	702581.3	31416.3
Length Wtd. (ft)	592.04	Wetted Per. (ft)	165.43	731.03	68.20
Min Ch El (ft)	308.50	Shear (lb/sq ft)	0.62	0.79	0.70

Alpha	1.08	Stream Power (lb/ft s)	2.69	5.12	2.46
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	599.12	2515.66	91.07
C & E Loss (ft)	0.11	Cum SA (acres)	102.17	278.45	31.61

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	320.06	Element			
Vel Head (ft)	0.68	Wt. n-Val.	0.045	0.035	
W.S. Elev (ft)	319.39	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)		Flow Area (sq ft)	746.39	4782.98	
E.G. Slope (ft/ft)	0.001940	Area (sq ft)	746.39	4782.98	
Q Total (cfs)	36000.00	Flow (cfs)	3580.89	32419.11	
Top Width (ft)	798.91	Top Width (ft)	117.81	681.09	
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	4.80	6.78	
Max Chl Dpth (ft)	10.89	Hydr. Depth (ft)	6.34	7.02	
Conv. Total (cfs)	817277.9	Conv. (cfs)	81293.9	735984.0	
Length Wtd. (ft)	589.57	Wetted Per. (ft)	124.60	693.16	
Min Ch El (ft)	308.50	Shear (lb/sq ft)	0.73	0.84	
Alpha	1.03	Stream Power (lb/ft s)	3.48	5.67	
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	379.26	2561.82	17.01
C & E Loss (ft)	0.10	Cum SA (acres)	40.04	260.13	2.67

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 320

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.4	101.5	323.7	187.5	322.4	294.7	321.3	328.1	322.2
372.3	322.4	415.6	322.3	449.4	321.1	499.6	318.3	530.1	317.5
541.3	316.3	562.6	314.8	571.4	311.4	581.5	311.3	595.5	315.9
610.8	312.9	683.9	313.3	766.6	313.6	843.7	313.5	881.4	314.9
941.2	316.6	1011.1	315.1	1068.6	313.7	1150.9	313	1194.3	312.8
1207.9	311.7	1253.3	311.6	1279.8	312.4	1311.5	312.9	1329.1	315.8
1354.1	318.2	1384.6	319.2	1413.1	312.3	1446.8	309.1	1468.1	308.5
1525.2	308.7	1576.9	307.3	1645.1	307.2	1755.3	307.2	1767.4	309.6
1795.1	312	1828.4	316.7	1870.6	319	1940.9	317.9	2014.7	319.2
2045.7	318.3	2057.3	310.6	2069.4	307.4	2098.7	307.3	2107.9	311.7
2118.4	317.9	2181	318.8	2200.7	315.1	2251.7	315.2	2264.1	312.2
2315.1	312.7	2393	313.5	2445.7	314.6	2525.6	315.6	2536	318.9

2542.8	323.9	2611.1	324.6	2625.6	326.3	2631.2	328.7	2718.3	328.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	530.1	.035	1870.6	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
530.1	1870.6	660	711	640	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	318.86	Element			
Vel Head (ft)	0.23	Wt. n-Val.	0.045	0.035	0.060
W.S. Elev (ft)	318.63	Reach Len. (ft)	660.00	711.00	640.00
Crit W.S. (ft)		Flow Area (sq ft)	23.07	8142.99	2225.22
E.G. Slope (ft/ft)	0.000795	Area (sq ft)	23.07	8142.99	2225.22
Q Total (cfs)	37000.00	Flow (cfs)	15.87	32834.19	4149.94
Top Width (ft)	1925.14	Top Width (ft)	36.33	1313.72	575.09
Vel Total (ft/s)	3.56	Avg. Vel. (ft/s)	0.69	4.03	1.86
Max Chl Dpth (ft)	11.43	Hydr. Depth (ft)	0.63	6.20	3.87
Conv. Total (cfs)	1311916.0	Conv. (cfs)	562.6	1164208.0	147145.2
Length Wtd. (ft)	706.67	Wetted Per. (ft)	36.35	1317.67	581.72
Min Ch El (ft)	307.20	Shear (lb/sq ft)	0.03	0.31	0.19
Alpha	1.17	Stream Power (lb/ft s)	0.02	1.24	0.35
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	592.90	2428.63	72.43
C & E Loss (ft)	0.00	Cum SA (acres)	100.75	264.70	27.06

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	319.15	Element			
Vel Head (ft)	0.35	Wt. n-Val.		0.035	
W.S. Elev (ft)	318.81	Reach Len. (ft)	660.00	711.00	640.00
Crit W.S. (ft)		Flow Area (sq ft)		7824.76	
E.G. Slope (ft/ft)	0.001037	Area (sq ft)		7824.76	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1208.34	Top Width (ft)		1208.34	
Vel Total (ft/s)	4.73	Avg. Vel. (ft/s)		4.73	
Max Chl Dpth (ft)	11.61	Hydr. Depth (ft)		6.48	
Conv. Total (cfs)	1149112.0	Conv. (cfs)		1149112.0	
Length Wtd. (ft)	710.87	Wetted Per. (ft)		1216.26	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.42	
Alpha	1.00	Stream Power (lb/ft s)		1.97	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	373.95	2476.73	17.01
C & E Loss (ft)	0.04	Cum SA (acres)	39.20	247.38	2.67

Warning: Divided flow computed for this cross-section.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 310

INPUT
Description:
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.5	78.5	320.9	192.3	320.3	337.8	319.6	386.3	318.8
402.3	316	410.8	315.1	420.9	316.5	432.2	318.8	497.2	319.3
520.1	320.4	566.1	320.3	599.6	319.5	620.6	320.3	631.8	322.1
661.7	320.7	709.3	320.7	727.1	321.3	750.1	318.6	783.1	319.9
807.3	317.5	837.2	318.1	848.9	314.5	859	311.1	909.7	310
1033.1	310.5	1106.9	311.3	1263.4	310.8	1360.6	310.8	1375.1	312.7
1448.5	313.6	1482	313.3	1515.1	311.1	1540	311	1560.1	312.9
1573.5	314.8	1622.6	314.1	1637.2	311.3	1645.3	312.6	1702	312
1808.2	313.1	1863.8	313.5	1914.6	312.9	1949.8	311.6	1979.2	312.2
2097.3	312.4	2173.9	312.2	2203	311.5	2212.7	314.6	2222.8	316.7
2236.9	316	2244.5	309.2	2255.8	306.9	2273.8	305.7	2285.5	306.4
2325.4	307.9	2334.6	313.6	2348.3	316	2396.7	315.6	2504.3	317.1
2557.2	317.6	2662.8	320.2	2782.6	321.7	2904	323.7	2954.1	324.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	837.2	.035	2348.3	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
837.2	2348.3	640	610	610	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	318.32	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.045	0.035	0.060
W.S. Elev (ft)	318.10	Reach Len. (ft)	640.00	610.00	610.00
Crit W.S. (ft)		Flow Area (sq ft)	74.38	9527.06	343.76
E.G. Slope (ft/ft)	0.000708	Area (sq ft)	74.38	9527.06	343.76
Q Total (cfs)	37000.00	Flow (cfs)	81.93	36621.09	296.98
Top Width (ft)	1814.42	Top Width (ft)	74.22	1511.09	229.10
Vel Total (ft/s)	3.72	Avg. Vel. (ft/s)	1.10	3.84	0.86
Max Chl Dpth (ft)	12.40	Hydr. Depth (ft)	1.00	6.30	1.50
Conv. Total (cfs)	1390103.0	Conv. (cfs)	3078.2	1375867.0	11157.5
Length Wtd. (ft)	610.03	Wetted Per. (ft)	74.75	1518.53	229.12
Min Ch El (ft)	305.70	Shear (lb/sq ft)	0.04	0.28	0.07
Alpha	1.06	Stream Power (lb/ft s)	0.05	1.07	0.06
Frctn Loss (ft)	0.68	Cum Volume (acre-ft)	592.17	2284.42	53.56
C & E Loss (ft)	0.00	Cum SA (acres)	99.91	241.64	21.15

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	318.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.035	0.060
W.S. Elev (ft)	318.33	Reach Len. (ft)	640.00	610.00	610.00
Crit W.S. (ft)		Flow Area (sq ft)		9844.98	117.65
E.G. Slope (ft/ft)	0.000638	Area (sq ft)		9844.98	117.65
Q Total (cfs)	37000.00	Flow (cfs)		36868.73	131.27
Top Width (ft)	1545.00	Top Width (ft)		1498.30	46.70
Vel Total (ft/s)	3.71	Avg. Vel. (ft/s)		3.74	1.12
Max Chl Dpth (ft)	12.63	Hydr. Depth (ft)		6.57	2.52
Conv. Total (cfs)	1464330.0	Conv. (cfs)		1459135.0	5195.4
Length Wtd. (ft)	610.00	Wetted Per. (ft)		1509.33	49.41
Min Ch El (ft)	305.70	Shear (lb/sq ft)		0.26	0.09
Alpha	1.01	Stream Power (lb/ft s)		0.97	0.11
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	373.95	2332.52	16.15
C & E Loss (ft)	0.00	Cum SA (acres)	39.20	225.29	2.32

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 300

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324	39.9	324.8	60.6	325.3	63.1	334	102.6	334
106.9	325.5	156.7	324.8	167.1	322.4	311.5	321.2	446.4	318.9
576.2	318.7	646.5	317.4	661	312.3	680.4	311.8	750.4	311.8
757.1	313.7	794.5	313.4	809.1	310.2	841.9	311.8	907.5	310.8
927.5	312.1	954.4	314.3	1051.2	313.4	1150.4	312.2	1200.4	311.8
1236.1	309.4	1274.2	310.6	1338.2	311.4	1440.1	311.8	1538.5	310.7
1612.1	311.2	1637.6	308.6	1697.1	309.8	1780.8	309.5	1852.9	309.2
1899.6	310.9	1940.4	310.8	1952.8	315.3	1964.7	314.1	1987	308.6
2003.1	305.8	2016.3	305.1	2068.8	305.8	2088.8	310.4	2117.4	313.4
2190.6	313.8	2278.3	316.1	2369.6	318.2	2468.2	320.1	2519	320.6
2564.3	321.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	646.5	.06	2117.4	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
646.5	2117.4	605	654	790	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	317.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	317.42	Reach Len. (ft)	605.00	654.00	790.00
Crit W.S. (ft)		Flow Area (sq ft)	0.01	9368.58	534.11
E.G. Slope (ft/ft)	0.002014	Area (sq ft)	0.01	9368.58	534.11
Q Total (cfs)	37000.00	Flow (cfs)	0.00	35706.68	1293.32
Top Width (ft)	1690.27	Top Width (ft)	1.08	1470.90	218.29
Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	0.06	3.81	2.42
Max Chl Dpth (ft)	12.32	Hydr. Depth (ft)	0.01	6.37	2.45
Conv. Total (cfs)	824439.7	Conv. (cfs)	0.0	795621.6	28818.0
Length Wtd. (ft)	656.38	Wetted Per. (ft)	1.08	1475.33	218.33
Min Ch El (ft)	305.10	Shear (lb/sq ft)	0.00	0.80	0.31
Alpha	1.02	Stream Power (lb/ft s)	0.00	3.04	0.74
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	591.62	2152.12	47.42
C & E Loss (ft)	0.01	Cum SA (acres)	99.36	220.76	18.02

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	317.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	317.70	Reach Len. (ft)	605.00	654.00	790.00
Crit W.S. (ft)		Flow Area (sq ft)		9746.28	53.76
E.G. Slope (ft/ft)	0.001865	Area (sq ft)		9746.28	53.76
Q Total (cfs)	37000.00	Flow (cfs)		36850.37	149.63
Top Width (ft)	1470.00	Top Width (ft)		1457.40	12.60
Vel Total (ft/s)	3.78	Avg. Vel. (ft/s)		3.78	2.78
Max Chl Dpth (ft)	12.60	Hydr. Depth (ft)		6.69	4.27
Conv. Total (cfs)	856838.1	Conv. (cfs)		853372.9	3465.2
Length Wtd. (ft)	654.28	Wetted Per. (ft)		1466.07	16.83
Min Ch El (ft)	305.10	Shear (lb/sq ft)		0.77	0.37
Alpha	1.00	Stream Power (lb/ft s)		2.93	1.03
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	373.95	2195.35	14.95
C & E Loss (ft)	0.00	Cum SA (acres)	39.20	204.59	1.91

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 290

INPUT
Description:

Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	347.5	37.9	347.4	62.7	349.4	137.6	349.1	159.5	344.9
249.7	342.1	337.8	339.7	383	339.1	408.7	335.6	415.8	350.1
509.1	350.1	514.2	334.8	528.6	331.4	553.4	342.3	587.7	322.6
603.1	318.2	635.3	317.8	649	318.6	714.3	317.9	749.3	314.4
772.5	312	810.1	311	1087.6	311	1095.6	311.6	1185.3	311.8
1273.7	311.2	1415.4	308.9	1439.5	306.5	1456.5	308.4	1529.9	310.4
1636.7	311.7	1666.1	309.1	1683.9	306.4	1715.7	307.1	1750.5	309
1829	307.5	1862.5	308.9	1886.7	310.4	1939.8	310.8	1978.3	310.3
2056.4	311.1	2077.8	309.2	2113.6	311	2125.3	316.9	2136.8	317.1
2149.9	306.1	2168	304.7	2177	303.1	2196.1	304.6	2232.5	305.1
2243.8	310.9	2331.8	310.7	2378.3	311.6	2390.2	308.5	2404.2	310.5
2455.5	312.3	2513.4	313	2557.6	314.2	2568.8	316.9	2610.7	319.1

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	714.3	.06	2568.8	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
714.3	2568.8	645	653	695	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	316.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.		0.060	
W.S. Elev (ft)	316.15	Reach Len. (ft)	645.00	653.00	695.00
Crit W.S. (ft)		Flow Area (sq ft)		10585.27	
E.G. Slope (ft/ft)	0.001916	Area (sq ft)		10585.27	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1819.80	Top Width (ft)		1819.80	
Vel Total (ft/s)	3.50	Avg. Vel. (ft/s)		3.50	
Max Chl Dpth (ft)	13.05	Hydr. Depth (ft)		5.82	
Conv. Total (cfs)	845242.1	Conv. (cfs)		845242.1	
Length Wtd. (ft)	653.06	Wetted Per. (ft)		1828.31	
Min Ch El (ft)	303.10	Shear (lb/sq ft)		0.69	
Alpha	1.00	Stream Power (lb/ft s)		2.42	
Frctn Loss (ft)	0.84	Cum Volume (acre-ft)	591.62	2002.32	42.57
C & E Loss (ft)	0.01	Cum SA (acres)	99.35	196.06	16.04

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	316.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.		0.060	
W.S. Elev (ft)	316.51	Reach Len. (ft)	645.00	653.00	695.00
Crit W.S. (ft)		Flow Area (sq ft)		10146.96	
E.G. Slope (ft/ft)	0.001808	Area (sq ft)		10146.96	

Q Total (cfs)	37000.00	Flow (cfs)	37000.00		
Top Width (ft)	1557.02	Top Width (ft)	1557.02		
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)	3.65		
Max Chl Dpth (ft)	13.41	Hydr. Depth (ft)	6.52		
Conv. Total (cfs)	870201.8	Conv. (cfs)	870201.8		
Length Wtd. (ft)	653.00	Wetted Per. (ft)	1574.62		
Min Ch El (ft)	303.10	Shear (lb/sq ft)	0.73		
Alpha	1.00	Stream Power (lb/ft s)	2.65		
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	373.95	2046.01	14.46
C & E Loss (ft)	0.02	Cum SA (acres)	39.20	181.96	1.79

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 285

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	340.2	48.2	339.2	67.9	332.9	91.5	329.2	110.3	323.2
145.3	321.2	179.9	317.8	205	314.3	272.9	311.4	295.2	307.5
386.5	306.1	480.7	303.8	506.6	302.2	517.4	304	535.9	306.5
640.4	306.8	693.1	308.4	803.1	309.1	900.8	309.3	961.7	308.9
1023.3	307.9	1048.2	304.8	1086.4	306.2	1117.1	307.2	1215.2	307.4
1282.8	305.4	1342.4	306.6	1380.7	309.7	1460	310.3	1479	308
1507	306.9	1516.5	308.2	1523.6	313.4	1533.4	312.7	1553.2	303.7
1573.1	302.4	1609.9	303.3	1634.1	305.3	1672.4	304.9	1680.9	307
1706.8	306.3	1735.4	310.4	1768	313.7	1840.5	314.6	1920.4	314.1
1931.1	317.7	1976.9	318.1	2020.4	317	2044.4	318.2	2094.1	321.4
2127.8	322.9	2237.1	324.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	272.9	.06	1768	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
272.9	1768	660	688	640	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	315.48	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	315.34	Reach Len. (ft)	660.00	688.00	640.00
Crit W.S. (ft)		Flow Area (sq ft)	173.23	12079.83	168.24
E.G. Slope (ft/ft)	0.000926	Area (sq ft)	173.23	12079.83	168.24

Q Total (cfs)	37000.00	Flow (cfs)	272.54	36567.63	159.83
Top Width (ft)	1726.58	Top Width (ft)	75.38	1495.10	156.10
Vel Total (ft/s)	2.98	Avg. Vel. (ft/s)	1.57	3.03	0.95
Max Chl Dpth (ft)	13.14	Hydr. Depth (ft)	2.30	8.08	1.08
Conv. Total (cfs)	1215579.0	Conv. (cfs)	8954.0	1201374.0	5250.9
Length Wtd. (ft)	687.60	Wetted Per. (ft)	75.52	1501.07	156.31
Min Ch El (ft)	302.20	Shear (lb/sq ft)	0.13	0.47	0.06
Alpha	1.02	Stream Power (lb/ft s)	0.21	1.41	0.06
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	590.34	1832.44	41.23
C & E Loss (ft)	0.01	Cum SA (acres)	98.79	171.22	14.79

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	315.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.		0.060	
W.S. Elev (ft)	315.77	Reach Len. (ft)	660.00	688.00	640.00
Crit W.S. (ft)		Flow Area (sq ft)		12269.01	
E.G. Slope (ft/ft)	0.000861	Area (sq ft)		12269.01	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1435.00	Top Width (ft)		1435.00	
Vel Total (ft/s)	3.02	Avg. Vel. (ft/s)		3.02	
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)		8.55	
Conv. Total (cfs)	1260642.0	Conv. (cfs)		1260642.0	
Length Wtd. (ft)	688.00	Wetted Per. (ft)		1451.78	
Min Ch El (ft)	302.20	Shear (lb/sq ft)		0.45	
Alpha	1.00	Stream Power (lb/ft s)		1.37	
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	373.95	1877.99	14.46
C & E Loss (ft)	0.00	Cum SA (acres)	39.20	159.54	1.79

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 280

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	319.5	16.6	319	32.8	318.5	74.5	319.2	75.3	327.1
110.5	327.1	113.9	319.6	175.1	318.1	192.4	312.2	202.3	308.8
216.8	308.4	231.3	306.6	283.3	306.5	325.9	306.3	342.4	304.1
355.7	300.7	376.6	300.1	385.9	303.2	466.4	304.3	556.9	304.8
655.3	305	772.1	306.1	843.4	305.7	868.6	304.5	921.9	304.3
953.7	306.4	1029.7	305.9	1074.3	304.7	1106.4	305.6	1125	310.6
1139.5	302.8	1176.6	301.1	1207.3	302.7	1215.5	307.4	1300.9	307.6
1398.9	307.1	1490.7	306.6	1547.8	306.8	1610.9	307.6	1646.1	307.6
1690.2	310.5	1704.8	310.7	1711.7	315.4	1717.1	316.9	1760.5	318.4
1801.4	318.6	1864.6	321.3	1990.3	324.3	2110.7	328.8	2238.4	331.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	216.8	.06	1690.2	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
216.8	1690.2	1060	1021	1135	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	314.95	Element			
Vel Head (ft)	0.11	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	314.84	Reach Len. (ft)	1060.00	1021.00	1135.00
Crit W.S. (ft)		Flow Area (sq ft)	143.54	13416.19	74.41
E.G. Slope (ft/ft)	0.000641	Area (sq ft)	143.54	13416.19	74.41
Q Total (cfs)	37000.00	Flow (cfs)	286.94	36586.74	126.32
Top Width (ft)	1526.20	Top Width (ft)	32.13	1473.40	20.67
Vel Total (ft/s)	2.71	Avg. Vel. (ft/s)	2.00	2.73	1.70
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	4.47	9.11	3.60
Conv. Total (cfs)	1461608.0	Conv. (cfs)	11334.9	1445283.0	4990.1
Length Wtd. (ft)	1023.25	Wetted Per. (ft)	33.14	1478.80	21.95
Min Ch El (ft)	300.10	Shear (lb/sq ft)	0.17	0.36	0.14
Alpha	1.00	Stream Power (lb/ft s)	0.35	0.99	0.23
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	587.94	1631.09	39.45
C & E Loss (ft)	0.04	Cum SA (acres)	97.98	147.77	13.50

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	315.38	Element			
Vel Head (ft)	0.13	Wt. n-Val.		0.060	
W.S. Elev (ft)	315.24	Reach Len. (ft)	1060.00	1021.00	1135.00
Crit W.S. (ft)		Flow Area (sq ft)		12643.06	
E.G. Slope (ft/ft)	0.000688	Area (sq ft)		12643.06	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1300.00	Top Width (ft)		1300.00	
Vel Total (ft/s)	2.93	Avg. Vel. (ft/s)		2.93	
Max Chl Dpth (ft)	15.14	Hydr. Depth (ft)		9.73	
Conv. Total (cfs)	1410519.0	Conv. (cfs)		1410519.0	
Length Wtd. (ft)	1021.02	Wetted Per. (ft)		1322.30	
Min Ch El (ft)	300.10	Shear (lb/sq ft)		0.41	
Alpha	1.00	Stream Power (lb/ft s)		1.20	
Frctn Loss (ft)	1.20	Cum Volume (acre-ft)	373.95	1681.26	14.46
C & E Loss (ft)	0.04	Cum SA (acres)	39.20	137.94	1.79

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 270

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.8	21	320.4	40.8	322.3	57.7	323.2	63.4	333.8
113.9	333.8	120.4	322.4	146.6	322.6	163.2	316.7	180.6	315.2
282.9	312.6	354.8	310.4	400.4	308.6	413	301	467.1	299.8
478.7	300.2	493.8	299.8	505.5	301.8	608.1	303.1	694.2	304.2
711.1	306.3	728.4	301.8	761.5	303.1	788.2	304.8	799.9	306.6
815.3	300.8	838	299.4	867.4	300.8	882.8	303.8	938.1	302.5
958.7	307.7	988.2	310	1023.7	313.8	1089.6	313	1118.6	311.8
1150.1	309.1	1163.9	309.8	1170.3	312.6	1212.8	312.5	1258.4	312.2
1277	314	1301.7	314.7						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	400.4	.06	958.7	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
400.4	958.7	815	951	1000	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	313.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	313.23	Reach Len. (ft)	815.00	951.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)	302.16	5939.80	431.20
E.G. Slope (ft/ft)	0.002489	Area (sq ft)	302.16	5939.80	431.20
Q Total (cfs)	37000.00	Flow (cfs)	739.96	35274.36	985.68
Top Width (ft)	958.53	Top Width (ft)	142.25	558.30	257.98
Vel Total (ft/s)	5.54	Avg. Vel. (ft/s)	2.45	5.94	2.29
Max Chl Dpth (ft)	13.83	Hydr. Depth (ft)	2.12	10.64	1.67
Conv. Total (cfs)	741668.6	Conv. (cfs)	14832.7	707077.9	19758.0
Length Wtd. (ft)	946.38	Wetted Per. (ft)	142.33	563.63	259.03
Min Ch El (ft)	299.40	Shear (lb/sq ft)	0.33	1.64	0.26
Alpha	1.10	Stream Power (lb/ft s)	0.81	9.72	0.59
Frctn Loss (ft)	3.29	Cum Volume (acre-ft)	582.51	1404.25	32.86
C & E Loss (ft)	0.03	Cum SA (acres)	95.86	123.96	9.87

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Element	Left OB	Channel	Right OB
E.G. Elev (ft)	314.13					
Vel Head (ft)	0.57		Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	313.56		Reach Len. (ft)	815.00	951.00	1000.00
Crit W.S. (ft)			Flow Area (sq ft)	1.98	6126.11	7.56
E.G. Slope (ft/ft)	0.002469		Area (sq ft)	1.98	6126.11	7.56
Q Total (cfs)	37000.00		Flow (cfs)	1.51	36986.82	11.67
Top Width (ft)	560.00		Top Width (ft)	0.40	558.30	1.30
Vel Total (ft/s)	6.03		Avg. Vel. (ft/s)	0.76	6.04	1.54
Max Chl Dpth (ft)	14.16		Hydr. Depth (ft)	4.95	10.97	5.81
Conv. Total (cfs)	744692.5		Conv. (cfs)	30.4	744427.3	234.8
Length Wtd. (ft)	947.33		Wetted Per. (ft)	5.35	563.63	7.07
Min Ch El (ft)	299.40		Shear (lb/sq ft)	0.06	1.68	0.16
Alpha	1.00		Stream Power (lb/ft s)	0.04	10.11	0.25
Frctn Loss (ft)	2.78		Cum Volume (acre-ft)	373.92	1461.29	14.36
C & E Loss (ft)	0.01		Cum SA (acres)	39.19	116.16	1.78

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 260

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.7	16.9	323.4	38	322.9	60.8	325.1	126	326.5
165.9	326.8	181.3	320.2	185.8	316.5	236.3	314.2	295.3	313.2
318.4	311.1	338.3	309.5	352.6	305.8	419.7	303.1	438.4	300.1
465.2	299.1	492.1	298.6	500.6	300.1	611.3	299.9	708.2	301.5
744.4	302.1	756.7	304.4	767.7	302.3	808	300.7	831.1	297.8
838.5	297.6	857.2	297.8	885.2	302.6	939.8	302.9	962.1	305.3
982.5	311.4	1006.9	312.3	1046.9	313.7	1089.9	312.1	1122.1	313.3
1221.7	314.3								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	419.7	.06	982.5	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
419.7	982.5	1000	1031	1050	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Element	Left OB	Channel	Right OB
E.G. Elev (ft)	310.44					

Vel Head (ft)	0.84	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	309.60	Reach Len. (ft)	1000.00	1031.00	1050.00
Crit W.S. (ft)		Flow Area (sq ft)	373.47	4814.84	
E.G. Slope (ft/ft)	0.005116	Area (sq ft)	373.47	4814.84	
Q Total (cfs)	38000.00	Flow (cfs)	2160.88	35839.12	
Top Width (ft)	639.42	Top Width (ft)	82.64	556.78	
Vel Total (ft/s)	7.32	Avg. Vel. (ft/s)	5.79	7.44	
Max Chl Dpth (ft)	12.00	Hydr. Depth (ft)	4.52	8.65	
Conv. Total (cfs)	531259.0	Conv. (cfs)	30210.1	501048.9	
Length Wtd. (ft)	1027.59	Wetted Per. (ft)	83.17	558.99	
Min Ch El (ft)	297.60	Shear (lb/sq ft)	1.43	2.75	
Alpha	1.01	Stream Power (lb/ft s)	8.30	20.48	
Frctn Loss (ft)	2.82	Cum Volume (acre-ft)	576.19	1286.86	27.91
C & E Loss (ft)	0.16	Cum SA (acres)	93.75	111.79	6.90

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	311.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	310.65	Reach Len. (ft)	1000.00	1031.00	1050.00
Crit W.S. (ft)		Flow Area (sq ft)	352.81	5368.23	
E.G. Slope (ft/ft)	0.003523	Area (sq ft)	352.81	5368.23	
Q Total (cfs)	38000.00	Flow (cfs)	2025.36	35974.64	
Top Width (ft)	600.00	Top Width (ft)	54.70	545.30	
Vel Total (ft/s)	6.64	Avg. Vel. (ft/s)	5.74	6.70	
Max Chl Dpth (ft)	13.05	Hydr. Depth (ft)	6.45	9.84	
Conv. Total (cfs)	640214.9	Conv. (cfs)	34122.8	606092.2	
Length Wtd. (ft)	1030.41	Wetted Per. (ft)	60.09	551.49	
Min Ch El (ft)	297.60	Shear (lb/sq ft)	1.29	2.14	
Alpha	1.00	Stream Power (lb/ft s)	7.41	14.35	
Frctn Loss (ft)	2.42	Cum Volume (acre-ft)	370.60	1335.82	14.27
C & E Loss (ft)	0.09	Cum SA (acres)	38.68	104.11	1.76

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 250

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.9	34.2	326.6	54.8	329.6	87.4	330.1	89.9	341.8
142.4	341.8	145.7	331	161.9	330.5	181	318.7	203.9	310.1
213	308	227.9	307.2	261.6	303.7	281.2	301.6	289.4	302.5
394.2	301.9	491.5	301.6	554.1	300	618.1	300.1	652.9	298.3
707.6	295.9	759.6	296.9	846	297.7	941.2	298	1041	297.9
1081.2	295.5	1096.2	297.7	1107.8	295.4	1124	294.4	1138.2	293.7
1152.9	294.3	1182	296.6	1199	300	1238.2	299.4	1271.8	299.9
1292.2	305	1315.5	307.5	1376.5	308.7	1466.7	311.9	1527.3	314.7
1559.3	315.6	1564.8	319.1	1609.7	320.1	1632	319		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	618.1	.06	1199	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
618.1	1199	615	701	700	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	307.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	307.14	Reach Len. (ft)	615.00	701.00	700.00
Crit W.S. (ft)		Flow Area (sq ft)	2080.97	5806.31	660.75
E.G. Slope (ft/ft)	0.001711	Area (sq ft)	2080.97	5806.31	660.75
Q Total (cfs)	38000.00	Flow (cfs)	7811.14	27566.86	2622.01
Top Width (ft)	1083.74	Top Width (ft)	389.66	580.90	113.18
Vel Total (ft/s)	4.45	Avg. Vel. (ft/s)	3.75	4.75	3.97
Max Chl Dpth (ft)	13.44	Hydr. Depth (ft)	5.34	10.00	5.84
Conv. Total (cfs)	918642.2	Conv. (cfs)	188832.6	666423.1	63386.5
Length Wtd. (ft)	684.16	Wetted Per. (ft)	390.02	581.96	113.93
Min Ch El (ft)	293.70	Shear (lb/sq ft)	0.57	1.07	0.62
Alpha	1.03	Stream Power (lb/ft s)	2.14	5.06	2.46
Frctn Loss (ft)	1.65	Cum Volume (acre-ft)	548.02	1161.16	19.95
C & E Loss (ft)	0.01	Cum SA (acres)	88.33	98.33	5.54

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	308.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.40	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	308.44	Reach Len. (ft)	615.00	701.00	700.00
Crit W.S. (ft)		Flow Area (sq ft)	318.73	6556.83	663.68

E.G. Slope (ft/ft)	0.001675	Area (sq ft)	318.73	6556.83	663.68
Q Total (cfs)	38000.00	Flow (cfs)	1398.72	33395.57	3205.72
Top Width (ft)	695.00	Top Width (ft)	38.10	580.90	76.00
Vel Total (ft/s)	5.04	Avg. Vel. (ft/s)	4.39	5.09	4.83
Max Chl Dpth (ft)	14.74	Hydr. Depth (ft)	8.37	11.29	8.73
Conv. Total (cfs)	928611.8	Conv. (cfs)	34180.6	816092.6	78338.6
Length Wtd. (ft)	699.29	Wetted Per. (ft)	46.50	581.96	83.84
Min Ch El (ft)	293.70	Shear (lb/sq ft)	0.72	1.18	0.83
Alpha	1.00	Stream Power (lb/ft s)	3.14	6.00	4.00
Frctn Loss (ft)	1.77	Cum Volume (acre-ft)	362.90	1194.70	6.27
C & E Loss (ft)	0.00	Cum SA (acres)	37.61	90.78	0.85

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 245

INPUT
Description:
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.6	34.7	329	59.7	332.3	62.4	341.6	117.5	341.6
120.9	333.4	142.8	332.7	163.7	321.9	178	315.1	232.6	313.1
301.1	307.8	332.2	304.4	356.7	299.6	421.6	299.6	495.5	299
576.5	301.1	651.8	300.6	662.9	294.8	733.9	295.4	752.9	293.5
779	294.3	881.8	293.9	956.6	293.6	1033.3	293.6	1075.7	292.7
1095.1	292.5	1117.1	292.7	1147.3	295.3	1193.3	295.7	1231.5	296
1310.2	295.4	1334.9	296.1	1353.3	298.3	1365.9	302.8	1410.9	306
1503.8	308.7	1574.9	312	1645.6	314.8	1687.3	316.8	1720	319.7
1804.8	321	1847.5	323.3	1898.9	326.3	1959.7	329.3	1973.3	330.2
2021.6	330.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.11	733.9	.1	1365.9	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
733.9	1365.9	150	177	210	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	305.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.110	0.100	0.045
W.S. Elev (ft)	305.53	Reach Len. (ft)	150.00	177.00	210.00
Crit W.S. (ft)		Flow Area (sq ft)	2561.20	6955.87	52.39

E.G. Slope (ft/ft)	0.003644	Area (sq ft)	2561.20	6955.87	52.39
Q Total (cfs)	38000.00	Flow (cfs)	7037.99	30833.72	128.29
Top Width (ft)	1082.42	Top Width (ft)	412.03	632.00	38.39
Vel Total (ft/s)	3.97	Avg. Vel. (ft/s)	2.75	4.43	2.45
Max Chl Dpth (ft)	13.03	Hydr. Depth (ft)	6.22	11.01	1.36
Conv. Total (cfs)	629503.1	Conv. (cfs)	116590.4	510787.4	2125.2
Length Wtd. (ft)	169.92	Wetted Per. (ft)	414.02	633.16	38.48
Min Ch El (ft)	292.50	Shear (lb/sq ft)	1.41	2.50	0.31
Alpha	1.10	Stream Power (lb/ft s)	3.87	11.08	0.76
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	515.25	1058.47	14.22
C & E Loss (ft)	0.00	Cum SA (acres)	82.67	88.57	4.32

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	307.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.110	0.100	
W.S. Elev (ft)	306.66	Reach Len. (ft)	150.00	177.00	210.00
Crit W.S. (ft)		Flow Area (sq ft)	43.97	7418.25	
E.G. Slope (ft/ft)	0.004250	Area (sq ft)	43.97	7418.25	
Q Total (cfs)	38000.00	Flow (cfs)	78.63	37921.37	
Top Width (ft)	605.00	Top Width (ft)	3.90	601.10	
Vel Total (ft/s)	5.09	Avg. Vel. (ft/s)	1.79	5.11	
Max Chl Dpth (ft)	14.16	Hydr. Depth (ft)	11.27	12.34	
Conv. Total (cfs)	582926.8	Conv. (cfs)	1206.2	581720.6	
Length Wtd. (ft)	176.97	Wetted Per. (ft)	15.19	611.89	
Min Ch El (ft)	292.50	Shear (lb/sq ft)	0.77	3.22	
Alpha	1.01	Stream Power (lb/ft s)	1.37	16.44	
Frctn Loss (ft)	0.68	Cum Volume (acre-ft)	360.34	1082.25	0.94
C & E Loss (ft)	0.03	Cum SA (acres)	37.32	81.27	0.24

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 244

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	333.7	112.5	332.9	205.8	325.1	337.4	318.3	476.3	315.9
545.2	313.1	602.4	326.7	710.5	328.1	857.3	327.9	896.3	309.9
960.7	307.6	995.7	300.3	1057.8	300.4	1138.4	300.3	1237.7	300.5
1331.6	300.4	1412.7	298.3	1496.6	296.8	1538.3	296	1563.3	293.5
1610.2	294.6	1726.3	293.3	1859.5	293.1	1881.3	292.2	1912.8	293.1
1989.5	294.9	2038.7	307.8	2130.6	307.6	2162.9	307.7	2178.6	312.8
2260.9	311.6	2281.9	307.1	2290.6	307.1	2297.1	303.9	2393.9	308.1

2498.4 312.5

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1538.3	.065	2038.7	.1

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1538.3	2038.7	95	95	.3	.5

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	305.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.045	0.065	0.100
W.S. Elev (ft)	305.07	Reach Len. (ft)	5.00	5.00	5.00
Crit W.S. (ft)	299.65	Flow Area (sq ft)	3080.25	5353.73	17.07
E.G. Slope (ft/ft)	0.001720	Area (sq ft)	3080.25	5353.73	17.07
Q Total (cfs)	38000.00	Flow (cfs)	13050.93	24941.77	7.30
Top Width (ft)	1084.70	Top Width (ft)	565.46	489.98	29.26
Vel Total (ft/s)	4.50	Avg. Vel. (ft/s)	4.24	4.66	0.43
Max Chl Dpth (ft)	12.87	Hydr. Depth (ft)	5.45	10.93	0.58
Conv. Total (cfs)	916273.9	Conv. (cfs)	314690.2	601407.8	176.0
Length Wtd. (ft)	5.00	Wetted Per. (ft)	566.00	491.48	29.56
Min Ch El (ft)	292.20	Shear (lb/sq ft)	0.58	1.17	0.06
Alpha	1.01	Stream Power (lb/ft s)	2.48	5.45	0.03
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	505.54	1033.46	14.05
C & E Loss (ft)	0.01	Cum SA (acres)	80.99	86.29	4.16

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	306.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.71	Wt. n-Val.		0.065	
W.S. Elev (ft)	305.65	Reach Len. (ft)	5.00	5.00	5.00
Crit W.S. (ft)	299.64	Flow Area (sq ft)		5639.67	
E.G. Slope (ft/ft)	0.003466	Area (sq ft)		5639.67	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	492.20	Top Width (ft)		492.20	
Vel Total (ft/s)	6.74	Avg. Vel. (ft/s)		6.74	
Max Chl Dpth (ft)	13.45	Hydr. Depth (ft)		11.46	
Conv. Total (cfs)	645475.3	Conv. (cfs)		645475.3	
Length Wtd. (ft)	5.00	Wetted Per. (ft)		503.43	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.42	
Alpha	1.00	Stream Power (lb/ft s)		16.33	
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	360.26	1055.72	0.94
C & E Loss (ft)	0.05	Cum SA (acres)	37.31	79.05	0.24

BRIDGE

RIVER: RIVER-1
REACH: Reach-1 RS: 243

INPUT
Description: Bridge #1
Distance from Upstream XS = 0
Deck/Roadway Width = 95
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 22

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
1538.3	315	311.5	1618.3	315	311.5	1618.3	315	0
1625.3	315	0	1625.3	315	311.5	1701.7	315	311.5
1701.7	315	0	1708.7	315	0	1708.7	315	311.5
1785	315	311.5	1785	315	0	1792	315	0
1792	315	311.5	1868.3	315	311.5	1868.3	315	0
1875.3	315	0	1875.3	315	311.5	1951.7	315	311.5
1951.7	315	0	1958.7	315	0	1958.7	315	311.5
2038.7	315	311.5						

Upstream Bridge Cross Section Data
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	333.7	112.5	332.9	205.8	325.1	337.4	318.3	476.3	315.9
545.2	313.1	602.4	326.7	710.5	328.1	857.3	327.9	896.3	309.9
960.7	307.6	995.7	300.3	1057.8	300.4	1138.4	300.3	1237.7	300.5
1331.6	300.4	1412.7	298.3	1496.6	296.8	1538.3	296	1563.3	293.5
1610.2	294.6	1726.3	293.3	1859.5	293.1	1881.3	292.2	1912.8	293.1
1989.5	294.9	2038.7	307.8	2130.6	307.6	2162.9	307.7	2178.6	312.8
2260.9	311.6	2281.9	307.1	2290.6	307.1	2297.1	303.9	2393.9	308.1
2498.4	312.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1538.3	.065	2038.7	.1

Bank Sta: Left	Right	Coeff Contr.	Expan.
1538.3	2038.7	.3	.5

Downstream Deck/Roadway Coordinates
num= 22

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
1477.7	315	311.5	1557	315	311.5	1557	315	0
1564	315	0	1564	315	311.5	1640.4	315	311.5
1640.4	315	0	1647.4	315	0	1647.4	315	311.5
1723.7	315	311.5	1723.7	315	0	1730.7	315	0
1730.7	315	311.5	1807	315	311.5	1807	315	0
1814	315	0	1814	315	311.5	1890.4	315	311.5
1890.4	315	0	1897.4	315	0	1897.4	315	311.5
1977.2	315	311.5						

Downstream Bridge Cross Section Data

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.3	50	325.6	125.3	327.8	167.9	328	223.5	320.9
265.9	317.6	374.7	313.7	478.1	316.2	644.2	320.7	741.1	321.6
757.2	329.1	771.6	328.4	789.8	321.9	881.9	321.3	1023.6	317.3
1127.3	313.9	1268.7	310.6	1384.5	311.6	1444.5	309.6	1477.7	309.6
1496.5	298.9	1529.5	292.9	1544.4	293.1	1624.2	293.8	1694.9	294
1762.9	292.5	1804.8	293	1829.1	291.7	1863.2	292.1	1921.8	294.1
1977.2	311.6	2102.5	312.9	2169.8	309.6	2266.2	313	2378.2	316.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1477.7	.065	1977.2	.1

Bank Sta: Left	Right	Coeff Contr.	Expan.
1477.7	1977.2	.3	.5

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins = 315
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Energy

High Flow Method
Energy Only

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #PF 1

			Inside BR US	Inside BR DS
E.G. US. (ft)	305.38	Element		
W.S. US. (ft)	305.07	E.G. Elev (ft)	305.36	304.67
Q Total (cfs)	38000.00	W.S. Elev (ft)	305.01	303.28
Q Bridge (cfs)	23082.87	Crit W.S. (ft)	299.94	300.01
Q Weir (cfs)		Max Chl Dpth (ft)	12.81	11.58
Weir Sta Lft (ft)		Vel Total (ft/s)	4.76	9.46
Weir Sta Rgt (ft)		Flow Area (sq ft)	7989.41	4016.41
Weir Submerg		Froude # Chl	0.25	0.54
Weir Max Depth (ft)		Specif Force (cu ft)	42138.02	30999.80

Min El Weir Flow (ft)	309.61	Hydr Depth (ft)	7.63	9.40
Min El Prs (ft)	311.50	W.P. Total (ft)	1173.40	530.58
Delta EG (ft)	0.87	Conv. Total (cfs)	780151.6	353978.3
Delta WS (ft)	1.72	Top Width (ft)	1047.78	427.05
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.38	0.04
BR Open Vel (ft/s)	5.75	C & E Loss (ft)	0.31	0.12
BR Sluice Coef		Shear Total (lb/sq ft)	1.01	5.45
BR Sel Method	Energy only	Power Total (lb/ft s)	4.80	51.53

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

BRIDGE OUTPUT Profile #PF 2

			Inside BR US	Inside BR DS
E.G. US. (ft)	306.35	Element		
W.S. US. (ft)	305.65	E.G. Elev (ft)	306.29	305.66
Q Total (cfs)	38000.00	W.S. Elev (ft)	305.43	304.59
Q Bridge (cfs)	38000.00	Crit W.S. (ft)	299.99	300.00
Q Weir (cfs)		Max Chl Dpth (ft)	13.23	12.89
Weir Sta Lft (ft)		Vel Total (ft/s)	7.43	8.30
Weir Sta Rgt (ft)		Flow Area (sq ft)	5117.30	4579.11
Weir Submerg		Froude # Chl	0.39	0.45
Weir Max Depth (ft)		Specif Force (cu ft)	38516.42	35246.21
Min El Weir Flow (ft)	311.61	Hydr Depth (ft)	11.21	10.56
Min El Prs (ft)	311.50	W.P. Total (ft)	576.41	550.65
Delta EG (ft)	0.81	Conv. Total (cfs)	501566.7	429669.7
Delta WS (ft)	1.01	Top Width (ft)	456.36	433.49
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.57	0.03
BR Open Vel (ft/s)	8.30	C & E Loss (ft)	0.06	0.09
BR Sluice Coef		Shear Total (lb/sq ft)	3.18	4.06
BR Sel Method	Energy only	Power Total (lb/ft s)	23.62	33.70

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 242

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.3	50	325.6	125.3	327.8	167.9	328	223.5	320.9
265.9	317.6	374.7	313.7	478.1	316.2	644.2	320.7	741.1	321.6
757.2	329.1	771.6	328.4	789.8	321.9	881.9	321.3	1023.6	317.3
1127.3	313.9	1268.7	310.6	1384.5	311.6	1444.5	309.6	1477.7	309.6
1496.5	298.9	1529.5	292.9	1544.4	293.1	1624.2	293.8	1694.9	294
1762.9	292.5	1804.8	293	1829.1	291.7	1863.2	292.1	1921.8	294.1

1977.2	311.6	2102.5	312.9	2169.8	309.6	2266.2	313	2378.2	316.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1477.7	.065	1977.2	.1

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1477.7	1977.2	270	224	165	.3	.5

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	304.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.16	Wt. n-Val.		0.065	
W.S. Elev (ft)	303.35	Reach Len. (ft)	270.00	224.00	165.00
Crit W.S. (ft)		Flow Area (sq ft)		4400.59	
E.G. Slope (ft/ft)	0.007141	Area (sq ft)		4400.59	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	462.40	Top Width (ft)		462.40	
Vel Total (ft/s)	8.64	Avg. Vel. (ft/s)		8.64	
Max Chl Dpth (ft)	11.65	Hydr. Depth (ft)		9.52	
Conv. Total (cfs)	449674.0	Conv. (cfs)		449674.0	
Length Wtd. (ft)	236.52	Wetted Per. (ft)		465.64	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		4.21	
Alpha	1.00	Stream Power (lb/ft s)		36.38	
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	502.21	1023.67	14.03
C & E Loss (ft)	0.38	Cum SA (acres)	80.37	85.32	4.13

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	305.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.		0.065	
W.S. Elev (ft)	304.64	Reach Len. (ft)	270.00	224.00	165.00
Crit W.S. (ft)		Flow Area (sq ft)		5002.65	
E.G. Slope (ft/ft)	0.004750	Area (sq ft)		5002.65	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	468.77	Top Width (ft)		468.77	
Vel Total (ft/s)	7.60	Avg. Vel. (ft/s)		7.60	
Max Chl Dpth (ft)	12.94	Hydr. Depth (ft)		10.67	
Conv. Total (cfs)	551378.5	Conv. (cfs)		551378.5	
Length Wtd. (ft)	232.25	Wetted Per. (ft)		472.55	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.14	
Alpha	1.00	Stream Power (lb/ft s)		23.84	
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	360.26	1045.09	0.94
C & E Loss (ft)	0.11	Cum SA (acres)	37.31	78.08	0.24

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 239

INPUT
Description:
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.7	9.7	325.9	33.3	313.3	58.7	302.7	75.9	299.6
146.3	298.8	184.4	296.4	292.8	295.9	340.1	296.4	359	298.6
480.3	298.3	577.6	297.1	628.2	296.4	690.3	295.3	723.4	296.7
773.8	296.3	794.2	299.6	807.3	295.7	815.5	293.2	884.9	292.7
929.7	290.7	952.3	291.8	972.5	294.4	1010.8	293.1	1033	292.6
1056.6	294.4	1097.2	292.9	1121.5	293.9	1156.1	296.8	1194.9	303
1220.8	304.6	1253	306.4	1284.9	308.5	1349.1	311.2	1436.2	314

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	794.2	.065	1194.9	.1

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
794.2	1194.9	515	413	385	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	303.18	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.40	Wt. n-Val.	0.045	0.065		
W.S. Elev (ft)	302.79	Reach Len. (ft)	515.00	413.00	385.00	
Crit W.S. (ft)		Flow Area (sq ft)	4009.35	3526.02		
E.G. Slope (ft/ft)	0.002547	Area (sq ft)	4009.35	3526.02		
Q Total (cfs)	38000.00	Flow (cfs)	20676.92	17323.08		
Top Width (ft)	1135.08	Top Width (ft)	735.71	399.37		
Vel Total (ft/s)	5.04	Avg. Vel. (ft/s)	5.16	4.91		
Max Chl Dpth (ft)	12.09	Hydr. Depth (ft)	5.45	8.83		
Conv. Total (cfs)	752909.3	Conv. (cfs)	409680.1	343229.1		
Length Wtd. (ft)	463.65	Wetted Per. (ft)	736.53	401.29		
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.87	1.40		
Alpha	1.00	Stream Power (lb/ft s)	4.46	6.87		
Frctn Loss (ft)	1.13	Cum Volume (acre-ft)	489.79	1003.29	14.03	
C & E Loss (ft)	0.02	Cum SA (acres)	78.09	83.11	4.13	

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.49	Element			
Vel Head (ft)	0.67	Wt. n-Val.	0.045	0.065	
W.S. Elev (ft)	303.82	Reach Len. (ft)	515.00	413.00	385.00
Crit W.S. (ft)		Flow Area (sq ft)	1906.16	3933.82	
E.G. Slope (ft/ft)	0.003476	Area (sq ft)	1906.16	3933.82	
Q Total (cfs)	38000.00	Flow (cfs)	13634.33	24365.67	
Top Width (ft)	660.00	Top Width (ft)	264.20	395.80	
Vel Total (ft/s)	6.51	Avg. Vel. (ft/s)	7.15	6.19	
Max Chl Dpth (ft)	13.12	Hydr. Depth (ft)	7.21	9.94	
Conv. Total (cfs)	644556.0	Conv. (cfs)	231265.5	413290.5	
Length Wtd. (ft)	446.19	Wetted Per. (ft)	270.65	399.28	
Min Ch El (ft)	290.70	Shear (lb/sq ft)	1.53	2.14	
Alpha	1.01	Stream Power (lb/ft s)	10.93	13.24	
Frctn Loss (ft)	1.41	Cum Volume (acre-ft)	354.35	1022.12	0.94
C & E Loss (ft)	0.04	Cum SA (acres)	36.49	75.85	0.24

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate
the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 230

INPUT
Description:
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.6	98.6	315.6	248.5	310.7	349.8	307.7	453.1	304.4
481.5	301.8	508.2	297.2	514.3	295	561.5	296.6	572.6	298.3
589.3	299.6	598.8	296.9	661.1	296	732	296	803	298
895.6	298.2	987.5	298.8	1007.2	297.5	1034.2	294.6	1049	292.3
1074.8	293.2	1177.3	294.1	1277.7	293.5	1390.6	293.6	1477.5	293.8
1497.2	290.2	1554.2	289.8	1569.5	290.4	1577.6	291.8	1624.4	291.3
1642.8	294.6	1680.2	295.4	1700.4	299.8	1740.6	300.1	1766.4	303.7
1824.3	304.8	1894	306.5	1966.2	310.4	2031.8	312		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1177.3	.065	1700.4	.1

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1177.3	1700.4	430	487	460	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	302.03	Element			
Vel Head (ft)	0.34	Wt. n-Val.	0.045	0.065	0.100

W.S. Elev (ft)	301.69	Reach Len. (ft)	430.00	487.00	460.00
Crit W.S. (ft)		Flow Area (sq ft)	3585.08	4495.36	79.14
E.G. Slope (ft/ft)	0.002345	Area (sq ft)	3585.08	4495.36	79.14
Q Total (cfs)	38000.00	Flow (cfs)	17080.65	20843.75	75.60
Top Width (ft)	1269.89	Top Width (ft)	695.18	523.10	51.61
Vel Total (ft/s)	4.66	Avg. Vel. (ft/s)	4.76	4.64	0.96
Max Chl Dpth (ft)	11.89	Hydr. Depth (ft)	5.16	8.59	1.53
Conv. Total (cfs)	784792.4	Conv. (cfs)	352756.9	430474.1	1561.4
Length Wtd. (ft)	457.01	Wetted Per. (ft)	696.96	524.34	51.72
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.75	1.25	0.22
Alpha	1.01	Stream Power (lb/ft s)	3.59	5.82	0.21
Frctn Loss (ft)	0.87	Cum Volume (acre-ft)	444.89	965.26	13.68
C & E Loss (ft)	0.03	Cum SA (acres)	69.63	78.73	3.90

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	303.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.045	0.065	0.100
W.S. Elev (ft)	302.49	Reach Len. (ft)	430.00	487.00	460.00
Crit W.S. (ft)		Flow Area (sq ft)	1597.49	4913.26	25.49
E.G. Slope (ft/ft)	0.002896	Area (sq ft)	1597.49	4913.26	25.49
Q Total (cfs)	38000.00	Flow (cfs)	11103.86	26862.86	33.28
Top Width (ft)	735.00	Top Width (ft)	202.30	523.10	9.60
Vel Total (ft/s)	5.81	Avg. Vel. (ft/s)	6.95	5.47	1.31
Max Chl Dpth (ft)	12.69	Hydr. Depth (ft)	7.90	9.39	2.66
Conv. Total (cfs)	706188.0	Conv. (cfs)	206353.0	499216.6	618.5
Length Wtd. (ft)	462.74	Wetted Per. (ft)	206.47	524.34	12.22
Min Ch El (ft)	289.80	Shear (lb/sq ft)	1.40	1.69	0.38
Alpha	1.04	Stream Power (lb/ft s)	9.72	9.26	0.49
Frctn Loss (ft)	0.92	Cum Volume (acre-ft)	333.64	980.17	0.83
C & E Loss (ft)	0.07	Cum SA (acres)	33.73	71.50	0.19

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 220

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	309.4	49.1	308.1	65.1	303.4	93.7	303.8	111.3	304.8
135.4	300.4	205.6	298.2	275.8	295.6	311.7	296.4	325.6	299.2
381.8	297.9	472.7	296.6	496	298.6	516.1	297.7	540.4	296
619.4	296	659.3	297	778.2	297.1	828	297	852.7	294.1
877.1	291.3	961.4	291.6	1078.8	291.5	1124.9	292.8	1185.2	292.4
1220.5	289.9	1321.4	289.8	1344.8	288.8	1386.7	290	1429	292.3
1467.4	292.1	1493	293.8	1567.7	295.4	1608	296.3	1658.7	299.8
1677.4	296.2	1703.2	295.9	1722.6	299.8	1749.7	301.5	1768.4	304.6

1845.6	308	1925.8	314.8	2049.1	319.7	2142.9	324

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1185.2	.065	1658.7	.1

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1185.2	1658.7	620	450	385	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	301.13	Element			
Vel Head (ft)	0.24	Wt. n-Val.	0.045	0.065	0.100
W.S. Elev (ft)	300.89	Reach Len. (ft)	620.00	450.00	385.00
Crit W.S. (ft)		Flow Area (sq ft)	5640.90	3977.05	247.49
E.G. Slope (ft/ft)	0.001589	Area (sq ft)	5640.90	3977.05	247.49
Q Total (cfs)	38000.00	Flow (cfs)	22726.61	14967.39	305.99
Top Width (ft)	1607.29	Top Width (ft)	1052.49	473.50	81.30
Vel Total (ft/s)	3.85	Avg. Vel. (ft/s)	4.03	3.76	1.24
Max Chl Dpth (ft)	12.09	Hydr. Depth (ft)	5.36	8.40	3.04
Conv. Total (cfs)	953237.3	Conv. (cfs)	570101.4	375459.9	7675.9
Length Wtd. (ft)	527.58	Wetted Per. (ft)	1053.46	473.89	82.07
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.53	0.83	0.30
Alpha	1.03	Stream Power (lb/ft s)	2.14	3.13	0.37
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	399.36	917.90	11.96
C & E Loss (ft)	0.03	Cum SA (acres)	61.01	73.16	3.20

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	302.05	Element			
Vel Head (ft)	0.32	Wt. n-Val.	0.045	0.065	
W.S. Elev (ft)	301.73	Reach Len. (ft)	620.00	450.00	385.00
Crit W.S. (ft)		Flow Area (sq ft)	4260.65	4247.01	
E.G. Slope (ft/ft)	0.001451	Area (sq ft)	4260.65	4247.01	
Q Total (cfs)	38000.00	Flow (cfs)	21226.55	16773.45	
Top Width (ft)	970.00	Top Width (ft)	535.20	434.80	
Vel Total (ft/s)	4.47	Avg. Vel. (ft/s)	4.98	3.95	
Max Chl Dpth (ft)	12.93	Hydr. Depth (ft)	7.96	9.77	
Conv. Total (cfs)	997567.6	Conv. (cfs)	557234.8	440332.8	
Length Wtd. (ft)	523.55	Wetted Per. (ft)	540.51	439.70	
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.71	0.87	
Alpha	1.04	Stream Power (lb/ft s)	3.56	3.46	
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	304.73	928.97	0.69
C & E Loss (ft)	0.05	Cum SA (acres)	30.09	66.14	0.14

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 210

INPUT
Description:
Station Elevation Data num= 48

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	318.8	35.3	319.5	62.2	317.3	79.9	311.7	108.8	309.5
166.1	306.3	312.9	303.1	457.4	301.6	607.8	299.8	747.8	298
839.7	298.6	875.4	298.1	891.9	294.4	974.9	294.4	1088	294.2
1105.7	297.8	1117.8	288.1	1133.4	285.5	1144.1	287.6	1217.9	287.8
1286.1	287.4	1313.3	296.5	1325.8	299.6	1355	300	1382.3	294.2
1414	292.7	1438.5	290	1526.3	289.8	1571.4	289.3	1623.5	288.5
1664.4	288.5	1686.8	290.5	1834.5	289.1	1958.5	288.3	2066.4	288.2
2086.4	294.5	2128.6	294.7	2157.4	298.3	2185.1	302	2216	302.3
2229.2	305.2	2291.8	307.6	2356	308.8	2371.3	309.1	2391.3	315.3
2429.4	316.5	2472.3	315.4	2518	318.7				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1355	.045	2185.1	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1355	2185.1	450	350	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	300.72	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	300.58	Reach Len. (ft)	450.00	350.00	350.00
Crit W.S. (ft)		Flow Area (sq ft)	4508.40	8303.35	
E.G. Slope (ft/ft)	0.000409	Area (sq ft)	4508.40	8303.35	
Q Total (cfs)	38000.00	Flow (cfs)	12073.34	25926.66	
Top Width (ft)	1631.91	Top Width (ft)	812.43	819.47	
Vel Total (ft/s)	2.97	Avg. Vel. (ft/s)	2.68	3.12	
Max Chl Dpth (ft)	15.08	Hydr. Depth (ft)	5.55	10.13	
Conv. Total (cfs)	1878276.0	Conv. (cfs)	596764.6	1281511.0	
Length Wtd. (ft)	377.53	Wetted Per. (ft)	818.92	821.72	
Min Ch El (ft)	288.20	Shear (lb/sq ft)	0.14	0.26	
Alpha	1.02	Stream Power (lb/ft s)	0.38	0.81	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	327.13	854.47	10.86
C & E Loss (ft)	0.02	Cum SA (acres)	47.74	66.48	2.84

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	301.52	Reach Len. (ft)	450.00	350.00	350.00
Crit W.S. (ft)		Flow Area (sq ft)	3264.57	8551.58	
E.G. Slope (ft/ft)	0.000331	Area (sq ft)	3264.57	8551.58	
Q Total (cfs)	38000.00	Flow (cfs)	11652.82	26347.18	
Top Width (ft)	1040.00	Top Width (ft)	315.00	725.00	
Vel Total (ft/s)	3.22	Avg. Vel. (ft/s)	3.57	3.08	
Max Chl Dpth (ft)	16.02	Hydr. Depth (ft)	10.36	11.80	
Conv. Total (cfs)	2090015.0	Conv. (cfs)	640909.6	1449106.0	
Length Wtd. (ft)	371.59	Wetted Per. (ft)	328.29	735.60	
Min Ch El (ft)	288.20	Shear (lb/sq ft)	0.21	0.24	
Alpha	1.01	Stream Power (lb/ft s)	0.73	0.74	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	251.17	862.86	0.69
C & E Loss (ft)	0.02	Cum SA (acres)	24.04	60.15	0.14

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 200

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.9	56.2	313.9	122.4	312.6	216.7	310.1	324.4	307.6
427.5	306.6	520.3	304.6	585	302.4	604.2	295.3	618.3	292.5
669.2	293.4	728.3	293.1	755.5	296.2	775.6	295.5	788.9	293.1
841.5	292.7	907.7	293.1	935	303.1	942.6	301.8	963.5	287
994.4	286	1011.2	285.3	1037.4	286	1056.7	296.9	1085.6	286.6
1164.6	287	1223.8	288.7	1403.9	288.1	1550.4	288.5	1765.6	289.1
1904.5	288.4	1911.4	286.6	2019.7	286.6	2043.4	293.5	2065.1	294.1
2092.4	298.4	2113.3	301.1	2137.8	300.5	2194.4	305.3	2283.5	312.4
2372.6	316.1	2429.6	318.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1056.7	.045	2113.3	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1056.7	2113.3	630	600	595	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	300.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.035	0.045	0.000
W.S. Elev (ft)	300.51	Reach Len. (ft)	630.00	600.00	595.00
Crit W.S. (ft)		Flow Area (sq ft)	3635.76	12336.17	0.00
E.G. Slope (ft/ft)	0.000193	Area (sq ft)	3635.76	12336.17	0.00

Q Total (cfs)	38000.00	Flow (cfs)	8846.15	29153.85	0.00
Top Width (ft)	1502.91	Top Width (ft)	450.12	1052.06	0.72
Vel Total (ft/s)	2.38	Avg. Vel. (ft/s)	2.43	2.36	0.02
Max Chl Dpth (ft)	15.21	Hydr. Depth (ft)	8.08	11.73	0.01
Conv. Total (cfs)	2734307.0	Conv. (cfs)	636529.0	2097778.0	0.0
Length Wtd. (ft)	605.83	Wetted Per. (ft)	460.27	1055.57	0.73
Min Ch El (ft)	286.60	Shear (lb/sq ft)	0.10	0.14	
Alpha	1.00	Stream Power (lb/ft s)	0.23	0.33	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	285.06	771.55	10.86
C & E Loss (ft)	0.00	Cum SA (acres)	41.22	58.96	2.84

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	301.46	Reach Len. (ft)	630.00	600.00	595.00
Crit W.S. (ft)		Flow Area (sq ft)	1483.38	12798.59	
E.G. Slope (ft/ft)	0.000202	Area (sq ft)	1483.38	12798.59	
Q Total (cfs)	38000.00	Flow (cfs)	4758.10	33241.91	
Top Width (ft)	1081.93	Top Width (ft)	113.63	968.30	
Vel Total (ft/s)	2.66	Avg. Vel. (ft/s)	3.21	2.60	
Max Chl Dpth (ft)	16.16	Hydr. Depth (ft)	13.05	13.22	
Conv. Total (cfs)	2672116.0	Conv. (cfs)	334583.8	2337532.0	
Length Wtd. (ft)	604.27	Wetted Per. (ft)	121.13	983.88	
Min Ch El (ft)	286.60	Shear (lb/sq ft)	0.15	0.16	
Alpha	1.02	Stream Power (lb/ft s)	0.50	0.43	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	226.65	777.09	0.69
C & E Loss (ft)	0.01	Cum SA (acres)	21.83	53.35	0.14

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 190

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.7	114.9	315.9	265.1	313.5	380	310.5	503.8	306.9
560.7	305.9	573.9	297.9	604.7	296.4	611.9	300.3	642	299.6
649.6	296.2	691.2	294.1	739.3	288.7	751.7	284.7	767.7	283.3
780.2	284.8	851.5	285.7	881.5	298.1	972.8	297.3	1012.4	286.6
1531.9	286.6	1542.3	288.3	1573.5	288.3	1606	286.6	1999.6	286.6
2012.1	292.2	2031.7	293.7	2041.3	297.1	2060.1	296.9	2075	301.2
2119	307.7	2152.3	309.7	2219.6	308.4	2266.8	309.5	2354.5	313.4
2439.9	317.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	972.8	.045	2041.3	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
972.8	2041.3	785	550	550 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	300.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	300.42	Reach Len. (ft)	785.00	550.00	550.00
Crit W.S. (ft)		Flow Area (sq ft)	3030.57	14222.13	85.79
E.G. Slope (ft/ft)	0.000148	Area (sq ft)	3030.57	14222.13	85.79
Q Total (cfs)	38000.00	Flow (cfs)	5939.52	31974.19	86.29
Top Width (ft)	1502.56	Top Width (ft)	403.06	1068.50	31.00
Vel Total (ft/s)	2.19	Avg. Vel. (ft/s)	1.96	2.25	1.01
Max Chl Dpth (ft)	17.12	Hydr. Depth (ft)	7.52	13.31	2.77
Conv. Total (cfs)	3127954.0	Conv. (cfs)	488909.2	2631942.0	7102.7
Length Wtd. (ft)	633.49	Wetted Per. (ft)	409.13	1071.94	31.50
Min Ch El (ft)	286.60	Shear (lb/sq ft)	0.07	0.12	0.03
Alpha	1.01	Stream Power (lb/ft s)	0.13	0.27	0.03
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	236.85	588.64	10.28
C & E Loss (ft)	0.00	Cum SA (acres)	35.05	44.36	2.62

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	301.40	Reach Len. (ft)	785.00	550.00	550.00
Crit W.S. (ft)		Flow Area (sq ft)	2775.43	14899.80	
E.G. Slope (ft/ft)	0.000122	Area (sq ft)	2775.43	14899.80	
Q Total (cfs)	38000.00	Flow (cfs)	6060.10	31939.90	
Top Width (ft)	1290.00	Top Width (ft)	262.80	1027.20	
Vel Total (ft/s)	2.15	Avg. Vel. (ft/s)	2.18	2.14	
Max Chl Dpth (ft)	18.10	Hydr. Depth (ft)	10.56	14.51	
Conv. Total (cfs)	3445216.0	Conv. (cfs)	549430.6	2895785.0	
Length Wtd. (ft)	635.07	Wetted Per. (ft)	275.64	1043.46	
Min Ch El (ft)	286.60	Shear (lb/sq ft)	0.08	0.11	
Alpha	1.00	Stream Power (lb/ft s)	0.17	0.23	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	195.85	586.33	0.69
C & E Loss (ft)	0.00	Cum SA (acres)	19.11	39.61	0.14

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 180

INPUT

Description:

Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.4	82	310.6	99.6	307.3	142.8	306.6	157.2	302.1
242.3	300.4	259.9	305.8	276	299.7	323.5	299.1	351.1	302
388.3	297.2	423.5	297.4	442.7	304.5	564.7	301.7	654.7	299.8
711.5	296.4	741.5	298.8	750.3	295.4	798.3	295.1	828.3	298.4
853.1	297.8	869.9	286.2	880.3	284.9	896.2	284	915	284.9
955	287.6	1011.4	291.1	1079.8	290.4	1155.4	292.9	1259.4	292
1362.2	291.2	1499.3	290.6	1566.5	289.5	1593.3	287.4	1960.4	287.4
2004.8	289	2020.4	289.3	2049.6	295.7	2102	300.3	2127.2	301.2
2188.8	307.6	2265.2	314.5	2333.6	319.7	2399.9	323.7	2456.7	326.1
2538.7	325								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1566.5	.045	2049.6	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1566.5	2049.6	405	300	255	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	300.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	300.25	Reach Len. (ft)	405.00	300.00	255.00
Crit W.S. (ft)		Flow Area (sq ft)	7817.29	5970.10	118.14
E.G. Slope (ft/ft)	0.000255	Area (sq ft)	7817.29	5970.10	118.14
Q Total (cfs)	38000.00	Flow (cfs)	21060.41	16801.36	138.23
Top Width (ft)	1594.85	Top Width (ft)	1059.87	483.10	51.88
Vel Total (ft/s)	2.73	Avg. Vel. (ft/s)	2.69	2.81	1.17
Max Chl Dpth (ft)	16.25	Hydr. Depth (ft)	7.38	12.36	2.28
Conv. Total (cfs)	2380582.0	Conv. (cfs)	1319369.0	1052553.0	8659.5
Length Wtd. (ft)	354.77	Wetted Per. (ft)	1065.77	483.91	52.08
Min Ch El (ft)	287.40	Shear (lb/sq ft)	0.12	0.20	0.04
Alpha	1.01	Stream Power (lb/ft s)	0.31	0.55	0.04
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	139.11	461.16	8.99
C & E Loss (ft)	0.00	Cum SA (acres)	21.86	34.56	2.10

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	301.26	Reach Len. (ft)	405.00	300.00	255.00
Crit W.S. (ft)		Flow Area (sq ft)	7611.29	6454.94	75.18
E.G. Slope (ft/ft)	0.000188	Area (sq ft)	7611.29	6454.94	75.18
Q Total (cfs)	38000.00	Flow (cfs)	21452.13	16440.84	107.03
Top Width (ft)	1200.00	Top Width (ft)	701.50	483.10	15.40
Vel Total (ft/s)	2.69	Avg. Vel. (ft/s)	2.82	2.55	1.42

Max Chl Dpth (ft)	17.26	Hydr. Depth (ft)	10.85	13.36	4.88
Conv. Total (cfs)	2770902.0	Conv. (cfs)	1564257.0	1198841.0	7804.2
Length Wtd. (ft)	350.90	Wetted Per. (ft)	714.62	483.91	19.67
Min Ch El (ft)	287.40	Shear (lb/sq ft)	0.13	0.16	0.04
Alpha	1.01	Stream Power (lb/ft s)	0.35	0.40	0.06
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	102.26	451.51	0.22
C & E Loss (ft)	0.01	Cum SA (acres)	10.42	30.07	0.05

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 170

INPUT
Description:
Station Elevation Data num= 38

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	308.5	111.3	308.4	202.9	306.4	219.1	304.9	242.6	305.5
343.9	304.3	471.7	301.1	600.6	299	723.4	296.7	831.4	293.7
905.4	291.6	988.8	290.2	1049.7	289	1081.5	284.4	1085.2	285.6
1109.7	285.8	1124	292	1187.7	292.3	1269.5	294.1	1379.6	292.5
1449	292.3	1503.8	294.4	1582.1	293.7	1653	291.4	1761.7	289.8
1784	287.4	1939.1	286	1951.8	284.5	1980.3	284.4	1987.3	286.4
2053.8	288.5	2073.7	292.1	2158.8	297.3	2259.3	305.2	2329.5	311.4
2402.7	317.2	2450.7	321.2	2520.8	321.5				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1503.8	.045	2158.8	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1503.8	2158.8	390	350	350	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	300.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.035	0.045	0.035
W.S. Elev (ft)	300.14	Reach Len. (ft)	390.00	350.00	350.00
Crit W.S. (ft)		Flow Area (sq ft)	6554.26	6633.25	51.15
E.G. Slope (ft/ft)	0.000355	Area (sq ft)	6554.26	6633.25	51.15
Q Total (cfs)	38000.00	Flow (cfs)	18663.92	19284.57	51.51
Top Width (ft)	1664.00	Top Width (ft)	972.92	655.00	36.08
Vel Total (ft/s)	2.87	Avg. Vel. (ft/s)	2.85	2.91	1.01
Max Chl Dpth (ft)	15.74	Hydr. Depth (ft)	6.74	10.13	1.42
Conv. Total (cfs)	2018056.0	Conv. (cfs)	991179.9	1024141.0	2735.4
Length Wtd. (ft)	363.89	Wetted Per. (ft)	974.93	656.07	36.19
Min Ch El (ft)	284.40	Shear (lb/sq ft)	0.15	0.22	0.03

Alpha	1.00	Stream Power (lb/ft s)	0.42	0.65	0.03
Frctn Loss (ft)	0.14	Cum Volume (acre-ft)	72.30	417.76	8.50
C & E Loss (ft)	0.01	Cum SA (acres)	12.41	30.65	1.84

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	301.09	Reach Len. (ft)	390.00	350.00	350.00
Crit W.S. (ft)		Flow Area (sq ft)	4284.52	6811.94	
E.G. Slope (ft/ft)	0.000386	Area (sq ft)	4284.52	6811.94	
Q Total (cfs)	38000.00	Flow (cfs)	15432.35	22567.65	
Top Width (ft)	1045.00	Top Width (ft)	463.80	581.20	
Vel Total (ft/s)	3.42	Avg. Vel. (ft/s)	3.60	3.31	
Max Chl Dpth (ft)	16.69	Hydr. Depth (ft)	9.24	11.72	
Conv. Total (cfs)	1933830.0	Conv. (cfs)	785356.6	1148474.0	
Length Wtd. (ft)	362.25	Wetted Per. (ft)	477.58	590.43	
Min Ch El (ft)	284.40	Shear (lb/sq ft)	0.22	0.28	
Alpha	1.01	Stream Power (lb/ft s)	0.78	0.92	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	46.96	405.83	
C & E Loss (ft)	0.00	Cum SA (acres)	5.00	26.41	

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 160

INPUT
Description:
Station Elevation Data num= 51

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	306.2	102.8	305.1	125.3	305.7	183.5	305.7	206.3	302.8
313.8	301	401.9	300.3	472.5	301.1	491	304.5	529.1	309.7
551.6	295.5	569.2	289.7	576.5	282.7	593	281.7	601.9	282.5
627.8	285.5	660.1	286.1	688	295.6	707.6	300.1	727.4	299.8
762.1	294.1	788	292	804.4	290.1	863.4	289	916.6	289.5
1008.3	289.6	1112.3	289	1178.6	287.8	1199.4	286.2	1215.4	288.4
1276.5	287.8	1353.9	286	1379.3	283.7	1424.4	283.8	1431.4	288.8
1517.3	288.9	1550	289.9	1579	292.8	1605.7	302.8	1633.1	307.2
1664.6	310.3	1688.8	310.8	1695.8	308.8	1711.4	314.4	1721.6	311.4
1732.3	313.3	1741.3	310.9	1768.3	311.9	1809.7	311.1	1833.9	315.7
1896.1	317.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	727.4	.045	1605.7	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
727.4	1605.7	630	690	690	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	300.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	299.94	Reach Len. (ft)	630.00	690.00	690.00
Crit W.S. (ft)		Flow Area (sq ft)	1861.85	9463.78	
E.G. Slope (ft/ft)	0.000392	Area (sq ft)	1861.85	9463.78	
Q Total (cfs)	38000.00	Flow (cfs)	7725.36	30274.64	
Top Width (ft)	1042.43	Top Width (ft)	171.75	870.67	
Vel Total (ft/s)	3.36	Avg. Vel. (ft/s)	4.15	3.20	
Max Chl Dpth (ft)	18.24	Hydr. Depth (ft)	10.84	10.87	
Conv. Total (cfs)	1918692.0	Conv. (cfs)	390068.1	1528624.0	
Length Wtd. (ft)	681.95	Wetted Per. (ft)	179.10	874.75	
Min Ch El (ft)	283.70	Shear (lb/sq ft)	0.25	0.26	
Alpha	1.04	Stream Power (lb/ft s)	1.06	0.85	
Frctn Loss (ft)	0.46	Cum Volume (acre-ft)	34.62	353.09	8.29
C & E Loss (ft)	0.01	Cum SA (acres)	7.29	24.52	1.69

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.035	0.045	
W.S. Elev (ft)	300.92	Reach Len. (ft)	630.00	690.00	690.00
Crit W.S. (ft)		Flow Area (sq ft)	1860.73	8577.35	
E.G. Slope (ft/ft)	0.000419	Area (sq ft)	1860.73	8577.35	
Q Total (cfs)	38000.00	Flow (cfs)	7838.70	30161.30	
Top Width (ft)	865.00	Top Width (ft)	157.40	707.60	
Vel Total (ft/s)	3.64	Avg. Vel. (ft/s)	4.21	3.52	
Max Chl Dpth (ft)	19.22	Hydr. Depth (ft)	11.82	12.12	
Conv. Total (cfs)	1857284.0	Conv. (cfs)	383123.6	1474160.0	
Length Wtd. (ft)	683.08	Wetted Per. (ft)	174.22	722.34	
Min Ch El (ft)	283.70	Shear (lb/sq ft)	0.28	0.31	
Alpha	1.02	Stream Power (lb/ft s)	1.18	1.09	
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	19.45	344.00	
C & E Loss (ft)	0.01	Cum SA (acres)	2.22	21.23	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 150

INPUT
Description:
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	307.2	106.4	303.7	237.9	303	313.1	299	382.4	297.4
438.3	295.9	449.4	293.8	477.6	293.5	486.5	297.1	560.2	294.7
632.3	295.3	689.1	293.8	710.8	296.1	734.9	294.6	754	287.2
775.6	281.8	787.6	279	791.8	282.7	831.8	284	918.3	282.9
929	279.1	976.6	279.2	995	283.8	1074.8	282.9	1149.2	281.7
1191.1	282.2	1207.9	283.4	1231.9	301.6	1256.8	300.4	1277.9	298.9
1293.5	305.9	1338.3	317	1374.9	323.5	1394.4	326.8		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	734.9	.08	1231.9	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
734.9	1231.9	545	540	540	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	299.65	Element			
Vel Head (ft)	0.29	Wt. n-Val.	0.080	0.080	0.080
W.S. Elev (ft)	299.36	Reach Len. (ft)	545.00	540.00	540.00
Crit W.S. (ft)		Flow Area (sq ft)	1517.17	8016.26	1.76
E.G. Slope (ft/ft)	0.001426	Area (sq ft)	1517.17	8016.26	1.76
Q Total (cfs)	38000.00	Flow (cfs)	2466.67	35532.88	0.46
Top Width (ft)	930.28	Top Width (ft)	428.65	494.05	7.57
Vel Total (ft/s)	3.99	Avg. Vel. (ft/s)	1.63	4.43	0.26
Max Chl Dpth (ft)	20.36	Hydr. Depth (ft)	3.54	16.23	0.23
Conv. Total (cfs)	1006403.0	Conv. (cfs)	65327.9	941063.3	12.2
Length Wtd. (ft)	540.16	Wetted Per. (ft)	429.83	504.50	7.69
Min Ch El (ft)	279.00	Shear (lb/sq ft)	0.31	1.41	0.02
Alpha	1.17	Stream Power (lb/ft s)	0.51	6.27	0.01
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	10.19	214.65	8.28
C & E Loss (ft)	0.05	Cum SA (acres)	2.95	13.71	1.63

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	300.64	Element			
Vel Head (ft)	0.31	Wt. n-Val.	0.080	0.080	
W.S. Elev (ft)	300.32	Reach Len. (ft)	545.00	540.00	540.00
Crit W.S. (ft)		Flow Area (sq ft)	443.45	8165.23	
E.G. Slope (ft/ft)	0.001395	Area (sq ft)	443.45	8165.23	
Q Total (cfs)	38000.00	Flow (cfs)	920.47	37079.53	

Top Width (ft)	545.00	Top Width (ft)	79.90	465.10
Vel Total (ft/s)	4.41	Avg. Vel. (ft/s)	2.08	4.54
Max Chl Dpth (ft)	21.32	Hydr. Depth (ft)	5.55	17.56
Conv. Total (cfs)	1017263.0	Conv. (cfs)	24641.1	992621.9
Length Wtd. (ft)	540.06	Wetted Per. (ft)	85.70	487.64
Min Ch El (ft)	279.00	Shear (lb/sq ft)	0.45	1.46
Alpha	1.04	Stream Power (lb/ft s)	0.94	6.62
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	2.79	211.40
C & E Loss (ft)	0.06	Cum SA (acres)	0.50	11.94

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 140

INPUT
Description:
Station Elevation Data num= 24

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.4	53.3	315.7	99.3	315.3	151.1	313.8	203.6	310.3
245.9	305.2	275	297.5	305.9	288.8	322.6	284.1	345	280.2
382.8	279.4	416.3	282.7	468.1	281.6	498.6	277.8	506.4	275
511.7	274.7	556.1	274.8	580.1	283.6	604.1	293.8	627.8	292.7
646.5	290.7	661.5	305.8	685.5	317.6	733.6	333.9		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	275	.08	604.1	.08

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
275	604.1	550	552	550	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	298.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.78	Wt. n-Val.	0.080	0.080	0.080
W.S. Elev (ft)	297.63	Reach Len. (ft)	550.00	552.00	550.00
Crit W.S. (ft)		Flow Area (sq ft)	0.03	5210.18	238.75
E.G. Slope (ft/ft)	0.003828	Area (sq ft)	0.03	5210.18	238.75
Q Total (cfs)	38000.00	Flow (cfs)	0.01	37245.01	754.98
Top Width (ft)	378.89	Top Width (ft)	0.51	329.10	49.29
Vel Total (ft/s)	6.97	Avg. Vel. (ft/s)	0.19	7.15	3.16
Max Chl Dpth (ft)	22.93	Hydr. Depth (ft)	0.07	15.83	4.84

Conv. Total (cfs)	614166.4	Conv. (cfs)	0.1	601964.1	12202.2
Length Wtd. (ft)	551.94	Wetted Per. (ft)	0.52	335.84	52.31
Min Ch El (ft)	274.70	Shear (lb/sq ft)	0.02	3.71	1.09
Alpha	1.03	Stream Power (lb/ft s)	0.00	26.50	3.45
Frctn Loss (ft)	1.97	Cum Volume (acre-ft)	0.70	132.67	6.79
C & E Loss (ft)	0.02	Cum SA (acres)	0.26	8.61	1.28

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	299.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.		0.080	
W.S. Elev (ft)	298.55	Reach Len. (ft)	550.00	552.00	550.00
Crit W.S. (ft)		Flow Area (sq ft)		5076.12	
E.G. Slope (ft/ft)	0.003718	Area (sq ft)		5076.12	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	270.00	Top Width (ft)		270.00	
Vel Total (ft/s)	7.49	Avg. Vel. (ft/s)		7.49	
Max Chl Dpth (ft)	23.85	Hydr. Depth (ft)		18.80	
Conv. Total (cfs)	623195.4	Conv. (cfs)		623195.4	
Length Wtd. (ft)	552.00	Wetted Per. (ft)		298.71	
Min Ch El (ft)	274.70	Shear (lb/sq ft)		3.94	
Alpha	1.00	Stream Power (lb/ft s)		29.53	
Frctn Loss (ft)	2.05	Cum Volume (acre-ft)	0.01	129.32	
C & E Loss (ft)	0.00	Cum SA (acres)	0.00	7.39	

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 130

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.1	56	314.7	91.8	310.5	134.1	303.5	161.8	298.5
189.1	289.9	216.8	284.3	242.4	284.5	258	276.5	274.7	275.4
289.3	277.6	326.4	278.1	363.1	279.8	380.2	278	385.9	275.2
412.9	275.2	444.5	275.2	451.1	277.5	482.1	277.5	496	280.5
506.5	288.3	557.7	289.5	571.6	296.7	594.4	298.1	629	297
644.9	299.3	651.9	297.1	680.4	297.2	712.1	302.5	751.2	308.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0     .08   189.1     .08   506.5     .08

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         189.1   506.5              530     520     520             .1       .3
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	296.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.72	Wt. n-Val.	0.080	0.080	0.080
W.S. Elev (ft)	295.71	Reach Len. (ft)	530.00	520.00	520.00
Crit W.S. (ft)		Flow Area (sq ft)	53.60	5295.34	385.96
E.G. Slope (ft/ft)	0.003328	Area (sq ft)	53.60	5295.34	385.96
Q Total (cfs)	38000.00	Flow (cfs)	113.30	36526.77	1359.94
Top Width (ft)	399.04	Top Width (ft)	18.45	317.40	63.19
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)	2.11	6.90	3.52
Max Chl Dpth (ft)	20.51	Hydr. Depth (ft)	2.91	16.68	6.11
Conv. Total (cfs)	658745.2	Conv. (cfs)	1964.0	633206.1	23575.1
Length Wtd. (ft)	520.02	Wetted Per. (ft)	19.34	324.17	64.72
Min Ch El (ft)	275.20	Shear (lb/sq ft)	0.58	3.39	1.24
Alpha	1.05	Stream Power (lb/ft s)	1.22	23.41	4.37
Frctn Loss (ft)	3.34	Cum Volume (acre-ft)	0.36	66.10	2.84
C & E Loss (ft)	0.05	Cum SA (acres)	0.14	4.51	0.57

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	297.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.		0.080	
W.S. Elev (ft)	296.51	Reach Len. (ft)	530.00	520.00	520.00
Crit W.S. (ft)		Flow Area (sq ft)		5118.84	
E.G. Slope (ft/ft)	0.003714	Area (sq ft)		5118.84	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	275.00	Top Width (ft)		275.00	
Vel Total (ft/s)	7.42	Avg. Vel. (ft/s)		7.42	
Max Chl Dpth (ft)	21.31	Hydr. Depth (ft)		18.61	
Conv. Total (cfs)	623525.4	Conv. (cfs)		623525.4	
Length Wtd. (ft)	520.00	Wetted Per. (ft)		304.79	
Min Ch El (ft)	275.20	Shear (lb/sq ft)		3.89	
Alpha	1.00	Stream Power (lb/ft s)		28.91	
Frctn Loss (ft)	3.56	Cum Volume (acre-ft)	0.01	64.73	
C & E Loss (ft)	0.04	Cum SA (acres)	0.00	3.93	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 120

INPUT
Description:
Station Elevation Data num= 26

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320.3	26.2	316.2	51.5	310.4	75.1	299.4	96.6	290.2
116.2	284.3	141.4	280.7	165.5	277.9	201.3	275.7	228.8	275.7
276.2	275.7	291.9	277.1	319.1	276	337.4	275.8	348.8	276.9
366.4	276.3	396	282.1	419.2	286.9	446.6	292.4	470.6	297.5
488.8	298.9	510.5	299.8	550.5	302.4	574.1	302.5	604.7	305.8
646.5	309.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.125	96.6	.125	419.2	.125

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
96.6	419.2	55	52	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	293.04	Element			
Vel Head (ft)	1.19	Wt. n-Val.	0.125	0.125	0.125
W.S. Elev (ft)	291.85	Reach Len. (ft)	55.00	52.00	50.00
Crit W.S. (ft)		Flow Area (sq ft)	3.19	4318.37	61.11
E.G. Slope (ft/ft)	0.017261	Area (sq ft)	3.19	4318.37	61.11
Q Total (cfs)	38000.00	Flow (cfs)	4.15	37823.42	172.43
Top Width (ft)	351.14	Top Width (ft)	3.86	322.60	24.68
Vel Total (ft/s)	8.67	Avg. Vel. (ft/s)	1.30	8.76	2.82
Max Chl Dpth (ft)	16.15	Hydr. Depth (ft)	0.83	13.39	2.48
Conv. Total (cfs)	289231.0	Conv. (cfs)	31.6	287886.9	1312.4
Length Wtd. (ft)	52.00	Wetted Per. (ft)	4.20	325.16	25.17
Min Ch El (ft)	275.70	Shear (lb/sq ft)	0.82	14.31	2.62
Alpha	1.02	Stream Power (lb/ft s)	1.07	125.35	7.38
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	0.01	8.72	0.17
C & E Loss (ft)	0.08	Cum SA (acres)	0.01	0.69	0.05

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	293.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.25	Wt. n-Val.		0.125	
W.S. Elev (ft)	292.52	Reach Len. (ft)	55.00	52.00	50.00
Crit W.S. (ft)		Flow Area (sq ft)		4243.63	
E.G. Slope (ft/ft)	0.016566	Area (sq ft)		4243.63	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	280.00	Top Width (ft)		280.00	
Vel Total (ft/s)	8.95	Avg. Vel. (ft/s)		8.95	
Max Chl Dpth (ft)	16.82	Hydr. Depth (ft)		15.16	
Conv. Total (cfs)	295243.9	Conv. (cfs)		295243.9	
Length Wtd. (ft)	52.00	Wetted Per. (ft)		299.71	
Min Ch El (ft)	275.70	Shear (lb/sq ft)		14.64	
Alpha	1.00	Stream Power (lb/ft s)		131.12	
Frctn Loss (ft)	1.19	Cum Volume (acre-ft)	0.01	8.85	
C & E Loss (ft)	0.07	Cum SA (acres)	0.00	0.62	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 110

INPUT
Description:
Station Elevation Data num= 30

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	319.7	25.6	320.8	39.1	323.7	56.6	323.4	85.6	316.2
100.7	307.4	113.3	295.1	123.1	285.4	143	280	159.7	278.6
231.4	276.9	308.8	278.8	314.5	275	322.1	275	324.7	279.8
342.2	279.7	346.2	275.9	359.7	275.5	377.5	276.8	400.8	282.2
413.9	282.9	433.8	288.8	461.1	295.2	477.9	298.5	493.3	300.6
507.2	300.1	530.4	301.2	561.4	306.5	593.1	313.9	640.4	322.8

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.125	123.1	.125	433.8	.125

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
123.1	433.8	40	46	50	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	291.66	Element	Left OB	Channel	Right OB

Vel Head (ft)	1.99	Wt. n-Val.	0.125	0.125	0.125
W.S. Elev (ft)	289.67	Reach Len. (ft)	40.00	46.00	50.00
Crit W.S. (ft)		Flow Area (sq ft)	9.23	3355.41	1.63
E.G. Slope (ft/ft)	0.039252	Area (sq ft)	9.23	3355.41	1.63
Q Total (cfs)	38000.00	Flow (cfs)	28.71	37969.11	2.17
Top Width (ft)	318.75	Top Width (ft)	4.32	310.70	3.73
Vel Total (ft/s)	11.29	Avg. Vel. (ft/s)	3.11	11.32	1.33
Max Chl Dpth (ft)	14.67	Hydr. Depth (ft)	2.14	10.80	0.44
Conv. Total (cfs)	191802.9	Conv. (cfs)	144.9	191647.0	11.0
Length Wtd. (ft)	46.04	Wetted Per. (ft)	6.08	318.59	3.83
Min Ch El (ft)	275.00	Shear (lb/sq ft)	3.72	25.81	1.04
Alpha	1.00	Stream Power (lb/ft s)	11.58	292.04	1.39
Frctn Loss (ft)	0.93	Cum Volume (acre-ft)	0.00	4.14	0.14
C & E Loss (ft)	0.28	Cum SA (acres)	0.00	0.31	0.03

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	292.50	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.97	Wt. n-Val.	0.125	0.125	
W.S. Elev (ft)	290.54	Reach Len. (ft)	40.00	46.00	50.00
Crit W.S. (ft)		Flow Area (sq ft)	11.17	3373.43	
E.G. Slope (ft/ft)	0.033763	Area (sq ft)	11.17	3373.43	
Q Total (cfs)	38000.00	Flow (cfs)	35.25	37964.75	
Top Width (ft)	275.00	Top Width (ft)	3.10	271.90	
Vel Total (ft/s)	11.23	Avg. Vel. (ft/s)	3.16	11.25	
Max Chl Dpth (ft)	15.54	Hydr. Depth (ft)	3.60	12.41	
Conv. Total (cfs)	206806.6	Conv. (cfs)	191.8	206614.8	
Length Wtd. (ft)	46.00	Wetted Per. (ft)	6.43	288.45	
Min Ch El (ft)	275.00	Shear (lb/sq ft)	3.66	24.65	
Alpha	1.00	Stream Power (lb/ft s)	11.55	277.43	
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	0.01	4.30	
C & E Loss (ft)	0.29	Cum SA (acres)	0.00	0.29	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 100

INPUT
Description:
Station Elevation Data num= 37

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	295.1	23.7	306	46.8	313.4	64.4	314.5	90	307.3
108.4	301.6	121.5	288.5	136.9	277.2	155.2	272.6	164.1	269
207.5	269	215.5	269	222	272.6	231.8	271.6	242.7	272.1
251.8	274.8	266.4	273.1	293.7	274.1	314.1	274.5	327.8	272.5
356.1	272.1	368.3	272.1	376.9	275.6	395.2	278.5	400.1	281.8
412.7	281.3	424.2	282.6	439.1	289.2	456	289.5	474.7	300.2
493.4	300.8	508.2	300.9	524	301.7	542.8	305.7	567.5	310.4
592.9	317	636.9	326.1						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.125	121.5	.125	400.1	.125

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
121.5	400.1	0	0	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	290.44	Element			
Vel Head (ft)	1.04	Wt. n-Val.	0.125	0.125	0.125
W.S. Elev (ft)	289.40	Reach Len. (ft)			
Crit W.S. (ft)	281.35	Flow Area (sq ft)	0.40	4490.03	237.86
E.G. Slope (ft/ft)	0.012376	Area (sq ft)	0.40	4490.03	237.86
Q Total (cfs)	38000.00	Flow (cfs)	0.25	37130.13	869.62
Top Width (ft)	329.77	Top Width (ft)	0.90	278.60	50.27
Vel Total (ft/s)	8.04	Avg. Vel. (ft/s)	0.62	8.27	3.66
Max Chl Dpth (ft)	20.40	Hydr. Depth (ft)	0.45	16.12	4.73
Conv. Total (cfs)	341577.6	Conv. (cfs)	2.2	333758.5	7816.9
Length Wtd. (ft)		Wetted Per. (ft)	1.27	287.15	51.75
Min Ch El (ft)	269.00	Shear (lb/sq ft)	0.25	12.08	3.55
Alpha	1.04	Stream Power (lb/ft s)	0.15	99.91	12.98
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	291.39	Element			
Vel Head (ft)	0.99	Wt. n-Val.	0.125	0.125	
W.S. Elev (ft)	290.40	Reach Len. (ft)			
Crit W.S. (ft)	281.34	Flow Area (sq ft)	1.72	4767.76	
E.G. Slope (ft/ft)	0.011035	Area (sq ft)	1.72	4767.76	
Q Total (cfs)	38000.00	Flow (cfs)	1.67	37998.33	
Top Width (ft)	280.00	Top Width (ft)	1.50	278.50	
Vel Total (ft/s)	7.97	Avg. Vel. (ft/s)	0.97	7.97	

Max Chl Dpth (ft)	21.40	Hydr. Depth (ft)	1.15	17.12
Conv. Total (cfs)	361745.0	Conv. (cfs)	15.9	361729.1
Length Wtd. (ft)		Wetted Per. (ft)	2.52	295.69
Min Ch El (ft)	269.00	Shear (lb/sq ft)	0.47	11.11
Alpha	1.00	Stream Power (lb/ft s)	0.46	88.53
Frctn Loss (ft)		Cum Volume (acre-ft)		
C & E Loss (ft)		Cum SA (acres)		

SUMMARY OF MANNING'S N VALUES

River:RIVER-1

Reach	River Sta.	n1	n2	n3
Reach-1	355	.06	.05	.06
Reach-1	345	.06	.05	.06
Reach-1	340	.06	.05	.06
Reach-1	330	.045	.035	.06
Reach-1	320	.045	.035	.06
Reach-1	310	.045	.035	.06
Reach-1	300	.05	.06	.05
Reach-1	290	.05	.06	.05
Reach-1	285	.05	.06	.05
Reach-1	280	.05	.06	.05
Reach-1	270	.05	.06	.05
Reach-1	260	.05	.06	.05
Reach-1	250	.05	.06	.05
Reach-1	245	.11	.1	.045
Reach-1	244	.045	.065	.1
Reach-1	243	Bridge		
Reach-1	242	.045	.065	.1
Reach-1	239	.045	.065	.1
Reach-1	230	.045	.065	.1
Reach-1	220	.045	.065	.1
Reach-1	210	.035	.045	.035
Reach-1	200	.035	.045	.035
Reach-1	190	.035	.045	.035
Reach-1	180	.035	.045	.035
Reach-1	170	.035	.045	.035
Reach-1	160	.035	.045	.035
Reach-1	150	.08	.08	.08
Reach-1	140	.08	.08	.08
Reach-1	130	.08	.08	.08
Reach-1	120	.125	.125	.125
Reach-1	110	.125	.125	.125
Reach-1	100	.125	.125	.125

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	355	350	310	360
Reach-1	345	125	335	400
Reach-1	340	575	454	450
Reach-1	330	620	588	620
Reach-1	320	660	711	640
Reach-1	310	640	610	610
Reach-1	300	605	654	790
Reach-1	290	645	653	695
Reach-1	285	660	688	640
Reach-1	280	1060	1021	1135
Reach-1	270	815	951	1000
Reach-1	260	1000	1031	1050
Reach-1	250	615	701	700
Reach-1	245	150	177	210
Reach-1	244	95	95	95
Reach-1	243	Bridge		
Reach-1	242	270	224	165
Reach-1	239	515	413	385
Reach-1	230	430	487	460
Reach-1	220	620	450	385
Reach-1	210	450	350	350
Reach-1	200	630	600	595
Reach-1	190	785	550	550
Reach-1	180	405	300	255
Reach-1	170	390	350	350
Reach-1	160	630	690	690
Reach-1	150	545	540	540
Reach-1	140	550	552	550
Reach-1	130	530	520	520
Reach-1	120	55	52	50
Reach-1	110	40	46	50
Reach-1	100	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	355	.1	.3
Reach-1	345	.1	.3
Reach-1	340	.1	.3

Reach-1	330		.1	.3
Reach-1	320		.1	.3
Reach-1	310		.1	.3
Reach-1	300		.1	.3
Reach-1	290		.1	.3
Reach-1	285		.1	.3
Reach-1	280		.1	.3
Reach-1	270		.1	.3
Reach-1	260		.1	.3
Reach-1	250		.1	.3
Reach-1	245		.1	.3
Reach-1	244		.3	.5
Reach-1	243	Bridge		
Reach-1	242		.3	.5
Reach-1	239		.1	.3
Reach-1	230		.1	.3
Reach-1	220		.1	.3
Reach-1	210		.1	.3
Reach-1	200		.1	.3
Reach-1	190		.1	.3
Reach-1	180		.1	.3
Reach-1	170		.1	.3
Reach-1	160		.1	.3
Reach-1	150		.1	.3
Reach-1	140		.1	.3
Reach-1	130		.1	.3
Reach-1	120		.1	.3
Reach-1	110		.1	.3
Reach-1	100		.1	.3

EXHIBIT D
CORRECTED EFFECTIVE MODEL

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Corrected Effective Model
Project File : CorrectedEffective.prj
Run Date and Time: 4/21/2023 2:39:01 PM

Project in English units

Project Description:
UPPER SAN DIEGO RIVER- Corrected Effective Model- Hunsaker&Associates

PROFILE 1 - 100 YEAR FLOODPLAIN (FEMA)
PROFILE 2 - 100 YEAR
FLOODWAY (FEMA)

PLAN DATA

Plan Title: Imported Plan 01
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\02 01-20-2023\04-20-2023\HEC-RAS 04-20-2023\Corrected Effective Model\CorrectedEffective.p01

Geometry Title: Imported Geom 01
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\02 01-20-2023\04-20-2023\HEC-RAS 04-20-2023\Corrected Effective Model\CorrectedEffective.g01

Flow Title : Imported Flow 01
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\02 01-20-2023\04-20-2023\HEC-RAS 04-20-2023\Corrected Effective Model\CorrectedEffective.f01

Plan Summary Information:
Number of: Cross Sections = 19 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 1 Lateral Structures = 0

Computational Information
    Water surface calculation tolerance = 0.01
    Critical depth calculation tolerance = 0.01
    Maximum number of iterations   = 20
    Maximum difference tolerance   = 0.3
    Flow tolerance factor   = 0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method: Average Conveyance
    Computational Flow Regime: Subcritical Flow

Encroachment Data
   Equal Conveyance = True
   Left Offset   =   0
   Right Offset   =   0

River = RIVER-1   Reach = Reach-1

RS	Profile	Method	Value1	Value2
355	PF 2	1	1604.5	2269.4
345	PF 2	1	1217.3	2147.3
340	PF 2	1	1147.2	2067.2
330	PF 2	1	1293.6	2138.6
320	PF 2	1	848.3	2073.3
315	PF 2	1	831	2340.8
310	PF 2	1	559.1	2104.1
300	PF 2	1	434.3	1904.3
290	PF 2	1	270.7	1840.7
285	PF 2	1	472.1	1907.1
280	PF 2	1	608.4	1908.4
270	PF 2	1	341.7	901.7
260	PF 2	1	256.7	856.7
250	PF 2	1	357	1052
245	PF 2	1	686.6	1291.6
244	PF 2	1	459.7	960.1
242	PF 2	1	401	900.5
239	PF 2	1	246.2	906.2
230	PF 2	1	321.8	1056.8
220	PF 2	1	522.9	1492.9
210	PF 2	1	438	1478
200	PF 2	1	404.6	1494.6
190	PF 2	1	710	2000
180	PF 2	1	865	2065
170	PF 2	1	1040	2085
160	PF 2	1	570	1435
150	PF 2	1	655	1200
140	PF 2	1	315	585
130	PF 2	1	225	500
120	PF 2	1	115	395
110	PF 2	1	120	395
100	PF 2	1	120	400

FLOW DATA

Flow Title: Imported Flow 01
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\02 01-20-2023\04-20-2023\HEC-RAS 04-20-2023\Corrected Effective Model\CorrectedEffective.f01

Flow Data (cfs)

River	Reach	RS	PF 1	PF 2	PF 3
RIVER-1	Reach-1	355	36000	36000	48000
RIVER-1	Reach-1	320	37000	37000	49000
RIVER-1	Reach-1	260	38000	38000	50000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
RIVER-1	Reach-1	PF 1		Known WS = 300.76
RIVER-1	Reach-1	PF 2		Known WS = 301.66
RIVER-1	Reach-1	PF 3		Known WS = 307.13

GEOMETRY DATA

Geometry Title: Imported Geom 01
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\02 01-20-2023\04-20-2023\HEC-RAS 04-20-2023\Corrected Effective Model\CorrectedEffective.g01

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 355

INPUT
Description: reversed cross section and encroachments
Ineffective flow area
Per FEMA Study
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.6	54.1	329.6	64.2	325.6	78.6	322.7	125.3	322.5
191.1	321.9	199.7	330.5	303.1	330.6	305.9	328.2	314.9	330.2
343.4	331	443.3	330.1	543	331.4	551.9	329.8	608.6	330
615.1	337.4	640.3	337.4	643.6	329.1	672	328.4	743.1	329.5
746.8	336.5	789.9	336.5	793.5	328.9	836.7	328.9	980.7	324.9
1031	325	1062.7	326.6	1066.4	336.1	1083.8	336.3	1090.8	326.3
1156	325.6	1239.4	323.7	1275.1	321.6	1361.3	321	1418.6	319.8
1446.7	316.6	1469.1	316.3	1506.5	316.7	1516.7	310.8	1537.2	310.1
1551.7	310.8	1563.9	314.9	1590.3	315.8	1604.5	319.7	1616.8	316.1
1666	315.1	1720.1	313.8	1733.1	311.4	1933.3	311.5	2090.2	312

2112.2	314.2	2137	316.4	2145.2	320.2	2164.3	321.8	2196.4	318.6
2209	313.6	2229.8	312.6	2258.6	312.6	2294	313.5	2306.7	315.2
2330.7	319.2	2365.6	319.9	2417.7	320.5	2464.8	318.9	2487.3	317.9
2527.9	317.8	2547.1	318.7	2582	322.5	2592.6	324.2	2640.3	323.9
2733.3	326	2773.3	328.7	2799.6	328.3	2837.5	329.1	2881.4	328.9
2888.7	330.5	2924.8	331.4	2990.2	330.4	2995.2	332.8	3009.4	332.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1604.5	.05	2417.7	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1604.5	2417.7	360	310	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1604.5	322	F
2417.7	3009.4	322	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	322.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.67	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	317.36	Flow Area (sq ft)		6058.62	
E.G. Slope (ft/ft)	0.002750	Area (sq ft)	1317.19	6058.62	428.14
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	1297.77	Top Width (ft)	330.65	810.42	156.71
Vel Total (ft/s)	5.94	Avg. Vel. (ft/s)		5.94	
Max Chl Dpth (ft)	11.57	Hydr. Depth (ft)		7.48	
Conv. Total (cfs)	686445.6	Conv. (cfs)		686445.6	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		813.88	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.28	
Alpha	1.00	Stream Power (lb/ft s)		7.59	
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	92.47	1796.14	222.42
C & E Loss (ft)	0.05	Cum SA (acres)	31.73	228.62	43.71

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	322.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.70	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	317.48	Flow Area (sq ft)		5516.36	
E.G. Slope (ft/ft)	0.002938	Area (sq ft)		5516.36	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	662.70	Top Width (ft)		662.70	
Vel Total (ft/s)	6.53	Avg. Vel. (ft/s)		6.53	
Max Chl Dpth (ft)	10.30	Hydr. Depth (ft)		8.32	
Conv. Total (cfs)	664129.3	Conv. (cfs)		664129.3	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		676.54	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.50	
Alpha	1.00	Stream Power (lb/ft s)		9.76	

Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	16.21	1796.00	79.03
C & E Loss (ft)	0.07	Cum SA (acres)	2.52	214.07	10.72

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	323.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.060	0.050	0.060
W.S. Elev (ft)	323.01	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	318.35	Flow Area (sq ft)	1848.77	7147.40	645.83
E.G. Slope (ft/ft)	0.002009	Area (sq ft)	1848.77	7147.40	645.83
Q Total (cfs)	48000.00	Flow (cfs)	5806.80	40432.62	1760.59
Top Width (ft)	1449.27	Top Width (ft)	468.57	813.20	167.49
Vel Total (ft/s)	4.98	Avg. Vel. (ft/s)	3.14	5.66	2.73
Max Chl Dpth (ft)	12.91	Hydr. Depth (ft)	3.95	8.79	3.86
Conv. Total (cfs)	1070897.0	Conv. (cfs)	129551.8	902066.1	39279.3
Length Wtd. (ft)	313.98	Wetted Per. (ft)	472.13	816.68	167.81
Min Ch El (ft)	311.40	Shear (lb/sq ft)	0.49	1.10	0.48
Alpha	1.15	Stream Power (lb/ft s)	1.54	6.21	1.32
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	165.51	2226.47	394.10
C & E Loss (ft)	0.00	Cum SA (acres)	44.54	230.37	53.69

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 345

INPUT
Description: reversed Section
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.5	49.4	329.1	102.6	328.5	110.8	325.5	147.2	324.7
222.2	324.8	279.9	324	297.8	318.7	332.6	318.3	342	322.6
352.2	328.6	409	329.7	414.3	338.4	436.9	338.4	443.4	329.4
479.4	328.7	533.4	328.1	539.9	334.4	654.6	334.4	663.1	327.7
761.2	327.7	831.1	325.5	841.3	334.3	870.8	334.3	875.7	325.4
919.5	323.7	960.7	323.6	995.9	324.3	1000.4	333.1	1039.7	333.1
1042.9	325.3	1092.1	322.8	1111.7	320.1	1171.1	320.2	1196.7	319
1218.4	314.4	1243.9	313.4	1260.5	315.7	1277.7	315.6	1287.1	312.5
1308.4	310.6	1331.5	309.8	1349.3	310.6	1357.5	314	1406.2	313.9
1473.3	313.3	1479.5	310	1754.1	310	1768.6	320.8	1784.4	328.6
1796.2	329.8	1811.8	323.1	1827.4	315.1	1847.9	313.7	1865	315.1
1881.8	319.8	1899.8	323.5	1942.8	322.9	1993.1	319.8	2004.9	316.5
2015.6	312.2	2033.1	312.5	2061.4	312.9	2065.9	312.2	2147.9	312.2
2160.3	316.1	2180.3	319.1	2223.2	319.9	2242.8	318	2258.3	317.9
2273.1	319.4	2284.9	321.6	2294.3	324.2	2319.3	325.5	2321.4	351.5
2360.3	351.5	2366.8	331.2	2419.1	331.4	2422.9	347.8	2478	347.8

2482.6	330.3	2500.2	330.1	2540.7	330.6	2574.2	329.3	2587	329.7
2658.4	333.8	2742.3	337.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1092.1	.05	2294.3	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1092.1	2294.3	400	335	125	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	742.3	322	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.44	Element			
Vel Head (ft)	0.37	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.07	Reach Len. (ft)	400.00	335.00	125.00
Crit W.S. (ft)	316.13	Flow Area (sq ft)		7368.56	
E.G. Slope (ft/ft)	0.002031	Area (sq ft)	107.28	7368.56	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	1095.11	Top Width (ft)	48.86	1046.25	
Vel Total (ft/s)	4.89	Avg. Vel. (ft/s)		4.89	
Max Chl Dpth (ft)	11.27	Hydr. Depth (ft)		7.04	
Conv. Total (cfs)	798808.6	Conv. (cfs)		798808.6	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		1057.62	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.88	
Alpha	1.00	Stream Power (lb/ft s)		4.32	
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	86.58	1748.36	220.70
C & E Loss (ft)	0.00	Cum SA (acres)	30.16	222.02	43.09

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.58	Element			
Vel Head (ft)	0.42	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.16	Reach Len. (ft)	400.00	335.00	125.00
Crit W.S. (ft)	316.13	Flow Area (sq ft)		6896.55	
E.G. Slope (ft/ft)	0.001822	Area (sq ft)		6896.55	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	801.12	Top Width (ft)		801.12	
Vel Total (ft/s)	5.22	Avg. Vel. (ft/s)		5.22	
Max Chl Dpth (ft)	11.36	Hydr. Depth (ft)		8.61	
Conv. Total (cfs)	843288.1	Conv. (cfs)		843288.1	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		826.33	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.95	
Alpha	1.00	Stream Power (lb/ft s)		4.96	
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	16.21	1751.83	79.03
C & E Loss (ft)	0.01	Cum SA (acres)	2.52	208.86	10.72

Warning: Divided flow computed for this cross-section.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	322.80	Element			
Vel Head (ft)	0.46	Wt. n-Val.	0.060	0.050	
W.S. Elev (ft)	322.34	Reach Len. (ft)	400.00	335.00	125.00
Crit W.S. (ft)	317.04	Flow Area (sq ft)	174.06	8732.06	
E.G. Slope (ft/ft)	0.002137	Area (sq ft)	174.06	8732.06	
Q Total (cfs)	48000.00	Flow (cfs)	417.68	47582.32	
Top Width (ft)	1148.93	Top Width (ft)	55.95	1092.98	
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)	2.40	5.45	
Max Chl Dpth (ft)	12.54	Hydr. Depth (ft)	3.11	7.99	
Conv. Total (cfs)	1038354.0	Conv. (cfs)	9035.3	1029319.0	
Length Wtd. (ft)	335.28	Wetted Per. (ft)	57.36	1105.36	
Min Ch El (ft)	309.80	Shear (lb/sq ft)	0.40	1.05	
Alpha	1.02	Stream Power (lb/ft s)	0.97	5.74	
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	157.15	2169.97	391.51
C & E Loss (ft)	0.00	Cum SA (acres)	42.38	223.59	53.02

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 340

INPUT
Description: reversed Cross section
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.7	43.2	327	89.6	327.9	94.4	326.4	102.4	324.9
130	324.1	201.6	323.1	232.8	323.6	287.2	322.5	301.2	321
312	313.1	344	313.4	353.2	317.7	361.6	325.1	382.4	325.4
408.1	327.2	412.5	335.5	452.9	335.5	458.9	325.8	498.9	324.4
541.7	325.2	559.3	325.7	597.3	325.8	630.1	325.1	705.7	324.9
768.5	325.4	806.9	325.7	889.8	326.1	895.4	334.3	917.8	334.3
923	326.1	955.8	324.1	987.8	325	1016.2	326	1018.6	336
1056.2	333.6	1063.4	326	1106.2	324.8	1119.4	322.7	1140.2	317.5
1166.2	311.8	1172.3	311.9	1182.7	315.6	1195.5	316.1	1201.1	310.6
1207.1	309.9	1243.1	310.6	1276.3	315.7	1331.9	314.9	1350.7	311.8
1408.7	311	1417.5	310.4	1588.3	310.4	1600	315.1	1626.4	315.7
1674.8	315.4	1693.2	314.2	1722.4	314.4	1733.6	315.6	1752.4	317.4
1782.8	317.3	1799.2	314.2	1807.6	311.3	1847.6	311.2	1929.2	311.9
1958.5	312.9	1963.3	312.2	2053.3	312.2	2071.3	314.7	2096.5	316.6
2114.1	319.8	2130.9	323.4	2156.1	324.1	2158.5	347.5	2320.2	347.5
2326.6	330.3	2339.4	330.2	2347.8	331	2388.2	331.3	2422.2	330.3
2449	331.8	2492.2	332.5						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1106.2	.05	2130.9	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1106.2	2130.9		450	454	575	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	992.2	325.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	320.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.050	
W.S. Elev (ft)	320.39	Reach Len. (ft)	450.00	454.00	575.00
Crit W.S. (ft)	316.26	Flow Area (sq ft)		7257.49	
E.G. Slope (ft/ft)	0.001970	Area (sq ft)	313.25	7257.49	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	1042.39	Top Width (ft)	54.21	988.18	
Vel Total (ft/s)	4.96	Avg. Vel. (ft/s)		4.96	
Max Chl Dpth (ft)	10.49	Hydr. Depth (ft)		7.34	
Conv. Total (cfs)	811010.4	Conv. (cfs)		811010.4	
Length Wtd. (ft)	460.48	Wetted Per. (ft)		995.33	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.90	
Alpha	1.00	Stream Power (lb/ft s)		4.45	
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	84.65	1692.12	220.70
C & E Loss (ft)	0.03	Cum SA (acres)	29.69	214.20	43.09

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	320.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.050	
W.S. Elev (ft)	320.57	Reach Len. (ft)	450.00	454.00	575.00
Crit W.S. (ft)	316.26	Flow Area (sq ft)		7196.79	
E.G. Slope (ft/ft)	0.001870	Area (sq ft)		7196.79	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	920.00	Top Width (ft)		920.00	
Vel Total (ft/s)	5.00	Avg. Vel. (ft/s)		5.00	
Max Chl Dpth (ft)	10.67	Hydr. Depth (ft)		7.82	
Conv. Total (cfs)	832474.0	Conv. (cfs)		832474.0	
Length Wtd. (ft)	460.02	Wetted Per. (ft)		937.19	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.90	
Alpha	1.00	Stream Power (lb/ft s)		4.48	
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	16.21	1697.64	79.03
C & E Loss (ft)	0.03	Cum SA (acres)	2.52	202.24	10.72

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	322.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.58	Reach Len. (ft)	450.00	454.00	575.00

Crit W.S. (ft)	317.07	Flow Area (sq ft)		8439.60	
E.G. Slope (ft/ft)	0.002148	Area (sq ft)	380.86	8439.60	
Q Total (cfs)	48000.00	Flow (cfs)		48000.00	
Top Width (ft)	1060.28	Top Width (ft)	61.78	998.50	
Vel Total (ft/s)	5.69	Avg. Vel. (ft/s)		5.69	
Max Chl Dpth (ft)	11.68	Hydr. Depth (ft)		8.45	
Conv. Total (cfs)	1035592.0	Conv. (cfs)		1035592.0	
Length Wtd. (ft)	460.78	Wetted Per. (ft)		1005.91	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		1.13	
Alpha	1.00	Stream Power (lb/ft s)		6.40	
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	154.61	2103.94	391.51
C & E Loss (ft)	0.04	Cum SA (acres)	41.84	215.55	53.02

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 330

INPUT
Description: Ineffective area Per FEMA Effective Study
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.4	6.4	340.1	55	340.1	58.2	328.3	141.2	326.1
185.4	328.3	231.5	330.2	243.2	325.1	288.6	324.1	379.6	322.2
474.7	320.1	525.2	321.6	540.1	314.3	568.2	309.9	581	309.8
589.9	316.6	600.7	322.8	620.3	323.5	669.7	323.1	674.1	332
706.7	332	712.3	323.7	739.5	322.4	776.4	322.4	806.9	323.4
811.9	331	853.1	331	858	323.1	901.3	324.3	907.3	326.5
951	327.2	1025.7	326.7	1077.9	326.6	1084.3	329.3	1104.3	330.1
1107.6	336.6	1151.7	336.6	1157.3	329.8	1199.9	326	1239.6	321.9
1254.4	316.3	1272.1	314.1	1309.8	313.3	1339.5	311.3	1353.9	308.6
1358.9	308.5	1370.2	308.6	1379.5	312	1426.4	313.8	1487.8	313.6
1504.2	310.2	1521.1	310.2	1556	313.2	1606.6	312.6	1668.3	312.9
1684.4	310	1832	310	1836.4	313.3	1844.4	317.8	1861.7	321.4
1879.7	316.5	1889.8	313.5	1945.9	314.8	1981.6	314	1996.9	322.1
2003.7	324.8	2013.3	323.4	2025.8	316.7	2041	312.5	2131.8	312.5
2142.6	314.9	2166.3	315.9	2183.1	318	2194.4	324.4	2217.2	324.6
2220.1	351.3	2263	351.3	2269.4	330.5	2329.6	329.8	2330.9	346.6
2382.3	346.6	2388.7	328.4	2403.5	325.8	2442.1	325.9	2477.4	324.8
2511.5	327.4	2573.6	331.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1239.6	.035	2003.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1239.6	2003.7	620	588	620	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1173.6	329.3	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	319.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	319.20	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	316.37	Flow Area (sq ft)		4849.57	871.85
E.G. Slope (ft/ft)	0.001962	Area (sq ft)	402.67	4849.57	871.85
Q Total (cfs)	36000.00	Flow (cfs)		32146.56	3853.44
Top Width (ft)	954.35	Top Width (ft)	64.31	725.97	164.07
Vel Total (ft/s)	6.29	Avg. Vel. (ft/s)		6.63	4.42
Max Chl Dpth (ft)	10.70	Hydr. Depth (ft)		6.68	5.31
Conv. Total (cfs)	812669.4	Conv. (cfs)		725681.3	86988.1
Length Wtd. (ft)	589.70	Wetted Per. (ft)		732.87	165.99
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.81	0.64
Alpha	1.04	Stream Power (lb/ft s)		5.37	2.84
Frctn Loss (ft)	0.81	Cum Volume (acre-ft)	80.95	1629.03	214.94
C & E Loss (ft)	0.10	Cum SA (acres)	29.08	205.26	42.00

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	320.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.68	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	319.36	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	316.37	Flow Area (sq ft)		4765.30	743.33
E.G. Slope (ft/ft)	0.001963	Area (sq ft)		4765.30	743.33
Q Total (cfs)	36000.00	Flow (cfs)		32420.83	3579.17
Top Width (ft)	798.59	Top Width (ft)		680.83	117.76
Vel Total (ft/s)	6.54	Avg. Vel. (ft/s)		6.80	4.82
Max Chl Dpth (ft)	10.86	Hydr. Depth (ft)		7.00	6.31
Conv. Total (cfs)	812445.2	Conv. (cfs)		731670.8	80774.4
Length Wtd. (ft)	589.57	Wetted Per. (ft)		692.86	124.51
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.84	0.73
Alpha	1.03	Stream Power (lb/ft s)		5.74	3.52
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	16.21	1635.30	74.13
C & E Loss (ft)	0.10	Cum SA (acres)	2.52	193.90	9.94

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	321.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.85	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	320.18	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	317.22	Flow Area (sq ft)		5573.65	1035.83

			Corrected	Effective	rep
E.G. Slope (ft/ft)	0.002223	Area (sq ft)	468.38	5573.65	1035.83
Q Total (cfs)	48000.00	Flow (cfs)		42622.30	5377.70
Top Width (ft)	981.16	Top Width (ft)	74.67	738.83	167.66
Vel Total (ft/s)	7.26	Avg. Vel. (ft/s)		7.65	5.19
Max Chl Dpth (ft)	11.68	Hydr. Depth (ft)		7.54	6.18
Conv. Total (cfs)	1018087.0	Conv. (cfs)		904025.1	114061.8
Length Wtd. (ft)	591.67	Wetted Per. (ft)		746.40	170.09
Min Ch El (ft)	308.50	Shear (lb/sq ft)		1.04	0.85
Alpha	1.04	Stream Power (lb/ft s)		7.92	4.39
Frctn Loss (ft)	0.71	Cum Volume (acre-ft)	150.22	2030.91	384.67
C & E Loss (ft)	0.17	Cum SA (acres)	41.13	206.49	51.91

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 320

INPUT
Description: CONFLUENCE WITH SYCAMORE CREEK
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.2	87.1	328.7	92.7	326.3	107.2	324.6	175.5	323.9
182.3	318.9	192.7	315.6	272.6	314.6	325.3	313.5	403.2	312.7
454.2	312.2	466.6	315.2	517.6	315.1	537.3	318.8	599.9	317.9
610.4	311.7	619.6	307.3	648.9	307.4	661	310.6	672.6	318.3
703.6	319.2	777.4	317.9	847.7	319	889.9	316.7	923.2	312
950.9	309.6	963	307.2	1073.2	307.2	1141.4	307.3	1193.1	308.7
1250.2	308.5	1271.5	309.1	1305.2	312.3	1333.7	319.2	1364.2	318.2
1389.2	315.8	1406.8	312.9	1438.5	312.4	1465	311.6	1510.4	311.7
1524	312.8	1567.4	313	1649.7	313.7	1707.2	315.1	1777.1	316.6
1836.9	314.9	1874.6	313.5	1951.7	313.6	2034.4	313.3	2107.5	312.9
2122.8	315.9	2136.8	311.3	2146.9	311.4	2155.7	314.8	2177	316.3
2188.2	317.5	2218.7	318.3	2268.9	321.1	2302.7	322.3	2346	322.4
2390.2	322.2	2423.6	321.3	2530.8	322.4	2616.8	323.7	2718.3	322.4

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	847.7	.035	2188.2	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.7	2188.2	640	711	660	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	847.7	319	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	318.93	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	318.61	Reach Len. (ft)	640.00	711.00	660.00
Crit W.S. (ft)	314.77	Flow Area (sq ft)		8127.04	22.63
E.G. Slope (ft/ft)	0.001015	Area (sq ft)	2218.25	8127.04	22.63
Q Total (cfs)	37000.00	Flow (cfs)		36982.57	17.43
Top Width (ft)	1921.45	Top Width (ft)	572.26	1313.08	36.11
Vel Total (ft/s)	4.54	Avg. Vel. (ft/s)		4.55	0.77
Max Chl Dpth (ft)	11.41	Hydr. Depth (ft)		6.19	0.63
Conv. Total (cfs)	1161335.0	Conv. (cfs)		1160788.0	547.0
Length Wtd. (ft)	710.70	Wetted Per. (ft)		1317.02	36.13
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.39	0.04
Alpha	1.00	Stream Power (lb/ft s)		1.78	0.03
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	62.30	1541.44	208.58
C & E Loss (ft)	0.03	Cum SA (acres)	24.55	191.50	40.58

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	319.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.35	Wt. n-Val.		0.035	
W.S. Elev (ft)	318.77	Reach Len. (ft)	640.00	711.00	660.00
Crit W.S. (ft)	314.83	Flow Area (sq ft)		7779.55	
E.G. Slope (ft/ft)	0.001055	Area (sq ft)		7779.55	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1206.36	Top Width (ft)		1206.36	
Vel Total (ft/s)	4.76	Avg. Vel. (ft/s)		4.76	
Max Chl Dpth (ft)	11.57	Hydr. Depth (ft)		6.45	
Conv. Total (cfs)	1139335.0	Conv. (cfs)		1139335.0	
Length Wtd. (ft)	710.88	Wetted Per. (ft)		1214.23	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.42	
Alpha	1.00	Stream Power (lb/ft s)		2.01	
Frctn Loss (ft)	0.58	Cum Volume (acre-ft)	16.21	1550.64	68.84
C & E Loss (ft)	0.04	Cum SA (acres)	2.52	181.17	9.11

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	320.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.27	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	319.88	Reach Len. (ft)	640.00	711.00	660.00
Crit W.S. (ft)	315.57	Flow Area (sq ft)	3038.49	9815.00	82.64
E.G. Slope (ft/ft)	0.000760	Area (sq ft)	3038.49	9815.00	82.64
Q Total (cfs)	49000.00	Flow (cfs)	5664.22	43241.41	94.37
Top Width (ft)	2066.02	Top Width (ft)	666.73	1340.50	58.79
Vel Total (ft/s)	3.79	Avg. Vel. (ft/s)	1.86	4.41	1.14
Max Chl Dpth (ft)	12.68	Hydr. Depth (ft)	4.56	7.32	1.41
Conv. Total (cfs)	1776889.0	Conv. (cfs)	205402.0	1568065.0	3422.3

Length Wtd. (ft)	706.26	Wetted Per. (ft)	673.76	1344.53	58.84
Min Ch El (ft)	307.20	Shear (lb/sq ft)	0.21	0.35	0.07
Alpha	1.22	Stream Power (lb/ft s)	0.40	1.53	0.08
Frctn Loss (ft)	0.50	Cum Volume (acre-ft)	125.26	1927.05	376.71
C & E Loss (ft)	0.00	Cum SA (acres)	35.85	192.46	50.30

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 310

INPUT
Description: CONFLUENCE WITH SYCAMORE CREEK
Station Elevation Data num= 66

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324.3	50.1	323.7	171.5	321.7	291.3	320.2	396.9	317.6
449.8	317.1	557.4	315.6	605.8	316	619.5	313.6	628.7	307.9
668.6	306.4	680.3	305.7	698.3	306.9	709.6	309.2	717.2	316
731.3	316.7	741.4	314.6	751.1	311.5	780.2	312.2	847.7	312.376
856.8	312.4	974.9	312.2	1004.3	311.6	1039.5	312.9	1090.3	313.5
1145.9	313.1	1252.1	312	1308.8	312.6	1316.9	311.3	1331.5	314.1
1380.6	314.8	1394	312.9	1414.1	311	1439	311.1	1472.1	313.3
1505.6	313.6	1579	312.7	1593.5	310.8	1690.7	310.8	1847.2	311.3
1921	310.5	2044.4	310	2095.1	311.1	2105.2	314.5	2116.9	318.1
2146.8	317.5	2171	319.9	2204	318.6	2227	321.3	2244.8	320.7
2292.4	320.7	2322.3	322.1	2333.5	320.3	2354.5	319.5	2388	320.3
2434	320.4	2456.9	319.3	2521.9	318.8	2533.2	316.5	2543.3	315.1
2551.8	316	2567.8	318.8	2616.3	319.6	2761.8	320.3	2875.6	320.9
2954.1	320.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	605.8	.035	2116.9	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
605.8	2116.9	610	610	640	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	154.1	322	F
2354.1	2954.1	320	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	318.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	318.07	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	314.35	Flow Area (sq ft)	338.32	9491.09	9.85
E.G. Slope (ft/ft)	0.000721	Area (sq ft)	338.32	9491.09	72.64
Q Total (cfs)	37000.00	Flow (cfs)	292.48	36703.72	3.80
Top Width (ft)	1811.69	Top Width (ft)	228.13	1511.01	72.54
Vel Total (ft/s)	3.76	Avg. Vel. (ft/s)	0.86	3.87	0.39

Max Chl Dpth (ft)	12.37	Hydr. Depth (ft)	1.48	6.28	0.29
Conv. Total (cfs)	1378307.0	Conv. (cfs)	10895.4	1367271.0	141.4
Length Wtd. (ft)	610.00	Wetted Per. (ft)	228.15	1518.45	34.40
Min Ch El (ft)	305.70	Shear (lb/sq ft)	0.07	0.28	0.01
Alpha	1.05	Stream Power (lb/ft s)	0.06	1.09	0.00
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	43.52	1397.66	207.85
C & E Loss (ft)	0.00	Cum SA (acres)	18.67	168.45	39.75

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	318.50	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	318.28	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	314.33	Flow Area (sq ft)	115.34	9770.92	
E.G. Slope (ft/ft)	0.000655	Area (sq ft)	115.34	9770.92	
Q Total (cfs)	37000.00	Flow (cfs)	128.71	36871.29	
Top Width (ft)	1545.00	Top Width (ft)	46.70	1498.30	
Vel Total (ft/s)	3.74	Avg. Vel. (ft/s)	1.12	3.77	
Max Chl Dpth (ft)	12.58	Hydr. Depth (ft)	2.47	6.52	
Conv. Total (cfs)	1445947.0	Conv. (cfs)	5029.9	1440917.0	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	49.36	1509.28	
Min Ch El (ft)	305.70	Shear (lb/sq ft)	0.10	0.26	
Alpha	1.01	Stream Power (lb/ft s)	0.11	1.00	
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	15.37	1407.40	68.84
C & E Loss (ft)	0.00	Cum SA (acres)	2.18	159.09	9.11

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	319.65	Element			
Vel Head (ft)	0.27	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	319.38	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	314.93	Flow Area (sq ft)	670.85	11464.31	75.33
E.G. Slope (ft/ft)	0.000661	Area (sq ft)	670.85	11464.31	226.89
Q Total (cfs)	49000.00	Flow (cfs)	762.76	48165.86	71.39
Top Width (ft)	2015.22	Top Width (ft)	281.17	1511.10	222.95
Vel Total (ft/s)	4.01	Avg. Vel. (ft/s)	1.14	4.20	0.95
Max Chl Dpth (ft)	13.68	Hydr. Depth (ft)	2.39	7.59	1.00
Conv. Total (cfs)	1905521.0	Conv. (cfs)	29662.2	1873082.0	2776.2
Length Wtd. (ft)	610.03	Wetted Per. (ft)	281.21	1518.54	75.43
Min Ch El (ft)	305.70	Shear (lb/sq ft)	0.10	0.31	0.04
Alpha	1.08	Stream Power (lb/ft s)	0.11	1.31	0.04
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	98.01	1753.39	374.37
C & E Loss (ft)	0.00	Cum SA (acres)	28.89	169.19	48.17

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 300

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.2	45.3	320.6	96.1	320.1	194.7	318.2	286	316.1
373.7	313.8	446	313.405	446.9	313.4	475.5	310.4	495.5	305.8
548	305.1	561.2	305.8	577.3	308.6	599.6	314.1	611.5	315.3
623.9	310.8	664.7	310.9	711.4	309.2	783.5	309.5	867.2	309.8
926.7	308.6	952.2	311.2	1025.8	310.7	1124.2	311.8	1226.1	311.4
1290.1	310.6	1328.2	309.4	1363.9	311.8	1413.9	312.2	1513.1	313.4
1609.9	314.3	1636.8	312.1	1656.8	310.8	1722.4	311.8	1755.2	310.2
1769.8	313.4	1807.2	313.7	1813.9	311.8	1883.9	311.8	1903.3	312.3
1904.3	312.652	1917.8	317.4	1988.1	318.7	2117.4	318.899	2117.9	318.9
2252.8	321.2	2397.2	322.4	2407.6	324.8	2457.4	325.5	2461.7	334
2501.2	334	2503.7	325.3	2524.4	324.8	2564.3	324		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	446.9	.06	1917.8	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
446.9	1917.8	790	654	605	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	317.61	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	317.38	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	526.31	9315.88	
E.G. Slope (ft/ft)	0.002054	Area (sq ft)	526.31	9315.88	
Q Total (cfs)	37000.00	Flow (cfs)	1280.46	35719.54	
Top Width (ft)	1687.58	Top Width (ft)	216.73	1470.86	
Vel Total (ft/s)	3.76	Avg. Vel. (ft/s)	2.43	3.83	
Max Chl Dpth (ft)	12.28	Hydr. Depth (ft)	2.43	6.33	
Conv. Total (cfs)	816448.2	Conv. (cfs)	28254.9	788193.3	
Length Wtd. (ft)	656.35	Wetted Per. (ft)	216.77	1475.29	
Min Ch El (ft)	305.10	Shear (lb/sq ft)	0.31	0.81	
Alpha	1.02	Stream Power (lb/ft s)	0.76	3.10	
Frctn Loss (ft)	1.33	Cum Volume (acre-ft)	37.46	1265.98	207.32
C & E Loss (ft)	0.01	Cum SA (acres)	15.55	147.57	39.22

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	317.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	317.63	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	52.89	9645.73	
E.G. Slope (ft/ft)	0.001930	Area (sq ft)	52.89	9645.73	
Q Total (cfs)	37000.00	Flow (cfs)	148.56	36851.44	
Top Width (ft)	1470.00	Top Width (ft)	12.60	1457.40	
Vel Total (ft/s)	3.81	Avg. Vel. (ft/s)	2.81	3.82	
Max Chl Dpth (ft)	12.53	Hydr. Depth (ft)	4.20	6.62	
Conv. Total (cfs)	842156.5	Conv. (cfs)	3381.4	838775.1	
Length Wtd. (ft)	654.27	Wetted Per. (ft)	16.76	1466.00	
Min Ch El (ft)	305.10	Shear (lb/sq ft)	0.38	0.79	
Alpha	1.00	Stream Power (lb/ft s)	1.07	3.03	
Frctn Loss (ft)	1.27	Cum Volume (acre-ft)	14.19	1271.45	68.84
C & E Loss (ft)	0.00	Cum SA (acres)	1.77	138.40	9.11

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	319.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	318.76	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	867.44	11342.09	51.26
E.G. Slope (ft/ft)	0.001817	Area (sq ft)	867.44	11342.09	51.26
Q Total (cfs)	49000.00	Flow (cfs)	2327.19	46633.86	38.94
Top Width (ft)	1862.61	Top Width (ft)	281.35	1470.90	110.36
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)	2.68	4.11	0.76
Max Chl Dpth (ft)	13.66	Hydr. Depth (ft)	3.08	7.71	0.46
Conv. Total (cfs)	1149654.0	Conv. (cfs)	54601.3	1094139.0	913.7
Length Wtd. (ft)	657.22	Wetted Per. (ft)	281.41	1475.33	110.37
Min Ch El (ft)	305.10	Shear (lb/sq ft)	0.35	0.87	0.05
Alpha	1.03	Stream Power (lb/ft s)	0.94	3.58	0.04
Frctn Loss (ft)	1.11	Cum Volume (acre-ft)	87.24	1593.70	372.32
C & E Loss (ft)	0.01	Cum SA (acres)	24.95	148.31	45.72

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 290

INPUT
Description:
Station Elevation Data num= 61

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	319.1	41.9	316.9	53.1	314.2	97.3	313	155.2	312.3
206.5	310.5	220.5	308.5	232.4	311.6	278.9	310.7	366.9	310.9
378.2	305.1	414.6	304.6	433.7	303.1	442.7	304.7	460.8	306.1
473.9	317.1	485.4	316.9	497.1	311	532.9	309.2	554.3	311.1
632.4	310.3	670.9	310.8	724	310.4	748.2	308.9	781.7	307.5
860.2	309	895	307.1	926.8	306.4	944.6	309.1	974	311.7
1080.8	310.4	1154.2	308.4	1171.2	306.5	1195.3	308.9	1337	311.2
1425.4	311.8	1515.1	311.6	1523.1	311	1800.6	311	1838.2	312
1861.4	314.4	1896.4	317.9	1961.7	318.6	1975.4	317.8	2007.6	318.2
2023	322.6	2057.3	342.3	2082.1	331.4	2096.5	334.8	2101.6	350.1
2194.9	350.1	2202	335.6	2227.7	339.1	2272.9	339.7	2361	342.1
2451.2	344.9	2473.1	349.1	2548	349.4	2568.8	347.723	2572.8	347.4
2610.7	347.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	41.9	.06	1896.4	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
41.9	1896.4	695	653	645	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	316.27	Element			
Vel Head (ft)	0.20	Wt. n-Val.		0.060	
W.S. Elev (ft)	316.07	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)		10439.77	
E.G. Slope (ft/ft)	0.002005	Area (sq ft)		10439.77	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1818.41	Top Width (ft)		1818.41	
Vel Total (ft/s)	3.54	Avg. Vel. (ft/s)		3.54	
Max Chl Dpth (ft)	12.97	Hydr. Depth (ft)		5.74	
Conv. Total (cfs)	826402.6	Conv. (cfs)		826402.6	
Length Wtd. (ft)	653.05	Wetted Per. (ft)		1826.86	
Min Ch El (ft)	303.10	Shear (lb/sq ft)		0.72	
Alpha	1.00	Stream Power (lb/ft s)		2.53	
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	32.69	1117.67	207.32
C & E Loss (ft)	0.01	Cum SA (acres)	13.59	122.88	39.22

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	316.59	Element			
Vel Head (ft)	0.22	Wt. n-Val.		0.060	
W.S. Elev (ft)	316.37	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)		9934.69	
E.G. Slope (ft/ft)	0.001939	Area (sq ft)		9934.69	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1556.59	Top Width (ft)		1556.59	
Vel Total (ft/s)	3.72	Avg. Vel. (ft/s)		3.72	

Max Chl Dpth (ft)	13.27	Hydr. Depth (ft)		6.38	
Conv. Total (cfs)	840353.2	Conv. (cfs)		840353.2	
Length Wtd. (ft)	653.00	Wetted Per. (ft)		1573.83	
Min Ch El (ft)	303.10	Shear (lb/sq ft)		0.76	
Alpha	1.00	Stream Power (lb/ft s)		2.85	
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	13.71	1124.46	68.84
C & E Loss (ft)	0.02	Cum SA (acres)	1.65	115.77	9.11

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	317.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	317.69	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)	5.91	13406.85	
E.G. Slope (ft/ft)	0.001566	Area (sq ft)	5.91	13406.85	
Q Total (cfs)	49000.00	Flow (cfs)	3.73	48996.27	
Top Width (ft)	1867.38	Top Width (ft)	15.00	1852.38	
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)	0.63	3.65	
Max Chl Dpth (ft)	14.59	Hydr. Depth (ft)	0.39	7.24	
Conv. Total (cfs)	1238324.0	Conv. (cfs)	94.2	1238229.0	
Length Wtd. (ft)	653.26	Wetted Per. (ft)	15.02	1861.58	
Min Ch El (ft)	303.10	Shear (lb/sq ft)	0.04	0.70	
Alpha	1.00	Stream Power (lb/ft s)	0.02	2.57	
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	79.32	1407.91	371.97
C & E Loss (ft)	0.01	Cum SA (acres)	22.27	123.36	44.95

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 285

INPUT
Description:
Station Elevation Data num= 52

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324.4	109.3	322.9	143	321.4	192.7	318.2	216.7	317
260.2	318.1	306	317.7	316.7	314.1	396.6	314.6	469.1	313.7
501.7	310.4	530.3	306.3	556.2	307	564.7	304.9	603	305.3
627.2	303.3	664	302.4	683.9	303.7	703.7	312.7	713.5	313.4
720.6	308.2	730.1	306.9	758.1	308	777.1	310.3	856.4	309.7
894.7	306.6	954.3	305.4	1021.9	307.4	1120	307.2	1150.7	306.2
1188.9	304.8	1213.8	307.9	1275.4	308.9	1336.3	309.3	1434	309.1
1544	308.4	1596.7	306.8	1701.2	306.5	1719.7	304	1730.5	302.2
1756.4	303.8	1850.6	306.1	1941.9	307.5	1964.2	311.4	2032.1	314.3
2057.2	317.8	2091.8	321.2	2126.8	323.2	2145.6	329.2	2169.2	332.9
2188.9	339.2	2237.1	340.2						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	469.1	.06	1964.2	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
469.1	1964.2	640	688	660	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	315.37	Element			
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	315.22	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)	149.10	11896.36	164.03
E.G. Slope (ft/ft)	0.000977	Area (sq ft)	149.10	11896.36	164.03
Q Total (cfs)	37000.00	Flow (cfs)	134.44	36607.96	257.59
Top Width (ft)	1725.34	Top Width (ft)	155.73	1495.10	74.50
Vel Total (ft/s)	3.03	Avg. Vel. (ft/s)	0.90	3.08	1.57
Max Chl Dpth (ft)	13.02	Hydr. Depth (ft)	0.96	7.96	2.20
Conv. Total (cfs)	1183659.0	Conv. (cfs)	4301.0	1171118.0	8240.6
Length Wtd. (ft)	687.65	Wetted Per. (ft)	155.92	1501.07	74.63
Min Ch El (ft)	302.20	Shear (lb/sq ft)	0.06	0.48	0.13
Alpha	1.02	Stream Power (lb/ft s)	0.05	1.49	0.21
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	31.50	950.25	206.11
C & E Loss (ft)	0.01	Cum SA (acres)	12.35	98.05	38.67

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	315.72	Element			
Vel Head (ft)	0.15	Wt. n-Val.		0.060	
W.S. Elev (ft)	315.57	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)		11988.95	
E.G. Slope (ft/ft)	0.000930	Area (sq ft)		11988.95	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1435.00	Top Width (ft)		1435.00	
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)		3.09	
Max Chl Dpth (ft)	13.37	Hydr. Depth (ft)		8.35	
Conv. Total (cfs)	1213266.0	Conv. (cfs)		1213266.0	
Length Wtd. (ft)	688.00	Wetted Per. (ft)		1451.39	
Min Ch El (ft)	302.20	Shear (lb/sq ft)		0.48	
Alpha	1.00	Stream Power (lb/ft s)		1.48	
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	13.71	960.14	68.84
C & E Loss (ft)	0.01	Cum SA (acres)	1.65	93.35	9.11

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	317.15	Element			
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	316.98	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)	427.79	14527.66	306.26
E.G. Slope (ft/ft)	0.000851	Area (sq ft)	427.79	14527.66	306.26
Q Total (cfs)	49000.00	Flow (cfs)	710.34	47676.84	612.82
Top Width (ft)	1743.19	Top Width (ft)	160.96	1495.10	87.13
Vel Total (ft/s)	3.21	Avg. Vel. (ft/s)	1.66	3.28	2.00
Max Chl Dpth (ft)	14.78	Hydr. Depth (ft)	2.66	9.72	3.52

Conv. Total (cfs)	1679288.0	Conv. (cfs)	24344.1	1633942.0	21002.0
Length Wtd. (ft)	687.29	Wetted Per. (ft)	161.44	1501.07	87.37
Min Ch El (ft)	302.20	Shear (lb/sq ft)	0.14	0.51	0.19
Alpha	1.03	Stream Power (lb/ft s)	0.23	1.69	0.37
Frctn Loss (ft)	0.45	Cum Volume (acre-ft)	75.86	1198.53	369.70
C & E Loss (ft)	0.01	Cum SA (acres)	20.86	98.27	44.31

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 280

INPUT
Description:
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	331.7	127.7	319	248.1	318.5	373.8	319.2	437	327.1
477.9	327.1	521.3	319.6	526.7	318.1	533.6	312.2	548.2	308.8
592.3	308.4	627.5	306.6	690.6	306.5	747.7	306.3	839.5	304.1
937.5	300.7	1022.9	300.1	1031.1	303.2	1061.8	304.3	1098.9	304.8
1113.4	305	1132	306.1	1164.1	305.7	1208.7	304.5	1284.7	304.3
1316.5	306.4	1369.8	305.9	1395	304.7	1466.3	305.6	1583.1	310.6
1681.5	302.8	1772	301.1	1852.5	302.7	1861.8	307.4	1882.7	307.6
1896	307.1	1912.5	306.6	1955.1	306.8	2007.1	307.6	2021.6	307.6
2036.1	310.5	2046	310.7	2063.3	315.4	2124.5	316.9	2127.9	318.4
2163.1	318.6	2163.9	321.3	2205.6	324.3	2221.8	328.8	2238.4	331.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	548.2	.06	2021.6	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
548.2	2021.6	1135	1021	1060	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	314.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.10	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	314.77	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)	66.23	14254.34	154.76
E.G. Slope (ft/ft)	0.000524	Area (sq ft)	66.23	14254.34	154.76
Q Total (cfs)	37000.00	Flow (cfs)	103.74	36637.81	258.46
Top Width (ft)	1530.39	Top Width (ft)	17.61	1473.40	39.39
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)	1.57	2.57	1.67
Max Chl Dpth (ft)	14.67	Hydr. Depth (ft)	3.76	9.67	3.93
Conv. Total (cfs)	1616820.0	Conv. (cfs)	4533.0	1600993.0	11293.9
Length Wtd. (ft)	1022.56	Wetted Per. (ft)	18.95	1475.88	40.22
Min Ch El (ft)	300.10	Shear (lb/sq ft)	0.11	0.32	0.13
Alpha	1.01	Stream Power (lb/ft s)	0.18	0.81	0.21
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	29.92	743.74	203.69
C & E Loss (ft)	0.04	Cum SA (acres)	11.07	74.60	37.81

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	315.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.		0.060	
W.S. Elev (ft)	315.10	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		13431.31	
E.G. Slope (ft/ft)	0.000560	Area (sq ft)		13431.31	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1300.00	Top Width (ft)		1300.00	
Vel Total (ft/s)	2.75	Avg. Vel. (ft/s)		2.75	
Max Chl Dpth (ft)	15.00	Hydr. Depth (ft)		10.33	
Conv. Total (cfs)	1563221.0	Conv. (cfs)		1563221.0	
Length Wtd. (ft)	1021.02	Wetted Per. (ft)		1318.35	
Min Ch El (ft)	300.10	Shear (lb/sq ft)		0.36	
Alpha	1.00	Stream Power (lb/ft s)		0.98	
Frctn Loss (ft)	1.05	Cum Volume (acre-ft)	13.71	759.39	68.84
C & E Loss (ft)	0.04	Cum SA (acres)	1.65	71.75	9.11

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	316.68	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	316.56	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)	99.51	16883.60	255.70
E.G. Slope (ft/ft)	0.000521	Area (sq ft)	99.51	16883.60	255.70
Q Total (cfs)	49000.00	Flow (cfs)	186.39	48465.05	348.56
Top Width (ft)	1581.95	Top Width (ft)	19.69	1473.40	88.86
Vel Total (ft/s)	2.84	Avg. Vel. (ft/s)	1.87	2.87	1.36
Max Chl Dpth (ft)	16.46	Hydr. Depth (ft)	5.05	11.46	2.88
Conv. Total (cfs)	2146282.0	Conv. (cfs)	8164.2	2122850.0	15267.3
Length Wtd. (ft)	1025.57	Wetted Per. (ft)	21.69	1475.88	89.79
Min Ch El (ft)	300.10	Shear (lb/sq ft)	0.15	0.37	0.09
Alpha	1.01	Stream Power (lb/ft s)	0.28	1.07	0.13
Frctn Loss (ft)	0.98	Cum Volume (acre-ft)	71.99	950.47	365.44
C & E Loss (ft)	0.04	Cum SA (acres)	19.53	74.83	42.97

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 270

INPUT
Description:
Station Elevation Data num= 42

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.7	24.7	314	43.3	312.2	88.9	312.5	131.4	312.6
137.8	309.8	151.6	309.1	183.1	311.8	212.1	313	278	313.8
313.5	310	343	307.7	363.6	302.5	418.9	303.8	434.3	300.8
463.7	299.4	486.4	300.8	501.8	306.6	513.5	304.8	540.2	303.1
573.3	301.8	590.6	306.3	607.5	304.2	693.6	303.1	796.2	301.8
807.9	299.8	823	300.2	834.6	299.8	888.7	301	901.3	308.6
946.9	310.4	1018.8	312.6	1121.1	315.2	1138.5	316.7	1155.1	322.6
1181.3	322.4	1187.8	333.8	1238.3	333.8	1244	323.2	1260.9	322.3
1280.7	320.4	1301.7	320.8						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	343	.06	901.3	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
343	901.3	1000	951	815	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	278.7	313.79	F
1201.7	1301.7	333.8	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	313.82	Element			
Vel Head (ft)	0.54	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	313.28	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	307.73	Flow Area (sq ft)	181.04	5969.14	309.69
E.G. Slope (ft/ft)	0.002504	Area (sq ft)	444.90	5969.14	309.69
Q Total (cfs)	37000.00	Flow (cfs)	559.55	35674.54	765.92
Top Width (ft)	965.96	Top Width (ft)	263.34	558.30	144.32
Vel Total (ft/s)	5.73	Avg. Vel. (ft/s)	3.09	5.98	2.47
Max Chl Dpth (ft)	13.88	Hydr. Depth (ft)	3.01	10.69	2.15
Conv. Total (cfs)	739396.3	Conv. (cfs)	11181.8	712908.6	15305.9
Length Wtd. (ft)	945.99	Wetted Per. (ft)	60.42	563.63	144.40
Min Ch El (ft)	299.40	Shear (lb/sq ft)	0.47	1.66	0.34
Alpha	1.06	Stream Power (lb/ft s)	1.45	9.89	0.83
Frctn Loss (ft)	3.18	Cum Volume (acre-ft)	23.26	506.73	198.04
C & E Loss (ft)	0.03	Cum SA (acres)	7.41	50.79	35.57

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	314.13	Element			
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	313.56	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	307.74	Flow Area (sq ft)	7.55	6123.92	1.98
E.G. Slope (ft/ft)	0.002472	Area (sq ft)	7.55	6123.92	1.98
Q Total (cfs)	37000.00	Flow (cfs)	11.66	36986.82	1.51
Top Width (ft)	560.00	Top Width (ft)	1.30	558.30	0.40
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)	1.54	6.04	0.76
Max Chl Dpth (ft)	14.16	Hydr. Depth (ft)	5.81	10.97	4.95
Conv. Total (cfs)	744247.4	Conv. (cfs)	234.6	743982.4	30.4
Length Wtd. (ft)	947.34	Wetted Per. (ft)	7.06	563.63	5.34
Min Ch El (ft)	299.40	Shear (lb/sq ft)	0.16	1.68	0.06
Alpha	1.00	Stream Power (lb/ft s)	0.25	10.13	0.04
Frctn Loss (ft)	2.79	Cum Volume (acre-ft)	13.61	530.21	68.81
C & E Loss (ft)	0.01	Cum SA (acres)	1.63	49.97	9.10

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	315.66	Element			
Vel Head (ft)	0.57	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	315.08	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	308.82	Flow Area (sq ft)	1021.48	6974.98	633.55
E.G. Slope (ft/ft)	0.002283	Area (sq ft)	1021.48	6974.98	633.55
Q Total (cfs)	49000.00	Flow (cfs)	2993.61	44159.01	1847.38
Top Width (ft)	1116.51	Top Width (ft)	343.00	558.30	215.21
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)	2.93	6.33	2.92
Max Chl Dpth (ft)	15.68	Hydr. Depth (ft)	2.98	12.49	2.94
Conv. Total (cfs)	1025484.0	Conv. (cfs)	62651.0	924170.6	38662.5
Length Wtd. (ft)	945.19	Wetted Per. (ft)	344.52	563.63	215.31
Min Ch El (ft)	299.40	Shear (lb/sq ft)	0.42	1.76	0.42
Alpha	1.15	Stream Power (lb/ft s)	1.24	11.17	1.22
Frctn Loss (ft)	2.76	Cum Volume (acre-ft)	57.39	670.86	354.62
C & E Loss (ft)	0.03	Cum SA (acres)	14.81	51.01	39.27

Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 260

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

0	314.3	99.6	313.3	131.8	312.1	174.8	313.7	214.8	312.3
239.2	311.4	259.6	305.3	281.9	302.9	336.5	302.6	364.5	297.8
383.2	297.6	390.6	297.8	413.7	300.7	454	302.3	465	304.4
477.3	302.1	513.5	301.5	610.4	299.9	721.1	300.1	729.6	298.6
756.5	299.1	783.3	300.1	802	303.1	869.1	305.8	883.4	309.5
903.3	311.1	926.4	313.2	985.4	314.2	1035.9	316.5	1040.4	320.2
1055.8	326.8	1095.7	326.5	1160.9	325.1	1183.7	322.9	1204.8	323.4
1221.7	322.7								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	239.2	.06	802	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	802	1050	1031	1000	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	310.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	309.82	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		4937.11	391.90
E.G. Slope (ft/ft)	0.004705	Area (sq ft)		4937.11	391.90
Q Total (cfs)	38000.00	Flow (cfs)		35802.51	2197.49
Top Width (ft)	642.88	Top Width (ft)		557.51	85.37
Vel Total (ft/s)	7.13	Avg. Vel. (ft/s)		7.25	5.61
Max Chl Dpth (ft)	12.22	Hydr. Depth (ft)		8.86	4.59
Conv. Total (cfs)	553993.5	Conv. (cfs)		521956.8	32036.7
Length Wtd. (ft)	1027.33	Wetted Per. (ft)		559.75	85.90
Min Ch El (ft)	297.60	Shear (lb/sq ft)		2.59	1.34
Alpha	1.01	Stream Power (lb/ft s)		18.79	7.51
Frctn Loss (ft)	2.30	Cum Volume (acre-ft)	18.15	387.68	191.48
C & E Loss (ft)	0.16	Cum SA (acres)	4.39	38.61	33.42

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	311.33	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	310.64	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		5360.95	352.08
E.G. Slope (ft/ft)	0.003539	Area (sq ft)		5360.95	352.08
Q Total (cfs)	38000.00	Flow (cfs)		35976.68	2023.33
Top Width (ft)	600.00	Top Width (ft)		545.30	54.70
Vel Total (ft/s)	6.65	Avg. Vel. (ft/s)		6.71	5.75
Max Chl Dpth (ft)	13.04	Hydr. Depth (ft)		9.83	6.44
Conv. Total (cfs)	638741.0	Conv. (cfs)		604731.0	34010.0
Length Wtd. (ft)	1030.41	Wetted Per. (ft)		551.48	60.08

Min Ch El (ft)	297.60	Shear (lb/sq ft)		2.15	1.29
Alpha	1.00	Stream Power (lb/ft s)		14.41	7.44
Frctn Loss (ft)	2.44	Cum Volume (acre-ft)	13.52	404.84	65.50
C & E Loss (ft)	0.09	Cum SA (acres)	1.62	37.92	8.59

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	312.87	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.86	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	312.01	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)	5.11	6168.42	608.67
E.G. Slope (ft/ft)	0.003834	Area (sq ft)	5.11	6168.42	608.67
Q Total (cfs)	50000.00	Flow (cfs)	4.28	46533.47	3462.25
Top Width (ft)	690.81	Top Width (ft)	16.65	562.80	111.36
Vel Total (ft/s)	7.37	Avg. Vel. (ft/s)	0.84	7.54	5.69
Max Chl Dpth (ft)	14.41	Hydr. Depth (ft)	0.31	10.96	5.47
Conv. Total (cfs)	807545.4	Conv. (cfs)	69.1	751557.8	55918.5
Length Wtd. (ft)	1026.53	Wetted Per. (ft)	16.66	565.27	111.99
Min Ch El (ft)	297.60	Shear (lb/sq ft)	0.07	2.61	1.30
Alpha	1.02	Stream Power (lb/ft s)	0.06	19.70	7.40
Frctn Loss (ft)	1.65	Cum Volume (acre-ft)	45.60	527.39	343.00
C & E Loss (ft)	0.18	Cum SA (acres)	10.68	38.78	36.22

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 250

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	319	22.3	320.1	67.2	319.1	72.7	315.6	104.7	314.7
165.3	311.9	255.5	308.7	316.5	307.5	339.8	305	360.2	299.9
393.8	299.4	433	300	450	296.6	479.1	294.3	493.8	293.7
508	294.4	524.2	295.4	535.8	297.7	550.8	295.5	591	297.9
690.8	298	786	297.7	872.4	296.9	924.4	295.9	979.1	298.3
1013.9	300.1	1077.9	300	1140.5	301.6	1237.8	301.9	1342.6	302.5
1350.8	301.6	1370.4	303.7	1404.1	307.2	1419	308	1428.1	310.1
1451	318.7	1470.1	330.5	1486.3	331	1489.6	341.8	1542.1	341.8

1544.6	330.1	1577.2	329.6	1597.8	326.6	1632	326.9

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	433	.06	1013.9	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
433	1013.9	700	701	615	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	308.15	Element			
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	307.89	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	750.96	6239.79	2376.56
E.G. Slope (ft/ft)	0.001307	Area (sq ft)	750.96	6239.79	2376.56
Q Total (cfs)	38000.00	Flow (cfs)	2507.10	27164.51	8328.40
Top Width (ft)	1120.27	Top Width (ft)	136.32	580.90	403.05
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	3.34	4.35	3.50
Max Chl Dpth (ft)	14.19	Hydr. Depth (ft)	5.51	10.74	5.90
Conv. Total (cfs)	1051109.0	Conv. (cfs)	69348.4	751391.2	230369.8
Length Wtd. (ft)	687.55	Wetted Per. (ft)	137.10	581.96	403.43
Min Ch El (ft)	293.70	Shear (lb/sq ft)	0.45	0.87	0.48
Alpha	1.03	Stream Power (lb/ft s)	1.49	3.81	1.68
Frctn Loss (ft)	1.38	Cum Volume (acre-ft)	9.10	255.41	159.70
C & E Loss (ft)	0.00	Cum SA (acres)	2.75	25.14	27.82

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	308.80	Element			
Vel Head (ft)	0.40	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	308.40	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	661.21	6537.99	317.49
E.G. Slope (ft/ft)	0.001691	Area (sq ft)	661.21	6537.99	317.49
Q Total (cfs)	38000.00	Flow (cfs)	3202.49	33400.29	1397.22
Top Width (ft)	695.00	Top Width (ft)	76.00	580.90	38.10
Vel Total (ft/s)	5.06	Avg. Vel. (ft/s)	4.84	5.11	4.40
Max Chl Dpth (ft)	14.70	Hydr. Depth (ft)	8.70	11.25	8.33
Conv. Total (cfs)	924037.3	Conv. (cfs)	77874.3	812187.3	33975.8
Length Wtd. (ft)	699.29	Wetted Per. (ft)	83.81	581.96	46.46
Min Ch El (ft)	293.70	Shear (lb/sq ft)	0.83	1.19	0.72
Alpha	1.00	Stream Power (lb/ft s)	4.03	6.06	3.17
Frctn Loss (ft)	1.79	Cum Volume (acre-ft)	5.56	264.03	57.81
C & E Loss (ft)	0.00	Cum SA (acres)	0.70	24.60	7.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	311.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	310.79	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	1310.63	7924.50	3567.78
E.G. Slope (ft/ft)	0.000881	Area (sq ft)	1310.63	7924.50	3567.78
Q Total (cfs)	50000.00	Flow (cfs)	3613.03	33217.34	13169.63
Top Width (ft)	1233.35	Top Width (ft)	236.42	580.90	416.04
Vel Total (ft/s)	3.91	Avg. Vel. (ft/s)	2.76	4.19	3.69
Max Chl Dpth (ft)	17.09	Hydr. Depth (ft)	5.54	13.64	8.58
Conv. Total (cfs)	1684514.0	Conv. (cfs)	121723.9	1119102.0	443688.4
Length Wtd. (ft)	685.55	Wetted Per. (ft)	237.23	581.96	416.79
Min Ch El (ft)	293.70	Shear (lb/sq ft)	0.30	0.75	0.47
Alpha	1.04	Stream Power (lb/ft s)	0.84	3.14	1.74
Frctn Loss (ft)	0.97	Cum Volume (acre-ft)	29.74	360.61	295.06
C & E Loss (ft)	0.01	Cum SA (acres)	7.63	25.24	30.17

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 245

INPUT
Description: Ineffective area has been added (Contraction reach 1:1)
Station Elevation Data num= 46

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	330.6	48.3	330.2	61.9	329.3	122.7	326.3	174.1	323.3
216.8	321	301.6	319.7	334.3	316.8	376	314.8	446.7	312
517.8	308.7	610.7	306	655.7	302.8	668.3	298.3	686.7	296.1
711.4	295.4	790.1	296	828.3	295.7	874.3	295.3	904.5	292.7
926.5	292.5	945.9	292.7	988.3	293.6	1065	293.6	1139.8	293.9
1242.6	294.3	1268.7	293.5	1287.7	295.4	1358.7	294.8	1369.8	300.6
1445.1	301.1	1526.1	299	1600	299.6	1664.9	299.6	1689.4	304.4
1720.5	307.8	1789	313.1	1843.6	315.1	1857.9	321.9	1878.8	332.7
1900.7	333.4	1904.1	341.6	1959.2	341.6	1961.9	332.3	1986.9	329
2021.6	329.6								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	655.7	.1	1287.7	.11

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
655.7	1287.7	140.2	147.4	160	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	642	313.25	F
1371.7	2021.6	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	306.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	306.46	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	299.04	Flow Area (sq ft)	43.47	7543.86	914.93
E.G. Slope (ft/ft)	0.003440	Area (sq ft)	96.35	7543.86	2948.50
Q Total (cfs)	38000.00	Flow (cfs)	181.48	34296.49	3522.03
Top Width (ft)	1113.38	Top Width (ft)	60.83	632.00	420.54
Vel Total (ft/s)	4.47	Avg. Vel. (ft/s)	4.17	4.55	3.85
Max Chl Dpth (ft)	13.96	Hydr. Depth (ft)	3.17	11.94	10.89
Conv. Total (cfs)	647904.0	Conv. (cfs)	3094.3	584758.8	60050.9
Length Wtd. (ft)	147.97	Wetted Per. (ft)	13.73	633.16	85.43
Min Ch El (ft)	292.50	Shear (lb/sq ft)	0.68	2.56	2.30
Alpha	1.01	Stream Power (lb/ft s)	2.84	11.63	8.85
Frctn Loss (ft)	0.52	Cum Volume (acre-ft)	2.30	144.50	122.11
C & E Loss (ft)	0.04	Cum SA (acres)	1.16	15.38	22.00

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	307.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.		0.100	0.110
W.S. Elev (ft)	306.60	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	299.29	Flow Area (sq ft)		7385.43	43.75
E.G. Slope (ft/ft)	0.004312	Area (sq ft)		7385.43	43.75
Q Total (cfs)	38000.00	Flow (cfs)		37921.24	78.76
Top Width (ft)	605.00	Top Width (ft)		601.10	3.90
Vel Total (ft/s)	5.11	Avg. Vel. (ft/s)		5.13	1.80
Max Chl Dpth (ft)	14.10	Hydr. Depth (ft)		12.29	11.22
Conv. Total (cfs)	578671.3	Conv. (cfs)		577471.9	1199.4
Length Wtd. (ft)	147.41	Wetted Per. (ft)		611.84	15.14
Min Ch El (ft)	292.50	Shear (lb/sq ft)		3.25	0.78
Alpha	1.01	Stream Power (lb/ft s)		16.69	1.40
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	0.24	152.00	55.26
C & E Loss (ft)	0.03	Cum SA (acres)	0.09	15.09	7.22

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	310.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	309.73	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	299.95	Flow Area (sq ft)	88.27	9610.65	1189.63
E.G. Slope (ft/ft)	0.002611	Area (sq ft)	472.44	9610.65	4379.73
Q Total (cfs)	50000.00	Flow (cfs)	514.83	44732.47	4752.70
Top Width (ft)	1249.85	Top Width (ft)	160.10	632.00	457.75
Vel Total (ft/s)	4.59	Avg. Vel. (ft/s)	5.83	4.65	4.00
Max Chl Dpth (ft)	17.23	Hydr. Depth (ft)	6.44	15.21	14.16
Conv. Total (cfs)	978563.6	Conv. (cfs)	10075.9	875471.3	93016.4

Length Wtd. (ft)	147.96	Wetted Per. (ft)	13.73	633.16	85.43
Min Ch El (ft)	292.50	Shear (lb/sq ft)	1.05	2.47	2.27
Alpha	1.01	Stream Power (lb/ft s)	6.11	11.52	9.07
Frctn Loss (ft)	0.38	Cum Volume (acre-ft)	15.42	219.51	238.96
C & E Loss (ft)	0.04	Cum SA (acres)	4.45	15.48	24.00

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 244

INPUT
Description: MAST BLVD BRIDGE (NORMAL BRIDGE ROUTINE)
-ineffective area has
been added (cross section at the face of the bridge)
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.5	104.5	308.1	201.3	303.9	207.8	307.1	216.5	307.1
237.5	311.6	319.8	312.8	335.5	307.7	367.8	307.6	459.7	307.8
508.9	294.9	585.6	293.1	617.1	292.2	638.9	293.1	772.1	293.3
888.2	294.6	935.1	293.5	960.1	296	1085.7	298.3	1166.8	300.4
1260.7	300.5	1360	300.3	1440.6	300.4	1502.7	300.3	1537.7	307.6
1602.1	309.9	1641.1	327.9	1787.9	328.1	1896	326.7	1953.2	313.1
2022.1	315.9	2161	318.3	2292.6	325.1	2385.9	332.9	2498.4	333.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	459.7	.065	960.1	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
459.7	960.1	104.8	124.6	145	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	459.7	311.5	F
960.1	2498.4	311.5	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	306.22	Element			
Vel Head (ft)	0.73	Wt. n-Val.		0.065	
W.S. Elev (ft)	305.49	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	299.66	Flow Area (sq ft)		5561.37	
E.G. Slope (ft/ft)	0.003533	Area (sq ft)	31.70	5561.37	3322.20
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	1098.95	Top Width (ft)	39.88	491.59	567.48
Vel Total (ft/s)	6.83	Avg. Vel. (ft/s)		6.83	
Max Chl Dpth (ft)	13.29	Hydr. Depth (ft)		11.31	
Conv. Total (cfs)	639339.1	Conv. (cfs)		639339.1	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		493.15	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.49	
Alpha	1.00	Stream Power (lb/ft s)		16.99	

Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	2.09	122.33	110.59
C & E Loss (ft)	0.06	Cum SA (acres)	1.00	13.48	20.19

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	306.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.		0.065	
W.S. Elev (ft)	305.72	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	299.66	Flow Area (sq ft)		5676.50	
E.G. Slope (ft/ft)	0.003395	Area (sq ft)		5676.50	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	492.48	Top Width (ft)		492.48	
Vel Total (ft/s)	6.69	Avg. Vel. (ft/s)		6.69	
Max Chl Dpth (ft)	13.52	Hydr. Depth (ft)		11.53	
Conv. Total (cfs)	652195.7	Conv. (cfs)		652195.7	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		503.80	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.39	
Alpha	1.00	Stream Power (lb/ft s)		15.99	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.24	129.90	55.18
C & E Loss (ft)	0.05	Cum SA (acres)	0.09	13.24	7.22

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	309.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.065	
W.S. Elev (ft)	308.90	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	300.87	Flow Area (sq ft)		7256.49	
E.G. Slope (ft/ft)	0.002582	Area (sq ft)	485.94	7256.49	5303.49
Q Total (cfs)	50000.00	Flow (cfs)		50000.00	
Top Width (ft)	1381.57	Top Width (ft)	267.23	500.40	613.94
Vel Total (ft/s)	6.89	Avg. Vel. (ft/s)		6.89	
Max Chl Dpth (ft)	16.70	Hydr. Depth (ft)		14.50	
Conv. Total (cfs)	984027.8	Conv. (cfs)		984027.8	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		502.26	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		16.05	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	13.88	190.98	221.18
C & E Loss (ft)	0.05	Cum SA (acres)	3.76	13.57	22.03

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE

RIVER: RIVER-1
REACH: Reach-1 RS: 243

```
INPUT
Description: Bridge #1
- Bridge was modeled as a Normal Bridge in  the
             effective model
-Piers were modeled as a part of the deck. Pier
             information has been deleted from the Deck , and re-entered as a
             separate pier information in HEC-RAS
-Deck width and distance
             have been revised (0 value is not correct for the distance from
             the Face cross Section).
Ineffective area has been included in
             the contraction reach (1:1) and Expansion Reach (2:1)
Distance from Upstream XS =      35
Deck/Roadway Width        =      55
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=      22
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   459.7     315   311.5   539.7     315   311.5   539.7     315   311.5
   546.7     315   311.5   546.7     315   311.5   623.1     315   311.5
   623.1     315   311.5   630.1     315   311.5   630.1     315   311.5
   706.4     315   311.5   706.4     315   311.5   713.4     315   311.5
   713.4     315   311.5   789.7     315   311.5   789.7     315   311.5
   796.7     315   311.5   796.7     315   311.5   873.1     315   311.5
   873.1     315   311.5   880.1     315   311.5   880.1     315   311.5
   960.1     315   311.5

Upstream Bridge Cross Section Data
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   312.5   104.5   308.1   201.3   303.9   207.8   307.1   216.5   307.1
   237.5   311.6   319.8   312.8   335.5   307.7   367.8   307.6   459.7   307.8
   508.9   294.9   585.6   293.1   617.1   292.2   638.9   293.1   772.1   293.3
   888.2   294.6   935.1   293.5   960.1     296  1085.7   298.3  1166.8   300.4
  1260.7   300.5    1360   300.3  1440.6   300.4  1502.7   300.3  1537.7   307.6
  1602.1   309.9  1641.1   327.9  1787.9   328.1    1896   326.7  1953.2   313.1
  2022.1   315.9    2161   318.3  2292.6   325.1  2385.9   332.9  2498.4   333.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0      .1   459.7    .065   960.1    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         459.7   960.1             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   459.7   311.5       F
   960.1  2498.4   311.5       F

Downstream  Deck/Roadway Coordinates
    num=      22
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     401     315   311.5   480.8     315   311.5   480.8     315   311.5
   487.8     315   311.5   487.8     315   311.5   564.2     315   311.5
```

564.2	315	311.5	571.2	315	311.5	571.2	315	311.5
647.5	315	311.5	647.5	315	311.5	654.5	315	311.5
654.5	315	311.5	730.8	315	311.5	730.8	315	311.5
737.8	315	311.5	737.8	315	311.5	814.2	315	311.5
814.2	315	311.5	821.2	315	311.5	821.2	315	311.5
900.5	315	311.5						

Downstream Bridge Cross Section Data
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1
1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left Right Coeff Contr. Expan.
401 900.5 .3 .5
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	401	313.25	F
900.5	2378.2	313.25	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Piers = 5

Pier Data
Pier Station Upstream= 543.2 Downstream= 484.3
Upstream num= 2

Width	Elev	Width	Elev
7	0	7	311.5

Downstream num= 2

Width	Elev	Width	Elev
7	0	7	311.5

Pier Data
Pier Station Upstream= 626.6 Downstream= 567.7
Upstream num= 2

Width	Elev	Width	Elev
7	0	7	311.5

Downstream num= 2

Width	Elev	Width	Elev

```
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   709.9    Downstream=     651
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   793.2    Downstream=   734.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   876.6    Downstream=   817.7
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Energy

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #PF 1

  E.G. US. (ft)               306.22    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               305.49    E.G. Elev (ft)              306.00        305.54
  Q Total (cfs)             38000.00    W.S. Elev (ft)              305.08        304.44
  Q Bridge (cfs)            38000.00    Crit W.S. (ft)              300.00        300.01
  Q Weir (cfs)                          Max Chl Dpth (ft)            12.88         12.74
  Weir Sta Lft (ft)                     Vel Total (ft/s)              7.66          8.41
  Weir Sta Rgt (ft)                     Flow Area (sq ft)          4959.43       4516.98
  Weir Submerg                          Froude # Chl                  0.38          0.46
```

Weir Max Depth (ft)		Specif Force (cu ft)	37050.15	34728.68
Min El Weir Flow (ft)	309.61	Hydr Depth (ft)	10.90	10.44
Min El Prs (ft)	311.50	W.P. Total (ft)	580.67	548.45
Delta EG (ft)	0.97	Conv. Total (cfs)	473715.9	421120.7
Delta WS (ft)	1.20	Top Width (ft)	1050.27	432.78
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.40	0.22
BR Open Vel (ft/s)	8.41	C & E Loss (ft)	0.06	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	3.43	4.19
BR Sel Method	Energy only	Power Total (lb/ft s)	26.29	35.22

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 2

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	306.42	E.G. Elev (ft)	306.21	305.80
W.S. US. (ft)	305.72	W.S. Elev (ft)	305.34	304.76
Q Total (cfs)	38000.00	Crit W.S. (ft)	300.00	300.00
Q Bridge (cfs)	38000.00	Max Chl Dpth (ft)	13.14	13.06
Q Weir (cfs)		Vel Total (ft/s)	7.48	8.16
Weir Sta Lft (ft)		Flow Area (sq ft)	5077.39	4654.77
Weir Sta Rgt (ft)		Froude # Chl	0.36	0.44
Weir Submerg		Specif Force (cu ft)	38139.38	35891.98
Weir Max Depth (ft)		Hydr Depth (ft)	11.13	10.72
Min El Weir Flow (ft)	309.61	W.P. Total (ft)	584.53	553.32
Min El Prs (ft)	311.50	Conv. Total (cfs)	490466.3	440143.6
Delta EG (ft)	0.90	Top Width (ft)	456.03	434.35
Delta WS (ft)	1.10	Frctn Loss (ft)	0.37	0.20
BR Open Area (sq ft)	7690.35	C & E Loss (ft)	0.05	0.07
BR Open Vel (ft/s)	8.16	Shear Total (lb/sq ft)	3.26	3.91
BR Sluice Coef		Power Total (lb/ft s)	24.36	31.96
BR Sel Method	Energy only			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 3

		Element	Inside BR US	Inside BR DS
E.G. US. (ft)	309.64	E.G. Elev (ft)	309.47	309.13
W.S. US. (ft)	308.90	W.S. Elev (ft)	308.56	308.10
Q Total (cfs)	50000.00	Crit W.S. (ft)	301.26	301.32
Q Bridge (cfs)	50000.00	Max Chl Dpth (ft)	16.36	16.40
Q Weir (cfs)		Vel Total (ft/s)	7.62	8.15
Weir Sta Lft (ft)		Flow Area (sq ft)	6565.00	6132.94
Weir Sta Rgt (ft)		Froude # Chl	0.33	0.39
Weir Submerg		Specif Force (cu ft)	59877.75	56919.77
Weir Max Depth (ft)		Hydr Depth (ft)	14.11	13.60
Min El Weir Flow (ft)	309.61	W.P. Total (ft)	630.42	604.56
Min El Prs (ft)	311.50	Conv. Total (cfs)	715682.7	657005.8
Delta EG (ft)	0.73	Top Width (ft)	1326.71	450.79
Delta WS (ft)	0.88	Frctn Loss (ft)	0.29	0.15
BR Open Area (sq ft)	7690.35	C & E Loss (ft)	0.04	0.07
BR Open Vel (ft/s)	8.15			

BR Sluice Coef		Shear Total (lb/sq ft)	3.17	3.67
BR Sel Method	Energy only	Power Total (lb/ft s)	24.17	29.90

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 242

INPUT
Description: ineffective area has been added (cross section at the face of the bridge)

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1
1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401	900.5	165	224	270	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	401	313.25	F
900.5	2378.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.25	Element			
Vel Head (ft)	0.96	Wt. n-Val.		0.065	
W.S. Elev (ft)	304.29	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	299.62	Flow Area (sq ft)		4836.56	
E.G. Slope (ft/ft)	0.005287	Area (sq ft)		4836.56	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	467.02	Top Width (ft)		467.02	
Vel Total (ft/s)	7.86	Avg. Vel. (ft/s)		7.86	
Max Chl Dpth (ft)	12.59	Hydr. Depth (ft)		10.36	
Conv. Total (cfs)	522605.8	Conv. (cfs)		522605.8	
Length Wtd. (ft)	232.17	Wetted Per. (ft)		470.66	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.39	
Alpha	1.00	Stream Power (lb/ft s)		26.65	
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	2.06	108.40	106.06
C & E Loss (ft)	0.10	Cum SA (acres)	0.95	12.18	19.38

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	305.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.90	Wt. n-Val.		0.065	
W.S. Elev (ft)	304.62	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	299.63	Flow Area (sq ft)		4993.90	
E.G. Slope (ft/ft)	0.004776	Area (sq ft)		4993.90	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	468.68	Top Width (ft)		468.68	
Vel Total (ft/s)	7.61	Avg. Vel. (ft/s)		7.61	
Max Chl Dpth (ft)	12.92	Hydr. Depth (ft)		10.66	
Conv. Total (cfs)	549848.9	Conv. (cfs)		549848.9	
Length Wtd. (ft)	232.24	Wetted Per. (ft)		472.45	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.15	
Alpha	1.00	Stream Power (lb/ft s)		23.98	
Frctn Loss (ft)	0.95	Cum Volume (acre-ft)	0.24	115.60	55.18
C & E Loss (ft)	0.11	Cum SA (acres)	0.09	11.93	7.22

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	308.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.		0.065	
W.S. Elev (ft)	308.02	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	300.88	Flow Area (sq ft)		6614.62	
E.G. Slope (ft/ft)	0.003407	Area (sq ft)		6614.62	
Q Total (cfs)	50000.00	Flow (cfs)		50000.00	
Top Width (ft)	485.40	Top Width (ft)		485.40	
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)		7.56	
Max Chl Dpth (ft)	16.32	Hydr. Depth (ft)		13.63	
Conv. Total (cfs)	856588.9	Conv. (cfs)		856588.9	
Length Wtd. (ft)	233.07	Wetted Per. (ft)		490.60	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		2.87	
Alpha	1.00	Stream Power (lb/ft s)		21.68	
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	13.27	172.34	213.78
C & E Loss (ft)	0.16	Cum SA (acres)	3.38	12.23	21.16

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 239

INPUT
Description: -add ineffective flow area (Expansion Reach)
Station Elevation Data   num=   35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314	87.1	311.2	151.3	308.5	183.2	306.4	215.4	304.6
241.3	303	280.1	296.8	314.7	293.9	339	292.9	379.6	294.4
403.2	292.6	425.4	293.1	463.7	294.4	483.9	291.8	506.5	290.7
551.3	292.7	620.7	293.2	628.9	295.7	642	299.6	662.4	296.3
712.8	296.7	745.9	295.3	808	296.4	858.6	297.1	955.9	298.3
1077.2	298.6	1096.1	296.4	1143.4	295.9	1251.8	296.4	1289.9	298.8
1360.3	299.6	1377.5	302.7	1402.9	313.3	1426.5	325.9	1436.2	326.7

Manning's n Values   num=   3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	241.3	.065	642	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
241.3	642	385	413	515	.1	.3

Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	201.8	313.25	F
906.2	1436.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.05	Element			
Vel Head (ft)	0.75	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	303.29	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	299.63	Flow Area (sq ft)	0.70	3729.01	1767.20
E.G. Slope (ft/ft)	0.004249	Area (sq ft)	0.70	3729.01	4382.61
Q Total (cfs)	38000.00	Flow (cfs)	0.19	24506.64	13493.17
Top Width (ft)	1142.39	Top Width (ft)	4.76	400.70	736.92
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)	0.27	6.57	7.64
Max Chl Dpth (ft)	12.59	Hydr. Depth (ft)	0.15	9.31	6.69
Conv. Total (cfs)	582943.8	Conv. (cfs)	2.9	375947.2	206993.7
Length Wtd. (ft)	447.70	Wetted Per. (ft)	4.77	402.64	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.04	2.46	1.77
Alpha	1.02	Stream Power (lb/ft s)	0.01	16.15	13.53
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	2.06	86.38	92.48
C & E Loss (ft)	0.07	Cum SA (acres)	0.94	9.95	17.09

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.47	Element			
Vel Head (ft)	0.67	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	303.79	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	299.64	Flow Area (sq ft)		3923.34	1899.16
E.G. Slope (ft/ft)	0.003511	Area (sq ft)		3923.34	1899.16
Q Total (cfs)	38000.00	Flow (cfs)		24380.19	13619.81
Top Width (ft)	660.00	Top Width (ft)		395.80	264.20

Vel Total (ft/s)	6.53	Avg. Vel. (ft/s)		6.21	7.17
Max Chl Dpth (ft)	13.09	Hydr. Depth (ft)		9.91	7.19
Conv. Total (cfs)	641341.7	Conv. (cfs)		411474.6	229867.1
Length Wtd. (ft)	446.15	Wetted Per. (ft)		399.25	270.62
Min Ch El (ft)	290.70	Shear (lb/sq ft)		2.15	1.54
Alpha	1.01	Stream Power (lb/ft s)		13.38	11.03
Frctn Loss (ft)	1.43	Cum Volume (acre-ft)	0.24	92.67	49.30
C & E Loss (ft)	0.04	Cum SA (acres)	0.09	9.71	6.40

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	308.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.63	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	300.56	Flow Area (sq ft)	135.09	5464.84	2911.71
E.G. Slope (ft/ft)	0.001762	Area (sq ft)	178.99	5464.84	7587.45
Q Total (cfs)	50000.00	Flow (cfs)	191.03	29838.00	19970.97
Top Width (ft)	1224.73	Top Width (ft)	76.73	400.70	747.30
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	1.41	5.46	6.86
Max Chl Dpth (ft)	16.93	Hydr. Depth (ft)	3.42	13.64	11.02
Conv. Total (cfs)	1191153.0	Conv. (cfs)	4551.0	710832.4	475769.5
Length Wtd. (ft)	453.52	Wetted Per. (ft)	39.57	402.64	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.38	1.49	1.21
Alpha	1.06	Stream Power (lb/ft s)	0.53	8.15	8.31
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	12.93	141.29	190.23
C & E Loss (ft)	0.08	Cum SA (acres)	3.24	9.95	18.84

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 230

INPUT
Description: Ineffective flow-Expansion Reach
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312	65.6	310.4	137.8	306.5	207.5	304.8	265.4	303.7
291.2	300.1	331.4	299.8	351.6	295.4	389	294.6	407.4	291.3
454.2	291.8	462.3	290.4	477.6	289.8	534.6	290.2	554.3	293.8
641.2	293.6	754.1	293.5	854.5	294.1	957	293.2	982.8	292.3
997.6	294.6	1024.6	297.5	1044.3	298.8	1136.2	298.2	1228.8	298
1299.8	296	1370.7	296	1433	296.9	1442.5	299.6	1459.2	298.3
1470.3	296.6	1517.5	295	1523.6	297.2	1550.3	301.8	1578.7	304.4
1682	307.7	1783.3	310.7	1933.2	315.6	2031.8	320.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	331.4	.065	854.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.4	854.5	460	487	430	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	61.8	313.25	F
1233.8	2031.8	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	302.27	Element			
Vel Head (ft)	0.51	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	301.76	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	297.85	Flow Area (sq ft)	82.76	4531.83	2070.54
E.G. Slope (ft/ft)	0.003420	Area (sq ft)	82.76	4531.83	3633.57
Q Total (cfs)	38000.00	Flow (cfs)	97.74	25515.28	12386.99
Top Width (ft)	1270.79	Top Width (ft)	52.11	523.10	695.58
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)	1.18	5.63	5.98
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	1.59	8.66	5.46
Conv. Total (cfs)	649800.6	Conv. (cfs)	1671.3	436311.6	211817.8
Length Wtd. (ft)	461.16	Wetted Per. (ft)	52.23	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.34	1.85	1.16
Alpha	1.02	Stream Power (lb/ft s)	0.40	10.39	6.97
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	1.69	47.22	45.09
C & E Loss (ft)	0.06	Cum SA (acres)	0.69	5.57	8.62

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.00	Element			
Vel Head (ft)	0.55	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	302.44	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	297.86	Flow Area (sq ft)	25.04	4888.27	1587.83
E.G. Slope (ft/ft)	0.002948	Area (sq ft)	25.04	4888.27	1587.83
Q Total (cfs)	38000.00	Flow (cfs)	32.67	26874.77	11092.57
Top Width (ft)	735.00	Top Width (ft)	9.60	523.10	202.30
Vel Total (ft/s)	5.85	Avg. Vel. (ft/s)	1.30	5.50	6.99
Max Chl Dpth (ft)	12.64	Hydr. Depth (ft)	2.61	9.34	7.85
Conv. Total (cfs)	699903.2	Conv. (cfs)	601.7	494993.0	204308.5
Length Wtd. (ft)	462.77	Wetted Per. (ft)	12.17	524.34	206.42
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.38	1.72	1.42
Alpha	1.04	Stream Power (lb/ft s)	0.49	9.43	9.89
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.13	50.90	28.69
C & E Loss (ft)	0.07	Cum SA (acres)	0.05	5.35	3.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	307.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.28	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	299.08	Flow Area (sq ft)	728.21	7418.30	4163.52
E.G. Slope (ft/ft)	0.000870	Area (sq ft)	728.21	7418.30	7721.56
Q Total (cfs)	50000.00	Flow (cfs)	734.92	29254.25	20010.83
Top Width (ft)	1545.51	Top Width (ft)	208.05	523.10	814.36
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	1.01	3.94	4.81
Max Chl Dpth (ft)	17.48	Hydr. Depth (ft)	3.50	14.18	10.98
Conv. Total (cfs)	1695491.0	Conv. (cfs)	24921.0	992005.9	678563.6
Length Wtd. (ft)	457.44	Wetted Per. (ft)	208.35	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.19	0.77	0.60
Alpha	1.11	Stream Power (lb/ft s)	0.19	3.03	2.86
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	8.92	80.21	99.67
C & E Loss (ft)	0.04	Cum SA (acres)	1.98	5.57	9.61

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: RIVER-1
REACH: Reach-1 RS: 220

INPUT
Description: Ineffective flow-Expansion Reach
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324	93.8	319.7	217.1	314.8	297.3	308	374.5	304.6
393.2	301.5	420.3	299.8	439.7	295.9	465.5	296.2	484.2	299.8
534.9	296.3	575.2	295.4	649.9	293.8	675.5	292.1	713.9	292.3
756.2	290	798.1	288.8	821.5	289.8	922.4	289.9	957.7	292.4
1018	292.8	1064.1	291.5	1181.5	291.6	1265.8	291.3	1290.2	294.1
1314.9	297	1364.7	297.1	1483.6	297	1523.5	296	1602.5	296
1626.8	297.7	1646.9	298.6	1670.2	296.6	1761.1	297.9	1817.3	299.2
1831.2	296.4	1867.1	295.6	1937.3	298.2	2007.5	300.4	2031.6	304.8
2049.2	303.8	2077.8	303.4	2093.8	308.1	2142.9	309.4		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	484.2	.065	957.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
484.2	957.7	0	0	0	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	56	313.25	F
1681.8	2142.9	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	301.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.76	Reach Len. (ft)			
Crit W.S. (ft)	296.44	Flow Area (sq ft)	236.93	3914.77	4520.70
E.G. Slope (ft/ft)	0.001870	Area (sq ft)	236.93	3914.77	5502.52
Q Total (cfs)	38000.00	Flow (cfs)	314.02	15812.66	21873.32
Top Width (ft)	1604.48	Top Width (ft)	79.20	473.50	1051.77
Vel Total (ft/s)	4.38	Avg. Vel. (ft/s)	1.33	4.04	4.84
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	2.99	8.27	6.24
Conv. Total (cfs)	878855.8	Conv. (cfs)	7262.6	365711.7	505881.5
Length Wtd. (ft)		Wetted Per. (ft)	79.97	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.35	0.96	0.73
Alpha	1.06	Stream Power (lb/ft s)	0.46	3.89	3.52
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	301.66	Reach Len. (ft)			
Crit W.S. (ft)	296.15	Flow Area (sq ft)		4217.24	4224.02
E.G. Slope (ft/ft)	0.001490	Area (sq ft)		4217.24	4224.02
Q Total (cfs)	38000.00	Flow (cfs)		16798.66	21201.34
Top Width (ft)	970.00	Top Width (ft)		434.80	535.20
Vel Total (ft/s)	4.50	Avg. Vel. (ft/s)		3.98	5.02
Max Chl Dpth (ft)	12.86	Hydr. Depth (ft)		9.70	7.89
Conv. Total (cfs)	984565.4	Conv. (cfs)		435246.9	549318.5
Length Wtd. (ft)		Wetted Per. (ft)		439.63	540.45
Min Ch El (ft)	288.80	Shear (lb/sq ft)		0.89	0.73
Alpha	1.04	Stream Power (lb/ft s)		3.55	3.65
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	307.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.13	Reach Len. (ft)			
Crit W.S. (ft)	297.37	Flow Area (sq ft)	961.20	6930.97	9133.22
E.G. Slope (ft/ft)	0.000362	Area (sq ft)	961.20	6930.97	12473.01
Q Total (cfs)	50000.00	Flow (cfs)	868.91	18038.38	31092.72
Top Width (ft)	1773.44	Top Width (ft)	167.15	473.50	1132.80
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	0.90	2.60	3.40
Max Chl Dpth (ft)	18.33	Hydr. Depth (ft)	5.75	14.64	12.61
Conv. Total (cfs)	2626576.0	Conv. (cfs)	45645.1	947583.3	1633348.0
Length Wtd. (ft)		Wetted Per. (ft)	168.24	473.89	724.63

Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.13	0.33	0.29
Alpha	1.12	Stream Power (lb/ft s)	0.12	0.86	0.97
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

SUMMARY OF MANNING'S N VALUES

River:RIVER-1

Reach	River Sta.	n1	n2	n3
Reach-1	355	.06	.05	.06
Reach-1	345	.06	.05	.06
Reach-1	340	.06	.05	.06
Reach-1	330	.06	.035	.045
Reach-1	320	.06	.035	.045
Reach-1	310	.06	.035	.045
Reach-1	300	.05	.06	.05
Reach-1	290	.05	.06	.05
Reach-1	285	.05	.06	.05
Reach-1	280	.05	.06	.05
Reach-1	270	.05	.06	.05
Reach-1	260	.05	.06	.05
Reach-1	250	.05	.06	.05
Reach-1	245	.045	.1	.11
Reach-1	244	.1	.065	.045
Reach-1	243	Bridge		
Reach-1	242	.1	.065	.045
Reach-1	239	.1	.065	.045
Reach-1	230	.1	.065	.045
Reach-1	220	.1	.065	.045

SUMMARY OF REACH LENGTHS

River: RIVER-1

Reach	River Sta.	Left	Channel	Right
Reach-1	355	360	310	350
Reach-1	345	400	335	125
Reach-1	340	450	454	575
Reach-1	330	620	588	620
Reach-1	320	640	711	660
Reach-1	310	610	610	640
Reach-1	300	790	654	605
Reach-1	290	695	653	645
Reach-1	285	640	688	660

Reach-1	280	1135	1021	1060
Reach-1	270	1000	951	815
Reach-1	260	1050	1031	1000
Reach-1	250	700	701	615
Reach-1	245	140.2	147.4	160
Reach-1	244	104.8	124.6	145
Reach-1	243	Bridge		
Reach-1	242	165	224	270
Reach-1	239	385	413	515
Reach-1	230	460	487	430
Reach-1	220	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: RIVER-1

Reach	River Sta.	Contr.	Expan.
Reach-1	355	.1	.3
Reach-1	345	.1	.3
Reach-1	340	.1	.3
Reach-1	330	.1	.3
Reach-1	320	.1	.3
Reach-1	310	.1	.3
Reach-1	300	.1	.3
Reach-1	290	.1	.3
Reach-1	285	.1	.3
Reach-1	280	.1	.3
Reach-1	270	.1	.3
Reach-1	260	.1	.3
Reach-1	250	.1	.3
Reach-1	245	.1	.3
Reach-1	244	.3	.5
Reach-1	243	Bridge	
Reach-1	242	.3	.5
Reach-1	239	.1	.3
Reach-1	230	.1	.3
Reach-1	220	.1	.3

HEC-RAS Plan: Imported Plan 01 River: RIVER-1 Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	220	PF 1	38000.00	288.80	300.76	296.44	301.08	0.001870	4.04	8672.41	1604.48	0.25
Reach-1	220	PF 2	38000.00	288.80	301.66	296.15	301.99	0.001490	3.98	8441.26	970.00	0.23
Reach-1	220	PF 3	50000.00	288.80	307.13	297.37	307.28	0.000362	2.60	17025.38	1773.44	0.12
Reach-1	230	PF 1	38000.00	289.80	301.76	297.85	302.27	0.003420	5.63	6685.13	1270.79	0.34
Reach-1	230	PF 2	38000.00	289.80	302.44	297.86	303.00	0.002948	5.50	6501.14	735.00	0.32
Reach-1	230	PF 3	50000.00	289.80	307.28	299.08	307.57	0.000870	3.94	12310.04	1545.51	0.18
Reach-1	239	PF 1	38000.00	290.70	303.29	299.63	304.05	0.004249	6.57	5496.90	1142.39	0.38
Reach-1	239	PF 2	38000.00	290.70	303.79	299.64	304.47	0.003511	6.21	5822.50	660.00	0.35
Reach-1	239	PF 3	50000.00	290.70	307.63	300.56	308.19	0.001762	5.46	8511.64	1224.73	0.26
Reach-1	242	PF 1	38000.00	291.70	304.29	299.62	305.25	0.005287	7.86	4836.56	467.02	0.43
Reach-1	242	PF 2	38000.00	291.70	304.62	299.63	305.52	0.004776	7.61	4993.90	468.68	0.41
Reach-1	242	PF 3	50000.00	291.70	308.02	300.88	308.91	0.003407	7.56	6614.62	485.40	0.36
Reach-1	243		Bridge									
Reach-1	244	PF 1	38000.00	292.20	305.49	299.66	306.22	0.003533	6.83	5561.37	1098.95	0.36
Reach-1	244	PF 2	38000.00	292.20	305.72	299.66	306.42	0.003395	6.69	5676.50	492.48	0.35
Reach-1	244	PF 3	50000.00	292.20	308.90	300.87	309.64	0.002582	6.89	7256.49	1381.57	0.32
Reach-1	245	PF 1	38000.00	292.50	306.46	299.04	306.77	0.003440	4.55	8502.26	1113.38	0.23
Reach-1	245	PF 2	38000.00	292.50	306.60	299.29	307.01	0.004312	5.13	7429.18	605.00	0.26
Reach-1	245	PF 3	50000.00	292.50	309.73	299.95	310.06	0.002611	4.65	10888.54	1249.85	0.21
Reach-1	250	PF 1	38000.00	293.70	307.89		308.15	0.001307	4.35	9367.31	1120.27	0.23
Reach-1	250	PF 2	38000.00	293.70	308.40		308.80	0.001691	5.11	7516.69	695.00	0.27
Reach-1	250	PF 3	50000.00	293.70	310.79		311.04	0.000881	4.19	12802.92	1233.35	0.20
Reach-1	260	PF 1	38000.00	297.60	309.82		310.62	0.004705	7.25	5329.01	642.88	0.43
Reach-1	260	PF 2	38000.00	297.60	310.64		311.33	0.003539	6.71	5713.03	600.00	0.38
Reach-1	260	PF 3	50000.00	297.60	312.01		312.87	0.003834	7.54	6782.21	690.81	0.40
Reach-1	270	PF 1	37000.00	299.40	313.28	307.73	313.82	0.002504	5.98	6459.87	965.96	0.32
Reach-1	270	PF 2	37000.00	299.40	313.56	307.74	314.13	0.002472	6.04	6133.45	560.00	0.32
Reach-1	270	PF 3	49000.00	299.40	315.08	308.82	315.66	0.002283	6.33	8630.01	1116.51	0.32
Reach-1	280	PF 1	37000.00	300.10	314.77		314.87	0.000524	2.57	14475.33	1530.39	0.15
Reach-1	280	PF 2	37000.00	300.10	315.10		315.22	0.000560	2.75	13431.31	1300.00	0.15
Reach-1	280	PF 3	49000.00	300.10	316.56		316.68	0.000521	2.87	17238.81	1581.95	0.15
Reach-1	285	PF 1	37000.00	302.20	315.22		315.37	0.000977	3.08	12209.50	1725.34	0.19
Reach-1	285	PF 2	37000.00	302.20	315.57		315.72	0.000930	3.09	11988.95	1435.00	0.19
Reach-1	285	PF 3	49000.00	302.20	316.98		317.15	0.000851	3.28	15261.71	1743.19	0.19
Reach-1	290	PF 1	37000.00	303.10	316.07		316.27	0.002005	3.54	10439.77	1818.41	0.26
Reach-1	290	PF 2	37000.00	303.10	316.37		316.59	0.001939	3.72	9934.69	1556.59	0.26
Reach-1	290	PF 3	49000.00	303.10	317.69		317.90	0.001566	3.65	13412.76	1867.38	0.24
Reach-1	300	PF 1	37000.00	305.10	317.38		317.61	0.002054	3.83	9842.19	1687.58	0.27
Reach-1	300	PF 2	37000.00	305.10	317.63		317.86	0.001930	3.82	9698.62	1470.00	0.26
Reach-1	300	PF 3	49000.00	305.10	318.76		319.02	0.001817	4.11	12260.79	1862.61	0.26
Reach-1	310	PF 1	37000.00	305.70	318.07	314.35	318.30	0.000721	3.87	9839.27	1811.69	0.27
Reach-1	310	PF 2	37000.00	305.70	318.28	314.33	318.50	0.000655	3.77	9886.26	1545.00	0.26
Reach-1	310	PF 3	49000.00	305.70	319.38	314.93	319.65	0.000661	4.20	12210.49	2015.22	0.27
Reach-1	320	PF 1	37000.00	307.20	318.61	314.77	318.93	0.001015	4.55	8149.67	1921.45	0.32
Reach-1	320	PF 2	37000.00	307.20	318.77	314.83	319.12	0.001055	4.76	7779.55	1206.36	0.33
Reach-1	320	PF 3	49000.00	307.20	319.88	315.57	320.15	0.000760	4.41	12936.14	2066.02	0.29
Reach-1	330	PF 1	36000.00	308.50	319.20	316.37	319.84	0.001962	6.63	5721.42	954.35	0.45
Reach-1	330	PF 2	36000.00	308.50	319.36	316.37	320.04	0.001963	6.80	5508.63	798.59	0.45
Reach-1	330	PF 3	48000.00	308.50	320.18	317.22	321.04	0.002223	7.65	6609.48	981.16	0.49
Reach-1	340	PF 1	36000.00	309.90	320.39	316.26	320.77	0.001970	4.96	7257.49	1042.39	0.32
Reach-1	340	PF 2	36000.00	309.90	320.57	316.26	320.95	0.001870	5.00	7196.79	920.00	0.32
Reach-1	340	PF 3	48000.00	309.90	321.58	317.07	322.08	0.002148	5.69	8439.60	1060.28	0.34
Reach-1	345	PF 1	36000.00	309.80	321.07	316.13	321.44	0.002031	4.89	7368.56	1095.11	0.32
Reach-1	345	PF 2	36000.00	309.80	321.16	316.13	321.58	0.001822	5.22	6896.55	801.12	0.31
Reach-1	345	PF 3	48000.00	309.80	322.34	317.04	322.80	0.002137	5.45	8906.12	1148.93	0.34
Reach-1	355	PF 1	36000.00	311.40	321.67	317.36	322.22	0.002750	5.94	6058.62	1297.77	0.38
Reach-1	355	PF 2	36000.00	311.40	321.70	317.48	322.36	0.002938	6.53	5516.36	662.70	0.40

HEC-RAS Plan: Imported Plan 01 River: RIVER-1 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	355	PF 3	48000.00	311.40	323.01	318.35	323.45	0.002009	5.66	9642.01	1449.27	0.34

EXHIBIT E
EXISTING CONDITIONS MODEL

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Carlton Oaks Existing
Project File : CarltonOaksExisting.prj
Run Date and Time: 12/19/2023 4:05:21 PM

Project in English units

Project Description:
UPPER SAN DIEGO RIVER EXISTING CONDITIONS
Profile 1: FEMA
100-Year Flood Plain
Profile 2: FEMA Fwy
Profile 3:
100-Year Flood Plain with BSI Flows
Revised per Existing topo

Record Floodway Locations
12/15/2023

PLAN DATA

Plan Title: Plan 01
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Existing\CarltonOaksExisting.p01

Geometry Title: UpperSanDiego-EX
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Existing\CarltonOaksExisting.g01

Flow Title   : 100 Year Flow
Flow File   : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Existing\CarltonOaksExisting.f01

Plan Summary Information:
Number of: Cross Sections = 20 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 1 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

Encroachment Data
Equal Conveyance = True
Left Offset = 0
Right Offset = 0

River = San Diego River Reach = Reach 1

RS	Profile	Method	Value1	Value2
355	PF 2	1	1604.5	2269.4
345	PF 2	1	1217.3	2147.3
340	PF 2	1	1147.2	2067.2
330	PF 2	1	1293.6	2138.6
320	PF 2	1	848.3	2073.3
315	PF 2	1	831	2340.8
310	PF 2	1	559.1	2104.1
300	PF 2	1	434.3	1904.3
290	PF 2	1	270.7	1840.7
285	PF 2	1	472.1	1907.1
280	PF 2	1	608.4	1908.4
270	PF 2	1	341.7	901.7
260	PF 2	1	256.7	856.7
250	PF 2	1	357	1052
245	PF 2	1	686.6	1291.6
244	PF 2	1	459.7	960.1
242	PF 2	1	401	900.5
239	PF 2	1	246.2	906.2
230	PF 2	1	321.8	1056.8
220	PF 2	1	522.9	1492.9
210	PF 2	1	438	1478
200	PF 2	1	404.6	1494.6

FLOW DATA

Flow Title: 100 Year Flow
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Existing\CarltonOaksExisting.f01

Flow Data (cfs)

River	Reach	RS	PF 1	PF 2	PF 3	PF 4	PF 5
San Diego River	Reach 1	355	36000	36000	48000	4500	16000
San Diego River	Reach 1	320	37000	37000	49000	5000	17000
San Diego River	Reach 1	260	38000	38000	50000	5500	19000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Diego River	Reach 1	PF 1		Known WS = 300.76
San Diego River	Reach 1	PF 2		Known WS = 301.66
San Diego River	Reach 1	PF 3		Known WS = 307.13
San Diego River	Reach 1	PF 4		Known WS = 300.13
San Diego River	Reach 1	PF 5		Known WS = 300.13

GEOMETRY DATA

Geometry Title: UpperSanDiego-EX
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Existing\CarltonOaksExisting.g01

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 355

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.6	54.1	329.6	64.2	325.6	78.6	322.7	125.3	322.5
191.1	321.9	199.7	330.5	303.1	330.6	305.9	328.2	314.9	330.2
343.4	331	443.3	330.1	543	331.4	551.9	329.8	608.6	330
615.1	337.4	640.3	337.4	643.6	329.1	672	328.4	743.1	329.5
746.8	336.5	789.9	336.5	793.5	328.9	836.7	328.9	980.7	324.9
1031	325	1062.7	326.6	1066.4	336.1	1083.8	336.3	1090.8	326.3
1156	325.6	1239.4	323.7	1275.1	321.6	1361.3	321	1418.6	319.8
1446.7	316.6	1469.1	316.3	1506.5	316.7	1516.7	310.8	1537.2	310.1
1551.7	310.8	1563.9	314.9	1590.3	315.8	1604.5	319.7	1616.8	316.1
1666	315.1	1720.1	313.8	1733.1	311.4	1933.3	311.5	2090.2	312
2112.2	314.2	2137	316.4	2145.2	320.2	2164.3	321.8	2196.4	318.6

2209	313.6	2229.8	312.6	2258.6	312.6	2294	313.5	2306.7	315.2
2330.7	319.2	2365.6	319.9	2417.7	320.5	2464.8	318.9	2487.3	317.9
2527.9	317.8	2547.1	318.7	2582	322.5	2592.6	324.2	2640.3	323.9
2733.3	326	2773.3	328.7	2799.6	328.3	2837.5	329.1	2881.4	328.9
2888.7	330.5	2924.8	331.4	2990.2	330.4	2995.2	332.8	3009.4	332.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1604.5	.05	2417.7	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1604.5	2417.7	360	310	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1604.5	326	F
2417.7	3009.4	326	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	322.49	Element			
Vel Head (ft)	0.51	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.98	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	317.36	Flow Area (sq ft)		6308.79	
E.G. Slope (ft/ft)	0.002414	Area (sq ft)	1420.15	6308.79	476.82
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	1317.59	Top Width (ft)	344.86	813.20	159.53
Vel Total (ft/s)	5.71	Avg. Vel. (ft/s)		5.71	
Max Chl Dpth (ft)	11.88	Hydr. Depth (ft)		7.76	
Conv. Total (cfs)	732658.3	Conv. (cfs)		732658.3	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		816.68	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.16	
Alpha	1.00	Stream Power (lb/ft s)		6.64	
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	110.50	1732.51	236.87
C & E Loss (ft)	0.05	Cum SA (acres)	29.51	222.66	43.16

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	322.68	Element			
Vel Head (ft)	0.61	Wt. n-Val.		0.050	
W.S. Elev (ft)	322.08	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	317.49	Flow Area (sq ft)		5766.69	
E.G. Slope (ft/ft)	0.002549	Area (sq ft)		5766.69	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	664.90	Top Width (ft)		664.90	
Vel Total (ft/s)	6.24	Avg. Vel. (ft/s)		6.24	
Max Chl Dpth (ft)	10.68	Hydr. Depth (ft)		8.67	
Conv. Total (cfs)	713036.6	Conv. (cfs)		713036.6	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		679.50	

Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.35	
Alpha	1.00	Stream Power (lb/ft s)		8.43	
Frctn Loss (ft)	0.61	Cum Volume (acre-ft)	21.35	1770.26	79.86
C & E Loss (ft)	0.07	Cum SA (acres)	3.08	212.49	10.75

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	323.98	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.		0.050	
W.S. Elev (ft)	323.32	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	318.35	Flow Area (sq ft)		7400.66	
E.G. Slope (ft/ft)	0.002521	Area (sq ft)	1995.82	7400.66	698.30
Q Total (cfs)	48000.00	Flow (cfs)		48000.00	
Top Width (ft)	1458.36	Top Width (ft)	475.73	813.20	169.44
Vel Total (ft/s)	6.49	Avg. Vel. (ft/s)		6.49	
Max Chl Dpth (ft)	13.22	Hydr. Depth (ft)		9.10	
Conv. Total (cfs)	955965.1	Conv. (cfs)		955965.1	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		816.68	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.43	
Alpha	1.00	Stream Power (lb/ft s)		9.25	
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	175.64	2149.44	406.79
C & E Loss (ft)	0.07	Cum SA (acres)	40.11	225.06	50.70

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	315.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.050	
W.S. Elev (ft)	315.76	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	313.28	Flow Area (sq ft)		1953.79	
E.G. Slope (ft/ft)	0.001255	Area (sq ft)	253.45	1953.79	
Q Total (cfs)	4500.00	Flow (cfs)		4500.00	
Top Width (ft)	683.74	Top Width (ft)	80.99	602.74	
Vel Total (ft/s)	2.30	Avg. Vel. (ft/s)		2.30	
Max Chl Dpth (ft)	5.66	Hydr. Depth (ft)		3.24	
Conv. Total (cfs)	127029.8	Conv. (cfs)		127029.8	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		603.77	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		0.25	
Alpha	1.00	Stream Power (lb/ft s)		0.58	
Frctn Loss (ft)	0.25	Cum Volume (acre-ft)	19.20	542.87	98.28
C & E Loss (ft)	0.01	Cum SA (acres)	10.54	178.63	29.87

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	319.18	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.25	Wt. n-Val.		0.050		
W.S. Elev (ft)	318.94	Reach Len. (ft)	360.00	310.00	350.00	
Crit W.S. (ft)	315.25	Flow Area (sq ft)		4002.69		
E.G. Slope (ft/ft)	0.001683	Area (sq ft)	707.33	4002.69	69.53	
Q Total (cfs)	16000.00	Flow (cfs)		16000.00		
Top Width (ft)	932.45	Top Width (ft)	175.52	671.43	85.49	
Vel Total (ft/s)	4.00	Avg. Vel. (ft/s)		4.00		
Max Chl Dpth (ft)	8.84	Hydr. Depth (ft)		5.96		
Conv. Total (cfs)	389989.0	Conv. (cfs)		389989.0		
Length Wtd. (ft)	310.00	Wetted Per. (ft)		674.28		
Min Ch El (ft)	311.40	Shear (lb/sq ft)		0.62		
Alpha	1.00	Stream Power (lb/ft s)		2.49		
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	51.03	1090.73	146.56	
C & E Loss (ft)	0.03	Cum SA (acres)	15.29	212.33	35.74	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 345

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.5	49.4	329.1	102.6	328.5	110.8	325.5	147.2	324.7
222.2	324.8	279.9	324	297.8	318.7	332.6	318.3	342	322.6
352.2	328.6	409	329.7	414.3	338.4	436.9	338.4	443.4	329.4
479.4	328.7	533.4	328.1	539.9	334.4	654.6	334.4	663.1	327.7
761.2	327.7	831.1	325.5	841.3	334.3	870.8	334.3	875.7	325.4
919.5	323.7	960.7	323.6	995.9	324.3	1000.4	333.1	1039.7	333.1
1042.9	325.3	1092.1	322.8	1111.7	320.1	1171.1	320.2	1196.7	319
1218.4	314.4	1243.9	313.4	1260.5	315.7	1277.7	315.6	1287.1	312.5
1308.4	310.6	1331.5	309.8	1349.3	310.6	1357.5	314	1406.2	313.9
1473.3	313.3	1479.5	310	1754.1	310	1768.6	320.8	1784.4	328.6
1796.2	329.8	1811.8	323.1	1827.4	315.1	1847.9	313.7	1865	315.1
1881.8	319.8	1899.8	323.5	1942.8	322.9	1993.1	319.8	2004.9	316.5
2015.6	312.2	2033.1	312.5	2061.4	312.9	2065.9	312.2	2147.9	312.2
2160.3	316.1	2180.3	319.1	2223.2	319.9	2242.8	318	2258.3	317.9
2273.1	319.4	2284.9	321.6	2294.3	324.2	2319.3	325.5	2321.4	351.5
2360.3	351.5	2366.8	331.2	2419.1	331.4	2422.9	347.8	2478	347.8
2482.6	330.3	2500.2	330.1	2540.7	330.6	2574.2	329.3	2587	329.7
2658.4	333.8	2742.3	337.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1092.1	.05	2294.3	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1092.1	2294.3	400	335	125	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	742.3	326	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	321.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.48	Reach Len. (ft)	400.00	335.00	125.00
Crit W.S. (ft)	316.13	Flow Area (sq ft)		7798.78	
E.G. Slope (ft/ft)	0.001714	Area (sq ft)	127.68	7798.78	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	1112.76	Top Width (ft)	51.13	1061.63	
Vel Total (ft/s)	4.62	Avg. Vel. (ft/s)		4.62	
Max Chl Dpth (ft)	11.68	Hydr. Depth (ft)		7.35	
Conv. Total (cfs)	869461.5	Conv. (cfs)		869461.5	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		1073.32	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.78	
Alpha	1.00	Stream Power (lb/ft s)		3.59	
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	104.10	1682.31	234.96
C & E Loss (ft)	0.00	Cum SA (acres)	27.87	215.99	42.52

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	322.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.63	Reach Len. (ft)	400.00	335.00	125.00
Crit W.S. (ft)	316.13	Flow Area (sq ft)		7272.35	
E.G. Slope (ft/ft)	0.001559	Area (sq ft)		7272.35	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	812.79	Top Width (ft)		812.79	
Vel Total (ft/s)	4.95	Avg. Vel. (ft/s)		4.95	
Max Chl Dpth (ft)	11.83	Hydr. Depth (ft)		8.95	
Conv. Total (cfs)	911800.9	Conv. (cfs)		911800.9	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		839.22	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.84	
Alpha	1.00	Stream Power (lb/ft s)		4.17	
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	21.35	1723.86	79.86
C & E Loss (ft)	0.01	Cum SA (acres)	3.08	207.24	10.75

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	323.25	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.42	Wt. n-Val.	0.060	0.050		
W.S. Elev (ft)	322.83	Reach Len. (ft)	400.00	335.00	125.00	
Crit W.S. (ft)	317.04	Flow Area (sq ft)	0.01	9267.35		
E.G. Slope (ft/ft)	0.001821	Area (sq ft)	201.89	9267.35		
Q Total (cfs)	48000.00	Flow (cfs)	0.00	48000.00		
Top Width (ft)	1169.35	Top Width (ft)	59.12	1110.23		
Vel Total (ft/s)	5.18	Avg. Vel. (ft/s)	0.06	5.18		
Max Chl Dpth (ft)	13.03	Hydr. Depth (ft)	0.01	8.35		
Conv. Total (cfs)	1124684.0	Conv. (cfs)	0.0	1124684.0		
Length Wtd. (ft)	335.00	Wetted Per. (ft)	0.59	1123.00		
Min Ch El (ft)	309.80	Shear (lb/sq ft)	0.00	0.94		
Alpha	1.00	Stream Power (lb/ft s)	0.00	4.86		
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	166.56	2090.13	403.99	
C & E Loss (ft)	0.00	Cum SA (acres)	37.90	218.21	50.02	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	315.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.050	
W.S. Elev (ft)	315.54	Reach Len. (ft)	400.00	335.00	125.00
Crit W.S. (ft)	311.87	Flow Area (sq ft)		2674.66	
E.G. Slope (ft/ft)	0.000564	Area (sq ft)		2674.66	
Q Total (cfs)	4500.00	Flow (cfs)		4500.00	
Top Width (ft)	721.13	Top Width (ft)		721.13	
Vel Total (ft/s)	1.68	Avg. Vel. (ft/s)		1.68	
Max Chl Dpth (ft)	5.74	Hydr. Depth (ft)		3.71	
Conv. Total (cfs)	189457.8	Conv. (cfs)		189457.8	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		726.85	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.13	
Alpha	1.00	Stream Power (lb/ft s)		0.22	
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	18.15	526.40	98.28
C & E Loss (ft)	0.00	Cum SA (acres)	10.21	173.92	29.87

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	318.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.		0.050	
W.S. Elev (ft)	318.59	Reach Len. (ft)	400.00	335.00	125.00

Crit W.S. (ft)	314.19	Flow Area (sq ft)		5042.64	
E.G. Slope (ft/ft)	0.001046	Area (sq ft)	3.85	5042.64	
Q Total (cfs)	16000.00	Flow (cfs)		16000.00	
Top Width (ft)	858.13	Top Width (ft)	26.21	831.91	
Vel Total (ft/s)	3.17	Avg. Vel. (ft/s)		3.17	
Max Chl Dpth (ft)	8.79	Hydr. Depth (ft)		6.06	
Conv. Total (cfs)	494622.7	Conv. (cfs)		494622.7	
Length Wtd. (ft)	335.00	Wetted Per. (ft)		840.95	
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.39	
Alpha	1.00	Stream Power (lb/ft s)		1.24	
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	48.09	1058.54	146.28
C & E Loss (ft)	0.00	Cum SA (acres)	14.46	206.98	35.40

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 340

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.7	43.2	327	89.6	327.9	94.4	326.4	102.4	324.9
130	324.1	201.6	323.1	232.8	323.6	287.2	322.5	301.2	321
312	313.1	344	313.4	353.2	317.7	361.6	325.1	382.4	325.4
408.1	327.2	412.5	335.5	452.9	335.5	458.9	325.8	498.9	324.4
541.7	325.2	559.3	325.7	597.3	325.8	630.1	325.1	705.7	324.9
806.9	325.7	889.8	326.1	895.4	334.3	917.8	334.3	923	326.1
955.8	324.1	987.8	325	1016.2	326	1018.6	336	1056.2	333.6
1063.4	326	1106.2	324.8	1119.4	322.7	1140.2	317.5	1166.2	311.8
1172.3	311.9	1182.7	315.6	1195.5	316.1	1201.1	310.6	1207.1	309.9
1243.1	310.6	1276.3	315.7	1331.9	314.9	1350.7	311.8	1408.7	311
1417.5	310.4	1588.3	310.4	1600	315.1	1626.4	315.7	1674.8	315.4
1693.2	314.2	1722.4	314.4	1733.6	315.6	1752.4	317.4	1782.8	317.3
1799.2	314.2	1807.6	311.3	1847.6	311.2	1929.2	311.9	1958.5	312.9
1963.3	312.2	2053.3	312.2	2071.3	314.7	2096.5	316.6	2114.1	319.8
2130.9	323.4	2156.1	324.1	2158.5	347.5	2320.2	347.5	2326.6	330.3
2339.4	330.2	2347.8	331	2388.2	331.3	2422.2	330.3	2449	331.8
2492.2	332.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1106.2	.05	2130.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1106.2	2130.9	575	454	575	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	992.2	326	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	321.26	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.33	Wt. n-Val.		0.050		
W.S. Elev (ft)	320.93	Reach Len. (ft)	575.00	454.00	575.00	
Crit W.S. (ft)	316.27	Flow Area (sq ft)		7795.05		
E.G. Slope (ft/ft)	0.001563	Area (sq ft)	343.04	7795.05		
Q Total (cfs)	36000.00	Flow (cfs)		36000.00		
Top Width (ft)	1048.46	Top Width (ft)	55.57	992.89		
Vel Total (ft/s)	4.62	Avg. Vel. (ft/s)		4.62		
Max Chl Dpth (ft)	11.03	Hydr. Depth (ft)		7.85		
Conv. Total (cfs)	910638.3	Conv. (cfs)		910638.3		
Length Wtd. (ft)	460.75	Wetted Per. (ft)		1000.15		
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.76		
Alpha	1.00	Stream Power (lb/ft s)		3.51		
Frctn Loss (ft)	0.65	Cum Volume (acre-ft)	101.94	1622.35	234.96	
C & E Loss (ft)	0.02	Cum SA (acres)	27.38	208.09	42.52	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	321.49	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.34	Wt. n-Val.		0.050		
W.S. Elev (ft)	321.15	Reach Len. (ft)	575.00	454.00	575.00	
Crit W.S. (ft)	316.26	Flow Area (sq ft)		7733.08		
E.G. Slope (ft/ft)	0.001474	Area (sq ft)		7733.08		
Q Total (cfs)	36000.00	Flow (cfs)		36000.00		
Top Width (ft)	920.00	Top Width (ft)		920.00		
Vel Total (ft/s)	4.66	Avg. Vel. (ft/s)		4.66		
Max Chl Dpth (ft)	11.25	Hydr. Depth (ft)		8.41		
Conv. Total (cfs)	937632.8	Conv. (cfs)		937632.8		
Length Wtd. (ft)	460.11	Wetted Per. (ft)		938.36		
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.76		
Alpha	1.00	Stream Power (lb/ft s)		3.53		
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	21.35	1666.16	79.86	
C & E Loss (ft)	0.02	Cum SA (acres)	3.08	200.57	10.75	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	322.66	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.43	Wt. n-Val.		0.050		
W.S. Elev (ft)	322.22	Reach Len. (ft)	575.00	454.00	575.00	
Crit W.S. (ft)	317.07	Flow Area (sq ft)		9087.39		

E.G. Slope (ft/ft)	0.001692	Area (sq ft)	423.02	9087.39	
Q Total (cfs)	48000.00	Flow (cfs)		48000.00	
Top Width (ft)	1072.66	Top Width (ft)	68.55	1004.10	
Vel Total (ft/s)	5.28	Avg. Vel. (ft/s)		5.28	
Max Chl Dpth (ft)	12.32	Hydr. Depth (ft)		9.05	
Conv. Total (cfs)	1166985.0	Conv. (cfs)		1166985.0	
Length Wtd. (ft)	461.04	Wetted Per. (ft)		1011.67	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.95	
Alpha	1.00	Stream Power (lb/ft s)		5.01	
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	163.69	2019.55	403.99
C & E Loss (ft)	0.02	Cum SA (acres)	37.32	210.08	50.02

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	315.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.050	
W.S. Elev (ft)	315.31	Reach Len. (ft)	575.00	454.00	575.00
Crit W.S. (ft)	312.47	Flow Area (sq ft)		2493.08	
E.G. Slope (ft/ft)	0.000759	Area (sq ft)	73.20	2493.08	
Q Total (cfs)	4500.00	Flow (cfs)		4500.00	
Top Width (ft)	795.05	Top Width (ft)	39.11	755.94	
Vel Total (ft/s)	1.80	Avg. Vel. (ft/s)		1.80	
Max Chl Dpth (ft)	5.41	Hydr. Depth (ft)		3.30	
Conv. Total (cfs)	163374.4	Conv. (cfs)		163374.4	
Length Wtd. (ft)	458.87	Wetted Per. (ft)		761.38	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.16	
Alpha	1.00	Stream Power (lb/ft s)		0.28	
Frctn Loss (ft)	0.33	Cum Volume (acre-ft)	17.82	506.53	98.28
C & E Loss (ft)	0.00	Cum SA (acres)	10.03	168.24	29.87

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	318.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.050	
W.S. Elev (ft)	318.22	Reach Len. (ft)	575.00	454.00	575.00
Crit W.S. (ft)	314.16	Flow Area (sq ft)		5141.46	
E.G. Slope (ft/ft)	0.001194	Area (sq ft)	201.85	5141.46	
Q Total (cfs)	16000.00	Flow (cfs)		16000.00	
Top Width (ft)	1016.92	Top Width (ft)	48.80	968.12	
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)		3.11	
Max Chl Dpth (ft)	8.32	Hydr. Depth (ft)		5.31	
Conv. Total (cfs)	462977.6	Conv. (cfs)		462977.6	
Length Wtd. (ft)	459.87	Wetted Per. (ft)		974.80	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.39	

Alpha	1.00	Stream Power (lb/ft s)	1.22		
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	47.15	1019.38	146.28
C & E Loss (ft)	0.01	Cum SA (acres)	14.11	200.06	35.40

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 330

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 85

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.4	6.4	340.1	55	340.1	58.2	328.3	141.2	326.1
185.4	328.3	231.5	330.2	243.2	325.1	474.7	320.1	525.2	321.6
540.1	314.3	568.2	309.9	581	309.8	589.9	316.6	600.7	322.8
620.3	323.5	669.7	323.1	674.1	332	706.7	332	712.3	323.7
739.5	322.4	776.4	322.4	806.9	323.4	811.9	331	853.1	331
858	323.1	901.3	324.3	907.3	326.5	951	327.2	1025.7	326.7
1077.9	326.6	1084.3	329.3	1104.3	330.1	1107.6	336.6	1151.7	336.6
1157.3	329.8	1199.9	326	1239.6	321.9	1254.4	316.3	1272.1	314.1
1309.8	313.3	1339.5	311.3	1353.9	308.6	1358.9	308.5	1370.2	308.6
1379.5	312	1426.4	313.8	1487.8	313.6	1504.2	310.2	1521.1	310.2
1556	313.2	1606.6	312.6	1668.3	312.9	1684.4	310	1832	310
1836.4	313.3	1844.4	317.8	1861.7	321.4	1879.7	316.5	1889.8	313.5
1945.9	314.8	1981.6	314	1996.9	322.1	2003.7	324.8	2013.3	323.4
2025.8	316.7	2041	312.5	2131.8	312.5	2142.6	314.9	2166.3	315.9
2183.1	318	2194.4	324.4	2217.2	324.6	2220.1	351.3	2263	351.3
2269.4	330.5	2329.6	329.8	2330.9	346.6	2382.3	346.6	2388.7	328.4
2403.5	325.8	2442.1	325.9	2477.4	324.8	2511.5	327.4	2573.6	331.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1239.6	.035	2003.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1239.6	2003.7	620	588	620	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	1173.6	329.3	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	320.59	Element		Left OB	Channel	Right OB
Vel Head (ft)	0.49	Wt. n-Val.			0.035	0.045
W.S. Elev (ft)	320.10	Reach Len. (ft)		620.00	588.00	620.00
Crit W.S. (ft)	316.37	Flow Area (sq ft)			5510.41	1021.48

E.G. Slope (ft/ft)	0.001297	Area (sq ft)	462.29	5510.41	1021.48
Q Total (cfs)	36000.00	Flow (cfs)		31980.61	4019.39
Top Width (ft)	972.79	Top Width (ft)	67.73	737.72	167.34
Vel Total (ft/s)	5.51	Avg. Vel. (ft/s)		5.80	3.93
Max Chl Dpth (ft)	11.60	Hydr. Depth (ft)		7.47	6.10
Conv. Total (cfs)	999519.1	Conv. (cfs)		887923.1	111596.0
Length Wtd. (ft)	589.76	Wetted Per. (ft)		745.23	169.74
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.60	0.49
Alpha	1.04	Stream Power (lb/ft s)		3.48	1.92
Frctn Loss (ft)	0.77	Cum Volume (acre-ft)	96.62	1553.01	228.21
C & E Loss (ft)	0.03	Cum SA (acres)	26.57	199.07	41.41

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	320.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.53	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	320.30	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	316.37	Flow Area (sq ft)		5408.89	854.68
E.G. Slope (ft/ft)	0.001310	Area (sq ft)		5408.89	854.68
Q Total (cfs)	36000.00	Flow (cfs)		32366.80	3633.20
Top Width (ft)	810.07	Top Width (ft)		690.56	119.51
Vel Total (ft/s)	5.75	Avg. Vel. (ft/s)		5.98	4.25
Max Chl Dpth (ft)	11.80	Hydr. Depth (ft)		7.83	7.15
Conv. Total (cfs)	994495.3	Conv. (cfs)		894128.8	100366.6
Length Wtd. (ft)	589.59	Wetted Per. (ft)		703.98	127.44
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.63	0.55
Alpha	1.03	Stream Power (lb/ft s)		3.76	2.33
Frctn Loss (ft)	0.76	Cum Volume (acre-ft)	21.35	1597.68	74.22
C & E Loss (ft)	0.04	Cum SA (acres)	3.08	192.18	9.96

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	321.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.64	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	321.28	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	317.22	Flow Area (sq ft)		6388.29	1221.09
E.G. Slope (ft/ft)	0.001434	Area (sq ft)	599.96	6388.29	1221.09
Q Total (cfs)	48000.00	Flow (cfs)		42415.61	5584.39
Top Width (ft)	1090.88	Top Width (ft)	166.22	753.04	171.62
Vel Total (ft/s)	6.31	Avg. Vel. (ft/s)		6.64	4.57
Max Chl Dpth (ft)	12.78	Hydr. Depth (ft)		8.48	7.12
Conv. Total (cfs)	1267360.0	Conv. (cfs)		1119914.0	147446.5
Length Wtd. (ft)	589.84	Wetted Per. (ft)		761.34	174.62
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.75	0.63

Alpha	1.04	Stream Power (lb/ft s)		4.99	2.86
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	156.94	1938.91	395.93
C & E Loss (ft)	0.05	Cum SA (acres)	35.77	200.92	48.89

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	315.03	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	314.96	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	312.34	Flow Area (sq ft)		1882.65	247.76
E.G. Slope (ft/ft)	0.000685	Area (sq ft)	163.55	1882.65	247.76
Q Total (cfs)	4500.00	Flow (cfs)		4137.63	362.37
Top Width (ft)	833.54	Top Width (ft)	48.99	672.67	111.87
Vel Total (ft/s)	2.11	Avg. Vel. (ft/s)		2.20	1.46
Max Chl Dpth (ft)	6.46	Hydr. Depth (ft)		2.80	2.21
Conv. Total (cfs)	171996.6	Conv. (cfs)		158146.1	13850.5
Length Wtd. (ft)	589.22	Wetted Per. (ft)		676.44	112.47
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.12	0.09
Alpha	1.03	Stream Power (lb/ft s)		0.26	0.14
Frctn Loss (ft)	0.26	Cum Volume (acre-ft)	16.25	483.73	96.65
C & E Loss (ft)	0.00	Cum SA (acres)	9.44	160.79	29.13

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	317.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	317.68	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	314.60	Flow Area (sq ft)		3764.97	627.85
E.G. Slope (ft/ft)	0.000888	Area (sq ft)	309.61	3764.97	627.85
Q Total (cfs)	16000.00	Flow (cfs)		14448.84	1551.16
Top Width (ft)	921.78	Top Width (ft)	58.58	706.63	156.57
Vel Total (ft/s)	3.64	Avg. Vel. (ft/s)		3.84	2.47
Max Chl Dpth (ft)	9.18	Hydr. Depth (ft)		5.33	4.01
Conv. Total (cfs)	536982.0	Conv. (cfs)		484922.9	52059.1
Length Wtd. (ft)	589.50	Wetted Per. (ft)		712.50	157.79
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.29	0.22
Alpha	1.05	Stream Power (lb/ft s)		1.12	0.54
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	43.77	972.97	142.13
C & E Loss (ft)	0.00	Cum SA (acres)	13.41	191.33	34.37

Warning: Divided flow computed for this cross-section.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 320

INPUT
Description: 320 start Revising per Existing Topo
From Stations 0 to 1290.09,
Geometry from the corrected effective model.(Forrest Creek -
Offsite existing development).
Revising per Survey Data (June
12, 2014) starts from Station 1141.4.
Manning's coefficients are
derived from the Corrected Effective Model.
Station Elevation Data num= 247

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.2	87.1	328.7	92.7	326.3	107.2	324.6	175.5	323.9
182.3	318.9	192.7	315.6	272.6	314.6	325.3	313.5	403.2	312.7
454.2	312.2	466.6	315.2	517.6	315.1	537.3	318.8	599.9	317.9
610.4	311.7	619.6	307.3	648.9	307.4	661	310.6	672.6	318.3
703.6	319.2	777.4	317.9	847.7	319	889.9	316.7	923.2	312
950.9	309.6	963	307.2	1073.2	307.2	1141.4	307.3	1193.1	308.7
1250.2	308.5	1290.09	320	1331.79	319	1339.45	318	1350.57	315.96
1357.34	315.58	1365.01	315.29	1370.12	314.92	1377.79	314.2	1383.57	313.96
1398.23	313.63	1403.34	313.64	1408.45	313.47	1418.67	313.45	1428.9	313.28
1431.45	313.38	1438.4	313.38	1441.67	313.44	1449.34	313.77	1457.01	313.94
1459.56	313.94	1467.23	314.1	1480	314.47	1485.12	314.7	1500.45	315.15
1513.23	315.42	1519.49	315.39	1536.22	315.49	1538.78	315.6	1543.89	315.6
1546.45	315.7	1551.56	315.73	1554.39	315.84	1566.89	315.8	1572	315.64
1581.8	315.62	1592.35	315.67	1597.56	315.94	1602.67	315.98	1607.78	316.12
1612.89	316.16	1621.87	316.53	1630.78	316.81	1640.85	316.99	1646.11	316.94
1653.78	317.32	1656.33	317.26	1664	317.37	1669.11	317.54	1674.59	317.45
1684.44	317.4	1688.41	317.47	1695.68	317.41	1702.33	317.55	1712.55	317.56
1717.66	317.65	1725.2	317.68	1730.44	317.61	1732.99	317.75	1740.66	317.8
1745.76	317.64	1750.87	317.35	1758.52	317.02	1763.25	316.5	1768.74	316.05
1773.84	315.78	1786.18	315.65	1792.88	315.71	1801.92	315.51	1809.58	315.08
1812.13	315.01	1824.62	314.23	1835.66	314.13	1842.76	314.25	1847.87	314.47
1858.48	315.05	1863.18	315.15	1865.74	315.31	1870.84	315.25	1883.87	315.25
1891.26	315.33	1901.47	315.11	1916.79	315.01	1924.45	315.03	1932.11	315.22
1942.32	315.25	1949.47	315.11	1952.53	314.97	1962.74	314.68	1975.5	314.71
1985.71	315.14	1993.37	315.73	1998.48	316.53	2003.58	316.99	2006.13	317.04
2008.71	316.89	2016.34	315.78	2021.45	315.34	2029.11	315.07	2036.77	314.66
2039.32	314.61	2046.8	314.62	2049.53	314.7	2052.08	314.59	2057.38	314.64
2062.29	314.84	2067.4	314.74	2072.5	314.96	2075.06	314.95	2080.16	315.16
2082.71	315.13	2085.27	314.82	2087.82	314.06	2092.92	312.23	2098.03	311.8
2103.14	311.22	2105.69	311.06	2108.24	311.1	2113.35	313.08	2115.9	313.67
2121	315.62	2126.11	316.67	2128.66	317.04	2133.77	317.22	2136.32	317.54
2138.87	318.2	2141.43	319.32	2143.98	319.82	2146.26	320.56	2149.08	321.65
2151.64	323.02	2154.19	324.02	2156.74	325.89	2164.4	326.49	2169.5	326.66

2179.72	326.74	2182.27	326.66	2188.2	326.66	2200.14	326.66	2220.56	325.88
2233.32	325.5	2248.64	325.38	2253.74	325.26	2258.85	325.57	2261.4	325.23
2263.95	324.48	2269.06	323.4	2274.16	322.81	2281.82	323.38	2289.48	323.65
2292.03	323.63	2294.59	323.78	2304.8	323.88	2312.45	323.89	2322.66	323.59
2330.32	323.06	2332.88	322.94	2343.09	323.56	2351.51	323.93	2355.85	324.38
2359.98	324.33	2371.17	323.75	2378.82	323.75	2383.93	323.82	2394.14	324.07
2401.8	324.55	2406.9	324.66	2414.56	324.71	2419.22	324.95	2424.77	325.38
2431.92	325.79	2442.5	326.03	2457.96	326.02	2465.61	325.83	2470.72	325.51
2473.27	324.65	2475.82	324.21	2480.93	323.73	2483.48	323.61	2488.59	323.53
2498.8	323.64	2503.87	323.63	2514.11	323.79	2525.03	323.76	2542.19	324.07
2547.3	324.54	2552.4	324.03	2557.51	324	2565.17	323.78	2575.38	323.86
2580.48	323.81	2585.59	323.85	2588.14	323.74	2592.74	323.78	2599.09	323.97
2603.46	324.01	2607.55	324.18	2616.02	324.39	2618.77	324.58	2623.88	325.09
2626.43	325.04	2628.71	325.18	2639.2	325.47	2643.52	325.68	2654.51	325.86
2657.06	325.94	2664.72	325.53	2667.27	325.61	2672.38	325.5	2677.49	325.56
2682.59	325.44	2692.19	325.58	2697.91	325.59	2700.46	325.68	2709.12	325.54
2717.58	325.62	2732.54	326.12						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	847.7	.035	2188.2	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.7	2188.2	260	431	405 .1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	847.7	323	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	319.79	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.39	Wt. n-Val.		0.035		
W.S. Elev (ft)	319.40	Reach Len. (ft)	260.00	431.00	405.00	
Crit W.S. (ft)	315.92	Flow Area (sq ft)		7408.00		
E.G. Slope (ft/ft)	0.001321	Area (sq ft)	2719.42	7408.00		
Q Total (cfs)	37000.00	Flow (cfs)		37000.00		
Top Width (ft)	1933.07	Top Width (ft)	666.08	1266.99		
Vel Total (ft/s)	4.99	Avg. Vel. (ft/s)		4.99		
Max Chl Dpth (ft)	12.20	Hydr. Depth (ft)		5.85		
Conv. Total (cfs)	1018111.0	Conv. (cfs)		1018111.0		
Length Wtd. (ft)	421.77	Wetted Per. (ft)		1271.89		
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.48		
Alpha	1.00	Stream Power (lb/ft s)		2.40		
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	73.98	1465.82	220.94	
C & E Loss (ft)	0.02	Cum SA (acres)	21.35	185.54	40.22	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	320.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.		0.035	
W.S. Elev (ft)	319.63	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	316.01	Flow Area (sq ft)		7344.57	
E.G. Slope (ft/ft)	0.001281	Area (sq ft)		7344.57	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1208.23	Top Width (ft)		1208.23	
Vel Total (ft/s)	5.04	Avg. Vel. (ft/s)		5.04	
Max Chl Dpth (ft)	12.43	Hydr. Depth (ft)		6.08	
Conv. Total (cfs)	1033745.0	Conv. (cfs)		1033745.0	
Length Wtd. (ft)	427.40	Wetted Per. (ft)		1216.71	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.48	
Alpha	1.00	Stream Power (lb/ft s)		2.43	
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	21.35	1511.60	68.13
C & E Loss (ft)	0.00	Cum SA (acres)	3.08	179.36	9.11

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	321.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.		0.035	
W.S. Elev (ft)	320.61	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	316.71	Flow Area (sq ft)		8966.82	
E.G. Slope (ft/ft)	0.001267	Area (sq ft)	3525.33	8966.82	
Q Total (cfs)	49000.00	Flow (cfs)		49000.00	
Top Width (ft)	1966.41	Top Width (ft)	667.72	1298.68	
Vel Total (ft/s)	5.46	Avg. Vel. (ft/s)		5.46	
Max Chl Dpth (ft)	13.41	Hydr. Depth (ft)		6.90	
Conv. Total (cfs)	1376704.0	Conv. (cfs)		1376704.0	
Length Wtd. (ft)	421.78	Wetted Per. (ft)		1303.85	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.54	
Alpha	1.00	Stream Power (lb/ft s)		2.97	
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	127.58	1835.27	387.24
C & E Loss (ft)	0.03	Cum SA (acres)	29.83	187.08	47.67

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	314.77	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.035	
W.S. Elev (ft)	314.70	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	309.73	Flow Area (sq ft)		2498.60	
E.G. Slope (ft/ft)	0.000320	Area (sq ft)	640.26	2498.60	
Q Total (cfs)	5000.00	Flow (cfs)		5000.00	
Top Width (ft)	844.25	Top Width (ft)	262.06	582.19	
Vel Total (ft/s)	2.00	Avg. Vel. (ft/s)		2.00	
Max Chl Dpth (ft)	7.50	Hydr. Depth (ft)		4.29	

Conv. Total (cfs)	279306.8	Conv. (cfs)	279306.8		
Length Wtd. (ft)	419.60	Wetted Per. (ft)	584.80		
Min Ch El (ft)	307.20	Shear (lb/sq ft)	0.09		
Alpha	1.00	Stream Power (lb/ft s)	0.17		
Frctn Loss (ft)	0.32	Cum Volume (acre-ft)	10.53	454.16	94.88
C & E Loss (ft)	0.01	Cum SA (acres)	7.23	152.32	28.33

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

			Left OB	Channel	Right OB
E.G. Elev (ft)	317.32	Element			
Vel Head (ft)	0.21	Wt. n-Val.		0.035	
W.S. Elev (ft)	317.11	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	312.32	Flow Area (sq ft)		4651.06	
E.G. Slope (ft/ft)	0.001060	Area (sq ft)	1540.80	4651.06	
Q Total (cfs)	17000.00	Flow (cfs)		17000.00	
Top Width (ft)	1487.48	Top Width (ft)	409.97	1077.50	
Vel Total (ft/s)	3.66	Avg. Vel. (ft/s)		3.66	
Max Chl Dpth (ft)	9.91	Hydr. Depth (ft)		4.32	
Conv. Total (cfs)	522191.0	Conv. (cfs)		522191.0	
Length Wtd. (ft)	421.98	Wetted Per. (ft)		1081.50	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.28	
Alpha	1.00	Stream Power (lb/ft s)		1.04	
Frctn Loss (ft)	0.62	Cum Volume (acre-ft)	30.60	916.16	137.67
C & E Loss (ft)	0.00	Cum SA (acres)	10.07	179.29	33.25

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 315

INPUT
Description: New Xsection-Survey Data (June 12, 2014)
Manning's coefficients
are similar to what is used for upstream and downstream cross secctions in the Corrected Effective Model.
Station Elevation Data num= 490

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.37	4.8	326.34	10.25	325.97	18.78	326.48	24.07	325.99
29.36	326.09	33.27	325.91	36.26	326.09	40.19	325.99	42.58	326.17

50.51	327.44	58.4	328.05	60.99	328.38	63.58	328.43	66.17	328.86
72.23	329	76.53	328.8	81.71	328.87	84.29	328.5	89.47	328.36
94.67	328.06	96.71	328.06	111.18	327.7	118.46	327.35	123.62	327.53
126.27	327.46	131.56	327.67	136.85	327.44	147.43	327.27	152.72	327.38
158.01	327.29	160.66	327.38	169.56	327.36	176.53	327.45	179.18	327.38
193.24	327.36	199.19	327.24	202.86	327.28	208.12	327.19	221.26	327.09
229.15	326.97	238.18	326.93	246.87	326.81	250.12	326.89	255.36	326.78
260.59	326.92	265.83	326.8	271.06	326.85	276.29	326.7	284.14	326.8
297.23	326.9	299.85	327.1	312.82	327.04	318.17	327.21	326.02	327.19
331.25	327.4	333.87	327.36	344.37	327.56	357.51	327.73	362.77	327.99
378.47	328.15	381.17	328.06	389.05	328.38	396.94	328.35	402.2	327.89
412.2	326.25	417.97	325.61	425.85	325.37	428.08	325.17	438.99	325.28
444.25	325.41	457.39	325.86	460.02	325.88	465.78	326.16	475.79	326.53
478.42	326.71	488.93	326.25	507.82	325.83	517.84	325.65	537.22	325.21
544.13	325.24	547.14	325.01	552.01	324.42	555.08	324.23	565	322.89
570.41	322.24	578.3	321.47	580.93	321.53	586.18	321.96	588.81	322.97
591.44	324.28	596.6	325.5	599.32	326.03	601.95	326.13	604.68	325.49
609.84	323.29	612.47	322.34	615.09	321.85	620.35	321.4	626.51	321.35
638.42	321.12	641.38	321	649.26	320.41	652.31	319.94	654.29	319.38
657.15	318.28	662.41	316.69	665.03	316.24	668.18	315.36	670.17	314.59
672.15	314.25	675.55	313.97	683.43	313.74	693.98	313.53	702.17	313.63
707.09	313.88	712.35	313.57	717.6	313.67	722.86	313.41	730.74	313.47
736	313.83	742.66	313.42	745.57	313.57	750.76	313.25	754.4	313.25
759.66	313.96	762.28	313.92	767.54	313.27	771.37	313.4	773.35	313.69
775.43	314.33	778.05	314.44	780.68	313.86	785.94	313.33	791.25	313.12
797.16	313.23	801.71	313.54	807.08	313.34	809.6	313.37	814.85	313.07
820.11	312.95	827.99	312.92	833.25	313.19	838.51	312.56	841.14	312.66
843.76	313.1	846.39	312.78	848.76	313.01	851.65	314.27	854.71	315.29
856.91	315.79	862.16	316.46	864.79	316.36	867.42	315.93	877.93	316.18
880.5	316	888.45	315.06	893.7	314.63	896.33	315	898.96	314.85
901.59	313.95	904.32	312.53	906.85	310.87	909.47	309.59	914.73	307.71
917.36	307.42	919.99	307.69	922.62	308.49	926	309.161	927.87	309.36
933.13	310.41	937.01	310.47	951.53	311.12	956.79	310.59	962.04	310.61
967.3	312.27	972.56	313.48	975.18	313.79	980.44	313.81	985.67	313.53
988.33	313.89	991.63	313.82	993.58	314.06	996.21	313.6	1001.47	313.6
1004.1	313.84	1006.72	313.74	1011.98	313.23	1017.24	312.48	1021.39	310.39
1025.12	308.71	1030.38	307.53	1035.64	307.86	1038.27	308.3	1042.29	309.33
1047.19	310.83	1055.13	312.98	1059.29	314.37	1064.55	316	1098.72	316
1100.77	315.96	1106.72	314.27	1109.23	313.8	1114.49	313.05	1126.56	312.98
1130.26	312.91	1135.52	313	1140.77	313.22	1156.33	313.17	1164.43	312.91
1169.69	313.08	1178.15	314.01	1182.12	314.2	1190.06	314.34	1198	313.89
1201.23	313.62	1203.85	313.65	1214.37	313.2	1220.44	312.56	1223.79	312.45
1232.77	312.39	1235.39	312.59	1238.02	313.17	1243.28	314.01	1248.54	315.2
1255.54	317.25	1259.05	318.02	1264.31	318.44	1269.56	318.51	1275.39	318.26
1282.71	317.22	1287.96	316.27	1293.22	315.07	1295.23	314.8	1301.18	313.67
1306.36	313.11	1311.1	312.09	1319.5	311.14	1322.13	310.95	1324.76	311.12
1330.95	310.99	1340.53	311.2	1343.16	311.37	1351.04	312.67	1358.93	313.22
1366.81	313.38	1379.96	313.45	1382.67	313.53	1400.4	313.72	1414.13	314.06
1438.1	314.28	1443.04	314.25	1456.18	314.31	1463.9	314.28	1474.58	314.41
1477.21	314.38	1500.86	314.72	1503.49	314.82	1511.38	315.74	1514	315.87
1516.63	316.33	1519.26	316.22	1521.89	315.49	1532.4	314.76	1537.32	314.63
1543.27	314.62	1553.19	314.5	1561.13	314.16	1569.2	313.96	1578.99	314.01

1590.23	314.15	1595.48	313.98	1598.83	314.05	1606.77	313.95	1611.25	313.72
1624.4	313.9	1629.65	313.81	1637.54	314.06	1645.42	314.22	1658.36	315.53
1664.31	315.67	1666.45	315.59	1669.08	315.22	1679.59	313.45	1684.85	312.98
1690.11	312.97	1692.73	313.3	1698.22	314.93	1700.62	315.2	1707.97	315.52
1716.39	315.64	1719.87	315.58	1726.9	315.25	1737.42	315.48	1746.81	315.3
1753.18	315.3	1758.43	314.84	1763.68	314.61	1773.51	314.48	1782.05	314.62
1795.17	315.14	1797.79	315.51	1803.04	316.69	1808.29	318.96	1810.91	319.74
1813.53	320.21	1816.16	320.27	1826.65	320.18	1829.22	319.69	1831.9	318.68
1835.19	317.94	1839.17	317.27	1845.02	317.05	1850.27	315.76	1853.1	315.22
1858.14	314.48	1863.39	314.08	1868.64	314.03	1873.88	314.18	1878.45	314.47
1880.96	315.1	1884.94	316.46	1892.25	318.73	1896.87	320.5	1900.12	321.39
1902.84	321.62	1910.62	321.43	1918.49	321.38	1928.99	321.38	1934.24	321.11
1942.11	320.42	1947.36	320.22	1955.23	320.22	1965.72	320.36	1970.97	320.2
1982.43	319.25	1986.71	318.58	1998.35	314.39	2002.33	313.4	2010.29	312.47
2016.26	312.08	2023.45	311.78	2033.95	311.5	2038.14	311.66	2040.13	311.94
2044.44	312.99	2047.07	313.21	2052.31	312.41	2057.56	312.45	2062.81	312.32
2066	312.68	2070.68	312.52	2075.95	312.1	2078.55	312.28	2083.8	312.98
2085.89	312.93	2089.05	312.56	2094.3	312.54	2102.17	311.45	2104.79	311.33
2112.66	311.47	2115.29	311.45	2120.54	312.25	2125.39	312.12	2131.03	312.33
2136.28	311.9	2144.15	311.61	2146.78	311.65	2154.65	312.57	2159.9	311.97
2162.52	311.81	2173.44	311.95	2175.64	311.85	2181.4	312.49	2186.13	312.36
2199.47	312.96	2204.5	312.58	2207.27	312.53	2213.23	313.25	2215	313.37
2222.87	312.72	2231.14	312.34	2233.13	312.4	2243.86	312.18	2246.49	312.43
2259	312.31	2262.23	312.21	2267.48	312.46	2285.84	312.92	2288.47	313.18
2293.72	313.32	2301.59	313.09	2306.84	313.26	2312.08	313.67	2322.58	313.75
2332.62	314.53	2334.6	314.59	2339.4	315	2359.32	316.43	2364.56	316.73
2375.4	317.043	2382.93	317.06	2388.79	317.31	2393.43	317.38	2401.3	317.32
2403.92	317.08	2409.17	316.88	2417.04	316.86	2424.14	317.12	2427.54	317.33
2435.41	318.26	2438.07	318.44	2440.66	319.22	2443.28	321.2	2445.91	321.69
2451.15	321.81	2462.87	321.81	2472.15	321.75	2474.77	321.61	2480.02	321.72
2482.64	322.07	2485.27	323.31	2487.89	323.95	2493.78	323.92	2498.38	322.93
2501.74	323.04	2503.73	322.84	2506.26	323.23	2511.69	322.95	2516.75	322.91
2521.64	322.48	2532.5	322.41	2537.74	322.46	2550.86	322.4	2553.49	322.22
2556.11	321.83	2558.74	321.71	2567.4	321.58	2571.86	321.45	2577.1	321.46
2584.98	321.33	2587.6	321.71	2592.85	321.51	2598.09	321.08	2600.72	321.19
2611.21	321.84	2619.09	322.09	2629.58	322.28	2632.21	322.5	2634.83	322.49
2637.45	322.14	2645.33	322	2653.2	321.75	2661.07	321.38	2671.57	321.09
2676.89	321.57	2694.74	322.28	2697.8	322.79	2703.05	322.35	2708.3	322.22
2716.17	322.34	2726.67	322.59	2734.54	322.59	2737.16	322.66	2750.45	322.66
2763.4	322.81	2768.36	323.31	2774.33	323.04	2784.27	323.31	2794.89	323.53
2812.13	323.76	2826.38	324.07	2831.63	324.36	2834.25	324.62	2839.5	324.8
2842.12	324.62	2849.99	324.47	2860.49	324.58	2875.8	324.54	2879.78	324.38
2891.72	324.62	2897.23	324.54	2905.1	324.55	2910.34	324.06	2915.59	323.69
2918.22	323.64	2923.55	323.31	2928.71	323.19	2936.58	322.65	2941.83	322.76

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	926	.035	2375.4	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
926	2375.4	380	280	255 .1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	648.46	323	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	319.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	318.85	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	316.16	Flow Area (sq ft)	1402.68	6812.54	100.25
E.G. Slope (ft/ft)	0.001481	Area (sq ft)	1402.68	6812.54	100.25
Q Total (cfs)	37000.00	Flow (cfs)	3970.02	32858.49	171.50
Top Width (ft)	1667.87	Top Width (ft)	270.32	1333.52	64.02
Vel Total (ft/s)	4.45	Avg. Vel. (ft/s)	2.83	4.82	1.71
Max Chl Dpth (ft)	11.43	Hydr. Depth (ft)	5.19	5.11	1.57
Conv. Total (cfs)	961592.3	Conv. (cfs)	103176.6	853958.6	4457.0
Length Wtd. (ft)	289.83	Wetted Per. (ft)	274.02	1342.79	64.17
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.47	0.47	0.14
Alpha	1.09	Stream Power (lb/ft s)	1.34	2.26	0.25
Frctn Loss (ft)	0.28	Cum Volume (acre-ft)	61.68	1395.47	220.48
C & E Loss (ft)	0.04	Cum SA (acres)	18.55	172.68	39.92

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	319.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	319.03	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	316.35	Flow Area (sq ft)	533.21	6956.84	
E.G. Slope (ft/ft)	0.001562	Area (sq ft)	533.21	6956.84	
Q Total (cfs)	37000.00	Flow (cfs)	1556.00	35444.00	
Top Width (ft)	1396.51	Top Width (ft)	95.00	1301.51	
Vel Total (ft/s)	4.94	Avg. Vel. (ft/s)	2.92	5.09	
Max Chl Dpth (ft)	11.61	Hydr. Depth (ft)	5.61	5.35	
Conv. Total (cfs)	936215.4	Conv. (cfs)	39371.7	896843.8	
Length Wtd. (ft)	283.04	Wetted Per. (ft)	103.57	1314.76	
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.50	0.52	
Alpha	1.03	Stream Power (lb/ft s)	1.46	2.63	
Frctn Loss (ft)	0.29	Cum Volume (acre-ft)	19.76	1440.85	68.13
C & E Loss (ft)	0.05	Cum SA (acres)	2.80	166.95	9.11

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	320.51	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	320.15	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	316.79	Flow Area (sq ft)	1756.64	8561.41	185.43
E.G. Slope (ft/ft)	0.001236	Area (sq ft)	1756.64	8561.41	185.43
Q Total (cfs)	49000.00	Flow (cfs)	5216.61	43359.02	424.37
Top Width (ft)	1701.61	Top Width (ft)	275.03	1360.09	66.49
Vel Total (ft/s)	4.67	Avg. Vel. (ft/s)	2.97	5.06	2.29
Max Chl Dpth (ft)	12.73	Hydr. Depth (ft)	6.39	6.29	2.79
Conv. Total (cfs)	1393577.0	Conv. (cfs)	148362.1	1233146.0	12069.1
Length Wtd. (ft)	289.50	Wetted Per. (ft)	278.93	1370.04	67.01
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.49	0.48	0.21
Alpha	1.09	Stream Power (lb/ft s)	1.44	2.44	0.49
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	111.82	1748.55	386.38
C & E Loss (ft)	0.04	Cum SA (acres)	27.02	173.92	47.36

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	314.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	314.28	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	313.37	Flow Area (sq ft)	269.07	1328.85	
E.G. Slope (ft/ft)	0.003409	Area (sq ft)	269.07	1328.85	
Q Total (cfs)	5000.00	Flow (cfs)	666.57	4333.43	
Top Width (ft)	1077.52	Top Width (ft)	201.66	875.86	
Vel Total (ft/s)	3.13	Avg. Vel. (ft/s)	2.48	3.26	
Max Chl Dpth (ft)	6.86	Hydr. Depth (ft)	1.33	1.52	
Conv. Total (cfs)	85638.7	Conv. (cfs)	11416.9	74221.8	
Length Wtd. (ft)	289.98	Wetted Per. (ft)	204.16	880.61	
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.28	0.32	
Alpha	1.02	Stream Power (lb/ft s)	0.69	1.05	
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	7.82	435.22	94.88
C & E Loss (ft)	0.03	Cum SA (acres)	5.85	145.11	28.33

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	316.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	316.46	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	314.84	Flow Area (sq ft)	765.05	3719.38	
E.G. Slope (ft/ft)	0.002176	Area (sq ft)	765.05	3719.38	
Q Total (cfs)	17000.00	Flow (cfs)	1793.37	15206.63	

Top Width (ft)	1508.64	Top Width (ft)	262.09	1246.55	
Vel Total (ft/s)	3.79	Avg. Vel. (ft/s)	2.34	4.09	
Max Chl Dpth (ft)	9.04	Hydr. Depth (ft)	2.92	2.98	
Conv. Total (cfs)	364420.1	Conv. (cfs)	38443.6	325976.5	
Length Wtd. (ft)	289.81	Wetted Per. (ft)	265.43	1253.97	
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.39	0.40	
Alpha	1.08	Stream Power (lb/ft s)	0.92	1.65	
Frctn Loss (ft)	0.35	Cum Volume (acre-ft)	23.72	874.75	137.67
C & E Loss (ft)	0.04	Cum SA (acres)	8.07	167.79	33.25

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 310

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 490

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.1	5.08	329.21	15.37	329.76	23.08	329.9	28.78	330.25
38.52	330.96	43.66	331.42	53.95	332.24	56.52	332.32	59.1	332.04
61.67	331.54	66.81	330.01	71.83	328.21	79.67	325.55	82.18	324.97
84.82	323.91	87.39	323.12	90.46	322.95	92.53	323.03	102.89	323.69
107.03	323.7	113.24	323.5	118.26	323.06	123.6	323.06	149.12	323.56
159.41	323.73	161.98	323.93	164.56	324.45	167.13	324.66	172.27	324.31
185.13	323.9	187.71	323.63	195.43	323.43	210.55	323.16	223.73	323.02
236.59	322.93	247.8	322.25	249.46	322.06	254.01	320.94	257.18	320.38
259.75	320.2	264.35	320.27	270.04	320.24	274.7	320.53	277.76	320.96
290.63	320.73	296.4	320.75	300.92	320.95	303.49	320.9	305.74	320.4
311.21	319.67	313.79	319.06	318.93	319.01	324.36	319.13	334.37	319.07
336.94	318.95	339.52	318.45	344.66	316.25	347.13	315.7	352.38	313.34
355.4	312.92	360.1	312.78	363.68	312.92	371.96	312.91	378.11	313.06
385.83	312.62	390.98	312.84	396.12	312.66	401.27	312.71	403.84	312.51
411.56	312.7	423.69	312.42	434.03	312.75	442.31	312.71	445.01	312.49
447.58	312.74	450.16	312.54	455.3	312.6	460.45	312.29	465.59	312.35
470.74	312.59	475.89	312.38	481.03	312.82	483.6	313.44	488.75	313.36
493.9	312.55	496.47	312.46	504.19	312.47	506.76	312.61	514.48	312.49
519.63	312.15	522.2	312.16	527.15	312.58	529.22	312.36	532.49	312.34
535.06	312.16	540.21	312.02	545.36	312	550.5	312.23	555.65	312.35
558.22	312.63	560.79	312.64	563.37	312.33	566.47	312.25	571.09	311.96
576.23	311.97	580.95	312.2	586.53	311.83	596.82	311.96	601.64	311.84
605.8	312.133	612.26	313.36	614.83	313.96	622.55	315.03	632.84	314.96
635.41	314.5	640.56	314.33	649.24	312.49	653.42	311.09	656	310.45
658.57	309.42	661.14	308.05	663.72	307.66	666.29	307.98	668.86	308.97

671.43	309.69	676.58	310.4	684.3	308.36	689.45	307.23	697.16	305.65
699.74	305.31	707.46	305.25	709.24	305.45	712.6	306.81	715.18	308.38
719.59	310.28	722.9	311.42	725.8	311.73	728.04	312.61	733.19	316
761.49	316	767.18	315.55	774.36	312.98	776.93	312.27	779.6	311.77
782.07	311.57	787.22	311.41	789.95	311.49	802.66	311.37	807.8	311.42
820.67	311.33	829.26	311.58	841.25	312.26	845.82	312.4	848.97	312.38
856.16	312.07	859.27	311.86	861.84	311.39	866.98	309.91	869.56	309.39
872.13	309.06	874.7	308.93	877.28	308.99	882.42	309.32	885.13	309.83
890.14	310.47	893.41	311.22	897.55	311.85	903.01	312.19	908.15	312.18
918.44	311.88	927.97	311.77	949.11	311.85	959.61	312.03	965.83	312.32
969.97	312.43	977.62	312.42	985.34	312.55	990.49	312.56	995.64	312.43
1000.78	312.1	1008.5	311.89	1013.65	311.96	1026.51	311.89	1031.66	311.75
1036.19	311.52	1039.38	311.49	1044.52	311.63	1052.24	312	1054.81	311.97
1059.96	312.39	1065.16	312.59	1070.25	312.54	1075.4	312.62	1080.54	312.84
1085.69	313.19	1093.41	313.33	1101.13	313.94	1111.42	314.38	1113.99	314.42
1124.29	314.03	1129.3	314.01	1134.58	314.47	1144.87	316.03	1147.44	316.32
1152.59	316.63	1155.16	316.69	1165.45	315.78	1173.17	315.37	1178.32	315.54
1185.17	316.3	1188.61	316.27	1193.76	315.75	1198.9	314.8	1206.62	313.49
1212.07	312.89	1216.91	312.46	1222.06	311.79	1227.21	311.26	1229.78	311.14
1234.93	311.25	1240.07	311.76	1242.64	312.23	1250.36	314.01	1252.94	314.42
1255.51	314.6	1258.08	314.23	1260.66	313.31	1263.23	311.78	1265.8	310.76
1268.38	310.52	1278.67	310.39	1286.57	310.23	1294.11	310.26	1296.68	310.37
1301.82	311.25	1307.26	311.06	1312.12	310.68	1317.61	310.39	1324.98	310.29
1335.27	310.23	1342.99	310.24	1350.71	310.44	1361.06	310.97	1371.3	311.23
1384.16	311.81	1392.1	312.03	1396.24	312.28	1417.61	313.29	1425.33	313.88
1435.55	314.06	1440.77	314.22	1448.49	313.9	1451.06	313.64	1458.78	312.35
1461.35	312.07	1466.5	311.97	1469.07	312.1	1474.22	312.79	1476.94	313.26
1481.08	313.69	1497.37	314.45	1505.09	314.31	1510.24	314.06	1520.53	314.19
1530.82	314.19	1533.4	313.98	1541.12	312.94	1548.83	312.38	1553.98	312.2
1556.55	312.26	1563.85	312.66	1569.42	313.07	1577.14	313.29	1582.28	313.56
1590	313.29	1595.15	313.32	1597.72	313.5	1605.44	315.06	1608.01	315.28
1610.59	315.26	1613.16	314.94	1615.73	314.88	1620.88	315.48	1623.46	315.45
1626.24	314.56	1627.97	313.6	1631.18	312.77	1633.76	311.78	1636.33	311.88
1638.91	312.51	1644.06	312.97	1649.21	313.01	1654.82	312.95	1656.93	313.05
1659.51	312.39	1667.23	311.06	1669.81	311.12	1672.38	310.92	1685.8	310.84
1687.83	310.61	1690.41	311.09	1692.98	311.78	1695.56	312.14	1703.28	311.12
1705.86	311.12	1713.58	312.34	1716.16	312.53	1723.88	312.17	1726.46	312.23
1731.24	312.72	1734.18	312.88	1741.91	311.83	1747.06	312.28	1753.96	311.96
1759.93	311.9	1762.22	311.79	1765.08	311.35	1770.23	312.52	1772.55	312.42
1780.53	311.82	1783.1	311.53	1790.83	312.01	1793.4	312.02	1803.53	311.82
1808.85	311.27	1811.43	311.21	1814	311.34	1819.15	311.38	1821.73	311.3
1826.88	311.78	1829.45	311.73	1832.03	311.28	1834.51	311.31	1837.18	310.96
1839.75	311.22	1844.9	311.34	1855.2	311.75	1857.78	311.96	1861.36	312.89
1863.43	313.23	1870.65	313.95	1873.23	314.34	1878.38	315.39	1880.95	315.15
1886.1	313.94	1888.68	313.53	1896.4	313.35	1898.98	313.49	1904.13	314.2
1910.93	313.56	1914.43	313.41	1917.13	313.49	1919.58	313.35	1924.73	312.54
1927.3	312.28	1929.52	312.75	1935.03	313.18	1942.75	313.54	1945.33	313.85
1947.9	313.85	1953.05	314.31	1955.63	313.78	1958.44	313.45	1965.93	313.34
1971.08	313.66	1976.23	313.63	1981.38	313.05	1986.53	313.35	1989.42	313.28
1991.68	313.05	1996.83	312.93	1999.4	313.07	2007.13	312.97	2012.28	313.32
2017.43	313.29	2022.58	312.78	2025.15	312.77	2030.3	313.67	2032.88	313.89
2034.86	313.74	2040.6	313.71	2045.18	313.52	2048.33	313.61	2053.31	314.27

2056.05	314.4	2058.63	313.72	2061.2	313.35	2063.78	313.44	2066.35	313.34
2076.65	313.69	2084.38	312.79	2089.53	313.12	2097.25	313.01	2105.08	313.61
2110.13	313.67	2112.7	313.87	2115.28	314.66	2116.9	314.934	2123	316.05
2125.58	316.86	2128.15	318.04	2130.73	318.7	2138.45	318.8	2141.02	318.77
2143.6	319.05	2151.32	320.24	2161.62	321.3	2166.77	322.4	2169.35	322.3
2171.92	322.43	2177.37	322.38	2179.65	322.17	2182.22	322.19	2192.52	322.68
2200.25	322.69	2202.82	322.44	2220.3	322.29	2236.3	322.11	2244.02	322.08
2251.72	322.53	2264.62	322.01	2272.38	321.97	2277.5	322.14	2282.65	322.12
2287.8	321.95	2292.95	322.12	2300.67	322.15	2305.82	322.36	2308.4	322.15
2315.75	322.19	2324.67	322.12	2334.15	322.43	2336.72	322.25	2341.87	322.33
2352.17	322.21	2362.47	321.25	2367.62	321.06	2375.35	320.59	2377.92	320.34
2385.97	320.79	2394.23	321.01	2406.25	321.06	2411.4	321.33	2413.97	321.29
2419.12	320.91	2424.27	320.88	2437.15	320.25	2439.72	320.38	2442.3	320.71
2447.45	320.88	2450.02	320.84	2460.32	320.94	2466.52	320.85	2474.78	320.19
2478.35	319.99	2488.65	319.59	2493.37	319.57	2499.57	319.36	2506.67	319.35
2511.82	319.19	2519.54	319.19	2522.29	319.28	2529.84	319.14	2537.57	319.29
2545.29	319.02	2550.44	319	2560.74	318.75	2568.47	318.36	2581.34	318.29
2586.49	317.64	2591.64	315.46	2594.22	315.65	2596.79	316.37	2598.71	317.38
2601.94	318.79	2604.52	319.05	2609.67	320.17	2612.24	320.33	2621.43	320.13
2630.27	320.07	2640.57	320.23	2658.59	320.31	2668.89	320.28	2681.77	320.31
2689.49	320.25	2704.94	320.3	2712.67	320.44	2717.82	320.24	2720.24	320.31

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	605.8	.035	2116.9	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
605.8	2116.9	610	610	640 .1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	154.1	324.5	F
2354.1	2720.24	320	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	318.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	318.67	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	314.88	Flow Area (sq ft)	1599.91	9231.72	29.00
E.G. Slope (ft/ft)	0.000665	Area (sq ft)	1599.91	9231.72	69.14
Q Total (cfs)	37000.00	Flow (cfs)	3355.88	33604.50	39.63
Top Width (ft)	1831.55	Top Width (ft)	267.41	1511.10	53.03
Vel Total (ft/s)	3.41	Avg. Vel. (ft/s)	2.10	3.64	1.37
Max Chl Dpth (ft)	13.42	Hydr. Depth (ft)	5.98	6.11	2.12
Conv. Total (cfs)	1434528.0	Conv. (cfs)	130110.8	1302881.0	1536.4
Length Wtd. (ft)	610.06	Wetted Per. (ft)	268.87	1523.14	14.27
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.25	0.25	0.08
Alpha	1.07	Stream Power (lb/ft s)	0.52	0.92	0.12
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	48.58	1343.91	219.98
C & E Loss (ft)	0.01	Cum SA (acres)	16.21	163.53	39.58

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	319.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	318.86	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	315.04	Flow Area (sq ft)	317.74	9449.75	
E.G. Slope (ft/ft)	0.000714	Area (sq ft)	317.74	9449.75	
Q Total (cfs)	37000.00	Flow (cfs)	693.88	36306.12	
Top Width (ft)	1545.00	Top Width (ft)	46.70	1498.30	
Vel Total (ft/s)	3.79	Avg. Vel. (ft/s)	2.18	3.84	
Max Chl Dpth (ft)	13.61	Hydr. Depth (ft)	6.80	6.31	
Conv. Total (cfs)	1385086.0	Conv. (cfs)	25975.1	1359111.0	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	52.98	1515.51	
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.27	0.28	
Alpha	1.02	Stream Power (lb/ft s)	0.58	1.07	
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	16.04	1388.12	68.13
C & E Loss (ft)	0.00	Cum SA (acres)	2.18	157.95	9.11

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	320.23	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	320.00	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	315.44	Flow Area (sq ft)	1981.87	11246.50	225.49
E.G. Slope (ft/ft)	0.000604	Area (sq ft)	1981.87	11246.50	225.49
Q Total (cfs)	49000.00	Flow (cfs)	4260.81	44508.23	230.96
Top Width (ft)	1971.84	Top Width (ft)	297.08	1511.10	163.66
Vel Total (ft/s)	3.64	Avg. Vel. (ft/s)	2.15	3.96	1.02
Max Chl Dpth (ft)	14.75	Hydr. Depth (ft)	6.67	7.44	1.38
Conv. Total (cfs)	1993203.0	Conv. (cfs)	173319.7	1810488.0	9394.9
Length Wtd. (ft)	610.18	Wetted Per. (ft)	298.66	1523.14	165.60
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.25	0.28	0.05
Alpha	1.10	Stream Power (lb/ft s)	0.54	1.10	0.05
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	95.51	1684.89	385.17
C & E Loss (ft)	0.01	Cum SA (acres)	24.52	164.70	46.68

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	313.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	313.88	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	312.27	Flow Area (sq ft)	351.68	2309.23	
E.G. Slope (ft/ft)	0.000943	Area (sq ft)	351.68	2309.23	
Q Total (cfs)	5000.00	Flow (cfs)	331.27	4668.73	
Top Width (ft)	1441.43	Top Width (ft)	254.63	1186.81	
Vel Total (ft/s)	1.88	Avg. Vel. (ft/s)	0.94	2.02	
Max Chl Dpth (ft)	8.63	Hydr. Depth (ft)	1.38	1.95	
Conv. Total (cfs)	162805.3	Conv. (cfs)	10786.4	152018.9	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	255.16	1195.95	
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.08	0.11	
Alpha	1.10	Stream Power (lb/ft s)	0.08	0.23	
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	5.11	423.53	94.88
C & E Loss (ft)	0.00	Cum SA (acres)	3.86	138.48	28.33

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	316.31	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.12	Wt. n-Val.	0.060	0.035	0.045
W.S. Elev (ft)	316.19	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	313.72	Flow Area (sq ft)	945.45	5489.13	4.29
E.G. Slope (ft/ft)	0.000782	Area (sq ft)	945.45	5489.13	7.07
Q Total (cfs)	17000.00	Flow (cfs)	1541.35	15455.70	2.95
Top Width (ft)	1764.97	Top Width (ft)	260.87	1491.33	12.77
Vel Total (ft/s)	2.64	Avg. Vel. (ft/s)	1.63	2.82	0.69
Max Chl Dpth (ft)	10.94	Hydr. Depth (ft)	3.62	3.68	0.65
Conv. Total (cfs)	607797.3	Conv. (cfs)	55107.7	552584.1	105.4
Length Wtd. (ft)	610.00	Wetted Per. (ft)	261.84	1503.33	6.67
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.18	0.18	0.03
Alpha	1.07	Stream Power (lb/ft s)	0.29	0.50	0.02
Frctn Loss (ft)	0.83	Cum Volume (acre-ft)	16.26	845.16	137.64
C & E Loss (ft)	0.00	Cum SA (acres)	5.78	158.99	33.22

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River

REACH: Reach 1 RS: 300

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 491

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.62	3.76	364.84	6.33	365.19	12.17	365.6	20.43	366.25
26.94	366.72	32.09	367.16	34.66	367.3	39.81	367.77	42.39	367.38
44.96	364.93	47.54	363.01	50.11	362	55.53	359.5	60.42	356.51
65.57	352.38	68.14	350.81	72.05	348.73	75.87	346.52	80.31	343.61
83.59	341.76	86.17	339.91	88.74	338.43	91.32	337.12	93.89	335.58
99.05	332.11	101.62	330.56	106.77	327.26	109.21	325.76	111.92	323.95
114.5	322.72	117.07	321.83	119.65	321.5	124.8	321.55	135.1	321.78
138.12	321.9	147.98	322.08	155.7	322.12	158.28	322.25	160.85	322.06
166	320.39	168.58	319.77	171.15	319.37	176.31	319.45	181.47	319.31
184.03	319.33	189.18	319.17	195.93	318.67	200.06	318.45	204.19	318.46
207.21	318.71	214.93	318.96	217.51	318.94	220.09	318.77	225.24	318.77
227.81	318.61	235.54	318.54	245.48	318.5	248.41	318.58	256.14	318.49
275.26	318.38	279.32	318.42	287.04	318.18	292.97	318.17	299.92	318.06
302.5	317.97	305.07	318.04	307.65	317.92	315.37	317.92	320.52	318.23
323.1	318.31	328.25	318.71	330.13	318.36	335.98	317.51	341.13	316.98
346.28	316.88	348.85	316.63	354	315.94	356.58	315.74	359.15	315.88
363.17	315.29	366.88	314.59	369.36	314.38	374.61	314.2	377.62	313.77
382.33	313.67	384.91	313.92	387.48	314.64	389.8	315.46	392.63	316.03
397.78	315.67	400.21	315.24	404.46	313.99	408.08	313.32	413.24	313.4
415.81	313.3	418.39	312.84	420.96	312.63	426.11	312.48	428.69	312.23
431.3	311.32	436.41	311.42	438.99	311.65	441.86	311.75	446.9	311.71
449.29	311.66	457.02	312.95	462.17	312.74	464.74	312.87	472.47	312.76
474.66	312.02	477.62	311.19	480.19	310.81	482.77	310.71	485.34	310.74
487.92	310.25	490.5	309.47	493.07	308.37	497.37	306.9	498.22	306.71
503.56	306.78	507.69	306.68	511.1	306.43	515.95	305.62	518.02	305.57
523.97	306.06	526.55	306.1	529.13	306.76	532.47	307.96	534.53	308.52
539.43	308.82	544.58	308.81	547.15	308.94	549.73	308.86	552.3	308.93
554.88	309.25	560.03	309.64	570.33	311.01	572.91	311.66	578.06	312.75
583.21	314	614.11	314	615.06	313.79	617.12	313.07	619.26	312.59
621.84	312.43	624.41	312.44	632.14	313.33	634.71	313.46	639.86	313.31
647.59	312.87	652.74	312.41	660.47	311.88	668.19	311.43	686.22	310.67
701.77	310.19	711.97	309.81	717.12	309.58	727.43	309.51	732.58	309.4
737.73	309.12	742.88	308.93	750.6	308.75	758.33	308.29	765.78	308.03
771.21	308.03	776.36	308.34	784.08	309.38	791.81	310.2	794.38	310.42
799.54	310.55	807.26	310.29	809.84	310.27	817.56	310.06	822.71	310.06
825.65	310.18	833.01	310.65	840.1	310.62	845.89	310.41	850.43	310.47
853.62	310.76	856.62	311.15	861.34	311.52	866.49	311.52	871.64	311
876.8	310.12	884.52	309.81	889.67	309.53	895.85	309.43	897.92	309.46
907.7	310.04	910.27	310	915.43	309.75	920.58	309.22	925.73	308.8
930.88	308.25	936.03	308.48	941.18	309.08	946.33	308.58	953.66	308.29
961.78	308.34	970.18	308.32	972.08	308.39	974.31	308.66	977.23	309.39
979.81	310.3	982.57	310.99	984.63	311.28	987.53	311.43	995.26	311.18
1002.99	311.03	1010.71	310.97	1021.01	310.56	1031.32	310.39	1036.47	310.5
1041.62	310.54	1048.64	310.81	1069.95	312.11	1075.1	312.32	1077.67	312.49

1085.4	312.76	1093.12	312.9	1098.27	313.24	1103.42	313.89	1108.58	314.84
1113.73	315.96	1118.84	317.2	1121.45	317.75	1124.03	318.1	1126.6	318.3
1129.08	318.34	1131.75	317.95	1134.33	317.14	1139.49	315.87	1142.05	315.1
1147.2	313.33	1149.81	312.69	1152.36	312.2	1154.93	311.96	1160.08	311.75
1162.66	311.8	1165.23	312	1170.38	312.57	1172.96	312.39	1178.11	310.93
1181.14	310.24	1185.83	309.33	1189.03	309.1	1193.16	308.92	1196.14	308.88
1201.29	309	1206.44	309.38	1211.59	310.41	1215.87	311.48	1219.31	312.22
1224.13	312.88	1227.04	313.06	1232.19	313.06	1237.34	312.85	1242.49	312.52
1253.04	311.62	1257.17	311.5	1263.09	311.41	1275.97	311.53	1283.7	311.71
1291.42	312.08	1296.57	312.38	1309.45	313.02	1317.18	313.56	1324.9	314.16
1330.05	314.39	1337.93	314.27	1342.93	314	1345.51	313.74	1350.66	313.55
1353.23	313.53	1358.38	313.81	1360.96	314.38	1363.53	315.25	1366.11	316.43
1368.68	317.47	1371.26	318.15	1373.83	318.61	1376.41	318.56	1378.98	318.19
1384.14	317.14	1389.29	316.22	1394.44	315.51	1399.59	314.91	1404.74	314.07
1407.89	313.65	1412.02	313.43	1416.15	313.4	1422.34	313.24	1425.34	313.25
1430.49	313.69	1435.64	314.75	1445.94	317.43	1451.25	318.44	1456.24	319.14
1461.4	319.71	1469.12	319.94	1471.7	319.96	1476.85	319.81	1482	319.49
1487.15	319.28	1489.72	318.82	1492.3	318.01	1494.87	316.38	1497.45	315.02
1500.03	314.53	1502.6	314.32	1507.75	314.3	1512.9	314.57	1515.48	314.37
1518.05	313.94	1523.2	312.87	1525.78	312.52	1530.93	312.11	1536.08	311.99
1541.23	312.03	1546.38	312.22	1562.74	313.39	1566.98	313.66	1575.13	313.93
1590.16	314.01	1597.89	313.94	1605.61	313.76	1610.76	313.55	1618.49	313.31
1628.81	312.87	1631.37	312.81	1639.09	312.44	1644.24	312.36	1651.97	312.58
1657.12	312.82	1659.7	312.87	1662.27	312.61	1667.42	311.59	1670	311.19
1672.57	310.97	1680.3	310.75	1688.02	310.7	1693.18	310.84	1706.05	311.08
1708.63	311.2	1713.78	311.28	1726.65	311.56	1729.23	311.72	1734.11	311.86
1747.26	311.99	1752.41	312.11	1754.98	312.27	1757.56	312.67	1760.95	313.44
1765.28	314.53	1773.01	313.88	1780.74	313.91	1785.89	314.06	1791.04	314.37
1796.05	314.74	1798.76	314.86	1803.91	314.91	1809.07	314.62	1812.56	313.82
1814.63	313.23	1816.69	312.92	1818.76	312.06	1821.94	310.94	1827.09	310.43
1832.24	310.14	1837.39	310.09	1847.66	310.19	1852.85	310.53	1860.57	310.79
1868.3	310.56	1876.02	310.65	1878.6	310.85	1883.75	311.93	1888.9	311.87
1896.63	312.01	1901.78	312.82	1904.35	313.81	1909.5	315.61	1913.73	316.89
1917.8	318.441	1922.38	319.25	1935.26	320.39	1940.41	320.73	1948.13	321.38
1953.28	321.54	1961.01	321.22	1973.89	321.04	1981.87	320.99	1989.34	321.03
1999.64	321.39	2007.37	321.46	2009.94	321.34	2017.67	320.74	2027.97	320.31
2033.48	320.3	2043.42	320.87	2048.57	321.05	2064.45	321.34	2069.17	321.37
2074.32	321.31	2082.05	321.01	2087.2	320.91	2097.52	320.87	2101.62	320.74
2105.23	320.49	2107.8	320.16	2118.26	318.07	2120.68	317.66	2123.26	317.36
2126.4	317.16	2130.98	316.73	2140.85	316.14	2149.11	315.88	2151.58	315.87
2159.43	316.26	2164.46	316.76	2169.61	317.49	2174.76	318	2177.34	318.17
2182.49	318.37	2188.34	318.49	2196.59	318.47	2210.82	318.49	2228.84	318.99
2239.15	318.98	2241.72	318.92	2246.87	319.09	2252.34	319.17	2254.6	319.27
2260.6	319.7	2267.47	320.57	2270.05	320.63	2280.35	320.54	2285.5	320.66
2288.08	320.64	2293.63	320.86	2306.1	321.19	2316.34	321.41	2318.41	321.36
2324.13	321.4	2331.86	321.27	2342.16	320.97	2347.31	320.97	2349.88	321.09
2355.04	321.62	2362.76	322.83	2367.91	323.35	2375.64	323.58	2378.21	323.57
2383.36	323.35	2386.54	323.12	2393.67	322.88	2396.24	322.93	2398.93	323.22
2401.39	323.28	2403.97	323.5	2406.54	323.92	2409.12	324.87	2420.22	325.5
2421.99	325.53	2424.57	325.38	2432.3	325.32	2434.87	325.43	2442.29	325.29
2447.75	325.29	2454.68	325.44	2460.87	325.47	2468.35	325.44	2473.5	325.53
2483.8	325.03	2489.78	325.09	2493.91	325.34	2500.1	324.98	2509.56	324.93

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 2514.55  325.21 2517.28  325.18 2519.86  325.37 2522.81  325.93 2525.01  326.07
 2527.58  325.84 2529.01  325.56 2532.73  324.57 2535.31  324.28 2543.03  323.89
 2549.37  324.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05   446.9     .06  1917.8     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         446.9  1917.8              790     654     605             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0       0               F
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CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	318.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	317.90	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	405.30	8652.98	68.63
E.G. Slope (ft/ft)	0.002457	Area (sq ft)	405.30	8652.98	68.63
Q Total (cfs)	37000.00	Flow (cfs)	1385.14	35497.14	117.72
Top Width (ft)	1573.83	Top Width (ft)	113.57	1405.84	54.42
Vel Total (ft/s)	4.05	Avg. Vel. (ft/s)	3.42	4.10	1.72
Max Chl Dpth (ft)	12.33	Hydr. Depth (ft)	3.57	6.16	1.26
Conv. Total (cfs)	746491.1	Conv. (cfs)	27945.7	716170.3	2375.0
Length Wtd. (ft)	656.47	Wetted Per. (ft)	114.68	1416.30	54.61
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.54	0.94	0.19
Alpha	1.01	Stream Power (lb/ft s)	1.85	3.84	0.33
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)	34.54	1218.68	218.97
C & E Loss (ft)	0.02	Cum SA (acres)	13.54	143.11	38.79

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	318.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.26	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	318.09	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	81.37	8893.46	
E.G. Slope (ft/ft)	0.002389	Area (sq ft)	81.37	8893.46	
Q Total (cfs)	37000.00	Flow (cfs)	308.27	36691.73	
Top Width (ft)	1411.95	Top Width (ft)	12.60	1399.35	
Vel Total (ft/s)	4.12	Avg. Vel. (ft/s)	3.79	4.13	
Max Chl Dpth (ft)	12.52	Hydr. Depth (ft)	6.46	6.36	
Conv. Total (cfs)	756923.8	Conv. (cfs)	6306.3	750617.4	
Length Wtd. (ft)	654.57	Wetted Per. (ft)	19.32	1413.56	
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.63	0.94	
Alpha	1.00	Stream Power (lb/ft s)	2.38	3.87	

Frctn Loss (ft)	1.27	Cum Volume (acre-ft)	13.25	1259.68	68.13
C & E Loss (ft)	0.02	Cum SA (acres)	1.77	137.66	9.11

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	319.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	319.30	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	688.51	10652.70	201.98
E.G. Slope (ft/ft)	0.002211	Area (sq ft)	688.51	10652.70	201.98
Q Total (cfs)	49000.00	Flow (cfs)	1827.44	46822.04	350.51
Top Width (ft)	1851.52	Top Width (ft)	261.78	1441.80	147.94
Vel Total (ft/s)	4.24	Avg. Vel. (ft/s)	2.65	4.40	1.74
Max Chl Dpth (ft)	13.73	Hydr. Depth (ft)	2.63	7.39	1.37
Conv. Total (cfs)	1042016.0	Conv. (cfs)	38861.8	995700.4	7453.9
Length Wtd. (ft)	656.36	Wetted Per. (ft)	263.05	1452.86	148.37
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.36	1.01	0.19
Alpha	1.04	Stream Power (lb/ft s)	0.96	4.45	0.33
Frctn Loss (ft)	1.22	Cum Volume (acre-ft)	76.81	1531.56	382.03
C & E Loss (ft)	0.02	Cum SA (acres)	20.61	144.02	44.40

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	313.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	312.99	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	29.71	2298.79	
E.G. Slope (ft/ft)	0.002507	Area (sq ft)	29.71	2298.79	
Q Total (cfs)	5000.00	Flow (cfs)	44.38	4955.62	
Top Width (ft)	1027.09	Top Width (ft)	29.32	997.77	
Vel Total (ft/s)	2.15	Avg. Vel. (ft/s)	1.49	2.16	
Max Chl Dpth (ft)	7.42	Hydr. Depth (ft)	1.01	2.30	
Conv. Total (cfs)	99865.7	Conv. (cfs)	886.4	98979.3	
Length Wtd. (ft)	654.60	Wetted Per. (ft)	29.53	1002.76	
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.16	0.36	
Alpha	1.00	Stream Power (lb/ft s)	0.24	0.77	
Frctn Loss (ft)	1.95	Cum Volume (acre-ft)	2.44	391.27	94.88
C & E Loss (ft)	0.00	Cum SA (acres)	1.87	123.18	28.33

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	315.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.16	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	315.31	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)		Flow Area (sq ft)	152.89	5097.23	
E.G. Slope (ft/ft)	0.002922	Area (sq ft)	152.89	5097.23	
Q Total (cfs)	17000.00	Flow (cfs)	430.08	16569.92	
Top Width (ft)	1412.77	Top Width (ft)	73.36	1339.41	
Vel Total (ft/s)	3.24	Avg. Vel. (ft/s)	2.81	3.25	
Max Chl Dpth (ft)	9.74	Hydr. Depth (ft)	2.08	3.81	
Conv. Total (cfs)	314488.4	Conv. (cfs)	7956.2	306532.2	
Length Wtd. (ft)	655.72	Wetted Per. (ft)	74.18	1347.06	
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.38	0.69	
Alpha	1.00	Stream Power (lb/ft s)	1.06	2.24	
Frctn Loss (ft)	1.88	Cum Volume (acre-ft)	8.57	771.03	137.59
C & E Loss (ft)	0.00	Cum SA (acres)	3.44	139.17	33.12

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 290

INPUT
Description: Survey Data (June 12, 2014)
 Manning's coefficients are derived
 from the Corrected Effective Model.
Station Elevation Data num= 492

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.95	2.48	334.94	5.04	335.09	10.15	335.25	20.39	335.69
25.51	335.81	35.74	335.7	41.9	335.452	43.42	335.38	45.98	335.47
51.09	335.9	56.33	336.67	60.43	336.96	63.89	337.26	66.45	337.41
71.56	337.81	74.12	337.94	81.44	338.2	89.48	338.53	92.03	338.56
97.15	338.81	102.27	339.01	107.39	339.11	109.95	339.21	117.15	339.36
122.74	339.56	128.18	339.82	140.65	340.22	145.77	340.31	150.89	340.5
156	340.81	158.56	340.56	161.12	339.73	163.68	338.65	168.8	336.4
171.36	335.41	176.47	333.21	184.15	330.13	188.57	328.73	194.39	326.74
199.07	325.3	202.06	324.25	204.62	323.54	207.18	323.31	212.3	323.54
217.41	323.5	224.28	323.38	230.21	323.22	235.33	323.36	236.17	322.59
236.88	322.23	237.88	321.09	240.44	315.58	243	310.28	244.02	310.18
248.12	310.78	250.68	310.8	255.8	310.47	258.35	310.5	260.91	310.35
263.47	310.32	266.29	310.62	271.15	310.77	276.27	311.11	281.38	311.08
291.62	310.71	296.74	310.61	299.3	310.74	306.97	310.61	309.53	310.42
312.09	310.32	314.65	310.34	317.21	310.49	319.77	310.51	324.88	309.98

330	310.01	333.51	310.26	335.12	310.45	342.79	310.23	347.91	310.25
353.03	310.44	360.71	310.94	365.02	311.73	368.38	311.91	370.94	311.83
373.5	311.49	378.62	311.09	381.18	310.6	383.92	310.27	386.29	310.17
388.85	308.91	391.41	306.63	393.97	303.15	396.53	302	399.09	301.71
401.65	301.92	404.21	302.6	407.03	303.05	409.32	302.93	414.44	303.16
415.43	303.38	419.56	304.71	422.12	305.17	427.23	306.6	429.79	307.01
440.03	308.25	445.15	308.69	447.7	308.69	450.26	308.52	452.82	308.62
455.38	309.64	457.94	311.68	460.5	312	483.53	312	486.09	311.97
488.64	311.01	491.2	310.39	493.76	309.98	496.32	309.72	499.45	309.55
505.75	309.28	511.68	308.9	513.68	308.84	516.8	308.86	524.63	309
530.93	309.03	535.12	309.1	537.28	309	541.42	308.97	547.52	309.03
552.64	308.92	555.2	308.96	560.31	309.16	562.4	309.29	565.43	309.58
570.55	309.77	573.11	309.82	580.79	309.66	588.47	309.38	593.59	309.4
596.15	309.67	601.27	310.39	603.83	310.66	606.39	310.69	608.95	310.51
614.07	310.32	619.19	310.37	621.75	310.49	624.31	310.78	629.55	310.85
634.55	311.12	637.11	311.16	642.23	311.34	647.34	311.38	652.46	311.47
657.58	311.42	672.94	311.07	676.68	311.09	680.62	311.05	685.74	311.07
690.86	311.15	693.42	311.14	701.1	311.34	711.34	311.5	716.46	311.45
728.17	311.15	731.82	310.95	734.47	310.69	739.49	310.53	744.61	310.62
749.16	310.92	765.09	312.84	770.21	313.34	780.45	314.16	783.01	314.15
785.57	313.99	790.69	313.48	793.25	312.9	798.37	311.37	806.05	309.57
811.17	308.62	816.29	308.06	818.85	307.86	821.41	307.8	828.89	307.78
834.2	307.73	836.76	307.66	841.88	307.69	844.44	307.62	849.56	307.59
857.24	307.33	859.8	307.31	862.36	307.4	870.04	307.78	875.16	307.96
880.28	308.38	882.84	308.51	898.14	308.53	903.32	308.61	911	308.67
917.03	308.81	923.79	308.79	926.35	308.84	928.91	308.99	931.47	309.53
934.03	310.22	939.15	311.31	941.71	311.77	946.83	312.84	951.95	314.08
954.51	314.76	959.63	315.75	964.75	316.81	972.43	317.94	975.78	318.4
979.98	318.86	982.67	319.01	985.23	318.91	990.35	318.25	995.47	317.33
1000.58	316.54	1003.14	316.07	1015.94	313.83	1021.06	313.03	1026.14	312.4
1028.74	312.15	1034.53	311.83	1036.42	311.77	1044.1	311.84	1051.78	312.04
1054.34	311.98	1059.46	311.59	1061.81	311.28	1067.14	310.25	1074.4	308.56
1077.38	307.97	1079.94	307.6	1085.06	307.12	1090.17	306.8	1095.29	306.63
1100.41	306.56	1105.53	306.32	1108.09	306.41	1115.77	306.91	1118.47	307
1126.01	307.35	1128.57	307.57	1131.13	307.88	1133.16	308.04	1138.81	308.25
1146.49	308.28	1159.29	308.11	1172.09	308.23	1174.65	308.35	1179.76	308.34
1184.88	308.45	1192.56	308.38	1197.68	308.29	1200.24	308.31	1210.48	308.27
1215.6	308.14	1223.28	308.12	1238.64	308	1248.88	308	1259.2	308.12
1266.79	308.05	1271.91	307.96	1274.47	308.01	1282.15	307.78	1284.71	307.77
1290.53	307.83	1294.95	307.81	1305.19	308.09	1312.87	308.34	1323.11	308.86
1330.79	309.41	1335.91	309.66	1341.03	309.72	1343.59	309.84	1349.29	310.02
1356.38	310.18	1361.88	310.19	1369.18	310.12	1374.3	310.18	1379.42	310.47
1384.96	311.01	1389.66	311.65	1394.78	312.07	1399.9	312.15	1405.02	312.06
1410.14	312.19	1412.7	312.42	1420.38	313.23	1428.06	314.2	1433.22	314.72
1435.74	314.87	1441.62	315.34	1443.41	315.4	1448.53	314.59	1453.65	314.03
1463.89	313.17	1468.9	312.91	1474.13	312.72	1476.69	312.67	1483.58	312.44
1487.78	312.16	1489.49	311.95	1492.05	311.36	1494.61	311.16	1497.17	310.85
1499.73	310.65	1502.47	310.7	1504.85	311.16	1507.41	311.03	1509.97	310.8
1512.53	310.71	1517.65	310.62	1522.77	310.79	1527.89	310.54	1530.44	310.07
1533	309.91	1804.33	309.91	1806.89	310.12	1812.01	311.64	1817.13	313.47
1822.25	314.57	1824.81	314.68	1829.93	315.06	1840.17	316.02	1842.73	316.07
1847.85	315.82	1850.41	315.81	1858.09	316.45	1863.21	317.2	1872.77	319.18

1876.01	319.78	1878.08	319.92	1881.13	320.38	1884.37	320.58	1893.92	321.1		
1896.4	321.158	1899.04	321.22	1904.16	321.1	1909.28	320.86	1911.84	320.62		
1916.96	320.39	1924.24	320.39	1927.2	320.45	1932.63	320.19	1940	319.51		
1942.56	319.42	1945.22	319.63	1949.42	320.14	1952.8	320.48	1957.92	320.6		
1963.04	320.95	1965.6	321.3	1968.16	321.77	1970.72	322.43	1973.27	322.89		
1975.83	323.1	1978.8	323.21	1982.99	323.65	1986.07	324.19	1988.63	324.52		
1993.75	325.28	1998.87	324.8	2001.43	324.73	2003.98	324.82	2006.55	325.48		
2009.11	326.02	2011.67	326.23	2014.47	326.27	2019.35	326.03	2024.47	325.92		
2027.03	326.06	2034.71	327	2039.83	327.86	2042.39	328.16	2045.95	328.72		
2050.49	329.3	2057.75	330.11	2060.3	330.23	2065.42	330.29	2073.1	330.69		
2075.66	330.89	2078.22	331.23	2080.78	331.66	2083.34	332.58	2085.9	333.41		
2088.46	333.8	2091.02	334.06	2101.26	334.56	2103.82	334.74	2108.94	334.94		
2111.5	334.8	2126.86	334.72	2139.66	334.78	2155.27	334.78	2157.57	334.76		
2160.13	334.83	2162.69	335.06	2165.25	335.54	2168.07	336.17	2169.75	336.46		
2173.95	337.71	2178.14	338.65	2180.61	338.75	2183.17	338.48	2186.54	337.93		
2188.63	337.76	2190.85	337.68	2193.41	337.7	2195.97	337.81	2201.22	338.26		
2206.21	338.4	2211.33	338.63	2216.45	338.98	2228.5	339.53	2230.6	339.71		
2232.7	339.99	2236.92	340.69	2238.99	340.81	2247.16	341.05	2249.72	341.23		
2252.28	341.3	2259.98	341.19	2262.52	341.27	2267.64	341.28	2275.32	341.45		
2277.88	341.64	2283	341.62	2285.56	341.73	2290.68	341.81	2293.24	341.92		
2300.92	342.05	2303.48	342.16	2311.16	342.34	2313.72	342.43	2321.4	342.58		
2336.75	343.05	2346.99	343.25	2352.11	343.24	2359.79	343.48	2367.47	343.55		
2375.15	343.77	2385.39	344.13	2393.07	344.32	2395.63	344.42	2398.19	344.43		
2403.31	344.55	2408.43	344.77	2413.54	344.83	2416.1	344.96	2421.22	345.05		
2423.78	345.04	2426.34	345.17	2431.46	345.61	2436.58	346.17	2441.7	346.51		
2446.82	346.75	2449.38	346.92	2454.5	347.44	2464.74	349.03	2467.3	349.33		
2472.42	349.63	2474.98	349.73	2485.22	349.91	2490.34	350.05	2495.46	349.81		
2498.02	349.95	2500.57	350.54	2505.69	350.77	2518.49	350.65	2528.73	350.5		
2533.85	350.28	2536.41	350.24	2539.06	350.35	2547.45	350.55	2551.77	350.69		
2554.33	350.37	2556.89	349.95	2562.14	349.27	2567.13	348.72	2572.25	348.68		
2574.73	348.48	2577.37	348.37	2585.05	348.43	2592.72	348.59	2595.28	348.57		
2602.96	348.64	2607.9	348.59								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	41.9	.06	1896.4	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
41.9	1896.4	695	653	645 .1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	316.75	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.21	Wt. n-Val.		0.060		
W.S. Elev (ft)	316.54	Reach Len. (ft)	695.00	653.00	645.00	
Crit W.S. (ft)		Flow Area (sq ft)		10129.69		
E.G. Slope (ft/ft)	0.001850	Area (sq ft)		10129.69		
Q Total (cfs)	37000.00	Flow (cfs)		37000.00		
Top Width (ft)	1581.55	Top Width (ft)		1581.55		
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)		3.65		
Max Chl Dpth (ft)	14.83	Hydr. Depth (ft)		6.40		
Conv. Total (cfs)	860216.9	Conv. (cfs)		860216.9		

Length Wtd. (ft)	653.08	Wetted Per. (ft)		1595.31	
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.73	
Alpha	1.00	Stream Power (lb/ft s)		2.68	
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	30.87	1077.68	218.49
C & E Loss (ft)	0.02	Cum SA (acres)	12.51	120.68	38.41

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	317.06	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.20	Wt. n-Val.		0.060	
W.S. Elev (ft)	316.86	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)		10438.97	
E.G. Slope (ft/ft)	0.001615	Area (sq ft)		10438.97	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1536.58	Top Width (ft)		1536.58	
Vel Total (ft/s)	3.54	Avg. Vel. (ft/s)		3.54	
Max Chl Dpth (ft)	15.15	Hydr. Depth (ft)		6.79	
Conv. Total (cfs)	920678.1	Conv. (cfs)		920678.1	
Length Wtd. (ft)	653.00	Wetted Per. (ft)		1553.28	
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.68	
Alpha	1.00	Stream Power (lb/ft s)		2.40	
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	12.51	1114.56	68.13
C & E Loss (ft)	0.01	Cum SA (acres)	1.65	115.62	9.11

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	318.35	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.		0.060	
W.S. Elev (ft)	318.12	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)		12646.59	
E.G. Slope (ft/ft)	0.001589	Area (sq ft)		12646.59	
Q Total (cfs)	49000.00	Flow (cfs)		49000.00	
Top Width (ft)	1610.97	Top Width (ft)		1610.97	
Vel Total (ft/s)	3.87	Avg. Vel. (ft/s)		3.87	
Max Chl Dpth (ft)	16.40	Hydr. Depth (ft)		7.85	
Conv. Total (cfs)	1229409.0	Conv. (cfs)		1229409.0	
Length Wtd. (ft)	653.12	Wetted Per. (ft)		1626.13	
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.77	
Alpha	1.00	Stream Power (lb/ft s)		2.99	
Frctn Loss (ft)	0.79	Cum Volume (acre-ft)	70.57	1356.65	380.63
C & E Loss (ft)	0.02	Cum SA (acres)	18.24	121.10	43.37

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	311.11	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.060	
W.S. Elev (ft)	311.03	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)		2178.53	
E.G. Slope (ft/ft)	0.003583	Area (sq ft)		2178.53	
Q Total (cfs)	5000.00	Flow (cfs)		5000.00	
Top Width (ft)	1123.68	Top Width (ft)		1123.68	
Vel Total (ft/s)	2.30	Avg. Vel. (ft/s)		2.30	
Max Chl Dpth (ft)	9.32	Hydr. Depth (ft)		1.94	
Conv. Total (cfs)	83535.7	Conv. (cfs)		83535.7	
Length Wtd. (ft)	653.00	Wetted Per. (ft)		1130.76	
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.43	
Alpha	1.00	Stream Power (lb/ft s)		0.99	
Frctn Loss (ft)	1.86	Cum Volume (acre-ft)	2.17	357.66	94.88
C & E Loss (ft)	0.01	Cum SA (acres)	1.60	107.26	28.33

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	313.59	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.060	
W.S. Elev (ft)	313.43	Reach Len. (ft)	695.00	653.00	645.00
Crit W.S. (ft)		Flow Area (sq ft)		5401.58	
E.G. Slope (ft/ft)	0.002819	Area (sq ft)		5401.58	
Q Total (cfs)	17000.00	Flow (cfs)		17000.00	
Top Width (ft)	1448.06	Top Width (ft)		1448.06	
Vel Total (ft/s)	3.15	Avg. Vel. (ft/s)		3.15	
Max Chl Dpth (ft)	11.72	Hydr. Depth (ft)		3.73	
Conv. Total (cfs)	320178.2	Conv. (cfs)		320178.2	
Length Wtd. (ft)	653.00	Wetted Per. (ft)		1458.75	
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.65	
Alpha	1.00	Stream Power (lb/ft s)		2.05	
Frctn Loss (ft)	1.30	Cum Volume (acre-ft)	7.18	692.22	137.59
C & E Loss (ft)	0.01	Cum SA (acres)	2.78	118.24	33.12

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 285

INPUT

Description: Survey Data (June 12, 2014)
 Manning's coefficients are derived
            from the Corrected Effective Model.
Station Elevation Data   num=   492

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.08	5.36	327.9	13.04	327.81	20.42	327.63	23.27	327.6
28.38	327.65	30.94	327.84	33.5	327.9	38.61	327.34	41.17	327.22
46.29	327.12	48.84	327.33	51.4	328.1	53.96	329.12	59.07	331.78
61.63	332.78	64.19	333.33	66.75	333	69.31	332.31	71.86	331.37
77.21	329.64	82.09	329.24	87.21	328.96	89.77	328.87	92.32	328.68
102.55	328.29	106.66	328.39	115.77	328.51	120.46	328.52	123.48	328.64
128.13	328.69	138.36	328.65	143.48	328.56	148.59	328.31	151.15	328.11
153.71	327.31	157.14	326	161.38	324.5	163.94	323.95	166.5	323.71
171.61	324.68	173.96	324.96	176.73	325.48	179.28	326.21	182.38	326.23
189.52	325.81	194.63	326.06	199.75	326.21	202.3	326.22	207.42	326.35
212.53	326.41	217.65	326.53	220.21	326.53	222.76	326.65	233	326.81
238.11	326.66	245.48	325.93	250.9	325.66	256.01	325.19	261.13	325.05
263.69	325.11	271.36	325.71	284.15	326.54	289.26	326.57	298.06	326.29
307.17	326.12	312.28	326.1	314.84	326.03	325.07	326.01	330.19	325.92
337.86	325.69	342.97	325.48	348.09	325.74	350.65	325.97	353.21	326.01
355.76	325.58	358.32	324.9	360.88	323.82	365.99	322.04	368.55	321.48
371.11	321.19	373.67	321.59	381.34	323.66	383.9	323.9	391.57	324.11
399.24	324	406.92	323.76	411.64	323.5	414.59	323.41	417.15	323.71
419.7	324.46	422.26	323.7	427.38	320.83	430.57	318.08	432.49	316.55
434.78	315.33	436.88	314.48	440.17	313.71	442.72	313.87	445.28	313.59
447.84	313.45	452.95	313.58	457.91	313.02	460.63	312.89	463.18	312.49
468.1	311.01	469.1	310.844	470.53	310.72	473.42	310.8	475.97	310.41
483.65	310.22	486.2	309.87	489.46	309.7	491.57	309.43	493.67	308.78
496.43	308.55	498.99	308.62	502.08	308.43	503.99	307.97	506.29	308.27
509.22	308.09	511.78	308.15	516.9	308.5	519.45	308.45	522.01	308.5
525.22	308.8	527.13	308.87	530.08	308.71	532.24	308.38	534.8	307.73
537.36	307.41	539.91	307.41	542.05	307.53	545.03	307.98	547.59	307.95
552.7	308.11	555.26	308.47	557.82	308.67	560.38	308.5	565.18	308.07
573.16	307.98	575.7	307.69	578.28	307.77	580.84	307.97	583.39	307.93
585.95	307.73	588.51	307.69	591.07	307.99	593.62	307.77	596.18	307.13
601.3	306.27	606.41	304.69	611.64	303.64	614.09	303.34	619.2	303.17
624.08	303.84	626.87	304.04	629.43	303.83	631.99	303.51	637.11	302.44
639.66	301.75	642.22	301.64	644.78	302.31	655.01	305.34	657.73	306.12
660.12	306.62	662.68	306.75	666.14	306.69	668.25	306.75	670.35	306.66
672.91	306.76	678.03	308.2	680.59	308.98	683.14	310	712.42	310
721.51	307.88	726.62	307.13	731.74	306.97	739.41	307.09	744.53	307.42
748.17	307.41	754.76	307.28	757.31	307.08	759.87	306.67	762.43	306.03
769.21	304.75	770.1	304.54	772.66	304.31	777.62	304.16	782.89	304.24
790.56	304.12	795.68	304.58	800.8	304.13	803.35	303.64	809.17	304.17
810.64	304.54	813.91	304.79	817.58	304.83	821.26	305.09	823.89	305.18
828.1	305.1	831.49	305.1	834.04	304.93	838.62	305.07	841.72	305.05
844.28	304.91	846.83	304.9	851.24	305.06	857.06	305.2	867.29	305.76
872.41	306.19	877.52	306.45	880.68	306.7	885.2	306.63	887.76	306.98
890.31	307.13	892.87	306.97	897.99	307.31	900.54	307.74	903.1	307.84
905.66	307.44	908.51	307.3	912.23	307.37	915.89	307.3	918.45	307.59
922.75	308.19	926.96	308.43	928.68	308.64	931.16	308.07	933.79	307.62
936.35	307.72	944.02	307.88	946.58	307.99	951.7	308.02	954.3	307.91

958.51	307.9	961.93	307.99	964.82	307.94	969.6	307.76	974.72	307.94
979.83	308.2	982.39	308.24	990.06	308.5	992.62	308.65	998.47	308.83
1007.97	308.97	1013.08	308.88	1017.4	308.62	1023.31	308.46	1033.54	308.49
1036.1	308.43	1041.21	308.09	1046.33	307.83	1053.16	307.67	1059.47	307.6
1066.79	307.56	1071.91	307.65	1074.19	308	1076.29	308.15	1082.14	307.8
1084.71	308.03	1087.25	307.96	1094.47	307.9	1097.48	308.02	1107.71	308.02
1112.05	307.97	1115.39	308.01	1120.46	307.91	1122.57	307.95	1128.18	307.93
1130.73	307.84	1135.85	307.9	1138.41	307.82	1143.52	307.45	1148.64	306.83
1153.75	306.32	1158.87	305.98	1163.98	305.8	1171.66	305.75	1179.33	305.94
1189.56	306.38	1194.67	306.51	1197.23	306.64	1204.9	307.22	1217.69	308.01
1223.53	308.45	1229.84	309.04	1236.15	309.78	1240.35	310.41	1248.38	311.87
1253.5	312.58	1256.06	312.84	1258.62	313	1261.17	313.06	1263.73	313.02
1268.85	312.8	1276.52	312.7	1282.42	313.19	1288.73	313.85	1291.86	314.02
1296.98	313.98	1299.54	313.88	1302.1	313.41	1304.65	312.54	1307.21	311.41
1309.77	310.56	1312.33	310.3	1317.44	310.17	1322.56	310.16	1327.67	310.2
1332.9	310.56	1335	310.58	1343.02	310.11	1358.36	309.92	1366.04	309.74
1370.76	309.71	1378.83	309.79	1381.38	309.78	1389.06	310.08	1394.17	310.1
1402.31	309.89	1409.52	309.45	1414.63	308.94	1422.31	308.41	1432.54	308.06
1435.09	307.91	1440.17	307.81	1445.32	307.8	1452.79	307.62	1460.67	307.59
1465.79	307.71	1475.5	307.99	1481.13	308.19	1491.36	308.49	1496.48	308.79
1499.04	309.06	1501.59	309.22	1504.15	309.49	1511.82	310.15	1514.38	310.3
1519.5	310.41	1522.05	310.1	1524.61	308.95	1527.17	308.06	1529.73	307.57
1534.84	307.25	1539.96	307.08	1547.63	306.91	1555.3	306.93	1560.42	307.08
1562.98	307.49	1565.53	308.08	1568.09	308.34	1570.65	308.28	1575.76	307.83
1583.2	307.63	1586	307.52	1591.11	307.57	1596.23	307.71	1600.02	307.7
1604.23	307.61	1611.57	307.59	1616.85	307.47	1621.8	307.52	1624.36	307.48
1629.48	307.56	1634.59	307.44	1642.26	307.41	1648.4	307.33	1655.05	307.15
1660.17	307.17	1667.84	307.08	1670.4	307.17	1675.51	307.19	1678.07	307.29
1685.74	307.8	1688.36	307.68	1693.42	307.3	1698.53	307.24	1701.09	306.25
1703.65	304.77	1706.21	303.85	1708.76	303.14	1713.88	303.14	1718.99	302.71
1721.55	302.62	1724.11	302.75	1726.67	302.98	1729.22	303.11	1731.78	303.53
1734.34	303.85	1739.45	304.83	1742.01	305	1744.57	305.03	1747.13	305.28
1754.8	305.24	1759.92	305.31	1762.47	305.45	1766.19	305.49	1772.7	305.73
1775.26	305.73	1782.93	305.86	1790.61	305.87	1795.72	305.79	1800.84	305.92
1803.4	306.05	1811.07	306.71	1814.56	307.12	1818.74	307.71	1826.42	309.05
1831.39	309.74	1836.65	310.28	1841.91	310.45	1844.01	310.45	1851.99	310.31
1854.41	310.23	1858.73	309.93	1867.34	309.22	1869.9	309.08	1887.8	308.58
1895.47	308.48	1900.59	308.53	1913.38	309.06	1918.49	309.18	1923.61	309.45
1926.16	309.7	1933.84	310.33	1938.95	310.58	1944.07	311.01	1947.07	311.4
1951.74	311.85	1954.3	312.16	1959.41	312.63	1964.2	313.194	1972.82	314.19
1977.32	314.62	1979.87	314.96	1987.55	315.87	1992.66	316.34	1995.22	316.46
2000.34	316.41	2002.89	316.3	2005.45	316.06	2008.07	315.69	2015.68	315.26
2023.35	315.6	2025.91	315.87	2036.14	317.44	2041.26	318.14	2045.93	318.85
2058.55	319.91	2064.28	320.57	2071.95	321.17	2074.51	321.28	2081.68	321.43
2089.85	321.9	2092.41	321.95	2094.97	322.12	2100.61	322.79	2105.2	323.15
2112.87	323.18	2117.99	323.38	2120.55	323.57	2123.1	323.96	2125.66	324.53
2133.33	325.92	2138.45	327.09	2143.56	328.19	2148.99	329.64	2151.46	330.19
2153.8	331.02	2156.35	331.36	2158.91	331.42	2161.47	331.36	2164.03	331.55
2166.58	331.93	2169.14	333.45	2171.7	334.81	2174.26	335.88	2176.33	335.45
2179.37	335.18	2181.93	335.48	2184.49	336.22	2189.6	337.38	2193.16	338.43
2197.28	339.52	2202.39	340.36	2204.95	340.7	2207.51	340.84	2210.06	341.09
2215.18	341.09	2218.221	341.02						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	469.1	.06	1964.2	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
469.1	1964.2	640	688	660	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	315.84	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	315.69	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)	84.55	11710.42	31.12
E.G. Slope (ft/ft)	0.001043	Area (sq ft)	84.55	11710.42	31.12
Q Total (cfs)	37000.00	Flow (cfs)	144.33	36823.72	31.95
Top Width (ft)	1567.96	Top Width (ft)	34.99	1495.10	37.87
Vel Total (ft/s)	3.13	Avg. Vel. (ft/s)	1.71	3.14	1.03
Max Chl Dpth (ft)	14.05	Hydr. Depth (ft)	2.42	7.83	0.82
Conv. Total (cfs)	1145468.0	Conv. (cfs)	4468.1	1140010.0	989.2
Length Wtd. (ft)	687.86	Wetted Per. (ft)	35.66	1502.57	38.04
Min Ch El (ft)	301.64	Shear (lb/sq ft)	0.15	0.51	0.05
Alpha	1.01	Stream Power (lb/ft s)	0.26	1.60	0.05
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	30.19	913.98	218.26
C & E Loss (ft)	0.01	Cum SA (acres)	12.23	97.62	38.13

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	316.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.060	
W.S. Elev (ft)	316.11	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)		12009.99	
E.G. Slope (ft/ft)	0.000928	Area (sq ft)		12009.99	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1435.00	Top Width (ft)		1435.00	
Vel Total (ft/s)	3.08	Avg. Vel. (ft/s)		3.08	
Max Chl Dpth (ft)	14.47	Hydr. Depth (ft)		8.37	
Conv. Total (cfs)	1214849.0	Conv. (cfs)		1214849.0	
Length Wtd. (ft)	688.00	Wetted Per. (ft)		1454.92	
Min Ch El (ft)	301.64	Shear (lb/sq ft)		0.48	
Alpha	1.00	Stream Power (lb/ft s)		1.47	
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	12.51	946.29	68.13
C & E Loss (ft)	0.01	Cum SA (acres)	1.65	93.35	9.11

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	317.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.050	0.060	0.050

W.S. Elev (ft)	317.36	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)	145.66	14217.38	130.33
E.G. Slope (ft/ft)	0.000948	Area (sq ft)	145.66	14217.38	130.33
Q Total (cfs)	49000.00	Flow (cfs)	321.95	48500.61	177.44
Top Width (ft)	1604.18	Top Width (ft)	37.63	1495.10	71.45
Vel Total (ft/s)	3.38	Avg. Vel. (ft/s)	2.21	3.41	1.36
Max Chl Dpth (ft)	15.72	Hydr. Depth (ft)	3.87	9.51	1.82
Conv. Total (cfs)	1591365.0	Conv. (cfs)	10456.0	1575147.0	5762.9
Length Wtd. (ft)	687.75	Wetted Per. (ft)	38.80	1502.57	71.81
Min Ch El (ft)	301.64	Shear (lb/sq ft)	0.22	0.56	0.11
Alpha	1.01	Stream Power (lb/ft s)	0.49	1.91	0.15
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	69.41	1155.30	379.66
C & E Loss (ft)	0.01	Cum SA (acres)	17.94	97.82	42.84

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	309.24	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.06	Wt. n-Val.		0.060	
W.S. Elev (ft)	309.18	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)		2503.59	
E.G. Slope (ft/ft)	0.002309	Area (sq ft)		2503.59	
Q Total (cfs)	5000.00	Flow (cfs)		5000.00	
Top Width (ft)	1146.00	Top Width (ft)		1146.00	
Vel Total (ft/s)	2.00	Avg. Vel. (ft/s)		2.00	
Max Chl Dpth (ft)	7.54	Hydr. Depth (ft)		2.18	
Conv. Total (cfs)	104055.6	Conv. (cfs)		104055.6	
Length Wtd. (ft)	688.00	Wetted Per. (ft)		1151.53	
Min Ch El (ft)	301.64	Shear (lb/sq ft)		0.31	
Alpha	1.00	Stream Power (lb/ft s)		0.63	
Frctn Loss (ft)	1.29	Cum Volume (acre-ft)	2.17	322.56	94.88
C & E Loss (ft)	0.01	Cum SA (acres)	1.60	90.25	28.33

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	312.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.	0.050	0.060	
W.S. Elev (ft)	312.17	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)		Flow Area (sq ft)	3.46	6505.89	
E.G. Slope (ft/ft)	0.001486	Area (sq ft)	3.46	6505.89	
Q Total (cfs)	17000.00	Flow (cfs)	3.09	16996.91	
Top Width (ft)	1435.13	Top Width (ft)	4.84	1430.29	
Vel Total (ft/s)	2.61	Avg. Vel. (ft/s)	0.89	2.61	
Max Chl Dpth (ft)	10.53	Hydr. Depth (ft)	0.71	4.55	
Conv. Total (cfs)	440959.8	Conv. (cfs)	80.2	440879.6	
Length Wtd. (ft)	687.99	Wetted Per. (ft)	5.03	1437.32	
Min Ch El (ft)	301.64	Shear (lb/sq ft)	0.06	0.42	

Alpha	1.00	Stream Power (lb/ft s)	0.06	1.10	
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	7.16	602.97	137.59
C & E Loss (ft)	0.01	Cum SA (acres)	2.74	96.67	33.12

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 280

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 460

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.56	5.17	332.57	10.16	332.16	12.86	332.01	20.99	331.83
35.91	331.55	38.48	331.47	41.04	331.15	43.6	330.94	46.16	330.97
53.84	330.75	74.34	330.07	79.46	329.97	89.71	329.56	94.83	329.5
117.88	328.95	120.45	328.85	123.01	329	125.57	328.75	130.69	328.39
135.82	328.16	143.5	327.95	146.06	327.97	151.18	327.79	156.31	327.76
158.87	327.66	161.43	327.77	163.99	327.59	166.55	327.2	169.3	327.11
171.68	326.93	179.36	326.75	184.49	326.95	187.05	326.99	189.61	326.78
194.73	326.12	199.85	325.92	202.8	326.07	204.98	326.06	212.66	325.48
217.79	325.03	220.35	324.91	228.03	325	235.72	325.2	238.4	325.2
246.77	325.49	251.09	325.69	261.43	325.34	269.02	325.19	271.9	325.06
276.7	324.98	281.83	324.77	286.95	324.68	294.63	324.34	302.32	324.72
310	325.01	315.13	325.01	320.06	325.21	325.37	325.22	327.93	325.16
333.06	324.7	338.18	324.78	340.74	324.75	343.1	324.63	358.67	324.11
363.8	323.91	368.92	323.64	381.73	323.08	389.41	322.81	391.97	322.66
397.1	322.53	402.22	322.28	407.34	321.79	412.47	321.53	417.59	321.17
420.57	320.88	427.84	320.29	430.4	320.23	438.08	320.28	440.64	320.39
448.33	320.11	450.89	320.16	456.01	320.04	461.14	319.8	463.7	319.73
476.51	319.25	491.87	318.59	497	318.44	509.81	317.88	512.37	317.69
516.9	317.48	520.05	317.42	525.18	317.19	527.74	317.29	532.86	318.2
535.42	318.74	537.98	319.74	543.11	322.47	545.67	323.72	548.2	324.155
550.79	323.83	553.35	322.81	555.91	321.69	560.87	318.53	563.6	318.13
566.16	316.66	567.15	314.97	569.24	311.77	571.28	308.37	573.43	308.88
578.97	309.83	584.39	309.08	586	309.09	589.21	308.61	594.34	308.44
596.9	308.52	600.65	309.01	604.58	309.2	606.94	309.44	612.27	309.8
615.31	309.95	622.52	309.69	625.08	308.6	627.64	308.3	629.97	308.27
635.32	307.81	637.88	307.7	640.45	307.69	645.57	307.47	648.13	307.46
650.69	307.67	653.25	307.51	658.38	307.36	661.38	307.18	671.19	306.97
673.75	307.01	678.87	307.46	684.41	307.34	686.51	307.37	689.12	307.55
699.36	307.77	701.92	307.76	704.49	307.5	707.05	307.06	709.54	307.4
711.63	307.53	714.73	307.89	717.92	307.67	719.86	307.3	724.98	306.78
727.54	306.82	730.1	307.01	732.66	307.3	734.67	307.27	737.79	307.09

740.35	307.07	745.14	306.62	750.59	306.69	755.72	306.66	757.7	306.82
761.89	306.76	766.08	306.58	773.65	307.14	776.21	307.19	778.77	306.94
781.33	306.5	783.89	306.23	786.46	306.3	789.11	306.11	794.14	306.18
799.58	306.15	801.83	306.37	809.51	306.39	812.07	306.34	814.63	306.44
817.2	306.32	822.32	306.4	824.88	306.11	830.99	306.06	835.13	306.22
837.69	306.26	840.25	306.48	845.37	307.05	847.93	307.18	850.5	306.88
853.06	306.83	858.18	306.85	865.87	306.44	868.43	306.52	870.99	306.42
877.06	306.55	878.67	306.53	881.29	306.34	886.36	306.34	891.11	306.48
896.6	306.9	900.09	306.82	904.29	306.53	906.85	306.71	909.41	306.64
912.66	306.75	924.78	306.93	932.47	306.64	935.03	306.86	937.78	306.99
942.71	307.02	945.27	306.98	950.4	307.09	952.96	307.23	958.08	307.71
965	307.32	968.33	307.2	975.47	306.81	978.57	306.72	981.14	306.77
983.7	306.97	988.04	306.9	991.38	307.09	993.94	306.93	996.51	306.34
999.07	305.99	1000.6	306.05	1006.54	306.07	1009.31	305.92	1011.88	305.68
1014.44	304.2	1015.26	303.54	1017.35	302.17	1019.56	301.18	1021.54	300.63
1024.68	299.55	1027.24	298.96	1029.63	298.83	1032.37	298.84	1034.93	299.11
1037.49	299.54	1040.05	299.42	1042.61	299.04	1046.67	299.04	1050.3	298.92
1052.86	299.72	1055.04	300.96	1057.98	302.77	1060.55	304.24	1063.11	305.17
1065.67	305.93	1211.68	305.92	1216.8	305.95	1219.36	306.05	1222.56	305.96
1227.05	306.01	1229.61	305.86	1232.17	305.91	1237.29	306.18	1239.86	306.68
1242.42	307.07	1250.1	306.62	1252.66	306.05	1255.22	305.21	1257.79	304.56
1260.35	304.31	1265.47	304.52	1268.03	304.82	1273.16	305.13	1278.28	305.36
1280.84	305.65	1285.96	305.82	1287.47	305.67	1293.48	305.38	1298.77	305.18
1301.33	304.97	1303.9	304.96	1311.58	305.15	1316.7	305.12	1321.83	304.99
1325.17	305	1326.95	304.88	1332.07	305.01	1334.63	304.86	1339.76	303.84
1344.88	303.49	1350.29	304	1352.56	304.1	1355.13	303.93	1360.25	304.2
1362.81	304.56	1367.93	305.4	1369.14	305.5	1373.06	305.59	1380.74	305.64
1385.82	305.84	1388.43	305.78	1396.36	306.17	1401.23	306.26	1408.92	306.5
1414.04	306.51	1417.3	306.59	1421.73	306.53	1431.97	306.69	1434.54	306.66
1437.1	306.73	1442.22	306.72	1447.34	306.77	1449.91	306.72	1452.47	306.8
1457.59	306.71	1459.18	306.79	1462.71	306.8	1465.27	306.6	1470.4	306.54
1472.96	306.65	1478.03	306.72	1480.12	306.67	1486.4	306.26	1490.89	306.07
1496.01	306.03	1498.97	306.06	1508.82	306.05	1513.94	305.92	1519.07	306.09
1521.63	306.12	1524.19	306	1526.75	305.66	1537	304.17	1542.12	303.61
1547.24	303.28	1552.37	303.2	1559.69	303.22	1570.3	303.53	1575.42	303.78
1580.55	304.28	1585.67	304.93	1590.79	305.38	1593.35	305.49	1603.6	305.47
1609.95	305.63	1613.85	305.67	1618.97	305.65	1624.09	305.57	1631.78	305.6
1634.34	305.54	1637.17	305.58	1656.01	306.14	1659.95	306.29	1665.08	306.32
1670.2	306.52	1677.89	306.54	1680.45	306.51	1688.13	306.06	1693.25	305.8
1699.99	305.3	1708.36	304.81	1712.55	304.66	1718.83	304.5	1726.56	304.43
1735.58	304.46	1744.49	304.38	1752.17	304.25	1759.86	304.04	1766.99	303.98
1772.66	304.08	1780.35	304.33	1782.91	304.48	1790.59	305.11	1795.72	305.41
1800.5	305.52	1805.96	305.43	1808.53	305.2	1811.09	304.8	1816.21	304.2
1821.33	303.75	1823.53	303.62	1829.02	303.5	1834.14	303.53	1839.26	303.46
1844.47	303.75	1846.95	303.68	1849.51	302.64	1852.07	302.47	1854.94	302.68
1857.03	302.98	1859.76	303.01	1864.88	302.81	1867.5	302.42	1869.6	302.74
1872.57	302.92	1877.69	304.58	1880.25	305.14	1882.81	305.6	1887.93	305.86
1890.5	305.94	1898.18	305.88	1903.3	305.98	1908.43	306.18	1910.99	306.16
1917.76	306.24	1921.24	306.2	1925.13	306.38	1931.48	306.74	1936.6	306.94
1949.17	307	1951.97	307.2	1957.1	307.33	1959.69	307.28	1963.83	307.36
1972.2	307.61	1977.59	307.64	1984.77	307.83	1991.05	307.91	1998.08	308.16
2003.21	308.71	2005.71	309.03	2010.89	309.38	2016.01	309.22	2021.6	309.25

2023.7	309.34	2026.26	310.27	2028.82	311.83	2036.5	315.19	2039.05	316.03		
2041.38	316.48	2043.49	317.28	2046.71	318.01	2049.27	318.07	2054.37	318.42		
2056.93	318.84	2059.48	318.77	2064.59	318.78	2067.14	318.88	2069.69	319.14		
2072.25	319.82	2074.8	319.32	2077.35	319.03	2085.02	318.99	2094.22	319.12		
2100.34	319.25	2102.67	319.25	2105.44	319.41	2113.1	319.41	2118.21	319.69		
2120.77	319.5	2128.43	319.62	2133.53	319.65	2143.75	319.79	2148.85	319.82		
2156.52	319.94	2166.73	319.8	2169.28	319.94	2176.94	320.09	2184.6	319.9		
2189.33	319.63	2192.27	319.57	2194.82	319.4	2199.93	319.62	2202.48	319.8		
2210.14	320.04	2217.8	320.1	2222.91	320.05	2228.02	319.84	2228.86	319.94		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	548.2	.06	2021.6	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
548.2	2021.6	1135	1021	1060	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	315.28	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.12	Wt. n-Val.		0.060	0.050	
W.S. Elev (ft)	315.16	Reach Len. (ft)	1135.00	1021.00	1060.00	
Crit W.S. (ft)		Flow Area (sq ft)		13452.34	49.21	
E.G. Slope (ft/ft)	0.000639	Area (sq ft)		13452.34	49.21	
Q Total (cfs)	37000.00	Flow (cfs)		36922.24	77.76	
Top Width (ft)	1469.39	Top Width (ft)		1454.56	14.83	
Vel Total (ft/s)	2.74	Avg. Vel. (ft/s)		2.74	1.58	
Max Chl Dpth (ft)	16.33	Hydr. Depth (ft)		9.25	3.32	
Conv. Total (cfs)	1463951.0	Conv. (cfs)		1460874.0	3076.6	
Length Wtd. (ft)	1021.95	Wetted Per. (ft)		1465.01	16.13	
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.37	0.12	
Alpha	1.00	Stream Power (lb/ft s)		1.01	0.19	
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	29.57	715.27	217.66	
C & E Loss (ft)	0.04	Cum SA (acres)	11.97	74.33	37.73	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	315.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.		0.060	
W.S. Elev (ft)	315.60	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		12916.01	
E.G. Slope (ft/ft)	0.000640	Area (sq ft)		12916.01	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1300.00	Top Width (ft)		1300.00	
Vel Total (ft/s)	2.86	Avg. Vel. (ft/s)		2.86	
Max Chl Dpth (ft)	16.77	Hydr. Depth (ft)		9.94	

Conv. Total (cfs)	1462018.0	Conv. (cfs)		1462018.0	
Length Wtd. (ft)	1021.02	Wetted Per. (ft)		1321.78	
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.39	
Alpha	1.00	Stream Power (lb/ft s)		1.12	
Frctn Loss (ft)	1.08	Cum Volume (acre-ft)	12.51	749.45	68.13
C & E Loss (ft)	0.04	Cum SA (acres)	1.65	71.75	9.11

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	317.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	316.86	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		15922.21	79.27
E.G. Slope (ft/ft)	0.000639	Area (sq ft)		15922.21	79.27
Q Total (cfs)	49000.00	Flow (cfs)		48861.39	138.61
Top Width (ft)	1476.56	Top Width (ft)		1455.78	20.77
Vel Total (ft/s)	3.06	Avg. Vel. (ft/s)		3.07	1.75
Max Chl Dpth (ft)	18.03	Hydr. Depth (ft)		10.94	3.82
Conv. Total (cfs)	1938343.0	Conv. (cfs)		1932860.0	5483.0
Length Wtd. (ft)	1025.73	Wetted Per. (ft)		1467.15	22.33
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.43	0.14
Alpha	1.00	Stream Power (lb/ft s)		1.33	0.25
Frctn Loss (ft)	1.07	Cum Volume (acre-ft)	68.34	917.28	378.08
C & E Loss (ft)	0.04	Cum SA (acres)	17.66	74.52	42.14

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	307.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.060	
W.S. Elev (ft)	307.91	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		3019.86	
E.G. Slope (ft/ft)	0.001547	Area (sq ft)		3019.86	
Q Total (cfs)	5000.00	Flow (cfs)		5000.00	
Top Width (ft)	1356.56	Top Width (ft)		1356.56	
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)		1.66	
Max Chl Dpth (ft)	9.08	Hydr. Depth (ft)		2.23	
Conv. Total (cfs)	127127.2	Conv. (cfs)		127127.2	
Length Wtd. (ft)	1021.07	Wetted Per. (ft)		1362.62	
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.35	

Frctn Loss (ft)	1.37	Cum Volume (acre-ft)	2.17	278.94	94.88
C & E Loss (ft)	0.00	Cum SA (acres)	1.60	70.48	28.33

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	311.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	311.51	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		8140.99	10.25
E.G. Slope (ft/ft)	0.000719	Area (sq ft)		8140.99	10.25
Q Total (cfs)	17000.00	Flow (cfs)		16989.67	10.33
Top Width (ft)	1458.89	Top Width (ft)		1452.20	6.69
Vel Total (ft/s)	2.09	Avg. Vel. (ft/s)		2.09	1.01
Max Chl Dpth (ft)	12.68	Hydr. Depth (ft)		5.61	1.53
Conv. Total (cfs)	634167.3	Conv. (cfs)		633782.1	385.2
Length Wtd. (ft)	1021.17	Wetted Per. (ft)		1460.66	7.20
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.25	0.06
Alpha	1.00	Stream Power (lb/ft s)		0.52	0.06
Frctn Loss (ft)	1.07	Cum Volume (acre-ft)	7.13	487.30	137.51
C & E Loss (ft)	0.02	Cum SA (acres)	2.70	73.91	33.07

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 270

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 488

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	311.5	4.03	311.65	16.61	311.94	19.12	311.97	21.64	312.03
24.15	312.03	29.18	312.16	31.7	312.19	36.73	312.32	41.76	312.25
46.79	311.94	49.3	311.84	51.82	311.69	54.33	311.61	56.85	311.5
59.36	311.42	60.08	311.37	64.39	311.01	66.91	310.91	69.42	310.97
74.45	311.42	79.48	311.69	82	311.77	89.54	311.94	92.06	312.07
94.57	312.16	97.09	312.19	99.6	312.14	102.12	312.06	104.63	312.03
107.15	311.97	109.66	311.88	112.18	311.81	117.21	311.75	122.24	311.61
127.27	311.53	129.78	311.47	132.3	311.38	134.81	311.25	137.33	311.15
139.84	311.18	142.36	311.53	144.87	312.01	147.39	312.7	149.9	313.69

152.42	314.88	154.93	315.98	157.45	317.13	159.96	318.05	162.48	318.62
164.99	318.75	167.51	318.29	170.02	317.3	175.05	314.66	177.57	313.56
179.95	312.91	182.6	312.1	185.11	311.55	187.63	311.23	190.14	311.18
191.52	311.33	192.66	311.41	195.17	311.51	196.06	311.51	197.69	311.56
200.2	311.37	202.72	311.24	205.23	311.32	207.75	311.48	210.26	311.59
212.78	311.62	215.29	311.7	217.81	311.74	220.99	311.75	222.84	311.74
225.35	311.87	230.38	311.95	232.9	312.02	235.41	312.02	237.93	311.98
245.92	312.1	248.18	312.15	250.5	312.12	253.02	312.18	255.53	312.27
258.05	312.32	260.56	312.34	264.05	312.28	265.59	312.23	270.62	312.45
273.14	312.47	276	312.44	280.68	312.47	283.2	312.43	285.71	312.47
288.23	312.56	290.74	312.78	293.51	313.12	295.77	313.37	298.29	313.79
300.31	314.03	303.32	314.27	305.83	314.64	308.35	314.52	310.86	314.22
313.38	313.85	315.89	313.36	318.37	313.13	320.92	312.84	323.44	312.68
325.24	312.46	326.85	312.3	327.5	312.19	329.77	311.98	330.98	311.89
333.5	311.35	334.3	311.14	335.32	310.81	336.01	310.63	336.57	310.57
338.53	310.25	341.04	310.03	343	309.18	346.07	307.77	347.9	307.02
348.59	306.76	349.45	306.68	350.17	306.56	351.1	306.49	356.13	306.26
358.65	306.62	361.16	307.17	361.5	307.22	363.57	307.83	364.53	307.86
366.4	307.82	368.3	307.63	369.22	307.6	370.56	307.44	371.22	307.43
372.05	307.32	372.83	307.29	373.74	307.14	376.25	307.23	378.77	306.35
379.63	305.86	380.52	305.46	381.28	305.05	381.89	304.89	384.16	304.39
386.43	304.04	388.69	303.57	391.34	303.06	391.82	302.94	393.23	302.76
394.65	302.31	395.49	301.98	396.37	301.71	397.47	301.86	397.76	301.86
398.89	302.06	400.02	302.49	401.4	303.07	402.29	303.13	403.12	303.04
403.92	303.07	406.43	303.47	406.82	303.47	408.77	303.14	408.95	303.13
411.46	302.35	413.98	302.35	419.01	302.5	420.42	302.42	424.04	302.26
426.55	301.75	427.22	301.74	429.07	301.65	431.58	301.9	434.1	302.29
436.29	302.2	436.61	302.16	439.13	301.98	439.85	302.13	440.82	302.4
441.64	302.57	444.16	303.14	446.67	303.42	449.19	303.32	451.7	302.62
453.97	301.69	456.73	300.53	459.25	299.76	461.76	299.35	463.48	299.2
466.79	298.87	469.31	298.5	471.82	297.98	472.55	297.86	474.81	297.57
476.85	297.34	479.37	297.19	481.88	297.12	484.4	297.09	489.43	297.09
491.94	298.11	494.46	299.66	496.97	300.43	499.49	300.96	502.01	301.63
504.52	302.39	507.03	303.35	509.55	304.95	539.73	305.61	540.54	305.27
541.55	304.77	542.24	304.48	544.76	303.76	547.27	303.25	549.79	302.53
552.3	302.08	554.82	301.81	559.85	301.45	562.36	301.34	564.88	301.31
567.39	301.38	570	301.5	572.42	301.59	574.94	301.76	577.45	301.96
579.97	302.24	582.48	302.56	583.59	302.77	585	302.99	587.51	303.28
590.03	303.47	592.66	303.54	594.93	303.65	597.57	303.88	600.09	304.2
602.6	304.62	605.12	304.92	606.26	305.02	608.52	305.17	615.18	305.5
617.69	305.81	620.21	306.25	622.72	306.76	625.24	307.07	627.75	306.92
630.27	306.18	632.78	305.14	635.3	304.4	637.81	304.03	640.33	303.91
642.84	303.9	645.36	303.92	647.88	304.11	650.39	304.41	652.9	304.63
655.42	304.56	660.45	303.85	662.97	303.56	665.48	303.37	668	303.25
670.51	303.24	673.03	303.28	676.51	303.42	680.57	303.63	683.09	303.74
685.6	303.75	688.45	303.71	690.63	303.61	693.15	303.45	698.18	303.19
700.69	303.16	705.72	303.15	708.24	303.19	710.75	303.19	715.78	303.26
718.3	303.24	720.81	303.06	723.33	302.7	726.37	302.13	728	301.88
730.87	301.34	733.17	301.06	736.48	300.82	738.42	300.64	740.93	300.33
743.45	300.11	745.96	299.96	755.83	299.73	758.54	299.71	763.57	299.7
773.63	299.75	776.14	299.81	778.85	300.07	780.76	300.32	783.69	300.5
786.2	300.56	788.72	300.72	791.23	300.96	794.36	301.36	796.26	301.63

801.16	302.46	803.81	303.02	806.32	303.44	808.84	303.71	810.22	303.74
812.49	303.67	813.87	303.57	816.38	303.34	818.9	303.15	821.41	302.91
823.93	302.39	831.47	300.23	836.5	298.74	839.02	298.74	841.53	298.89
844.05	299.36	846.56	299.95	849.08	300.36	851.02	300.47	854.11	300.54
856.62	300.5	859.14	300.37	862.35	300.29	864.62	300.28	866.68	300.39
869.2	300.26	871.71	300.09	874.23	300.16	874.9	300.23	875.95	300.41
876.74	300.48	879.26	300.32	881.77	300.46	885.01	300.81	886.2	301.09
886.8	301.16	887.28	301.15	889.32	301.2	889.55	301.23	891.85	301.35
894.35	301.52	896.86	301.85	899.38	302.54	901.3	303.229	901.89	303.44
904.41	304.47	906.92	305.85	909.44	307.53	909.94	307.79	911.95	308.72
914.47	309.28	916.98	309.24	919.5	309.16	921.27	309.15	923.54	309.11
927.04	309.01	929.56	309.06	932.07	309.18	937.1	309.31	939.62	309.45
944.65	309.79	949.68	310.22	952.19	310.41	954.71	310.56	957.53	310.69
959.74	310.83	962.07	310.9	964.33	310.84	966.6	310.75	968.87	310.63
972.31	310.38	973.4	310.32	977.34	310.14	979.86	310.08	982.37	310.12
984.73	310.19	987	310.22	992.43	310.35	994.95	310.44	998.33	310.65
999.98	310.73	1002.49	310.95	1005.01	311.09	1012.55	311.78	1016.46	312.03
1020.1	312.23	1022.61	312.42	1025.13	312.67	1030.16	312.9	1032.67	312.96
1035.19	313	1036.86	313.09	1040.22	313.2	1045.25	313.34	1053.57	313.51
1055.01	313.52	1060.32	313.77	1062.83	313.92	1065.34	314.19	1067.85	314.57
1072.87	315.46	1075.38	315.88	1077.89	316.24	1080.4	316.5	1082.91	316.73
1085.42	316.89	1090.44	317.06	1092.95	317.1	1095.46	317.09	1097.97	317.06
1100.48	316.99	1102.99	316.89	1105.5	316.69	1108.01	316.44	1112.62	316.02
1115.54	315.8	1118.05	315.71	1120.56	315.73	1123.07	315.7	1125.58	315.37
1128.09	315.17	1130.6	315.16	1133.11	315.18	1135.62	315.34	1137.97	315.68
1140.28	316.07	1143.15	316.62	1144.89	316.9	1148.17	317.29	1150.68	317.64
1153.19	318.16	1161.02	319.73	1163.23	320.12	1165.74	320.67	1168.25	321.25
1170.76	321.86	1173.27	322.52	1175.78	323.04	1178.29	322.95	1180.8	322.81
1184.06	322.87	1190.84	322.88	1193.28	322.94	1195.86	322.97	1200.88	323.11
1203.39	323.08	1205.9	323.1	1211.72	323.25	1215.94	323.38	1218.45	323.41
1220.96	323.38	1223.47	323.46	1228.49	323.46	1231	323.44	1233.51	323.44
1243.55	323.47	1248.59	323.41	1250.89	323.4	1253.59	323.37	1256.1	323.37
1261.12	323.39	1263.63	323.53	1266.14	323.4	1268.65	323.19	1271.16	322.96
1273.94	322.73	1276.18	322.38	1278.68	322.19	1280.85	322.18	1283.7	322.07
1285.46	321.83	1286.21	321.69	1288.72	320.97	1291.23	320.78	1293.74	320.73
1294.68	320.68	1295.38	320.59	1296.98	320.49	1298.14	320.52	1298.76	320.49
1301.27	320.62	1303.9	320.66	1306.14	320.74				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	343	.06	901.3	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
343	901.3	1000	951	815	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	278.7	314.64	F
1201.7	1306.14	333.8	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	314.14	Element	Left OB	Channel	Right OB

Vel Head (ft)	0.49	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	313.64	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	307.63	Flow Area (sq ft)	68.69	6201.80	469.16
E.G. Slope (ft/ft)	0.002199	Area (sq ft)	519.46	6201.80	469.16
Q Total (cfs)	37000.00	Flow (cfs)	128.44	35520.53	1351.02
Top Width (ft)	1012.96	Top Width (ft)	298.35	558.30	156.30
Vel Total (ft/s)	5.49	Avg. Vel. (ft/s)	1.87	5.73	2.88
Max Chl Dpth (ft)	16.55	Hydr. Depth (ft)	1.45	11.11	3.00
Conv. Total (cfs)	789098.9	Conv. (cfs)	2739.3	757546.3	28813.3
Length Wtd. (ft)	946.27	Wetted Per. (ft)	47.80	566.17	157.93
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.20	1.50	0.41
Alpha	1.06	Stream Power (lb/ft s)	0.37	8.61	1.17
Frctn Loss (ft)	3.29	Cum Volume (acre-ft)	22.80	484.93	211.35
C & E Loss (ft)	0.05	Cum SA (acres)	8.09	50.74	35.65

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	314.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	314.09	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	307.65	Flow Area (sq ft)	6.02	6452.91	4.32
E.G. Slope (ft/ft)	0.002089	Area (sq ft)	6.02	6452.91	4.32
Q Total (cfs)	37000.00	Flow (cfs)	8.41	36988.47	3.12
Top Width (ft)	560.00	Top Width (ft)	1.30	558.30	0.40
Vel Total (ft/s)	5.72	Avg. Vel. (ft/s)	1.40	5.73	0.72
Max Chl Dpth (ft)	17.00	Hydr. Depth (ft)	4.63	11.56	10.79
Conv. Total (cfs)	809606.5	Conv. (cfs)	184.1	809354.3	68.2
Length Wtd. (ft)	948.07	Wetted Per. (ft)	5.77	566.17	11.14
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.14	1.49	0.05
Alpha	1.00	Stream Power (lb/ft s)	0.19	8.52	0.04
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	12.43	522.45	68.08
C & E Loss (ft)	0.02	Cum SA (acres)	1.63	49.97	9.10

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	315.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	315.38	Reach Len. (ft)	1000.00	951.00	815.00

Crit W.S. (ft)	308.73	Flow Area (sq ft)	1063.59	7170.10	757.90
E.G. Slope (ft/ft)	0.002006	Area (sq ft)	1063.59	7170.10	757.90
Q Total (cfs)	49000.00	Flow (cfs)	3100.44	43206.23	2693.33
Top Width (ft)	1062.61	Top Width (ft)	322.87	558.30	181.44
Vel Total (ft/s)	5.45	Avg. Vel. (ft/s)	2.92	6.03	3.55
Max Chl Dpth (ft)	18.29	Hydr. Depth (ft)	3.29	12.84	4.18
Conv. Total (cfs)	1094136.0	Conv. (cfs)	69230.6	964765.4	60140.3
Length Wtd. (ft)	945.68	Wetted Per. (ft)	328.99	566.17	183.20
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.40	1.59	0.52
Alpha	1.12	Stream Power (lb/ft s)	1.18	9.56	1.84
Frctn Loss (ft)	2.82	Cum Volume (acre-ft)	54.48	646.65	367.89
C & E Loss (ft)	0.05	Cum SA (acres)	13.46	50.91	39.68

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	306.58	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	306.50	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	302.77	Flow Area (sq ft)		2242.34	11.96
E.G. Slope (ft/ft)	0.001174	Area (sq ft)		2242.34	11.96
Q Total (cfs)	5000.00	Flow (cfs)		4983.21	16.79
Top Width (ft)	528.65	Top Width (ft)		522.06	6.59
Vel Total (ft/s)	2.22	Avg. Vel. (ft/s)		2.22	1.40
Max Chl Dpth (ft)	9.41	Hydr. Depth (ft)		4.30	1.81
Conv. Total (cfs)	145943.5	Conv. (cfs)		145453.3	490.2
Length Wtd. (ft)	950.78	Wetted Per. (ft)		528.97	7.38
Min Ch El (ft)	297.09	Shear (lb/sq ft)		0.31	0.12
Alpha	1.00	Stream Power (lb/ft s)		0.69	0.17
Frctn Loss (ft)	2.66	Cum Volume (acre-ft)	2.17	217.27	94.74
C & E Loss (ft)	0.03	Cum SA (acres)	1.60	48.47	28.25

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	310.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.060	0.050

W.S. Elev (ft)	310.25	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	305.30	Flow Area (sq ft)	1.54	4307.52	82.63
E.G. Slope (ft/ft)	0.001670	Area (sq ft)	1.54	4307.52	82.63
Q Total (cfs)	17000.00	Flow (cfs)	0.89	16862.36	136.75
Top Width (ft)	624.79	Top Width (ft)	4.46	558.30	62.03
Vel Total (ft/s)	3.87	Avg. Vel. (ft/s)	0.58	3.91	1.65
Max Chl Dpth (ft)	13.16	Hydr. Depth (ft)	0.34	7.72	1.33
Conv. Total (cfs)	416027.5	Conv. (cfs)	21.8	412659.2	3346.5
Length Wtd. (ft)	949.97	Wetted Per. (ft)	4.65	566.17	63.51
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.03	0.79	0.14
Alpha	1.02	Stream Power (lb/ft s)	0.02	3.10	0.22
Frctn Loss (ft)	3.07	Cum Volume (acre-ft)	7.11	341.41	136.38
C & E Loss (ft)	0.04	Cum SA (acres)	2.65	50.34	32.23

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 260

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 458

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.92	3.45	315.01	6.04	315.17	7.03	315.37	8.63	315.64
9.07	315.63	11.1	315.49	13.14	315.27	13.81	315.22	15.18	315.17
16.4	315.16	19.25	314.89	21.29	314.76	23.33	314.69	29.35	314.53
37.12	314.41	39.71	314.41	42.3	314.34	47.48	314.28	50.07	314.28
51.85	314.55	52.67	314.69	55.26	315.25	57.85	315.78	60.44	316.08
63.03	316.68	65.62	317.52	68.21	318.28	73.39	319.57	76.31	320.2
78.57	320.6	81.16	320.96	83.75	321.1	86.34	321.04	88.53	320.94
91.52	320.77	94.11	320.67	96.6	320.51	100.76	320.28	104.47	320.05
107.06	319.93	109.65	319.74	112.24	319.59	119.09	319.12	123.17	318.89
127.79	318.56	130.38	318.4	132.97	318.17	135.56	317.9	138.15	317.65
141.51	317.29	151.1	316.35	151.69	316.3	153.69	316.19	155.77	316.1
157.81	316.04	158.87	315.98	164.05	315.03	166.64	314.89	169.23	314.79
171.82	314.81	174.11	314.87	177.01	314.89	179.6	314.98	182.26	315
184.78	314.95	187.37	314.84	189.96	314.7	195.14	314.49	197.73	314.46
200.32	314.26	202.63	314.16	210.78	313.72	213.27	313.55	215.86	313.42
220.7	313.11	223.01	312.98	226.22	312.76	228.81	312.67	231.16	312.75
231.4	312.77	233.19	313.06	233.99	313.2	236.58	313.83	237.27	313.89
239.2	313.926	241.34	313.16	242.5	312.57	243.38	312.16	244.36	311.61

245.42	310.84	247.46	309.41	249.54	308	252.13	306.73	253.57	306.16
254.72	305.66	257.31	304.26	259.9	303.04	261.72	302.43	262.49	302.21
263.76	302.23	265.08	302.27	267.67	302.52	268.43	302.69	269.87	302.98
271.91	303.26	272.85	303.33	273.94	303.35	274.5	303.44	275.44	303.52
275.98	303.53	277.97	303.62	280.06	303.54	280.62	303.53	283.21	303.44
288.39	303.36	290.98	303.2	293.57	303.21	296.16	303.19	298.75	303.05
300.43	303.01	303.94	303	306.54	302.97	311.71	302.85	314.3	302.84
316.73	303.11	319.48	303.24	322.07	303.18	324.88	302.73	325.7	302.62
326.92	302.4	327.82	302.16	328.96	301.76	329.84	301.6	330.99	301.46
333.03	301.3	335.02	301.09	337.11	301.15	340.2	301.33	341.18	301.44
342.04	301.43	342.79	301.48	343.22	301.43	344.82	301.34	347.97	301.22
350.56	300.82	351.38	300.62	353.15	300.23	354.4	299.81	355.45	299.42
357.49	298.58	358.33	298.25	363.51	297.13	363.98	297.06	365.65	296.87
366.88	296.75	367.69	296.7	368.69	296.55	371.28	296.28	373.87	296.22
375.84	296.01	376.46	295.92	379.05	295.65	379.92	295.61	381.64	295.59
384.23	295.73	384.63	295.83	386.03	296.09	386.82	296.3	389.41	297.47
390.11	297.72	391.99	298.29	394.19	299.03	394.58	299.12	397.17	299.64
399.76	300.36	400.3	300.45	402.3	300.74	404.94	301.01	407.53	301.51
408.46	301.64	409.47	301.86	411.88	302	438.61	302	441.2	301.53
443.12	301.07	443.79	300.93	446.38	300.71	448.97	300.74	454.15	300.98
456.74	301.04	459.33	301.25	461.92	301.57	464.51	301.84	467.1	301.98
474.87	302.04	477.46	302.08	482.64	302.14	485.23	302.21	490.4	302.29
492.99	302.38	495.58	302.51	498.16	302.75	500.76	303.05	506.31	303.46
508.53	303.59	511.12	303.67	513.71	303.54	516.3	303.08	518.89	302.54
521.48	301.94	524.07	301.55	526.66	301.25	529.25	301.12	534.43	300.81
537.02	300.69	539.61	300.75	542.2	300.72	545.05	300.63	549.12	300.56
552.56	300.48	555.15	300.56	560.33	300.81	563.4	301.08	568.1	301.52
570.69	301.84	573.28	302.12	578.46	302.76	583.78	303.33	586.22	303.56
588.81	303.77	591.4	303.95	593.99	304.06	599.17	304.17	601.76	304.26
604.35	304.28	606.94	304.35	612.12	304.38	614.71	304.33	617.3	304.24
619.89	304.11	620.48	304.07	625.07	303.69	627.66	303.45	638.02	302.62
640.86	302.36	643.2	302.18	650.97	301.44	653.56	301.27	658.74	301.05
663.92	300.88	666.51	300.89	669.4	300.84	671.69	300.74	674.28	300.67
679.46	300.44	682.05	300.42	687.22	300.48	689.81	300.41	692.4	300.29
694.99	300.09	697.58	299.85	700.17	299.56	702.02	299.38	702.76	299.32
705.35	299.2	720.89	300.88	731.25	299.16	739.02	298.81	746.79	300.31
759.14	299.26	759.74	299.12	761.14	299.45	762.33	299.69	763.18	299.67
764.4	299.58	765.22	299.56	766.32	299.63	767.51	299.74	770.1	300.46
771.33	300.71	772.69	301.01	775.28	301.97	775.86	302.06	777.44	302.25
777.87	302.24	780.46	302.11	783.05	302.11	788.23	302.27	790.82	302.42
793.74	302.83	795.78	303.03	797.82	303.19	798.59	303.24	801.18	303.44
802	303.488	803.77	303.62	805.97	303.65	806.36	303.67	808	303.83
808.96	303.94	811.55	304.35	814.14	304.81	816.73	305.39	819.32	305.9
821.91	306.32	824.3	306.53	827.09	306.61	830.42	306.55	832.27	306.56
834.86	306.46	836.53	306.37	840.04	306.21	842.63	306.12	845.22	306.16
847.81	306.22	850.4	306.33	852.99	306.53	855.58	306.84	858.17	307.24
860.76	307.69	863.35	308.2	865.94	308.79	868.54	309.32	871.13	309.6
873.2	309.9	875.24	310.16	879.32	310.65	881.49	310.89	885.43	310.74
886.67	310.72	891.54	310.57	893.58	310.55	895.62	310.5	897.65	310.42
899.62	310.32	902.21	310.25	903.77	310.33	904.8	310.36	905.8	310.5
906.61	310.53	907.39	310.61	907.84	310.69	909.5	310.79	910.16	310.86
911.92	311.12	912.57	311.17	915.16	311.27	915.99	311.19	917.27	311.25

918.03	311.25	919.05	311.34	920.34	311.5	922.93	311.75	928.22	312.1
930.71	312.4	932.29	312.53	933.3	312.59	935.89	312.72	938.6	312.79
940.44	312.85	943.66	312.86	944.52	312.87	946.25	312.93	948.84	313.06
952.67	313.18	958.78	313.34	961.79	313.39	964.38	313.47	969.56	313.52
972.15	313.5	974.74	313.58	977.33	313.57	979.15	313.62	982.51	313.69
985.86	313.72	990.28	313.79	995.47	314.25	998.06	314.32	1000.65	314.49
1001.57	314.56	1004.95	314.87	1008.42	315.14	1011.01	315.24	1013.6	315.21
1016.19	315.27	1021.37	315.29	1023.96	315.31	1026.02	315.63	1026.55	315.68
1029.14	315.8	1030.09	316.09	1031.04	316.44	1032.13	316.8	1034.17	317.55
1034.59	317.75	1036.2	318.64	1036.91	319.01	1039.5	319.94	1042.09	321.26
1044.68	323.16	1045.26	323.43	1046.39	324.01	1049.86	325.43	1050.47	325.56
1052.46	325.9	1056.58	326.15	1057.64	326.2	1060.65	326.2	1065.41	326.3
1070.59	326.34	1073.18	326.42	1074.92	326.44	1081.03	326.47	1083.54	326.46
1086.13	326.48	1088.72	326.55	1091.31	326.56	1096.49	326.67	1099.08	326.68
1101.4	326.66	1104.26	326.67	1106.85	326.65	1109.44	326.65	1111.59	326.63
1117.7	326.62	1119.74	326.59	1122.4	326.53	1124.99	326.5	1129.93	326.48
1135.35	326.4	1137.94	326.38	1140.12	326.28	1143.12	326.13	1146.23	325.93
1148.3	325.84	1153.48	325.68	1158.45	325.35	1166.14	324.68	1169.02	324.48
1174.2	323.92	1174.75	323.89	1179.39	323.43	1181.98	323.25	1184.57	323.42
1184.94	323.42	1187.16	323.31	1189.75	323.36	1194.93	323.44	1197.17	323.49
1200.11	323.49	1202.7	323.53	1205.29	323.53	1207.88	323.5	1209.39	323.46
1211.43	323.38	1213.46	323.28	1216.09	323.2				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	239.2	.06	802	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	802	1050	1031	1000	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	310.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.96	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	309.84	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		4621.90	245.10
E.G. Slope (ft/ft)	0.006172	Area (sq ft)		4621.90	245.10
Q Total (cfs)	38000.00	Flow (cfs)		36697.42	1302.58
Top Width (ft)	625.96	Top Width (ft)		555.16	70.81
Vel Total (ft/s)	7.81	Avg. Vel. (ft/s)		7.94	5.31
Max Chl Dpth (ft)	14.25	Hydr. Depth (ft)		8.33	3.46
Conv. Total (cfs)	483698.7	Conv. (cfs)		467118.2	16580.5
Length Wtd. (ft)	1025.37	Wetted Per. (ft)		560.63	71.37
Min Ch El (ft)	295.59	Shear (lb/sq ft)		3.18	1.32
Alpha	1.01	Stream Power (lb/ft s)		25.22	7.03
Frctn Loss (ft)	2.20	Cum Volume (acre-ft)	16.84	366.78	204.67
C & E Loss (ft)	0.22	Cum SA (acres)	4.66	38.58	33.53

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than

1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	312.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	311.35	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		5418.56	305.99
E.G. Slope (ft/ft)	0.003534	Area (sq ft)		5418.56	305.99
Q Total (cfs)	38000.00	Flow (cfs)		36386.68	1613.32
Top Width (ft)	600.00	Top Width (ft)		545.30	54.70
Vel Total (ft/s)	6.64	Avg. Vel. (ft/s)		6.72	5.27
Max Chl Dpth (ft)	15.76	Hydr. Depth (ft)		9.94	5.59
Conv. Total (cfs)	639258.7	Conv. (cfs)		612118.4	27140.3
Length Wtd. (ft)	1030.44	Wetted Per. (ft)		556.19	59.35
Min Ch El (ft)	295.59	Shear (lb/sq ft)		2.15	1.14
Alpha	1.01	Stream Power (lb/ft s)		14.43	6.00
Frctn Loss (ft)	2.55	Cum Volume (acre-ft)	12.36	392.87	65.18
C & E Loss (ft)	0.08	Cum SA (acres)	1.62	37.92	8.59

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	313.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.01	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	312.01	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		5828.95	464.03
E.G. Slope (ft/ft)	0.004857	Area (sq ft)		5828.95	464.03
Q Total (cfs)	50000.00	Flow (cfs)		47703.38	2296.62
Top Width (ft)	683.23	Top Width (ft)		558.35	124.88
Vel Total (ft/s)	7.95	Avg. Vel. (ft/s)		8.18	4.95
Max Chl Dpth (ft)	16.42	Hydr. Depth (ft)		10.44	3.72
Conv. Total (cfs)	717476.4	Conv. (cfs)		684521.0	32955.4
Length Wtd. (ft)	1025.21	Wetted Per. (ft)		564.50	125.60
Min Ch El (ft)	295.59	Shear (lb/sq ft)		3.13	1.12
Alpha	1.03	Stream Power (lb/ft s)		25.62	5.54
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	42.27	504.75	356.46
C & E Loss (ft)	0.24	Cum SA (acres)	9.75	38.72	36.81

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	303.89	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	303.55	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		1188.03	0.03
E.G. Slope (ft/ft)	0.010956	Area (sq ft)		1188.03	0.03
Q Total (cfs)	5500.00	Flow (cfs)		5499.99	0.01
Top Width (ft)	494.80	Top Width (ft)		493.94	0.86
Vel Total (ft/s)	4.63	Avg. Vel. (ft/s)		4.63	0.31
Max Chl Dpth (ft)	7.96	Hydr. Depth (ft)		2.41	0.03
Conv. Total (cfs)	52546.7	Conv. (cfs)		52546.6	0.1
Length Wtd. (ft)	1025.76	Wetted Per. (ft)		497.76	0.87
Min Ch El (ft)	295.59	Shear (lb/sq ft)		1.63	0.02
Alpha	1.00	Stream Power (lb/ft s)		7.56	0.01
Frctn Loss (ft)	2.27	Cum Volume (acre-ft)	2.17	179.83	94.63
C & E Loss (ft)	0.09	Cum SA (acres)	1.60	37.38	28.18

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	307.37	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.		0.060	0.050
W.S. Elev (ft)	306.72	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		2893.51	52.55
E.G. Slope (ft/ft)	0.007655	Area (sq ft)		2893.51	52.55
Q Total (cfs)	19000.00	Flow (cfs)		18863.83	136.17
Top Width (ft)	602.38	Top Width (ft)		549.83	52.54
Vel Total (ft/s)	6.45	Avg. Vel. (ft/s)		6.52	2.59
Max Chl Dpth (ft)	11.13	Hydr. Depth (ft)		5.26	1.00
Conv. Total (cfs)	217156.6	Conv. (cfs)		215600.3	1556.3
Length Wtd. (ft)	1025.56	Wetted Per. (ft)		554.44	52.82
Min Ch El (ft)	295.59	Shear (lb/sq ft)		2.49	0.48
Alpha	1.02	Stream Power (lb/ft s)		16.26	1.23
Frctn Loss (ft)	2.39	Cum Volume (acre-ft)	7.09	262.80	135.12
C & E Loss (ft)	0.15	Cum SA (acres)	2.60	38.25	31.16

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 250

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 487

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	318.928	4.622	319.038	12.594	319.122	15.7	319.219	18.322	319.25
20.943	319.338	23.564	319.328	27.682	319.281	31.428	319.298	39.292	319.281
44.535	319.187	47.157	319.187	50.459	319.114	52.399	319.125	55.021	319.054
62.416	318.932	65.506	318.795	70.749	318.707	73.37	318.703	75.992	318.391
78.613	317.554	81.234	316.809	83.856	316.561	85.869	316.428	89.098	316.266
91.72	315.968	94.341	315.712	99.584	315.049	102.274	314.726	106.26	314.353
110.069	314.028	112.691	313.926	115.312	313.884	117.933	313.746	120.555	313.65
125.798	313.318	130.175	313.011	133.662	312.813	144.147	312.28	146.118	312.16
152.011	311.755	154.633	311.639	159.875	311.35	166.047	311.046	170.361	310.792
172.982	310.674	175.603	310.607	183.468	310.352	188.71	310.219	193.953	310.062
199.196	309.855	204.438	309.773	207.06	309.75	209.681	309.688	212.303	309.656
214.924	309.594	222.788	309.485	225.834	309.401	228.031	309.372	230.652	309.268
233.273	309.196	239.784	308.97	243.77	308.875	249.002	308.688	252.117	308.545
256.866	308.38	262.108	308.25	267.351	308.042	269.973	307.991	272.594	308.021
277.055	307.809	280.458	307.777	283.628	307.611	285.701	307.475	287.614	307.426
293.565	307.157	296.186	307.075	303.557	306.759	305.55	306.696	309.293	306.625
311.914	306.531	317.157	306.412	321.493	306.266	325.021	306.077	330.445	305.822
335.513	305.529	339.41	305.056	343.388	304.625	346.013	304.263	349.353	303.693
351.262	303.297	353.887	302.877	359.794	302.391	363.273	302.183	367.011	301.849
367.998	301.875	369.239	302.008	372.261	302.203	374.886	302.224	376.203	302.187
380.135	302.17	385.148	302.097	388.01	301.744	389.125	301.636	395.884	301.094
398.509	301.045	403.046	300.767	405.034	300.679	407.026	300.502	408.999	300.22
411.029	300.153	413.031	300.017	416.842	299.881	419.037	299.753	423.041	299.565
427.045	299.351	433	299.093	442.986	298.66	450.829	298.328	453.443	298.379
455.072	298.488	459.076	298.625	461.678	298.649	463.08	298.758	463.901	298.687
468.942	296.956	471.744	296.116	474.358	295.412	476.972	295.75	479.095	296.279
479.587	296.345	481.097	296.243	482.201	296.233	486.033	295.852	487.43	295.658
489.105	295.329	491.107	295.062	495.273	294.729	497.887	294.724	503.137	294.783
505.122	295.088	505.729	295.272	508.343	296.433	509.127	296.681	511.692	297.173
513.572	297.348	516.186	297.87	517.136	298.003	518.8	298.328	521.414	298.563
523.143	298.407	525.145	298.181	526.642	298.086	529.256	298.099	534.484	298.083
539.713	298.088	543.166	298.045	545.168	297.986	547.17	297.994	550.169	297.953
555.397	297.948	561.186	298.101	563.24	298.188	565.854	298.239	568.468	298.253
571.198	298.237	573.696	298.195	575.202	298.335	577.204	298.444	581.538	298.578
584.152	298.496	587.216	298.792	589.686	299.081	591.22	299.309	591.995	299.358
597.241	299.156	599.23	299.099	602.451	299.272	605.065	299.439	607.679	299.382
609.241	299.244	612.908	298.86	615.248	298.771	618.136	298.726	620.75	298.641
622.906	298.445	625.259	298.278	625.978	298.188	628.592	298.041	636.43	298.08
639.28	298.03	643.28	298.28	646.89	298.37	649.51	298.16	652.12	298.06
657.3	297.94	659.96	298.02	663.3	298.24	665.19	298.34	667.8	298.58
671.31	298.71	675.32	298.89	678.26	298.85	686.1	298.97	688.72	298.9

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 691.33  298.91  693.95  298.92  696.56  298.98  720.09  298.98 721.369  298.98
730.543 298.924 735.771 298.775 743.613 298.594 747.398 298.566 751.403 298.467
753.405 298.359 756.684 298.062 759.298 297.771 761.414 297.454 764.526 297.108
767.421 296.918  775.43 296.779 779.435 296.725 782.825 296.724 785.442 296.906
788.053 297.174 790.667 297.385 794.005 297.451 798.509  297.49  801.46 297.458
805.464 297.319 809.469 297.046  811.58 296.941 814.194 296.898 822.036 296.682
827.265 296.816 829.879 297.049 832.493 297.312 835.107 297.782 837.721 298.441
839.503 298.723 842.949 299.318 845.563  299.62 848.178 299.615 850.792 299.474
853.406 299.259  856.02     299 858.634 298.962  863.53 299.131 866.476 298.998
871.705 298.622 876.933 298.563 879.547 298.438 881.551 297.634 883.553 296.565
884.775 295.994 885.556 295.797 887.558 295.464 890.003 295.188 893.565  295.29
895.231 295.307 897.846 295.236  900.46 295.278 901.574 295.379 903.576 295.626
905.219 295.733 910.916 295.938 911.585  296.03 913.587 296.412 916.144 297.125
918.758 297.651 921.597 297.904 923.987 297.987 925.601 298.006 927.603  297.97
929.215 297.874 931.829 297.785 937.615 297.634   944.9  297.38 947.514 297.413
949.628 297.641 952.742 297.906 955.356 297.938  957.97 298.115 960.584 298.247
963.198 298.316 968.427 298.267 973.659 298.438 978.883 298.519 984.111 298.868
986.725 298.921 991.954 298.969 994.568  299.08 997.182 299.1331005.024 299.365
1007.695 299.5971010.252 299.7241012.866 299.883  1013.9 300.0011015.481 300.215
1018.095 300.274 1021.71 300.2741028.551 300.3881031.165 300.2551033.779 300.195
1036.393 300.2711039.007 300.3071041.622 300.453 1046.85 300.6631052.078  300.74
1054.692 300.629 1059.92 300.2791062.534 299.9971067.763 299.3441070.377 298.971
1075.605 298.0761078.219 297.9791080.833 298.1171083.781 298.4521086.062 298.629
1088.676 298.608 1091.29 298.5551093.904 297.9251096.518 297.0151099.132   296.5
1101.746 296.4381106.974   296.51112.203 296.7131114.817 296.7811120.045 297.118
1122.659 297.3541125.273 297.5351127.887 297.7461130.501 297.9061133.115  298.11
1137.843 298.3551140.958 298.6111146.186 298.9011151.414 299.0491153.861 299.102
1159.868 298.9721161.871 298.9691167.099 299.0291169.713  299.011172.327 299.028
1175.886 298.9851177.555  298.991181.893 299.0461183.895 299.104  1187.9 299.273
1190.626 299.415 1193.24 299.5211198.468 299.7951203.696 300.0351206.311 300.082
1213.929 300.0511219.381 299.9721221.995 299.8711224.609 299.7081227.223 299.514
1229.838  299.381232.452 299.211 1237.68 299.0891242.908 299.1071245.522 299.174
1248.136 299.2791248.453 299.164 1249.97 298.992 1250.75 298.5391251.973 297.689
1253.365 296.5331253.975 296.0981255.979   295.51257.979 295.5571259.982 295.662
1263.821 295.6121264.527 295.6871266.435 295.9931269.049 296.1781271.663 295.745
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1284.734 296.3071286.011 296.4831287.348 296.5831289.962 296.8521292.576 296.984
 1295.19 296.7531296.023 296.936 1297.39 297.1311300.027 297.6071301.154 297.706
 1302.03 297.7051303.033  297.861308.261 297.7471310.039 297.7511313.489 297.705
1316.103 297.6151318.717 297.2081322.052 297.1421324.412 297.1561326.057 297.135
1329.174 297.0451332.064 297.1421334.066  297.331337.016 297.727 1339.63 297.799
1340.073 297.8631342.244 298.3551344.077 298.894 1346.08 299.5591347.472 300.086
1350.087  301.221352.701 302.4291356.091 304.0331357.929 304.6961360.096  305.23
1360.543 305.3061363.157 306.0091365.771 306.3281367.187 306.2931368.385 306.316
1370.999 306.6951373.614 306.8681376.228 306.5691378.116 306.2521380.119 305.969
1381.456 305.6671384.123 305.3451386.684 305.584 1390.13  305.861394.134 306.118
1397.141 306.2351399.755 306.4451402.144 306.5911404.983 306.8151407.597 307.184
1410.211 307.4421412.825 307.573 1416.16 307.7021418.053  307.861420.667 308.133
1423.282 308.4381425.896 308.7741431.124 309.5081432.178 309.8391433.738 310.512
 1434.18 310.8381436.182 312.1361438.185 312.658 1441.58 313.1771442.189 313.318
1444.191 313.9691446.809 315.5381449.423 316.7531450.198 317.1471452.037 318.278
1454.203 319.7781456.205 320.9171458.207 321.9761459.258 322.806 1460.21 323.423
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1461.291 324.4121462.212 325.5121462.493 325.6711464.214 328.0971465.107 329.251
1466.216 330.2341466.786 330.3391467.721 330.86 1472.95 330.981478.178 330.999
1480.792 331.0631484.237 330.9691486.956 330.9381491.248   3311496.477 331.118
1499.091 331.049 1504.26 331.0311506.262 331.0041509.547   3311512.161 330.969
1514.776 330.969 1517.39 330.938

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	433	.06	1013.9	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
433	1013.9	700	701	615	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
1222	1517.39	300	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	308.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.23	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	308.16	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)	301.90	Flow Area (sq ft)	712.27	5921.80	3403.79
E.G. Slope (ft/ft)	0.001079	Area (sq ft)	712.27	5921.80	3403.79
Q Total (cfs)	38000.00	Flow (cfs)	1814.78	22577.64	13607.58
Top Width (ft)	1156.37	Top Width (ft)	168.51	580.90	406.96
Vel Total (ft/s)	3.79	Avg. Vel. (ft/s)	2.55	3.81	4.00
Max Chl Dpth (ft)	13.43	Hydr. Depth (ft)	4.23	10.19	8.36
Conv. Total (cfs)	1156767.0	Conv. (cfs)	55244.1	687291.0	414231.3
Length Wtd. (ft)	681.86	Wetted Per. (ft)	168.94	583.70	410.75
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.28	0.68	0.56
Alpha	1.02	Stream Power (lb/ft s)	0.72	2.61	2.23
Frctn Loss (ft)	1.45	Cum Volume (acre-ft)	8.26	242.00	162.78
C & E Loss (ft)	0.02	Cum SA (acres)	2.63	25.14	28.04

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	309.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	308.99	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)	303.02	Flow Area (sq ft)	603.46	6406.14	328.11
E.G. Slope (ft/ft)	0.001835	Area (sq ft)	603.46	6406.14	328.11
Q Total (cfs)	38000.00	Flow (cfs)	2894.41	33566.19	1539.40
Top Width (ft)	695.00	Top Width (ft)	76.00	580.90	38.10
Vel Total (ft/s)	5.18	Avg. Vel. (ft/s)	4.80	5.24	4.69
Max Chl Dpth (ft)	14.27	Hydr. Depth (ft)	7.94	11.03	8.61
Conv. Total (cfs)	887005.4	Conv. (cfs)	67561.9	783510.3	35933.1

Length Wtd. (ft)	699.11	Wetted Per. (ft)	82.53	583.70	46.38
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.84	1.26	0.81
Alpha	1.00	Stream Power (lb/ft s)	4.02	6.59	3.80
Frctn Loss (ft)	2.26	Cum Volume (acre-ft)	5.09	252.93	57.90
C & E Loss (ft)	0.01	Cum SA (acres)	0.70	24.60	7.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	311.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	310.95	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)	302.68	Flow Area (sq ft)	1319.23	7544.74	4565.44
E.G. Slope (ft/ft)	0.000768	Area (sq ft)	1319.23	7544.74	4565.44
Q Total (cfs)	50000.00	Flow (cfs)	3161.73	28521.51	18316.77
Top Width (ft)	1266.66	Top Width (ft)	265.31	580.90	420.45
Vel Total (ft/s)	3.72	Avg. Vel. (ft/s)	2.40	3.78	4.01
Max Chl Dpth (ft)	16.23	Hydr. Depth (ft)	4.97	12.99	10.86
Conv. Total (cfs)	1804077.0	Conv. (cfs)	114079.9	1029100.0	660897.1
Length Wtd. (ft)	681.31	Wetted Per. (ft)	265.78	583.70	424.66
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.24	0.62	0.52
Alpha	1.04	Stream Power (lb/ft s)	0.57	2.34	2.07
Frctn Loss (ft)	1.01	Cum Volume (acre-ft)	26.37	346.48	298.73
C & E Loss (ft)	0.02	Cum SA (acres)	6.55	25.24	30.56

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	301.53	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	301.48	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)	299.21	Flow Area (sq ft)	54.03	2046.77	1014.58
E.G. Slope (ft/ft)	0.000919	Area (sq ft)	54.03	2046.77	1014.58
Q Total (cfs)	5500.00	Flow (cfs)	57.50	3546.09	1896.42
Top Width (ft)	959.65	Top Width (ft)	41.99	580.90	336.76
Vel Total (ft/s)	1.77	Avg. Vel. (ft/s)	1.06	1.73	1.87
Max Chl Dpth (ft)	6.76	Hydr. Depth (ft)	1.29	3.52	3.01
Conv. Total (cfs)	181458.8	Conv. (cfs)	1897.0	116994.3	62567.5
Length Wtd. (ft)	683.24	Wetted Per. (ft)	42.07	583.70	339.41
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.07	0.20	0.17

Alpha	1.01	Stream Power (lb/ft s)	0.08	0.35	0.32
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	1.52	141.55	82.98
C & E Loss (ft)	0.00	Cum SA (acres)	1.10	24.66	24.31

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

			Left OB	Channel	Right OB
E.G. Elev (ft)	304.83	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	304.69	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)	300.52	Flow Area (sq ft)	291.96	3906.58	2103.84
E.G. Slope (ft/ft)	0.001110	Area (sq ft)	291.96	3906.58	2103.84
Q Total (cfs)	19000.00	Flow (cfs)	631.14	11447.29	6921.57
Top Width (ft)	1015.08	Top Width (ft)	90.18	580.90	344.00
Vel Total (ft/s)	3.01	Avg. Vel. (ft/s)	2.16	2.93	3.29
Max Chl Dpth (ft)	9.96	Hydr. Depth (ft)	3.24	6.73	6.12
Conv. Total (cfs)	570289.4	Conv. (cfs)	18943.8	343593.2	207752.4
Length Wtd. (ft)	682.06	Wetted Per. (ft)	90.50	583.70	347.34
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.22	0.46	0.42
Alpha	1.02	Stream Power (lb/ft s)	0.48	1.36	1.38
Frctn Loss (ft)	1.46	Cum Volume (acre-ft)	3.58	182.33	110.37
C & E Loss (ft)	0.01	Cum SA (acres)	1.51	24.87	26.61

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 245

INPUT
Description: Survey Data (June 12, 2014)
Manning's coefficients are derived
from the Corrected Effective Model.
Station Elevation Data num= 499

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332	2.84	332.19	5.61	331.73	8.38	331.47	11.15	331.35
13.91	331.34	16.68	331.19	22.22	331.11	27.76	330.97	36.57	330.92
47.13	330.62	52.67	330.54	55.44	330.59	58.21	330.86	60.98	331.66
63.74	332.05	66.51	331.88	72.05	331.1	74.82	331.13	78.38	331.34
80.35	331.62	83.47	331.43	85.89	330.53	88.66	328.99	91.43	328.22
94.2	326.76	96.6	325.29	98.48	324.29	102.5	322.5	105.27	322.02
110.81	321.97	122.87	321.76	138.49	321.39	146.79	321.17	157.87	320.93

160.64	320.84	180.01	320.7	182.9	320.72	193.86	320.68	204.93	320.51
218.77	320.18	224.18	320.09	232.61	319.89	246.45	319.6	263.06	319.16
267.33	319.1	274.14	318.93	279.67	319.02	282.44	318.94	287.98	319.34
290.75	319.66	296.28	319.88	299.05	320.09	304.59	320.63	310.13	320.93
315.66	321.01	317.04	320.71	323.97	318.15	327.36	317.19	329.5	317.06
332.27	317.08	357.38	317	368.26	316.94	382.1	316.9	386.89	316.81
393.17	316.75	398.65	316.84	407.02	316.8	415.32	316.63	427.63	316.42
431.93	316.38	458.69	315.94	462.56	315.75	467.92	315.56	470.69	315.66
476.22	315.73	484.53	315.91	487.3	315.91	491.66	316.05	496.21	316.07
509.44	316.44	514.98	316.44	520.52	316.71	523.29	316.79	526.05	316.64
528.1	316.82	537.13	316.66	539.36	316.75	542.66	316.7	556.51	316.75
567.58	316.72	570.35	316.78	578.65	316.84	581.42	316.78	586.96	316.96
590.62	316.81	591.89	316.86	595.26	317.4	602.26	317.7	603.57	317.54
608.08	316.74	617.41	316.59	622.95	316.31	628.48	316.16	629.41	315.13
631.37	310.13	633.16	306.96	634.02	305.95	636.79	305.58	639.56	304.94
645.09	304.22	647.86	304.06	653.4	304.17	655.7	304.089	659.43	303.85
661.7	303.59	666.93	303.22	670.01	302.56	672.56	302.12	676.31	301.19
681.08	299.79	686.62	298.64	693.2	297.84	695.4	297.65	698.83	297.15
701.22	296.89	704.46	296.87	706.33	296.77	711.53	296.66	717.07	296.31
719.84	296.21	722.61	296.46	725.09	296.35	728.84	296.63	730.91	296.98
736.45	296.78	740.1	296.9	747.61	296.93	749.48	297	751.36	296.92
755.11	296.59	758.59	296.54	761.36	296.61	766.37	296.48	769.67	296.55
771.99	296.2	773.87	295.68	775.75	295.39	777.97	295.44	780.74	295.95
783.51	296.63	785.13	296.61	788.88	296.38	791.81	296.51	794.51	296.75
797.35	297.11	800.12	297.15	802.01	296.98	803.89	297.03	805.99	297.36
808.42	297.47	811.82	297.32	818.9	296.76	825.03	296.92	827.8	296.77
830.57	295.86	835.1	295.52	843.29	295.61	847.04	295.56	849.95	295.74
858.25	296.46	863.92	297.64	866.56	298.01	871.43	298.2	880.4	298.09
882.68	298.15	885.94	297.99	888.7	297.4	891.47	296.65	894.24	294.91
897.01	292.78	899.78	291.77	901.44	291.49	904.95	291.1	908.95	291.11
910.85	291.03	919.16	291.38	924.69	291.73	927.46	292.07	930.23	292.55
933	292.91	938.53	293.22	941.3	293.57	944.6	293.75	949.61	294.29
952.1	294.81	955.14	295.33	960.68	296.05	966.22	296.28	968.99	296.5
971.75	296.56	980.06	296.47	982.83	296.5	985.87	296.35	991.13	296.54
993.9	296.58	1002.21	296.24	1007.74	295.79	1012.13	296.12	1015.89	296.33
1021.37	296.38	1027.19	296.13	1032.66	296.1	1035.43	296.16	1040.28	295.83
1043.73	295.98	1049.27	295.7	1054.8	295.28	1060.34	295.51	1065.88	295.65
1068.65	295.89	1074.18	296.73	1076.95	296.71	1085.26	296.34	1088.02	296.28
1101.87	296.43	1107.4	296.07	1110.17	296	1115.32	296.16	1118.48	296.02
1121.24	296.25	1124.01	296.36	1126.78	296.28	1129.55	296.33	1137.85	296.69
1143.39	297.12	1146.16	297.68	1160.35	297.39	1165.54	297.2	1167.85	297.25
1173.84	297.03	1177.23	297.12	1184.92	297.09	1190.45	297.31	1195.99	297.19
1201.53	296.88	1209.12	296.24	1212.6	296.01	1220.9	295.67	1226.44	295.56
1234.75	294.97	1243.05	294.53	1248.59	294.5	1254.21	294.22	1259.66	294.29
1261.65	294.84	1263.53	295.06	1267.96	295.29	1271.03	295.35	1273.5	295.72
1276.66	295.67	1279.04	295.4	1281.81	295.43	1287.7	295.836	1292.88	295.97
1295.42	295.86	1298.42	295.89	1301.18	296.15	1304.8	295.61	1306.72	295.44
1309.49	295.37	1312.26	295.62	1314.18	296.05	1317.79	296.63	1320.56	297.38
1325.44	297.46	1328.87	297.78	1331.64	297.63	1337.17	297.01	1339.94	297.08
1342.71	297.44	1346.08	297.33	1348.25	297.45	1351.01	298.15	1356.55	300.77
1359.32	301.34	1362.09	301.39	1364.86	301.25	1368.59	300.94	1373.16	300.46
1381.47	299.84	1387	299.65	1392.54	299.72	1398.08	299.53	1400.84	299.5

1405.55	299.76	1409.15	299.66	1411.92	299.41	1414.69	298.92	1417.45	298.11
1422.99	296.16	1424.87	296.01	1426.75	296.09	1428.53	296.39	1434.06	298.55
1436.83	299.2	1440.47	299.75	1445.14	300.21	1451.14	300.54	1458.64	300.66
1462.4	300.62	1472.82	300.69	1481.13	300.56	1486.66	300.53	1492.2	300.65
1500.5	300.61	1506.04	300.75	1509.3	300.95	1516.8	301.57	1524.31	302.39
1528.06	302.74	1530.96	303.09	1533.72	303.57	1539.26	304.83	1542.03	305.23
1545.25	305.49	1554.32	305.78	1561.41	306.33	1564.18	306.59	1569.71	307.23
1575.25	308.43	1578.02	308.92	1583.55	309.7	1586.22	309.89	1589.09	309.93
1594.63	309.6	1597.4	309.23	1605.7	307.12	1614.36	305.23	1619.54	304.41
1631.24	303.35	1635	303.13	1641.69	302.83	1644.46	302.81	1652.76	302.55
1659.38	302.24	1672.14	301.39	1674.91	301.18	1680.45	300.97	1688.75	300.85
1704.41	300.81	1710.9	300.76	1716.43	300.91	1724.74	301.29	1730.28	301.62
1733.04	301.67	1741.35	302.46	1746.89	302.82	1754.8	303.2	1760.69	303.44
1764.45	303.76	1769.03	304.23	1771.8	304.78	1777.34	306.9	1779.45	307.45
1782.87	307.91	1785.64	307.95	1789.72	308.37	1791.18	308.62	1794.46	309.59
1798.21	310.87	1801.37	311.79	1805.72	312.31	1809.47	312.62	1816.98	312.88
1824.48	312.94	1832.7	312.77	1835.47	313.06	1841.01	314.5	1846.99	315.71
1853.75	317.19	1858.25	318.37	1860.39	319.21	1863.16	320.56	1865.4	322.04
1871.22	326.19	1873.26	327.09	1874.23	327.69	1877.01	329.75	1879.77	331.55
1882.64	333.1	1885.3	334.05	1888.07	334.39	1893.61	334.27	1895.77	334.34
1901.91	334.27	1907.03	334.3	1912.99	334.09	1918.52	334.13	1924.06	333.97
1929.6	333.97	1937.9	333.91	1955.81	333.89	1960.05	333.76	1964.35	333.72
1968.35	333.47	1973.89	332.63	1979.43	331.73	1985.82	331.12	1987.73	331
1993.45	330.46	1996.04	330.33	2004.34	330.65	2009.88	330.75	2018.18	330.91
2025.22	330.99	2034.79	331	2040.33	330.93	2045.87	330.91	2048.63	330.8
2051.66	330.78	2057.11	330.57	2059.71	330.69	2066.49	331.27	2070.78	331.72
2079.09	332.37	2087.39	333.11	2092.76	333.34	2098.23	333.4	2101.23	333.5
2109.54	333.38	2115.27	333.52	2124.65	333.5	2127.33	333.59	2135.91	333.6
2139.99	333.73	2145.29	333.81	2148.29	334.13	2151.06	334	2156.6	334.06
2170.44	334.65	2173.21	335.34	2175.98	337.02	2178.75	338.58	2181.51	339.28
2192.59	339.58	2200.89	339.16	2206.43	338.83	2211.97	338.69	2217.5	338.73
2220.46	338.62	2228.58	338.57	2234.11	338.33	2239.09	338.3	2245.19	338
2250.35	337.65	2253.49	337.36	2257.85	336.81	2261.8	336.21	2267.03	335.65
2270.1	335.38	2272.87	334.97	2281.17	335.14	2283.94	335.09	2286.71	335.16
2290.31	335.15	2306.09	334.97	2308.86	334.88	2314.39	334.84	2319.93	334.69
2325.47	334.66	2331	334.5	2333.77	334.48	2342.08	334.25	2347.61	334.06
2350.38	334.05	2355.92	333.9	2361.04	333.71	2364.22	333.68	2369.76	333.72
2375.3	333.94	2383.45	334.18	2389.14	334.31	2400.21	334.27	2414.05	333.97
2416.82	334.07	2422.36	334.84	2424.83	335.33	2427.9	335.55	2432.33	335.68
2434.21	335.89	2441.74	336.53	2444.51	336.81	2450.04	337.19	2455.58	337.39
2462.35	337.43	2469.85	337.65	2474.96	337.45	2498.59	337.08		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	655.7	.1	1287.7	.11

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
655.7	1287.7	140.2	147.4	160	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	642	313.25	F
1371.7	2498.59	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	306.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	306.48	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	300.76	Flow Area (sq ft)	31.30	6431.43	741.55
E.G. Slope (ft/ft)	0.005987	Area (sq ft)	40.89	6431.43	2476.76
Q Total (cfs)	38000.00	Flow (cfs)	138.48	34579.88	3281.65
Top Width (ft)	1096.97	Top Width (ft)	22.13	632.00	442.85
Vel Total (ft/s)	5.27	Avg. Vel. (ft/s)	4.42	5.38	4.43
Max Chl Dpth (ft)	15.45	Hydr. Depth (ft)	2.28	10.18	8.83
Conv. Total (cfs)	491097.6	Conv. (cfs)	1789.7	446897.2	42410.8
Length Wtd. (ft)	147.93	Wetted Per. (ft)	13.73	635.99	85.12
Min Ch El (ft)	291.03	Shear (lb/sq ft)	0.85	3.78	3.26
Alpha	1.01	Stream Power (lb/ft s)	3.77	20.32	14.41
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	2.21	142.60	121.27
C & E Loss (ft)	0.03	Cum SA (acres)	1.10	15.38	22.04

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	307.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.100	0.110
W.S. Elev (ft)	306.58	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	300.98	Flow Area (sq ft)		6355.73	41.72
E.G. Slope (ft/ft)	0.007116	Area (sq ft)		6355.73	41.72
Q Total (cfs)	38000.00	Flow (cfs)		37904.05	95.95
Top Width (ft)	605.00	Top Width (ft)		601.10	3.90
Vel Total (ft/s)	5.94	Avg. Vel. (ft/s)		5.96	2.30
Max Chl Dpth (ft)	15.55	Hydr. Depth (ft)		10.57	10.70
Conv. Total (cfs)	450457.5	Conv. (cfs)		449320.1	1137.4
Length Wtd. (ft)	147.42	Wetted Per. (ft)		612.45	14.55
Min Ch El (ft)	291.03	Shear (lb/sq ft)		4.61	1.27
Alpha	1.01	Stream Power (lb/ft s)		27.50	2.93
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	0.24	150.24	55.29
C & E Loss (ft)	0.01	Cum SA (acres)	0.09	15.09	7.22

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
         1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	310.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	309.71	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	301.75	Flow Area (sq ft)	75.60	8475.04	1013.17

E.G. Slope (ft/ft)	0.004037	Area (sq ft)	115.81	8475.04	3996.47
Q Total (cfs)	50000.00	Flow (cfs)	494.45	44972.46	4533.09
Top Width (ft)	1154.10	Top Width (ft)	24.09	632.00	498.00
Vel Total (ft/s)	5.23	Avg. Vel. (ft/s)	6.54	5.31	4.47
Max Chl Dpth (ft)	18.68	Hydr. Depth (ft)	5.52	13.41	12.06
Conv. Total (cfs)	786962.9	Conv. (cfs)	7782.2	707833.2	71347.5
Length Wtd. (ft)	147.94	Wetted Per. (ft)	13.73	635.99	85.12
Min Ch El (ft)	291.03	Shear (lb/sq ft)	1.39	3.36	3.00
Alpha	1.01	Stream Power (lb/ft s)	9.07	17.82	13.42
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	14.84	217.58	238.29
C & E Loss (ft)	0.03	Cum SA (acres)	4.23	15.48	24.07

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	300.62	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.100	0.110
W.S. Elev (ft)	300.57	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	297.23	Flow Area (sq ft)		2747.87	253.48
E.G. Slope (ft/ft)	0.002131	Area (sq ft)		2747.87	367.93
Q Total (cfs)	5500.00	Flow (cfs)		5125.10	374.90
Top Width (ft)	766.00	Top Width (ft)		609.27	156.73
Vel Total (ft/s)	1.83	Avg. Vel. (ft/s)		1.87	1.48
Max Chl Dpth (ft)	9.54	Hydr. Depth (ft)		4.51	3.70
Conv. Total (cfs)	119138.1	Conv. (cfs)		111017.3	8120.8
Length Wtd. (ft)	147.83	Wetted Per. (ft)		612.91	69.40
Min Ch El (ft)	291.03	Shear (lb/sq ft)		0.60	0.49
Alpha	1.01	Stream Power (lb/ft s)		1.11	0.72
Frctn Loss (ft)	0.13	Cum Volume (acre-ft)	1.09	102.97	73.22
C & E Loss (ft)	0.00	Cum SA (acres)	0.76	15.08	20.82

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	303.36	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.25	Wt. n-Val.		0.100	0.110
W.S. Elev (ft)	303.11	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	299.03	Flow Area (sq ft)		4311.85	459.02
E.G. Slope (ft/ft)	0.005709	Area (sq ft)		4311.85	1111.43
Q Total (cfs)	19000.00	Flow (cfs)		17559.27	1440.73
Top Width (ft)	981.25	Top Width (ft)		620.27	360.98
Vel Total (ft/s)	3.98	Avg. Vel. (ft/s)		4.07	3.14
Max Chl Dpth (ft)	12.08	Hydr. Depth (ft)		6.95	5.46
Conv. Total (cfs)	251455.6	Conv. (cfs)		232388.2	19067.4

Length Wtd. (ft)	147.88	Wetted Per. (ft)	624.21	85.12	
Min Ch El (ft)	291.03	Shear (lb/sq ft)	2.46	1.92	
Alpha	1.01	Stream Power (lb/ft s)	10.03	6.03	
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	1.23	116.20	87.67
C & E Loss (ft)	0.01	Cum SA (acres)	0.78	15.20	21.63

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 244

INPUT
Description: MAST BLVD BRIDGE (NORMAL BRIDGE ROUTINE)-
Corrected Effective
Geometry
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.5	104.5	308.1	201.3	303.9	207.8	307.1	216.5	307.1
237.5	311.6	319.8	312.8	335.5	307.7	367.8	307.6	459.7	307.8
508.9	294.9	585.6	293.1	617.1	292.2	638.9	293.1	772.1	293.3
888.2	294.6	935.1	293.5	960.1	296	1085.7	298.3	1166.8	300.4
1260.7	300.5	1360	300.3	1440.6	300.4	1502.7	300.3	1537.7	307.6
1602.1	309.9	1641.1	327.9	1787.9	328.1	1896	326.7	1953.2	313.1
2022.1	315.9	2161	318.3	2292.6	325.1	2385.9	332.9	2498.4	333.7

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	459.7	.065	960.1	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
459.7	960.1	104.8	124.6	145	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	459.7	311.5	F
960.1	2498.4	311.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	306.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.73	Wt. n-Val.		0.065	
W.S. Elev (ft)	305.49	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	299.66	Flow Area (sq ft)		5560.77	
E.G. Slope (ft/ft)	0.003534	Area (sq ft)	31.65	5560.77	3321.51
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	1098.91	Top Width (ft)	39.84	491.59	567.48

Vel Total (ft/s)	6.83	Avg. Vel. (ft/s)		6.83	
Max Chl Dpth (ft)	13.29	Hydr. Depth (ft)		11.31	
Conv. Total (cfs)	639228.1	Conv. (cfs)		639228.1	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		493.15	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.49	
Alpha	1.00	Stream Power (lb/ft s)		17.00	
Frctn Loss (ft)	0.16	Cum Volume (acre-ft)	2.09	122.31	110.62
C & E Loss (ft)	0.06	Cum SA (acres)	1.00	13.48	20.19

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	306.42	Element			
Vel Head (ft)	0.70	Wt. n-Val.		0.065	
W.S. Elev (ft)	305.72	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	299.66	Flow Area (sq ft)		5675.99	
E.G. Slope (ft/ft)	0.003396	Area (sq ft)		5675.99	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	492.48	Top Width (ft)		492.48	
Vel Total (ft/s)	6.69	Avg. Vel. (ft/s)		6.69	
Max Chl Dpth (ft)	13.52	Hydr. Depth (ft)		11.53	
Conv. Total (cfs)	652102.3	Conv. (cfs)		652102.3	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		503.79	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.39	
Alpha	1.00	Stream Power (lb/ft s)		15.99	
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	0.24	129.89	55.21
C & E Loss (ft)	0.05	Cum SA (acres)	0.09	13.24	7.22

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	309.64	Element			
Vel Head (ft)	0.74	Wt. n-Val.		0.065	
W.S. Elev (ft)	308.90	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	300.87	Flow Area (sq ft)		7256.28	
E.G. Slope (ft/ft)	0.002582	Area (sq ft)	485.82	7256.28	5303.23
Q Total (cfs)	50000.00	Flow (cfs)		50000.00	
Top Width (ft)	1381.54	Top Width (ft)	267.21	500.40	613.93
Vel Total (ft/s)	6.89	Avg. Vel. (ft/s)		6.89	
Max Chl Dpth (ft)	16.70	Hydr. Depth (ft)		14.50	
Conv. Total (cfs)	983979.4	Conv. (cfs)		983979.4	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		502.26	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.33	
Alpha	1.00	Stream Power (lb/ft s)		16.05	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	13.88	190.97	221.21
C & E Loss (ft)	0.05	Cum SA (acres)	3.76	13.57	22.03

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	300.49	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.05	Wt. n-Val.		0.065		
W.S. Elev (ft)	300.44	Reach Len. (ft)	35.00	35.00	35.00	
Crit W.S. (ft)	295.29	Flow Area (sq ft)		3127.44		
E.G. Slope (ft/ft)	0.000477	Area (sq ft)		3127.44	520.09	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00		
Top Width (ft)	929.35	Top Width (ft)		472.33	457.02	
Vel Total (ft/s)	1.76	Avg. Vel. (ft/s)		1.76		
Max Chl Dpth (ft)	8.24	Hydr. Depth (ft)		6.62		
Conv. Total (cfs)	251772.8	Conv. (cfs)		251772.8		
Length Wtd. (ft)	35.00	Wetted Per. (ft)		473.24		
Min Ch El (ft)	292.20	Shear (lb/sq ft)		0.20		
Alpha	1.00	Stream Power (lb/ft s)		0.35		
Frctn Loss (ft)	0.02	Cum Volume (acre-ft)	1.09	93.03	71.59	
C & E Loss (ft)	0.00	Cum SA (acres)	0.76	13.25	19.70	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	302.84	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.33	Wt. n-Val.		0.065		
W.S. Elev (ft)	302.51	Reach Len. (ft)	35.00	35.00	35.00	
Crit W.S. (ft)	297.44	Flow Area (sq ft)		4112.43		
E.G. Slope (ft/ft)	0.002339	Area (sq ft)		4112.43	1651.30	
Q Total (cfs)	19000.00	Flow (cfs)		19000.00		
Top Width (ft)	1033.40	Top Width (ft)		480.22	553.19	
Vel Total (ft/s)	4.62	Avg. Vel. (ft/s)		4.62		
Max Chl Dpth (ft)	10.31	Hydr. Depth (ft)		8.56		
Conv. Total (cfs)	392866.0	Conv. (cfs)		392866.0		
Length Wtd. (ft)	35.00	Wetted Per. (ft)		481.40		
Min Ch El (ft)	292.20	Shear (lb/sq ft)		1.25		
Alpha	1.00	Stream Power (lb/ft s)		5.76		
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	1.23	101.95	82.60	
C & E Loss (ft)	0.02	Cum SA (acres)	0.78	13.34	19.96	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE

RIVER: San Diego River
REACH: Reach 1 RS: 243

```
INPUT
Description:
Distance from Upstream XS =      35
Deck/Roadway Width        =      55
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   459.7     315   311.5   960.1     315   311.5

Upstream Bridge Cross Section Data
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   312.5   104.5   308.1   201.3   303.9   207.8   307.1   216.5   307.1
   237.5   311.6   319.8   312.8   335.5   307.7   367.8   307.6   459.7   307.8
   508.9   294.9   585.6   293.1   617.1   292.2   638.9   293.1   772.1   293.3
   888.2   294.6   935.1   293.5   960.1     296  1085.7   298.3  1166.8   300.4
  1260.7   300.5    1360   300.3  1440.6   300.4  1502.7   300.3  1537.7   307.6
  1602.1   309.9  1641.1   327.9  1787.9   328.1    1896   326.7  1953.2   313.1
  2022.1   315.9    2161   318.3  2292.6   325.1  2385.9   332.9  2498.4   333.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0      .1   459.7    .065   960.1    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
         459.7   960.1            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   459.7   311.5       F
   960.1  2498.4   311.5       F

Downstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     401     315   311.5   900.5     315   311.5

Downstream Bridge Cross Section Data
Station Elevation Data    num=      35
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   316.8     112     313   208.4   309.6   275.7   312.9     401   311.6
   456.4   294.1     515   292.1   549.1   291.7   573.4     293   615.3   292.5
   683.3     294     754   293.8   833.8   293.1   848.7   292.9   881.7   298.9
   900.5   309.6   933.7   309.6   993.7   311.6  1109.5   310.6  1250.9   313.9
  1354.6   317.3  1496.3   321.3  1588.4   321.9  1606.6   328.4    1621   329.1
  1637.1   321.6    1734   320.7  1900.1   316.2  2003.5   313.7  2112.3   317.6
  2154.7   320.9  2210.3     328  2252.9   327.8  2328.2   325.6  2378.2   322.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0      .1     401    .065   900.5    .045
```

```
Bank Sta: Left   Right    Coeff Contr.   Expan.
          401   900.5            .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     401  313.25       F
   900.5  2378.2  313.25       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =     315
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  5

Pier Data
Pier Station     Upstream=   543.2    Downstream=   484.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   626.6    Downstream=   567.7
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   709.9    Downstream=     651
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   793.2    Downstream=   734.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
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       7       0       7   311.5

Pier Data
Pier Station     Upstream=   876.6    Downstream=   817.7
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #PF 1

  E.G. US. (ft)               306.21    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               305.49    E.G. Elev (ft)              306.00        305.54
  Q Total (cfs)             38000.00    W.S. Elev (ft)              305.08        304.44
  Q Bridge (cfs)            38000.00    Crit W.S. (ft)              300.00        300.01
  Q Weir (cfs)                          Max Chl Dpth (ft)            12.88         12.74
  Weir Sta Lft (ft)                     Vel Total (ft/s)              7.66          8.41
  Weir Sta Rgt (ft)                     Flow Area (sq ft)          4958.81       4516.24
  Weir Submerg                          Froude # Chl                  0.38          0.46
  Weir Max Depth (ft)                   Specif Force (cu ft)      37044.48      34722.59
  Min El Weir Flow (ft)        315.00   Hydr Depth (ft)              10.90         10.44
  Min El Prs (ft)              311.50   W.P. Total (ft)             580.64        548.42
  Delta EG (ft)                  0.97   Conv. Total (cfs)         473627.5      421019.1
  Delta WS (ft)                  1.20   Top Width (ft)             1050.22        432.78
  BR Open Area (sq ft)        7690.35   Frctn Loss (ft)               0.40          0.22
  BR Open Vel (ft/s)             8.41   C & E Loss (ft)               0.06          0.07
  BR Sluice Coef                        Shear Total (lb/sq ft)        3.43          4.19
  BR Sel Method           Energy only   Power Total (lb/ft s)         26.30         35.24


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was used.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT  Profile #PF 2
```

E.G. US. (ft)	306.42	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	305.72	E.G. Elev (ft)	306.21	305.80
Q Total (cfs)	38000.00	W.S. Elev (ft)	305.34	304.76
Q Bridge (cfs)	38000.00	Crit W.S. (ft)	300.00	300.00
Q Weir (cfs)		Max Chl Dpth (ft)	13.14	13.06
Weir Sta Lft (ft)		Vel Total (ft/s)	7.48	8.16
Weir Sta Rgt (ft)		Flow Area (sq ft)	5076.86	4654.16
Weir Submerg		Froude # Chl	0.36	0.44
Weir Max Depth (ft)		Specif Force (cu ft)	38134.41	35886.71
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	11.13	10.72
Min El Prs (ft)	311.50	W.P. Total (ft)	584.52	553.30
Delta EG (ft)	0.90	Conv. Total (cfs)	490390.9	440058.9
Delta WS (ft)	1.10	Top Width (ft)	456.02	434.34
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.37	0.20
BR Open Vel (ft/s)	8.16	C & E Loss (ft)	0.05	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	3.26	3.92
BR Sel Method	Energy only	Power Total (lb/ft s)	24.37	31.97

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 3

E.G. US. (ft)	309.64	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	308.90	E.G. Elev (ft)	309.47	309.13
Q Total (cfs)	50000.00	W.S. Elev (ft)	308.56	308.10
Q Bridge (cfs)	50000.00	Crit W.S. (ft)	301.26	301.32
Q Weir (cfs)		Max Chl Dpth (ft)	16.36	16.40
Weir Sta Lft (ft)		Vel Total (ft/s)	7.62	8.15
Weir Sta Rgt (ft)		Flow Area (sq ft)	6564.78	6132.68
Weir Submerg		Froude # Chl	0.33	0.39
Weir Max Depth (ft)		Specif Force (cu ft)	59874.96	56916.75
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	14.11	13.60
Min El Prs (ft)	311.50	W.P. Total (ft)	630.41	604.55
Delta EG (ft)	0.73	Conv. Total (cfs)	715645.8	656965.7
Delta WS (ft)	0.88	Top Width (ft)	1326.68	450.79
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.29	0.15
BR Open Vel (ft/s)	8.15	C & E Loss (ft)	0.04	0.07
BR Sluice Coef		Shear Total (lb/sq ft)	3.17	3.67
BR Sel Method	Energy only	Power Total (lb/ft s)	24.17	29.91

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 4

E.G. US. (ft)	300.49	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	300.44	E.G. Elev (ft)	300.47	300.43
Q Total (cfs)	5500.00	W.S. Elev (ft)	300.41	300.37

Q Bridge (cfs)	5500.00	Crit W.S. (ft)	295.39	295.07
Q Weir (cfs)		Max Chl Dpth (ft)	8.21	8.66
Weir Sta Lft (ft)		Vel Total (ft/s)	1.91	1.97
Weir Sta Rgt (ft)		Flow Area (sq ft)	2873.57	2792.84
Weir Submerg		Froude # Chl	0.12	0.13
Weir Max Depth (ft)		Specif Force (cu ft)	10048.57	10250.81
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	6.57	6.77
Min El Prs (ft)	311.50	W.P. Total (ft)	510.80	485.88
Delta EG (ft)	0.09	Conv. Total (cfs)	207786.9	204868.6
Delta WS (ft)	0.09	Top Width (ft)	848.87	412.71
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.04	0.02
BR Open Vel (ft/s)	1.97	C & E Loss (ft)	0.00	0.00
BR Sluice Coef		Shear Total (lb/sq ft)	0.25	0.26
BR Sel Method	Energy only	Power Total (lb/ft s)	0.47	0.51

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 5

E.G. US. (ft)	302.84	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	302.51	E.G. Elev (ft)	302.71	302.47
Q Total (cfs)	19000.00	W.S. Elev (ft)	302.31	302.01
Q Bridge (cfs)	19000.00	Crit W.S. (ft)	297.65	297.51
Q Weir (cfs)		Max Chl Dpth (ft)	10.11	10.31
Weir Sta Lft (ft)		Vel Total (ft/s)	5.12	5.46
Weir Sta Rgt (ft)		Flow Area (sq ft)	3710.17	3476.84
Weir Submerg		Froude # Chl	0.28	0.34
Weir Max Depth (ft)		Specif Force (cu ft)	18990.70	18284.59
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	8.35	8.26
Min El Prs (ft)	311.50	W.P. Total (ft)	539.16	511.06
Delta EG (ft)	0.53	Conv. Total (cfs)	306851.4	285370.9
Delta WS (ft)	0.60	Top Width (ft)	996.67	420.79
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.23	0.12
BR Open Vel (ft/s)	5.46	C & E Loss (ft)	0.02	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	1.65	1.88
BR Sel Method	Energy only	Power Total (lb/ft s)	8.43	10.29

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 242

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1
1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401	900.5	165	224	270	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	401	313.25	F
900.5	2378.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.25	Element			
Vel Head (ft)	0.96	Wt. n-Val.		0.065	
W.S. Elev (ft)	304.29	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	299.62	Flow Area (sq ft)		4835.71	
E.G. Slope (ft/ft)	0.005290	Area (sq ft)		4835.71	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	467.01	Top Width (ft)		467.01	
Vel Total (ft/s)	7.86	Avg. Vel. (ft/s)		7.86	
Max Chl Dpth (ft)	12.59	Hydr. Depth (ft)		10.35	
Conv. Total (cfs)	522459.1	Conv. (cfs)		522459.1	
Length Wtd. (ft)	232.18	Wetted Per. (ft)		470.65	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.39	
Alpha	1.00	Stream Power (lb/ft s)		26.67	
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	2.06	108.39	106.09
C & E Loss (ft)	0.10	Cum SA (acres)	0.95	12.18	19.38

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.52	Element			
Vel Head (ft)	0.90	Wt. n-Val.		0.065	
W.S. Elev (ft)	304.62	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	299.63	Flow Area (sq ft)		4993.21	
E.G. Slope (ft/ft)	0.004778	Area (sq ft)		4993.21	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	468.67	Top Width (ft)		468.67	

Vel Total (ft/s)	7.61	Avg. Vel. (ft/s)		7.61	
Max Chl Dpth (ft)	12.92	Hydr. Depth (ft)		10.65	
Conv. Total (cfs)	549728.9	Conv. (cfs)		549728.9	
Length Wtd. (ft)	232.26	Wetted Per. (ft)		472.44	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.15	
Alpha	1.00	Stream Power (lb/ft s)		23.99	
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.24	115.59	55.21
C & E Loss (ft)	0.11	Cum SA (acres)	0.09	11.93	7.22

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	308.91	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.		0.065	
W.S. Elev (ft)	308.02	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	300.88	Flow Area (sq ft)		6614.34	
E.G. Slope (ft/ft)	0.003408	Area (sq ft)		6614.34	
Q Total (cfs)	50000.00	Flow (cfs)		50000.00	
Top Width (ft)	485.40	Top Width (ft)		485.40	
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)		7.56	
Max Chl Dpth (ft)	16.32	Hydr. Depth (ft)		13.63	
Conv. Total (cfs)	856532.0	Conv. (cfs)		856532.0	
Length Wtd. (ft)	233.08	Wetted Per. (ft)		490.60	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		2.87	
Alpha	1.00	Stream Power (lb/ft s)		21.68	
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	13.27	172.34	213.81
C & E Loss (ft)	0.16	Cum SA (acres)	3.38	12.23	21.16

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	300.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.		0.065	
W.S. Elev (ft)	300.35	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	294.97	Flow Area (sq ft)		3034.95	
E.G. Slope (ft/ft)	0.000493	Area (sq ft)		3034.95	
Q Total (cfs)	5500.00	Flow (cfs)		5500.00	
Top Width (ft)	447.63	Top Width (ft)		447.63	
Vel Total (ft/s)	1.81	Avg. Vel. (ft/s)		1.81	
Max Chl Dpth (ft)	8.65	Hydr. Depth (ft)		6.78	
Conv. Total (cfs)	247803.9	Conv. (cfs)		247803.9	
Length Wtd. (ft)	230.24	Wetted Per. (ft)		449.61	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		0.21	
Alpha	1.00	Stream Power (lb/ft s)		0.38	
Frctn Loss (ft)	0.10	Cum Volume (acre-ft)	1.09	84.72	70.86
C & E Loss (ft)	0.01	Cum SA (acres)	0.76	12.01	19.09

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	302.31	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.40	Wt. n-Val.		0.065		
W.S. Elev (ft)	301.91	Reach Len. (ft)	165.00	224.00	270.00	
Crit W.S. (ft)	297.28	Flow Area (sq ft)		3740.85		
E.G. Slope (ft/ft)	0.003001	Area (sq ft)		3740.85		
Q Total (cfs)	19000.00	Flow (cfs)		19000.00		
Top Width (ft)	455.33	Top Width (ft)		455.33		
Vel Total (ft/s)	5.08	Avg. Vel. (ft/s)		5.08		
Max Chl Dpth (ft)	10.21	Hydr. Depth (ft)		8.22		
Conv. Total (cfs)	346852.2	Conv. (cfs)		346852.2		
Length Wtd. (ft)	231.12	Wetted Per. (ft)		457.96		
Min Ch El (ft)	291.70	Shear (lb/sq ft)		1.53		
Alpha	1.00	Stream Power (lb/ft s)		7.77		
Frctn Loss (ft)	0.64	Cum Volume (acre-ft)	1.23	91.40	80.34	
C & E Loss (ft)	0.04	Cum SA (acres)	0.78	12.07	19.16	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 239

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314	87.1	311.2	151.3	308.5	183.2	306.4	215.4	304.6
241.3	303	280.1	296.8	314.7	293.9	339	292.9	379.6	294.4
403.2	292.6	425.4	293.1	463.7	294.4	483.9	291.8	506.5	290.7
551.3	292.7	620.7	293.2	628.9	295.7	642	299.6	662.4	296.3
712.8	296.7	745.9	295.3	808	296.4	955.9	298.3	1077.2	298.6
1096.1	296.4	1143.4	295.9	1251.8	296.4	1289.9	298.8	1360.3	299.6
1377.5	302.7	1402.9	313.3	1426.5	325.9	1436.2	326.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	241.3	.065	642	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
241.3	642	385	413	515 .1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	201.8	313.25	F

906.2 1436.2 313.25 F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	304.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	303.29	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	299.63	Flow Area (sq ft)	0.70	3728.71	1770.06
E.G. Slope (ft/ft)	0.004242	Area (sq ft)	0.70	3728.71	4385.77
Q Total (cfs)	38000.00	Flow (cfs)	0.19	24481.97	13517.85
Top Width (ft)	1142.37	Top Width (ft)	4.75	400.70	736.92
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)	0.27	6.57	7.64
Max Chl Dpth (ft)	12.59	Hydr. Depth (ft)	0.15	9.31	6.70
Conv. Total (cfs)	583454.8	Conv. (cfs)	2.9	375897.9	207554.0
Length Wtd. (ft)	447.73	Wetted Per. (ft)	4.76	402.64	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.04	2.45	1.77
Alpha	1.02	Stream Power (lb/ft s)	0.01	16.10	13.53
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	2.06	86.37	92.50
C & E Loss (ft)	0.07	Cum SA (acres)	0.94	9.95	17.09

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	304.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	303.79	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	299.62	Flow Area (sq ft)		3923.15	1902.09
E.G. Slope (ft/ft)	0.003505	Area (sq ft)		3923.15	1902.09
Q Total (cfs)	38000.00	Flow (cfs)		24357.54	13642.46
Top Width (ft)	660.00	Top Width (ft)		395.80	264.20
Vel Total (ft/s)	6.52	Avg. Vel. (ft/s)		6.21	7.17
Max Chl Dpth (ft)	13.09	Hydr. Depth (ft)		9.91	7.20
Conv. Total (cfs)	641885.9	Conv. (cfs)		411441.2	230444.8
Length Wtd. (ft)	446.19	Wetted Per. (ft)		399.25	270.65
Min Ch El (ft)	290.70	Shear (lb/sq ft)		2.15	1.54
Alpha	1.01	Stream Power (lb/ft s)		13.35	11.03
Frctn Loss (ft)	1.43	Cum Volume (acre-ft)	0.24	92.67	49.32
C & E Loss (ft)	0.04	Cum SA (acres)	0.09	9.71	6.40

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	308.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.100	0.065	0.045

W.S. Elev (ft)	307.63	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	300.56	Flow Area (sq ft)	135.09	5464.83	2914.76
E.G. Slope (ft/ft)	0.001760	Area (sq ft)	178.98	5464.83	7601.12
Q Total (cfs)	50000.00	Flow (cfs)	190.90	29817.13	19991.97
Top Width (ft)	1224.73	Top Width (ft)	76.73	400.70	747.30
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	1.41	5.46	6.86
Max Chl Dpth (ft)	16.93	Hydr. Depth (ft)	3.42	13.64	11.03
Conv. Total (cfs)	1191982.0	Conv. (cfs)	4550.9	710829.9	476601.6
Length Wtd. (ft)	453.54	Wetted Per. (ft)	39.57	402.64	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.37	1.49	1.21
Alpha	1.06	Stream Power (lb/ft s)	0.53	8.13	8.30
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	12.93	141.28	190.25
C & E Loss (ft)	0.08	Cum SA (acres)	3.24	9.95	18.84

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	300.29	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	300.26	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	295.07	Flow Area (sq ft)		2534.86	967.36
E.G. Slope (ft/ft)	0.000388	Area (sq ft)		2534.86	2167.30
Q Total (cfs)	5500.00	Flow (cfs)		4006.90	1493.10
Top Width (ft)	1105.46	Top Width (ft)		383.52	721.94
Vel Total (ft/s)	1.57	Avg. Vel. (ft/s)		1.58	1.54
Max Chl Dpth (ft)	9.56	Hydr. Depth (ft)		6.61	3.66
Conv. Total (cfs)	279299.3	Conv. (cfs)		203477.0	75822.3
Length Wtd. (ft)	440.96	Wetted Per. (ft)		385.24	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)		0.16	0.09
Alpha	1.00	Stream Power (lb/ft s)		0.25	0.14
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	1.09	70.40	64.14
C & E Loss (ft)	0.01	Cum SA (acres)	0.76	9.87	16.85

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	301.63	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	301.31	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	297.86	Flow Area (sq ft)		2942.83	1246.00
E.G. Slope (ft/ft)	0.002587	Area (sq ft)		2942.83	2931.78
Q Total (cfs)	19000.00	Flow (cfs)		13119.84	5880.16
Top Width (ft)	1117.91	Top Width (ft)		390.12	727.79
Vel Total (ft/s)	4.54	Avg. Vel. (ft/s)		4.46	4.72
Max Chl Dpth (ft)	10.61	Hydr. Depth (ft)		7.54	4.72
Conv. Total (cfs)	373575.1	Conv. (cfs)		257960.3	115614.9

Length Wtd. (ft)	443.55	Wetted Per. (ft)		391.93	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)		1.21	0.76
Alpha	1.00	Stream Power (lb/ft s)		5.41	3.59
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	1.23	74.22	71.26
C & E Loss (ft)	0.04	Cum SA (acres)	0.78	9.90	16.91

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 230

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312	65.6	310.4	137.8	306.5	207.5	304.8	265.4	303.7
291.2	300.1	331.4	299.8	351.6	295.4	389	294.6	407.4	291.3
454.2	291.8	462.3	290.4	477.6	289.8	534.6	290.2	554.3	293.8
641.2	293.6	754.1	293.5	854.5	294.1	957	293.2	982.8	292.3
997.6	294.6	1024.6	297.5	1044.3	298.8	1136.2	298.2	1228.8	298
1299.8	296	1370.7	296	1433	296.9	1442.5	299.6	1459.2	298.3
1470.3	296.6	1517.5	295	1523.6	297.2	1550.3	301.8	1578.7	304.4
1682	307.7	1783.3	310.7	1933.2	315.6	2031.8	320.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	331.4	.065	854.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.4	854.5	460	487	430	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	61.8	313.25	F
1233.8	2031.8	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	302.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	301.76	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	297.85	Flow Area (sq ft)	82.78	4532.04	2070.69
E.G. Slope (ft/ft)	0.003419	Area (sq ft)	82.78	4532.04	3633.85
Q Total (cfs)	38000.00	Flow (cfs)	97.76	25514.88	12387.36
Top Width (ft)	1270.80	Top Width (ft)	52.12	523.10	695.58
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)	1.18	5.63	5.98
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	1.59	8.66	5.46
Conv. Total (cfs)	649860.2	Conv. (cfs)	1671.9	436344.9	211843.4
Length Wtd. (ft)	461.15	Wetted Per. (ft)	52.23	524.34	379.70

Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.34	1.85	1.16
Alpha	1.02	Stream Power (lb/ft s)	0.40	10.39	6.96
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	1.69	47.21	45.09
C & E Loss (ft)	0.06	Cum SA (acres)	0.69	5.57	8.62

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	303.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	302.44	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	297.86	Flow Area (sq ft)	25.04	4888.45	1587.90
E.G. Slope (ft/ft)	0.002947	Area (sq ft)	25.04	4888.45	1587.90
Q Total (cfs)	38000.00	Flow (cfs)	32.67	26874.68	11092.65
Top Width (ft)	735.00	Top Width (ft)	9.60	523.10	202.30
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)	1.30	5.50	6.99
Max Chl Dpth (ft)	12.64	Hydr. Depth (ft)	2.61	9.35	7.85
Conv. Total (cfs)	699947.4	Conv. (cfs)	601.8	495022.7	204322.8
Length Wtd. (ft)	462.76	Wetted Per. (ft)	12.17	524.34	206.42
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.38	1.72	1.42
Alpha	1.04	Stream Power (lb/ft s)	0.49	9.43	9.89
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.13	50.89	28.69
C & E Loss (ft)	0.07	Cum SA (acres)	0.05	5.35	3.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	307.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.28	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	299.08	Flow Area (sq ft)	728.23	7418.33	4163.54
E.G. Slope (ft/ft)	0.000870	Area (sq ft)	728.23	7418.33	7721.61
Q Total (cfs)	50000.00	Flow (cfs)	734.93	29254.21	20010.86
Top Width (ft)	1545.51	Top Width (ft)	208.05	523.10	814.36
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	1.01	3.94	4.81
Max Chl Dpth (ft)	17.48	Hydr. Depth (ft)	3.50	14.18	10.98
Conv. Total (cfs)	1695505.0	Conv. (cfs)	24921.6	992013.2	678570.0
Length Wtd. (ft)	457.44	Wetted Per. (ft)	208.35	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.19	0.77	0.60
Alpha	1.11	Stream Power (lb/ft s)	0.19	3.03	2.86
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	8.92	80.20	99.67
C & E Loss (ft)	0.04	Cum SA (acres)	1.98	5.57	9.61

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	300.18	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.02	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.16	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	294.28	Flow Area (sq ft)	8.60	3695.51	1464.12
E.G. Slope (ft/ft)	0.000164	Area (sq ft)	8.60	3695.51	2528.90
Q Total (cfs)	5500.00	Flow (cfs)	0.58	3976.98	1522.44
Top Width (ft)	1250.06	Top Width (ft)	40.66	523.10	686.30
Vel Total (ft/s)	1.06	Avg. Vel. (ft/s)	0.07	1.08	1.04
Max Chl Dpth (ft)	10.36	Hydr. Depth (ft)	0.21	7.06	3.86
Conv. Total (cfs)	429477.1	Conv. (cfs)	45.3	310549.3	118882.5
Length Wtd. (ft)	462.90	Wetted Per. (ft)	40.66	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.00	0.07	0.04
Alpha	1.00	Stream Power (lb/ft s)	0.00	0.08	0.04
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	1.05	40.87	36.38
C & E Loss (ft)	0.00	Cum SA (acres)	0.58	5.57	8.53

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	300.70	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.51	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	296.06	Flow Area (sq ft)	23.19	3877.67	1596.21
E.G. Slope (ft/ft)	0.001607	Area (sq ft)	23.19	3877.67	2768.25
Q Total (cfs)	19000.00	Flow (cfs)	9.13	13487.66	5503.21
Top Width (ft)	1254.57	Top Width (ft)	43.15	523.10	688.32
Vel Total (ft/s)	3.46	Avg. Vel. (ft/s)	0.39	3.48	3.45
Max Chl Dpth (ft)	10.71	Hydr. Depth (ft)	0.54	7.41	4.21
Conv. Total (cfs)	473996.8	Conv. (cfs)	227.7	336479.4	137289.8
Length Wtd. (ft)	462.53	Wetted Per. (ft)	43.18	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.05	0.74	0.42
Alpha	1.01	Stream Power (lb/ft s)	0.02	2.58	1.45
Frctn Loss (ft)	0.45	Cum Volume (acre-ft)	1.13	41.88	37.56
C & E Loss (ft)	0.03	Cum SA (acres)	0.59	5.57	8.54

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 220

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324	93.8	319.7	217.1	314.8	297.3	308	374.5	304.6
393.2	301.5	420.3	299.8	439.7	295.9	465.5	296.2	484.2	299.8
534.9	296.3	649.9	293.8	675.5	292.1	713.9	292.3	756.2	290
798.1	288.8	821.5	289.8	922.4	289.9	957.7	292.4	1018	292.8
1064.1	291.5	1181.5	291.6	1265.8	291.3	1290.2	294.1	1314.9	297
1364.7	297.1	1483.6	297	1523.5	296	1602.5	296	1626.8	297.7
1646.9	298.6	1670.2	296.6	1761.1	297.9	1817.3	299.2	1831.2	296.4
1867.1	295.6	1937.3	298.2	2007.5	300.4	2031.6	304.8	2049.2	303.8
2077.8	303.4	2093.8	308.1	2142.9	309.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	484.2	.065	957.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
484.2	957.7	0	0	0 .1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	56	313.25	F
1681.8	2142.9	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	301.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.76	Reach Len. (ft)			
Crit W.S. (ft)	296.44	Flow Area (sq ft)	236.93	3913.40	4520.70
E.G. Slope (ft/ft)	0.001870	Area (sq ft)	236.93	3913.40	5502.52
Q Total (cfs)	38000.00	Flow (cfs)	314.10	15807.25	21878.65
Top Width (ft)	1604.48	Top Width (ft)	79.20	473.50	1051.77
Vel Total (ft/s)	4.38	Avg. Vel. (ft/s)	1.33	4.04	4.84
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	2.99	8.26	6.24
Conv. Total (cfs)	878641.8	Conv. (cfs)	7262.6	365497.7	505881.5
Length Wtd. (ft)		Wetted Per. (ft)	79.97	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.35	0.96	0.73
Alpha	1.06	Stream Power (lb/ft s)	0.46	3.90	3.53
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	301.99	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	301.66	Reach Len. (ft)			
Crit W.S. (ft)	296.14	Flow Area (sq ft)		4215.87	4224.02
E.G. Slope (ft/ft)	0.001490	Area (sq ft)		4215.87	4224.02
Q Total (cfs)	38000.00	Flow (cfs)		16793.57	21206.43
Top Width (ft)	970.00	Top Width (ft)		434.80	535.20
Vel Total (ft/s)	4.50	Avg. Vel. (ft/s)		3.98	5.02
Max Chl Dpth (ft)	12.86	Hydr. Depth (ft)		9.70	7.89
Conv. Total (cfs)	984329.0	Conv. (cfs)		435010.5	549318.5
Length Wtd. (ft)		Wetted Per. (ft)		439.63	540.45
Min Ch El (ft)	288.80	Shear (lb/sq ft)		0.89	0.73
Alpha	1.04	Stream Power (lb/ft s)		3.55	3.65
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	307.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.13	Reach Len. (ft)			
Crit W.S. (ft)	297.37	Flow Area (sq ft)	961.20	6929.59	9133.22
E.G. Slope (ft/ft)	0.000362	Area (sq ft)	961.20	6929.59	12473.01
Q Total (cfs)	50000.00	Flow (cfs)	869.01	18034.57	31096.42
Top Width (ft)	1773.44	Top Width (ft)	167.15	473.50	1132.80
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	0.90	2.60	3.40
Max Chl Dpth (ft)	18.33	Hydr. Depth (ft)	5.75	14.63	12.61
Conv. Total (cfs)	2626263.0	Conv. (cfs)	45645.1	947270.3	1633348.0
Length Wtd. (ft)		Wetted Per. (ft)	168.24	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.13	0.33	0.29
Alpha	1.12	Stream Power (lb/ft s)	0.12	0.86	0.97
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 4

E.G. Elev (ft)	300.14	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.01	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.13	Reach Len. (ft)			
Crit W.S. (ft)	292.51	Flow Area (sq ft)	190.20	3615.09	4064.51
E.G. Slope (ft/ft)	0.000054	Area (sq ft)	190.20	3615.09	4841.95
Q Total (cfs)	5500.00	Flow (cfs)	40.42	2350.23	3109.35
Top Width (ft)	1583.85	Top Width (ft)	69.16	473.50	1041.19
Vel Total (ft/s)	0.70	Avg. Vel. (ft/s)	0.21	0.65	0.76
Max Chl Dpth (ft)	11.33	Hydr. Depth (ft)	2.75	7.63	5.61
Conv. Total (cfs)	749456.3	Conv. (cfs)	5508.0	320253.1	423695.2

Length Wtd. (ft)		Wetted Per. (ft)	69.90	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.01	0.03	0.02
Alpha	1.05	Stream Power (lb/ft s)	0.00	0.02	0.01
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 5

E.G. Elev (ft)	300.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.09	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.13	Reach Len. (ft)			
Crit W.S. (ft)	294.29	Flow Area (sq ft)	190.20	3615.09	4064.51
E.G. Slope (ft/ft)	0.000643	Area (sq ft)	190.20	3615.09	4841.95
Q Total (cfs)	19000.00	Flow (cfs)	139.64	8118.96	10741.40
Top Width (ft)	1583.85	Top Width (ft)	69.16	473.50	1041.19
Vel Total (ft/s)	2.41	Avg. Vel. (ft/s)	0.73	2.25	2.64
Max Chl Dpth (ft)	11.33	Hydr. Depth (ft)	2.75	7.63	5.61
Conv. Total (cfs)	749456.3	Conv. (cfs)	5508.0	320253.1	423695.2
Length Wtd. (ft)		Wetted Per. (ft)	69.90	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.11	0.31	0.23
Alpha	1.05	Stream Power (lb/ft s)	0.08	0.69	0.59
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

SUMMARY OF REACH LENGTHS

River: San Diego River

Reach	River Sta.	Left	Channel	Right
Reach 1	355	360	310	350
Reach 1	345	400	335	125
Reach 1	340	575	454	575
Reach 1	330	620	588	620
Reach 1	320	260	431	405
Reach 1	315	380	280	255
Reach 1	310	610	610	640
Reach 1	300	790	654	605
Reach 1	290	695	653	645
Reach 1	285	640	688	660
Reach 1	280	1135	1021	1060
Reach 1	270	1000	951	815
Reach 1	260	1050	1031	1000
Reach 1	250	700	701	615

Reach 1	245	140.2	147.4	160
Reach 1	244	104.8	124.6	145
Reach 1	243	Bridge		
Reach 1	242	165	224	270
Reach 1	239	385	413	515
Reach 1	230	460	487	430
Reach 1	220	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Diego River

Reach	River Sta.	Contr.	Expan.
Reach 1	355	.1	.3
Reach 1	345	.1	.3
Reach 1	340	.1	.3
Reach 1	330	.1	.3
Reach 1	320	.1	.3
Reach 1	315	.1	.3
Reach 1	310	.1	.3
Reach 1	300	.1	.3
Reach 1	290	.1	.3
Reach 1	285	.1	.3
Reach 1	280	.1	.3
Reach 1	270	.1	.3
Reach 1	260	.1	.3
Reach 1	250	.1	.3
Reach 1	245	.1	.3
Reach 1	244	.3	.5
Reach 1	243	Bridge	
Reach 1	242	.3	.5
Reach 1	239	.1	.3
Reach 1	230	.1	.3
Reach 1	220	.1	.3

HEC-RAS Plan: Existing-PL1 River: San Diego River Reach: Reach 1

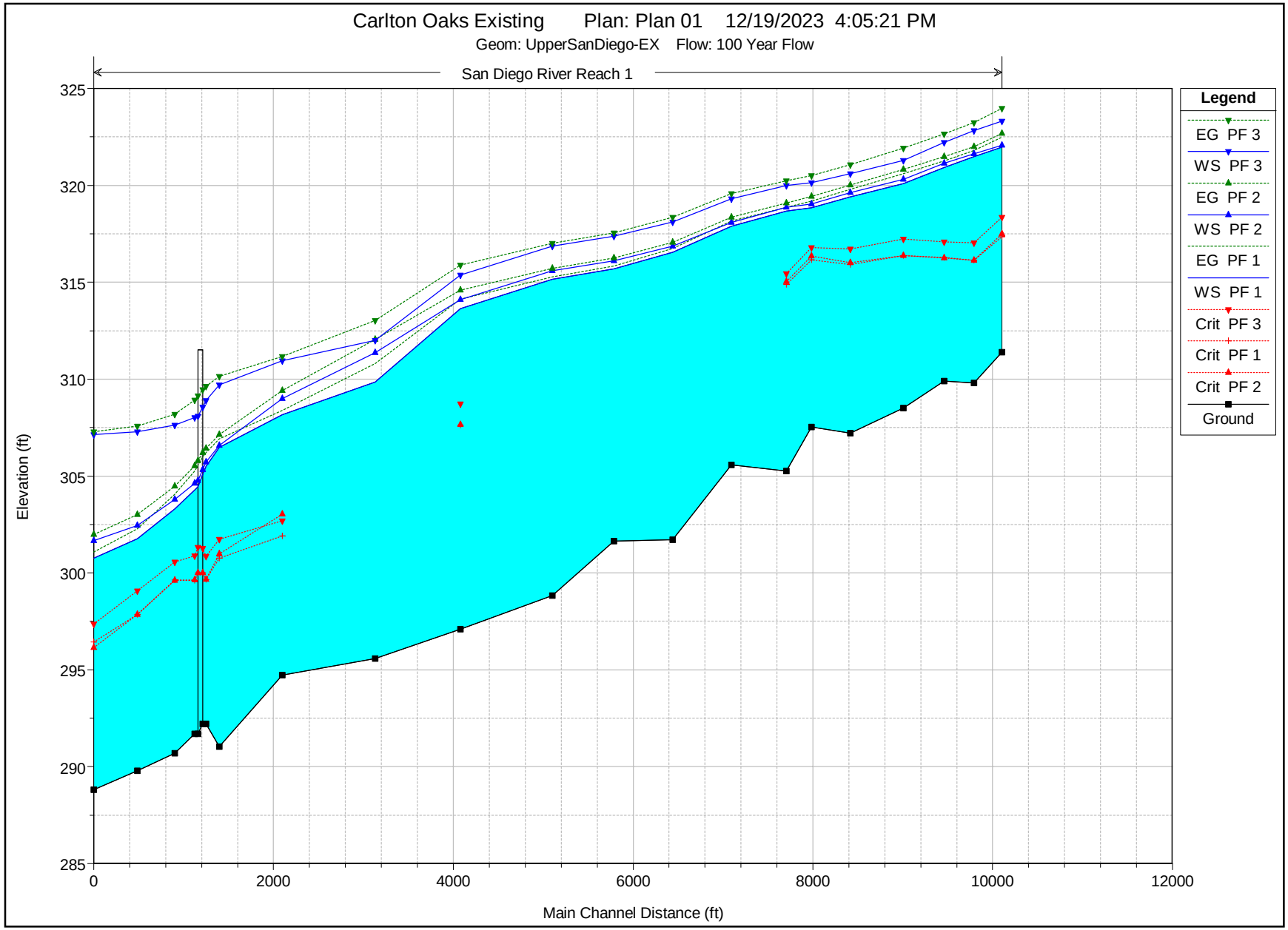
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	220	PF 1	38000.00	288.80	300.76	296.44	301.08	0.001870	4.04	8671.03	1604.48	0.25
Reach 1	220	PF 2	38000.00	288.80	301.66	296.14	301.99	0.001490	3.98	8439.89	970.00	0.23
Reach 1	220	PF 3	50000.00	288.80	307.13	297.37	307.28	0.000362	2.60	17024.01	1773.44	0.12
Reach 1	230	PF 1	38000.00	289.80	301.76	297.85	302.27	0.003419	5.63	6685.51	1270.80	0.34
Reach 1	230	PF 2	38000.00	289.80	302.44	297.86	303.00	0.002947	5.50	6501.38	735.00	0.32
Reach 1	230	PF 3	50000.00	289.80	307.28	299.08	307.57	0.000870	3.94	12310.10	1545.51	0.18
Reach 1	239	PF 1	38000.00	290.70	303.29	299.63	304.05	0.004242	6.57	5499.47	1142.37	0.38
Reach 1	239	PF 2	38000.00	290.70	303.79	299.62	304.46	0.003505	6.21	5825.24	660.00	0.35
Reach 1	239	PF 3	50000.00	290.70	307.63	300.56	308.19	0.001760	5.46	8514.67	1224.73	0.26
Reach 1	242	PF 1	38000.00	291.70	304.29	299.62	305.25	0.005290	7.86	4835.71	467.01	0.43
Reach 1	242	PF 2	38000.00	291.70	304.62	299.63	305.52	0.004778	7.61	4993.21	468.67	0.41
Reach 1	242	PF 3	50000.00	291.70	308.02	300.88	308.91	0.003408	7.56	6614.34	485.40	0.36
Reach 1	243		Bridge									
Reach 1	244	PF 1	38000.00	292.20	305.49	299.66	306.21	0.003534	6.83	5560.77	1098.91	0.36
Reach 1	244	PF 2	38000.00	292.20	305.72	299.66	306.42	0.003396	6.69	5675.99	492.48	0.35
Reach 1	244	PF 3	50000.00	292.20	308.90	300.87	309.64	0.002582	6.89	7256.28	1381.54	0.32
Reach 1	245	PF 1	38000.00	291.03	306.48	300.76	306.91	0.005987	5.38	7204.27	1096.97	0.30
Reach 1	245	PF 2	38000.00	291.03	306.58	300.98	307.13	0.007116	5.96	6397.45	605.00	0.32
Reach 1	245	PF 3	50000.00	291.03	309.71	301.75	310.14	0.004037	5.31	9563.80	1154.10	0.26
Reach 1	250	PF 1	38000.00	294.72	308.16	301.90	308.38	0.001079	3.81	10037.86	1156.37	0.21
Reach 1	250	PF 2	38000.00	294.72	308.99	303.02	309.41	0.001835	5.24	7337.71	695.00	0.28
Reach 1	250	PF 3	50000.00	294.72	310.95	302.68	311.17	0.000768	3.78	13429.41	1266.66	0.18
Reach 1	260	PF 1	38000.00	295.59	309.84		310.80	0.006172	7.94	4867.00	625.96	0.49
Reach 1	260	PF 2	38000.00	295.59	311.35		312.04	0.003534	6.72	5724.55	600.00	0.38
Reach 1	260	PF 3	50000.00	295.59	312.01		313.02	0.004857	8.18	6292.97	683.23	0.45
Reach 1	270	PF 1	37000.00	297.09	313.64	307.63	314.14	0.002199	5.73	6739.66	1012.96	0.30
Reach 1	270	PF 2	37000.00	297.09	314.09	307.65	314.60	0.002089	5.73	6463.24	560.00	0.30
Reach 1	270	PF 3	49000.00	297.09	315.38	308.73	315.89	0.002006	6.03	8991.59	1062.61	0.30
Reach 1	280	PF 1	37000.00	298.83	315.16		315.28	0.000639	2.74	13501.55	1469.39	0.16

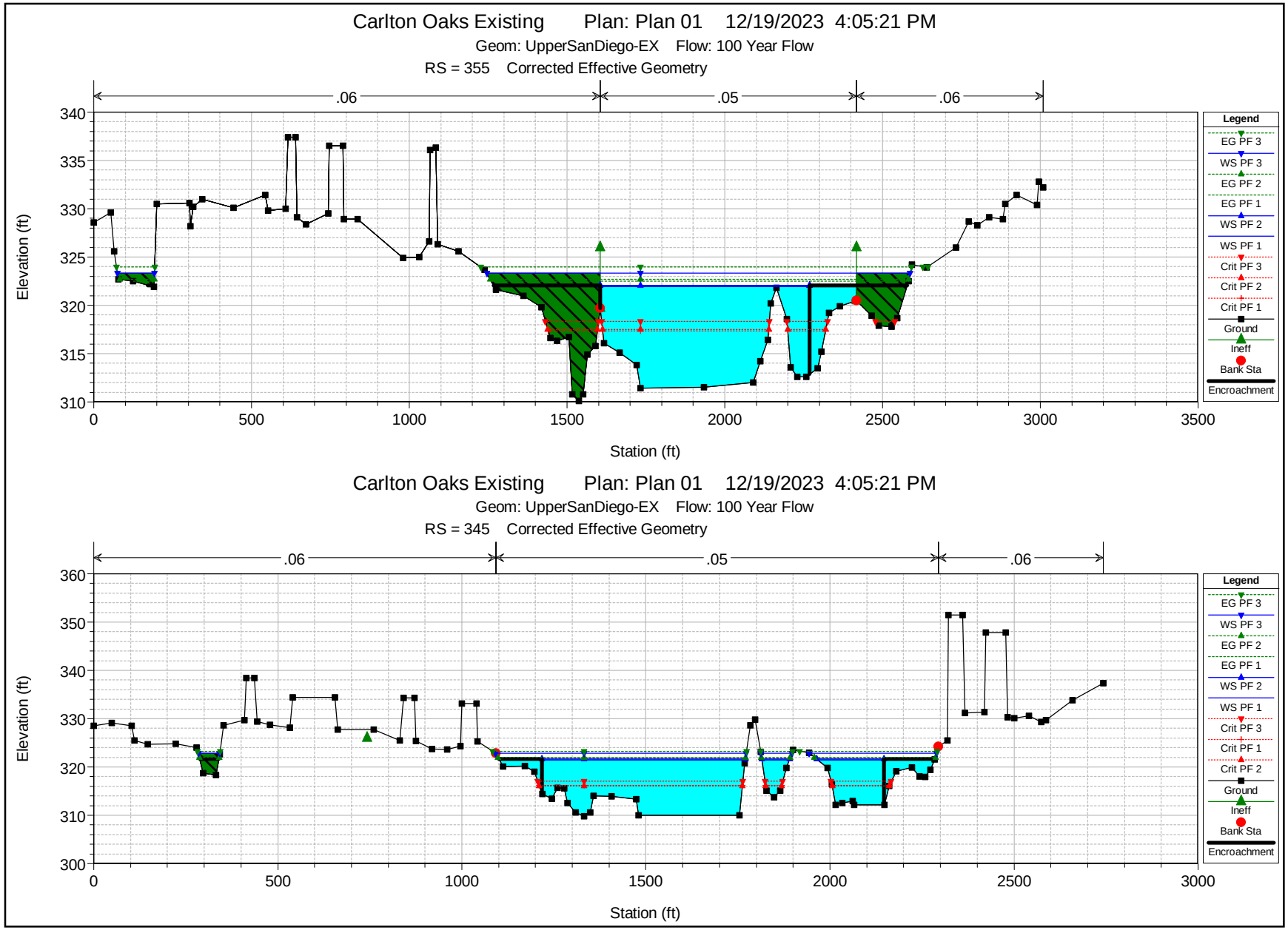
HEC-RAS Plan: Existing-PL1 River: San Diego River Reach: Reach 1 (Continued)

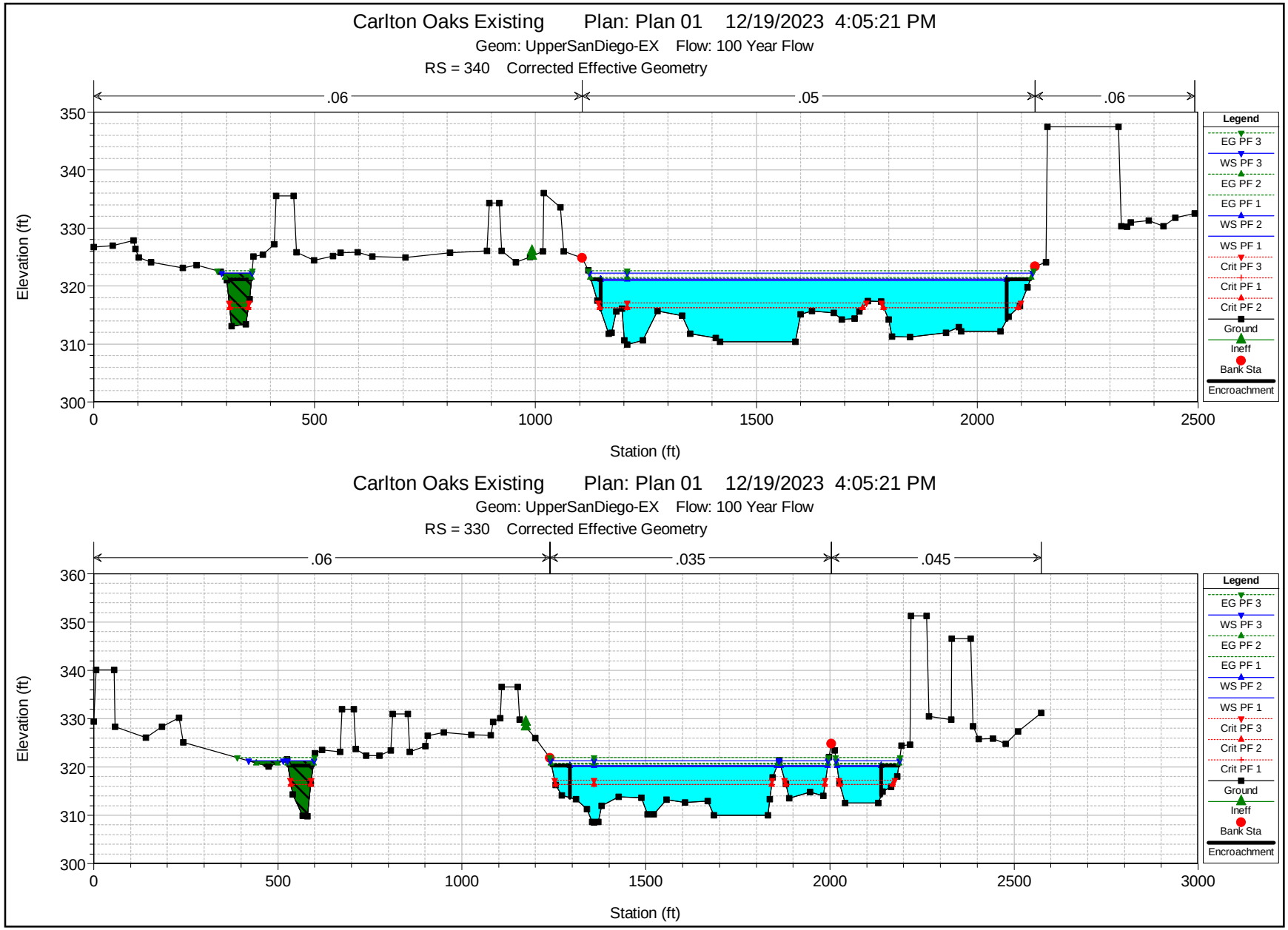
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	280	PF 2	37000.00	298.83	315.60		315.73	0.000640	2.86	12916.01	1300.00	0.16
Reach 1	280	PF 3	49000.00	298.83	316.86		317.00	0.000639	3.07	16001.48	1476.56	0.16
Reach 1	285	PF 1	37000.00	301.64	315.69		315.84	0.001043	3.14	11826.09	1567.96	0.20
Reach 1	285	PF 2	37000.00	301.64	316.11		316.26	0.000928	3.08	12009.99	1435.00	0.19
Reach 1	285	PF 3	49000.00	301.64	317.36		317.54	0.000948	3.41	14493.37	1604.18	0.20
Reach 1	290	PF 1	37000.00	301.71	316.54		316.75	0.001850	3.65	10129.69	1581.55	0.25
Reach 1	290	PF 2	37000.00	301.71	316.86		317.06	0.001615	3.54	10438.97	1536.58	0.24
Reach 1	290	PF 3	49000.00	301.71	318.12		318.35	0.001589	3.87	12646.59	1610.97	0.24
Reach 1	300	PF 1	37000.00	305.57	317.90		318.15	0.002457	4.10	9126.91	1573.83	0.29
Reach 1	300	PF 2	37000.00	305.57	318.09		318.35	0.002389	4.13	8974.82	1411.95	0.29
Reach 1	300	PF 3	49000.00	305.57	319.30		319.59	0.002211	4.40	11543.19	1851.52	0.29
Reach 1	310	PF 1	37000.00	305.25	318.67	314.88	318.86	0.000665	3.64	10860.64	1831.55	0.26
Reach 1	310	PF 2	37000.00	305.25	318.86	315.04	319.08	0.000714	3.84	9767.49	1545.00	0.27
Reach 1	310	PF 3	49000.00	305.25	320.00	315.44	320.23	0.000604	3.96	13453.85	1971.84	0.26
Reach 1	315	PF 1	37000.00	307.53	318.85	316.16	319.18	0.001481	4.82	8315.47	1667.87	0.38
Reach 1	315	PF 2	37000.00	307.53	319.03	316.35	319.42	0.001562	5.09	7490.04	1396.51	0.39
Reach 1	315	PF 3	49000.00	307.53	320.15	316.79	320.51	0.001236	5.06	10503.48	1701.61	0.36
Reach 1	320	PF 1	37000.00	307.20	319.40	315.92	319.79	0.001321	4.99	7408.00	1933.07	0.36
Reach 1	320	PF 2	37000.00	307.20	319.63	316.01	320.02	0.001281	5.04	7344.57	1208.23	0.36
Reach 1	320	PF 3	49000.00	307.20	320.61	316.71	321.07	0.001267	5.46	8966.82	1966.41	0.37
Reach 1	330	PF 1	36000.00	308.50	320.10	316.37	320.59	0.001297	5.80	6531.89	972.79	0.37
Reach 1	330	PF 2	36000.00	308.50	320.30	316.37	320.83	0.001310	5.98	6263.57	810.07	0.38
Reach 1	330	PF 3	48000.00	308.50	321.28	317.22	321.92	0.001434	6.64	7609.38	1090.88	0.40
Reach 1	340	PF 1	36000.00	309.90	320.93	316.27	321.26	0.001563	4.62	7795.05	1048.46	0.29
Reach 1	340	PF 2	36000.00	309.90	321.15	316.26	321.49	0.001474	4.66	7733.08	920.00	0.28
Reach 1	340	PF 3	48000.00	309.90	322.22	317.07	322.66	0.001692	5.28	9087.39	1072.66	0.31
Reach 1	345	PF 1	36000.00	309.80	321.48	316.13	321.81	0.001714	4.62	7798.78	1112.76	0.30
Reach 1	345	PF 2	36000.00	309.80	321.63	316.13	322.01	0.001559	4.95	7272.35	812.79	0.29
Reach 1	345	PF 3	48000.00	309.80	322.83	317.04	323.25	0.001821	5.18	9267.36	1169.35	0.32

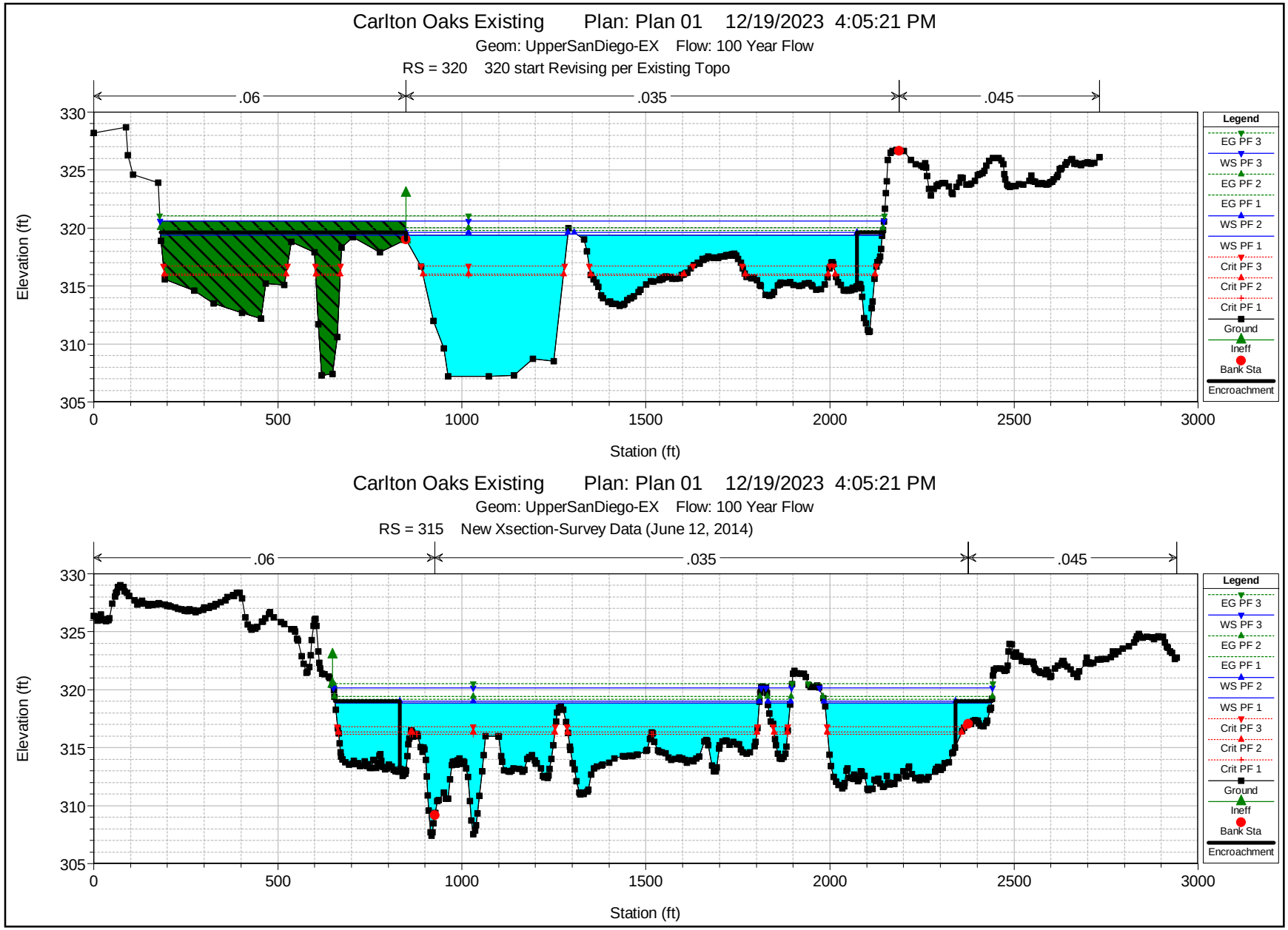
HEC-RAS Plan: Existing-PL1 River: San Diego River Reach: Reach 1 (Continued)

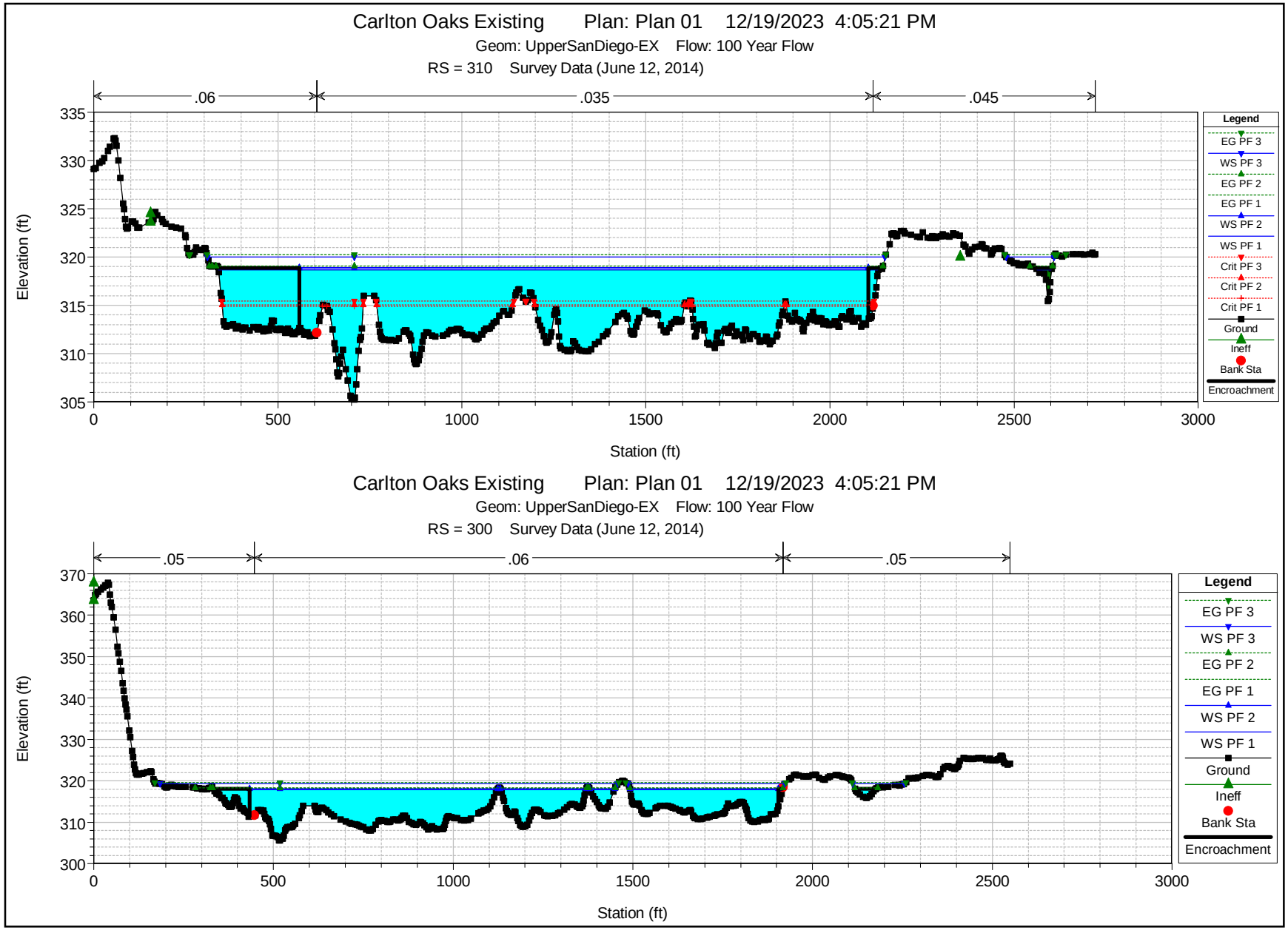
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	355	PF 1	36000.00	311.40	321.98	317.36	322.49	0.002414	5.71	6308.79	1317.59	0.36
Reach 1	355	PF 2	36000.00	311.40	322.08	317.49	322.68	0.002549	6.24	5766.69	664.90	0.37
Reach 1	355	PF 3	48000.00	311.40	323.32	318.35	323.98	0.002521	6.49	7400.66	1458.36	0.38

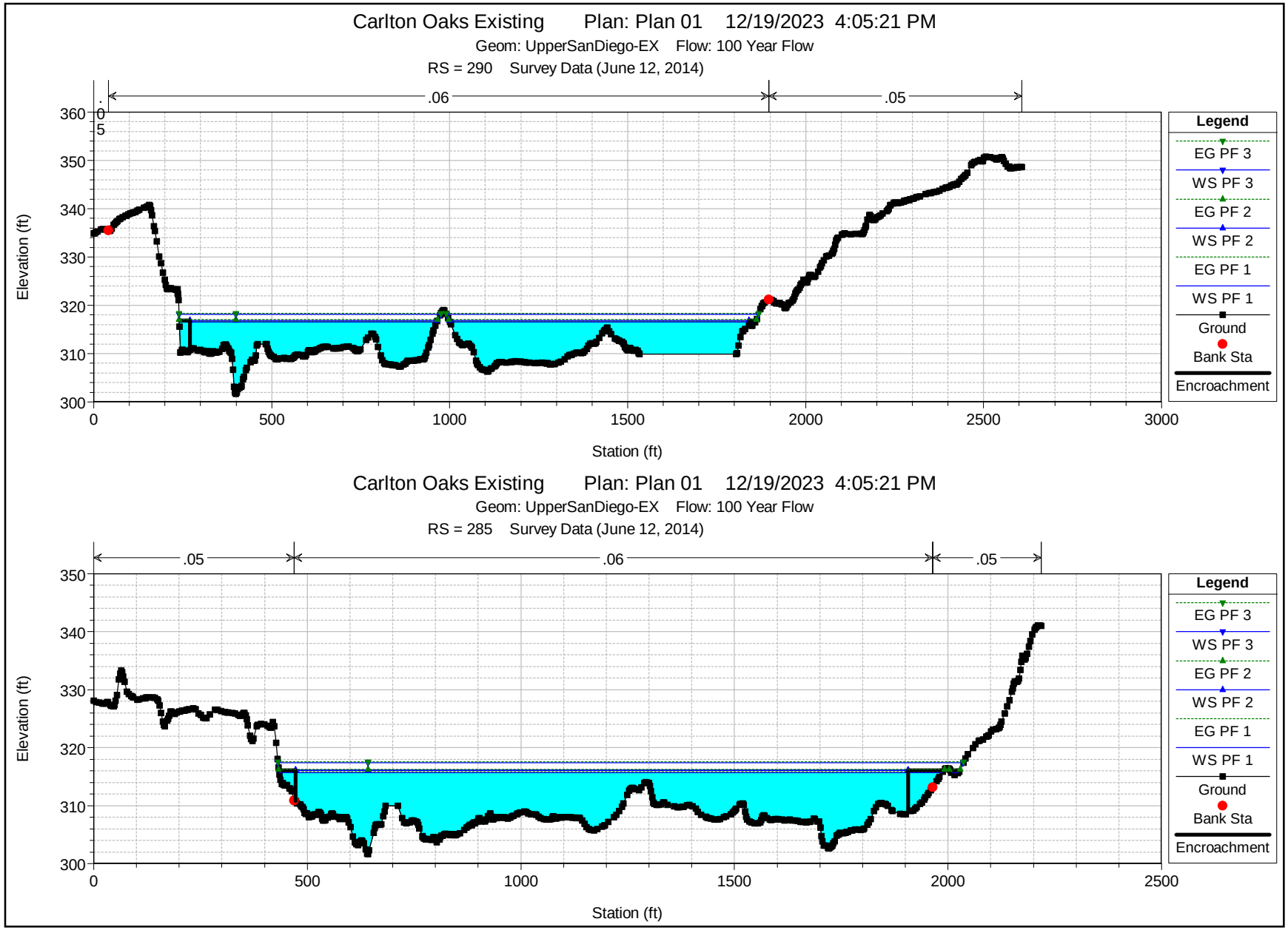

Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
San Diego River Reach 1
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
2000
4000
6000
8000
10000
12000
Main Channel Distance (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground

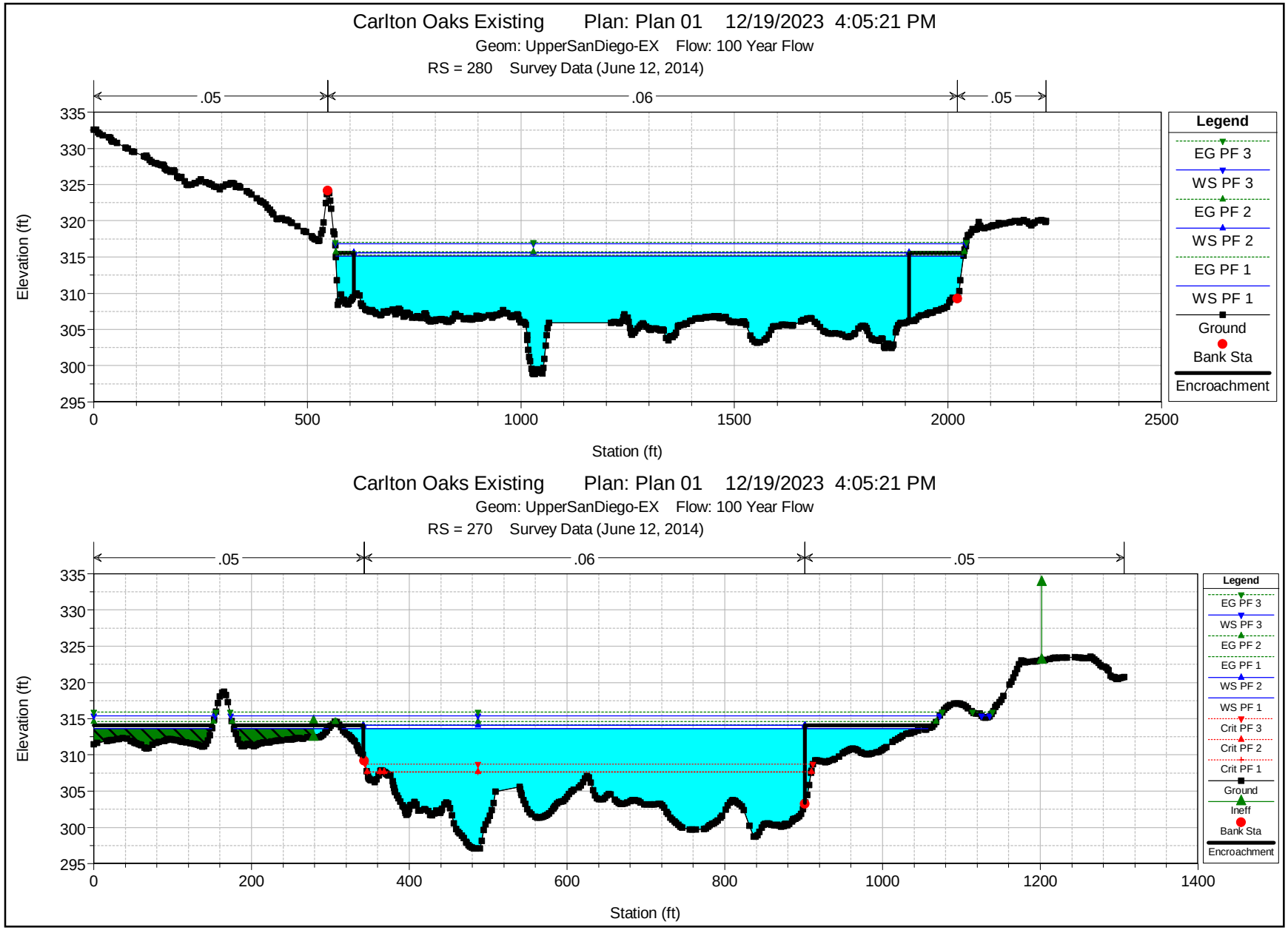

Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 355 Corrected Effective Geometry
.06
.05
.06
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 345 Corrected Effective Geometry
.06
.05
.06
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

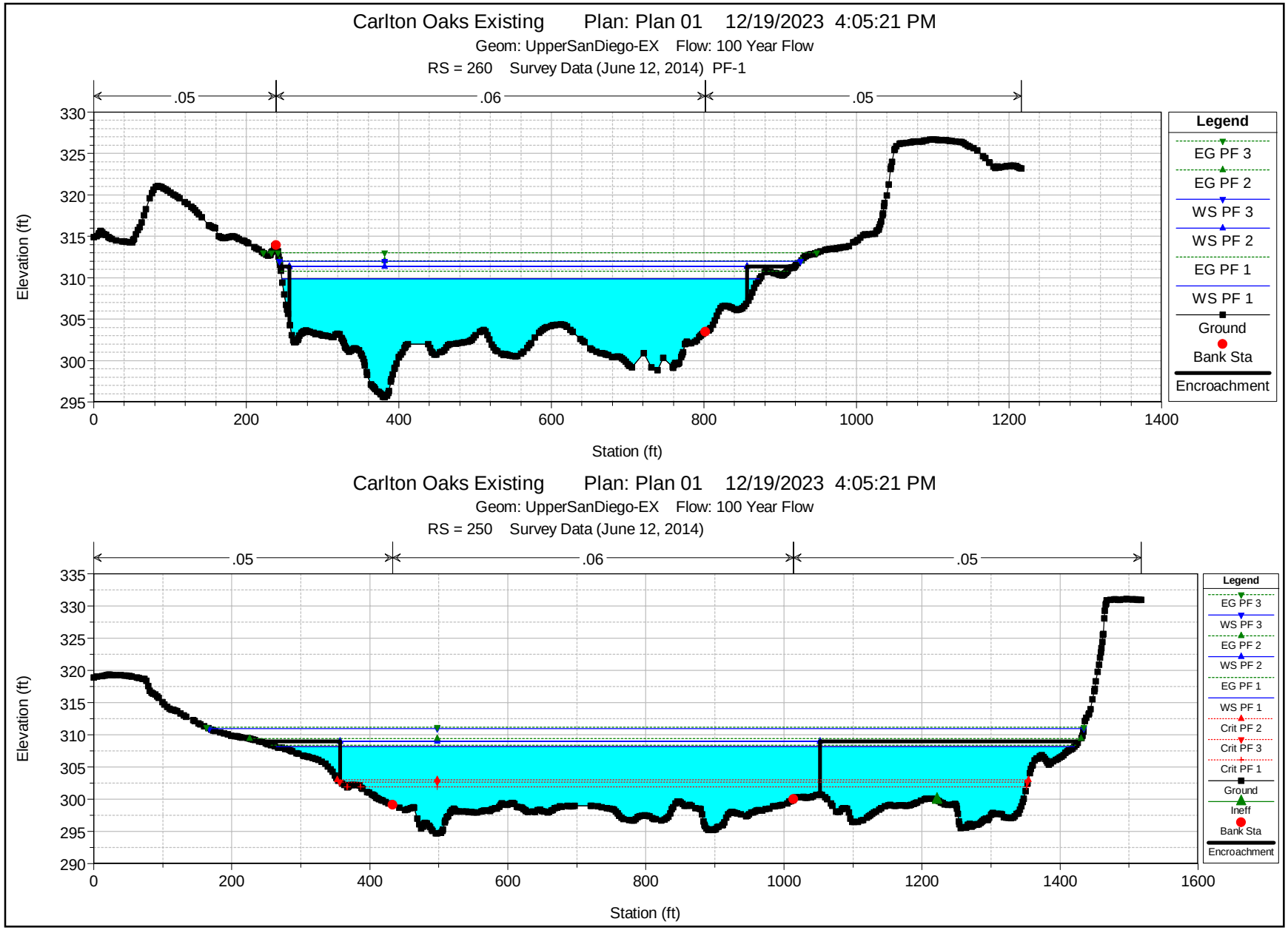

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Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 340 Corrected Effective Geometry
.06
.05
.06
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 330 Corrected Effective Geometry
.06
.035
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment

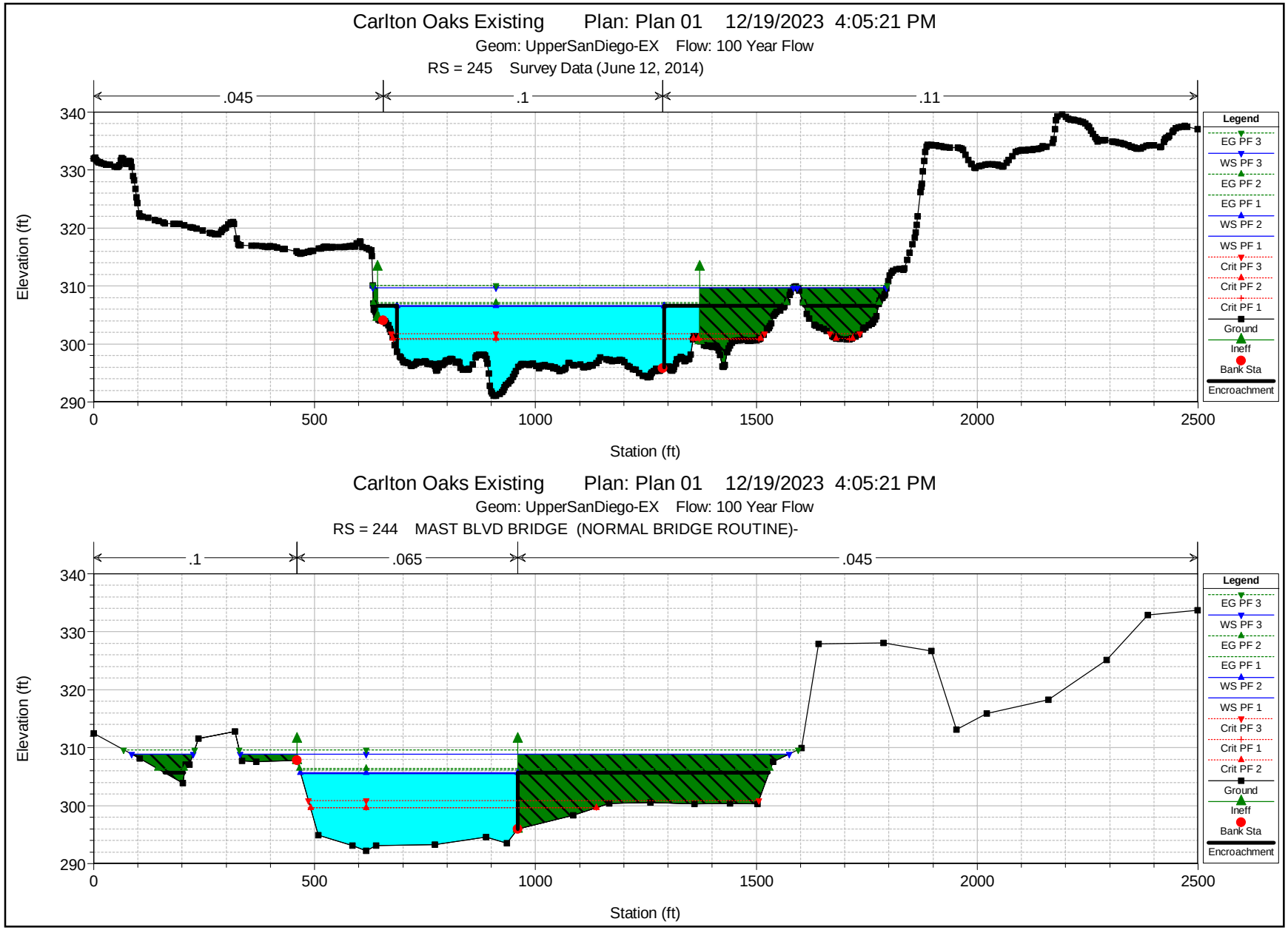

Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 320 320 start Revising per Existing Topo
.06
.035
.045
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 315 New Xsection-Survey Data (June 12, 2014)
.06
.035
.045
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment

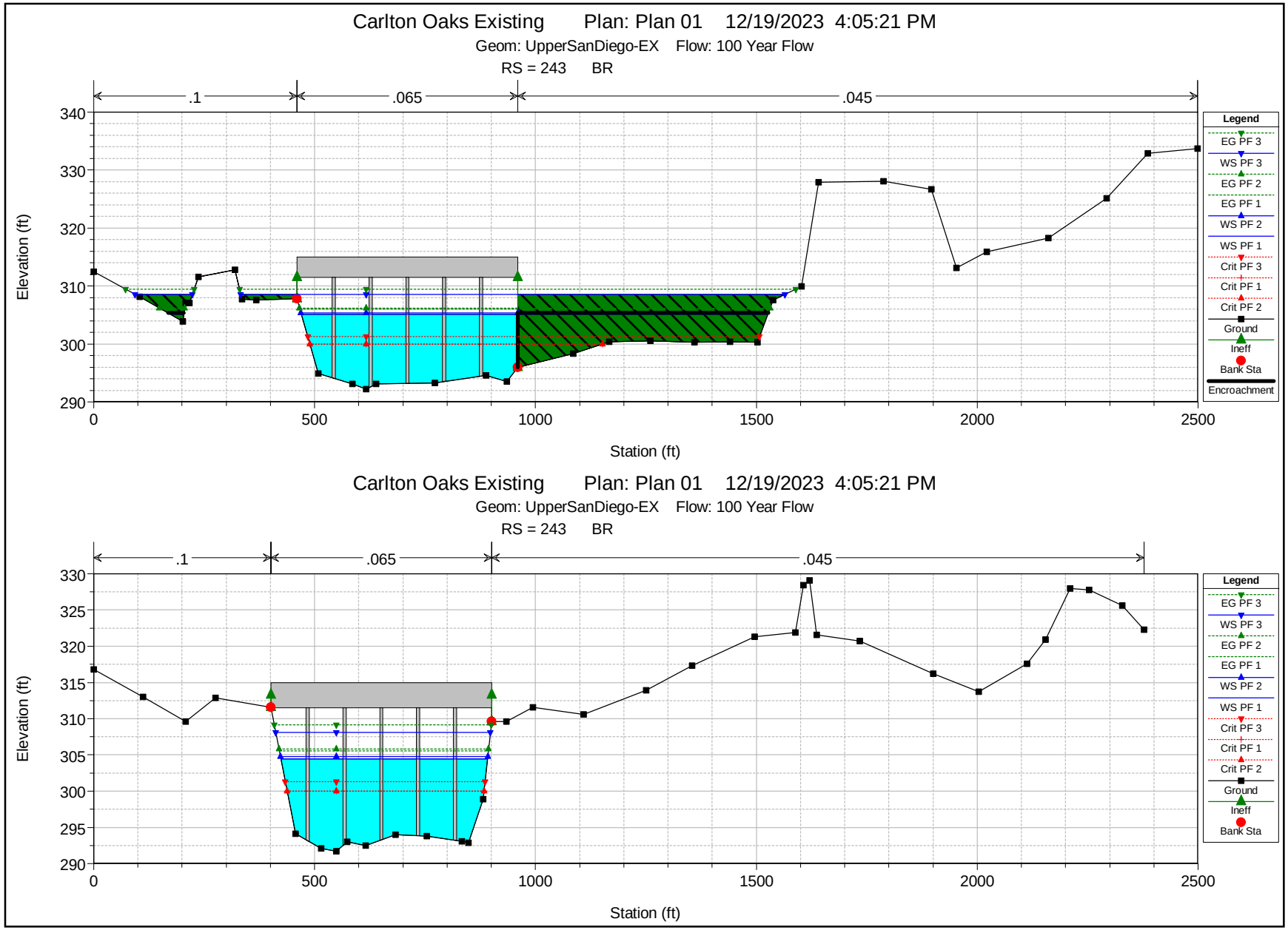

Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 310 Survey Data (June 12, 2014)
.06
.035
.045
Elevation (ft)
335
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 300 Survey Data (June 12, 2014)
.05
.06
.05
Elevation (ft)
370
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Ground
Ineff
Bank Sta
Encroachment

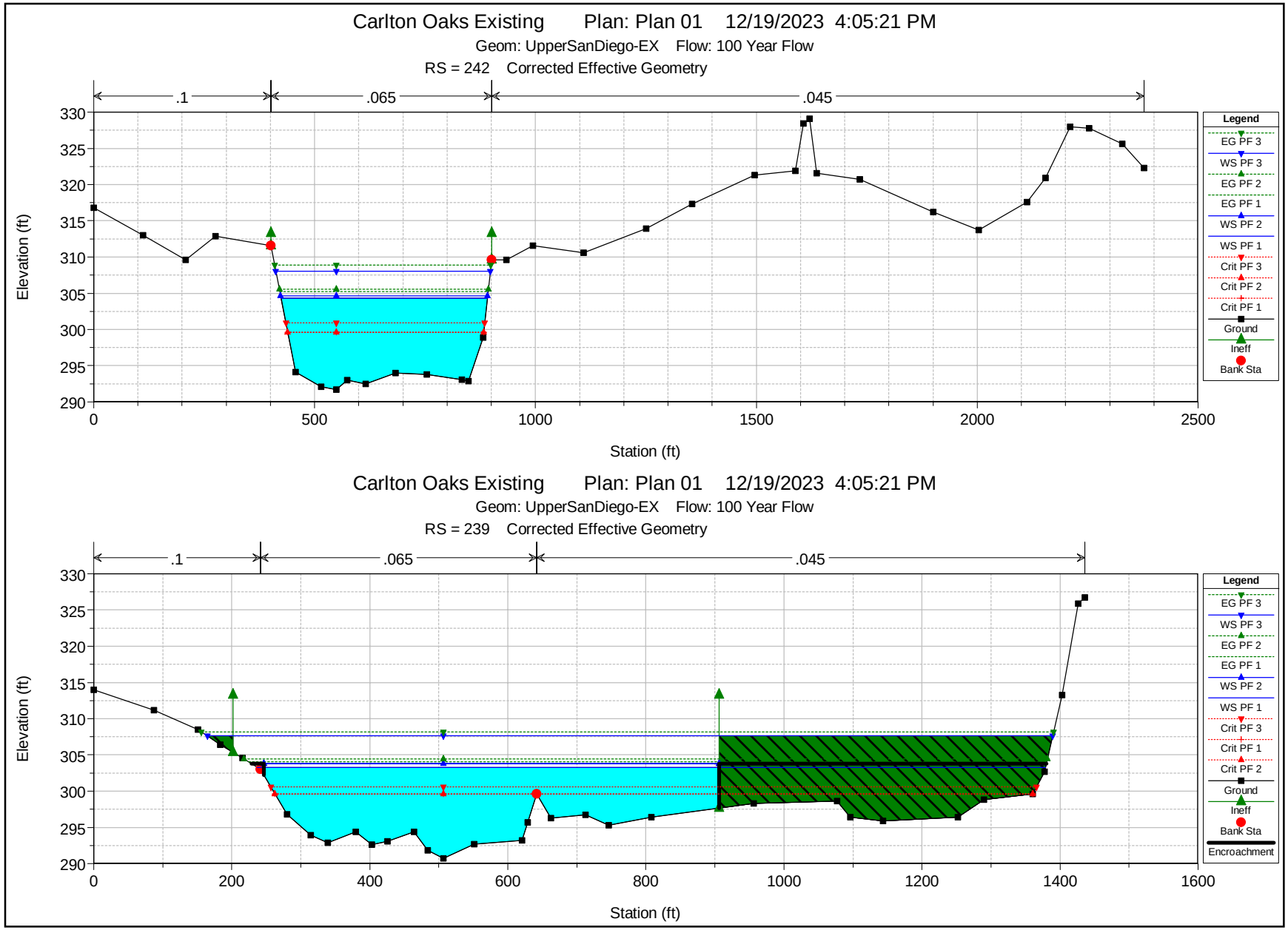

Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 290 Survey Data (June 12, 2014)
.06
.05
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Ground
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 285 Survey Data (June 12, 2014)
.05
.06
.05
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Ground
Bank Sta
Encroachment


Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 280 Survey Data (June 12, 2014)
.05
.06
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Ground
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 270 Survey Data (June 12, 2014)
.05
.06
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
0
200
400
600
800
1000
1200
1400
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment


Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 260 Survey Data (June 12, 2014) PF-1
.05
.06
.05
Elevation (ft)
Station (ft)
Legend
EG PF 3
EG PF 2
WS PF 3
WS PF 2
EG PF 1
WS PF 1
Ground
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 250 Survey Data (June 12, 2014)
.05
.06
.05
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Crit PF 2
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment


Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 245 Survey Data (June 12, 2014)
.045
.1
.11
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 244 MAST BLVD BRIDGE (NORMAL BRIDGE ROUTINE)-
.1
.065
.045
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment


Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 243 BR
.1
.065
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 243 BR
.1
.065
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta


Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 242 Corrected Effective Geometry
.1
.065
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 239 Corrected Effective Geometry
.1
.065
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
EG PF 1
WS PF 2
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

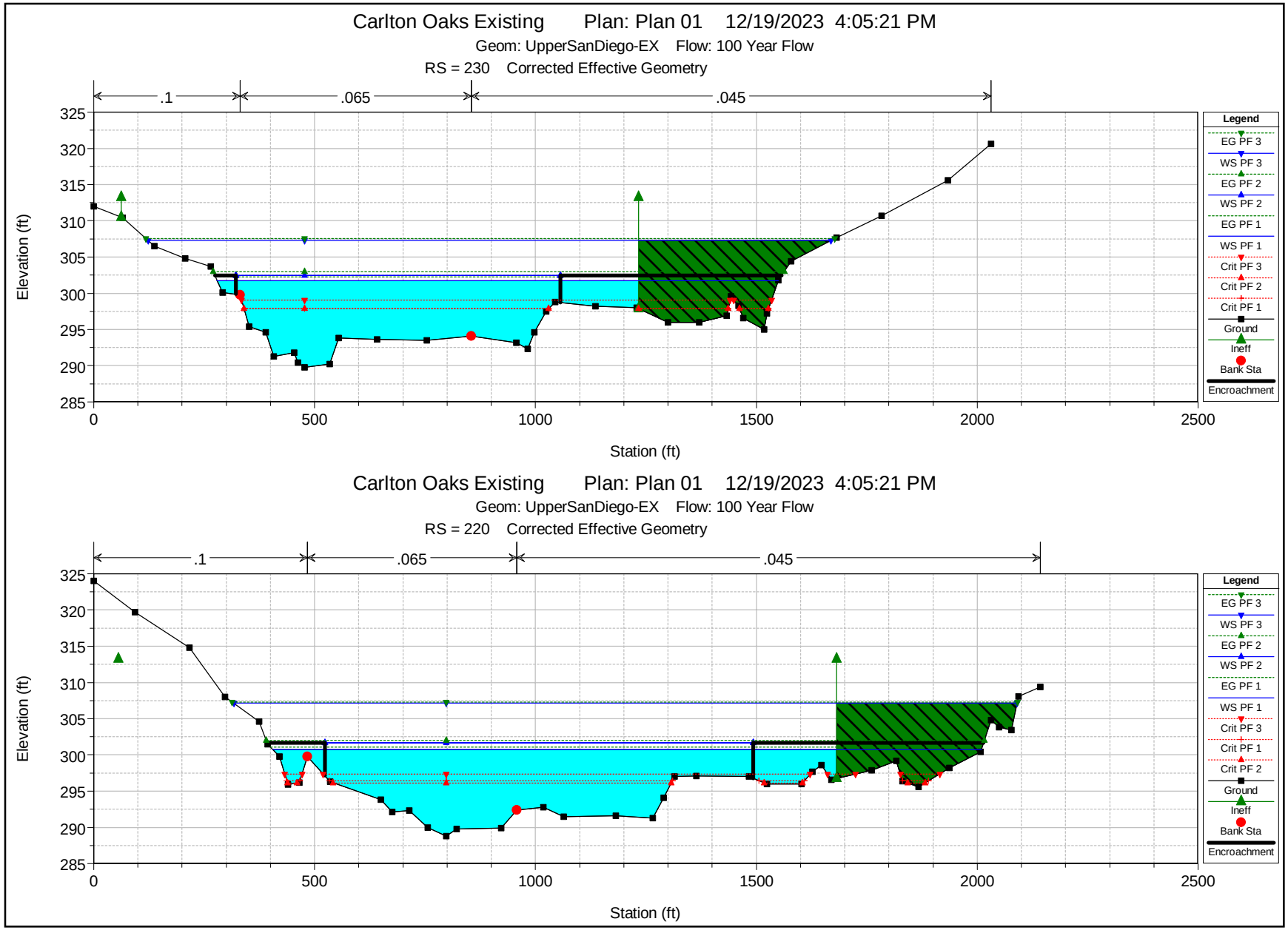

Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 230 Corrected Effective Geometry
.1
.065
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Crit PF 3
Crit PF 2
Crit PF 1
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks Existing Plan: Plan 01 12/19/2023 4:05:21 PM
Geom: UpperSanDiego-EX Flow: 100 Year Flow
RS = 220 Corrected Effective Geometry
.1
.065
.045
Elevation (ft)
Station (ft)
Legend
EG PF 3
WS PF 3
EG PF 2
WS PF 2
EG PF 1
WS PF 1
Crit PF 3
Crit PF 1
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

EXHIBIT F
POST PROJECT CONDITIONS
MODEL

POST PROJECT CONDITIONS MODEL
PLAN P01
FEMA 100-YEAR FLOODPLAIN (PF01)
FLOODPLAIN WITH BSI YEAR FLOWS (PF03)

Table A-5

Table A-5 Average Manning Roughness Coefficients for Natural Channels

Minor Streams (Surface Width at Flood Stage < 100 ft)

- Fairly Regular Section
  - (A) Some Grass and Weeds, Little or No Brush 0.030
  - (B) Dense Growth of Weeds, Depth of Flow Materially Greater Than Weed Height 0.040
  - (C) Some Weeds, Light Brush on Banks 0.040
  - (D) Some Weeds, Heavy Brush on Banks 0.060
  - (E) For Trees within Channel with Branches Submerged at High Stage, Increase All Above Values By 0.015
- Irregular Section, with Pools, Slight Channel Meander
  - Channels (A) to (E) Above, Increase All Values By 0.015
- Mountain Streams; No Vegetation in Channel, Banks Usually Steep, Trees and Brush along Banks Submerged at High Stage
  - (A) Bottom, Gravel, Cobbles and Few Boulders 0.050
  - (B) Bottom, Cobbles with Large Boulders 0.060

Flood Plains (Adjacent To Natural Streams)

- Pasture, No Brush
  - (A) Short Grass 0.030
  - (B) High Grass 0.040
- Cultivated Areas
  - (A) No Crop 0.040
  - (B) Mature Row Crops 0.040
  - (C) Mature Field Crops 0.050
- Heavy Weeds, Scattered Brush 0.050
- Light Brush and Trees 0.060
- Medium To Dense Brush 0.090
- Dense Willows 0.170
- Cleared Land with Tree Stumps, 100-150 Per Acre 0.060
- Heavy Stand of Timber, Little Undergrowth
  - (A) Flood Depth below Branches 0.110
  - (B) Flood Depth Reaches Branches 0.140

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Carlton Oaks PR
Project File : CarltonOaksPR.prj
Run Date and Time: 2/7/2024 1:49:05 PM

Project in English units

Project Description:
UPPER SAN DIEGO RIVER PROPOSED CONDITIONS
Profile 1 FEMA
100-Year Floodplain, Profile 2 FEMA Floodwy, Profile 3 BSI 100-Year
Flow
Revised Existing topo+ Proposed 2023
Floodway proposed
conditions

PLAN DATA

Plan Title: Plan 01
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.p01

Geometry Title: revised-UpperSanDiego-PR
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.g01

Flow Title : 100 Year Flow
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.f01

Plan Summary Information:
Number of: Cross Sections = 20 Multiple Openings = 0

```
            Culverts       =    0    Inline Structures  =    0
            Bridges        =    1    Lateral Structures =    1

Computational Information
    Water surface calculation tolerance  =  0.01
    Critical depth calculation tolerance =  0.01
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.3
    Flow tolerance factor                =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow

Encroachment Data
   Equal Conveyance = True
   Left Offset      =        0
   Right Offset     =        0

River = San Diego River  Reach = Reach 1
RS      Profile           Method  Value1  Value2
355     PF 2                   1  1604.5  2269.4
345     PF 2                   1  1217.3  2147.3
340     PF 2                   1  1147.2  2067.2
330     PF 2                   1  1293.6  2138.6
320     PF 2                   1   848.3  1725.2
315     PF 2                   1     831  1690.6
310     PF 2                   1   559.1  1277.4
300     PF 2                   1   434.3  1520.7
290     PF 2                   1   250.7    1725
285     PF 2                   1   472.1  1907.1
280     PF 2                   1   608.4  1908.4
270     PF 2                   1   341.7   901.7
260     PF 2                   1   256.7   856.7
250     PF 2                   1     357    1052
245     PF 2                   1   686.6  1291.6
244     PF 2                   1   459.7   960.1
242     PF 2                   1     401   900.5
239     PF 2                   1   246.2   906.2
230     PF 2                   1   321.8  1056.8
220     PF 2                   1   522.9  1492.9



FLOW DATA

Flow Title: 100 Year Flow
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.f01
```

Flow Data (cfs)

River	Reach	RS	PF 1	PF 2	PF 3	PF 4	PF 5	PF 6
San Diego River	Reach 1	355	36000	36000	48000	4500	16000	21333
San Diego River	Reach 1	320	37000	37000	49000	5000	17000	22513
San Diego River	Reach 1	260	38000	38000	50000	5500	19000	25000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Diego River	Reach 1	PF 1		Known WS = 300.76
San Diego River	Reach 1	PF 2		Known WS = 301.66
San Diego River	Reach 1	PF 3		Known WS = 307.13
San Diego River	Reach 1	PF 4		Known WS = 300.76
San Diego River	Reach 1	PF 5		Known WS = 300.76
San Diego River	Reach 1	PF 6		Known WS = 301

GEOMETRY DATA

Geometry Title: revised-UpperSanDiego-PR
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.g01

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 355

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.6	54.1	329.6	64.2	325.6	78.6	322.7	125.3	322.5
191.1	321.9	199.7	330.5	303.1	330.6	305.9	328.2	314.9	330.2
343.4	331	443.3	330.1	543	331.4	551.9	329.8	608.6	330
615.1	337.4	640.3	337.4	643.6	329.1	672	328.4	743.1	329.5
746.8	336.5	789.9	336.5	793.5	328.9	836.7	328.9	980.7	324.9
1031	325	1062.7	326.6	1066.4	336.1	1083.8	336.3	1090.8	326.3
1156	325.6	1239.4	323.7	1275.1	321.6	1361.3	321	1418.6	319.8
1446.7	316.6	1469.1	316.3	1506.5	316.7	1516.7	310.8	1537.2	310.1
1551.7	310.8	1563.9	314.9	1590.3	315.8	1604.5	319.7	1616.8	316.1
1666	315.1	1720.1	313.8	1733.1	311.4	1933.3	311.5	2090.2	312
2112.2	314.2	2137	316.4	2145.2	320.2	2164.3	321.8	2196.4	318.6
2209	313.6	2229.8	312.6	2258.6	312.6	2294	313.5	2306.7	315.2
2330.7	319.2	2365.6	319.9	2417.7	320.5	2464.8	318.9	2487.3	317.9
2527.9	317.8	2547.1	318.7	2582	322.5	2592.6	324.2	2640.3	323.9
2733.3	326	2773.3	328.7	2799.6	328.3	2837.5	329.1	2881.4	328.9

2888.7	330.5	2924.8	331.4	2990.2	330.4	2995.2	332.8	3009.4	332.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1604.5	.05	2417.7	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1604.5	2417.7	360	310	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1604.5	326	F
2417.7	3009.4	326	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	322.36	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.53	Wt. n-Val.		0.050		
W.S. Elev (ft)	321.84	Reach Len. (ft)	360.00	310.00	350.00	
Crit W.S. (ft)	317.36	Flow Area (sq ft)		6191.11		
E.G. Slope (ft/ft)	0.002571	Area (sq ft)	1371.36	6191.11	453.83	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00		
Top Width (ft)	1304.83	Top Width (ft)	333.42	813.20	158.21	
Vel Total (ft/s)	5.81	Avg. Vel. (ft/s)		5.81		
Max Chl Dpth (ft)	11.74	Hydr. Depth (ft)		7.61		
Conv. Total (cfs)	710022.3	Conv. (cfs)		710022.3		
Length Wtd. (ft)	310.00	Wetted Per. (ft)		816.68		
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.22		
Alpha	1.00	Stream Power (lb/ft s)		7.07		
Frctn Loss (ft)	0.67	Cum Volume (acre-ft)	91.83	1664.91	157.75	
C & E Loss (ft)	0.05	Cum SA (acres)	28.45	213.79	30.69	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	323.88	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.67	Wt. n-Val.		0.050		
W.S. Elev (ft)	323.21	Reach Len. (ft)	360.00	310.00	350.00	
Crit W.S. (ft)	318.35	Flow Area (sq ft)		7307.35		
E.G. Slope (ft/ft)	0.002630	Area (sq ft)	1941.38	7307.35	678.90	
Q Total (cfs)	48000.00	Flow (cfs)		48000.00		
Top Width (ft)	1455.01	Top Width (ft)	473.09	813.20	168.72	
Vel Total (ft/s)	6.57	Avg. Vel. (ft/s)		6.57		
Max Chl Dpth (ft)	13.11	Hydr. Depth (ft)		8.99		
Conv. Total (cfs)	935960.6	Conv. (cfs)		935960.6		
Length Wtd. (ft)	310.00	Wetted Per. (ft)		816.68		
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.47		
Alpha	1.00	Stream Power (lb/ft s)		9.65		
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	155.69	2086.47	291.64	
C & E Loss (ft)	0.07	Cum SA (acres)	36.91	216.43	34.92	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	319.98	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.35	Wt. n-Val.		0.050		
W.S. Elev (ft)	319.63	Reach Len. (ft)	360.00	310.00	350.00	
Crit W.S. (ft)	315.93	Flow Area (sq ft)		4477.88		
E.G. Slope (ft/ft)	0.002199	Area (sq ft)	832.13	4477.88	138.16	
Q Total (cfs)	21333.00	Flow (cfs)		21333.00		
Top Width (ft)	1001.68	Top Width (ft)	184.14	705.24	112.30	
Vel Total (ft/s)	4.76	Avg. Vel. (ft/s)		4.76		
Max Chl Dpth (ft)	9.53	Hydr. Depth (ft)		6.35		
Conv. Total (cfs)	454944.4	Conv. (cfs)		454944.4		
Length Wtd. (ft)	310.00	Wetted Per. (ft)		708.41		
Min Ch El (ft)	311.40	Shear (lb/sq ft)		0.87		
Alpha	1.00	Stream Power (lb/ft s)		4.13		
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	49.00	1234.13	129.09	
C & E Loss (ft)	0.04	Cum SA (acres)	15.59	204.80	28.27	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 345

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.5	49.4	329.1	102.6	328.5	110.8	325.5	147.2	324.7
222.2	324.8	279.9	324	297.8	318.7	332.6	318.3	342	322.6
352.2	328.6	409	329.7	414.3	338.4	436.9	338.4	443.4	329.4
479.4	328.7	533.4	328.1	539.9	334.4	654.6	334.4	663.1	327.7
761.2	327.7	831.1	325.5	841.3	334.3	870.8	334.3	875.7	325.4
919.5	323.7	960.7	323.6	995.9	324.3	1000.4	333.1	1039.7	333.1
1042.9	325.3	1092.1	322.8	1111.7	320.1	1171.1	320.2	1196.7	319
1218.4	314.4	1243.9	313.4	1260.5	315.7	1277.7	315.6	1287.1	312.5
1308.4	310.6	1331.5	309.8	1349.3	310.6	1357.5	314	1406.2	313.9
1473.3	313.3	1479.5	310	1754.1	310	1768.6	320.8	1784.4	328.6
1796.2	329.8	1811.8	323.1	1827.4	315.1	1847.9	313.7	1865	315.1
1881.8	319.8	1899.8	323.5	1942.8	322.9	1993.1	319.8	2004.9	316.5
2015.6	312.2	2033.1	312.5	2061.4	312.9	2065.9	312.2	2147.9	312.2
2160.3	316.1	2180.3	319.1	2223.2	319.9	2242.8	318	2258.3	317.9
2273.1	319.4	2284.9	321.6	2294.3	324.2	2319.3	325.5	2321.4	351.5
2360.3	351.5	2366.8	331.2	2419.1	331.4	2422.9	347.8	2478	347.8

```
  2482.6   330.3  2500.2   330.1  2540.7   330.6  2574.2   329.3    2587   329.7
  2658.4   333.8  2742.3   337.4

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06  1092.1     .05  2294.3     .06

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        1092.1  2294.3             400     335     125             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
       0   742.3     326       F

CROSS SECTION OUTPUT  Profile #PF 1

  E.G. Elev (ft)            321.64    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.35    Wt. n-Val.                           0.050
  W.S. Elev (ft)            321.29    Reach Len. (ft)          400.00     335.00     125.00
  Crit W.S. (ft)            316.13    Flow Area (sq ft)                  7598.52
  E.G. Slope (ft/ft)      0.001853    Area (sq ft)             118.11    7598.52
  Q Total (cfs)           36000.00    Flow (cfs)                        36000.00
  Top Width (ft)           1104.57    Top Width (ft)            50.07    1054.50
  Vel Total (ft/s)            4.74    Avg. Vel. (ft/s)                     4.74
  Max Chl Dpth (ft)          11.49    Hydr. Depth (ft)                     7.21
  Conv. Total (cfs)       836355.9    Conv. (cfs)                       836355.9
  Length Wtd. (ft)          335.00    Wetted Per. (ft)                  1066.04
  Min Ch El (ft)            309.80    Shear (lb/sq ft)                     0.82
  Alpha                       1.00    Stream Power (lb/ft s)               3.91
  Frctn Loss (ft)             0.60    Cum Volume (acre-ft)       85.67    1615.84     155.92
  C & E Loss (ft)             0.00    Cum SA (acres)             26.86     207.14      30.05


Warning: Divided flow computed for this cross-section.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #PF 3

  E.G. Elev (ft)            323.12    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.43    Wt. n-Val.                           0.050
  W.S. Elev (ft)            322.68    Reach Len. (ft)          400.00     335.00     125.00
  Crit W.S. (ft)            317.04    Flow Area (sq ft)                  9105.89
  E.G. Slope (ft/ft)      0.001920    Area (sq ft)             193.41    9105.89
  Q Total (cfs)           48000.00    Flow (cfs)                        48000.00
  Top Width (ft)           1163.00    Top Width (ft)            57.80    1105.21
  Vel Total (ft/s)            5.27    Avg. Vel. (ft/s)                     5.27
  Max Chl Dpth (ft)          12.88    Hydr. Depth (ft)                     8.24
  Conv. Total (cfs)      1095560.0     Conv. (cfs)                      1095560.0
  Length Wtd. (ft)          335.00    Wetted Per. (ft)                  1117.86
  Min Ch El (ft)            309.80    Shear (lb/sq ft)                     0.98
  Alpha                       1.00    Stream Power (lb/ft s)               5.15
  Frctn Loss (ft)             0.62    Cum Volume (acre-ft)      146.87    2028.07     288.91
  C & E Loss (ft)             0.00    Cum SA (acres)             34.72     209.61      34.24
```

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	319.40	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.23	Wt. n-Val.		0.050		
W.S. Elev (ft)	319.17	Reach Len. (ft)	400.00	335.00	125.00	
Crit W.S. (ft)	314.77	Flow Area (sq ft)		5528.71		
E.G. Slope (ft/ft)	0.001436	Area (sq ft)	24.49	5528.71		
Q Total (cfs)	21333.00	Flow (cfs)		21333.00		
Top Width (ft)	900.45	Top Width (ft)	38.29	862.16		
Vel Total (ft/s)	3.86	Avg. Vel. (ft/s)		3.86		
Max Chl Dpth (ft)	9.37	Hydr. Depth (ft)		6.41		
Conv. Total (cfs)	562915.1	Conv. (cfs)		562915.1		
Length Wtd. (ft)	335.00	Wetted Per. (ft)		871.83		
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.57		
Alpha	1.00	Stream Power (lb/ft s)		2.19		
Frctn Loss (ft)	0.51	Cum Volume (acre-ft)	45.46	1198.53	128.54	
C & E Loss (ft)	0.00	Cum SA (acres)	14.67	199.22	27.82	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 340

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.7	43.2	327	89.6	327.9	94.4	326.4	102.4	324.9
130	324.1	201.6	323.1	232.8	323.6	287.2	322.5	301.2	321
312	313.1	344	313.4	353.2	317.7	361.6	325.1	382.4	325.4
408.1	327.2	412.5	335.5	452.9	335.5	458.9	325.8	498.9	324.4
541.7	325.2	559.3	325.7	597.3	325.8	630.1	325.1	705.7	324.9
806.9	325.7	889.8	326.1	895.4	334.3	917.8	334.3	923	326.1
955.8	324.1	987.8	325	1016.2	326	1018.6	336	1056.2	333.6
1063.4	326	1106.2	324.8	1119.4	322.7	1140.2	317.5	1166.2	311.8
1172.3	311.9	1182.7	315.6	1195.5	316.1	1201.1	310.6	1207.1	309.9
1243.1	310.6	1276.3	315.7	1331.9	314.9	1350.7	311.8	1408.7	311
1417.5	310.4	1588.3	310.4	1600	315.1	1626.4	315.7	1674.8	315.4
1693.2	314.2	1722.4	314.4	1733.6	315.6	1752.4	317.4	1782.8	317.3
1799.2	314.2	1807.6	311.3	1847.6	311.2	1929.2	311.9	1958.5	312.9
1963.3	312.2	2053.3	312.2	2071.3	314.7	2096.5	316.6	2114.1	319.8
2130.9	323.4	2156.1	324.1	2158.5	347.5	2320.2	347.5	2326.6	330.3

2339.4	330.2	2347.8	331	2388.2	331.3	2422.2	330.3	2449	331.8
2492.2	332.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1106.2	.05	2130.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1106.2	2130.9	575	454	575	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	992.2	326	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.04	Element			
Vel Head (ft)	0.35	Wt. n-Val.		0.050	
W.S. Elev (ft)	320.68	Reach Len. (ft)	575.00	454.00	575.00
Crit W.S. (ft)	316.27	Flow Area (sq ft)		7551.36	
E.G. Slope (ft/ft)	0.001732	Area (sq ft)	329.46	7551.36	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	1045.71	Top Width (ft)	54.95	990.76	
Vel Total (ft/s)	4.77	Avg. Vel. (ft/s)		4.77	
Max Chl Dpth (ft)	10.78	Hydr. Depth (ft)		7.62	
Conv. Total (cfs)	864948.1	Conv. (cfs)		864948.1	
Length Wtd. (ft)	460.65	Wetted Per. (ft)		997.97	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.82	
Alpha	1.00	Stream Power (lb/ft s)		3.90	
Frctn Loss (ft)	0.75	Cum Volume (acre-ft)	83.62	1557.58	155.92
C & E Loss (ft)	0.02	Cum SA (acres)	26.38	199.28	30.05

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	322.49	Element			
Vel Head (ft)	0.45	Wt. n-Val.		0.050	
W.S. Elev (ft)	322.04	Reach Len. (ft)	575.00	454.00	575.00
Crit W.S. (ft)	317.07	Flow Area (sq ft)		8901.04	
E.G. Slope (ft/ft)	0.001809	Area (sq ft)	410.47	8901.04	
Q Total (cfs)	48000.00	Flow (cfs)		48000.00	
Top Width (ft)	1069.10	Top Width (ft)	66.61	1002.49	
Vel Total (ft/s)	5.39	Avg. Vel. (ft/s)		5.39	
Max Chl Dpth (ft)	12.14	Hydr. Depth (ft)		8.88	
Conv. Total (cfs)	1128604.0	Conv. (cfs)		1128604.0	
Length Wtd. (ft)	461.00	Wetted Per. (ft)		1010.02	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		1.00	
Alpha	1.00	Stream Power (lb/ft s)		5.37	
Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	144.10	1958.83	288.91
C & E Loss (ft)	0.02	Cum SA (acres)	34.15	201.50	34.24

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	318.89	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.23	Wt. n-Val.		0.050		
W.S. Elev (ft)	318.66	Reach Len. (ft)	575.00	454.00	575.00	
Crit W.S. (ft)	314.81	Flow Area (sq ft)		5562.87		
E.G. Slope (ft/ft)	0.001642	Area (sq ft)	223.28	5562.87		
Q Total (cfs)	21333.00	Flow (cfs)		21333.00		
Top Width (ft)	1022.14	Top Width (ft)	49.89	972.25		
Vel Total (ft/s)	3.83	Avg. Vel. (ft/s)		3.83		
Max Chl Dpth (ft)	8.76	Hydr. Depth (ft)		5.72		
Conv. Total (cfs)	526417.0	Conv. (cfs)		526417.0		
Length Wtd. (ft)	459.90	Wetted Per. (ft)		979.02		
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.58		
Alpha	1.00	Stream Power (lb/ft s)		2.23		
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	44.33	1155.88	128.54	
C & E Loss (ft)	0.01	Cum SA (acres)	14.27	192.17	27.82	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 330

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 85

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.4	6.4	340.1	55	340.1	58.2	328.3	141.2	326.1
185.4	328.3	231.5	330.2	243.2	325.1	474.7	320.1	525.2	321.6
540.1	314.3	568.2	309.9	581	309.8	589.9	316.6	600.7	322.8
620.3	323.5	669.7	323.1	674.1	332	706.7	332	712.3	323.7
739.5	322.4	776.4	322.4	806.9	323.4	811.9	331	853.1	331
858	323.1	901.3	324.3	907.3	326.5	951	327.2	1025.7	326.7
1077.9	326.6	1084.3	329.3	1104.3	330.1	1107.6	336.6	1151.7	336.6
1157.3	329.8	1199.9	326	1239.6	321.9	1254.4	316.3	1272.1	314.1
1309.8	313.3	1339.5	311.3	1353.9	308.6	1358.9	308.5	1370.2	308.6
1379.5	312	1426.4	313.8	1487.8	313.6	1504.2	310.2	1521.1	310.2
1556	313.2	1606.6	312.6	1668.3	312.9	1684.4	310	1832	310
1836.4	313.3	1844.4	317.8	1861.7	321.4	1879.7	316.5	1889.8	313.5
1945.9	314.8	1981.6	314	1996.9	322.1	2003.7	324.8	2013.3	323.4
2025.8	316.7	2041	312.5	2131.8	312.5	2142.6	314.9	2166.3	315.9
2183.1	318	2194.4	324.4	2217.2	324.6	2220.1	351.3	2263	351.3

2269.4	330.5	2329.6	329.8	2330.9	346.6	2382.3	346.6	2388.7	328.4
2403.5	325.8	2442.1	325.9	2477.4	324.8	2511.5	327.4	2573.6	331.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1239.6	.035	2003.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1239.6	2003.7	620	588	620 .1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1173.6	329.3	F
2187.3	2573.6	321.5	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	320.27	Element			
Vel Head (ft)	0.55	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	319.72	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	316.37	Flow Area (sq ft)		5231.39	958.23
E.G. Slope (ft/ft)	0.001534	Area (sq ft)	436.86	5231.39	958.23
Q Total (cfs)	36000.00	Flow (cfs)		32045.74	3954.26
Top Width (ft)	965.04	Top Width (ft)	66.29	732.78	165.97
Vel Total (ft/s)	5.82	Avg. Vel. (ft/s)		6.13	4.13
Max Chl Dpth (ft)	11.22	Hydr. Depth (ft)		7.14	5.77
Conv. Total (cfs)	919010.4	Conv. (cfs)		818065.8	100944.6
Length Wtd. (ft)	589.77	Wetted Per. (ft)		740.03	168.16
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.68	0.55
Alpha	1.04	Stream Power (lb/ft s)		4.15	2.25
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	78.56	1490.97	149.60
C & E Loss (ft)	0.01	Cum SA (acres)	25.58	190.30	28.96

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.68	Element			
Vel Head (ft)	0.69	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	320.99	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	317.23	Flow Area (sq ft)		6176.58	1172.53
E.G. Slope (ft/ft)	0.001596	Area (sq ft)	556.45	6176.58	1172.86
Q Total (cfs)	48000.00	Flow (cfs)		42442.95	5557.05
Top Width (ft)	1062.59	Top Width (ft)	142.61	749.38	170.60
Vel Total (ft/s)	6.53	Avg. Vel. (ft/s)		6.87	4.74
Max Chl Dpth (ft)	12.49	Hydr. Depth (ft)		8.24	6.92
Conv. Total (cfs)	1201422.0	Conv. (cfs)		1062331.0	139090.7
Length Wtd. (ft)	589.88	Wetted Per. (ft)		757.48	172.20
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.81	0.68
Alpha	1.04	Stream Power (lb/ft s)		5.58	3.22
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	137.72	1880.25	281.17

C & E Loss (ft)	0.01	Cum SA (acres)	32.77	192.37	33.12

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	318.16	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	317.79	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	315.11	Flow Area (sq ft)		3841.34	644.82
E.G. Slope (ft/ft)	0.001477	Area (sq ft)	315.96	3841.34	644.82
Q Total (cfs)	21333.00	Flow (cfs)		19250.89	2082.11
Top Width (ft)	924.34	Top Width (ft)	58.99	707.70	157.64
Vel Total (ft/s)	4.76	Avg. Vel. (ft/s)		5.01	3.23
Max Chl Dpth (ft)	9.29	Hydr. Depth (ft)		5.43	4.09
Conv. Total (cfs)	555055.1	Conv. (cfs)		500881.5	54173.6
Length Wtd. (ft)	589.55	Wetted Per. (ft)		713.67	158.89
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.50	0.37
Alpha	1.05	Stream Power (lb/ft s)		2.49	1.21
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	40.77	1106.87	124.28
C & E Loss (ft)	0.01	Cum SA (acres)	13.55	183.41	26.78

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

LATERAL STRUCTURE

RIVER: San Diego River
REACH: Reach 1 RS: 322

INPUT
Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 100
Weir Coefficient = 3.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	323.5	75	323.5

Weir crest shape = Broad Crested

Number of Culverts = 4

Culvert Name	Shape	Rise	Span
Culvert #1	Box	8	10.5

```
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Inlet control
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                       88     .013     .013        0                  .2               .3
Upstream   Elevation =  313
           Centerline Station =  10
Downstream Elevation =  312.5
           Centerline Station =  10

Culvert Name     Shape      Rise    Span
Culvert #2           Box       8    10.5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                       78     .013     .013        0                  .2               .3
Upstream   Elevation =  313
           Centerline Station =  23
Downstream Elevation =  312.5
           Centerline Station =  23

Culvert Name     Shape      Rise    Span
Culvert #3           Box       8    10.5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                     68.3      .013     .013        0                  .2               .3
Upstream   Elevation =  313
           Centerline Station =  36
Downstream Elevation =  312.5
           Centerline Station =  36

Culvert Name     Shape      Rise    Span
Culvert #4           Box       8    10.5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                       50     .013     .013        0                  .2               .3
Upstream   Elevation =  313
           Centerline Station =  49
Downstream Elevation =  312.5
           Centerline Station =  49

CROSS SECTION


RIVER: San Diego River
REACH: Reach 1           RS: 320
```

INPUT
Description: 320 start Revising per Existing Topo and Proposed grading.Resort
East
From Stations 0 to 1290.09, Geometry from the corrected
effective model.(Forrest Creek - Offsite existing
development).
start regrading at station 1290.09
Station 1738.31
to 1927 proposed resort n =0.15
In the non-disturbed area,
Manning's coefficients are derived from the Corrected Effective
Model.
Station Elevation Data num= 166

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.2	87.1	328.7	92.7	326.3	107.2	324.6	175.5	323.9
182.3	318.9	192.7	315.6	272.6	314.6	325.3	313.5	403.2	312.7
454.2	312.2	466.6	315.2	517.6	315.1	537.3	318.8	599.9	317.9
610.4	311.7	619.6	307.3	648.9	307.4	661	310.6	672.6	318.3
703.6	319.2	777.4	317.9	847.7	319	889.9	316.7	923.2	312
950.9	309.6	963	307.2	1073.2	307.2	1141.4	307.3	1193.1	308.7
1250.2	308.5	1290.09	320	1342.26	316	1356.77	314	1366.58	313
1369.82	311	1457.79	311	1504.75	312	1590.76	314	1687.87	316
1692.08	318	1703.35	318	1724.42	318	1731.81	320	1738.71	320.8
1818.46	320.6	1929.08	322	1939.46	320	1959.37	318	1974.86	314.5
2023	315.34	2029.11	315.07	2036.77	314.66	2039.32	314.61	2046.8	314.62
2049.53	314.7	2052.08	314.59	2057.38	314.64	2062.29	314.84	2067.4	314.74
2072.5	314.96	2076.43	312.07	2092.92	312	2098.03	311.8	2103.14	311.22
2105.69	311.06	2108.24	311.1	2113.35	313.08	2115.9	313.67	2121	315.62
2126.11	316.67	2128.66	317.04	2133.77	317.22	2136.32	317.54	2138.87	318.2
2141.43	319.32	2143.98	319.82	2146.26	320.56	2149.08	321.65	2151.64	323.02
2154.19	324.02	2156.74	325.89	2164.4	326.49	2169.5	326.66	2179.72	326.74
2182.27	326.66	2188.2	326.66	2200.14	326.66	2220.56	325.88	2233.32	325.5
2248.64	325.38	2253.74	325.26	2258.85	325.57	2261.4	325.23	2263.95	324.48
2269.06	323.4	2274.16	322.81	2281.82	323.38	2289.48	323.65	2292.03	323.63
2294.59	323.78	2304.8	323.88	2312.45	323.89	2322.66	323.59	2330.32	323.06
2332.88	322.94	2343.09	323.56	2351.51	323.93	2355.85	324.38	2359.98	324.33
2371.17	323.75	2378.82	323.75	2383.93	323.82	2394.14	324.07	2401.8	324.55
2406.9	324.66	2414.56	324.71	2419.22	324.95	2424.77	325.38	2431.92	325.79
2442.5	326.03	2457.96	326.02	2465.61	325.83	2470.72	325.51	2473.27	324.65
2475.82	324.21	2480.93	323.73	2483.48	323.61	2488.59	323.53	2498.8	323.64
2503.87	323.63	2514.11	323.79	2525.03	323.76	2542.19	324.07	2547.3	324.54
2552.4	324.03	2557.51	324	2565.17	323.78	2575.38	323.86	2580.48	323.81
2585.59	323.85	2588.14	323.74	2592.74	323.78	2599.09	323.97	2603.46	324.01
2607.55	324.18	2616.02	324.39	2618.77	324.58	2623.88	325.09	2626.43	325.04
2628.71	325.18	2639.2	325.47	2643.52	325.68	2654.51	325.86	2657.06	325.94
2664.72	325.53	2667.27	325.61	2672.38	325.5	2677.49	325.56	2682.59	325.44
2692.19	325.58	2697.91	325.59	2700.46	325.68	2709.12	325.54	2717.58	325.62
2732.54	326.12								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	847.7	.035	1738.71	.15	1929.08	.03	2188.2	.045

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         847.7  2188.2              260     431     405             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     847     323       F
  1725.2 2732.54   321.5       F
```

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	319.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.		0.035	
W.S. Elev (ft)	318.89	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	314.61	Flow Area (sq ft)		6111.42	
E.G. Slope (ft/ft)	0.001361	Area (sq ft)	2382.66	6903.49	
Q Total (cfs)	35359.28	Flow (cfs)		35359.28	
Top Width (ft)	1678.78	Top Width (ft)	629.40	1049.39	
Vel Total (ft/s)	5.79	Avg. Vel. (ft/s)		5.79	
Max Chl Dpth (ft)	11.69	Hydr. Depth (ft)		7.13	
Conv. Total (cfs)	958567.4	Conv. (cfs)		958567.4	
Length Wtd. (ft)	421.10	Wetted Per. (ft)		860.62	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.60	
Alpha	1.00	Stream Power (lb/ft s)		3.49	
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	58.49	1409.07	142.78
C & E Loss (ft)	0.04	Cum SA (acres)	20.63	178.27	27.78

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	320.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.66	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	320.12	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	315.71	Flow Area (sq ft)	0.79	7183.98	
E.G. Slope (ft/ft)	0.001438	Area (sq ft)	3199.92	8226.41	
Q Total (cfs)	46848.73	Flow (cfs)	0.80	46847.93	
Top Width (ft)	1758.27	Top Width (ft)	667.06	1091.21	
Vel Total (ft/s)	6.52	Avg. Vel. (ft/s)	1.02	6.52	
Max Chl Dpth (ft)	12.92	Hydr. Depth (ft)	1.13	8.19	
Conv. Total (cfs)	1235344.0	Conv. (cfs)	21.1	1235323.0	
Length Wtd. (ft)	420.18	Wetted Per. (ft)	0.70	881.32	
Min Ch El (ft)	307.20	Shear (lb/sq ft)	0.10	0.73	
Alpha	1.00	Stream Power (lb/ft s)	0.10	4.77	
Frctn Loss (ft)	0.85	Cum Volume (acre-ft)	110.99	1783.04	272.82
C & E Loss (ft)	0.03	Cum SA (acres)	27.01	179.95	31.90

Warning: Divided flow computed for this cross-section.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	317.41	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.33	Wt. n-Val.		0.035	
W.S. Elev (ft)	317.08	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	313.02	Flow Area (sq ft)		4649.91	
E.G. Slope (ft/ft)	0.001068	Area (sq ft)	1525.82	5117.00	
Q Total (cfs)	21544.92	Flow (cfs)		21544.92	
Top Width (ft)	1334.70	Top Width (ft)	409.55	925.15	
Vel Total (ft/s)	4.63	Avg. Vel. (ft/s)		4.63	
Max Chl Dpth (ft)	9.88	Hydr. Depth (ft)		6.13	
Conv. Total (cfs)	659278.3	Conv. (cfs)		659278.3	
Length Wtd. (ft)	423.54	Wetted Per. (ft)		761.90	
Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.41	
Alpha	1.00	Stream Power (lb/ft s)		1.89	
Frctn Loss (ft)	0.88	Cum Volume (acre-ft)	27.66	1046.41	119.69
C & E Loss (ft)	0.06	Cum SA (acres)	10.22	172.39	25.65

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 315

INPUT
Description: New Xsection-
Survey Data (June 12, 2014) and proposed
grading
proposed grading starts at station # 1110.6
Station
1379.96 to 1561.13 the exisitng building and grading to
stay
proposed resort at station 1702.4 to 1970.5- n=0.15
Station Elevation Data num= 386

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.37	4.8	326.34	10.25	325.97	18.78	326.48	24.07	325.99
29.36	326.09	33.27	325.91	36.26	326.09	40.19	325.99	42.58	326.17
50.51	327.44	58.4	328.05	60.99	328.38	63.58	328.43	66.17	328.86
72.23	329	76.53	328.8	81.71	328.87	84.29	328.5	89.47	328.36
94.67	328.06	96.71	328.06	111.18	327.7	118.46	327.35	123.62	327.53

126.27	327.46	131.56	327.67	136.85	327.44	147.43	327.27	152.72	327.38
158.01	327.29	160.66	327.38	169.56	327.36	176.53	327.45	179.18	327.38
193.24	327.36	199.19	327.24	202.86	327.28	208.12	327.19	221.26	327.09
229.15	326.97	238.18	326.93	246.87	326.81	250.12	326.89	255.36	326.78
260.59	326.92	265.83	326.8	271.06	326.85	276.29	326.7	284.14	326.8
297.23	326.9	299.85	327.1	312.82	327.04	318.17	327.21	326.02	327.19
331.25	327.4	333.87	327.36	344.37	327.56	357.51	327.73	362.77	327.99
378.47	328.15	381.17	328.06	389.05	328.38	396.94	328.35	402.2	327.89
412.2	326.25	417.97	325.61	425.85	325.37	428.08	325.17	438.99	325.28
444.25	325.41	457.39	325.86	460.02	325.88	465.78	326.16	475.79	326.53
478.42	326.71	488.93	326.25	507.82	325.83	517.84	325.65	537.22	325.21
544.13	325.24	547.14	325.01	552.01	324.42	555.08	324.23	565	322.89
570.41	322.24	578.3	321.47	580.93	321.53	586.18	321.96	588.81	322.97
591.44	324.28	596.6	325.5	599.32	326.03	601.95	326.13	604.68	325.49
609.84	323.29	612.47	322.34	615.09	321.85	620.35	321.4	626.51	321.35
638.42	321.12	641.38	321	649.26	320.41	652.31	319.94	654.29	319.38
657.15	318.28	662.41	316.69	665.03	316.24	668.18	315.36	670.17	314.59
672.15	314.25	675.55	313.97	683.43	313.74	693.98	313.53	702.17	313.63
707.09	313.88	712.35	313.57	717.6	313.67	722.86	313.41	730.74	313.47
736	313.83	742.66	313.42	745.57	313.57	750.76	313.25	754.4	313.25
759.66	313.96	762.28	313.92	767.54	313.27	771.37	313.4	773.35	313.69
775.43	314.33	778.05	314.44	780.68	313.86	785.94	313.33	791.25	313.12
797.16	313.23	801.71	313.54	807.08	313.34	809.6	313.37	814.85	313.07
820.11	312.95	827.99	312.92	833.25	313.19	838.51	312.56	841.14	312.66
843.76	313.1	846.39	312.78	848.76	313.01	851.65	314.27	854.71	315.29
856.91	315.79	862.16	316.46	864.79	316.36	867.42	315.93	877.93	316.18
880.5	316	888.45	315.06	893.7	314.63	896.33	315	898.96	314.85
901.59	313.95	904.32	312.53	906.85	310.87	909.47	309.59	914.73	307.71
917.36	307.42	919.99	307.69	922.62	308.49	926	309.161	927.87	309.36
933.13	310.41	937.01	310.47	951.53	311.12	956.79	310.59	962.04	310.61
967.3	312.27	972.56	313.48	975.18	313.79	980.44	313.81	985.67	313.53
988.33	313.89	991.63	313.82	993.58	314.06	996.21	313.6	1001.47	313.6
1004.1	313.84	1006.72	313.74	1011.98	313.23	1017.24	312.48	1021.39	310.39
1025.12	308.71	1030.38	307.53	1035.64	307.86	1038.27	308.3	1042.29	309.33
1047.19	310.83	1055.13	312.98	1059.29	314.37	1064.55	316	1098.72	316
1110.6	315	1115.91	309.39	1120.66	309.14	1142.85	309	1211.52	308.1
1219.42	308	1257.7	308	1273.08	308.82	1304	309	1329.86	310.04
1358.7	313	1379.96	313.45	1382.67	313.53	1400.4	313.72	1414.13	314.06
1438.1	314.28	1443.04	314.25	1456.18	314.31	1463.9	314.28	1474.58	314.41
1477.21	314.38	1500.86	314.72	1503.49	314.82	1511.38	315.74	1514	315.87
1516.63	316.33	1519.26	316.22	1521.89	315.49	1532.4	314.76	1537.32	314.63
1543.27	314.62	1553.19	314.5	1561.13	314.16	1588.49	313.55	1613.72	316
1678.29	316	1697.3	320	1702.4	322.8	1792.31	322.8	1821	322.4
1915.15	323	1970.5	323.4	1978.53	320	1987.77	318	1997.24	315
2003.13	313	2066	312.68	2070.68	312.52	2075.95	312.1	2078.55	312.28
2083.8	312.98	2085.89	312.93	2089.05	312.56	2094.3	312.54	2102.17	311.45
2104.79	311.33	2112.66	311.47	2115.29	311.45	2120.54	312.25	2125.39	312.12
2131.03	312.33	2136.28	311.9	2144.15	311.61	2146.78	311.65	2154.65	312.57
2159.9	311.97	2162.52	311.81	2173.44	311.95	2175.64	311.85	2181.4	312.49
2186.13	312.36	2199.47	312.96	2204.5	312.58	2207.27	312.53	2213.23	313.25
2215	313.37	2222.87	312.72	2231.14	312.34	2233.13	312.4	2243.86	312.18
2246.49	312.43	2259	312.31	2262.23	312.21	2267.48	312.46	2285.84	312.92

2288.47	313.18	2293.72	313.32	2301.59	313.09	2306.84	313.26	2312.08	313.67
2322.58	313.75	2332.62	314.53	2334.6	314.59	2339.4	315	2359.32	316.43
2364.56	316.73	2375.4	317.043	2382.93	317.06	2388.79	317.31	2393.43	317.38
2401.3	317.32	2403.92	317.08	2409.17	316.88	2417.04	316.86	2424.14	317.12
2427.54	317.33	2435.41	318.26	2438.07	318.44	2440.66	319.22	2443.28	321.2
2445.91	321.69	2451.15	321.81	2462.87	321.81	2472.15	321.75	2474.77	321.61
2480.02	321.72	2482.64	322.07	2485.27	323.31	2487.89	323.95	2493.78	323.92
2498.38	322.93	2501.74	323.04	2503.73	322.84	2506.26	323.23	2511.69	322.95
2516.75	322.91	2521.64	322.48	2532.5	322.41	2537.74	322.46	2550.86	322.4
2553.49	322.22	2556.11	321.83	2558.74	321.71	2567.4	321.58	2571.86	321.45
2577.1	321.46	2584.98	321.33	2587.6	321.71	2592.85	321.51	2598.09	321.08
2600.72	321.19	2611.21	321.84	2619.09	322.09	2629.58	322.28	2632.21	322.5
2634.83	322.49	2637.45	322.14	2645.33	322	2653.2	321.75	2661.07	321.38
2671.57	321.09	2676.89	321.57	2694.74	322.28	2697.8	322.79	2703.05	322.35
2708.3	322.22	2716.17	322.34	2726.67	322.59	2734.54	322.59	2737.16	322.66
2750.45	322.66	2763.4	322.81	2768.36	323.31	2774.33	323.04	2784.27	323.31
2794.89	323.53	2812.13	323.76	2826.38	324.07	2831.63	324.36	2834.25	324.62
2839.5	324.8	2842.12	324.62	2849.99	324.47	2860.49	324.58	2875.8	324.54
2879.78	324.38	2891.72	324.62	2897.23	324.54	2905.1	324.55	2910.34	324.06
2915.59	323.69	2918.22	323.64	2923.55	323.31	2928.71	323.19	2936.58	322.65
2941.83	322.76								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	926	.035	1702.4	.15	1970.5	.035	2375.4	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
926	2375.4	380	280	255	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	648.46	323	F
1699.64	2941.83	322.2	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	318.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.89	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	317.57	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	316.08	Flow Area (sq ft)	1059.10	3939.36	
E.G. Slope (ft/ft)	0.003936	Area (sq ft)	1059.10	5679.75	23.90
Q Total (cfs)	35359.28	Flow (cfs)	4093.05	31266.22	
Top Width (ft)	1466.64	Top Width (ft)	266.49	1146.00	54.15
Vel Total (ft/s)	7.07	Avg. Vel. (ft/s)	3.86	7.94	
Max Chl Dpth (ft)	10.15	Hydr. Depth (ft)	3.97	5.19	
Conv. Total (cfs)	563604.1	Conv. (cfs)	65240.6	498363.4	
Length Wtd. (ft)	290.52	Wetted Per. (ft)	269.98	765.84	
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.96	1.26	
Alpha	1.15	Stream Power (lb/ft s)	3.73	10.03	
Frctn Loss (ft)	0.80	Cum Volume (acre-ft)	48.22	1346.82	142.67
C & E Loss (ft)	0.06	Cum SA (acres)	17.96	167.41	27.53

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	319.90	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.94	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	318.96	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	316.91	Flow Area (sq ft)	1432.07	4998.60	
E.G. Slope (ft/ft)	0.003084	Area (sq ft)	1432.07	7278.90	107.23
Q Total (cfs)	46848.73	Flow (cfs)	5927.15	40921.58	
Top Width (ft)	1493.37	Top Width (ft)	270.61	1158.38	64.38
Vel Total (ft/s)	7.29	Avg. Vel. (ft/s)	4.14	8.19	
Max Chl Dpth (ft)	11.54	Hydr. Depth (ft)	5.29	6.52	
Conv. Total (cfs)	843576.8	Conv. (cfs)	106726.6	736850.2	
Length Wtd. (ft)	291.84	Wetted Per. (ft)	274.33	772.58	
Min Ch El (ft)	307.53	Shear (lb/sq ft)	1.01	1.25	
Alpha	1.14	Stream Power (lb/ft s)	4.16	10.20	
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	97.16	1706.33	272.33
C & E Loss (ft)	0.04	Cum SA (acres)	24.21	168.82	31.60

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	316.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	315.55	Reach Len. (ft)	380.00	280.00	255.00
Crit W.S. (ft)	314.72	Flow Area (sq ft)	544.34	2469.24	
E.G. Slope (ft/ft)	0.005767	Area (sq ft)	544.34	3462.85	
Q Total (cfs)	21544.92	Flow (cfs)	1878.79	19666.13	
Top Width (ft)	1211.95	Top Width (ft)	230.08	981.87	
Vel Total (ft/s)	7.15	Avg. Vel. (ft/s)	3.45	7.96	
Max Chl Dpth (ft)	8.13	Hydr. Depth (ft)	2.37	3.92	
Conv. Total (cfs)	283709.5	Conv. (cfs)	24740.4	258969.1	
Length Wtd. (ft)	287.15	Wetted Per. (ft)	233.17	635.95	
Min Ch El (ft)	307.53	Shear (lb/sq ft)	0.84	1.40	
Alpha	1.15	Stream Power (lb/ft s)	2.90	11.13	
Frctn Loss (ft)	0.91	Cum Volume (acre-ft)	21.48	1003.96	119.69
C & E Loss (ft)	0.11	Cum SA (acres)	8.31	162.96	25.65

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 310

INPUT
Description: Resort West
Survey Data (June 12, 2014), and proposed grading
.
Golf course proposed grading start at sation 782.2
proposed
resort station 1277.2 to 1589.3. n= 0.15
In the non-disturbed
area, Manning's coefficients are derived from the Corrected
Effective Model.
Station Elevation Data num= 375

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.1	5.08	329.21	15.37	329.76	23.08	329.9	28.78	330.25
38.52	330.96	43.66	331.42	53.95	332.24	56.52	332.32	59.1	332.04
61.67	331.54	66.81	330.01	71.83	328.21	79.67	325.55	82.18	324.97
84.82	323.91	87.39	323.12	90.46	322.95	92.53	323.03	102.89	323.69
107.03	323.7	113.24	323.5	118.26	323.06	123.6	323.06	149.12	323.56
159.41	323.73	161.98	323.93	164.56	324.45	167.13	324.66	172.27	324.31
185.13	323.9	187.71	323.63	195.43	323.43	210.55	323.16	223.73	323.02
236.59	322.93	247.8	322.25	249.46	322.06	254.01	320.94	257.18	320.38
259.75	320.2	264.35	320.27	270.04	320.24	274.7	320.53	277.76	320.96
290.63	320.73	296.4	320.75	300.92	320.95	303.49	320.9	305.74	320.4
311.21	319.67	313.79	319.06	318.93	319.01	324.36	319.13	334.37	319.07
336.94	318.95	339.52	318.45	344.66	316.25	347.13	315.7	352.38	313.34
355.4	312.92	360.1	312.78	363.68	312.92	371.96	312.91	378.11	313.06
385.83	312.62	390.98	312.84	396.12	312.66	401.27	312.71	403.84	312.51
411.56	312.7	423.69	312.42	434.03	312.75	442.31	312.71	445.01	312.49
447.58	312.74	450.16	312.54	455.3	312.6	460.45	312.29	465.59	312.35
470.74	312.59	475.89	312.38	481.03	312.82	483.6	313.44	488.75	313.36
493.9	312.55	496.47	312.46	504.19	312.47	506.76	312.61	514.48	312.49
519.63	312.15	522.2	312.16	527.15	312.58	529.22	312.36	532.49	312.34
535.06	312.16	540.21	312.02	545.36	312	550.5	312.23	555.65	312.35
558.22	312.63	560.79	312.64	563.37	312.33	566.47	312.25	571.09	311.96
576.23	311.97	580.95	312.2	586.53	311.83	596.82	311.96	601.64	311.84
605.8	312.133	612.26	313.36	614.83	313.96	622.55	315.03	632.84	314.96
635.41	314.5	640.56	314.33	649.24	312.49	653.42	311.09	656	310.45
658.57	309.42	661.14	308.05	663.72	307.66	697.16	305.65	699.74	305.31
707.46	305.25	709.24	305.45	712.6	306.81	715.18	308.38	719.59	310.28
722.9	311.42	725.8	311.73	728.04	312.61	733.19	316	761.49	316
767.18	315.55	774.36	312.98	778.73	310.07	782.2	309.92	787.99	309.36
807.33	308.64	819.64	308	849.74	307	864.61	306	1040	306
1047.4	307.19	1075.14	307.89	1089.8	308	1109.11	313.12	1124.54	314.97
1136.04	315	1149.62	315	1155.69	314	1163.68	314	1219.2	314
1244.96	314	1274	320	1278	322.5	1511	322.5	1573	322.8
1589	322.5	1591	322	1594	320	1603	316	1608.01	315.28
1610.59	315.26	1613.16	314.94	1615.73	314.88	1620.88	315.48	1623.46	315.45
1626.24	314.56	1627.97	313.6	1631.18	312.77	1633.76	311.78	1636.33	311.88

1638.91	312.51	1644.06	312.97	1649.21	313.01	1654.82	312.95	1656.93	313.05		
1659.51	312.39	1667.23	311.06	1669.81	311.12	1672.38	310.92	1685.8	310.84		
1687.83	310.61	1690.41	311.09	1692.98	311.78	1695.56	312.14	1703.28	311.12		
1705.86	311.12	1713.58	312.34	1716.16	312.53	1723.88	312.17	1726.46	312.23		
1731.24	312.72	1734.18	312.88	1741.91	311.83	1747.06	312.28	1753.96	311.96		
1759.93	311.9	1762.22	311.79	1765.08	311.35	1770.23	312.52	1772.55	312.42		
1780.53	311.82	1783.1	311.53	1790.83	312.01	1793.4	312.02	1803.53	311.82		
1808.85	311.27	1811.43	311.21	1814	311.34	1819.15	311.38	1821.73	311.3		
1826.88	311.78	1829.45	311.73	1832.03	311.28	1834.51	311.31	1837.18	310.96		
1839.75	311.22	1844.9	311.34	1855.2	311.75	1857.78	311.96	1861.36	312.89		
1863.43	313.23	1870.65	313.95	1873.23	314.34	1878.38	315.39	1880.95	315.15		
1886.1	313.94	1888.68	313.53	1896.4	313.35	1898.98	313.49	1904.13	314.2		
1910.93	313.56	1914.43	313.41	1917.13	313.49	1919.58	313.35	1924.73	312.54		
1927.3	312.28	1929.52	312.75	1935.03	313.18	1942.75	313.54	1945.33	313.85		
1947.9	313.85	1953.05	314.31	1955.63	313.78	1958.44	313.45	1965.93	313.34		
1971.08	313.66	1976.23	313.63	1981.38	313.05	1986.53	313.35	1989.42	313.28		
1991.68	313.05	1996.83	312.93	1999.4	313.07	2007.13	312.97	2012.28	313.32		
2017.43	313.29	2022.58	312.78	2025.15	312.77	2030.3	313.67	2032.88	313.89		
2034.86	313.74	2040.6	313.71	2045.18	313.52	2048.33	313.61	2053.31	314.27		
2056.05	314.4	2058.63	313.72	2061.2	313.35	2063.78	313.44	2066.35	313.34		
2076.65	313.69	2084.38	312.79	2089.53	313.12	2097.25	313.01	2105.08	313.61		
2110.13	313.67	2112.7	313.87	2115.28	314.66	2116.9	314.934	2123	316.05		
2125.58	316.86	2128.15	318.04	2130.73	318.7	2138.45	318.8	2141.02	318.77		
2143.6	319.05	2151.32	320.24	2161.62	321.3	2166.77	322.4	2169.35	322.3		
2171.92	322.43	2177.37	322.38	2179.65	322.17	2182.22	322.19	2192.52	322.68		
2200.25	322.69	2202.82	322.44	2220.3	322.29	2236.3	322.11	2244.02	322.08		
2251.72	322.53	2264.62	322.01	2272.38	321.97	2277.5	322.14	2282.65	322.12		
2287.8	321.95	2292.95	322.12	2300.67	322.15	2305.82	322.36	2308.4	322.15		
2315.75	322.19	2324.67	322.12	2334.15	322.43	2336.72	322.25	2341.87	322.33		
2352.17	322.21	2362.47	321.25	2367.62	321.06	2375.35	320.59	2377.92	320.34		
2385.97	320.79	2394.23	321.01	2406.25	321.06	2411.4	321.33	2413.97	321.29		
2419.12	320.91	2424.27	320.88	2437.15	320.25	2439.72	320.38	2442.3	320.71		
2447.45	320.88	2450.02	320.84	2460.32	320.94	2466.52	320.85	2474.78	320.19		
2478.35	319.99	2488.65	319.59	2493.37	319.57	2499.57	319.36	2506.67	319.35		
2511.82	319.19	2519.54	319.19	2522.29	319.28	2529.84	319.14	2537.57	319.29		
2545.29	319.02	2550.44	319	2560.74	318.75	2568.47	318.36	2581.34	318.29		
2586.49	317.64	2591.64	315.46	2594.22	315.65	2596.79	316.37	2598.71	317.38		
2601.94	318.79	2604.52	319.05	2609.67	320.17	2612.24	320.33	2621.43	320.13		
2630.27	320.07	2640.57	320.23	2658.59	320.31	2668.89	320.28	2681.77	320.31		
2689.49	320.25	2704.94	320.3	2712.67	320.44	2717.82	320.24	2720.24	320.31		

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	605.8	.035	1278	.15	1591	.035	2116.9	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
605.8	2116.9	610	610	640	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	154.1	324.5	F
1277.2	2720.24	322.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	317.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	316.90	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	313.68	Flow Area (sq ft)	1131.02	4578.91	
E.G. Slope (ft/ft)	0.002049	Area (sq ft)	1131.02	6666.29	18.18
Q Total (cfs)	35359.28	Flow (cfs)	3346.35	32012.93	
Top Width (ft)	1450.08	Top Width (ft)	262.65	1169.11	18.32
Vel Total (ft/s)	6.19	Avg. Vel. (ft/s)	2.96	6.99	
Max Chl Dpth (ft)	11.65	Hydr. Depth (ft)	4.31	7.01	
Conv. Total (cfs)	781165.1	Conv. (cfs)	73928.3	707236.9	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	263.77	659.86	
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.55	0.89	
Alpha	1.18	Stream Power (lb/ft s)	1.62	6.21	
Frctn Loss (ft)	1.04	Cum Volume (acre-ft)	38.67	1307.14	142.55
C & E Loss (ft)	0.12	Cum SA (acres)	15.65	159.97	27.31

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	319.17	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.80	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	318.37	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	315.08	Flow Area (sq ft)	1519.05	5542.85	
E.G. Slope (ft/ft)	0.001864	Area (sq ft)	1519.05	8389.91	54.26
Q Total (cfs)	46848.73	Flow (cfs)	5169.88	41678.84	
Top Width (ft)	1490.74	Top Width (ft)	266.08	1179.52	45.14
Vel Total (ft/s)	6.63	Avg. Vel. (ft/s)	3.40	7.52	
Max Chl Dpth (ft)	13.12	Hydr. Depth (ft)	5.71	8.39	
Conv. Total (cfs)	1085093.0	Conv. (cfs)	119742.9	965350.4	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	267.50	667.11	
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.66	0.97	
Alpha	1.17	Stream Power (lb/ft s)	2.25	7.27	
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	84.29	1655.98	271.85
C & E Loss (ft)	0.14	Cum SA (acres)	21.87	161.31	31.28

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	315.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.060	0.035	

W.S. Elev (ft)	314.90	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	311.52	Flow Area (sq ft)	610.80	3321.57	
E.G. Slope (ft/ft)	0.002003	Area (sq ft)	610.80	4389.00	
Q Total (cfs)	21544.92	Flow (cfs)	1203.64	20341.28	
Top Width (ft)	1311.08	Top Width (ft)	256.88	1054.20	
Vel Total (ft/s)	5.48	Avg. Vel. (ft/s)	1.97	6.12	
Max Chl Dpth (ft)	9.65	Hydr. Depth (ft)	2.38	5.85	
Conv. Total (cfs)	481423.2	Conv. (cfs)	26895.5	454527.7	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	257.63	574.00	
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.30	0.72	
Alpha	1.19	Stream Power (lb/ft s)	0.58	4.43	
Frctn Loss (ft)	1.07	Cum Volume (acre-ft)	16.44	978.73	119.69
C & E Loss (ft)	0.10	Cum SA (acres)	6.18	156.42	25.65

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 300

INPUT
Description: Survey Data (June 12, 2014), and proposed grading .
Golf course
proposed grading starts at station 667.46. n=0.05
Poposed bridge
from PA-2 to PA-3 station 1722 to 1763. n = 0.15
Proposed PA-2
station 1949 to 2549.37
In the non-disturbed area, Manning's
coefficients are derived from the Corrected Effective Model.
Station Elevation Data num= 384

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.62	3.76	364.84	6.33	365.19	12.17	365.6	20.43	366.25
26.94	366.72	32.09	367.16	34.66	367.3	39.81	367.77	42.39	367.38
44.96	364.93	47.54	363.01	50.11	362	55.53	359.5	60.42	356.51
65.57	352.38	68.14	350.81	72.05	348.73	75.87	346.52	80.31	343.61
83.59	341.76	86.17	339.91	88.74	338.43	91.32	337.12	93.89	335.58
99.05	332.11	101.62	330.56	106.77	327.26	109.21	325.76	111.92	323.95
114.5	322.72	117.07	321.83	119.65	321.5	124.8	321.55	135.1	321.78
138.12	321.9	147.98	322.08	155.7	322.12	158.28	322.25	160.85	322.06
166	320.39	168.58	319.77	171.15	319.37	176.31	319.45	181.47	319.31
184.03	319.33	189.18	319.17	195.93	318.67	200.06	318.45	204.19	318.46
207.21	318.71	214.93	318.96	217.51	318.94	220.09	318.77	225.24	318.77
227.81	318.61	235.54	318.54	245.48	318.5	248.41	318.58	256.14	318.49
275.26	318.38	279.32	318.42	287.04	318.18	292.97	318.17	299.92	318.06
302.5	317.97	305.07	318.04	307.65	317.92	315.37	317.92	320.52	318.23

323.1	318.31	328.25	318.71	330.13	318.36	335.98	317.51	341.13	316.98
346.28	316.88	348.85	316.63	354	315.94	356.58	315.74	359.15	315.88
363.17	315.29	366.88	314.59	369.36	314.38	374.61	314.2	377.62	313.77
382.33	313.67	384.91	313.92	387.48	314.64	389.8	315.46	392.63	316.03
397.78	315.67	400.21	315.24	404.46	313.99	408.08	313.32	413.24	313.4
415.81	313.3	418.39	312.84	420.96	312.63	426.11	312.48	428.69	312.23
431.3	311.32	436.41	311.42	438.99	311.65	441.86	311.75	446.9	311.71
449.29	311.66	457.02	312.95	462.17	312.74	464.74	312.87	472.47	312.76
474.66	312.02	477.62	311.19	480.19	310.81	482.77	310.71	485.34	310.74
487.92	310.25	490.5	309.47	493.07	308.37	497.37	306.9	498.22	306.71
503.56	306.78	507.69	306.68	511.1	306.43	515.95	305.62	518.02	305.57
523.97	306.06	526.55	306.1	529.13	306.76	532.47	307.96	534.53	308.52
539.43	308.82	544.58	308.81	547.15	308.94	549.73	308.86	552.3	308.93
554.88	309.25	560.03	309.64	570.33	311.01	572.91	311.66	578.06	312.75
583.21	314	614.11	314	667.46	310	670.39	308.96	702.35	308
774.1	308	809.13	309.33	904.35	309.81	932.16	308.23	1055	308
1074.32	305.41	1083.59	305.19	1094.06	307.84	1153	308.5	1225.53	308
1248.14	308	1264.82	308	1269.77	307	1457.28	307	1469.9	308
1503	309	1538.4	309	1541	309.02	1544.1	309.2	1545	309.27
1546.6	309.4	1554.59	309	1565.61	310	1584.49	312	1591.5	313
1598.54	314	1609.01	316	1617.23	317.01	1626.2	317.01	1634.08	316
1651.91	314	1652.2	313.53	1654	313.53	1658.4	313.58	1661.6	313.66
1664.6	313.76	1669.8	313.88	1673.7	313.96	1686.35	314	1695	316
1699	318	1703	320	1708	322	1722	324	1763	324
1771	322	1775	320	1780	318	1784	316	1788.2	314.28
1791.3	314.47	1794.4	314.59	1797.7	314.73	1800.6	314.81	1803.7	314.94
1806.7	315.03	1809.07	314.62	1812.56	313.82	1814.63	313.23	1816.69	312.92
1818.76	312.06	1821.94	310.94	1827.09	310.43	1832.24	310.14	1837.39	310.09
1847.66	310.19	1852.85	310.53	1860.57	310.79	1868.3	310.56	1876.02	310.65
1878.6	310.85	1883.75	311.93	1888.9	311.87	1896.63	312.01	1901.78	312.82
1904.35	313.81	1909.5	315.61	1913.73	316.89	1917	316	1917.8	316.347
1921.61	318	1931	320	1944	326	1949	328.2	1989.1	328.19
1992.2	328.12	1993.4	328.08	1994.2	328.09	1995.9	328.05	1998.3	327.94
2000.9	327.39	2001.4	327.23	2002.4	326.99	2003.3	326.81	2004.5	326.45
2007.6	325.81	2008.3	325.74	2010.6	325.68	2011	325.65	2013.3	325.41
2013.8	325.39	2014.7	325.42	2015.7	325.38	2016.9	325.48	2018.2	325.37
2020.7	325.21	2023.2	325.18	2026.2	324.98	2028.1	324.81	2029.3	324.73
2032.3	324.58	2036	324.37	2038	324.24	2041.6	324.15	2044.7	324.41
2045.5	324.75	2047.9	326.18	2050.4	326.65	2052.9	326.97	2057.8	327.54
2060.3	327.78	2062.8	327.81	2112.7	327.81	2114.8	327.99	2115.8	328.05
2117.4	328.25	2118.9	328.46	2122	328.78	2125.6	328.82	2129.7	328.84
2132.2	328.84	2136	328.83	2142	328.86	2148.5	328.86	2152	328.89
2159.4	328.9	2162.1	328.93	2164.4	328.93	2168.3	328.88	2169.3	328.89
2170.7	328.85	2173.4	328.81	2174.5	328.81	2176.8	328.87	2179	328.89
2180.7	328.89	2181.7	328.85	2183.8	328.82	2221.4	328.81	2223.4	328.79
2226.3	328.72	2227	328.67	2228.8	328.8	2230.1	328.86	2233.2	328.66
2235.9	328.54	2239.4	328.56	2241.2	328.69	2243.7	328.76	2244.7	328.72
2246.1	328.71	2248.8	328.55	2251.1	328.47	2254.9	328.36	2257	328.33
2260.9	328.31	2268.4	328.32	2270.9	328.33	2273.4	328.31	2275.9	328.33
2277.5	328.3	2279.6	328.22	2280.8	327.77	2281.6	327.44	2282.7	327.03
2283.3	326.76	2285.7	325.56	2288.8	324.27	2291.9	324.06	2295	324.3
2295.7	324.33	2298	324.55	2301.2	324.83	2304.3	325.07	2305.6	325.14

2306.2	325.21	2308.1	325.34	2310.3	325.59	2310.9	325.64	2313.6	325.82
2314.5	325.87	2315.5	325.89	2318	326.07	2319.8	326.26	2320.5	326.31
2322.8	326.54	2323.4	326.58	2325.9	326.6	2326.8	326.73	2327.9	326.94
2329	327.09	2332.1	327.19	2389.8	327.19	2393.9	327.14	2394.8	326.88
2397	326.07	2397.3	325.84	2399.8	323.76	2400.1	323.49	2403.2	323.76
2406.3	324.52	2409.4	325	2420.22	325.5	2421.99	325.53	2424.57	325.38
2432.3	325.32	2434.87	325.43	2442.29	325.29	2447.75	325.29	2454.68	325.44
2460.87	325.47	2468.35	325.44	2473.5	325.53	2483.8	325.03	2489.78	325.09
2493.91	325.34	2500.1	324.98	2509.56	324.93	2514.55	325.21	2517.28	325.18
2519.86	325.37	2522.81	325.93	2525.01	326.07	2527.58	325.84	2529.01	325.56
2532.73	324.57	2535.31	324.28	2543.03	323.89	2549.37	324.09		

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	446.9	.06	667.46	.05	1722	.15	1763	.05
1949	.15								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
446.9	1917.8	790	654	605 .1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
1520.7	2549.37	321.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	316.43	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.051	
W.S. Elev (ft)	316.14	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)	311.60	Flow Area (sq ft)	222.68	8089.58	
E.G. Slope (ft/ft)	0.001451	Area (sq ft)	222.68	9176.70	
Q Total (cfs)	35359.28	Flow (cfs)	443.48	34915.80	
Top Width (ft)	1448.45	Top Width (ft)	94.42	1354.03	
Vel Total (ft/s)	4.25	Avg. Vel. (ft/s)	1.99	4.32	
Max Chl Dpth (ft)	10.95	Hydr. Depth (ft)	2.36	7.53	
Conv. Total (cfs)	928200.9	Conv. (cfs)	11641.6	916559.3	
Length Wtd. (ft)	654.83	Wetted Per. (ft)	95.43	1076.86	
Min Ch El (ft)	305.19	Shear (lb/sq ft)	0.21	0.68	
Alpha	1.02	Stream Power (lb/ft s)	0.42	2.94	
Frctn Loss (ft)	0.66	Cum Volume (acre-ft)	29.19	1196.21	142.41
C & E Loss (ft)	0.03	Cum SA (acres)	13.15	142.30	27.18

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	318.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.34	Wt. n-Val.	0.050	0.051	
W.S. Elev (ft)	317.73	Reach Len. (ft)	790.00	654.00	605.00

Crit W.S. (ft)	312.34	Flow Area (sq ft)	387.00	9796.53	
E.G. Slope (ft/ft)	0.001342	Area (sq ft)	387.00	11363.64	2.22
Q Total (cfs)	46848.73	Flow (cfs)	954.10	45894.63	
Top Width (ft)	1504.49	Top Width (ft)	112.46	1388.84	3.20
Vel Total (ft/s)	4.60	Avg. Vel. (ft/s)	2.47	4.68	
Max Chl Dpth (ft)	12.54	Hydr. Depth (ft)	3.44	9.12	
Conv. Total (cfs)	1278885.0	Conv. (cfs)	26045.3	1252840.0	
Length Wtd. (ft)	655.35	Wetted Per. (ft)	113.56	1076.86	
Min Ch El (ft)	305.19	Shear (lb/sq ft)	0.29	0.76	
Alpha	1.02	Stream Power (lb/ft s)	0.70	3.57	
Frctn Loss (ft)	0.59	Cum Volume (acre-ft)	70.94	1517.66	271.44
C & E Loss (ft)	0.03	Cum SA (acres)	19.22	143.32	30.93

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	314.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.051	
W.S. Elev (ft)	314.07	Reach Len. (ft)	790.00	654.00	605.00
Crit W.S. (ft)	310.58	Flow Area (sq ft)	72.79	5860.19	
E.G. Slope (ft/ft)	0.001549	Area (sq ft)	72.79	6432.66	
Q Total (cfs)	21544.92	Flow (cfs)	114.85	21430.07	
Top Width (ft)	1333.55	Top Width (ft)	52.61	1280.94	
Vel Total (ft/s)	3.63	Avg. Vel. (ft/s)	1.58	3.66	
Max Chl Dpth (ft)	8.88	Hydr. Depth (ft)	1.38	5.46	
Conv. Total (cfs)	547417.6	Conv. (cfs)	2918.2	544499.4	
Length Wtd. (ft)	654.35	Wetted Per. (ft)	52.97	1076.86	
Min Ch El (ft)	305.19	Shear (lb/sq ft)	0.13	0.53	
Alpha	1.01	Stream Power (lb/ft s)	0.21	1.92	
Frctn Loss (ft)	0.74	Cum Volume (acre-ft)	11.66	902.95	119.69
C & E Loss (ft)	0.02	Cum SA (acres)	4.02	140.07	25.65

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 290

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed
gradingstartsstart at station 485.22, n=0.04
Proposed PA-2
station 1896.4, n=0.15

In the non-disturbed area, Manning's
coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 498

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.95	2.48	334.94	5.04	335.09	10.15	335.25	20.39	335.69
25.51	335.81	35.74	335.7	41.9	335.452	43.42	335.38	45.98	335.47
51.09	335.9	56.33	336.67	60.43	336.96	63.89	337.26	66.45	337.41
71.56	337.81	74.12	337.94	81.44	338.2	89.48	338.53	92.03	338.56
97.15	338.81	102.27	339.01	107.39	339.11	109.95	339.21	117.15	339.36
122.74	339.56	128.18	339.82	140.65	340.22	145.77	340.31	150.89	340.5
156	340.81	158.56	340.56	161.12	339.73	163.68	338.65	168.8	336.4
171.36	335.41	176.47	333.21	184.15	330.13	188.57	328.73	194.39	326.74
199.07	325.3	202.06	324.25	204.62	323.54	207.18	323.31	212.3	323.54
217.41	323.5	224.28	323.38	230.21	323.22	235.33	323.36	236.17	322.59
236.88	322.23	237.88	321.09	240.44	315.58	243	310.28	244.02	310.18
248.12	310.78	250.68	310.8	255.8	310.47	258.35	310.5	260.91	310.35
263.47	310.32	266.29	310.62	271.15	310.77	276.27	311.11	281.38	311.08
291.62	310.71	296.74	310.61	299.3	310.74	306.97	310.61	309.53	310.42
312.09	310.32	314.65	310.34	317.21	310.49	319.77	310.51	324.88	309.98
330	310.01	333.51	310.26	335.12	310.45	342.79	310.23	347.91	310.25
353.03	310.44	360.71	310.94	365.02	311.73	368.38	311.91	370.94	311.83
373.5	311.49	378.62	311.09	381.18	310.6	383.92	310.27	386.29	310.17
388.85	308.91	391.41	306.63	393.97	303.15	396.53	302	399.09	301.71
401.65	301.92	404.21	302.6	407.03	303.05	409.32	302.93	414.44	303.16
415.43	303.38	419.56	304.71	422.12	305.17	427.23	306.6	429.79	307.01
440.03	308.25	445.15	308.69	447.7	308.69	450.26	308.52	452.82	308.62
455.38	309.64	457.94	311.68	460.5	312	483.53	312	485.22	311.07
488.4	311.16	493.5	310.95	494	310.92	496.5	310.82	504.1	310.56
506.6	310.46	509.9	310.36	511.6	310.43	513	310.47	519.1	310.78
521.7	310.88	525.2	310.98	528.3	311	571.3	310.99	574.1	310.97
577.5	310.86	580.5	310.65	586.7	310.13	589.8	310.03	595.9	310.09
597.2	310.12	602.3	310.19	612.3	310.39	614.9	310.42	617.3	310.47
619.9	310.51	626.6	310.58	630	310.6	632.8	310.58	635.8	310.47
638.9	310.4	642	310.42	645.1	310.47	648.1	310.31	650.1	309.97
652.6	309.5	654.3	309.22	657.3	309.14	660.4	309.18	664.7	309.21
673.2	309.32	676.5	309.34	685.4	309.45	688	309.46	688.3	309.47
692.9	309.52	697.3	309.56	703.4	309.64	705.5	309.65	710.5	309.7
712.6	309.73	713.1	309.71	715.7	309.72	718.1	309.39	718.8	309.36
720.6	308.85	723.1	308.27	723.7	308.08	724.9	307.78	725.7	307.74
727.7	307.49	728	307.47	730.7	307.48	731	307.46	734.1	307.53
743.3	307.84	746.4	307.97	748.3	307.97	749.5	307.99	752.5	307.97
764.8	307.72	767.9	307.56	771	307.62	771	307.63	774.1	307.78
777.1	307.91	780.2	307.99	782.8	307.97	786.3	307.91	792.5	307.77
795.6	307.71	798.5	307.69	801.7	307.69	807.8	307.78	808.8	307.8
814	307.97	816.3	307.99	823.2	307.95	826.3	307.91	829.3	307.86
844.7	307.8	846.5	307.81	849	307.81	850.8	307.82	854.1	307.91
859.1	308.11	861.6	308.2	869.2	308.53	872.3	308.65	875.4	308.74
879.3	308.78	884.6	308.73	887.7	308.73	890.8	308.69	893.8	308.63
897	308.53	900.9	308.36	903.1	308.27	906.1	308.12	909.2	307.99
922.1	307.32	924.7	307.15	927.1	306.95	930.7	306.42	939.7	306
1268.05	306	1279	307	1290.11	307	1296.1	306	1318.8	306
1332.1	307	1383	308	1417	310	1423	312	1432	314

1486	314	1492.5	311	1525.3	309	1799.69	309	1817.13	313.47	
1822.25	314.57	1824.81	314.68	1829.93	315.06	1838.09	316.02	1848.88	320	
1861.13	326	1864.16	327.2	1896.4	327.2	1924.2	327.15	1925.9	327.09	
1926.8	326.85	1928.5	326.08	1929	325.93	1930.6	324.85	1931.8	324.02	
1932.1	323.89	1934.3	323.73	1935.1	323.7	1938.2	323.7	1941.3	323.71	
1944.3	323.75	1948.2	323.76	1950.5	323.78	1952.2	323.81	1953.6	323.82	
1956.1	323.87	1962.8	323.96	1965.9	324.17	1967	324.9	1968.9	326.1	
1971.9	326.86	1972.5	326.99	1975.1	327.47	1977.1	327.74	1978.1	327.84	
1979.6	327.74	1982.2	327.53	1984.3	327.34	1987.6	327.67	1989.7	327.85	
1990.4	327.95	1992.2	327.97	1993.5	328	2033.4	328	2036.5	328.07	
2038.8	328.39	2040.1	328.53	2042.7	328.66	2045.1	328.67	2045.7	328.69	
2085.6	328.69	2087.9	328.77	2088.7	328.81	2090.4	329.19	2091.8	329.49	
2092.9	329.54	2094.9	329.59	2128.6	329.59	2130.7	329.69	2131.7	329.76	
2133.2	330.65	2133.3	330.69	2134.8	331.7	2135.8	332.31	2137.9	333.55	
2138.3	333.91	2140.1	335.43	2140.8	335.96	2140.9	336.07	2141.2	336.17	
2143.3	337.3	2144	337.58	2147.1	337.69	2196.2	337.69	2198.7	337.6	
2199.3	337.56	2201.2	337.34	2202.4	337.22	2205.4	337.07	2206.3	337.07	
2208.8	337.17	2211.3	337.34	2212	337.36	2216	337.4	2217.7	337.41	
2226.9	337.41	2230	337.39	2233.1	337.34	2235.7	337.17	2239.2	336.92	
2242.3	336.77	2243.5	336.93	2245.4	337.16	2248.4	336.86	2251.6	336.65	
2254.6	336.52	2255.3	336.54	2256.6	336.54	2257.7	336.57	2260.7	336.76	
2261.7	336.8	2265.9	336.9	2266.7	336.91	2276.1	336.91	2276.8	336.9	
2279	336.91	2282.2	336.91	2285.3	336.89	2286.8	336.86	2288.4	336.85	
2289.4	336.83	2293.8	336.83	2294.5	336.82	2296.9	336.53	2297.6	336.47	
2300.7	336.09	2303.7	335.98	2304.5	335.79	2306.5	335.55	2307	335.45	
2307.8	335.12	2309.9	334.18	2312.9	334.19	2314.5	334.25	2318.3	334.41	
2322.3	334.57	2327.1	334.75	2329.6	334.86	2331.4	334.93	2334.1	335.05	
2337.5	335.18	2339.7	335.29	2340.6	335.32	2344.8	335.5	2346.7	335.62	
2347.3	335.69	2349.7	336.26	2349.8	336.3	2352.3	336.74	2352.9	336.83	
2353.8	337.13	2354.8	337.62	2356	337.9	2357.3	337.99	2359	338.09	
2361.7	338.2	2365.2	338.4	2368.2	338.69	2371.3	338.84	2374.4	339.02	
2377.6	339.23	2380.5	339.41	2385	339.62	2386.7	339.71	2387.6	339.74	
2389.7	339.85	2390.1	339.8	2391.6	339.89	2393.1	339.9	2395.9	339.79	
2399	339.63	2400.1	339.45	2401	339.43	2402	339.33	2402.7	339.33	
2405.2	339.29	2407.7	338.99	2408.2	338.96	2410.2	339.03	2411.2	339.04	
2414.3	339.44	2415.3	339.62	2417.8	340.11	2419.6	340.48	2420.7	340.72	
2423.5	341.25	2425.3	341.47	2426.6	341.61	2429.7	341.6	2430.4	341.38	
2432.7	340.39	2432.9	340.4	2435.8	341.1	2436.5	341.31	2437.9	341.8	
2438.9	342.09	2440.4	342.44	2442	342.76	2443	342.86	2445	343.03	
2445.5	343.06	2448.1	343.13	2448.3	343.07	2450.5	342.54	2451.2	342.28	
2452.2	342.06	2453	341.77	2454.2	341.6	2457.3	342.67	2460.6	343.3	
2461.5	343.33	2463.1	343.41	2465.6	343.52	2468.1	343.59	2469.6	343.61	
2470.7	343.4	2471.9	342.96	2473.2	342.64	2475.7	342.31	2481.9	342.93	
2483.2	343.08	2485	343.27	2487.6	343.65	2488.3	343.77	2489.4	344.22	
2491.1	344.87	2494.2	345.01	2497.2	345.12	2506.5	345.4	2508.4	345.38	
2510.9	345.29	2512.6	345.21	2515.7	345.12	2516	345.16	2517.3	345.45	
2518.7	345.74	2521	345.85	2523.1	345.92	2524.9	345.96	2528	346.05	
2531	346.09	2533.6	346.08	2536.1	345.98	2540.3	345.83	2549.5	346.13	
2555.6	346.42	2556.3	346.49	2558.5	346.76	2561.3	347.09	2564.8	347.41	
2567.9	347.57	2571	347.72	2576.4	347.99	2580.2	348.23	2581.4	348.33	
2583.3	348.46	2586.3	348.68	2589.4	348.79	2592.5	348.8	2596.6	348.83	
2599.1	348.87	2601.7	348.88	2604.8	348.48					

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	41.9	.06	485.22	.04	1896.4	.15

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
41.9	1896.4	695	653	645	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
1725.3	2604.8	321.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	315.74	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.20	Wt. n-Val.		0.042		
W.S. Elev (ft)	315.55	Reach Len. (ft)	695.00	653.00	645.00	
Crit W.S. (ft)	310.93	Flow Area (sq ft)		10407.01		
E.G. Slope (ft/ft)	0.000748	Area (sq ft)		10984.02		
Q Total (cfs)	37000.00	Flow (cfs)		37000.00		
Top Width (ft)	1593.62	Top Width (ft)		1593.62		
Vel Total (ft/s)	3.56	Avg. Vel. (ft/s)		3.56		
Max Chl Dpth (ft)	13.84	Hydr. Depth (ft)		7.01		
Conv. Total (cfs)	1352745.0	Conv. (cfs)		1352745.0		
Length Wtd. (ft)	653.04	Wetted Per. (ft)		1495.69		
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.32		
Alpha	1.00	Stream Power (lb/ft s)		1.16		
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	27.17	1044.86	142.41	
C & E Loss (ft)	0.00	Cum SA (acres)	12.29	120.17	27.18	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	317.45	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.22	Wt. n-Val.		0.042		
W.S. Elev (ft)	317.23	Reach Len. (ft)	695.00	653.00	645.00	
Crit W.S. (ft)	311.58	Flow Area (sq ft)		12899.38		
E.G. Slope (ft/ft)	0.000646	Area (sq ft)		13666.69		
Q Total (cfs)	49000.00	Flow (cfs)		49000.00		
Top Width (ft)	1601.69	Top Width (ft)		1601.69		
Vel Total (ft/s)	3.80	Avg. Vel. (ft/s)		3.80		
Max Chl Dpth (ft)	15.52	Hydr. Depth (ft)		8.68		
Conv. Total (cfs)	1927956.0	Conv. (cfs)		1927956.0		
Length Wtd. (ft)	653.09	Wetted Per. (ft)		1497.55		
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.35		
Alpha	1.00	Stream Power (lb/ft s)		1.32		
Frctn Loss (ft)	0.41	Cum Volume (acre-ft)	67.43	1329.77	271.42	
C & E Loss (ft)	0.00	Cum SA (acres)	18.20	120.87	30.90	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	313.52	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.15	Wt. n-Val.		0.042		
W.S. Elev (ft)	313.36	Reach Len. (ft)	695.00	653.00	645.00	
Crit W.S. (ft)	309.84	Flow Area (sq ft)		7200.74		
E.G. Slope (ft/ft)	0.000876	Area (sq ft)		7562.53		
Q Total (cfs)	22513.00	Flow (cfs)		22513.00		
Top Width (ft)	1516.97	Top Width (ft)		1516.97		
Vel Total (ft/s)	3.13	Avg. Vel. (ft/s)		3.13		
Max Chl Dpth (ft)	11.65	Hydr. Depth (ft)		5.05		
Conv. Total (cfs)	760596.0	Conv. (cfs)		760596.0		
Length Wtd. (ft)	653.01	Wetted Per. (ft)		1434.82		
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.27		
Alpha	1.00	Stream Power (lb/ft s)		0.86		
Frctn Loss (ft)	0.60	Cum Volume (acre-ft)	11.00	797.89	119.69	
C & E Loss (ft)	0.00	Cum SA (acres)	3.54	119.06	25.65	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 285

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed
gradingstarts start at station 730, n=0.04
Proposed PA-2 station
1964.2 to 2054.18, n=0.15
In the non-disturbed area, Manning's
coefficients are derived from the Corrected Effective Model.
Station Elevation Data num= 273

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.08	5.36	327.9	13.04	327.81	20.42	327.63	23.27	327.6
28.38	327.65	30.94	327.84	33.5	327.9	38.61	327.34	41.17	327.22
46.29	327.12	48.84	327.33	51.4	328.1	53.96	329.12	59.07	331.78
61.63	332.78	64.19	333.33	66.75	333	69.31	332.31	71.86	331.37
77.21	329.64	82.09	329.24	87.21	328.96	89.77	328.87	92.32	328.68
102.55	328.29	106.66	328.39	115.77	328.51	120.46	328.52	123.48	328.64
128.13	328.69	138.36	328.65	143.48	328.56	148.59	328.31	151.15	328.11
153.71	327.31	157.14	326	161.38	324.5	163.94	323.95	166.5	323.71
171.61	324.68	173.96	324.96	176.73	325.48	179.28	326.21	182.38	326.23
189.52	325.81	194.63	326.06	199.75	326.21	202.3	326.22	207.42	326.35
212.53	326.41	217.65	326.53	220.21	326.53	222.76	326.65	233	326.81
238.11	326.66	245.48	325.93	250.9	325.66	256.01	325.19	261.13	325.05
263.69	325.11	271.36	325.71	284.15	326.54	289.26	326.57	298.06	326.29
307.17	326.12	312.28	326.1	314.84	326.03	325.07	326.01	330.19	325.92

337.86	325.69	342.97	325.48	348.09	325.74	350.65	325.97	353.21	326.01
355.76	325.58	358.32	324.9	360.88	323.82	365.99	322.04	368.55	321.48
371.11	321.19	373.67	321.59	381.34	323.66	383.9	323.9	391.57	324.11
399.24	324	406.92	323.76	411.64	323.5	414.59	323.41	417.15	323.71
419.7	324.46	422.26	323.7	427.38	320.83	430.57	318.08	432.49	316.55
434.78	315.33	436.88	314.48	440.17	313.71	442.72	313.87	445.28	313.59
447.84	313.45	452.95	313.58	457.91	313.02	460.63	312.89	463.18	312.49
468.1	311.01	469.1	310.844	470.53	310.72	473.42	310.8	475.97	310.41
483.65	310.22	486.2	309.87	489.46	309.7	491.57	309.43	493.67	308.78
496.43	308.55	498.99	308.62	502.08	308.43	503.99	307.97	506.29	308.27
509.22	308.09	511.78	308.15	516.9	308.5	519.45	308.45	522.01	308.5
525.22	308.8	527.13	308.87	530.08	308.71	532.24	308.38	534.8	307.73
537.36	307.41	539.91	307.41	542.05	307.53	545.03	307.98	547.59	307.95
552.7	308.11	555.26	308.47	557.82	308.67	560.38	308.5	565.18	308.07
573.16	307.98	575.7	307.69	578.28	307.77	580.84	307.97	583.39	307.93
585.95	307.73	588.51	307.69	591.07	307.99	593.62	307.77	596.18	307.13
601.3	306.27	606.41	304.69	611.64	303.64	614.09	303.34	619.2	303.17
624.08	303.84	626.87	304.04	629.43	303.83	631.99	303.51	637.11	302.44
639.66	301.75	642.22	301.64	644.78	302.31	655.01	305.34	657.73	306.12
660.12	306.62	662.68	306.75	666.14	306.69	668.25	306.75	670.35	306.66
672.91	306.76	678.03	308.2	680.59	308.98	683.14	310	712.42	310
722.26	308	730	307	785	308	791.9	310	819.57	310
846.1	308	867.14	307	874.55	306	887	305.5	900.36	306
913.09	308	922	308.5	931.14	308	941.58	307	970.67	306
1030.4	305	1080.4	304.5	1127.55	305	1191.99	306	1203.67	307
1204.9	307.22	1216.37	308	1236.87	310	1271.36	312	1285	312.5
1303.5	312	1321.1	310	1379.39	308	1449.095	307	1463.37	307
1475.37	308	1492.97	310	1502	312	1508.04	312.5	1516.28	312
1521.11	310	1530	308	1663	308	1693.8	308	1700.9	307
1709.09	305	1713.308	303	1726.85	303	1742.01	305	1761.77	307
1768.82	308	1777.9	309	1829.21	310	1835.09	311	1844.41	312
1852.81	312	1866.37	311	1874.73	310	1914.03	310	1939.58	310.5
1959.11	320	1964.2	322.144	1966.47	323.1	2040	323.1	2054.18	321.3
2084.2	321	2089.85	321.9	2092.41	321.95	2094.97	322.12	2100.61	322.79
2105.2	323.15	2112.87	323.18	2117.99	323.38	2120.55	323.57	2123.1	323.96
2125.66	324.53	2133.33	325.92	2138.45	327.09	2143.56	328.19	2148.99	329.64
2151.46	330.19	2153.8	331.02	2156.35	331.36	2158.91	331.42	2161.47	331.36
2164.03	331.55	2166.58	331.93	2169.14	333.45	2171.7	334.81	2174.26	335.88
2176.33	335.45	2179.37	335.18	2181.93	335.48	2184.49	336.22	2189.6	337.38
2193.16	338.43	2197.28	339.52	2202.39	340.36	2204.95	340.7	2207.51	340.84
2210.06	341.09	2215.18	341.092	218.221	341.02				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	469.1	.06	730	.04	1964.2	.15	2054.18	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
469.1	1964.2	640	688	660	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
2084.22	218.221	321.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	315.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.19	Wt. n-Val.	0.050	0.043	
W.S. Elev (ft)	315.08	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)	310.28	Flow Area (sq ft)	63.64	10689.84	
E.G. Slope (ft/ft)	0.000711	Area (sq ft)	63.64	10689.84	
Q Total (cfs)	37000.00	Flow (cfs)	76.25	36923.75	
Top Width (ft)	1513.60	Top Width (ft)	33.70	1479.90	
Vel Total (ft/s)	3.44	Avg. Vel. (ft/s)	1.20	3.45	
Max Chl Dpth (ft)	13.44	Hydr. Depth (ft)	1.89	7.22	
Conv. Total (cfs)	1387815.0	Conv. (cfs)	2860.0	1384955.0	
Length Wtd. (ft)	687.93	Wetted Per. (ft)	34.23	1487.38	
Min Ch El (ft)	301.64	Shear (lb/sq ft)	0.08	0.32	
Alpha	1.01	Stream Power (lb/ft s)	0.10	1.10	
Frctn Loss (ft)	0.47	Cum Volume (acre-ft)	26.67	882.41	142.41
C & E Loss (ft)	0.01	Cum SA (acres)	12.02	97.13	27.18

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	317.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.21	Wt. n-Val.	0.050	0.043	
W.S. Elev (ft)	316.83	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)	310.92	Flow Area (sq ft)	125.71	13282.72	
E.G. Slope (ft/ft)	0.000603	Area (sq ft)	125.71	13282.72	
Q Total (cfs)	49000.00	Flow (cfs)	203.88	48796.12	
Top Width (ft)	1520.45	Top Width (ft)	36.96	1483.49	
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)	1.62	3.67	
Max Chl Dpth (ft)	15.19	Hydr. Depth (ft)	3.40	8.95	
Conv. Total (cfs)	1995562.0	Conv. (cfs)	8303.2	1987259.0	
Length Wtd. (ft)	687.87	Wetted Per. (ft)	37.94	1491.38	
Min Ch El (ft)	301.64	Shear (lb/sq ft)	0.12	0.34	
Alpha	1.01	Stream Power (lb/ft s)	0.20	1.23	
Frctn Loss (ft)	0.42	Cum Volume (acre-ft)	66.43	1127.77	271.42
C & E Loss (ft)	0.01	Cum SA (acres)	17.90	97.75	30.90

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	312.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.050	0.043	
W.S. Elev (ft)	312.77	Reach Len. (ft)	640.00	688.00	660.00
Crit W.S. (ft)	309.21	Flow Area (sq ft)	7.12	7278.44	
E.G. Slope (ft/ft)	0.000951	Area (sq ft)	7.12	7278.44	
Q Total (cfs)	22513.00	Flow (cfs)	6.05	22506.95	
Top Width (ft)	1482.86	Top Width (ft)	7.71	1475.15	
Vel Total (ft/s)	3.09	Avg. Vel. (ft/s)	0.85	3.09	

Max Chl Dpth (ft)	11.13	Hydr. Depth (ft)	0.92	4.93	
Conv. Total (cfs)	730170.5	Conv. (cfs)	196.2	729974.3	
Length Wtd. (ft)	687.98	Wetted Per. (ft)	7.96	1482.10	
Min Ch El (ft)	301.64	Shear (lb/sq ft)	0.05	0.29	
Alpha	1.00	Stream Power (lb/ft s)	0.05	0.90	
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	10.94	686.65	119.69
C & E Loss (ft)	0.01	Cum SA (acres)	3.48	96.63	25.65

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 280

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed gradingstarts at 1435.62, n=0.04
In the non-disturbed area, Manning's coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 368

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332.56	5.17	332.57	10.16	332.16	12.86	332.01	20.99	331.83
35.91	331.55	38.48	331.47	41.04	331.15	43.6	330.94	46.16	330.97
53.84	330.75	74.34	330.07	79.46	329.97	89.71	329.56	94.83	329.5
117.88	328.95	120.45	328.85	123.01	329	125.57	328.75	130.69	328.39
135.82	328.16	143.5	327.95	146.06	327.97	151.18	327.79	156.31	327.76
158.87	327.66	161.43	327.77	163.99	327.59	166.55	327.2	169.3	327.11
171.68	326.93	179.36	326.75	184.49	326.95	187.05	326.99	189.61	326.78
194.73	326.12	199.85	325.92	202.8	326.07	204.98	326.06	212.66	325.48
217.79	325.03	220.35	324.91	228.03	325	235.72	325.2	238.4	325.2
246.77	325.49	251.09	325.69	261.43	325.34	269.02	325.19	271.9	325.06
276.7	324.98	281.83	324.77	286.95	324.68	294.63	324.34	302.32	324.72
310	325.01	315.13	325.01	320.06	325.21	325.37	325.22	327.93	325.16
333.06	324.7	338.18	324.78	340.74	324.75	343.1	324.63	358.67	324.11
363.8	323.91	368.92	323.64	381.73	323.08	389.41	322.81	391.97	322.66
397.1	322.53	402.22	322.28	407.34	321.79	412.47	321.53	417.59	321.17
420.57	320.88	427.84	320.29	430.4	320.23	438.08	320.28	440.64	320.39
448.33	320.11	450.89	320.16	456.01	320.04	461.14	319.8	463.7	319.73
476.51	319.25	491.87	318.59	497	318.44	509.81	317.88	512.37	317.69
516.9	317.48	520.05	317.42	525.18	317.19	527.74	317.29	532.86	318.2
535.42	318.74	537.98	319.74	543.11	322.47	545.67	323.72	548.2	324.155
550.79	323.83	553.35	322.81	555.91	321.69	560.87	318.53	563.6	318.13
566.16	316.66	567.15	314.97	569.24	311.77	571.28	308.37	573.43	308.88
578.97	309.83	584.39	309.08	586	309.09	589.21	308.61	594.34	308.44
596.9	308.52	600.65	309.01	604.58	309.2	606.94	309.44	612.27	309.8
615.31	309.95	622.52	309.69	625.08	308.6	627.64	308.3	629.97	308.27
635.32	307.81	637.88	307.7	640.45	307.69	645.57	307.47	648.13	307.46
650.69	307.67	653.25	307.51	658.38	307.36	661.38	307.18	671.19	306.97

673.75	307.01	678.87	307.46	684.41	307.34	686.51	307.37	689.12	307.55
699.36	307.77	701.92	307.76	704.49	307.5	707.05	307.06	709.54	307.4
711.63	307.53	714.73	307.89	717.92	307.67	719.86	307.3	724.98	306.78
727.54	306.82	730.1	307.01	732.66	307.3	734.67	307.27	737.79	307.09
740.35	307.07	745.14	306.62	750.59	306.69	755.72	306.66	757.7	306.82
761.89	306.76	766.08	306.58	773.65	307.14	776.21	307.19	778.77	306.94
781.33	306.5	783.89	306.23	786.46	306.3	789.11	306.11	794.14	306.18
799.58	306.15	801.83	306.37	809.51	306.39	812.07	306.34	814.63	306.44
817.2	306.32	822.32	306.4	824.88	306.11	830.99	306.06	835.13	306.22
837.69	306.26	840.25	306.48	845.37	307.05	847.93	307.18	850.5	306.88
853.06	306.83	858.18	306.85	865.87	306.44	868.43	306.52	870.99	306.42
877.06	306.55	878.67	306.53	881.29	306.34	886.36	306.34	891.11	306.48
896.6	306.9	900.09	306.82	904.29	306.53	906.85	306.71	909.41	306.64
912.66	306.75	924.78	306.93	932.47	306.64	935.03	306.86	937.78	306.99
942.71	307.02	945.27	306.98	950.4	307.09	952.96	307.23	958.08	307.71
965	307.32	968.33	307.2	975.47	306.81	978.57	306.72	981.14	306.77
983.7	306.97	988.04	306.9	991.38	307.09	993.94	306.93	996.51	306.34
999.07	305.99	1000.6	306.05	1006.54	306.07	1009.31	305.92	1011.88	305.68
1014.44	304.2	1015.26	303.54	1017.35	302.17	1019.56	301.18	1021.54	300.63
1024.68	299.55	1027.24	298.96	1029.63	298.83	1032.37	298.84	1034.93	299.11
1037.49	299.54	1040.05	299.42	1042.61	299.04	1046.67	299.04	1050.3	298.92
1052.86	299.72	1055.04	300.96	1057.98	302.77	1060.55	304.24	1063.11	305.17
1065.67	305.93	1211.68	305.92	1216.8	305.95	1219.36	306.05	1222.56	305.96
1227.05	306.01	1229.61	305.86	1232.17	305.91	1237.29	306.18	1239.86	306.68
1242.42	307.07	1250.1	306.62	1252.66	306.05	1255.22	305.21	1257.79	304.56
1260.35	304.31	1272.37	304.19	1344.88	303.49	1350.29	304	1352.56	304.1
1355.13	303.93	1360.25	304.2	1362.81	304.56	1367.93	305.4	1369.14	305.5
1373.06	305.59	1380.74	305.64	1385.82	305.84	1388.43	305.78	1396.36	306.17
1401.23	306.26	1408.92	306.5	1414.04	306.51	1417.3	306.59	1421.73	306.53
1431.97	306.69	1434.54	306.66	1435.62	306.5	1466.04	306	1504.96	306
1520.25	307	1533.1	308	1536.24	308.5	1554.65	308	1581.9	307
1653.55	306.37	1687.22	308	1703.58	312	1715.73	316	1727.06	316
1738.61	312	1764.4	306	1780.91	305	1803.51	304	1825.15	304
1835.04	305	1845.02	305	1852.07	302.47	1854.94	302.68	1857.03	302.98
1859.76	303.01	1864.88	302.81	1867.5	302.42	1869.6	302.74	1872.57	302.92
1877.69	304.58	1880.25	305.14	1882.81	305.6	1887.93	305.86	1890.5	305.94
1896.95	305	1967.09	305	1974.46	305.81	1979.38	307.44	1988.6	309.91
1997.83	309.62	2016.27	309.63	2021.6	310	2023.7	310	2026.26	310.27
2028.82	311.83	2036.5	315.19	2039.05	316.03	2041.38	316.48	2043.49	317.28
2046.71	318.01	2049.27	318.07	2054.37	318.42	2056.93	318.84	2059.48	318.77
2064.59	318.78	2067.14	318.88	2069.69	319.14	2072.25	319.82	2074.8	319.32
2077.35	319.03	2085.02	318.99	2094.22	319.12	2100.34	319.25	2102.67	319.25
2105.44	319.41	2113.1	319.41	2118.21	319.69	2120.77	319.5	2128.43	319.62
2133.53	319.65	2143.75	319.79	2148.85	319.82	2156.52	319.94	2166.73	319.8
2169.28	319.94	2176.94	320.09	2184.6	319.9	2189.33	319.63	2192.27	319.57
2194.82	319.4	2199.93	319.62	2202.48	319.8	2210.14	320.04	2217.8	320.1
2222.91	320.05	2228.02	319.84	2228.86	319.94				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	548.2	.06	1435.62	.04	1974.46	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
548.2	2021.6	1135	1021	1060	.1	.3

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	314.78	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.		0.051	0.050
W.S. Elev (ft)	314.64	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		12013.23	39.45
E.G. Slope (ft/ft)	0.000655	Area (sq ft)		12013.23	39.45
Q Total (cfs)	37000.00	Flow (cfs)		36942.00	58.00
Top Width (ft)	1448.47	Top Width (ft)		1434.83	13.64
Vel Total (ft/s)	3.07	Avg. Vel. (ft/s)		3.08	1.47
Max Chl Dpth (ft)	15.81	Hydr. Depth (ft)		8.37	2.89
Conv. Total (cfs)	1446218.0	Conv. (cfs)		1443951.0	2267.0
Length Wtd. (ft)	1021.61	Wetted Per. (ft)		1447.41	14.68
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.34	0.11
Alpha	1.00	Stream Power (lb/ft s)		1.04	0.16
Frctn Loss (ft)	1.05	Cum Volume (acre-ft)	26.20	703.12	142.11
C & E Loss (ft)	0.04	Cum SA (acres)	11.77	74.12	27.08

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	316.61	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.		0.051	0.050
W.S. Elev (ft)	316.44	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		14610.08	68.45
E.G. Slope (ft/ft)	0.000611	Area (sq ft)		14610.08	68.45
Q Total (cfs)	49000.00	Flow (cfs)		48889.06	110.95
Top Width (ft)	1474.87	Top Width (ft)		1455.31	19.56
Vel Total (ft/s)	3.34	Avg. Vel. (ft/s)		3.35	1.62
Max Chl Dpth (ft)	17.61	Hydr. Depth (ft)		10.04	3.50
Conv. Total (cfs)	1982527.0	Conv. (cfs)		1978038.0	4488.8
Length Wtd. (ft)	1024.48	Wetted Per. (ft)		1469.36	20.88
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.38	0.13
Alpha	1.00	Stream Power (lb/ft s)		1.27	0.20
Frctn Loss (ft)	0.96	Cum Volume (acre-ft)	65.51	907.49	270.90
C & E Loss (ft)	0.04	Cum SA (acres)	17.63	74.54	30.76

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	312.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.11	Wt. n-Val.		0.051	0.050
W.S. Elev (ft)	312.23	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		8577.12	13.24
E.G. Slope (ft/ft)	0.000730	Area (sq ft)		8577.12	13.24
Q Total (cfs)	22513.00	Flow (cfs)		22498.89	14.11
Top Width (ft)	1427.12	Top Width (ft)		1418.99	8.13
Vel Total (ft/s)	2.62	Avg. Vel. (ft/s)		2.62	1.07
Max Chl Dpth (ft)	13.40	Hydr. Depth (ft)		6.04	1.63
Conv. Total (cfs)	833185.9	Conv. (cfs)		832663.8	522.1
Length Wtd. (ft)	1021.17	Wetted Per. (ft)		1429.48	8.67
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.27	0.07
Alpha	1.00	Stream Power (lb/ft s)		0.72	0.07
Frctn Loss (ft)	1.05	Cum Volume (acre-ft)	10.89	561.44	119.59
C & E Loss (ft)	0.03	Cum SA (acres)	3.42	73.78	25.59

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 270

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed grading start at station# 564, n=0.04
In the non-disturbed area, Manning's coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 410

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	311.5	4.03	311.65	16.61	311.94	19.12	311.97	21.64	312.03
24.15	312.03	29.18	312.16	31.7	312.19	36.73	312.32	41.76	312.25
46.79	311.94	49.3	311.84	51.82	311.69	54.33	311.61	56.85	311.5
59.36	311.42	60.08	311.37	64.39	311.01	66.91	310.91	69.42	310.97
74.45	311.42	79.48	311.69	82	311.77	89.54	311.94	92.06	312.07
94.57	312.16	97.09	312.19	99.6	312.14	102.12	312.06	104.63	312.03
107.15	311.97	109.66	311.88	112.18	311.81	117.21	311.75	122.24	311.61
127.27	311.53	129.78	311.47	132.3	311.38	134.81	311.25	137.33	311.15
139.84	311.18	142.36	311.53	144.87	312.01	147.39	312.7	149.9	313.69
152.42	314.88	154.93	315.98	157.45	317.13	159.96	318.05	162.48	318.62
164.99	318.75	167.51	318.29	170.02	317.3	175.05	314.66	177.57	313.56
179.95	312.91	182.6	312.1	185.11	311.55	187.63	311.23	190.14	311.18
191.52	311.33	192.66	311.41	195.17	311.51	196.06	311.51	197.69	311.56

200.2	311.37	202.72	311.24	205.23	311.32	207.75	311.48	210.26	311.59
212.78	311.62	215.29	311.7	217.81	311.74	220.99	311.75	222.84	311.74
225.35	311.87	230.38	311.95	232.9	312.02	235.41	312.02	237.93	311.98
245.92	312.1	248.18	312.15	250.5	312.12	253.02	312.18	255.53	312.27
258.05	312.32	260.56	312.34	264.05	312.28	265.59	312.23	270.62	312.45
273.14	312.47	276	312.44	280.68	312.47	283.2	312.43	285.71	312.47
288.23	312.56	290.74	312.78	293.51	313.12	295.77	313.37	298.29	313.79
300.31	314.03	303.32	314.27	305.83	314.64	308.35	314.52	310.86	314.22
313.38	313.85	315.89	313.36	318.37	313.13	320.92	312.84	323.44	312.68
325.24	312.46	326.85	312.3	327.5	312.19	329.77	311.98	330.98	311.89
333.5	311.35	334.3	311.14	335.32	310.81	336.01	310.63	336.57	310.57
338.53	310.25	341.04	310.03	343	309.18	346.07	307.77	347.9	307.02
348.59	306.76	349.45	306.68	350.17	306.56	351.1	306.49	356.13	306.26
358.65	306.62	361.16	307.17	361.5	307.22	363.57	307.83	364.53	307.86
366.4	307.82	368.3	307.63	369.22	307.6	370.56	307.44	371.22	307.43
372.05	307.32	372.83	307.29	373.74	307.14	376.25	307.23	378.77	306.35
379.63	305.86	380.52	305.46	381.28	305.05	381.89	304.89	384.16	304.39
386.43	304.04	388.69	303.57	391.34	303.06	391.82	302.94	393.23	302.76
394.65	302.31	395.49	301.98	396.37	301.71	397.47	301.86	397.76	301.86
398.89	302.06	400.02	302.49	401.4	303.07	402.29	303.13	403.12	303.04
403.92	303.07	406.43	303.47	406.82	303.47	408.77	303.14	408.95	303.13
411.46	302.35	413.98	302.35	419.01	302.5	420.42	302.42	424.04	302.26
426.55	301.75	427.22	301.74	429.07	301.65	431.58	301.9	434.1	302.29
436.29	302.2	436.61	302.16	439.13	301.98	439.85	302.13	440.82	302.4
441.64	302.57	444.16	303.14	446.67	303.42	449.19	303.32	451.7	302.62
453.97	301.69	456.73	300.53	459.25	299.76	461.76	299.35	463.48	299.2
466.79	298.87	469.31	298.5	471.82	297.98	472.55	297.86	474.81	297.57
476.85	297.34	479.37	297.19	481.88	297.12	484.4	297.09	489.43	297.09
491.94	298.11	494.46	299.66	496.97	300.43	499.49	300.96	502.01	301.63
504.52	302.39	507.03	303.35	509.55	304.95	539.73	305.61	540.54	305.27
541.55	304.77	542.24	304.48	544.76	303.76	547.27	303.25	549.79	302.53
552.3	302.08	554.82	301.81	559.85	301.45	561.7	301	564	302
575.22	303	579.77	304	582.78	305	604.98	305	610.86	306
624.5	307.5	633.03	306	647.38	305	658.82	304	730.18	302
748.97	300	773.22	299.81	781.81	300	783.69	300.56	786.2	300.72
788.72	300.96	791.23	301.36	794.36	301.63	796.26	302.46	801.16	303.02
803.81	303.44	806.32	303.71	808.84	303.74	810.22	303.67	812.49	303.57
813.87	303.34	816.38	303.15	818.9	302.91	821.41	302.39	823.93	300.23
831.47	298.74	836.5	298.74	839.02	298.89	841.53	299.36	844.05	299.95
846.56	300.36	849.08	300.47	851.02	300.54	854.11	300.5	856.62	300.37
859.14	300.29	862.35	300.28	864.62	300.39	866.68	300.26	869.2	300.09
871.71	300.16	874.23	300.23	874.9	300.41	875.95	300.48	876.74	300.32
879.26	300.46	881.77	300.81	885.01	301.09	886.2	301.16	886.8	301.15
887.28	301.2	889.32	301.23	889.55	301.35	891.85	301.52	894.35	301.85
896.86	302.54	899.38	303.229	901.3	303.44	901.89	304.47	904.41	305.85
906.92	307.53	909.44	307.79	909.94	308.72	911.95	309.28	914.47	309.24
916.98	309.16	919.5	309.15	921.27	309.11	923.54	309.01	927.04	309.06
929.56	309.18	932.07	309.31	937.1	309.45	939.62	309.79	944.65	310.22
949.68	310.41	952.19	310.56	954.71	310.69	957.53	310.83	959.74	310.9
962.07	310.84	964.33	310.75	966.6	310.63	968.87	310.38	972.31	310.32
973.4	310.14	977.34	310.08	979.86	310.12	982.37	310.19	984.73	310.22
987	310.35	992.43	310.44	994.95	310.65	998.33	310.73	999.98	310.95

1002.49	311.09	1005.01	311.78	1012.55	312.03	1016.46	312.23	1020.1	312.42
1022.61	312.67	1025.13	312.9	1030.16	312.96	1032.67	313	1035.19	313.09
1036.86	313.2	1040.22	313.34	1045.25	313.51	1053.57	313.52	1055.01	313.77
1060.32	313.92	1062.83	314.19	1065.34	314.57	1067.85	315.46	1086.35	322.18
1093.2	321.99	1111.24	322.531	116.773	323.12	1129.35	316	1130.6	315.18
1133.11	315.34	1135.62	315.68	1137.97	316.07	1140.28	316.62	1143.15	316.9
1144.89	317.29	1148.17	317.64	1150.68	318.16	1153.19	319.73	1161.02	320.12
1163.23	320.67	1165.74	321.25	1168.25	321.86	1170.76	322.52	1173.27	323.04
1175.78	322.95	1178.29	322.81	1180.8	322.87	1184.06	322.88	1190.84	322.94
1193.28	322.97	1195.86	323.11	1200.88	323.08	1203.39	323.1	1205.9	323.25
1211.72	323.38	1215.94	323.41	1218.45	323.38	1220.96	323.46	1223.47	323.46
1228.49	323.44	1231	323.44	1233.51	323.47	1243.55	323.41	1248.59	323.4
1250.89	323.37	1253.59	323.37	1256.1	323.39	1261.12	323.53	1263.63	323.4
1266.14	323.19	1268.65	322.96	1271.16	322.73	1273.94	322.38	1276.18	322.19
1278.68	322.18	1280.85	322.07	1283.7	321.83	1285.46	321.69	1286.21	320.97
1288.72	320.78	1291.23	320.73	1293.74	320.68	1294.68	320.59	1295.38	320.49
1296.98	320.52	1298.14	320.49	1298.76	320.62	1301.27	320.66	1303.9	320.74

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	343	.06	564	.04	781.81	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
343	901.3	1000	951	815	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	278.7	314.64	F
1201.7	1303.9	333.8	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	313.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.58	Wt. n-Val.	0.050	0.049	0.050
W.S. Elev (ft)	313.11	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	307.81	Flow Area (sq ft)	45.41	5823.92	363.98
E.G. Slope (ft/ft)	0.001829	Area (sq ft)	363.40	5823.92	363.98
Q Total (cfs)	37000.00	Flow (cfs)	69.63	36041.04	889.33
Top Width (ft)	979.59	Top Width (ft)	287.10	558.30	134.19
Vel Total (ft/s)	5.94	Avg. Vel. (ft/s)	1.53	6.19	2.44
Max Chl Dpth (ft)	16.02	Hydr. Depth (ft)	1.16	10.43	2.71
Conv. Total (cfs)	865074.4	Conv. (cfs)	1627.9	842653.6	20792.9
Length Wtd. (ft)	947.08	Wetted Per. (ft)	39.65	566.66	136.57
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.13	1.17	0.30
Alpha	1.06	Stream Power (lb/ft s)	0.20	7.26	0.74
Frctn Loss (ft)	2.44	Cum Volume (acre-ft)	21.46	494.07	137.20
C & E Loss (ft)	0.02	Cum SA (acres)	8.03	50.76	25.28

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	315.60	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.61	Wt. n-Val.	0.050	0.049	0.050
W.S. Elev (ft)	314.99	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	308.89	Flow Area (sq ft)	940.17	6875.29	657.37
E.G. Slope (ft/ft)	0.001623	Area (sq ft)	940.17	6875.29	657.37
Q Total (cfs)	49000.00	Flow (cfs)	2282.37	44761.54	1956.09
Top Width (ft)	1044.80	Top Width (ft)	321.26	558.30	165.23
Vel Total (ft/s)	5.78	Avg. Vel. (ft/s)	2.43	6.51	2.98
Max Chl Dpth (ft)	17.90	Hydr. Depth (ft)	2.93	12.31	3.98
Conv. Total (cfs)	1216331.0	Conv. (cfs)	56655.4	1111119.0	48556.2
Length Wtd. (ft)	946.23	Wetted Per. (ft)	326.83	566.66	167.76
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.29	1.23	0.40
Alpha	1.18	Stream Power (lb/ft s)	0.71	8.00	1.18
Frctn Loss (ft)	2.11	Cum Volume (acre-ft)	53.26	655.70	262.07
C & E Loss (ft)	0.02	Cum SA (acres)	13.45	50.94	28.51

Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	311.26	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.050	0.049	0.050
W.S. Elev (ft)	310.89	Reach Len. (ft)	1000.00	951.00	815.00
Crit W.S. (ft)	306.16	Flow Area (sq ft)	5.63	4584.66	116.08
E.G. Slope (ft/ft)	0.001558	Area (sq ft)	5.63	4584.66	116.08
Q Total (cfs)	22513.00	Flow (cfs)	5.16	22336.83	171.01
Top Width (ft)	663.78	Top Width (ft)	7.93	558.30	97.55
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	0.92	4.87	1.47
Max Chl Dpth (ft)	13.80	Hydr. Depth (ft)	0.71	8.21	1.19
Conv. Total (cfs)	570269.8	Conv. (cfs)	130.6	565807.4	4331.8
Length Wtd. (ft)	949.13	Wetted Per. (ft)	8.18	566.66	99.79
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.07	0.79	0.11
Alpha	1.03	Stream Power (lb/ft s)	0.06	3.84	0.17
Frctn Loss (ft)	2.31	Cum Volume (acre-ft)	10.81	407.19	118.02
C & E Loss (ft)	0.02	Cum SA (acres)	3.32	50.61	24.31

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 260

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed grading start at station 523.75, n=0.05
In the non-disturbed area, Manning's coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 402

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.92	3.45	315.01	6.04	315.17	7.03	315.37	8.63	315.64
9.07	315.63	11.1	315.49	13.14	315.27	13.81	315.22	15.18	315.17
16.4	315.16	19.25	314.89	21.29	314.76	23.33	314.69	29.35	314.53
37.12	314.41	39.71	314.41	42.3	314.34	47.48	314.28	50.07	314.28
51.85	314.55	52.67	314.69	55.26	315.25	57.85	315.78	60.44	316.08
63.03	316.68	65.62	317.52	68.21	318.28	73.39	319.57	76.31	320.2
78.57	320.6	81.16	320.96	83.75	321.1	86.34	321.04	88.53	320.94
91.52	320.77	94.11	320.67	96.6	320.51	100.76	320.28	104.47	320.05
107.06	319.93	109.65	319.74	112.24	319.59	119.09	319.12	123.17	318.89
127.79	318.56	130.38	318.4	132.97	318.17	135.56	317.9	138.15	317.65
141.51	317.29	151.1	316.35	151.69	316.3	153.69	316.19	155.77	316.1
157.81	316.04	158.87	315.98	164.05	315.03	166.64	314.89	169.23	314.79
171.82	314.81	174.11	314.87	177.01	314.89	179.6	314.98	182.26	315
184.78	314.95	187.37	314.84	189.96	314.7	195.14	314.49	197.73	314.46
200.32	314.26	202.63	314.16	210.78	313.72	213.27	313.55	215.86	313.42
220.7	313.11	223.01	312.98	226.22	312.76	228.81	312.67	231.16	312.75
231.4	312.77	233.19	313.06	233.99	313.2	236.58	313.83	237.27	313.89
239.2	313.926	241.34	313.16	242.5	312.57	243.38	312.16	244.36	311.61
245.42	310.84	247.46	309.41	249.54	308	252.13	306.73	253.57	306.16
254.72	305.66	257.31	304.26	259.9	303.04	261.72	302.43	262.49	302.21
263.76	302.23	265.08	302.27	267.67	302.52	268.43	302.69	269.87	302.98
271.91	303.26	272.85	303.33	273.94	303.35	274.5	303.44	275.44	303.52
275.98	303.53	277.97	303.62	280.06	303.54	280.62	303.53	283.21	303.44
288.39	303.36	290.98	303.2	293.57	303.21	296.16	303.19	298.75	303.05
300.43	303.01	303.94	303	306.54	302.97	311.71	302.85	314.3	302.84
316.73	303.11	319.48	303.24	322.07	303.18	324.88	302.73	325.7	302.62
326.92	302.4	327.82	302.16	328.96	301.76	329.84	301.6	330.99	301.46
333.03	301.3	335.02	301.09	337.11	301.15	340.2	301.33	341.18	301.44
342.04	301.43	342.79	301.48	343.22	301.43	344.82	301.34	347.97	301.22
350.56	300.82	351.38	300.62	353.15	300.23	354.4	299.81	355.45	299.42
357.49	298.58	358.33	298.25	363.51	297.13	363.98	297.06	365.65	296.87
366.88	296.75	367.69	296.7	368.69	296.55	371.28	296.28	373.87	296.22
375.84	296.01	376.46	295.92	379.05	295.65	379.92	295.61	381.64	295.59
384.23	295.73	384.63	295.83	386.03	296.09	386.82	296.3	389.41	297.47
390.11	297.72	391.99	298.29	394.19	299.03	394.58	299.12	397.17	299.64

399.76	300.36	400.3	300.45	402.3	300.74	404.94	301.01	407.53	301.51
408.46	301.64	409.47	301.86	411.88	302	438.61	302	441.2	301.53
443.12	301.07	443.79	300.93	446.38	300.71	448.97	300.74	454.15	300.98
456.74	301.04	459.33	301.25	461.92	301.57	464.51	301.84	467.1	301.98
474.87	302.04	477.46	302.08	482.64	302.14	485.23	302.21	490.4	302.29
492.99	302.38	495.58	302.51	498.16	302.75	500.76	303.05	506.31	303.46
508.53	303.59	511.12	303.67	513.71	303.54	516.3	303.08	518.89	302.54
521.48	301.94	523.75	302	530.97	301	552.09	300.3	562.39	301
570.87	302	598.18	302	611.86	302	705.35	299.2	720.89	300.88
731.25	299.16	739.02	298.81	746.79	300.31	759.14	299.26	759.74	299.12
761.14	299.45	762.33	299.69	763.18	299.67	764.4	299.58	765.22	299.56
766.32	299.63	767.51	299.74	770.1	300.46	771.33	300.71	772.69	301.01
775.28	301.97	775.86	302.06	777.44	302.25	777.87	302.24	780.46	302.11
783.05	302.11	788.23	302.27	790.82	302.42	793.74	302.83	795.78	303.03
797.82	303.19	798.59	303.24	801.18	303.44	802	303.488	803.77	303.62
805.97	303.65	806.36	303.67	808	303.83	808.96	303.94	811.55	304.35
814.14	304.81	816.73	305.39	819.32	305.9	821.91	306.32	824.3	306.53
827.09	306.61	830.42	306.55	832.27	306.56	834.86	306.46	836.53	306.37
840.04	306.21	842.63	306.12	845.22	306.16	847.81	306.22	850.4	306.33
852.99	306.53	855.58	306.84	858.17	307.24	860.76	307.69	863.35	308.2
865.94	308.79	868.54	309.32	871.13	309.6	873.2	309.9	875.24	310.16
879.32	310.65	881.49	310.89	885.43	310.74	886.67	310.72	891.54	310.57
893.58	310.55	895.62	310.5	897.65	310.42	899.62	310.32	902.21	310.25
903.77	310.33	904.8	310.36	905.8	310.5	906.61	310.53	907.39	310.61
907.84	310.69	909.5	310.79	910.16	310.86	911.92	311.12	912.57	311.17
915.16	311.27	915.99	311.19	917.27	311.25	918.03	311.25	919.05	311.34
920.34	311.5	922.93	311.75	928.22	312.1	930.71	312.4	932.29	312.53
933.3	312.59	935.89	312.72	938.6	312.79	940.44	312.85	943.66	312.86
944.52	312.87	946.25	312.93	948.84	313.06	952.67	313.18	958.78	313.34
961.79	313.39	964.38	313.47	969.56	313.52	972.15	313.5	974.74	313.58
977.33	313.57	979.15	313.62	982.51	313.69	985.86	313.72	990.28	313.79
995.47	314.25	998.06	314.32	1000.65	314.49	1001.57	314.56	1004.9	316
1030.09	316.09	1031.04	316.44	1032.13	316.8	1034.17	317.55	1034.59	317.75
1036.2	318.64	1036.91	319.01	1039.5	319.94	1042.09	321.26	1044.68	323.16
1045.26	323.43	1046.39	324.01	1049.86	325.43	1050.47	325.56	1052.46	325.9
1056.58	326.15	1057.64	326.2	1060.65	326.2	1065.41	326.3	1070.59	326.34
1073.18	326.42	1074.92	326.44	1081.03	326.47	1083.54	326.46	1086.13	326.48
1088.72	326.55	1091.31	326.56	1096.49	326.67	1099.08	326.68	1101.4	326.66
1104.26	326.67	1106.85	326.65	1109.44	326.65	1111.59	326.63	1117.7	326.62
1119.74	326.59	1122.4	326.53	1124.99	326.5	1129.93	326.48	1135.35	326.4
1137.94	326.38	1140.12	326.28	1143.12	326.13	1146.23	325.93	1148.3	325.84
1153.48	325.68	1158.45	325.35	1166.14	324.68	1169.02	324.48	1174.2	323.92
1174.75	323.89	1179.39	323.43	1181.98	323.25	1184.57	323.42	1184.94	323.42
1187.16	323.31	1189.75	323.36	1194.93	323.44	1197.17	323.49	1200.11	323.49
1202.7	323.53	1205.29	323.53	1207.88	323.5	1209.39	323.46	1211.43	323.38
1213.46	323.28	1216.09	323.2						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	239.2	.06	523.75	.05	705.35	.06	802	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.

239.2 802 1050 1031 1000 .1 .3

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	311.23	Element			
Vel Head (ft)	0.78	Wt. n-Val.		0.056	0.050
W.S. Elev (ft)	310.45	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		5114.99	290.28
E.G. Slope (ft/ft)	0.003853	Area (sq ft)		5114.99	290.28
Q Total (cfs)	38000.00	Flow (cfs)		36700.95	1299.05
Top Width (ft)	640.12	Top Width (ft)		556.02	84.10
Vel Total (ft/s)	7.03	Avg. Vel. (ft/s)		7.18	4.48
Max Chl Dpth (ft)	14.86	Hydr. Depth (ft)		9.20	3.45
Conv. Total (cfs)	612166.2	Conv. (cfs)		591239.0	20927.2
Length Wtd. (ft)	1030.09	Wetted Per. (ft)		561.45	84.71
Min Ch El (ft)	295.59	Shear (lb/sq ft)		2.19	0.82
Alpha	1.02	Stream Power (lb/ft s)		15.72	3.69
Frctn Loss (ft)	2.38	Cum Volume (acre-ft)	17.29	374.67	131.08
C & E Loss (ft)	0.10	Cum SA (acres)	4.74	38.59	23.24

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	313.47	Element			
Vel Head (ft)	0.86	Wt. n-Val.		0.056	0.050
W.S. Elev (ft)	312.61	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		6320.87	540.72
E.G. Slope (ft/ft)	0.003243	Area (sq ft)		6320.87	540.72
Q Total (cfs)	50000.00	Flow (cfs)		47662.39	2337.61
Top Width (ft)	691.27	Top Width (ft)		559.58	131.69
Vel Total (ft/s)	7.29	Avg. Vel. (ft/s)		7.54	4.32
Max Chl Dpth (ft)	17.02	Hydr. Depth (ft)		11.30	4.11
Conv. Total (cfs)	877954.6	Conv. (cfs)		836908.3	41046.3
Length Wtd. (ft)	1030.04	Wetted Per. (ft)		565.63	132.45
Min Ch El (ft)	295.59	Shear (lb/sq ft)		2.26	0.83
Alpha	1.04	Stream Power (lb/ft s)		17.06	3.57
Frctn Loss (ft)	1.89	Cum Volume (acre-ft)	42.47	511.65	250.87
C & E Loss (ft)	0.12	Cum SA (acres)	9.76	38.74	25.73

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	308.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.		0.056	0.050
W.S. Elev (ft)	308.33	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		3941.07	145.60
E.G. Slope (ft/ft)	0.004057	Area (sq ft)		3941.07	145.60
Q Total (cfs)	25000.00	Flow (cfs)		24514.83	485.17
Top Width (ft)	614.87	Top Width (ft)		552.95	61.92
Vel Total (ft/s)	6.12	Avg. Vel. (ft/s)		6.22	3.33
Max Chl Dpth (ft)	12.74	Hydr. Depth (ft)		7.13	2.35
Conv. Total (cfs)	392491.3	Conv. (cfs)		384874.3	7616.9
Length Wtd. (ft)	1030.28	Wetted Per. (ft)		557.72	62.35
Min Ch El (ft)	295.59	Shear (lb/sq ft)		1.79	0.59
Alpha	1.02	Stream Power (lb/ft s)		11.13	1.97
Frctn Loss (ft)	2.37	Cum Volume (acre-ft)	10.75	314.13	115.57
C & E Loss (ft)	0.08	Cum SA (acres)	3.23	38.48	22.81

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 250

INPUT
Description: Survey Data (June 12, 2014), and proposed grading
Proposed
grading start at 737.45, n=0.04
Proposed PA-1 staton, n=0.15
In
the non-disturbed area, Manning's coefficients are derived from
the Corrected Effective Model.
Station Elevation Data num= 309

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	318.93	4.62	319.04	12.59	319.12	15.7	319.22	18.32	319.25
20.94	319.34	23.56	319.33	27.68	319.28	31.43	319.3	39.29	319.28
44.54	319.19	47.16	319.19	50.46	319.11	52.4	319.12	55.02	319.05
62.42	318.93	65.51	318.8	70.75	318.71	73.37	318.7	75.99	318.39
78.61	317.55	81.23	316.81	83.86	316.56	85.87	316.43	89.1	316.27
91.72	315.97	94.34	315.71	99.58	315.05	102.27	314.73	106.26	314.35
110.07	314.03	112.69	313.93	115.31	313.88	120.55	313.65	125.8	313.32
130.17	313.01	133.66	312.81	144.15	312.28	152.01	311.76	154.63	311.64
159.88	311.35	166.05	311.05	170.36	310.79	172.98	310.67	175.6	310.61
183.47	310.35	188.71	310.22	193.95	310.06	199.2	309.86	204.44	309.77
207.06	309.75	212.3	309.66	214.92	309.59	222.79	309.49	225.83	309.4
228.03	309.37	233.27	309.2	239.78	308.97	243.77	308.87	249	308.69
252.12	308.54	256.87	308.38	262.11	308.25	267.35	308.04	269.97	307.99

272.59	308.02	277.05	307.81	280.46	307.78	285.7	307.48	287.61	307.43
293.56	307.16	296.19	307.07	303.56	306.76	309.29	306.62	311.91	306.53
317.16	306.41	321.49	306.27	325.02	306.08	327.64	305.97	335.51	305.53
339.41	305.06	343.39	304.62	347.36	304.05	349.35	303.69	351.26	303.3
353.89	302.88	359.79	302.39	363.27	302.18	367.01	301.85	368	301.88
369.24	302.01	372.26	302.2	374.89	302.22	376.2	302.19	380.14	302.17
385.15	302.1	388.01	301.74	395.88	301.09	398.51	301.04	403.05	300.77
405.03	300.68	407.03	300.5	409	300.22	411.03	300.15	413.03	300.02
416.84	299.88	419.04	299.75	427.04	299.35	433	299.092	450.83	298.33
453.44	298.38	455.07	298.49	459.08	298.62	461.68	298.65	463.08	298.76
463.9	298.69	468.94	296.96	471.74	296.12	474.36	295.41	476.97	295.75
479.1	296.28	479.59	296.35	481.1	296.24	482.2	296.23	486.03	295.85
487.43	295.66	489.1	295.33	491.11	295.06	495.27	294.73	497.89	294.72
503.14	294.78	505.12	295.09	505.73	295.27	508.34	296.43	509.13	296.68
511.69	297.17	513.57	297.35	516.19	297.87	517.14	298	518.8	298.33
521.41	298.56	523.14	298.41	525.15	298.18	526.64	298.09	529.26	298.1
534.48	298.08	539.71	298.09	545.17	297.99	550.17	297.95	555.4	297.95
561.19	298.1	563.24	298.19	565.85	298.24	571.2	298.24	573.7	298.19
575.2	298.34	578.92	298.51	581.54	298.58	584.15	298.5	587.22	298.79
589.69	299.08	591.22	299.31	591.99	299.36	597.24	299.16	599.23	299.1
602.45	299.27	605.07	299.44	607.24	299.41	609.24	299.24	612.91	298.86
615.25	298.77	618.14	298.73	621.25	298.61	622.91	298.44	625.26	298.28
625.98	298.19	628.59	298.04	633.27	297.9	636.43	298.08	639.28	298.03
643.28	298.28	646.89	298.37	649.51	298.16	652.12	298.06	657.3	297.94
659.96	298.02	663.3	298.24	665.19	298.34	667.8	298.58	671.31	298.71
675.32	298.89	678.26	298.85	680.87	299.01	683.49	299.09	686.1	298.97
688.72	298.9	691.33	298.91	693.95	298.92	695.34	298.97	696.56	298.98
720.09	298.98	727.34	298.98	737.45	298.66	770.58	298	790.39	296.68
819.65	296.68	838.35	298	866.67	298	877.89	295.19	893.56	295.29
895.23	295.31	897.85	295.24	900.46	295.28	903.58	295.63	905.22	295.73
910.92	295.94	913.59	296.41	916.14	297.12	917.59	297.44	919.59	297.75
921.6	297.9	923.99	297.99	925.6	298.01	927.6	297.97	929.21	297.87
931.52	298	938.6	300	951.75	300	960.67	298	1002.48	298
1013.9	299.754	1015.5	300	1042.19	300	1062.53	300	1066.39	300
1066.39	307	1069.81	308	1073.81	310	1077.8	312	1081.81	314
1085.26	315.5	1156.32	315.5	1174.31	313.9	1229.4	315.3	1314.98	315.3
1340.67	314	1360.7	315.6	1437.02	316	1438.65	315	1440.5	315
1440.5	313	1441.58	313.18	1442.19	313.32	1444.19	313.97	1446.81	315.54
1449.42	316.75	1450.2	317.15	1452.04	318.28	1454.2	319.78	1456.21	320.92
1457.27	321.44	1458.21	321.98	1459.26	322.81	1460.21	323.42	1461.29	324.41
1462.21	325.51	1462.49	325.67	1464.21	328.1	1465.11	329.25	1466.22	330.23
1466.79	330.34	1467.72	330.86	1472.95	330.98	1478.18	331	1480.79	331.06
1484.24	330.97	1486.96	330.94	1491.25	331	1496.48	331.12	1499.09	331.05
1504.26	331.03	1506.26	331	1509.55	331	1517.39	330.94	1520.28	330.84
1527.85	330.78	1533.07	330.72	1540.92	330.69	1546.14	330.72	1550.31	330.69
1552.31	330.73	1553.99	330.71	1556.32	330.6	1559.22	330.53	1561.83	330.37
1564.44	330.28	1569.67	330.19	1574.9	329.93	1580.13	329.81	1588.36	329.23
1590.36	329.13	1594.36	328.79	1595.81	328.72	1598.43	328.47	1601.04	327.93
1603.66	327.44	1606.27	327.22	1608.38	327.22	1611.64	327.26		

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

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      0     .05     433     .06  737.45     .04  877.89     .06  931.52     .04
 1085.26     .15 1441.58     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           433  1013.9              700     701     615             .1       .3
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CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	308.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	308.29	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	736.03	6057.29	438.39
E.G. Slope (ft/ft)	0.001543	Area (sq ft)	736.03	6057.29	438.39
Q Total (cfs)	38000.00	Flow (cfs)	2255.01	33431.20	2313.80
Top Width (ft)	810.09	Top Width (ft)	172.69	580.90	56.50
Vel Total (ft/s)	5.25	Avg. Vel. (ft/s)	3.06	5.52	5.28
Max Chl Dpth (ft)	13.57	Hydr. Depth (ft)	4.26	10.43	7.76
Conv. Total (cfs)	967360.1	Conv. (cfs)	57405.5	851052.8	58901.9
Length Wtd. (ft)	694.64	Wetted Per. (ft)	173.12	583.67	63.73
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.41	1.00	0.66
Alpha	1.05	Stream Power (lb/ft s)	1.25	5.52	3.50
Frctn Loss (ft)	1.90	Cum Volume (acre-ft)	8.42	242.45	122.72
C & E Loss (ft)	0.00	Cum SA (acres)	2.66	25.14	21.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	311.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.46	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	311.00	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	1332.99	7629.50	598.62
E.G. Slope (ft/ft)	0.001175	Area (sq ft)	1332.99	7629.50	598.62
Q Total (cfs)	50000.00	Flow (cfs)	3970.23	42835.42	3194.35
Top Width (ft)	908.95	Top Width (ft)	266.14	580.90	61.91
Vel Total (ft/s)	5.23	Avg. Vel. (ft/s)	2.98	5.61	5.34
Max Chl Dpth (ft)	16.28	Hydr. Depth (ft)	5.01	13.13	9.67
Conv. Total (cfs)	1458703.0	Conv. (cfs)	115827.7	1249683.0	93192.2
Length Wtd. (ft)	694.31	Wetted Per. (ft)	266.61	583.67	69.78
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.37	0.96	0.63
Alpha	1.08	Stream Power (lb/ft s)	1.09	5.38	3.36
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)	26.40	346.56	237.79
C & E Loss (ft)	0.01	Cum SA (acres)	6.55	25.24	23.51

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate

the need for additional cross sections.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	306.47	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	306.15	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	435.24	4811.42	323.01
E.G. Slope (ft/ft)	0.001479	Area (sq ft)	435.24	4811.42	323.01
Q Total (cfs)	25000.00	Flow (cfs)	1246.91	22314.21	1438.89
Top Width (ft)	742.67	Top Width (ft)	109.28	580.90	52.49
Vel Total (ft/s)	4.49	Avg. Vel. (ft/s)	2.86	4.64	4.45
Max Chl Dpth (ft)	11.43	Hydr. Depth (ft)	3.98	8.28	6.15
Conv. Total (cfs)	650094.4	Conv. (cfs)	32424.2	580253.7	37416.5
Length Wtd. (ft)	695.00	Wetted Per. (ft)	109.66	583.67	58.66
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.37	0.76	0.51
Alpha	1.03	Stream Power (lb/ft s)	1.05	3.53	2.26
Frctn Loss (ft)	1.81	Cum Volume (acre-ft)	5.50	210.55	110.19
C & E Loss (ft)	0.00	Cum SA (acres)	1.91	25.06	21.50

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 245

INPUT
Description: Survey Data (June 12, 2014), and proposed grading-Proposed grading starts at station 1373.16
In the non-disturbed area, Manning's coefficients are derived from the Corrected Effective Model.
Station Elevation Data num= 428

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332	2.84	332.19	5.61	331.73	8.38	331.47	11.15	331.35
13.91	331.34	16.68	331.19	22.22	331.11	27.76	330.97	36.57	330.92
47.13	330.62	52.67	330.54	55.44	330.59	58.21	330.86	60.98	331.66
63.74	332.05	66.51	331.88	72.05	331.1	74.82	331.13	78.38	331.34
80.35	331.62	83.47	331.43	85.89	330.53	88.66	328.99	91.43	328.22
94.2	326.76	96.6	325.29	98.48	324.29	102.5	322.5	105.27	322.02
110.81	321.97	122.87	321.76	138.49	321.39	146.79	321.17	157.87	320.93
160.64	320.84	180.01	320.7	182.9	320.72	193.86	320.68	204.93	320.51
218.77	320.18	224.18	320.09	232.61	319.89	246.45	319.6	263.06	319.16
267.33	319.1	274.14	318.93	279.67	319.02	282.44	318.94	287.98	319.34
290.75	319.66	296.28	319.88	299.05	320.09	304.59	320.63	310.13	320.93
315.66	321.01	317.04	320.71	323.97	318.15	327.36	317.19	329.5	317.06
332.27	317.08	357.38	317	368.26	316.94	382.1	316.9	386.89	316.81

393.17	316.75	398.65	316.84	407.02	316.8	415.32	316.63	427.63	316.42
431.93	316.38	458.69	315.94	462.56	315.75	467.92	315.56	470.69	315.66
476.22	315.73	484.53	315.91	487.3	315.91	491.66	316.05	496.21	316.07
509.44	316.44	514.98	316.44	520.52	316.71	523.29	316.79	526.05	316.64
528.1	316.82	537.13	316.66	539.36	316.75	542.66	316.7	556.51	316.75
567.58	316.72	570.35	316.78	578.65	316.84	581.42	316.78	586.96	316.96
590.62	316.81	591.89	316.86	595.26	317.4	602.26	317.7	603.57	317.54
608.08	316.74	617.41	316.59	622.95	316.31	628.48	316.16	629.41	315.13
631.37	310.13	633.16	306.96	634.02	305.95	636.79	305.58	639.56	304.94
645.09	304.22	647.86	304.06	653.4	304.17	655.7	304.089	659.43	303.85
661.7	303.59	666.93	303.22	670.01	302.56	672.56	302.12	676.31	301.19
681.08	299.79	686.62	298.64	693.2	297.84	695.4	297.65	698.83	297.15
701.22	296.89	704.46	296.87	706.33	296.77	711.53	296.66	717.07	296.31
719.84	296.21	722.61	296.46	725.09	296.35	728.84	296.63	730.91	296.98
736.45	296.78	740.1	296.9	747.61	296.93	749.48	297	751.36	296.92
755.11	296.59	758.59	296.54	761.36	296.61	766.37	296.48	769.67	296.55
771.99	296.2	773.87	295.68	775.75	295.39	777.97	295.44	780.74	295.95
783.51	296.63	785.13	296.61	788.88	296.38	791.81	296.51	794.51	296.75
797.35	297.11	800.12	297.15	802.01	296.98	803.89	297.03	805.99	297.36
808.42	297.47	811.82	297.32	818.9	296.76	825.03	296.92	827.8	296.77
830.57	295.86	835.1	295.52	843.29	295.61	847.04	295.56	849.95	295.74
858.25	296.46	863.92	297.64	866.56	298.01	871.43	298.2	880.4	298.09
882.68	298.15	885.94	297.99	888.7	297.4	891.47	296.65	894.24	294.91
897.01	292.78	899.78	291.77	901.44	291.49	904.95	291.1	908.95	291.11
910.85	291.03	919.16	291.38	924.69	291.73	927.46	292.07	930.23	292.55
933	292.91	938.53	293.22	941.3	293.57	944.6	293.75	949.61	294.29
952.1	294.81	955.14	295.33	960.68	296.05	966.22	296.28	968.99	296.5
971.75	296.56	980.06	296.47	982.83	296.5	985.87	296.35	991.13	296.54
993.9	296.58	1002.21	296.24	1007.74	295.79	1012.13	296.12	1015.89	296.33
1021.37	296.38	1027.19	296.13	1032.66	296.1	1035.43	296.16	1040.28	295.83
1043.73	295.98	1049.27	295.7	1054.8	295.28	1060.34	295.51	1065.88	295.65
1068.65	295.89	1074.18	296.73	1076.95	296.71	1085.26	296.34	1088.02	296.28
1101.87	296.43	1107.4	296.07	1110.17	296	1115.32	296.16	1118.48	296.02
1121.24	296.25	1124.01	296.36	1126.78	296.28	1129.55	296.33	1137.85	296.69
1143.39	297.12	1146.16	297.68	1160.35	297.39	1165.54	297.2	1167.85	297.25
1173.84	297.03	1177.23	297.12	1184.92	297.09	1190.45	297.31	1195.99	297.19
1201.53	296.88	1209.12	296.24	1212.6	296.01	1220.9	295.67	1226.44	295.56
1234.75	294.97	1243.05	294.53	1248.59	294.5	1254.21	294.22	1259.66	294.29
1261.65	294.84	1263.53	295.06	1267.96	295.29	1271.03	295.35	1273.5	295.72
1276.66	295.67	1279.04	295.4	1281.81	295.43	1287.7	295.836	1292.88	295.97
1295.42	295.86	1298.42	295.89	1301.18	296.15	1304.8	295.61	1306.72	295.44
1309.49	295.37	1312.26	295.62	1314.18	296.05	1317.79	296.63	1320.56	297.38
1325.44	297.46	1328.87	297.78	1331.64	297.63	1337.17	297.01	1339.94	297.08
1342.71	297.44	1346.08	297.33	1348.25	297.45	1351.01	298.15	1356.55	300.77
1359.32	301.34	1362.09	301.39	1364.86	301.25	1368.59	300.94	1373.16	300.46
1381.47	299.84	1387	299.65	1393.96	299.72	1399.37	300	1400.01	301.39
1411.74	302.1	1429.9	310	1436.51	312	1508.82	312	1526.87	312.1
1555.9	313.1	1593.3	313.1	1636.57	312.8	1640.47	314.6	1700.95	314.6
1728.04	314.2	1771.31	314.2	1843.95	313.8	1845.34	315.71	1853.75	317.19
1858.25	318.37	1860.39	319.21	1863.16	320.56	1865.4	322.04	1871.22	326.19
1873.26	327.09	1874.23	327.69	1877.01	329.75	1879.77	331.55	1882.64	333.1
1885.3	334.05	1888.07	334.39	1893.61	334.27	1895.77	334.34	1901.91	334.27

1907.03	334.3	1912.99	334.09	1918.52	334.13	1924.06	333.97	1929.6	333.97
1937.9	333.91	1955.81	333.89	1960.05	333.76	1964.35	333.72	1968.35	333.47
1973.89	332.63	1979.43	331.73	1985.82	331.12	1987.73	331	1993.45	330.46
1996.04	330.33	2004.34	330.65	2009.88	330.75	2018.18	330.91	2025.22	330.99
2034.79	331	2040.33	330.93	2045.87	330.91	2048.63	330.8	2051.66	330.78
2057.11	330.57	2059.71	330.69	2066.49	331.27	2070.78	331.72	2079.09	332.37
2087.39	333.11	2092.76	333.34	2098.23	333.4	2101.23	333.5	2109.54	333.38
2115.27	333.52	2124.65	333.5	2127.33	333.59	2135.91	333.6	2139.99	333.73
2145.29	333.81	2148.29	334.13	2151.06	334	2156.6	334.06	2170.44	334.65
2173.21	335.34	2175.98	337.02	2178.75	338.58	2181.51	339.28	2192.59	339.58
2200.89	339.16	2206.43	338.83	2211.97	338.69	2217.5	338.73	2220.46	338.62
2228.58	338.57	2234.11	338.33	2239.09	338.3	2245.19	338	2250.35	337.65
2253.49	337.36	2257.85	336.81	2261.8	336.21	2267.03	335.65	2270.1	335.38
2272.87	334.97	2281.17	335.14	2283.94	335.09	2286.71	335.16	2290.31	335.15
2306.09	334.97	2308.86	334.88	2314.39	334.84	2319.93	334.69	2325.47	334.66
2331	334.5	2333.77	334.48	2342.08	334.25	2347.61	334.06	2350.38	334.05
2355.92	333.9	2361.04	333.71	2364.22	333.68	2369.76	333.72	2375.3	333.94
2383.45	334.18	2389.14	334.31	2400.21	334.27	2414.05	333.97	2416.82	334.07
2422.36	334.84	2424.83	335.33	2427.9	335.55	2432.33	335.68	2434.21	335.89
2441.74	336.53	2444.51	336.81	2450.04	337.19	2455.58	337.39	2462.35	337.43
2469.85	337.65	2474.96	337.45	2498.59	337.08				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.045	655.7	.1	1287.7	.11	1373.16	.04	1508.82	.15
1888.07	.05								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

655.7	1287.7		140.2	147.4	160	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	642	313.25	F
1371.7	2498.59	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	306.84	Element			
Vel Head (ft)	0.44	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	306.40	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	300.76	Flow Area (sq ft)	30.22	6381.75	734.94
E.G. Slope (ft/ft)	0.006148	Area (sq ft)	39.15	6381.75	993.74
Q Total (cfs)	38000.00	Flow (cfs)	132.37	34591.39	3276.24
Top Width (ft)	787.98	Top Width (ft)	22.06	632.00	133.92
Vel Total (ft/s)	5.32	Avg. Vel. (ft/s)	4.38	5.42	4.46
Max Chl Dpth (ft)	15.37	Hydr. Depth (ft)	2.21	10.10	8.75
Conv. Total (cfs)	484629.4	Conv. (cfs)	1688.2	441158.0	41783.2
Length Wtd. (ft)	147.93	Wetted Per. (ft)	13.73	635.99	85.12
Min Ch El (ft)	291.03	Shear (lb/sq ft)	0.84	3.85	3.31
Alpha	1.01	Stream Power (lb/ft s)	3.70	20.88	14.77
Frctn Loss (ft)	0.69	Cum Volume (acre-ft)	2.19	142.36	112.61
C & E Loss (ft)	0.03	Cum SA (acres)	1.09	15.38	20.28

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	310.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	309.63	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	301.75	Flow Area (sq ft)	74.55	8426.57	1006.72
E.G. Slope (ft/ft)	0.004117	Area (sq ft)	113.96	8426.57	1439.06
Q Total (cfs)	50000.00	Flow (cfs)	487.80	44982.91	4529.29
Top Width (ft)	797.41	Top Width (ft)	24.05	632.00	141.36
Vel Total (ft/s)	5.26	Avg. Vel. (ft/s)	6.54	5.34	4.50
Max Chl Dpth (ft)	18.60	Hydr. Depth (ft)	5.44	13.33	11.98
Conv. Total (cfs)	779294.9	Conv. (cfs)	7602.8	701099.1	70593.0
Length Wtd. (ft)	147.94	Wetted Per. (ft)	13.73	635.99	85.12
Min Ch El (ft)	291.03	Shear (lb/sq ft)	1.40	3.41	3.04
Alpha	1.01	Stream Power (lb/ft s)	9.13	18.18	13.67
Frctn Loss (ft)	0.48	Cum Volume (acre-ft)	14.78	217.36	223.40
C & E Loss (ft)	0.03	Cum SA (acres)	4.22	15.48	22.07

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	304.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.045	0.100	0.110
W.S. Elev (ft)	304.35	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	299.62	Flow Area (sq ft)	2.44	5086.81	562.83
E.G. Slope (ft/ft)	0.005770	Area (sq ft)	2.44	5086.81	724.17
Q Total (cfs)	25000.00	Flow (cfs)	2.16	22963.28	2034.57
Top Width (ft)	772.80	Top Width (ft)	11.60	632.00	129.21
Vel Total (ft/s)	4.42	Avg. Vel. (ft/s)	0.89	4.51	3.61
Max Chl Dpth (ft)	13.32	Hydr. Depth (ft)	0.21	8.05	6.70
Conv. Total (cfs)	329112.1	Conv. (cfs)	28.4	302299.7	26784.0
Length Wtd. (ft)	147.91	Wetted Per. (ft)	11.61	635.99	85.12
Min Ch El (ft)	291.03	Shear (lb/sq ft)	0.08	2.88	2.38
Alpha	1.01	Stream Power (lb/ft s)	0.07	13.01	8.61
Frctn Loss (ft)	0.57	Cum Volume (acre-ft)	1.99	130.90	102.80
C & E Loss (ft)	0.01	Cum SA (acres)	0.94	15.30	20.22

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 244

INPUT
Description: Begin Grading-West site-regrading starts at station 1160.21
 PA-1
            starts st Station 1221.2 manning = 0.15
Station Elevation Data   num=   50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.5	104.5	308.1	201.3	303.9	207.8	307.1	216.5	307.1
237.5	311.6	319.8	312.8	335.5	307.7	367.8	307.6	459.7	307.8
508.9	294.9	585.6	293.1	617.1	292.2	638.9	293.1	772.1	293.3
888.2	294.6	935.1	293.5	960.1	296	1085.7	298.3	1160.21	301.08
1160.21	309	1162.4	310	1170.59	314	1173.4	314.5	1176.28	315.3
1182.66	315.26	1189.2	316	1198.08	316	1221.2	316	1237.79	315.57
1240.81	313	1261.99	312	1324.4	313.4	1364.6	313.8	1401.66	314.2
1444.79	314.2	1501.32	316	1507.4	318.78	1564.26	319	1579.2	316
1591.26	313.39	1618.49	327.9	1787.9	328.1	1896	326.7	1953.2	313.1
2022.1	315.9	2161	318.3	2292.6	325.1	2385.9	332.9	2498.4	333.7

Manning's n Values   num=   4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	459.7	.065	960.1	.045	1221.2	.15

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
459.7	960.1	104.8	124.6	145	.1	.3

Ineffective Flow   num=   2

Sta L	Sta R	Elev	Permanent
0	459.7	311.5	F
960.1	2498.4	311.5	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	306.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.065	
W.S. Elev (ft)	305.38	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	299.66	Flow Area (sq ft)		5509.08	
E.G. Slope (ft/ft)	0.003642	Area (sq ft)	27.60	5509.08	1458.37
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	728.50	Top Width (ft)	37.21	491.18	200.11
Vel Total (ft/s)	6.90	Avg. Vel. (ft/s)		6.90	
Max Chl Dpth (ft)	13.18	Hydr. Depth (ft)		11.22	
Conv. Total (cfs)	629708.6	Conv. (cfs)		629708.6	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		492.73	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.54	
Alpha	1.00	Stream Power (lb/ft s)		17.53	
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	2.09	122.24	108.11
C & E Loss (ft)	0.02	Cum SA (acres)	1.00	13.48	19.66

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	309.55	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.		0.065	
W.S. Elev (ft)	308.81	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	300.87	Flow Area (sq ft)		7210.64	
E.G. Slope (ft/ft)	0.002637	Area (sq ft)	461.58	7210.64	2143.27
Q Total (cfs)	50000.00	Flow (cfs)		50000.00	
Top Width (ft)	964.85	Top Width (ft)	264.34	500.40	200.11
Vel Total (ft/s)	6.93	Avg. Vel. (ft/s)		6.93	
Max Chl Dpth (ft)	16.61	Hydr. Depth (ft)		14.41	
Conv. Total (cfs)	973685.1	Conv. (cfs)		973685.1	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		502.26	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		2.36	
Alpha	1.00	Stream Power (lb/ft s)		16.39	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	13.85	190.91	216.82
C & E Loss (ft)	0.02	Cum SA (acres)	3.75	13.57	21.45

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	304.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.45	Wt. n-Val.		0.065	
W.S. Elev (ft)	303.63	Reach Len. (ft)	35.00	35.00	35.00
Crit W.S. (ft)	298.20	Flow Area (sq ft)		4652.47	
E.G. Slope (ft/ft)	0.002717	Area (sq ft)		4652.47	1106.98
Q Total (cfs)	25000.00	Flow (cfs)		25000.00	
Top Width (ft)	684.60	Top Width (ft)		484.49	200.11
Vel Total (ft/s)	5.37	Avg. Vel. (ft/s)		5.37	
Max Chl Dpth (ft)	11.43	Hydr. Depth (ft)		9.60	
Conv. Total (cfs)	479634.2	Conv. (cfs)		479634.2	
Length Wtd. (ft)	35.00	Wetted Per. (ft)		485.81	
Min Ch El (ft)	292.20	Shear (lb/sq ft)		1.62	
Alpha	1.00	Stream Power (lb/ft s)		8.73	
Frctn Loss (ft)	0.12	Cum Volume (acre-ft)	1.98	114.42	99.43
C & E Loss (ft)	0.01	Cum SA (acres)	0.92	13.41	19.61

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE

RIVER: San Diego River
REACH: Reach 1 RS: 243

INPUT
Description:
Distance from Upstream XS = 35
Deck/Roadway Width = 55

Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
459.7	315	311.5	960.1	315	311.5

Upstream Bridge Cross Section Data
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.5	104.5	308.1	201.3	303.9	207.8	307.1	216.5	307.1
237.5	311.6	319.8	312.8	335.5	307.7	367.8	307.6	459.7	307.8
508.9	294.9	585.6	293.1	617.1	292.2	638.9	293.1	772.1	293.3
888.2	294.6	935.1	293.5	960.1	296	1085.7	298.3	1160.21	301.08
1160.21	309	1162.4	310	1170.59	314	1173.4	314.5	1176.28	315.3
1182.66	315.26	1189.2	316	1198.08	316	1221.2	316	1237.79	315.57
1240.81	313	1261.99	312	1324.4	313.4	1364.6	313.8	1401.66	314.2
1444.79	314.2	1501.32	316	1507.4	318.78	1564.26	319	1579.2	316
1591.26	313.39	1618.49	327.9	1787.9	328.1	1896	326.7	1953.2	313.1
2022.1	315.9	2161	318.3	2292.6	325.1	2385.9	332.9	2498.4	333.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	459.7	.065	960.1	.045	1221.2	.15

Bank Sta: Left Right Coeff Contr. Expan.
459.7 960.1 .1 .3
Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	459.7	311.5	F
960.1	2498.4	311.5	F

Downstream Deck/Roadway Coordinates
num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
401	315	311.5	900.5	315	311.5

Downstream Bridge Cross Section Data
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1
1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left Right Coeff Contr. Expan.

```
          401   900.5             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0     401  313.25       F
   900.5  2378.2  313.25       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =     315
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  5

Pier Data
Pier Station     Upstream=   543.2    Downstream=   484.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   626.6    Downstream=   567.7
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   709.9    Downstream=     651
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   793.2    Downstream=   734.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
```

Pier Data
Pier Station Upstream= 876.6 Downstream= 817.7
Upstream num= 2

Width	Elev	Width	Elev
7	0	7	311.5

Downstream num= 2

Width	Elev	Width	Elev
7	0	7	311.5

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Energy Only

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #PF 1

			Inside BR US	Inside BR DS
E.G. US. (ft)	306.12	Element		
W.S. US. (ft)	305.38	E.G. Elev (ft)	305.94	305.52
Q Total (cfs)	38000.00	W.S. Elev (ft)	305.01	304.41
Q Bridge (cfs)	38000.00	Crit W.S. (ft)	300.00	300.01
Q Weir (cfs)		Max Chl Dpth (ft)	12.81	12.71
Weir Sta Lft (ft)		Vel Total (ft/s)	7.71	8.44
Weir Sta Rgt (ft)		Flow Area (sq ft)	4926.99	4502.03
Weir Submerg		Froude # Chl	0.38	0.46
Weir Max Depth (ft)		Specif Force (cu ft)	36757.19	34605.89
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	10.83	10.41
Min El Prs (ft)	311.50	W.P. Total (ft)	579.60	547.92
Delta EG (ft)	0.88	Conv. Total (cfs)	469136.5	419070.5
Delta WS (ft)	1.10	Top Width (ft)	682.78	432.61
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.40	0.23
BR Open Vel (ft/s)	8.44	C & E Loss (ft)	0.02	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	3.48	4.22
BR Sel Method	Energy only	Power Total (lb/ft s)	26.85	35.60

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 3

E.G. US. (ft)	309.55	Element	Inside BR US	Inside BR DS

W.S. US. (ft)	308.81	E.G. Elev (ft)	309.41	309.11
Q Total (cfs)	50000.00	W.S. Elev (ft)	308.50	308.07
Q Bridge (cfs)	50000.00	Crit W.S. (ft)	301.26	301.32
Q Weir (cfs)		Max Chl Dpth (ft)	16.30	16.37
Weir Sta Lft (ft)		Vel Total (ft/s)	7.65	8.17
Weir Sta Rgt (ft)		Flow Area (sq ft)	6537.51	6118.15
Weir Submerg		Froude # Chl	0.33	0.39
Weir Max Depth (ft)		Specif Force (cu ft)	59540.48	56749.43
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	14.05	13.58
Min El Prs (ft)	311.50	W.P. Total (ft)	629.71	604.06
Delta EG (ft)	0.64	Conv. Total (cfs)	711227.1	654731.5
Delta WS (ft)	0.78	Top Width (ft)	920.36	450.63
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.29	0.15
BR Open Vel (ft/s)	8.17	C & E Loss (ft)	0.01	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	3.20	3.69
BR Sel Method	Energy only	Power Total (lb/ft s)	24.50	30.14

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE OUTPUT Profile #PF 6

E.G. US. (ft)	304.08	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	303.63	E.G. Elev (ft)	303.94	303.66
Q Total (cfs)	25000.00	W.S. Elev (ft)	303.39	303.03
Q Bridge (cfs)	25000.00	Crit W.S. (ft)	298.46	298.38
Q Weir (cfs)		Max Chl Dpth (ft)	11.19	11.33
Weir Sta Lft (ft)		Vel Total (ft/s)	5.96	6.40
Weir Sta Rgt (ft)		Flow Area (sq ft)	4195.34	3909.00
Weir Submerg		Froude # Chl	0.31	0.37
Weir Max Depth (ft)		Specif Force (cu ft)	24891.26	23796.71
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	9.35	9.18
Min El Prs (ft)	311.50	W.P. Total (ft)	555.39	526.72
Delta EG (ft)	0.59	Conv. Total (cfs)	369226.1	339994.3
Delta WS (ft)	0.69	Top Width (ft)	648.70	425.81
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.27	0.15
BR Open Vel (ft/s)	6.40	C & E Loss (ft)	0.01	0.03
BR Sluice Coef		Shear Total (lb/sq ft)	2.16	2.51
BR Sel Method	Energy only	Power Total (lb/ft s)	12.88	16.02

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 242

INPUT

Description: Corrected Effective Geometry
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1
1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401	900.5	165	224	270	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	401	313.25	F
900.5	2378.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	305.25	Element			
Vel Head (ft)	0.96	Wt. n-Val.		0.065	
W.S. Elev (ft)	304.29	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	299.62	Flow Area (sq ft)		4835.65	
E.G. Slope (ft/ft)	0.005290	Area (sq ft)		4835.65	
Q Total (cfs)	38000.00	Flow (cfs)		38000.00	
Top Width (ft)	467.01	Top Width (ft)		467.01	
Vel Total (ft/s)	7.86	Avg. Vel. (ft/s)		7.86	
Max Chl Dpth (ft)	12.59	Hydr. Depth (ft)		10.35	
Conv. Total (cfs)	522449.2	Conv. (cfs)		522449.2	
Length Wtd. (ft)	232.18	Wetted Per. (ft)		470.65	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.39	
Alpha	1.00	Stream Power (lb/ft s)		26.67	
Frctn Loss (ft)	1.10	Cum Volume (acre-ft)	2.06	108.39	106.09
C & E Loss (ft)	0.10	Cum SA (acres)	0.95	12.18	19.38

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 3

			Left OB	Channel	Right OB
E.G. Elev (ft)	308.91	Element			
Vel Head (ft)	0.89	Wt. n-Val.		0.065	
W.S. Elev (ft)	308.02	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	300.88	Flow Area (sq ft)		6614.34	
E.G. Slope (ft/ft)	0.003408	Area (sq ft)		6614.34	

Q Total (cfs)	50000.00	Flow (cfs)		50000.00	
Top Width (ft)	485.40	Top Width (ft)		485.40	
Vel Total (ft/s)	7.56	Avg. Vel. (ft/s)		7.56	
Max Chl Dpth (ft)	16.32	Hydr. Depth (ft)		13.63	
Conv. Total (cfs)	856532.0	Conv. (cfs)		856532.0	
Length Wtd. (ft)	233.08	Wetted Per. (ft)		490.60	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		2.87	
Alpha	1.00	Stream Power (lb/ft s)		21.68	
Frctn Loss (ft)	0.56	Cum Volume (acre-ft)	13.27	172.34	213.81
C & E Loss (ft)	0.16	Cum SA (acres)	3.38	12.23	21.16

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	303.49	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.		0.065	
W.S. Elev (ft)	302.94	Reach Len. (ft)	165.00	224.00	270.00
Crit W.S. (ft)	298.09	Flow Area (sq ft)		4210.24	
E.G. Slope (ft/ft)	0.003559	Area (sq ft)		4210.24	
Q Total (cfs)	25000.00	Flow (cfs)		25000.00	
Top Width (ft)	460.37	Top Width (ft)		460.37	
Vel Total (ft/s)	5.94	Avg. Vel. (ft/s)		5.94	
Max Chl Dpth (ft)	11.24	Hydr. Depth (ft)		9.15	
Conv. Total (cfs)	419048.3	Conv. (cfs)		419048.3	
Length Wtd. (ft)	231.71	Wetted Per. (ft)		463.44	
Min Ch El (ft)	291.70	Shear (lb/sq ft)		2.02	
Alpha	1.00	Stream Power (lb/ft s)		11.99	
Frctn Loss (ft)	0.73	Cum Volume (acre-ft)	1.98	102.53	97.90
C & E Loss (ft)	0.06	Cum SA (acres)	0.92	12.13	19.33

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 239

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314	87.1	311.2	151.3	308.5	183.2	306.4	215.4	304.6
241.3	303	280.1	296.8	314.7	293.9	339	292.9	379.6	294.4
403.2	292.6	425.4	293.1	463.7	294.4	483.9	291.8	506.5	290.7
551.3	292.7	620.7	293.2	628.9	295.7	642	299.6	662.4	296.3
712.8	296.7	745.9	295.3	808	296.4	955.9	298.3	1077.2	298.6
1096.1	296.4	1143.4	295.9	1251.8	296.4	1289.9	298.8	1360.3	299.6
1377.5	302.7	1402.9	313.3	1426.5	325.9	1436.2	326.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	241.3	.065	642	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
241.3	642	385	413	515	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	201.8	313.25	F
906.2	1436.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	304.05	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.75	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	303.29	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	299.63	Flow Area (sq ft)	0.70	3728.65	1770.02
E.G. Slope (ft/ft)	0.004242	Area (sq ft)	0.70	3728.65	4385.66
Q Total (cfs)	38000.00	Flow (cfs)	0.19	24482.05	13517.76
Top Width (ft)	1142.37	Top Width (ft)	4.75	400.70	736.92
Vel Total (ft/s)	6.91	Avg. Vel. (ft/s)	0.27	6.57	7.64
Max Chl Dpth (ft)	12.59	Hydr. Depth (ft)	0.15	9.31	6.70
Conv. Total (cfs)	583436.6	Conv. (cfs)	2.9	375887.6	207546.2
Length Wtd. (ft)	447.73	Wetted Per. (ft)	4.76	402.64	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.04	2.45	1.77
Alpha	1.02	Stream Power (lb/ft s)	0.01	16.10	13.53
Frctn Loss (ft)	1.70	Cum Volume (acre-ft)	2.06	86.37	92.50
C & E Loss (ft)	0.07	Cum SA (acres)	0.94	9.95	17.09

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	308.19	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.57	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.63	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	300.56	Flow Area (sq ft)	135.09	5464.83	2914.76
E.G. Slope (ft/ft)	0.001760	Area (sq ft)	178.98	5464.83	7601.12
Q Total (cfs)	50000.00	Flow (cfs)	190.90	29817.13	19991.97
Top Width (ft)	1224.73	Top Width (ft)	76.73	400.70	747.30
Vel Total (ft/s)	5.87	Avg. Vel. (ft/s)	1.41	5.46	6.86
Max Chl Dpth (ft)	16.93	Hydr. Depth (ft)	3.42	13.64	11.03
Conv. Total (cfs)	1191982.0	Conv. (cfs)	4550.9	710829.9	476601.6
Length Wtd. (ft)	453.54	Wetted Per. (ft)	39.57	402.64	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)	0.37	1.49	1.21
Alpha	1.06	Stream Power (lb/ft s)	0.53	8.13	8.30
Frctn Loss (ft)	0.54	Cum Volume (acre-ft)	12.93	141.28	190.25
C & E Loss (ft)	0.08	Cum SA (acres)	3.24	9.95	18.84

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	302.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.42	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	302.27	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	298.47	Flow Area (sq ft)		3319.05	1498.85
E.G. Slope (ft/ft)	0.002837	Area (sq ft)		3319.05	3630.84
Q Total (cfs)	25000.00	Flow (cfs)		16620.72	8379.28
Top Width (ft)	1129.21	Top Width (ft)		396.11	733.10
Vel Total (ft/s)	5.19	Avg. Vel. (ft/s)		5.01	5.59
Max Chl Dpth (ft)	11.57	Hydr. Depth (ft)		8.38	5.67
Conv. Total (cfs)	469331.0	Conv. (cfs)		312024.7	157306.3
Length Wtd. (ft)	446.24	Wetted Per. (ft)		397.99	264.51
Min Ch El (ft)	290.70	Shear (lb/sq ft)		1.48	1.00
Alpha	1.01	Stream Power (lb/ft s)		7.40	5.61
Frctn Loss (ft)	0.98	Cum Volume (acre-ft)	1.98	83.17	86.64
C & E Loss (ft)	0.05	Cum SA (acres)	0.92	9.93	17.05

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 230

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312	65.6	310.4	137.8	306.5	207.5	304.8	265.4	303.7
291.2	300.1	331.4	299.8	351.6	295.4	389	294.6	407.4	291.3
454.2	291.8	462.3	290.4	477.6	289.8	534.6	290.2	554.3	293.8
641.2	293.6	754.1	293.5	854.5	294.1	957	293.2	982.8	292.3
997.6	294.6	1024.6	297.5	1044.3	298.8	1136.2	298.2	1228.8	298
1299.8	296	1370.7	296	1433	296.9	1442.5	299.6	1459.2	298.3
1470.3	296.6	1517.5	295	1523.6	297.2	1550.3	301.8	1578.7	304.4
1682	307.7	1783.3	310.7	1933.2	315.6	2031.8	320.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	331.4	.065	854.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.4	854.5	460	487	430	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	61.8	313.25	F
1233.8	2031.8	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	302.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.51	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	301.76	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	297.85	Flow Area (sq ft)	82.76	4531.88	2070.58
E.G. Slope (ft/ft)	0.003420	Area (sq ft)	82.76	4531.88	3633.63
Q Total (cfs)	38000.00	Flow (cfs)	97.74	25515.18	12387.08
Top Width (ft)	1270.80	Top Width (ft)	52.11	523.10	695.58
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)	1.18	5.63	5.98
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	1.59	8.66	5.46
Conv. Total (cfs)	649814.4	Conv. (cfs)	1671.4	436319.3	211823.7
Length Wtd. (ft)	461.15	Wetted Per. (ft)	52.23	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.34	1.85	1.16
Alpha	1.02	Stream Power (lb/ft s)	0.40	10.39	6.96
Frctn Loss (ft)	1.14	Cum Volume (acre-ft)	1.69	47.21	45.09
C & E Loss (ft)	0.06	Cum SA (acres)	0.69	5.57	8.62

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	307.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.28	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	299.08	Flow Area (sq ft)	728.23	7418.33	4163.54
E.G. Slope (ft/ft)	0.000870	Area (sq ft)	728.23	7418.33	7721.61
Q Total (cfs)	50000.00	Flow (cfs)	734.93	29254.21	20010.86
Top Width (ft)	1545.51	Top Width (ft)	208.05	523.10	814.36
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	1.01	3.94	4.81
Max Chl Dpth (ft)	17.48	Hydr. Depth (ft)	3.50	14.18	10.98
Conv. Total (cfs)	1695505.0	Conv. (cfs)	24921.6	992013.2	678570.0
Length Wtd. (ft)	457.44	Wetted Per. (ft)	208.35	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.19	0.77	0.60
Alpha	1.11	Stream Power (lb/ft s)	0.19	3.03	2.86
Frctn Loss (ft)	0.24	Cum Volume (acre-ft)	8.92	80.20	99.67
C & E Loss (ft)	0.04	Cum SA (acres)	1.98	5.57	9.61

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	301.66	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	301.41	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	296.67	Flow Area (sq ft)	64.94	4348.54	1937.63
E.G. Slope (ft/ft)	0.001747	Area (sq ft)	64.94	4348.54	3390.19
Q Total (cfs)	25000.00	Flow (cfs)	48.21	17024.76	7927.03
Top Width (ft)	1266.25	Top Width (ft)	49.60	523.10	693.55
Vel Total (ft/s)	3.94	Avg. Vel. (ft/s)	0.74	3.92	4.09
Max Chl Dpth (ft)	11.61	Hydr. Depth (ft)	1.31	8.31	5.11
Conv. Total (cfs)	598096.4	Conv. (cfs)	1153.3	407297.9	189645.2
Length Wtd. (ft)	461.31	Wetted Per. (ft)	49.69	524.34	379.70
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.14	0.90	0.56
Alpha	1.02	Stream Power (lb/ft s)	0.11	3.54	2.28
Frctn Loss (ft)	0.49	Cum Volume (acre-ft)	1.70	46.82	45.14
C & E Loss (ft)	0.04	Cum SA (acres)	0.70	5.57	8.62

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 220

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324	93.8	319.7	217.1	314.8	297.3	308	374.5	304.6
393.2	301.5	420.3	299.8	439.7	295.9	465.5	296.2	484.2	299.8
534.9	296.3	649.9	293.8	675.5	292.1	713.9	292.3	756.2	290
798.1	288.8	821.5	289.8	922.4	289.9	957.7	292.4	1018	292.8
1064.1	291.5	1181.5	291.6	1265.8	291.3	1290.2	294.1	1314.9	297
1364.7	297.1	1483.6	297	1523.5	296	1602.5	296	1626.8	297.7
1646.9	298.6	1670.2	296.6	1761.1	297.9	1817.3	299.2	1831.2	296.4
1867.1	295.6	1937.3	298.2	2007.5	300.4	2031.6	304.8	2049.2	303.8
2077.8	303.4	2093.8	308.1	2142.9	309.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	484.2	.065	957.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
484.2	957.7	0	0	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	56	313.25	F
1681.8	2142.9	313.25	F

CROSS SECTION OUTPUT Profile #PF 1

E.G. Elev (ft)	301.08	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.32	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	300.76	Reach Len. (ft)			
Crit W.S. (ft)	296.44	Flow Area (sq ft)	236.93	3913.40	4520.70
E.G. Slope (ft/ft)	0.001870	Area (sq ft)	236.93	3913.40	5502.52
Q Total (cfs)	38000.00	Flow (cfs)	314.10	15807.25	21878.65
Top Width (ft)	1604.48	Top Width (ft)	79.20	473.50	1051.77
Vel Total (ft/s)	4.38	Avg. Vel. (ft/s)	1.33	4.04	4.84
Max Chl Dpth (ft)	11.96	Hydr. Depth (ft)	2.99	8.26	6.24
Conv. Total (cfs)	878641.8	Conv. (cfs)	7262.6	365497.7	505881.5
Length Wtd. (ft)		Wetted Per. (ft)	79.97	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.35	0.96	0.73
Alpha	1.06	Stream Power (lb/ft s)	0.46	3.90	3.53
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 3

E.G. Elev (ft)	307.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	307.13	Reach Len. (ft)			
Crit W.S. (ft)	297.37	Flow Area (sq ft)	961.20	6929.59	9133.22
E.G. Slope (ft/ft)	0.000362	Area (sq ft)	961.20	6929.59	12473.01
Q Total (cfs)	50000.00	Flow (cfs)	869.01	18034.57	31096.42
Top Width (ft)	1773.44	Top Width (ft)	167.15	473.50	1132.80
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	0.90	2.60	3.40
Max Chl Dpth (ft)	18.33	Hydr. Depth (ft)	5.75	14.63	12.61
Conv. Total (cfs)	2626263.0	Conv. (cfs)	45645.1	947270.3	1633348.0
Length Wtd. (ft)		Wetted Per. (ft)	168.24	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.13	0.33	0.29
Alpha	1.12	Stream Power (lb/ft s)	0.12	0.86	0.97
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT Profile #PF 6

E.G. Elev (ft)	301.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	301.00	Reach Len. (ft)			
Crit W.S. (ft)	294.92	Flow Area (sq ft)	256.40	4027.03	4694.48
E.G. Slope (ft/ft)	0.000722	Area (sq ft)	256.40	4027.03	5755.09
Q Total (cfs)	25000.00	Flow (cfs)	215.83	10304.28	14479.90
Top Width (ft)	1609.62	Top Width (ft)	83.03	473.50	1053.09

Vel Total (ft/s)	2.78	Avg. Vel. (ft/s)	0.84	2.56	3.08
Max Chl Dpth (ft)	12.20	Hydr. Depth (ft)	3.09	8.50	6.48
Conv. Total (cfs)	930091.7	Conv. (cfs)	8029.5	383356.9	538705.3
Length Wtd. (ft)		Wetted Per. (ft)	83.80	473.89	724.63
Min Ch El (ft)	288.80	Shear (lb/sq ft)	0.14	0.38	0.29
Alpha	1.06	Stream Power (lb/ft s)	0.12	0.98	0.90
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

SUMMARY OF REACH LENGTHS

River: San Diego River

Reach	River Sta.	Left	Channel	Right
Reach 1	355	360	310	350
Reach 1	345	400	335	125
Reach 1	340	575	454	575
Reach 1	330	620	588	620
Reach 1	322	Lat Struct		
Reach 1	320	260	431	405
Reach 1	315	380	280	255
Reach 1	310	610	610	640
Reach 1	300	790	654	605
Reach 1	290	695	653	645
Reach 1	285	640	688	660
Reach 1	280	1135	1021	1060
Reach 1	270	1000	951	815
Reach 1	260	1050	1031	1000
Reach 1	250	700	701	615
Reach 1	245	140.2	147.4	160
Reach 1	244	104.8	124.6	145
Reach 1	243	Bridge		
Reach 1	242	165	224	270
Reach 1	239	385	413	515
Reach 1	230	460	487	430
Reach 1	220	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Diego River

Reach	River Sta.	Contr.	Expan.

Reach 1	355		.1	.3
Reach 1	345		.1	.3
Reach 1	340		.1	.3
Reach 1	330		.1	.3
Reach 1	322	Lat Struct		
Reach 1	320		.1	.3
Reach 1	315		.1	.3
Reach 1	310		.1	.3
Reach 1	300		.1	.3
Reach 1	290		.1	.3
Reach 1	285		.1	.3
Reach 1	280		.1	.3
Reach 1	270		.1	.3
Reach 1	260		.1	.3
Reach 1	250		.1	.3
Reach 1	245		.1	.3
Reach 1	244		.1	.3
Reach 1	243	Bridge		
Reach 1	242		.3	.5
Reach 1	239		.1	.3
Reach 1	230		.1	.3
Reach 1	220		.1	.3

HEC-RAS Plan: Plan 01 River: San Diego River Reach: Reach 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	220	PF 1	38000.00	288.80	300.76	296.44	301.08	0.001870	4.04	8671.03	1604.48	0.25
Reach 1	220	PF 3	50000.00	288.80	307.13	297.37	307.28	0.000362	2.60	17024.01	1773.44	0.12
Reach 1	230	PF 1	38000.00	289.80	301.76	297.85	302.27	0.003420	5.63	6685.22	1270.80	0.34
Reach 1	230	PF 3	50000.00	289.80	307.28	299.08	307.57	0.000870	3.94	12310.10	1545.51	0.18
Reach 1	239	PF 1	38000.00	290.70	303.29	299.63	304.05	0.004242	6.57	5499.37	1142.37	0.38
Reach 1	239	PF 3	50000.00	290.70	307.63	300.56	308.19	0.001760	5.46	8514.67	1224.73	0.26
Reach 1	242	PF 1	38000.00	291.70	304.29	299.62	305.25	0.005290	7.86	4835.65	467.01	0.43
Reach 1	242	PF 3	50000.00	291.70	308.02	300.88	308.91	0.003408	7.56	6614.34	485.40	0.36
Reach 1	243		Bridge									
Reach 1	244	PF 1	38000.00	292.20	305.38	299.66	306.12	0.003642	6.90	5509.08	728.50	0.36
Reach 1	244	PF 3	50000.00	292.20	308.81	300.87	309.55	0.002637	6.93	7210.64	964.85	0.32
Reach 1	245	PF 1	38000.00	291.03	306.40	300.76	306.84	0.006148	5.42	7146.91	787.98	0.30
Reach 1	245	PF 3	50000.00	291.03	309.63	301.75	310.07	0.004117	5.34	9507.84	797.41	0.26
Reach 1	250	PF 1	38000.00	294.72	308.29		308.75	0.001543	5.52	7231.70	810.09	0.30
Reach 1	250	PF 3	50000.00	294.72	311.00		311.46	0.001175	5.61	9561.11	908.95	0.27
Reach 1	260	PF 1	38000.00	295.59	310.45		311.23	0.003853	7.18	5405.28	640.12	0.42
Reach 1	260	PF 3	50000.00	295.59	312.61		313.47	0.003243	7.54	6861.59	691.27	0.40
Reach 1	270	PF 1	37000.00	297.09	313.11	307.81	313.69	0.001829	6.19	6233.30	979.59	0.34
Reach 1	270	PF 3	49000.00	297.09	314.99	308.89	315.60	0.001623	6.51	8472.83	1044.80	0.33
Reach 1	280	PF 1	37000.00	298.83	314.64		314.78	0.000655	3.08	12052.69	1448.47	0.19
Reach 1	280	PF 3	49000.00	298.83	316.44		316.61	0.000611	3.35	14678.53	1474.87	0.19
Reach 1	285	PF 1	37000.00	301.64	315.08	310.28	315.26	0.000711	3.45	10753.49	1513.60	0.23
Reach 1	285	PF 3	49000.00	301.64	316.83	310.92	317.04	0.000603	3.67	13408.43	1520.45	0.22
Reach 1	290	PF 1	37000.00	301.71	315.55	310.93	315.74	0.000748	3.56	10407.01	1593.62	0.24
Reach 1	290	PF 3	49000.00	301.71	317.23	311.58	317.45	0.000646	3.80	12899.38	1601.69	0.23
Reach 1	300	PF 1	35359.28	305.19	316.14	311.60	316.43	0.001451	4.32	8312.26	1448.45	0.28

HEC-RAS Plan: Plan 01 River: San Diego River Reach: Reach 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	300	PF 3	46848.73	305.19	317.73	312.34	318.07	0.001342	4.68	10183.53	1504.49	0.27
Reach 1	310	PF 1	35359.28	305.25	316.90	313.68	317.60	0.002049	6.99	5709.93	1450.08	0.47
Reach 1	310	PF 3	46848.73	305.25	318.37	315.08	319.17	0.001864	7.52	7061.91	1490.74	0.46
Reach 1	315	PF 1	35359.28	307.53	317.57	316.08	318.46	0.003936	7.94	4998.46	1466.64	0.61
Reach 1	315	PF 3	46848.73	307.53	318.96	316.91	319.90	0.003084	8.19	6430.67	1493.37	0.57
Reach 1	320	PF 1	35359.28	307.20	318.89	314.61	319.41	0.001361	5.79	6111.42	1678.78	0.38
Reach 1	320	PF 3	46848.73	307.20	320.12	315.71	320.78	0.001438	6.52	7184.77	1758.27	0.40
Reach 1	322		Lat Struct									
Reach 1	330	PF 1	36000.00	308.50	319.72	316.37	320.27	0.001534	6.13	6189.63	965.04	0.40
Reach 1	330	PF 3	48000.00	308.50	320.99	317.23	321.68	0.001596	6.87	7349.11	1062.59	0.42
Reach 1	340	PF 1	36000.00	309.90	320.68	316.27	321.04	0.001732	4.77	7551.36	1045.71	0.30
Reach 1	340	PF 3	48000.00	309.90	322.04	317.07	322.49	0.001809	5.39	8901.04	1069.10	0.32
Reach 1	345	PF 1	36000.00	309.80	321.29	316.13	321.64	0.001853	4.74	7598.52	1104.57	0.31
Reach 1	345	PF 3	48000.00	309.80	322.68	317.04	323.12	0.001920	5.27	9105.89	1163.00	0.32
Reach 1	355	PF 1	36000.00	311.40	321.84	317.36	322.36	0.002571	5.81	6191.11	1304.83	0.37
Reach 1	355	PF 3	48000.00	311.40	323.21	318.35	323.88	0.002630	6.57	7307.35	1455.01	0.39

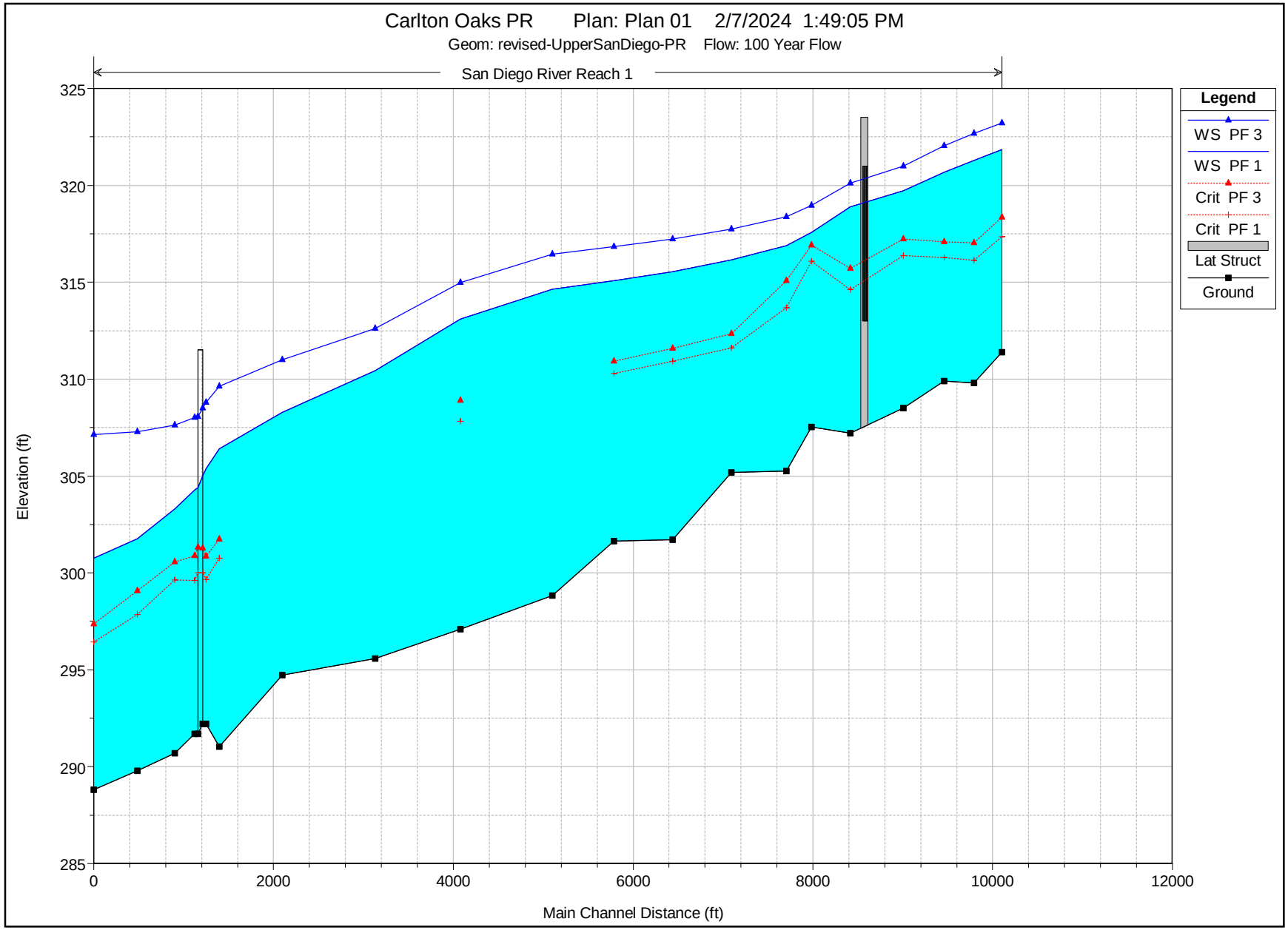
Plan: Plan 01 San Diego River Reach 1 RS: 322 Culv Group: Culvert #1 Profile: PF 6

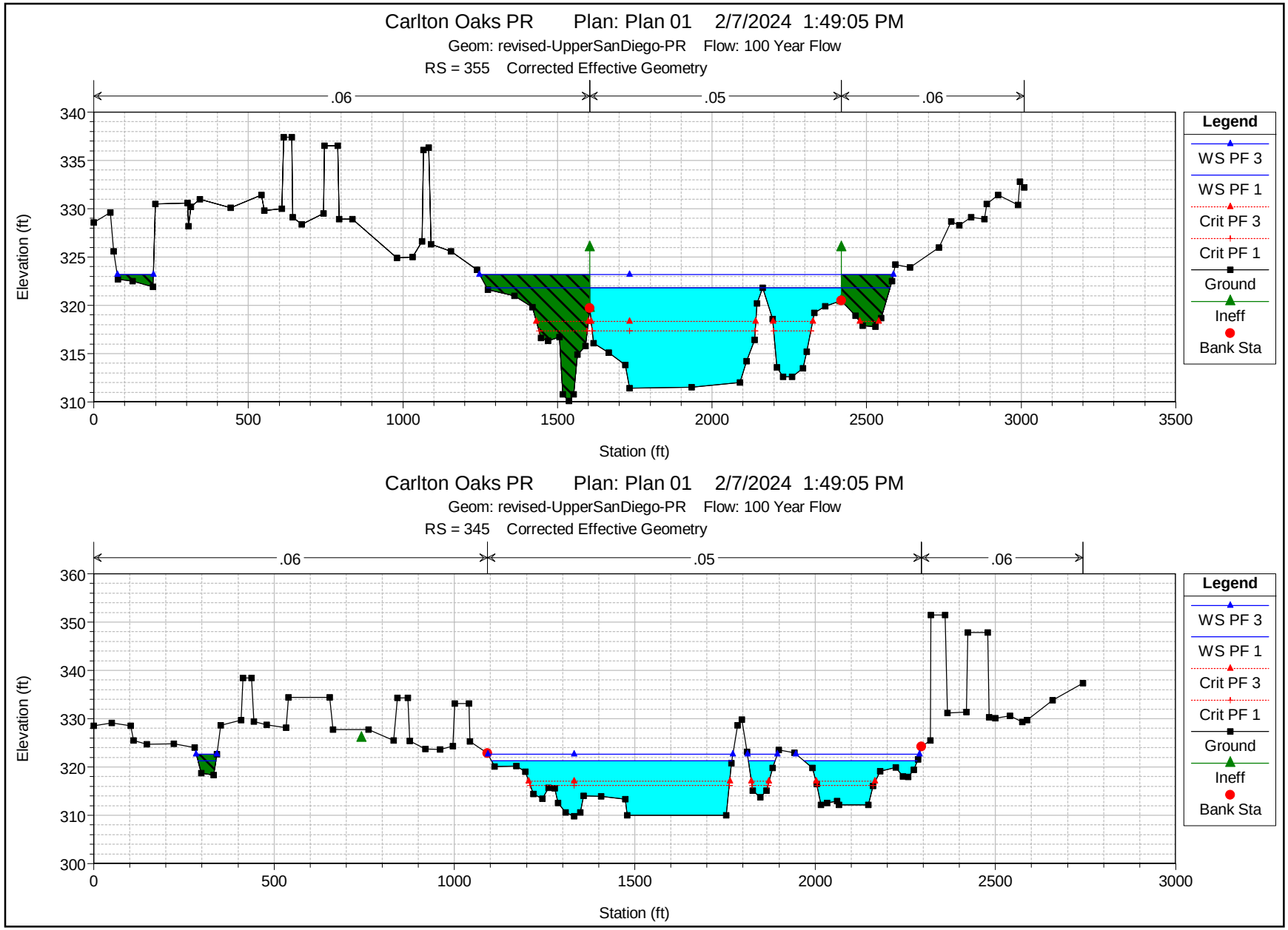
E.G. US. (ft)	317.66	Weir Sta US (ft)	
W.S. US. (ft)	317.31	Weir Sta DS (ft)	
E.G. DS (ft)	317.56	Min El Weir Flow (ft)	323.50
W.S. DS (ft)	317.22	Wr Top Wdth (ft)	
Q US (cfs)	21333.00	Weir Max Depth (ft)	
Q Leaving Total (cfs)	965.13	Weir Avg Depth (ft)	
Q DS (cfs)	21544.92	Weir Flow Area (sq ft)	
Perc Q Leaving	4.54	Weir Coef (ft^1/2)	0.000
Q Weir (cfs)	0.00	Weir Submerg	
Q Gates (cfs)			
Q Culv (cfs)	965.13	Q Culv Group (cfs)	242.69
Q Lat RC (cfs)		# Barrels	1
Q Outlet TS (cfs)	0.00	Culv Length (ft)	88.00
Q Breach (cfs)		Culv Depth Blocked (ft)	
Breach Avg Velocity (ft/s)		Culv Inv El Up (ft)	313.00
Breach Flow Area (sq ft)		Culv Inv El Dn (ft)	312.50
Breach WD (ft)			
Breach Top El (ft)			
Breach Bottom El (ft)			
Breach SSL (ft)			
Breach SSR (ft)			

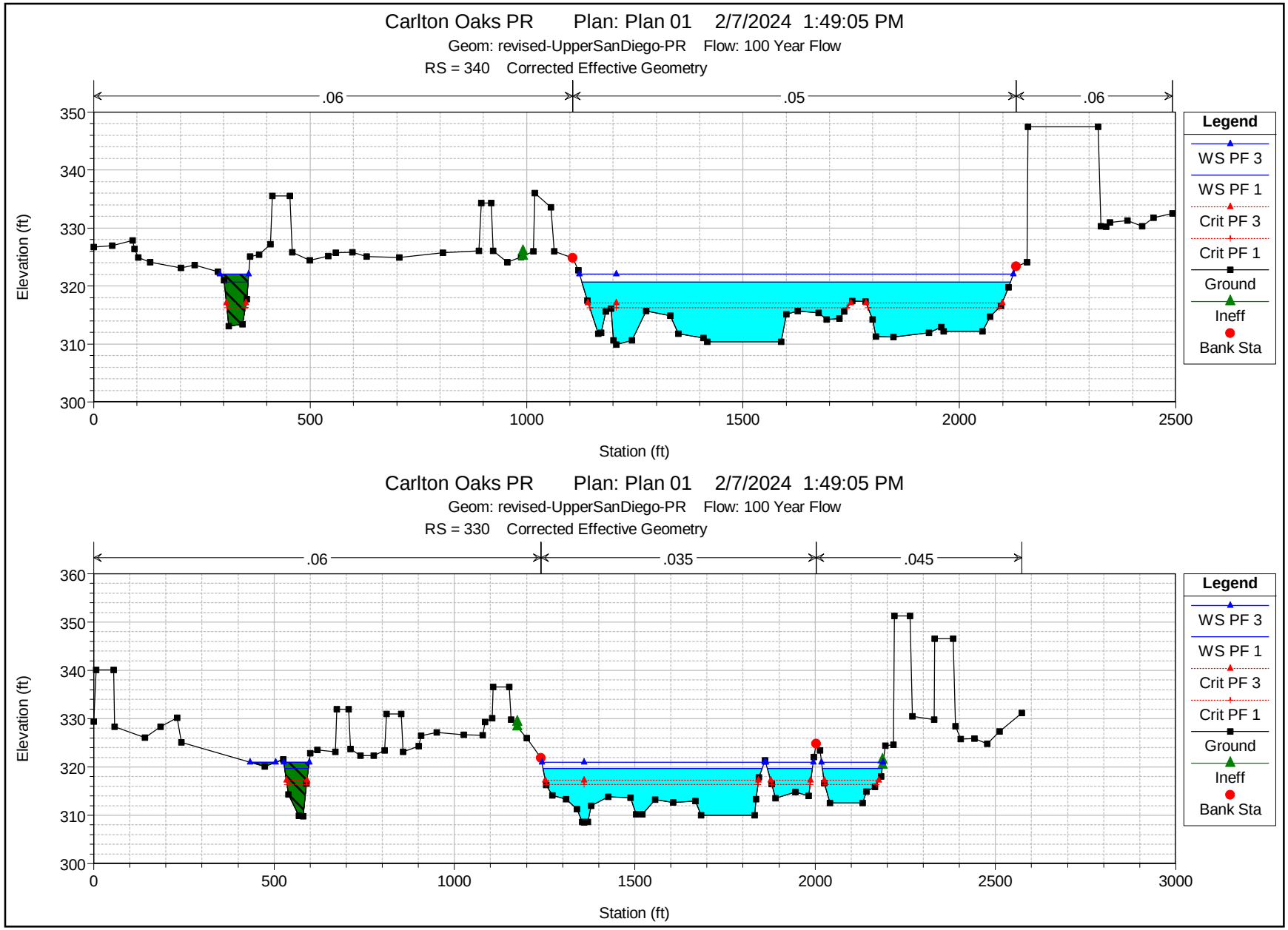
Profile PF06: Estimated Q50 BSI based on the Q100 BSI, following the proportional scaling method aligned with the pattern observed in FEMA data).
PF-6 to calculate the flow from the San Diego River that enters the proposed culverts and commingles with Sycamore Creek at Cross Section #100, before the proposed bridge connecting PA-2 and PA-3

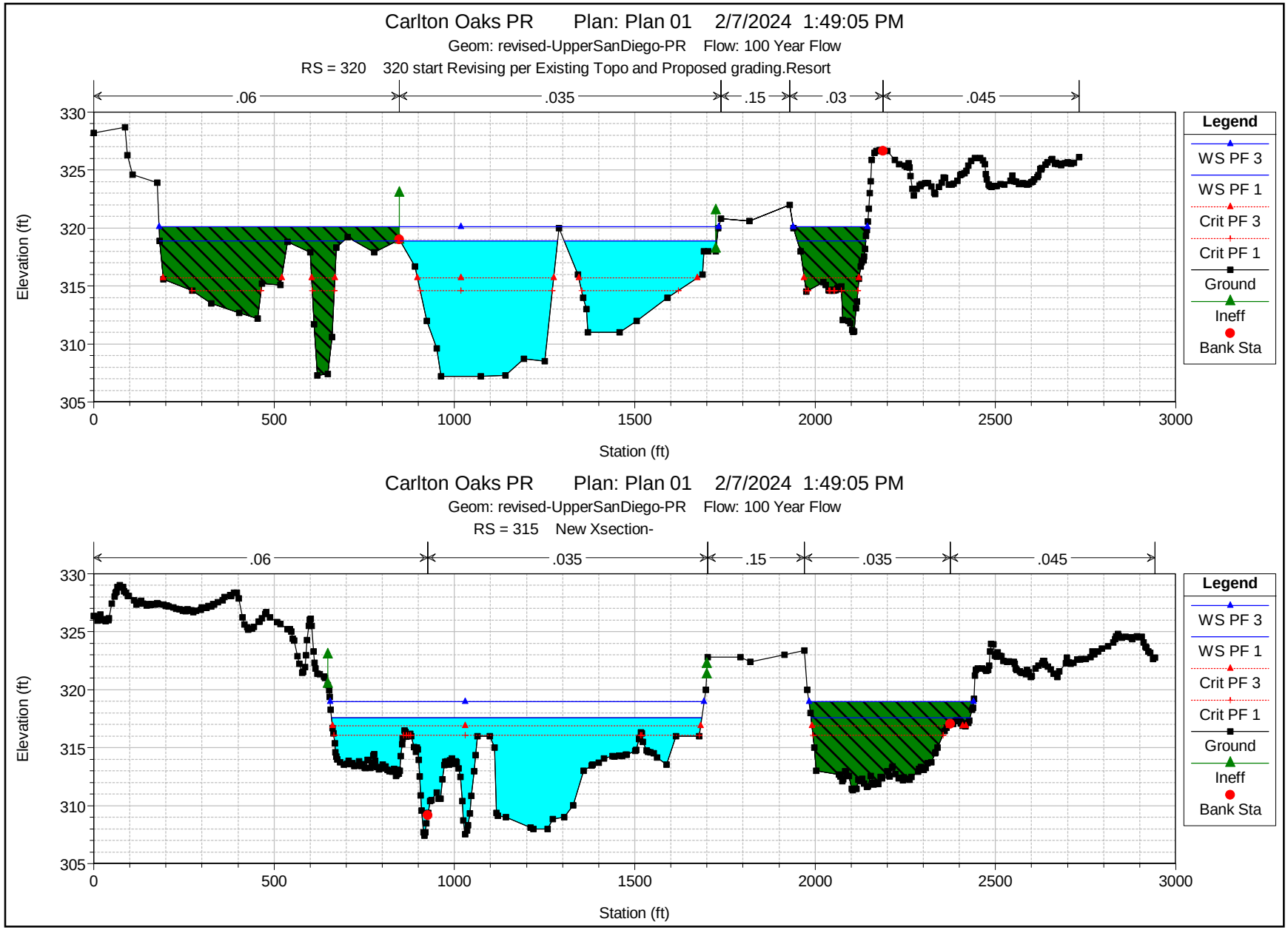
HEC-RAS Plan: Plan 01 River: San Diego River Reach: Reach 1 Profile: PF 6

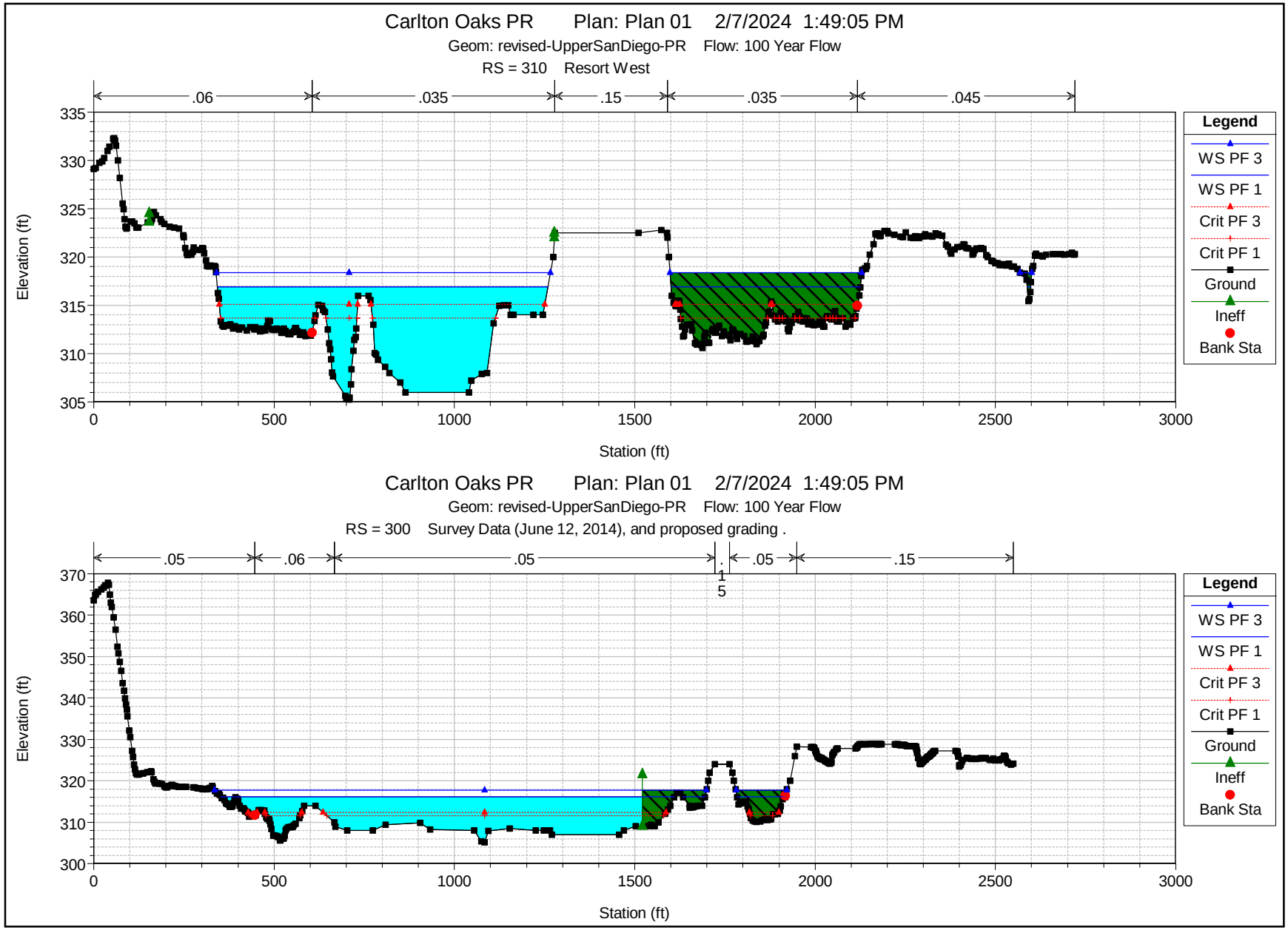
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	220	PF 6	25000.00	288.80	301.00	294.92	301.13	0.000722	2.56	8977.91	1609.62	0.15
Reach 1	230	PF 6	25000.00	289.80	301.41	296.67	301.66	0.001747	3.92	6351.11	1266.25	0.24
Reach 1	239	PF 6	25000.00	290.70	302.27	298.47	302.69	0.002837	5.01	4817.90	1129.21	0.30
Reach 1	242	PF 6	25000.00	291.70	302.94	298.09	303.49	0.003559	5.94	4210.24	460.37	0.35
Reach 1	243		Bridge									
Reach 1	244	PF 6	25000.00	292.20	303.63	298.20	304.08	0.002717	5.37	4652.47	684.60	0.31
Reach 1	245	PF 6	25000.00	291.03	304.35	299.62	304.66	0.005770	4.51	5652.08	772.80	0.28
Reach 1	250	PF 6	25000.00	294.72	306.15		306.47	0.001479	4.64	5569.67	742.67	0.28
Reach 1	260	PF 6	25000.00	295.59	308.33		308.92	0.004057	6.22	4086.68	614.87	0.41
Reach 1	270	PF 6	22513.00	297.09	310.89	306.16	311.26	0.001558	4.87	4706.37	663.78	0.30
Reach 1	280	PF 6	22513.00	298.83	312.23		312.34	0.000730	2.62	8590.36	1427.12	0.19
Reach 1	285	PF 6	22513.00	301.64	312.77	309.21	312.92	0.000951	3.09	7285.56	1482.86	0.25
Reach 1	290	PF 6	22513.00	301.71	313.36	309.84	313.52	0.000876	3.13	7200.74	1516.97	0.25
Reach 1	300	PF 6	21544.92	305.19	314.07	310.58	314.27	0.001549	3.66	5932.98	1333.55	0.28
Reach 1	310	PF 6	21544.92	305.25	314.90	311.52	315.45	0.002003	6.12	3932.37	1311.08	0.45
Reach 1	315	PF 6	21544.92	307.53	315.55	314.72	316.47	0.005767	7.96	3013.58	1211.95	0.71
Reach 1	320	PF 6	21544.92	307.20	317.08	313.02	317.41	0.001068	4.63	4649.91	1334.70	0.33
Reach 1	322		Lat Struct									
Reach 1	330	PF 6	21333.00	308.50	317.79	315.11	318.16	0.001477	5.01	4486.16	924.34	0.38
Reach 1	340	PF 6	21333.00	309.90	318.66	314.81	318.89	0.001642	3.83	5562.87	1022.14	0.28
Reach 1	345	PF 6	21333.00	309.80	319.17	314.77	319.40	0.001436	3.86	5528.71	900.45	0.27
Reach 1	355	PF 6	21333.00	311.40	319.63	315.93	319.98	0.002199	4.76	4477.88	1001.68	0.33

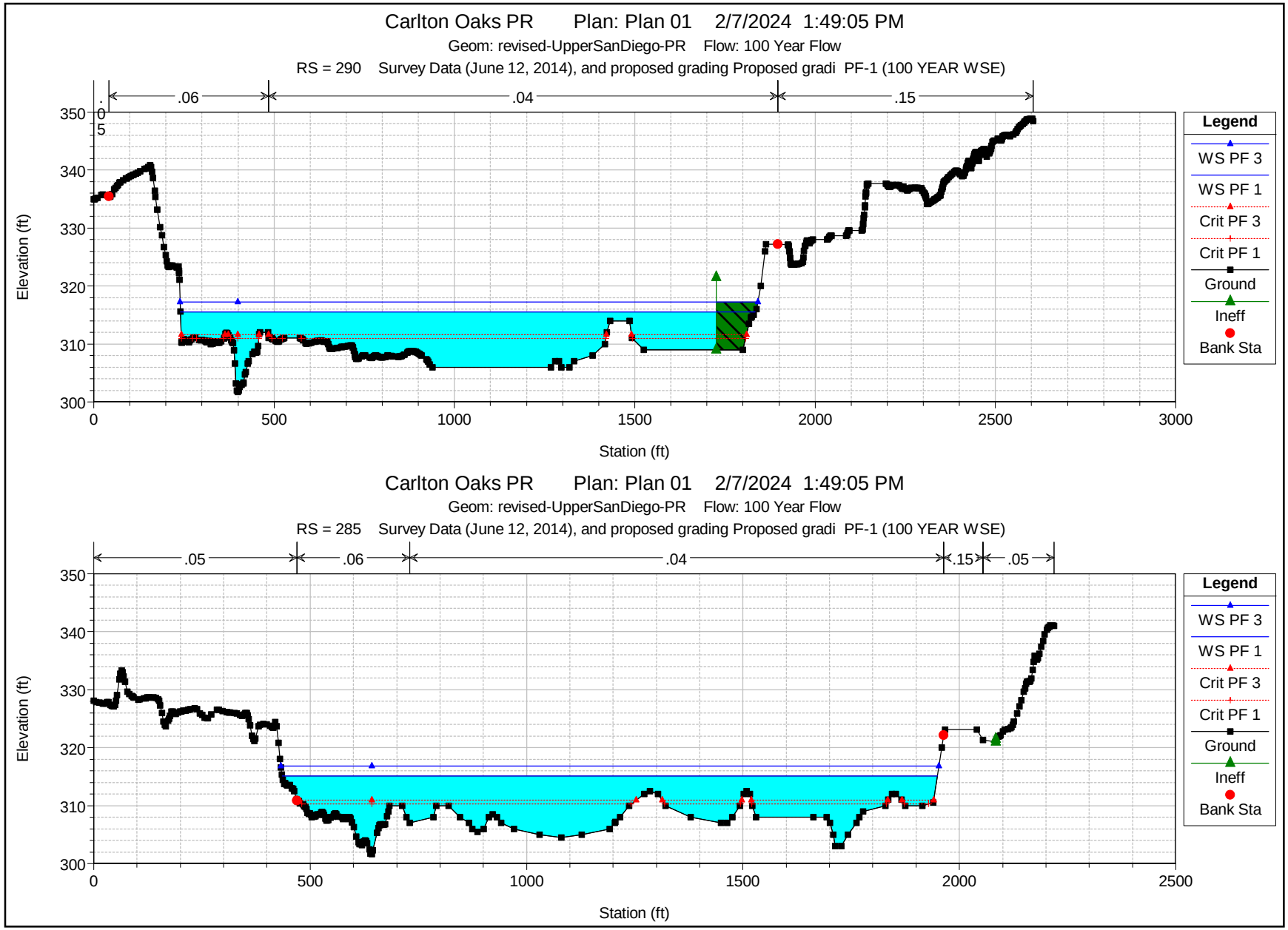

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
San Diego River Reach 1
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
2000
4000
6000
8000
10000
12000
Main Channel Distance (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Lat Struct
Ground

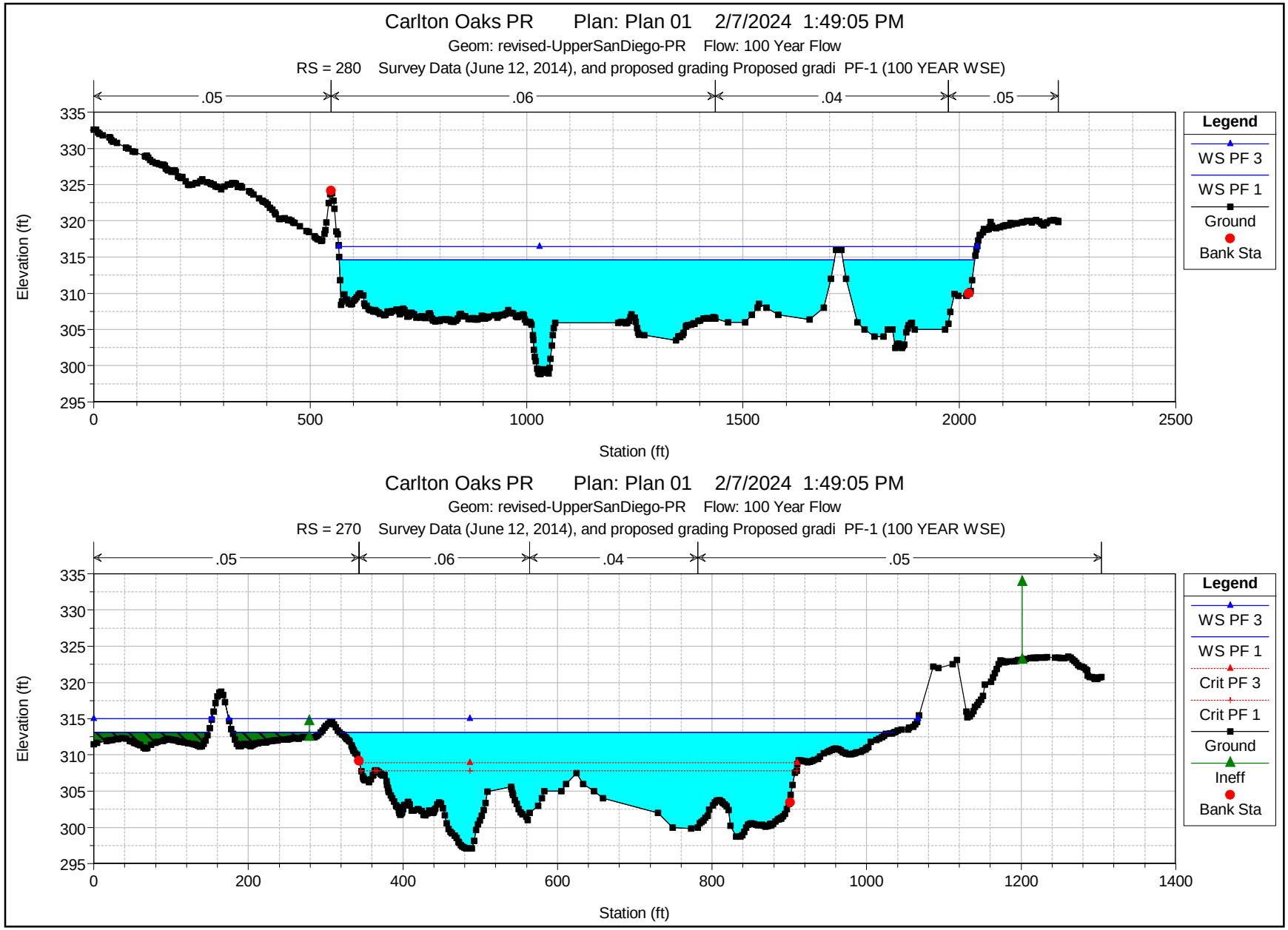

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 355 Corrected Effective Geometry
.06
.05
.06
Elevation (ft)
340
335
330
325
320
315
310
0
500
1000
1500
2000
2500
3000
3500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 345 Corrected Effective Geometry
.06
.05
.06
Elevation (ft)
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta

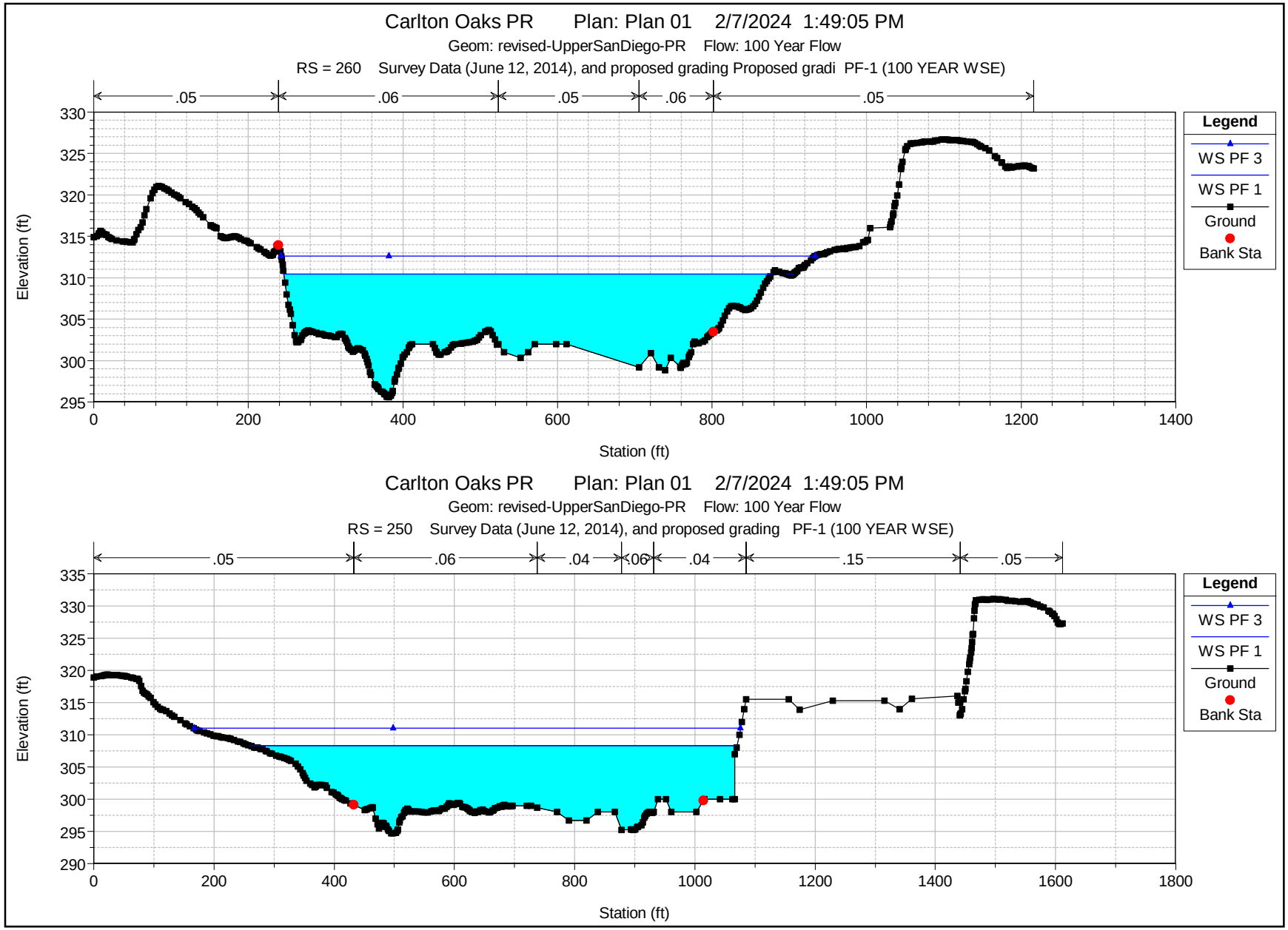

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 340 Corrected Effective Geometry
.06
.05
.06
Elevation (ft)
350
340
330
320
310
300
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 330 Corrected Effective Geometry
.06
.035
.045
Elevation (ft)
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta

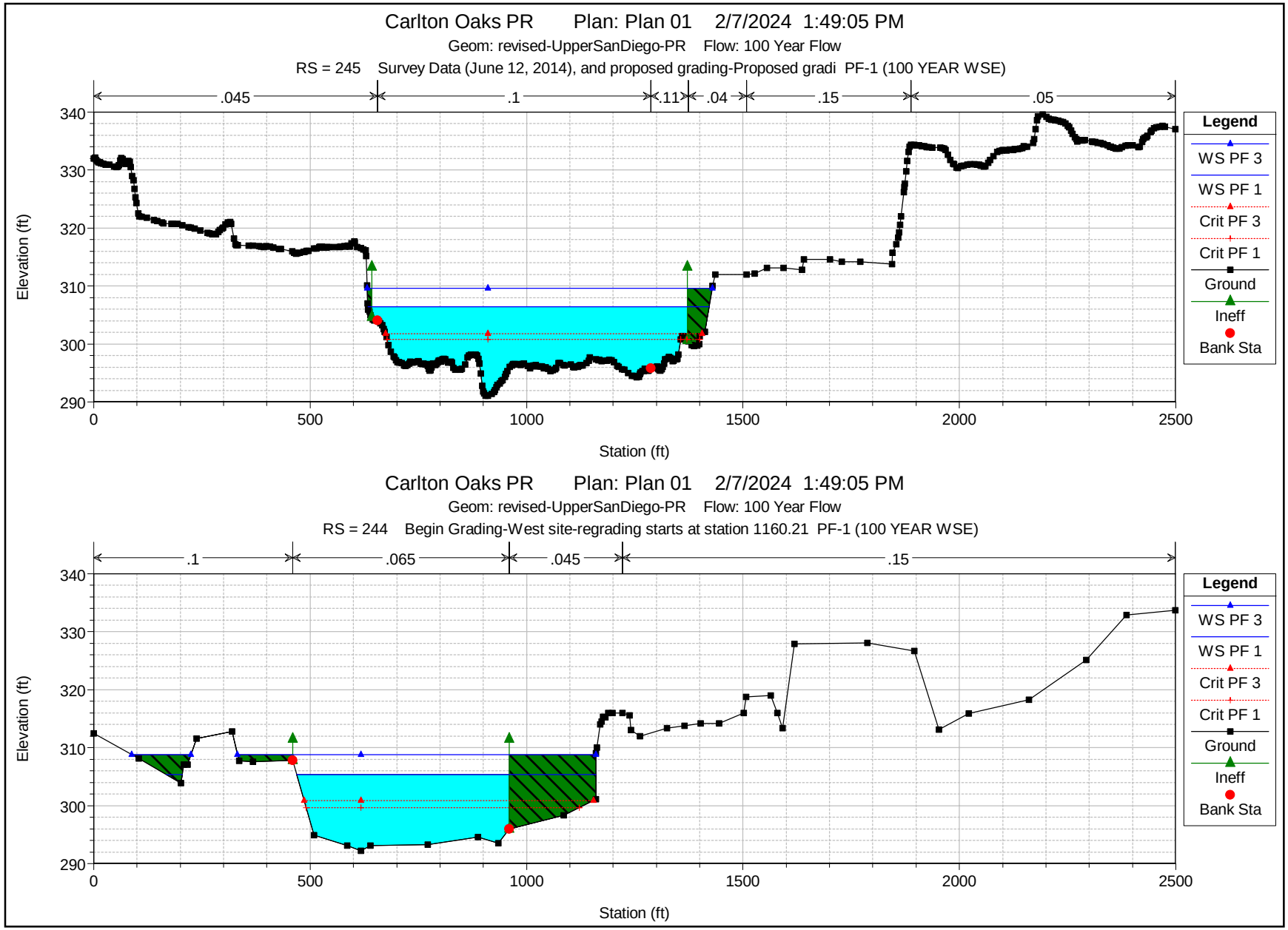

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 320 320 start Revising per Existing Topo and Proposed grading.Resort
.06
.035
.15
.03
.045
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 315 New Xsection-
.06
.035
.15
.035
.045
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta

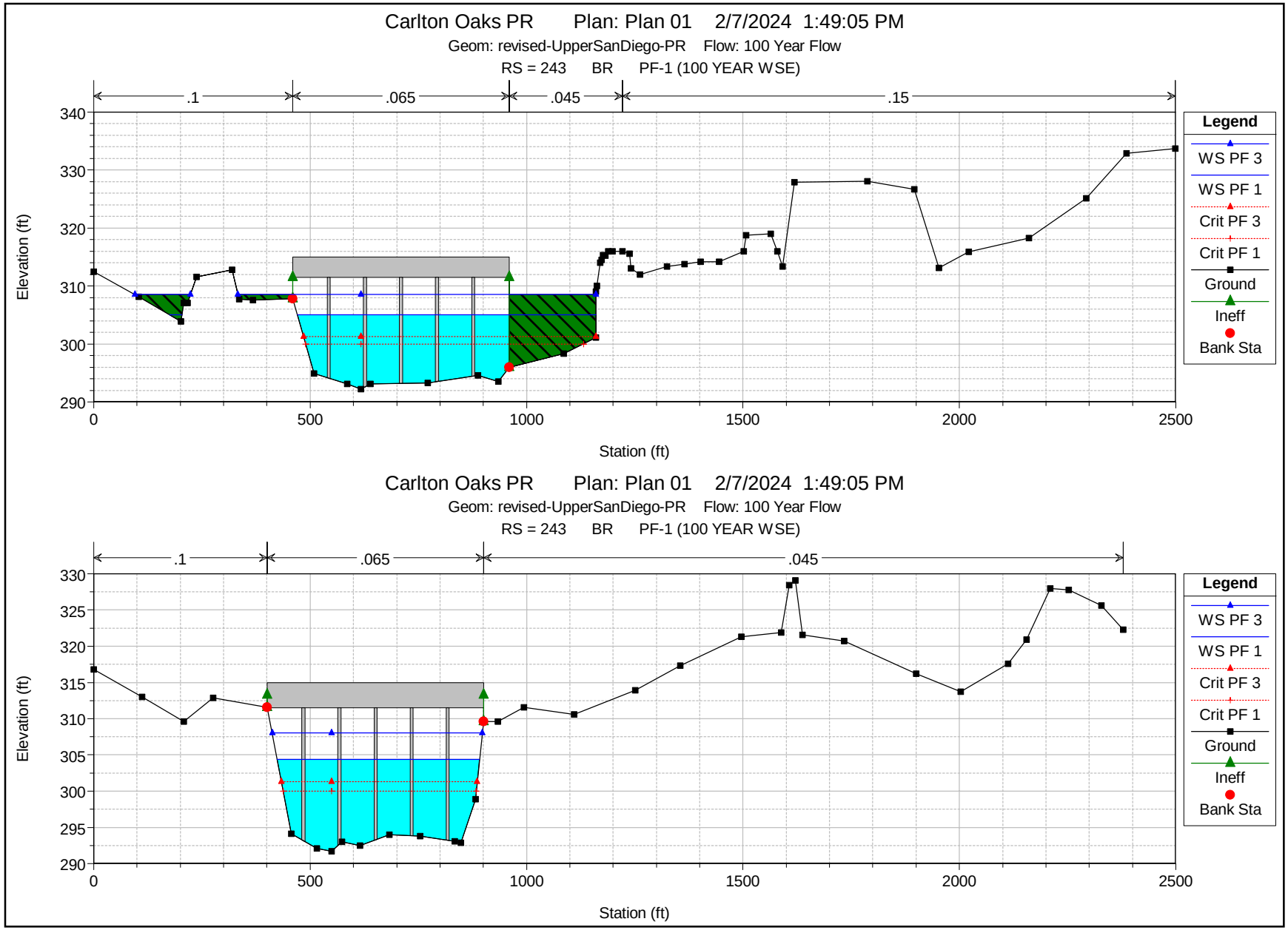

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 310 Resort West
.06
.035
.15
.035
.045
Elevation (ft)
335
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 300 Survey Data (June 12, 2014), and proposed grading .
.05
.06
.05
.15
.05
.15
Elevation (ft)
370
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta

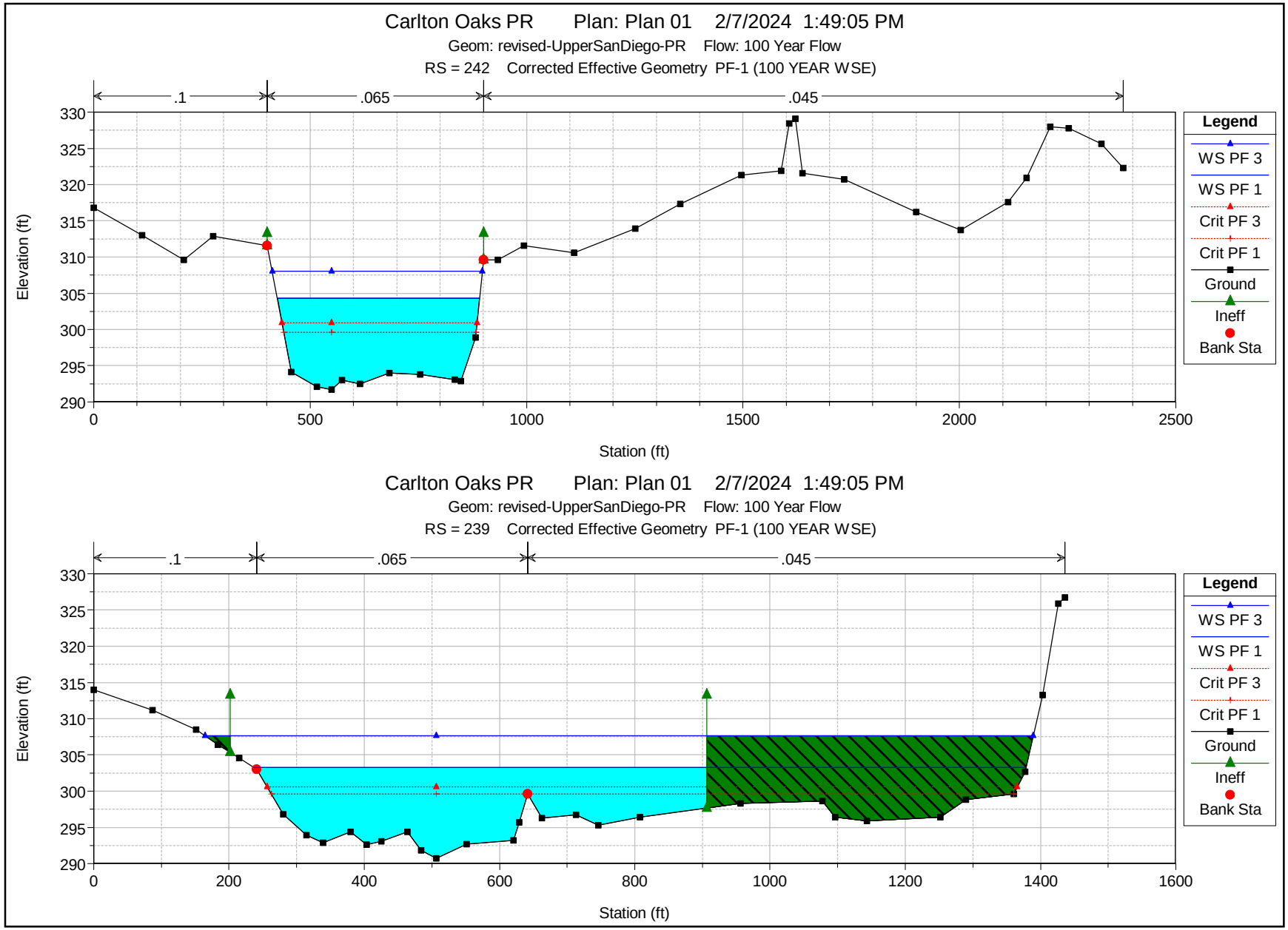

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 290 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-1 (100 YEAR WSE)
.06
.04
.15
Elevation (ft)
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 285 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-1 (100 YEAR WSE)
.05
.06
.04
.15
.05
Elevation (ft)
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta

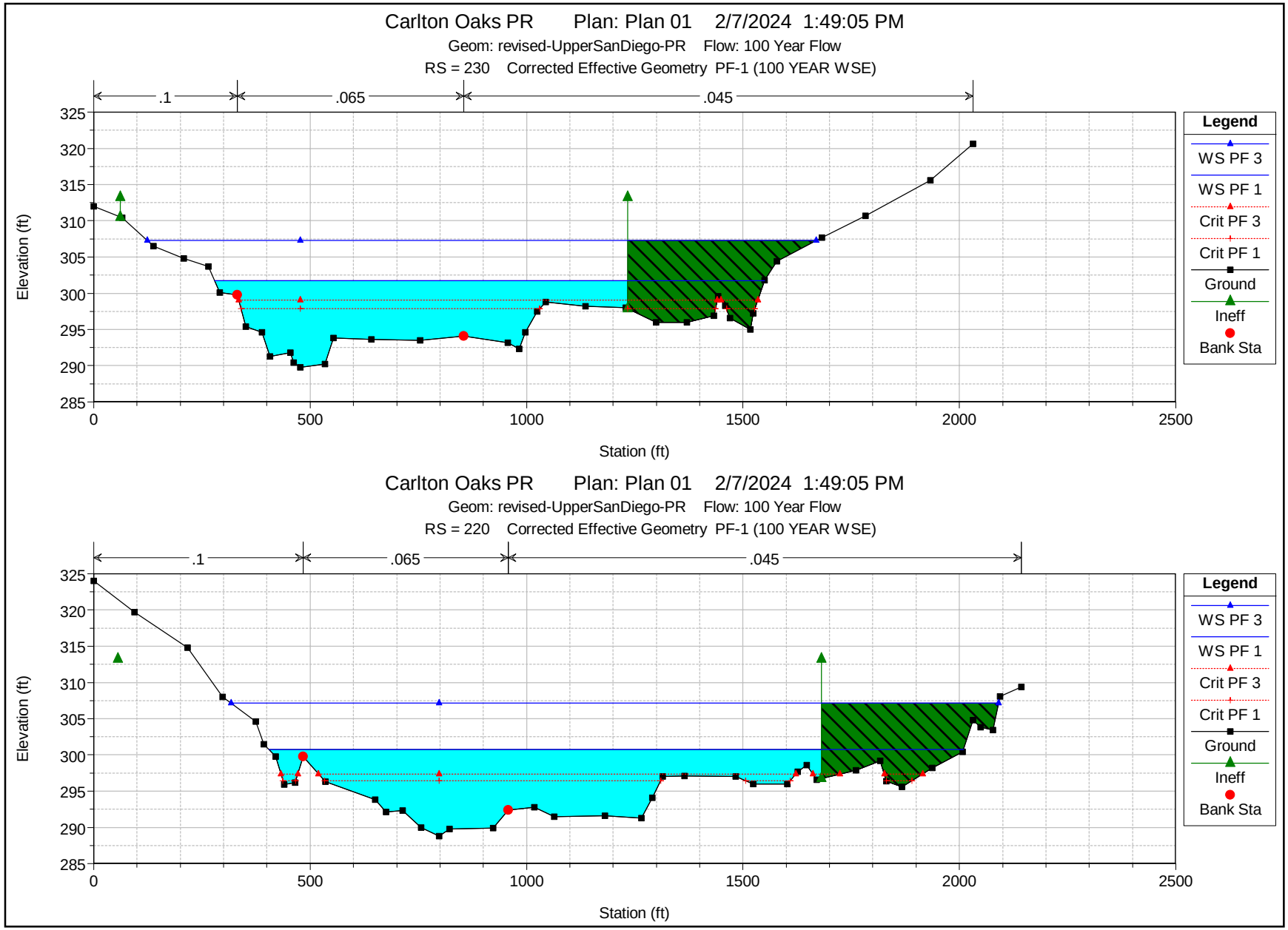

Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 280 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-1 (100 YEAR WSE)
.05
.06
.04
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Ground
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 270 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-1 (100 YEAR WSE)
.05
.06
.04
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
0
200
400
600
800
1000
1200
1400
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta


Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 260 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-1 (100 YEAR WSE)
.05
.06
.05
.06
.05
Elevation (ft)
330
325
320
315
310
305
300
295
0
200
400
600
800
1000
1200
1400
Station (ft)
Legend
WS PF 3
WS PF 1
Ground
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 250 Survey Data (June 12, 2014), and proposed grading PF-1 (100 YEAR WSE)
.05
.06
.04
.06
.04
.15
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
290
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)
Legend
WS PF 3
WS PF 1
Ground
Bank Sta


Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 245 Survey Data (June 12, 2014), and proposed grading-Proposed gradi PF-1 (100 YEAR WSE)
.045
.1
.11
.04
.15
.05
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 244 Begin Grading-West site-regrading starts at station 1160.21 PF-1 (100 YEAR WSE)
.1
.065
.045
.15
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta


Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 243 BR PF-1 (100 YEAR WSE)
.1
.065
.045
.15
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 243 BR PF-1 (100 YEAR WSE)
.1
.065
.045
Elevation (ft)
330
325
320
315
310
305
300
295
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta


Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 242 Corrected Effective Geometry PF-1 (100 YEAR WSE)
.1
.065
.045
Elevation (ft)
330
325
320
315
310
305
300
295
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 239 Corrected Effective Geometry PF-1 (100 YEAR WSE)
.1
.065
.045
Elevation (ft)
330
325
320
315
310
305
300
295
290
0
200
400
600
800
1000
1200
1400
1600
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta


Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 230 Corrected Effective Geometry PF-1 (100 YEAR WSE)
.1
.065
.045
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 01 2/7/2024 1:49:05 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 220 Corrected Effective Geometry PF-1 (100 YEAR WSE)
.1
.065
.045
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 3
WS PF 1
Crit PF 3
Crit PF 1
Ground
Ineff
Bank Sta

POST PROJECT CONDITIONS MODEL PLAN P04
FEMA 100-YEAR FLOODWAY (PF02) - NO SPLIT FLOW

X-SEC #	Existing Conditions Encroachment		Proposed Conditions Encroachment		
	Left	Right	Left	Right	
355	1604.5	2269.4	1604.5	2269.4	
345	1217.3	2147.3	1217.3	2147.3	
340	1147.2	2067.2	1147.2	2067.2	
330	1293.6	2138.6	1293.6	2138.6	
322					
320	848.3	2073.3	848.3	1725.2	Revised Encroachment in Proposed conditions
315	831	2340.8	831	1690.6	
310	559.1	2104.1	559.1	1277.4	
300	434.3	1904.3	434.3	1520.7	
290	270.7	1840.7	250.7	1725	Manning reduced at the proposed grading within the golfcourse to 0.04 from 0.06
285	472.1	1907.1	472.1	1907.1	Per Table A-5 from SD County HDM 2014, Page A-6 (High Grass in the flood plain)
280	608.4	1908.4	608.4	1908.4	
270	341.7	901.7	341.7	901.7	
260	256.7	856.7	256.7	856.7	
250	357	1052	357	1052	
245	686.6	1291.6	686.6	1291.6	
244	459.7	960.1	459.7	960.1	
243					
242	401	900.5	401	900.5	
239	246.2	906.2	246.2	906.2	
230	321.8	1056.8	321.8	1056.8	
220	522.9	1492.9	522.9	1492.9	

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Carlton Oaks PR
Project File : CarltonOaksPR.prj
Run Date and Time: 2/7/2024 3:08:02 PM

Project in English units

Project Description:
UPPER SAN DIEGO RIVER PROPOSED CONDITIONS
Profile 1 FEMA
100-Year Floodplain, Profile 2 FEMA Floodwy, Profile 3 BSI 100-Year
Flow
Revised Existing topo+ Proposed 2023
Floodway proposed
conditions

PLAN DATA

Plan Title: Plan 04
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.p04

Geometry Title: revised-UpperSanDiego-PR
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.g01

Flow Title : 100 Year Flow
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.f01

Plan Summary Information:
Number of: Cross Sections = 20 Multiple Openings = 0

```
            Culverts       =    0    Inline Structures  =    0
            Bridges        =    1    Lateral Structures =    1

Computational Information
    Water surface calculation tolerance  =  0.01
    Critical depth calculation tolerance =  0.01
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.3
    Flow tolerance factor                =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow

Encroachment Data
   Equal Conveyance = True
   Left Offset      =        0
   Right Offset     =        0

River = San Diego River  Reach = Reach 1
RS      Profile           Method  Value1  Value2
355     PF 2                   1  1604.5  2269.4
345     PF 2                   1  1217.3  2147.3
340     PF 2                   1  1147.2  2067.2
330     PF 2                   1  1293.6  2138.6
320     PF 2                   1   848.3  1725.2
315     PF 2                   1     831  1690.6
310     PF 2                   1   559.1  1277.4
300     PF 2                   1   434.3  1520.7
290     PF 2                   1   250.7    1725
285     PF 2                   1   472.1  1907.1
280     PF 2                   1   608.4  1908.4
270     PF 2                   1   341.7   901.7
260     PF 2                   1   256.7   856.7
250     PF 2                   1     357    1052
245     PF 2                   1   686.6  1291.6
244     PF 2                   1   459.7   960.1
242     PF 2                   1     401   900.5
239     PF 2                   1   246.2   906.2
230     PF 2                   1   321.8  1056.8
220     PF 2                   1   522.9  1492.9



FLOW DATA

Flow Title: 100 Year Flow
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.f01
```

Flow Data (cfs)

River	Reach	RS	PF 1	PF 2	PF 3	PF 4	PF 5	PF 6
San Diego River	Reach 1	355	36000	36000	48000	4500	16000	21333
San Diego River	Reach 1	320	37000	37000	49000	5000	17000	22513
San Diego River	Reach 1	260	38000	38000	50000	5500	19000	25000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
San Diego River	Reach 1	PF 1		Known WS = 300.76
San Diego River	Reach 1	PF 2		Known WS = 301.66
San Diego River	Reach 1	PF 3		Known WS = 307.13
San Diego River	Reach 1	PF 4		Known WS = 300.76
San Diego River	Reach 1	PF 5		Known WS = 300.76
San Diego River	Reach 1	PF 6		Known WS = 301

GEOMETRY DATA

Geometry Title: revised-UpperSanDiego-PR
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\San Diego River\Proposed\CarltonOaksPR.g01

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 355

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 80

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.6	54.1	329.6	64.2	325.6	78.6	322.7	125.3	322.5
191.1	321.9	199.7	330.5	303.1	330.6	305.9	328.2	314.9	330.2
343.4	331	443.3	330.1	543	331.4	551.9	329.8	608.6	330
615.1	337.4	640.3	337.4	643.6	329.1	672	328.4	743.1	329.5
746.8	336.5	789.9	336.5	793.5	328.9	836.7	328.9	980.7	324.9
1031	325	1062.7	326.6	1066.4	336.1	1083.8	336.3	1090.8	326.3
1156	325.6	1239.4	323.7	1275.1	321.6	1361.3	321	1418.6	319.8
1446.7	316.6	1469.1	316.3	1506.5	316.7	1516.7	310.8	1537.2	310.1
1551.7	310.8	1563.9	314.9	1590.3	315.8	1604.5	319.7	1616.8	316.1
1666	315.1	1720.1	313.8	1733.1	311.4	1933.3	311.5	2090.2	312
2112.2	314.2	2137	316.4	2145.2	320.2	2164.3	321.8	2196.4	318.6
2209	313.6	2229.8	312.6	2258.6	312.6	2294	313.5	2306.7	315.2
2330.7	319.2	2365.6	319.9	2417.7	320.5	2464.8	318.9	2487.3	317.9
2527.9	317.8	2547.1	318.7	2582	322.5	2592.6	324.2	2640.3	323.9
2733.3	326	2773.3	328.7	2799.6	328.3	2837.5	329.1	2881.4	328.9

2888.7	330.5	2924.8	331.4	2990.2	330.4	2995.2	332.8	3009.4	332.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1604.5	.05	2417.7	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1604.5	2417.7	360	310	350	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1604.5	326	F
2417.7	3009.4	326	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	322.60	Element			
Vel Head (ft)	0.62	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.98	Reach Len. (ft)	360.00	310.00	350.00
Crit W.S. (ft)	317.49	Flow Area (sq ft)		5705.00	
E.G. Slope (ft/ft)	0.002641	Area (sq ft)		5705.00	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	664.90	Top Width (ft)		664.90	
Vel Total (ft/s)	6.31	Avg. Vel. (ft/s)		6.31	
Max Chl Dpth (ft)	10.58	Hydr. Depth (ft)		8.58	
Conv. Total (cfs)	700497.6	Conv. (cfs)		700497.6	
Length Wtd. (ft)	310.00	Wetted Per. (ft)		679.31	
Min Ch El (ft)	311.40	Shear (lb/sq ft)		1.38	
Alpha	1.00	Stream Power (lb/ft s)		8.74	
Frctn Loss (ft)	0.63	Cum Volume (acre-ft)	18.53	1604.46	78.63
C & E Loss (ft)	0.07	Cum SA (acres)	3.08	189.40	10.74

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 345

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 87

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.5	49.4	329.1	102.6	328.5	110.8	325.5	147.2	324.7
222.2	324.8	279.9	324	297.8	318.7	332.6	318.3	342	322.6
352.2	328.6	409	329.7	414.3	338.4	436.9	338.4	443.4	329.4
479.4	328.7	533.4	328.1	539.9	334.4	654.6	334.4	663.1	327.7
761.2	327.7	831.1	325.5	841.3	334.3	870.8	334.3	875.7	325.4
919.5	323.7	960.7	323.6	995.9	324.3	1000.4	333.1	1039.7	333.1
1042.9	325.3	1092.1	322.8	1111.7	320.1	1171.1	320.2	1196.7	319
1218.4	314.4	1243.9	313.4	1260.5	315.7	1277.7	315.6	1287.1	312.5

1308.4	310.6	1331.5	309.8	1349.3	310.6	1357.5	314	1406.2	313.9
1473.3	313.3	1479.5	310	1754.1	310	1768.6	320.8	1784.4	328.6
1796.2	329.8	1811.8	323.1	1827.4	315.1	1847.9	313.7	1865	315.1
1881.8	319.8	1899.8	323.5	1942.8	322.9	1993.1	319.8	2004.9	316.5
2015.6	312.2	2033.1	312.5	2061.4	312.9	2065.9	312.2	2147.9	312.2
2160.3	316.1	2180.3	319.1	2223.2	319.9	2242.8	318	2258.3	317.9
2273.1	319.4	2284.9	321.6	2294.3	324.2	2319.3	325.5	2321.4	351.5
2360.3	351.5	2366.8	331.2	2419.1	331.4	2422.9	347.8	2478	347.8
2482.6	330.3	2500.2	330.1	2540.7	330.6	2574.2	329.3	2587	329.7
2658.4	333.8	2742.3	337.4						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1092.1	.05	2294.3	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1092.1	2294.3	400	335	125	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	742.3	326	F

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	321.90	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.39	Wt. n-Val.		0.050		
W.S. Elev (ft)	321.51	Reach Len. (ft)	400.00	335.00	125.00	
Crit W.S. (ft)	316.13	Flow Area (sq ft)		7180.65		
E.G. Slope (ft/ft)	0.001618	Area (sq ft)		7180.65		
Q Total (cfs)	36000.00	Flow (cfs)		36000.00		
Top Width (ft)	809.96	Top Width (ft)		809.96		
Vel Total (ft/s)	5.01	Avg. Vel. (ft/s)		5.01		
Max Chl Dpth (ft)	11.71	Hydr. Depth (ft)		8.87		
Conv. Total (cfs)	894946.1	Conv. (cfs)		894946.1		
Length Wtd. (ft)	335.00	Wetted Per. (ft)		836.09		
Min Ch El (ft)	309.80	Shear (lb/sq ft)		0.87		
Alpha	1.00	Stream Power (lb/ft s)		4.35		
Frctn Loss (ft)	0.53	Cum Volume (acre-ft)	18.53	1558.60	78.63	
C & E Loss (ft)	0.01	Cum SA (acres)	3.08	184.15	10.74	

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 340

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.7	43.2	327	89.6	327.9	94.4	326.4	102.4	324.9
130	324.1	201.6	323.1	232.8	323.6	287.2	322.5	301.2	321
312	313.1	344	313.4	353.2	317.7	361.6	325.1	382.4	325.4
408.1	327.2	412.5	335.5	452.9	335.5	458.9	325.8	498.9	324.4
541.7	325.2	559.3	325.7	597.3	325.8	630.1	325.1	705.7	324.9
806.9	325.7	889.8	326.1	895.4	334.3	917.8	334.3	923	326.1
955.8	324.1	987.8	325	1016.2	326	1018.6	336	1056.2	333.6
1063.4	326	1106.2	324.8	1119.4	322.7	1140.2	317.5	1166.2	311.8
1172.3	311.9	1182.7	315.6	1195.5	316.1	1201.1	310.6	1207.1	309.9
1243.1	310.6	1276.3	315.7	1331.9	314.9	1350.7	311.8	1408.7	311
1417.5	310.4	1588.3	310.4	1600	315.1	1626.4	315.7	1674.8	315.4
1693.2	314.2	1722.4	314.4	1733.6	315.6	1752.4	317.4	1782.8	317.3
1799.2	314.2	1807.6	311.3	1847.6	311.2	1929.2	311.9	1958.5	312.9
1963.3	312.2	2053.3	312.2	2071.3	314.7	2096.5	316.6	2114.1	319.8
2130.9	323.4	2156.1	324.1	2158.5	347.5	2320.2	347.5	2326.6	330.3
2339.4	330.2	2347.8	331	2388.2	331.3	2422.2	330.3	2449	331.8
2492.2	332.5								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1106.2	.05	2130.9	.06

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1106.2	2130.9	575	454	575	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	992.2	326	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	321.36	Element			
Vel Head (ft)	0.35	Wt. n-Val.		0.050	
W.S. Elev (ft)	321.01	Reach Len. (ft)	575.00	454.00	575.00
Crit W.S. (ft)	316.26	Flow Area (sq ft)		7606.01	
E.G. Slope (ft/ft)	0.001557	Area (sq ft)		7606.01	
Q Total (cfs)	36000.00	Flow (cfs)		36000.00	
Top Width (ft)	920.00	Top Width (ft)		920.00	
Vel Total (ft/s)	4.73	Avg. Vel. (ft/s)		4.73	
Max Chl Dpth (ft)	11.11	Hydr. Depth (ft)		8.27	
Conv. Total (cfs)	912273.7	Conv. (cfs)		912273.7	
Length Wtd. (ft)	460.09	Wetted Per. (ft)		938.08	
Min Ch El (ft)	309.90	Shear (lb/sq ft)		0.79	
Alpha	1.00	Stream Power (lb/ft s)		3.73	
Frctn Loss (ft)	0.68	Cum Volume (acre-ft)	18.53	1501.75	78.63
C & E Loss (ft)	0.02	Cum SA (acres)	3.08	177.50	10.74

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 330

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 85

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.4	6.4	340.1	55	340.1	58.2	328.3	141.2	326.1
185.4	328.3	231.5	330.2	243.2	325.1	474.7	320.1	525.2	321.6
540.1	314.3	568.2	309.9	581	309.8	589.9	316.6	600.7	322.8
620.3	323.5	669.7	323.1	674.1	332	706.7	332	712.3	323.7
739.5	322.4	776.4	322.4	806.9	323.4	811.9	331	853.1	331
858	323.1	901.3	324.3	907.3	326.5	951	327.2	1025.7	326.7
1077.9	326.6	1084.3	329.3	1104.3	330.1	1107.6	336.6	1151.7	336.6
1157.3	329.8	1199.9	326	1239.6	321.9	1254.4	316.3	1272.1	314.1
1309.8	313.3	1339.5	311.3	1353.9	308.6	1358.9	308.5	1370.2	308.6
1379.5	312	1426.4	313.8	1487.8	313.6	1504.2	310.2	1521.1	310.2
1556	313.2	1606.6	312.6	1668.3	312.9	1684.4	310	1832	310
1836.4	313.3	1844.4	317.8	1861.7	321.4	1879.7	316.5	1889.8	313.5
1945.9	314.8	1981.6	314	1996.9	322.1	2003.7	324.8	2013.3	323.4
2025.8	316.7	2041	312.5	2131.8	312.5	2142.6	314.9	2166.3	315.9
2183.1	318	2194.4	324.4	2217.2	324.6	2220.1	351.3	2263	351.3
2269.4	330.5	2329.6	329.8	2330.9	346.6	2382.3	346.6	2388.7	328.4
2403.5	325.8	2442.1	325.9	2477.4	324.8	2511.5	327.4	2573.6	331.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.06	1239.6	.035	2003.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1239.6	2003.7	620	588	620	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1173.6	329.3	F
2187.3	2573.6	321.5	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	320.65	Element			
Vel Head (ft)	0.56	Wt. n-Val.		0.035	0.045
W.S. Elev (ft)	320.09	Reach Len. (ft)	620.00	588.00	620.00
Crit W.S. (ft)	316.35	Flow Area (sq ft)		5268.56	830.40
E.G. Slope (ft/ft)	0.001425	Area (sq ft)		5268.56	830.40
Q Total (cfs)	36000.00	Flow (cfs)		32377.22	3622.78
Top Width (ft)	807.58	Top Width (ft)		688.45	119.13
Vel Total (ft/s)	5.90	Avg. Vel. (ft/s)		6.15	4.36
Max Chl Dpth (ft)	11.59	Hydr. Depth (ft)		7.65	6.97
Conv. Total (cfs)	953740.2	Conv. (cfs)		857762.7	95977.5
Length Wtd. (ft)	589.59	Wetted Per. (ft)		701.57	126.81
Min Ch El (ft)	308.50	Shear (lb/sq ft)		0.67	0.58
Alpha	1.03	Stream Power (lb/ft s)		4.10	2.54

Frctn Loss (ft)	0.78	Cum Volume (acre-ft)	18.53	1434.65	73.15
C & E Loss (ft)	0.02	Cum SA (acres)	3.08	169.11	9.95

Warning: Divided flow computed for this cross-section.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

LATERAL STRUCTURE

RIVER: San Diego River
REACH: Reach 1 RS: 322

INPUT
Description:
Lateral structure position = Next ot right bank station
Distance from Upstream XS =
Deck/Roadway Width = 100
Weir Coefficient = 3.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	323.5	75	323.5

Weir crest shape = Broad Crested

Number of Culverts = 4

Culvert Name	Shape	Rise	Span
Culvert #1	Box	8	10.5

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Inlet control

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	88	.013	.013	0	.2	.3

Upstream Elevation = 313
Centerline Station = 10
Downstream Elevation = 312.5
Centerline Station = 10

Culvert Name	Shape	Rise	Span
Culvert #2	Box	8	10.5

FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
	78	.013	.013	0	.2	.3

Upstream Elevation = 313
Centerline Station = 23
Downstream Elevation = 312.5
Centerline Station = 23

```
Culvert Name     Shape      Rise    Span
Culvert #3           Box       8    10.5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                      68.3     .013     .013        0                  .2               .3
Upstream   Elevation =  313
           Centerline Station =  36
Downstream Elevation =  312.5
           Centerline Station =  36

Culvert Name     Shape      Rise    Span
Culvert #4           Box       8    10.5
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 3 - Wingwall flared 0 deg. (sides extended straight)
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                        50     .013     .013        0                  .2               .3
Upstream   Elevation =  313
           Centerline Station =  49
Downstream Elevation =  312.5
           Centerline Station =  49

CROSS SECTION


RIVER: San Diego River
REACH: Reach 1            RS: 320

INPUT
Description: 320 start Revising per Existing Topo and Proposed grading.Resort
             East
From Stations 0 to 1290.09, Geometry from the corrected
             effective model.(Forrest Creek - Offsite existing
             development).
start regrading at station 1290.09
Station 1738.31
             to 1927 proposed resort n =0.15
In the non-disturbed area,
             Manning's coefficients are derived from the Corrected Effective
             Model.
Station Elevation Data    num=     166
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   328.2    87.1   328.7    92.7   326.3   107.2   324.6   175.5   323.9
   182.3   318.9   192.7   315.6   272.6   314.6   325.3   313.5   403.2   312.7
   454.2   312.2   466.6   315.2   517.6   315.1   537.3   318.8   599.9   317.9
   610.4   311.7   619.6   307.3   648.9   307.4     661   310.6   672.6   318.3
   703.6   319.2   777.4   317.9   847.7     319   889.9   316.7   923.2     312
   950.9   309.6     963   307.2  1073.2   307.2  1141.4   307.3  1193.1   308.7
  1250.2   308.5 1290.09     320 1342.26     316 1356.77     314 1366.58     313
```

1369.82	311	1457.79	311	1504.75	312	1590.76	314	1687.87	316		
1692.08	318	1703.35	318	1724.42	318	1731.81	320	1738.71	320.8		
1818.46	320.6	1929.08	322	1939.46	320	1959.37	318	1974.86	314.5		
2023	315.34	2029.11	315.07	2036.77	314.66	2039.32	314.61	2046.8	314.62		
2049.53	314.7	2052.08	314.59	2057.38	314.64	2062.29	314.84	2067.4	314.74		
2072.5	314.96	2076.43	312.07	2092.92	312	2098.03	311.8	2103.14	311.22		
2105.69	311.06	2108.24	311.1	2113.35	313.08	2115.9	313.67	2121	315.62		
2126.11	316.67	2128.66	317.04	2133.77	317.22	2136.32	317.54	2138.87	318.2		
2141.43	319.32	2143.98	319.82	2146.26	320.56	2149.08	321.65	2151.64	323.02		
2154.19	324.02	2156.74	325.89	2164.4	326.49	2169.5	326.66	2179.72	326.74		
2182.27	326.66	2188.2	326.66	2200.14	326.66	2220.56	325.88	2233.32	325.5		
2248.64	325.38	2253.74	325.26	2258.85	325.57	2261.4	325.23	2263.95	324.48		
2269.06	323.4	2274.16	322.81	2281.82	323.38	2289.48	323.65	2292.03	323.63		
2294.59	323.78	2304.8	323.88	2312.45	323.89	2322.66	323.59	2330.32	323.06		
2332.88	322.94	2343.09	323.56	2351.51	323.93	2355.85	324.38	2359.98	324.33		
2371.17	323.75	2378.82	323.75	2383.93	323.82	2394.14	324.07	2401.8	324.55		
2406.9	324.66	2414.56	324.71	2419.22	324.95	2424.77	325.38	2431.92	325.79		
2442.5	326.03	2457.96	326.02	2465.61	325.83	2470.72	325.51	2473.27	324.65		
2475.82	324.21	2480.93	323.73	2483.48	323.61	2488.59	323.53	2498.8	323.64		
2503.87	323.63	2514.11	323.79	2525.03	323.76	2542.19	324.07	2547.3	324.54		
2552.4	324.03	2557.51	324	2565.17	323.78	2575.38	323.86	2580.48	323.81		
2585.59	323.85	2588.14	323.74	2592.74	323.78	2599.09	323.97	2603.46	324.01		
2607.55	324.18	2616.02	324.39	2618.77	324.58	2623.88	325.09	2626.43	325.04		
2628.71	325.18	2639.2	325.47	2643.52	325.68	2654.51	325.86	2657.06	325.94		
2664.72	325.53	2667.27	325.61	2672.38	325.5	2677.49	325.56	2682.59	325.44		
2692.19	325.58	2697.91	325.59	2700.46	325.68	2709.12	325.54	2717.58	325.62		
2732.54	326.12										

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	847.7	.035	1738.71	.15	1929.08	.03	2188.2	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
847.7	2188.2	260	431	405	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	847	323	F
1725.2	2732.54	321.5	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	319.86	Element			
Vel Head (ft)	0.50	Wt. n-Val.		0.035	
W.S. Elev (ft)	319.36	Reach Len. (ft)	260.00	431.00	405.00
Crit W.S. (ft)	314.77	Flow Area (sq ft)		6519.30	
E.G. Slope (ft/ft)	0.001222	Area (sq ft)		6519.30	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	866.31	Top Width (ft)		866.31	
Vel Total (ft/s)	5.68	Avg. Vel. (ft/s)		5.68	
Max Chl Dpth (ft)	12.16	Hydr. Depth (ft)		7.53	
Conv. Total (cfs)	1058602.0	Conv. (cfs)		1058602.0	
Length Wtd. (ft)	426.99	Wetted Per. (ft)		871.56	

Min Ch El (ft)	307.20	Shear (lb/sq ft)		0.57	
Alpha	1.00	Stream Power (lb/ft s)		3.24	
Frctn Loss (ft)	0.89	Cum Volume (acre-ft)	18.53	1355.09	67.24
C & E Loss (ft)	0.06	Cum SA (acres)	3.08	158.62	9.11

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 315

INPUT
Description: New Xsection-
Survey Data (June 12, 2014) and proposed grading
proposed grading starts at station # 1110.6
Station 1379.96 to 1561.13 the exisitng building and grading to stay
proposed resort at station 1702.4 to 1970.5- n=0.15
Station Elevation Data num= 386

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.37	4.8	326.34	10.25	325.97	18.78	326.48	24.07	325.99
29.36	326.09	33.27	325.91	36.26	326.09	40.19	325.99	42.58	326.17
50.51	327.44	58.4	328.05	60.99	328.38	63.58	328.43	66.17	328.86
72.23	329	76.53	328.8	81.71	328.87	84.29	328.5	89.47	328.36
94.67	328.06	96.71	328.06	111.18	327.7	118.46	327.35	123.62	327.53
126.27	327.46	131.56	327.67	136.85	327.44	147.43	327.27	152.72	327.38
158.01	327.29	160.66	327.38	169.56	327.36	176.53	327.45	179.18	327.38
193.24	327.36	199.19	327.24	202.86	327.28	208.12	327.19	221.26	327.09
229.15	326.97	238.18	326.93	246.87	326.81	250.12	326.89	255.36	326.78
260.59	326.92	265.83	326.8	271.06	326.85	276.29	326.7	284.14	326.8
297.23	326.9	299.85	327.1	312.82	327.04	318.17	327.21	326.02	327.19
331.25	327.4	333.87	327.36	344.37	327.56	357.51	327.73	362.77	327.99
378.47	328.15	381.17	328.06	389.05	328.38	396.94	328.35	402.2	327.89
412.2	326.25	417.97	325.61	425.85	325.37	428.08	325.17	438.99	325.28
444.25	325.41	457.39	325.86	460.02	325.88	465.78	326.16	475.79	326.53
478.42	326.71	488.93	326.25	507.82	325.83	517.84	325.65	537.22	325.21
544.13	325.24	547.14	325.01	552.01	324.42	555.08	324.23	565	322.89
570.41	322.24	578.3	321.47	580.93	321.53	586.18	321.96	588.81	322.97
591.44	324.28	596.6	325.5	599.32	326.03	601.95	326.13	604.68	325.49
609.84	323.29	612.47	322.34	615.09	321.85	620.35	321.4	626.51	321.35
638.42	321.12	641.38	321	649.26	320.41	652.31	319.94	654.29	319.38
657.15	318.28	662.41	316.69	665.03	316.24	668.18	315.36	670.17	314.59

672.15	314.25	675.55	313.97	683.43	313.74	693.98	313.53	702.17	313.63
707.09	313.88	712.35	313.57	717.6	313.67	722.86	313.41	730.74	313.47
736	313.83	742.66	313.42	745.57	313.57	750.76	313.25	754.4	313.25
759.66	313.96	762.28	313.92	767.54	313.27	771.37	313.4	773.35	313.69
775.43	314.33	778.05	314.44	780.68	313.86	785.94	313.33	791.25	313.12
797.16	313.23	801.71	313.54	807.08	313.34	809.6	313.37	814.85	313.07
820.11	312.95	827.99	312.92	833.25	313.19	838.51	312.56	841.14	312.66
843.76	313.1	846.39	312.78	848.76	313.01	851.65	314.27	854.71	315.29
856.91	315.79	862.16	316.46	864.79	316.36	867.42	315.93	877.93	316.18
880.5	316	888.45	315.06	893.7	314.63	896.33	315	898.96	314.85
901.59	313.95	904.32	312.53	906.85	310.87	909.47	309.59	914.73	307.71
917.36	307.42	919.99	307.69	922.62	308.49	926	309.161	927.87	309.36
933.13	310.41	937.01	310.47	951.53	311.12	956.79	310.59	962.04	310.61
967.3	312.27	972.56	313.48	975.18	313.79	980.44	313.81	985.67	313.53
988.33	313.89	991.63	313.82	993.58	314.06	996.21	313.6	1001.47	313.6
1004.1	313.84	1006.72	313.74	1011.98	313.23	1017.24	312.48	1021.39	310.39
1025.12	308.71	1030.38	307.53	1035.64	307.86	1038.27	308.3	1042.29	309.33
1047.19	310.83	1055.13	312.98	1059.29	314.37	1064.55	316	1098.72	316
1110.6	315	1115.91	309.39	1120.66	309.14	1142.85	309	1211.52	308.1
1219.42	308	1257.7	308	1273.08	308.82	1304	309	1329.86	310.04
1358.7	313	1379.96	313.45	1382.67	313.53	1400.4	313.72	1414.13	314.06
1438.1	314.28	1443.04	314.25	1456.18	314.31	1463.9	314.28	1474.58	314.41
1477.21	314.38	1500.86	314.72	1503.49	314.82	1511.38	315.74	1514	315.87
1516.63	316.33	1519.26	316.22	1521.89	315.49	1532.4	314.76	1537.32	314.63
1543.27	314.62	1553.19	314.5	1561.13	314.16	1588.49	313.55	1613.72	316
1678.29	316	1697.3	320	1702.4	322.8	1792.31	322.8	1821	322.4
1915.15	323	1970.5	323.4	1978.53	320	1987.77	318	1997.24	315
2003.13	313	2066	312.68	2070.68	312.52	2075.95	312.1	2078.55	312.28
2083.8	312.98	2085.89	312.93	2089.05	312.56	2094.3	312.54	2102.17	311.45
2104.79	311.33	2112.66	311.47	2115.29	311.45	2120.54	312.25	2125.39	312.12
2131.03	312.33	2136.28	311.9	2144.15	311.61	2146.78	311.65	2154.65	312.57
2159.9	311.97	2162.52	311.81	2173.44	311.95	2175.64	311.85	2181.4	312.49
2186.13	312.36	2199.47	312.96	2204.5	312.58	2207.27	312.53	2213.23	313.25
2215	313.37	2222.87	312.72	2231.14	312.34	2233.13	312.4	2243.86	312.18
2246.49	312.43	2259	312.31	2262.23	312.21	2267.48	312.46	2285.84	312.92
2288.47	313.18	2293.72	313.32	2301.59	313.09	2306.84	313.26	2312.08	313.67
2322.58	313.75	2332.62	314.53	2334.6	314.59	2339.4	315	2359.32	316.43
2364.56	316.73	2375.4	317.043	2382.93	317.06	2388.79	317.31	2393.43	317.38
2401.3	317.32	2403.92	317.08	2409.17	316.88	2417.04	316.86	2424.14	317.12
2427.54	317.33	2435.41	318.26	2438.07	318.44	2440.66	319.22	2443.28	321.2
2445.91	321.69	2451.15	321.81	2462.87	321.81	2472.15	321.75	2474.77	321.61
2480.02	321.72	2482.64	322.07	2485.27	323.31	2487.89	323.95	2493.78	323.92
2498.38	322.93	2501.74	323.04	2503.73	322.84	2506.26	323.23	2511.69	322.95
2516.75	322.91	2521.64	322.48	2532.5	322.41	2537.74	322.46	2550.86	322.4
2553.49	322.22	2556.11	321.83	2558.74	321.71	2567.4	321.58	2571.86	321.45
2577.1	321.46	2584.98	321.33	2587.6	321.71	2592.85	321.51	2598.09	321.08
2600.72	321.19	2611.21	321.84	2619.09	322.09	2629.58	322.28	2632.21	322.5
2634.83	322.49	2637.45	322.14	2645.33	322	2653.2	321.75	2661.07	321.38
2671.57	321.09	2676.89	321.57	2694.74	322.28	2697.8	322.79	2703.05	322.35
2708.3	322.22	2716.17	322.34	2726.67	322.59	2734.54	322.59	2737.16	322.66
2750.45	322.66	2763.4	322.81	2768.36	323.31	2774.33	323.04	2784.27	323.31
2794.89	323.53	2812.13	323.76	2826.38	324.07	2831.63	324.36	2834.25	324.62

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 2839.5   324.8 2842.12  324.62 2849.99  324.47 2860.49  324.58  2875.8  324.54
2879.78  324.38 2891.72  324.62 2897.23  324.54  2905.1  324.55 2910.34  324.06
2915.59  323.69 2918.22  323.64 2923.55  323.31 2928.71  323.19 2936.58  322.65
2941.83  322.76

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .06     926    .035  1702.4     .15  1970.5    .035  2375.4    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
           926  2375.4              380     280     255             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0  648.46     323       F
1699.64 2941.83   322.2       F

CROSS SECTION OUTPUT  Profile #PF 2

  E.G. Elev (ft)            318.92    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.09    Wt. n-Val.                0.060      0.035
  W.S. Elev (ft)            317.83    Reach Len. (ft)          380.00     280.00     255.00
  Crit W.S. (ft)            316.37    Flow Area (sq ft)        419.05    4135.69
  E.G. Slope (ft/ft)      0.004267    Area (sq ft)             419.05    4135.69
  Q Total (cfs)           37000.00    Flow (cfs)              1734.79   35265.20
  Top Width (ft)            855.97    Top Width (ft)            95.00     760.97
  Vel Total (ft/s)            8.12    Avg. Vel. (ft/s)           4.14       8.53
  Max Chl Dpth (ft)          10.41    Hydr. Depth (ft)           4.41       5.43
  Conv. Total (cfs)       566410.8    Conv. (cfs)             26556.9   539853.9
  Length Wtd. (ft)          283.41    Wetted Per. (ft)         102.37     767.09
  Min Ch El (ft)            307.53    Shear (lb/sq ft)           1.09       1.44
  Alpha                       1.06    Stream Power (lb/ft s)     4.51      12.25
  Frctn Loss (ft)             0.90    Cum Volume (acre-ft)      17.28    1302.38      67.24
  C & E Loss (ft)             0.05    Cum SA (acres)             2.80     150.57       9.11


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: San Diego River
REACH: Reach 1            RS: 310

INPUT
Description: Resort West
Survey Data (June 12, 2014), and proposed grading
             .
Golf course proposed grading start at sation 782.2
proposed
             resort station 1277.2 to 1589.3. n= 0.15
In the non-disturbed
             area, Manning's coefficients are derived from the Corrected
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Effective Model.
Station Elevation Data num= 375

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	329.1	5.08	329.21	15.37	329.76	23.08	329.9	28.78	330.25
38.52	330.96	43.66	331.42	53.95	332.24	56.52	332.32	59.1	332.04
61.67	331.54	66.81	330.01	71.83	328.21	79.67	325.55	82.18	324.97
84.82	323.91	87.39	323.12	90.46	322.95	92.53	323.03	102.89	323.69
107.03	323.7	113.24	323.5	118.26	323.06	123.6	323.06	149.12	323.56
159.41	323.73	161.98	323.93	164.56	324.45	167.13	324.66	172.27	324.31
185.13	323.9	187.71	323.63	195.43	323.43	210.55	323.16	223.73	323.02
236.59	322.93	247.8	322.25	249.46	322.06	254.01	320.94	257.18	320.38
259.75	320.2	264.35	320.27	270.04	320.24	274.7	320.53	277.76	320.96
290.63	320.73	296.4	320.75	300.92	320.95	303.49	320.9	305.74	320.4
311.21	319.67	313.79	319.06	318.93	319.01	324.36	319.13	334.37	319.07
336.94	318.95	339.52	318.45	344.66	316.25	347.13	315.7	352.38	313.34
355.4	312.92	360.1	312.78	363.68	312.92	371.96	312.91	378.11	313.06
385.83	312.62	390.98	312.84	396.12	312.66	401.27	312.71	403.84	312.51
411.56	312.7	423.69	312.42	434.03	312.75	442.31	312.71	445.01	312.49
447.58	312.74	450.16	312.54	455.3	312.6	460.45	312.29	465.59	312.35
470.74	312.59	475.89	312.38	481.03	312.82	483.6	313.44	488.75	313.36
493.9	312.55	496.47	312.46	504.19	312.47	506.76	312.61	514.48	312.49
519.63	312.15	522.2	312.16	527.15	312.58	529.22	312.36	532.49	312.34
535.06	312.16	540.21	312.02	545.36	312	550.5	312.23	555.65	312.35
558.22	312.63	560.79	312.64	563.37	312.33	566.47	312.25	571.09	311.96
576.23	311.97	580.95	312.2	586.53	311.83	596.82	311.96	601.64	311.84
605.8	312.133	612.26	313.36	614.83	313.96	622.55	315.03	632.84	314.96
635.41	314.5	640.56	314.33	649.24	312.49	653.42	311.09	656	310.45
658.57	309.42	661.14	308.05	663.72	307.66	697.16	305.65	699.74	305.31
707.46	305.25	709.24	305.45	712.6	306.81	715.18	308.38	719.59	310.28
722.9	311.42	725.8	311.73	728.04	312.61	733.19	316	761.49	316
767.18	315.55	774.36	312.98	778.73	310.07	782.2	309.92	787.99	309.36
807.33	308.64	819.64	308	849.74	307	864.61	306	1040	306
1047.4	307.19	1075.14	307.89	1089.8	308	1109.11	313.12	1124.54	314.97
1136.04	315	1149.62	315	1155.69	314	1163.68	314	1219.2	314
1244.96	314	1274	320	1278	322.5	1511	322.5	1573	322.8
1589	322.5	1591	322	1594	320	1603	316	1608.01	315.28
1610.59	315.26	1613.16	314.94	1615.73	314.88	1620.88	315.48	1623.46	315.45
1626.24	314.56	1627.97	313.6	1631.18	312.77	1633.76	311.78	1636.33	311.88
1638.91	312.51	1644.06	312.97	1649.21	313.01	1654.82	312.95	1656.93	313.05
1659.51	312.39	1667.23	311.06	1669.81	311.12	1672.38	310.92	1685.8	310.84
1687.83	310.61	1690.41	311.09	1692.98	311.78	1695.56	312.14	1703.28	311.12
1705.86	311.12	1713.58	312.34	1716.16	312.53	1723.88	312.17	1726.46	312.23
1731.24	312.72	1734.18	312.88	1741.91	311.83	1747.06	312.28	1753.96	311.96
1759.93	311.9	1762.22	311.79	1765.08	311.35	1770.23	312.52	1772.55	312.42
1780.53	311.82	1783.1	311.53	1790.83	312.01	1793.4	312.02	1803.53	311.82
1808.85	311.27	1811.43	311.21	1814	311.34	1819.15	311.38	1821.73	311.3
1826.88	311.78	1829.45	311.73	1832.03	311.28	1834.51	311.31	1837.18	310.96
1839.75	311.22	1844.9	311.34	1855.2	311.75	1857.78	311.96	1861.36	312.89
1863.43	313.23	1870.65	313.95	1873.23	314.34	1878.38	315.39	1880.95	315.15
1886.1	313.94	1888.68	313.53	1896.4	313.35	1898.98	313.49	1904.13	314.2
1910.93	313.56	1914.43	313.41	1917.13	313.49	1919.58	313.35	1924.73	312.54
1927.3	312.28	1929.52	312.75	1935.03	313.18	1942.75	313.54	1945.33	313.85

1947.9	313.85	1953.05	314.31	1955.63	313.78	1958.44	313.45	1965.93	313.34
1971.08	313.66	1976.23	313.63	1981.38	313.05	1986.53	313.35	1989.42	313.28
1991.68	313.05	1996.83	312.93	1999.4	313.07	2007.13	312.97	2012.28	313.32
2017.43	313.29	2022.58	312.78	2025.15	312.77	2030.3	313.67	2032.88	313.89
2034.86	313.74	2040.6	313.71	2045.18	313.52	2048.33	313.61	2053.31	314.27
2056.05	314.4	2058.63	313.72	2061.2	313.35	2063.78	313.44	2066.35	313.34
2076.65	313.69	2084.38	312.79	2089.53	313.12	2097.25	313.01	2105.08	313.61
2110.13	313.67	2112.7	313.87	2115.28	314.66	2116.9	314.934	2123	316.05
2125.58	316.86	2128.15	318.04	2130.73	318.7	2138.45	318.8	2141.02	318.77
2143.6	319.05	2151.32	320.24	2161.62	321.3	2166.77	322.4	2169.35	322.3
2171.92	322.43	2177.37	322.38	2179.65	322.17	2182.22	322.19	2192.52	322.68
2200.25	322.69	2202.82	322.44	2220.3	322.29	2236.3	322.11	2244.02	322.08
2251.72	322.53	2264.62	322.01	2272.38	321.97	2277.5	322.14	2282.65	322.12
2287.8	321.95	2292.95	322.12	2300.67	322.15	2305.82	322.36	2308.4	322.15
2315.75	322.19	2324.67	322.12	2334.15	322.43	2336.72	322.25	2341.87	322.33
2352.17	322.21	2362.47	321.25	2367.62	321.06	2375.35	320.59	2377.92	320.34
2385.97	320.79	2394.23	321.01	2406.25	321.06	2411.4	321.33	2413.97	321.29
2419.12	320.91	2424.27	320.88	2437.15	320.25	2439.72	320.38	2442.3	320.71
2447.45	320.88	2450.02	320.84	2460.32	320.94	2466.52	320.85	2474.78	320.19
2478.35	319.99	2488.65	319.59	2493.37	319.57	2499.57	319.36	2506.67	319.35
2511.82	319.19	2519.54	319.19	2522.29	319.28	2529.84	319.14	2537.57	319.29
2545.29	319.02	2550.44	319	2560.74	318.75	2568.47	318.36	2581.34	318.29
2586.49	317.64	2591.64	315.46	2594.22	315.65	2596.79	316.37	2598.71	317.38
2601.94	318.79	2604.52	319.05	2609.67	320.17	2612.24	320.33	2621.43	320.13
2630.27	320.07	2640.57	320.23	2658.59	320.31	2668.89	320.28	2681.77	320.31
2689.49	320.25	2704.94	320.3	2712.67	320.44	2717.82	320.24	2720.24	320.31

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	605.8	.035	1278	.15	1591	.035	2116.9	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
605.8	2116.9	610	610	640	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	154.1	324.5	F
1277.2	2720.24	322.5	F

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	317.96	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.92	Wt. n-Val.	0.060	0.035	
W.S. Elev (ft)	317.05	Reach Len. (ft)	610.00	610.00	640.00
Crit W.S. (ft)	313.63	Flow Area (sq ft)	233.41	4677.69	
E.G. Slope (ft/ft)	0.002446	Area (sq ft)	233.41	4677.69	
Q Total (cfs)	37000.00	Flow (cfs)	786.19	36213.81	
Top Width (ft)	700.62	Top Width (ft)	46.70	653.92	
Vel Total (ft/s)	7.53	Avg. Vel. (ft/s)	3.37	7.74	
Max Chl Dpth (ft)	11.80	Hydr. Depth (ft)	5.00	7.15	
Conv. Total (cfs)	748194.9	Conv. (cfs)	15897.9	732296.9	
Length Wtd. (ft)	610.00	Wetted Per. (ft)	51.18	660.60	
Min Ch El (ft)	305.25	Shear (lb/sq ft)	0.70	1.08	

Alpha	1.04	Stream Power (lb/ft s)	2.35	8.37	
Frctn Loss (ft)	1.16	Cum Volume (acre-ft)	14.44	1274.06	67.24
C & E Loss (ft)	0.18	Cum SA (acres)	2.18	146.02	9.11

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 300

INPUT
Description: Survey Data (June 12, 2014), and proposed grading .
Golf course
proposed grading starts at station 667.46. n=0.05
Poposed bridge
from PA-2 to PA-3 station 1722 to 1763. n = 0.15
Proposed PA-2
station 1949 to 2549.37
In the non-disturbed area, Manning's
coefficients are derived from the Corrected Effective Model.
Station Elevation Data num= 384

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.62	3.76	364.84	6.33	365.19	12.17	365.6	20.43	366.25
26.94	366.72	32.09	367.16	34.66	367.3	39.81	367.77	42.39	367.38
44.96	364.93	47.54	363.01	50.11	362	55.53	359.5	60.42	356.51
65.57	352.38	68.14	350.81	72.05	348.73	75.87	346.52	80.31	343.61
83.59	341.76	86.17	339.91	88.74	338.43	91.32	337.12	93.89	335.58
99.05	332.11	101.62	330.56	106.77	327.26	109.21	325.76	111.92	323.95
114.5	322.72	117.07	321.83	119.65	321.5	124.8	321.55	135.1	321.78
138.12	321.9	147.98	322.08	155.7	322.12	158.28	322.25	160.85	322.06
166	320.39	168.58	319.77	171.15	319.37	176.31	319.45	181.47	319.31
184.03	319.33	189.18	319.17	195.93	318.67	200.06	318.45	204.19	318.46
207.21	318.71	214.93	318.96	217.51	318.94	220.09	318.77	225.24	318.77
227.81	318.61	235.54	318.54	245.48	318.5	248.41	318.58	256.14	318.49
275.26	318.38	279.32	318.42	287.04	318.18	292.97	318.17	299.92	318.06
302.5	317.97	305.07	318.04	307.65	317.92	315.37	317.92	320.52	318.23
323.1	318.31	328.25	318.71	330.13	318.36	335.98	317.51	341.13	316.98
346.28	316.88	348.85	316.63	354	315.94	356.58	315.74	359.15	315.88
363.17	315.29	366.88	314.59	369.36	314.38	374.61	314.2	377.62	313.77
382.33	313.67	384.91	313.92	387.48	314.64	389.8	315.46	392.63	316.03
397.78	315.67	400.21	315.24	404.46	313.99	408.08	313.32	413.24	313.4
415.81	313.3	418.39	312.84	420.96	312.63	426.11	312.48	428.69	312.23
431.3	311.32	436.41	311.42	438.99	311.65	441.86	311.75	446.9	311.71
449.29	311.66	457.02	312.95	462.17	312.74	464.74	312.87	472.47	312.76
474.66	312.02	477.62	311.19	480.19	310.81	482.77	310.71	485.34	310.74

487.92	310.25	490.5	309.47	493.07	308.37	497.37	306.9	498.22	306.71
503.56	306.78	507.69	306.68	511.1	306.43	515.95	305.62	518.02	305.57
523.97	306.06	526.55	306.1	529.13	306.76	532.47	307.96	534.53	308.52
539.43	308.82	544.58	308.81	547.15	308.94	549.73	308.86	552.3	308.93
554.88	309.25	560.03	309.64	570.33	311.01	572.91	311.66	578.06	312.75
583.21	314	614.11	314	667.46	310	670.39	308.96	702.35	308
774.1	308	809.13	309.33	904.35	309.81	932.16	308.23	1055	308
1074.32	305.41	1083.59	305.19	1094.06	307.84	1153	308.5	1225.53	308
1248.14	308	1264.82	308	1269.77	307	1457.28	307	1469.9	308
1503	309	1538.4	309	1541	309.02	1544.1	309.2	1545	309.27
1546.6	309.4	1554.59	309	1565.61	310	1584.49	312	1591.5	313
1598.54	314	1609.01	316	1617.23	317.01	1626.2	317.01	1634.08	316
1651.91	314	1652.2	313.53	1654	313.53	1658.4	313.58	1661.6	313.66
1664.6	313.76	1669.8	313.88	1673.7	313.96	1686.35	314	1695	316
1699	318	1703	320	1708	322	1722	324	1763	324
1771	322	1775	320	1780	318	1784	316	1788.2	314.28
1791.3	314.47	1794.4	314.59	1797.7	314.73	1800.6	314.81	1803.7	314.94
1806.7	315.03	1809.07	314.62	1812.56	313.82	1814.63	313.23	1816.69	312.92
1818.76	312.06	1821.94	310.94	1827.09	310.43	1832.24	310.14	1837.39	310.09
1847.66	310.19	1852.85	310.53	1860.57	310.79	1868.3	310.56	1876.02	310.65
1878.6	310.85	1883.75	311.93	1888.9	311.87	1896.63	312.01	1901.78	312.82
1904.35	313.81	1909.5	315.61	1913.73	316.89	1917	316	1917.8	316.347
1921.61	318	1931	320	1944	326	1949	328.2	1989.1	328.19
1992.2	328.12	1993.4	328.08	1994.2	328.09	1995.9	328.05	1998.3	327.94
2000.9	327.39	2001.4	327.23	2002.4	326.99	2003.3	326.81	2004.5	326.45
2007.6	325.81	2008.3	325.74	2010.6	325.68	2011	325.65	2013.3	325.41
2013.8	325.39	2014.7	325.42	2015.7	325.38	2016.9	325.48	2018.2	325.37
2020.7	325.21	2023.2	325.18	2026.2	324.98	2028.1	324.81	2029.3	324.73
2032.3	324.58	2036	324.37	2038	324.24	2041.6	324.15	2044.7	324.41
2045.5	324.75	2047.9	326.18	2050.4	326.65	2052.9	326.97	2057.8	327.54
2060.3	327.78	2062.8	327.81	2112.7	327.81	2114.8	327.99	2115.8	328.05
2117.4	328.25	2118.9	328.46	2122	328.78	2125.6	328.82	2129.7	328.84
2132.2	328.84	2136	328.83	2142	328.86	2148.5	328.86	2152	328.89
2159.4	328.9	2162.1	328.93	2164.4	328.93	2168.3	328.88	2169.3	328.89
2170.7	328.85	2173.4	328.81	2174.5	328.81	2176.8	328.87	2179	328.89
2180.7	328.89	2181.7	328.85	2183.8	328.82	2221.4	328.81	2223.4	328.79
2226.3	328.72	2227	328.67	2228.8	328.8	2230.1	328.86	2233.2	328.66
2235.9	328.54	2239.4	328.56	2241.2	328.69	2243.7	328.76	2244.7	328.72
2246.1	328.71	2248.8	328.55	2251.1	328.47	2254.9	328.36	2257	328.33
2260.9	328.31	2268.4	328.32	2270.9	328.33	2273.4	328.31	2275.9	328.33
2277.5	328.3	2279.6	328.22	2280.8	327.77	2281.6	327.44	2282.7	327.03
2283.3	326.76	2285.7	325.56	2288.8	324.27	2291.9	324.06	2295	324.3
2295.7	324.33	2298	324.55	2301.2	324.83	2304.3	325.07	2305.6	325.14
2306.2	325.21	2308.1	325.34	2310.3	325.59	2310.9	325.64	2313.6	325.82
2314.5	325.87	2315.5	325.89	2318	326.07	2319.8	326.26	2320.5	326.31
2322.8	326.54	2323.4	326.58	2325.9	326.6	2326.8	326.73	2327.9	326.94
2329	327.09	2332.1	327.19	2389.8	327.19	2393.9	327.14	2394.8	326.88
2397	326.07	2397.3	325.84	2399.8	323.76	2400.1	323.49	2403.2	323.76
2406.3	324.52	2409.4	325	2420.22	325.5	2421.99	325.53	2424.57	325.38
2432.3	325.32	2434.87	325.43	2442.29	325.29	2447.75	325.29	2454.68	325.44
2460.87	325.47	2468.35	325.44	2473.5	325.53	2483.8	325.03	2489.78	325.09
2493.91	325.34	2500.1	324.98	2509.56	324.93	2514.55	325.21	2517.28	325.18

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 2519.86  325.37 2522.81  325.93 2525.01  326.07 2527.58  325.84 2529.01  325.56
 2532.73  324.57 2535.31  324.28 2543.03  323.89 2549.37  324.09

Manning's n Values        num=       6
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
       0     .05   446.9     .06  667.46     .05    1722     .15    1763     .05
    1949     .15

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         446.9  1917.8              790     654     605             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  1520.7 2549.37   321.5       F

CROSS SECTION OUTPUT  Profile #PF 2

  E.G. Elev (ft)            316.62    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.31    Wt. n-Val.                0.050      0.051
  W.S. Elev (ft)            316.32    Reach Len. (ft)          790.00     654.00     605.00
  Crit W.S. (ft)            311.71    Flow Area (sq ft)         59.08    8275.45
  E.G. Slope (ft/ft)      0.001516    Area (sq ft)              59.08    8275.45
  Q Total (cfs)           37000.00    Flow (cfs)               153.58   36846.42
  Top Width (ft)           1086.40    Top Width (ft)            12.60    1073.80
  Vel Total (ft/s)            4.44    Avg. Vel. (ft/s)           2.60       4.45
  Max Chl Dpth (ft)          11.13    Hydr. Depth (ft)           4.69       7.71
  Conv. Total (cfs)       950167.9    Conv. (cfs)              3944.1   946223.8
  Length Wtd. (ft)          654.28    Wetted Per. (ft)          17.55    1084.18
  Min Ch El (ft)            305.19    Shear (lb/sq ft)           0.32       0.72
  Alpha                       1.00    Stream Power (lb/ft s)     0.83       3.22
  Frctn Loss (ft)             0.64    Cum Volume (acre-ft)      12.39    1183.36      67.24
  C & E Loss (ft)             0.04    Cum SA (acres)             1.77     133.93       9.11


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
         1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: San Diego River
REACH: Reach 1            RS: 290

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed
             gradingstartsstart at station 485.22, n=0.04
Proposed PA-2
             station 1896.4, n=0.15
In the non-disturbed area, Manning's
             coefficients are derived from the Corrected Effective Model.
Station Elevation Data    num=     498
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
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0	334.95	2.48	334.94	5.04	335.09	10.15	335.25	20.39	335.69
25.51	335.81	35.74	335.7	41.9	335.452	43.42	335.38	45.98	335.47
51.09	335.9	56.33	336.67	60.43	336.96	63.89	337.26	66.45	337.41
71.56	337.81	74.12	337.94	81.44	338.2	89.48	338.53	92.03	338.56
97.15	338.81	102.27	339.01	107.39	339.11	109.95	339.21	117.15	339.36
122.74	339.56	128.18	339.82	140.65	340.22	145.77	340.31	150.89	340.5
156	340.81	158.56	340.56	161.12	339.73	163.68	338.65	168.8	336.4
171.36	335.41	176.47	333.21	184.15	330.13	188.57	328.73	194.39	326.74
199.07	325.3	202.06	324.25	204.62	323.54	207.18	323.31	212.3	323.54
217.41	323.5	224.28	323.38	230.21	323.22	235.33	323.36	236.17	322.59
236.88	322.23	237.88	321.09	240.44	315.58	243	310.28	244.02	310.18
248.12	310.78	250.68	310.8	255.8	310.47	258.35	310.5	260.91	310.35
263.47	310.32	266.29	310.62	271.15	310.77	276.27	311.11	281.38	311.08
291.62	310.71	296.74	310.61	299.3	310.74	306.97	310.61	309.53	310.42
312.09	310.32	314.65	310.34	317.21	310.49	319.77	310.51	324.88	309.98
330	310.01	333.51	310.26	335.12	310.45	342.79	310.23	347.91	310.25
353.03	310.44	360.71	310.94	365.02	311.73	368.38	311.91	370.94	311.83
373.5	311.49	378.62	311.09	381.18	310.6	383.92	310.27	386.29	310.17
388.85	308.91	391.41	306.63	393.97	303.15	396.53	302	399.09	301.71
401.65	301.92	404.21	302.6	407.03	303.05	409.32	302.93	414.44	303.16
415.43	303.38	419.56	304.71	422.12	305.17	427.23	306.6	429.79	307.01
440.03	308.25	445.15	308.69	447.7	308.69	450.26	308.52	452.82	308.62
455.38	309.64	457.94	311.68	460.5	312	483.53	312	485.22	311.07
488.4	311.16	493.5	310.95	494	310.92	496.5	310.82	504.1	310.56
506.6	310.46	509.9	310.36	511.6	310.43	513	310.47	519.1	310.78
521.7	310.88	525.2	310.98	528.3	311	571.3	310.99	574.1	310.97
577.5	310.86	580.5	310.65	586.7	310.13	589.8	310.03	595.9	310.09
597.2	310.12	602.3	310.19	612.3	310.39	614.9	310.42	617.3	310.47
619.9	310.51	626.6	310.58	630	310.6	632.8	310.58	635.8	310.47
638.9	310.4	642	310.42	645.1	310.47	648.1	310.31	650.1	309.97
652.6	309.5	654.3	309.22	657.3	309.14	660.4	309.18	664.7	309.21
673.2	309.32	676.5	309.34	685.4	309.45	688	309.46	688.3	309.47
692.9	309.52	697.3	309.56	703.4	309.64	705.5	309.65	710.5	309.7
712.6	309.73	713.1	309.71	715.7	309.72	718.1	309.39	718.8	309.36
720.6	308.85	723.1	308.27	723.7	308.08	724.9	307.78	725.7	307.74
727.7	307.49	728	307.47	730.7	307.48	731	307.46	734.1	307.53
743.3	307.84	746.4	307.97	748.3	307.97	749.5	307.99	752.5	307.97
764.8	307.72	767.9	307.56	771	307.62	771	307.63	774.1	307.78
777.1	307.91	780.2	307.99	782.8	307.97	786.3	307.91	792.5	307.77
795.6	307.71	798.5	307.69	801.7	307.69	807.8	307.78	808.8	307.8
814	307.97	816.3	307.99	823.2	307.95	826.3	307.91	829.3	307.86
844.7	307.8	846.5	307.81	849	307.81	850.8	307.82	854.1	307.91
859.1	308.11	861.6	308.2	869.2	308.53	872.3	308.65	875.4	308.74
879.3	308.78	884.6	308.73	887.7	308.73	890.8	308.69	893.8	308.63
897	308.53	900.9	308.36	903.1	308.27	906.1	308.12	909.2	307.99
922.1	307.32	924.7	307.15	927.1	306.95	930.7	306.42	939.7	306
1268.05	306	1279	307	1290.11	307	1296.1	306	1318.8	306
1332.1	307	1383	308	1417	310	1423	312	1432	314
1486	314	1492.5	311	1525.3	309	1799.69	309	1817.13	313.47
1822.25	314.57	1824.81	314.68	1829.93	315.06	1838.09	316.02	1848.88	320
1861.13	326	1864.16	327.2	1896.4	327.2	1924.2	327.15	1925.9	327.09
1926.8	326.85	1928.5	326.08	1929	325.93	1930.6	324.85	1931.8	324.02

1932.1	323.89	1934.3	323.73	1935.1	323.7	1938.2	323.7	1941.3	323.71
1944.3	323.75	1948.2	323.76	1950.5	323.78	1952.2	323.81	1953.6	323.82
1956.1	323.87	1962.8	323.96	1965.9	324.17	1967	324.9	1968.9	326.1
1971.9	326.86	1972.5	326.99	1975.1	327.47	1977.1	327.74	1978.1	327.84
1979.6	327.74	1982.2	327.53	1984.3	327.34	1987.6	327.67	1989.7	327.85
1990.4	327.95	1992.2	327.97	1993.5	328	2033.4	328	2036.5	328.07
2038.8	328.39	2040.1	328.53	2042.7	328.66	2045.1	328.67	2045.7	328.69
2085.6	328.69	2087.9	328.77	2088.7	328.81	2090.4	329.19	2091.8	329.49
2092.9	329.54	2094.9	329.59	2128.6	329.59	2130.7	329.69	2131.7	329.76
2133.2	330.65	2133.3	330.69	2134.8	331.7	2135.8	332.31	2137.9	333.55
2138.3	333.91	2140.1	335.43	2140.8	335.96	2140.9	336.07	2141.2	336.17
2143.3	337.3	2144	337.58	2147.1	337.69	2196.2	337.69	2198.7	337.6
2199.3	337.56	2201.2	337.34	2202.4	337.22	2205.4	337.07	2206.3	337.07
2208.8	337.17	2211.3	337.34	2212	337.36	2216	337.4	2217.7	337.41
2226.9	337.41	2230	337.39	2233.1	337.34	2235.7	337.17	2239.2	336.92
2242.3	336.77	2243.5	336.93	2245.4	337.16	2248.4	336.86	2251.6	336.65
2254.6	336.52	2255.3	336.54	2256.6	336.54	2257.7	336.57	2260.7	336.76
2261.7	336.8	2265.9	336.9	2266.7	336.91	2276.1	336.91	2276.8	336.9
2279	336.91	2282.2	336.91	2285.3	336.89	2286.8	336.86	2288.4	336.85
2289.4	336.83	2293.8	336.83	2294.5	336.82	2296.9	336.53	2297.6	336.47
2300.7	336.09	2303.7	335.98	2304.5	335.79	2306.5	335.55	2307	335.45
2307.8	335.12	2309.9	334.18	2312.9	334.19	2314.5	334.25	2318.3	334.41
2322.3	334.57	2327.1	334.75	2329.6	334.86	2331.4	334.93	2334.1	335.05
2337.5	335.18	2339.7	335.29	2340.6	335.32	2344.8	335.5	2346.7	335.62
2347.3	335.69	2349.7	336.26	2349.8	336.3	2352.3	336.74	2352.9	336.83
2353.8	337.13	2354.8	337.62	2356	337.9	2357.3	337.99	2359	338.09
2361.7	338.2	2365.2	338.4	2368.2	338.69	2371.3	338.84	2374.4	339.02
2377.6	339.23	2380.5	339.41	2385	339.62	2386.7	339.71	2387.6	339.74
2389.7	339.85	2390.1	339.8	2391.6	339.89	2393.1	339.9	2395.9	339.79
2399	339.63	2400.1	339.45	2401	339.43	2402	339.33	2402.7	339.33
2405.2	339.29	2407.7	338.99	2408.2	338.96	2410.2	339.03	2411.2	339.04
2414.3	339.44	2415.3	339.62	2417.8	340.11	2419.6	340.48	2420.7	340.72
2423.5	341.25	2425.3	341.47	2426.6	341.61	2429.7	341.6	2430.4	341.38
2432.7	340.39	2432.9	340.4	2435.8	341.1	2436.5	341.31	2437.9	341.8
2438.9	342.09	2440.4	342.44	2442	342.76	2443	342.86	2445	343.03
2445.5	343.06	2448.1	343.13	2448.3	343.07	2450.5	342.54	2451.2	342.28
2452.2	342.06	2453	341.77	2454.2	341.6	2457.3	342.67	2460.6	343.3
2461.5	343.33	2463.1	343.41	2465.6	343.52	2468.1	343.59	2469.6	343.61
2470.7	343.4	2471.9	342.96	2473.2	342.64	2475.7	342.31	2481.9	342.93
2483.2	343.08	2485	343.27	2487.6	343.65	2488.3	343.77	2489.4	344.22
2491.1	344.87	2494.2	345.01	2497.2	345.12	2506.5	345.4	2508.4	345.38
2510.9	345.29	2512.6	345.21	2515.7	345.12	2516	345.16	2517.3	345.45
2518.7	345.74	2521	345.85	2523.1	345.92	2524.9	345.96	2528	346.05
2531	346.09	2533.6	346.08	2536.1	345.98	2540.3	345.83	2549.5	346.13
2555.6	346.42	2556.3	346.49	2558.5	346.76	2561.3	347.09	2564.8	347.41
2567.9	347.57	2571	347.72	2576.4	347.99	2580.2	348.23	2581.4	348.33
2583.3	348.46	2586.3	348.68	2589.4	348.79	2592.5	348.8	2596.6	348.83
2599.1	348.87	2601.7	348.88	2604.8	348.48				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	41.9	.06	485.22	.04	1896.4	.15

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
41.9 1896.4 695 653 645 .1 .3
Ineffective Flow num= 1
Sta L Sta R Elev Permanent
1725.3 2604.8 321.5 F

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	315.95	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.19	Wt. n-Val.		0.042		
W.S. Elev (ft)	315.76	Reach Len. (ft)	695.00	653.00	645.00	
Crit W.S. (ft)	310.94	Flow Area (sq ft)		10670.26		
E.G. Slope (ft/ft)	0.000687	Area (sq ft)		10670.26		
Q Total (cfs)	37000.00	Flow (cfs)		37000.00		
Top Width (ft)	1474.30	Top Width (ft)		1474.30		
Vel Total (ft/s)	3.47	Avg. Vel. (ft/s)		3.47		
Max Chl Dpth (ft)	14.05	Hydr. Depth (ft)		7.24		
Conv. Total (cfs)	1411932.0	Conv. (cfs)		1411932.0		
Length Wtd. (ft)	653.00	Wetted Per. (ft)		1493.51		
Min Ch El (ft)	301.71	Shear (lb/sq ft)		0.31		
Alpha	1.00	Stream Power (lb/ft s)		1.06		
Frctn Loss (ft)	0.44	Cum Volume (acre-ft)	11.85	1041.14	67.24	
C & E Loss (ft)	0.00	Cum SA (acres)	1.65	114.80	9.11	

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 285

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed
gradingstarts start at station 730, n=0.04
Proposed PA-2 station
1964.2 to 2054.18, n=0.15
In the non-disturbed area, Manning's
coefficients are derived from the Corrected Effective Model.
Station Elevation Data num= 273

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	328.08	5.36	327.9	13.04	327.81	20.42	327.63	23.27	327.6
28.38	327.65	30.94	327.84	33.5	327.9	38.61	327.34	41.17	327.22
46.29	327.12	48.84	327.33	51.4	328.1	53.96	329.12	59.07	331.78
61.63	332.78	64.19	333.33	66.75	333	69.31	332.31	71.86	331.37
77.21	329.64	82.09	329.24	87.21	328.96	89.77	328.87	92.32	328.68
102.55	328.29	106.66	328.39	115.77	328.51	120.46	328.52	123.48	328.64
128.13	328.69	138.36	328.65	143.48	328.56	148.59	328.31	151.15	328.11
153.71	327.31	157.14	326	161.38	324.5	163.94	323.95	166.5	323.71
171.61	324.68	173.96	324.96	176.73	325.48	179.28	326.21	182.38	326.23

189.52	325.81	194.63	326.06	199.75	326.21	202.3	326.22	207.42	326.35
212.53	326.41	217.65	326.53	220.21	326.53	222.76	326.65	233	326.81
238.11	326.66	245.48	325.93	250.9	325.66	256.01	325.19	261.13	325.05
263.69	325.11	271.36	325.71	284.15	326.54	289.26	326.57	298.06	326.29
307.17	326.12	312.28	326.1	314.84	326.03	325.07	326.01	330.19	325.92
337.86	325.69	342.97	325.48	348.09	325.74	350.65	325.97	353.21	326.01
355.76	325.58	358.32	324.9	360.88	323.82	365.99	322.04	368.55	321.48
371.11	321.19	373.67	321.59	381.34	323.66	383.9	323.9	391.57	324.11
399.24	324	406.92	323.76	411.64	323.5	414.59	323.41	417.15	323.71
419.7	324.46	422.26	323.7	427.38	320.83	430.57	318.08	432.49	316.55
434.78	315.33	436.88	314.48	440.17	313.71	442.72	313.87	445.28	313.59
447.84	313.45	452.95	313.58	457.91	313.02	460.63	312.89	463.18	312.49
468.1	311.01	469.1	310.844	470.53	310.72	473.42	310.8	475.97	310.41
483.65	310.22	486.2	309.87	489.46	309.7	491.57	309.43	493.67	308.78
496.43	308.55	498.99	308.62	502.08	308.43	503.99	307.97	506.29	308.27
509.22	308.09	511.78	308.15	516.9	308.5	519.45	308.45	522.01	308.5
525.22	308.8	527.13	308.87	530.08	308.71	532.24	308.38	534.8	307.73
537.36	307.41	539.91	307.41	542.05	307.53	545.03	307.98	547.59	307.95
552.7	308.11	555.26	308.47	557.82	308.67	560.38	308.5	565.18	308.07
573.16	307.98	575.7	307.69	578.28	307.77	580.84	307.97	583.39	307.93
585.95	307.73	588.51	307.69	591.07	307.99	593.62	307.77	596.18	307.13
601.3	306.27	606.41	304.69	611.64	303.64	614.09	303.34	619.2	303.17
624.08	303.84	626.87	304.04	629.43	303.83	631.99	303.51	637.11	302.44
639.66	301.75	642.22	301.64	644.78	302.31	655.01	305.34	657.73	306.12
660.12	306.62	662.68	306.75	666.14	306.69	668.25	306.75	670.35	306.66
672.91	306.76	678.03	308.2	680.59	308.98	683.14	310	712.42	310
722.26	308	730	307	785	308	791.9	310	819.57	310
846.1	308	867.14	307	874.55	306	887	305.5	900.36	306
913.09	308	922	308.5	931.14	308	941.58	307	970.67	306
1030.4	305	1080.4	304.5	1127.55	305	1191.99	306	1203.67	307
1204.9	307.22	1216.37	308	1236.87	310	1271.36	312	1285	312.5
1303.5	312	1321.1	310	1379.39	308	1449.095	307	1463.37	307
1475.37	308	1492.97	310	1502	312	1508.04	312.5	1516.28	312
1521.11	310	1530	308	1663	308	1693.8	308	1700.9	307
1709.09	305	1713.308	303	1726.85	303	1742.01	305	1761.77	307
1768.82	308	1777.9	309	1829.21	310	1835.09	311	1844.41	312
1852.81	312	1866.37	311	1874.73	310	1914.03	310	1939.58	310.5
1959.11	320	1964.2	322.144	1966.47	323.1	2040	323.1	2054.18	321.3
2084.2	321	2089.85	321.9	2092.41	321.95	2094.97	322.12	2100.61	322.79
2105.2	323.15	2112.87	323.18	2117.99	323.38	2120.55	323.57	2123.1	323.96
2125.66	324.53	2133.33	325.92	2138.45	327.09	2143.56	328.19	2148.99	329.64
2151.46	330.19	2153.8	331.02	2156.35	331.36	2158.91	331.42	2161.47	331.36
2164.03	331.55	2166.58	331.93	2169.14	333.45	2171.7	334.81	2174.26	335.88
2176.33	335.45	2179.37	335.18	2181.93	335.48	2184.49	336.22	2189.6	337.38
2193.16	338.43	2197.28	339.52	2202.39	340.36	2204.95	340.7	2207.51	340.84
2210.06	341.09	2215.18	341.092	218.221	341.02				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	469.1	.06	730	.04	1964.2	.15	2054.18	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

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        469.1  1964.2              640     688     660             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
  2084.22218.221   321.5       F

CROSS SECTION OUTPUT  Profile #PF 2

  E.G. Elev (ft)            315.51    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.18    Wt. n-Val.                           0.043
  W.S. Elev (ft)            315.32    Reach Len. (ft)          640.00     688.00     660.00
  Crit W.S. (ft)            310.28    Flow Area (sq ft)                  10848.39
  E.G. Slope (ft/ft)      0.000658    Area (sq ft)                       10848.39
  Q Total (cfs)           37000.00    Flow (cfs)                         37000.00
  Top Width (ft)           1435.00    Top Width (ft)                      1435.00
  Vel Total (ft/s)            3.41    Avg. Vel. (ft/s)                       3.41
  Max Chl Dpth (ft)          13.68    Hydr. Depth (ft)                       7.56
  Conv. Total (cfs)       1442819.0    Conv. (cfs)                        1442819.0
  Length Wtd. (ft)          688.00    Wetted Per. (ft)                   1451.31
  Min Ch El (ft)            301.64    Shear (lb/sq ft)                       0.31
  Alpha                       1.00    Stream Power (lb/ft s)                 1.05
  Frctn Loss (ft)             0.48    Cum Volume (acre-ft)       11.85     879.85      67.24
  C & E Loss (ft)             0.00    Cum SA (acres)              1.65      92.99       9.11


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: San Diego River
REACH: Reach 1            RS: 280

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed
             gradingstarts at 1435.62, n=0.04
In the non-disturbed area,
             Manning's coefficients are derived from the Corrected Effective
             Model.
Station Elevation Data    num=     368
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  332.56    5.17  332.57   10.16  332.16   12.86  332.01   20.99  331.83
   35.91  331.55   38.48  331.47   41.04  331.15    43.6  330.94   46.16  330.97
   53.84  330.75   74.34  330.07   79.46  329.97   89.71  329.56   94.83   329.5
  117.88  328.95  120.45  328.85  123.01     329  125.57  328.75  130.69  328.39
  135.82  328.16   143.5  327.95  146.06  327.97  151.18  327.79  156.31  327.76
  158.87  327.66  161.43  327.77  163.99  327.59  166.55   327.2   169.3  327.11
  171.68  326.93  179.36  326.75  184.49  326.95  187.05  326.99  189.61  326.78
  194.73  326.12  199.85  325.92   202.8  326.07  204.98  326.06  212.66  325.48
  217.79  325.03  220.35  324.91  228.03     325  235.72   325.2   238.4   325.2
  246.77  325.49  251.09  325.69  261.43  325.34  269.02  325.19   271.9  325.06
   276.7  324.98  281.83  324.77  286.95  324.68  294.63  324.34  302.32  324.72
     310  325.01  315.13  325.01  320.06  325.21  325.37  325.22  327.93  325.16
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333.06	324.7	338.18	324.78	340.74	324.75	343.1	324.63	358.67	324.11
363.8	323.91	368.92	323.64	381.73	323.08	389.41	322.81	391.97	322.66
397.1	322.53	402.22	322.28	407.34	321.79	412.47	321.53	417.59	321.17
420.57	320.88	427.84	320.29	430.4	320.23	438.08	320.28	440.64	320.39
448.33	320.11	450.89	320.16	456.01	320.04	461.14	319.8	463.7	319.73
476.51	319.25	491.87	318.59	497	318.44	509.81	317.88	512.37	317.69
516.9	317.48	520.05	317.42	525.18	317.19	527.74	317.29	532.86	318.2
535.42	318.74	537.98	319.74	543.11	322.47	545.67	323.72	548.2	324.155
550.79	323.83	553.35	322.81	555.91	321.69	560.87	318.53	563.6	318.13
566.16	316.66	567.15	314.97	569.24	311.77	571.28	308.37	573.43	308.88
578.97	309.83	584.39	309.08	586	309.09	589.21	308.61	594.34	308.44
596.9	308.52	600.65	309.01	604.58	309.2	606.94	309.44	612.27	309.8
615.31	309.95	622.52	309.69	625.08	308.6	627.64	308.3	629.97	308.27
635.32	307.81	637.88	307.7	640.45	307.69	645.57	307.47	648.13	307.46
650.69	307.67	653.25	307.51	658.38	307.36	661.38	307.18	671.19	306.97
673.75	307.01	678.87	307.46	684.41	307.34	686.51	307.37	689.12	307.55
699.36	307.77	701.92	307.76	704.49	307.5	707.05	307.06	709.54	307.4
711.63	307.53	714.73	307.89	717.92	307.67	719.86	307.3	724.98	306.78
727.54	306.82	730.1	307.01	732.66	307.3	734.67	307.27	737.79	307.09
740.35	307.07	745.14	306.62	750.59	306.69	755.72	306.66	757.7	306.82
761.89	306.76	766.08	306.58	773.65	307.14	776.21	307.19	778.77	306.94
781.33	306.5	783.89	306.23	786.46	306.3	789.11	306.11	794.14	306.18
799.58	306.15	801.83	306.37	809.51	306.39	812.07	306.34	814.63	306.44
817.2	306.32	822.32	306.4	824.88	306.11	830.99	306.06	835.13	306.22
837.69	306.26	840.25	306.48	845.37	307.05	847.93	307.18	850.5	306.88
853.06	306.83	858.18	306.85	865.87	306.44	868.43	306.52	870.99	306.42
877.06	306.55	878.67	306.53	881.29	306.34	886.36	306.34	891.11	306.48
896.6	306.9	900.09	306.82	904.29	306.53	906.85	306.71	909.41	306.64
912.66	306.75	924.78	306.93	932.47	306.64	935.03	306.86	937.78	306.99
942.71	307.02	945.27	306.98	950.4	307.09	952.96	307.23	958.08	307.71
965	307.32	968.33	307.2	975.47	306.81	978.57	306.72	981.14	306.77
983.7	306.97	988.04	306.9	991.38	307.09	993.94	306.93	996.51	306.34
999.07	305.99	1000.6	306.05	1006.54	306.07	1009.31	305.92	1011.88	305.68
1014.44	304.2	1015.26	303.54	1017.35	302.17	1019.56	301.18	1021.54	300.63
1024.68	299.55	1027.24	298.96	1029.63	298.83	1032.37	298.84	1034.93	299.11
1037.49	299.54	1040.05	299.42	1042.61	299.04	1046.67	299.04	1050.3	298.92
1052.86	299.72	1055.04	300.96	1057.98	302.77	1060.55	304.24	1063.11	305.17
1065.67	305.93	1211.68	305.92	1216.8	305.95	1219.36	306.05	1222.56	305.96
1227.05	306.01	1229.61	305.86	1232.17	305.91	1237.29	306.18	1239.86	306.68
1242.42	307.07	1250.1	306.62	1252.66	306.05	1255.22	305.21	1257.79	304.56
1260.35	304.31	1272.37	304.19	1344.88	303.49	1350.29	304	1352.56	304.1
1355.13	303.93	1360.25	304.2	1362.81	304.56	1367.93	305.4	1369.14	305.5
1373.06	305.59	1380.74	305.64	1385.82	305.84	1388.43	305.78	1396.36	306.17
1401.23	306.26	1408.92	306.5	1414.04	306.51	1417.3	306.59	1421.73	306.53
1431.97	306.69	1434.54	306.66	1435.62	306.5	1466.04	306	1504.96	306
1520.25	307	1533.1	308	1536.24	308.5	1554.65	308	1581.9	307
1653.55	306.37	1687.22	308	1703.58	312	1715.73	316	1727.06	316
1738.61	312	1764.4	306	1780.91	305	1803.51	304	1825.15	304
1835.04	305	1845.02	305	1852.07	302.47	1854.94	302.68	1857.03	302.98
1859.76	303.01	1864.88	302.81	1867.5	302.42	1869.6	302.74	1872.57	302.92
1877.69	304.58	1880.25	305.14	1882.81	305.6	1887.93	305.86	1890.5	305.94
1896.95	305	1967.09	305	1974.46	305.81	1979.38	307.44	1988.6	309.91

1997.83	309.62	2016.27	309.63	2021.6	310	2023.7	310	2026.26	310.27
2028.82	311.83	2036.5	315.19	2039.05	316.03	2041.38	316.48	2043.49	317.28
2046.71	318.01	2049.27	318.07	2054.37	318.42	2056.93	318.84	2059.48	318.77
2064.59	318.78	2067.14	318.88	2069.69	319.14	2072.25	319.82	2074.8	319.32
2077.35	319.03	2085.02	318.99	2094.22	319.12	2100.34	319.25	2102.67	319.25
2105.44	319.41	2113.1	319.41	2118.21	319.69	2120.77	319.5	2128.43	319.62
2133.53	319.65	2143.75	319.79	2148.85	319.82	2156.52	319.94	2166.73	319.8
2169.28	319.94	2176.94	320.09	2184.6	319.9	2189.33	319.63	2192.27	319.57
2194.82	319.4	2199.93	319.62	2202.48	319.8	2210.14	320.04	2217.8	320.1
2222.91	320.05	2228.02	319.84	2228.86	319.94				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	548.2	.06	1435.62	.04	1974.46	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
548.2	2021.6	1135	1021	1060	.1	.3

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	315.02	Element			
Vel Head (ft)	0.17	Wt. n-Val.		0.052	
W.S. Elev (ft)	314.85	Reach Len. (ft)	1135.00	1021.00	1060.00
Crit W.S. (ft)		Flow Area (sq ft)		11170.51	
E.G. Slope (ft/ft)	0.000756	Area (sq ft)		11170.51	
Q Total (cfs)	37000.00	Flow (cfs)		37000.00	
Top Width (ft)	1281.84	Top Width (ft)		1281.84	
Vel Total (ft/s)	3.31	Avg. Vel. (ft/s)		3.31	
Max Chl Dpth (ft)	16.02	Hydr. Depth (ft)		8.71	
Conv. Total (cfs)	1346038.0	Conv. (cfs)		1346038.0	
Length Wtd. (ft)	1021.01	Wetted Per. (ft)		1305.24	
Min Ch El (ft)	298.83	Shear (lb/sq ft)		0.40	
Alpha	1.00	Stream Power (lb/ft s)		1.34	
Frctn Loss (ft)	1.15	Cum Volume (acre-ft)	11.85	705.96	67.24
C & E Loss (ft)	0.04	Cum SA (acres)	1.65	71.54	9.11

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 270

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed grading start at station# 564, n=0.04

In the non-disturbed area,
Manning's coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 410

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	311.5	4.03	311.65	16.61	311.94	19.12	311.97	21.64	312.03
24.15	312.03	29.18	312.16	31.7	312.19	36.73	312.32	41.76	312.25
46.79	311.94	49.3	311.84	51.82	311.69	54.33	311.61	56.85	311.5
59.36	311.42	60.08	311.37	64.39	311.01	66.91	310.91	69.42	310.97
74.45	311.42	79.48	311.69	82	311.77	89.54	311.94	92.06	312.07
94.57	312.16	97.09	312.19	99.6	312.14	102.12	312.06	104.63	312.03
107.15	311.97	109.66	311.88	112.18	311.81	117.21	311.75	122.24	311.61
127.27	311.53	129.78	311.47	132.3	311.38	134.81	311.25	137.33	311.15
139.84	311.18	142.36	311.53	144.87	312.01	147.39	312.7	149.9	313.69
152.42	314.88	154.93	315.98	157.45	317.13	159.96	318.05	162.48	318.62
164.99	318.75	167.51	318.29	170.02	317.3	175.05	314.66	177.57	313.56
179.95	312.91	182.6	312.1	185.11	311.55	187.63	311.23	190.14	311.18
191.52	311.33	192.66	311.41	195.17	311.51	196.06	311.51	197.69	311.56
200.2	311.37	202.72	311.24	205.23	311.32	207.75	311.48	210.26	311.59
212.78	311.62	215.29	311.7	217.81	311.74	220.99	311.75	222.84	311.74
225.35	311.87	230.38	311.95	232.9	312.02	235.41	312.02	237.93	311.98
245.92	312.1	248.18	312.15	250.5	312.12	253.02	312.18	255.53	312.27
258.05	312.32	260.56	312.34	264.05	312.28	265.59	312.23	270.62	312.45
273.14	312.47	276	312.44	280.68	312.47	283.2	312.43	285.71	312.47
288.23	312.56	290.74	312.78	293.51	313.12	295.77	313.37	298.29	313.79
300.31	314.03	303.32	314.27	305.83	314.64	308.35	314.52	310.86	314.22
313.38	313.85	315.89	313.36	318.37	313.13	320.92	312.84	323.44	312.68
325.24	312.46	326.85	312.3	327.5	312.19	329.77	311.98	330.98	311.89
333.5	311.35	334.3	311.14	335.32	310.81	336.01	310.63	336.57	310.57
338.53	310.25	341.04	310.03	343	309.18	346.07	307.77	347.9	307.02
348.59	306.76	349.45	306.68	350.17	306.56	351.1	306.49	356.13	306.26
358.65	306.62	361.16	307.17	361.5	307.22	363.57	307.83	364.53	307.86
366.4	307.82	368.3	307.63	369.22	307.6	370.56	307.44	371.22	307.43
372.05	307.32	372.83	307.29	373.74	307.14	376.25	307.23	378.77	306.35
379.63	305.86	380.52	305.46	381.28	305.05	381.89	304.89	384.16	304.39
386.43	304.04	388.69	303.57	391.34	303.06	391.82	302.94	393.23	302.76
394.65	302.31	395.49	301.98	396.37	301.71	397.47	301.86	397.76	301.86
398.89	302.06	400.02	302.49	401.4	303.07	402.29	303.13	403.12	303.04
403.92	303.07	406.43	303.47	406.82	303.47	408.77	303.14	408.95	303.13
411.46	302.35	413.98	302.35	419.01	302.5	420.42	302.42	424.04	302.26
426.55	301.75	427.22	301.74	429.07	301.65	431.58	301.9	434.1	302.29
436.29	302.2	436.61	302.16	439.13	301.98	439.85	302.13	440.82	302.4
441.64	302.57	444.16	303.14	446.67	303.42	449.19	303.32	451.7	302.62
453.97	301.69	456.73	300.53	459.25	299.76	461.76	299.35	463.48	299.2
466.79	298.87	469.31	298.5	471.82	297.98	472.55	297.86	474.81	297.57
476.85	297.34	479.37	297.19	481.88	297.12	484.4	297.09	489.43	297.09
491.94	298.11	494.46	299.66	496.97	300.43	499.49	300.96	502.01	301.63
504.52	302.39	507.03	303.35	509.55	304.95	539.73	305.61	540.54	305.27
541.55	304.77	542.24	304.48	544.76	303.76	547.27	303.25	549.79	302.53
552.3	302.08	554.82	301.81	559.85	301.45	561.7	301	564	302
575.22	303	579.77	304	582.78	305	604.98	305	610.86	306
624.5	307.5	633.03	306	647.38	305	658.82	304	730.18	302

748.97	300	773.22	299.81	781.81	300	783.69	300.56	786.2	300.72
788.72	300.96	791.23	301.36	794.36	301.63	796.26	302.46	801.16	303.02
803.81	303.44	806.32	303.71	808.84	303.74	810.22	303.67	812.49	303.57
813.87	303.34	816.38	303.15	818.9	302.91	821.41	302.39	823.93	300.23
831.47	298.74	836.5	298.74	839.02	298.89	841.53	299.36	844.05	299.95
846.56	300.36	849.08	300.47	851.02	300.54	854.11	300.5	856.62	300.37
859.14	300.29	862.35	300.28	864.62	300.39	866.68	300.26	869.2	300.09
871.71	300.16	874.23	300.23	874.9	300.41	875.95	300.48	876.74	300.32
879.26	300.46	881.77	300.81	885.01	301.09	886.2	301.16	886.8	301.15
887.28	301.2	889.32	301.23	889.55	301.35	891.85	301.52	894.35	301.85
896.86	302.54	899.38	303.229	901.3	303.44	901.89	304.47	904.41	305.85
906.92	307.53	909.44	307.79	909.94	308.72	911.95	309.28	914.47	309.24
916.98	309.16	919.5	309.15	921.27	309.11	923.54	309.01	927.04	309.06
929.56	309.18	932.07	309.31	937.1	309.45	939.62	309.79	944.65	310.22
949.68	310.41	952.19	310.56	954.71	310.69	957.53	310.83	959.74	310.9
962.07	310.84	964.33	310.75	966.6	310.63	968.87	310.38	972.31	310.32
973.4	310.14	977.34	310.08	979.86	310.12	982.37	310.19	984.73	310.22
987	310.35	992.43	310.44	994.95	310.65	998.33	310.73	999.98	310.95
1002.49	311.09	1005.01	311.78	1012.55	312.03	1016.46	312.23	1020.1	312.42
1022.61	312.67	1025.13	312.9	1030.16	312.96	1032.67	313	1035.19	313.09
1036.86	313.2	1040.22	313.34	1045.25	313.51	1053.57	313.52	1055.01	313.77
1060.32	313.92	1062.83	314.19	1065.34	314.57	1067.85	315.46	1086.35	322.18
1093.2	321.99	1111.24	322.531	1116.773	323.12	1129.35	316	1130.6	315.18
1133.11	315.34	1135.62	315.68	1137.97	316.07	1140.28	316.62	1143.15	316.9
1144.89	317.29	1148.17	317.64	1150.68	318.16	1153.19	319.73	1161.02	320.12
1163.23	320.67	1165.74	321.25	1168.25	321.86	1170.76	322.52	1173.27	323.04
1175.78	322.95	1178.29	322.81	1180.8	322.87	1184.06	322.88	1190.84	322.94
1193.28	322.97	1195.86	323.11	1200.88	323.08	1203.39	323.1	1205.9	323.25
1211.72	323.38	1215.94	323.41	1218.45	323.38	1220.96	323.46	1223.47	323.46
1228.49	323.44	1231	323.44	1233.51	323.47	1243.55	323.41	1248.59	323.4
1250.89	323.37	1253.59	323.37	1256.1	323.39	1261.12	323.53	1263.63	323.4
1266.14	323.19	1268.65	322.96	1271.16	322.73	1273.94	322.38	1276.18	322.19
1278.68	322.18	1280.85	322.07	1283.7	321.83	1285.46	321.69	1286.21	320.97
1288.72	320.78	1291.23	320.73	1293.74	320.68	1294.68	320.59	1295.38	320.49
1296.98	320.52	1298.14	320.49	1298.76	320.62	1301.27	320.66	1303.9	320.74

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	343	.06	564	.04	781.81	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
343	901.3	1000	951	815	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	278.7	314.64	F
1201.7	1303.9	333.8	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	313.82	Element			
Vel Head (ft)	0.62	Wt. n-Val.	0.050	0.049	0.050
W.S. Elev (ft)	313.20	Reach Len. (ft)	1000.00	951.00	815.00

Crit W.S. (ft)	307.80	Flow Area (sq ft)	4.86	5875.80	3.77
E.G. Slope (ft/ft)	0.001871	Area (sq ft)	4.86	5875.80	3.77
Q Total (cfs)	37000.00	Flow (cfs)	6.24	36991.21	2.55
Top Width (ft)	560.00	Top Width (ft)	1.30	558.30	0.40
Vel Total (ft/s)	6.29	Avg. Vel. (ft/s)	1.28	6.30	0.68
Max Chl Dpth (ft)	16.11	Hydr. Depth (ft)	3.74	10.52	9.41
Conv. Total (cfs)	855399.1	Conv. (cfs)	144.3	855196.0	58.9
Length Wtd. (ft)	948.63	Wetted Per. (ft)	4.88	566.66	9.87
Min Ch El (ft)	297.09	Shear (lb/sq ft)	0.12	1.21	0.04
Alpha	1.00	Stream Power (lb/ft s)	0.15	7.62	0.03
Frctn Loss (ft)	2.43	Cum Volume (acre-ft)	11.79	506.18	67.20
C & E Loss (ft)	0.02	Cum SA (acres)	1.63	49.97	9.10

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 260

INPUT
Description: Survey Data (June 12, 2014), and proposed grading Proposed grading start at station 523.75, n=0.05
In the non-disturbed area,
Manning's coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 402

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314.92	3.45	315.01	6.04	315.17	7.03	315.37	8.63	315.64
9.07	315.63	11.1	315.49	13.14	315.27	13.81	315.22	15.18	315.17
16.4	315.16	19.25	314.89	21.29	314.76	23.33	314.69	29.35	314.53
37.12	314.41	39.71	314.41	42.3	314.34	47.48	314.28	50.07	314.28
51.85	314.55	52.67	314.69	55.26	315.25	57.85	315.78	60.44	316.08
63.03	316.68	65.62	317.52	68.21	318.28	73.39	319.57	76.31	320.2
78.57	320.6	81.16	320.96	83.75	321.1	86.34	321.04	88.53	320.94
91.52	320.77	94.11	320.67	96.6	320.51	100.76	320.28	104.47	320.05
107.06	319.93	109.65	319.74	112.24	319.59	119.09	319.12	123.17	318.89
127.79	318.56	130.38	318.4	132.97	318.17	135.56	317.9	138.15	317.65
141.51	317.29	151.1	316.35	151.69	316.3	153.69	316.19	155.77	316.1
157.81	316.04	158.87	315.98	164.05	315.03	166.64	314.89	169.23	314.79
171.82	314.81	174.11	314.87	177.01	314.89	179.6	314.98	182.26	315
184.78	314.95	187.37	314.84	189.96	314.7	195.14	314.49	197.73	314.46
200.32	314.26	202.63	314.16	210.78	313.72	213.27	313.55	215.86	313.42
220.7	313.11	223.01	312.98	226.22	312.76	228.81	312.67	231.16	312.75
231.4	312.77	233.19	313.06	233.99	313.2	236.58	313.83	237.27	313.89
239.2	313.926	241.34	313.16	242.5	312.57	243.38	312.16	244.36	311.61
245.42	310.84	247.46	309.41	249.54	308	252.13	306.73	253.57	306.16
254.72	305.66	257.31	304.26	259.9	303.04	261.72	302.43	262.49	302.21

263.76	302.23	265.08	302.27	267.67	302.52	268.43	302.69	269.87	302.98
271.91	303.26	272.85	303.33	273.94	303.35	274.5	303.44	275.44	303.52
275.98	303.53	277.97	303.62	280.06	303.54	280.62	303.53	283.21	303.44
288.39	303.36	290.98	303.2	293.57	303.21	296.16	303.19	298.75	303.05
300.43	303.01	303.94	303	306.54	302.97	311.71	302.85	314.3	302.84
316.73	303.11	319.48	303.24	322.07	303.18	324.88	302.73	325.7	302.62
326.92	302.4	327.82	302.16	328.96	301.76	329.84	301.6	330.99	301.46
333.03	301.3	335.02	301.09	337.11	301.15	340.2	301.33	341.18	301.44
342.04	301.43	342.79	301.48	343.22	301.43	344.82	301.34	347.97	301.22
350.56	300.82	351.38	300.62	353.15	300.23	354.4	299.81	355.45	299.42
357.49	298.58	358.33	298.25	363.51	297.13	363.98	297.06	365.65	296.87
366.88	296.75	367.69	296.7	368.69	296.55	371.28	296.28	373.87	296.22
375.84	296.01	376.46	295.92	379.05	295.65	379.92	295.61	381.64	295.59
384.23	295.73	384.63	295.83	386.03	296.09	386.82	296.3	389.41	297.47
390.11	297.72	391.99	298.29	394.19	299.03	394.58	299.12	397.17	299.64
399.76	300.36	400.3	300.45	402.3	300.74	404.94	301.01	407.53	301.51
408.46	301.64	409.47	301.86	411.88	302	438.61	302	441.2	301.53
443.12	301.07	443.79	300.93	446.38	300.71	448.97	300.74	454.15	300.98
456.74	301.04	459.33	301.25	461.92	301.57	464.51	301.84	467.1	301.98
474.87	302.04	477.46	302.08	482.64	302.14	485.23	302.21	490.4	302.29
492.99	302.38	495.58	302.51	498.16	302.75	500.76	303.05	506.31	303.46
508.53	303.59	511.12	303.67	513.71	303.54	516.3	303.08	518.89	302.54
521.48	301.94	523.75	302	530.97	301	552.09	300.3	562.39	301
570.87	302	598.18	302	611.86	302	705.35	299.2	720.89	300.88
731.25	299.16	739.02	298.81	746.79	300.31	759.14	299.26	759.74	299.12
761.14	299.45	762.33	299.69	763.18	299.67	764.4	299.58	765.22	299.56
766.32	299.63	767.51	299.74	770.1	300.46	771.33	300.71	772.69	301.01
775.28	301.97	775.86	302.06	777.44	302.25	777.87	302.24	780.46	302.11
783.05	302.11	788.23	302.27	790.82	302.42	793.74	302.83	795.78	303.03
797.82	303.19	798.59	303.24	801.18	303.44	802	303.488	803.77	303.62
805.97	303.65	806.36	303.67	808	303.83	808.96	303.94	811.55	304.35
814.14	304.81	816.73	305.39	819.32	305.9	821.91	306.32	824.3	306.53
827.09	306.61	830.42	306.55	832.27	306.56	834.86	306.46	836.53	306.37
840.04	306.21	842.63	306.12	845.22	306.16	847.81	306.22	850.4	306.33
852.99	306.53	855.58	306.84	858.17	307.24	860.76	307.69	863.35	308.2
865.94	308.79	868.54	309.32	871.13	309.6	873.2	309.9	875.24	310.16
879.32	310.65	881.49	310.89	885.43	310.74	886.67	310.72	891.54	310.57
893.58	310.55	895.62	310.5	897.65	310.42	899.62	310.32	902.21	310.25
903.77	310.33	904.8	310.36	905.8	310.5	906.61	310.53	907.39	310.61
907.84	310.69	909.5	310.79	910.16	310.86	911.92	311.12	912.57	311.17
915.16	311.27	915.99	311.19	917.27	311.25	918.03	311.25	919.05	311.34
920.34	311.5	922.93	311.75	928.22	312.1	930.71	312.4	932.29	312.53
933.3	312.59	935.89	312.72	938.6	312.79	940.44	312.85	943.66	312.86
944.52	312.87	946.25	312.93	948.84	313.06	952.67	313.18	958.78	313.34
961.79	313.39	964.38	313.47	969.56	313.52	972.15	313.5	974.74	313.58
977.33	313.57	979.15	313.62	982.51	313.69	985.86	313.72	990.28	313.79
995.47	314.25	998.06	314.32	1000.65	314.49	1001.57	314.56	1004.9	316
1030.09	316.09	1031.04	316.44	1032.13	316.8	1034.17	317.55	1034.59	317.75
1036.2	318.64	1036.91	319.01	1039.5	319.94	1042.09	321.26	1044.68	323.16
1045.26	323.43	1046.39	324.01	1049.86	325.43	1050.47	325.56	1052.46	325.9
1056.58	326.15	1057.64	326.2	1060.65	326.2	1065.41	326.3	1070.59	326.34
1073.18	326.42	1074.92	326.44	1081.03	326.47	1083.54	326.46	1086.13	326.48

1088.72	326.55	1091.31	326.56	1096.49	326.67	1099.08	326.68	1101.4	326.66
1104.26	326.67	1106.85	326.65	1109.44	326.65	1111.59	326.63	1117.7	326.62
1119.74	326.59	1122.4	326.53	1124.99	326.5	1129.93	326.48	1135.35	326.4
1137.94	326.38	1140.12	326.28	1143.12	326.13	1146.23	325.93	1148.3	325.84
1153.48	325.68	1158.45	325.35	1166.14	324.68	1169.02	324.48	1174.2	323.92
1174.75	323.89	1179.39	323.43	1181.98	323.25	1184.57	323.42	1184.94	323.42
1187.16	323.31	1189.75	323.36	1194.93	323.44	1197.17	323.49	1200.11	323.49
1202.7	323.53	1205.29	323.53	1207.88	323.5	1209.39	323.46	1211.43	323.38
1213.46	323.28	1216.09	323.2						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	239.2	.06	523.75	.05	705.35	.06	802	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
239.2	802	1050	1031	1000	.1	.3

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	311.38	Element			
Vel Head (ft)	0.77	Wt. n-Val.		0.056	0.050
W.S. Elev (ft)	310.61	Reach Len. (ft)	1050.00	1031.00	1000.00
Crit W.S. (ft)		Flow Area (sq ft)		5168.65	265.15
E.G. Slope (ft/ft)	0.003665	Area (sq ft)		5168.65	265.15
Q Total (cfs)	38000.00	Flow (cfs)		36694.91	1305.09
Top Width (ft)	600.00	Top Width (ft)		545.30	54.70
Vel Total (ft/s)	6.99	Avg. Vel. (ft/s)		7.10	4.92
Max Chl Dpth (ft)	15.02	Hydr. Depth (ft)		9.48	4.85
Conv. Total (cfs)	627656.6	Conv. (cfs)		606100.1	21556.5
Length Wtd. (ft)	1030.37	Wetted Per. (ft)		555.21	58.60
Min Ch El (ft)	295.59	Shear (lb/sq ft)		2.13	1.04
Alpha	1.01	Stream Power (lb/ft s)		15.12	5.10
Frctn Loss (ft)	2.26	Cum Volume (acre-ft)	11.73	385.62	64.68
C & E Loss (ft)	0.10	Cum SA (acres)	1.62	37.92	8.59

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 250

INPUT
Description: Survey Data (June 12, 2014), and proposed grading
Proposed
grading start at 737.45, n=0.04
Proposed PA-1 staton, n=0.15

In the non-disturbed area, Manning's coefficients are derived from the Corrected Effective Model.

Station Elevation Data num= 309

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	318.93	4.62	319.04	12.59	319.12	15.7	319.22	18.32	319.25
20.94	319.34	23.56	319.33	27.68	319.28	31.43	319.3	39.29	319.28
44.54	319.19	47.16	319.19	50.46	319.11	52.4	319.12	55.02	319.05
62.42	318.93	65.51	318.8	70.75	318.71	73.37	318.7	75.99	318.39
78.61	317.55	81.23	316.81	83.86	316.56	85.87	316.43	89.1	316.27
91.72	315.97	94.34	315.71	99.58	315.05	102.27	314.73	106.26	314.35
110.07	314.03	112.69	313.93	115.31	313.88	120.55	313.65	125.8	313.32
130.17	313.01	133.66	312.81	144.15	312.28	152.01	311.76	154.63	311.64
159.88	311.35	166.05	311.05	170.36	310.79	172.98	310.67	175.6	310.61
183.47	310.35	188.71	310.22	193.95	310.06	199.2	309.86	204.44	309.77
207.06	309.75	212.3	309.66	214.92	309.59	222.79	309.49	225.83	309.4
228.03	309.37	233.27	309.2	239.78	308.97	243.77	308.87	249	308.69
252.12	308.54	256.87	308.38	262.11	308.25	267.35	308.04	269.97	307.99
272.59	308.02	277.05	307.81	280.46	307.78	285.7	307.48	287.61	307.43
293.56	307.16	296.19	307.07	303.56	306.76	309.29	306.62	311.91	306.53
317.16	306.41	321.49	306.27	325.02	306.08	327.64	305.97	335.51	305.53
339.41	305.06	343.39	304.62	347.36	304.05	349.35	303.69	351.26	303.3
353.89	302.88	359.79	302.39	363.27	302.18	367.01	301.85	368	301.88
369.24	302.01	372.26	302.2	374.89	302.22	376.2	302.19	380.14	302.17
385.15	302.1	388.01	301.74	395.88	301.09	398.51	301.04	403.05	300.77
405.03	300.68	407.03	300.5	409	300.22	411.03	300.15	413.03	300.02
416.84	299.88	419.04	299.75	427.04	299.35	433	299.092	450.83	298.33
453.44	298.38	455.07	298.49	459.08	298.62	461.68	298.65	463.08	298.76
463.9	298.69	468.94	296.96	471.74	296.12	474.36	295.41	476.97	295.75
479.1	296.28	479.59	296.35	481.1	296.24	482.2	296.23	486.03	295.85
487.43	295.66	489.1	295.33	491.11	295.06	495.27	294.73	497.89	294.72
503.14	294.78	505.12	295.09	505.73	295.27	508.34	296.43	509.13	296.68
511.69	297.17	513.57	297.35	516.19	297.87	517.14	298	518.8	298.33
521.41	298.56	523.14	298.41	525.15	298.18	526.64	298.09	529.26	298.1
534.48	298.08	539.71	298.09	545.17	297.99	550.17	297.95	555.4	297.95
561.19	298.1	563.24	298.19	565.85	298.24	571.2	298.24	573.7	298.19
575.2	298.34	578.92	298.51	581.54	298.58	584.15	298.5	587.22	298.79
589.69	299.08	591.22	299.31	591.99	299.36	597.24	299.16	599.23	299.1
602.45	299.27	605.07	299.44	607.24	299.41	609.24	299.24	612.91	298.86
615.25	298.77	618.14	298.73	621.25	298.61	622.91	298.44	625.26	298.28
625.98	298.19	628.59	298.04	633.27	297.9	636.43	298.08	639.28	298.03
643.28	298.28	646.89	298.37	649.51	298.16	652.12	298.06	657.3	297.94
659.96	298.02	663.3	298.24	665.19	298.34	667.8	298.58	671.31	298.71
675.32	298.89	678.26	298.85	680.87	299.01	683.49	299.09	686.1	298.97
688.72	298.9	691.33	298.91	693.95	298.92	695.34	298.97	696.56	298.98
720.09	298.98	727.34	298.98	737.45	298.66	770.58	298	790.39	296.68
819.65	296.68	838.35	298	866.67	298	877.89	295.19	893.56	295.29
895.23	295.31	897.85	295.24	900.46	295.28	903.58	295.63	905.22	295.73
910.92	295.94	913.59	296.41	916.14	297.12	917.59	297.44	919.59	297.75
921.6	297.9	923.99	297.99	925.6	298.01	927.6	297.97	929.21	297.87
931.52	298	938.6	300	951.75	300	960.67	298	1002.48	298
1013.9	299.754	1015.5	300	1042.19	300	1062.53	300	1066.39	300

1066.39	307	1069.81	308	1073.81	310	1077.8	312	1081.81	314		
1085.26	315.5	1156.32	315.5	1174.31	313.9	1229.4	315.3	1314.98	315.3		
1340.67	314	1360.7	315.6	1437.02	316	1438.65	315	1440.5	315		
1440.5	313	1441.58	313.18	1442.19	313.32	1444.19	313.97	1446.81	315.54		
1449.42	316.75	1450.2	317.15	1452.04	318.28	1454.2	319.78	1456.21	320.92		
1457.27	321.44	1458.21	321.98	1459.26	322.81	1460.21	323.42	1461.29	324.41		
1462.21	325.51	1462.49	325.67	1464.21	328.1	1465.11	329.25	1466.22	330.23		
1466.79	330.34	1467.72	330.86	1472.95	330.98	1478.18	331	1480.79	331.06		
1484.24	330.97	1486.96	330.94	1491.25	331	1496.48	331.12	1499.09	331.05		
1504.26	331.03	1506.26	331	1509.55	331	1517.39	330.94	1520.28	330.84		
1527.85	330.78	1533.07	330.72	1540.92	330.69	1546.14	330.72	1550.31	330.69		
1552.31	330.73	1553.99	330.71	1556.32	330.6	1559.22	330.53	1561.83	330.37		
1564.44	330.28	1569.67	330.19	1574.9	329.93	1580.13	329.81	1588.36	329.23		
1590.36	329.13	1594.36	328.79	1595.81	328.72	1598.43	328.47	1601.04	327.93		
1603.66	327.44	1606.27	327.22	1608.38	327.22	1611.64	327.26				

Manning's n Values num= 7

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	433	.06	737.45	.04	877.89	.06	931.52	.04
1085.26	.15	1441.58	.05						

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
433	1013.9	700	701	615	.1	.3

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	309.02	Element			
Vel Head (ft)	0.45	Wt. n-Val.	0.050	0.050	0.040
W.S. Elev (ft)	308.57	Reach Len. (ft)	700.00	701.00	615.00
Crit W.S. (ft)		Flow Area (sq ft)	572.01	6219.83	326.88
E.G. Slope (ft/ft)	0.001456	Area (sq ft)	572.01	6219.83	326.88
Q Total (cfs)	38000.00	Flow (cfs)	2366.02	33938.30	1695.69
Top Width (ft)	695.00	Top Width (ft)	76.00	580.90	38.10
Vel Total (ft/s)	5.34	Avg. Vel. (ft/s)	4.14	5.46	5.19
Max Chl Dpth (ft)	13.85	Hydr. Depth (ft)	7.53	10.71	8.58
Conv. Total (cfs)	995840.8	Conv. (cfs)	62004.6	889398.4	44437.8
Length Wtd. (ft)	698.94	Wetted Per. (ft)	82.11	583.67	46.69
Min Ch El (ft)	294.72	Shear (lb/sq ft)	0.63	0.97	0.64
Alpha	1.01	Stream Power (lb/ft s)	2.62	5.29	3.30
Frctn Loss (ft)	1.94	Cum Volume (acre-ft)	4.84	250.85	57.89
C & E Loss (ft)	0.01	Cum SA (acres)	0.70	24.60	7.52

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: San Diego River

REACH: Reach 1 RS: 245

INPUT
Description: Survey Data (June 12, 2014), and proposed grading-Proposed grading
starts at station 1373.16
In the non-disturbed area, Manning's
coefficients are derived from the Corrected Effective Model.
Station Elevation Data num= 428

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	332	2.84	332.19	5.61	331.73	8.38	331.47	11.15	331.35
13.91	331.34	16.68	331.19	22.22	331.11	27.76	330.97	36.57	330.92
47.13	330.62	52.67	330.54	55.44	330.59	58.21	330.86	60.98	331.66
63.74	332.05	66.51	331.88	72.05	331.1	74.82	331.13	78.38	331.34
80.35	331.62	83.47	331.43	85.89	330.53	88.66	328.99	91.43	328.22
94.2	326.76	96.6	325.29	98.48	324.29	102.5	322.5	105.27	322.02
110.81	321.97	122.87	321.76	138.49	321.39	146.79	321.17	157.87	320.93
160.64	320.84	180.01	320.7	182.9	320.72	193.86	320.68	204.93	320.51
218.77	320.18	224.18	320.09	232.61	319.89	246.45	319.6	263.06	319.16
267.33	319.1	274.14	318.93	279.67	319.02	282.44	318.94	287.98	319.34
290.75	319.66	296.28	319.88	299.05	320.09	304.59	320.63	310.13	320.93
315.66	321.01	317.04	320.71	323.97	318.15	327.36	317.19	329.5	317.06
332.27	317.08	357.38	317	368.26	316.94	382.1	316.9	386.89	316.81
393.17	316.75	398.65	316.84	407.02	316.8	415.32	316.63	427.63	316.42
431.93	316.38	458.69	315.94	462.56	315.75	467.92	315.56	470.69	315.66
476.22	315.73	484.53	315.91	487.3	315.91	491.66	316.05	496.21	316.07
509.44	316.44	514.98	316.44	520.52	316.71	523.29	316.79	526.05	316.64
528.1	316.82	537.13	316.66	539.36	316.75	542.66	316.7	556.51	316.75
567.58	316.72	570.35	316.78	578.65	316.84	581.42	316.78	586.96	316.96
590.62	316.81	591.89	316.86	595.26	317.4	602.26	317.7	603.57	317.54
608.08	316.74	617.41	316.59	622.95	316.31	628.48	316.16	629.41	315.13
631.37	310.13	633.16	306.96	634.02	305.95	636.79	305.58	639.56	304.94
645.09	304.22	647.86	304.06	653.4	304.17	655.7	304.089	659.43	303.85
661.7	303.59	666.93	303.22	670.01	302.56	672.56	302.12	676.31	301.19
681.08	299.79	686.62	298.64	693.2	297.84	695.4	297.65	698.83	297.15
701.22	296.89	704.46	296.87	706.33	296.77	711.53	296.66	717.07	296.31
719.84	296.21	722.61	296.46	725.09	296.35	728.84	296.63	730.91	296.98
736.45	296.78	740.1	296.9	747.61	296.93	749.48	297	751.36	296.92
755.11	296.59	758.59	296.54	761.36	296.61	766.37	296.48	769.67	296.55
771.99	296.2	773.87	295.68	775.75	295.39	777.97	295.44	780.74	295.95
783.51	296.63	785.13	296.61	788.88	296.38	791.81	296.51	794.51	296.75
797.35	297.11	800.12	297.15	802.01	296.98	803.89	297.03	805.99	297.36
808.42	297.47	811.82	297.32	818.9	296.76	825.03	296.92	827.8	296.77
830.57	295.86	835.1	295.52	843.29	295.61	847.04	295.56	849.95	295.74
858.25	296.46	863.92	297.64	866.56	298.01	871.43	298.2	880.4	298.09
882.68	298.15	885.94	297.99	888.7	297.4	891.47	296.65	894.24	294.91
897.01	292.78	899.78	291.77	901.44	291.49	904.95	291.1	908.95	291.11
910.85	291.03	919.16	291.38	924.69	291.73	927.46	292.07	930.23	292.55
933	292.91	938.53	293.22	941.3	293.57	944.6	293.75	949.61	294.29
952.1	294.81	955.14	295.33	960.68	296.05	966.22	296.28	968.99	296.5
971.75	296.56	980.06	296.47	982.83	296.5	985.87	296.35	991.13	296.54
993.9	296.58	1002.21	296.24	1007.74	295.79	1012.13	296.12	1015.89	296.33
1021.37	296.38	1027.19	296.13	1032.66	296.1	1035.43	296.16	1040.28	295.83

1043.73	295.98	1049.27	295.7	1054.8	295.28	1060.34	295.51	1065.88	295.65
1068.65	295.89	1074.18	296.73	1076.95	296.71	1085.26	296.34	1088.02	296.28
1101.87	296.43	1107.4	296.07	1110.17	296	1115.32	296.16	1118.48	296.02
1121.24	296.25	1124.01	296.36	1126.78	296.28	1129.55	296.33	1137.85	296.69
1143.39	297.12	1146.16	297.68	1160.35	297.39	1165.54	297.2	1167.85	297.25
1173.84	297.03	1177.23	297.12	1184.92	297.09	1190.45	297.31	1195.99	297.19
1201.53	296.88	1209.12	296.24	1212.6	296.01	1220.9	295.67	1226.44	295.56
1234.75	294.97	1243.05	294.53	1248.59	294.5	1254.21	294.22	1259.66	294.29
1261.65	294.84	1263.53	295.06	1267.96	295.29	1271.03	295.35	1273.5	295.72
1276.66	295.67	1279.04	295.4	1281.81	295.43	1287.7	295.836	1292.88	295.97
1295.42	295.86	1298.42	295.89	1301.18	296.15	1304.8	295.61	1306.72	295.44
1309.49	295.37	1312.26	295.62	1314.18	296.05	1317.79	296.63	1320.56	297.38
1325.44	297.46	1328.87	297.78	1331.64	297.63	1337.17	297.01	1339.94	297.08
1342.71	297.44	1346.08	297.33	1348.25	297.45	1351.01	298.15	1356.55	300.77
1359.32	301.34	1362.09	301.39	1364.86	301.25	1368.59	300.94	1373.16	300.46
1381.47	299.84	1387	299.65	1393.96	299.72	1399.37	300	1400.01	301.39
1411.74	302.1	1429.9	310	1436.51	312	1508.82	312	1526.87	312.1
1555.9	313.1	1593.3	313.1	1636.57	312.8	1640.47	314.6	1700.95	314.6
1728.04	314.2	1771.31	314.2	1843.95	313.8	1845.34	315.71	1853.75	317.19
1858.25	318.37	1860.39	319.21	1863.16	320.56	1865.4	322.04	1871.22	326.19
1873.26	327.09	1874.23	327.69	1877.01	329.75	1879.77	331.55	1882.64	333.1
1885.3	334.05	1888.07	334.39	1893.61	334.27	1895.77	334.34	1901.91	334.27
1907.03	334.3	1912.99	334.09	1918.52	334.13	1924.06	333.97	1929.6	333.97
1937.9	333.91	1955.81	333.89	1960.05	333.76	1964.35	333.72	1968.35	333.47
1973.89	332.63	1979.43	331.73	1985.82	331.12	1987.73	331	1993.45	330.46
1996.04	330.33	2004.34	330.65	2009.88	330.75	2018.18	330.91	2025.22	330.99
2034.79	331	2040.33	330.93	2045.87	330.91	2048.63	330.8	2051.66	330.78
2057.11	330.57	2059.71	330.69	2066.49	331.27	2070.78	331.72	2079.09	332.37
2087.39	333.11	2092.76	333.34	2098.23	333.4	2101.23	333.5	2109.54	333.38
2115.27	333.52	2124.65	333.5	2127.33	333.59	2135.91	333.6	2139.99	333.73
2145.29	333.81	2148.29	334.13	2151.06	334	2156.6	334.06	2170.44	334.65
2173.21	335.34	2175.98	337.02	2178.75	338.58	2181.51	339.28	2192.59	339.58
2200.89	339.16	2206.43	338.83	2211.97	338.69	2217.5	338.73	2220.46	338.62
2228.58	338.57	2234.11	338.33	2239.09	338.3	2245.19	338	2250.35	337.65
2253.49	337.36	2257.85	336.81	2261.8	336.21	2267.03	335.65	2270.1	335.38
2272.87	334.97	2281.17	335.14	2283.94	335.09	2286.71	335.16	2290.31	335.15
2306.09	334.97	2308.86	334.88	2314.39	334.84	2319.93	334.69	2325.47	334.66
2331	334.5	2333.77	334.48	2342.08	334.25	2347.61	334.06	2350.38	334.05
2355.92	333.9	2361.04	333.71	2364.22	333.68	2369.76	333.72	2375.3	333.94
2383.45	334.18	2389.14	334.31	2400.21	334.27	2414.05	333.97	2416.82	334.07
2422.36	334.84	2424.83	335.33	2427.9	335.55	2432.33	335.68	2434.21	335.89
2441.74	336.53	2444.51	336.81	2450.04	337.19	2455.58	337.39	2462.35	337.43
2469.85	337.65	2474.96	337.45	2498.59	337.08				

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.045	655.7	.1	1287.7	.11	1373.16	.04	1508.82	.15
1888.07	.05								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
655.7	1287.7	140.2	147.4	160	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	642	313.25	F
1371.7	2498.59	313.25	F

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	307.07	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.56	Wt. n-Val.		0.100	0.110
W.S. Elev (ft)	306.51	Reach Len. (ft)	140.20	147.40	160.00
Crit W.S. (ft)	300.98	Flow Area (sq ft)		6310.95	41.43
E.G. Slope (ft/ft)	0.007285	Area (sq ft)		6310.95	41.43
Q Total (cfs)	38000.00	Flow (cfs)		37903.71	96.29
Top Width (ft)	605.00	Top Width (ft)		601.10	3.90
Vel Total (ft/s)	5.98	Avg. Vel. (ft/s)		6.01	2.32
Max Chl Dpth (ft)	15.48	Hydr. Depth (ft)		10.50	10.62
Conv. Total (cfs)	445220.5	Conv. (cfs)		444092.4	1128.1
Length Wtd. (ft)	147.42	Wetted Per. (ft)		612.38	14.47
Min Ch El (ft)	291.03	Shear (lb/sq ft)		4.69	1.30
Alpha	1.01	Stream Power (lb/ft s)		28.15	3.03
Frctn Loss (ft)	0.72	Cum Volume (acre-ft)	0.24	150.02	55.29
C & E Loss (ft)	0.01	Cum SA (acres)	0.09	15.08	7.22

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 244

INPUT
Description: Begin Grading-West site-regrading starts at station 1160.21
 PA-1
  starts st Station 1221.2 manning = 0.15
Station Elevation Data num= 50

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312.5	104.5	308.1	201.3	303.9	207.8	307.1	216.5	307.1
237.5	311.6	319.8	312.8	335.5	307.7	367.8	307.6	459.7	307.8
508.9	294.9	585.6	293.1	617.1	292.2	638.9	293.1	772.1	293.3
888.2	294.6	935.1	293.5	960.1	296	1085.7	298.3	1160.21	301.08
1160.21	309	1162.4	310	1170.59	314	1173.4	314.5	1176.28	315.3
1182.66	315.26	1189.2	316	1198.08	316	1221.2	316	1237.79	315.57
1240.81	313	1261.99	312	1324.4	313.4	1364.6	313.8	1401.66	314.2
1444.79	314.2	1501.32	316	1507.4	318.78	1564.26	319	1579.2	316
1591.26	313.39	1618.49	327.9	1787.9	328.1	1896	326.7	1953.2	313.1
2022.1	315.9	2161	318.3	2292.6	325.1	2385.9	332.9	2498.4	333.7

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
       0      .1   459.7    .065   960.1    .045  1221.2     .15

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
         459.7   960.1            104.8   124.6     145             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0   459.7   311.5       F
   960.1  2498.4   311.5       F

CROSS SECTION OUTPUT  Profile #PF 2

  E.G. Elev (ft)            306.33    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.71    Wt. n-Val.                           0.065
  W.S. Elev (ft)            305.63    Reach Len. (ft)           35.00      35.00      35.00
  Crit W.S. (ft)            299.66    Flow Area (sq ft)                  5628.26
  E.G. Slope (ft/ft)      0.003488    Area (sq ft)                       5628.26
  Q Total (cfs)           38000.00    Flow (cfs)                        38000.00
  Top Width (ft)            492.11    Top Width (ft)                      492.11
  Vel Total (ft/s)            6.75    Avg. Vel. (ft/s)                      6.75
  Max Chl Dpth (ft)          13.43    Hydr. Depth (ft)                     11.44
  Conv. Total (cfs)       643396.7    Conv. (cfs)                       643396.7
  Length Wtd. (ft)           35.00    Wetted Per. (ft)                    503.31
  Min Ch El (ft)            292.20    Shear (lb/sq ft)                      2.44
  Alpha                       1.00    Stream Power (lb/ft s)               16.44
  Frctn Loss (ft)             0.16    Cum Volume (acre-ft)        0.24     129.82      55.21
  C & E Loss (ft)             0.02    Cum SA (acres)              0.09      13.23       7.22


Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was used.

BRIDGE


RIVER: San Diego River
REACH: Reach 1            RS: 243

INPUT
Description:
Distance from Upstream XS =      35
Deck/Roadway Width        =      55
Weir Coefficient          =     2.6
Upstream  Deck/Roadway Coordinates
    num=       2
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
   459.7     315   311.5   960.1     315   311.5

Upstream Bridge Cross Section Data
Station Elevation Data    num=      50
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   312.5   104.5   308.1   201.3   303.9   207.8   307.1   216.5   307.1
   237.5   311.6   319.8   312.8   335.5   307.7   367.8   307.6   459.7   307.8
   508.9   294.9   585.6   293.1   617.1   292.2   638.9   293.1   772.1   293.3
```

888.2	294.6	935.1	293.5	960.1	296	1085.7	298.3	1160.21	301.08		
1160.21	309	1162.4	310	1170.59	314	1173.4	314.5	1176.28	315.3		
1182.66	315.26	1189.2	316	1198.08	316	1221.2	316	1237.79	315.57		
1240.81	313	1261.99	312	1324.4	313.4	1364.6	313.8	1401.66	314.2		
1444.79	314.2	1501.32	316	1507.4	318.78	1564.26	319	1579.2	316		
1591.26	313.39	1618.49	327.9	1787.9	328.1	1896	326.7	1953.2	313.1		
2022.1	315.9	2161	318.3	2292.6	325.1	2385.9	332.9	2498.4	333.7		

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	459.7	.065	960.1	.045	1221.2	.15

Bank Sta: Left Right Coeff Contr. Expan.

459.7	960.1	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	459.7	311.5	F
960.1	2498.4	311.5	F

Downstream Deck/Roadway Coordinates

num= 2

Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
401	315	311.5	900.5	315	311.5

Downstream Bridge Cross Section Data

Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1
1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left Right Coeff Contr. Expan.

401	900.5	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	401	313.25	F
900.5	2378.2	313.25	F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins = 315
Energy head used in spillway design =
Spillway height used in design =

```
Weir crest shape                          = Broad Crested

Number of Piers =  5

Pier Data
Pier Station     Upstream=   543.2    Downstream=   484.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   626.6    Downstream=   567.7
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   709.9    Downstream=     651
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   793.2    Downstream=   734.3
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Pier Data
Pier Station     Upstream=   876.6    Downstream=   817.7
Upstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5
Downstream     num=       2
    Width   Elev    Width   Elev
       7       0       7   311.5

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
```

Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
Energy Only

Additional Bridge Parameters
Add Friction component to Momentum
Do not add Weight component to Momentum
Class B flow critical depth computations use critical depth
inside the bridge at the upstream end
Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT Profile #PF 2

E.G. US. (ft)	306.33	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	305.63	E.G. Elev (ft)	306.16	305.77
Q Total (cfs)	38000.00	W.S. Elev (ft)	305.28	304.73
Q Bridge (cfs)	38000.00	Crit W.S. (ft)	300.00	300.00
Q Weir (cfs)		Max Chl Dpth (ft)	13.08	13.03
Weir Sta Lft (ft)		Vel Total (ft/s)	7.53	8.19
Weir Sta Rgt (ft)		Flow Area (sq ft)	5047.84	4640.73
Weir Submerg		Froude # Chl	0.37	0.44
Weir Max Depth (ft)		Specif Force (cu ft)	37862.97	35770.82
Min El Weir Flow (ft)	315.00	Hydr Depth (ft)	11.08	10.69
Min El Prs (ft)	311.50	W.P. Total (ft)	583.57	552.83
Delta EG (ft)	0.81	Conv. Total (cfs)	486255.1	438194.0
Delta WS (ft)	1.00	Top Width (ft)	455.78	434.19
BR Open Area (sq ft)	7690.35	Frctn Loss (ft)	0.37	0.20
BR Open Vel (ft/s)	8.19	C & E Loss (ft)	0.02	0.04
BR Sluice Coef		Shear Total (lb/sq ft)	3.30	3.94
BR Sel Method	Energy only	Power Total (lb/ft s)	24.83	32.27

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 242

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 35

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	316.8	112	313	208.4	309.6	275.7	312.9	401	311.6
456.4	294.1	515	292.1	549.1	291.7	573.4	293	615.3	292.5
683.3	294	754	293.8	833.8	293.1	848.7	292.9	881.7	298.9
900.5	309.6	933.7	309.6	993.7	311.6	1109.5	310.6	1250.9	313.9
1354.6	317.3	1496.3	321.3	1588.4	321.9	1606.6	328.4	1621	329.1

1637.1	321.6	1734	320.7	1900.1	316.2	2003.5	313.7	2112.3	317.6
2154.7	320.9	2210.3	328	2252.9	327.8	2328.2	325.6	2378.2	322.3

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	401	.065	900.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
401	900.5	165	224	270	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	401	313.25	F
900.5	2378.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	305.52	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.90	Wt. n-Val.		0.065		
W.S. Elev (ft)	304.62	Reach Len. (ft)	165.00	224.00	270.00	
Crit W.S. (ft)	299.63	Flow Area (sq ft)		4993.21		
E.G. Slope (ft/ft)	0.004778	Area (sq ft)		4993.21		
Q Total (cfs)	38000.00	Flow (cfs)		38000.00		
Top Width (ft)	468.67	Top Width (ft)		468.67		
Vel Total (ft/s)	7.61	Avg. Vel. (ft/s)		7.61		
Max Chl Dpth (ft)	12.92	Hydr. Depth (ft)		10.65		
Conv. Total (cfs)	549728.9	Conv. (cfs)		549728.9		
Length Wtd. (ft)	232.26	Wetted Per. (ft)		472.44		
Min Ch El (ft)	291.70	Shear (lb/sq ft)		3.15		
Alpha	1.00	Stream Power (lb/ft s)		23.99		
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.24	115.59	55.21	
C & E Loss (ft)	0.11	Cum SA (acres)	0.09	11.93	7.22	

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 239

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 34

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	314	87.1	311.2	151.3	308.5	183.2	306.4	215.4	304.6
241.3	303	280.1	296.8	314.7	293.9	339	292.9	379.6	294.4
403.2	292.6	425.4	293.1	463.7	294.4	483.9	291.8	506.5	290.7
551.3	292.7	620.7	293.2	628.9	295.7	642	299.6	662.4	296.3
712.8	296.7	745.9	295.3	808	296.4	955.9	298.3	1077.2	298.6

1096.1	296.4	1143.4	295.9	1251.8	296.4	1289.9	298.8	1360.3	299.6
1377.5	302.7	1402.9	313.3	1426.5	325.9	1436.2	326.7		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	241.3	.065	642	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
241.3	642	385	413	515	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	201.8	313.25	F
906.2	1436.2	313.25	F

CROSS SECTION OUTPUT Profile #PF 2

E.G. Elev (ft)	304.46	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.67	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	303.79	Reach Len. (ft)	385.00	413.00	515.00
Crit W.S. (ft)	299.62	Flow Area (sq ft)		3923.15	1902.09
E.G. Slope (ft/ft)	0.003505	Area (sq ft)		3923.15	1902.09
Q Total (cfs)	38000.00	Flow (cfs)		24357.54	13642.46
Top Width (ft)	660.00	Top Width (ft)		395.80	264.20
Vel Total (ft/s)	6.52	Avg. Vel. (ft/s)		6.21	7.17
Max Chl Dpth (ft)	13.09	Hydr. Depth (ft)		9.91	7.20
Conv. Total (cfs)	641885.9	Conv. (cfs)		411441.2	230444.8
Length Wtd. (ft)	446.19	Wetted Per. (ft)		399.25	270.65
Min Ch El (ft)	290.70	Shear (lb/sq ft)		2.15	1.54
Alpha	1.01	Stream Power (lb/ft s)		13.35	11.03
Frctn Loss (ft)	1.43	Cum Volume (acre-ft)	0.24	92.67	49.32
C & E Loss (ft)	0.04	Cum SA (acres)	0.09	9.71	6.40

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 230

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 39

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	312	65.6	310.4	137.8	306.5	207.5	304.8	265.4	303.7
291.2	300.1	331.4	299.8	351.6	295.4	389	294.6	407.4	291.3
454.2	291.8	462.3	290.4	477.6	289.8	534.6	290.2	554.3	293.8
641.2	293.6	754.1	293.5	854.5	294.1	957	293.2	982.8	292.3
997.6	294.6	1024.6	297.5	1044.3	298.8	1136.2	298.2	1228.8	298

1299.8	296	1370.7	296	1433	296.9	1442.5	299.6	1459.2	298.3
1470.3	296.6	1517.5	295	1523.6	297.2	1550.3	301.8	1578.7	304.4
1682	307.7	1783.3	310.7	1933.2	315.6	2031.8	320.6		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	331.4	.065	854.5	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
331.4	854.5	460	487	430	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	61.8	313.25	F
1233.8	2031.8	313.25	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	303.00	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.55	Wt. n-Val.	0.100	0.065	0.045
W.S. Elev (ft)	302.44	Reach Len. (ft)	460.00	487.00	430.00
Crit W.S. (ft)	297.86	Flow Area (sq ft)	25.04	4888.45	1587.90
E.G. Slope (ft/ft)	0.002947	Area (sq ft)	25.04	4888.45	1587.90
Q Total (cfs)	38000.00	Flow (cfs)	32.67	26874.68	11092.65
Top Width (ft)	735.00	Top Width (ft)	9.60	523.10	202.30
Vel Total (ft/s)	5.84	Avg. Vel. (ft/s)	1.30	5.50	6.99
Max Chl Dpth (ft)	12.64	Hydr. Depth (ft)	2.61	9.35	7.85
Conv. Total (cfs)	699947.4	Conv. (cfs)	601.8	495022.7	204322.8
Length Wtd. (ft)	462.76	Wetted Per. (ft)	12.17	524.34	206.42
Min Ch El (ft)	289.80	Shear (lb/sq ft)	0.38	1.72	1.42
Alpha	1.04	Stream Power (lb/ft s)	0.49	9.43	9.89
Frctn Loss (ft)	0.94	Cum Volume (acre-ft)	0.13	50.89	28.69
C & E Loss (ft)	0.07	Cum SA (acres)	0.05	5.35	3.64

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: San Diego River
REACH: Reach 1 RS: 220

INPUT
Description: Corrected Effective Geometry
Station Elevation Data num= 43

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	324	93.8	319.7	217.1	314.8	297.3	308	374.5	304.6
393.2	301.5	420.3	299.8	439.7	295.9	465.5	296.2	484.2	299.8
534.9	296.3	649.9	293.8	675.5	292.1	713.9	292.3	756.2	290
798.1	288.8	821.5	289.8	922.4	289.9	957.7	292.4	1018	292.8

1064.1	291.5	1181.5	291.6	1265.8	291.3	1290.2	294.1	1314.9	297
1364.7	297.1	1483.6	297	1523.5	296	1602.5	296	1626.8	297.7
1646.9	298.6	1670.2	296.6	1761.1	297.9	1817.3	299.2	1831.2	296.4
1867.1	295.6	1937.3	298.2	2007.5	300.4	2031.6	304.8	2049.2	303.8
2077.8	303.4	2093.8	308.1	2142.9	309.4				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	484.2	.065	957.7	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
484.2	957.7	0	0	0 .1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	56	313.25	F
1681.8	2142.9	313.25	F

CROSS SECTION OUTPUT Profile #PF 2

			Left OB	Channel	Right OB
E.G. Elev (ft)	301.99	Element			
Vel Head (ft)	0.33	Wt. n-Val.		0.065	0.045
W.S. Elev (ft)	301.66	Reach Len. (ft)			
Crit W.S. (ft)	296.14	Flow Area (sq ft)		4215.87	4224.02
E.G. Slope (ft/ft)	0.001490	Area (sq ft)		4215.87	4224.02
Q Total (cfs)	38000.00	Flow (cfs)		16793.57	21206.43
Top Width (ft)	970.00	Top Width (ft)		434.80	535.20
Vel Total (ft/s)	4.50	Avg. Vel. (ft/s)		3.98	5.02
Max Chl Dpth (ft)	12.86	Hydr. Depth (ft)		9.70	7.89
Conv. Total (cfs)	984329.0	Conv. (cfs)		435010.5	549318.5
Length Wtd. (ft)		Wetted Per. (ft)		439.63	540.45
Min Ch El (ft)	288.80	Shear (lb/sq ft)		0.89	0.73
Alpha	1.04	Stream Power (lb/ft s)		3.55	3.65
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

SUMMARY OF REACH LENGTHS

River: San Diego River

Reach	River Sta.	Left	Channel	Right
Reach 1	355	360	310	350
Reach 1	345	400	335	125
Reach 1	340	575	454	575
Reach 1	330	620	588	620
Reach 1	322	Lat Struct		
Reach 1	320	260	431	405

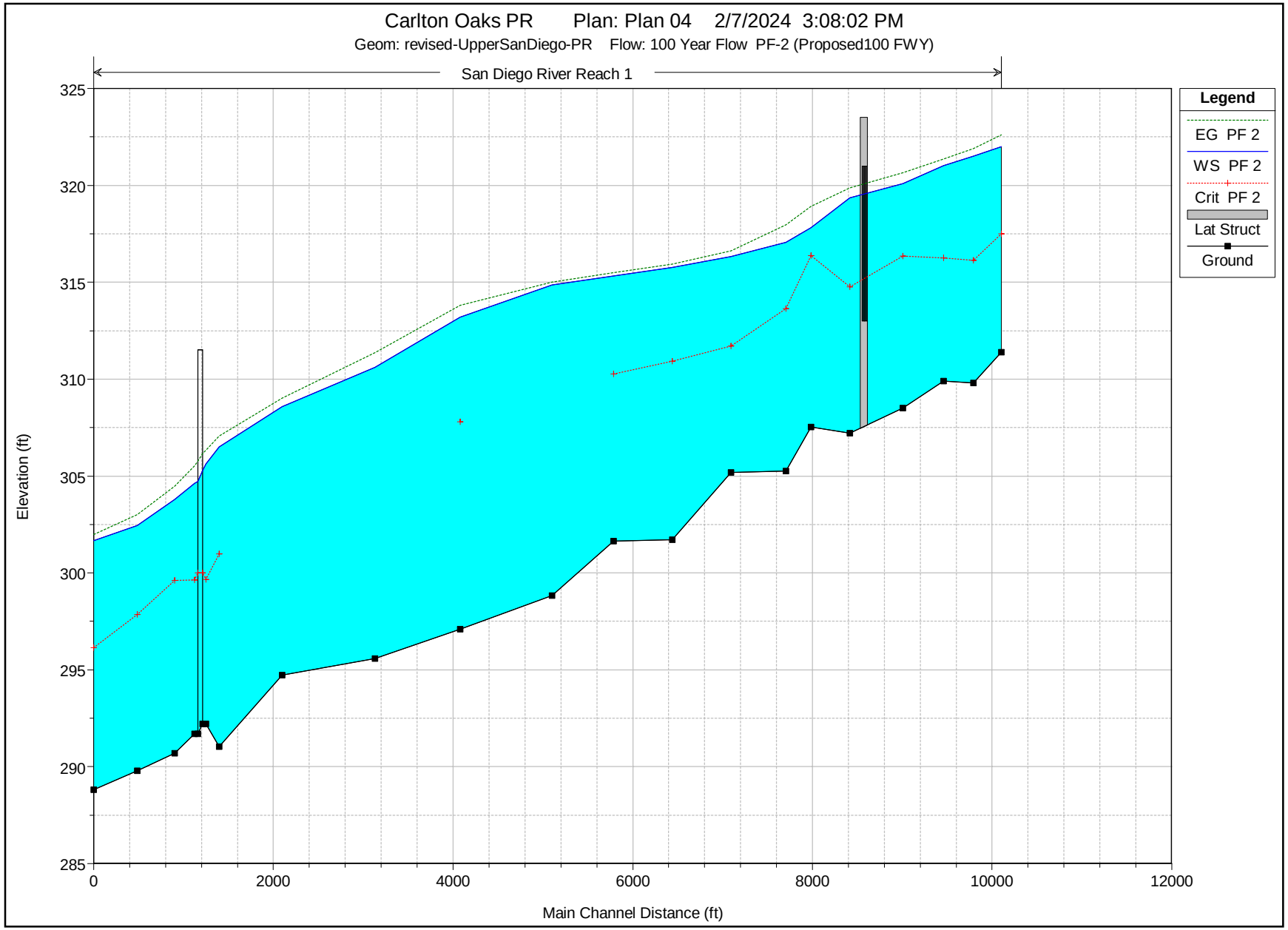
Reach 1	315	380	280	255
Reach 1	310	610	610	640
Reach 1	300	790	654	605
Reach 1	290	695	653	645
Reach 1	285	640	688	660
Reach 1	280	1135	1021	1060
Reach 1	270	1000	951	815
Reach 1	260	1050	1031	1000
Reach 1	250	700	701	615
Reach 1	245	140.2	147.4	160
Reach 1	244	104.8	124.6	145
Reach 1	243	Bridge		
Reach 1	242	165	224	270
Reach 1	239	385	413	515
Reach 1	230	460	487	430
Reach 1	220	0	0	0

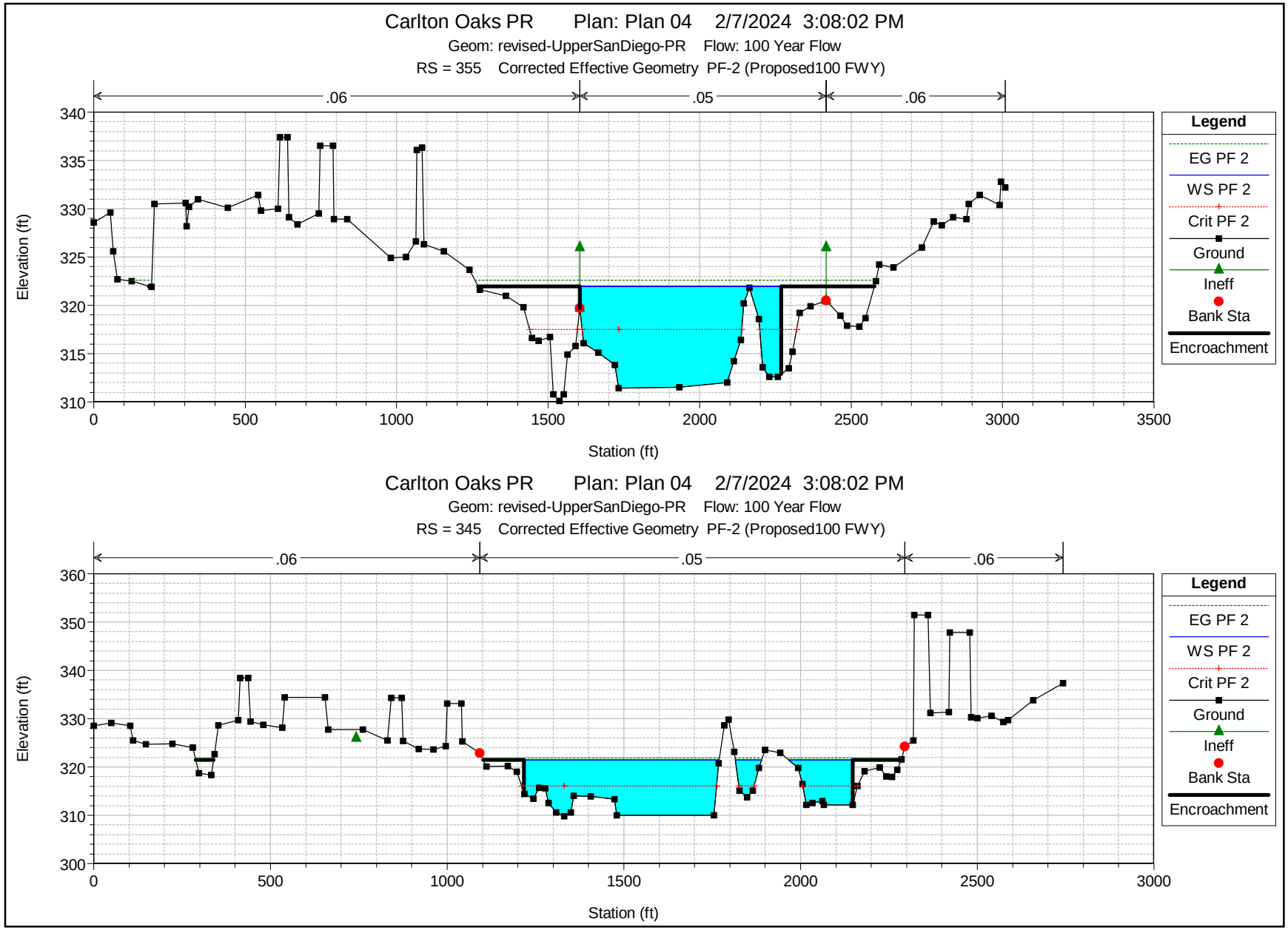
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: San Diego River

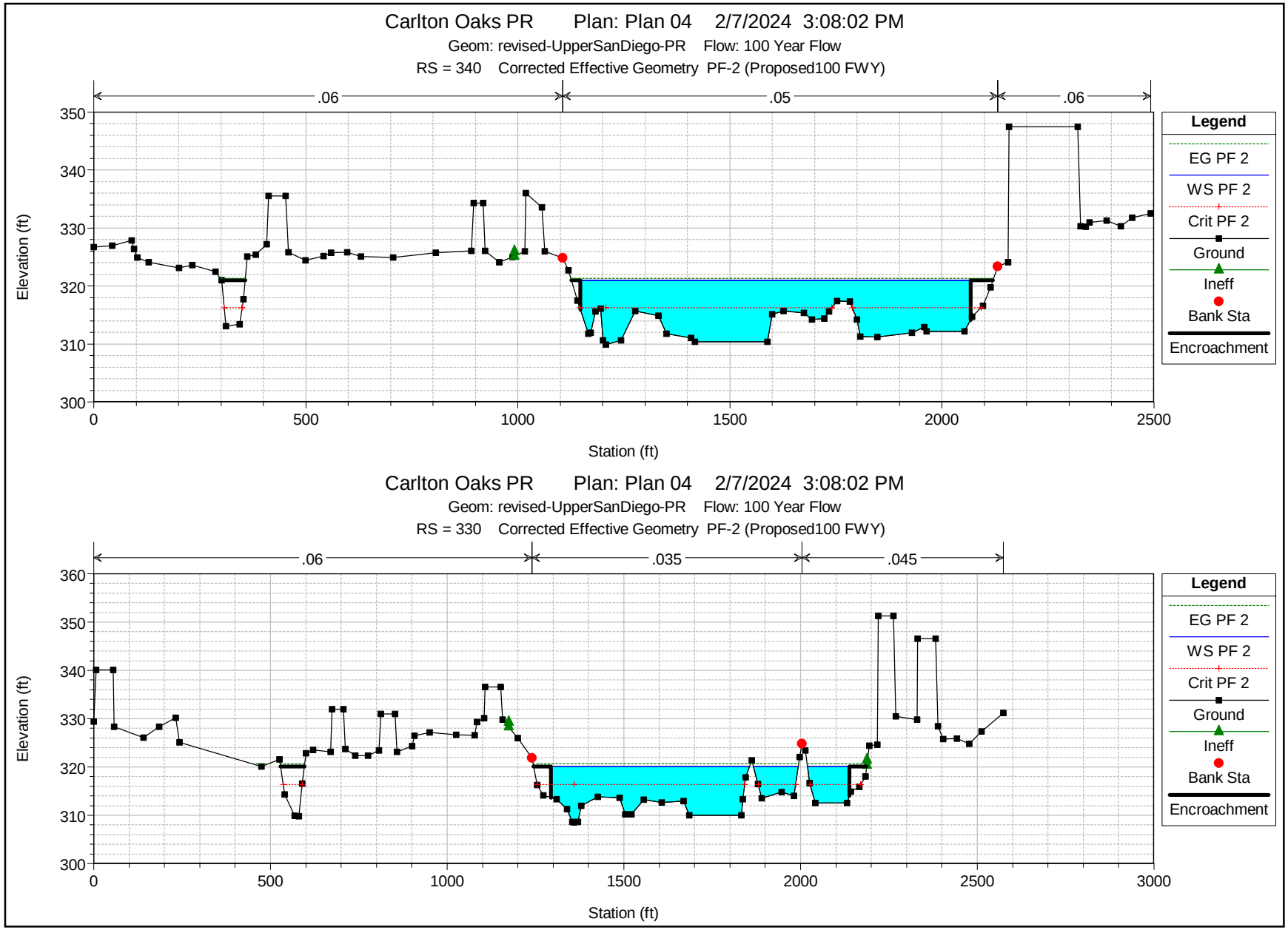
Reach	River Sta.	Contr.	Expan.
Reach 1	355	.1	.3
Reach 1	345	.1	.3
Reach 1	340	.1	.3
Reach 1	330	.1	.3
Reach 1	322	Lat Struct	
Reach 1	320	.1	.3
Reach 1	315	.1	.3
Reach 1	310	.1	.3
Reach 1	300	.1	.3
Reach 1	290	.1	.3
Reach 1	285	.1	.3
Reach 1	280	.1	.3
Reach 1	270	.1	.3
Reach 1	260	.1	.3
Reach 1	250	.1	.3
Reach 1	245	.1	.3
Reach 1	244	.1	.3
Reach 1	243	Bridge	
Reach 1	242	.3	.5
Reach 1	239	.1	.3
Reach 1	230	.1	.3
Reach 1	220	.1	.3

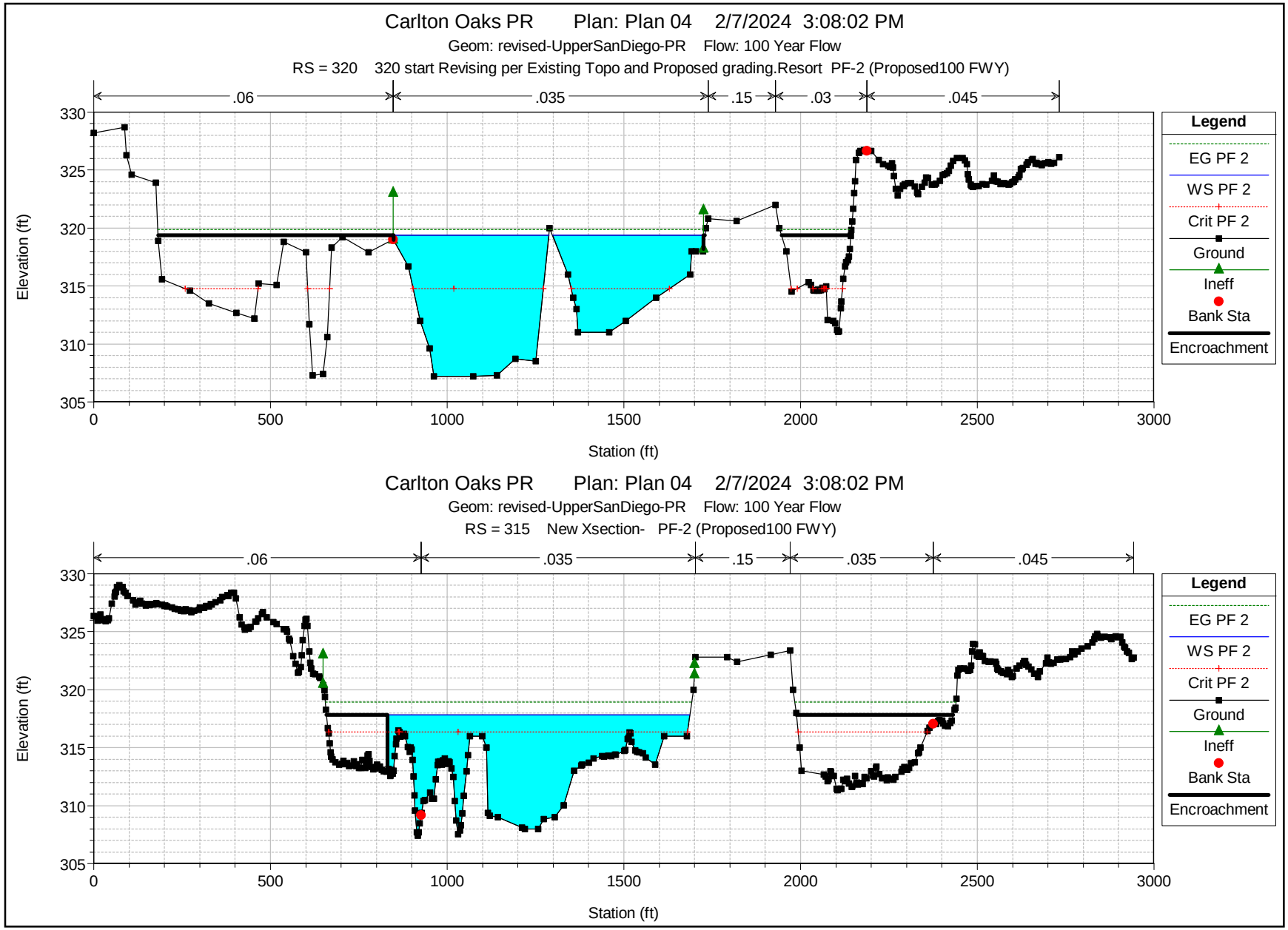
HEC-RAS Plan: NO Lateral flows River: San Diego River Reach: Reach 1 Profile: PF 2

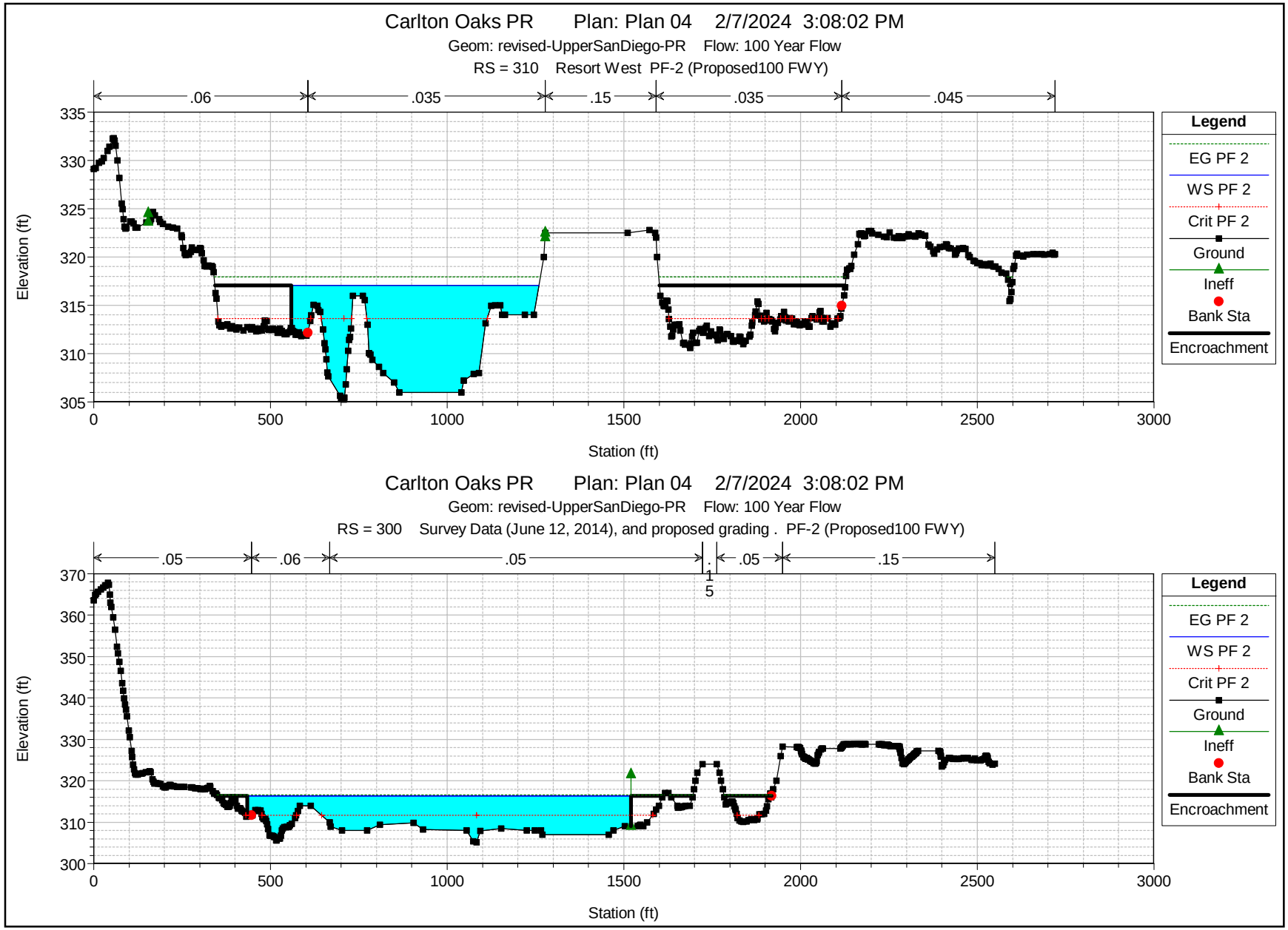
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach 1	220	PF 2	38000.00	288.80	301.66	296.14	301.99	0.001490	3.98	8439.89	970.00	0.23
Reach 1	230	PF 2	38000.00	289.80	302.44	297.86	303.00	0.002947	5.50	6501.38	735.00	0.32
Reach 1	239	PF 2	38000.00	290.70	303.79	299.62	304.46	0.003505	6.21	5825.24	660.00	0.35
Reach 1	242	PF 2	38000.00	291.70	304.62	299.63	305.52	0.004778	7.61	4993.21	468.67	0.41
Reach 1	243		Bridge									
Reach 1	244	PF 2	38000.00	292.20	305.63	299.66	306.33	0.003488	6.75	5628.26	492.11	0.35
Reach 1	245	PF 2	38000.00	291.03	306.51	300.98	307.07	0.007285	6.01	6352.38	605.00	0.33
Reach 1	250	PF 2	38000.00	294.72	308.57		309.02	0.001456	5.46	7118.72	695.00	0.29
Reach 1	260	PF 2	38000.00	295.59	310.61		311.38	0.003665	7.10	5433.80	600.00	0.41
Reach 1	270	PF 2	37000.00	297.09	313.20	307.80	313.82	0.001871	6.30	5884.43	560.00	0.34
Reach 1	280	PF 2	37000.00	298.83	314.85		315.02	0.000756	3.31	11170.51	1281.84	0.20
Reach 1	285	PF 2	37000.00	301.64	315.32	310.28	315.51	0.000658	3.41	10848.39	1435.00	0.22
Reach 1	290	PF 2	37000.00	301.71	315.76	310.94	315.95	0.000687	3.47	10670.26	1474.30	0.23
Reach 1	300	PF 2	37000.00	305.19	316.32	311.71	316.62	0.001516	4.45	8334.54	1086.40	0.28
Reach 1	310	PF 2	37000.00	305.25	317.05	313.63	317.96	0.002446	7.74	4911.11	700.62	0.51
Reach 1	315	PF 2	37000.00	307.53	317.83	316.37	318.92	0.004267	8.53	4554.74	855.97	0.64
Reach 1	320	PF 2	37000.00	307.20	319.36	314.77	319.86	0.001222	5.68	6519.30	866.31	0.36
Reach 1	322		Lat Struct									
Reach 1	330	PF 2	36000.00	308.50	320.09	316.35	320.65	0.001425	6.15	6098.96	807.58	0.39
Reach 1	340	PF 2	36000.00	309.90	321.01	316.26	321.36	0.001557	4.73	7606.01	920.00	0.29
Reach 1	345	PF 2	36000.00	309.80	321.51	316.13	321.90	0.001618	5.01	7180.65	809.96	0.30
Reach 1	355	PF 2	36000.00	311.40	321.98	317.49	322.60	0.002641	6.31	5705.00	664.90	0.38

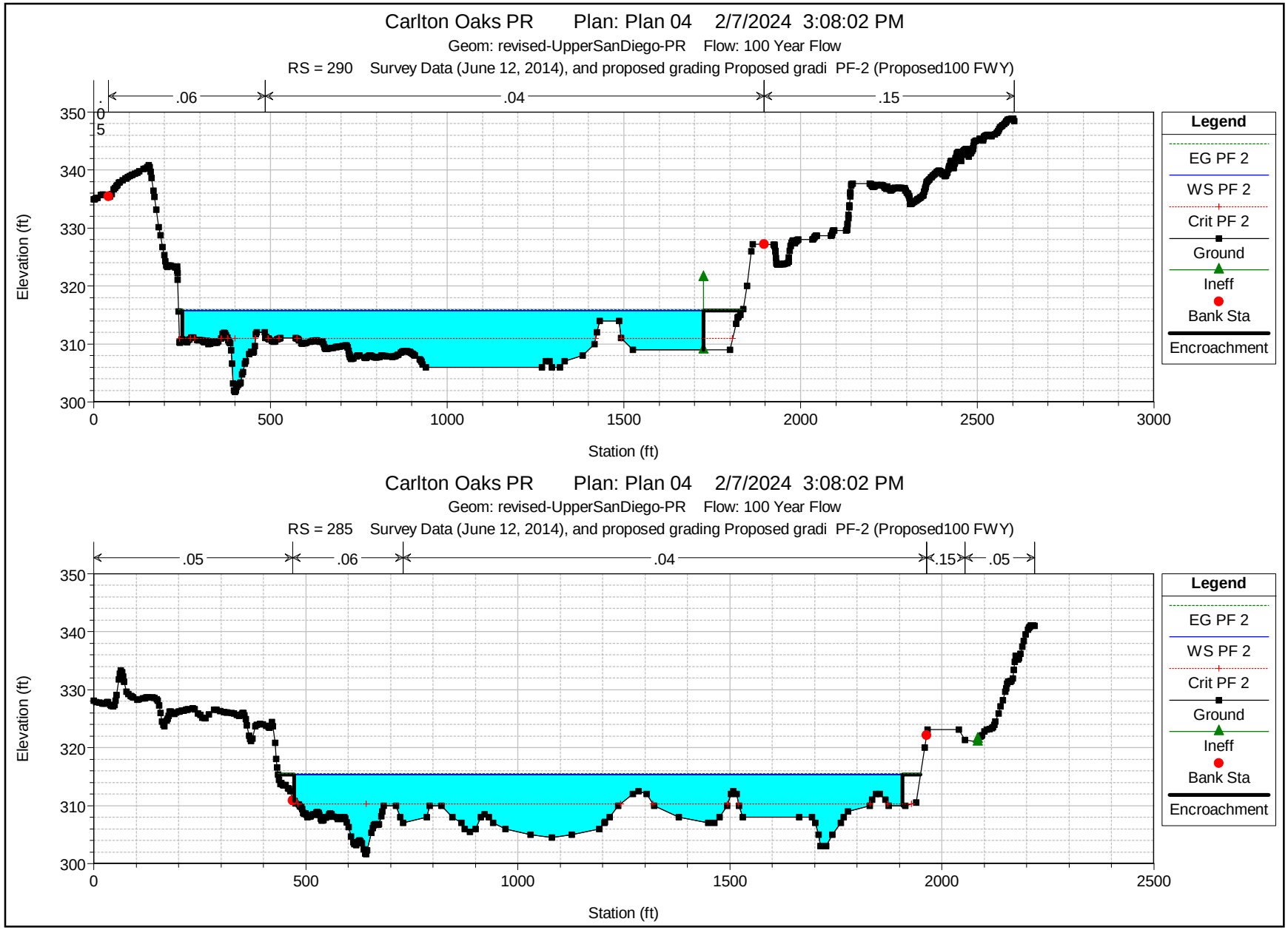

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow PF-2 (Proposed100 FWY)
San Diego River Reach 1
Legend
EG PF 2
WS PF 2
Crit PF 2
Lat Struct
Ground
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
2000
4000
6000
8000
10000
12000
Main Channel Distance (ft)

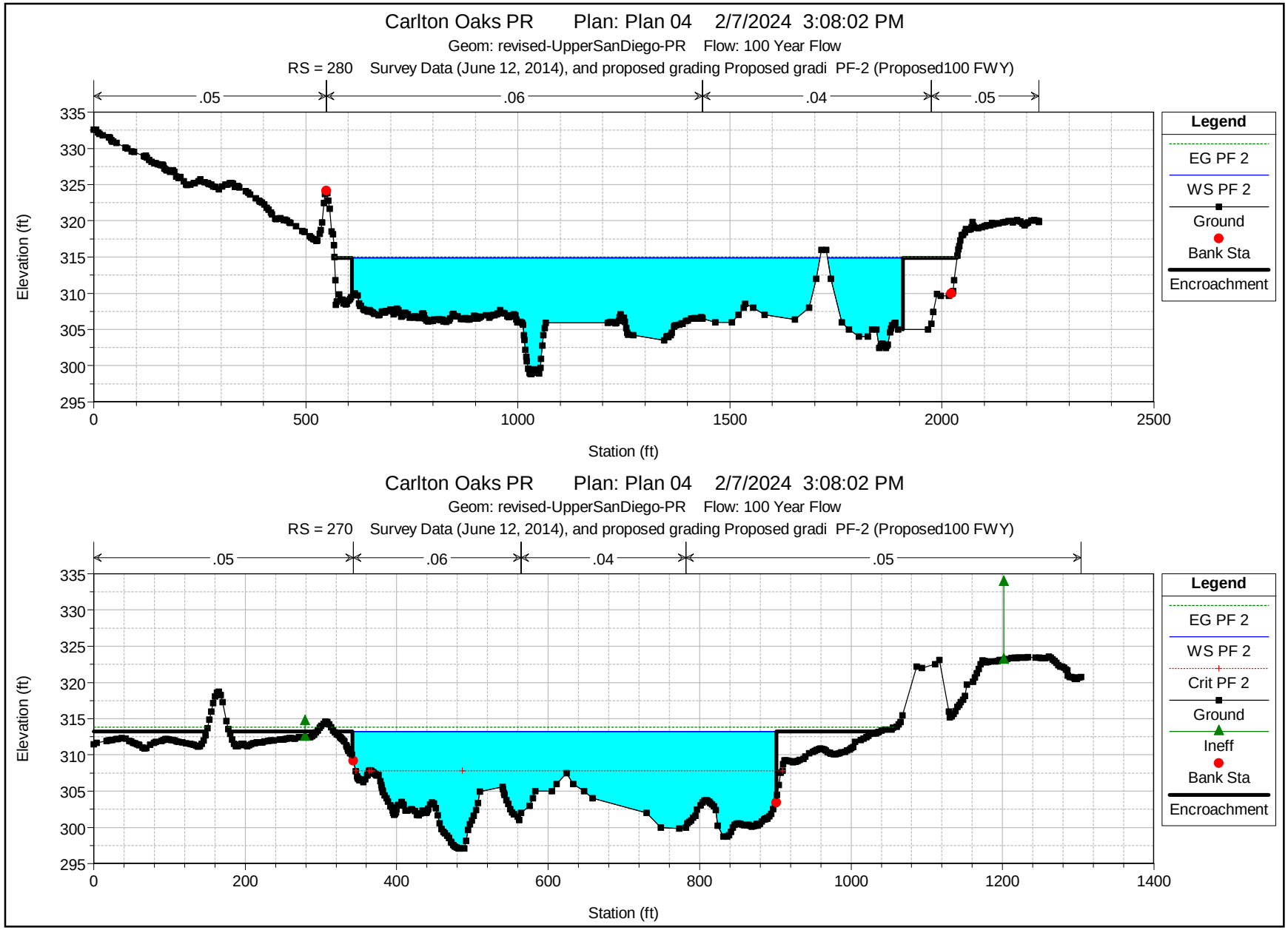

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 355 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.06
.05
.06
Elevation (ft)
340
335
330
325
320
315
310
0
500
1000
1500
2000
2500
3000
3500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 345 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.06
.05
.06
Elevation (ft)
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

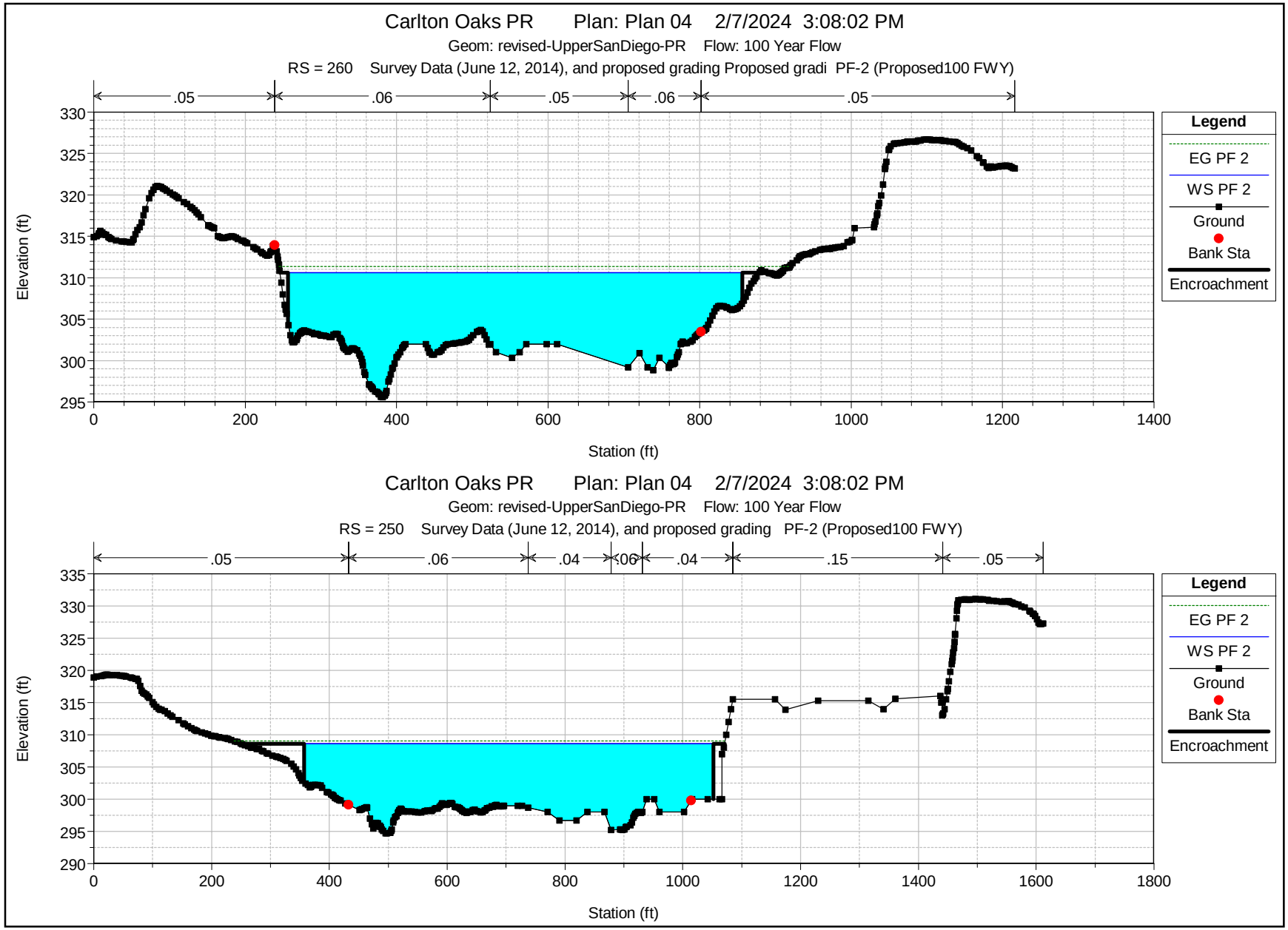

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 340 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.06
.05
.06
Elevation (ft)
350
340
330
320
310
300
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 330 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.06
.035
.045
Elevation (ft)
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

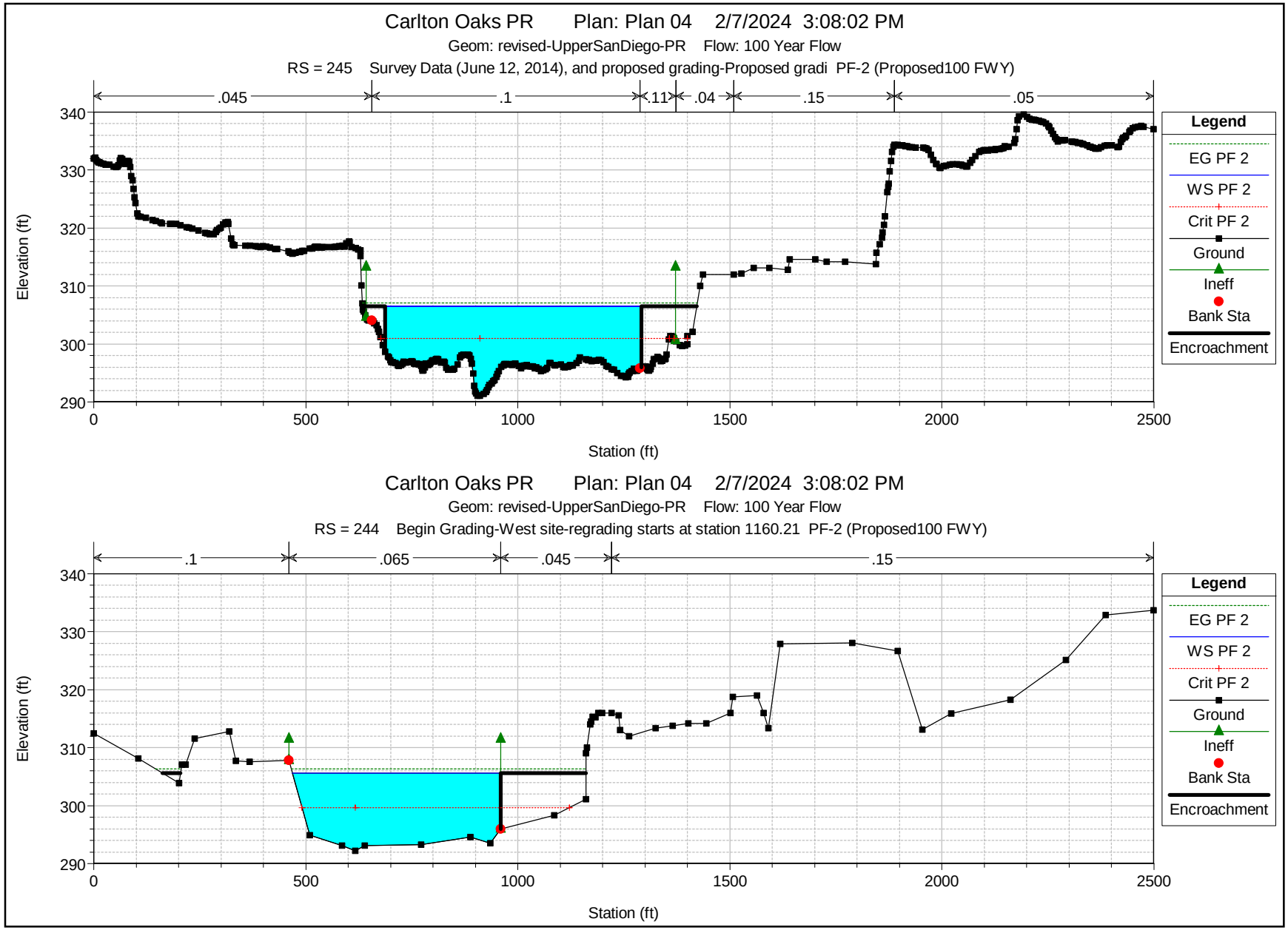

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 320 320 start Revising per Existing Topo and Proposed grading.Resort PF-2 (Proposed100 FWY)
.06
.035
.15
.03
.045
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 315 New Xsection- PF-2 (Proposed100 FWY)
.06
.035
.15
.035
.045
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

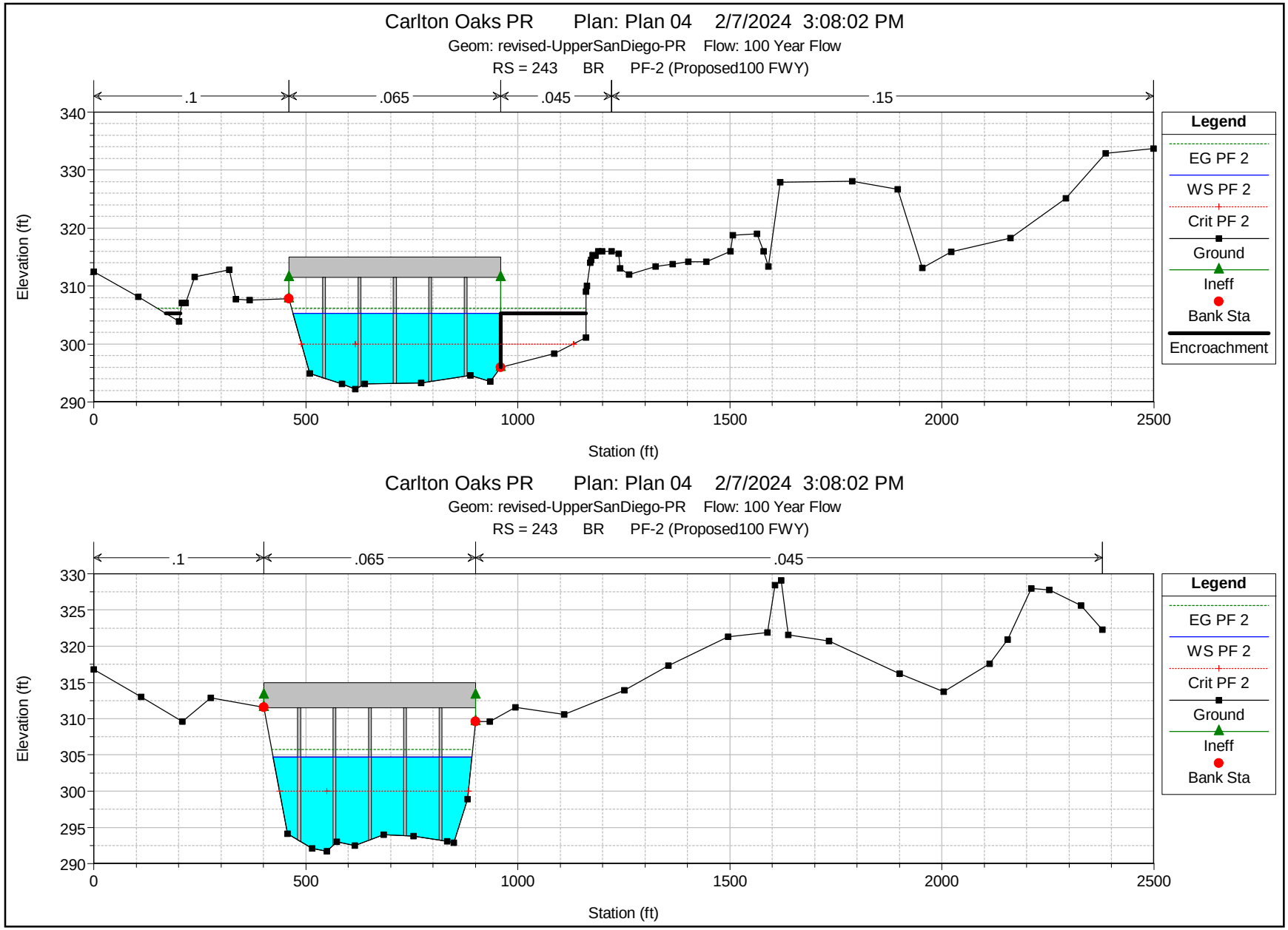

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 310 Resort West PF-2 (Proposed100 FWY)
.06
.035
.15
.035
.045
Elevation (ft)
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 300 Survey Data (June 12, 2014), and proposed grading . PF-2 (Proposed100 FWY)
.05
.06
.05
.15
.05
.15
Elevation (ft)
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

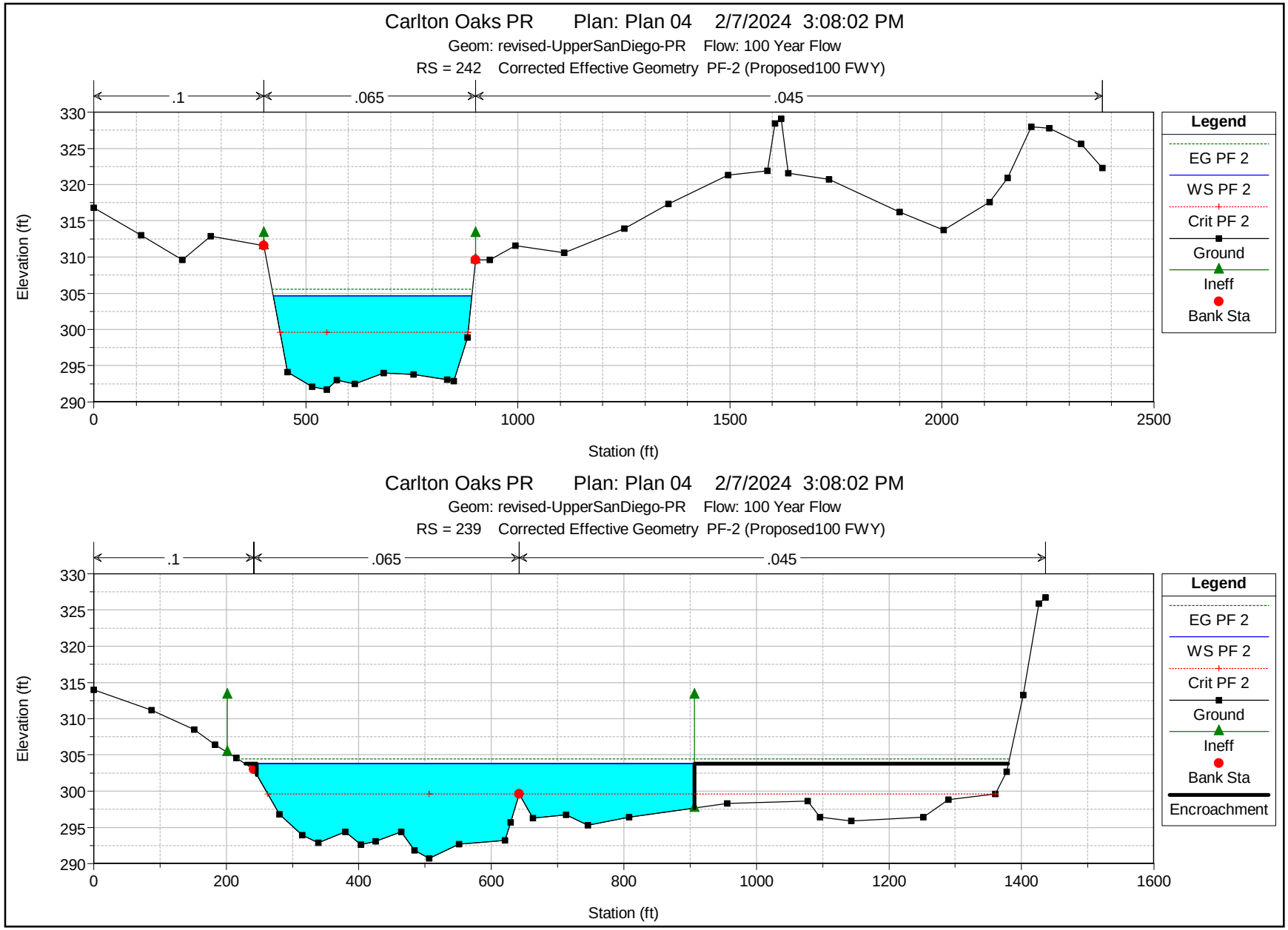

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 290 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-2 (Proposed100 FWY)
.06
.04
.15
Elevation (ft)
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 285 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-2 (Proposed100 FWY)
.05
.06
.04
.15
.05
Elevation (ft)
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment


Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 280 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-2 (Proposed100 FWY)
.05
.06
.04
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Ground
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 270 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-2 (Proposed100 FWY)
.05
.06
.04
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
0
200
400
600
800
1000
1200
1400
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment


Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 260 Survey Data (June 12, 2014), and proposed grading Proposed gradi PF-2 (Proposed100 FWY)
.05
.06
.05
.06
.05
Elevation (ft)
330
325
320
315
310
305
300
295
0
200
400
600
800
1000
1200
1400
Station (ft)
Legend
EG PF 2
WS PF 2
Ground
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 250 Survey Data (June 12, 2014), and proposed grading PF-2 (Proposed100 FWY)
.05
.06
.04
.06
.04
.15
.05
Elevation (ft)
335
330
325
320
315
310
305
300
295
290
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)
Legend
EG PF 2
WS PF 2
Ground
Bank Sta
Encroachment


Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 245 Survey Data (June 12, 2014), and proposed grading-Proposed gradi PF-2 (Proposed100 FWY)
.045
.1
.11
.04
.15
.05
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 244 Begin Grading-West site-regrading starts at station 1160.21 PF-2 (Proposed100 FWY)
.1
.065
.045
.15
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment


Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 243 BR PF-2 (Proposed100 FWY)
.1
.065
.045
.15
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 243 BR PF-2 (Proposed100 FWY)
.1
.065
.045
Elevation (ft)
330
325
320
315
310
305
300
295
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta


Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 242 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.1
.065
.045
Elevation (ft)
330
325
320
315
310
305
300
295
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 239 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.1
.065
.045
Elevation (ft)
330
325
320
315
310
305
300
295
290
0
200
400
600
800
1000
1200
1400
1600
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

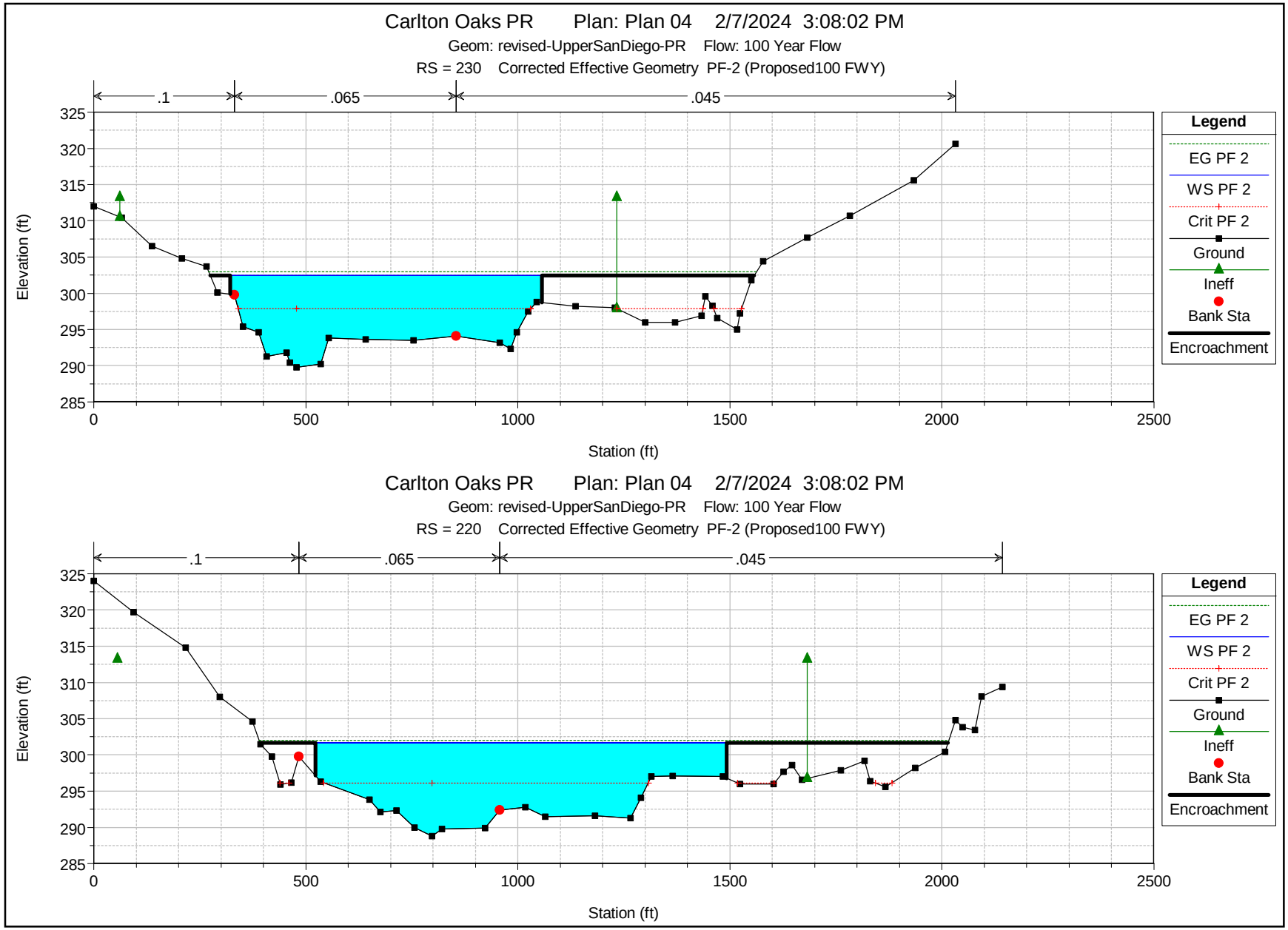

Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 230 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.1
.065
.045
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment
Carlton Oaks PR Plan: Plan 04 2/7/2024 3:08:02 PM
Geom: revised-UpperSanDiego-PR Flow: 100 Year Flow
RS = 220 Corrected Effective Geometry PF-2 (Proposed100 FWY)
.1
.065
.045
Elevation (ft)
325
320
315
310
305
300
295
290
285
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Ineff
Bank Sta
Encroachment

EXHIBIT G
SYCAMORE CREEK MODEL

EXISTING CONDITIONS
SYCAMORE CREEK MODEL

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Sycamore Creek
Project File : SycamoreCreek.prj
Run Date and Time: 12/19/2023 3:15:46 PM

Project in English units

PLAN DATA

Plan Title: Plan 08
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.p08

Geometry Title: SYC-EX-extend-(100-year)
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.g06

Flow Title   : SY-EX-Flow
Flow File   : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.f05

Plan Summary Information:
Number of: Cross Sections =   7   Multiple Openings =   0
            Culverts   =   0   Inline Structures =   0
            Bridges   =   1   Lateral Structures =   0

Computational Information
    Water surface calculation tolerance = 0.01
    Critical depth calculation tolerance = 0.01
    Maximum number of iterations   = 20
    Maximum difference tolerance   = 0.3
    Flow tolerance factor   = 0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: SY-EX-Flow
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.f05

Flow Data (cfs)

River	Reach	RS	Scenario 1
Sycamore Creek	Reach	500	13407
Sycamore Creek	Reach	70	25000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Sycamore Creek	Reach	Scenario 1		Known WS = 319.3

GEOMETRY DATA

Geometry Title: SYC-EX-extend-(100-year)
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.g06

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 500

INPUT
Description: 0.023 for the Santa recreational Lake
0.035 AC road+ short to
medium grass
0.09 Creek medium t odense brush
0.045 houses+
landscape
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	346	.48	345.42	2.61	344	2.66	343.94	5.57	342
9.1	340.54	10.94	340	12.03	339.37	15.95	338	16.87	337.09
19.22	336	37.85	334.58	44.1	334.36	91.44	334.1	91.71	334.1

92	334.1	103.16	334.09	104.62	334.09	105.32	334.08	106.24	334.08
110.23	334	114.92	334	117	333.976	177.13	333.27	185.06	333.3
190.91	333.29	250.26	334	260.57	334	265.06	334.09	265.59	334.1
301.99	334.1	304.29	334.05	306.99	334	308.9	332.43	309.47	332
311.94	331.29	316.88	330	317.16	329.75	324.23	329.29	326.75	328
372.87	328	378.15	326.23	378.76	326	379.37	325.68	380.21	325.39
386.6	324	391.32	323.22	395.69	322.75	399.05	322	1057.41	322
1059.55	323.35	1061.33	324	1088.34	324	1155.18	324.93	1174	324.02
1174.06	324.02	1174.41	324	1182.58	322.46	1185.46	322	1187.3	321.2
1190.19	320.23	1191.3	320	1191.98	319.72	1196.05	318.7	1197.6	318.55
1197.89	318.45	1198.77	318	1205.35	318	1207.04	318	1215.51	318.47
1248.19	320	1271.68	320	1281.23	320	1308.2	320	1337.97	320
1360.39	320	1365.31	321.25	1375.35	324.28	1375.39	324.29	1390.4	328.82
1391.91	330	1417.68	338.79	1419.76	339.3	1423	340	1434.66	340
1472.4	340.51	1480.96	340	1489.05	339.24	1489.71	339.26	1536.35	339.46
1546.35	339.59	1549.55	340	1551	340.64	1554.92	342	1559.9	343.46
1562.26	344	1571.8	344.47	1578.84	344.71	1586.79	344.95	1595.93	345.12
1602.63	345.18	1623.79	346						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	326.75	.023	1057.41	.035	1174.06	.09	1360.39	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1174	1375.35	484.65	511.2	513.2	.1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	327.42	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.13	Wt. n-Val.	0.024	0.087	0.045
W.S. Elev (ft)	327.29	Reach Len. (ft)	484.65	511.20	513.20
Crit W.S. (ft)		Flow Area (sq ft)	3903.05	1461.17	15.02
E.G. Slope (ft/ft)	0.000271	Area (sq ft)	3903.05	1461.17	15.02
Q Total (cfs)	13407.00	Flow (cfs)	11863.62	1532.96	10.42
Top Width (ft)	1010.34	Top Width (ft)	799.01	201.35	9.98
Vel Total (ft/s)	2.49	Avg. Vel. (ft/s)	3.04	1.05	0.69
Max Chl Dpth (ft)	9.29	Hydr. Depth (ft)	4.88	7.26	1.51
Conv. Total (cfs)	814221.6	Conv. (cfs)	720490.4	93098.2	633.0
Length Wtd. (ft)	491.41	Wetted Per. (ft)	800.21	202.85	10.42
Min Ch El (ft)	318.00	Shear (lb/sq ft)	0.08	0.12	0.02
Alpha	1.34	Stream Power (lb/ft s)	0.25	0.13	0.02
Frctn Loss (ft)	0.17	Cum Volume (acre-ft)	251.09	144.19	22.45
C & E Loss (ft)	0.00	Cum SA (acres)	56.06	17.02	8.93

Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 450

INPUT
Description: 0.023 for the Santa recreational Lake
0.035 AC road+ short to
medium grass
0.09 Creek medium t odense brush
0.045 houses+
landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	344	17.26	344	20.59	343.57	23.56	343.47	37.59	342
41.63	340.86	43.32	340	45.06	338.83	49.52	338	108.46	330
113.23	329.57	121.31	328.71	131.1	328	198.19	328	215.69	329
217.89	329.29	249.45	330	252.84	330.01	257.89	328.27	258.41	328
259.21	327.72	263.54	326	267.83	326	271.35	324.26	273.16	324.46
291.29	326	447.75	326	453.6	325.88	461.37	326	464.52	326
479	326.38	494.64	326.57	508.17	326.54	533.29	326.23	538.75	326
548.32	326	583.38	324.55	604.58	324	612.4	323.61	634.1	322.7
646.44	322.3	649.79	322	835.68	322	859.71	322.96	865.16	322
893.59	322	906.95	324	919.69	324	933.72	322.74	946.86	322
1024.16	320.67	1052.36	320.27	1052.39	320.27	1069.11	320	1082.55	320
1106.56	320	1112.67	318.77	1115.34	318	1118.62	317.28	1125.27	316
1137.06	314	1149.25	314	1153.58	314.04	1154.62	314.1	1163.46	314.3
1169.47	314.53	1184.76	315.59	1193.79	315.87	1196.5	316	1228.7	316
1289.08	318	1294.75	319.64	1294.78	319.65	1296.82	320.34	1297.25	320.7
1302.63	322.24	1310.3	324.11	1330.91	330	1418.17	330	1425.14	329.24
1475.4	329.56	1487.5	330	1512.95	331.13	1538.06	332	1549.66	332
1550.33	332.31	1553.11	334	1555.85	334.9	1563.92	336	1565.63	337.16
1570.84	338	1572.31	338.52	1580.22	340	1584.67	341.39	1586.5	342
1591.39	343.46	1592.65	344	1595.12	345.34	1599.14	345.8	1601.31	346
1604.01	346								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	538.75	.023	919.69	.035	1118.62	.09	1296.82	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
1052.39 1294.75 163.58 199.56 223.24 .1 .3
Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
462	627	330	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	327.25	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.13	Wt. n-Val.	0.027	0.072	0.051	
W.S. Elev (ft)	327.11	Reach Len. (ft)	163.58	199.56	223.24	
Crit W.S. (ft)	322.39	Flow Area (sq ft)	2424.04	2450.89	93.96	
E.G. Slope (ft/ft)	0.000461	Area (sq ft)	2698.46	2450.89	93.96	
Q Total (cfs)	13407.00	Flow (cfs)	8132.87	5134.25	139.88	
Top Width (ft)	1060.08	Top Width (ft)	791.66	242.36	26.06	
Vel Total (ft/s)	2.70	Avg. Vel. (ft/s)	3.36	2.09	1.49	

Max Chl Dpth (ft)	13.11	Hydr. Depth (ft)	3.87	10.11	3.61
Conv. Total (cfs)	624372.2	Conv. (cfs)	378752.8	239105.1	6514.4
Length Wtd. (ft)	184.31	Wetted Per. (ft)	627.72	243.28	27.17
Min Ch El (ft)	314.00	Shear (lb/sq ft)	0.11	0.29	0.10
Alpha	1.17	Stream Power (lb/ft s)	0.37	0.61	0.15
Frctn Loss (ft)	0.15	Cum Volume (acre-ft)	214.37	121.24	21.80
C & E Loss (ft)	0.00	Cum SA (acres)	47.21	14.42	8.72

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 400

INPUT
Description: 0.09 Creek medium t odense brush
0.045 houses (buildings)+
parking area+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	338	.21	338	1.12	337.74	8.25	336	11.02	334.07
11.32	333.91	16.15	332	22.08	330	47.54	328.37	67.02	328.46
77.13	328.55	115.32	328	138.57	328	145.26	327.01	147.88	326.66
153.6	326.29	155.07	326.24	156.95	326	184.97	326	189.2	326.1
211.91	326.98	235.19	327.84	238.28	328	275.37	328	275.57	327.82
281.09	326	284.67	324.66	286.51	324	294.81	324	308.89	324.47
419.7	324.68	457.3	324.67	462.04	324.73	498.49	325.01	504.39	325.01
515.48	325.09	520.86	325.08	536.12	325.18	545.12	325.21	594.18	325.04
602.87	324.99	633.01	324.87	644.44	324.85	716.39	324.46	727.52	324.38
768.74	324	791.41	324	807.68	323.76	838.96	322.8	845.41	322.6
868.9	322	881.07	322	892.7	321.57	902.92	321.34	948.37	320.84
960.48	320.65	966.06	320.56	988.85	320.21	993.5	320.19	1011.36	320
1041.42	320	1065.21	319.4	1065.28	319.4	1083.68	318.94	1123.34	318
1124.7	317.76	1132.52	316	1135.34	314.39	1136.69	314	1170.93	314
1304.97	316	1307.64	316.64	1308.71	317.05	1314.11	320	1314.97	320.19
1315	320.2	1319.26	321.16	1322.52	322	1329.49	324.1	1332.61	326
1347.79	327	1352.19	327.04	1357.77	326.99	1431.55	326.53	1434.01	326.49
1449.92	326	1491.44	326	1513.13	326.5	1574.68	327.31	1585.54	327.42
1587.93	327.48	1593.01	327.52	1599.21	327.61	1608.14	328	1610.54	329.25
1612.64	330	1618.12	330.65	1633.37	332	1635.41	332.5	1639.14	333.24
1639.65	334								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.045	1041.42	.09	1332.61	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

1065.28 1315 290.22 278.09 271.36 .1 .3

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	842	321	F
842	1062	330	F
1573	1639.65	321	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	327.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.046	0.090	0.074
W.S. Elev (ft)	326.93	Reach Len. (ft)	290.22	278.09	271.36
Crit W.S. (ft)	320.39	Flow Area (sq ft)	1393.15	2750.81	167.77
E.G. Slope (ft/ft)	0.001884	Area (sq ft)	2725.75	2750.81	167.77
Q Total (cfs)	13407.00	Flow (cfs)	3469.91	9716.22	220.87
Top Width (ft)	1310.37	Top Width (ft)	851.61	249.72	209.04
Vel Total (ft/s)	3.11	Avg. Vel. (ft/s)	2.49	3.53	1.32
Max Chl Dpth (ft)	12.93	Hydr. Depth (ft)	2.21	11.02	0.80
Conv. Total (cfs)	308889.0	Conv. (cfs)	79944.7	223855.8	5088.6
Length Wtd. (ft)	283.59	Wetted Per. (ft)	632.21	251.38	210.14
Min Ch El (ft)	314.00	Shear (lb/sq ft)	0.26	1.29	0.09
Alpha	1.10	Stream Power (lb/ft s)	0.65	4.55	0.12
Frctn Loss (ft)	0.22	Cum Volume (acre-ft)	204.18	109.32	21.13
C & E Loss (ft)	0.03	Cum SA (acres)	44.12	13.29	8.12

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 300

INPUT
Description: 0.035 AC road+ short to medium grass
0.08 Creek medium odense
brush
0.045 houses+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.9	2.71	326.86	4.84	326.81	7.05	326.76	13.21	327.6
17.53	328.05	24.55	327.96	32.42	328.47	46.58	328.62	93.74	326.9
95.92	326.8	97.95	326.67	101.7	326.36	103.87	326.73	109.94	326.8
114.01	326	164.4	326	198.56	325.51	204.46	325.49	234.71	325.45
244.93	325.43	247.08	325.43	346.79	324	347.98	324	699.16	324
790.88	322.16	792.13	322.16	813.92	322.1	814.54	322.1	814.85	322.1
844.83	322	1074.15	322	1203.28	320.26	1220.36	320	1257.95	320
1258.05	320	1270.88	320	1309.73	319.63	1316.14	318	1316.31	317.94

1320.69	316	1323.26	314.42	1323.92	314	1387.93	314	1411.01	313.84	
1415.96	313.85	1421.73	314.95	1430.1	314	1454.02	314	1457.01	314	
1472.57	314	1478.77	316.81	1478.87	316.86	1479.02	316.93	1486.47	320	
1492.6	321.89	1492.87	322	1493.51	322.27	1497.83	324	1516.18	324	
1539.49	324	1557.89	324	1576.09	324	1584.94	323.84	1585.17	323.84	
1592.19	324	1605.09	324	1607.37	324	1608.02	324	1611.34	324	
1649.18	324	1678.88	324.11	1683.07	324	1684.65	324	1684.79	324	
1687.31	324	1693.67	324	1701.42	324	1704.28	324	1801.5	324	
1804.71	324	1805.6	324.02	1824.42	324.39	1826.39	324.46	1866.12	325.48	
1884.04	325.83	1886.97	326	1903.67	327.44	1908.78	328	1911.3	329.35	
1913.18	330	1913.9	330.37	1918.57	332	1923.41	333.53	1925.36	334	
1926.23	334.45	1929.81	336	1932.53	336.76	1940.9	338	1942.33	338.7	
1951.53	340									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1316.14	.08	1497.83	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1323.26	1472.57	95.85	94.82	94.72	.3	.5

Ineffective Flow num= 5

Sta L	Sta R	Elev	Permanent
0	495	321	F
495	626	330	F
626	1309.17	321	F
1495.61	1538	321	F
1538	1951.53	330	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	326.84	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.07	Wt. n-Val.	0.036	0.080	0.067	
W.S. Elev (ft)	326.77	Reach Len. (ft)	25.00	25.00	25.00	
Crit W.S. (ft)	321.01	Flow Area (sq ft)	4225.36	1903.33	301.96	
E.G. Slope (ft/ft)	0.000422	Area (sq ft)	4588.63	1903.33	1194.07	
Q Total (cfs)	13407.00	Flow (cfs)	9031.91	3959.54	415.55	
Top Width (ft)	1797.79	Top Width (ft)	1225.12	149.31	423.37	
Vel Total (ft/s)	2.08	Avg. Vel. (ft/s)	2.14	2.08	1.38	
Max Chl Dpth (ft)	12.93	Hydr. Depth (ft)	3.86	12.75	4.62	
Conv. Total (cfs)	652400.6	Conv. (cfs)	439503.4	192676.0	20221.2	
Length Wtd. (ft)	25.00	Wetted Per. (ft)	1095.36	149.59	67.37	
Min Ch El (ft)	313.84	Shear (lb/sq ft)	0.10	0.34	0.12	
Alpha	1.02	Stream Power (lb/ft s)	0.22	0.70	0.16	
Frctn Loss (ft)	0.01	Cum Volume (acre-ft)	179.82	94.47	16.89	
C & E Loss (ft)	0.01	Cum SA (acres)	37.20	12.02	6.15	

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

BRIDGE

RIVER: Sycamore Creek
REACH: Reach RS: 250

INPUT
Description:
Distance from Upstream XS = 25
Deck/Roadway Width = 65
Weir Coefficient = 3
Upstream Deck/Roadway Coordinates
num= 7

Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord	Sta	Hi Cord	Lo Cord
1038	321.5	318.5	1270.8	321.3	318.3	1316.1	321.3	318.3
1415	321.6	318.6	1444	321.7	318.7	1497.8	322	319
1576	322	319						

Upstream Bridge Cross Section Data
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.9	2.71	326.86	4.84	326.81	7.05	326.76	13.21	327.6
17.53	328.05	24.55	327.96	32.42	328.47	46.58	328.62	93.74	326.9
95.92	326.8	97.95	326.67	101.7	326.36	103.87	326.73	109.94	326.8
114.01	326	164.4	326	198.56	325.51	204.46	325.49	234.71	325.45
244.93	325.43	247.08	325.43	346.79	324	347.98	324	699.16	324
790.88	322.16	792.13	322.16	813.92	322.1	814.54	322.1	814.85	322.1
844.83	322	1074.15	322	1203.28	320.26	1220.36	320	1257.95	320
1258.05	320	1270.88	320	1309.73	319.63	1316.14	318	1316.31	317.94
1320.69	316	1323.26	314.42	1323.92	314	1387.93	314	1411.01	313.84
1415.96	313.85	1421.73	314.95	1430.1	314	1454.02	314	1457.01	314
1472.57	314	1478.77	316.81	1478.87	316.86	1479.02	316.93	1486.47	320
1492.6	321.89	1492.87	322	1493.51	322.27	1497.83	324	1516.18	324
1539.49	324	1557.89	324	1576.09	324	1584.94	323.84	1585.17	323.84
1592.19	324	1605.09	324	1607.37	324	1608.02	324	1611.34	324
1649.18	324	1678.88	324.11	1683.07	324	1684.65	324	1684.79	324
1687.31	324	1693.67	324	1701.42	324	1704.28	324	1801.5	324
1804.71	324	1805.6	324.02	1824.42	324.39	1826.39	324.46	1866.12	325.48
1884.04	325.83	1886.97	326	1903.67	327.44	1908.78	328	1911.3	329.35
1913.18	330	1913.9	330.37	1918.57	332	1923.41	333.53	1925.36	334
1926.23	334.45	1929.81	336	1932.53	336.76	1940.9	338	1942.33	338.7
1951.53	340								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1316.14	.08	1497.83	.045

Bank Sta: Left	Right	Coeff Contr.	Expan.
1323.26	1472.57	.3	.5

Ineffective Flow num= 5

Sta L	Sta R	Elev	Permanent
0	495	321	F

```
     495     626     330       F
     626 1309.17     321       F
 1495.61    1538     321       F
    1538 1951.53     330       F

Downstream  Deck/Roadway Coordinates
    num=       7
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
     808     323     320    1353     321     318  1464.3   321.5   318.5
    1483   321.6   318.6  1500.8   321.6   318.6    1560   321.8   318.8
  1582.6     322     319

Downstream Bridge Cross Section Data
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0  327.46   28.23  326.41   44.34     326  299.22     326  399.15     324
  399.19     324  399.22     324   402.1     324  405.23     324  816.63     324
  843.92  322.38  851.28     322  852.31     322  882.13     322  885.37     322
  905.31     322  915.28     322  923.84     322  925.93     322  929.19     322
  937.09     322  969.52     322  972.34     322  995.39     322 1010.89     322
  1035.6     322 1052.64  321.42 1090.99  321.25 1103.71  321.21 1107.61  321.26
 1141.78  321.26 1149.32   321.2  1224.8  320.02    1226     320 1227.14     320
 1300.05     320 1300.14     320 1328.99     320 1353.28     320 1353.62     320
 1353.66  319.99 1359.29     318 1359.35  317.98 1359.38  317.97 1363.29  315.97
 1368.06     314 1462.45  312.04  1464.3  312.03 1464.38  312.03 1466.48  312.43
 1466.85  312.51 1502.13  312.53 1502.41   312.6 1506.34  314.57 1509.85  316.47
 1512.47  317.67  1512.5  317.68 1513.61   318.2 1517.04  320.09 1529.08     322
 1534.27     322 1535.44     322 1554.42     322  1558.1     322 1560.62     322
 1563.47     322 1565.63     322 1626.77     322 1630.35     322 1632.59     322
 1679.24     322 1679.48     322 1681.04  322.07 1681.35  322.08 1682.74     322
 1701.61  322.31 1799.76     324 1811.41     324 1832.13     324 1859.32     324
 1859.48     324 1867.76     324 1868.41     324 1868.68     324 1899.87     324
 1899.92     324 1900.25     324 1927.85     324 1931.37  324.11 1933.92  324.24
 1963.05     326 1970.76     326 1983.01  326.46 1985.11  326.53 2008.56  327.79
 2011.05     328 2012.61     328 2039.87  329.62 2040.73  329.66 2045.52     330
 2045.53     330

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045 1353.28     .08 1560.62    .045

Bank Sta: Left   Right    Coeff Contr.   Expan.
       1359.29 1512.47             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 1330.23     321       F
 1527.39 2045.53     321       F

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =     321
```

```
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Piers =  2

Pier Data
Pier Station     Upstream= 1398.47    Downstream=  1463.8
Upstream     num=       2
    Width   Elev    Width   Elev
       1     314       1     320
Downstream     num=       2
    Width   Elev    Width   Elev
       1     314       1     320

Pier Data
Pier Station     Upstream=  1446.3    Downstream=  1416.1
Upstream     num=       2
    Width   Elev    Width   Elev
       1     314       1     320
Downstream     num=       2
    Width   Elev    Width   Elev
       1     312       1     320

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #Scenario 1

  E.G. US. (ft)               326.84    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               326.77    E.G. Elev (ft)              326.81        325.28
  Q Total (cfs)             13407.00    W.S. Elev (ft)              326.70        320.71
  Q Bridge (cfs)              616.74    Crit W.S. (ft)              322.82        318.35
  Q Weir (cfs)                          Max Chl Dpth (ft)            12.86          8.68
  Weir Sta Lft (ft)                     Vel Total (ft/s)             2.39         17.13
  Weir Sta Rgt (ft)                     Flow Area (sq ft)          5599.20        782.67
  Weir Submerg                          Froude # Chl                 0.13          1.03
  Weir Max Depth (ft)                   Specif Force (cu ft)      19102.79      11090.10
  Min El Weir Flow (ft)       321.31    Hydr Depth (ft)              4.30
```

Min El Prs (ft)	318.92	W.P. Total (ft)	1657.94	332.31
Delta EG (ft)	3.61	Conv. Total (cfs)	454952.7	25910.8
Delta WS (ft)	4.25	Top Width (ft)	1790.79	
BR Open Area (sq ft)	708.36	Frctn Loss (ft)	0.20	0.11
BR Open Vel (ft/s)	0.87	C & E Loss (ft)	1.34	1.93
BR Sluice Coef		Shear Total (lb/sq ft)	0.18	39.37
BR Sel Method	Energy only	Power Total (lb/ft s)	0.44	674.35

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 200

INPUT
Description: 0.035 AC road+ short to medium grass
0.08 Creek medium odense
brush
0.045 houses+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.46	28.23	326.41	44.34	326	299.22	326	399.15	324
399.19	324	399.22	324	402.1	324	405.23	324	816.63	324
843.92	322.38	851.28	322	852.31	322	882.13	322	885.37	322
905.31	322	915.28	322	923.84	322	925.93	322	929.19	322
937.09	322	969.52	322	972.34	322	995.39	322	1010.89	322
1035.6	322	1052.64	321.42	1090.99	321.25	1103.71	321.21	1107.61	321.26
1141.78	321.26	1149.32	321.2	1224.8	320.02	1226	320	1227.14	320
1300.05	320	1300.14	320	1328.99	320	1353.28	320	1353.62	320
1353.66	319.99	1359.29	318	1359.35	317.98	1359.38	317.97	1363.29	315.97
1368.06	314	1462.45	312.04	1464.3	312.03	1464.38	312.03	1466.48	312.43
1466.85	312.51	1502.13	312.53	1502.41	312.6	1506.34	314.57	1509.85	316.47
1512.47	317.67	1512.5	317.68	1513.61	318.2	1517.04	320.09	1529.08	322
1534.27	322	1535.44	322	1554.42	322	1558.1	322	1560.62	322
1563.47	322	1565.63	322	1626.77	322	1630.35	322	1632.59	322
1679.24	322	1679.48	322	1681.04	322.07	1681.35	322.08	1682.74	322

```
 1701.61  322.31 1799.76     324 1811.41     324 1832.13     324 1859.32     324
 1859.48     324 1867.76     324 1868.41     324 1868.68     324 1899.87     324
 1899.92     324 1900.25     324 1927.85     324 1931.37  324.11 1933.92  324.24
 1963.05     326 1970.76     326 1983.01  326.46 1985.11  326.53 2008.56  327.79
 2011.05     328 2012.61     328 2039.87  329.62 2040.73  329.66 2045.52     330
 2045.53     330

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045 1353.28     .08 1560.62    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1359.29 1512.47             301  307.18     316             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 1330.23     321       F
 1527.39 2045.53     321       F

CROSS SECTION OUTPUT  Profile #Scenario 1

  E.G. Elev (ft)            323.23    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.70    Wt. n-Val.                0.046      0.080      0.059
  W.S. Elev (ft)            322.53    Reach Len. (ft)          301.00     307.18     316.00
  Crit W.S. (ft)            319.42    Flow Area (sq ft)        723.71    1430.78     123.71
  E.G. Slope (ft/ft)      0.008126    Area (sq ft)             723.71    1430.78     123.71
  Q Total (cfs)           13407.00    Flow (cfs)              2661.70   10526.05     219.25
  Top Width (ft)            872.69    Top Width (ft)           517.83     153.18     201.68
  Vel Total (ft/s)            5.88    Avg. Vel. (ft/s)           3.68       7.36       1.77
  Max Chl Dpth (ft)          10.50    Hydr. Depth (ft)           1.40       9.34       0.61
  Conv. Total (cfs)       148731.4    Conv. (cfs)             29527.7   116771.4     2432.3
  Length Wtd. (ft)          306.74    Wetted Per. (ft)         518.21     155.34     202.45
  Min Ch El (ft)            312.03    Shear (lb/sq ft)           0.71       4.67       0.31
  Alpha                       1.31    Stream Power (lb/ft s)     2.61      34.37       0.55
  Frctn Loss (ft)             2.89    Cum Volume (acre-ft)     174.05      91.73      15.39
  C & E Loss (ft)             0.02    Cum SA (acres)            35.56      11.81       5.58


Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate
         the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was used.

CROSS SECTION


RIVER: Sycamore Creek
REACH: Reach              RS: 100

INPUT
Description:
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     320     5.9     320   12.54     318   18.89  316.23   19.93     316
```

138.69	316	243.19	314.75	259.69	314.69	285.98	314	313.63	314
320.87	316	332.1	318	341.59	320	352.45	320	362.13	318.13
363.2	318	396.32	316	566.04	316	583.37	314.68	590.43	314.61
609.26	314	665.47	314	698.45	313.7	713.65	313.17	716.99	313.12
740.12	312	744.01	311.37	751.39	310	782.07	310	802.86	312
822.52	312	847.25	312.66	854.61	312.72	864.73	312	951.52	311.98
995.57	311.4	1006.26	311.36	1040.45	310	1069.5	310	1118.53	311.6
1127.3	312	1130.69	312	1144.57	313.53	1157.38	313.67	1177.21	313.36
1177.28	313.36	1194.29	312.94	1204.3	312	1211.39	310.26	1211.93	310
1235.53	308.55	1269.25	308.93	1283.61	308.98	1294.48	309.81	1343.59	311.55
1351.9	312	1365.51	313	1365.6	313	1379	314	1383.25	315.34
1385.69	316	1386.66	316.43	1391.44	318	1394.82	320	1419.35	320
1471.26	320	1485.07	318	1509.45	318	1513.77	316.56	1515.79	316
1516.09	315.71	1523.67	314	1583.01	314	1597.6	314.44	1634.63	316
1662.36	316.97	1687.28	318	1732.34	318	1735.36	317.58	1737.74	317.04
1752.05	316	1759.32	314.76	1762.18	314	1784.85	314	1797.38	315.09
1800.4	316	1806.47	316.29	1809.74	316.24	1836.22	316.71	1864.1	316.77
1874.12	317.02	1885.56	317.03	1899.33	318	1913.02	319.36	1925.04	320
1950.72	321.09	1978.21	322	1985.66	324	1995.77	324.35	2030.44	326
2042.34	326								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	854.61	.09	1394.82	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1204.3	1351.9	1794.15	589.3	429.11	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1175	321	F
1394.82	2042.34	321	F

CROSS SECTION OUTPUT Profile #Scenario 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	320.32	Element			
Vel Head (ft)	0.88	Wt. n-Val.	0.090	0.090	0.090
W.S. Elev (ft)	319.44	Reach Len. (ft)	1794.15	589.30	429.11
Crit W.S. (ft)	315.99	Flow Area (sq ft)	190.55	1418.10	219.56
E.G. Slope (ft/ft)	0.011090	Area (sq ft)	6542.97	1418.10	1630.07
Q Total (cfs)	13407.00	Flow (cfs)	1152.98	11123.40	1130.62
Top Width (ft)	1809.04	Top Width (ft)	1180.11	147.60	481.33
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	6.05	7.84	5.15
Max Chl Dpth (ft)	10.89	Hydr. Depth (ft)	6.50	9.61	5.23
Conv. Total (cfs)	127310.9	Conv. (cfs)	10948.5	105626.1	10736.2
Length Wtd. (ft)	649.29	Wetted Per. (ft)	29.35	147.99	43.08
Min Ch El (ft)	308.55	Shear (lb/sq ft)	4.49	6.63	3.53
Alpha	1.05	Stream Power (lb/ft s)	27.20	52.04	18.17
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	148.95	81.69	9.03
C & E Loss (ft)	0.24	Cum SA (acres)	29.70	10.75	3.10

Warning: Divided flow computed for this cross-section.

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 70

INPUT
Description: San Diego River 300
Station Elevation Data num= 491

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.62	3.76	364.84	6.33	365.19	12.17	365.6	20.43	366.25
26.94	366.72	32.09	367.16	34.66	367.3	39.81	367.77	42.39	367.38
44.96	364.93	47.54	363.01	50.11	362	55.53	359.5	60.42	356.51
65.57	352.38	68.14	350.81	72.05	348.73	75.87	346.52	80.31	343.61
83.59	341.76	86.17	339.91	88.74	338.43	91.32	337.12	93.89	335.58
99.05	332.11	101.62	330.56	106.77	327.26	109.21	325.76	111.92	323.95
114.5	322.72	117.07	321.83	119.65	321.5	124.8	321.55	135.1	321.78
138.12	321.9	147.98	322.08	155.7	322.12	158.28	322.25	160.85	322.06
166	320.39	168.58	319.77	171.15	319.37	176.31	319.45	181.47	319.31
184.03	319.33	189.18	319.17	195.93	318.67	200.06	318.45	204.19	318.46
207.21	318.71	214.93	318.96	217.51	318.94	220.09	318.77	225.24	318.77
227.81	318.61	235.54	318.54	245.48	318.5	248.41	318.58	256.14	318.49
275.26	318.38	279.32	318.42	287.04	318.18	292.97	318.17	299.92	318.06
302.5	317.97	305.07	318.04	307.65	317.92	315.37	317.92	320.52	318.23
323.1	318.31	328.25	318.71	330.13	318.36	335.98	317.51	341.13	316.98
346.28	316.88	348.85	316.63	354	315.94	356.58	315.74	359.15	315.88
363.17	315.29	366.88	314.59	369.36	314.38	374.61	314.2	377.62	313.77
382.33	313.67	384.91	313.92	387.48	314.64	389.8	315.46	392.63	316.03
397.78	315.67	400.21	315.24	404.46	313.99	408.08	313.32	413.24	313.4
415.81	313.3	418.39	312.84	420.96	312.63	426.11	312.48	428.69	312.23
431.3	311.32	436.41	311.42	438.99	311.65	441.86	311.75	446.9	311.71
449.29	311.66	457.02	312.95	462.17	312.74	464.74	312.87	472.47	312.76
474.66	312.02	477.62	311.19	480.19	310.81	482.77	310.71	485.34	310.74
487.92	310.25	490.5	309.47	493.07	308.37	497.37	306.9	498.22	306.71
503.56	306.78	507.69	306.68	511.1	306.43	515.95	305.62	518.02	305.57
523.97	306.06	526.55	306.1	529.13	306.76	532.47	307.96	534.53	308.52
539.43	308.82	544.58	308.81	547.15	308.94	549.73	308.86	552.3	308.93
554.88	309.25	560.03	309.64	570.33	311.01	572.91	311.66	578.06	312.75
583.21	314	614.11	314	615.06	313.79	617.12	313.07	619.26	312.59
621.84	312.43	624.41	312.44	632.14	313.33	634.71	313.46	639.86	313.31
647.59	312.87	652.74	312.41	660.47	311.88	668.19	311.43	686.22	310.67
701.77	310.19	711.97	309.81	717.12	309.58	727.43	309.51	732.58	309.4
737.73	309.12	742.88	308.93	750.6	308.75	758.33	308.29	765.78	308.03
771.21	308.03	776.36	308.34	784.08	309.38	791.81	310.2	794.38	310.42
799.54	310.55	807.26	310.29	809.84	310.27	817.56	310.06	822.71	310.06
825.65	310.18	833.01	310.65	840.1	310.62	845.89	310.41	850.43	310.47

853.62	310.76	856.62	311.15	861.34	311.52	866.49	311.52	871.64	311
876.8	310.12	884.52	309.81	889.67	309.53	895.85	309.43	897.92	309.46
907.7	310.04	910.27	310	915.43	309.75	920.58	309.22	925.73	308.8
930.88	308.25	936.03	308.48	941.18	309.08	946.33	308.58	953.66	308.29
961.78	308.34	970.18	308.32	972.08	308.39	974.31	308.66	977.23	309.39
979.81	310.3	982.57	310.99	984.63	311.28	987.53	311.43	995.26	311.18
1002.99	311.03	1010.71	310.97	1021.01	310.56	1031.32	310.39	1036.47	310.5
1041.62	310.54	1048.64	310.81	1069.95	312.11	1075.1	312.32	1077.67	312.49
1085.4	312.76	1093.12	312.9	1098.27	313.24	1103.42	313.89	1108.58	314.84
1113.73	315.96	1118.84	317.2	1121.45	317.75	1124.03	318.1	1126.6	318.3
1129.08	318.34	1131.75	317.95	1134.33	317.14	1139.49	315.87	1142.05	315.1
1147.2	313.33	1149.81	312.69	1152.36	312.2	1154.93	311.96	1160.08	311.75
1162.66	311.8	1165.23	312	1170.38	312.57	1172.96	312.39	1178.11	310.93
1181.14	310.24	1185.83	309.33	1189.03	309.1	1193.16	308.92	1196.14	308.88
1201.29	309	1206.44	309.38	1211.59	310.41	1215.87	311.48	1219.31	312.22
1224.13	312.88	1227.04	313.06	1232.19	313.06	1237.34	312.85	1242.49	312.52
1253.04	311.62	1257.17	311.5	1263.09	311.41	1275.97	311.53	1283.7	311.71
1291.42	312.08	1296.57	312.38	1309.45	313.02	1317.18	313.56	1324.9	314.16
1330.05	314.39	1337.93	314.27	1342.93	314	1345.51	313.74	1350.66	313.55
1353.23	313.53	1358.38	313.81	1360.96	314.38	1363.53	315.25	1366.11	316.43
1368.68	317.47	1371.26	318.15	1373.83	318.61	1376.41	318.56	1378.98	318.19
1384.14	317.14	1389.29	316.22	1394.44	315.51	1399.59	314.91	1404.74	314.07
1407.89	313.65	1412.02	313.43	1416.15	313.4	1422.34	313.24	1425.34	313.25
1430.49	313.69	1435.64	314.75	1445.94	317.43	1451.25	318.44	1456.24	319.14
1461.4	319.71	1469.12	319.94	1471.7	319.96	1476.85	319.81	1482	319.49
1487.15	319.28	1489.72	318.82	1492.3	318.01	1494.87	316.38	1497.45	315.02
1500.03	314.53	1502.6	314.32	1507.75	314.3	1512.9	314.57	1515.48	314.37
1518.05	313.94	1523.2	312.87	1525.78	312.52	1530.93	312.11	1536.08	311.99
1541.23	312.03	1546.38	312.22	1562.74	313.39	1566.98	313.66	1575.13	313.93
1590.16	314.01	1597.89	313.94	1605.61	313.76	1610.76	313.55	1618.49	313.31
1628.81	312.87	1631.37	312.81	1639.09	312.44	1644.24	312.36	1651.97	312.58
1657.12	312.82	1659.7	312.87	1662.27	312.61	1667.42	311.59	1670	311.19
1672.57	310.97	1680.3	310.75	1688.02	310.7	1693.18	310.84	1706.05	311.08
1708.63	311.2	1713.78	311.28	1726.65	311.56	1729.23	311.72	1734.11	311.86
1747.26	311.99	1752.41	312.11	1754.98	312.27	1757.56	312.67	1760.95	313.44
1765.28	314.53	1773.01	313.88	1780.74	313.91	1785.89	314.06	1791.04	314.37
1796.05	314.74	1798.76	314.86	1803.91	314.91	1809.07	314.62	1812.56	313.82
1814.63	313.23	1816.69	312.92	1818.76	312.06	1821.94	310.94	1827.09	310.43
1832.24	310.14	1837.39	310.09	1847.66	310.19	1852.85	310.53	1860.57	310.79
1868.3	310.56	1876.02	310.65	1878.6	310.85	1883.75	311.93	1888.9	311.87
1896.63	312.01	1901.78	312.82	1904.35	313.81	1909.5	315.61	1913.73	316.89
1917.8	318.441	1922.38	319.25	1935.26	320.39	1940.41	320.73	1948.13	321.38
1953.28	321.54	1961.01	321.22	1973.89	321.04	1981.87	320.99	1989.34	321.03
1999.64	321.39	2007.37	321.46	2009.94	321.34	2017.67	320.74	2027.97	320.31
2033.48	320.3	2043.42	320.87	2048.57	321.05	2064.45	321.34	2069.17	321.37
2074.32	321.31	2082.05	321.01	2087.2	320.91	2097.52	320.87	2101.62	320.74
2105.23	320.49	2107.8	320.16	2118.26	318.07	2120.68	317.66	2123.26	317.36
2126.4	317.16	2130.98	316.73	2140.85	316.14	2149.11	315.88	2151.58	315.87
2159.43	316.26	2164.46	316.76	2169.61	317.49	2174.76	318	2177.34	318.17
2182.49	318.37	2188.34	318.49	2196.59	318.47	2210.82	318.49	2228.84	318.99
2239.15	318.98	2241.72	318.92	2246.87	319.09	2252.34	319.17	2254.6	319.27
2260.6	319.7	2267.47	320.57	2270.05	320.63	2280.35	320.54	2285.5	320.66

2288.08	320.64	2293.63	320.86	2306.1	321.19	2316.34	321.41	2318.41	321.36
2324.13	321.4	2331.86	321.27	2342.16	320.97	2347.31	320.97	2349.88	321.09
2355.04	321.62	2362.76	322.83	2367.91	323.35	2375.64	323.58	2378.21	323.57
2383.36	323.35	2386.54	323.12	2393.67	322.88	2396.24	322.93	2398.93	323.22
2401.39	323.28	2403.97	323.5	2406.54	323.92	2409.12	324.87	2420.22	325.5
2421.99	325.53	2424.57	325.38	2432.3	325.32	2434.87	325.43	2442.29	325.29
2447.75	325.29	2454.68	325.44	2460.87	325.47	2468.35	325.44	2473.5	325.53
2483.8	325.03	2489.78	325.09	2493.91	325.34	2500.1	324.98	2509.56	324.93
2514.55	325.21	2517.28	325.18	2519.86	325.37	2522.81	325.93	2525.01	326.07
2527.58	325.84	2529.01	325.56	2532.73	324.57	2535.31	324.28	2543.03	323.89
2549.37	324.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	446.9	.06	1917.8	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
446.9	1917.8	0	0	0 .1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	319.38	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.08	Wt. n-Val.	0.050	0.060	0.050	
W.S. Elev (ft)	319.30	Reach Len. (ft)				
Crit W.S. (ft)	313.43	Flow Area (sq ft)	689.53	10658.29	202.55	
E.G. Slope (ft/ft)	0.000575	Area (sq ft)	689.53	10658.29	202.55	
Q Total (cfs)	25000.00	Flow (cfs)	933.54	23887.02	179.44	
Top Width (ft)	1851.89	Top Width (ft)	261.90	1441.93	148.06	
Vel Total (ft/s)	2.16	Avg. Vel. (ft/s)	1.35	2.24	0.89	
Max Chl Dpth (ft)	13.73	Hydr. Depth (ft)	2.63	7.39	1.37	
Conv. Total (cfs)	1042943.0	Conv. (cfs)	38945.0	996512.1	7485.9	
Length Wtd. (ft)		Wetted Per. (ft)	263.17	1452.99	148.49	
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.09	0.26	0.05	
Alpha	1.04	Stream Power (lb/ft s)	0.13	0.59	0.04	
Frctn Loss (ft)		Cum Volume (acre-ft)				
C & E Loss (ft)		Cum SA (acres)				

Warning: Divided flow computed for this cross-section.

SUMMARY OF REACH LENGTHS

River: Sycamore Creek

Reach	River Sta.	Left	Channel	Right
Reach	500	484.65	511.2	513.2
Reach	450	163.58	199.56	223.24
Reach	400	290.22	278.09	271.36
Reach	300	95.85	94.82	94.72

Reach	250	Bridge			
Reach	200		301	307.18	316
Reach	100		1794.15	589.3	429.11
Reach	70		0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Sycamore Creek

Reach	River Sta.	Contr.	Expan.
Reach	500	.1	.3
Reach	450	.1	.3
Reach	400	.1	.3
Reach	300	.3	.5
Reach	250	Bridge	
Reach	200	.1	.3
Reach	100	.1	.3
Reach	70	.1	.3

HEC-RAS Plan: Plan 08 River: Sycamore Creek Reach: Reach Profile: Scenario 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach	70	Scenario 1	25000.00	305.57	319.30	313.43	319.38	0.000575	2.24	11550.37	1851.89	0.15
Reach	100	Scenario 1	13407.00	308.55	319.44	315.99	320.32	0.011090	7.84	1828.20	1809.04	0.45
Reach	200	Scenario 1	13407.00	312.03	322.53	319.42	323.23	0.008126	7.36	2278.20	872.69	0.42
Reach	250		Bridge									
Reach	300	Scenario 1	13407.00	313.84	326.77	321.01	326.84	0.000422	2.08	6430.65	1797.79	0.10
Reach	400	Scenario 1	13407.00	314.00	326.93	320.39	327.09	0.001884	3.53	4311.73	1310.37	0.19
Reach	450	Scenario 1	13407.00	314.00	327.11	322.39	327.25	0.000461	2.09	4968.90	1060.08	0.12
Reach	500	Scenario 1	13407.00	318.00	327.29		327.42	0.000271	1.05	5379.25	1010.34	0.07

Plan: Plan 08 Sycamore Creek Reach RS: 250 Profile: Scenario 1

E.G. US. (ft)	326.84	Element	Inside BR US	Inside BR DS
W.S. US. (ft)	326.77	E.G. Elev (ft)	326.81	325.28
Q Total (cfs)	13407.00	W.S. Elev (ft)	326.70	320.71
Q Bridge (cfs)	616.74	Crit W.S. (ft)	322.82	318.35
Q Weir (cfs)		Max Chl Dpth (ft)	12.86	8.68
Weir Sta Lft (ft)		Vel Total (ft/s)	2.39	17.13
Weir Sta Rgt (ft)		Flow Area (sq ft)	5599.20	782.67
Weir Submerg		Froude # Chl	0.13	1.03
Weir Max Depth (ft)		Specif Force (cu ft)	19102.79	11090.10
Min El Weir Flow (ft)	321.31	Hydr Depth (ft)	4.30	
Min El Prs (ft)	318.92	W.P. Total (ft)	1657.94	332.31
Delta EG (ft)	3.61	Conv. Total (cfs)	454952.7	25910.8
Delta WS (ft)	4.25	Top Width (ft)	1790.79	
BR Open Area (sq ft)	708.36	Frctn Loss (ft)	0.20	0.11
BR Open Vel (ft/s)	0.87	C & E Loss (ft)	1.34	1.93
BR Sluice Coef		Shear Total (lb/sq ft)	0.18	39.37
BR Sel Method	Energy only	Power Total (lb/ft s)	0.44	674.35

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Sycamore Creek
Project File : SycamoreCreek.prj
Run Date and Time: 12/19/2023 3:18:54 PM

Project in English units

PLAN DATA

Plan Title: Plan 05
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.p05

Geometry Title: SYC-EX-remove Carlton Bridge-Weir
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.g14

Flow Title   : SY-EX-Flow-remove-bridge-Weir
Flow File   : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.f11

Plan Summary Information:
Number of: Cross Sections =   7   Multiple Openings =   0
            Culverts   =   0   Inline Structures =   1
            Bridges   =   0   Lateral Structures =   0

Computational Information
    Water surface calculation tolerance = 0.01
    Critical depth calculation tolerance = 0.01
    Maximum number of iterations   = 20
    Maximum difference tolerance   = 0.3
    Flow tolerance factor   = 0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: SY-EX-Flow-remove-bridge-Weir
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.f11

Flow Data (cfs)

River	Reach	RS	Scenario 1
Sycamore Creek	Reach	500	13407
Sycamore Creek	Reach	300	12790.26
Sycamore Creek	Reach	100	13407
Sycamore Creek	Reach	70	25000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Sycamore Creek	Reach	Scenario 1		Known WS = 319.3

GEOMETRY DATA

Geometry Title: SYC-EX-remove Carlton Bridge-Weir
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.g14

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 500

INPUT
Description: 0.023 for the Santa recreational Lake
0.035 AC road+ short to
medium grass
0.09 Creek medium t odense brush
0.045 houses+
landscape
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	346	.48	345.42	2.61	344	2.66	343.94	5.57	342

9.1	340.54	10.94	340	12.03	339.37	15.95	338	16.87	337.09	
19.22	336	37.85	334.58	44.1	334.36	91.44	334.1	91.71	334.1	
92	334.1	103.16	334.09	104.62	334.09	105.32	334.08	106.24	334.08	
110.23	334	114.92	334	117	333.976	177.13	333.27	185.06	333.3	
190.91	333.29	250.26	334	260.57	334	265.06	334.09	265.59	334.1	
301.99	334.1	304.29	334.05	306.99	334	308.9	332.43	309.47	332	
311.94	331.29	316.88	330	317.16	329.75	324.23	329.29	326.75	328	
372.87	328	378.15	326.23	378.76	326	379.37	325.68	380.21	325.39	
386.6	324	391.32	323.22	395.69	322.75	399.05	322	1057.41	322	
1059.55	323.35	1061.33	324	1088.34	324	1155.18	324.93	1174	324.02	
1174.06	324.02	1174.41	324	1182.58	322.46	1185.46	322	1187.3	321.2	
1190.19	320.23	1191.3	320	1191.98	319.72	1196.05	318.7	1197.6	318.55	
1197.89	318.45	1198.77	318	1205.35	318	1207.04	318	1215.51	318.47	
1248.19	320	1271.68	320	1281.23	320	1308.2	320	1337.97	320	
1360.39	320	1365.31	321.25	1375.35	324.28	1375.39	324.29	1390.4	328.82	
1391.91	330	1417.68	338.79	1419.76	339.3	1423	340	1434.66	340	
1472.4	340.51	1480.96	340	1489.05	339.24	1489.71	339.26	1536.35	339.46	
1546.35	339.59	1549.55	340	1551	340.64	1554.92	342	1559.9	343.46	
1562.26	344	1571.8	344.47	1578.84	344.71	1586.79	344.95	1595.93	345.12	
1602.63	345.18	1623.79	346							

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	326.75	.023	1057.41	.035	1174.06	.09	1360.39	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1174	1375.35	484.65	511.2	513.2	.1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	326.44	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.20	Wt. n-Val.	0.023	0.087	0.045	
W.S. Elev (ft)	326.24	Reach Len. (ft)	484.65	511.20	513.20	
Crit W.S. (ft)		Flow Area (sq ft)	3069.34	1250.66	6.40	
E.G. Slope (ft/ft)	0.000565	Area (sq ft)	3069.34	1250.66	6.40	
Q Total (cfs)	13407.00	Flow (cfs)	11694.39	1707.78	4.83	
Top Width (ft)	1003.75	Top Width (ft)	795.89	201.35	6.51	
Vel Total (ft/s)	3.10	Avg. Vel. (ft/s)	3.81	1.37	0.75	
Max Chl Dpth (ft)	8.24	Hydr. Depth (ft)	3.86	6.21	0.98	
Conv. Total (cfs)	563950.6	Conv. (cfs)	491911.8	71835.8	203.0	
Length Wtd. (ft)	492.42	Wetted Per. (ft)	796.92	202.85	6.80	
Min Ch El (ft)	318.00	Shear (lb/sq ft)	0.14	0.22	0.03	
Alpha	1.34	Stream Power (lb/ft s)	0.52	0.30	0.03	
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	218.65	140.59	17.26	
C & E Loss (ft)	0.00	Cum SA (acres)	53.04	17.15	7.61	

Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 450

INPUT
Description: 0.023 for the Santa recreational Lake
0.035 AC road+ short to
medium grass
0.09 Creek medium t odense brush
0.045 houses+
landscape

Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	344	17.26	344	20.59	343.57	23.56	343.47	37.59	342
41.63	340.86	43.32	340	45.06	338.83	49.52	338	108.46	330
113.23	329.57	121.31	328.71	131.1	328	198.19	328	215.69	329
217.89	329.29	249.45	330	252.84	330.01	257.89	328.27	258.41	328
259.21	327.72	263.54	326	267.83	326	271.35	324.26	273.16	324.46
291.29	326	447.75	326	453.6	325.88	461.37	326	464.52	326
479	326.38	494.64	326.57	508.17	326.54	533.29	326.23	538.75	326
548.32	326	583.38	324.55	604.58	324	612.4	323.61	634.1	322.7
646.44	322.3	649.79	322	835.68	322	859.71	322.96	865.16	322
893.59	322	906.95	324	919.69	324	933.72	322.74	946.86	322
1024.16	320.67	1052.36	320.27	1052.39	320.27	1069.11	320	1082.55	320
1106.56	320	1112.67	318.77	1115.34	318	1118.62	317.28	1125.27	316
1137.06	314	1149.25	314	1153.58	314.04	1154.62	314.1	1163.46	314.3
1169.47	314.53	1184.76	315.59	1193.79	315.87	1196.5	316	1228.7	316
1289.08	318	1294.75	319.64	1294.78	319.65	1296.82	320.34	1297.25	320.7
1302.63	322.24	1310.3	324.11	1330.91	330	1418.17	330	1425.14	329.24
1475.4	329.56	1487.5	330	1512.95	331.13	1538.06	332	1549.66	332
1550.33	332.31	1553.11	334	1555.85	334.9	1563.92	336	1565.63	337.16
1570.84	338	1572.31	338.52	1580.22	340	1584.67	341.39	1586.5	342
1591.39	343.46	1592.65	344	1595.12	345.34	1599.14	345.8	1601.31	346
1604.01	346								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	538.75	.023	919.69	.035	1118.62	.09	1296.82	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
1052.39	1294.75	163.58	199.56	223.24	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
462	627	330	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	326.08	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.22	Wt. n-Val.	0.027	0.074	0.052	
W.S. Elev (ft)	325.86	Reach Len. (ft)	163.58	199.56	223.24	
Crit W.S. (ft)	322.39	Flow Area (sq ft)	1664.76	2147.44	64.07	
E.G. Slope (ft/ft)	0.001006	Area (sq ft)	1772.68	2147.44	64.07	
Q Total (cfs)	13407.00	Flow (cfs)	7282.88	6002.88	121.25	

Top Width (ft)	786.35	Top Width (ft)	522.31	242.36	21.68
Vel Total (ft/s)	3.46	Avg. Vel. (ft/s)	4.37	2.80	1.89
Max Chl Dpth (ft)	11.86	Hydr. Depth (ft)	3.72	8.86	2.95
Conv. Total (cfs)	422660.2	Conv. (cfs)	229595.2	189242.7	3822.4
Length Wtd. (ft)	188.87	Wetted Per. (ft)	447.77	243.28	22.61
Min Ch El (ft)	314.00	Shear (lb/sq ft)	0.23	0.55	0.18
Alpha	1.16	Stream Power (lb/ft s)	1.02	1.55	0.34
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	191.72	120.65	16.84
C & E Loss (ft)	0.02	Cum SA (acres)	45.70	14.54	7.45

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 400

INPUT
Description: 0.09 Creek medium t odense brush
0.045 houses (buildings)+
parking area+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	338	.21	338	1.12	337.74	8.25	336	11.02	334.07
11.32	333.91	16.15	332	22.08	330	47.54	328.37	67.02	328.46
77.13	328.55	115.32	328	138.57	328	145.26	327.01	147.88	326.66
153.6	326.29	155.07	326.24	156.95	326	184.97	326	189.2	326.1
211.91	326.98	235.19	327.84	238.28	328	275.37	328	275.57	327.82
281.09	326	284.67	324.66	286.51	324	294.81	324	308.89	324.47
419.7	324.68	457.3	324.67	462.04	324.73	498.49	325.01	504.39	325.01
515.48	325.09	520.86	325.08	536.12	325.18	545.12	325.21	594.18	325.04
602.87	324.99	633.01	324.87	644.44	324.85	716.39	324.46	727.52	324.38
768.74	324	791.41	324	807.68	323.76	838.96	322.8	845.41	322.6
868.9	322	881.07	322	892.7	321.57	902.92	321.34	948.37	320.84
960.48	320.65	966.06	320.56	988.85	320.21	993.5	320.19	1011.36	320
1041.42	320	1065.21	319.4	1065.28	319.4	1083.68	318.94	1123.34	318
1124.7	317.76	1132.52	316	1135.34	314.39	1136.69	314	1170.93	314
1304.97	316	1307.64	316.64	1308.71	317.05	1314.11	320	1314.97	320.19
1315	320.2	1319.26	321.16	1322.52	322	1329.49	324.1	1332.61	326
1347.79	327	1352.19	327.04	1357.77	326.99	1431.55	326.53	1434.01	326.49
1449.92	326	1491.44	326	1513.13	326.5	1574.68	327.31	1585.54	327.42
1587.93	327.48	1593.01	327.52	1599.21	327.61	1608.14	328	1610.54	329.25
1612.64	330	1618.12	330.65	1633.37	332	1635.41	332.5	1639.14	333.24
1639.65	334								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .045 1041.42     .09 1332.61    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1065.28    1315           290.22  278.09  271.36             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     842     321       F
     842    1062     330       F
    1573 1639.65     321       F

CROSS SECTION OUTPUT  Profile #Scenario 1

  E.G. Elev (ft)            325.69    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.41    Wt. n-Val.                0.049      0.090     0.090
  W.S. Elev (ft)            325.28    Reach Len. (ft)          290.22     278.09    271.36
  Crit W.S. (ft)            320.39    Flow Area (sq ft)        417.93    2338.79     48.27
  E.G. Slope (ft/ft)      0.005313    Area (sq ft)            1387.55    2338.79     48.27
  Q Total (cfs)           13407.00    Flow (cfs)               840.79   12450.95    115.27
  Top Width (ft)           1048.40    Top Width (ft)           782.26     249.72     16.42
  Vel Total (ft/s)            4.78    Avg. Vel. (ft/s)           2.01       5.32      2.39
  Max Chl Dpth (ft)          11.28    Hydr. Depth (ft)           0.74       9.37      2.94
  Conv. Total (cfs)       183929.1    Conv. (cfs)             11534.7   170813.1    1581.3
  Length Wtd. (ft)           281.35    Wetted Per. (ft)         562.51     251.38     17.27
  Min Ch El (ft)             314.00    Shear (lb/sq ft)           0.25       3.09      0.93
  Alpha                        1.17    Stream Power (lb/ft s)     0.50      16.43      2.21
  Frctn Loss (ft)              0.82    Cum Volume (acre-ft)     185.78     110.38     16.55
  C & E Loss (ft)              0.07    Cum SA (acres)            43.25      13.42      7.35


Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
         1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: Sycamore Creek
REACH: Reach             RS: 300

INPUT
Description: 0.035 AC road+ short to medium grass
0.08 Creek medium odense
           brush
0.045 houses+ landscape
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   326.9    2.71  326.86    4.84  326.81    7.05  326.76   13.21   327.6
   17.53  328.05   24.55  327.96   32.42  328.47   46.58  328.62   93.74   326.9
   95.92   326.8   97.95  326.67   101.7  326.36  103.87  326.73  109.94   326.8
  114.01     326   164.4     326  198.56  325.51  204.46  325.49  234.71  325.45
  244.93  325.43  247.08  325.43  346.79     324  347.98     324  699.16     324
  790.88  322.16  792.13  322.16  813.92   322.1  814.54   322.1  814.85   322.1
```

844.83	322	1074.15	322	1203.28	320.26	1220.36	320	1257.95	320
1258.05	320	1270.88	320	1309.73	319.63	1316.14	318	1316.31	317.94
1320.69	316	1323.26	314.42	1323.92	314	1387.93	314	1411.01	313.84
1415.96	313.85	1421.73	314.95	1430.1	314	1454.02	314	1457.01	314
1472.57	314	1478.77	316.81	1478.87	316.86	1479.02	316.93	1486.47	320
1492.6	321.89	1492.87	322	1493.51	322.27	1497.83	324	1516.18	324
1539.49	324	1557.89	324	1576.09	324	1584.94	323.84	1585.17	323.84
1592.19	324	1605.09	324	1607.37	324	1608.02	324	1611.34	324
1649.18	324	1678.88	324.11	1683.07	324	1684.65	324	1684.79	324
1687.31	324	1693.67	324	1701.42	324	1704.28	324	1801.5	324
1804.71	324	1805.6	324.02	1824.42	324.39	1826.39	324.46	1866.12	325.48
1884.04	325.83	1886.97	326	1903.67	327.44	1908.78	328	1911.3	329.35
1913.18	330	1913.9	330.37	1918.57	332	1923.41	333.53	1925.36	334
1926.23	334.45	1929.81	336	1932.53	336.76	1940.9	338	1942.33	338.7
1951.53	340								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1316.14	.08	1497.83	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1323.26	1472.57	95.85	94.82	94.72	.3	.5

Ineffective Flow num= 5

Sta L	Sta R	Elev	Permanent
0	495	321	F
495	626	330	F
626	1309.17	321	F
1495.61	1538	321	F
1538	1951.53	330	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	324.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.036	0.080	0.077
W.S. Elev (ft)	324.62	Reach Len. (ft)	95.85	94.82	94.72
Crit W.S. (ft)	320.05	Flow Area (sq ft)	2072.52	1581.80	161.06
E.G. Slope (ft/ft)	0.001794	Area (sq ft)	2153.68	1581.80	334.97
Q Total (cfs)	12790.26	Flow (cfs)	6455.43	5995.96	338.87
Top Width (ft)	1529.02	Top Width (ft)	1019.67	149.31	360.04
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	3.11	3.79	2.10
Max Chl Dpth (ft)	10.78	Hydr. Depth (ft)	2.33	10.59	2.46
Conv. Total (cfs)	301931.8	Conv. (cfs)	152389.4	141542.9	7999.5
Length Wtd. (ft)	94.82	Wetted Per. (ft)	889.78	149.59	67.37
Min Ch El (ft)	313.84	Shear (lb/sq ft)	0.26	1.18	0.27
Alpha	1.05	Stream Power (lb/ft s)	0.81	4.49	0.56
Frctn Loss (ft)		Cum Volume (acre-ft)	173.99	97.86	15.36
C & E Loss (ft)		Cum SA (acres)	37.25	12.14	6.18

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE

RIVER: Sycamore Creek
REACH: Reach RS: 250

INPUT
Description:
Distance from Upstream XS = 25
Deck/Roadway Width = 65
Weir Coefficient = 3
Weir Embankment Coordinates num = 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1038	321.5	1270.8	321.3	1316.1	321.3	1415	321.6	1444	321.7
1497.8	322	1576	322						

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Weir crest shape = Broad Crested

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 200

INPUT
Description: 0.035 AC road+ short to medium grass
0.08 Creek medium odense
brush
0.045 houses+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.46	28.23	326.41	44.34	326	299.22	326	399.15	324
399.19	324	399.22	324	402.1	324	405.23	324	816.63	324
843.92	322.38	851.28	322	852.31	322	882.13	322	885.37	322
905.31	322	915.28	322	923.84	322	925.93	322	929.19	322
937.09	322	969.52	322	972.34	322	995.39	322	1010.89	322
1035.6	322	1052.64	321.42	1090.99	321.25	1103.71	321.21	1107.61	321.26
1141.78	321.26	1149.32	321.2	1224.8	320.02	1226	320	1227.14	320
1300.05	320	1300.14	320	1328.99	320	1353.28	320	1353.62	320
1353.66	319.99	1359.29	318	1359.35	317.98	1359.38	317.97	1363.29	315.97
1368.06	314	1462.45	312.04	1464.3	312.03	1464.38	312.03	1466.48	312.43
1466.85	312.51	1502.13	312.53	1502.41	312.6	1506.34	314.57	1509.85	316.47
1512.47	317.67	1512.5	317.68	1513.61	318.2	1517.04	320.09	1529.08	322
1534.27	322	1535.44	322	1554.42	322	1558.1	322	1560.62	322
1563.47	322	1565.63	322	1626.77	322	1630.35	322	1632.59	322
1679.24	322	1679.48	322	1681.04	322.07	1681.35	322.08	1682.74	322
1701.61	322.31	1799.76	324	1811.41	324	1832.13	324	1859.32	324
1859.48	324	1867.76	324	1868.41	324	1868.68	324	1899.87	324

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 1899.92     324 1900.25     324 1927.85     324 1931.37  324.11 1933.92  324.24
 1963.05     326 1970.76     326 1983.01  326.46 1985.11  326.53 2008.56  327.79
 2011.05     328 2012.61     328 2039.87  329.62 2040.73  329.66 2045.52     330
 2045.53     330

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045 1353.28     .08 1560.62    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1359.29 1512.47              301  307.18     316             .1       .3
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 1330.23     321       F
 1527.39 2045.53     321       F

CROSS SECTION OUTPUT  Profile #Scenario 1

  E.G. Elev (ft)            323.15    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               0.66    Wt. n-Val.                0.046     0.080      0.060
  W.S. Elev (ft)            322.49    Reach Len. (ft)          301.00    307.18     316.00
  Crit W.S. (ft)            319.22    Flow Area (sq ft)        704.42   1425.08     116.23
  E.G. Slope (ft/ft)      0.007627    Area (sq ft)             704.42   1425.08     116.23
  Q Total (cfs)           12790.26    Flow (cfs)              2467.29  10130.55     192.42
  Top Width (ft)            869.90    Top Width (ft)           517.20    153.18     199.52
  Vel Total (ft/s)            5.70    Avg. Vel. (ft/s)           3.50      7.11       1.66
  Max Chl Dpth (ft)          10.46    Hydr. Depth (ft)           1.36      9.30       0.58
  Conv. Total (cfs)       146450.0    Conv. (cfs)             28250.8  115996.1     2203.2
  Length Wtd. (ft)          306.77    Wetted Per. (ft)         517.58    155.34     200.28
  Min Ch El (ft)            312.03    Shear (lb/sq ft)           0.65      4.37       0.28
  Alpha                       1.31    Stream Power (lb/ft s)     2.27     31.05       0.46
  Frctn Loss (ft)             2.81    Cum Volume (acre-ft)     173.99     91.71      15.36
  C & E Loss (ft)             0.02    Cum SA (acres)            35.56     11.81       5.57


Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate
         the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: Sycamore Creek
REACH: Reach              RS: 100

INPUT
Description:
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     320     5.9     320   12.54     318   18.89  316.23   19.93     316
  138.69     316  243.19  314.75  259.69  314.69  285.98     314  313.63     314
  320.87     316   332.1     318  341.59     320  352.45     320  362.13  318.13
```

363.2	318	396.32	316	566.04	316	583.37	314.68	590.43	314.61	
609.26	314	665.47	314	698.45	313.7	713.65	313.17	716.99	313.12	
740.12	312	744.01	311.37	751.39	310	782.07	310	802.86	312	
822.52	312	847.25	312.66	854.61	312.72	864.73	312	951.52	311.98	
995.57	311.4	1006.26	311.36	1040.45	310	1069.5	310	1118.53	311.6	
1127.3	312	1130.69	312	1144.57	313.53	1157.38	313.67	1177.21	313.36	
1177.28	313.36	1194.29	312.94	1204.3	312	1211.39	310.26	1211.93	310	
1235.53	308.55	1269.25	308.93	1283.61	308.98	1294.48	309.81	1343.59	311.55	
1351.9	312	1365.51	313	1365.6	313	1379	314	1383.25	315.34	
1385.69	316	1386.66	316.43	1391.44	318	1394.82	320	1419.35	320	
1471.26	320	1485.07	318	1509.45	318	1513.77	316.56	1515.79	316	
1516.09	315.71	1523.67	314	1583.01	314	1597.6	314.44	1634.63	316	
1662.36	316.97	1687.28	318	1732.34	318	1735.36	317.58	1737.74	317.04	
1752.05	316	1759.32	314.76	1762.18	314	1784.85	314	1797.38	315.09	
1800.4	316	1806.47	316.29	1809.74	316.24	1836.22	316.71	1864.1	316.77	
1874.12	317.02	1885.56	317.03	1899.33	318	1913.02	319.36	1925.04	320	
1950.72	321.09	1978.21	322	1985.66	324	1995.77	324.35	2030.44	326	
2042.34	326									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	854.61	.09	1394.82	.035

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1204.3	1351.9	1794.15	589.3	429.11	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1175	321	F
1394.82	2042.34	321	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	320.32	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.88	Wt. n-Val.	0.090	0.090	0.090	
W.S. Elev (ft)	319.44	Reach Len. (ft)	1794.15	589.30	429.11	
Crit W.S. (ft)	315.99	Flow Area (sq ft)	190.55	1418.10	219.56	
E.G. Slope (ft/ft)	0.011090	Area (sq ft)	6542.97	1418.10	1630.07	
Q Total (cfs)	13407.00	Flow (cfs)	1152.98	11123.40	1130.62	
Top Width (ft)	1809.04	Top Width (ft)	1180.11	147.60	481.33	
Vel Total (ft/s)	7.33	Avg. Vel. (ft/s)	6.05	7.84	5.15	
Max Chl Dpth (ft)	10.89	Hydr. Depth (ft)	6.50	9.61	5.23	
Conv. Total (cfs)	127310.9	Conv. (cfs)	10948.5	105626.1	10736.2	
Length Wtd. (ft)	649.29	Wetted Per. (ft)	29.35	147.99	43.08	
Min Ch El (ft)	308.55	Shear (lb/sq ft)	4.49	6.63	3.53	
Alpha	1.05	Stream Power (lb/ft s)	27.20	52.04	18.17	
Frctn Loss (ft)	0.70	Cum Volume (acre-ft)	148.95	81.69	9.03	
C & E Loss (ft)	0.24	Cum SA (acres)	29.70	10.75	3.10	

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 70

INPUT
Description: San Diego River 300
Station Elevation Data num= 491

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	363.62	3.76	364.84	6.33	365.19	12.17	365.6	20.43	366.25
26.94	366.72	32.09	367.16	34.66	367.3	39.81	367.77	42.39	367.38
44.96	364.93	47.54	363.01	50.11	362	55.53	359.5	60.42	356.51
65.57	352.38	68.14	350.81	72.05	348.73	75.87	346.52	80.31	343.61
83.59	341.76	86.17	339.91	88.74	338.43	91.32	337.12	93.89	335.58
99.05	332.11	101.62	330.56	106.77	327.26	109.21	325.76	111.92	323.95
114.5	322.72	117.07	321.83	119.65	321.5	124.8	321.55	135.1	321.78
138.12	321.9	147.98	322.08	155.7	322.12	158.28	322.25	160.85	322.06
166	320.39	168.58	319.77	171.15	319.37	176.31	319.45	181.47	319.31
184.03	319.33	189.18	319.17	195.93	318.67	200.06	318.45	204.19	318.46
207.21	318.71	214.93	318.96	217.51	318.94	220.09	318.77	225.24	318.77
227.81	318.61	235.54	318.54	245.48	318.5	248.41	318.58	256.14	318.49
275.26	318.38	279.32	318.42	287.04	318.18	292.97	318.17	299.92	318.06
302.5	317.97	305.07	318.04	307.65	317.92	315.37	317.92	320.52	318.23
323.1	318.31	328.25	318.71	330.13	318.36	335.98	317.51	341.13	316.98
346.28	316.88	348.85	316.63	354	315.94	356.58	315.74	359.15	315.88
363.17	315.29	366.88	314.59	369.36	314.38	374.61	314.2	377.62	313.77
382.33	313.67	384.91	313.92	387.48	314.64	389.8	315.46	392.63	316.03
397.78	315.67	400.21	315.24	404.46	313.99	408.08	313.32	413.24	313.4
415.81	313.3	418.39	312.84	420.96	312.63	426.11	312.48	428.69	312.23
431.3	311.32	436.41	311.42	438.99	311.65	441.86	311.75	446.9	311.71
449.29	311.66	457.02	312.95	462.17	312.74	464.74	312.87	472.47	312.76
474.66	312.02	477.62	311.19	480.19	310.81	482.77	310.71	485.34	310.74
487.92	310.25	490.5	309.47	493.07	308.37	497.37	306.9	498.22	306.71
503.56	306.78	507.69	306.68	511.1	306.43	515.95	305.62	518.02	305.57
523.97	306.06	526.55	306.1	529.13	306.76	532.47	307.96	534.53	308.52
539.43	308.82	544.58	308.81	547.15	308.94	549.73	308.86	552.3	308.93
554.88	309.25	560.03	309.64	570.33	311.01	572.91	311.66	578.06	312.75
583.21	314	614.11	314	615.06	313.79	617.12	313.07	619.26	312.59
621.84	312.43	624.41	312.44	632.14	313.33	634.71	313.46	639.86	313.31
647.59	312.87	652.74	312.41	660.47	311.88	668.19	311.43	686.22	310.67
701.77	310.19	711.97	309.81	717.12	309.58	727.43	309.51	732.58	309.4
737.73	309.12	742.88	308.93	750.6	308.75	758.33	308.29	765.78	308.03
771.21	308.03	776.36	308.34	784.08	309.38	791.81	310.2	794.38	310.42
799.54	310.55	807.26	310.29	809.84	310.27	817.56	310.06	822.71	310.06
825.65	310.18	833.01	310.65	840.1	310.62	845.89	310.41	850.43	310.47
853.62	310.76	856.62	311.15	861.34	311.52	866.49	311.52	871.64	311
876.8	310.12	884.52	309.81	889.67	309.53	895.85	309.43	897.92	309.46

907.7	310.04	910.27	310	915.43	309.75	920.58	309.22	925.73	308.8
930.88	308.25	936.03	308.48	941.18	309.08	946.33	308.58	953.66	308.29
961.78	308.34	970.18	308.32	972.08	308.39	974.31	308.66	977.23	309.39
979.81	310.3	982.57	310.99	984.63	311.28	987.53	311.43	995.26	311.18
1002.99	311.03	1010.71	310.97	1021.01	310.56	1031.32	310.39	1036.47	310.5
1041.62	310.54	1048.64	310.81	1069.95	312.11	1075.1	312.32	1077.67	312.49
1085.4	312.76	1093.12	312.9	1098.27	313.24	1103.42	313.89	1108.58	314.84
1113.73	315.96	1118.84	317.2	1121.45	317.75	1124.03	318.1	1126.6	318.3
1129.08	318.34	1131.75	317.95	1134.33	317.14	1139.49	315.87	1142.05	315.1
1147.2	313.33	1149.81	312.69	1152.36	312.2	1154.93	311.96	1160.08	311.75
1162.66	311.8	1165.23	312	1170.38	312.57	1172.96	312.39	1178.11	310.93
1181.14	310.24	1185.83	309.33	1189.03	309.1	1193.16	308.92	1196.14	308.88
1201.29	309	1206.44	309.38	1211.59	310.41	1215.87	311.48	1219.31	312.22
1224.13	312.88	1227.04	313.06	1232.19	313.06	1237.34	312.85	1242.49	312.52
1253.04	311.62	1257.17	311.5	1263.09	311.41	1275.97	311.53	1283.7	311.71
1291.42	312.08	1296.57	312.38	1309.45	313.02	1317.18	313.56	1324.9	314.16
1330.05	314.39	1337.93	314.27	1342.93	314	1345.51	313.74	1350.66	313.55
1353.23	313.53	1358.38	313.81	1360.96	314.38	1363.53	315.25	1366.11	316.43
1368.68	317.47	1371.26	318.15	1373.83	318.61	1376.41	318.56	1378.98	318.19
1384.14	317.14	1389.29	316.22	1394.44	315.51	1399.59	314.91	1404.74	314.07
1407.89	313.65	1412.02	313.43	1416.15	313.4	1422.34	313.24	1425.34	313.25
1430.49	313.69	1435.64	314.75	1445.94	317.43	1451.25	318.44	1456.24	319.14
1461.4	319.71	1469.12	319.94	1471.7	319.96	1476.85	319.81	1482	319.49
1487.15	319.28	1489.72	318.82	1492.3	318.01	1494.87	316.38	1497.45	315.02
1500.03	314.53	1502.6	314.32	1507.75	314.3	1512.9	314.57	1515.48	314.37
1518.05	313.94	1523.2	312.87	1525.78	312.52	1530.93	312.11	1536.08	311.99
1541.23	312.03	1546.38	312.22	1562.74	313.39	1566.98	313.66	1575.13	313.93
1590.16	314.01	1597.89	313.94	1605.61	313.76	1610.76	313.55	1618.49	313.31
1628.81	312.87	1631.37	312.81	1639.09	312.44	1644.24	312.36	1651.97	312.58
1657.12	312.82	1659.7	312.87	1662.27	312.61	1667.42	311.59	1670	311.19
1672.57	310.97	1680.3	310.75	1688.02	310.7	1693.18	310.84	1706.05	311.08
1708.63	311.2	1713.78	311.28	1726.65	311.56	1729.23	311.72	1734.11	311.86
1747.26	311.99	1752.41	312.11	1754.98	312.27	1757.56	312.67	1760.95	313.44
1765.28	314.53	1773.01	313.88	1780.74	313.91	1785.89	314.06	1791.04	314.37
1796.05	314.74	1798.76	314.86	1803.91	314.91	1809.07	314.62	1812.56	313.82
1814.63	313.23	1816.69	312.92	1818.76	312.06	1821.94	310.94	1827.09	310.43
1832.24	310.14	1837.39	310.09	1847.66	310.19	1852.85	310.53	1860.57	310.79
1868.3	310.56	1876.02	310.65	1878.6	310.85	1883.75	311.93	1888.9	311.87
1896.63	312.01	1901.78	312.82	1904.35	313.81	1909.5	315.61	1913.73	316.89
1917.8	318.441	1922.38	319.25	1935.26	320.39	1940.41	320.73	1948.13	321.38
1953.28	321.54	1961.01	321.22	1973.89	321.04	1981.87	320.99	1989.34	321.03
1999.64	321.39	2007.37	321.46	2009.94	321.34	2017.67	320.74	2027.97	320.31
2033.48	320.3	2043.42	320.87	2048.57	321.05	2064.45	321.34	2069.17	321.37
2074.32	321.31	2082.05	321.01	2087.2	320.91	2097.52	320.87	2101.62	320.74
2105.23	320.49	2107.8	320.16	2118.26	318.07	2120.68	317.66	2123.26	317.36
2126.4	317.16	2130.98	316.73	2140.85	316.14	2149.11	315.88	2151.58	315.87
2159.43	316.26	2164.46	316.76	2169.61	317.49	2174.76	318	2177.34	318.17
2182.49	318.37	2188.34	318.49	2196.59	318.47	2210.82	318.49	2228.84	318.99
2239.15	318.98	2241.72	318.92	2246.87	319.09	2252.34	319.17	2254.6	319.27
2260.6	319.7	2267.47	320.57	2270.05	320.63	2280.35	320.54	2285.5	320.66
2288.08	320.64	2293.63	320.86	2306.1	321.19	2316.34	321.41	2318.41	321.36
2324.13	321.4	2331.86	321.27	2342.16	320.97	2347.31	320.97	2349.88	321.09

2355.04	321.62	2362.76	322.83	2367.91	323.35	2375.64	323.58	2378.21	323.57
2383.36	323.35	2386.54	323.12	2393.67	322.88	2396.24	322.93	2398.93	323.22
2401.39	323.28	2403.97	323.5	2406.54	323.92	2409.12	324.87	2420.22	325.5
2421.99	325.53	2424.57	325.38	2432.3	325.32	2434.87	325.43	2442.29	325.29
2447.75	325.29	2454.68	325.44	2460.87	325.47	2468.35	325.44	2473.5	325.53
2483.8	325.03	2489.78	325.09	2493.91	325.34	2500.1	324.98	2509.56	324.93
2514.55	325.21	2517.28	325.18	2519.86	325.37	2522.81	325.93	2525.01	326.07
2527.58	325.84	2529.01	325.56	2532.73	324.57	2535.31	324.28	2543.03	323.89
2549.37	324.09								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.05	446.9	.06	1917.8	.05

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
446.9	1917.8	0	0	0 .1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	319.38	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.08	Wt. n-Val.	0.050	0.060	0.050
W.S. Elev (ft)	319.30	Reach Len. (ft)			
Crit W.S. (ft)	313.43	Flow Area (sq ft)	689.53	10658.29	202.55
E.G. Slope (ft/ft)	0.000575	Area (sq ft)	689.53	10658.29	202.55
Q Total (cfs)	25000.00	Flow (cfs)	933.54	23887.02	179.44
Top Width (ft)	1851.89	Top Width (ft)	261.90	1441.93	148.06
Vel Total (ft/s)	2.16	Avg. Vel. (ft/s)	1.35	2.24	0.89
Max Chl Dpth (ft)	13.73	Hydr. Depth (ft)	2.63	7.39	1.37
Conv. Total (cfs)	1042943.0	Conv. (cfs)	38945.0	996512.1	7485.9
Length Wtd. (ft)		Wetted Per. (ft)	263.17	1452.99	148.49
Min Ch El (ft)	305.57	Shear (lb/sq ft)	0.09	0.26	0.05
Alpha	1.04	Stream Power (lb/ft s)	0.13	0.59	0.04
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Divided flow computed for this cross-section.

SUMMARY OF REACH LENGTHS

River: Sycamore Creek

Reach	River Sta.	Left	Channel	Right
Reach	500	484.65	511.2	513.2
Reach	450	163.58	199.56	223.24
Reach	400	290.22	278.09	271.36
Reach	300	95.85	94.82	94.72
Reach	250	Inl Struct		
Reach	200	301	307.18	316

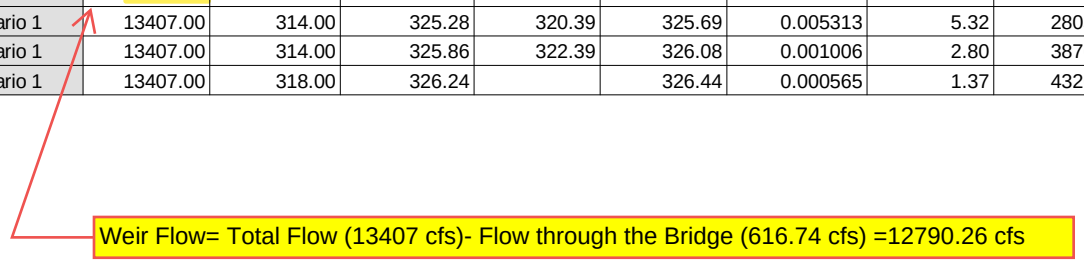
Reach	100	1794.15	589.3	429.11
Reach	70	0	0	0

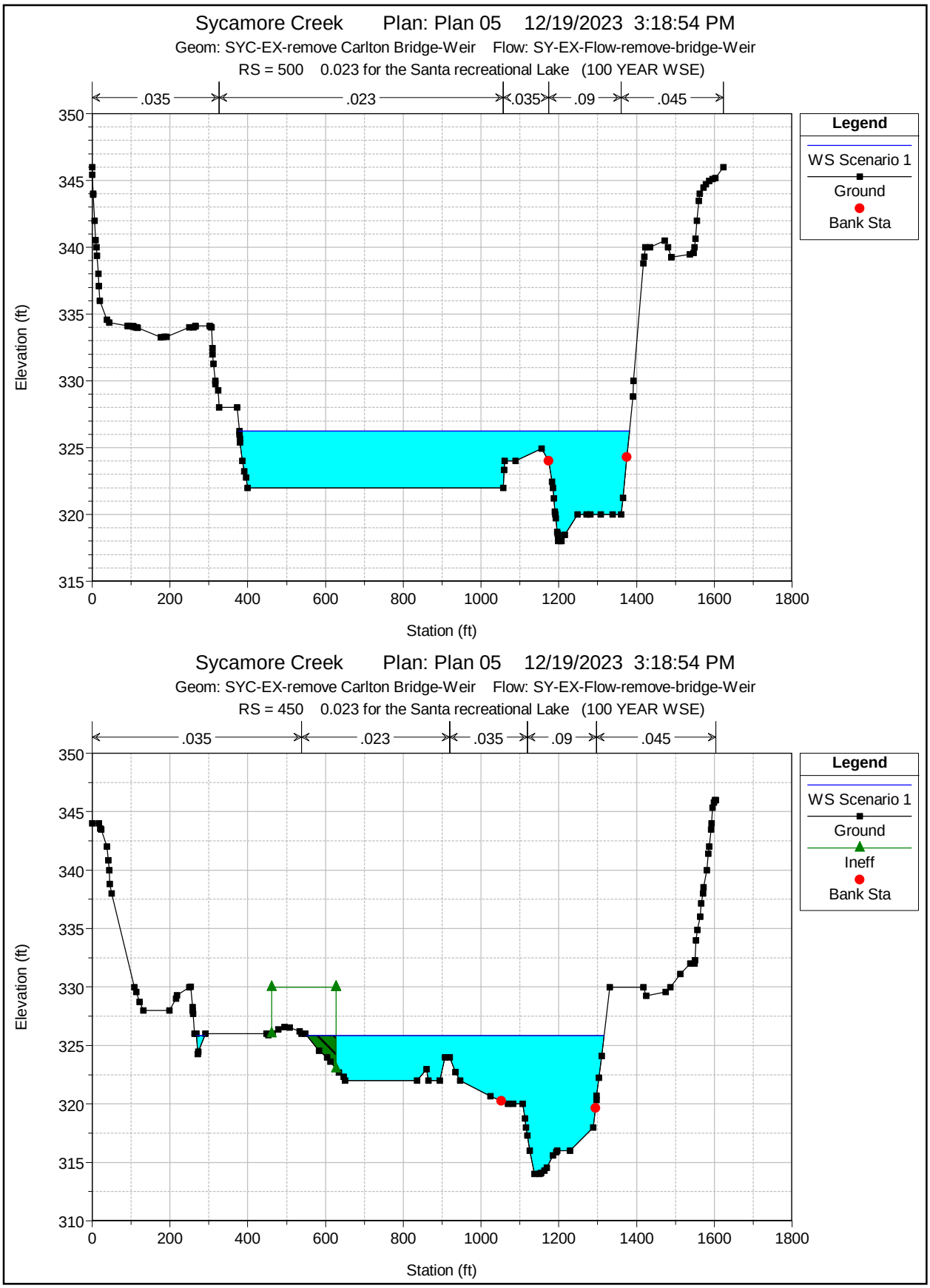
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Sycamore Creek

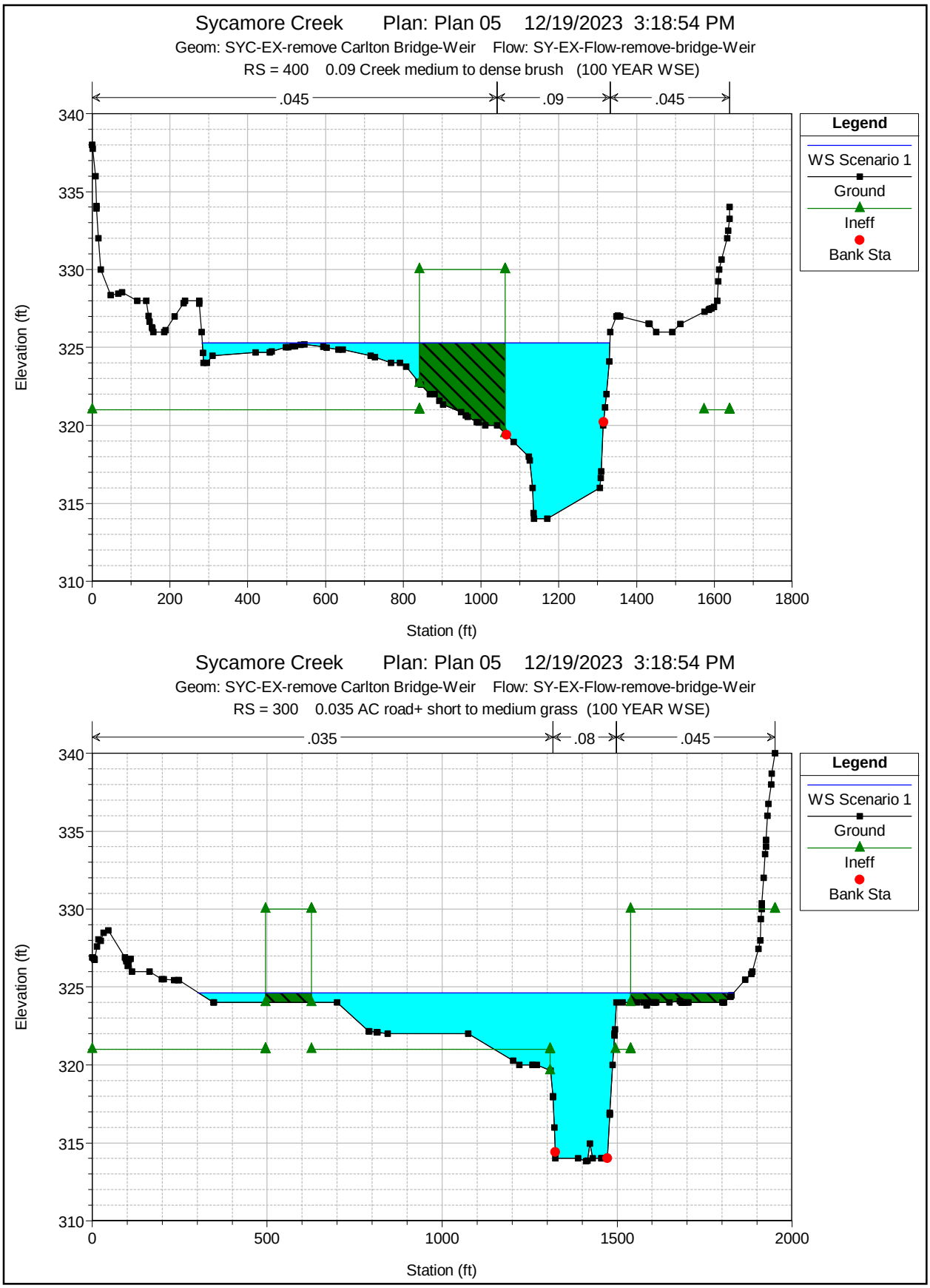
Reach	River Sta.	Contr.	Expan.
Reach	500	.1	.3
Reach	450	.1	.3
Reach	400	.1	.3
Reach	300	.3	.5
Reach	250	Inl Struct	
Reach	200	.1	.3
Reach	100	.1	.3
Reach	70	.1	.3

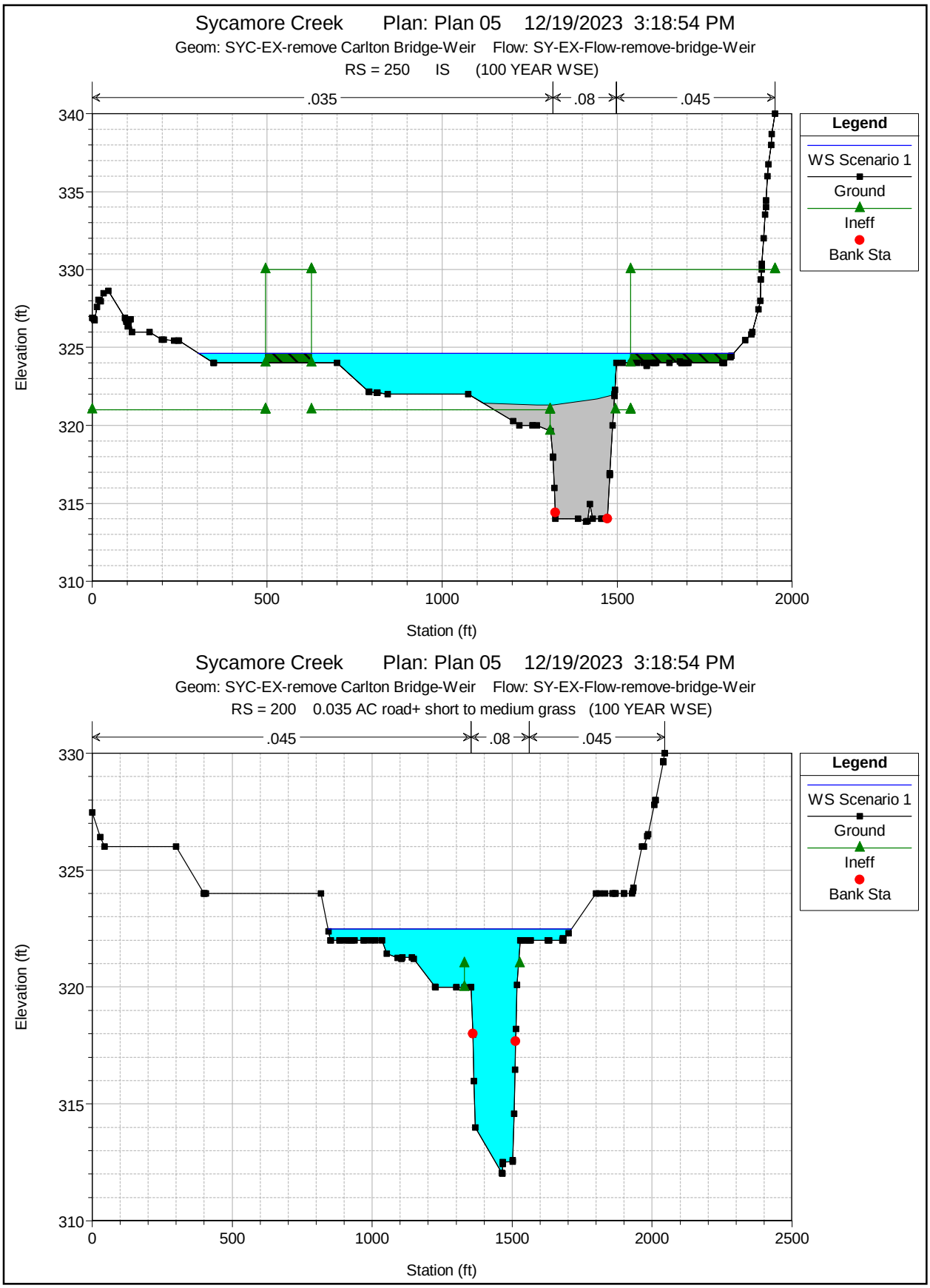
HEC-RAS Plan: Plan 05 River: Sycamore Creek Reach: Reach Profile: Scenario 1

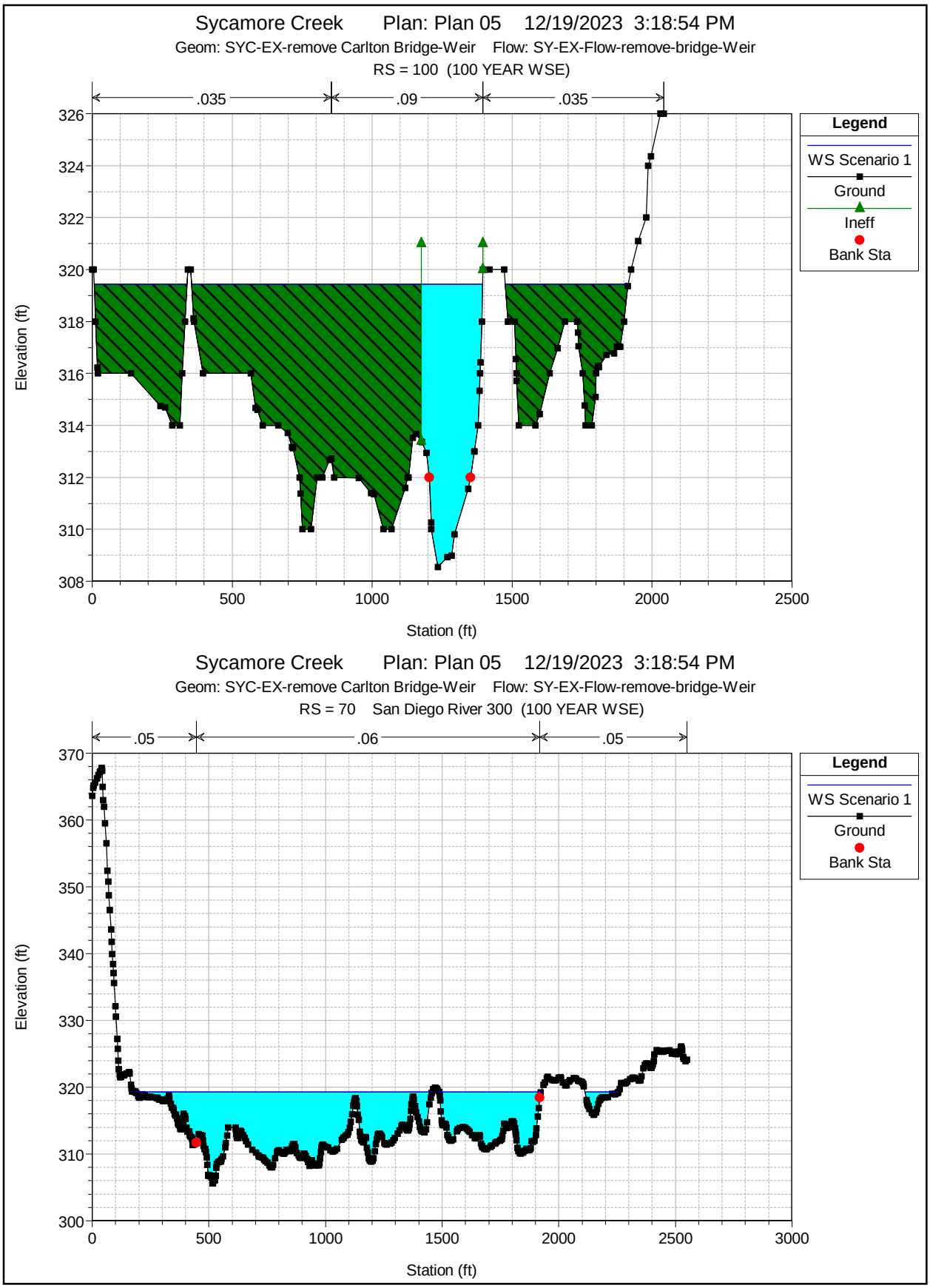
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach	70	Scenario 1	25000.00	305.57	319.30	313.43	319.38	0.000575	2.24	11550.37	1851.89	0.15
Reach	100	Scenario 1	13407.00	308.55	319.44	315.99	320.32	0.011090	7.84	1828.20	1809.04	0.45
Reach	200	Scenario 1	12790.26	312.03	322.49	319.22	323.15	0.007627	7.11	2245.73	869.90	0.41
Reach	250		Inl Struct									
Reach	300	Scenario 1	12790.26	313.84	324.62	320.05	324.80	0.001794	3.79	3815.38	1529.02	0.21
Reach	400	Scenario 1	13407.00	314.00	325.28	320.39	325.69	0.005313	5.32	2805.00	1048.40	0.31
Reach	450	Scenario 1	13407.00	314.00	325.86	322.39	326.08	0.001006	2.80	3876.27	786.35	0.17
Reach	500	Scenario 1	13407.00	318.00	326.24		326.44	0.000565	1.37	4326.41	1003.75	0.10




Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 500 0.023 for the Santa recreational Lake (100 YEAR WSE)
.035
.023
.035
.09
.045
Legend
WS Scenario 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 450 0.023 for the Santa recreational Lake (100 YEAR WSE)
.035
.023
.035
.09
.045
Legend
WS Scenario 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 400 0.09 Creek medium to dense brush (100 YEAR WSE)
.045
.09
.045
Legend
WS Scenario 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
340
335
330
325
320
315
310
0
200
400
600
800
1000
1200
1400
1600
1800
Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 300 0.035 AC road+ short to medium grass (100 YEAR WSE)
.035
.08
.045
Legend
WS Scenario 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
340
335
330
325
320
315
310
0
500
1000
1500
2000

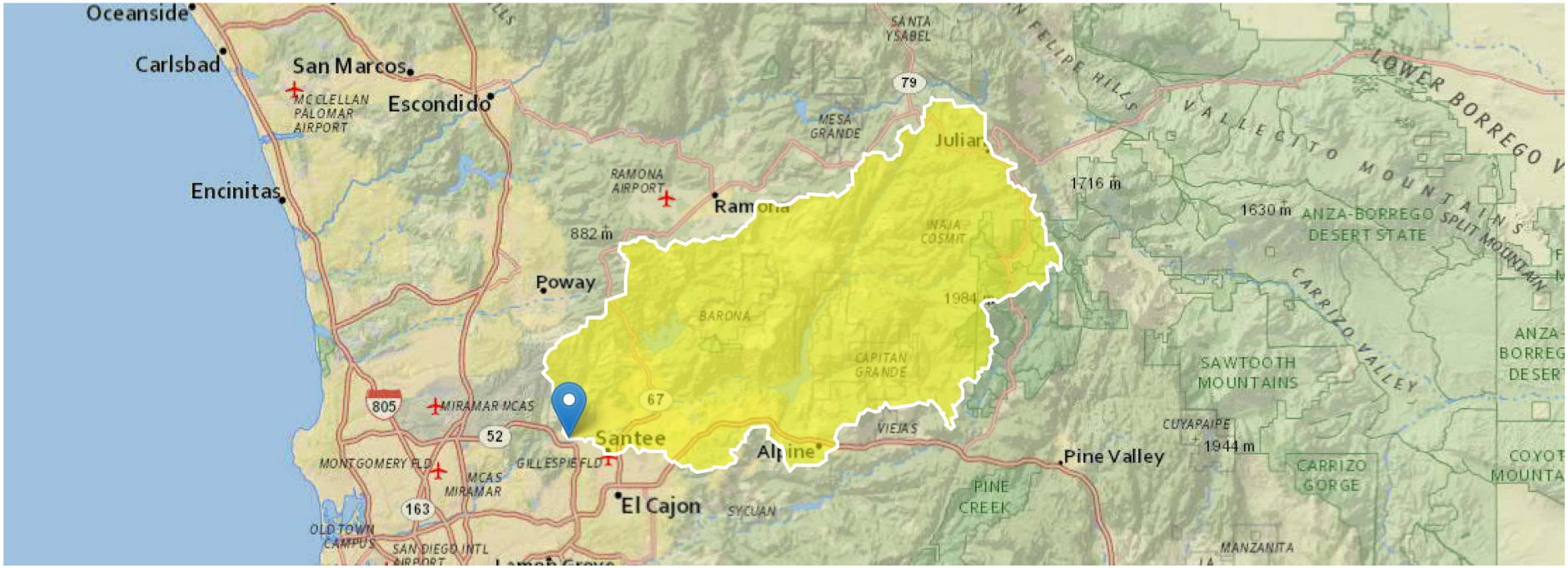

Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 250 IS (100 YEAR WSE)
.035
.08
.045
Legend
WS Scenario 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
340
335
330
325
320
315
310
0
500
1000
1500
2000
Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 200 0.035 AC road+ short to medium grass (100 YEAR WSE)
.045
.08
.045
Legend
WS Scenario 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
330
325
320
315
310
0
500
1000
1500
2000
2500


Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 100 (100 YEAR WSE)
.035
.09
.035
Legend
WS Scenario 1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
Sycamore Creek Plan: Plan 05 12/19/2023 3:18:54 PM
Geom: SYC-EX-remove Carlton Bridge-Weir Flow: SY-EX-Flow-remove-bridge-Weir
RS = 70 San Diego River 300 (100 YEAR WSE)
.05
.06
.05
Legend
WS Scenario 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

PROPOSED CONDITIONS
SYCAMORE CREEK MODEL

StreamStats Report

Region ID: CA
Workspace ID: CA20230727213209983000
Clicked Point (Latitude, Longitude): 32.84143, -117.01083
Time: 2023-07-27 14:32:34 -0700



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	140	miles
DRNAREA	Area that drains to a point on a stream	339.4	square miles
ELEV	Mean Basin Elevation	2224	feet

Parameter Code	Parameter Description	Value	Unit
LFPLENGTH	Length of longest flow path	40	miles
OUTLETELEV	Elevation of the stream outlet in feet above NAVD88	323	feet
PRECIP	Mean Annual Precipitation	21.1	inches

Peak-Flow Statistics

Peak-Flow Statistics Parameters [2012 5113 Region 5 South Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	339.4	square miles	0.04	850
PRECIP	Mean Annual Precipitation	21.1	inches	10	45

Peak-Flow Statistics Flow Report [2012 5113 Region 5 South Coast]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	ASEp
50-percent AEP flood	1800	ft^3/s	331	9790	134
20-percent AEP flood	7870	ft^3/s	2350	26300	83.1
10-percent AEP flood	16400	ft^3/s	6150	43700	64
4-percent AEP flood	33600	ft^3/s	14800	76100	51.5
2-percent AEP flood	52200	ft^3/s	24500	111000	47.6
1-percent AEP flood	75200	ft^3/s	35100	161000	47.2
0.5-percent AEP flood	105000	ft^3/s	48400	228000	47.7
0.2-percent AEP flood	149000	ft^3/s	65400	340000	52

Peak-Flow Statistics Citations

Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

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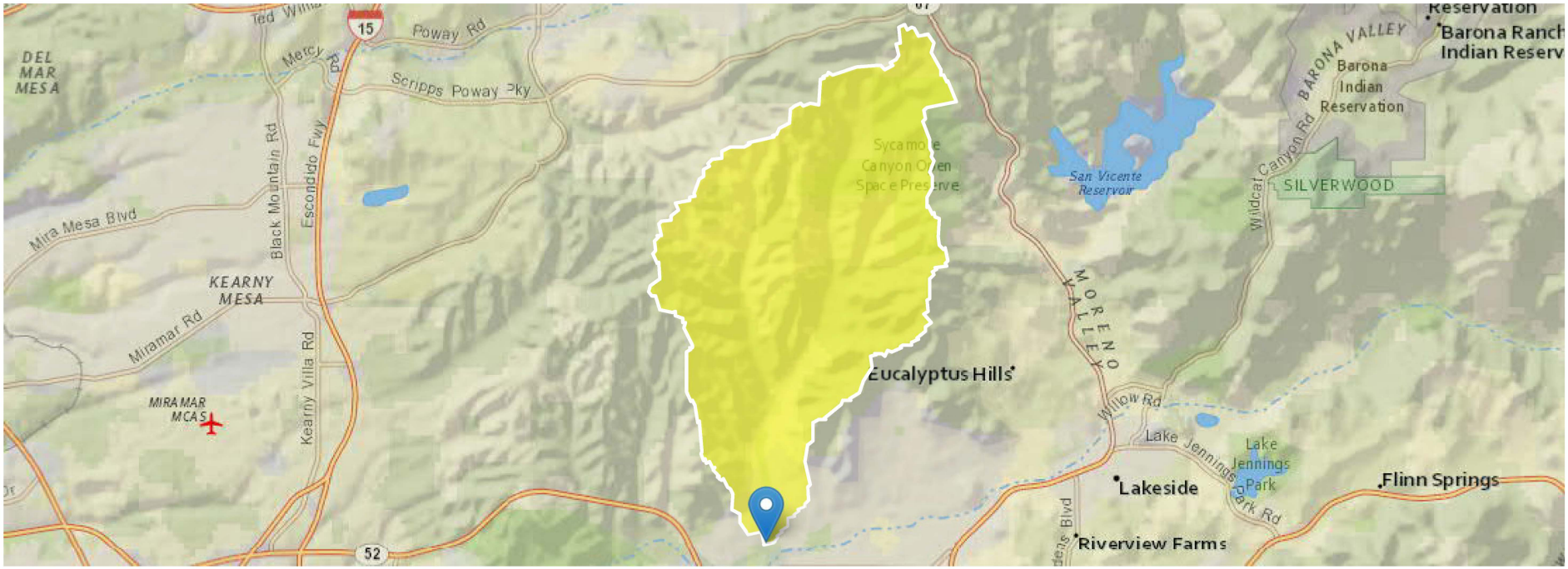
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Application Version: 4.16.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report

Region ID: CA
Workspace ID: CA20230722002005961000
Clicked Point (Latitude, Longitude): 32.84383, -117.00710
Time: 2023-07-21 17:20:28 -0700



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262		miles
BSLDEM30M	Mean basin slope computed from 30 m DEM		percent
CENTROXA83	X coordinate of the centroid, in NAD_1983_Albers, meters		meters

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	17.1	square miles
PRECIP	Mean Annual Precipitation	15	inches

Peak-Flow Statistics

Peak-Flow Statistics Parameters [2012 5113 Region 5 South Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	17.1	square miles	0.04	850
PRECIP	Mean Annual Precipitation	15	inches	10	45

Peak-Flow Statistics Flow Report [2012 5113 Region 5 South Coast]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	ASEp
50-percent AEP flood	186	ft^3/s	34	1020	134
20-percent AEP flood	642	ft^3/s	192	2150	83.1
10-percent AEP flood	1100	ft^3/s	413	2930	64
4-percent AEP flood	1780	ft^3/s	789	4020	51.5
2-percent AEP flood	2390	ft^3/s	1130	5080	47.6
1-percent AEP flood	3050	ft^3/s	1430	6490	47.2
0.5-percent AEP flood	3810	ft^3/s	1770	8200	47.7
0.2-percent AEP flood	4770	ft^3/s	2110	10800	52

Peak-Flow Statistics Citations

Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

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Application Version: 4.16.1
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Table 1 - Comparison of Peak Flow Rates (cfs)

San Diego River Location	10-Year FEMA	50-Year FEMA	100-Year FEMA	100-Year City / BSI	500-Year FEMA
W Hills Br (Mission Dam)	5,500	19,000	38,000	50,000	112,000
0.7 Mi Downstream of Sycamore Creek	5,000	17,000	37,000	49,000	112,000
Forester Creek Confluence	4,500	16,000	36,000	48,000	112,000

To estimate Q50 BSI (Estimated based on the Q100 BSI, following the proportional scaling method aligned with the pattern observed in FEMA data).
Q50 BSI is used in San Diego River Proposed as profile PF-6 to calculate the flow from the San Diego River that enters
the proposed culverts and commingles with Sycamore Creek at Cross Section #100, before the proposed bridge connecting PA-2 and PA-3
To calculate 50 Year BSI= 19,000(FEMA 50 Year X 50,000 (BSI 100 Year)/ 38,000 (FEMA)= 25,000 cfs

from the tributary system can be qualitatively evaluated by a comparison of the drainage area of the main stem to the area of the tributary. For example, if the tributary system has a drainage area much smaller than that of the main stem, the peak discharge from the tributary may be out of phase with the peak discharge from the main stem. Table 3-4_provides a comparison of discharge frequencies for coincidental occurrence for a 100 year design storm. This table can be used to establish an appropriate tailwater WSEL for the tributary based on the expected coincident storm frequency in the main stem. For example, if the main stem has a drainage area of 1000 acres and the tributary has a drainage area of 10 acres the ratio of main stem drainage area to tributary drainage area is 2000 to 20 which equals 100 to 1. From Table 3-4 for the 100 year design storm occurring over both areas, the flow rate in the main stem will equal that of a 25 year storm when the tributary flow rate reaches its 100 year peak. Conversely, when the flow rate in the main stem reaches its 100 year peak at the outfall of the tributary, the flow rate from the tributary will have fallen to the 25 year flow rate.

Table 3-4 Coincidental Frequency Table

Area Ratio	100 Year Coincidental Frequency	
	Main Stem	Tributary
10,000 to 1 and Greater	2 100	100 2
Between 9,999 to 1 and 1,000 to 1	10 100	100 10
Between 999 to 1 and 100 to 1	25 100	100 25
Between 99.9 to 1 and 10 to 1	50 100	100 50
Between 9.99 to 1 and 1 to 1	100 100	100 100

17.1/339.4=5%

Coincidental Channel Hydraulic Calculations

The engineer may use the 100 year WSEL in the main stem as the tailwater elevation for all mainline hydraulic calculations in the tributary regardless of the relative sizes of the drainage areas.

Where the engineer, for the purpose of analyzing the mainline hydraulics in the tributary, proposes to use two different frequencies, one for main stem and a different frequency for the tributary drainage system, two design water surfaces must be calculated:

1. The water surface in the main stem will be the WSEL of the larger frequency as shown in Table 3-4 (100). The tributary would then use the lower frequency shown in Table 3-4 (5,10 etc.) for its mainline hydraulic calculations. For example, for a drainage area ratio between 100 to 1 and 999 to1 and a 100 year storm the main stem control WSEL would be calculated using a 100 year storm and the mainline hydraulics in the tributary would be calculated using a 25 year storm.
2. In the second case, the water surface in the main stem will be the WSEL of the smaller frequency as shown in Table 3-4 (2, 10 etc.). The tributary would then use the larger

HEC-RAS HEC-RAS 5.0.7 March 2019
U.S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

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

PROJECT DATA
Project Title: Sycamore Creek
Project File : SycamoreCreek.prj
Run Date and Time: 2/7/2024 3:24:02 PM

Project in English units

PLAN DATA

Plan Title: Plan 07
Plan File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.p07

Geometry Title: PRSYC-Remove-Carlton-Weir
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.g15

Flow Title   : SY-PR-Flow-removeBridge-weir
Flow File   : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.f13

Plan Summary Information:
Number of: Cross Sections =   11   Multiple Openings =   0
            Culverts   =   0   Inline Structures =   1
            Bridges   =   1   Lateral Structures =   1

Computational Information
    Water surface calculation tolerance = 0.01
    Critical depth calculation tolerance = 0.01
    Maximum number of iterations   = 20
    Maximum difference tolerance   = 0.3
    Flow tolerance factor   = 0.001

Computation Options

Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: SY-PR-Flow-removeBridge-weir
Flow File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.f13

Flow Data (cfs)

River	Reach	RS	Scenario 1
Sycamore Creek	Reach	500	13407
Sycamore Creek	Reach	300	12790.26
Sycamore Creek	Reach	100	14373
Sycamore Creek	Reach	50	25000

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Sycamore Creek	Reach	Scenario 1		Known WS = 317.23

GEOMETRY DATA

Geometry Title: PRSYC-Remove-Carlton-Weir
Geometry File : r:\1759\Plot\Hydrology\FEMA\To the City\12 12-14-2023\Sycamore Creek\SycamoreCreek.g15

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 500

INPUT
Description: 0.023 for the Santa recreational Lake
0.035 AC road+ short to
medium grass
0.09 Creek medium t odense brush
0.045 houses+
landscape
Station Elevation Data num= 102

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	346	.48	345.42	2.61	344	2.66	343.94	5.57	342

9.1	340.54	10.94	340	12.03	339.37	15.95	338	16.87	337.09	
19.22	336	37.85	334.58	44.1	334.36	91.44	334.1	91.71	334.1	
92	334.1	103.16	334.09	104.62	334.09	105.32	334.08	106.24	334.08	
110.23	334	114.92	334	117	333.976	177.13	333.27	185.06	333.3	
190.91	333.29	250.26	334	260.57	334	265.06	334.09	265.59	334.1	
301.99	334.1	304.29	334.05	306.99	334	308.9	332.43	309.47	332	
311.94	331.29	316.88	330	317.16	329.75	324.23	329.29	326.75	328	
372.87	328	378.15	326.23	378.76	326	379.37	325.68	380.21	325.39	
386.6	324	391.32	323.22	395.69	322.75	399.05	322	1057.41	322	
1059.55	323.35	1061.33	324	1088.34	324	1155.18	324.93	1174	324.02	
1174.06	324.02	1174.41	324	1182.58	322.46	1185.46	322	1187.3	321.2	
1190.19	320.23	1191.3	320	1191.98	319.72	1196.05	318.7	1197.6	318.55	
1197.89	318.45	1198.77	318	1205.35	318	1207.04	318	1215.51	318.47	
1248.19	320	1271.68	320	1281.23	320	1308.2	320	1337.97	320	
1360.39	320	1365.31	321.25	1375.35	324.28	1375.39	324.29	1390.4	328.82	
1391.91	330	1417.68	338.79	1419.76	339.3	1423	340	1434.66	340	
1472.4	340.51	1480.96	340	1489.05	339.24	1489.71	339.26	1536.35	339.46	
1546.35	339.59	1549.55	340	1551	340.64	1554.92	342	1559.9	343.46	
1562.26	344	1571.8	344.47	1578.84	344.71	1586.79	344.95	1595.93	345.12	
1602.63	345.18	1623.79	346							

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	326.75	.023	1057.41	.035	1174.06	.09	1360.39	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1174	1375.35	484.65	511.2	513.2	.1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	326.44	Element	Left OB	Channel	Right OB	
Vel Head (ft)	0.20	Wt. n-Val.	0.023	0.087	0.045	
W.S. Elev (ft)	326.24	Reach Len. (ft)	484.65	511.20	513.20	
Crit W.S. (ft)		Flow Area (sq ft)	3069.34	1250.66	6.40	
E.G. Slope (ft/ft)	0.000565	Area (sq ft)	3069.34	1250.66	6.40	
Q Total (cfs)	13407.00	Flow (cfs)	11694.39	1707.78	4.83	
Top Width (ft)	1003.75	Top Width (ft)	795.89	201.35	6.51	
Vel Total (ft/s)	3.10	Avg. Vel. (ft/s)	3.81	1.37	0.75	
Max Chl Dpth (ft)	8.24	Hydr. Depth (ft)	3.86	6.21	0.98	
Conv. Total (cfs)	563950.6	Conv. (cfs)	491911.8	71835.8	203.0	
Length Wtd. (ft)	492.42	Wetted Per. (ft)	796.92	202.85	6.80	
Min Ch El (ft)	318.00	Shear (lb/sq ft)	0.14	0.22	0.03	
Alpha	1.34	Stream Power (lb/ft s)	0.52	0.30	0.03	
Frctn Loss (ft)	0.36	Cum Volume (acre-ft)	127.42	152.04	3.47	
C & E Loss (ft)	0.00	Cum SA (acres)	28.16	17.42	2.13	

Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 450

INPUT
Description: 0.023 for the Santa recreational Lake
0.035 AC road+ short to
medium grass
0.09 Creek medium t odense brush
0.045 houses+
landscape

Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	344	17.26	344	20.59	343.57	23.56	343.47	37.59	342
41.63	340.86	43.32	340	45.06	338.83	49.52	338	108.46	330
113.23	329.57	121.31	328.71	131.1	328	198.19	328	215.69	329
217.89	329.29	249.45	330	252.84	330.01	257.89	328.27	258.41	328
259.21	327.72	263.54	326	267.83	326	271.35	324.26	273.16	324.46
291.29	326	447.75	326	453.6	325.88	461.37	326	464.52	326
479	326.38	494.64	326.57	508.17	326.54	533.29	326.23	538.75	326
548.32	326	583.38	324.55	604.58	324	612.4	323.61	634.1	322.7
646.44	322.3	649.79	322	835.68	322	859.71	322.96	865.16	322
893.59	322	906.95	324	919.69	324	933.72	322.74	946.86	322
1024.16	320.67	1052.36	320.27	1052.39	320.27	1069.11	320	1082.55	320
1106.56	320	1112.67	318.77	1115.34	318	1118.62	317.28	1125.27	316
1137.06	314	1149.25	314	1153.58	314.04	1154.62	314.1	1163.46	314.3
1169.47	314.53	1184.76	315.59	1193.79	315.87	1196.5	316	1228.7	316
1289.08	318	1294.75	319.64	1294.78	319.65	1296.82	320.34	1297.25	320.7
1302.63	322.24	1310.3	324.11	1330.91	330	1418.17	330	1425.14	329.24
1475.4	329.56	1487.5	330	1512.95	331.13	1538.06	332	1549.66	332
1550.33	332.31	1553.11	334	1555.85	334.9	1563.92	336	1565.63	337.16
1570.84	338	1572.31	338.52	1580.22	340	1584.67	341.39	1586.5	342
1591.39	343.46	1592.65	344	1595.12	345.34	1599.14	345.8	1601.31	346
1604.01	346								

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	538.75	.023	919.69	.035	1118.62	.09	1296.82	.045

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff Contr.	Expan.
1052.39	1294.75	163.58	199.56	223.24	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
462	627	330	F

CROSS SECTION OUTPUT Profile #Scenario 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	326.08	Element			
Vel Head (ft)	0.22	Wt. n-Val.	0.027	0.074	0.052
W.S. Elev (ft)	325.86	Reach Len. (ft)	163.58	199.56	223.24
Crit W.S. (ft)	322.39	Flow Area (sq ft)	1664.78	2147.45	64.07
E.G. Slope (ft/ft)	0.001006	Area (sq ft)	1772.70	2147.45	64.07
Q Total (cfs)	13407.00	Flow (cfs)	7282.90	6002.85	121.25

Top Width (ft)	786.35	Top Width (ft)	522.31	242.36	21.68
Vel Total (ft/s)	3.46	Avg. Vel. (ft/s)	4.37	2.80	1.89
Max Chl Dpth (ft)	11.86	Hydr. Depth (ft)	3.72	8.86	2.95
Conv. Total (cfs)	422664.5	Conv. (cfs)	229598.3	189243.8	3822.4
Length Wtd. (ft)	188.87	Wetted Per. (ft)	447.77	243.28	22.61
Min Ch El (ft)	314.00	Shear (lb/sq ft)	0.23	0.55	0.18
Alpha	1.16	Stream Power (lb/ft s)	1.02	1.55	0.34
Frctn Loss (ft)	0.37	Cum Volume (acre-ft)	100.48	132.10	3.05
C & E Loss (ft)	0.02	Cum SA (acres)	20.82	14.82	1.97

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 400

INPUT
Description: 0.09 Creek medium t odense brush
0.045 houses (buildings)+
parking area+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	338	.21	338	1.12	337.74	8.25	336	11.02	334.07
11.32	333.91	16.15	332	22.08	330	47.54	328.37	67.02	328.46
77.13	328.55	115.32	328	138.57	328	145.26	327.01	147.88	326.66
153.6	326.29	155.07	326.24	156.95	326	184.97	326	189.2	326.1
211.91	326.98	235.19	327.84	238.28	328	275.37	328	275.57	327.82
281.09	326	284.67	324.66	286.51	324	294.81	324	308.89	324.47
419.7	324.68	457.3	324.67	462.04	324.73	498.49	325.01	504.39	325.01
515.48	325.09	520.86	325.08	536.12	325.18	545.12	325.21	594.18	325.04
602.87	324.99	633.01	324.87	644.44	324.85	716.39	324.46	727.52	324.38
768.74	324	791.41	324	807.68	323.76	838.96	322.8	845.41	322.6
868.9	322	881.07	322	892.7	321.57	902.92	321.34	948.37	320.84
960.48	320.65	966.06	320.56	988.85	320.21	993.5	320.19	1011.36	320
1041.42	320	1065.21	319.4	1065.28	319.4	1083.68	318.94	1123.34	318
1124.7	317.76	1132.52	316	1135.34	314.39	1136.69	314	1170.93	314
1304.97	316	1307.64	316.64	1308.71	317.05	1314.11	320	1314.97	320.19
1315	320.2	1319.26	321.16	1322.52	322	1329.49	324.1	1332.61	326
1347.79	327	1352.19	327.04	1357.77	326.99	1431.55	326.53	1434.01	326.49
1449.92	326	1491.44	326	1513.13	326.5	1574.68	327.31	1585.54	327.42
1587.93	327.48	1593.01	327.52	1599.21	327.61	1608.14	328	1610.54	329.25
1612.64	330	1618.12	330.65	1633.37	332	1635.41	332.5	1639.14	333.24
1639.65	334								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
       0    .045 1041.42     .09 1332.61    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1065.28    1315           290.22  278.09  271.36             .1       .3
Ineffective Flow     num=       3
   Sta L   Sta R    Elev  Permanent
       0     842     321       F
     842    1062     330       F
    1573 1639.65     321       F
```

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	325.69	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.049	0.090	0.090
W.S. Elev (ft)	325.28	Reach Len. (ft)	290.22	278.09	271.36
Crit W.S. (ft)	320.39	Flow Area (sq ft)	417.91	2338.79	48.27
E.G. Slope (ft/ft)	0.005313	Area (sq ft)	1387.52	2338.79	48.27
Q Total (cfs)	13407.00	Flow (cfs)	840.74	12450.99	115.27
Top Width (ft)	1048.40	Top Width (ft)	782.25	249.72	16.42
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	2.01	5.32	2.39
Max Chl Dpth (ft)	11.28	Hydr. Depth (ft)	0.74	9.37	2.94
Conv. Total (cfs)	183927.4	Conv. (cfs)	11533.9	170812.2	1581.3
Length Wtd. (ft)	281.35	Wetted Per. (ft)	562.51	251.38	17.27
Min Ch El (ft)	314.00	Shear (lb/sq ft)	0.25	3.09	0.93
Alpha	1.17	Stream Power (lb/ft s)	0.50	16.43	2.21
Frctn Loss (ft)	0.82	Cum Volume (acre-ft)	94.55	121.82	2.76
C & E Loss (ft)	0.07	Cum SA (acres)	18.37	13.69	1.87

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 300

INPUT

Description: 0.035 AC road+ short to medium grass
0.08 Creek medium odense brush
0.045 houses+ landscape

Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	326.9	2.71	326.86	4.84	326.81	7.05	326.76	13.21	327.6
17.53	328.05	24.55	327.96	32.42	328.47	46.58	328.62	93.74	326.9
95.92	326.8	97.95	326.67	101.7	326.36	103.87	326.73	109.94	326.8
114.01	326	164.4	326	198.56	325.51	204.46	325.49	234.71	325.45
244.93	325.43	247.08	325.43	346.79	324	347.98	324	699.16	324
790.88	322.16	792.13	322.16	813.92	322.1	814.54	322.1	814.85	322.1

844.83	322	1074.15	322	1203.28	320.26	1220.36	320	1257.95	320
1258.05	320	1270.88	320	1309.73	319.63	1316.14	318	1316.31	317.94
1320.69	316	1323.26	314.42	1323.92	314	1387.93	314	1411.01	313.84
1415.96	313.85	1421.73	314.95	1430.1	314	1454.02	314	1457.01	314
1472.57	314	1478.77	316.81	1478.87	316.86	1479.02	316.93	1486.47	320
1492.6	321.89	1492.87	322	1493.51	322.27	1497.83	324	1516.18	324
1539.49	324	1557.89	324	1576.09	324	1584.94	323.84	1585.17	323.84
1592.19	324	1605.09	324	1607.37	324	1608.02	324	1611.34	324
1649.18	324	1678.88	324.11	1683.07	324	1684.65	324	1684.79	324
1687.31	324	1693.67	324	1701.42	324	1704.28	324	1801.5	324
1804.71	324	1805.6	324.02	1824.42	324.39	1826.39	324.46	1866.12	325.48
1884.04	325.83	1886.97	326	1903.67	327.44	1908.78	328	1911.3	329.35
1913.18	330	1913.9	330.37	1918.57	332	1923.41	333.53	1925.36	334
1926.23	334.45	1929.81	336	1932.53	336.76	1940.9	338	1942.33	338.7
1951.53	340								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.035	1316.14	.08	1497.83	.045

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1323.26	1472.57	95.85	94.82	94.72	.3	.5

Ineffective Flow num= 5

Sta L	Sta R	Elev	Permanent
0	495	321	F
495	626	330	F
626	1309.17	321	F
1495.61	1538	321	F
1538	1951.53	330	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	324.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.18	Wt. n-Val.	0.036	0.080	0.077
W.S. Elev (ft)	324.62	Reach Len. (ft)	95.85	94.82	94.72
Crit W.S. (ft)	320.05	Flow Area (sq ft)	2072.52	1581.80	161.06
E.G. Slope (ft/ft)	0.001794	Area (sq ft)	2153.68	1581.80	334.97
Q Total (cfs)	12790.26	Flow (cfs)	6455.43	5995.96	338.87
Top Width (ft)	1529.02	Top Width (ft)	1019.67	149.31	360.04
Vel Total (ft/s)	3.35	Avg. Vel. (ft/s)	3.11	3.79	2.10
Max Chl Dpth (ft)	10.78	Hydr. Depth (ft)	2.33	10.59	2.46
Conv. Total (cfs)	301931.8	Conv. (cfs)	152389.4	141542.9	7999.5
Length Wtd. (ft)	94.82	Wetted Per. (ft)	889.78	149.59	67.37
Min Ch El (ft)	313.84	Shear (lb/sq ft)	0.26	1.18	0.27
Alpha	1.05	Stream Power (lb/ft s)	0.81	4.49	0.56
Frctn Loss (ft)		Cum Volume (acre-ft)	82.75	109.31	1.57
C & E Loss (ft)		Cum SA (acres)	12.37	12.42	0.70

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

INLINE STRUCTURE

RIVER: Sycamore Creek
REACH: Reach RS: 250

INPUT
Description:
Distance from Upstream XS = 25
Deck/Roadway Width = 65
Weir Coefficient = 3
Weir Embankment Coordinates num = 7

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
1038	321.5	1270.8	321.3	1316.1	321.3	1415	321.6	1444	321.7
1497.8	322	1576	322						

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Weir crest shape = Broad Crested

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 200

INPUT
Description: 0.035 AC road+ short to medium grass
0.08 Creek medium odense
brush
0.045 houses+ landscape
Station Elevation Data num= 101

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	327.46	28.23	326.41	44.34	326	299.22	326	399.15	324
399.19	324	399.22	324	402.1	324	405.23	324	816.63	324
843.92	322.38	851.28	322	852.31	322	882.13	322	885.37	322
905.31	322	915.28	322	923.84	322	925.93	322	929.19	322
937.09	322	969.52	322	972.34	322	995.39	322	1010.89	322
1035.6	322	1052.64	321.42	1090.99	321.25	1103.71	321.21	1107.61	321.26
1141.78	321.26	1149.32	321.2	1224.8	320.02	1226	320	1227.14	320
1300.05	320	1300.14	320	1328.99	320	1353.28	320	1353.62	320
1353.66	319.99	1359.29	318	1359.35	317.98	1359.38	317.97	1363.29	315.97
1368.06	314	1462.45	312.04	1464.3	312.03	1464.38	312.03	1466.48	312.43
1466.85	312.51	1502.13	312.53	1502.41	312.6	1506.34	314.57	1509.85	316.47
1512.47	317.67	1512.5	317.68	1513.61	318.2	1517.04	320.09	1529.08	322
1534.27	322	1535.44	322	1554.42	322	1558.1	322	1560.62	322
1563.47	322	1565.63	322	1626.77	322	1630.35	322	1632.59	322
1679.24	322	1679.48	322	1681.04	322.07	1681.35	322.08	1682.74	322
1701.61	322.31	1799.76	324	1811.41	324	1832.13	324	1859.32	324
1859.48	324	1867.76	324	1868.41	324	1868.68	324	1899.87	324

```
 1899.92     324 1900.25     324 1927.85     324 1931.37  324.11 1933.92  324.24
 1963.05     326 1970.76     326 1983.01  326.46 1985.11  326.53 2008.56  327.79
 2011.05     328 2012.61     328 2039.87  329.62 2040.73  329.66 2045.52     330
 2045.53     330

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0    .045 1353.28     .08 1560.62    .045

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       1359.29 1512.47              301  307.18     316             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 1330.23     321       F
 1527.39 2045.53     321       F

CROSS SECTION OUTPUT  Profile #Scenario 1

  E.G. Elev (ft)            322.49    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.96    Wt. n-Val.                0.060      0.080      0.080
  W.S. Elev (ft)            320.53    Reach Len. (ft)          301.00     307.18     316.00
  Crit W.S. (ft)            319.22    Flow Area (sq ft)         21.19    1125.75       8.36
  E.G. Slope (ft/ft)      0.026254    Area (sq ft)              86.02    1125.75       8.36
  Q Total (cfs)           12790.26    Flow (cfs)                76.79   12687.61      25.86
  Top Width (ft)            327.96    Top Width (ft)           167.41     153.18       7.37
  Vel Total (ft/s)           11.07    Avg. Vel. (ft/s)           3.62      11.27       3.10
  Max Chl Dpth (ft)           8.50    Hydr. Depth (ft)           0.73       7.35       1.13
  Conv. Total (cfs)         78937.6    Conv. (cfs)               473.9    78304.0      159.6
  Length Wtd. (ft)          304.40    Wetted Per. (ft)          29.40     155.34       8.01
  Min Ch El (ft)            312.03    Shear (lb/sq ft)           1.18      11.88       1.71
  Alpha                       1.03    Stream Power (lb/ft s)     4.28     133.87       5.29
  Frctn Loss (ft)             0.13    Cum Volume (acre-ft)      82.75     103.16       1.57
  C & E Loss (ft)             0.96    Cum SA (acres)            11.06      12.09       0.30


Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross
         sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
         1.4.  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate
         the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: Sycamore Creek
REACH: Reach              RS: 100

INPUT
Description:
Station Elevation Data    num=      62
```

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	320	5.9	320	12.54	318	18.89	316.23	19.93	316
138.69	316	243.19	314.75	259.69	314.69	285.98	314	313.63	314
320.87	316	332.1	318	341.59	320	346.65	320	356.89	321
371.55	321	401.47	322.5	428.35	323.5	448.66	316	742.12	312
744.01	311.37	751.39	310	782.07	310	802.86	312	822.52	312
847.25	312.66	854.61	312.72	864.73	312	951.52	311.98	995.57	311.4
1006.26	311.36	1040.45	310	1069.5	310	1118.53	311.6	1127.3	312
1130.69	312	1144.57	313.53	1157.38	313.67	1177.21	313.36	1177.28	313.36
1194.29	312.94	1204.3	312	1211.39	310.26	1211.93	310	1235.53	308.55
1269.25	308.93	1283.61	308.98	1294.48	309.81	1343.59	311.55	1351.9	312
1365.51	313	1365.6	313	1379	314	1383.25	315.34	1385.69	316
1386.66	316.43	1391.44	318	1394.82	320	1405	321	1419.39	324
1462.42	324	2042.34	333.6						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.035	854.61	.09	1394.82	.035	1419.39	.15

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
1204.3	1351.9	263.29	199.09	115	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	1175	321	F
1394.82	2042.34	321	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	321.40	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.03	Wt. n-Val.	0.048	0.090	0.089
W.S. Elev (ft)	321.37	Reach Len. (ft)	263.29	199.09	115.00
Crit W.S. (ft)	316.26	Flow Area (sq ft)	8662.77	1702.68	311.19
E.G. Slope (ft/ft)	0.000138	Area (sq ft)	8662.77	1702.68	311.19
Q Total (cfs)	14373.00	Flow (cfs)	12473.45	1684.53	215.02
Top Width (ft)	1351.50	Top Width (ft)	1149.04	147.60	54.86
Vel Total (ft/s)	1.35	Avg. Vel. (ft/s)	1.44	0.99	0.69
Max Chl Dpth (ft)	12.82	Hydr. Depth (ft)	7.54	11.54	5.67
Conv. Total (cfs)	1222421.0	Conv. (cfs)	1060864.0	143268.9	18287.7
Length Wtd. (ft)	239.43	Wetted Per. (ft)	1153.25	147.99	56.20
Min Ch El (ft)	308.55	Shear (lb/sq ft)	0.06	0.10	0.05
Alpha	1.06	Stream Power (lb/ft s)	0.09	0.10	0.03
Frctn Loss (ft)	0.04	Cum Volume (acre-ft)	52.53	93.19	0.41
C & E Loss (ft)	0.01	Cum SA (acres)	6.52	11.03	0.07

Warning: Multiple water surfaces were found that could balance the energy equation. The program selected the water surface whose main channel velocity head was the closest to the previously computed cross section.
Warning: Divided flow computed for this cross-section.
Warning: The cross-section end points had to be extended vertically for the computed water surface.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 90

INPUT
Description:
Station Elevation Data num= 173

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	322.5	217.26	322	221.53	320	229.52	316	233.54	314
254.87	312	264.6	310.79	267.4	310.54	281.5	310.97	303.9	312.62
306.7	312.71	309.5	312.5	312.7	312.17	315.1	311.81	316.1	311.72
317.9	311.71	319.9	311.76	321.7	311.93	323.5	312.14	323.6	312.17
323.8	312.22	325.4	312.52	326.3	312.51	327.3	312.6	329.1	312.68
331	312.67	360.8	310.88	362.7	310.78	368.3	310.93	421.6	311.07
424	311.21	427.2	311.3	429.6	311.27	434.5	311.29	445.6	312.13
446.8	312.19	448	312.17	449.6	312.19	451.9	312.05	452.4	312.04
456.6	312.11	458	312.02	459.4	311.99	460.8	311.91	463.1	311.51
463.6	311.45	465	311.24	466.4	311.12	466.8	311.29	467.7	311.4
468.7	311.69	469.2	311.75	470.5	311.81	472.4	311.76	474.3	311.79
483.2	311.71	488.8	310.84	539.2	310.57	539.4	310.58	541.2	310.68
542	310.67	543.1	310.68	544.8	310.6	546.8	311.08	550.1	311.64
552.4	311.96	553.2	311.96	554.3	312.06	556	312.31	556.1	312.32
556.3	312.34	558	312.38	558.8	312.38	561.6	312.23	561.7	312.23
564.4	312.05	565.83	11.8424	567.3	311.62	570.1	311.48	572.9	311.59
574.7	311.78	575.7	311.87	576.6	311.9	578.5	311.91	581.3	311.69
584.1	311.72	585.9	311.91	586.9	311.99	589.7	312.16	591.5	311.93
593.3	311.56	595	311.48	595.2	311.46	595.3	311.45	598.1	311.61
600.6	311.86	602.6	311.85	603.7	311.93	604.5	311.95	606.4	312.21
606.5	312.23	608.2	312	609.3	311.95	611.7	311.99	614.9	312.1
617.2	312.15	617.5	312.18	617.7	312.19	619.4	312.14	620.5	312.01
626.1	310.93	626.8	310.86	628.9	310.52	631.7	310.31	632.4	310.31
633.8	310.48	634.3	310.57	637.3	308.5	687.3	308.5	723.6	310.83
727	310.76	729.1	310.78	735.4	310.96	738.4	311.28	741	311.79
743.8	311.82	744	311.82	745.9	311.88	747.7	311.85	748.7	311.8
749.6	311.78	751.5	312.12	753.3	312.56	755	312.89	755.2	312.91
757.1	313.09	757.8	313.16	760.6	313.46	760.8	313.46	761.1	313.46
762.6	313.41	763.4	313.3	764.5	313.15	766.2	312.99	766.4	312.98
769	313.05	770.1	313.18	771.8	313.31	773.8	313.73	774.6	313.84
777.4	314.04	779.4	314.1	780.2	314.16	782.7	314.62	783	314.68
783.1	314.71	785	315.28	788.4	316.38	791.4	317.54	796.1	319.09
797	319.34	799.7	319.95	799.8	319.97	799.9	319.98	802.6	320.45
803.6	320.56	805.4	320.75	807.24	322	811.36	324	814.13	325
853.1	325	864.77	325	960.74	324.9				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.15	217.26	.09	488.8	.03	751.5	.04	864.77	.15

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
565.8	853.1	320.95	231.7	125.17	.1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	321.34	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.14	Wt. n-Val.	0.060	0.031	
W.S. Elev (ft)	321.20	Reach Len. (ft)	320.95	231.70	125.17
Crit W.S. (ft)		Flow Area (sq ft)	3278.79	2330.95	
E.G. Slope (ft/ft)	0.000262	Area (sq ft)	3278.79	2330.95	
Q Total (cfs)	14373.00	Flow (cfs)	5869.93	8503.07	
Top Width (ft)	587.09	Top Width (ft)	346.83	240.26	
Vel Total (ft/s)	2.56	Avg. Vel. (ft/s)	1.79	3.65	
Max Chl Dpth (ft)	12.70	Hydr. Depth (ft)	9.45	9.70	
Conv. Total (cfs)	887353.5	Conv. (cfs)	362395.2	524958.3	
Length Wtd. (ft)	257.32	Wetted Per. (ft)	349.38	242.72	
Min Ch El (ft)	308.50	Shear (lb/sq ft)	0.15	0.16	
Alpha	1.40	Stream Power (lb/ft s)	0.28	0.57	
Frctn Loss (ft)	0.11	Cum Volume (acre-ft)	16.44	83.97	
C & E Loss (ft)	0.02	Cum SA (acres)	2.00	10.14	

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 80

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321	10	318	18.79	316	24	313	37.05	314
69.07	314	82.15	311	87.21	310	89.7	308.45	114	308.49
290.79	308.78	310.93	310	314.6	311.92	314.7	311.91	315	311.91
316.4	311.97	317.5	311.89	318.3	311.95	320	312.12	320.2	312.13
320.3	312.13	320.4	312.13	322.1	312.15	323.9	311.89	325.8	311.75
325.9	311.72	328.6	311.09	329.5	311.06	331.4	311.09	333.3	310.96
334.2	310.92	335.1	310.98	337	311.16	338.9	311.26	342.5	311.53
345.3	312.01	346.3	312.4	347.8	313.13	350.1	314.13	350.9	314.54
351.9	314.98	353.8	315.76	356.5	316.79	357.5	317.09	359.2	317.5
361.3	317.91	362	318.03	363.1	318.09	364.8	318.1	367.6	317.94
370.6	317.94	372.53	320	385.48	326	431.52	326.209	561.42	326.8

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.09	10	.04	89.7	.03	310.93	.09	372.53	.04
385.48	.15								

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
114	431.52	12	250	515	.1	.3

Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
0	87.21	322	F

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	321.21	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.031	0.048	
W.S. Elev (ft)	320.84	Reach Len. (ft)	12.00	250.00	515.00
Crit W.S. (ft)	313.78	Flow Area (sq ft)	329.57	2829.38	
E.G. Slope (ft/ft)	0.000793	Area (sq ft)	886.20	2829.38	
Q Total (cfs)	14373.00	Flow (cfs)	2381.98	11991.02	
Top Width (ft)	373.82	Top Width (ft)	113.47	260.35	
Vel Total (ft/s)	4.55	Avg. Vel. (ft/s)	7.23	4.24	
Max Chl Dpth (ft)	12.39	Hydr. Depth (ft)	12.30	10.87	
Conv. Total (cfs)	510477.0	Conv. (cfs)	84599.4	425877.6	
Length Wtd. (ft)	229.86	Wetted Per. (ft)	27.23	263.26	
Min Ch El (ft)	308.49	Shear (lb/sq ft)	0.60	0.53	
Alpha	1.14	Stream Power (lb/ft s)	4.33	2.25	
Frctn Loss (ft)	0.34	Cum Volume (acre-ft)	1.09	70.25	
C & E Loss (ft)	0.12	Cum SA (acres)	0.30	8.81	

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

LATERAL STRUCTURE

RIVER: Sycamore Creek
REACH: Reach RS: 75

INPUT
Description:
Lateral structure position = Next ot left bank station
Distance from Upstream XS =
Deck/Roadway Width = 110
Weir Coefficient = 3.1
Weir Flow Reference = Water Surface
Weir Embankment Coordinates num = 2

Sta	Elev	Sta	Elev
0	324	110	324

Weir crest shape = Broad Crested

Number of Culverts = 3

Culvert Name	Shape	Rise	Span

```
Culvert #1      Circular     6.5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                        110     .013     .013        0                  .2               .3
Upstream   Elevation =  314
           Centerline Station =  23.2
Downstream Elevation =  312
           Centerline Station =  70

Culvert Name     Shape      Rise    Span
Culvert #2      Circular     6.5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                        110     .013     .013        0                  .2               .3
Upstream   Elevation =  314
           Centerline Station =  40
Downstream Elevation =  312
           Centerline Station =  86

Culvert Name     Shape      Rise    Span
Culvert #3      Circular     6.5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 1 - Square edge entrance with headwall
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                        110     .013     .013        0                  .2               .3
Upstream   Elevation =  314
           Centerline Station =  52.5
Downstream Elevation =  312
           Centerline Station =  96

CROSS SECTION


RIVER: Sycamore Creek
REACH: Reach              RS: 69

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     321  27.122     321  29.752     320  33.028     318  36.493     316
  41.777     314  76.218     314  84.438     313  87.649     312  90.598     311
  95.513     310 101.321   308.4 118.777 308.385 160.496  308.35 197.416     310
 200.833 310.834 201.511     311 206.049     312 211.104     313 220.712     314
 235.301     314  245.17     314 269.558     314 277.774     316 293.428     318
 332.051     320 340.243     320 340.243     314 359.911     314  368.07     312
 373.984     310 378.555   308.4 437.796   308.3 445.676     310 447.667     311
```

```
 451.902     315 453.048     316 480.443     316 523.192     316 532.088     315
 548.226     315 557.843     318 566.034   319.5 566.034     326  570.13     326
  586.51     326 597.981     326 606.173     328

Manning's n Values        num=       2
     Sta   n Val     Sta   n Val
       0     .05 101.321     .03

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        245.17  586.51             106  104.85     164             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 332.576     323       F
 566.034 606.173     323       F
Skew Angle = 35

CROSS SECTION OUTPUT  Profile #Scenario 1

  E.G. Elev (ft)            320.75    Element                  Left OB    Channel   Right OB
  Vel Head (ft)               1.59    Wt. n-Val.                           0.030
  W.S. Elev (ft)            319.16    Reach Len. (ft)           12.57      12.57      12.57
  Crit W.S. (ft)            317.91    Flow Area (sq ft)                   1362.26
  E.G. Slope (ft/ft)      0.003954    Area (sq ft)             1689.88    1568.87
  Q Total (cfs)           13772.30    Flow (cfs)                         13772.30
  Top Width (ft)            508.56    Top Width (ft)            214.04     294.52
  Vel Total (ft/s)           10.11    Avg. Vel. (ft/s)                     10.11
  Max Chl Dpth (ft)          10.86    Hydr. Depth (ft)                      6.08
  Conv. Total (cfs)       219029.6    Conv. (cfs)                        219029.6
  Length Wtd. (ft)           12.57    Wetted Per. (ft)                    232.92
  Min Ch El (ft)            308.30    Shear (lb/sq ft)                      1.44
  Alpha                       1.00    Stream Power (lb/ft s)                14.59
  Frctn Loss (ft)             0.07    Cum Volume (acre-ft)        0.74      57.63
  C & E Loss (ft)             0.27    Cum SA (acres)              0.25       7.22


Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross
         sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than
         1.4.  This may indicate the need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, water surface was used.

BRIDGE


RIVER: Sycamore Creek
REACH: Reach              RS: 65

INPUT
Description:
Distance from Upstream XS =   12.57
Deck/Roadway Width        =      40
```

```
Weir Coefficient          =     2.6
Bridge Deck/Roadway Skew  =      35
Bridge Pier Skew          =      35
Upstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
 191.682     323       0     332     325     320     332     325     322
     600     327     322  740.18     326       0

Upstream Bridge Cross Section Data
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0     321  27.122     321  29.752     320  33.028     318  36.493     316
  41.777     314  76.218     314  84.438     313  87.649     312  90.598     311
  95.513     310 101.321   308.4 118.777 308.385 160.496  308.35 197.416     310
 200.833 310.834 201.511     311 206.049     312 211.104     313 220.712     314
 235.301     314  245.17     314 269.558     314 277.774     316 293.428     318
 332.051     320 340.243     320 340.243     314 359.911     314  368.07     312
 373.984     310 378.555   308.4 437.796   308.3 445.676     310 447.667     311
 451.902     315 453.048     316 480.443     316 523.192     316 532.088     315
 548.226     315 557.843     318 566.034   319.5 566.034     326  570.13     326
  586.51     326 597.981     326 606.173     328

Manning's n Values        num=       2
     Sta   n Val     Sta   n Val
       0     .05 101.321     .03

Bank Sta: Left   Right    Coeff Contr.   Expan.
        245.17  586.51             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 332.576     323       F
 566.034 606.173     323       F
Skew Angle = 35

Downstream  Deck/Roadway Coordinates
    num=       5
     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord     Sta Hi Cord Lo Cord
  277.91     323       0     420     325     320     420     325     322
     680     327     322  739.05     326       0

Downstream Bridge Cross Section Data
Station Elevation Data    num=      36
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
       0   321.7   18.84     320  27.851     318  36.862     316  53.245     314
  69.628     314  99.937     320 124.577     320 196.596     320 255.575     316
 257.951     314 290.037 312.263 294.895     312 339.948     320 343.225     320
 343.225     312 439.065     312 445.955     310 447.994     309  452.09   308.3
 516.208   308.3 530.811   308.3  537.88     309 539.494     310 545.228     312
 568.492     312 568.492     322 573.406     322 630.174 325.186 644.673     326
 670.066     326 679.896 323.943 698.737     320 711.843     320 738.056     326
     750   327.2
```

```
Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
       0     .04 447.994     .03 545.228     .04

Bank Sta: Left   Right    Coeff Contr.   Expan.
       290.037 630.174             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
       0 341.709   322.5       F
 579.239     750   322.5       F
Skew Angle = 35

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .95
Elevation at which weir flow begins         =     325
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Bridge Coefficient Sets =  1

Low Flow Methods and Data
       Energy
Selected Low Flow Methods = Highest Energy Answer

High Flow Method
       Energy Only

Additional Bridge Parameters
       Add Friction component to Momentum
       Do not add Weight component to Momentum
       Class B flow critical depth computations use critical depth
           inside the bridge at the upstream end
       Criteria to check for pressure flow = Upstream energy grade line

BRIDGE OUTPUT  Profile #Scenario 1

  E.G. US. (ft)               320.75    Element                Inside BR US  Inside BR DS
  W.S. US. (ft)               319.16    E.G. Elev (ft)              320.40        319.23
  Q Total (cfs)             13772.30    W.S. Elev (ft)              317.91        316.04
  Q Bridge (cfs)            13772.30    Crit W.S. (ft)              317.91        316.03
  Q Weir (cfs)                          Max Chl Dpth (ft)             9.61          7.74
  Weir Sta Lft (ft)                     Vel Total (ft/s)             12.66         14.33
  Weir Sta Rgt (ft)                     Flow Area (sq ft)          1087.87        961.27
  Weir Submerg                          Froude # Chl                  1.00          0.91
  Weir Max Depth (ft)                   Specif Force (cu ft)       9346.33       9407.54
  Min El Weir Flow (ft)       325.00    Hydr Depth (ft)               5.01          6.40
  Min El Prs (ft)             322.00    W.P. Total (ft)             224.96        161.74
  Delta EG (ft)                 2.62    Conv. Total (cfs)         154087.4      158483.2
  Delta WS (ft)                 2.58    Top Width (ft)              217.32        150.25
```

BR Open Area (sq ft)	1849.56	Frctn Loss (ft)	0.31	0.28
BR Open Vel (ft/s)	14.33	C & E Loss (ft)	0.21	0.82
BR Sluice Coef		Shear Total (lb/sq ft)	2.41	2.80
BR Sel Method	Energy only	Power Total (lb/ft s)	30.53	40.14

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 64

INPUT
Description:
Station Elevation Data num= 36

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	321.7	18.84	320	27.851	318	36.862	316	53.245	314
69.628	314	99.937	320	124.577	320	196.596	320	255.575	316
257.951	314	290.037	312.263	294.895	312	339.948	320	343.225	320
343.225	312	439.065	312	445.955	310	447.994	309	452.09	308.3
516.208	308.3	530.811	308.3	537.88	309	539.494	310	545.228	312
568.492	312	568.492	322	573.406	322	630.174	325.186	644.673	326
670.066	326	679.896	323.943	698.737	320	711.843	320	738.056	326
750	327.2								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.04	447.994	.03	545.228	.04

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
290.037	630.174	160.87	315.7	1469	.3	.5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	341.709	322.5	F
579.239	750	322.5	F

Skew Angle = 35

CROSS SECTION OUTPUT Profile #Scenario 1

E.G. Elev (ft)	318.12	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.54	Wt. n-Val.		0.033	
W.S. Elev (ft)	316.58	Reach Len. (ft)	160.87	315.70	1469.00
Crit W.S. (ft)	315.30	Flow Area (sq ft)		1382.00	
E.G. Slope (ft/ft)	0.004119	Area (sq ft)	202.55	1462.66	
Q Total (cfs)	13772.30	Flow (cfs)		13772.30	
Top Width (ft)	347.32	Top Width (ft)	91.41	255.91	
Vel Total (ft/s)	9.97	Avg. Vel. (ft/s)		9.97	
Max Chl Dpth (ft)	8.28	Hydr. Depth (ft)		6.13	
Conv. Total (cfs)	214580.4	Conv. (cfs)		214580.4	
Length Wtd. (ft)	315.70	Wetted Per. (ft)		235.66	
Min Ch El (ft)	308.30	Shear (lb/sq ft)		1.51	
Alpha	1.00	Stream Power (lb/ft s)		15.03	
Frctn Loss (ft)	0.09	Cum Volume (acre-ft)	0.37	54.85	
C & E Loss (ft)	0.75	Cum SA (acres)	0.17	6.73	

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, water surface was used.

CROSS SECTION

RIVER: Sycamore Creek
REACH: Reach RS: 50

INPUT
Description: San Diego River 290
Station Elevation Data num= 498

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	334.95	2.48	334.94	5.04	335.09	10.15	335.25	20.39	335.69
25.51	335.81	35.74	335.7	41.9	335.452	43.42	335.38	45.98	335.47
51.09	335.9	56.33	336.67	60.43	336.96	63.89	337.26	66.45	337.41
71.56	337.81	74.12	337.94	81.44	338.2	89.48	338.53	92.03	338.56
97.15	338.81	102.27	339.01	107.39	339.11	109.95	339.21	117.15	339.36
122.74	339.56	128.18	339.82	140.65	340.22	145.77	340.31	150.89	340.5
156	340.81	158.56	340.56	161.12	339.73	163.68	338.65	168.8	336.4
171.36	335.41	176.47	333.21	184.15	330.13	188.57	328.73	194.39	326.74
199.07	325.3	202.06	324.25	204.62	323.54	207.18	323.31	212.3	323.54
217.41	323.5	224.28	323.38	230.21	323.22	235.33	323.36	236.17	322.59
236.88	322.23	237.88	321.09	240.44	315.58	243	310.28	244.02	310.18
248.12	310.78	250.68	310.8	255.8	310.47	258.35	310.5	260.91	310.35
263.47	310.32	266.29	310.62	271.15	310.77	276.27	311.11	281.38	311.08
291.62	310.71	296.74	310.61	299.3	310.74	306.97	310.61	309.53	310.42
312.09	310.32	314.65	310.34	317.21	310.49	319.77	310.51	324.88	309.98

330	310.01	333.51	310.26	335.12	310.45	342.79	310.23	347.91	310.25
353.03	310.44	360.71	310.94	365.02	311.73	368.38	311.91	370.94	311.83
373.5	311.49	378.62	311.09	381.18	310.6	383.92	310.27	386.29	310.17
388.85	308.91	391.41	306.63	393.97	303.15	396.53	302	399.09	301.71
401.65	301.92	404.21	302.6	407.03	303.05	409.32	302.93	414.44	303.16
415.43	303.38	419.56	304.71	422.12	305.17	427.23	306.6	429.79	307.01
440.03	308.25	445.15	308.69	447.7	308.69	450.26	308.52	452.82	308.62
455.38	309.64	457.94	311.68	460.5	312	483.53	312	485.22	311.07
488.4	311.16	493.5	310.95	494	310.92	496.5	310.82	504.1	310.56
506.6	310.46	509.9	310.36	511.6	310.43	513	310.47	519.1	310.78
521.7	310.88	525.2	310.98	528.3	311	571.3	310.99	574.1	310.97
577.5	310.86	580.5	310.65	586.7	310.13	589.8	310.03	595.9	310.09
597.2	310.12	602.3	310.19	612.3	310.39	614.9	310.42	617.3	310.47
619.9	310.51	626.6	310.58	630	310.6	632.8	310.58	635.8	310.47
638.9	310.4	642	310.42	645.1	310.47	648.1	310.31	650.1	309.97
652.6	309.5	654.3	309.22	657.3	309.14	660.4	309.18	664.7	309.21
673.2	309.32	676.5	309.34	685.4	309.45	688	309.46	688.3	309.47
692.9	309.52	697.3	309.56	703.4	309.64	705.5	309.65	710.5	309.7
712.6	309.73	713.1	309.71	715.7	309.72	718.1	309.39	718.8	309.36
720.6	308.85	723.1	308.27	723.7	308.08	724.9	307.78	725.7	307.74
727.7	307.49	728	307.47	730.7	307.48	731	307.46	734.1	307.53
743.3	307.84	746.4	307.97	748.3	307.97	749.5	307.99	752.5	307.97
764.8	307.72	767.9	307.56	771	307.62	771	307.63	774.1	307.78
777.1	307.91	780.2	307.99	782.8	307.97	786.3	307.91	792.5	307.77
795.6	307.71	798.5	307.69	801.7	307.69	807.8	307.78	808.8	307.8
814	307.97	816.3	307.99	823.2	307.95	826.3	307.91	829.3	307.86
844.7	307.8	846.5	307.81	849	307.81	850.8	307.82	854.1	307.91
859.1	308.11	861.6	308.2	869.2	308.53	872.3	308.65	875.4	308.74
879.3	308.78	884.6	308.73	887.7	308.73	890.8	308.69	893.8	308.63
897	308.53	900.9	308.36	903.1	308.27	906.1	308.12	909.2	307.99
922.1	307.32	924.7	307.15	927.1	306.95	930.7	306.42	939.7	306
1268.05	306	1279	307	1290.11	307	1296.1	306	1318.8	306
1332.1	307	1383	308	1417	310	1423	312	1432	314
1486	314	1492.5	311	1525.3	309	1799.69	309	1817.13	313.47
1822.25	314.57	1824.81	314.68	1829.93	315.06	1838.09	316.02	1848.88	320
1861.13	326	1864.16	327.2	1896.4	327.2	1924.2	327.15	1925.9	327.09
1926.8	326.85	1928.5	326.08	1929	325.93	1930.6	324.85	1931.8	324.02
1932.1	323.89	1934.3	323.73	1935.1	323.7	1938.2	323.7	1941.3	323.71
1944.3	323.75	1948.2	323.76	1950.5	323.78	1952.2	323.81	1953.6	323.82
1956.1	323.87	1962.8	323.96	1965.9	324.17	1967	324.9	1968.9	326.1
1971.9	326.86	1972.5	326.99	1975.1	327.47	1977.1	327.74	1978.1	327.84
1979.6	327.74	1982.2	327.53	1984.3	327.34	1987.6	327.67	1989.7	327.85
1990.4	327.95	1992.2	327.97	1993.5	328	2033.4	328	2036.5	328.07
2038.8	328.39	2040.1	328.53	2042.7	328.66	2045.1	328.67	2045.7	328.69
2085.6	328.69	2087.9	328.77	2088.7	328.81	2090.4	329.19	2091.8	329.49
2092.9	329.54	2094.9	329.59	2128.6	329.59	2130.7	329.69	2131.7	329.76
2133.2	330.65	2133.3	330.69	2134.8	331.7	2135.8	332.31	2137.9	333.55
2138.3	333.91	2140.1	335.43	2140.8	335.96	2140.9	336.07	2141.2	336.17
2143.3	337.3	2144	337.58	2147.1	337.69	2196.2	337.69	2198.7	337.6
2199.3	337.56	2201.2	337.34	2202.4	337.22	2205.4	337.07	2206.3	337.07
2208.8	337.17	2211.3	337.34	2212	337.36	2216	337.4	2217.7	337.41
2226.9	337.41	2230	337.39	2233.1	337.34	2235.7	337.17	2239.2	336.92

2242.3	336.77	2243.5	336.93	2245.4	337.16	2248.4	336.86	2251.6	336.65
2254.6	336.52	2255.3	336.54	2256.6	336.54	2257.7	336.57	2260.7	336.76
2261.7	336.8	2265.9	336.9	2266.7	336.91	2276.1	336.91	2276.8	336.9
2279	336.91	2282.2	336.91	2285.3	336.89	2286.8	336.86	2288.4	336.85
2289.4	336.83	2293.8	336.83	2294.5	336.82	2296.9	336.53	2297.6	336.47
2300.7	336.09	2303.7	335.98	2304.5	335.79	2306.5	335.55	2307	335.45
2307.8	335.12	2309.9	334.18	2312.9	334.19	2314.5	334.25	2318.3	334.41
2322.3	334.57	2327.1	334.75	2329.6	334.86	2331.4	334.93	2334.1	335.05
2337.5	335.18	2339.7	335.29	2340.6	335.32	2344.8	335.5	2346.7	335.62
2347.3	335.69	2349.7	336.26	2349.8	336.3	2352.3	336.74	2352.9	336.83
2353.8	337.13	2354.8	337.62	2356	337.9	2357.3	337.99	2359	338.09
2361.7	338.2	2365.2	338.4	2368.2	338.69	2371.3	338.84	2374.4	339.02
2377.6	339.23	2380.5	339.41	2385	339.62	2386.7	339.71	2387.6	339.74
2389.7	339.85	2390.1	339.8	2391.6	339.89	2393.1	339.9	2395.9	339.79
2399	339.63	2400.1	339.45	2401	339.43	2402	339.33	2402.7	339.33
2405.2	339.29	2407.7	338.99	2408.2	338.96	2410.2	339.03	2411.2	339.04
2414.3	339.44	2415.3	339.62	2417.8	340.11	2419.6	340.48	2420.7	340.72
2423.5	341.25	2425.3	341.47	2426.6	341.61	2429.7	341.6	2430.4	341.38
2432.7	340.39	2432.9	340.4	2435.8	341.1	2436.5	341.31	2437.9	341.8
2438.9	342.09	2440.4	342.44	2442	342.76	2443	342.86	2445	343.03
2445.5	343.06	2448.1	343.13	2448.3	343.07	2450.5	342.54	2451.2	342.28
2452.2	342.06	2453	341.77	2454.2	341.6	2457.3	342.67	2460.6	343.3
2461.5	343.33	2463.1	343.41	2465.6	343.52	2468.1	343.59	2469.6	343.61
2470.7	343.4	2471.9	342.96	2473.2	342.64	2475.7	342.31	2481.9	342.93
2483.2	343.08	2485	343.27	2487.6	343.65	2488.3	343.77	2489.4	344.22
2491.1	344.87	2494.2	345.01	2497.2	345.12	2506.5	345.4	2508.4	345.38
2510.9	345.29	2512.6	345.21	2515.7	345.12	2516	345.16	2517.3	345.45
2518.7	345.74	2521	345.85	2523.1	345.92	2524.9	345.96	2528	346.05
2531	346.09	2533.6	346.08	2536.1	345.98	2540.3	345.83	2549.5	346.13
2555.6	346.42	2556.3	346.49	2558.5	346.76	2561.3	347.09	2564.8	347.41
2567.9	347.57	2571	347.72	2576.4	347.99	2580.2	348.23	2581.4	348.33
2583.3	348.46	2586.3	348.68	2589.4	348.79	2592.5	348.8	2596.6	348.83
2599.1	348.87	2601.7	348.88	2604.8	348.48				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.05	41.9	.06	485.22	.04	1896.4	.15

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
41.9	1896.4	0	0	.1	.3

CROSS SECTION OUTPUT Profile #Scenario 1

			Left OB	Channel	Right OB
E.G. Elev (ft)	317.28	Element			
Vel Head (ft)	0.05	Wt. n-Val.		0.042	
W.S. Elev (ft)	317.23	Reach Len. (ft)			
Crit W.S. (ft)	309.97	Flow Area (sq ft)		13672.75	
E.G. Slope (ft/ft)	0.000153	Area (sq ft)		13672.75	
Q Total (cfs)	25000.00	Flow (cfs)		25000.00	
Top Width (ft)	1601.70	Top Width (ft)		1601.70	
Vel Total (ft/s)	1.83	Avg. Vel. (ft/s)		1.83	
Max Chl Dpth (ft)	15.52	Hydr. Depth (ft)		8.54	

Conv. Total (cfs)	2023461.0	Conv. (cfs)	2023461.0
Length Wtd. (ft)		Wetted Per. (ft)	1614.59
Min Ch El (ft)	301.71	Shear (lb/sq ft)	0.08
Alpha	1.00	Stream Power (lb/ft s)	0.15
Frctn Loss (ft)		Cum Volume (acre-ft)	
C & E Loss (ft)		Cum SA (acres)	

SUMMARY OF REACH LENGTHS

River: Sycamore Creek

Reach	River Sta.	Left	Channel	Right
Reach	500	484.65	511.2	513.2
Reach	450	163.58	199.56	223.24
Reach	400	290.22	278.09	271.36
Reach	300	95.85	94.82	94.72
Reach	250	Inl Struct		
Reach	200	301	307.18	316
Reach	100	263.29	199.09	115
Reach	90	320.95	231.7	125.17
Reach	80	12	250	515
Reach	75	Lat Struct		
Reach	69	106	104.85	164
Reach	65	Bridge		
Reach	64	160.87	315.7	1469
Reach	50	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Sycamore Creek

Reach	River Sta.	Contr.	Expan.
Reach	500	.1	.3
Reach	450	.1	.3
Reach	400	.1	.3
Reach	300	.3	.5
Reach	250	Inl Struct	
Reach	200	.3	.5
Reach	100	.1	.3
Reach	90	.1	.3
Reach	80	.1	.3
Reach	75	Lat Struct	
Reach	69	.3	.5
Reach	65	Bridge	

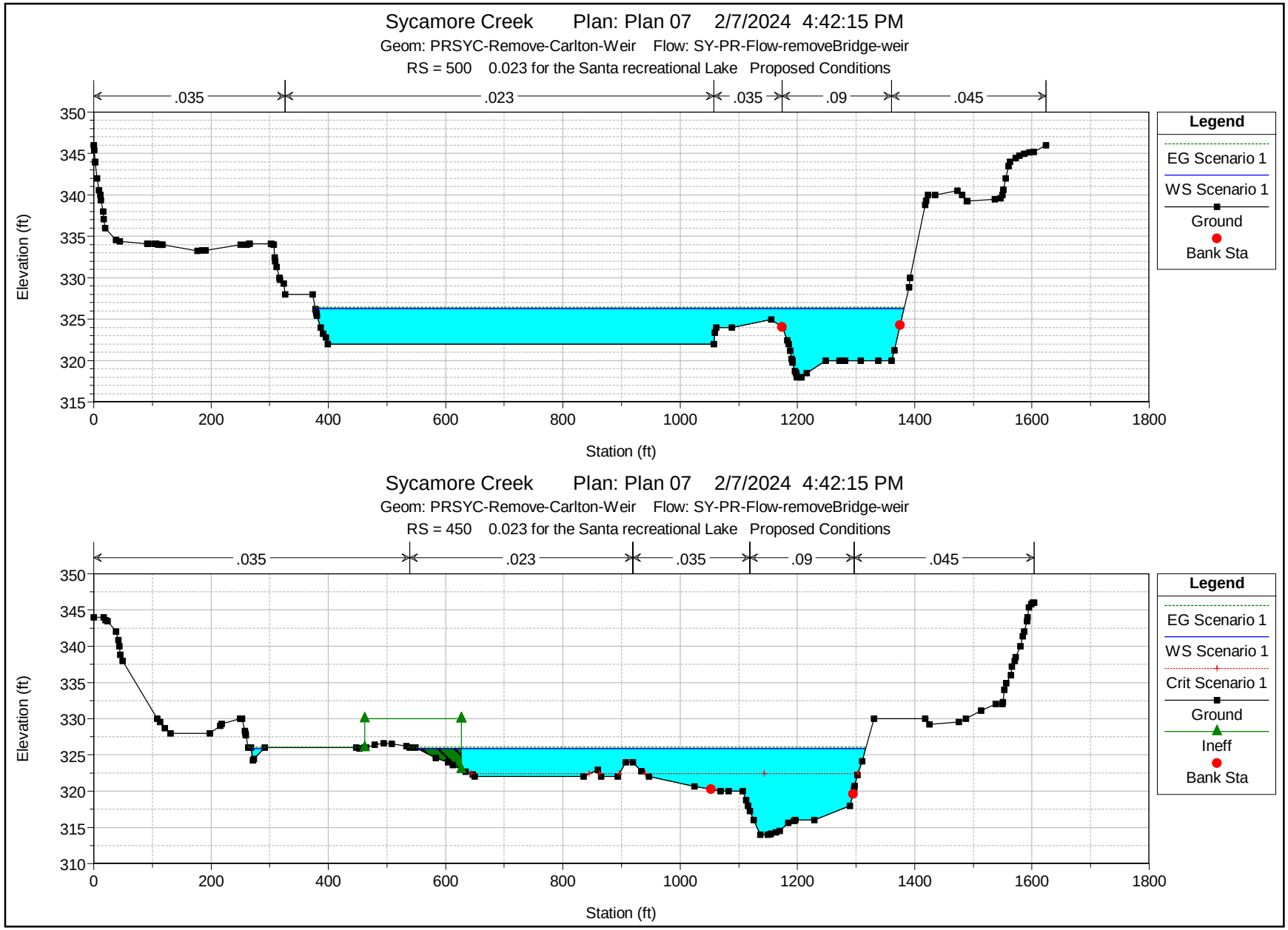
Reach	64	.3	.5
Reach	50	.1	.3

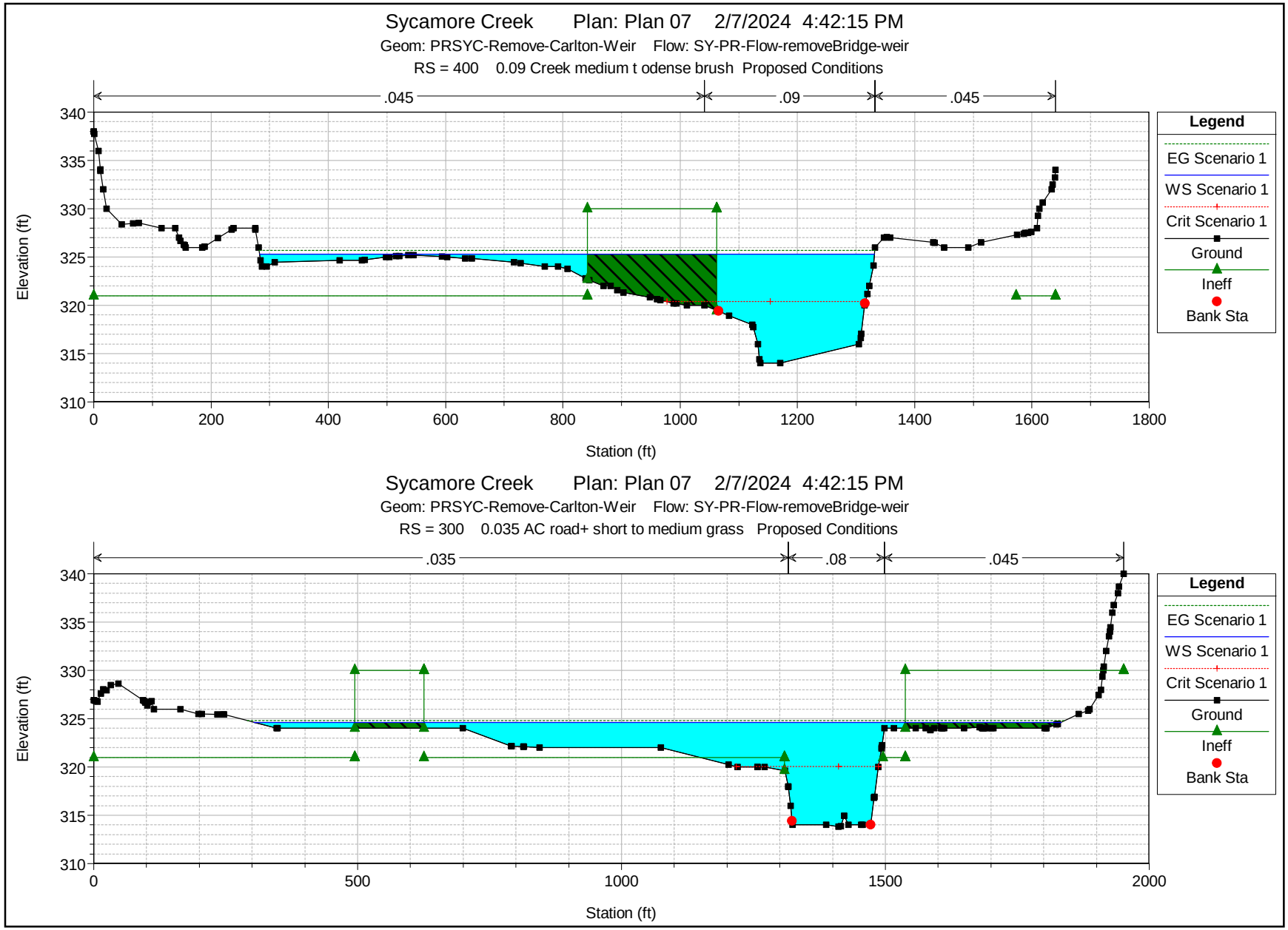
HEC-RAS Plan: PR-SYC-WEIR River: Sycamore Creek Reach: Reach Profile: Scenario 1

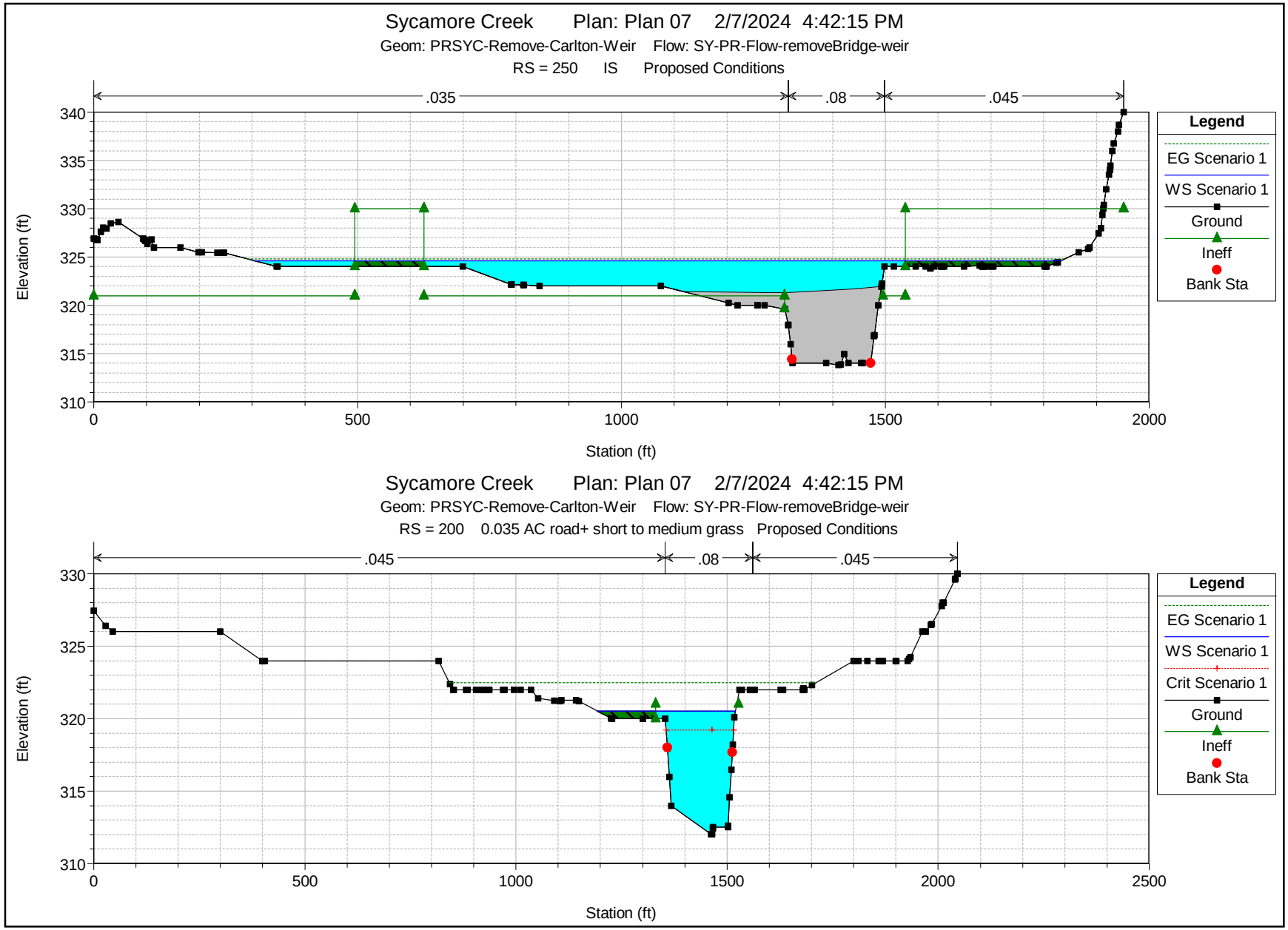
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach	50	Scenario 1	25000.00	301.71	317.23	309.97	317.28	0.000153	1.83	13672.75	1601.70	0.11
Reach	64	Scenario 1	13772.30	308.30	316.58	315.30	318.12	0.004119	9.97	1382.00	347.32	0.71
Reach	65		Bridge									
Reach	69	Scenario 1	13772.30	308.30	319.16	317.91	320.75	0.003954	10.11	1362.26	508.56	0.72
Reach	75		Lat Struct									
Reach	80	Scenario 1	14373.00	308.49	320.84	313.78	321.21	0.000793	4.24	3158.95	373.82	0.23
Reach	90	Scenario 1	14373.00	308.50	321.20		321.34	0.000262	3.65	5609.74	587.09	0.21
Reach	100	Scenario 1	14373.00	308.55	321.37	316.26	321.40	0.000138	0.99	10676.64	1351.50	0.05
Reach	200	Scenario 1	12790.26	312.03	320.53	319.22	322.49	0.026254	11.27	1155.30	327.96	0.73
Reach	250		Inl Struct									
Reach	300	Scenario 1	12790.26	313.84	324.62	320.05	324.80	0.001794	3.79	3815.38	1529.02	0.21
Reach	400	Scenario 1	13407.00	314.00	325.28	320.39	325.69	0.005313	5.32	2804.97	1048.40	0.31
Reach	450	Scenario 1	13407.00	314.00	325.86	322.39	326.08	0.001006	2.80	3876.29	786.35	0.17
Reach	500	Scenario 1	13407.00	318.00	326.24		326.44	0.000565	1.37	4326.41	1003.75	0.10

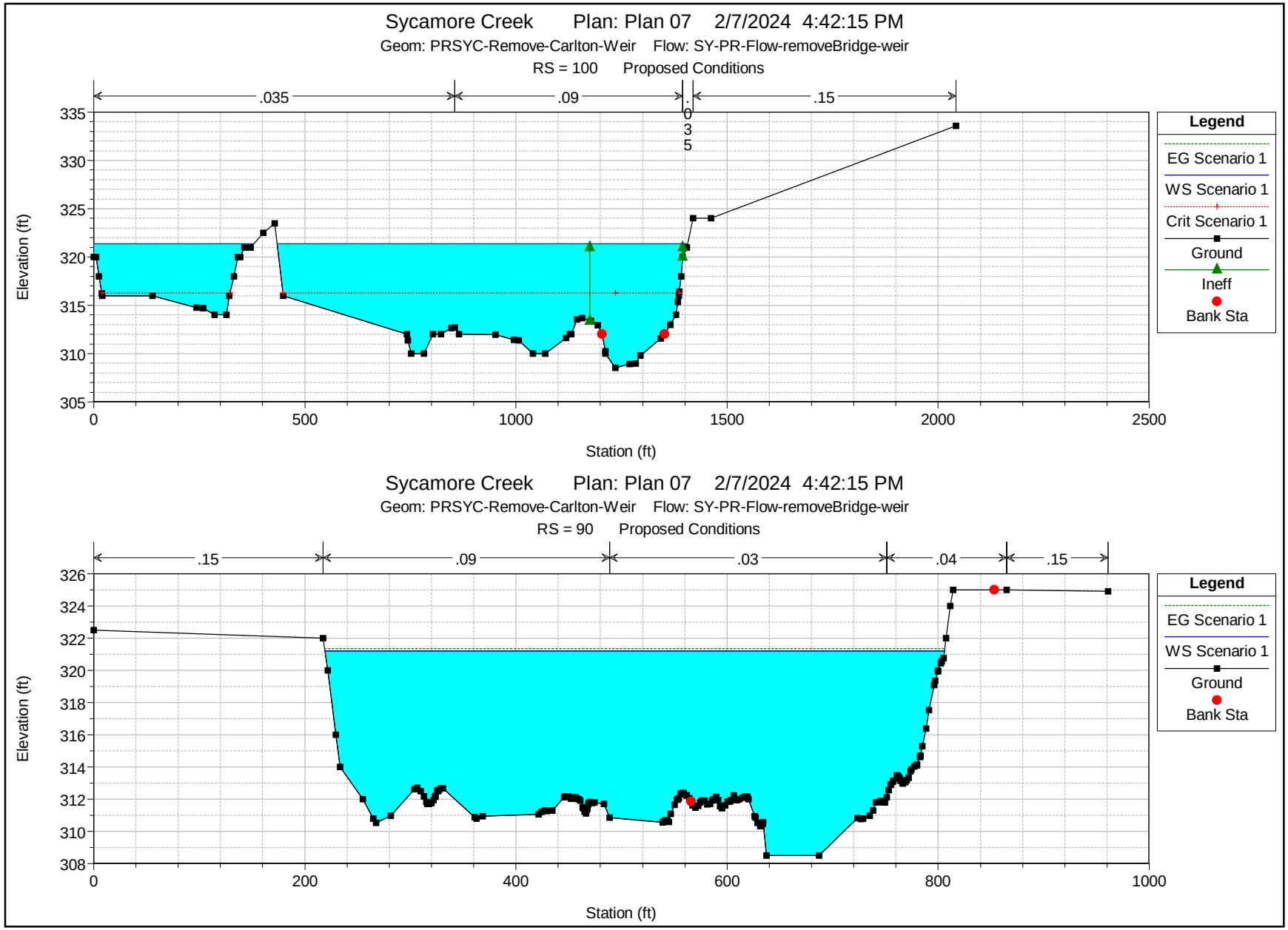
Weir Flow= Total Flow (13407 cfs)- Flow through the Bridge (616.74 cfs) =12790.26 cfs

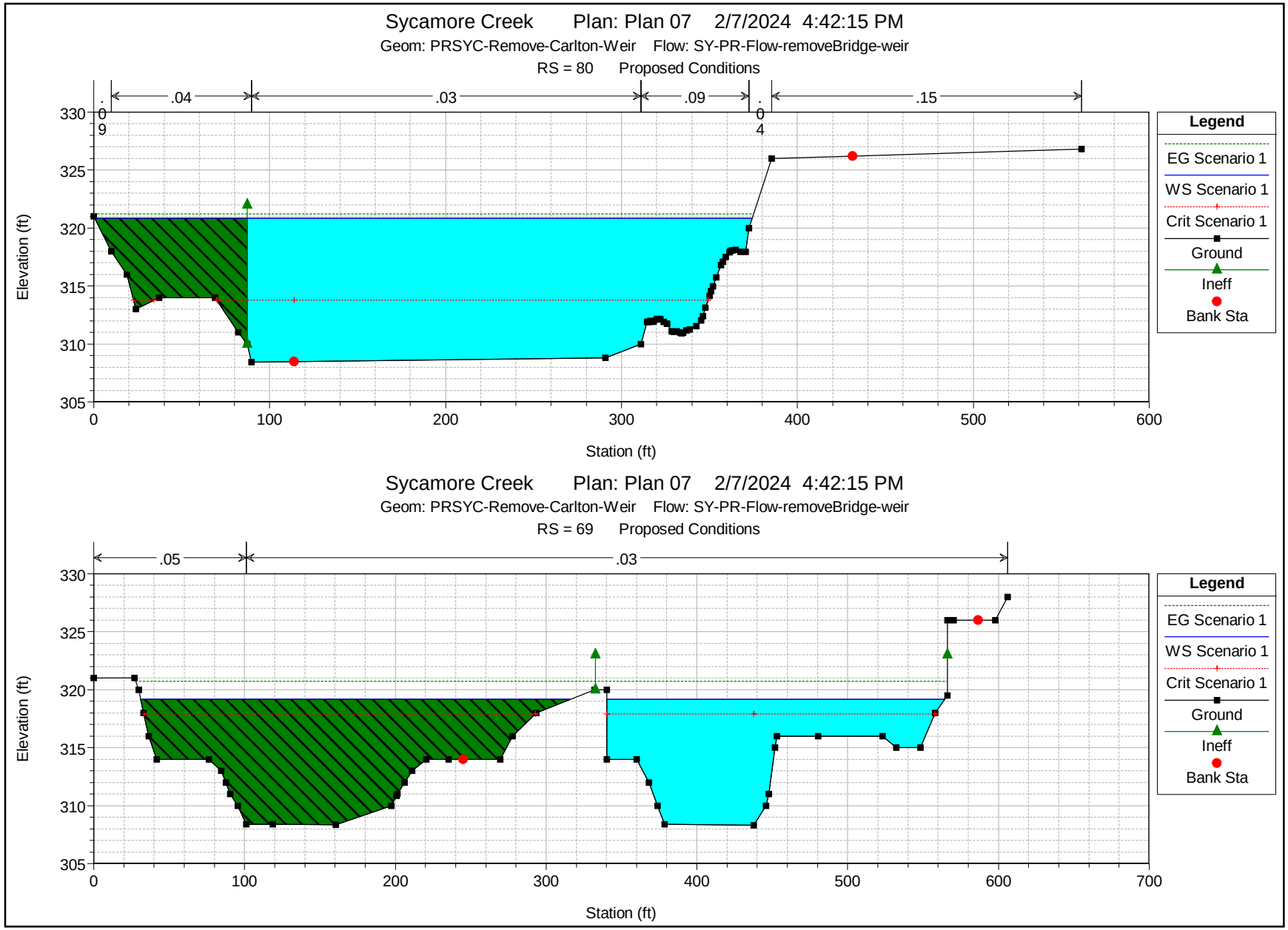
Adding the flow from the proposed four-barrel box (4x RCB) culvert (Split flow from San Diego River-Proposed-Plan01-PF6) to Sycamore Creek Flow= 13407+ 965.13= 14372.13 rounded up to 14373 cfs

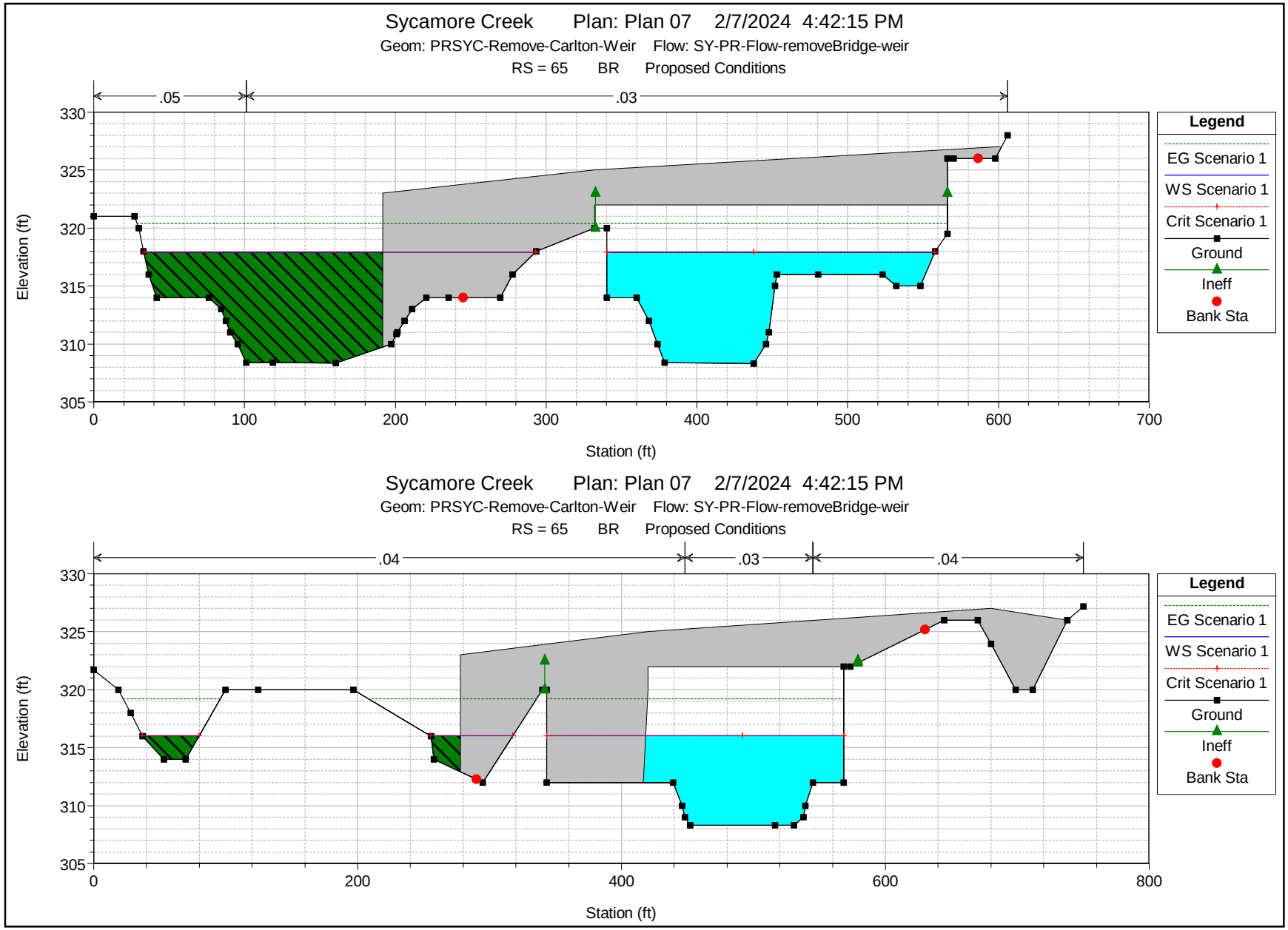

Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 500 0.023 for the Santa recreational Lake Proposed Conditions
.035
.023
.035
.09
.045
Elevation (ft)
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Ground
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 450 0.023 for the Santa recreational Lake Proposed Conditions
.035
.023
.035
.09
.045
Elevation (ft)
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta


Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 400 0.09 Creek medium t odense brush Proposed Conditions
.045
.09
.045
Elevation (ft)
340
335
330
325
320
315
310
0
200
400
600
800
1000
1200
1400
1600
1800
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 300 0.035 AC road+ short to medium grass Proposed Conditions
.035
.08
.045
Elevation (ft)
340
335
330
325
320
315
310
0
500
1000
1500
2000
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta


Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 250 IS Proposed Conditions
.035
.08
.045
Elevation (ft)
340
335
330
325
320
315
310
0
500
1000
1500
2000
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Ground
Ineff
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 200 0.035 AC road+ short to medium grass Proposed Conditions
.045
.08
.045
Elevation (ft)
330
325
320
315
310
0
500
1000
1500
2000
2500
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta


Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 100 Proposed Conditions
.035
.09
.035
.15
Elevation (ft)
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 90 Proposed Conditions
.15
.09
.03
.04
.15
Elevation (ft)
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Ground
Bank Sta


Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 80 Proposed Conditions
.09
.04
.03
.09
.04
.15
Elevation (ft)
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 69 Proposed Conditions
.05
.03
Elevation (ft)
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta


Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 65 BR Proposed Conditions
.05
.03
Elevation (ft)
330
325
320
315
310
305
0
100
200
300
400
500
600
700
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 65 BR Proposed Conditions
.04
.03
.04
Elevation (ft)
330
325
320
315
310
305
0
200
400
600
800
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta

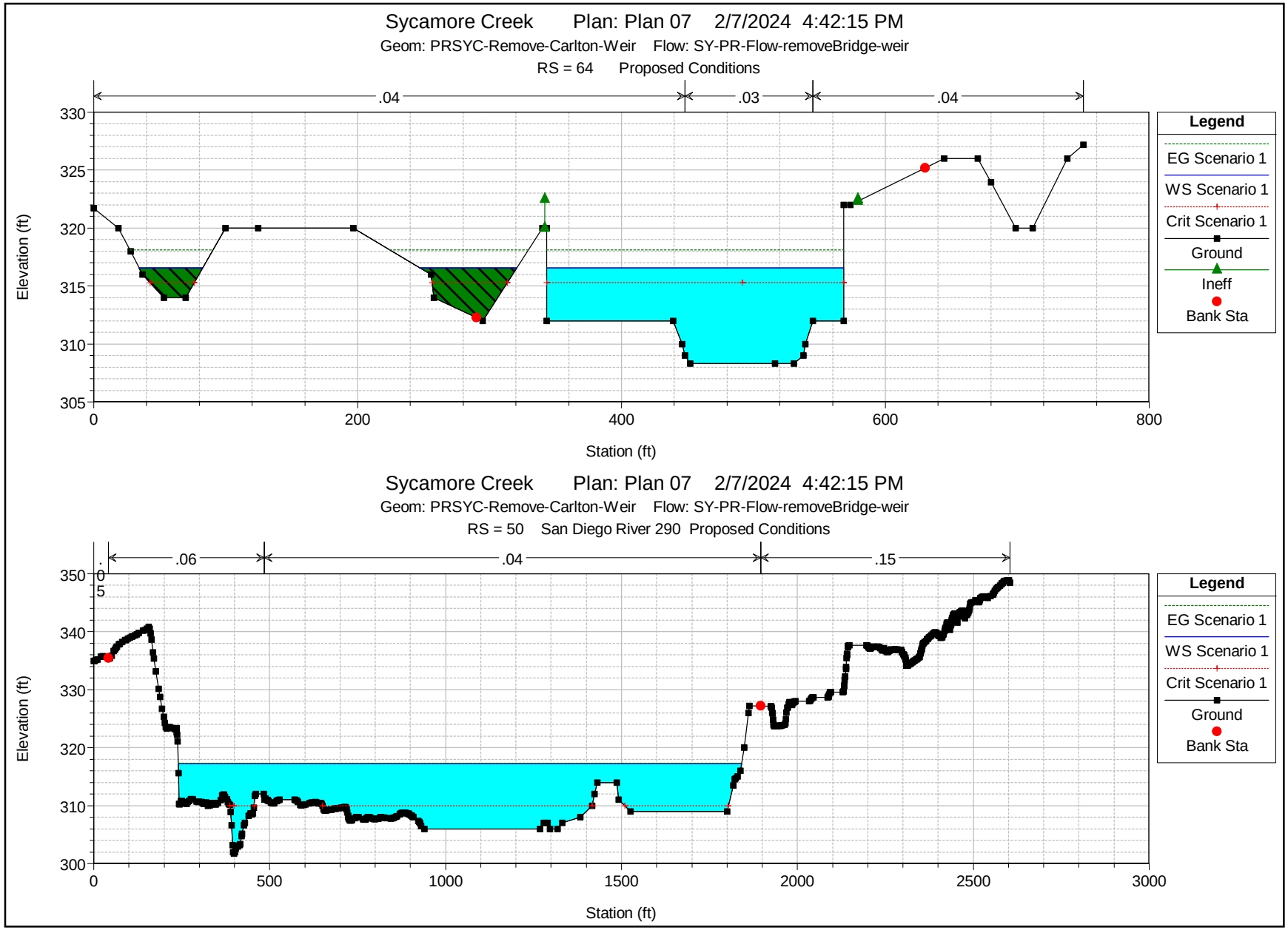

Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 64 Proposed Conditions
.04
.03
.04
Elevation (ft)
330
325
320
315
310
305
0
200
400
600
800
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Ineff
Bank Sta
Sycamore Creek Plan: Plan 07 2/7/2024 4:42:15 PM
Geom: PRSYC-Remove-Carlton-Weir Flow: SY-PR-Flow-removeBridge-weir
RS = 50 San Diego River 290 Proposed Conditions
.05
.06
.04
.15
Elevation (ft)
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
EG Scenario 1
WS Scenario 1
Crit Scenario 1
Ground
Bank Sta

EXHIBIT H

FIRM Panel 06073C1634G (NAD 1988)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). this information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2009.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables *in the Flood Insurance Study report (which contains authoritative hydraulic data)* may reflect stream channel distances that differ from what is shown on this map.

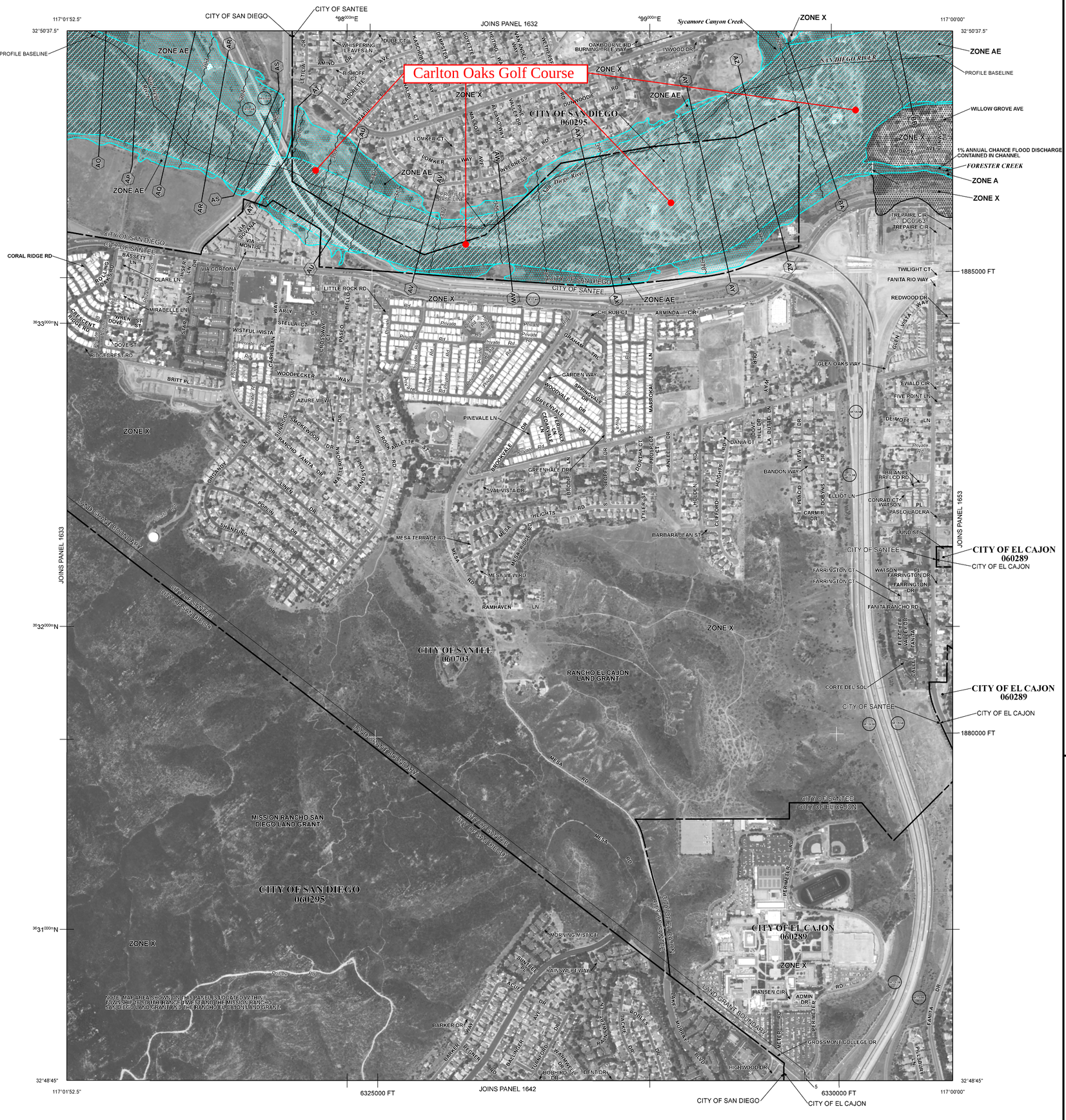
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-877-FEMA MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 (EL 987)	Base Flood Elevation line and value; elevation in feet*
	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 — 23	Transect line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4275000mE	1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 FT	5000-foot grid values: California State Plane coordinate system, Zone VI (FIPSZONE = 406), Lambert projection
DX5510X	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
June 19, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
May 16, 2012 – to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision, and to update map elevations to North American Vertical Datum of 1988.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1634G

FIRM
FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 1634 OF 2375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL CAJON, CITY OF	060289	1634	G
SAN DIEGO, CITY OF	060295	1634	G
SANTEE, CITY OF	060703	1634	G

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

MAP NUMBER
06073C1634G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

Exhibit I

BSI Report Modeling (1992) excerpts

FEMA 100-Year
City of Santee 100-Year

```
**************************************************
*  WATER SURFACE PROFILES                        *
*  DEVELOPED BY THE COE                          *
*  VERSION OF SEPTEMBER 1988                     *
*                                                *
*  RUN DATE     6/24/92   TIME   12:49:14        *
**************************************************
```

```
**************************************
*  DODSON AND ASSOCIATES, INC.       *
*  HYDROLOGIST AND CIVIL ENGINEERS   *
*  7015 W TIDWELL SUITE 107          *
*  HOUSTON, TEXAS 77092              *
*  (713) 895-8322                    *
**************************************
```

```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

END OF BANNER

THIS RUN EXECUTED 6/24/92 12:49:14

```
**********************************************
  HEC2 RELEASE DATED SEPT 88

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

T1      SAN DIEGO RIVER
T2      CITY OF SANTEE
T3      PROFILE 1 - 100 YEAR FLOODPLAIN (FEMA)
T4      PROFILE 2 - 100 YEAR FLOODWAY (FEMA)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2                             0                                   280.54

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1                                      -1                            0


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38          1          2          8         43         13         14         15          3          5
     55         26         56                    38         21         23         22         24         16
     17         18         39         33         25         20         12                    38          4
     53         54         10         11         51         52         58                   110        200

NC      .08        .08       0.18        0.1         0.3
QT        2      38000      38000
ET                   0        8.1                                                          340.0       600.0
         MISSION DAM - DOWNSTREAM LIMIT OF STUDY (SUB-CRITICAL FLOW ASSUMED)
X1      100       42.0      340.8      600.7        0.0        0.0        0.0
GR    322.0      106.3      320.0      113.0      318.0      136.3      316.0      145.1      314.0      149.2
GR    312.0      156.4      310.0      163.1      308.0      173.8      306.0      184.7      304.0      195.9
GR    302.0      206.5      300.0      254.3      298.0      260.1      296.0      265.0      294.0      267.5
GR    292.0      274.0      290.0      278.2      288.0      289.9      286.0      302.9      284.0      308.8
GR    282.0      315.2      280.0      340.8      278.0      347.4      276.0      353.5      274.0      360.8
GR    272.0      383.8      270.0      502.7      270.0      562.6      272.0      577.0      274.0      584.1
GR    276.0      589.9      278.0      597.2      280.0      600.7      290.0      612.3      300.0      626.4
GR    310.0      650.9      312.0      658.7      314.0      662.9      314.0      676.5      312.0      689.0
GR    310.0      703.7      300.0      723.7
```

PROFILE 1 - 100 YEAR FLO

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	100.000	280.55	.01	284.91	267.60	7.36	37992.07	.56	.00	.00	340.80	600.70	.00
	100.000	281.55	1.00	285.06	260.00	5.97	37994.03	.00	260.00	340.00	340.80	600.70	600.00
*	110.000	287.97	.00	289.86	316.99	2882.51	34433.88	683.61	.00	.00	339.70	600.30	.00
*	110.000	287.62	-.35	289.66	300.00	2680.68	34735.79	583.53	300.00	310.00	339.70	600.30	610.00
*	120.000	290.82	.00	292.02	352.03	3808.51	31137.15	3054.34	.00	.00	354.50	602.50	.00
*	120.000	290.74	-.08	291.97	340.00	3737.62	31235.66	3026.72	340.00	310.00	354.50	602.50	650.00
*	130.000	297.99	.00	298.61	477.59	5618.51	23527.88	8853.60	.00	.00	353.00	583.50	.00
*	130.000	298.39	.40	299.10	353.00	2399.01	25722.11	9878.88	353.00	330.00	353.00	583.50	683.00
	140.000	301.91	.00	302.44	395.33	3860.58	28377.58	5761.85	.00	.00	242.60	482.40	.00
	140.000	302.54	.63	303.10	330.00	2665.03	29260.41	6074.56	330.00	215.00	242.60	482.40	545.00
*	150.000	303.43	.00	303.62	976.14	870.98	22246.51	14882.51	1061.50	108.50	273.60	738.10	1170.00
*	150.000	303.99	.56	304.17	955.00	475.86	21623.91	15900.24	955.00	245.00	273.60	738.10	1200.00
*	160.000	303.97	.00	304.05	1351.05	33311.62	3778.80	909.58	.00	.00	1331.10	1412.30	.00
*	160.000	304.48	.51	304.56	1313.47	33042.74	3788.47	1168.79	1445.00	415.00	1331.10	1412.30	1860.00
*	170.000	304.08	.00	304.13	1634.62	27876.56	1803.74	8319.70	2000.00	.00	1483.20	1544.10	2000.00
*	170.000	304.59	.51	304.64	1580.00	27690.71	1777.98	8531.31	1580.00	410.00	1483.20	1544.10	1990.00
*	180.000	304.13	.00	304.20	1478.97	32332.93	3921.19	1745.88	2000.00	.00	1530.00	1759.00	2000.00
*	180.000	304.63	.50	304.69	1455.00	32330.47	3919.01	1750.52	1455.00	485.00	1530.00	1759.00	1940.00
*	190.000	304.17	.00	304.23	1446.03	35057.10	2848.29	94.61	.00	.00	1576.30	1809.70	.00
*	190.000	304.67	.50	304.72	1433.19	35033.61	2854.60	111.79	1450.00	470.00	1576.30	1809.70	1920.00
*	200.000	304.23	.00	304.29	1650.98	25806.00	2295.95	9898.06	.00	.00	1439.70	1562.70	.00
*	200.000	304.72	.49	304.77	1605.00	25540.55	2287.97	10171.48	1605.00	370.00	1439.70	1562.70	1975.00
	209.000	304.37	.00	304.43	1918.02	19214.92	5154.75	13630.33	.00	.00	1233.40	1479.20	.00
	209.000	304.84	.47	304.91	1700.00	19153.99	5150.53	13695.48	1700.00	400.00	1233.40	1479.20	2100.00
*	210.000	304.27	.00	304.48	1912.23	6900.28	8610.63	22489.09	.00	.00	1233.40	1479.20	.00
*	210.000	304.74	.47	304.96	1700.00	7308.99	8447.90	22243.12	1700.00	400.00	1233.40	1479.20	2100.00
*	211.000	304.44	.00	304.51	1922.28	19150.20	5138.87	13710.93	.00	.00	1233.40	1479.20	.00
*	211.000	304.91	.47	304.98	1700.00	19103.19	5138.39	13758.43	1700.00	400.00	1233.40	1479.20	2100.00
	220.000	304.71	.00	304.84	1684.15	6257.56	4678.44	27064.00	.00	.00	745.80	1065.00	.00
	220.000	305.15	.44	305.28	1585.00	6056.05	4574.76	27369.20	1585.00	515.00	745.80	1065.00	2100.00
	230.000	304.89	.00	305.11	1225.00	2673.15	3499.23	31827.62	1225.00	825.00	941.10	1142.70	2050.00
	230.000	305.30	.41	305.52	1175.00	2808.74	3511.09	31680.16	1175.00	825.00	941.10	1142.70	2000.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	239.000	304.95	.00	305.82	670.00	2261.69	13043.76	22694.55	670.00	2370.00	2398.50	2724.40	3040.00
*	239.000	305.35	.40	306.17	670.00	2259.47	12748.31	22992.22	670.00	2370.00	2398.50	2724.40	3040.00
*	240.000	306.98	.00	307.39	493.99	2.52	37997.48	.00	.00	.00	2519.30	3031.90	.00
*	240.000	307.18	.20	307.58	494.00	4.16	37995.84	.00	494.00	2517.00	2519.30	3031.90	3011.00
*	242.000	306.97	.00	307.45	493.85	.86	37999.14	.00	.00	.00	2519.30	3031.90	.00
*	242.000	307.17	.20	307.64	492.00	1.13	37998.87	.00	492.00	2518.00	2519.30	3031.90	3010.00
	243.000	307.03	.00	307.51	494.44	.00	37980.43	19.57	.00	.00	2480.00	3001.90	.00
	243.000	307.23	.20	307.70	492.00	.00	37979.57	20.43	492.00	2518.00	2480.00	3001.90	3010.00
*	244.000	307.12	.00	307.54	510.84	.00	38000.00	.00	.00	.00	2550.50	3075.60	.00
*	244.000	307.32	.20	307.72	510.00	.00	38000.00	.00	510.00	2560.00	2550.50	3075.60	3070.00
*	245.000	307.60	.00	307.90	857.36	15026.80	17368.06	5605.15	1415.00	100.00	928.40	1396.30	1515.00
*	245.000	307.71	.11	308.15	650.00	16802.16	20194.79	1003.05	650.00	760.00	928.40	1396.30	1410.00
	250.000	308.39	.00	308.53	1193.16	5707.58	5891.06	26401.36	.00	.00	2566.70	2740.60	.00
	250.000	308.80	.42	309.00	910.00	7098.65	7154.32	23747.03	910.00	2400.00	2566.70	2740.60	3310.00
*	260.000	309.50	.00	310.32	678.32	533.73	9184.47	28281.80	.00	.00	2375.20	2544.60	.00
*	260.000	310.26	.76	311.00	610.00	551.27	8980.21	28468.53	610.00	2340.00	2375.20	2544.60	2950.00
*	270.000	312.91	.00	313.42	1073.31	3461.44	6445.73	27092.83	.00	.00	2509.50	2678.60	.00
	270.000	313.23	.33	313.82	720.00	3105.61	6763.26	27131.14	720.00	2270.00	2509.50	2678.60	2990.00
*	280.000	314.65	.00	314.79	1526.23	4252.20	2248.31	30499.49	.00	.00	958.00	1060.00	.00
*	280.000	315.11	.46	315.27	1330.00	4165.22	2469.75	30365.03	1330.00	560.00	958.00	1060.00	1890.00
	285.000	315.19	.00	315.32	1709.02	2834.58	1494.35	32671.08	.00	.00	706.60	792.20	.00
	285.000	315.65	.46	315.78	1490.00	2706.90	1482.49	32810.61	1490.00	525.00	706.60	792.20	2015.00
	290.000	315.74	.00	315.91	1774.24	5645.31	2055.89	29298.80	.00	.00	2655.10	2758.90	.00
	290.000	316.14	.40	316.32	1544.09	3023.11	2153.92	31822.96	1594.00	2560.00	2655.10	2758.90	4154.00
*	300.000	316.68	.00	316.97	1605.71	2017.92	2638.47	32343.61	1800.00	2340.00	2536.20	2708.70	4140.00
*	300.000	317.04	.37	317.34	1410.53	.00	2677.51	34322.49	1474.00	2540.00	2536.20	2708.70	4014.00
*	310.000	317.75	.00	317.94	1743.70	923.33	958.02	35118.64	1770.00	2460.00	2698.40	2822.30	4230.00
	310.000	318.17	.42	318.42	1350.00	601.93	1202.76	35195.31	1350.00	2650.00	2698.40	2822.30	4000.00
*	320.000	319.50	.00	320.03	1322.48	415.25	9871.67	26713.07	1350.00	950.00	988.70	1300.00	2300.00
*	320.000	320.17	.67	320.70	1120.00	.00	9169.39	27830.61	1120.00	1030.00	988.70	1300.00	2150.00
*	330.000	322.64	.00	322.98	949.66	17451.99	6631.55	11916.46	1020.00	1280.00	1760.00	1917.00	2300.00
*	330.000	322.98	.34	323.31	880.00	17175.08	6803.74	12021.19	880.00	1370.00	1760.00	1917.00	2250.00
	340.000	323.83	.00	324.12	958.29	5787.50	16945.86	13266.64	980.00	1200.00	1410.00	1843.20	2180.00
	340.000	324.11	.27	324.37	960.00	5852.52	16845.83	13301.65	960.00	1220.00	1410.00	1843.20	2180.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	345.000	324.53	.00	324.88	1060.00	9000.79	20015.56	6983.65	1060.00	1210.00	1509.80	1995.50	2270.00
	345.000	324.73	.20	325.09	970.00	8257.22	20489.92	7252.86	970.00	1300.00	1509.80	1995.50	2270.00
	355.000	325.62	.00	326.04	1000.00	7691.40	24308.14	4000.46	1000.00	1370.00	1731.40	2253.80	2370.00
	355.000	325.80	.18	326.25	870.00	6679.52	25134.85	4185.63	870.00	1500.00	1731.40	2253.80	2370.00
	356.000	327.08	.00	327.84	941.47	6303.11	29018.37	678.52	950.00	1340.00	1836.00	2258.20	2290.00
	356.000	327.26	.19	328.14	762.01	4129.55	31121.67	748.78	770.00	1520.00	1836.00	2258.20	2290.00
*	358.000	326.84	.00	327.84	940.81	3033.19	32965.38	1.43	960.00	1340.00	1836.00	2278.40	2300.00
*	358.000	327.12	.28	328.14	771.59	2047.65	33949.40	2.95	790.00	1510.00	1836.00	2278.40	2300.00
	360.000	328.47	.00	328.74	1070.00	28115.08	6467.28	1417.64	1070.00	1530.00	2187.00	2382.90	2600.00
	360.000	328.74	.27	329.03	870.00	28837.45	6698.35	464.20	870.00	1565.00	2187.00	2382.90	2435.00
	370.000	329.02	.00	329.21	1338.57	26811.51	2887.07	6301.42	1350.00	1470.00	2234.10	2326.40	2820.00
	370.000	329.28	.26	329.51	1030.00	29820.38	3193.21	2986.41	1030.00	1470.00	2234.10	2326.40	2500.00
	380.000	329.41	.00	329.60	1420.00	25573.75	1930.68	8495.57	1420.00	1540.00	2380.90	2436.40	2960.00
	380.000	329.72	.31	329.98	1085.00	29821.24	2221.74	3957.03	1085.00	1540.00	2380.90	2436.40	2625.00
	390.000	330.20	.00	330.53	1060.00	24818.01	5296.69	5885.29	1060.00	1680.00	2250.00	2402.00	2740.00
	390.000	330.65	.45	331.03	890.00	25682.97	5933.40	4383.62	890.00	1730.00	2250.00	2402.00	2620.00
*	400.000	331.24	.00	331.46	856.00	3270.18	30980.14	1749.68	856.00	1749.00	1877.60	2531.60	2605.00
*	400.000	331.76	.51	331.98	765.00	1660.89	32449.65	1889.46	765.00	1820.00	1877.60	2531.60	2585.00
	410.000	331.93	.00	332.20	745.35	1728.32	32629.26	1642.42	750.00	2970.00	3065.30	3645.90	3720.00
	410.000	332.41	.47	332.65	739.50	1831.68	32451.58	1716.74	739.50	2970.50	3065.30	3645.90	3710.00
	415.000	332.64	.00	332.86	765.00	1523.24	32139.30	2337.46	765.00	3180.00	3252.30	3865.00	3945.00
	415.000	333.04	.40	333.25	745.00	1560.20	32031.77	2408.03	745.00	3200.00	3252.30	3865.00	3945.00
	420.000	333.04	.00	333.36	654.27	2397.63	30350.63	3251.73	685.00	3380.00	3467.10	3988.90	4065.00
	420.000	333.40	.36	333.70	653.50	2447.66	30235.22	3317.12	653.50	3411.50	3467.10	3988.90	4065.00
*	421.000	333.18	.00	334.57	441.57	1644.00	34227.24	128.76	.00	.00	2650.00	3049.10	.00
*	421.000	333.51	.33	334.80	440.00	1687.24	34171.24	141.53	440.00	2617.00	2650.00	3049.10	3057.00
	422.000	332.75	.00	335.11	440.48	971.30	34795.57	233.13	.00	.00	2645.00	3044.70	.00
	422.000	333.13	.37	335.28	440.00	1013.78	34734.45	251.77	440.00	2617.00	2645.00	3044.70	3057.00
	423.000	333.68	.00	335.58	442.85	1074.27	34646.00	279.73	.00	.00	4645.00	5044.70	.00
	423.000	333.86	.18	335.69	442.00	1093.63	34617.20	289.16	442.00	4616.00	4645.00	5044.70	5058.00
	424.000	333.88	.00	335.68	450.42	720.63	33946.33	1333.04	.00	.00	4658.90	5055.00	.00
	424.000	334.09	.20	335.79	449.00	743.15	33908.34	1348.51	449.00	4633.00	4658.90	5055.00	5082.00
*	425.000	336.57	.00	336.91	1029.97	12474.41	12538.88	10986.71	1035.00	4365.00	4805.90	5113.20	5400.00
*	425.000	336.64	.07	337.09	850.00	13918.51	14370.78	7710.71	850.00	4420.00	4805.90	5113.20	5270.00

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**************************************************
*  WATER SURFACE PROFILES                        *
*  DEVELOPED BY THE COE                          *
*  VERSION OF SEPTEMBER 1988                     *
*                                                *
*  RUN DATE     6/24/92   TIME   13: 0: 4        *
**************************************************
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**************************************
*  DODSON AND ASSOCIATES, INC.       *
*  HYDROLOGIST AND CIVIL ENGINEERS   *
*  7015 W TIDWELL SUITE 107          *
*  HOUSTON, TEXAS 77092              *
*  (713) 895-8322                    *
**************************************
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```
X     X  XXXXXXX   XXXXX             XXXXX
X     X  X        X     X           X     X
X     X  X        X                       X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
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END OF BANNER

THIS RUN EXECUTED 6/24/92 13: 0: 5

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**********************************************
  HEC2 RELEASE DATED SEPT 88

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T1      SAN DIEGO RIVER
T2      CITY OF SANTEE
T3      PROFILE 1 - 100 YEAR FLOODPLAIN (SANTEE)
T4      PROFILE 2 - 100 YEAR FLOODWAY (SANTEE)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2                             0                                  282.53

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1                                      -1                           15

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38          1          2          8         43         13         14         15          3          5
     55         26         56                    38         21         23         22         24         16
     17         18         39         33         25         20         12                    38          4
     53         54         10         11         51         52         58                   110        200

NC      .08        .08       0.18        0.1         0.3
QT        2      50000      50000
ET                   0        8.1                                                          340.0      600.0
        MISSION DAM - DOWNSTREAM LIMIT OF STUDY (SUB-CRITICAL FLOW ASSUMED)
X1      100       42.0      340.8      600.7        0.0        0.0        0.0
GR    322.0      106.3      320.0      113.0      318.0      136.3      316.0      145.1      314.0      149.2
GR    312.0      156.4      310.0      163.1      308.0      173.8      306.0      184.7      304.0      195.9
GR    302.0      206.5      300.0      254.3      298.0      260.1      296.0      265.0      294.0      267.5
GR    292.0      274.0      290.0      278.2      288.0      289.9      286.0      302.9      284.0      308.8
GR    282.0      315.2      280.0      340.8      278.0      347.4      276.0      353.5      274.0      360.8
GR    272.0      383.8      270.0      502.7      270.0      562.6      272.0      577.0      274.0      584.1
GR    276.0      589.9      278.0      597.2      280.0      600.7      290.0      612.3      300.0      626.4
GR    310.0      650.9      312.0      658.7      314.0      662.9      314.0      676.5      312.0      689.0
GR    310.0      703.7      300.0      723.7
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NC     0.08       0.08       0.18
ET                   0        8.1                                                  310.0       610.0
X1      110       42.0      339.7      600.3       45.0       45.0       45.0
GR    322.0      102.1      320.0      107.6      318.0      116.9      316.0      127.8      314.0      137.2
GR    312.0      150.6      310.0      159.7      308.0      165.6      306.0      171.6      304.0      186.0
GR    302.0      199.6      300.0      228.0      298.0      257.2      296.0      261.3      294.0      270.2
GR    292.0      276.4      290.0      280.6      288.0      299.4      286.0      308.1      284.0      314.0
GR    282.0      319.1      280.0      339.7      278.0      369.2      276.0      377.8      274.0      405.7
GR    274.0      424.4      276.0      513.7      274.0      561.0      274.0      571.2      278.0      589.6
GR    276.0      590.1      280.0      600.3      290.0      620.6      300.0      629.3      310.0      638.9
GR    312.0      644.0      314.0      647.2      318.0      659.0      320.0      669.0      322.0      682.9
GR    322.0      707.6      320.0      723.0

NC     0.08       0.08       0.18
ET                   0        8.1                                                  310.0         650
X1      120       32.0      354.5      602.5       55.0       55.0       55.0
GR    308.0      102.3      306.0      116.7      304.0      151.7      302.0      196.8      300.0      221.4
GR    298.0      252.0      296.0      274.8      294.0      281.9      292.0      290.3      290.0      304.3
GR    288.0      311.6      286.0      319.1      284.0      327.2      282.0      341.2      280.0      354.5
GR    278.0      367.7      276.0      399.7      274.0      403.0      274.0      425.1      274.0      467.8
GR    274.0      547.3      276.0      555.0      278.0      566.9      280.0      602.5      288.0      643.7
GR    290.0      648.8      300.0      670.6      310.0      693.0      312.0      702.1      314.0      713.5
GR    316.0      721.4      318.0      739.3

NC     0.08       0.08       0.18
ET                   0        8.1                                                  330.0         683
X1      130       39.0      353.0      583.5      520.0      520.0      520.0
GR    312.0       79.0      310.0       90.0      308.0       98.0      306.0      104.9      304.0      118.2
GR    302.0      123.6      300.0      141.8      298.0      205.2      296.0      271.7      294.0      278.5
GR    292.0      282.7      290.0      289.9      288.0      325.4      286.0      341.4      284.0      346.3
GR    280.0      353.0      278.0      357.1      278.0      375.2      278.0      394.4      276.0      420.6
GR    276.0      449.2      278.0      454.6      280.0      583.5      282.0      599.6      284.0      611.7
GR    286.0      627.5      288.0      644.3      290.0      653.5      298.0      683.1      300.0      687.1
GR    302.0      701.7      304.0      711.7      306.0      720.8      308.0      730.8      310.0      741.8
GR    312.0      759.2      314.0      773.7      316.0      790.4      318.0      820.0

NC     0.08       0.08       0.18       0.03       0.05
ET                   0        8.1                                                  215.0         545
X1      140       32.0      242.6      482.4      555.0      555.0      555.0
GR    330.0      102.8      320.0      127.5      310.0      152.4      300.0      161.2      294.0      209.3
GR    294.0      217.9      290.0      230.3      288.0      233.1      286.0      237.3      284.0      242.6
GR    282.0      247.1      280.0      259.9      278.0      269.7      276.0      332.7      276.0      349.0
GR    278.0      361.2      280.0      371.2      282.0      467.9      284.0      482.4      286.0      497.6
GR    288.0      507.7      290.0      514.9      300.0      546.9      302.0      555.2      304.0      562.8
GR    306.0      577.1      308.0      587.4      310.0      606.1      312.0      626.3      314.0      654.4
GR    316.0      690.6      316.0      781.7

NC     0.08      0.035       0.16
ET                 6.1        8.1                                      108.5      1200.0         245        1200
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X1      150       39.0      273.6      738.1      555.0      555.0      580.0
GR    324.0      108.5      322.0      117.6      320.0      129.6      318.0      140.8      316.0      151.8
GR    314.0      159.5      312.0      167.6      310.0      175.6      300.0      203.4      298.0      206.4
GR    298.0      208.7      298.0      256.1      290.0      273.6      288.0      277.8      286.0      284.5
GR    284.0      293.6      282.0      385.5      280.0      411.0      280.0      552.4      280.0      655.2
GR    280.0      703.0      290.0      738.1      292.0      750.6      294.0      758.6      296.0      870.3
GR    296.0      894.6      296.0     1042.4      298.0     1080.5      300.0     1153.4      302.0     1232.5
GR    304.0     1332.3      306.0     1432.2      308.0     1480.5      310.0     1538.6      312.0     1585.5
GR    314.0     1637.3      316.0     1690.9      318.0     1742.0      320.0     1781.4

NH        3        0.04      497.4       0.08     1450.1       0.040     2720.0
ET                    0        8.1                                                415       1860
X1      160         56     1331.1     1412.3      900.0      670.0      670.0
GR    322.0        0.0      320.0       55.0      318.0       85.0      316.0      133.6      314.0      158.2
GR    312.0      166.4      310.0      280.5      308.0      342.6      306.0      358.4      304.0      371.8
GR    302.0      379.5      300.0      388.4      298.0      395.0      296.0      400.8      294.0      409.4
GR    292.0      416.6      284.0      497.4      282.0      524.4      282.0      589.9      284.0      597.7
GR    286.0      637.8      288.0      649.2      290.0     1193.1      292.0     1208.4      294.0     1225.6
GR    296.0     1239.8      298.0     1254.6      300.0     1263.4      302.0     1271.5      302.0     1277.6
GR    300.0     1286.7      298.0     1294.6      296.0     1302.7      294.0     1320.7      292.0     1331.1
GR    290.0     1339.6      282.0     1363.6      282.0     1400.5      290.0     1412.3      300.0     1439.6
GR    306.0     1450.1      308.0     1483.3      306.0     1504.8      304.0     1515.9      302.0     1528.7
GR    302.0     1778.9      304.0     1792.9      306.0     1798.8      306.0     1873.0      304.0     1879.5
GR    304.0     1911.4      305.0     1930.0      310.0     2125.0      315.0     2430.0      320.0     2620.0
GR    328.0     2720.0

NC        0          0          0        0.1        0.3
NH        3        0.04      744.3       0.08     1725.4       0.04      3120.0
ET                    0        8.1                                                410       1990
X1      170         42.0     1483.2     1544.1      325.0      315.0      320.0
GR    320.0      164.6      318.0      193.5      316.0      222.9      314.0      243.0      312.0      266.0
GR    310.0      289.5      308.0      311.8      306.0      336.8      304.0      354.7      302.0      384.8
GR    300.0      407.7      298.0      429.7      296.0      457.8      294.0      489.8      292.0      530.3
GR    290.0      535.9      288.0      569.7      286.0      744.3      284.0      761.0      282.0      772.2
GR    282.0      813.9      284.0      822.3      286.0      830.3      288.0      842.6      290.0      867.5
GR    292.0      977.6      292.0     1483.2      290.0     1487.1      284.0     1504.3      284.0     1529.0
GR    290.0     1544.1      292.0     1725.4      294.0     1819.8      296.0     1883.7      298.0     1988.6
GR    300.0     2050.0      300.0     2200.0      305.0     2400.0      310.0     2630.0      310.0     2680.0
GR    315.0     2880.0      320.0     3120.0

NH        4        0.04      608.0       0.03     1109.0       0.08      1759.0       0.04     2935.0
ET                    0        8.1                                                485       1940
X1      180         35.0     1530.0     1759.0      529.0      570.0      550.0
GR    324.0      208.3      322.0      247.9      320.0      282.2      318.0      313.0      316.0      344.4
GR    314.0      371.7      310.0      415.0      300.0      531.0      290.0      608.0      288.0      647.0
GR    286.0      703.0      286.0     1032.0      288.0     1053.0      290.0     1109.0      292.0     1308.0
GR    292.0     1530.0      290.0     1603.0      288.0     1627.0      286.0     1640.0      286.0     1743.0
GR    288.0     1750.0      290.0     1759.0      296.0     1772.0      298.0     1800.0      296.0     1827.0
GR    296.0     1884.0      298.0     1887.0      300.0     1962.0      300.0     2380.0      305.0     2390.0
GR    300.0     2440.0      305.0     2500.0      310.0     2570.0      315.0     2850.0      320.0     2935.0
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NH        4       0.04      508.2       0.03      1455.3        0.08      1827.3        0.04      2950.0
ET                   0        8.1                                                      470        1920
X1      190         52     1576.3     1809.7       505.0       505.0       505.0
GR    322.0       35.0      320.0       61.0       318.0        85.0       316.0       135.7       314.0       193.6
GR    312.0      243.3      310.0      277.0       310.0       339.0       310.0       407.4       308.0       424.7
GR    306.0      438.4      304.0      449.2       302.0       457.0       300.0       466.5       298.0       472.3
GR    296.0      500.5      294.0      508.2       292.0       518.3       290.0       524.8       288.0       531.3
GR    286.0      540.8      286.0      978.3       286.0      1036.5       286.0      1374.7       288.0      1391.0
GR    290.0     1413.5      292.0     1428.0       294.0      1443.6       296.0      1455.3       296.0      1576.3
GR    294.0     1586.7      292.0     1592.6       290.0      1603.2       288.0      1646.1       286.0      1668.1
GR    286.0     1706.0      286.0     1711.1       286.0      1798.8       288.0      1804.1       290.0      1809.7
GR    300.0     1827.3      302.0     1830.0       304.0      1891.2       306.0      1927.1       308.0      1932.4
GR    308.0     1936.0      306.0     1942.7       306.0      1952.2       310.0      2150.0       315.0      2380.0
GR    320.0     2750.0      325.0     2950.0

NH        3       0.04      459.2       0.125     1599.5        0.04      2585.0
ET                   0        8.1                                                      370        1975
X1      200         57.0     1439.7     1562.7       720.0       750.0       740.0
GR    320.0       25.0      318.0       95.0       316.0       152.8       314.0       197.7       312.0       232.1
GR    310.0      257.8      308.0      284.8       306.0       307.0       304.0       333.7       302.0       359.3
GR    300.0      383.4      298.0      415.9       296.0       429.0       294.0       459.2       292.0       478.2
GR    290.0      484.7      288.0      492.8       286.0       975.5       286.0      1006.1       286.0      1203.4
GR    286.0     1406.9      288.0     1416.2       290.0      1423.8       292.0      1430.8       294.0      1434.3
GR    296.0     1439.7      296.0     1463.1       294.0      1466.8       292.0      1469.6       290.0      1474.0
GR    286.0     1482.4      286.0     1532.8       288.0      1548.0       290.0      1554.3       292.0      1558.1
GR    294.0     1562.7      296.0     1567.3       298.0      1570.1       300.0      1574.3       300.0      1585.0
GR    296.0     1593.3      294.0     1599.5       294.0      1637.4       294.0      1665.6       294.0      1695.5
GR    296.0     1771.3      296.0     1775.4       294.0      1779.7       294.0      1907.5       296.0      1914.0
GR    298.0     1918.9      300.0     1923.5       302.0      1929.2       305.0      2000.0       310.0      2300.0
GR    315.0     2490.0      320.0     2585.0

NH        3       0.04      465.0       0.125     1479.2        0.04      2610.0
ET                   0        8.1                                                      400        2100
X1      209         47     1233.4     1479.2       430.0       365.0       390.0
GR    320.0       40.0      318.0       95.0       316.0       140.4       314.0       213.9       312.0       238.5
GR    310.0      249.4      308.0      258.8       308.0       278.4       308.0       306.3       306.0       357.7
GR    304.0      383.3      302.0      436.4       300.0       460.0       298.0       465.0       296.0       473.7
GR    294.0      492.3      292.0      514.5       290.0       554.4       288.0       673.2       286.0       779.3
GR    286.0     1081.2      288.0     1151.0       290.0      1166.1       292.0      1186.0       294.0      1203.7
GR    296.0     1225.8      298.0     1233.4       298.0      1266.3       296.0      1274.8       294.0      1280.7
GR    292.0     1291.8      290.0     1309.1       288.0      1316.7       286.0      1323.7       286.0      1437.3
GR    288.0     1458.5      290.0     1465.4       292.0      1471.5       294.0      1479.2       296.0      1655.4
GR    298.0     1934.4      300.0     2100.0       305.0      2325.0       310.0      2510.0       315.0      2540.0
GR    320.0     2550.0      325.0     2610.0

NH        3       0.04      465.0       0.125     1479.2        0.04      2610.0
ET                   0        8.1                                                      400        2100
X1      210         35     1233.4     1479.2        10.0        10.0        10.0
GR    320.0       40.0      318.0       95.0       316.0       140.4       314.0       213.9       312.0       238.5
GR    310.0      249.4      308.0      258.8       308.0       278.4       308.0       306.3       306.0       357.7
GR    304.0      383.3      302.0      436.4       300.0       460.0       298.0       465.0       298.0      1233.4
GR    298.0     1266.3      296.0     1274.8       294.0      1280.7       292.0      1291.8       290.0      1309.1
GR    288.0     1316.7      286.0     1323.7       286.0      1437.3       288.0      1458.5       290.0      1465.4
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GR    292.0    1471.5     294.0    1479.2     296.0    1655.4     298.0    1934.4     300.0    2100.0
GR    305.0    2325.0     310.0    2510.0     315.0    2540.0     320.0    2550.0     325.0    2610.0

NH        3       0.04     465.0     0.125    1479.2       0.04    2610.0
ET                   0       8.1                                      400       2100
X1      211         47    1233.4    1479.2      10.0       10.0      10.0
GR    320.0       40.0     318.0      95.0     316.0      140.4     314.0     213.9     312.0      238.5
GR    310.0      249.4     308.0     258.8     308.0      278.4     308.0     306.3     306.0      357.7
GR    304.0      383.3     302.0     436.4     300.0      460.0     298.0     465.0     296.0      473.7
GR    294.0      492.3     292.0     514.5     290.0      554.4     288.0     673.2     286.0      779.3
GR    286.0     1081.2     288.0    1151.0     290.0     1166.1     292.0    1186.0     294.0     1203.7
GR    296.0     1225.8     298.0    1233.4     298.0     1266.3     296.0    1274.8     294.0     1280.7
GR    292.0     1291.8     290.0    1309.1     288.0     1316.7     286.0    1323.7     286.0     1437.3
GR    288.0     1458.5     290.0    1465.4     292.0     1471.5     294.0    1479.2     296.0     1655.4
GR    298.0     1934.4     300.0    2100.0     305.0     2325.0     310.0    2510.0     315.0     2540.0
GR    320.0     2550.0     325.0    2610.0

NC      0.04       0.04       0.20
ET                   0       8.1                                      515       2100
X1      220         41     745.8    1065.0      830.0      770.0      810.0
GR    322.0      150.4     320.0     203.3     318.0      243.5     316.0     285.0     314.0      322.2
GR    312.0      347.7     310.0     374.4     308.0      400.2     306.0     431.4     304.0      465.2
GR    302.0      485.6     300.0     510.2     298.0      524.9     298.0     574.3     298.0      584.8
GR    296.0      651.5     294.0     736.3     292.0      745.8     290.0     809.7     288.0      832.4
GR    288.0      990.1     290.0    1026.9     292.0     1065.0     294.0    1377.8     296.0     1394.0
GR    298.0     1420.2     298.0    1493.8     298.0     1539.1     298.0    1562.9     298.0     1687.3
GR    298.0     1757.3     298.0    1873.0     298.0     1920.0     298.0    1964.6     300.0     2085.9
GR    302.0     2110.3     304.0    2117.1     306.0     2174.7     308.0    2188.1     315.0     2330.0
GR    320.0     2390.0

NC      0.04       0.04       0.20
ET                   6.1       8.1                                      825       2050        825       2000
X1      230         45.0     941.1    1142.7      465.0      505.0      490.0
GR    330.0      101.0     328.0     152.6     326.0      218.4     324.0     300.8     322.0      348.6
GR    320.0      387.2     318.0     451.4     316.0      496.5     314.0     545.0     312.0      593.3
GR    310.0      634.8     308.0     671.1     306.0      723.4     304.0     811.3     302.0      829.7
GR    300.0      865.9     298.0     889.4     296.0      902.0     294.0     939.5     292.0      941.1
GR    290.0      955.7     288.0    1002.9     288.0     1074.8     290.0    1090.0     292.0     1142.7
GR    294.0     1280.3     294.0    1427.1     294.0     1543.5     296.0    1559.7     298.0     1575.7
GR    298.0     1826.4     298.0    1844.4     298.0     2021.3     298.0    2061.1     300.0     2083.4
GR    302.0     2094.8     304.0    2109.5     306.0     2146.5     308.0    2209.0     310.0     2253.9
GR    312.0     2329.1     314.0    2373.7     316.0     2415.5     316.0    2439.6     318.0     2450.0

NC      0.04       0.04       0.20
ET                   6.1       8.1                                     2370.0    3040.0    2370.0    3040.0
X1      239         36     2398.5    2724.4      400.0       440.0      420.0
GR    326.0     1750.0     324.0    1802.0     322.0     1870.0     320.0    1920.0     318.0     2005.0
GR    316.0     2080.0     314.0    2125.5     312.0     2165.8     310.0    2233.3     308.0     2269.5
GR    306.0     2294.3     304.0    2331.7     302.0     2347.4     300.0    2357.7     298.0     2367.2
GR    296.0     2385.3     294.0    2398.5     292.0     2401.7     290.0    2404.4     290.0     2656.3
GR    292.0     2715.8     294.0    2724.4     296.0     2731.5     298.0    2742.2     298.0     2758.1
GR    296.0     2827.0     296.0    2869.3     298.0     2999.5     298.0    3198.0     298.0     3387.9
GR    300.0     3450.9     310.0    3495.2     320.0     3518.9     322.0    3522.4     324.0     3525.4
GR    326.0     3527.8
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NC     0.04       0.04       0.20
ET                   0        8.1                                          2517.0        3011
X1      240         65     2519.3     3031.9       195.0       255.0       230.0
GR    330.0     1682.0      328.0     1750.0       326.0      1805.0       324.0      1860.0       322.0      1920.0
GR    320.0     1980.0      318.0     2060.0       316.0      2139.9       314.0      2194.2       312.0      2259.3
GR    312.0     2339.4      312.0     2505.0       310.0      2508.9       308.0      2515.1       306.0      2519.3
GR    304.0     2524.1      302.0     2530.1       300.0      2533.9       298.0      2537.2       296.0      2540.2
GR    294.0     2543.1      292.0     2549.3       291.0      2584.8       291.0      2591.8       290.0      2668.2
GR    290.0     2675.2      290.0     2751.5       290.0      2758.5       290.0      2834.8       290.0      2841.8
GR    291.0     2918.2      291.0     2925.2       292.0      2934.7       294.0      2939.9       296.0      2954.4
GR    296.0     2977.8      296.0     2999.2       300.0      3001.9       306.0      3004.5       310.0      3031.9
GR    311.0     3036.7      312.0     3041.5       314.0      3074.7       310.0      3080.0       310.0      3180.0
GR    310.0     3238.5      320.0     3430.4       322.0      3475.0       324.0      3592.2       326.0      3677.8
GR    328.0     3684.3      328.0     3733.7       326.0      3788.3       324.0      3847.3       322.0      3883.8
GR    320.0     3953.1      318.0     4017.4       318.0      4167.3       320.0      4201.2       322.0      4225.0
GR    324.0     4239.0      326.0     4260.1       328.0      4274.0       330.0      4291.5       328.0      4386.5

NC     0.03       0.03       0.04         0.3          0.5
ET                   0        8.1                                            2518        3010
       MAST BLVD BRIDGE  (NORMAL BRIDGE ROUTINE)
X1      242         57     2519.3     3031.9           10          10          10
BT      -31     2339.4      312.0      312.0       2505.0       315.0       311.5      2584.8       315.0       311.5
BT              2584.8      315.0      291.0       2591.8       315.0       291.0      2591.8       315.0       311.5
BT              2668.2      315.0      311.5       2668.2       315.0       290.0      2675.2       315.0       290.0
BT              2675.2      315.0      311.5       2751.5       315.0       311.5      2751.5       315.0       290.0
BT              2758.5      315.0      290.0       2758.5       315.0       311.5      2834.8       315.0       311.5
BT              2834.8      315.0      290.0       2841.8       315.0       290.0      2841.8       315.0       311.5
BT              2918.2      315.0      311.5       2918.2       315.0       291.0      2925.2       315.0       291.0
BT              2925.2      315.0      311.5       3004.5       315.0       311.5      3004.5       315.0       306.0
BT              3031.9      315.0      310.0       3036.7       315.0       311.0      3041.5       315.1       312.0
BT              3074.7      315.5      314.0       3080.0       315.6       310.0      3238.5       317.6       310.0
BT              3350.0      320.0      320.0
GR    330.0     1682.0      328.0     1750.0       326.0      1805.0       324.0      1860.0       322.0      1920.0
GR    320.0     1960.0      318.0     2020.0       316.0      2090.0       314.0      2170.0       312.0      2339.4
GR    312.0     2505.0      310.0     2508.9       308.0      2515.1       306.0      2519.3       304.0      2524.1
GR    302.0     2530.1      300.0     2533.9       298.0      2537.2       296.0      2540.2       294.0      2543.1
GR    292.0     2549.3      291.0     2584.8       291.0      2591.8       290.0      2668.2       290.0      2675.2
GR    290.0     2751.5      290.0     2758.5       290.0      2834.8       290.0      2841.8       291.0      2918.2
GR    291.0     2925.2      292.0     2934.7       294.0      2939.9       296.0      2954.4       296.0      2977.8
GR    296.0     2999.2      300.0     3001.9       306.0      3004.5       310.0      3031.9       311.0      3036.7
GR    312.0     3041.5      314.0     3074.7       310.0      3080.0       310.0      3180.0       310.0      3238.5
GR    320.0     3350.0      322.0     3415.0       324.0      3490.0       326.0      3590.0       328.0      3750.0
GR    328.0     3860.0      326.0     3970.0       324.0      4040.0       324.0      4210.0       326.0      4270.0
GR    328.0     4325.0      330.0     4380.0

NC     0.03       0.03       0.04
ET                   0        8.1                                            2518        3010
X1      243         58     2480.0     3001.9         65.0        65.0        65.0
BT      -31     2339.4      312.0      312.0       2505.0       315.0       311.5      2584.8       315.0       311.5
BT              2584.8      315.0      291.0       2591.8       315.0       291.0      2591.8       315.0       311.5
BT              2668.2      315.0      311.5       2668.2       315.0       290.0      2675.2       315.0       290.0
BT              2675.2      315.0      311.5       2751.5       315.0       311.5      2751.5       315.0       290.0
BT              2758.5      315.0      290.0       2758.5       315.0       311.5      2834.8       315.0       311.5
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BT		2834.8	315.0	290.0	2841.8	315.0	290.0	2841.8	315.0	311.5
BT		2918.2	315.0	311.5	2918.2	315.0	291.0	2925.2	315.0	291.0
BT		2925.2	315.0	311.5	3004.5	315.0	311.5	3004.5	315.0	306.0
BT		3031.9	315.0	310.0	3036.7	315.0	311.0	3041.5	315.1	312.0
BT		3074.7	315.5	314.0	3080.0	315.6	310.0	3238.5	317.6	310.0
BT		3350.0	320.0	320.0						
GR	330.0	1682.0	328.0	1750.0	326.0	1805.0	324.0	1860.0	322.0	1920.0
GR	320.0	1960.0	318.0	2020.0	316.0	2090.0	314.0	2170.0	312.0	2339.4
GR	313.0	2480.0	312.0	2505.0	310.0	2508.9	308.0	2515.1	306.0	2519.3
GR	304.0	2524.1	302.0	2530.1	300.0	2533.9	298.0	2537.2	296.0	2540.2
GR	294.0	2543.1	292.0	2549.3	291.0	2584.8	291.0	2591.8	290.0	2668.2
GR	290.0	2675.2	290.0	2751.5	290.0	2758.5	290.0	2834.8	290.0	2841.8
GR	291.0	2918.2	291.0	2925.2	292.0	2934.7	294.0	2939.9	296.0	2954.4
GR	296.0	2977.8	296.0	2999.2	300.0	3001.9	306.0	3004.5	310.0	3031.9
GR	311.0	3036.7	312.0	3041.5	314.0	3074.7	310.0	3080.0	310.0	3180.0
GR	310.0	3238.5	320.0	3350.0	322.0	3415.0	324.0	3490.0	326.0	3590.0
GR	328.0	3750.0	328.0	3860.0	326.0	3970.0	324.0	4040.0	324.0	4210.0
GR	326.0	4270.0	328.0	4325.0	330.0	4380.0				
NC	0.04	0.055	0.14							
ET		0	8.1					2560.0	3070.0	
X1	244	64	2550.5	3075.6	10	10	10			
GR	330.0	1720.0	328.0	1730.0	326.0	1750.0	324.0	1765.0	322.0	1800.0
GR	320.0	1940.0	318.0	1980.0	316.0	2020.0	314.0	2050.0	312.0	2111.7
GR	310.0	2149.8	310.0	2157.7	310.0	2251.0	310.0	2267.6	312.0	2320.7
GR	314.0	2518.2	314.0	2535.4	312.0	2545.0	312.0	2546.4	310.0	2550.5
GR	308.0	2557.6	306.0	2562.4	304.0	2568.1	302.0	2573.4	300.0	2579.0
GR	298.0	2585.3	296.0	2593.3	294.0	2609.6	293.0	2637.6	293.0	2644.6
GR	292.0	2688.9	292.0	2721.0	292.0	2728.0	291.0	2804.3	291.0	2811.3
GR	291.0	2887.6	291.0	2894.6	290.0	2971.0	290.0	2978.0	290.0	3005.0
GR	292.0	3010.4	294.0	3039.7	296.0	3046.7	298.0	3051.9	300.0	3058.0
GR	310.0	3075.6	312.0	3078.7	316.0	3088.0	318.0	3283.0	320.0	3382.0
GR	310.0	3647.0	320.0	3685.0	328.0	3700.0	328.0	3800.0	328.0	3810.0
GR	326.0	3878.0	324.0	3883.0	322.0	3888.0	320.0	3945.0	318.0	4015.0
GR	316.0	4050.0	318.0	4125.0	320.0	4200.0	336.0	4520.0		
NC	0.04	0.055	0.14							
ET		6.1	8.1			100.0	1515.0	760.0	1410.0	
X1	245	55.0	928.4	1396.3	210.0	200.0	165.0			
GR	330.0	158.8	328.0	203.0	326.0	244.5	324.0	276.7	322.0	313.6
GR	320.0	380.0	318.0	410.8	316.0	447.3	314.0	493.0	312.0	535.8
GR	308.0	648.8	306.0	693.5	304.0	735.4	302.0	760.3	298.0	776.5
GR	296.0	786.2	294.0	816.6	292.0	928.4	290.0	1067.4	290.0	1374.2
GR	292.0	1396.3	294.0	1408.0	296.0	1451.6	298.0	1461.4	298.0	1492.8
GR	296.0	1508.5	296.0	1527.0	298.0	1536.0	300.0	1591.3	300.0	1591.9
GR	300.0	1612.0	302.0	1617.0	304.0	1625.9	306.0	1648.9	308.0	1670.8
GR	310.0	1676.4	310.0	1678.4	308.0	1692.3	306.0	1707.5	304.0	1734.3
GR	302.0	1771.4	302.0	1833.7	304.0	1856.0	306.0	1865.7	308.0	1878.7
GR	310.0	1886.9	312.0	1891.3	314.0	1927.9	316.0	1936.3	318.0	1942.1
GR	320.0	1950.0	330.0	1962.9	332.0	1971.6	332.0	2064.2	330.0	2076.3

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NC        0         0         0       0.1       0.3
NH        4     0.125    2050.0       .04    2550.8       0.14    2947.3     0.055    3701.7
ET                          8.1                                      2400    3310.0
X1      250        52    2566.7    2740.6     705.0      790.0      740.0
GR    330.0    1762.0     328.0    1791.0     326.0     1829.0     324.0    1887.0     322.0    1980.0
GR    320.0    2050.0     318.0    2153.8     316.0     2187.3     314.0    2194.5     312.0    2244.8
GR    310.0    2282.9     308.0    2358.3     306.0     2411.1     304.0    2450.5     302.0    2460.8
GR    300.0    2470.2     298.0    2478.8     296.0     2550.8     294.0    2566.7     294.0    2567.0
GR    292.0    2570.7     290.0    2677.6     290.0     2719.3     292.0    2733.9     294.0    2740.6
GR    294.0    2740.7     296.0    2760.8     296.0     2947.3     296.0    2972.9     294.0    3000.5
GR    294.0    3022.9     296.0    3054.0     298.0     3089.0     300.0    3130.4     300.0    3144.4
GR    298.0    3185.1     296.0    3192.7     296.0     3221.8     298.0    3249.3     296.0    3439.1
GR    298.0    3444.5     300.0    3452.9     302.0     3468.9     304.0    3495.0     306.0    3516.7
GR    308.0    3536.0     310.0    3542.2     320.0     3564.9     328.0    3580.4     330.0    3586.6
GR    330.0    3657.8     328.0    3701.7

NH        5     0.125    2162.1      0.06    2323.9       0.14    2544.6     0.055    3145.9     0.125
NH   3432.0
ET                  0       8.1                                      2340    2950.0
X1      260        50    2375.2    2544.6    1035.0     1020.0     1025.0
GR    330.0    1180.0     325.0    1530.0     322.0     1660.0     320.0    1700.0     318.0    1850.0
GR    316.0    2025.0     314.0    2030.0     312.0     2162.1     312.0    2242.9     312.0    2273.9
GR    310.0    2323.9     308.0    2334.9     306.0     2346.8     304.0    2353.6     302.0    2368.8
GR    300.0    2375.2     298.0    2409.3     296.0     2425.8     294.0    2436.4     294.0    2436.7
GR    294.0    2480.1     294.0    2480.2     296.0     2491.6     298.0    2530.6     300.0    2544.6
GR    302.0    2601.0     302.0    2634.8     302.0     2684.7     302.0    2743.0     300.0    2774.6
GR    298.0    2795.7     298.0    2809.3     298.0     2825.2     298.0    2856.1     300.0    2866.4
GR    302.0    2905.5     304.0    2921.1     306.0     2962.3     308.0    2975.8     310.0    3014.6
GR    312.0    3039.4     314.0    3096.0     316.0     3124.5     318.0    3131.9     320.0    3140.0
GR    322.0    3142.8     324.0    3145.9     324.0     3266.1     324.0    3330.0     326.0    3432.0

QT        2      49000     49000
NH        5     0.125    2125.8      0.06    2393.6       0.14    2678.6     0.055    3249.6     0.125
NH   3555.0
ET                  0       8.1                                      2270       2990
X1      270        44    2509.5    2678.6     985.0      930.0      965.0
GR    330.0    1280.0     325.0    1480.0     320.0     1600.0     318.0    1669.0     316.0    1755.0
GR    314.0    1945.0     312.0    2125.8     310.0     2228.0     310.0    2393.6     308.0    2417.3
GR    306.0    2450.5     302.0    2477.3     300.0     2509.5     298.0    2526.5     298.0    2592.8
GR    300.0    2630.4     304.0    2678.6     304.0     2720.6     302.0    2739.0     300.0    2802.1
GR    300.0    2883.1     300.0    2900.1     298.0     2906.1     298.0    2961.0     300.0    2970.1
GR    308.0    2994.6     310.0    3071.9     312.0     3096.3     314.0    3142.5     316.0    3164.8
GR    316.0    3178.8     316.0    3229.5     318.0     3233.8     320.0    3239.2     322.0    3249.6
GR    322.0    3347.9     320.0    3371.3     320.0     3373.7     320.0    3377.1     322.0    3435.0
GR    324.0    3544.0     326.0    3549.0     328.0     3551.0     330.0    3555.0

NH        5     0.125     388.0      0.06     548.0       0.14    1290.0     0.055    2038.0     0.125
NH   2380.0
ET                  0       8.1                                       560    1890.0
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X1      280        49      958.0     1060.0     1045.0     1030.0     1040.0
GR    328.0     118.0     326.0      195.0      324.0      255.0      322.0      310.0      320.0      388.0
GR    318.0     455.0     316.0      493.0      314.0      498.0      312.0      503.0      310.0      520.0
GR    308.0     548.0     306.0      950.0      306.0      958.0      300.0      977.0      300.0     1030.0
GR    302.0    1038.0     304.0     1043.0      306.0     1060.0      306.0     1242.0      304.0     1290.0
GR    304.0    1340.0     302.0     1370.0      304.0     1385.0      306.0     1408.0      306.0     1432.0
GR    304.0    1502.0     304.0     1570.0      306.0     1635.0      306.0     1665.0      304.0     1690.0
GR    302.0    1800.0     300.0     1830.0      300.0     1850.0      302.0     1855.0      304.0     1862.0
GR    306.0    1933.0     308.0     1995.0      310.0     2005.0      312.0     2010.0      314.0     2019.0
GR    316.0    2030.0     318.0     2038.0      318.0     2170.0      320.0     2211.0      322.0     2219.0
GR    324.0    2232.0     326.0     2300.0      328.0     2360.0      330.0     2380.0

NC     0.06     0.055      0.14
ET                 0        8.1                                                 525     2015.0
X1      285        51     706.6      792.2      665.0      680.0      670.0
GR    325.8       0.0     324.0      111.4      322.0      204.5      318.0      284.9      316.0      402.4
GR    314.0     406.6     312.0      564.3      308.0      625.5      306.0      706.6      304.0      713.6
GR    302.0     721.9     302.0      768.4      304.0      774.6      304.0      774.8      306.0      783.7
GR    310.0     792.2     310.0      820.3      306.0      831.0      304.0      909.5      306.0     1062.5
GR    306.0    1231.8     306.0     1288.1      308.0     1337.2      310.0     1352.2      312.0     1376.4
GR    312.0    1405.7     310.0     1409.6      308.0     1512.8      308.0     1601.1      308.0     1616.3
GR    306.0    1785.5     304.0     1816.6      304.0     1841.7      306.0     1982.3      308.0     1993.1
GR    310.0    2008.2     312.0     2039.8      314.0     2079.9      316.0     2135.9      318.0     2157.1
GR    320.0    2174.6     322.0     2204.7      324.0     2220.1      326.0     2227.3      328.0     2237.7
GR    330.0    2241.4     332.0     2247.8      334.0     2257.8      336.0     2266.8      338.0     2277.9
GR    340.0    2307.8

NC     0.04     0.055      0.14
ET                 0        8.1                                                2560     4154.0
X1      290        81     2655.1     2758.9      645.0      645.0      645.0
GR    330.0    1550.0     328.0     1610.0      326.0     1680.0      324.0     1757.0      322.0     1830.0
GR    320.0    1890.0     320.0     2050.0      318.0     2222.0      316.0     2230.2      316.0     2237.9
GR    318.0    2241.4     318.0     2290.7      316.0     2324.5      314.0     2341.2      312.0     2393.6
GR    312.0    2459.9     312.0     2477.7      310.0     2544.8      308.0     2655.1      306.0     2672.8
GR    304.0    2682.0     302.0     2691.9      302.0     2719.3      304.0     2741.6      304.0     2741.8
GR    306.0    2745.0     308.0     2747.9      310.0     2758.9      308.0     2834.0      308.0     2864.6
GR    310.0    2932.1     310.0     2951.1      310.0     2962.7      310.0     2968.0      308.0     3040.7
GR    308.0    3091.2     310.0     3099.7      310.0     3116.1      308.0     3135.0      308.0     3243.2
GR    310.0    3252.7     312.0     3259.7      314.0     3266.2      316.0     3270.9      318.0     3279.1
GR    320.0    3297.7     318.0     3309.3      316.0     3322.4      314.0     3334.8      312.0     3346.4
GR    310.0    3359.6     308.0     3411.2      306.0     3446.4      308.0     3646.0      310.0     3700.6
GR    314.0    3730.0     314.0     3744.6      312.0     3754.3      310.0     3798.3      308.0     3810.6
GR    310.0    4077.9     312.0     4133.1      314.0     4137.9      316.0     4157.2      318.0     4169.3
GR    320.0    4258.6     322.0     4307.3      324.0     4323.7      326.0     4340.8      328.0     4352.3
GR    330.0    4377.5     332.0     4385.1      334.0     4419.5      336.0     4492.5      338.0     4512.0
GR    340.0    4563.8     342.0     4650.1      344.0     4715.6      346.0     4746.7      348.0     4761.2
GR    348.0    4861.4

NH        5     0.125     2037.0       0.04     2536.2       0.14     2749.7      0.055     4600.0      0.125
NH   4970.0
ET                6.1        8.1                          2340.0     4140.0       2540     4014.0
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X1      300         80     2536.2     2708.7       655.0       670.0       660.0
GR    330.0     1520.0      328.0     1596.0       326.0      1600.0       324.0      1750.0       322.0      1759.0
GR    320.0     2037.0      318.0     2261.7       316.0      2362.4       314.0      2425.6       312.0      2536.2
GR    308.0     2597.1      306.0     2620.7       306.0      2648.3       308.0      2667.9       312.0      2686.7
GR    314.0     2708.7      314.0     2749.7       312.0      2772.3       310.0      2798.1       308.0      2823.3
GR    308.0     2917.1      308.0     2989.5       308.0      3029.4       308.0      3049.3       308.0      3090.7
GR    308.0     3096.6      310.0     3151.2       312.0      3254.8       312.0      3258.8       312.0      3289.5
GR    312.0     3415.7      314.0     3465.6       316.0      3469.2       318.0      3471.7       318.0      3481.0
GR    316.0     3491.1      314.0     3500.1       314.0      3528.6       316.0      3536.7       318.0      3545.1
GR    320.0     3548.4      322.0     3554.1       322.0      3569.0       320.0      3574.4       318.0      3584.7
GR    316.0     3594.2      314.0     3607.1       312.0      3618.5       312.0      3634.5       312.0      3736.6
GR    312.0     3852.4      312.0     3897.2       310.0      3904.3       308.0      3907.9       308.0      3966.7
GR    312.0     4002.1      314.0     4006.7       316.0      4010.8       318.0      4022.5       320.0      4028.6
GR    320.0     4053.6      320.0     4083.9       320.0      4114.5       320.0      4148.3       320.0      4199.1
GR    318.0     4210.5      316.0     4222.5       316.0      4260.1       318.0      4362.2       320.0      4437.5
GR    322.0     4445.4      324.0     4453.2       326.0      4461.8       326.0      4472.2       324.0      4481.0
GR    324.0     4600.0      324.0     4750.0       326.0      4875.0       328.0      4955.0       330.0      4970.0

NC     0.04      0.055       0.14
ET                 6.1         8.1                             2460.0      4230.0         2650      4000.0
        CONFLUENCE WITH SYCAMORE CREEK
X1      310         60     2698.4     2822.3       620.0       600.0       610.0
GR    330.0     1530.0      328.0     1565.0       326.0      1682.0       324.0      2100.0       324.0      2102.5
GR    322.0     2202.8      320.0     2315.0       320.0      2355.0       318.0      2455.0       316.0      2580.0
GR    314.0     2698.4      312.0     2738.8       310.0      2752.5       308.0      2761.7       308.0      2773.1
GR    310.0     2793.7      312.0     2798.9       314.0      2811.2       316.0      2822.3       316.0      2833.7
GR    314.0     2843.4      312.0     2851.5       310.0      2944.2       310.0      2978.5       310.0      3016.0
GR    310.0     3032.5      312.0     3085.0       312.0      3099.4       312.0      3160.0       312.0      3297.0
GR    312.0     3324.1      312.0     3343.1       310.0      3422.3       310.0      3422.5       312.0      3462.6
GR    312.0     3549.5      312.0     3553.5       314.0      3569.6       312.0      3686.9       310.0      3695.8
GR    308.0     3710.0      308.0     4070.0       310.0      4130.0       312.0      4191.2       314.0      4198.4
GR    316.0     4207.2      318.0     4215.0       320.0      4234.2       318.0      4662.2       316.0      4670.3
GR    316.0     4679.2      318.0     4685.6       320.0      4801.6       320.0      4805.3       320.0      4906.2
GR    322.0     5240.0      324.0     5415.0       326.0      5650.0       328.0      6065.0       330.0      6240.0

NC     0.04      0.055       0.14
ET                 6.1         8.1                              950.0      2300.0      1030.0      2150.0
        CONFLUENCE WITH FORRESTER CREEK
X1      320          43      988.7     1300.0       665.0       840.0       750.0
GR    328.0      180.8      328.0      185.1       328.0       185.1       326.0       192.2       326.0       192.2
GR    324.0      205.3      322.0      220.2       322.0       224.7       320.0       234.1       318.0       251.7
GR    316.0      282.5      314.0      309.3       312.0       454.2       316.0       680.0       310.0       730.0
GR    318.0      765.0      318.0      968.3       316.0       988.7       314.0      1009.1       312.0      1023.2
GR    310.0     1060.0      310.0     1115.0       312.0      1300.0       316.0      1477.9       314.0      1512.5
GR    314.0     1669.5      316.0     1785.6       316.0      1960.5       316.0      2203.0       316.0      2220.5
GR    318.0     2265.2      320.0     2274.9       322.0      2286.6       324.0      2288.4       326.0      2292.2
GR    326.0     2358.1      324.0     2396.8       324.0      2423.1       324.0      2449.8       324.0      2697.0
GR    326.0     2905.0      328.0     3290.0       330.0      3865.0
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QT        2      48000      48000
NC     0.06       0.06      0.085
ET                  6.1        8.1                          1280.0      2300.0        1370      2250.0
X1      330       53.0     1760.0     1917.0       870.0       700.0       780.0
GR    328.0      105.6      326.0      212.4       326.0       248.3       328.0       289.1       328.0       289.1
GR    328.0      336.2      328.0      336.2       326.0       339.6       324.0       358.2       322.0       490.2
GR    320.0      585.0      318.0      622.0       316.0       629.0       314.0       636.0       312.0       640.0
GR    312.0      679.0      314.0      682.1       316.0       686.2       318.0       689.7       320.0       693.1
GR    322.0      699.6      324.0      990.1       326.0      1003.5       328.0      1176.8       330.0      1185.3
GR    330.0     1278.5      328.0     1292.7       326.0      1316.0       324.0      1326.0       322.0      1332.0
GR    320.0     1340.0      318.0     1347.0       316.0      1352.0       314.0      1393.0       314.0      1760.0
GR    312.0     1770.0      312.0     1910.0       314.0      1917.0       316.0      1925.3       316.0      1929.3
GR    314.0     2113.3      316.0     2239.8       318.0      2264.8       320.0      2271.8       322.0      2278.2
GR    324.0     2283.0      326.0     2310.9       328.0      2319.4       330.0      2480.0       328.0      2492.6
GR    328.0     2590.5      330.0     2632.1       332.0      2667.4

NC     0.06       0.06      0.085
ET                  6.1        8.1                          1200.0      2180.0        1220      2180.0
X1      340       58.0     1410.0     1843.2       520.0       505.0       505.0
GR    326.0      129.4      326.0      194.9       324.0       207.9       322.0       368.5       320.0       374.7
GR    318.0      387.3      316.0      393.1       320.0       454.2       322.0       461.0       324.0       466.8
GR    326.0      493.4      326.0      583.0       326.0       668.9       326.0       685.7       326.0       728.0
GR    326.0      794.9      326.0      831.2       326.0      1049.6       326.0      1089.2       328.0      1122.7
GR    328.0     1171.1      326.0     1192.0       324.0      1221.3       322.0      1226.0       320.0      1233.0
GR    318.0     1245.0      316.0     1250.0       316.0      1391.0       318.0      1399.0       320.0      1410.0
GR    318.0     1433.0      316.0     1440.0       314.0      1450.0       312.0      1513.0       310.0      1528.0
GR    310.0     1548.0      310.0     1670.0       312.0      1690.0       314.0      1695.0       316.0      1705.0
GR    318.0     1843.2      318.0     1890.7       316.0      1903.5       314.0      1909.3       316.0      2190.0
GR    318.0     2199.2      320.0     2211.0       322.0      2219.6       324.0      2228.2       328.0      2260.3
GR    326.0     2261.5      330.0     2307.8       332.0      2363.1       332.0      2452.5       332.0      2466.5
GR    332.0     2507.3      332.0     2524.9       334.0      2579.9

NC     0.06       0.06      0.085
ET                  6.1        8.1                          1210.0      2270.0        1300      2270.0
X1      345       71.0     1509.8     1995.5       320.0       250.0       280.0
GR    328.0      121.6      328.0      195.4       328.0       197.1       328.0       205.9       326.0       217.1
GR    324.0      302.0      324.0      332.2       326.0       361.0       326.0       372.0       324.0       378.0
GR    322.0      383.8      320.0      391.6       320.0       438.3       322.0       442.1       324.0       445.2
GR    326.0      446.6      328.0      453.5       328.0       582.7       328.0       587.1       328.0       619.2
GR    328.0      630.9      328.0      855.7       326.0       989.7       326.0      1086.9       326.0      1148.5
GR    324.0     1188.9      322.0     1212.2       320.0      1312.0       318.0      1318.0       316.0      1330.0
GR    316.0     1445.0      318.0     1452.0       320.0      1490.1       322.0      1497.6       322.0      1509.8
GR    320.0     1515.6      316.0     1530.7       314.0      1582.0       314.0      1668.0       312.0      1783.0
GR    312.0     1834.0      314.0     1841.0       316.0      1851.0       318.0      1860.0       318.0      1934.1
GR    318.0     1966.8      320.0     1976.4       322.0      1986.7       324.0      1995.5       324.0      2065.9
GR    322.0     2086.6      320.0     2101.4       318.0      2107.1       316.0      2111.7       318.0      2265.9
GR    320.0     2279.5      320.0     2339.1       318.0      2355.0       318.0      2362.5       320.0      2373.9
GR    322.0     2384.1      324.0     2391.7       326.0      2422.8       328.0      2436.8       330.0      2448.2
GR    332.0     2567.8      332.0     2583.1       332.0      2692.6       334.0      2726.2       336.0      2767.6
GR    338.0     2808.6
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NC     0.06       0.06      0.085        0.3        0.5
ET                 6.1        8.1                          1370.0      2370.0        1500      2370.0
X1      355        44.0     1731.4     2253.8       275.0       295.0       285.0
GR    328.1       132.4      328.1      151.4       322.0       174.5       328.0       407.0       330.0       527.2
GR    330.0       673.5      328.0      955.5       326.0      1275.4       324.0      1336.9       322.0      1491.7
GR    320.0      1530.6      320.0     1695.0       322.0      1702.4       322.0      1731.4       320.0      1735.2
GR    318.0      1738.1      316.0     1830.0       316.0      2035.0       314.0      2044.0       314.0      2075.0
GR    316.0      2088.0      318.0     2121.1       318.0      2175.9       318.0      2233.6       320.0      2240.9
GR    322.0      2253.8      322.0     2286.8       320.0      2302.5       318.0      2305.5       318.0      2416.9
GR    320.0      2429.4      322.0     2486.5       322.0      2527.9       320.0      2572.0       320.0      2633.9
GR    322.0      2656.8      324.0     2681.1       326.0      2773.1       328.0      2858.1       330.0      2956.9
GR    330.0      2974.1      332.0     2988.9       334.0      3095.7       334.0      3105.5

NC     0.06       0.06      0.085
ET                 6.1        8.1                          1340.0      2290.0        1520        2290
X1      356        52.0     1836.0     2258.2       250.0       250.0       250.0
X3       10
GR    330.0       270.0      328.0      521.0       326.0       767.7       326.0       773.5       326.0       795.9
GR    326.0       805.9      326.0      961.7       324.0      1053.5       324.0      1110.4       324.0      1123.6
GR    324.0      1496.7      326.0     1678.4       326.0      1787.6       324.0      1794.7       322.0      1813.4
GR    320.0      1822.3      318.0     1829.3       316.0      1836.0       316.0      1864.3       317.0      1871.3
GR    318.0      1906.3      318.0     1913.3       318.0      1946.8       318.0      1956.8       318.0      1990.3
GR    318.0      1997.3      318.0     2032.3       318.0      2039.3       318.0      2074.3       318.0      2081.3
GR    316.0      2110.0      318.0     2114.8       318.0      2121.0       318.0      2124.8       318.0      2158.3
GR    318.0      2165.3      318.0     2200.3       318.0      2207.3       318.0      2242.3       319.0      2249.3
GR    320.0      2258.2      322.0     2267.5       324.0      2277.0       326.0      2278.4       328.0      2284.1
GR    328.0      2342.9      326.0     2455.2       326.0      2673.1       328.0      2756.9       330.0      2870.0
GR    332.0      3004.7      334.0     3069.9

NC     0.06       0.03       0.04
SB      0.9        1.6       2.75          0       450.0        77.0      3112.0           2       318.0       318.0
ET                6.11       8.11                          1340.0      2300.0        1510        2300
        CARLTON HILLS BLVD BRIDGE  (SPECIAL BRIDGE ROUTINE)
X1      358         45     1850.0     2278.4        65.0        65.0        65.0
X2        0          0          1      326.0       324.0           0           0           0           0           0
X3       10          0          0          0           0           0           0           0           0           0
BT      -15      430.0      328.0      328.0       780.0       326.0       326.0      1090.0       324.0       324.0
BT             1496.7      324.0      324.0      1678.4       327.0       326.0      1787.6       328.9       326.0
BT             2278.4      329.0      326.0      2284.1       328.9       328.0      2342.9       328.0       328.0
BT             2490.0      326.0      326.0      2640.1       326.0       326.0      2756.9       328.0       328.0
BT             2870.0      330.0      330.0      3030.0       332.0       332.0      3110.0       334.0       334.0
GR    328.0       430.0      326.0      780.0       324.0      1090.0       324.0      1496.7       326.0      1678.4
GR    326.0      1787.6      324.0     1794.7       322.0      1813.4       320.0      1822.3       318.0      1829.3
GR    316.0      1850.0      316.0     1864.3       317.0      1871.3       317.0      1906.3       318.0      1913.3
GR    318.0      1946.8      318.0     1956.8       318.0      1990.3       318.0      1997.3       318.0      2032.3
GR    318.0      2039.3      318.0     2074.3       318.0      2081.3       316.0      2110.0       318.0      2114.8
GR    318.0      2121.0      318.0     2124.8       318.0      2158.3       318.0      2165.3       318.0      2200.3
GR    318.0      2207.3      318.0     2242.3       319.0      2249.3       320.0      2258.2       322.0      2267.5
GR    324.0      2277.0      326.0     2278.4       328.0      2284.1       328.0      2342.9       326.0      2490.0
GR    326.0      2640.0      328.0     2756.9       330.0      2870.0       332.0      3030.0       334.0      3110.0
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NC     0.06      0.085      0.085
ET                6.1        8.1                          1530.0      2600.0        1565        2435
X1       360       35.0     2187.0     2382.9       335.0       355.0       345.0
GR     330.0      275.8      328.0      424.1       326.0      1248.3       326.0      1356.6       326.0      1544.0
GR     324.0     1558.2      322.0     1570.1       320.0      1575.0       318.0      1879.0       318.0      1920.0
GR     316.0     1933.3      316.0     2012.0       320.0      2112.8       320.0      2187.0       318.0      2200.0
GR     318.0     2356.8      320.0     2382.9       322.0      2395.5       324.0      2406.1       326.0      2412.3
GR     328.0     2438.3      328.0     2460.9       326.0      2525.5       324.0      2540.0       322.0      2549.1
GR     322.0     2624.0      324.0     2726.5       326.0      2779.5       328.0      2795.5       330.0      2805.8
GR     332.0     2819.3      334.0     2827.7       336.0      2891.8       338.0      3130.9       340.0      3190.3

NC     0.06      0.085      0.085        0.1          0.3
ET                6.1        8.1                          1470.0      2820.0      1470.0        2500
X1       370       44.0     2234.1     2326.4       345.0       350.0       345.0
GR     330.0      149.4      328.0      349.9       328.0       355.0       328.0       360.9       328.0       514.3
GR     328.0      816.5      326.0      846.9       324.0       870.6       322.0       913.9       322.0       984.9
GR     324.0     1004.3      326.0     1014.1       326.0      1049.3       326.0      1077.6       326.0      1245.4
GR     326.0     1248.2      326.0     1279.9       326.0      1282.3       326.0      1388.8       324.0      1421.2
GR     320.0     1541.9      320.0     1573.2       320.0      1590.2       318.0      1630.0       318.0      1725.0
GR     320.0     1835.0      320.0     2154.6       320.0      2203.7       320.0      2234.1       318.0      2243.0
GR     318.0     2313.0      320.0     2326.4       322.0      2340.6       322.0      2387.8       322.0      2642.0
GR     324.0     2740.0      326.0     2768.0       328.0      2805.0       330.0      2812.0       332.0      2821.0
GR     334.0     2889.0      336.0     3030.0       338.0      3135.0       340.0      3266.0

NC     0.06      0.085      0.085
ET                6.1        8.1                          1540.0      2960.0      1540.0        2625
X1       380         60     2380.9     2436.4       320.0       320.0       320.0
GR     335.0       0.0      334.0       95.0       332.0       395.4       330.0       414.4       330.0       476.9
GR     330.0      528.2      330.0      778.2       330.0       880.6       328.0       894.6       326.0       927.8
GR     324.0      975.1      324.0     1076.0       326.0      1107.4       328.0      1122.8       330.0      1165.2
GR     330.0     1214.1      330.0     1487.9       330.0      1533.6       328.0      1545.8       326.0      1553.1
GR     324.0     1557.9      322.0     1566.1       320.0      1758.3       318.0      1764.9       318.0      1792.8
GR     320.0     1806.1      320.0     1859.6       320.0      1872.8       320.0      1931.1       320.0      1967.5
GR     322.0     2063.7      324.0     2067.2       326.0      2082.5       328.0      2095.9       328.0      2156.1
GR     326.0     2164.9      324.0     2175.2       322.0      2185.4       320.0      2198.5       320.0      2262.3
GR     320.0     2380.9      318.0     2387.6       318.0      2425.8       318.0      2426.4       318.0      2426.7
GR     320.0     2436.4      322.0     2457.0       322.0      2585.1       322.0      2817.3       324.0      2918.0
GR     326.0     2943.0      328.0     2954.1       330.0      2962.7       332.0      2970.9       334.0      3048.8
GR     334.0     3201.4      334.0     3225.7       334.0      3250.0       334.0      3273.6       342.0      3413.7

NC      0.06      0.085      0.085
ET                6.1        8.1                          1680.0        2740      1730.0        2620
X1       390       45.0     2250.0     2402.0       520.0       520.0       520.0
GR     336.0      100.0      336.0      273.0       336.0       510.0       336.0       800.0       334.0       810.0
GR     332.0      890.0      330.0     1000.0       332.0      1270.0       332.0      1540.0       330.0      1552.0
GR     328.0     1562.0      326.0     1590.0       324.0      1603.0       322.0      1661.0       322.0      1728.0
GR     322.0     1775.0      320.0     1781.0       318.0      1822.0       318.0      1859.0       320.0      1862.0
GR     322.0     1908.0      322.0     2195.0       324.0      2220.0       324.0      2250.0       322.0      2315.0
GR     320.0     2327.0      318.0     2337.0       318.0      2380.0       320.0      2389.0       322.0      2396.0
GR     324.0     2402.0      324.0     2780.0       322.0      2795.0       322.0      2982.0       324.0      3008.0
GR     326.0     3019.0      328.0     3025.0       330.0      3035.0       332.0      3042.0       334.0      3049.0
GR     336.0     3060.0      338.0     3110.0       336.0      3278.0       336.0      3480.0       340.0      3490.0
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NC     0.04       0.04      0.075
ET                 6.1        8.1                          1749.0        2605      1820.0        2585
        DOWNSTREAM END MISSION CREEK DEVELOPMENT
X1       400          41     1877.6     2531.6       705.0        495.0       540.0
GR     338.0         0.0      336.0      236.4       334.0        957.0       332.0       972.3       332.0      1180.4
GR     332.0      1508.0      330.0     1641.2       328.0       1671.9       326.0      1712.6       324.0      1759.2
GR     324.0      1792.6      326.0     1801.2       328.0       1806.5       328.0      1836.3       326.0      1845.9
GR     324.0      1857.9      322.0     1870.4       320.0       1877.6       318.0      1888.9       318.0      2400.6
GR     320.0      2531.6      322.0     2547.9       324.0       2556.9       326.0      2565.0       328.0      2575.5
GR     330.0      2587.7      330.0     2630.0       331.0       2680.0       333.0      2820.0       325.0      2925.0
GR     324.0      3153.7      326.0     3185.0       328.0       3195.3       330.0      3323.2       332.0      3352.4
GR     334.0      3366.1      336.0     3386.9       338.0       3409.9       340.0      3428.3       342.0      3444.8
GR     344.0      3506.3

NH         4       0.125     2329.0       0.04      3065.3        0.065      3645.9         0.04      5376.7
ET                   6.1        8.1                          2970.0         3720      2970.5         3710
X1       410          46     3065.3     3645.9       672.0        726.0       700.0
GR     340.0         930.0      338.0     1205.0       336.0       1335.0       336.0      1760.0       336.0      2329.0
GR     336.0      2523.4      336.0     2540.8       334.0       2618.2       332.0      2807.8       332.0      2898.9
GR     332.0      2943.8      330.0     3015.9       328.0       3024.1       326.0      3034.7       324.0      3043.6
GR     322.0      3053.5      320.0     3065.3       318.0       3081.7       318.0      3558.9       320.0      3645.9
GR     322.0      3656.9      324.0     3667.7       326.0       3675.2       328.0      3684.9       330.0      3699.4
GR     332.0      3715.9      333.0     3755.0       334.0       3860.0       333.0      4020.0       333.0      4120.0
GR     334.0      4170.0      335.0     4230.0       333.0       4300.0       336.0      4380.0       335.0      4510.0
GR     333.0      4760.0      334.0     4840.0       333.0       4900.0       337.0      5000.0       337.0      5080.0
GR     336.0      5120.0      337.0     5170.0       338.0       5260.0       338.0      5269.2       340.0      5281.8
GR     340.0      5376.7

NH         4       0.125     2616.7       0.04      3252.3        0.065      3865.0         0.04      5263.5
ET                   6.1        8.1                          3200.0         3945      3200.0         3945.0
X1       415          40     3252.3     3865.0       765.0        800.0       780.0
GR     340.0         940.0      338.0     1132.0       338.0       1245.0       336.0      1772.0       336.0      2616.7
GR     338.0      2647.1      338.0     2816.3       336.0       2850.7       334.0      2899.9       332.0      3198.5
GR     330.0      3207.0      328.0     3214.0       326.0       3221.8       324.0      3232.7       322.0      3244.9
GR     320.0      3252.3      318.0     3270.4       318.0       3533.8       320.0      3538.4       320.0      3567.0
GR     318.0      3578.2      318.0     3739.3       320.0       3865.0       322.0      3882.3       324.0      3895.0
GR     326.0      3908.4      328.0     3915.9       330.0       3937.1       332.0      3945.0       331.0      4320.0
GR     335.0      4330.0      334.0     4435.0       334.0       4575.0       335.0      4715.0       333.0      4930.0
GR     334.0      5080.0      334.0     5130.0       338.0       5160.0       340.0      5183.8       340.0      5263.5

NH         4       0.125     2200.0       0.04      3467.1        0.075      3988.9         0.04      5306.6
ET                   6.1        8.1                          3378.9          4065      3411.5          4065
X1       420          54     3467.1     3988.9       480.0        480.0       480.0
GR     340.0        1100.0      338.0     1210.0       338.0       1695.0       338.0      2200.0       338.0      2595.0
GR     340.0      2628.1      342.0     2709.7       342.0       2717.4       340.0      2781.4       338.0      2791.8
GR     336.0      2796.5      336.0     3236.7       338.0       3240.6       340.0      3248.5       342.0      3378.9
GR     342.0      3387.0      340.0     3392.3       338.0       3397.4       336.0      3401.5       334.0      3407.4
GR     332.0      3414.4      330.0     3420.1       328.0       3428.7       326.0      3435.2       324.0      3445.0
GR     322.0      3454.6      320.0     3467.1       318.0       3492.9       318.0      3634.8       320.0      3642.3
GR     322.0      3651.5      322.0     3741.8       320.0       3758.6       318.0      3766.4       318.0      3891.7
GR     320.0      3988.9      322.0     4008.9       324.0       4018.8       326.0      4031.9       328.0      4038.0
GR     330.0      4049.3      332.0     4057.5       333.0       4075.0       334.0      4205.0       334.0      4285.0
GR     334.0      4340.0      334.0     4445.0       335.0       4610.0       335.0      4720.0       335.0      4880.0
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GR    336.0    5005.0     336.0    5075.0      334.0    5090.0      342.0    5306.6
NC     0.04     0.04      0.05
ET                0         8.1                                                2617       3057
X1      421       63.0    2650.0    3049.1      375.0     375.0      375.0
GR    340.0     302.7     340.0     591.8      340.0     719.1      340.0    1070.0      340.0    1093.6
GR    340.0    1099.7     340.0    1139.2      340.0    1478.6      340.0    1590.3      340.0    1920.7
GR    342.0    2207.1     344.0    2445.7      344.0    2588.2      342.0    2593.0      340.0    2600.3
GR    338.0    2606.1     336.0    2609.4      334.0    2614.9      332.0    2617.7      330.0    2624.7
GR    328.0    2627.8     326.0    2640.4      325.0    2650.0      325.0    2666.7      324.0    2680.6
GR    324.0    2701.7     324.0    2708.7      324.0    2742.2      324.0    2752.2      324.0    2785.7
GR    324.0    2792.7     324.0    2827.7      324.0    2834.7      324.0    2869.7      324.0    2876.7
GR    324.0    2910.2     324.0    2920.2      324.0    2953.7      324.0    2960.7      324.0    2995.7
GR    324.0    3002.7     324.0    3024.8      325.0    3037.7      326.0    3044.7      328.0    3049.1
GR    330.0    3052.6     332.0    3056.2      334.0    3058.6      336.0    3062.2      338.0    3073.0
GR    340.0    3081.4     342.0    3085.6      344.0    3153.8      344.0    3220.9      342.0    3349.9
GR    340.0    3643.4     339.0    3825.0      339.0    3866.7      340.0    4418.3      342.0    4554.5
GR    344.0    4615.8     346.0    4685.8      348.0    4726.0
NC     0.04     0.04      0.03       0.3        0.5
ET                0         8.1                                                2617       3057
       CUYAMACA BRIDGE - UPSTREAM END OF MISSION CREEK  DEVELOPMENT
       (NORMAL BRIDGE ROUTINE)
X1      422         56    2645.0    3044.7       10.0      10.0       10.0
BT      -53     2445.7     344.0     344.0     2588.2     344.9      344.0    2593.0      345.0      342.0
BT              2600.3     345.0     342.0     2617.7     345.0      342.0    2617.7      345.0      332.0
BT              2624.7     345.0     330.0     2624.7     345.0      342.0    2659.7      345.0      342.0
BT              2659.7     345.0     325.0     2666.7     345.0      325.0    2666.7      345.0      342.0
BT              2701.7     345.0     342.0     2701.7     345.0      324.0    2708.7      345.0      324.0
BT              2708.7     345.0     342.0     2742.2     345.0      342.0    2742.2      345.0      324.0
BT              2752.2     345.0     324.0     2752.2     345.0      342.0    2785.7      345.0      342.0
BT              2785.7     345.0     324.0     2792.7     345.0      324.0    2792.7      345.0      342.0
BT              2827.7     345.0     342.0     2827.7     345.0      324.0    2834.7      345.0      324.0
BT              2834.7     345.0     342.0     2869.7     345.0      342.0    2869.7      345.0      324.0
BT              2876.7     345.0     324.0     2876.7     345.0      342.0    2910.2      345.0      342.0
BT              2910.2     345.0     324.0     2920.2     345.0      324.0    2920.2      345.0      342.0
BT              2953.7     345.0     342.0     2953.7     345.0      324.0    2960.7      345.0      324.0
BT              2960.7     345.0     342.0     2995.7     345.0      342.0    2995.7      345.0      324.0
BT              3002.7     345.0     324.0     3002.7     345.0      342.0    3037.7      345.0      342.0
BT              3037.7     345.0     325.0     3044.7     345.0      326.0    3044.7      345.0      342.0
BT              3073.0     345.0     342.0     3081.4     344.9      342.0    3085.6      344.9      342.0
BT              3153.8     344.5     344.0     3220.9     344.0      344.0
GR    340.0        0.0     340.0    1995.0      342.0    2250.0      344.0    2445.7      344.0    2588.2
GR    342.0    2593.0     340.0    2600.3      338.0    2606.1      336.0    2609.4      334.0    2614.9
GR    332.0    2617.7     330.0    2624.7      328.0    2627.8      326.0    2645.0      325.0    2659.7
GR    325.0    2666.7     324.0    2680.6      324.0    2701.7      324.0    2708.7      324.0    2742.2
GR    324.0    2752.2     324.0    2785.7      324.0    2792.7      324.0    2827.7      324.0    2834.7
GR    324.0    2869.7     324.0    2876.7      324.0    2910.2      324.0    2920.2      324.0    2953.7
GR    324.0    2960.7     324.0    2995.7      324.0    3002.7      324.0    3024.8      325.0    3037.7
GR    326.0    3044.7     328.0    3049.1      330.0    3052.6      332.0    3056.2      334.0    3058.6
GR    336.0    3062.2     338.0    3073.0      340.0    3081.4      342.0    3085.6      344.0    3153.8
GR    344.0    3220.9     342.0    3349.9      340.0    3650.0      339.0    4000.0      340.0    4200.0
GR    342.0    4440.0     344.0    4600.0      346.0    4675.0      348.0    4726.0      350.0    4765.0
GR    360.0    4940.0
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NC     0.04       0.04       0.03
ET                   0        8.1                                                    4616        5058
X1      423         61     4645.0     5044.7       65.0       65.0       65.0
BT      -53     4445.7      344.0      344.0     4588.2      344.9      344.0     4593.0      345.0      342.0
BT          4600.3      345.0      342.0     4617.7      345.0      342.0     4617.7      345.0      332.0
BT          4624.7      345.0      330.0     4624.7      345.0      342.0     4659.7      345.0      342.0
BT          4659.7      345.0      325.0     4666.7      345.0      325.0     4666.7      345.0      342.0
BT          4701.7      345.0      342.0     4701.7      345.0      324.0     4708.7      345.0      324.0
BT          4708.7      345.0      342.0     4742.2      345.0      342.0     4742.2      345.0      324.0
BT          4752.2      345.0      324.0     4752.2      345.0      342.0     4785.7      345.0      342.0
BT          4785.7      345.0      324.0     4792.7      345.0      324.0     4792.7      345.0      342.0
BT          4827.7      345.0      342.0     4827.7      345.0      324.0     4834.7      345.0      324.0
BT          4834.7      345.0      342.0     4869.7      345.0      342.0     4869.7      345.0      324.0
BT          4876.7      345.0      324.0     4876.7      345.0      342.0     4910.2      345.0      342.0
BT          4910.2      345.0      324.0     4920.2      345.0      324.0     4920.2      345.0      342.0
BT          4953.7      345.0      342.0     4953.7      345.0      324.0     4960.7      345.0      324.0
BT          4960.7      345.0      342.0     4995.7      345.0      342.0     4995.7      345.0      324.0
BT          5002.7      345.0      324.0     5002.7      345.0      342.0     5037.7      345.0      342.0
BT          5037.7      345.0      325.0     5044.7      345.0      326.0     5044.7      345.0      342.0
BT          5073.0      345.0      342.0     5081.4      344.9      342.0     5085.6      344.9      342.0
BT          5153.8      344.5      344.0     5220.9      344.0      344.0
GR     350.0       600.0      348.0      780.0      346.0     1090.0      344.0     1300.0      342.0     1545.0
GR     340.0      1790.0      340.0     3995.0      342.0     4250.0      344.0     4445.7      344.0     4588.2
GR     342.0      4593.0      340.0     4600.3      338.0     4606.1      336.0     4609.4      334.0     4614.9
GR     332.0      4617.7      330.0     4624.7      328.0     4627.8      326.0     4645.0      325.0     4659.7
GR     325.0      4666.7      324.0     4680.6      324.0     4701.7      324.0     4708.7      324.0     4742.2
GR     324.0      4752.2      324.0     4785.7      324.0     4792.7      324.0     4827.7      324.0     4834.7
GR     324.0      4869.7      324.0     4876.7      324.0     4910.2      324.0     4920.2      324.0     4953.7
GR     324.0      4960.7      324.0     4995.7      324.0     5002.7      324.0     5024.8      325.0     5037.7
GR     326.0      5044.7      328.0     5049.1      330.0     5052.6      332.0     5056.2      334.0     5058.6
GR     336.0      5062.2      338.0     5073.0      340.0     5081.4      342.0     5085.6      344.0     5153.8
GR     344.0      5220.9      342.0     5349.9      340.0     5650.0      339.0     6000.0      340.0     6200.0
GR     342.0      6440.0      344.0     6600.0      346.0     6675.0      348.0     6726.0      350.0     6765.0
GR     360.0      6940.0

NH         4       0.125     2035.0       0.04     4613.8       0.05     5104.2       0.04     6952.0
ET                   0        8.1                                                    4633        5082
X1       424         69     4658.9     5055.0       10.0       10.0       10.0
GR     350.0       580.0      348.0      750.0      348.0     1080.0      346.0     1150.0      346.0     1370.0
GR     344.0      1575.0      342.0     1580.0      342.0     1800.0      340.0     2035.0      340.0     2132.2
GR     340.0      2145.0      340.0     2380.5      340.0     3990.8      342.0     4119.1      344.0     4360.6
GR     344.0      4609.4      342.0     4613.8      340.0     4620.1      338.0     4624.0      336.0     4628.1
GR     334.0      4631.9      332.0     4638.5      331.0     4643.2      329.0     4650.2      328.0     4654.6
GR     326.0      4658.9      326.0     4685.2      326.0     4692.2      326.0     4727.2      326.0     4734.2
GR     326.0      4767.7      326.0     4777.7      326.0     4811.2      326.0     4818.2      326.0     4853.2
GR     326.0      4860.2      326.0     4895.2      326.0     4902.2      326.0     4935.7      326.0     4945.7
GR     326.0      4979.2      326.0     4986.2      326.0     5021.2      326.0     5028.2      326.0     5055.0
GR     327.0      5063.2      328.0     5070.2      330.0     5075.7      332.0     5080.9      334.0     5082.8
GR     336.0      5089.5      338.0     5094.7      340.0     5097.0      342.0     5104.2      344.0     5110.0
GR     344.0      5259.8      342.0     5451.8      340.0     5618.0      340.0     5725.4      339.0     5804.5
GR     339.0      5968.7      340.0     6027.7      340.0     6173.6      342.0     6449.1      344.0     6595.1
GR     346.0      6870.0      348.0     6910.0      350.0     6930.0      358.0     6952.0
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NH        4      0.125     2041.0      0.045     4805.9       0.075     5113.2       0.045     6961.0
ET                 6.1        8.1                            4365.0     5270.0        4420     5270.0
X1      425         39     4805.9     5113.2       285.0       215.0       225.0
GR    350.0     1185.0      348.0     1262.0       346.0      1390.0       344.0      1890.0       342.0      2041.0
GR    340.0     2142.0      338.0     2150.0       335.9      3406.5       334.0      3428.9       334.0      3510.7
GR    335.9     3568.7      338.0     3680.0       338.0      4166.4       338.0      4189.8       338.0      4366.3
GR    336.0     4371.5      334.0     4381.6       332.0      4456.4       330.0      4626.7       328.0      4805.9
GR    326.0     4838.8      326.0     4902.3       326.0      4999.7       326.0      5043.9       328.0      5113.2
GR    330.0     5344.6      332.0     5451.5       334.0      5583.1       334.0      5617.4       334.0      5729.9
GR    336.0     6044.3      338.0     6089.0       340.0      6181.4       342.0      6428.1       344.0      6890.0
GR    346.0     6935.0      348.0     6942.0       350.0      6948.0       356.0      6961.0

NC        0          0          0        0.1         0.3
NH        4      0.125     2555.0      0.045     5520.6       0.075     5704.9       0.045     7548.0
ET                 6.1        8.1                            4540.0     6200.0        4860     5860.0
X1      430         37     5520.6     5704.9       495.0       465.0       470.0
GR    350.0     1340.0      346.0     1807.0       346.0      2122.0       344.0      2253.0       344.0      2412.0
GR    342.0     2555.0      340.0     2657.0       338.0      3921.0       336.0      3959.0       336.0      4058.5
GR    336.0     4473.2      336.0     4516.0       338.0      4556.7       338.0      4811.0       336.0      4905.8
GR    336.0     5036.3      336.0     5322.7       334.0      5369.8       332.0      5505.1       330.0      5511.1
GR    328.0     5520.6      326.0     5536.0       326.0      5665.0       328.0      5704.9       330.0      5717.6
GR    330.0     5849.9      330.0     6295.6       332.0      6315.9       334.0      6349.1       336.0      6378.4
GR    338.0     6557.5      340.0     6787.6       342.0      7019.6       344.0      7440.0       346.0      7530.0
GR    348.0     7540.0      350.0     7548.0

QT        2      46000      46000
NH        4      0.125     2030.0      0.045     5118.7       0.075     5291.8       0.045     6650.0
ET                 6.1        8.1                            4030.0     5760.0        4365     5420
X1      440         52     5118.7     5291.8       535.0       550.0       545.0
GR    350.0     1080.0      346.0     1445.0       348.0      1459.0       348.0      1550.0       346.0      1675.0
GR    344.0     2030.0      342.0     2150.0       340.0      3430.3       338.0      3456.9       336.0      3631.7
GR    336.0     3663.2      338.0     3687.3       340.0      3714.2       340.0      4208.8       338.0      4388.9
GR    338.0     4524.7      338.0     4718.6       336.0      4725.0       330.0      5052.0       330.0      5084.9
GR    334.0     5107.3      332.0     5113.6       330.0      5118.7       328.0      5127.5       328.0      5264.0
GR    330.0     5291.8      332.0     5305.1       334.0      5311.0       336.0      5334.8       336.0      5369.0
GR    336.0     5422.4      338.0     5442.9       340.0      5522.5       340.0      5563.3       338.0      5749.0
GR    338.0     5763.4      338.0     5848.7       338.0      5939.2       338.0      6011.5       336.0      6039.2
GR    334.0     6050.3      332.0     6058.1       332.0      6066.5       334.0      6091.4       336.0      6112.2
GR    338.0     6120.5      340.0     6132.0       342.0      6409.4       344.0      6585.0       346.0      6618.2
GR    348.0     6637.6      350.0     6650.0

NH        4      0.125     2072.0      0.055     4864.8        0.03     5377.9       0.055     6949.6
ET                 6.1        8.1                            4030.0     5680.0        4375     5410.0
X1      450         49     4864.8     5377.9       575.0       545.0       530.0
GR    350.0     1240.0      348.0     1440.0       350.0      1520.0       338.0      1585.0       338.0      1743.0
GR    336.0     1937.0      344.0     2072.0       344.0      2130.0       344.0      2155.0       342.0      2165.0
GR    342.0     2872.7      342.0     3360.1       340.0      3445.5       340.0      3579.3       340.0      3711.6
GR    338.0     3740.8      336.0     3747.9       336.0      3753.9       338.0      3789.5       340.0      3843.7
GR    342.0     4093.9      342.0     4177.2       340.0      4218.7       338.0      4487.1       336.0      4498.4
GR    334.0     4510.9      332.0     4641.3       332.0      4651.7       334.0      4820.3       336.0      4836.0
GR    336.0     4854.3      334.0     4857.6       332.0      4862.0       330.0      4864.8       328.0      4871.7
GR    328.0     5369.9      330.0     5377.9       340.0      5397.3       340.0      5957.7       340.0      6045.4
GR    342.0     6101.1      342.0     6215.9       340.0      6230.0       340.0      6278.0       342.0      6293.1
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GR    344.0    6493.9     346.0    6760.6     348.0    6921.3     350.0    6949.6

NH        4     0.125    2055.0     0.055    4626.2      0.03    5331.2     0.055    6792.0
ET              6.1       8.1                          4025.0    5620.0      4380    5360.0
X1      460       43    4626.2    5331.2     480.0     425.0     440.0
GR    350.0    1220.0     346.0    1470.0     344.0    1860.0     346.0    2055.0     346.0    2132.0
GR    346.0    2162.0     344.0    2208.0     342.0    3091.2     342.0    3321.4     344.0    3345.9
GR    344.0    3411.5     342.0    3819.8     340.0    3824.7     340.0    3844.0     342.0    3912.4
GR    342.0    3979.8     340.0    4198.8     338.0    4226.4     336.0    4313.8     336.0    4582.0
GR    336.0    4610.6     334.0    4617.1     332.0    4620.2     330.0    4626.2     328.0    4630.1
GR    328.0    5252.6     330.0    5331.2     340.0    5356.8     340.0    5383.4     340.0    5476.7
GR    342.0    5845.6     342.0    5959.6     342.0    6188.7     344.0    6197.4     346.0    6296.4
GR    346.0    6376.8     344.0    6385.2     342.0    6399.7     342.0    6575.7     344.0    6587.7
GR    346.0    6645.3     348.0    6750.0     350.0    6792.0

NH        6     0.125    1790.0     0.045    2590.0      0.100    3579.6     0.045    5002.1      0.07
NH   5145.9     0.045    6460.0
ET              6.1       8.1                          3700.0    5310.0      4125    5130.0
X1      470       64    5002.1    5145.9     790.0     430.0     480.0
GR    350.0     600.0     346.0    1245.0     348.0    1323.0     348.0    1790.0     348.0    1885.0
GR    346.0    1892.0     346.0    2590.0     346.0    3020.0     346.0    3483.5     346.0    3520.4
GR    346.0    3579.6     344.0    3685.9     342.0    3709.5     340.0    3715.3     338.0    3720.0
GR    338.0    3725.9     340.0    3732.2     340.0    3847.1     338.0    4279.4     336.0    4285.0
GR    334.0    4293.9     332.0    4306.5     332.0    4345.6     332.0    4372.4     330.0    4384.2
GR    330.0    4423.6     340.0    4459.4     342.0    4471.1     342.0    4556.9     340.0    4613.1
GR    338.0    4618.3     336.0    4624.9     334.0    4632.7     334.0    4698.0     336.0    4706.4
GR    338.0    4729.0     338.0    4764.9     338.0    4837.2     338.0    4863.7     336.0    4874.6
GR    334.0    4887.4     332.0    4914.2     330.0    5002.1     328.0    5083.6     328.0    5130.1
GR    330.0    5145.9     340.0    5162.1     342.0    5168.9     344.0    5235.6     344.0    5596.5
GR    342.0    5821.0     342.0    5959.5     344.0    5994.9     346.0    6007.4     348.0    6035.5
GR    348.0    6205.0     346.0    6216.0     344.0    6220.0     342.0    6315.0     342.0    6386.0
GR    344.0    6405.0     346.0    6419.0     348.0    6435.0     350.0    6460.0

NH        4     0.100    2619.8     0.045    3872.7      0.07    4124.9     0.045    5570.7
ET              6.1       8.1                          2870.0    4250.0      3105    4125.6
X1      480       41    3872.7    4124.9     305.0     280.0     280.0
GR    356.0    1132.0     356.0    1228.0     354.0    1275.0     352.0    1286.0     352.0    1390.0
GR    350.0    1446.0     348.0    1450.0     346.0    1455.0     346.0    1467.0     348.0    1950.0
GR    348.0    2113.2     346.0    2545.0     344.0    2619.8     342.0    2664.9     342.0    2687.7
GR    342.0    2739.0     342.0    3361.5     344.0    3483.8     344.0    3688.0     342.0    3866.6
GR    340.0    3872.7     330.0    3894.3     330.0    4069.2     332.0    4095.4     334.0    4114.1
GR    336.0    4116.2     338.0    4120.0     340.0    4124.9     342.0    4132.6     344.0    4189.7
GR    344.0    4740.3     344.0    5007.8     346.0    5016.3     348.0    5024.5     348.0    5269.2
GR    346.0    5273.4     344.0    5277.1     344.0    5511.3     346.0    5541.5     348.0    5560.0
GR    350.0    5570.7

NH        4     0.100    2502.0     0.045    3854.9      0.07    4098.1     0.045    5643.7
ET              6.1       8.1                          2900.0    4240.0       3120     4140
X1      483       45    3854.9    4098.1     100.0     105.0     100.0
GR    356.0    1105.0     356.0    1280.0     354.0    1290.0     352.0    1430.0     350.0    1454.0
GR    348.0    1460.0     348.0    2105.1     346.0    2502.0     344.0    2612.0     342.0    2665.7
GR    342.0    2683.7     342.0    2769.5     342.0    3359.5     342.0    3379.8     342.0    3410.7
GR    344.0    3450.4     344.0    3816.5     342.0    3837.7     340.0    3854.9     330.0    3895.7
GR    330.0    4009.3     332.0    4079.9     334.0    4088.0     336.0    4091.9     338.0    4095.3
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GR    340.0     4098.1      342.0     4103.2      342.0     4137.8      340.0     4141.5      340.0     4162.6
GR    342.0     4171.8      344.0     4215.5      344.0     4767.9      344.0     5026.4      346.0     5036.5
GR    348.0     5044.5      348.0     5286.1      346.0     5290.9      344.0     5396.7      344.0     5436.4
GR    344.0     5502.7      344.0     5543.5      346.0     5604.2      348.0     5621.7      350.0     5643.7

NC    0.045      0.045       0.07
ET                 6.1         8.1                           2920.0     4190.0        3080        4095
X1      484          26      3795.2     4061.4      110.0       160.0      115.0
GR    356.0     1100.0      356.0     1270.0      354.0     1315.0      352.0     1350.0      350.0     1373.0
GR    348.0     1419.0      346.0     1810.0      344.0     2690.0      342.0     2965.4      342.0     3369.7
GR    344.0     3472.5      344.0     3650.8      342.0     3795.2      340.0     3810.8      330.0     3835.1
GR    330.0     3898.3      332.0     3907.2      334.0     3912.9      336.0     3918.5      338.0     3980.9
GR    340.0     4017.8      342.0     4061.4      344.0     4422.3      346.0     4997.8      348.0     5278.5
GR    350.0     5330.8

NC    0.045      0.045       0.07
ET                 6.1         8.1                           2920.0     4180.0        3080        4095
        CHUBB LANE CROSSING
X1      485          20      3795.2     4061.4       10.0        10.0       10.0
GR    356.0     1100.0      356.0     1270.0      354.0     1315.0      352.0     1350.0      350.0     1373.0
GR    348.0     1419.0      346.0     1810.0      344.0     2690.0      342.0     2965.4      342.0     3369.7
GR    344.0     3472.5      344.0     3650.8      342.0     3795.2      340.0     3810.8      340.0     4017.8
GR    342.0     4061.4      344.0     4422.3      346.0     4997.8      348.0     5278.5      350.0     5330.8

NC    0.045      0.045       0.07
ET                 6.1         8.1                           2920.0     4180.0        3080        4095
X1      486          26      3795.2     4061.4       10.0        10.0       10.0
GR    356.0     1100.0      356.0     1270.0      354.0     1315.0      352.0     1350.0      350.0     1373.0
GR    348.0     1419.0      346.0     1810.0      344.0     2690.0      342.0     2965.4      342.0     3369.7
GR    344.0     3472.5      344.0     3650.8      342.0     3795.2      340.0     3810.8      330.0     3835.1
GR    330.0     3898.3      332.0     3907.2      334.0     3912.9      336.0     3918.5      338.0     3980.9
GR    340.0     4017.8      342.0     4061.4      344.0     4422.3      346.0     4997.8      348.0     5278.5
GR    350.0     5330.8

NH        4       0.04      3797.7       0.07      3905.4        .075      4110.0       0.125      5380.0
ET                 6.1         8.1                           3060.0     4120.0         3030        4050
X1      490          36      3797.7     3905.4       175.0       175.0      175.0
GR    354.0      110.0      354.0     1280.0      352.0     1310.0      350.0     1330.0      348.0     1358.0
GR    346.0     1408.0      346.0     2451.7      342.0     3056.1      342.0     3463.8      342.0     3544.0
GR    342.0     3616.0      342.0     3686.6      340.0     3704.2      340.0     3748.6      340.0     3774.1
GR    338.0     3780.9      336.0     3797.7      334.0     3806.3      332.0     3814.2      330.0     3830.2
GR    330.0     3875.2      332.0     3892.7      334.0     3900.1      336.0     3905.4      338.0     3911.0
GR    340.0     3917.1      342.0     3924.4      342.0     4001.3      346.0     4712.1      348.0     4717.7
GR    348.0     4725.7      346.0     4737.3      346.0     4793.3      348.0     4841.3      350.0     4959.4
GR    352.0     5380.0

QT        2      45000       45000
NH        5      0.085      2633.5       0.03      3766.7        0.04      4005.4        0.03      4739.8       0.125
NH   6165.0
ET                 6.1         8.1                           3430.0     4190.0         3280        4155
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X1      500        44     3766.7     4005.4       495.0       525.0       510.0
GR    358.0     830.0      356.0      900.0       354.0      1045.0       352.0      1089.0       350.0      1175.0
GR    348.0    1242.0      348.0     2080.0       348.0      2633.5       346.0      2640.9       346.0      2735.0
GR    346.0    2810.0      344.0     3339.8       342.0      3695.5       338.0      3741.7       336.0      3751.7
GR    334.0    3766.7      332.0     3793.9       330.0      3843.9       330.0      3989.1       332.0      3998.5
GR    334.0    4005.4      336.0     4015.5       338.0      4023.5       340.0      4112.9       338.0      4126.6
GR    336.0    4139.9      336.0     4175.3       338.0      4185.5       340.0      4201.8       342.0      4395.8
GR    342.0    4399.9      346.0     4407.0       346.0      4469.5       346.0      4591.4       348.0      4594.7
GR    348.0    4599.1      348.0     4617.3       348.0      4625.8       348.0      4647.7       348.0      4679.9
GR    348.0    4739.8      350.0     4933.4       352.0      5300.0       354.0      6165.0

NH        5     0.065     2393.3       0.03      3835.4        0.04      4360.7        0.03      4590.8       0.125
NH   6670.0
ET                  0        8.1                                                    3851.0      4335.0
X1      507        63     3860.7     4289.5       510.0       450.0       470.0
GR    360.0     960.0      358.0     1050.0       356.0      1095.0       354.0      1357.0       352.0      1435.0
GR    350.0    1590.0      348.0     1765.0       348.0      1800.0       350.0      2192.2       350.0      2393.3
GR    348.0    3070.0      348.0     3487.6       350.0      3675.1       352.0      3743.8       352.0      3835.4
GR    350.0    3839.8      348.0     3847.1       346.0      3853.6       344.0      3856.3       342.0      3860.7
GR    340.0    3865.6      339.0     3869.5       338.0      3876.5       336.0      3889.4       336.0      3911.5
GR    336.0    3918.5      336.0     3953.5       336.0      3960.5       336.0      3994.0       334.0      4004.0
GR    334.0    4037.5      334.0     4044.5       334.0      4079.5       334.0      4086.5       334.0      4121.5
GR    334.0    4128.5      334.0     4162.0       336.0      4172.0       336.0      4205.5       336.0      4212.5
GR    336.0    4226.3      337.0     4247.5       338.0      4252.3       339.0      4254.5       340.0      4259.3
GR    342.0    4267.2      342.0     4267.4       342.0      4289.5       342.0      4296.5       342.0      4304.1
GR    342.0    4322.4      346.0     4332.1       348.0      4339.3       350.0      4346.2       352.0      4360.7
GR    352.0    4419.1      350.0     4539.4       350.0      4590.8       352.0      5410.1       354.0      6320.0
GR    356.0    6500.0      358.0     6600.0       360.0      6670.0

NC     0.04      0.04       0.03        0.3         0.5
ET                  0        8.1                                                    3852      4334.0
        MAGNOLIA AVE BRIDGE  (NORMAL BRIDGE ROUTINE)
X1      508         58     3860.7     4289.5        10.0        10.0        10.0
BT      -49     3743.8      352.0      352.0      3835.4       354.5       352.0      3869.5       355.0       352.0
BT             3869.5      355.0      339.0      3876.5       355.0       338.0      3876.5       355.0       352.0
BT             3911.5      355.0      352.0      3911.5       355.0       336.0      3918.5       355.0       336.0
BT             3918.5      355.0      352.0      3953.5       355.0       352.0      3953.5       355.0       336.0
BT             3960.5      355.0      336.0      3960.5       355.0       352.0      3994.0       355.0       352.0
BT             3994.0      355.0      336.0      4004.0       355.0       336.0      4004.0       355.0       352.0
BT             4037.5      355.0      352.0      4037.5       355.0       336.0      4044.5       355.0       336.0
BT             4044.5      355.0      352.0      4079.5       355.0       352.0      4079.5       355.0       336.0
BT             4086.5      355.0      336.0      4086.5       355.0       352.0      4121.5       355.0       352.0
BT             4121.5      355.0      336.0      4128.5       355.0       336.0      4128.5       355.0       352.0
BT             4162.0      355.0      352.0      4162.0       355.0       336.0      4172.0       355.0       336.0
BT             4172.0      355.0      352.0      4205.5       355.0       352.0      4205.5       355.0       336.0
BT             4212.5      355.0      336.0      4212.5       355.0       352.0      4247.5       355.0       352.0
BT             4247.5      355.0      337.0      4254.5       355.0       339.0      4254.5       355.0       352.0
BT             4289.5      355.0      352.0      4289.5       355.0       342.0      4296.5       355.0       342.0
BT             4296.5      355.0      352.0      4346.2       355.0       352.0      4360.7       354.0       352.0
BT             4450.0      352.0      352.0
GR    360.0     965.0      358.0     1085.0       356.0      1225.0       354.0      1345.0       352.0      1510.0
GR    350.0    2420.0      348.0     3070.0       348.0      3487.6       350.0      3675.1       352.0      3743.8
GR    352.0    3835.4      350.0     3839.8       348.0      3847.1       346.0      3853.6       344.0      3856.3
GR    342.0    3860.7      340.0     3865.6       339.0      3869.5       338.0      3876.5       336.0      3889.4
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GR    336.0    3911.5    336.0    3918.5    336.0    3953.5    336.0    3960.5    336.0    3994.0
GR    334.0    4004.0    334.0    4037.5    334.0    4044.5    334.0    4079.5    334.0    4086.5
GR    334.0    4121.5    334.0    4128.5    334.0    4162.0    336.0    4172.0    336.0    4205.5
GR    336.0    4212.5    336.0    4226.3    337.0    4247.5    338.0    4252.3    339.0    4254.5
GR    340.0    4259.3    342.0    4267.2    342.0    4267.4    342.0    4289.5    342.0    4296.5
GR    342.0    4304.1    342.0    4322.4    346.0    4332.1    348.0    4339.3    350.0    4346.2
GR    352.0    4360.7    352.0    4450.0    352.0    5050.0    352.0    5450.0    354.0    6150.0
GR    356.0    6290.0    358.0    6680.0    360.0    6810.0

NC     0.04     0.04     0.03
ET                 0      8.1                                                  3851.0    4335.0
X1      509       58    3889.4    4322.4      65.0      65.0      65.0
BT      -49    3743.8    352.0     352.0    3835.4     354.5     352.0    3869.5    355.0     352.0
BT           3869.5    355.0     339.0    3876.5     355.0     338.0    3876.5    355.0     352.0
BT           3911.5    355.0     352.0    3911.5     355.0     336.0    3918.5    355.0     336.0
BT           3918.5    355.0     352.0    3953.5     355.0     352.0    3953.5    355.0     336.0
BT           3960.5    355.0     336.0    3960.5     355.0     352.0    3994.0    355.0     352.0
BT           3994.0    355.0     336.0    4004.0     355.0     336.0    4004.0    355.0     352.0
BT           4037.5    355.0     352.0    4037.5     355.0     336.0    4044.5    355.0     336.0
BT           4044.5    355.0     352.0    4079.5     355.0     352.0    4079.5    355.0     336.0
BT           4086.5    355.0     336.0    4086.5     355.0     352.0    4121.5    355.0     352.0
BT           4121.5    355.0     336.0    4128.5     355.0     336.0    4128.5    355.0     352.0
BT           4162.0    355.0     352.0    4162.0     355.0     336.0    4172.0    355.0     336.0
BT           4172.0    355.0     352.0    4205.5     355.0     352.0    4205.5    355.0     336.0
BT           4212.5    355.0     336.0    4212.5     355.0     352.0    4247.5    355.0     352.0
BT           4247.5    355.0     337.0    4254.5     355.0     339.0    4254.5    355.0     352.0
BT           4289.5    355.0     352.0    4289.5     355.0     342.0    4296.5    355.0     342.0
BT           4296.5    355.0     352.0    4346.2     355.0     352.0    4360.7    354.0     352.0
BT           4450.0    352.0     352.0
GR    360.0     965.0    358.0    1085.0    356.0    1225.0    354.0    1345.0    352.0    1510.0
GR    350.0    2420.0    348.0    3070.0    348.0    3487.6    350.0    3675.1    352.0    3743.8
GR    352.0    3835.4    350.0    3839.8    348.0    3847.1    346.0    3853.6    344.0    3856.3
GR    342.0    3860.7    340.0    3865.6    339.0    3869.5    338.0    3876.5    336.0    3889.4
GR    336.0    3911.5    336.0    3918.5    336.0    3953.5    336.0    3960.5    336.0    3994.0
GR    334.0    4004.0    334.0    4037.5    334.0    4044.5    334.0    4079.5    334.0    4086.5
GR    334.0    4121.5    334.0    4128.5    334.0    4162.0    336.0    4172.0    336.0    4205.5
GR    336.0    4212.5    336.0    4226.3    337.0    4247.5    338.0    4252.3    339.0    4254.5
GR    340.0    4259.3    342.0    4267.2    342.0    4267.4    342.0    4289.5    342.0    4296.5
GR    342.0    4304.1    342.0    4322.4    346.0    4332.1    348.0    4339.3    350.0    4346.2
GR    352.0    4360.7    352.0    4450.0    352.0    5050.0    352.0    5450.0    354.0    6150.0
GR    356.0    6290.0    358.0    6680.0    360.0    6810.0

NC        0         0         0       0.1       0.3
NH        5     0.125    3603.7      0.03    3864.3      0.04    4357.7      0.03    4787.9     0.125
NH   6500.0
ET                6.1       8.1                                  3864.3    4357.7    3867.0    4352.0
X1      510        67    3885.3    4317.2      10.0      10.0      10.0
GR    360.0    1000.0    358.0    1120.0    356.0    1230.0    354.0    1350.0    352.0    1480.0
GR    352.0    2160.4    354.0    2166.0    354.0    2725.2    352.0    2794.1    350.0    2800.2
GR    348.0    2927.2    348.0    3502.2    350.0    3603.7    352.0    3725.7    352.0    3854.6
GR    350.0    3859.7    348.0    3864.3    346.0    3872.7    344.0    3875.1    342.0    3885.3
GR    340.0    3888.1    339.0    3897.2    336.0    3904.2    336.0    3939.2    336.0    3946.2
GR    335.0    3981.2    335.0    3988.2    335.0    4021.7    335.0    4031.7    335.0    4065.2
GR    334.0    4072.2    334.0    4099.9    333.0    4107.2    333.0    4114.2    332.0    4118.2
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GR    332.0    4138.2     334.0    4141.3     334.0    4149.2     335.0    4156.2     335.0    4189.7
GR    335.0    4199.7     335.0    4233.2     336.0    4240.2     336.0    4261.1     338.0    4264.2
GR    340.0    4272.0     340.0    4275.2     341.0    4282.2     341.0    4317.2     342.0    4324.2
GR    344.0    4330.0     346.0    4338.6     348.0    4357.7     348.0    4451.3     346.0    4474.4
GR    346.0    4560.8     348.0    4643.2     350.0    4686.4     352.0    4787.9     354.0    4949.8
GR    356.0    5106.6     356.0    5735.0     354.0    5745.0     354.0    5815.0     356.0    6265.0
GR    358.0    6305.0     360.0    6500.0

NH        3      .125    3614.7      0.04    4704.9      0.125    6505.0
ET              6.1        8.1                         3640.0    4470.0       3750    4440.0
X1      515       53     3935.0    4447.8     250.0     350.0     275.0
GR    362.0     710.0     360.0     720.0     358.0     785.0     356.0     866.0     354.0    1170.0
GR    352.0    1700.0     352.0    2020.0     354.0    2100.0     354.0    2376.8     352.0    2799.9
GR    350.0    3013.6     348.0    3176.9     348.0    3407.4     348.0    3614.7     348.0    3639.6
GR    346.0    3642.6     346.0    3643.2     344.0    3648.3     342.0    3652.1     340.0    3656.8
GR    338.0    3665.5     346.0    3667.9     336.0    3675.4     334.0    3935.0     332.0    3951.7
GR    332.0    4435.6     334.0    4447.8     336.0    4456.4     338.0    4469.2     340.0    4526.5
GR    342.0    4537.8     344.0    4543.0     346.0    4557.9     348.0    4603.2     350.0    4609.2
GR    352.0    4615.3     352.0    4647.6     352.0    4662.2     354.0    4666.4     354.0    4704.9
GR    354.0    4863.6     356.0    5134.3     356.0    5500.0     354.0    5620.0     354.0    5675.0
GR    356.0    5765.0     356.0    5830.0     354.0    5880.0     354.0    5940.0     356.0    6035.0
GR    358.0    6120.0     360.0    6420.0     362.0    6505.0

NH        5     0.125    4258.6      0.04    4387.7       0.03    4851.5       0.04    5018.7      0.125
NH   6900.0
ET              6.1        8.1                         4240.0    5000.0     4240.0    4865.0
X1      520       65     4347.8    4855.3     515.0     590.0     560.0
GR    362.0    1250.0     360.0    1261.0     358.0    1319.0     356.0    1540.0     354.0    1650.0
GR    352.0    2055.0     352.0    2209.2     354.0    2588.6     356.0    2679.1     356.0    2743.9
GR    354.0    3131.2     354.0    3204.9     354.0    3232.3     352.0    3297.2     352.0    3308.2
GR    352.0    3319.1     352.0    3327.2     352.0    3343.9     350.0    3512.7     348.0    3663.8
GR    348.0    3669.4     348.0    3965.0     348.0    4106.2     348.0    4106.7     348.0    4158.5
GR    348.0    4258.6     346.0    4263.3     344.0    4268.6     342.0    4272.0     340.0    4275.2
GR    338.0    4279.7     336.0    4283.7     334.0    4347.8     332.0    4387.7     332.0    4523.9
GR    334.0    4530.9     334.0    4704.9     332.0    4708.7     332.0    4851.5     334.0    4855.3
GR    336.0    4860.2     338.0    4866.8     340.0    4876.8     342.0    4919.9     344.0    4927.6
GR    346.0    4929.8     348.0    4933.4     350.0    4951.4     352.0    4959.9     354.0    4990.6
GR    356.0    4998.1     356.0    5018.7     354.0    5361.1     354.0    5395.8     356.0    5475.0
GR    358.0    5510.0     356.0    5585.0     356.0    5930.0     358.0    5965.0     356.0    6150.0
GR    356.0    6200.0     358.0    6290.0     358.0    6720.0     360.0    6810.0     362.0    6900.0

NH        4     0.100    4012.3      0.04    4190.2       0.03    4516.3       0.04    6460.0
ET              6.1        8.1                         4050.0    4691.0       4170    4650.0
X1      530       53     4190.2    4516.3     640.0     610.0     620.0
GR    362.0    1570.0     360.0    1582.0     358.0    1775.0     356.0    1790.0     356.0    1985.0
GR    356.0    2190.2     354.0    2655.8     354.0    2937.3     352.0    2958.0     350.0    3490.2
GR    350.0    4012.3     350.0    4089.9     348.0    4095.2     346.0    4143.4     344.0    4151.9
GR    342.0    4155.4     340.0    4159.6     338.0    4174.5     336.0    4183.0     334.0    4190.2
GR    334.0    4516.3     336.0    4525.2     338.0    4589.7     340.0    4647.5     350.0    4666.3
GR    352.0    4674.7     360.0    4691.0     360.0    4705.1     354.0    4712.6     352.0    4718.3
GR    350.0    4725.4     350.0    4760.9     352.0    4781.7     354.0    4795.3     356.0    4806.9
GR    358.0    4832.0     360.0    4863.8     360.0    4905.5     358.0    5015.0     356.0    5040.0
GR    356.0    5300.0     354.0    5430.0     356.0    5500.0     358.0    5680.0     358.0    5783.0
GR    356.0    5787.0     354.0    5855.0     354.0    5975.0     356.0    6035.0     358.0    6040.0
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GR    360.0    6410.0     360.0    6455.0     362.0    6460.0

NH        4     0.100    1987.3      0.04    2128.1      0.03    2406.4      0.04    3590.0
ET              6.1       8.1                          2070.0    2600.0      2120    2530.0
X1      535       36    2119.8    2411.1     290.0     275.0     280.0
GR    360.0      0.0     358.0     188.8     356.0     211.0     354.0     228.7     354.0     314.3
GR    354.0    334.2     354.0     351.3     354.0     695.4     352.0    1004.9     352.0    1261.4
GR    352.0   1339.2     350.0    1389.9     350.0    1987.3     350.0    2065.4     348.0    2095.4
GR    346.0   2098.9     344.0    2102.4     342.0    2107.7     340.0    2113.5     338.0    2117.2
GR    336.0   2119.8     334.0    2128.1     334.0    2406.4     336.0    2411.1     338.0    2445.2
GR    340.0   2478.5     342.0    2515.2     344.0    2529.9     346.0    2535.1     348.0    2543.0
GR    350.0   2635.3     352.0    2651.1     354.0    2773.2     356.0    3360.0     358.0    3390.0
GR    360.0   3590.0

NH        4     0.100    1900.0      0.04    2065.8      0.03    2390.6      0.04    3240.0
ET              0         8.1                                              2055    2467.0
X1      540       36    2055.8    2395.1     365.0     335.0     350.0
GR    364.0    126.0     362.0     255.0     360.0     292.6     358.0     352.3     356.0     382.5
GR    356.0    410.9     356.0     877.4     354.0     963.3     354.0     968.2     354.0    1262.3
GR    354.0   1625.0     354.0    1706.5     352.0    1727.1     351.0    1900.0     350.0    2004.7
GR    340.0   2027.6     338.0    2035.3     336.0    2055.8     334.0    2065.8     334.0    2390.6
GR    336.0   2395.1     338.0    2410.3     340.0    2416.7     342.0    2432.0     344.0    2444.2
GR    346.0   2460.4     348.0    2466.0     350.0    2474.7     352.0    2495.3     354.0    2555.1
GR    354.0   2571.0     354.0    2617.2     356.0    2676.7     356.0    3100.0     358.0    3200.0
GR    360.0   3240.0

NH        6     0.100    1120.0      0.06    1701.3      0.04    1900.5      0.03    2149.2      0.04
NH   2539.6     0.125    2909.2
ET              0         8.1                                              1830.0      2350
X1      550       40.0    1894.0    2153.3     645.0     655.0     650.0
GR    370.0    147.4     368.0     151.1     366.0     158.9     364.0     168.9     364.0     250.9
GR    364.0    308.1     362.0     326.8     358.0     354.2     356.0     381.8     356.0     568.8
GR    356.0   1120.0     354.0    1377.0     354.0    1422.7     354.0    1701.3     352.0    1718.0
GR    350.0   1746.6     340.0    1828.0     338.0    1831.6     336.0    1894.0     334.0    1900.5
GR    334.0   2149.2     336.0    2153.3     338.0    2156.8     340.0    2199.4     342.0    2214.0
GR    344.0   2223.8     344.0    2280.7     344.0    2333.5     346.0    2348.4     348.0    2353.7
GR    350.0   2356.8     352.0    2359.2     354.0    2368.0     356.0    2382.7     358.0    2421.7
GR    360.0   2425.5     360.0    2539.6     360.0    2636.9     362.0    2722.6     364.0    2909.2

NH        4      0.05    1643.0      0.03    1885.4      0.04    2282.7     0.125    2809.5
ET              0         8.1                                               1575      2200
X1      560       46.0    1638.2    1898.1     605.0     595.0     600.0
GR    362.0    136.3     362.0     194.5     364.0     210.8     366.0     233.2     366.0     287.9
GR    366.0    315.1     366.0     371.5     364.0     385.2     362.0     390.9     360.0     455.9
GR    358.0    466.9     356.0     617.4     356.0     992.7     358.0    1010.1     358.0    1064.6
GR    356.0   1372.1     354.0    1497.6     352.0    1542.9     350.0    1558.0     340.0    1585.4
GR    338.0   1592.1     336.0    1638.2     334.0    1643.0     334.0    1885.4     336.0    1898.1
GR    338.0   2060.8     340.0    2071.8     342.0    2121.3     344.0    2208.5     346.0    2214.3
GR    348.0   2217.3     350.0    2220.7     352.0    2224.7     354.0    2227.4     356.0    2254.0
GR    358.0   2260.6     360.0    2279.6     362.0    2282.7     362.0    2385.4     362.0    2469.4
GR    364.0   2537.2     366.0    2600.1     368.0    2650.4     370.0    2686.2     372.0    2770.6
GR    374.0   2809.5
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NH       4     0.100     986.3      0.05    1187.5      0.03    1383.4      0.04    1850.5
ET             0       8.1                                      1080       1790
X1     562      40.0    1181.4    1385.0     280.0     285.0     280.0
GR   366.0     106.5     364.0     123.2     362.0     127.7     360.0     134.7     360.0     138.6
GR   360.0     169.0     358.0     191.7     358.0     219.4     358.0     231.0     356.0     395.2
GR   356.0     419.7     356.0     630.2     356.0     691.3     356.0     986.3     354.0    1059.2
GR   352.0    1064.0     350.0    1068.5     340.0    1107.5     338.0    1127.7     336.0    1181.4
GR   334.0    1187.5     334.0    1383.4     336.0    1385.0     334.0    1453.1     334.0    1484.7
GR   338.0    1555.7     340.0    1600.9     340.0    1633.0     340.0    1698.3     342.0    1712.0
GR   344.0    1780.4     346.0    1790.8     348.0    1797.9     350.0    1801.1     352.0    1812.1
GR   354.0    1816.6     356.0    1819.1     358.0    1821.8     360.0    1826.7     362.0    1850.5

NH       5     0.100     821.7      0.05    1102.1      0.03    1325.5      0.04    1694.5     0.125
NH  1835.5
ET             0       8.1                                       920       1650
X1     564      34.0    1053.1    1332.2     220.0     220.0     220.0
GR   364.0     130.8     362.0     135.1     360.0     178.5     360.0     194.3     360.0     199.1
GR   358.0     210.6     356.0     821.7     354.0     896.6     351.0     902.2     350.0     905.0
GR   348.0     910.5     346.0     916.1     344.0     926.7     342.0     943.3     338.0     959.8
GR   336.0    1053.1     334.0    1102.1     334.0    1325.5     336.0    1332.2     338.0    1506.9
GR   340.0    1539.8     342.0    1592.1     344.0    1621.6     346.0    1636.2     348.0    1647.2
GR   350.0    1658.3     352.0    1675.0     354.0    1680.3     356.0    1684.4     358.0    1688.6
GR   360.0    1691.3     362.0    1694.5     362.0    1830.3     362.0    1835.5

NC   0.085      0.06      0.03
ET             0       8.1                                       870       1405
X1     566      48.0     971.9    1257.5     280.0     280.0     280.0
GR   364.0     125.7     362.0     130.3     360.0     226.0     358.0     539.3     356.0     545.7
GR   354.0     549.2     354.0     586.2     354.0     836.5     351.0     841.5     350.0     846.0
GR   348.0     852.7     346.0     861.9     344.0     870.9     342.0     873.4     340.0     878.6
GR   338.0     882.9     338.0     891.3     340.0     897.1     342.0     928.0     342.0     943.5
GR   340.0     966.5     338.0     971.9     336.0     987.3     334.0    1006.2     334.0    1248.3
GR   336.0    1249.2     338.0    1257.5     340.0    1312.0     342.0    1319.6     344.0    1359.0
GR   346.0    1374.5     348.0    1397.8     350.0    1410.4     352.0    1435.6     354.0    1452.7
GR   356.0    1461.4     358.0    1472.7     360.0    1475.8     362.0    1480.2     364.0    1482.6
GR   366.0    1485.5     368.0    1547.3     370.0    1556.3     372.0    1562.2     374.0    1573.8
GR   376.0    1582.1     378.0    1591.8     380.0    1597.3

NC   0.085      0.06      0.03
ET             0       8.1                                      1525       1960
X1     570      51.0    1642.7    1843.3     285.0     280.0     280.0
GR   370.0     581.4     368.0     587.2     366.0     591.4     364.0     596.0     362.0     671.4
GR   362.0     686.5     364.0     810.8     364.0     840.9     362.0     859.4     360.0     914.8
GR   358.0    1050.7     356.0    1054.8     354.0    1061.1     354.0    1070.1     356.0    1074.5
GR   358.0    1079.1     358.0    1092.1     356.0    1097.0     356.0    1108.1     358.0    1112.0
GR   358.0    1127.6     356.0    1130.5     356.0    1466.0     356.0    1513.1     354.0    1516.3
GR   351.0    1518.8     350.0    1522.2     348.0    1526.1     346.0    1531.5     344.0    1537.1
GR   342.0    1556.5     342.0    1580.3     342.0    1627.4     340.0    1635.2     338.0    1638.2
GR   336.0    1642.7     334.0    1647.9     334.0    1837.5     336.0    1843.3     338.0    1860.7
GR   340.0    1867.9     342.0    1914.8     344.0    1920.4     346.0    1948.3     348.0    1964.0
GR   350.0    1970.5     352.0    1974.8     354.0    1999.3     356.0    2006.6     358.0    2013.6
GR   360.0    2028.7
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NC    0.085       0.06       0.03
ET                   0        8.1                                                  757        1150
X1      572         32      832.0     1056.1      200.0       178.0       187.0
GR    362.0      120.8      360.0      184.3      358.0       190.8       356.0       276.1       356.0       440.2
GR    356.0      738.5      354.0      746.9      351.0       749.1       350.0       755.1       348.0       759.7
GR    346.0      769.4      344.0      772.6      342.0       775.3       340.0       780.9       338.0       784.1
GR    336.0      832.0      334.0      838.1      334.0      1051.5       336.0      1056.1       338.0      1063.0
GR    340.0     1097.3      342.0     1102.0      344.0      1105.3       346.0      1109.4       348.0      1153.3
GR    350.0     1161.6      352.0     1183.2      354.0      1196.0       356.0      1212.6       358.0      1239.7
GR    360.0     1250.9      362.0     1260.0

NC    0.085       0.06       0.03
ET                   0        8.1                                                  705      1090.0
X1      574         35.0      747.5     1043.6      210.0       190.0       200.0
GR    362.0      129.2      362.0      138.5      362.0       163.3       360.0       186.2       358.0       190.0
GR    358.0      577.1      358.0      687.6      356.0       694.4       354.0       697.9       351.0       701.0
GR    350.0      704.4      348.0      710.2      346.0       713.6       344.0       716.8       342.0       721.3
GR    340.0      725.5      338.0      741.6      336.0       747.5       334.0       749.7       334.0      1039.4
GR    336.0     1043.6      338.0     1048.8      340.0      1081.1       342.0      1085.0       349.9      1097.5
GR    350.0     1106.8      350.0     1121.7      352.0      1128.8       354.0      1131.7       356.0      1148.3
GR    358.0     1163.7      360.0     1176.6      362.0      1185.2       364.0      1192.5       366.0      1192.6

NC    0.085       0.06       0.03
ET                   0        8.1                                                  688        1060
X1      576         30.0      733.4      959.3      190.0       165.0       170.0
GR    362.0      169.2      360.0      207.0      358.0       657.3       356.0       661.5       354.0       667.9
GR    351.0      683.0      350.0      687.3      348.0       693.7       346.0       700.1       344.0       706.9
GR    342.0      713.0      340.0      714.2      338.0       733.4       336.0       737.2       334.0       739.6
GR    334.0      948.2      336.0      952.2      338.0       959.3       340.0      1048.8       342.0      1075.6
GR    349.9     1095.6      352.0     1099.3      354.0      1104.0       356.0      1108.2       356.0      1123.7
GR    356.0     1139.6      358.0     1143.4      360.0      1146.4       362.0      1153.0       364.0      1184.9

NC    0.085       0.06       0.03
ET                   0        8.1                                                  615.0       1080
X1      582         39.0      698.2      914.1      335.0       310.0       330.0
GR    364.0      137.4      362.0      189.7      360.0       205.4       360.0       212.2       360.0       221.3
GR    358.0      568.5      356.0      572.6      354.0       576.1       351.0       579.3       350.0       581.9
GR    348.0      586.0      346.0      590.1      344.0       593.5       344.0       610.4       346.0       616.5
GR    346.0      623.7      344.0      627.6      344.0       643.0       344.0       680.1       342.0       683.7
GR    340.0      693.0      338.0      698.2      336.0       704.7       336.0       909.2       338.0       914.1
GR    340.0      919.5      342.0     1044.1      342.0      1107.0       342.0      1140.7       344.0      1144.9
GR    346.0     1148.3      348.0     1150.5      350.0      1152.8       352.0      1156.0       354.0      1159.9
GR    356.0     1163.4      358.0     1215.1      360.0      1219.2       370.0      1239.5

NC    0.085       0.06       0.03
ET                   0        8.1                                                  538.0       1085
X1      584         33.0      632.7      857.9      210.0       190.0       200.0
GR    364.0      135.1      364.0      145.5      364.0       174.9       362.0       191.2       360.0       196.8
GR    358.0      515.4      356.0      518.5      354.0       526.4       351.0       533.5       350.0       540.1
GR    348.0      551.7      346.0      557.5      344.0       561.9       342.0       573.5       340.0       581.2
GR    338.0      632.7      336.0      644.9      336.0       851.8       338.0       857.9       342.0       992.7
GR    344.0     1066.7      346.0     1072.5      348.0      1095.0       350.0      1098.7       352.0      1100.7
GR    354.0     1107.8      356.0     1111.0      358.0      1121.2       358.0      1163.7       358.0      1244.0
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GR    360.0    1267.6     362.0    1299.1     364.0    1309.3

NC    0.085      0.06      0.03
ET                 0       8.1                                          465.0       960
X1      586      34.0     582.7     772.7     205.0     205.0     205.0
GR    366.0     110.7     364.0     182.5     362.0     188.7     360.0     329.3     360.0     355.9
GR    360.0     383.3     360.0     412.5     360.0     444.5     350.0     465.8     348.0     470.9
GR    346.0     483.4     344.0     488.8     342.0     507.1     338.0     582.7     336.0     593.3
GR    336.0     767.0     338.0     772.7     340.0     929.5     342.0    1012.7     344.0    1019.4
GR    346.0    1023.4     348.0    1027.9     350.0    1031.1     360.0    1046.7     362.0    1051.5
GR    362.0    1124.7     360.0    1174.0     360.0    1212.8     360.0    1229.7     358.0    1236.1
GR    358.0    1312.4     360.0    1327.9     362.0    1354.8     364.0    1367.3

NC    0.085      0.06      0.03
ET                 6.1       8.1                344.8       800       371.0       720
X1      592      57.0     443.9     597.6     375.0     385.0     380.0
GR    370.0     130.6     368.0     136.8     366.0     139.9     364.0     191.1     362.0     195.4
GR    360.0     202.2     360.0     222.8     362.0     241.9     364.0     302.7     364.0     344.8
GR    362.0     348.7     360.0     350.8     350.0     371.6     348.0     375.7     346.0     380.7
GR    344.0     395.9     342.0     402.9     340.0     408.7     338.0     443.9     336.0     467.1
GR    336.0     563.3     338.0     572.4     338.0     581.7     338.0     597.6     340.0     602.0
GR    340.0     671.2     340.0     724.3     342.0     747.9     344.0     751.6     346.0     756.9
GR    348.0     760.9     349.9     777.6     352.0     786.1     354.0     792.1     358.0     816.9
GR    360.0     823.8     362.0     905.7     364.0     928.2     364.0     966.1     364.0    1187.2
GR    366.0    1201.8     368.0    1207.7     368.0    1228.7     366.0    1234.6     364.0    1241.2
GR    362.0    1345.3     360.0    1375.6     358.0    1382.2     356.0    1387.4     356.0    1419.4
GR    358.0    1476.4     360.0    1493.0     362.0    1501.1     364.0    1504.4     366.0    1512.4
GR    368.0    1529.3     370.0    1578.1

NC    0.075      0.065     0.125
ET                 0       8.1                                          595.0       830.0
X1      594       80.0     630.7     779.9     230.0     230.0     230.0
GR    368.0     189.5     366.0     194.5     366.0     207.4     368.0     213.8     370.0     220.5
GR    372.0     225.8     374.0     231.6     376.0     243.5     376.0     310.6     376.0     366.8
GR    376.0     391.0     374.0     415.0     372.0     422.3     370.0     427.1     368.0     428.7
GR    366.0     431.0     364.0     562.6     362.0     564.8     360.0     571.4     350.0     596.8
GR    348.0     609.4     346.0     613.4     344.0     617.0     342.0     630.7     340.0     637.0
GR    340.0     712.7     340.0     738.3     340.0     743.7     342.0     779.9     344.0     790.4
GR    346.0     800.8     348.0     808.4     350.0     822.9     360.0     901.4     358.0     908.6
GR    358.0     939.7     360.0     949.9     362.0     955.8     364.0     964.0     364.0     994.9
GR    362.0    1004.8     360.0    1014.2     358.0    1025.8     356.0    1057.6     356.0    1075.6
GR    358.0    1082.9     360.0    1086.9     362.0    1091.8     364.0    1098.9     366.0    1107.1
GR    368.0    1111.3     370.0    1116.3     370.0    1123.9     368.0    1148.6     366.0    1153.0
GR    364.0    1164.1     364.0    1432.2     364.0    1449.6     364.0    1466.1     366.0    1605.9
GR    368.0    1611.6     370.0    1615.0     370.0    1633.0     368.0    1637.6     366.0    1642.8
GR    364.0    1669.4     364.0    1683.8     364.0    1718.7     362.0    1724.1     360.0    1731.7
GR    358.0    1764.6     356.0    1819.5     356.0    1840.9     358.0    1880.0     360.0    1887.5
GR    362.0    1891.9     364.0    1899.2     366.0    1911.8     368.0    1973.0     370.0    1986.0
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NC    0.075      0.065      0.125
ET                 6.1        8.1                          600.0      1050.0       660.0       995.0
X1      600        76.0      778.9      979.1       145.0      155.0       150.0
GR    376.0       107.5      374.0      132.1       372.0      135.5       368.0       303.5       368.0       319.6
GR    370.0       325.3      372.0      329.6       374.0      335.7       376.0       341.2       378.0       346.9
GR    380.0       352.9      380.0      443.7       380.0      471.0       380.0       520.9       378.0       541.4
GR    376.0       544.6      374.0      548.5       372.0      551.8       370.0       557.8       368.0       560.1
GR    366.0       563.7      364.0      640.1       362.0      649.0       360.0       652.5       358.0       658.2
GR    356.0       665.5      354.0      675.5       352.0      693.7       350.0       706.0       348.0       714.2
GR    348.0       720.6      348.0      757.2       346.0      778.9       344.0       788.4       342.0       801.2
GR    342.0       944.1      344.0      973.4       346.0      979.1       348.0       986.4       350.0       988.7
GR    360.0      1001.5      362.0     1006.2       364.0     1020.1       366.0      1144.4       368.0      1278.3
GR    370.0      1282.7      370.0     1293.0       368.0     1297.8       366.0      1301.3       364.0      1304.6
GR    364.0      1385.5      366.0     1396.2       366.0     1412.0       364.0      1420.3       364.0      1639.3
GR    364.0      1714.3      364.0     1832.9       366.0     1845.3       368.0      1849.6       370.0      1855.1
GR    370.0      1872.1      368.0     1877.6       366.0     1885.2       364.0      1934.5       362.0      1938.2
GR    360.0      1948.6      360.0     1966.8       360.0     2011.3       358.0      2020.0       358.0      2086.0
GR    360.0      2170.5      362.0     2176.6       364.0     2184.5       366.0      2191.1       368.0      2252.7
GR    370.0      2281.2

NC    0.075      0.065      0.125
ET                 6.1        8.1                          200.0       652.3         280       645.0
X1      610          75      319.9      622.8       295.0      355.0       315.0
GR    390.0       103.3      390.0      133.2       388.0      139.9       382.0       151.5       380.0       156.0
GR    370.0       177.5      368.0      180.4       366.0      189.1       364.0       252.7       362.0       256.4
GR    360.0       260.7      358.0      266.5       356.0      272.8       354.0       301.5       352.0       304.8
GR    350.0       308.1      348.0      313.6       346.0      319.9       344.0       381.3       342.0       409.0
GR    342.0       604.8      344.0      615.0       346.0      622.8       348.0       626.7       350.0       630.3
GR    360.0       645.0      362.0      648.2       364.0      652.3       364.0       727.8       362.0       732.5
GR    360.0       738.6      358.0      742.9       356.0      746.9       356.0       792.1       358.0       799.0
GR    360.0       804.5      362.0      810.2       364.0      815.3       366.0       823.4       368.0       890.1
GR    368.0       914.0      366.0      923.1       366.0      959.7       368.0       969.4       368.0      1056.9
GR    366.0      1071.8      364.0     1084.5       362.0     1096.9       360.0      1103.2       350.0      1127.8
GR    348.0      1147.5      346.0     1173.3       346.0     1268.3       348.0      1275.2       350.0      1281.2
GR    360.0      1298.3      362.0     1301.8       362.0     1341.2       360.0      1381.5       350.0      1415.1
GR    348.0      1422.9      346.0     1430.3       346.0     1494.6       348.0      1515.3       348.0      1717.0
GR    348.0      1760.2      350.0     1832.6       360.0     1856.7       364.0      1860.6       362.0      1866.9
GR    366.0      1891.5      368.0     2520.0       370.0     2620.0       372.0      2740.0       374.0      2780.0

NC    0.075      0.065      0.125
ET                 6.1        8.1                          250.0       750.0         330       730.0
X1      620          63      299.2      732.0       395.0      395.0       395.0
GR    380.0       210.5      370.0      228.8       368.0      230.7       366.0       234.4       366.0       239.9
GR    366.0       246.0      364.0      299.2       362.0      302.7       360.0       309.4       358.0       335.2
GR    356.0       341.1      354.0      343.7       352.0      348.6       350.0       415.7       348.0       421.2
GR    346.0       429.7      344.0      515.8       344.0      685.5       346.0       691.3       348.0       701.4
GR    350.0       709.6      360.0      726.0       362.0      729.1       364.0       732.0       364.0       767.8
GR    362.0       771.4      360.0      775.6       350.0      819.3       348.0       824.3       346.0       827.8
GR    346.0       846.3      346.0      966.4       344.0      971.4       344.0      1009.4       346.0      1063.6
GR    348.0      1115.1      350.0     1124.6       360.0     1185.8       362.0      1195.8       364.0      1205.6
GR    366.0      1211.1      368.0     1236.4       370.0     1308.2       370.0      1503.3       368.0      1552.5
GR    366.0      1558.4      364.0     1562.0       362.0     1567.8       360.0      1584.3       360.0      1684.8
GR    362.0      1691.5      364.0     1713.1       366.0     1722.9       366.0      1770.0       366.0      1862.4
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GR    368.0    1960.0     368.0    2490.0     370.0    2518.0     372.0    2536.0     374.0    2730.0
GR    376.0    2800.0     378.0    2840.0     380.0    2875.0

NC    0.075     0.065     0.125
ET                6.1       8.1                        300.0     804.6       380     750.0
X1      630         60     445.6     718.0     235.0     295.0     265.0
GR    380.0     231.4     370.0     248.4     368.0     254.6     366.0     328.7     364.0     337.7
GR    362.0     344.0     360.0     347.8     358.0     353.4     358.0     362.4     358.0     382.2
GR    356.0     395.2     354.0     426.7     352.0     433.1     350.0     438.4     348.0     445.6
GR    346.0     466.8     344.0     561.4     344.0     632.7     346.0     679.5     348.0     718.0
GR    350.0     730.2     360.0     748.4     362.0     751.9     366.0     753.5     364.0     754.7
GR    368.0     804.6     368.0     835.1     366.0     840.2     364.0     844.7     362.0     850.5
GR    360.0     855.9     356.0     865.8     350.0     881.5     348.0     901.3     346.0     918.7
GR    344.0     927.5     344.0     986.7     346.0     996.7     348.0    1015.4     348.0    1070.6
GR    348.0    1129.5     350.0    1141.8     352.0    1146.3     354.0    1258.4     356.0    1275.1
GR    358.0    1514.9     360.0    1522.3     370.0    1544.4     372.0    1576.1     372.0    1650.2
GR    370.0    1676.7     368.0    1685.7     368.0    1855.0     370.0    1966.0     370.0    2470.0
GR    372.0    2510.0     374.0    2657.0     376.0    2695.0     378.0    2745.0     380.0    2785.0

NC    0.075     0.065     0.125
ET                  0       8.1                                              401     600.0
        FINAL CROSS SECTION - APPROX. 200 FT. DOWNSTREAM OF RIVERFORD BRIDGE
X1      640         27     433.9     577.6     345.0     355.0     350.0
GR    376.0       30.0     374.0      40.0     372.0      50.0     370.0      65.0     368.0     177.8
GR    370.0     224.7      370.0     392.0     360.0     410.6     350.0     433.9     348.0     447.6
GR    346.0     450.9      346.0     550.9     348.0     564.9     350.0     577.6     360.0     601.2
GR    362.0     621.0      364.0     656.5     366.0     694.7     368.0     731.7     370.0     757.0
GR    372.0     802.2      372.0    1053.1     370.0    1410.8     370.0    1725.0     372.0    2340.0
GR    374.0    2370.0      376.0    2490.0
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


 *PROF 1

 CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

 CCHV=     .100 CEHV=     .300
 *SECNO 100.000
 3720 CRITICAL DEPTH ASSUMED
         MISSION DAM - DOWNSTREAM LIMIT OF STUDY (SUB-CRITICAL FLOW ASSUMED)
    100.00    12.55   282.55   282.55   282.53   287.42     4.87      .00      .00   280.00
    50000.     440.   49530.      30.      40.    2787.       4.       0.       0.    280.00
       .00    10.96    17.77     8.08     .080     .180     .080     .000   270.00   313.45
   .198391       0.       0.       0.        0        4        0      .00   290.21   603.66


 FLOW DISTRIBUTION FOR SECNO=    100.00          CWSEL=    282.55

 STA=     313.     341.     601.     604.
   PER Q=       .9     99.1       .1
    AREA=     40.1   2787.5      3.8
     VEL=     11.0     17.8      8.1
   DEPTH=      1.5     10.7      1.3

 *SECNO 110.000

 3301 HV CHANGED MORE THAN HVINS


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

    110.00    15.82   289.82   285.87      .00   292.22     2.40     4.55      .25   280.00
    50000.    4747.   44045.    1208.     285.    3706.      98.       4.       0.    280.00
       .00    16.65    11.88    12.34     .080     .180     .080     .000   274.00   282.28
   .061120      45.      45.      45.        3       11        0      .00   337.95   620.24


 FLOW DISTRIBUTION FOR SECNO=    110.00          CWSEL=    289.82

 STA=     282.     299.     308.     314.     319.     340.     600.     620.
   PER Q=       .1       .4       .7      1.1      7.1     88.1      2.4
    AREA=     15.6     24.5     28.4     34.8    181.7   3706.0     97.9
     VEL=      4.3      9.0     12.6     15.7     19.5     11.9     12.3
   DEPTH=       .9      2.8      4.8      6.8      8.8     14.2      4.9
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 120.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

120.00	18.90	292.90	286.24	.00	294.45	1.55	2.15	.08	280.00
50000.	5984.	39075.	4941.	462.	4301.	396.	9.	1.	280.00
.00	12.95	9.09	12.48	.080	.180	.080	.000	274.00	286.51
.027154	55.	55.	55.	3	15	0	.00	368.62	655.13

FLOW DISTRIBUTION FOR SECNO= 120.00 CWSEL= 292.90

STA=	287.	304.	312.	319.	327.	341.	355.	603.	644.	649.	655.
PER Q=	.3	.4	.9	1.5	3.9	5.0	78.2	9.5	.3	.1	
AREA=	28.3	28.5	44.3	64.0	138.6	158.3	4301.0	366.8	19.9	9.2	
VEL=	4.5	7.4	9.8	11.9	14.0	15.8	9.1	13.0	7.2	3.7	
DEPTH=	1.6	3.9	5.9	7.9	9.9	11.9	17.3	8.9	3.9	1.5	

*SECNO 130.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

130.00	24.44	300.44	289.33	.00	301.19	.76	6.66	.08	280.00
50000.	9040.	28781.	12179.	1277.	5128.	1296.	86.	6.	280.00
.02	7.08	5.61	9.40	.080	.180	.080	.000	276.00	137.82
.007426	520.	520.	520.	5	19	0	.00	552.47	690.29

FLOW DISTRIBUTION FOR SECNO= 130.00 CWSEL= 300.44

STA=	138.	290.	325.	341.	353.	584.	600.	612.	628.	644.	683.	690.
PER Q=	3.7	6.6	3.9	3.9	57.6	7.2	4.5	4.8	4.1	3.7	.0	
AREA=	456.7	406.0	215.0	199.2	5127.6	312.9	211.0	243.9	225.7	295.8	6.4	
VEL=	4.0	8.1	9.0	9.8	5.6	11.5	10.7	9.9	9.0	6.3	1.8	
DEPTH=	3.0	11.4	13.4	17.2	22.2	19.4	17.4	15.4	13.4	7.6	.9	

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


CCHV=     .030 CEHV=     .050
*SECNO 140.000
   140.00    28.49   304.49   290.26      .00   305.19      .70     3.99      .00   284.00
   50000.    6255.   35399.    8346.     834.    6017.     929.     185.      12.    284.00
      .05     7.50     5.88     8.98     .080     .180     .080     .000   276.00   157.25
  .006965     555.     555.     555.        3       14        0      .00   409.05   566.30


FLOW DISTRIBUTION FOR SECNO=    140.00          CWSEL=    304.49

STA=     157.     209.     230.     243.     482.     498.     508.     547.     566.
  PER Q=      4.3      3.8      4.4     70.8      6.6      3.6      6.2       .2
   AREA=    369.1    245.1    220.1   6016.5    296.2    176.6    415.2     41.1
    VEL=      5.8      7.8     10.0      5.9     11.2     10.3      7.5      3.0
  DEPTH=      7.1     11.7     17.9     25.1     19.5     17.5     10.6      2.1

*SECNO 150.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS=      108.5    1200.0  TYPE=      1  TARGET=     1091.500
   150.00    25.95   305.95   288.36      .00   306.20      .25     1.00      .01   290.00
   50000.    1440.   25150.   23410.     674.   11447.    4324.     344.      22.    290.00
      .09     2.14     2.20     5.41     .080     .160     .035     .000   280.00   186.86
  .000786     555.     580.     555.        3       14        0      .00  1013.14  1200.00


FLOW DISTRIBUTION FOR SECNO=    150.00          CWSEL=    305.95

STA=     187.     274.     738.     759.     870.    1042.    1081.    1153.    1200.
  PER Q=      2.9     50.3      4.0     14.4     18.9      3.5      4.4      1.7
   AREA=    674.4  11447.4    290.5   1223.2   1712.6    341.0    506.7    249.9
    VEL=      2.1      2.2      6.9      5.9      5.5      5.1      4.3      3.4
  DEPTH=      7.8     24.6     14.2     11.0     10.0      9.0      7.0      5.4

1490 NH CARD USED
*SECNO 160.000

3265 DIVIDED FLOW
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   160.00    24.49   306.49   292.18      .00   306.59      .10      .38      .00   292.00
   50000.   42430.    4574.    2995.   16347.    1768.    1798.     669.      44.    290.00
      .17     2.60     2.59     1.67     .072     .080     .047     .000   282.00   354.58
  .000340     900.     670.     670.        2       22        0      .00  1591.84  1987.88


FLOW DISTRIBUTION FOR SECNO=    160.00          CWSEL=    306.49

STA=     355.     497.     524.     590.     638.    1193.    1263.    1331.    1412.    1779.    1988.
  PER Q=     16.6      3.6      9.3      5.6     45.0      3.1      1.9      9.1      5.4       .5
   AREA=   1890.2    634.1   1603.7   1044.7   9731.7    838.1    604.6   1768.4   1536.3    262.2
    VEL=      4.4      2.8      2.9      2.7      2.3      1.8      1.6      2.6      1.8      1.0
  DEPTH=     13.2     23.5     24.5     21.8     17.5     11.9      8.9     21.8      4.2      1.3

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 170.000
3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   170.00    24.61   306.61   293.99      .00   306.66      .05      .07      .00   292.00
   50000.   33635.    2047.   14318.   17542.    1253.    8204.     842.      58.    290.00
      .22     1.92     1.63     1.75     .060     .080     .051     .000   282.00   329.19
  .000145     325.     320.     315.        2        9        0      .00  2144.81  2474.00


FLOW DISTRIBUTION FOR SECNO=    170.00          CWSEL=    306.61

STA=     329.     490.     536.     570.     744.     814.     868.     978.    1483.    1544.    1725.    1820.    1884.
  PER Q=      4.0      3.3      3.6     22.3      6.1      3.4      4.8     19.8      4.1      7.9      6.6      3.4
   AREA=   1077.1    638.6    595.2   3423.7   1651.5   1050.8   1718.5   7386.2   1252.7   2829.9   1284.7    741.8
    VEL=      1.9      2.6      3.0      3.3      1.8      1.6      1.4      1.3      1.6      1.4      2.6      2.3
  DEPTH=      6.7     13.9     17.6     19.6     23.7     19.6     15.6     14.6     20.6     15.6     13.6     11.6

STA=    1884.    1989.    2200.    2474.
  PER Q=      4.1      4.7      1.9
   AREA=   1008.0   1458.5    881.3
    VEL=      2.0      1.6      1.1
  DEPTH=      9.6      6.9      3.2
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 180.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

180.00	20.65	306.65	293.03	.00	306.72	.06	.05	.00	292.00
50000.	38997.	4717.	6286.	17509.	4246.	5219.	1178.	85.	290.00
.30	2.23	1.11	1.20	.038	.080	.040	.000	286.00	453.80
.000073	529.	550.	570.	2	14	0	.00	2069.37	2523.17

FLOW DISTRIBUTION FOR SECNO= 180.00 CWSEL= 306.65

STA=	454.	608.	647.	703.	1032.	1109.	1308.	1530.	1759.	1884.	2380.	2523.
PER Q=	3.3	4.0	6.8	43.4	8.2	6.2	6.2	9.4	4.0	7.7	.8	
AREA=	1154.3	688.5	1100.7	6795.5	1401.4	3115.3	3253.4	4246.0	1315.9	3384.9	517.8	
VEL=	1.4	2.9	3.1	3.2	2.9	1.0	1.0	1.1	1.5	1.1	.8	
DEPTH=	7.5	17.7	19.7	20.7	18.2	15.7	14.7	18.5	10.5	6.8	3.6	

1490 NH CARD USED
*SECNO 190.000

3265 DIVIDED FLOW

190.00	20.68	306.68	290.51	.00	306.75	.07	.03	.00	296.00
50000.	45964.	3763.	274.	20883.	4466.	525.	1484.	106.	290.00
.36	2.20	.84	.52	.031	.080	.057	.000	286.00	433.75
.000041	505.	505.	505.	2	17	0	.00	1540.45	1985.74

FLOW DISTRIBUTION FOR SECNO= 190.00 CWSEL= 306.68

STA=	434.	541.	978.	1037.	1375.	1414.	1576.	1810.	1986.
PER Q=	3.2	43.0	5.7	33.2	3.2	3.6	7.5	.5	
AREA=	1051.6	9046.7	1203.5	6993.4	718.5	1869.4	4465.6	525.4	
VEL=	1.5	2.4	2.4	2.4	2.2	1.0	.8	.5	
DEPTH=	9.8	20.7	20.7	20.7	18.5	11.5	19.1	3.0	

1490 NH CARD USED
*SECNO 200.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

200.00	20.74	306.74	290.78	.00	306.81	.07	.06	.00	296.00
50000.	32505.	2923.	14572.	20541.	2140.	4680.	1927.	134.	294.00
.46	1.58	1.37	3.11	.118	.125	.042	.000	286.00	298.78
.000305	720.	740.	750.	2	17	0	.00	1805.67	2104.45

FLOW DISTRIBUTION FOR SECNO= 200.00 CWSEL= 306.74

STA=	299.	459.	976.	1203.	1407.	1440.	1563.	1637.	1696.	1771.	1908.	2104.
PER Q=	5.4	30.2	14.8	13.2	1.4	5.8	4.0	5.2	6.0	12.1	1.8	
AREA=	1017.4	10036.0	4726.8	4220.8	540.1	2140.1	814.1	740.2	890.0	1722.8	512.7	
VEL=	2.6	1.5	1.6	1.6	1.3	1.4	2.5	3.5	3.4	3.5	1.8	
DEPTH=	6.3	19.4	20.7	20.7	16.5	17.4	10.9	12.7	11.7	12.6	2.6	

1490 NH CARD USED
*SECNO 209.000

209.00	20.86	306.86	292.00	.00	306.94	.08	.13	.00	298.00
50000.	22775.	6120.	21104.	14771.	4267.	7191.	2180.	151.	294.00
.52	1.54	1.43	2.93	.122	.125	.040	.000	286.00	335.50
.000328	430.	390.	365.	2	14	0	.00	2058.47	2393.96

FLOW DISTRIBUTION FOR SECNO= 209.00 CWSEL= 306.86

STA=	335.	515.	673.	779.	1081.	1151.	1233.	1479.	1655.	1934.	2100.	2325.	2394.
PER Q=	3.0	8.0	6.7	20.6	4.4	3.0	12.2	14.6	17.0	6.9	3.5	.1	
AREA=	1054.4	2755.2	2107.6	6298.8	1386.5	1168.0	4266.6	2090.4	2752.0	1302.3	981.9	64.3	
VEL=	1.4	1.4	1.6	1.6	1.6	1.3	1.4	3.5	3.1	2.7	1.8	.6	
DEPTH=	5.9	17.4	19.9	20.9	19.9	14.2	17.4	11.9	9.9	7.9	4.4	.9	

1490 NH CARD USED
*SECNO 210.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

210.00	20.78	306.78	299.60	.00	306.98	.20	.00	.04	298.00
50000.	10285.	8978.	30737.	7180.	4247.	7118.	2185.	152.	294.00
.52	1.43	2.11	4.32	.116	.125	.040	.000	286.00	337.53
.000717	10.	10.	10.	2	14	0	.00	2053.50	2391.03

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    210.00          CWSEL=    306.78

STA=     338.    1233.    1479.    1655.    1934.    2100.    2325.    2391.
  PER Q=     20.6     18.0     21.4     24.8     10.1      5.1       .1
   AREA=   7180.1   4247.2   2076.5   2729.9   1289.1    964.1     58.9
    VEL=      1.4      2.1      5.2      4.6      3.9      2.6       .9
  DEPTH=      8.0     17.3     11.8      9.8      7.8      4.3       .9

1490 NH CARD USED
*SECNO 211.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   211.00    20.92   306.92   292.00      .00   307.00      .08      .00      .01   298.00
   50000.   22727.    6106.   21166.   14822.    4281.    7244.    2190.     152.    294.00
      .52     1.53     1.43     2.92     .122     .125     .040     .000   286.00   334.01
  .000323      10.      10.      10.        2       14        0      .00  2062.09  2396.10


FLOW DISTRIBUTION FOR SECNO=    211.00          CWSEL=    306.92

STA=     334.     515.     673.     779.    1081.    1151.    1233.    1479.    1655.    1934.    2100.    2325.    2396.
  PER Q=      3.0      7.9      6.6     20.5      4.4      3.0     12.2     14.6     17.1      7.0      3.6       .1
   AREA=   1064.8   2764.4   2113.7   6316.3   1390.5   1172.8   4280.9   2100.6   2768.2   1311.8    994.9     68.3
    VEL=      1.4      1.4      1.6      1.6      1.6      1.3      1.4      3.5      3.1      2.7      1.8       .6
  DEPTH=      5.9     17.4     19.9     20.9     19.9     14.2     17.4     11.9      9.9      7.9      4.4      1.0

*SECNO 220.000
   220.00    19.13   307.13   298.96      .00   307.27      .14      .25      .02   292.00
   50000.    8658.    5215.   36127.    2821.    5740.   11141.    2614.     187.    292.00
      .59     3.07      .91     3.24     .040     .200     .040     .000   288.00   413.80
  .000318      830.     810.     770.        2       12        0      .00  1768.46  2182.26


FLOW DISTRIBUTION FOR SECNO=    220.00          CWSEL=    307.13
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=     414.     574.     652.     736.     746.    1065.    1378.    1420.    1494.    1563.    1687.    1757.    1873.
  PER Q=      4.4      4.7      7.2      1.0     10.4     34.2      3.0      3.9      3.6      6.6      3.7      6.1
   AREA=    887.2    771.4   1028.5    134.2   5740.2   4419.3    461.8    671.8    630.8   1135.5    639.0   1056.1
    VEL=      2.5      3.1      3.5      3.8       .9      3.9      3.3      2.9      2.9      2.9      2.9      2.9
  DEPTH=      5.5     10.0     12.1     14.1     18.0     14.1     10.9      9.1      9.1      9.1      9.1      9.1

STA=    1873.    1965.    2086.    2182.
  PER Q=      4.8      5.3      1.0
   AREA=    836.1    985.9    304.4
    VEL=      2.9      2.7      1.7
  DEPTH=      9.1      8.1      3.2

*SECNO 230.000

3470 ENCROACHMENT STATIONS=      825.0    2050.0  TYPE=      1  TARGET=     1225.000
   230.00    19.25   307.25   299.47      .00   307.49      .24      .19      .03   292.00
   50000.    3842.    4012.   42146.    1055.    3617.   10200.    2811.     204.    292.00
      .63     3.64     1.11     4.13     .040     .200     .040     .000   288.00   825.00
  .000475     465.     490.     505.        2       20        0      .00  1225.00  2050.00

FLOW DISTRIBUTION FOR SECNO=    230.00          CWSEL=    307.25

STA=     825.     902.     940.     941.    1143.    1280.    1427.    1544.    1826.    2021.    2050.
  PER Q=      3.6      4.0       .2      8.0     18.7     17.7     14.0     19.5     12.9      1.6
   AREA=    573.0    459.5     22.8   3617.0   1961.2   1945.5   1542.6   2682.2   1803.3    265.5
    VEL=      3.1      4.3      3.5      1.1      4.8      4.5      4.5      3.6      3.6      3.0
  DEPTH=      7.4     12.3     14.3     17.9     14.3     13.3     13.3      9.5      9.3      9.3

*SECNO 239.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2370.0    3040.0  TYPE=      1  TARGET=      670.000
   239.00    17.10   307.10   298.48      .00   308.18     1.09      .44      .25   294.00
   50000.    2952.   15410.   31637.     317.    5474.    3187.    2929.     214.    294.00
      .65     9.33     2.82     9.93     .040     .200     .040     .000   290.00  2370.00
  .003357     400.     420.     440.        2       13        0      .00   670.00  3040.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    239.00          CWSEL=    307.10

STA=    2370.    2385.    2399.    2724.    2732.    2742.    2758.    2827.    2869.    3000.    3040.
  PER Q=      2.3      3.6     30.8      1.9      2.1      2.7     14.0     10.1     26.4      6.0
   AREA=    156.8    159.7   5474.1     85.9    108.0    144.6    695.6    469.4   1314.6    368.4
    VEL=      7.4     11.3      2.8     11.1      9.9      9.4     10.1     10.7     10.1      8.2
  DEPTH=     10.3     12.1     16.8     12.1     10.1      9.1     10.1     11.1     10.1      9.1

*SECNO 240.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   240.00    19.17   309.17   298.36      .00   309.70      .54     1.47      .05   306.00
   50000.      72.   49928.       0.      11.    8491.       0.    2976.     217.    310.00
      .66     6.36     5.88      .00     .040     .200     .000     .000   290.00  2511.46
  .015003     195.     230.     255.        2       11        0      .00   514.77  3026.24

FLOW DISTRIBUTION FOR SECNO=    240.00          CWSEL=    309.17

STA=    2511.    2515.    2519.    3032.
  PER Q=       .0       .1     99.9
   AREA=      2.1      9.1   8491.4
    VEL=      3.1      7.1      5.9
  DEPTH=       .6      2.2     16.8

CCHV=     .300 CEHV=     .500
*SECNO 242.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   312.00 MAX ELLC=   311.50

        MAST BLVD BRIDGE  (NORMAL BRIDGE ROUTINE)
   242.00    19.14   309.14   298.80      .00   309.78      .64      .03      .05   306.00
   50000.      25.   49975.       0.      11.    7786.       0.    2978.     217.    310.00
      .66     2.27     6.42      .00     .030     .040     .000     .000   290.00  2511.56
  .001091      10.      10.      10.        2       15        0  -689.77   514.46  3026.02
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    242.00          CWSEL=    309.14

STA=    2512.    2519.    3032.
  PER Q=       .1     99.9
   AREA=     11.0   7785.8
    VEL=      2.3      6.4
  DEPTH=      1.4     15.4

*SECNO 243.000

3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   312.00 MAX ELLC=   311.50

   243.00    19.22   309.22   298.80      .00   309.85      .63      .07      .00   313.00
   50000.       0.   49963.      37.       0.    7816.      16.    2989.     218.    300.00
      .66      .00     6.39     2.27     .000     .040     .030     .000   290.00  2511.32
  .001075      65.      65.      65.        2       15        0  -694.21   515.24  3026.56


FLOW DISTRIBUTION FOR SECNO=    243.00          CWSEL=    309.22

STA=    2511.    3002.    3005.
  PER Q=     99.9       .1
   AREA=   7816.5     16.2
    VEL=      6.4      2.3
  DEPTH=     15.9      6.2

*SECNO 244.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   244.00    19.37   309.37   298.90      .00   309.91      .54      .02      .03   310.00
   50000.       0.   50000.       0.       0.    8511.       0.    2991.     218.    310.00
      .66      .00     5.87      .00     .000     .140     .000     .000   290.00  2552.74
  .007522      10.      10.      10.        2       14        0      .00   521.75  3074.49


FLOW DISTRIBUTION FOR SECNO=    244.00          CWSEL=    309.37

STA=    2553.    3076.
  PER Q=    100.0
   AREA=   8510.7
    VEL=      5.9
  DEPTH=     16.3
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 245.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 100.0 1515.0 TYPE= 1 TARGET= 1415.000

245.00	19.96	309.96	297.46	.00	310.32	.36	.36	.05	292.00
50000.	20710.	21639.	7652.	3207.	9180.	1648.	3036.	221.	292.00
.67	6.46	2.36	4.64	.040	.140	.055	.000	290.00	593.34
.000932	210.	165.	200.	2	17	0	.00	921.66	1515.00

FLOW DISTRIBUTION FOR SECNO= 245.00 CWSEL= 309.96

STA=	593.	760.	786.	817.	928.	1396.	1452.	1493.	1515.
PER Q=	3.5	3.2	6.3	28.4	43.3	8.7	4.4	2.2	
AREA=	568.2	287.1	454.9	1896.5	9179.7	850.9	502.7	294.3	
VEL=	3.1	5.6	6.9	7.5	2.4	5.1	4.4	3.8	
DEPTH=	3.4	11.1	15.0	17.0	19.6	15.4	12.2	13.3	

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 250.000

250.00	20.76	310.76	299.80	.00	310.93	.17	.59	.02	294.00
50000.	8419.	6929.	34652.	2076.	3455.	10608.	3297.	240.	294.00
.74	4.05	2.01	3.27	.045	.140	.067	.000	290.00	2268.53
.000668	705.	740.	790.	2	8	0	.00	1275.38	3543.91

FLOW DISTRIBUTION FOR SECNO= 250.00 CWSEL= 310.76

STA=	2269.	2461.	2551.	2567.	2741.	2947.	2973.	3001.	3023.	3054.	3089.	3130.	3185.
PER Q=	3.3	12.7	.9	13.9	10.2	3.2	3.8	3.4	4.3	3.9	3.5	4.5	
AREA=	642.5	1183.1	250.5	3455.3	3070.0	377.7	434.8	375.3	490.0	481.4	486.6	629.0	
VEL=	2.6	5.4	1.7	2.0	1.7	4.2	4.4	4.6	4.4	4.0	3.6	3.6	
DEPTH=	3.3	13.1	15.8	19.9	14.9	14.8	15.8	16.8	15.8	13.8	11.8	11.5	

STA=	3185.	3222.	3249.	3439.	3495.	3544.
PER Q=	4.4	3.0	20.9	3.4	.8	
AREA=	533.9	378.2	2610.6	531.5	208.9	
VEL=	4.1	4.0	4.0	3.2	2.0	
DEPTH=	14.5	13.8	13.8	9.5	4.3	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 260.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

260.00	17.65	311.65	306.19	.00	312.56	.90	1.41	.22	300.00
50000.	909.	10884.	38207.	363.	2561.	4538.	3575.	264.	300.00
.77	2.50	4.25	8.42	.136	.140	.055	.000	294.00	2282.62
.004312	1035.	1025.	1020.	2	14	0	.00	752.46	3035.08

FLOW DISTRIBUTION FOR SECNO= 260.00 CWSEL= 311.65

STA=	2283.	2375.	2545.	2601.	2635.	2685.	2743.	2775.	2796.	2809.	2825.	2856.	2906.
PER Q=	1.8	21.8	10.3	5.2	7.7	9.1	5.8	5.1	3.8	4.4	8.6	9.6	
AREA=	363.5	2561.1	600.7	326.2	481.6	562.7	336.6	266.9	185.7	217.1	421.8	546.8	
VEL=	2.5	4.2	8.6	8.0	8.0	8.0	8.6	9.6	10.1	10.1	10.1	8.8	
DEPTH=	3.9	15.1	10.7	9.7	9.7	9.7	10.7	12.7	13.7	13.7	13.7	11.1	

STA=	2906.	2962.	3035.
PER Q=	5.4	1.4	
AREA=	409.0	182.6	
VEL=	6.7	3.7	
DEPTH=	7.2	2.5	

1490 NH CARD USED
*SECNO 270.000

270.00	16.82	314.82	307.73	.00	315.36	.55	2.77	.04	300.00
49000.	6620.	7842.	34538.	2678.	2596.	5052.	3768.	286.	304.00
.82	2.47	3.02	6.84	.095	.140	.055	.000	298.00	1867.70
.002129	985.	965.	930.	2	11	0	.00	1283.88	3151.57

FLOW DISTRIBUTION FOR SECNO= 270.00 CWSEL= 314.82

STA=	1868.	2394.	2510.	2679.	2721.	2802.	2883.	2900.	2961.	2995.	3072.	3152.
PER Q=	8.1	5.4	16.0	5.7	15.6	18.4	3.9	16.9	5.5	3.7	.9	
AREA=	1546.3	1131.8	2595.8	454.2	1089.0	1199.9	251.8	1018.0	408.8	449.4	180.5	
VEL=	2.6	2.3	3.0	6.1	7.0	7.5	7.5	8.1	6.5	4.0	2.4	
DEPTH=	2.9	9.8	15.4	10.8	13.4	14.8	14.8	16.7	12.2	5.8	2.3	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
280.00	16.53	316.53	308.55	.00	316.70	.17	1.30	.04	306.00
49000.	6210.	2786.	40004.	4250.	1521.	11258.	4093.	320.	306.00
.91	1.46	1.83	3.55	.129	.140	.063	.000	300.00	482.86
.000829	1045.	1040.	1030.	3	11	0	.00	1549.27	2032.13

1490 NH CARD USED
*SECNO 280.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

FLOW DISTRIBUTION FOR SECNO= 280.00 CWSEL= 316.53

STA=	483.	950.	958.	1060.	1242.	1340.	1370.	1408.	1502.	1570.	1635.	1690.	1800.
PER Q=	12.4	.3	5.7	5.7	7.1	3.7	4.0	8.5	7.3	6.1	4.7	13.4	
AREA=	4165.5	84.3	1521.4	1917.1	1180.3	406.0	468.3	1060.1	852.3	749.7	604.3	1488.7	
VEL=	1.5	1.5	1.8	1.5	3.0	4.4	4.1	3.9	4.2	4.0	3.8	4.4	
DEPTH=	8.9	10.5	14.9	10.5	12.0	13.5	12.3	11.3	12.5	11.5	11.0	13.5	

STA=	1800.	1830.	1850.	1933.	1995.	2032.
PER Q=	4.6	3.4	8.2	4.2	.7	
AREA=	466.0	330.7	991.3	591.1	152.2	
VEL=	4.8	5.0	4.1	3.5	2.4	
DEPTH=	15.5	16.5	11.9	9.5	4.1	

*SECNO 285.000

285.00	15.04	317.04	309.79	.00	317.20	.15	.50	.00	306.00
49000.	4435.	1793.	42771.	1924.	1174.	13069.	4351.	346.	310.00
.97	2.31	1.53	3.27	.060	.140	.055	.000	302.00	341.11
.000650	665.	670.	680.	2	14	0	.00	1805.85	2146.96

FLOW DISTRIBUTION FOR SECNO= 285.00 CWSEL= 317.04

STA=	341.	626.	707.	792.	910.	1063.	1232.	1288.	1337.	1513.	1601.	1786.	1842.
PER Q=	4.2	4.9	3.7	8.6	13.6	13.0	4.3	3.2	6.8	4.9	12.0	5.3	
AREA=	1109.2	814.5	1174.1	1240.1	1842.6	1869.6	621.7	493.1	1268.3	798.5	1836.8	701.9	
VEL=	1.8	2.9	1.5	3.4	3.6	3.4	3.4	3.2	2.6	3.0	3.2	3.7	
DEPTH=	3.9	10.0	13.7	10.6	12.0	11.0	11.0	10.0	7.2	9.0	10.0	12.5	

STA=	1842.	1982.	2136.	2147.
PER Q=	12.5	3.1	.0	
AREA=	1693.3	697.4	5.8	
VEL=	3.6	2.2	.4	
DEPTH=	12.0	4.5	.5	

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 290.000

3265 DIVIDED FLOW

   290.00    15.51   317.51   311.73      .00   317.69      .18      .48      .01   308.00
   49000.    8388.    2341.   38271.    2156.    1361.   11343.    4581.     373.    310.00
     1.02     3.89     1.72     3.37     .040     .140     .055     .000   302.00  2223.99
  .000872     645.     645.     645.        1       20        0      .00  1848.62  4166.36


FLOW DISTRIBUTION FOR SECNO=    290.00          CWSEL=    317.51

STA=    2224.    2460.    2545.    2655.    2759.    2834.    2932.    3041.    3091.    3243.    3411.    3646.    3701.
  PER Q=      4.3      4.1      8.8      4.8      4.3      6.0      5.9      3.5      9.9      4.8     19.3      3.2
   AREA=    681.8    535.2    939.1   1360.5    639.4    865.8    888.7    480.4   1385.9    788.7   2468.7    464.9
    VEL=      3.1      3.8      4.6      1.7      3.3      3.4      3.2      3.6      3.5      3.0      3.8      3.3
  DEPTH=      2.9      6.3      8.5     13.1      8.5      8.8      8.2      9.5      9.1      4.7     10.5      8.5

STA=    3701.    3811.    4078.    4166.
  PER Q=      3.5     15.4      2.3
   AREA=    648.5   2275.8    436.7
    VEL=      2.7      3.3      2.6
  DEPTH=      5.9      8.5      4.9

1490 NH CARD USED
*SECNO 300.000

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2340.0    4140.0  TYPE=      1  TARGET=     1800.000
   300.00    12.24   318.24   314.09      .00   318.55      .31      .83      .04   312.00
   49000.    3664.    3237.   42099.     830.    1596.    9134.    4783.     400.    314.00
     1.07     4.41     2.03     4.61     .040     .140     .055     .000   306.00  2340.00
  .001892     655.     660.     670.        2       11        0      .00  1645.29  4023.24


FLOW DISTRIBUTION FOR SECNO=    300.00          CWSEL=    318.24
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=    2340.    2536.    2709.    2823.    2917.    2990.    3029.    3091.    3151.    3255.    3416.    3537.    3737.
  PER Q=      7.5      6.6      5.4     10.9      8.4      4.6      7.1      6.0      6.7      8.2      3.0      6.7
   AREA=    830.1   1595.9    712.2    960.8    741.6    408.7    627.9    565.1    750.4   1004.5    467.6    861.4
    VEL=      4.4      2.0      3.7      5.5      5.5      5.5      5.5      5.2      4.4      4.0      3.2      3.8
  DEPTH=      4.2      9.3      6.2     10.2     10.2     10.2     10.2      9.3      7.2      6.2      3.9      4.3

STA=    3737.    3852.    3908.    3967.    4007.    4023.
  PER Q=      5.9      3.0      6.8      3.0       .1
   AREA=    722.9    364.4    602.3    315.9     27.9
    VEL=      4.0      4.1      5.5      4.7      1.8
  DEPTH=      6.2      6.6     10.2      7.9      1.7

*SECNO 310.000

3470 ENCROACHMENT STATIONS=     2460.0    4230.0  TYPE=      1  TARGET=     1770.000
        CONFLUENCE WITH SYCAMORE CREEK
   310.00    11.19   319.19   313.84      .00   319.41      .22      .85      .01   314.00
   49000.    2135.    1304.   45561.     764.     959.   11907.    4957.     423.    316.00
     1.11     2.79     1.36     3.83     .040     .140     .055     .000   308.00  2460.00
  .001086     620.     610.     600.        2       14        0      .00  1766.44  4226.44

FLOW DISTRIBUTION FOR SECNO=    310.00          CWSEL=    319.19

STA=    2460.    2698.    2822.    2944.    3016.    3085.    3160.    3297.    3422.    3550.    3687.    4070.    4130.
  PER Q=      4.4      2.7      6.2      5.3      4.4      3.7      6.7      7.0      6.7      5.3     38.4      5.2
   AREA=    764.0    958.9    886.5    659.9    581.7    539.3    985.2    980.3    955.2    854.7   4246.5    611.5
    VEL=      2.8      1.4      3.4      3.9      3.7      3.3      3.3      3.5      3.4      3.0      4.4      4.2
  DEPTH=      3.2      7.7      7.3      9.2      8.4      7.2      7.2      7.8      7.5      6.2     11.1     10.2

STA=    4130.    4191.    4226.
  PER Q=      3.7       .5
   AREA=    501.3    105.4
    VEL=      3.6      2.3
  DEPTH=      8.2      3.0

*SECNO 320.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS=      950.0    2300.0  TYPE=      1  TARGET=     1350.000
       CONFLUENCE WITH FORRESTER CREEK
   320.00    10.71   320.71   317.84      .00   321.33      .62     1.80      .12   316.00
   49000.     804.   11393.   36803.     125.    2969.    5342.    5164.     452.    312.00
     1.15     6.41     3.84     6.89     .040     .140     .055     .000   310.00   950.00
  .006472     665.     750.     840.        2       16        0      .00  1329.07  2279.07


FLOW DISTRIBUTION FOR SECNO=    320.00          CWSEL=    320.71

STA=     950.     989.    1300.    1478.    1670.    1786.    1961.    2203.    2279.
  PER Q=      1.6     23.3     18.8     19.4      9.4     10.3     14.2      2.9
   AREA=    125.4   2968.7   1194.1   1251.5    663.2    824.2   1142.8    266.5
    VEL=      6.4      3.8      7.7      7.6      6.9      6.1      6.1      5.3
  DEPTH=      3.2      9.5      6.7      6.5      5.7      4.7      4.7      3.5

*SECNO 330.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS=     1280.0    2300.0  TYPE=      1  TARGET=     1020.000
   330.00    11.86   323.86   318.57      .00   324.31      .45     2.96      .02   314.00
   48000.   23228.    8457.   16315.    4076.    1844.    3082.    5317.     472.    314.00
     1.19     5.70     4.59     5.29     .060     .085     .060     .000   312.00  1326.43
  .002586     870.     780.     700.        2       14        0      .00   956.22  2282.65


FLOW DISTRIBUTION FOR SECNO=    330.00          CWSEL=    323.86

STA=    1326.    1393.    1760.    1917.    2113.    2240.    2283.
  PER Q=      4.8     43.6     17.6     19.4     12.6      2.0
   AREA=    459.4   3617.0   1844.3   1734.4   1120.2    227.8
    VEL=      5.0      5.8      4.6      5.4      5.4      4.2
  DEPTH=      6.9      9.9     11.7      8.8      8.9      5.3

*SECNO 340.000

3470 ENCROACHMENT STATIONS=     1200.0    2180.0  TYPE=      1  TARGET=      980.000
   340.00    15.21   325.21   319.00      .00   325.58      .38     1.27      .01   320.00
   48000.    8121.   21991.   17888.    1597.    5023.    3278.    5428.     483.    318.00
     1.22     5.08     4.38     5.46     .060     .085     .060     .000   310.00  1203.68
  .002399     520.     505.     505.        2       19        0      .00   976.32  2180.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    340.00          CWSEL=    325.21

STA=    1204.    1391.    1410.    1843.    1891.    2180.
  PER Q=     15.7      1.2     45.8      3.2     34.0
   AREA=   1463.4    133.9   5023.5    342.1   2935.7
    VEL=      5.1      4.4      4.4      4.5      5.6
  DEPTH=      7.8      7.0     11.6      7.2     10.1

*SECNO 345.000

3470 ENCROACHMENT STATIONS=     1210.0    2270.0  TYPE=      1  TARGET=     1060.000
   345.00    13.96   325.96   320.63      .00   326.39      .43      .79      .02   322.00
   48000.   12602.   25559.    9839.    2210.    5215.    1765.    5489.     490.    324.00
     1.23     5.70     4.90     5.57     .060     .085     .060     .000   312.00  1210.00
  .003338     320.     280.     250.        2       11        0      .00  1060.00  2270.00


FLOW DISTRIBUTION FOR SECNO=    345.00          CWSEL=    325.96

STA=    1210.    1312.    1445.    1490.    1510.    1996.    2266.    2270.
  PER Q=      4.3     17.6      3.7       .7     53.2     20.3       .2
   AREA=    503.0   1294.1    327.7     85.4   5214.9   1733.9     31.4
    VEL=      4.1      6.5      5.4      3.8      4.9      5.6      2.8
  DEPTH=      4.9      9.7      7.3      4.3     10.7      6.4      7.7

CCHV=     .300 CEHV=     .500
*SECNO 355.000

3470 ENCROACHMENT STATIONS=     1370.0    2370.0  TYPE=      1  TARGET=     1000.000
   355.00    13.04   327.04   322.71      .00   327.55      .51     1.12      .04   322.00
   48000.   11842.   30686.    5473.    2099.    5385.     868.    5546.     496.    322.00
     1.25     5.64     5.70     6.31     .060     .085     .060     .000   314.00  1370.00
  .004759     275.     285.     295.        2       14        0      .00  1000.00  2370.00


FLOW DISTRIBUTION FOR SECNO=    355.00          CWSEL=    327.04

STA=    1370.    1492.    1531.    1695.    1702.    1731.    2254.    2287.    2303.    2306.    2370.
  PER Q=      4.7      2.8     15.1       .5      1.5     63.9      1.7      1.1       .3      8.2
   AREA=    517.2    234.8   1156.7     44.7    146.0   5385.1    166.2     94.8     24.1    582.8
    VEL=      4.4      5.7      6.3      5.5      5.0      5.7      5.0      5.6      6.1      6.8
  DEPTH=      4.2      6.0      7.0      6.0      5.0     10.3      5.0      6.0      8.0      9.0
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 356.000

3470 ENCROACHMENT STATIONS=     1340.0    2290.0  TYPE=      1  TARGET=      950.000
   356.00    12.43   328.43   325.38      .00   329.29      .86     1.57      .17   316.00
   48000.   11547.   35451.    1002.    1918.    4505.     136.    5589.     502.    320.00
     1.25     6.02     7.87     7.36     .060     .085     .060     .000   316.00  1340.00
  .008642     250.     250.     250.        2       15        0      .00   950.00  2290.00


FLOW DISTRIBUTION FOR SECNO=    356.00          CWSEL=    328.43

STA=    1340.    1497.    1678.    1813.    1836.    2258.    2290.
  PER Q=      8.8      6.8      4.1      4.4     73.9      2.1
   AREA=    694.3    623.4    391.3    208.7   4505.1    136.2
    VEL=      6.1      5.2      5.0     10.1      7.9      7.4
  DEPTH=      4.4      3.4      2.9      9.2     10.7      4.3


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      .90      1.60      2.75       .00    450.00     77.00   3112.00      2.00    318.00    318.00

*SECNO 358.000
BTCARD  BRIDGE STENCL=    1340.00   STENCR=    2300.00
6870 D.S. ENERGY OF   329.29 IS HIGHER THAN COMPUTED ENERGY OF   328.59

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

PRESSURE AND WEIR FLOW


 EGPRS      EGLWC       H3       QWEIR      QPR       BAREA    TRAPEZOID      ELLC     ELTRD     WEIRLN
                                                              AREA
    328.59    328.57       .01    40063.     7911.     3112.     3112.      326.00    324.00      442.



3470 ENCROACHMENT STATIONS=     1340.0    2300.0  TYPE=      1  TARGET=      960.000
        CARLTON HILLS BLVD BRIDGE  (SPECIAL BRIDGE ROUTINE)
   358.00    12.06   328.06      .00      .00   329.29     1.23      .00      .00   316.00
   48000.    6928.   41055.      17.    1891.    4321.       7.    5598.     503.    326.00
     1.26     3.66     9.50     2.40     .060     .040     .030     .000   316.00  1340.00
  .003023      65.      65.      65.        3        0        8      .00   960.00  2300.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    358.00          CWSEL=    328.06

STA=    1340.    1497.    1678.    1788.    1795.    1813.    1822.    1829.    1850.    2278.    2284.    2300.
  PER Q=      4.5      3.3      1.0       .1       .8       .6       .8      3.2     85.5       .0       .0
   AREA=    636.8    556.7    225.4     21.8     94.7     62.9     63.4    229.0   4320.5      6.1      1.0
    VEL=      3.4      2.9      2.2      2.8      4.0      4.9      5.8      6.7      9.5      2.7       .4
  DEPTH=      4.1      3.1      2.1      3.1      5.1      7.1      9.1     11.1     10.1      1.1       .1

*SECNO 360.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     1530.0    2600.0  TYPE=      1  TARGET=     1070.000
   360.00    13.95   329.95   323.27      .00   330.30      .35      .75      .26   320.00
   48000.   37141.    8473.    2386.    7283.    2302.    1068.    5664.     511.    320.00
     1.28     5.10     3.68     2.23     .060     .085     .085     .000   316.00  1530.00
  .001662     335.     345.     355.        2       14        0      .00  1070.00  2600.00


FLOW DISTRIBUTION FOR SECNO=    360.00          CWSEL=    329.95

STA=    1530.    1879.    1920.    2012.    2113.    2187.    2383.    2600.
  PER Q=     36.2      5.4     15.4     13.2      7.2     17.7      5.0
   AREA=   3580.7    489.9   1270.0   1204.5    738.2   2301.8   1068.0
    VEL=      4.9      5.3      5.8      5.3      4.7      3.7      2.2
  DEPTH=     10.3     11.9     13.8     11.9      9.9     11.7      4.9

CCHV=     .100 CEHV=     .300
*SECNO 370.000

3470 ENCROACHMENT STATIONS=     1470.0    2820.0  TYPE=      1  TARGET=     1350.000
   370.00    12.57   330.57   324.06      .00   330.80      .23      .49      .01   320.00
   48000.   35160.    3677.    9164.    8329.    1138.    3760.    5759.     521.    320.00
     1.30     4.22     3.23     2.44     .060     .085     .085     .000   318.00  1470.00
  .001206     345.     345.     350.        2       18        0      .00  1344.56  2814.56


FLOW DISTRIBUTION FOR SECNO=    370.00          CWSEL=    330.57
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=    1470.    1542.    1590.    1630.    1725.    1835.    2155.    2204.    2234.    2326.    2642.    2740.    2815.
  PER Q=      5.0      4.4      4.2     11.6     11.7     29.1      4.5      2.8      7.7     14.4      3.6      1.0
   AREA=    674.2    510.4    460.4   1194.0   1272.5   3377.6    518.9    321.3   1137.7   2718.3    741.7    299.6
    VEL=      3.6      4.1      4.4      4.6      4.4      4.1      4.1      4.1      3.2      2.6      2.3      1.6
  DEPTH=      9.4     10.6     11.6     12.6     11.6     10.6     10.6     10.6     12.3      8.6      7.6      4.0

*SECNO 380.000

3470 ENCROACHMENT STATIONS=     1540.0    2960.0  TYPE=      1  TARGET=     1420.000
   380.00    12.97   330.97   324.77      .00   331.20      .23      .40      .00   320.00
   48000.   33764.    2402.   11834.    8047.     704.    4449.    5856.     531.    320.00
     1.33     4.20     3.41     2.66     .060     .085     .085     .000   318.00  1540.00
  .001305     320.     320.     320.        2       11        0      .00  1420.00  2960.00


FLOW DISTRIBUTION FOR SECNO=    380.00          CWSEL=    330.97

STA=    1540.    1758.    1793.    1860.    1931.    1968.    2064.    2199.    2262.    2381.    2436.    2585.    2817.
  PER Q=     17.4      4.5      6.9      7.2      3.7      8.3      3.9      6.4     12.0      5.0      7.8     11.8
   AREA=   2054.6    441.0    746.4    784.7    399.5    959.5    660.1    700.2   1301.5    703.7   1355.1   2083.8
    VEL=      4.1      4.9      4.5      4.4      4.4      4.1      2.9      4.4      4.4      3.4      2.8      2.7
  DEPTH=      9.4     12.8     11.2     11.0     11.0     10.0      4.9     11.0     11.0     12.7      9.1      9.0

STA=    2817.    2918.    2960.
  PER Q=      4.2       .8
   AREA=    803.0    207.0
    VEL=      2.5      1.9
  DEPTH=      8.0      4.9

*SECNO 390.000

3470 ENCROACHMENT STATIONS=     1680.0    2740.0  TYPE=      1  TARGET=     1060.000
   390.00    13.74   331.74   326.44      .00   332.14      .40      .89      .05   324.00
   48000.   32610.    6858.    8531.    5801.    1658.    2617.    5995.     546.    324.00
     1.35     5.62     4.14     3.26     .060     .085     .085     .000   318.00  1680.00
  .002339     520.     520.     520.        2       23        0      .00  1060.00  2740.00


FLOW DISTRIBUTION FOR SECNO=    390.00          CWSEL=    331.74
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=    1680.    1728.    1775.    1781.    1822.    1859.    1862.    1908.    2195.    2220.    2250.    2402.    2740.
  PER Q=      4.7      5.2       .8      7.1      7.3       .5      6.0     31.8      2.3      2.3     14.3     17.8
   AREA=    467.7    457.9     64.5    522.5    508.5     38.2    494.2   2796.2    218.6    232.3   1657.9   2617.1
    VEL=      4.8      5.5      5.6      6.5      6.9      5.8      5.8      5.5      5.1      4.7      4.1      3.3
  DEPTH=      9.7      9.7     10.7     12.7     13.7     12.7     10.7      9.7      8.7      7.7     10.9      7.7

*SECNO 400.000

3470 ENCROACHMENT STATIONS=     1749.0    2605.0  TYPE=      1  TARGET=      856.000
        DOWNSTREAM END MISSION CREEK DEVELOPMENT
   400.00    14.86   332.86   323.70      .00   333.16      .30     1.00      .01   320.00
   48000.    5050.   40249.    2701.     987.    9576.     504.    6137.     559.    320.00
     1.39     5.12     4.20     5.36     .040     .075     .040     .000   318.00  1749.00
  .001257     705.     540.     495.        2       14        0      .00   856.00  2605.00


FLOW DISTRIBUTION FOR SECNO=    400.00          CWSEL=    332.86

STA=    1749.    1793.    1858.    1878.    2532.    2557.    2605.
  PER Q=      4.2      3.6      2.7     83.9      3.8      1.8
   AREA=    384.0    394.0    208.6   9575.7    282.0    221.7
    VEL=      5.2      4.4      6.3      4.2      6.5      3.9
  DEPTH=      8.8      6.0     10.6     14.6     11.1      4.6

1490 NH CARD USED
*SECNO 410.000

3470 ENCROACHMENT STATIONS=     2970.0    3720.0  TYPE=      1  TARGET=      750.000
   410.00    15.65   333.65   324.11      .00   334.00      .35      .83      .02   320.00
   48000.    2801.   42632.    2568.     578.    8982.     501.    6307.     572.    320.00
     1.43     4.84     4.75     5.12     .040     .065     .040     .000   318.00  2970.00
  .001118     672.     700.     726.        2       18        0      .00   750.00  3720.00


FLOW DISTRIBUTION FOR SECNO=    410.00          CWSEL=    333.65

STA=    2970.    3054.    3065.    3646.    3668.    3720.
  PER Q=      3.8      2.1     88.8      3.4      2.0
   AREA=    429.2    149.2   8982.0    254.1    247.0
    VEL=      4.2      6.7      4.7      6.3      3.9
  DEPTH=      5.1     12.6     15.5     11.7      4.7
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 415.000

3470 ENCROACHMENT STATIONS=     3200.0    3945.0  TYPE=      1  TARGET=      745.000
   415.00    16.47   334.47   324.08      .00   334.77      .30      .76      .01   320.00
   48000.    2283.   42196.    3521.     465.    9877.     705.    6496.     585.    320.00
     1.48     4.91     4.27     4.99     .040     .065     .040     .000   318.00  3200.00
  .000859     765.     780.     800.        2       18        0      .00   745.00  3945.00


FLOW DISTRIBUTION FOR SECNO=    415.00          CWSEL=    334.47

STA=    3200.    3245.    3252.    3865.    3895.    3945.
  PER Q=      3.5      1.3     87.9      4.6      2.7
   AREA=    365.4     99.7   9877.0    378.8    326.5
    VEL=      4.6      6.0      4.3      5.9      4.0
  DEPTH=      8.1     13.5     16.1     12.6      6.5

1490 NH CARD USED
*SECNO 420.000

3470 ENCROACHMENT STATIONS=     3378.9    4065.0  TYPE=      1  TARGET=      686.100
   420.00    16.92   334.92   325.37      .00   335.34      .42      .53      .04   320.00
   48000.    3536.   39702.    4762.     525.    8251.     694.    6609.     593.    320.00
     1.51     6.74     4.81     6.86     .040     .075     .040     .000   318.00  3404.69
  .001490     480.     480.     480.        2       14        0      .00   660.31  4065.00


FLOW DISTRIBUTION FOR SECNO=    420.00          CWSEL=    334.92

STA=    3405.    3455.    3467.    3989.    4009.    4032.    4065.
  PER Q=      4.4      3.0     82.7      4.8      3.6      1.5
   AREA=    351.0    174.0   8250.5    278.4    247.9    167.6
    VEL=      6.0      8.2      4.8      8.3      7.0      4.4
  DEPTH=      7.0     13.9     15.8     13.9     10.8      5.1

*SECNO 421.000

3301 HV CHANGED MORE THAN HVINS
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   421.00    10.98   334.98   331.64      .00   336.66     1.69      .95      .38   325.00
   48000.    2496.   45230.     273.     245.    4329.      41.    6670.     598.    328.00
     1.52    10.19    10.45     6.69     .040     .050     .040     .000   324.00  2612.20
  .005157     375.     375.     375.        2       14        0      .00   448.16  3060.37


FLOW DISTRIBUTION FOR SECNO=    421.00          CWSEL=    334.98

STA=    2612.    2618.    2625.    2628.    2640.    2650.    3049.    3053.    3056.    3059.    3060.
  PER Q=       .0       .4       .3      2.2      2.3     94.2       .3       .2       .0       .0
   AREA=      6.9     27.9     18.5    100.6     91.0   4328.8     20.9     14.3      4.8       .9
    VEL=      3.3      6.5      7.8     10.6     11.9     10.4      8.0      6.1      3.5      1.5
  DEPTH=      1.2      4.0      6.0      8.0      9.5     10.8      6.0      4.0      2.0       .5

CCHV=     .300 CEHV=     .500
*SECNO 422.000

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD=  53 MIN ELTRD=   344.00 MAX ELLC=   342.00

        CUYAMACA BRIDGE - UPSTREAM END OF MISSION CREEK  DEVELOPMENT
        (NORMAL BRIDGE ROUTINE)
   422.00    10.44   334.44   332.77      .00   337.32     2.88      .06      .60   326.00
   48000.    1541.   46032.     427.     149.    3347.      68.    6671.     598.    326.00
     1.52    10.32    13.75     6.28     .040     .030     .040     .000   324.00  2613.66
  .006428      10.      10.      10.        2       12        0  -800.78   445.74  3059.41


FLOW DISTRIBUTION FOR SECNO=    422.00          CWSEL=    334.44

STA=    2614.    2618.    2628.    2645.    3045.    3049.    3053.    3056.    3059.    3059.
  PER Q=       .0       .2      3.0     95.9       .4       .3       .2       .0       .0
   AREA=      4.3     16.9    128.1   3346.9     32.8     19.1     12.4      3.5       .2
    VEL=      2.2      4.8     11.3     13.8      5.4      8.4      6.2      3.2      1.0
  DEPTH=      1.1      1.7      7.4      8.4      7.4      5.4      3.4      1.4       .2
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 423.000

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE, NRD= 53 MIN ELTRD= 344.00 MAX ELLC= 342.00

423.00	11.48	335.48	332.76	.00	337.84	2.35	.36	.16	326.00
48000.	1678.	45821.	501.	176.	3681.	84.	6676.	598.	326.00
1.52	9.54	12.45	5.96	.040	.030	.040	.000	324.00	4610.83
.004874	65.	65.	65.	3	9	0	-886.37	450.44	5061.26

FLOW DISTRIBUTION FOR SECNO= 423.00 CWSEL= 335.48

STA=	4611.	4615.	4618.	4628.	4645.	5045.	5049.	5053.	5056.	5059.	5061.
PER Q=	.0	.0	.2	3.3	95.5	.4	.4	.2	.0	.0	
AREA=	3.0	6.9	20.1	145.9	3680.7	37.3	22.7	16.1	6.0	2.0	
VEL=	2.0	2.6	4.4	10.7	12.4	4.9	8.2	6.4	4.0	1.9	
DEPTH=	.7	2.5	2.0	8.5	9.2	8.5	6.5	4.5	2.5	.7	

1490 NH CARD USED
*SECNO 424.000

424.00	10.18	336.18	333.45	.00	338.04	1.86	.06	.15	326.00
48000.	1281.	44712.	2007.	164.	4032.	221.	6677.	599.	326.00
1.52	7.81	11.09	9.10	.050	.050	.050	.000	326.00	4627.73
.006311	10.	10.	10.	3	14	0	.00	462.23	5089.96

FLOW DISTRIBUTION FOR SECNO= 424.00 CWSEL= 336.18

STA=	4628.	4659.	5055.	5070.	5090.
PER Q=	2.7	93.1	3.0	1.2	
AREA=	163.9	4031.7	140.1	80.4	
VEL=	7.8	11.1	10.3	7.0	
DEPTH=	5.3	10.2	9.2	4.1	

1490 NH CARD USED
*SECNO 425.000

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     4365.0    5270.0  TYPE=      1  TARGET=      905.000
   425.00    12.72   338.72   333.13      .00   339.19      .48      .74      .41   328.00
   48000.   20635.   17356.   10009.    3531.    3806.    1574.    6714.     602.    328.00
     1.53     5.84     4.56     6.36     .045     .075     .045     .000   326.00  4365.00
  .001849     285.     225.     215.        2       19        0      .00   905.00  5270.00


FLOW DISTRIBUTION FOR SECNO=    425.00          CWSEL=    338.72

STA=    4365.    4372.    4382.    4456.    4627.    4806.    5113.    5270.
  PER Q=       .0       .3      4.0     15.2     23.5     36.2     20.9
   AREA=      9.9     37.5    427.7   1314.3   1741.4   3805.9   1574.2
    VEL=      1.8      3.4      4.5      5.5      6.5      4.6      6.4
  DEPTH=      1.5      3.7      5.7      7.7      9.7     12.4     10.0
CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 430.000

3470 ENCROACHMENT STATIONS=     4540.0    6200.0  TYPE=      1  TARGET=     1660.000
   430.00    13.61   339.61   334.34      .00   339.97      .36      .77      .01   328.00
   48000.   11260.   10256.   26483.    3462.    2454.    4772.    6821.     617.    328.00
     1.56     3.25     4.18     5.55     .045     .075     .045     .000   326.00  4540.00
  .001412     495.     470.     465.        2       14        0      .00  1660.00  6200.00


FLOW DISTRIBUTION FOR SECNO=    430.00          CWSEL=    339.61

STA=    4540.    5036.    5323.    5505.    5521.    5705.    5850.    6200.
  PER Q=      5.7      6.3      9.7      1.8     21.4     16.5     38.6
   AREA=   1163.1   1034.7   1112.0    152.5   2453.5   1406.6   3365.4
    VEL=      2.3      2.9      4.2      5.6      4.2      5.6      5.5
  DEPTH=      2.3      3.6      6.1      9.8     13.3      9.7      9.6
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 440.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 4030.0 5760.0 TYPE= 1 TARGET= 1730.000

440.00	12.57	340.57	337.09	.00	341.14	.56	1.10	.06	330.00
46000.	27332.	12914.	5754.	4372.	2140.	1248.	6936.	638.	330.00
1.59	6.25	6.03	4.61	.045	.075	.045	.000	328.00	4030.00
.003251	535.	545.	550.	2	23	0	.00	1730.00	5760.00

FLOW DISTRIBUTION FOR SECNO= 440.00 CWSEL= 340.57

STA=	4030.	4525.	4719.	5052.	5085.	5107.	5119.	5292.	5311.	5369.	5443.	5760.
PER Q=	4.6	3.8	39.3	6.9	3.3	1.6	28.1	3.0	3.5	3.5	2.6	
AREA=	736.1	499.3	2499.9	347.9	192.1	96.6	2140.1	172.0	289.1	317.6	469.6	
VEL=	2.8	3.5	7.2	9.1	7.8	7.6	6.0	8.1	5.5	5.0	2.5	
DEPTH=	1.5	2.6	7.5	10.6	8.6	8.5	12.4	9.0	5.0	4.3	1.5	

1490 NH CARD USED
*SECNO 450.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 4030.0 5680.0 TYPE= 1 TARGET= 1650.000

450.00	13.22	341.22	334.54	.00	341.65	.43	.50	.01	330.00
46000.	7100.	38473.	428.	3569.	6768.	466.	7054.	658.	330.00
1.62	1.99	5.68	.92	.055	.030	.055	.000	328.00	4193.38
.000423	575.	530.	545.	2	11	0	.00	1486.62	5680.00

FLOW DISTRIBUTION FOR SECNO= 450.00 CWSEL= 341.22

STA=	4193.	4641.	4820.	4865.	5378.	5680.
PER Q=	7.0	7.3	1.1	83.6	.9	
AREA=	1808.6	1481.8	278.5	6768.3	465.6	
VEL=	1.8	2.3	1.9	5.7	.9	
DEPTH=	4.0	8.3	6.3	13.2	1.5	

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 460.000

3470 ENCROACHMENT STATIONS=     4025.0    5620.0  TYPE=      1  TARGET=     1595.000
   460.00    13.51   341.51   333.19      .00   341.81      .29      .15      .01   330.00
   46000.    3030.   42547.     422.    2359.    9446.     510.    7173.     674.    330.00
     1.65     1.28     4.50      .83     .055     .030     .055     .000   328.00  4032.84
  .000260     480.     440.     425.        2       18        0      .00  1587.16  5620.00


FLOW DISTRIBUTION FOR SECNO=    460.00          CWSEL=    341.51

STA=    4033.    4582.    4626.    5331.    5620.
  PER Q=      5.6      1.0     92.5       .9
   AREA=   2069.2    289.6   9446.0    510.0
    VEL=      1.2      1.5      4.5       .8
  DEPTH=      3.8      6.6     13.4      1.8

1490 NH CARD USED
*SECNO 470.000

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3700.0    5310.0  TYPE=      1  TARGET=     1610.000
   470.00    13.70   341.70   337.47      .00   342.25      .56      .36      .08   330.00
   46000.   34104.   11301.     595.    5703.    1873.     113.    7311.     697.    330.00
     1.67     5.98     6.03     5.24     .045     .070     .045     .000   328.00  3710.36
  .002639     790.     480.     430.        1       15        0      .00  1361.61  5167.89


FLOW DISTRIBUTION FOR SECNO=    470.00          CWSEL=    341.70

STA=    3710.    4279.    4346.    4372.    4424.    4459.    4698.    4837.    4914.    5002.    5146.    5168.
  PER Q=      9.8      9.1      4.4     11.0      3.1      8.5      5.4      6.1     16.8     24.6      1.3
   AREA=   1419.4    575.0    260.0    587.3    239.9    649.5    563.1    468.4    940.7   1873.0    113.5
    VEL=      3.2      7.3      7.7      8.6      5.9      6.0      4.4      6.0      8.2      6.0      5.2
  DEPTH=      2.5      8.7      9.7     11.5      6.7      2.7      4.0      6.1     10.7     13.0      5.2
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 480.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     2870.0    4250.0  TYPE=      1  TARGET=     1380.000
   480.00    13.90   343.90   343.90      .00   345.96     2.06     1.40      .45   340.00
   46000.    6049.   39621.     330.    1220.    3233.      74.    7353.     705.    340.00
     1.68     4.96    12.25     4.48     .045     .070     .045     .000   330.00  2870.00
  .011345     305.     280.     280.        0        5        0      .00  1096.92  4186.74


FLOW DISTRIBUTION FOR SECNO=    480.00          CWSEL=    343.90

STA=    2870.    3362.    3873.    4125.    4187.
  PER Q=     10.9      2.3     86.1       .7
   AREA=    932.0    288.1   3233.1     73.6
    VEL=      5.4      3.6     12.3      4.5
  DEPTH=      1.9       .6     12.8      1.2

1490 NH CARD USED
*SECNO 483.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2900.0    4240.0  TYPE=      1  TARGET=     1340.000
   483.00    15.96   345.96   344.09      .00   346.74      .78      .66      .13   340.00
   46000.   14528.   28589.    2883.    2996.    3512.     528.    7366.     708.    340.00
     1.68     4.85     8.14     5.46     .045     .070     .045     .000   330.00  2900.00
  .004254     100.     100.     105.        3        5        0      .00  1340.00  4240.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    483.00          CWSEL=    345.96

STA=    2900.    3360.    3450.    3817.    3855.    4098.    4163.    4240.
  PER Q=     21.1      3.5      5.2      1.8     62.1      4.1      2.2
   AREA=   1815.1    319.4    713.9    147.7   3511.7    305.8    222.2
    VEL=      5.4      5.0      3.4      5.5      8.1      6.1      4.5
  DEPTH=      4.0      3.5      2.0      3.8     14.4      4.7      2.9

*SECNO 484.000

3470 ENCROACHMENT STATIONS=     2920.0    4190.0  TYPE=      1  TARGET=     1270.000
   484.00    16.57   346.57   344.90      .00   347.31      .74      .57      .00   342.00
   46000.   21120.   21442.    3437.    3391.    2816.     542.    7384.     711.    342.00
     1.69     6.23     7.61     6.34     .045     .070     .045     .000   330.00  2920.00
  .005626     110.     115.     160.        2       10        0      .00  1270.00  4190.00


FLOW DISTRIBUTION FOR SECNO=    484.00          CWSEL=    346.57

STA=    2920.    2965.    3370.    3473.    3651.    3795.    4061.    4190.
  PER Q=      2.7     27.4      4.6      4.6      6.5     46.6      7.5
   AREA=    200.1   1848.9    367.3    458.8    516.0   2816.2    542.3
    VEL=      6.3      6.8      5.8      4.7      5.8      7.6      6.3
  DEPTH=      4.4      4.6      3.6      2.6      3.6     10.6      4.2

*SECNO 485.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2920.0    4180.0  TYPE=      1  TARGET=     1260.000
        CHUBB LANE CROSSING
   485.00     6.34   346.34   345.55      .00   347.52     1.18      .08      .13   342.00
   46000.   28647.   12983.    4370.    3194.    1631.     477.    7386.     712.    342.00
     1.69     8.97     7.96     9.17     .045     .070     .045     .000   340.00  2920.00
  .012562      10.      10.      10.        2       22        0      .00  1260.00  4180.00


FLOW DISTRIBUTION FOR SECNO=    485.00          CWSEL=    346.34
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=    2920.    2965.    3370.    3473.    3651.    3795.    4061.    4180.
  PER Q=      3.7     37.7      6.2      5.9      8.7     28.2      9.5
   AREA=    189.9   1757.8    344.1    418.6    483.4   1630.6    476.7
    VEL=      9.1      9.9      8.3      6.5      8.3      8.0      9.2
  DEPTH=      4.2      4.3      3.3      2.3      3.3      6.1      4.0

*SECNO 486.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2920.0    4180.0  TYPE=      1  TARGET=     1260.000
   486.00    17.01   347.01   344.97      .00   347.65      .63      .07      .05   342.00
   46000.   22302.   20363.    3336.    3774.    2933.     555.    7387.     712.    342.00
     1.69     5.91     6.94     6.01     .045     .070     .045     .000   330.00  2920.00
  .004433      10.      10.      10.        3       19        0      .00  1260.00  4180.00


FLOW DISTRIBUTION FOR SECNO=    486.00          CWSEL=    347.01

STA=    2920.    2965.    3370.    3473.    3651.    3795.    4061.    4180.
  PER Q=      2.8     28.4      5.0      5.3      7.0     44.3      7.3
   AREA=    220.0   2025.8    412.3    536.8    579.1   2932.6    555.3
    VEL=      5.9      6.4      5.5      4.6      5.5      6.9      6.0
  DEPTH=      4.8      5.0      4.0      3.0      4.0     11.0      4.7

1490 NH CARD USED
*SECNO 490.000

3470 ENCROACHMENT STATIONS=     3060.0    4120.0  TYPE=      1  TARGET=     1060.000
   490.00    17.60   347.60   344.97      .00   348.30      .71      .63      .02   336.00
   46000.   29673.   12939.    3388.    4390.    1746.    1215.    7417.     717.    336.00
     1.70     6.76     7.41     2.79     .040     .070     .093     .000   330.00  3060.00
  .003018     175.     175.     175.        3       13        0      .00  1060.00  4120.00


FLOW DISTRIBUTION FOR SECNO=    490.00          CWSEL=    347.60
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=    3060.    3464.    3544.    3616.    3687.    3749.    3774.    3798.    3905.    4001.    4120.
  PER Q=     31.3      6.3      5.6      5.5      7.6      3.3      4.9     28.1      4.8      2.6
   AREA=   2259.6    448.8    402.9    395.1    453.3    193.7    236.5   1746.2    590.2    624.6
    VEL=      6.4      6.4      6.4      6.4      7.7      7.9      9.4      7.4      3.7      1.9
  DEPTH=      5.6      5.6      5.6      5.6      7.3      7.6     10.0     16.2      6.2      5.3

1490 NH CARD USED
*SECNO 500.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3430.0    4190.0  TYPE=      1  TARGET=      760.000
   500.00    18.41   348.41   340.90      .00   348.87      .47      .55      .02   334.00
   45000.    9276.   24936.   10789.    2206.    4232.    1949.    7508.     727.    334.00
     1.72     4.20     5.89     5.54     .030     .040     .030     .000   330.00  3430.00
  .000546     495.     510.     525.        2       14        0      .00   760.00  4190.00


FLOW DISTRIBUTION FOR SECNO=    500.00          CWSEL=    348.41
STA=    3430.    3696.    3742.    3767.    4005.    4024.    4113.    4140.    4175.    4190.
  PER Q=     12.1      4.1      4.4     55.4      3.1      9.6      3.4      6.1      1.8
   AREA=   1502.6    388.3    315.1   4231.8    226.6    840.9    280.6    439.2    161.9
    VEL=      3.6      4.8      6.2      5.9      6.2      5.2      5.5      6.2      4.9
  DEPTH=      5.7      8.4     12.6     17.7     12.5      9.4     10.4     12.4     11.0

1490 NH CARD USED
*SECNO 507.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

   507.00    14.46   348.46   342.94      .00   349.44      .97      .41      .15   342.00
   45000.     434.   43284.    1282.     330.    5399.     267.    7586.     739.    342.00
     1.74     1.31     8.02     4.80     .035     .040     .040     .000   334.00  1724.40
  .001599     510.     470.     450.        2       11        0      .00  1280.19  4340.90
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    507.00         CWSEL=    348.46

STA=    1724.    3861.    4290.    4341.
  PER Q=      1.0     96.2      2.8
   AREA=    330.4   5398.6    266.9
    VEL=      1.3      8.0      4.8
  DEPTH=       .2     12.6      5.2

CCHV=     .300 CEHV=     .500
*SECNO 508.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3370 NORMAL BRIDGE, NRD=  49 MIN ELTRD=   352.00 MAX ELLC=   352.00
        MAGNOLIA AVE BRIDGE  (NORMAL BRIDGE ROUTINE)
   508.00    14.24   348.24   343.81      .00   349.71     1.47      .02      .25   342.00
   45000.     282.   43411.    1307.     149.    4402.     212.    7588.     739.    342.00
     1.74     1.89     9.86     6.18     .040     .030     .040     .000   334.00  2993.81
  .003368      10.      10.      10.        2       12        0  -941.96  1009.63  4340.11


FLOW DISTRIBUTION FOR SECNO=    508.00         CWSEL=    348.24

STA=    2994.    3861.    4290.    4340.
  PER Q=       .6     96.5      2.9
   AREA=    149.3   4401.9    211.5
    VEL=      1.9      9.9      6.2
  DEPTH=       .2     10.3      4.2

*SECNO 509.000

3265 DIVIDED FLOW
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3370 NORMAL BRIDGE, NRD=  49 MIN ELTRD=   352.00 MAX ELLC=   352.00

   509.00    14.63   348.63   343.83      .00   349.96     1.33      .21      .04   336.00
   45000.    2157.   42568.     274.     613.    4489.      57.    7595.     741.    342.00
     1.74     3.52     9.48     4.79     .040     .030     .040     .000   334.00  2866.31
  .003023      65.      65.      65.        2       12        0  -974.52  1176.70  4341.46


FLOW DISTRIBUTION FOR SECNO=    509.00          CWSEL=    348.63

STA=    2866.    3889.    4322.    4341.
  PER Q=      4.8     94.6       .6
   AREA=    612.8   4488.9     57.3
    VEL=      3.5      9.5      4.8
  DEPTH=       .6     10.4      3.0

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 510.000
3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3864.3    4357.7  TYPE=      1  TARGET=      493.400
   510.00    17.14   349.14   342.66      .00   350.02      .88      .02      .05   342.00
   45000.     347.   44008.     645.      91.    5792.     166.    7596.     741.    341.00
     1.74     3.82     7.60     3.89     .040     .040     .040     .000   332.00  3864.30
  .001326      10.      10.      10.        2       19        0      .00   493.40  4357.70


FLOW DISTRIBUTION FOR SECNO=    510.00          CWSEL=    349.14

STA=    3864.    3885.    4317.    4358.
  PER Q=       .8     97.8      1.4
   AREA=     90.6   5791.7    165.7
    VEL=      3.8      7.6      3.9
  DEPTH=      4.3     13.4      4.1

1490 NH CARD USED
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 515.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3640.0    4470.0  TYPE=      1  TARGET=      830.000
   515.00    18.03   350.03   337.92      .00   350.20      .17      .11      .07   334.00
   45000.   12449.   31700.     851.    4191.    9217.     306.    7658.     745.    334.00
     1.77     2.97     3.44     2.78     .040     .040     .040     .000   332.00  3640.00
  .000182     250.     275.     350.        2       22        0      .00   830.00  4470.00


FLOW DISTRIBUTION FOR SECNO=    515.00          CWSEL=    350.03

STA=    3640.    3935.    4448.    4470.
  PER Q=     27.7     70.4      1.9
   AREA=   4190.5   9217.5    305.7
    VEL=      3.0      3.4      2.8
  DEPTH=     14.2     18.0     13.8

1490 NH CARD USED
*SECNO 520.000

3470 ENCROACHMENT STATIONS=     4240.0    5000.0  TYPE=      1  TARGET=      760.000
   520.00    18.05   350.05   338.87      .00   350.34      .30      .11      .04   334.00
   45000.    3520.   39700.    1781.    1199.    8757.     756.    7812.     755.    334.00
     1.80     2.94     4.53     2.36     .040     .031     .040     .000   332.00  4240.00
  .000200     515.     560.     590.        2       18        0      .00   711.61  4951.61


FLOW DISTRIBUTION FOR SECNO=    520.00          CWSEL=    350.05

STA=    4240.    4348.    4855.    4920.    4952.
  PER Q=      7.8     88.2      3.7       .3
   AREA=   1198.6   8757.2    660.3     95.2
    VEL=      2.9      4.5      2.5      1.4
  DEPTH=     11.1     17.3     10.2      3.0
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 530.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     4050.0    4691.0  TYPE=      1  TARGET=      641.000
   530.00    16.00   350.00   341.92      .00   350.63      .63      .18      .10   334.00
   45000.    2188.   35681.    7132.     637.    5217.    1702.    7943.     764.    334.00
     1.83     3.43     6.84     4.19     .040     .030     .040     .000   334.00  4089.90
  .000473     640.     620.     610.        2       14        0      .00   576.39  4666.30


FLOW DISTRIBUTION FOR SECNO=    530.00          CWSEL=    350.00

STA=    4090.    4183.    4190.    4590.    4648.    4666.
  PER Q=      3.7      1.2      9.8      5.6       .5
   AREA=    528.9    108.0    971.9    635.7     94.0
    VEL=      3.2      4.8      4.5      4.0      2.2
  DEPTH=      5.7     15.0      2.4     11.0      5.0

1490 NH CARD USED
*SECNO 535.000

3470 ENCROACHMENT STATIONS=     2070.0    2600.0  TYPE=      1  TARGET=      530.000
   535.00    15.94   349.94   342.92      .00   350.88      .93      .16      .09   336.00
   45000.     774.   38057.    6169.     218.    4632.    1361.    7987.     767.    336.00
     1.84     3.55     8.22     4.53     .040     .031     .040     .000   334.00  2070.00
  .000713     290.     280.     275.        2       11        0      .00   530.00  2600.00


FLOW DISTRIBUTION FOR SECNO=    535.00          CWSEL=    349.94

STA=    2070.    2120.    2411.    2445.    2479.    2515.    2600.
  PER Q=      1.7     84.6      5.4      4.0      3.1      1.3
   AREA=    218.4   4631.8    441.4    364.5    328.3    226.7
    VEL=      3.5      8.2      5.5      4.9      4.3      2.5
  DEPTH=      4.4     15.9     12.9     10.9      8.9      2.7

1490 NH CARD USED
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 540.000
   540.00    16.33   350.33   342.11      .00   351.11      .78      .22      .02   336.00
   45000.    2018.   40570.    2412.     489.    5527.     625.    8038.     771.    336.00
     1.85     4.13     7.34     3.86     .040     .030     .040     .000   334.00  1969.79
  .000550     365.     350.     335.        2        8        0      .00   508.34  2478.13


FLOW DISTRIBUTION FOR SECNO=    540.00          CWSEL=    350.33

STA=    1970.    2056.    2395.    2432.    2478.
  PER Q=      4.5     90.2      4.1      1.3
   AREA=    488.6   5527.4    418.0    206.7
    VEL=      4.1      7.3      4.4      2.7
  DEPTH=      5.7     16.3     11.3      4.5

1490 NH CARD USED
*SECNO 550.000
   550.00    16.75   350.75   343.27      .00   351.48      .73      .37      .00   336.00
   45000.    5901.   33087.    6013.    1371.    4331.    1617.    8142.     780.    336.00
     1.88     4.30     7.64     3.72     .040     .030     .040     .000   334.00  1735.96
  .000577     645.     650.     655.        0       11        0      .00   621.73  2357.69


FLOW DISTRIBUTION FOR SECNO=    550.00          CWSEL=    350.75

STA=    1736.    1832.    1894.    2153.    2199.    2281.    2348.    2358.
  PER Q=      3.4      9.8     73.5      5.6      4.6      3.1       .1
   AREA=    513.8    857.6   4331.1    548.4    601.9    441.7     25.6
    VEL=      2.9      5.1      7.6      4.6      3.4      3.1      1.8
  DEPTH=      5.4     13.7     16.7     11.9      7.4      6.5      2.8

1490 NH CARD USED
*SECNO 560.000
   560.00    17.34   351.34   342.52      .00   351.79      .45      .28      .03   336.00
   45000.    2817.   27770.   14412.     924.    4488.    3767.    8256.     789.    336.00
     1.91     3.05     6.19     3.83     .050     .031     .040     .000   334.00  1547.90
  .000374     605.     600.     595.        2        8        0      .00   675.47  2223.37


FLOW DISTRIBUTION FOR SECNO=    560.00          CWSEL=    351.34
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


STA=    1548.    1638.    1898.    2061.    2121.    2209.    2223.
  PER Q=      6.3     61.7     22.0      5.0      4.8       .3
   AREA=    924.0   4488.5   2332.7    647.4    727.0     59.5
    VEL=      3.0      6.2      4.2      3.5      3.0      2.0
  DEPTH=     10.2     17.3     14.3     10.7      8.3      4.0

1490 NH CARD USED
*SECNO 562.000
   562.00    17.53   351.53   342.29      .00   351.89      .36      .10      .01   336.00
   45000.    3716.   20926.   20358.    1291.    3561.    5314.    8318.     793.    336.00
     1.93     2.88     5.88     3.83     .050      .031     .040     .000   334.00  1065.06
  .000330     280.     280.     285.        2       11        0      .00   744.46  1809.52


FLOW DISTRIBUTION FOR SECNO=    562.00          CWSEL=    351.53

STA=    1065.    1181.    1385.    1453.    1485.    1556.    1601.    1698.    1780.    1810.
  PER Q=      8.3     46.5     11.0      5.6     10.3      4.6      8.6      4.7       .5
   AREA=   1290.7   3561.5   1125.7    554.0   1102.7    566.4   1123.1    727.7    114.6
    VEL=      2.9      5.9      4.4      4.6      4.2      3.6      3.4      2.9      2.0
  DEPTH=     11.1     17.5     16.5     17.5     15.5     12.5     11.5      8.9      3.9

1490 NH CARD USED
*SECNO 564.000
   564.00    17.65   351.65   341.96      .00   351.97      .32      .07      .00   336.00
   45000.    5324.   25250.   14427.    1818.    4871.    3978.    8371.     797.    336.00
     1.94     2.93     5.18     3.63     .050     .034     .040     .000   334.00   900.98
  .000314     220.     220.     220.        2       14        0      .00   771.13  1672.11


FLOW DISTRIBUTION FOR SECNO=    564.00          CWSEL=    351.65

STA=     901.    1053.    1332.    1507.    1540.    1592.    1672.
  PER Q=     11.8     56.1     22.4      3.3      3.9      2.4
   AREA=   1817.9   4871.4   2560.0    416.3    557.2    444.5
    VEL=      2.9      5.2      3.9      3.6      3.2      2.4
  DEPTH=     12.0     17.5     14.7     12.7     10.7      5.6

*SECNO 566.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3301 HV CHANGED MORE THAN HVINS

   566.00    17.38   351.38   343.50      .00   352.25      .87      .12      .17   338.00
   45000.    2382.   38976.    3642.    1202.    4873.    1327.    8429.     802.    338.00
     1.95     1.98     8.00     2.74     .085     .030     .060     .000   334.00   840.86
  .000598     280.     280.     280.        2       11        0      .00   586.95  1427.82


FLOW DISTRIBUTION FOR SECNO=    566.00          CWSEL=    351.38

STA=     841.     928.     972.    1258.    1312.    1398.    1428.
  PER Q=      3.3      2.0     86.6      4.9      3.2       .1
   AREA=    750.9    451.1   4873.5    674.8    610.2     42.1
    VEL=      2.0      2.0      8.0      3.2      2.3       .9
  DEPTH=      8.6     10.3     17.1     12.4      7.1      1.4

*SECNO 570.000

3301 HV CHANGED MORE THAN HVINS

   570.00    17.05   351.05   345.56      .00   352.72     1.67      .23      .24   336.00
   45000.    2668.   38117.    4215.    1042.    3410.    1095.    8471.     805.    336.00
     1.96     2.56    11.18     3.85     .085     .030     .060     .000   334.00  1518.76
  .001171     285.     280.     280.        2       14        0      .00   454.01  1972.76


FLOW DISTRIBUTION FOR SECNO=    570.00          CWSEL=    351.05

STA=    1519.    1627.    1643.    1843.    1868.    1915.    1973.
  PER Q=      4.8      1.2     84.7      3.5      4.1      1.7
   AREA=    863.8    177.8   3409.8    331.3    471.5    292.1
    VEL=      2.5      2.9     11.2      4.8      3.9      2.7
  DEPTH=      8.0     11.6     17.0     13.5     10.1      5.0

*SECNO 572.000
   572.00    17.54   351.54   344.37      .00   352.94     1.40      .19      .03   336.00
   45000.    2595.   39473.    2932.     902.    3921.     869.    8495.     807.    336.00
     1.97     2.88    10.07     3.38     .085     .030     .060     .000   334.00   748.70
  .000913     200.     187.     178.        2       14        0      .00   429.57  1178.27
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


FLOW DISTRIBUTION FOR SECNO=    572.00          CWSEL=    351.54

STA=     749.     832.    1056.    1097.    1178.
  PER Q=      5.8     87.7      4.8      1.7
   AREA=    901.9   3920.8    530.6    338.0
    VEL=      2.9     10.1      4.1      2.2
  DEPTH=     10.8     17.5     12.9      4.2

*SECNO 574.000

3301 HV CHANGED MORE THAN HVINS

   574.00    18.23   352.23   342.95      .00   353.13      .90      .14      .05   336.00
   45000.     914.   42161.    1925.     458.    5392.     692.    8523.     809.    336.00
     1.97     2.00     7.82     2.78     .085     .030     .060     .000   334.00   699.73
  .000523     210.     200.     190.        2        8        0      .00   429.41  1129.14


FLOW DISTRIBUTION FOR SECNO=    574.00          CWSEL=    352.23

STA=     700.     748.    1044.    1081.    1129.
  PER Q=      2.0     93.7      3.6       .7
   AREA=    458.0   5392.5    506.6    185.7
    VEL=      2.0      7.8      3.2      1.7
  DEPTH=      9.6     18.2     13.5      3.9

*SECNO 576.000
   576.00    18.13   352.13   344.64      .00   353.33     1.20      .11      .09   338.00
   45000.     974.   38207.    5819.     433.    4056.    1601.    8548.     811.    338.00
     1.98     2.25     9.42     3.63     .085     .030     .060     .000   334.00   677.32
  .000778     190.     170.     165.        2       11        0      .00   422.28  1099.60


FLOW DISTRIBUTION FOR SECNO=    576.00          CWSEL=    352.13

STA=     677.     733.     959.    1049.    1100.
  PER Q=      2.2     84.9     10.0      2.9
   AREA=    432.6   4056.0   1175.0    426.2
    VEL=      2.3      9.4      3.8      3.1
  DEPTH=      7.7     18.0     13.1      8.4
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 582.000									
582.00	16.54	352.54	346.60	.00	353.61	1.06	.27	.01	338.00
45000.	2143.	33447.	9410.	997.	3560.	2621.	8597.	814.	338.00
1.99	2.15	9.39	3.59	.085	.030	.060	.000	336.00	577.65
.000861	335.	330.	310.	2	11	0	.00	579.40	1157.06

FLOW DISTRIBUTION FOR SECNO= 582.00 CWSEL= 352.54

STA=	578.	680.	698.	914.	1044.	1107.	1145.	1157.
PER Q=	3.5	1.2	74.3	12.5	5.1	3.0	.2	
AREA=	784.9	212.1	3560.2	1511.4	663.2	395.4	51.2	
VEL=	2.0	2.6	9.4	3.7	3.5	3.4	2.0	
DEPTH=	7.7	11.7	16.5	11.6	10.5	10.4	4.2	

*SECNO 584.000									
584.00	16.84	352.84	345.92	.00	353.78	.94	.16	.01	338.00
45000.	2602.	33311.	9087.	1050.	3774.	2655.	8631.	817.	338.00
2.00	2.48	8.83	3.42	.085	.030	.060	.000	336.00	529.15
.000742	210.	200.	190.	2	14	0	.00	574.54	1103.68

FLOW DISTRIBUTION FOR SECNO= 584.00 CWSEL= 352.84

STA=	529.	633.	858.	993.	1067.	1104.
PER Q=	5.8	74.0	14.2	5.0	1.0	
AREA=	1050.4	3774.1	1730.8	728.2	196.0	
VEL=	2.5	8.8	3.7	3.1	2.2	
DEPTH=	10.1	16.8	12.8	9.8	5.3	

*SECNO 586.000									
586.00	17.06	353.06	345.95	.00	353.94	.88	.15	.01	338.00
45000.	3275.	28997.	12728.	1321.	3225.	3355.	8667.	820.	338.00
2.01	2.48	8.99	3.79	.085	.030	.060	.000	336.00	459.29
.000758	205.	205.	205.	2	14	0	.00	576.58	1035.87

FLOW DISTRIBUTION FOR SECNO= 586.00 CWSEL= 353.06

STA=	459.	583.	773.	930.	1013.	1036.
PER Q=	7.3	64.4	19.5	8.0	.8	
AREA=	1321.1	3224.7	2204.3	1003.2	147.2	
VEL=	2.5	9.0	4.0	3.6	2.5	
DEPTH=	10.7	17.0	14.1	12.1	6.4	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 592.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 344.8 800.0 TYPE= 1 TARGET= 455.200

592.00	16.79	352.79	347.93	.00	354.63	1.84	.40	.29	338.00
45000.	2800.	31496.	10704.	794.	2499.	2085.	8725.	824.	338.00
2.02	3.53	12.61	5.13	.085	.030	.060	.000	336.00	365.79
.001577	375.	380.	385.	2	19	0	.00	422.69	788.48

FLOW DISTRIBUTION FOR SECNO= 592.00 CWSEL= 352.79

STA=	366.	444.	598.	671.	724.	748.	788.
PER Q=	6.2	70.0	11.3	8.1	3.1	1.2	
AREA=	793.6	2498.5	946.0	679.4	278.3	181.5	
VEL=	3.5	12.6	5.4	5.4	5.1	3.0	
DEPTH=	10.2	16.3	12.9	12.8	11.8	4.5	

*SECNO 594.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

594.00	13.27	353.27	353.27	.00	358.23	4.96	1.09	.94	342.00
45000.	5136.	32643.	7220.	263.	1937.	345.	8746.	826.	342.00
2.02	19.54	16.85	20.91	.075	.125	.065	.000	340.00	588.50
.066048	230.	230.	230.	0	11	0	.00	260.06	848.56

FLOW DISTRIBUTION FOR SECNO= 594.00 CWSEL= 353.27

STA=	588.	597.	609.	613.	617.	631.	780.	790.	801.	808.	823.	849.
PER Q=	.2	1.6	.9	1.3	7.5	72.5	6.6	4.5	2.1	2.1	.8	
AREA=	13.6	53.8	25.1	29.8	140.7	1937.2	107.8	86.0	47.6	61.9	41.9	
VEL=	6.7	13.3	16.1	19.0	23.9	16.9	27.4	23.7	19.5	15.4	8.1	
DEPTH=	1.6	4.3	6.3	8.3	10.3	13.0	10.3	8.3	6.3	4.3	1.6	

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 600.0 1050.0 TYPE= 1 TARGET= 450.000

600.00	18.55	360.55	353.32	.00	361.79	1.24	3.18	.37	346.00
45000.	12812.	30205.	1983.	1274.	3626.	197.	8759.	827.	346.00
2.02	10.06	8.33	10.07	.075	.125	.065	.000	342.00	651.54
.010375	145.	150.	155.	3	15	0	.00	351.25	1002.79

FLOW DISTRIBUTION FOR SECNO= 600.00 CWSEL= 360.55

STA=	652.	694.	714.	757.	779.	979.	989.	1003.
PER Q=	3.4	4.5	13.1	7.5	67.1	3.4	1.0	
AREA=	227.9	212.2	539.6	294.0	3625.9	125.5	71.4	
VEL=	6.8	9.5	10.9	11.4	8.3	12.3	6.2	
DEPTH=	5.4	10.3	12.5	13.5	18.1	13.1	5.1	

*SECNO 610.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 200.0 652.3 TYPE= 1 TARGET= 452.300

610.00	21.40	363.40	351.58	.00	364.03	.63	2.19	.06	346.00
45000.	3732.	39442.	1826.	577.	6239.	249.	8803.	830.	346.00
2.04	6.46	6.32	7.33	.075	.125	.065	.000	342.00	253.79
.005019	295.	315.	355.	3	11	0	.00	397.29	651.09

FLOW DISTRIBUTION FOR SECNO= 610.00 CWSEL= 363.40

STA=	254.	302.	320.	623.	645.	651.
PER Q=	3.8	4.5	87.6	4.0	.1	
AREA=	319.5	257.9	6239.3	239.5	9.7	
VEL=	5.3	7.8	6.3	7.5	2.3	
DEPTH=	6.7	14.0	20.6	10.8	1.6	

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 620.000

3470 ENCROACHMENT STATIONS=      250.0     750.0  TYPE=      1  TARGET=      500.000
   620.00    21.57   365.57   353.73      .00   366.11      .53     2.06      .01   364.00
   45000.      41.   44898.      61.      33.    7645.      28.    8870.     834.    364.00
     2.06     1.24     5.87     2.15     .075     .125     .065     .000   344.00   257.43
  .005431     395.     395.     395.        2       14        0      .00   492.57   750.00


FLOW DISTRIBUTION FOR SECNO=    620.00          CWSEL=    365.57

STA=     257.     299.     732.     750.
  PER Q=       .1     99.8       .1
   AREA=     32.8   7644.8     28.3
    VEL=      1.2      5.9      2.2
  DEPTH=       .8     17.7      1.6

*SECNO 630.000

3470 ENCROACHMENT STATIONS=      300.0     804.6  TYPE=      1  TARGET=      504.600
   630.00    22.77   366.77   354.55      .00   367.33      .56     1.22      .01   348.00
   45000.    7138.   34115.    3747.    1166.    5882.     506.    8916.     836.    348.00
     2.07     6.12     5.80     7.41     .075     .125     .065     .000   344.00   300.15
  .003961     235.     265.     295.        2       11        0      .00   489.11   789.26


FLOW DISTRIBUTION FOR SECNO=    630.00          CWSEL=    366.77

STA=     300.     382.     427.     446.     718.     730.     748.     789.
  PER Q=      3.8      6.9      5.1     75.8      4.7      3.2       .4
   AREA=    368.7    497.8    299.7   5882.2    216.8    214.2     74.6
    VEL=      4.7      6.2      7.7      5.8      9.7      6.8      2.4
  DEPTH=      4.5     11.2     15.9     21.6     17.8     11.8      1.8

*SECNO 640.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

FINAL CROSS SECTION - APPROX. 200 FT. DOWNSTREAM OF RIVERFORD BRIDGE

640.00	22.29	368.29	360.93	.00	369.99	1.70	2.31	.34	350.00
45000.	4082.	32759.	8159.	377.	3106.	819.	8963.	840.	350.00
2.08	10.84	10.55	9.96	.075	.125	.065	.000	346.00	161.72
.013194	345.	350.	355.	2	14	0	.00	362.89	735.31

FLOW DISTRIBUTION FOR SECNO= 640.00 CWSEL= 368.29

STA=	162.	411.	434.	578.	601.	621.	657.	695.	732.	735.
PER Q=	.8	8.3	72.8	9.7	3.2	3.3	1.6	.3	.0	
AREA=	67.1	309.5	3105.9	313.5	144.2	187.6	125.5	47.6	.5	
VEL=	5.2	12.1	10.5	13.9	9.8	8.0	5.8	3.1	.7	
DEPTH=	.3	13.3	21.6	13.3	7.3	5.3	3.3	1.3	.1	

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T1      SAN DIEGO RIVER
T2      CITY OF SANTEE
T3      100 YEAR FLOODWAY (SANTEE)

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

                3                                                           283.55

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15         0        -1                                      -1                            0
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


 *PROF 2

 CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS
0

 CCHV=     .100 CEHV=     .300
 *SECNO 100.000

 3470 ENCROACHMENT STATIONS=      340.0     600.0  TYPE=      1  TARGET=      260.000
         MISSION DAM - DOWNSTREAM LIMIT OF STUDY (SUB-CRITICAL FLOW ASSUMED)
    100.00    13.55   283.55   282.25   282.55   287.73     4.18      .00      .00   280.00
    50000.      15.   49985.       0.       3.    3045.       0.       0.       0. 100000.00
       .00     5.48    16.41      .00     .080     .180     .000     .000   270.00   340.00
   .152867       0.       0.       0.        0       10        0      .00   260.00   600.00


 *SECNO 110.000

 3301 HV CHANGED MORE THAN HVINS

 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


 3470 ENCROACHMENT STATIONS=      310.0     610.0  TYPE=      1  TARGET=      300.000
    110.00    15.63   289.63   285.82   289.82   292.23     2.59     4.33      .16   280.00
    50000.    4274.   44814.     913.     231.    3656.      70.       4.       0.    280.00
       .00    18.47    12.26    12.99     .080     .180     .080     .000   274.00   310.00
   .066182      45.      45.      45.        2       15        0      .00   300.00   610.00


 *SECNO 120.000

 3301 HV CHANGED MORE THAN HVINS


 3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


 3470 ENCROACHMENT STATIONS=      310.0     650.0  TYPE=      1  TARGET=      340.000
    120.00    18.95   292.95   286.24   292.90   294.55     1.60     2.22      .10   280.00
    50000.    5725.   39308.    4967.     415.    4312.     392.       9.       1.    280.00
       .00    13.80     9.12    12.67     .080     .180     .080     .000   274.00   310.00
   .027241      55.      55.      55.        3       15        0      .00   340.00   650.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 130.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      330.0     683.0  TYPE=      1  TARGET=      353.000
   130.00    25.07   301.07   289.06   300.44   302.01      .94     7.40      .07   280.00
   50000.    3244.   32665.   14091.     370.    5273.    1352.      82.       5.    280.00
      .02     8.76     6.20    10.42     .080     .180     .080     .000   276.00   330.00
  .008716     520.     520.     520.        5       19        0      .00   353.00   683.00


CCHV=     .030 CEHV=     .050
*SECNO 140.000

3470 ENCROACHMENT STATIONS=      215.0     545.0  TYPE=      1  TARGET=      330.000
   140.00    29.52   305.52   290.32   304.49   306.26      .74     4.25      .01   284.00
   50000.    3868.   37349.    8783.     434.    6264.     944.     175.       9.    284.00
      .04     8.92     5.96     9.31     .080     .180     .080     .000   276.00   215.00
  .006777     555.     555.     555.        3       11        0      .00   330.00   545.00


*SECNO 150.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      245.0    1200.0  TYPE=      1  TARGET=      955.000
   150.00    26.90   306.90   288.34   305.95   307.15      .24      .87      .01   290.00
   50000.     689.   24398.   24913.     325.   11889.    4763.     337.      18.    290.00
      .09     2.12     2.05     5.23     .080     .160     .035     .000   280.00   245.00
  .000652     555.     580.     555.        3       14        0      .00   955.00  1200.00


1490 NH CARD USED
*SECNO 160.000

3265 DIVIDED FLOW
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      415.0    1860.0  TYPE=      1  TARGET=     1445.000
   160.00    25.38   307.38   292.18   306.49   307.48      .09      .33      .00   292.00
   50000.   41862.    4575.    3562.   16793.    1841.    1998.     671.      38.    290.00
      .18     2.49     2.49     1.78     .073     .080     .047     .000   282.00   415.00
  .000297     900.     670.     670.        2       22        0      .00  1428.03  1860.00


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 170.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      410.0    1990.0  TYPE=      1  TARGET=     1580.000
   170.00    25.48   307.48   293.93   306.61   307.54      .06      .06      .00   292.00
   50000.   35734.    2166.   12101.   18198.    1306.    6267.     843.      50.    290.00
      .22     1.96     1.66     1.93     .061     .080     .054     .000   282.00   410.00
  .000142     325.     320.     315.        2       13        0      .00  1580.00  1990.00


1490 NH CARD USED
*SECNO 180.000

3470 ENCROACHMENT STATIONS=      485.0    1940.0  TYPE=      1  TARGET=     1455.000
   180.00    21.53   307.53   293.01   306.65   307.60      .07      .05      .00   292.00
   50000.   42028.    5078.    2894.   18379.    4446.    1924.    1155.      68.    290.00
      .29     2.29     1.14     1.50     .039     .080     .040     .000   286.00   485.00
  .000073     529.     550.     570.        2       14        0      .00  1455.00  1940.00


1490 NH CARD USED
*SECNO 190.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      470.0    1920.0  TYPE=      1  TARGET=     1450.000
   190.00    21.56   307.56   290.51   306.68   307.63      .06      .02      .00   296.00
   50000.   45893.    3774.     333.   21732.    4672.     597.    1455.      85.    290.00
      .36     2.11      .81      .56     .031     .080     .054     .000   286.00   470.00
  .000035     505.     505.     505.        2       17        0      .00  1450.00  1920.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 200.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      370.0    1975.0  TYPE=      1  TARGET=     1605.000
   200.00    21.61   307.61   290.78   306.74   307.68      .07      .05      .00   296.00
   50000.   32050.    2926.   15024.   21267.    2247.    4889.    1917.     111.    294.00
      .46     1.51     1.30     3.07     .118     .125     .042     .000   286.00   370.00
  .000260     720.     740.     750.        1       17        0      .00  1605.00  1975.00


1490 NH CARD USED
*SECNO 209.000

3470 ENCROACHMENT STATIONS=      400.0    2100.0  TYPE=      1  TARGET=     1700.000
   209.00    21.71   307.71   291.98   306.86   307.80      .08      .11      .00   298.00
   50000.   23059.    6243.   20699.   15369.    4476.    6673.    2176.     126.    294.00
      .52     1.50     1.39     3.10     .122     .125     .040     .000   286.00   400.00
  .000291     430.     390.     365.        2       14        0      .00  1700.00  2100.00


1490 NH CARD USED
*SECNO 210.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      400.0    2100.0  TYPE=      1  TARGET=     1700.000
   210.00    21.63   307.63   299.57   306.78   307.84      .21      .00      .04   298.00
   50000.   11055.    9060.   29885.    7780.    4455.    6620.    2181.     126.    294.00
      .52     1.42     2.03     4.51     .116     .125     .040     .000   286.00   400.00
  .000622      10.      10.      10.        2       14        0      .00  1700.00  2100.00


1490 NH CARD USED
*SECNO 211.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      400.0    2100.0  TYPE=      1  TARGET=     1700.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


   211.00    21.77   307.77   291.98   306.92   307.85      .08      .00      .01   298.00
   50000.   23024.    6234.   20743.   15418.    4490.    6709.    2186.     127.    294.00
      .52     1.49     1.39     3.09     .122     .125     .040     .000   286.00   400.00
  .000287      10.      10.      10.        2       14        0      .00  1700.00  2100.00


*SECNO 220.000

3470 ENCROACHMENT STATIONS=      515.0    2100.0  TYPE=      1  TARGET=     1585.000
   220.00    19.95   307.95   298.90   307.13   308.09      .14      .22      .02   292.00
   50000.    8150.    5111.   36739.    2659.    6003.   11782.    2620.     157.    292.00
      .60     3.06      .85     3.12     .040     .200     .040     .000   288.00   515.00
  .000263      830.     810.     770.        2        8        0      .00  1585.00  2100.00


*SECNO 230.000

3470 ENCROACHMENT STATIONS=      825.0    2000.0  TYPE=      1  TARGET=     1175.000
   230.00    20.05   308.05   299.28   307.25   308.28      .23      .16      .03   292.00
   50000.    4071.    4004.   41926.    1148.    3778.   10421.    2824.     173.    292.00
      .63     3.55     1.06     4.02     .040     .200     .040     .000   288.00   825.00
  .000410      465.     490.     505.        2       14        0      .00  1175.00  2000.00


*SECNO 239.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2370.0    3040.0  TYPE=      1  TARGET=      670.000
   239.00    17.90   307.90   298.52   307.10   308.87      .97      .37      .22   294.00
   50000.    2940.   14920.   32140.     339.    5735.    3439.    2946.     182.    294.00
      .65     8.66     2.60     9.34     .040     .200     .040     .000   290.00  2370.00
  .002694      400.     420.     440.        2       16        0      .00   670.00  3040.00


*SECNO 240.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS=     2517.0    3011.0  TYPE=      1  TARGET=      494.000
   240.00    19.62   309.62   298.34   309.17   310.13      .51     1.22      .05   306.00
   50000.      38.   49962.       0.       7.    8696.       0.    2995.     185. 100000.00
      .66     5.37     5.75      .00     .040     .200     .000     .000   290.00  2517.00
  .013421     195.     230.     255.        2       14        0      .00   494.00  3011.00


CCHV=     .300 CEHV=     .500
*SECNO 242.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   312.00 MAX ELLC=   311.50


3470 ENCROACHMENT STATIONS=     2518.0    3010.0  TYPE=      1  TARGET=      492.000
        MAST BLVD BRIDGE  (NORMAL BRIDGE ROUTINE)
   242.00    19.60   309.60   298.80   309.14   310.21      .61      .02      .05   306.00
   50000.       7.   49993.       0.       4.    7991.       0.    2997.     185. 100000.00
      .66     1.54     6.26      .00     .030     .040     .000     .000   290.00  2518.00
  .001011      10.      10.      10.        2       15        0  -689.49   492.00  3010.00


*SECNO 243.000

3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   312.00 MAX ELLC=   311.50


3470 ENCROACHMENT STATIONS=     2518.0    3010.0  TYPE=      1  TARGET=      492.000
   243.00    19.67   309.67   298.80   309.22   310.27      .60      .07      .00100000.00
   50000.       0.   49961.      39.       0.    8010.      17.    3009.     186.    300.00
      .66      .00     6.24     2.22     .000     .040     .030     .000   290.00  2518.00
  .000992      65.      65.      65.        2       15        0  -692.35   492.00  3010.00


*SECNO 244.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2560.0    3070.0  TYPE=      1  TARGET=      510.000
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
244.00	19.81	309.81	298.90	309.37	310.32	.51	.02	.03	100000.00
50000.	0.	50000.	0.	0.	8722.	0.	3011.	186.	100000.00
.66	.00	5.73	.00	.000	.140	.000	.000	290.00	2560.00
.006810	10.	10.	10.	2	14	0	.00	510.00	3070.00

*SECNO 245.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 760.0 1410.0 TYPE= 1 TARGET= 650.000

245.00	20.21	310.21	297.39	309.96	310.80	.59	.44	.04	292.00
50000.	22773.	25895.	1331.	2682.	9295.	234.	3052.	188.	292.00
.67	8.49	2.79	5.70	.040	.140	.055	.000	290.00	760.00
.001280	210.	165.	200.	2	18	0	.00	650.00	1410.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 250.000

3470 ENCROACHMENT STATIONS= 2400.0 3310.0 TYPE= 1 TARGET= 910.000

250.00	21.39	311.39	300.15	310.76	311.63	.24	.80	.03	294.00
50000.	10121.	8574.	31305.	1896.	3566.	8412.	3277.	202.	294.00
.73	5.34	2.40	3.72	.045	.140	.072	.000	290.00	2400.00
.000921	705.	740.	790.	2	8	0	.00	910.00	3310.00

1490 NH CARD USED
*SECNO 260.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 2340.0 2950.0 TYPE= 1 TARGET= 610.000

260.00	18.61	312.61	306.21	311.65	313.46	.86	1.65	.19	300.00
50000.	823.	10858.	38318.	313.	2723.	4670.	3530.	219.	300.00
.77	2.63	3.99	8.21	.140	.140	.055	.000	294.00	2340.00
.003498	1035.	1025.	1020.	2	11	0	.00	610.00	2950.00

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 270.000

3470 ENCROACHMENT STATIONS=     2270.0    2990.0  TYPE=      1  TARGET=      720.000
   270.00    17.40   315.40   307.73   314.82   316.10      .70     2.62      .02   300.00
   49000.    5349.    8595.   35057.    1867.    2695.    4569.    3714.     234.    304.00
      .81     2.86     3.19     7.67     .105     .140     .055     .000   298.00  2270.00
  .002257     985.     965.     930.        2       11        0      .00   720.00  2990.00


1490 NH CARD USED
*SECNO 280.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      560.0    1890.0  TYPE=      1  TARGET=     1330.000
   280.00    17.32   317.32   308.67   316.53   317.51      .18     1.36      .05   306.00
   49000.    6007.    3089.   39904.    4125.    1601.   10684.    4017.     258.    306.00
      .89     1.46     1.93     3.74     .140     .140     .064     .000   300.00   560.00
  .000859    1045.    1040.    1030.        2        8        0      .00  1330.00  1890.00


*SECNO 285.000

3470 ENCROACHMENT STATIONS=      525.0    2015.0  TYPE=      1  TARGET=     1490.000
   285.00    15.82   317.82   309.79   317.04   317.97      .15      .46      .00   306.00
   49000.    3934.    1800.   43266.    1575.    1240.   13590.    4272.     280.    310.00
      .95     2.50     1.45     3.18     .060     .140     .055     .000   302.00   525.00
  .000545     665.     670.     680.        2       18        0      .00  1490.00  2015.00


*SECNO 290.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     2560.0    4154.0  TYPE=      1  TARGET=     1594.000
   290.00    16.22   318.22   311.69   317.51   318.41      .19      .43      .01   308.00
   49000.    3993.    2491.   42516.     890.    1434.   12293.    4502.     303.    310.00
     1.01     4.49     1.74     3.46     .040     .140     .055     .000   302.00  2560.00
  .000829     645.     645.     645.        2       14        0      .00  1567.11  4154.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 300.000

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2540.0    4014.0  TYPE=      1  TARGET=     1474.000
   300.00    12.90   318.90   314.05   318.24   319.21      .31      .77      .04100000.00
   49000.       0.    3310.   45690.       0.    1683.    9965.    4703.     326.    314.00
     1.05      .00     1.97     4.58     .000     .140     .055     .000   306.00  2540.00
  .001699     655.     660.     670.        2        8        0      .00  1440.55  4014.00


*SECNO 310.000

3470 ENCROACHMENT STATIONS=     2650.0    4000.0  TYPE=      1  TARGET=     1350.000
        CONFLUENCE WITH SYCAMORE CREEK
   310.00    11.83   319.83   314.39   319.19   320.12      .28      .90      .00   314.00
   49000.    1031.    1652.   46318.     263.    1038.   10662.    4866.     345.    316.00
     1.09     3.92     1.59     4.34     .040     .140     .055     .000   308.00  2650.00
  .001336     620.     610.     600.        2        8        0      .00  1350.00  4000.00


*SECNO 320.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     1030.0    2150.0  TYPE=      1  TARGET=     1120.000
        CONFLUENCE WITH FORRESTER CREEK
   320.00    11.55   321.55   317.88   320.71   322.18      .63     1.96      .10100000.00
   49000.       0.   10706.   38294.       0.    2910.    5540.    5058.     368.    312.00
     1.13      .00     3.68     6.91     .000     .140     .055     .000   310.00  1030.00
  .005297     665.     750.     840.        2       23        0      .00  1120.00  2150.00


*SECNO 330.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS=     1370.0    2250.0  TYPE=      1  TARGET=      880.000
   330.00    12.35   324.35   318.63   323.86   324.79      .45     2.60      .02   314.00
   48000.   22843.    8710.   16448.    4023.    1922.    3095.    5211.     386.    314.00
     1.16     5.68     4.53     5.32     .060     .085     .060     .000   312.00  1370.00
  .002392     870.     780.     700.        2       11        0      .00   880.00  2250.00


*SECNO 340.000

3470 ENCROACHMENT STATIONS=     1220.0    2180.0  TYPE=      1  TARGET=      960.000
   340.00    15.60   325.60   319.00   325.21   325.95      .35     1.15      .01   320.00
   48000.    8214.   21849.   17937.    1663.    5195.    3411.    5324.     396.    318.00
     1.19     4.94     4.21     5.26     .060     .085     .060     .000   310.00  1220.00
  .002117     520.     505.     505.        2       19        0      .00   960.00  2180.00


*SECNO 345.000

3470 ENCROACHMENT STATIONS=     1300.0    2270.0  TYPE=      1  TARGET=      970.000
   345.00    14.26   326.26   320.55   325.96   326.71      .45      .72      .03   322.00
   48000.   11242.   26405.   10353.    1839.    5357.    1846.    5386.     403.    324.00
     1.21     6.11     4.93     5.61     .060     .085     .060     .000   312.00  1300.00
  .003257     320.     280.     250.        1       11        0      .00   970.00  2270.00


CCHV=     .300 CEHV=     .500
*SECNO 355.000

3470 ENCROACHMENT STATIONS=     1500.0    2370.0  TYPE=      1  TARGET=      870.000
   355.00    13.32   327.32   322.64   327.04   327.87      .56     1.11      .05   322.00
   48000.    9926.   32247.    5827.    1604.    5532.     901.    5442.     409.    322.00
     1.22     6.19     5.83     6.47     .060     .085     .060     .000   314.00  1500.00
  .004804     275.     285.     295.        2       14        0      .00   870.00  2370.00


*SECNO 356.000

3470 ENCROACHMENT STATIONS=     1520.0    2290.0  TYPE=      1  TARGET=      770.000
   356.00    12.73   328.73   325.13   328.43   329.75     1.02     1.64      .23   316.00
   48000.    7884.   38970.    1146.    1217.    4631.     146.    5482.     413.    320.00
     1.23     6.48     8.42     7.87     .060     .085     .060     .000   316.00  1520.00
  .009529     250.     250.     250.        2       18        0      .00   770.00  2290.00
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.60	2.75	.00	450.00	77.00	3112.00	2.00	318.00	318.00

*SECNO 358.000
BTCARD BRIDGE STENCL= 1510.00 STENCR= 2300.00
6870 D.S. ENERGY OF 329.75 IS HIGHER THAN COMPUTED ENERGY OF 328.83

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
328.83	328.83	.01	41494.	6485.	3112.	3112.	326.00	324.00	288.

3470 ENCROACHMENT STATIONS= 1510.0 2300.0 TYPE= 1 TARGET= 790.000
CARLTON HILLS BLVD BRIDGE (SPECIAL BRIDGE ROUTINE)

358.00	12.47	328.47	.00	328.06	329.75	1.28	.00	.00	316.00
48000.	5160.	42801.	40.	1341.	4496.	16.	5491.	415.	326.00
1.23	3.85	9.52	2.49	.060	.040	.030	.000	316.00	1510.00
.002876	65.	65.	65.	2	0	6	.00	790.00	2300.00

*SECNO 360.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 1565.0 2435.0 TYPE= 1 TARGET= 870.000

360.00	14.36	330.36	323.24	329.95	330.74	.38	.72	.27	320.00
48000.	38367.	8873.	761.	7371.	2383.	309.	5553.	421.	320.00
1.25	5.20	3.72	2.47	.060	.085	.085	.000	316.00	1565.00
.001624	335.	345.	355.	2	14	0	.00	870.00	2435.00

CCHV= .100 CEHV= .300
*SECNO 370.000

3470 ENCROACHMENT STATIONS= 1470.0 2500.0 TYPE= 1 TARGET= 1030.000

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


   370.00    12.97   330.97   324.06   330.57   331.26      .30      .51      .01   320.00
   48000.   39625.    4117.    4258.    8633.    1174.    1571.    5638.     429.    320.00
     1.27     4.59     3.51     2.71     .060     .085     .085     .000   318.00  1470.00
  .001361     345.     345.     350.        2       18        0      .00  1030.00  2500.00


*SECNO 380.000

3470 ENCROACHMENT STATIONS=     1540.0    2625.0  TYPE=      1  TARGET=     1085.000
   380.00    13.42   331.42   324.95   330.97   331.73      .32      .47      .01   320.00
   48000.   39772.    2789.    5439.    8421.     728.    1797.    5720.     436.    320.00
     1.29     4.72     3.83     3.03     .060     .085     .085     .000   318.00  1540.00
  .001568     320.     320.     320.        2       11        0      .00  1085.00  2625.00


*SECNO 390.000

3470 ENCROACHMENT STATIONS=     1730.0    2620.0  TYPE=      1  TARGET=      890.000
   390.00    14.32   332.32   326.71   331.74   332.80      .47     1.02      .05   324.00
   48000.   33910.    7734.    6357.    5615.    1746.    1815.    5840.     448.    324.00
     1.32     6.04     4.43     3.50     .060     .085     .085     .000   318.00  1730.00
  .002502     520.     520.     520.        2       14        0      .00   890.00  2620.00


*SECNO 400.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     1820.0    2585.0  TYPE=      1  TARGET=      765.000
        DOWNSTREAM END MISSION CREEK DEVELOPMENT
   400.00    15.52   333.52   323.70   332.86   333.83      .31     1.01      .02   320.00
   48000.    2552.   42647.    2800.     476.   10004.     481.    5975.     459.    320.00
     1.36     5.36     4.26     5.82     .040     .075     .040     .000   318.00  1820.00
  .001220     705.     540.     495.        1       18        0      .00   765.00  2585.00


1490 NH CARD USED
*SECNO 410.000

3470 ENCROACHMENT STATIONS=     2970.5    3710.0  TYPE=      1  TARGET=      739.500
   410.00    16.27   334.27   324.11   333.65   334.59      .33      .76      .01   320.00
   48000.    2972.   42390.    2639.     636.    9340.     522.    6147.     471.    320.00
     1.40     4.67     4.54     5.05     .040     .065     .040     .000   318.00  2970.50
  .000971     672.     700.     726.        2       18        0      .00   739.50  3710.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 415.000

3470 ENCROACHMENT STATIONS=     3200.0    3945.0  TYPE=      1  TARGET=      745.000
   415.00    16.99   334.99   324.08   334.47   335.27      .28      .67      .00   320.00
   48000.    2349.   42028.    3624.     492.   10194.     747.    6344.     485.    320.00
     1.45     4.77     4.12     4.85     .040     .065     .040     .000   318.00  3200.00
  .000767     765.     780.     800.        2       18        0      .00   745.00  3945.00


1490 NH CARD USED
*SECNO 420.000

3470 ENCROACHMENT STATIONS=     3411.5    4065.0  TYPE=      1  TARGET=      653.500
   420.00    17.38   335.38   325.39   334.92   335.78      .40      .48      .04   320.00
   48000.    3592.   39548.    4860.     543.    8494.     729.    6461.     492.    320.00
     1.48     6.61     4.66     6.66     .040     .075     .040     .000   318.00  3411.50
  .001342     480.     480.     480.        2       14        0      .00   653.50  4065.00


*SECNO 421.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     2617.0    3057.0  TYPE=      1  TARGET=      440.000
   421.00    11.42   335.42   331.65   334.98   336.97     1.56      .84      .35   325.00
   48000.    2538.   45184.     278.     254.    4503.      41.    6523.     497.    328.00
     1.49     9.98    10.04     6.82     .040     .050     .040     .000   324.00  2617.00
  .004514     375.     375.     375.        2       14        0      .00   440.00  3057.00


CCHV=     .300 CEHV=     .500
*SECNO 422.000

3301 HV CHANGED MORE THAN HVINS


3370 NORMAL BRIDGE, NRD=  53 MIN ELTRD=   344.00 MAX ELLC=   342.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS=     2617.0    3057.0  TYPE=      1  TARGET=      440.000
       CUYAMACA BRIDGE - UPSTREAM END OF MISSION CREEK  DEVELOPMENT
       (NORMAL BRIDGE ROUTINE)
   422.00    10.94   334.94   332.77   334.44   337.55     2.61      .05      .53   326.00
   48000.    1595.   45957.     448.     157.    3507.      72.    6524.     497.    326.00
     1.49    10.16    13.10     6.22     .040     .030     .040     .000   324.00  2617.00
  .005616      10.      10.      10.        2       12        0  -841.78   440.00  3057.00


*SECNO 423.000

3370 NORMAL BRIDGE, NRD=  53 MIN ELTRD=   344.00 MAX ELLC=   342.00


3470 ENCROACHMENT STATIONS=     4616.0    5058.0  TYPE=      1  TARGET=      442.000
   423.00    11.74   335.74   332.77   335.48   337.99     2.25      .33      .11   326.00
   48000.    1694.   45804.     502.     176.    3763.      84.    6530.     498.    326.00
     1.49     9.60    12.17     5.95     .040     .030     .040     .000   324.00  4616.00
  .004578      65.      65.      65.        3       12        0  -907.51   442.00  5058.00


1490 NH CARD USED
*SECNO 424.000

3470 ENCROACHMENT STATIONS=     4633.0    5082.0  TYPE=      1  TARGET=      449.000
   424.00    10.38   336.38   333.45   336.18   338.18     1.79      .05      .14   326.00
   48000.    1262.   44749.    1989.     162.    4112.     216.    6531.     498.    326.00
     1.49     7.78    10.88     9.21     .050     .050     .050     .000   326.00  4633.00
  .005920      10.      10.      10.        3       14        0      .00   449.00  5082.00


1490 NH CARD USED
*SECNO 425.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     4420.0    5270.0  TYPE=      1  TARGET=      850.000
   425.00    12.80   338.80   333.12   338.72   339.30      .50      .73      .39   328.00
   48000.   20040.   17719.   10241.    3314.    3831.    1587.    6568.     502.    328.00
     1.50     6.05     4.63     6.45     .045     .075     .045     .000   326.00  4420.00
  .001886     285.     225.     215.        2       19        0      .00   850.00  5270.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 430.000

3470 ENCROACHMENT STATIONS=     4860.0    5860.0  TYPE=      1  TARGET=     1000.000
   430.00    13.81   339.81   336.97   339.61   340.60      .79     1.21      .09   328.00
   48000.   17571.   16764.   13665.    3047.    2491.    1535.    6654.     512.    328.00
     1.52     5.77     6.73     8.90     .045     .075     .045     .000   326.00  4860.00
  .003589     495.     470.     465.        2       12        0      .00  1000.00  5860.00


1490 NH CARD USED
*SECNO 440.000

3470 ENCROACHMENT STATIONS=     4365.0    5420.0  TYPE=      1  TARGET=     1055.000
   440.00    13.64   341.64   337.08   340.57   342.16      .52     1.54      .03   330.00
   46000.   29010.   12410.    4579.    4846.    2324.     831.    6748.     525.    330.00
     1.55     5.99     5.34     5.51     .045     .075     .045     .000   328.00  4365.00
  .002280     535.     545.     550.        2       14        0      .00  1055.00  5420.00


1490 NH CARD USED
*SECNO 450.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     4375.0    5410.0  TYPE=      1  TARGET=     1035.000
   450.00    14.18   342.18   334.56   341.22   342.55      .37      .38      .01   330.00
   46000.    7483.   38260.     256.    3744.    7263.     167.    6869.     538.    330.00
     1.58     2.00     5.27     1.53     .055     .030     .055     .000   328.00  4375.00
  .000331     575.     530.     545.        2       11        0      .00  1035.00  5410.00


1490 NH CARD USED
*SECNO 460.000

3470 ENCROACHMENT STATIONS=     4380.0    5360.0  TYPE=      1  TARGET=      980.000
   460.00    14.41   342.41   333.20   341.51   342.68      .27      .12      .01   330.00
   46000.    2252.   43470.     279.    1623.   10074.     197.    6988.     548.    330.00
     1.61     1.39     4.32     1.41     .055     .030     .055     .000   328.00  4380.00
  .000219     480.     440.     425.        2       18        0      .00   980.00  5360.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 470.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     4125.0    5130.0  TYPE=      1  TARGET=     1005.000
   470.00    14.47   342.47   338.64   341.70   343.11      .64      .32      .11   330.00
   46000.   36001.    9999.       0.    5444.    1769.       0.    7118.     563. 100000.00
     1.64     6.61     5.65      .00     .045     .070     .000     .000   328.00  4125.00
  .002464     790.     480.     430.        2       16        0      .00  1005.00  5130.00


1490 NH CARD USED
*SECNO 480.000

3265 DIVIDED FLOW


3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS=     3105.0    4125.6  TYPE=      1  TARGET=     1020.600
   480.00    13.68   343.68   343.68   343.90   346.32     2.64     1.42      .60   340.00
   46000.    3213.   42780.       7.     657.    3178.       3.    7156.     569.    340.00
     1.64     4.89    13.46     2.76     .045     .070     .045     .000   330.00  3105.00
  .014013     305.     280.     280.        0        8        0      .00   767.61  4125.60


1490 NH CARD USED
*SECNO 483.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3120.0    4140.0  TYPE=      1  TARGET=     1020.000
   483.00    16.25   346.25   343.93   345.96   347.27     1.02      .79      .16   340.00
   46000.   12548.   32331.    1120.    2348.    3585.      184.    7167.     571.    340.00
     1.65     5.34     9.02     6.07     .045     .070     .045     .000   330.00  3120.00
  .005080     100.     100.     105.        4        5        0      .00  1020.00  4140.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 484.000

3470 ENCROACHMENT STATIONS=     3080.0    4095.0  TYPE=      1  TARGET=     1015.000
   484.00    17.02   347.02   345.28   346.57   347.93      .91      .64      .01   342.00
   46000.   20588.   24264.    1148.    2993.    2938.     166.    7183.     574.    342.00
     1.65     6.88     8.26     6.92     .045     .070     .045     .000   330.00  3080.00
  .006259     110.     115.     160.        2       10        0      .00  1015.00  4095.00


*SECNO 485.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3080.0    4095.0  TYPE=      1  TARGET=     1015.000
        CHUBB LANE CROSSING
   485.00     6.65   346.65   346.08   346.34   348.22     1.58      .10      .20   342.00
   46000.   28396.   15976.    1628.    2721.    1711.     153.    7184.     574.    342.00
     1.65    10.44     9.34    10.63     .045     .070     .045     .000   340.00  3080.00
  .016210      10.      10.      10.        3       22        0      .00  1015.00  4095.00


*SECNO 486.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3080.0    4095.0  TYPE=      1  TARGET=     1015.000
   486.00    17.65   347.65   345.25   347.01   348.39      .74      .08      .08   342.00
   46000.   22062.   22754.    1184.    3435.    3102.     187.    7186.     575.    342.00
     1.65     6.42     7.34     6.35     .045     .070     .045     .000   330.00  3080.00
  .004590      10.      10.      10.        3       18        0      .00  1015.00  4095.00


1490 NH CARD USED
*SECNO 490.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3030.0    4050.0  TYPE=      1  TARGET=     1020.000
   490.00    18.37   348.37   344.92   347.60   348.93      .56      .52      .02   336.00
   46000.   31295.   11636.    3069.    5151.    1830.     968.    7215.     579.    336.00
     1.66     6.08     6.36     3.17     .040     .070     .075     .000   330.00  3030.00
  .002089     175.     175.     175.        2       10        0      .00  1020.00  4050.00


1490 NH CARD USED
*SECNO 500.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3280.0    4155.0  TYPE=      1  TARGET=      875.000
   500.00    18.98   348.98   341.12   348.41   349.38      .40      .44      .02   334.00
   45000.   12312.   24485.    8202.    3164.    4370.    1622.    7314.     590.    334.00
     1.69     3.89     5.60     5.06     .030     .040     .030     .000   330.00  3280.00
  .000473     495.     510.     525.        2       11        0      .00   875.00  4155.00


1490 NH CARD USED
*SECNO 507.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3851.0    4335.0  TYPE=      1  TARGET=      484.000
   507.00    14.99   348.99   342.91   348.46   349.89      .91      .36      .15   342.00
   45000.     158.   43470.    1372.      44.    5623.     286.    7397.     597.    342.00
     1.70     3.60     7.73     4.80     .040     .040     .040     .000   334.00  3851.00
  .001408     510.     470.     450.        2       14        0      .00   484.00  4335.00


CCHV=     .300 CEHV=     .500
*SECNO 508.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3370 NORMAL BRIDGE, NRD=  49 MIN ELTRD=   352.00 MAX ELLC=   352.00


3470 ENCROACHMENT STATIONS=     3852.0    4334.0  TYPE=      1  TARGET=      482.000
        MAGNOLIA AVE BRIDGE  (NORMAL BRIDGE ROUTINE)
   508.00    14.78   348.78   343.78   348.24   350.14     1.35      .02      .22   342.00
   45000.     208.   43382.    1411.      40.    4595.     227.    7398.     597.    342.00
     1.70     5.24     9.44     6.22     .040     .030     .040     .000   334.00  3852.00
  .002979      10.      10.      10.        2       15        0  -987.46   482.00  4334.00


*SECNO 509.000

3370 NORMAL BRIDGE, NRD=  49 MIN ELTRD=   352.00 MAX ELLC=   352.00


3470 ENCROACHMENT STATIONS=     3851.0    4335.0  TYPE=      1  TARGET=      484.000
   509.00    15.04   349.04   343.78   348.63   350.34     1.30      .19      .02   336.00
   45000.    1723.   42989.     288.     276.    4637.      57.    7405.     598.    342.00
     1.71     6.24     9.27     5.10     .040     .030     .040     .000   334.00  3851.00
  .002811      65.      65.      65.        2       15        0 -1008.91   484.00  4335.00


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 510.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3867.0    4352.0  TYPE=      1  TARGET=      485.000
   510.00    17.58   349.58   342.66   349.14   350.41      .82      .02      .05   342.00
   45000.     365.   43952.     683.      95.    5982.     173.    7407.     598.    341.00
     1.71     3.85     7.35     3.95     .040     .040     .040     .000   332.00  3867.00
  .001188      10.      10.      10.        2       19        0      .00   485.00  4352.00


1490 NH CARD USED
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 515.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     3750.0    4440.0  TYPE=      1  TARGET=      690.000
   515.00    18.37   350.37   337.96   350.03   350.59      .21      .12      .06   334.00
   45000.    9669.   35331.       0.    2897.    9260.       0.    7464.     602. 100000.00
     1.73     3.34     3.82      .00     .040     .040     .000     .000   332.00  3750.00
  .000228     250.     275.     350.        2       17        0      .00   690.00  4440.00


1490 NH CARD USED
*SECNO 520.000

3470 ENCROACHMENT STATIONS=     4240.0    4865.0  TYPE=      1  TARGET=      625.000
   520.00    18.43   350.43   338.87   350.05   350.73      .31      .12      .03   334.00
   45000.    3670.   41015.     315.    1239.    8948.     141.    7607.     610.    334.00
     1.76     2.96     4.58     2.23     .040     .031     .040     .000   332.00  4240.00
  .000199     515.     560.     590.        2       18        0      .00   625.00  4865.00


1490 NH CARD USED
*SECNO 530.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=     4170.0    4650.0  TYPE=      1  TARGET=      480.000
   530.00    16.37   350.37   341.92   350.00   351.02      .65      .18      .10   334.00
   45000.    1132.   36643.    7225.     279.    5337.    1680.    7732.     618.    334.00
     1.79     4.06     6.87     4.30     .040     .030     .040     .000   334.00  4170.00
  .000462     640.     620.     610.        2       14        0      .00   480.00  4650.00


1490 NH CARD USED
*SECNO 535.000

3470 ENCROACHMENT STATIONS=     2120.0    2530.0  TYPE=      1  TARGET=      410.000
   535.00    16.33   350.33   342.92   349.94   351.26      .94      .16      .09100000.00
   45000.       0.   38543.    6457.       0.    4740.    1282.    7775.     621.    336.00
     1.80      .00     8.13     5.03     .000     .031     .040     .000   334.00  2120.00
  .000744     290.     280.     275.        2       11        0      .00   410.00  2530.00
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


1490 NH CARD USED
*SECNO 540.000

3470 ENCROACHMENT STATIONS=     2055.0    2467.0  TYPE=      1  TARGET=      412.000
   540.00    16.65   350.65   342.17   350.33   351.50      .84      .22      .01   336.00
   45000.       9.   42422.    2570.      12.    5636.     638.    7824.     624.    336.00
     1.81      .73     7.53     4.03     .040     .030     .040     .000   334.00  2055.00
  .000564     365.     350.     335.        2        8        0      .00   412.00  2467.00


1490 NH CARD USED
*SECNO 550.000

3470 ENCROACHMENT STATIONS=     1830.0    2350.0  TYPE=      1  TARGET=      520.000
   550.00    17.10   351.10   343.21   350.75   351.87      .77      .37      .01   336.00
   45000.    4576.   34066.    6357.     900.    4424.    1670.    7923.     631.    336.00
     1.84     5.08     7.70     3.81     .040     .030     .040     .000   334.00  1830.00
  .000570     645.     650.     655.        2       11        0      .00   520.00  2350.00


1490 NH CARD USED
*SECNO 560.000

3470 ENCROACHMENT STATIONS=     1575.0    2200.0  TYPE=      1  TARGET=      625.000
   560.00    17.73   351.73   342.49   351.34   352.17      .44      .26      .03   336.00
   45000.    2702.   27988.   14310.     867.    4591.    3763.    8035.     639.    336.00
     1.87     3.12     6.10     3.80     .050     .031     .040     .000   334.00  1575.00
  .000352     605.     600.     595.        2        8        0      .00   625.00  2200.00


1490 NH CARD USED
*SECNO 562.000

3470 ENCROACHMENT STATIONS=     1080.0    1790.0  TYPE=      1  TARGET=      710.000
   562.00    17.93   351.93   342.25   351.53   352.27      .35      .09      .01   336.00
   45000.    3704.   20884.   20413.    1294.    3642.    5423.    8098.     643.    336.00
     1.89     2.86     5.73     3.76     .050     .031     .040     .000   334.00  1080.00
  .000305     280.     280.     285.        2       14        0      .00   710.00  1790.00


1490 NH CARD USED
*SECNO 564.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS=      920.0    1650.0  TYPE=      1  TARGET=      730.000
   564.00    18.04   352.04   341.97   351.65   352.34      .30      .07      .00   336.00
   45000.    5243.   25208.   14549.    1802.    4979.    4069.    8152.     647.    336.00
     1.90     2.91     5.06     3.58     .050     .034     .040     .000   334.00   920.00
  .000291     220.     220.     220.        2       14        0      .00   730.00  1650.00


*SECNO 566.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      870.0    1405.0  TYPE=      1  TARGET=      535.000
   566.00    17.78   351.78   343.50   351.38   352.61      .83      .11      .16   338.00
   45000.    2291.   38979.    3729.    1131.    4986.    1364.    8210.     651.    338.00
     1.91     2.03     7.82     2.74     .085     .030     .060     .000   334.00   870.00
  .000554     280.     280.     280.        2       11        0      .00   535.00  1405.00


*SECNO 570.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     1525.0    1960.0  TYPE=      1  TARGET=      435.000
   570.00    17.47   351.47   345.56   351.05   353.05     1.58      .21      .22   336.00
   45000.    2747.   37994.    4259.    1084.    3493.    1116.    8253.     654.    336.00
     1.92     2.53    10.88     3.82     .085     .030     .060     .000   334.00  1525.00
  .001073     285.     280.     280.        2       14        0      .00   435.00  1960.00


*SECNO 572.000

3470 ENCROACHMENT STATIONS=      757.0    1150.0  TYPE=      1  TARGET=      393.000
   572.00    17.90   351.90   344.37   351.54   353.25     1.34      .18      .02   336.00
   45000.    2615.   39463.    2922.     919.    4002.     857.    8278.     656.    336.00
     1.93     2.85     9.86     3.41     .085     .030     .060     .000   334.00   757.00
  .000853     200.     187.     178.        2       14        0      .00   393.00  1150.00


*SECNO 574.000
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS=      705.0    1090.0  TYPE=      1  TARGET=      385.000
   574.00    18.55   352.55   342.91   352.23   353.42      .87      .13      .05   336.00
   45000.     922.   42269.    1809.     463.    5486.     608.    8306.     658.    336.00
     1.93     1.99     7.70     2.97     .085     .030     .060     .000   334.00   705.00
  .000496     210.     200.     190.        2        8        0      .00   385.00  1090.00


*SECNO 576.000

3470 ENCROACHMENT STATIONS=      688.0    1060.0  TYPE=      1  TARGET=      372.000
   576.00    18.40   352.40   344.59   352.13   353.64     1.24      .10      .11   338.00
   45000.    1002.   39040.    4958.     433.    4117.    1333.    8330.     659.    338.00
     1.94     2.31     9.48     3.72     .085     .030     .060     .000   334.00   688.00
  .000773     190.     170.     165.        2       11        0      .00   372.00  1060.00


*SECNO 582.000

3470 ENCROACHMENT STATIONS=      615.0    1080.0  TYPE=      1  TARGET=      465.000
   582.00    16.65   352.65   346.64   352.54   353.93     1.29      .28      .02   338.00
   45000.    1788.   35939.    7273.     756.    3582.    1907.    8376.     662.    338.00
     1.95     2.37    10.03     3.81     .085     .030     .060     .000   336.00   615.00
  .000973     335.     330.     310.        2       11        0      .00   465.00  1080.00


*SECNO 584.000

3470 ENCROACHMENT STATIONS=      538.0    1085.0  TYPE=      1  TARGET=      547.000
   584.00    17.24   353.24   345.92   352.84   354.13      .90      .16      .04   338.00
   45000.    2630.   33306.    9064.    1075.    3864.    2674.    8407.     665.    338.00
     1.96     2.45     8.62     3.39     .085     .030     .060     .000   336.00   538.00
  .000686     210.     200.     190.        2       14        0      .00   547.00  1085.00


*SECNO 586.000

3470 ENCROACHMENT STATIONS=      465.0     960.0  TYPE=      1  TARGET=      495.000
   586.00    17.31   353.31   346.08   353.06   354.32     1.02      .15      .04   338.00
   45000.    3520.   30882.   10598.    1343.    3272.    2638.    8442.     667.    338.00
     1.97     2.62     9.44     4.02     .085     .030     .060     .000   336.00   465.00
  .000819     205.     205.     205.        2       11        0      .00   495.00   960.00
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 592.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 371.0 720.0 TYPE= 1 TARGET= 349.000

592.00	16.96	352.96	348.14	352.79	355.10	2.13	.44	.34	338.00
45000.	2993.	33504.	8503.	800.	2525.	1591.	8495.	671.	338.00
1.97	3.74	13.27	5.34	.085	.030	.060	.000	336.00	371.00
.001722	375.	380.	385.	2	19	0	.00	349.00	720.00

*SECNO 594.000

3301 HV CHANGED MORE THAN HVINS

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 595.0 830.0 TYPE= 1 TARGET= 235.000

594.00	12.93	352.93	352.93	353.27	358.39	5.46	1.19	1.00	342.00
45000.	5001.	33075.	6924.	243.	1887.	307.	8515.	672.	342.00
1.98	20.62	17.53	22.59	.075	.125	.065	.000	340.00	595.00
.073995	230.	230.	230.	0	15	0	.00	235.00	830.00

*SECNO 600.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE

3470 ENCROACHMENT STATIONS= 660.0 995.0 TYPE= 1 TARGET= 335.000

600.00	18.78	360.78	353.34	360.55	362.00	1.22	3.19	.42	346.00
45000.	12922.	30234.	1844.	1287.	3673.	180.	8528.	673.	346.00
1.98	10.04	8.23	10.24	.075	.125	.065	.000	342.00	660.00
.009960	145.	150.	155.	3	11	0	.00	335.00	995.00

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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


*SECNO 610.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      280.0     645.0  TYPE=      1  TARGET=      365.000
   610.00    21.58   363.58   351.62   363.40   364.22      .65     2.16      .06   346.00
   45000.    3003.   40225.    1772.     451.    6293.     243.    8571.     676.    346.00
     2.00     6.66     6.39     7.28     .075     .125     .065     .000   342.00   280.00
  .005074     295.     315.     355.        3        8        0      .00   365.00   645.00


*SECNO 620.000

3470 ENCROACHMENT STATIONS=      330.0     730.0  TYPE=      1  TARGET=      400.000
   620.00    21.73   365.73   353.74   365.57   366.29      .55     2.05      .01100000.00
   45000.       0.   45000.       0.       0.    7534.       0.    8637.     679. 100000.00
     2.01      .00     5.97      .00     .000     .125     .000     .000   344.00   330.00
  .005322     395.     395.     395.        2       14        0      .00   400.00   730.00


*SECNO 630.000

3470 ENCROACHMENT STATIONS=      380.0     750.0  TYPE=      1  TARGET=      370.000
   630.00    22.93   366.93   354.56   366.77   367.55      .63     1.24      .02   348.00
   45000.    5714.   35532.    3754.     827.    5924.     446.    8682.     681.    348.00
     2.03     6.91     6.00     8.42     .075     .125     .065     .000   344.00   380.00
  .004196     235.     265.     295.        2       11        0      .00   370.00   750.00


*SECNO 640.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE


3470 ENCROACHMENT STATIONS=      401.0     600.0  TYPE=      1  TARGET=      199.000
        FINAL CROSS SECTION - APPROX. 200 FT. DOWNSTREAM OF RIVERFORD BRIDGE
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
640.00	22.41	368.41	360.72	368.29	370.59	2.18	2.57	.47	350.00
45000.	4545.	36553.	3902.	368.	3124.	306.	8726.	684.	350.00
2.03	12.34	11.70	12.75	.075	.125	.065	.000	346.00	401.00
.016116	345.	350.	355.	2	14	0	.00	199.00	600.00

THIS RUN EXECUTED 6/24/92 13: 1:54

****
HEC2 RELEASE DATED SEPT 88

****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

PROFILE 1 - 100 YEAR FLO

SUMMARY PRINTOUT

	SECNO	CWSEL	CRIWS	DEPTH	Q	QLOB	QCH	QROB	EG	10*KS	VLOB	VCH	VROB
*	100.000	282.55	282.55	12.55	50000.00	439.54	49530.04	30.42	287.42	1983.91	10.96	17.77	8.08
	100.000	283.55	282.25	13.55	50000.00	15.44	49984.56	.00	287.73	1528.67	5.48	16.41	.00
*	110.000	289.82	285.87	15.82	50000.00	4747.03	44044.85	1208.12	292.22	611.20	16.65	11.88	12.34
*	110.000	289.63	285.82	15.63	50000.00	4273.80	44813.60	912.60	292.23	661.82	18.47	12.26	12.99
*	120.000	292.90	286.24	18.90	50000.00	5983.88	39075.13	4941.00	294.45	271.54	12.95	9.09	12.48
*	120.000	292.95	286.24	18.95	50000.00	5724.87	39307.86	4967.27	294.55	272.41	13.80	9.12	12.67
*	130.000	300.44	289.33	24.44	50000.00	9040.13	28780.63	12179.24	301.19	74.26	7.08	5.61	9.40
*	130.000	301.07	289.06	25.07	50000.00	3243.99	32665.40	14090.61	302.01	87.16	8.76	6.20	10.42
	140.000	304.49	290.26	28.49	50000.00	6255.16	35398.74	8346.10	305.19	69.65	7.50	5.88	8.98
	140.000	305.52	290.32	29.52	50000.00	3868.47	37349.01	8782.52	306.26	67.77	8.92	5.96	9.31
*	150.000	305.95	288.36	25.95	50000.00	1439.87	25150.03	23410.09	306.20	7.86	2.14	2.20	5.41
*	150.000	306.90	288.34	26.90	50000.00	688.81	24398.49	24912.70	307.15	6.52	2.12	2.05	5.23
*	160.000	306.49	292.18	24.49	50000.00	42430.20	4574.35	2995.44	306.59	3.40	2.60	2.59	1.67
*	160.000	307.38	292.18	25.38	50000.00	41862.43	4575.37	3562.20	307.48	2.97	2.49	2.49	1.78
*	170.000	306.61	293.99	24.61	50000.00	33634.66	2046.90	14318.44	306.66	1.45	1.92	1.63	1.75
*	170.000	307.48	293.93	25.48	50000.00	35733.69	2165.61	12100.71	307.54	1.42	1.96	1.66	1.93
*	180.000	306.65	293.03	20.65	50000.00	38997.22	4716.69	6286.09	306.72	.73	2.23	1.11	1.20
	180.000	307.53	293.01	21.53	50000.00	42028.15	5077.55	2894.29	307.60	.73	2.29	1.14	1.50
	190.000	306.68	290.51	20.68	50000.00	45963.77	3762.62	273.61	306.75	.41	2.20	.84	.52
*	190.000	307.56	290.51	21.56	50000.00	45892.87	3773.71	333.42	307.63	.35	2.11	.81	.56
*	200.000	306.74	290.78	20.74	50000.00	32505.22	2922.58	14572.19	306.81	3.05	1.58	1.37	3.11
*	200.000	307.61	290.78	21.61	50000.00	32050.01	2925.98	15024.01	307.68	2.60	1.51	1.30	3.07

	SECNO	CWSEL	CRIWS	DEPTH	Q	QLOB	QCH	QROB	EG	10*KS	VLOB	VCH	VROB
	209.000	306.86	292.00	20.86	50000.00	22775.46	6120.35	21104.18	306.94	3.28	1.54	1.43	2.93
	209.000	307.71	291.98	21.71	50000.00	23058.53	6242.88	20698.60	307.80	2.91	1.50	1.39	3.10
*	210.000	306.78	299.60	20.78	50000.00	10284.65	8978.33	30737.02	306.98	7.17	1.43	2.11	4.32
*	210.000	307.63	299.57	21.63	50000.00	11055.12	9059.90	29884.99	307.84	6.22	1.42	2.03	4.51
*	211.000	306.92	292.00	20.92	50000.00	22727.08	6106.50	21166.43	307.00	3.23	1.53	1.43	2.92
*	211.000	307.77	291.98	21.77	50000.00	23023.59	6233.83	20742.58	307.85	2.87	1.49	1.39	3.09
	220.000	307.13	298.96	19.13	50000.00	8657.76	5215.09	36127.14	307.27	3.18	3.07	.91	3.24
	220.000	307.95	298.90	19.95	50000.00	8150.04	5111.31	36738.65	308.09	2.63	3.06	.85	3.12
	230.000	307.25	299.47	19.25	50000.00	3842.25	4011.86	42145.89	307.49	4.75	3.64	1.11	4.13
	230.000	308.05	299.28	20.05	50000.00	4070.61	4003.81	41925.57	308.28	4.10	3.55	1.06	4.02
*	239.000	307.10	298.48	17.10	50000.00	2952.22	15410.44	31637.33	308.18	33.57	9.33	2.82	9.93
*	239.000	307.90	298.52	17.90	50000.00	2940.00	14920.17	32139.83	308.87	26.94	8.66	2.60	9.34
*	240.000	309.17	298.36	19.17	50000.00	71.67	49928.34	.00	309.70	150.03	6.36	5.88	.00
*	240.000	309.62	298.34	19.62	50000.00	38.01	49961.99	.00	310.13	134.21	5.37	5.75	.00
*	242.000	309.14	298.80	19.14	50000.00	25.04	49974.96	.00	309.78	10.91	2.27	6.42	.00
*	242.000	309.60	298.80	19.60	50000.00	6.59	49993.41	.00	310.21	10.11	1.54	6.26	.00
	243.000	309.22	298.80	19.22	50000.00	.00	49963.21	36.79	309.85	10.75	.00	6.39	2.27
	243.000	309.67	298.80	19.67	50000.00	.00	49961.50	38.51	310.27	9.92	.00	6.24	2.22
*	244.000	309.37	298.90	19.37	50000.00	.00	50000.00	.00	309.91	75.22	.00	5.87	.00
*	244.000	309.81	298.90	19.81	50000.00	.00	50000.00	.00	310.32	68.10	.00	5.73	.00
*	245.000	309.96	297.46	19.96	50000.00	20709.59	21638.68	7651.73	310.32	9.32	6.46	2.36	4.64
*	245.000	310.21	297.39	20.21	50000.00	22773.35	25895.30	1331.34	310.80	12.80	8.49	2.79	5.70
	250.000	310.76	299.80	20.76	50000.00	8418.52	6928.99	34652.49	310.93	6.68	4.05	2.01	3.27
	250.000	311.39	300.15	21.39	50000.00	10121.22	8573.89	31304.88	311.63	9.21	5.34	2.40	3.72
*	260.000	311.65	306.19	17.65	50000.00	909.28	10883.84	38206.88	312.56	43.12	2.50	4.25	8.42
*	260.000	312.61	306.21	18.61	50000.00	823.34	10858.36	38318.30	313.46	34.98	2.63	3.99	8.21
	270.000	314.82	307.73	16.82	49000.00	6620.07	7842.30	34537.63	315.36	21.29	2.47	3.02	6.84
	270.000	315.40	307.73	17.40	49000.00	5348.92	8594.57	35056.51	316.10	22.57	2.86	3.19	7.67
*	280.000	316.53	308.55	16.53	49000.00	6209.83	2786.43	40003.74	316.70	8.29	1.46	1.83	3.55
*	280.000	317.32	308.67	17.32	49000.00	6006.91	3089.11	39903.98	317.51	8.59	1.46	1.93	3.74
	285.000	317.04	309.79	15.04	49000.00	4435.14	1793.47	42771.39	317.20	6.50	2.31	1.53	3.27
	285.000	317.82	309.79	15.82	49000.00	3934.17	1799.70	43266.13	317.97	5.45	2.50	1.45	3.18
	290.000	317.51	311.73	15.51	49000.00	8387.77	2340.77	38271.45	317.69	8.72	3.89	1.72	3.37
	290.000	318.22	311.69	16.22	49000.00	3992.56	2491.26	42516.18	318.41	8.29	4.49	1.74	3.46

	SECNO	CWSEL	CRIWS	DEPTH	Q	QLOB	QCH	QROB	EG	10*KS	VLOB	VCH	VROB
*	300.000	318.24	314.09	12.24	49000.00	3664.32	3237.14	42098.54	318.55	18.92	4.41	2.03	4.61
*	300.000	318.90	314.05	12.90	49000.00	.00	3310.40	45689.60	319.21	16.99	.00	1.97	4.58
	310.000	319.19	313.84	11.19	49000.00	2135.26	1304.05	45560.69	319.41	10.86	2.79	1.36	3.83
	310.000	319.83	314.39	11.83	49000.00	1030.52	1651.52	46317.95	320.12	13.36	3.92	1.59	4.34
*	320.000	320.71	317.84	10.71	49000.00	804.11	11393.19	36802.70	321.33	64.72	6.41	3.84	6.89
*	320.000	321.55	317.88	11.55	49000.00	.00	10705.56	38294.45	322.18	52.97	.00	3.68	6.91
*	330.000	323.86	318.57	11.86	48000.00	23228.34	8456.57	16315.09	324.31	25.86	5.70	4.59	5.29
*	330.000	324.35	318.63	12.35	48000.00	22842.52	8709.59	16447.88	324.79	23.92	5.68	4.53	5.32
	340.000	325.21	319.00	15.21	48000.00	8121.16	21990.63	17888.21	325.58	23.99	5.08	4.38	5.46
	340.000	325.60	319.00	15.60	48000.00	8213.52	21849.17	17937.31	325.95	21.17	4.94	4.21	5.26
	345.000	325.96	320.63	13.96	48000.00	12602.07	25559.24	9838.69	326.39	33.38	5.70	4.90	5.57
	345.000	326.26	320.55	14.26	48000.00	11242.15	26404.65	10353.21	326.71	32.57	6.11	4.93	5.61
	355.000	327.04	322.71	13.04	48000.00	11841.53	30685.59	5472.88	327.55	47.59	5.64	5.70	6.31
	355.000	327.32	322.64	13.32	48000.00	9926.16	32246.61	5827.23	327.87	48.04	6.19	5.83	6.47
	356.000	328.43	325.38	12.43	48000.00	11547.32	35450.64	1002.04	329.29	86.42	6.02	7.87	7.36
	356.000	328.73	325.13	12.73	48000.00	7883.78	38970.32	1145.89	329.75	95.29	6.48	8.42	7.87
*	358.000	328.06	.00	12.06	48000.00	6927.53	41055.46	17.01	329.29	30.23	3.66	9.50	2.40
*	358.000	328.47	.00	12.47	48000.00	5159.54	42800.66	39.80	329.75	28.76	3.85	9.52	2.49
	360.000	329.95	323.27	13.95	48000.00	37141.04	8472.66	2386.30	330.30	16.62	5.10	3.68	2.23
	360.000	330.36	323.24	14.36	48000.00	38366.72	8872.63	760.65	330.74	16.24	5.20	3.72	2.47
	370.000	330.57	324.06	12.57	48000.00	35159.80	3676.55	9163.64	330.80	12.06	4.22	3.23	2.44
	370.000	330.97	324.06	12.97	48000.00	39624.59	4117.46	4257.95	331.26	13.61	4.59	3.51	2.71
	380.000	330.97	324.77	12.97	48000.00	33764.25	2402.13	11833.62	331.20	13.05	4.20	3.41	2.66
	380.000	331.42	324.95	13.42	48000.00	39771.87	2788.83	5439.31	331.73	15.68	4.72	3.83	3.03
	390.000	331.74	326.44	13.74	48000.00	32610.24	6858.39	8531.37	332.14	23.39	5.62	4.14	3.26
	390.000	332.32	326.71	14.32	48000.00	33909.73	7733.60	6356.67	332.80	25.02	6.04	4.43	3.50
	400.000	332.86	323.70	14.86	48000.00	5050.22	40248.66	2701.12	333.16	12.57	5.12	4.20	5.36
*	400.000	333.52	323.70	15.52	48000.00	2552.38	42647.24	2800.37	333.83	12.20	5.36	4.26	5.82
	410.000	333.65	324.11	15.65	48000.00	2800.71	42631.76	2567.53	334.00	11.18	4.84	4.75	5.12
	410.000	334.27	324.11	16.27	48000.00	2971.53	42389.65	2638.82	334.59	9.71	4.67	4.54	5.05
	415.000	334.47	324.08	16.47	48000.00	2282.54	42196.28	3521.18	334.77	8.59	4.91	4.27	4.99
	415.000	334.99	324.08	16.99	48000.00	2348.61	42027.71	3623.68	335.27	7.67	4.77	4.12	4.85
	420.000	334.92	325.37	16.92	48000.00	3535.89	39702.05	4762.06	335.34	14.90	6.74	4.81	6.86
	420.000	335.38	325.39	17.38	48000.00	3592.24	39547.61	4860.15	335.78	13.42	6.61	4.66	6.66

	SECNO	CWSEL	CRIWS	DEPTH	Q	QLOB	QCH	QROB	EG	10*KS	VLOB	VCH	VROB
*	421.000	334.98	331.64	10.98	48000.00	2496.23	45230.37	273.41	336.66	51.57	10.19	10.45	6.69
*	421.000	335.42	331.65	11.42	48000.00	2538.04	45183.52	278.45	336.97	45.14	9.98	10.04	6.82
	422.000	334.44	332.77	10.44	48000.00	1540.73	46032.39	426.87	337.32	64.28	10.32	13.75	6.28
	422.000	334.94	332.77	10.94	48000.00	1594.96	45956.65	448.39	337.55	56.16	10.16	13.10	6.22
	423.000	335.48	332.76	11.48	48000.00	1678.35	45820.74	500.91	337.84	48.74	9.54	12.45	5.96
	423.000	335.74	332.77	11.74	48000.00	1693.80	45803.94	502.26	337.99	45.78	9.60	12.17	5.95
	424.000	336.18	333.45	10.18	48000.00	1280.97	44711.55	2007.48	338.04	63.11	7.81	11.09	9.10
	424.000	336.38	333.45	10.38	48000.00	1262.15	44749.20	1988.65	338.18	59.20	7.78	10.88	9.21
*	425.000	338.72	333.13	12.72	48000.00	20634.99	17355.63	10009.38	339.19	18.49	5.84	4.56	6.36
*	425.000	338.80	333.12	12.80	48000.00	20039.55	17718.98	10241.47	339.30	18.86	6.05	4.63	6.45
	430.000	339.61	334.34	13.61	48000.00	11260.05	10256.48	26483.47	339.97	14.12	3.25	4.18	5.55
	430.000	339.81	336.97	13.81	48000.00	17571.39	16763.61	13665.00	340.60	35.89	5.77	6.73	8.90
*	440.000	340.57	337.09	12.57	46000.00	27332.40	12913.81	5753.79	341.14	32.51	6.25	6.03	4.61
	440.000	341.64	337.08	13.64	46000.00	29010.05	12410.47	4579.49	342.16	22.80	5.99	5.34	5.51
*	450.000	341.22	334.54	13.22	46000.00	7099.60	38472.51	427.89	341.65	4.23	1.99	5.68	.92
*	450.000	342.18	334.56	14.18	46000.00	7483.19	38260.44	256.36	342.55	3.31	2.00	5.27	1.53
	460.000	341.51	333.19	13.51	46000.00	3030.39	42547.37	422.24	341.81	2.60	1.28	4.50	.83
	460.000	342.41	333.20	14.41	46000.00	2251.88	43469.58	278.54	342.68	2.19	1.39	4.32	1.41
*	470.000	341.70	337.47	13.70	46000.00	34103.78	11300.97	595.25	342.25	26.39	5.98	6.03	5.24
*	470.000	342.47	338.64	14.47	46000.00	36001.08	9998.92	.00	343.11	24.64	6.61	5.65	.00
*	480.000	343.90	343.90	13.90	46000.00	6049.24	39620.65	330.11	345.96	113.45	4.96	12.25	4.48
*	480.000	343.68	343.68	13.68	46000.00	3212.94	42780.13	6.93	346.32	140.13	4.89	13.46	2.76
*	483.000	345.96	344.09	15.96	46000.00	14527.80	28588.81	2883.39	346.74	42.54	4.85	8.14	5.46
*	483.000	346.25	343.93	16.25	46000.00	12548.46	32331.18	1120.36	347.27	50.80	5.34	9.02	6.07
	484.000	346.57	344.90	16.57	46000.00	21120.35	21442.27	3437.39	347.31	56.26	6.23	7.61	6.34
	484.000	347.02	345.28	17.02	46000.00	20587.64	24264.12	1148.25	347.93	62.59	6.88	8.26	6.92
*	485.000	346.34	345.55	6.34	46000.00	28646.99	12983.34	4369.67	347.52	125.62	8.97	7.96	9.17
*	485.000	346.65	346.08	6.65	46000.00	28396.00	15976.44	1627.57	348.22	162.10	10.44	9.34	10.63
*	486.000	347.01	344.97	17.01	46000.00	22301.78	20362.62	3335.60	347.65	44.33	5.91	6.94	6.01
*	486.000	347.65	345.25	17.65	46000.00	22061.97	22753.75	1184.27	348.39	45.90	6.42	7.34	6.35
	490.000	347.60	344.97	17.60	46000.00	29672.88	12938.82	3388.30	348.30	30.18	6.76	7.41	2.79
*	490.000	348.37	344.92	18.37	46000.00	31295.43	11635.80	3068.76	348.93	20.89	6.08	6.36	3.17
*	500.000	348.41	340.90	18.41	45000.00	9275.79	24935.60	10788.62	348.87	5.46	4.20	5.89	5.54
*	500.000	348.98	341.12	18.98	45000.00	12312.50	24485.27	8202.24	349.38	4.73	3.89	5.60	5.06

	SECNO	CWSEL	CRIWS	DEPTH	Q	QLOB	QCH	QROB	EG	10*KS	VLOB	VCH	VROB
*	507.000	348.46	342.94	14.46	45000.00	433.74	43284.47	1281.78	349.44	15.99	1.31	8.02	4.80
*	507.000	348.99	342.91	14.99	45000.00	157.96	43470.42	1371.62	349.89	14.08	3.60	7.73	4.80
*	508.000	348.24	343.81	14.24	45000.00	281.76	43411.40	1306.84	349.71	33.68	1.89	9.86	6.18
*	508.000	348.78	343.78	14.78	45000.00	207.94	43381.50	1410.56	350.14	29.79	5.24	9.44	6.22
	509.000	348.63	343.83	14.63	45000.00	2157.12	42568.43	274.46	349.96	30.23	3.52	9.48	4.79
	509.000	349.04	343.78	15.04	45000.00	1723.03	42988.84	288.13	350.34	28.11	6.24	9.27	5.10
*	510.000	349.14	342.66	17.14	45000.00	346.63	44007.95	645.42	350.02	13.26	3.82	7.60	3.89
*	510.000	349.58	342.66	17.58	45000.00	365.16	43952.22	682.62	350.41	11.88	3.85	7.35	3.95
*	515.000	350.03	337.92	18.03	45000.00	12448.68	31700.07	851.25	350.20	1.82	2.97	3.44	2.78
*	515.000	350.37	337.96	18.37	45000.00	9668.90	35331.10	.00	350.59	2.28	3.34	3.82	.00
	520.000	350.05	338.87	18.05	45000.00	3519.75	39699.54	1780.71	350.34	2.00	2.94	4.53	2.36
	520.000	350.43	338.87	18.43	45000.00	3670.36	41014.71	314.93	350.73	1.99	2.96	4.58	2.23
*	530.000	350.00	341.92	16.00	45000.00	2187.67	35680.74	7131.60	350.63	4.73	3.43	6.84	4.19
*	530.000	350.37	341.92	16.37	45000.00	1131.69	36643.10	7225.22	351.02	4.62	4.06	6.87	4.30
	535.000	349.94	342.92	15.94	45000.00	774.17	38056.98	6168.85	350.88	7.13	3.55	8.22	4.53
	535.000	350.33	342.92	16.33	45000.00	.00	38543.30	6456.70	351.26	7.44	.00	8.13	5.03
	540.000	350.33	342.11	16.33	45000.00	2018.31	40569.55	2412.15	351.11	5.50	4.13	7.34	3.86
	540.000	350.65	342.17	16.65	45000.00	8.59	42421.59	2569.82	351.50	5.64	.73	7.53	4.03
	550.000	350.75	343.27	16.75	45000.00	5900.62	33086.71	6012.67	351.48	5.77	4.30	7.64	3.72
	550.000	351.10	343.21	17.10	45000.00	4576.40	34066.30	6357.30	351.87	5.70	5.08	7.70	3.81
	560.000	351.34	342.52	17.34	45000.00	2817.36	27770.23	14412.41	351.79	3.74	3.05	6.19	3.83
	560.000	351.73	342.49	17.73	45000.00	2702.19	27987.60	14310.21	352.17	3.52	3.12	6.10	3.80
	562.000	351.53	342.29	17.53	45000.00	3716.00	20926.40	20357.60	351.89	3.30	2.88	5.88	3.83
	562.000	351.93	342.25	17.93	45000.00	3703.88	20883.51	20412.61	352.27	3.05	2.86	5.73	3.76
	564.000	351.65	341.96	17.65	45000.00	5323.74	25249.68	14426.58	351.97	3.14	2.93	5.18	3.63
	564.000	352.04	341.97	18.04	45000.00	5242.91	25208.25	14548.84	352.34	2.91	2.91	5.06	3.58
	566.000	351.38	343.50	17.38	45000.00	2381.65	38975.88	3642.47	352.25	5.98	1.98	8.00	2.74
	566.000	351.78	343.50	17.78	45000.00	2291.27	38979.42	3729.32	352.61	5.54	2.03	7.82	2.74
	570.000	351.05	345.56	17.05	45000.00	2668.25	38116.58	4215.16	352.72	11.71	2.56	11.18	3.85
	570.000	351.47	345.56	17.47	45000.00	2746.69	37994.10	4259.21	353.05	10.73	2.53	10.88	3.82
	572.000	351.54	344.37	17.54	45000.00	2594.57	39473.14	2932.29	352.94	9.13	2.88	10.07	3.38
	572.000	351.90	344.37	17.90	45000.00	2615.14	39463.08	2921.78	353.25	8.53	2.85	9.86	3.41
	574.000	352.23	342.95	18.23	45000.00	913.89	42161.19	1924.92	353.13	5.23	2.00	7.82	2.78
	574.000	352.55	342.91	18.55	45000.00	922.34	42268.61	1809.05	353.42	4.96	1.99	7.70	2.97

	SECNO	CWSEL	CRIWS	DEPTH	Q	QLOB	QCH	QROB	EG	10*KS	VLOB	VCH	VROB
	576.000	352.13	344.64	18.13	45000.00	974.31	38207.11	5818.58	353.33	7.78	2.25	9.42	3.63
	576.000	352.40	344.59	18.40	45000.00	1001.86	39039.84	4958.31	353.64	7.73	2.31	9.48	3.72
	582.000	352.54	346.60	16.54	45000.00	2142.75	33447.15	9410.10	353.61	8.61	2.15	9.39	3.59
	582.000	352.65	346.64	16.65	45000.00	1788.25	35938.52	7273.23	353.93	9.73	2.37	10.03	3.81
	584.000	352.84	345.92	16.84	45000.00	2601.64	33311.14	9087.21	353.78	7.42	2.48	8.83	3.42
	584.000	353.24	345.92	17.24	45000.00	2629.92	33305.62	9064.46	354.13	6.86	2.45	8.62	3.39
	586.000	353.06	345.95	17.06	45000.00	3275.13	28996.77	12728.10	353.94	7.58	2.48	8.99	3.79
	586.000	353.31	346.08	17.31	45000.00	3520.21	30882.23	10597.57	354.32	8.19	2.62	9.44	4.02
*	592.000	352.79	347.93	16.79	45000.00	2800.17	31496.20	10703.63	354.63	15.77	3.53	12.61	5.13
*	592.000	352.96	348.14	16.96	45000.00	2993.29	33503.95	8502.76	355.10	17.22	3.74	13.27	5.34
*	594.000	353.27	353.27	13.27	45000.00	5136.37	32643.34	7220.29	358.23	660.48	19.54	16.85	20.91
*	594.000	352.93	352.93	12.93	45000.00	5001.11	33075.16	6923.72	358.39	739.95	20.62	17.53	22.59
*	600.000	360.55	353.32	18.55	45000.00	12812.21	30205.13	1982.66	361.79	103.75	10.06	8.33	10.07
*	600.000	360.78	353.34	18.78	45000.00	12922.07	30233.79	1844.14	362.00	99.60	10.04	8.23	10.24
*	610.000	363.40	351.58	21.40	45000.00	3731.79	39442.21	1826.00	364.03	50.19	6.46	6.32	7.33
*	610.000	363.58	351.62	21.58	45000.00	3002.62	40225.27	1772.11	364.22	50.74	6.66	6.39	7.28
	620.000	365.57	353.73	21.57	45000.00	40.75	44898.39	60.86	366.11	54.31	1.24	5.87	2.15
	620.000	365.73	353.74	21.73	45000.00	.00	45000.00	.00	366.29	53.22	.00	5.97	.00
	630.000	366.77	354.55	22.77	45000.00	7137.99	34115.39	3746.62	367.33	39.61	6.12	5.80	7.41
	630.000	366.93	354.56	22.93	45000.00	5714.01	35532.07	3753.93	367.55	41.96	6.91	6.00	8.42
*	640.000	368.29	360.93	22.29	45000.00	4081.82	32759.11	8159.07	369.99	131.94	10.84	10.55	9.96
*	640.000	368.41	360.72	22.41	45000.00	4545.05	36553.00	3901.95	370.59	161.16	12.34	11.70	12.75

PROFILE 1 - 100 YEAR FLO

SUMMARY PRINTOUT

	SECNO	STCHL	XLBEL	STCHR	RBEL	K*XNL	K*XNCH	K*XNR	XLCH	K*CHSL	AREA	CASE	OLOSS
*	100.000	340.80	280.00	600.70	280.00	80.00	180.00	80.00	.00	.00	2831.33	1.00	.00
	100.000	340.80	280.00	600.70	100000.00	80.00	180.00	.00	.00	.00	3048.03	.00	.00
*	110.000	339.70	280.00	600.30	280.00	80.00	180.00	80.00	45.00	88.89	4089.00	16384.00	.25
*	110.000	339.70	280.00	600.30	280.00	80.00	180.00	80.00	45.00	88.89	3958.02	16384.00	.16
*	120.000	354.50	280.00	602.50	280.00	80.00	180.00	80.00	55.00	.00	5158.88	16384.00	.08
*	120.000	354.50	280.00	602.50	280.00	80.00	180.00	80.00	55.00	.00	5118.94	16384.00	.10
*	130.000	353.00	280.00	583.50	280.00	80.00	180.00	80.00	520.00	3.85	7700.22	16384.00	.08
*	130.000	353.00	280.00	583.50	280.00	80.00	180.00	80.00	520.00	3.85	6994.77	16384.00	.07
	140.000	242.60	284.00	482.40	284.00	80.00	180.00	80.00	555.00	.00	7779.94	.00	.00
	140.000	242.60	284.00	482.40	284.00	80.00	180.00	80.00	555.00	.00	7641.86	.00	.01
*	150.000	273.60	290.00	738.10	290.00	80.00	160.00	35.00	580.00	6.90	16445.68	16384.00	.01
*	150.000	273.60	290.00	738.10	290.00	80.00	160.00	35.00	580.00	6.90	16976.65	16384.00	.01
*	160.000	1331.10	292.00	1412.30	290.00	72.19	80.00	47.35	670.00	2.99	19913.96	16384.00	.00
*	160.000	1331.10	292.00	1412.30	290.00	73.09	80.00	46.64	670.00	2.99	20632.64	16384.00	.00
*	170.000	1483.20	292.00	1544.10	290.00	60.27	80.00	51.06	320.00	.00	26998.31	16384.00	.00
*	170.000	1483.20	292.00	1544.10	290.00	60.55	80.00	54.14	320.00	.00	25770.28	16384.00	.00
*	180.000	1530.00	292.00	1759.00	290.00	38.36	80.00	40.00	550.00	7.27	26973.68	16384.00	.00
	180.000	1530.00	292.00	1759.00	290.00	38.51	80.00	40.00	550.00	7.27	24749.20	.00	.00
	190.000	1576.30	296.00	1809.70	290.00	30.92	80.00	56.67	505.00	.00	25874.14	.00	.00
*	190.000	1576.30	296.00	1809.70	290.00	30.95	80.00	54.37	505.00	.00	27001.29	16384.00	.00
*	200.000	1439.70	296.00	1562.70	294.00	117.99	125.00	41.69	740.00	.00	27361.06	16384.00	.00
*	200.000	1439.70	296.00	1562.70	294.00	118.38	125.00	41.76	740.00	.00	28402.78	16384.00	.00
	209.000	1233.40	298.00	1479.20	294.00	122.04	125.00	40.00	390.00	.00	26228.00	.00	.00
	209.000	1233.40	298.00	1479.20	294.00	122.11	125.00	40.00	390.00	.00	26517.09	.00	.00
*	210.000	1233.40	298.00	1479.20	294.00	115.60	125.00	40.00	10.00	.00	18545.81	16384.00	.04
*	210.000	1233.40	298.00	1479.20	294.00	116.39	125.00	40.00	10.00	.00	18855.02	16384.00	.04
*	211.000	1233.40	298.00	1479.20	294.00	121.99	125.00	40.00	10.00	.00	26347.21	16384.00	.01
*	211.000	1233.40	298.00	1479.20	294.00	122.08	125.00	40.00	10.00	.00	26617.63	16384.00	.01
	220.000	745.80	292.00	1065.00	292.00	40.00	200.00	40.00	810.00	2.47	19702.38	.00	.02
	220.000	745.80	292.00	1065.00	292.00	40.00	200.00	40.00	810.00	2.47	20444.99	.00	.02
	230.000	941.10	292.00	1142.70	292.00	40.00	200.00	40.00	490.00	.00	14872.59	.00	.03
	230.000	941.10	292.00	1142.70	292.00	40.00	200.00	40.00	490.00	.00	15346.90	.00	.03

	SECNO	STCHL	XLBEL	STCHR	RBEL	K*XNL	K*XNCH	K*XNR	XLCH	K*CHSL	AREA	CASE	OLOSS
*	239.000	2398.50	294.00	2724.40	294.00	40.00	200.00	40.00	420.00	4.76	8977.21	16384.00	.25
*	239.000	2398.50	294.00	2724.40	294.00	40.00	200.00	40.00	420.00	4.76	9513.96	16384.00	.22
*	240.000	2519.30	306.00	3031.90	310.00	40.00	200.00	.00	230.00	.00	8502.70	16384.00	.05
*	240.000	2519.30	306.00	3031.90	100000.00	40.00	200.00	.00	230.00	.00	8703.58	16384.00	.05
*	242.000	2519.30	306.00	3031.90	310.00	30.00	40.00	.00	10.00	.00	7796.83	16384.00	.05
*	242.000	2519.30	306.00	3031.90	100000.00	30.00	40.00	.00	10.00	.00	7995.24	16384.00	.05
	243.000	2480.00	313.00	3001.90	300.00	.00	40.00	30.00	65.00	.00	7832.66	.00	.00
	243.000	2480.00	100000.00	3001.90	300.00	.00	40.00	30.00	65.00	.00	8027.22	.00	.00
*	244.000	2550.50	310.00	3075.60	310.00	.00	140.00	.00	10.00	.00	8510.74	16384.00	.03
*	244.000	2550.50	100000.00	3075.60	100000.00	.00	140.00	.00	10.00	.00	8721.88	16384.00	.03
*	245.000	928.40	292.00	1396.30	292.00	40.00	140.00	55.00	165.00	.00	14034.25	16384.00	.05
*	245.000	928.40	292.00	1396.30	292.00	40.00	140.00	55.00	165.00	.00	12211.34	16384.00	.04
	250.000	2566.70	294.00	2740.60	294.00	45.10	140.00	67.48	740.00	.00	16139.23	.00	.02
	250.000	2566.70	294.00	2740.60	294.00	45.32	140.00	72.40	740.00	.00	13873.74	.00	.03
*	260.000	2375.20	300.00	2544.60	300.00	135.71	140.00	55.00	1025.00	3.90	7462.20	16384.00	.22
*	260.000	2375.20	300.00	2544.60	300.00	140.00	140.00	55.00	1025.00	3.90	7705.79	16384.00	.19
	270.000	2509.50	300.00	2678.60	304.00	94.85	140.00	55.00	965.00	4.15	10325.57	.00	.04
	270.000	2509.50	300.00	2678.60	304.00	104.87	140.00	55.00	965.00	4.15	9131.23	.00	.02
*	280.000	958.00	306.00	1060.00	306.00	129.42	140.00	62.81	1040.00	1.92	17029.18	16384.00	.04
*	280.000	958.00	306.00	1060.00	306.00	140.00	140.00	63.97	1040.00	1.92	16409.44	16384.00	.05
	285.000	706.60	306.00	792.20	310.00	60.00	140.00	55.00	670.00	2.99	16166.95	.00	.00
	285.000	706.60	306.00	792.20	310.00	60.00	140.00	55.00	670.00	2.99	16405.47	.00	.00
	290.000	2655.10	308.00	2758.90	310.00	40.00	140.00	55.00	645.00	.00	14860.04	.00	.01
	290.000	2655.10	308.00	2758.90	310.00	40.00	140.00	55.00	645.00	.00	14616.15	.00	.01
*	300.000	2536.20	312.00	2708.70	314.00	40.00	140.00	55.43	660.00	6.06	11559.65	16384.00	.04
*	300.000	2536.20	100000.00	2708.70	314.00	.00	140.00	55.47	660.00	6.06	11648.33	16384.00	.04
	310.000	2698.40	314.00	2822.30	316.00	40.00	140.00	55.00	610.00	3.28	13630.36	.00	.01
	310.000	2698.40	314.00	2822.30	316.00	40.00	140.00	55.00	610.00	3.28	11963.49	.00	.00
*	320.000	988.70	316.00	1300.00	312.00	40.00	140.00	55.00	750.00	2.67	8436.39	16384.00	.12
*	320.000	988.70	100000.00	1300.00	312.00	.00	140.00	55.00	750.00	2.67	8449.59	16384.00	.10
*	330.000	1760.00	314.00	1917.00	314.00	60.00	85.00	60.00	780.00	2.56	9003.17	16384.00	.02
*	330.000	1760.00	314.00	1917.00	314.00	60.00	85.00	60.00	780.00	2.56	9038.96	16384.00	.02
	340.000	1410.00	320.00	1843.20	318.00	60.00	85.00	60.00	505.00	-3.96	9898.63	.00	.01
	340.000	1410.00	320.00	1843.20	318.00	60.00	85.00	60.00	505.00	-3.96	10269.99	.00	.01

	SECNO	STCHL	XLBEL	STCHR	RBEL	K*XNL	K*XNCH	K*XNR	XLCH	K*CHSL	AREA	CASE	OLOSS
	345.000	1509.80	322.00	1995.50	324.00	60.00	85.00	60.00	280.00	7.14	9190.36	.00	.02
	345.000	1509.80	322.00	1995.50	324.00	60.00	85.00	60.00	280.00	7.14	9041.44	.00	.03
	355.000	1731.40	322.00	2253.80	322.00	60.00	85.00	60.00	285.00	7.02	8352.46	.00	.04
	355.000	1731.40	322.00	2253.80	322.00	60.00	85.00	60.00	285.00	7.02	8036.36	.00	.05
	356.000	1836.00	316.00	2258.20	320.00	60.00	85.00	60.00	250.00	8.00	6559.01	.00	.17
	356.000	1836.00	316.00	2258.20	320.00	60.00	85.00	60.00	250.00	8.00	5993.35	.00	.23
*	358.000	1850.00	316.00	2278.40	326.00	60.00	40.00	30.00	65.00	.00	6218.37	16384.00	.00
*	358.000	1850.00	316.00	2278.40	326.00	60.00	40.00	30.00	65.00	.00	5852.91	16384.00	.00
	360.000	2187.00	320.00	2382.90	320.00	60.00	85.00	85.00	345.00	.00	10653.09	.00	.26
	360.000	2187.00	320.00	2382.90	320.00	60.00	85.00	85.00	345.00	.00	10063.01	.00	.27
	370.000	2234.10	320.00	2326.40	320.00	60.00	85.00	85.00	345.00	5.80	13226.70	.00	.01
	370.000	2234.10	320.00	2326.40	320.00	60.00	85.00	85.00	345.00	5.80	11377.75	.00	.01
	380.000	2380.90	320.00	2436.40	320.00	60.00	85.00	85.00	320.00	.00	13199.97	.00	.00
	380.000	2380.90	320.00	2436.40	320.00	60.00	85.00	85.00	320.00	.00	10946.16	.00	.01
	390.000	2250.00	324.00	2402.00	324.00	60.00	85.00	85.00	520.00	.00	10075.58	.00	.05
	390.000	2250.00	324.00	2402.00	324.00	60.00	85.00	85.00	520.00	.00	9176.22	.00	.05
	400.000	1877.60	320.00	2531.60	320.00	40.00	75.00	40.00	540.00	.00	11066.16	.00	.01
*	400.000	1877.60	320.00	2531.60	320.00	40.00	75.00	40.00	540.00	.00	10960.49	16384.00	.02
	410.000	3065.30	320.00	3645.90	320.00	40.00	65.00	40.00	700.00	.00	10061.53	.00	.02
	410.000	3065.30	320.00	3645.90	320.00	40.00	65.00	40.00	700.00	.00	10498.23	.00	.01
	415.000	3252.30	320.00	3865.00	320.00	40.00	65.00	40.00	780.00	.00	11047.47	.00	.01
	415.000	3252.30	320.00	3865.00	320.00	40.00	65.00	40.00	780.00	.00	11433.24	.00	.00
	420.000	3467.10	320.00	3988.90	320.00	40.00	75.00	40.00	480.00	.00	9469.37	.00	.04
	420.000	3467.10	320.00	3988.90	320.00	40.00	75.00	40.00	480.00	.00	9766.35	.00	.04
*	421.000	2650.00	325.00	3049.10	328.00	40.00	50.00	40.00	375.00	16.00	4614.54	16384.00	.38
*	421.000	2650.00	325.00	3049.10	328.00	40.00	50.00	40.00	375.00	16.00	4797.67	16384.00	.35
	422.000	2645.00	326.00	3044.70	326.00	40.00	30.00	40.00	10.00	.00	3564.22	.00	.60
	422.000	2645.00	326.00	3044.70	326.00	40.00	30.00	40.00	10.00	.00	3735.82	.00	.53
	423.000	4645.00	326.00	5044.70	326.00	40.00	30.00	40.00	65.00	.00	3940.70	.00	.16
	423.000	4645.00	326.00	5044.70	326.00	40.00	30.00	40.00	65.00	.00	4024.06	.00	.11
	424.000	4658.90	326.00	5055.00	326.00	50.00	50.00	50.00	10.00	200.00	4416.20	.00	.15
	424.000	4658.90	326.00	5055.00	326.00	50.00	50.00	50.00	10.00	200.00	4489.92	.00	.14
*	425.000	4805.90	328.00	5113.20	328.00	45.00	75.00	45.00	225.00	.00	8910.88	16384.00	.41
*	425.000	4805.90	328.00	5113.20	328.00	45.00	75.00	45.00	225.00	.00	8731.47	16384.00	.39

	SECNO	STCHL	XLBEL	STCHR	RBEL	K*XNL	K*XNCH	K*XNR	XLCH	K*CHSL	AREA	CASE	OLOSS
	430.000	5520.60	328.00	5704.90	328.00	45.00	75.00	45.00	470.00	.00	10687.78	.00	.01
	430.000	5520.60	328.00	5704.90	328.00	45.00	75.00	45.00	470.00	.00	7072.72	.00	.09
*	440.000	5118.70	330.00	5291.80	330.00	45.00	75.00	45.00	545.00	3.67	7760.31	16384.00	.06
	440.000	5118.70	330.00	5291.80	330.00	45.00	75.00	45.00	545.00	3.67	8001.52	.00	.03
*	450.000	4864.80	330.00	5377.90	330.00	55.00	30.00	55.00	530.00	.00	10802.82	16384.00	.01
*	450.000	4864.80	330.00	5377.90	330.00	55.00	30.00	55.00	530.00	.00	11174.35	16384.00	.01
	460.000	4626.20	330.00	5331.20	330.00	55.00	30.00	55.00	440.00	.00	12314.81	.00	.01
	460.000	4626.20	330.00	5331.20	330.00	55.00	30.00	55.00	440.00	.00	11893.68	.00	.01
*	470.000	5002.10	330.00	5145.90	330.00	45.00	70.00	45.00	480.00	.00	7689.89	16384.00	.08
*	470.000	5002.10	330.00	5145.90	100000.00	45.00	70.00	.00	480.00	.00	7213.08	16384.00	.11
*	480.000	3872.70	340.00	4124.90	340.00	45.00	70.00	45.00	280.00	7.14	4526.89	4097.00	.45
*	480.000	3872.70	340.00	4124.90	340.00	45.00	70.00	45.00	280.00	7.14	3837.40	4097.00	.60
*	483.000	3854.90	340.00	4098.10	340.00	45.00	70.00	45.00	100.00	.00	7035.74	16384.00	.13
*	483.000	3854.90	340.00	4098.10	340.00	45.00	70.00	45.00	100.00	.00	6117.00	16384.00	.16
	484.000	3795.20	342.00	4061.40	342.00	45.00	70.00	45.00	115.00	.00	6749.59	.00	.00
	484.000	3795.20	342.00	4061.40	342.00	45.00	70.00	45.00	115.00	.00	6096.42	.00	.01
*	485.000	3795.20	342.00	4061.40	342.00	45.00	70.00	45.00	10.00	1000.00	5301.06	16384.00	.13
*	485.000	3795.20	342.00	4061.40	342.00	45.00	70.00	45.00	10.00	1000.00	4584.90	16384.00	.20
*	486.000	3795.20	342.00	4061.40	342.00	45.00	70.00	45.00	10.00	-1000.00	7261.88	16384.00	.05
*	486.000	3795.20	342.00	4061.40	342.00	45.00	70.00	45.00	10.00	-1000.00	6723.73	16384.00	.08
	490.000	3797.70	336.00	3905.40	336.00	40.00	70.00	92.72	175.00	.00	7350.79	.00	.02
*	490.000	3797.70	336.00	3905.40	336.00	40.00	70.00	75.00	175.00	.00	7949.23	16384.00	.02
*	500.000	3766.70	334.00	4005.40	334.00	30.00	40.00	30.00	510.00	.00	8386.95	16384.00	.02
*	500.000	3766.70	334.00	4005.40	334.00	30.00	40.00	30.00	510.00	.00	9155.18	16384.00	.02
*	507.000	3860.70	342.00	4289.50	342.00	35.01	40.00	40.00	470.00	8.51	5995.87	16384.00	.15
*	507.000	3860.70	342.00	4289.50	342.00	40.00	40.00	40.00	470.00	8.51	5952.85	16384.00	.15
*	508.000	3860.70	342.00	4289.50	342.00	40.00	30.00	40.00	10.00	.00	4762.68	16384.00	.25
*	508.000	3860.70	342.00	4289.50	342.00	40.00	30.00	40.00	10.00	.00	4861.81	16384.00	.22
	509.000	3889.40	336.00	4322.40	342.00	40.00	30.00	40.00	65.00	.00	5158.98	.00	.04
	509.000	3889.40	336.00	4322.40	342.00	40.00	30.00	40.00	65.00	.00	4969.71	.00	.02
*	510.000	3885.30	342.00	4317.20	341.00	40.00	40.00	40.00	10.00	-200.00	6048.08	16384.00	.05
*	510.000	3885.30	342.00	4317.20	341.00	40.00	40.00	40.00	10.00	-200.00	6249.52	16384.00	.05
*	515.000	3935.00	334.00	4447.80	334.00	40.00	40.00	40.00	275.00	.00	13713.69	16384.00	.07
*	515.000	3935.00	334.00	4447.80	100000.00	40.00	40.00	.00	275.00	.00	12157.49	16384.00	.06

	SECNO	STCHL	XLBEL	STCHR	RBEL	K*XNL	K*XNCH	K*XNR	XLCH	K*CHSL	AREA	CASE	OLOSS
	520.000	4347.80	334.00	4855.30	334.00	40.23	30.93	40.00	560.00	.00	10711.41	.00	.04
	520.000	4347.80	334.00	4855.30	334.00	40.29	30.93	40.00	560.00	.00	10328.90	.00	.03
*	530.000	4190.20	334.00	4516.30	334.00	40.00	30.00	40.00	620.00	3.23	7555.44	16384.00	.10
*	530.000	4190.20	334.00	4516.30	334.00	40.00	30.00	40.00	620.00	3.23	7296.34	16384.00	.10
	535.000	2119.80	336.00	2411.10	336.00	40.00	30.50	40.00	280.00	.00	6211.02	.00	.09
	535.000	2119.80	100000.00	2411.10	336.00	.00	30.97	40.00	280.00	.00	6022.89	.00	.09
	540.000	2055.80	336.00	2395.10	336.00	40.00	30.48	40.00	350.00	.00	6640.69	.00	.02
	540.000	2055.80	336.00	2395.10	336.00	40.00	30.48	40.00	350.00	.00	6285.62	.00	.01
	550.000	1894.00	336.00	2153.30	336.00	40.00	30.47	40.00	650.00	.00	7319.96	.00	.00
	550.000	1894.00	336.00	2153.30	336.00	40.00	30.47	40.00	650.00	.00	6994.52	.00	.01
	560.000	1638.20	336.00	1898.10	336.00	50.00	30.98	40.00	600.00	.00	9179.08	.00	.03
	560.000	1638.20	336.00	1898.10	336.00	50.00	30.98	40.00	600.00	.00	9220.59	.00	.03
	562.000	1181.40	336.00	1385.00	336.00	50.00	30.85	40.00	280.00	.00	10166.30	.00	.01
	562.000	1181.40	336.00	1385.00	336.00	50.00	30.85	40.00	280.00	.00	10358.23	.00	.01
	564.000	1053.10	336.00	1332.20	336.00	50.00	34.17	40.00	220.00	.00	10667.37	.00	.00
	564.000	1053.10	336.00	1332.20	336.00	50.00	34.17	40.00	220.00	.00	10850.22	.00	.00
	566.000	971.90	338.00	1257.50	338.00	85.00	30.00	60.00	280.00	.00	7402.64	.00	.17
	566.000	971.90	338.00	1257.50	338.00	85.00	30.00	60.00	280.00	.00	7481.00	.00	.16
	570.000	1642.70	336.00	1843.30	336.00	85.00	30.00	60.00	280.00	.00	5546.34	.00	.24
	570.000	1642.70	336.00	1843.30	336.00	85.00	30.00	60.00	280.00	.00	5692.36	.00	.22
	572.000	832.00	336.00	1056.10	336.00	85.00	30.00	60.00	187.00	.00	5691.44	.00	.03
	572.000	832.00	336.00	1056.10	336.00	85.00	30.00	60.00	187.00	.00	5777.27	.00	.02
	574.000	747.50	336.00	1043.60	336.00	85.00	30.00	60.00	200.00	.00	6542.80	.00	.05
	574.000	747.50	336.00	1043.60	336.00	85.00	30.00	60.00	200.00	.00	6558.23	.00	.05
	576.000	733.40	338.00	959.30	338.00	85.00	30.00	60.00	170.00	.00	6089.73	.00	.09
	576.000	733.40	338.00	959.30	338.00	85.00	30.00	60.00	170.00	.00	5883.63	.00	.11
	582.000	698.20	338.00	914.10	338.00	85.00	30.00	60.00	330.00	6.06	7178.42	.00	.01
	582.000	698.20	338.00	914.10	338.00	85.00	30.00	60.00	330.00	6.06	6245.12	.00	.02
	584.000	632.70	338.00	857.90	338.00	85.00	30.00	60.00	200.00	.00	7479.47	.00	.01
	584.000	632.70	338.00	857.90	338.00	85.00	30.00	60.00	200.00	.00	7612.64	.00	.04
	586.000	582.70	338.00	772.70	338.00	85.00	30.00	60.00	205.00	.00	7900.50	.00	.01
	586.000	582.70	338.00	772.70	338.00	85.00	30.00	60.00	205.00	.00	7252.92	.00	.04
*	592.000	443.90	338.00	597.60	338.00	85.00	30.00	60.00	380.00	.00	5377.41	16384.00	.29
*	592.000	443.90	338.00	597.60	338.00	85.00	30.00	60.00	380.00	.00	4916.13	16384.00	.34

	SECNO	STCHL	XLBEL	STCHR	RBEL	K*XNL	K*XNCH	K*XNR	XLCH	K*CHSL	AREA	CASE	OLOSS
*	594.000	630.70	342.00	779.90	342.00	75.00	125.00	65.00	230.00	17.39	2545.29	4097.00	.94
*	594.000	630.70	342.00	779.90	342.00	75.00	125.00	65.00	230.00	17.39	2436.13	4097.00	1.00
*	600.000	778.90	346.00	979.10	346.00	75.00	125.00	65.00	150.00	13.33	5096.52	16384.00	.37
*	600.000	778.90	346.00	979.10	346.00	75.00	125.00	65.00	150.00	13.33	5140.08	16384.00	.42
*	610.000	319.90	346.00	622.80	346.00	75.00	125.00	65.00	315.00	.00	7065.98	16384.00	.06
*	610.000	319.90	346.00	622.80	346.00	75.00	125.00	65.00	315.00	.00	6987.24	16384.00	.06
	620.000	299.20	364.00	732.00	364.00	75.00	125.00	65.00	395.00	5.06	7705.87	.00	.01
	620.000	299.20	100000.00	732.00	100000.00	.00	125.00	.00	395.00	5.06	7533.58	.00	.01
	630.000	445.60	348.00	718.00	348.00	75.00	125.00	65.00	265.00	.00	7554.07	.00	.01
	630.000	445.60	348.00	718.00	348.00	75.00	125.00	65.00	265.00	.00	7197.39	.00	.02
*	640.000	433.90	350.00	577.60	350.00	75.00	125.00	65.00	350.00	5.71	4301.47	16384.00	.34
*	640.000	433.90	350.00	577.60	350.00	75.00	125.00	65.00	350.00	5.71	3798.23	16384.00	.47

PROFILE 1 - 100 YEAR FLO

SUMMARY PRINTOUT

	SECNO	TOPWID	SSTA	ENDST	HV	HL	DIFWSX	DIFKWS	KRATIO
*	100.000	290.21	313.45	603.66	4.87	.00	.00	.02	.00
	100.000	260.00	340.00	600.00	4.18	.00	.00	1.00	.00
*	110.000	337.95	282.28	620.24	2.40	4.55	7.27	.00	1.80
*	110.000	300.00	310.00	610.00	2.59	4.33	6.08	-.19	1.52
*	120.000	368.62	286.51	655.13	1.55	2.15	3.08	.00	1.50
*	120.000	340.00	310.00	650.00	1.60	2.22	3.31	.05	1.56
*	130.000	552.47	137.82	690.29	.76	6.66	7.54	.00	1.91
*	130.000	353.00	330.00	683.00	.94	7.40	8.12	.63	1.77
	140.000	409.05	157.25	566.30	.70	3.99	4.05	.00	1.03
	140.000	330.00	215.00	545.00	.74	4.25	4.45	1.03	1.13
*	150.000	1013.14	186.86	1200.00	.25	1.00	1.46	.00	2.98
*	150.000	955.00	245.00	1200.00	.24	.87	1.38	.95	3.22
*	160.000	1591.84	354.58	1987.88	.10	.38	.54	.00	1.52
*	160.000	1428.03	415.00	1860.00	.09	.33	.48	.89	1.48
*	170.000	2144.81	329.19	2474.00	.05	.07	.12	.00	1.53
*	170.000	1580.00	410.00	1990.00	.06	.06	.10	.88	1.45
*	180.000	2069.37	453.80	2523.17	.06	.05	.05	.00	1.41
	180.000	1455.00	485.00	1940.00	.07	.05	.04	.87	1.39
	190.000	1540.45	433.75	1985.74	.07	.03	.02	.00	1.34
*	190.000	1450.00	470.00	1920.00	.06	.02	.03	.88	1.44
*	200.000	1805.67	298.78	2104.45	.07	.06	.06	.00	.36
*	200.000	1605.00	370.00	1975.00	.07	.05	.05	.87	.37
	209.000	2058.47	335.50	2393.96	.08	.13	.12	.00	.96
	209.000	1700.00	400.00	2100.00	.08	.11	.10	.85	.95
*	210.000	2053.50	337.53	2391.03	.20	.00	-.08	.00	.68
*	210.000	1700.00	400.00	2100.00	.21	.00	-.08	.85	.68
*	211.000	2062.09	334.01	2396.10	.08	.00	.14	.00	1.49
*	211.000	1700.00	400.00	2100.00	.08	.00	.14	.85	1.47
	220.000	1768.46	413.80	2182.26	.14	.25	.21	.00	1.01
	220.000	1585.00	515.00	2100.00	.14	.22	.18	.82	1.05
	230.000	1225.00	825.00	2050.00	.24	.19	.12	.00	.82
	230.000	1175.00	825.00	2000.00	.23	.16	.10	.80	.80

	SECNO	TOPWID	SSTA	ENDST	HV	HL	DIFWSX	DIFKWS	KRATIO
*	239.000	670.00	2370.00	3040.00	1.09	.44	-.16	.00	.38
*	239.000	670.00	2370.00	3040.00	.97	.37	-.15	.80	.39
*	240.000	514.77	2511.46	3026.24	.54	1.47	2.07	.00	.47
*	240.000	494.00	2517.00	3011.00	.51	1.22	1.72	.45	.45
*	242.000	514.46	2511.56	3026.02	.64	.03	-.02	.00	3.71
*	242.000	492.00	2518.00	3010.00	.61	.02	-.02	.46	3.64
	243.000	515.24	2511.32	3026.56	.63	.07	.08	.00	1.01
	243.000	492.00	2518.00	3010.00	.60	.07	.07	.45	1.01
*	244.000	521.75	2552.74	3074.49	.54	.02	.15	.00	.38
*	244.000	510.00	2560.00	3070.00	.51	.02	.14	.44	.38
*	245.000	921.66	593.34	1515.00	.36	.36	.59	.00	2.84
*	245.000	650.00	760.00	1410.00	.59	.44	.40	.25	2.31
	250.000	1275.38	2268.53	3543.91	.17	.59	.80	.00	1.18
	250.000	910.00	2400.00	3310.00	.24	.80	1.18	.63	1.18
*	260.000	752.46	2282.62	3035.08	.90	1.41	.89	.00	.39
*	260.000	610.00	2340.00	2950.00	.86	1.65	1.21	.96	.51
	270.000	1283.88	1867.70	3151.57	.55	2.77	3.17	.00	1.39
	270.000	720.00	2270.00	2990.00	.70	2.62	2.79	.58	1.22
*	280.000	1549.27	482.86	2032.13	.17	1.30	1.72	.00	1.60
*	280.000	1330.00	560.00	1890.00	.18	1.36	1.92	.79	1.62
	285.000	1805.85	341.11	2146.96	.15	.50	.51	.00	1.13
	285.000	1490.00	525.00	2015.00	.15	.46	.50	.78	1.26
	290.000	1848.62	2223.99	4166.36	.18	.48	.46	.00	.86
	290.000	1567.11	2560.00	4154.00	.19	.43	.40	.71	.81
*	300.000	1645.29	2340.00	4023.24	.31	.83	.74	.00	.68
*	300.000	1440.55	2540.00	4014.00	.31	.77	.69	.66	.70
	310.000	1766.44	2460.00	4226.44	.22	.85	.95	.00	1.32
	310.000	1350.00	2650.00	4000.00	.28	.90	.93	.64	1.13
*	320.000	1329.07	950.00	2279.07	.62	1.80	1.52	.00	.41
*	320.000	1120.00	1030.00	2150.00	.63	1.96	1.72	.84	.50
*	330.000	956.22	1326.43	2282.65	.45	2.96	3.15	.00	1.55
*	330.000	880.00	1370.00	2250.00	.45	2.60	2.80	.49	1.46
	340.000	976.32	1203.68	2180.00	.38	1.27	1.35	.00	1.04
	340.000	960.00	1220.00	2180.00	.35	1.15	1.25	.39	1.06

	SECNO	TOPWID	SSTA	ENDST	HV	HL	DIFWSX	DIFKWS	KRATIO
	345.000	1060.00	1210.00	2270.00	.43	.79	.75	.00	.85
	345.000	970.00	1300.00	2270.00	.45	.72	.66	.30	.81
	355.000	1000.00	1370.00	2370.00	.51	1.12	1.08	.00	.84
	355.000	870.00	1500.00	2370.00	.56	1.11	1.06	.28	.82
	356.000	950.00	1340.00	2290.00	.86	1.57	1.39	.00	.74
	356.000	770.00	1520.00	2290.00	1.02	1.64	1.41	.30	.71
*	358.000	960.00	1340.00	2300.00	1.23	.00	-.37	.00	1.69
*	358.000	790.00	1510.00	2300.00	1.28	.00	-.26	.41	1.82
	360.000	1070.00	1530.00	2600.00	.35	.75	1.89	.00	1.35
	360.000	870.00	1565.00	2435.00	.38	.72	1.89	.41	1.33
	370.000	1344.56	1470.00	2814.56	.23	.49	.62	.00	1.17
	370.000	1030.00	1470.00	2500.00	.30	.51	.60	.40	1.09
	380.000	1420.00	1540.00	2960.00	.23	.40	.41	.00	.96
	380.000	1085.00	1540.00	2625.00	.32	.47	.45	.44	.93
	390.000	1060.00	1680.00	2740.00	.40	.89	.77	.00	.75
	390.000	890.00	1730.00	2620.00	.47	1.02	.91	.58	.79
	400.000	856.00	1749.00	2605.00	.30	1.00	1.12	.00	1.36
*	400.000	765.00	1820.00	2585.00	.31	1.01	1.20	.66	1.43
	410.000	750.00	2970.00	3720.00	.35	.83	.79	.00	1.06
	410.000	739.50	2970.50	3710.00	.33	.76	.74	.62	1.12
	415.000	745.00	3200.00	3945.00	.30	.76	.83	.00	1.14
	415.000	745.00	3200.00	3945.00	.28	.67	.73	.52	1.13
	420.000	660.31	3404.69	4065.00	.42	.53	.44	.00	.76
	420.000	653.50	3411.50	4065.00	.40	.48	.39	.47	.76
*	421.000	448.16	2612.20	3060.37	1.69	.95	.06	.00	.54
*	421.000	440.00	2617.00	3057.00	1.56	.84	.03	.44	.55
	422.000	445.74	2613.66	3059.41	2.88	.06	-.54	.00	.90
	422.000	440.00	2617.00	3057.00	2.61	.05	-.48	.50	.90
	423.000	450.44	4610.83	5061.26	2.35	.36	1.04	.00	1.15
	423.000	442.00	4616.00	5058.00	2.25	.33	.80	.25	1.11
	424.000	462.23	4627.73	5089.96	1.86	.06	.70	.00	.88
	424.000	449.00	4633.00	5082.00	1.79	.05	.65	.20	.88
*	425.000	905.00	4365.00	5270.00	.48	.74	2.54	.00	1.85
*	425.000	850.00	4420.00	5270.00	.50	.73	2.42	.08	1.77

	SECNO	TOPWID	SSTA	ENDST	HV	HL	DIFWSX	DIFKWS	KRATIO
	430.000	1660.00	4540.00	6200.00	.36	.77	.89	.00	1.14
	430.000	1000.00	4860.00	5860.00	.79	1.21	1.01	.20	.72
*	440.000	1730.00	4030.00	5760.00	.56	1.10	.96	.00	.63
	440.000	1055.00	4365.00	5420.00	.52	1.54	1.83	1.07	1.20
*	450.000	1486.62	4193.38	5680.00	.43	.50	.65	.00	2.77
*	450.000	1035.00	4375.00	5410.00	.37	.38	.54	.96	2.63
	460.000	1587.16	4032.84	5620.00	.29	.15	.29	.00	1.28
	460.000	980.00	4380.00	5360.00	.27	.12	.22	.89	1.23
*	470.000	1361.61	3710.36	5167.89	.56	.36	.18	.00	.31
*	470.000	1005.00	4125.00	5130.00	.64	.32	.06	.77	.30
*	480.000	1096.92	2870.00	4186.74	2.06	1.40	2.20	.00	.48
*	480.000	767.61	3105.00	4125.60	2.64	1.42	1.21	-.22	.42
*	483.000	1340.00	2900.00	4240.00	.78	.66	2.06	.00	1.63
*	483.000	1020.00	3120.00	4140.00	1.02	.79	2.58	.29	1.66
	484.000	1270.00	2920.00	4190.00	.74	.57	.61	.00	.87
	484.000	1015.00	3080.00	4095.00	.91	.64	.77	.45	.90
*	485.000	1260.00	2920.00	4180.00	1.18	.08	-.23	.00	.67
*	485.000	1015.00	3080.00	4095.00	1.58	.10	-.37	.31	.62
*	486.000	1260.00	2920.00	4180.00	.63	.07	.67	.00	1.68
*	486.000	1015.00	3080.00	4095.00	.74	.08	1.00	.64	1.88
	490.000	1060.00	3060.00	4120.00	.71	.63	.58	.00	1.21
*	490.000	1020.00	3030.00	4050.00	.56	.52	.72	.77	1.48
*	500.000	760.00	3430.00	4190.00	.47	.55	.81	.00	2.30
*	500.000	875.00	3280.00	4155.00	.40	.44	.61	.58	2.06
*	507.000	1280.19	1724.40	4340.90	.97	.41	.06	.00	.58
*	507.000	484.00	3851.00	4335.00	.91	.36	.00	.52	.58
*	508.000	1009.63	2993.81	4340.11	1.47	.02	-.23	.00	.69
*	508.000	482.00	3852.00	4334.00	1.35	.02	-.20	.55	.69
	509.000	1176.70	2866.31	4341.46	1.33	.21	.39	.00	1.06
	509.000	484.00	3851.00	4335.00	1.30	.19	.26	.41	1.03
*	510.000	493.40	3864.30	4357.70	.88	.02	.51	.00	1.51
*	510.000	485.00	3867.00	4352.00	.82	.02	.54	.44	1.54
*	515.000	830.00	3640.00	4470.00	.17	.11	.89	.00	2.70
*	515.000	690.00	3750.00	4440.00	.21	.12	.79	.34	2.28

	SECNO	TOPWID	SSTA	ENDST	HV	HL	DIFWSX	DIFKWS	KRATIO
	520.000	711.61	4240.00	4951.61	.30	.11	.02	.00	.95
	520.000	625.00	4240.00	4865.00	.31	.12	.05	.38	1.07
*	530.000	576.39	4089.90	4666.30	.63	.18	-.05	.00	.65
*	530.000	480.00	4170.00	4650.00	.65	.18	-.06	.37	.66
	535.000	530.00	2070.00	2600.00	.93	.16	-.05	.00	.81
	535.000	410.00	2120.00	2530.00	.94	.16	-.04	.38	.79
	540.000	508.34	1969.79	2478.13	.78	.22	.39	.00	1.14
	540.000	412.00	2055.00	2467.00	.84	.22	.33	.32	1.15
	550.000	621.73	1735.96	2357.69	.73	.37	.42	.00	.98
	550.000	520.00	1830.00	2350.00	.77	.37	.45	.35	.99
	560.000	675.47	1547.90	2223.37	.45	.28	.59	.00	1.24
	560.000	625.00	1575.00	2200.00	.44	.26	.63	.39	1.27
	562.000	744.46	1065.06	1809.52	.36	.10	.19	.00	1.06
	562.000	710.00	1080.00	1790.00	.35	.09	.19	.39	1.07
	564.000	771.13	900.98	1672.11	.32	.07	.12	.00	1.03
	564.000	730.00	920.00	1650.00	.30	.07	.11	.39	1.02
	566.000	586.95	840.86	1427.82	.87	.12	-.27	.00	.72
	566.000	535.00	870.00	1405.00	.83	.11	-.26	.40	.72
	570.000	454.01	1518.76	1972.76	1.67	.23	-.33	.00	.71
	570.000	435.00	1525.00	1960.00	1.58	.21	-.31	.42	.72
	572.000	429.57	748.70	1178.27	1.40	.19	.49	.00	1.13
	572.000	393.00	757.00	1150.00	1.34	.18	.44	.36	1.12
	574.000	429.41	699.73	1129.14	.90	.14	.69	.00	1.32
	574.000	385.00	705.00	1090.00	.87	.13	.65	.32	1.31
	576.000	422.28	677.32	1099.60	1.20	.11	-.10	.00	.82
	576.000	372.00	688.00	1060.00	1.24	.10	-.15	.27	.80
	582.000	579.40	577.65	1157.06	1.06	.27	.41	.00	.95
	582.000	465.00	615.00	1080.00	1.29	.28	.25	.10	.89
	584.000	574.54	529.15	1103.68	.94	.16	.30	.00	1.08
	584.000	547.00	538.00	1085.00	.90	.16	.59	.40	1.19
	586.000	576.58	459.29	1035.87	.88	.15	.22	.00	.99
	586.000	495.00	465.00	960.00	1.02	.15	.07	.25	.92
*	592.000	422.69	365.79	788.48	1.84	.40	-.27	.00	.69
*	592.000	349.00	371.00	720.00	2.13	.44	-.34	.17	.69

	SECNO	TOPWID	SSTA	ENDST	HV	HL	DIFWSX	DIFKWS	KRATIO
*	594.000	260.06	588.50	848.56	4.96	1.09	.48	.00	.15
*	594.000	235.00	595.00	830.00	5.46	1.19	-.03	-.34	.15
*	600.000	351.25	651.54	1002.79	1.24	3.18	7.28	.00	2.52
*	600.000	335.00	660.00	995.00	1.22	3.19	7.85	.23	2.73
*	610.000	397.29	253.79	651.09	.63	2.19	2.86	.00	1.44
*	610.000	365.00	280.00	645.00	.65	2.16	2.80	.18	1.40
	620.000	492.57	257.43	750.00	.53	2.06	2.17	.00	.96
	620.000	400.00	330.00	730.00	.55	2.05	2.15	.16	.98
	630.000	489.11	300.15	789.26	.56	1.22	1.20	.00	1.17
	630.000	370.00	380.00	750.00	.63	1.24	1.19	.15	1.13
*	640.000	362.89	161.72	735.31	1.70	2.31	1.51	.00	.55
*	640.000	199.00	401.00	600.00	2.18	2.57	1.48	.12	.51

PROFILE 1 - 100 YEAR FLO

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	100.000	282.55	.02	287.42	290.21	439.54	49530.04	30.42	.00	.00	340.80	600.70	.00
	100.000	283.55	1.00	287.73	260.00	15.44	49984.56	.00	260.00	340.00	340.80	600.70	600.00
*	110.000	289.82	.00	292.22	337.95	4747.03	44044.85	1208.12	.00	.00	339.70	600.30	.00
*	110.000	289.63	-.19	292.23	300.00	4273.80	44813.60	912.60	300.00	310.00	339.70	600.30	610.00
*	120.000	292.90	.00	294.45	368.62	5983.88	39075.13	4941.00	.00	.00	354.50	602.50	.00
*	120.000	292.95	.05	294.55	340.00	5724.87	39307.86	4967.27	340.00	310.00	354.50	602.50	650.00
*	130.000	300.44	.00	301.19	552.47	9040.13	28780.63	12179.24	.00	.00	353.00	583.50	.00
*	130.000	301.07	.63	302.01	353.00	3243.99	32665.40	14090.61	353.00	330.00	353.00	583.50	683.00
	140.000	304.49	.00	305.19	409.05	6255.16	35398.74	8346.10	.00	.00	242.60	482.40	.00
	140.000	305.52	1.03	306.26	330.00	3868.47	37349.01	8782.52	330.00	215.00	242.60	482.40	545.00
*	150.000	305.95	.00	306.20	1013.14	1439.87	25150.03	23410.09	1091.50	108.50	273.60	738.10	1200.00
*	150.000	306.90	.95	307.15	955.00	688.81	24398.49	24912.70	955.00	245.00	273.60	738.10	1200.00
*	160.000	306.49	.00	306.59	1591.84	42430.20	4574.35	2995.44	.00	.00	1331.10	1412.30	.00
*	160.000	307.38	.89	307.48	1428.03	41862.43	4575.37	3562.20	1445.00	415.00	1331.10	1412.30	1860.00
*	170.000	306.61	.00	306.66	2144.81	33634.66	2046.90	14318.44	.00	.00	1483.20	1544.10	.00
*	170.000	307.48	.88	307.54	1580.00	35733.69	2165.61	12100.71	1580.00	410.00	1483.20	1544.10	1990.00
*	180.000	306.65	.00	306.72	2069.37	38997.22	4716.69	6286.09	.00	.00	1530.00	1759.00	.00
	180.000	307.53	.87	307.60	1455.00	42028.15	5077.55	2894.29	1455.00	485.00	1530.00	1759.00	1940.00
	190.000	306.68	.00	306.75	1540.45	45963.77	3762.62	273.61	.00	.00	1576.30	1809.70	.00
*	190.000	307.56	.88	307.63	1450.00	45892.87	3773.71	333.42	1450.00	470.00	1576.30	1809.70	1920.00
*	200.000	306.74	.00	306.81	1805.67	32505.22	2922.58	14572.19	.00	.00	1439.70	1562.70	.00
*	200.000	307.61	.87	307.68	1605.00	32050.01	2925.98	15024.01	1605.00	370.00	1439.70	1562.70	1975.00
	209.000	306.86	.00	306.94	2058.47	22775.46	6120.35	21104.18	.00	.00	1233.40	1479.20	.00
	209.000	307.71	.85	307.80	1700.00	23058.53	6242.88	20698.60	1700.00	400.00	1233.40	1479.20	2100.00
*	210.000	306.78	.00	306.98	2053.50	10284.65	8978.33	30737.02	.00	.00	1233.40	1479.20	.00
*	210.000	307.63	.85	307.84	1700.00	11055.12	9059.90	29884.99	1700.00	400.00	1233.40	1479.20	2100.00
*	211.000	306.92	.00	307.00	2062.09	22727.08	6106.50	21166.43	.00	.00	1233.40	1479.20	.00
*	211.000	307.77	.85	307.85	1700.00	23023.59	6233.83	20742.58	1700.00	400.00	1233.40	1479.20	2100.00
	220.000	307.13	.00	307.27	1768.46	8657.76	5215.09	36127.14	.00	.00	745.80	1065.00	.00
	220.000	307.95	.82	308.09	1585.00	8150.04	5111.31	36738.65	1585.00	515.00	745.80	1065.00	2100.00
	230.000	307.25	.00	307.49	1225.00	3842.25	4011.86	42145.89	1225.00	825.00	941.10	1142.70	2050.00
	230.000	308.05	.80	308.28	1175.00	4070.61	4003.81	41925.57	1175.00	825.00	941.10	1142.70	2000.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	239.000	307.10	.00	308.18	670.00	2952.22	15410.44	31637.33	670.00	2370.00	2398.50	2724.40	3040.00
*	239.000	307.90	.80	308.87	670.00	2940.00	14920.17	32139.83	670.00	2370.00	2398.50	2724.40	3040.00
*	240.000	309.17	.00	309.70	514.77	71.67	49928.34	.00	.00	.00	2519.30	3031.90	.00
*	240.000	309.62	.45	310.13	494.00	38.01	49961.99	.00	494.00	2517.00	2519.30	3031.90	3011.00
*	242.000	309.14	.00	309.78	514.46	25.04	49974.96	.00	.00	.00	2519.30	3031.90	.00
*	242.000	309.60	.46	310.21	492.00	6.59	49993.41	.00	492.00	2518.00	2519.30	3031.90	3010.00
	243.000	309.22	.00	309.85	515.24	.00	49963.21	36.79	.00	.00	2480.00	3001.90	.00
	243.000	309.67	.45	310.27	492.00	.00	49961.50	38.51	492.00	2518.00	2480.00	3001.90	3010.00
*	244.000	309.37	.00	309.91	521.75	.00	50000.00	.00	.00	.00	2550.50	3075.60	.00
*	244.000	309.81	.44	310.32	510.00	.00	50000.00	.00	510.00	2560.00	2550.50	3075.60	3070.00
*	245.000	309.96	.00	310.32	921.66	20709.59	21638.68	7651.73	1415.00	100.00	928.40	1396.30	1515.00
*	245.000	310.21	.25	310.80	650.00	22773.35	25895.30	1331.34	650.00	760.00	928.40	1396.30	1410.00
	250.000	310.76	.00	310.93	1275.38	8418.52	6928.99	34652.49	.00	.00	2566.70	2740.60	.00
	250.000	311.39	.63	311.63	910.00	10121.22	8573.89	31304.88	910.00	2400.00	2566.70	2740.60	3310.00
*	260.000	311.65	.00	312.56	752.46	909.28	10883.84	38206.88	.00	.00	2375.20	2544.60	.00
*	260.000	312.61	.96	313.46	610.00	823.34	10858.36	38318.30	610.00	2340.00	2375.20	2544.60	2950.00
	270.000	314.82	.00	315.36	1283.88	6620.07	7842.30	34537.63	.00	.00	2509.50	2678.60	.00
	270.000	315.40	.58	316.10	720.00	5348.92	8594.57	35056.51	720.00	2270.00	2509.50	2678.60	2990.00
*	280.000	316.53	.00	316.70	1549.27	6209.83	2786.43	40003.74	.00	.00	958.00	1060.00	.00
*	280.000	317.32	.79	317.51	1330.00	6006.91	3089.11	39903.98	1330.00	560.00	958.00	1060.00	1890.00
	285.000	317.04	.00	317.20	1805.85	4435.14	1793.47	42771.39	.00	.00	706.60	792.20	.00
	285.000	317.82	.78	317.97	1490.00	3934.17	1799.70	43266.13	1490.00	525.00	706.60	792.20	2015.00
	290.000	317.51	.00	317.69	1848.62	8387.77	2340.77	38271.45	.00	.00	2655.10	2758.90	.00
	290.000	318.22	.71	318.41	1567.11	3992.56	2491.26	42516.18	1594.00	2560.00	2655.10	2758.90	4154.00
*	300.000	318.24	.00	318.55	1645.29	3664.32	3237.14	42098.54	1800.00	2340.00	2536.20	2708.70	4140.00
*	300.000	318.90	.66	319.21	1440.55	.00	3310.40	45689.60	1474.00	2540.00	2536.20	2708.70	4014.00
	310.000	319.19	.00	319.41	1766.44	2135.26	1304.05	45560.69	1770.00	2460.00	2698.40	2822.30	4230.00
	310.000	319.83	.64	320.12	1350.00	1030.52	1651.52	46317.95	1350.00	2650.00	2698.40	2822.30	4000.00
*	320.000	320.71	.00	321.33	1329.07	804.11	11393.19	36802.70	1350.00	950.00	988.70	1300.00	2300.00
*	320.000	321.55	.84	322.18	1120.00	.00	10705.56	38294.45	1120.00	1030.00	988.70	1300.00	2150.00
*	330.000	323.86	.00	324.31	956.22	23228.34	8456.57	16315.09	1020.00	1280.00	1760.00	1917.00	2300.00
*	330.000	324.35	.49	324.79	880.00	22842.52	8709.59	16447.88	880.00	1370.00	1760.00	1917.00	2250.00
	340.000	325.21	.00	325.58	976.32	8121.16	21990.63	17888.21	980.00	1200.00	1410.00	1843.20	2180.00
	340.000	325.60	.39	325.95	960.00	8213.52	21849.17	17937.31	960.00	1220.00	1410.00	1843.20	2180.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	345.000	325.96	.00	326.39	1060.00	12602.07	25559.24	9838.69	1060.00	1210.00	1509.80	1995.50	2270.00
	345.000	326.26	.30	326.71	970.00	11242.15	26404.65	10353.21	970.00	1300.00	1509.80	1995.50	2270.00
	355.000	327.04	.00	327.55	1000.00	11841.53	30685.59	5472.88	1000.00	1370.00	1731.40	2253.80	2370.00
	355.000	327.32	.28	327.87	870.00	9926.16	32246.61	5827.23	870.00	1500.00	1731.40	2253.80	2370.00
	356.000	328.43	.00	329.29	950.00	11547.32	35450.64	1002.04	950.00	1340.00	1836.00	2258.20	2290.00
	356.000	328.73	.30	329.75	770.00	7883.78	38970.32	1145.89	770.00	1520.00	1836.00	2258.20	2290.00
*	358.000	328.06	.00	329.29	960.00	6927.53	41055.46	17.01	960.00	1340.00	1850.00	2278.40	2300.00
*	358.000	328.47	.41	329.75	790.00	5159.54	42800.66	39.80	790.00	1510.00	1850.00	2278.40	2300.00
	360.000	329.95	.00	330.30	1070.00	37141.04	8472.66	2386.30	1070.00	1530.00	2187.00	2382.90	2600.00
	360.000	330.36	.41	330.74	870.00	38366.72	8872.63	760.65	870.00	1565.00	2187.00	2382.90	2435.00
	370.000	330.57	.00	330.80	1344.56	35159.80	3676.55	9163.64	1350.00	1470.00	2234.10	2326.40	2820.00
	370.000	330.97	.40	331.26	1030.00	39624.59	4117.46	4257.95	1030.00	1470.00	2234.10	2326.40	2500.00
	380.000	330.97	.00	331.20	1420.00	33764.25	2402.13	11833.62	1420.00	1540.00	2380.90	2436.40	2960.00
	380.000	331.42	.44	331.73	1085.00	39771.87	2788.83	5439.31	1085.00	1540.00	2380.90	2436.40	2625.00
	390.000	331.74	.00	332.14	1060.00	32610.24	6858.39	8531.37	1060.00	1680.00	2250.00	2402.00	2740.00
	390.000	332.32	.58	332.80	890.00	33909.73	7733.60	6356.67	890.00	1730.00	2250.00	2402.00	2620.00
	400.000	332.86	.00	333.16	856.00	5050.22	40248.66	2701.12	856.00	1749.00	1877.60	2531.60	2605.00
*	400.000	333.52	.66	333.83	765.00	2552.38	42647.24	2800.37	765.00	1820.00	1877.60	2531.60	2585.00
	410.000	333.65	.00	334.00	750.00	2800.71	42631.76	2567.53	750.00	2970.00	3065.30	3645.90	3720.00
	410.000	334.27	.62	334.59	739.50	2971.53	42389.65	2638.82	739.50	2970.50	3065.30	3645.90	3710.00
	415.000	334.47	.00	334.77	745.00	2282.54	42196.28	3521.18	745.00	3200.00	3252.30	3865.00	3945.00
	415.000	334.99	.52	335.27	745.00	2348.61	42027.71	3623.68	745.00	3200.00	3252.30	3865.00	3945.00
	420.000	334.92	.00	335.34	660.31	3535.89	39702.05	4762.06	686.10	3378.90	3467.10	3988.90	4065.00
	420.000	335.38	.47	335.78	653.50	3592.24	39547.61	4860.15	653.50	3411.50	3467.10	3988.90	4065.00
*	421.000	334.98	.00	336.66	448.16	2496.23	45230.37	273.41	.00	.00	2650.00	3049.10	.00
*	421.000	335.42	.44	336.97	440.00	2538.04	45183.52	278.45	440.00	2617.00	2650.00	3049.10	3057.00
	422.000	334.44	.00	337.32	445.74	1540.73	46032.39	426.87	.00	.00	2645.00	3044.70	.00
	422.000	334.94	.50	337.55	440.00	1594.96	45956.65	448.39	440.00	2617.00	2645.00	3044.70	3057.00
	423.000	335.48	.00	337.84	450.44	1678.35	45820.74	500.91	.00	.00	4645.00	5044.70	.00
	423.000	335.74	.25	337.99	442.00	1693.80	45803.94	502.26	442.00	4616.00	4645.00	5044.70	5058.00
	424.000	336.18	.00	338.04	462.23	1280.97	44711.55	2007.48	.00	.00	4658.90	5055.00	.00
	424.000	336.38	.20	338.18	449.00	1262.15	44749.20	1988.65	449.00	4633.00	4658.90	5055.00	5082.00
*	425.000	338.72	.00	339.19	905.00	20634.99	17355.63	10009.38	905.00	4365.00	4805.90	5113.20	5270.00
*	425.000	338.80	.08	339.30	850.00	20039.55	17718.98	10241.47	850.00	4420.00	4805.90	5113.20	5270.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	430.000	339.61	.00	339.97	1660.00	11260.05	10256.48	26483.47	1660.00	4540.00	5520.60	5704.90	6200.00
	430.000	339.81	.20	340.60	1000.00	17571.39	16763.61	13665.00	1000.00	4860.00	5520.60	5704.90	5860.00
*	440.000	340.57	.00	341.14	1730.00	27332.40	12913.81	5753.79	1730.00	4030.00	5118.70	5291.80	5760.00
	440.000	341.64	1.07	342.16	1055.00	29010.05	12410.47	4579.49	1055.00	4365.00	5118.70	5291.80	5420.00
*	450.000	341.22	.00	341.65	1486.62	7099.60	38472.51	427.89	1650.00	4030.00	4864.80	5377.90	5680.00
*	450.000	342.18	.96	342.55	1035.00	7483.19	38260.44	256.36	1035.00	4375.00	4864.80	5377.90	5410.00
	460.000	341.51	.00	341.81	1587.16	3030.39	42547.37	422.24	1595.00	4025.00	4626.20	5331.20	5620.00
	460.000	342.41	.89	342.68	980.00	2251.88	43469.58	278.54	980.00	4380.00	4626.20	5331.20	5360.00
*	470.000	341.70	.00	342.25	1361.61	34103.78	11300.97	595.25	1610.00	3700.00	5002.10	5145.90	5310.00
*	470.000	342.47	.77	343.11	1005.00	36001.08	9998.92	.00	1005.00	4125.00	5002.10	5145.90	5130.00
*	480.000	343.90	.00	345.96	1096.92	6049.24	39620.65	330.11	1380.00	2870.00	3872.70	4124.90	4250.00
*	480.000	343.68	-.22	346.32	767.61	3212.94	42780.13	6.93	1020.60	3105.00	3872.70	4124.90	4125.60
*	483.000	345.96	.00	346.74	1340.00	14527.80	28588.81	2883.39	1340.00	2900.00	3854.90	4098.10	4240.00
*	483.000	346.25	.29	347.27	1020.00	12548.46	32331.18	1120.36	1020.00	3120.00	3854.90	4098.10	4140.00
	484.000	346.57	.00	347.31	1270.00	21120.35	21442.27	3437.39	1270.00	2920.00	3795.20	4061.40	4190.00
	484.000	347.02	.45	347.93	1015.00	20587.64	24264.12	1148.25	1015.00	3080.00	3795.20	4061.40	4095.00
*	485.000	346.34	.00	347.52	1260.00	28646.99	12983.34	4369.67	1260.00	2920.00	3795.20	4061.40	4180.00
*	485.000	346.65	.31	348.22	1015.00	28396.00	15976.44	1627.57	1015.00	3080.00	3795.20	4061.40	4095.00
*	486.000	347.01	.00	347.65	1260.00	22301.78	20362.62	3335.60	1260.00	2920.00	3795.20	4061.40	4180.00
*	486.000	347.65	.64	348.39	1015.00	22061.97	22753.75	1184.27	1015.00	3080.00	3795.20	4061.40	4095.00
	490.000	347.60	.00	348.30	1060.00	29672.88	12938.82	3388.30	1060.00	3060.00	3797.70	3905.40	4120.00
*	490.000	348.37	.77	348.93	1020.00	31295.43	11635.80	3068.76	1020.00	3030.00	3797.70	3905.40	4050.00
*	500.000	348.41	.00	348.87	760.00	9275.79	24935.60	10788.62	760.00	3430.00	3766.70	4005.40	4190.00
*	500.000	348.98	.58	349.38	875.00	12312.50	24485.27	8202.24	875.00	3280.00	3766.70	4005.40	4155.00
*	507.000	348.46	.00	349.44	1280.19	433.74	43284.47	1281.78	.00	.00	3860.70	4289.50	.00
*	507.000	348.99	.52	349.89	484.00	157.96	43470.42	1371.62	484.00	3851.00	3860.70	4289.50	4335.00
*	508.000	348.24	.00	349.71	1009.63	281.76	43411.40	1306.84	.00	.00	3860.70	4289.50	.00
*	508.000	348.78	.55	350.14	482.00	207.94	43381.50	1410.56	482.00	3852.00	3860.70	4289.50	4334.00
	509.000	348.63	.00	349.96	1176.70	2157.12	42568.43	274.46	.00	.00	3889.40	4322.40	.00
	509.000	349.04	.41	350.34	484.00	1723.03	42988.84	288.13	484.00	3851.00	3889.40	4322.40	4335.00
*	510.000	349.14	.00	350.02	493.40	346.63	44007.95	645.42	493.40	3864.30	3885.30	4317.20	4357.70
*	510.000	349.58	.44	350.41	485.00	365.16	43952.22	682.62	485.00	3867.00	3885.30	4317.20	4352.00
*	515.000	350.03	.00	350.20	830.00	12448.68	31700.07	851.25	830.00	3640.00	3935.00	4447.80	4470.00
*	515.000	350.37	.34	350.59	690.00	9668.90	35331.10	.00	690.00	3750.00	3935.00	4447.80	4440.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	520.000	350.05	.00	350.34	711.61	3519.75	39699.54	1780.71	760.00	4240.00	4347.80	4855.30	5000.00
	520.000	350.43	.38	350.73	625.00	3670.36	41014.71	314.93	625.00	4240.00	4347.80	4855.30	4865.00
*	530.000	350.00	.00	350.63	576.39	2187.67	35680.74	7131.60	641.00	4050.00	4190.20	4516.30	4691.00
*	530.000	350.37	.37	351.02	480.00	1131.69	36643.10	7225.22	480.00	4170.00	4190.20	4516.30	4650.00
	535.000	349.94	.00	350.88	530.00	774.17	38056.98	6168.85	530.00	2070.00	2119.80	2411.10	2600.00
	535.000	350.33	.38	351.26	410.00	.00	38543.30	6456.70	410.00	2120.00	2119.80	2411.10	2530.00
	540.000	350.33	.00	351.11	508.34	2018.31	40569.55	2412.15	.00	.00	2055.80	2395.10	.00
	540.000	350.65	.32	351.50	412.00	8.59	42421.59	2569.82	412.00	2055.00	2055.80	2395.10	2467.00
	550.000	350.75	.00	351.48	621.73	5900.62	33086.71	6012.67	.00	.00	1894.00	2153.30	.00
	550.000	351.10	.35	351.87	520.00	4576.40	34066.30	6357.30	520.00	1830.00	1894.00	2153.30	2350.00
	560.000	351.34	.00	351.79	675.47	2817.36	27770.23	14412.41	.00	.00	1638.20	1898.10	.00
	560.000	351.73	.39	352.17	625.00	2702.19	27987.60	14310.21	625.00	1575.00	1638.20	1898.10	2200.00
	562.000	351.53	.00	351.89	744.46	3716.00	20926.40	20357.60	.00	.00	1181.40	1385.00	.00
	562.000	351.93	.39	352.27	710.00	3703.88	20883.51	20412.61	710.00	1080.00	1181.40	1385.00	1790.00
	564.000	351.65	.00	351.97	771.13	5323.74	25249.68	14426.58	.00	.00	1053.10	1332.20	.00
	564.000	352.04	.39	352.34	730.00	5242.91	25208.25	14548.84	730.00	920.00	1053.10	1332.20	1650.00
	566.000	351.38	.00	352.25	586.95	2381.65	38975.88	3642.47	.00	.00	971.90	1257.50	.00
	566.000	351.78	.40	352.61	535.00	2291.27	38979.42	3729.32	535.00	870.00	971.90	1257.50	1405.00
	570.000	351.05	.00	352.72	454.01	2668.25	38116.58	4215.16	.00	.00	1642.70	1843.30	.00
	570.000	351.47	.42	353.05	435.00	2746.69	37994.10	4259.21	435.00	1525.00	1642.70	1843.30	1960.00
	572.000	351.54	.00	352.94	429.57	2594.57	39473.14	2932.29	.00	.00	832.00	1056.10	.00
	572.000	351.90	.36	353.25	393.00	2615.14	39463.08	2921.78	393.00	757.00	832.00	1056.10	1150.00
	574.000	352.23	.00	353.13	429.41	913.89	42161.19	1924.92	.00	.00	747.50	1043.60	.00
	574.000	352.55	.32	353.42	385.00	922.34	42268.61	1809.05	385.00	705.00	747.50	1043.60	1090.00
	576.000	352.13	.00	353.33	422.28	974.31	38207.11	5818.58	.00	.00	733.40	959.30	.00
	576.000	352.40	.27	353.64	372.00	1001.86	39039.84	4958.31	372.00	688.00	733.40	959.30	1060.00
	582.000	352.54	.00	353.61	579.40	2142.75	33447.15	9410.10	.00	.00	698.20	914.10	.00
	582.000	352.65	.10	353.93	465.00	1788.25	35938.52	7273.23	465.00	615.00	698.20	914.10	1080.00
	584.000	352.84	.00	353.78	574.54	2601.64	33311.14	9087.21	.00	.00	632.70	857.90	.00
	584.000	353.24	.40	354.13	547.00	2629.92	33305.62	9064.46	547.00	538.00	632.70	857.90	1085.00
	586.000	353.06	.00	353.94	576.58	3275.13	28996.77	12728.10	.00	.00	582.70	772.70	.00
	586.000	353.31	.25	354.32	495.00	3520.21	30882.23	10597.57	495.00	465.00	582.70	772.70	960.00
*	592.000	352.79	.00	354.63	422.69	2800.17	31496.20	10703.63	455.20	344.80	443.90	597.60	800.00
*	592.000	352.96	.17	355.10	349.00	2993.29	33503.95	8502.76	349.00	371.00	443.90	597.60	720.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	594.000	353.27	.00	358.23	260.06	5136.37	32643.34	7220.29	.00	.00	630.70	779.90	.00
*	594.000	352.93	-.34	358.39	235.00	5001.11	33075.16	6923.72	235.00	595.00	630.70	779.90	830.00
*	600.000	360.55	.00	361.79	351.25	12812.21	30205.13	1982.66	450.00	600.00	778.90	979.10	1050.00
*	600.000	360.78	.23	362.00	335.00	12922.07	30233.79	1844.14	335.00	660.00	778.90	979.10	995.00
*	610.000	363.40	.00	364.03	397.29	3731.79	39442.21	1826.00	452.30	200.00	319.90	622.80	652.30
*	610.000	363.58	.18	364.22	365.00	3002.62	40225.27	1772.11	365.00	280.00	319.90	622.80	645.00
	620.000	365.57	.00	366.11	492.57	40.75	44898.39	60.86	500.00	250.00	299.20	732.00	750.00
	620.000	365.73	.16	366.29	400.00	.00	45000.00	.00	400.00	330.00	299.20	732.00	730.00
	630.000	366.77	.00	367.33	489.11	7137.99	34115.39	3746.62	504.60	300.00	445.60	718.00	804.60
	630.000	366.93	.15	367.55	370.00	5714.01	35532.07	3753.93	370.00	380.00	445.60	718.00	750.00
*	640.000	368.29	.00	369.99	362.89	4081.82	32759.11	8159.07	.00	.00	433.90	577.60	.00
*	640.000	368.41	.12	370.59	199.00	4545.05	36553.00	3901.95	199.00	401.00	433.90	577.60	600.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=    100.000  PROFILE=  1  CRITICAL DEPTH ASSUMED

WARNING SECNO=    110.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    110.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    120.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    120.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    130.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    130.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    150.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    150.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    160.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    160.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    170.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    170.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    180.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    190.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    200.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    200.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    210.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    210.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    211.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    211.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    239.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    239.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    240.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    240.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    242.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    242.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    244.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    244.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    245.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    245.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=    260.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    260.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    280.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    280.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    300.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    300.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    320.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    320.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    330.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    330.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    358.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    358.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    400.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    421.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    421.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    425.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    425.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    440.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    450.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    450.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    470.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    470.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    480.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    480.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    480.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    480.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    483.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    483.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    485.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    485.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    486.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    486.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    490.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=    500.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    507.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    507.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    508.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    508.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    510.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    510.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    515.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    515.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    530.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    530.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    592.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    592.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    594.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    594.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    594.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    594.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=    600.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    600.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    610.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    610.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=    640.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=    640.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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FLOODWAY DATA, PROFILE 1 - 100 YEAR FLO
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
100.000	260.	3048.	16.4	283.5	282.5	1.0
110.000	300.	3958.	12.6	289.6	289.8	-.2
120.000	340.	5119.	9.8	292.9	292.9	.0
130.000	353.	6995.	7.1	301.1	300.4	.7
140.000	330.	7642.	6.5	305.5	304.5	1.0
150.000	955.	16977.	2.9	306.9	306.0	.9
160.000	1445.	20633.	2.4	307.4	306.5	.9
170.000	1580.	25770.	1.9	307.5	306.6	.9
180.000	1455.	24749.	2.0	307.5	306.7	.8
190.000	1450.	27001.	1.9	307.6	306.7	.9
200.000	1605.	28403.	1.8	307.6	306.7	.9
209.000	1700.	26517.	1.9	307.7	306.9	.8
210.000	1700.	18855.	2.7	307.6	306.8	.8
211.000	1700.	26618.	1.9	307.8	306.9	.9
220.000	1585.	20445.	2.4	308.0	307.1	.9
230.000	1175.	15347.	3.3	308.1	307.3	.8
239.000	670.	9514.	5.3	307.9	307.1	.8
240.000	494.	8704.	5.7	309.6	309.2	.4
242.000	492.	7995.	6.3	309.6	309.1	.5
243.000	492.	8027.	6.2	309.7	309.2	.5
244.000	510.	8722.	5.7	309.8	309.4	.4
245.000	650.	12211.	4.1	310.2	310.0	.2
250.000	910.	13874.	3.6	311.4	310.8	.6
260.000	610.	7706.	6.5	312.6	311.7	.9
270.000	720.	9131.	5.4	315.4	314.8	.6
280.000	1330.	16409.	3.0	317.3	316.5	.8
285.000	1490.	16405.	3.0	317.8	317.0	.8
290.000	1594.	14616.	3.4	318.2	317.5	.7
300.000	1474.	11648.	4.2	318.9	318.2	.7
310.000	1350.	11963.	4.1	319.8	319.2	.6
320.000	1120.	8450.	5.8	321.6	320.7	.9
330.000	880.	9039.	5.3	324.3	323.9	.4
340.000	960.	10270.	4.7	325.6	325.2	.4
345.000	970.	9041.	5.3	326.3	326.0	.3
355.000	870.	8036.	6.0	327.3	327.0	.3
356.000	770.	5993.	8.0	328.7	328.4	.3
358.000	790.	5853.	8.2	328.5	328.1	.4
360.000	870.	10063.	4.8	330.4	329.9	.5
370.000	1030.	11378.	4.2	331.0	330.6	.4
380.000	1085.	10946.	4.4	331.4	331.0	.4
390.000	890.	9176.	5.2	332.3	331.7	.6
400.000	765.	10960.	4.4	333.5	332.9	.6

FLOODWAY DATA, PROFILE 1 - 100 YEAR FLO
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
410.000	739.	10498.	4.6	334.3	333.6	.7
415.000	745.	11433.	4.2	335.0	334.5	.5
420.000	653.	9766.	4.9	335.4	334.9	.5
421.000	440.	4798.	10.0	335.4	335.0	.4
422.000	440.	3736.	12.8	334.9	334.4	.5
423.000	442.	4024.	11.9	335.7	335.5	.2
424.000	449.	4490.	10.7	336.4	336.2	.2
425.000	850.	8731.	5.5	338.8	338.7	.1
430.000	1000.	7073.	6.8	339.8	339.6	.2
440.000	1055.	8002.	5.7	341.6	340.6	1.0
450.000	1035.	11174.	4.1	342.2	341.2	1.0
460.000	980.	11894.	3.9	342.4	341.5	.9
470.000	1005.	7213.	6.4	342.5	341.7	.8
480.000	1021.	3837.	12.0	343.7	343.9	-.2
483.000	1020.	6117.	7.5	346.3	346.0	.3
484.000	1015.	6096.	7.5	347.0	346.6	.4
485.000	1015.	4585.	10.0	346.6	346.3	.3
486.000	1015.	6724.	6.8	347.6	347.0	.6
490.000	1020.	7949.	5.8	348.4	347.6	.8
500.000	875.	9155.	4.9	349.0	348.4	.6
507.000	484.	5953.	7.6	349.0	348.5	.5
508.000	482.	4862.	9.3	348.8	348.2	.6
509.000	484.	4970.	9.1	349.0	348.6	.4
510.000	485.	6250.	7.2	349.6	349.1	.5
515.000	690.	12157.	3.7	350.4	350.0	.4
520.000	625.	10329.	4.4	350.4	350.0	.4
530.000	480.	7296.	6.2	350.4	350.0	.4
535.000	410.	6023.	7.5	350.3	349.9	.4
540.000	412.	6286.	7.2	350.7	350.3	.4
550.000	520.	6995.	6.4	351.1	350.7	.4
560.000	625.	9221.	4.9	351.7	351.3	.4
562.000	710.	10358.	4.3	351.9	351.5	.4
564.000	730.	10850.	4.1	352.0	351.7	.3
566.000	535.	7481.	6.0	351.8	351.4	.4
570.000	435.	5692.	7.9	351.5	351.1	.4
572.000	393.	5777.	7.8	351.9	351.5	.4
574.000	385.	6558.	6.9	352.5	352.2	.3
576.000	372.	5884.	7.6	352.4	352.1	.3
582.000	465.	6245.	7.2	352.6	352.5	.1
584.000	547.	7613.	5.9	353.2	352.8	.4
586.000	495.	7253.	6.2	353.3	353.1	.2
592.000	349.	4916.	9.2	353.0	352.8	.2

FLOODWAY DATA, PROFILE 1 - 100 YEAR FLO
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
594.000	235.	2436.	18.5	352.9	353.3	-.4
600.000	335.	5140.	8.8	360.8	360.5	.3
610.000	365.	6987.	6.4	363.6	363.4	.2
620.000	400.	7534.	6.0	365.7	365.6	.1
630.000	370.	7197.	6.3	366.9	366.8	.1
640.000	199.	3798.	11.8	368.4	368.3	.1

Exhibit J

Floodplain Analysis for Fanita Lake Excerpts (Sycamore Creek)

FLOODPLAIN ANALYSIS
FOR
FANITA LAKE

Job Number 14404-A
May 11, 2007
Revised: May 25, 2007

RICK ENGINEERING COMPANY
ENGINEERING COMPANY
RICK ENGINEERING CO

RICK
ENGINEERING COMPANY

rickengineering.com

FLOODPLAIN ANALYSIS

FOR

FANITA LAKE

Job Number 14404-A

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TABLE OF CONTENTS

Introduction 1
Fanita 1
The Lake 1
Historic Reports 3
Vicinity Map 4
Lake Detail 5

DSOD Requirements 6
55,000-Year Storm Hydrologic Methodology and Criteria 6
55,000-Year Storm Hydrologic Results 6

Hydrologic Analyses 8
Hydrologic Methodology and Criteria 8
Sycamore Creek Watershed Hydrology 9
Sycamore Creek Watershed Hydrology with Lake Water Loss 9
Hydrologic Results 11
100-Year Storm Event 11
Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event 12
Scenario 2 – Lake Water Loss with No Storm Event 14

Hydraulic Analyses 16
Hydraulic Methodology 16
Hydraulic Results 17
100 Year Floodplain Analysis for Sycamore Creek 17
Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event 17
Scenario 2 – Lake Water Loss with No Storm Event 18

Conclusion 19

Tables:

Table 1: HEC-1 Input Parameters 11

Table 2: Hydrologic Results for 100-Year Storm Event 12

Table 3: Hydrologic Results for Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event 13

Table 4: Hydrologic Results for Scenario 2 – Lake Water Loss with No Storm Event 15

Table 5: Hydraulic Results for Sycamore Creek 19

Appendices:

Appendix A: Hydrologic and Hydraulic Results for 100-Year Storm Event

Appendix B: Hydrologic and Hydraulic Results for Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event

Appendix C: Hydrologic and Hydraulic Results for Scenario 2 – Lake Water Loss with No Storm Event

Appendix D: Hydrologic Backup Information

Appendix E: State of California Jurisdiction Over Dams and Reservoir Chart

Map Pockets:

Floodplain Analysis HEC-RAS Cross-Section Workmap, Sheets 1-8

INTRODUCTION

Fanita

The Fanita project is a 2,600-acre development proposed within the City of Santee, and is located northeast of the intersection of Mast Boulevard and Fanita Parkway, and east of Santee Lakes Regional Park. The northern and eastern boundaries of the project follow the corporate boundary line of the City of Santee and County of San Diego (see Vicinity Map). West of the project site, Sycamore Creek generally flows from north to south along the project boundary to the San Diego River. Several ridgelines through the project site separate the runoff flows into Sycamore Creek.

The Fanita project consists of approximately 1,190 acres of developed area, as well as approximately 1400 acres on site that will remain in a natural state. The developed area consists of the construction of single-family homes, and improvements to Cuyamaca Street and Fanita Parkway. There are also several pads proposed on site for commercial developments, several park sites, a lake, as well as the construction of a recreation center and a fire station.

There are four proposed villages within the Fanita project: Rock Point, Sycamore Glen, Oak View, and Sage Hill. Runoff from Rock Point, Sycamore Glen, Oak View, and portions of Sage Hill drain into Sycamore Creek. Flows from the remaining portions of Sage Hill Village drain to existing City storm drain systems and channel which ultimately flow to the San Diego River.

The Lake Associated With Fanita

The Lake is proposed within the Oak View Village, bounded by Fanita Parkway to the east and Sycamore Creek to the west. The proposed lake will serve as the primary storm water treatment Best Management Practice (BMP) while attenuating the 2-, 10-, and 100-year storm events to pre-project levels for a portion of the Fanita project. The lake will also provide aesthetic value to the Fanita project by maintaining a permanent pool of

water and providing a recreation area for the residents of the proposed Project and City of Santee.

The proposed lake captures post-project flows from Rock Point, Sycamore Glen, and Oak View Villages. The total watershed area that is directed to the proposed lake is approximately 705 acres. As stated above, the proposed lake has been designed to provide water quality benefits and detention. The proposed lake will have a total capacity of approximately 200 acre-feet from the top of the lake (elev. 502.5') to the bottom (elev. 484'). The total height of the lake is measured from the outlet of the lake (elev. 476') to the top of the lake (elev. 502.5'), this elevation difference is 26.5 feet. Please refer to the lake detail on Page 5 for a cross-sectional view of the lake.

The State of California classifies a lake/basin/reservoir as a dam if it exceeds a height of 25 feet and/or contains a capacity of 50 acre-feet or more (please refer to Appendix E for the jurisdictional chart). The normal water level of the proposed lake will encompass approximately a 12 acre footprint with an average depth of 8 feet and will contain a volume of 65 acre-feet measured from the bottom of the lake (elev. 484') to the permanent pool of water within the lake (elev. 492'). Since the volume of the lake exceeds 50 acre-feet, the State of California has classified the Lake associated with Fanita as a dam and has requested that the lake be designed as such.

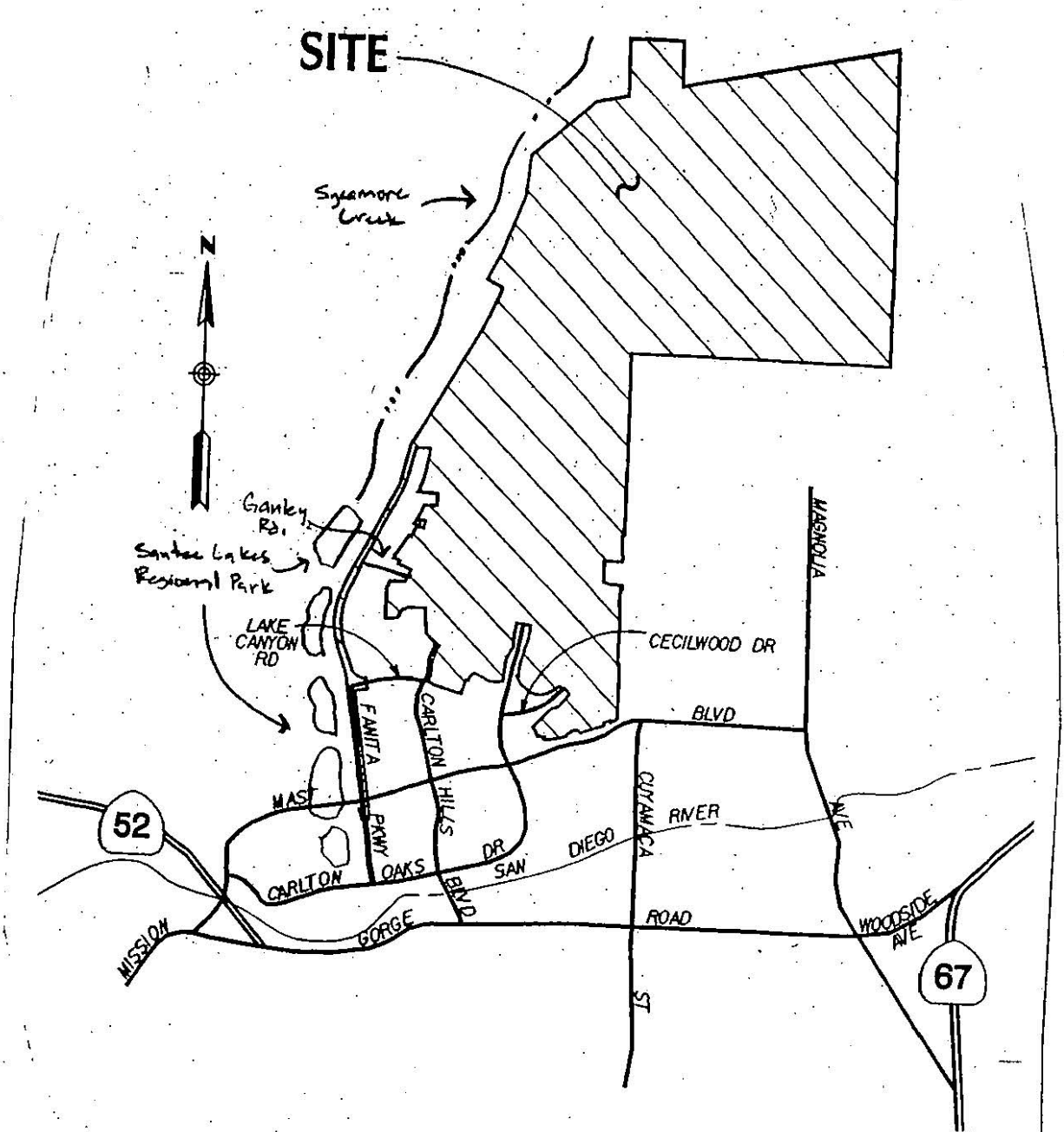
The purpose of this report is to determine the effects of water loss at the lake under two scenarios. The first scenario models a loss of lake water during the 100-year storm event. This scenario assumes water loss occurs coincident with the peak of the 100-year storm event. The lake will pond to the 100-year detained water surface elevation (elev. 497') before the loss of structural integrity. The second scenario models a loss of lake water under no storm event, where the lake will pond to the maintained permanent water surface elevation (elev. 492') before the loss of structural integrity. Hydrologic and Hydraulic analyses have been prepared to model both scenarios to determine the inundation limits in Sycamore Creek along with the post-project 100-year floodplain. The

following sections describe in more detail the parameters that were used to model both scenarios and the 100-year Sycamore Creek Watershed.

Historic Reports

Previously, a report titled "Sycamore Creek 100 Year Water Surface Determination," dated April 1994 by Black and Veatch was prepared for the Padre Dam Municipal Water District. This report quantified the 100-year peak discharge near Carlton Oaks Drive to be 8,745 cfs. Rick Engineering Company analysis yielded a 100-year peak discharge of 13,407 cfs. Upon review of the Black and Veatch report the following was compared: the drainage basin area, composite curve numbers, soil types, precipitation, and basin factor values. The above-described variables that were used in this report were similar to the values used in the Black and Veatch report. However, the Black and Veatch report was prepared in 1994. Consequently the criteria/methodology used was that of the 1993 County of San Diego Hydrology Manual. In 2003, a "new" County of San Diego Hydrology Manual was adopted in which the criteria/methodology in the "new" Hydrology Manual (2003) changed. The 1993 manual utilized a Type B distribution methodology, and the "new" manual utilizes a Nested Storm Distribution methodology. Consequently, the hydrologic analysis presented in this Floodplain Study for Sycamore Creek is following the current methodology described in the "new" Hydrology Manual. As a result, a larger flow rate was calculated, which accounts for the difference in the two analyses. For a more detailed discussion of the analysis please refer to Hydrologic Analyses of this report.

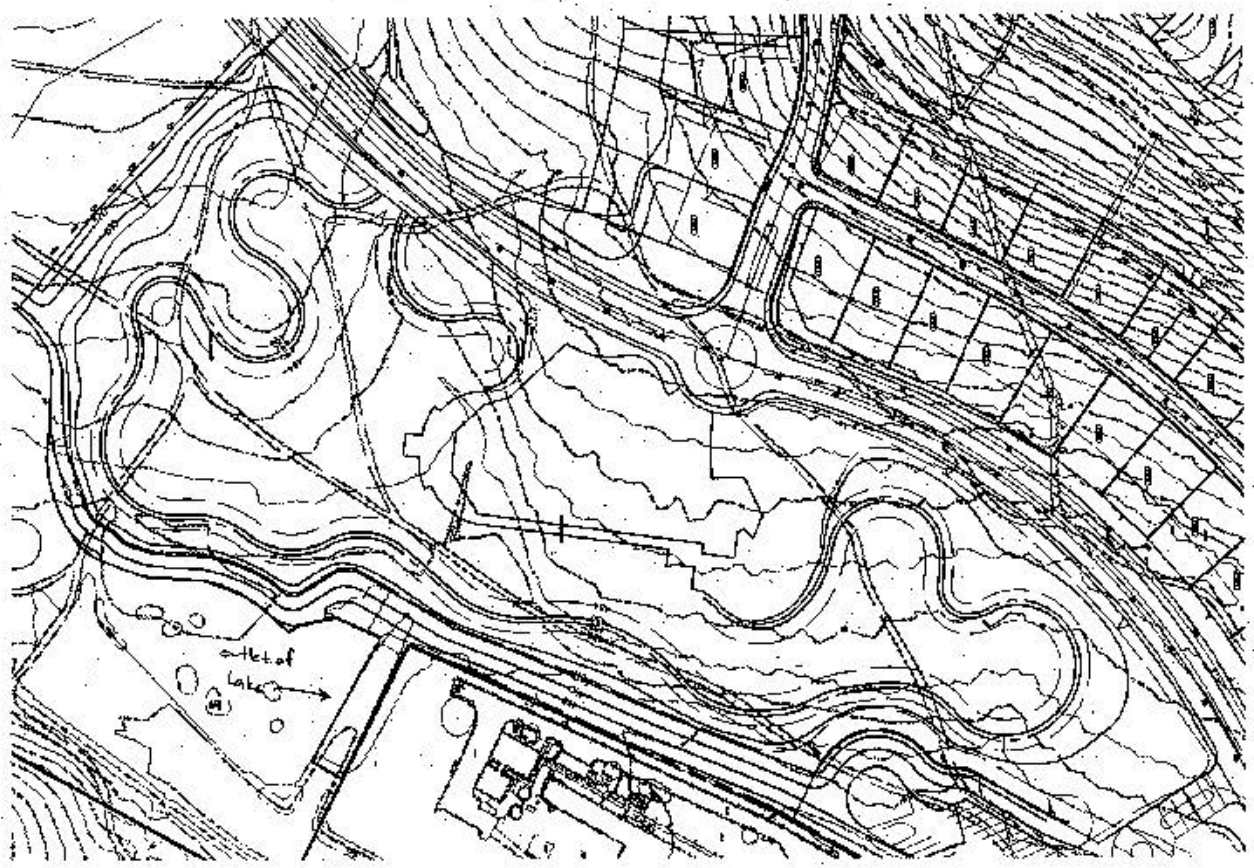
Vicinity Map



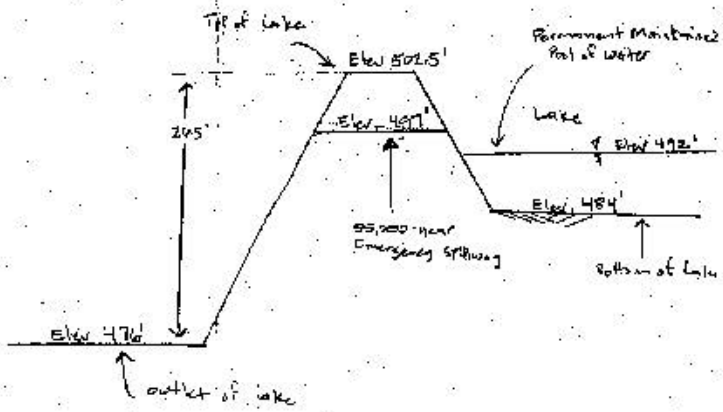
FANITA

VICINITY MAP

NO SCALE



Plan View of Lake
Scale: 1" = 200'



Detail of Lake Elevations
NTS

The Lake Associated With Fanita
Plan and Detail

DSOD REQUIREMENTS

55,000-Year Storm Hydrologic Methodology and Criteria

The California Department of Water Resources Department of Safety of Dams (DSOD) has reviewed the proposed Fanita project and the lake associated with Fanita. Upon their review they concluded that due to the size and placement of the proposed lake, the emergency spillway for the lake shall be designed to convey the 55,000-year return frequency storm. In order to determine the magnitude of the 55,000-year storm, a hydrologic analysis was performed.

The Department of Water Resources Bulletin Number 195 was used to determine the precipitation for the 6-hour and 24-hour 55,000-year storm event. This is done by plotting known precipitation values on log-probability paper and extrapolating out values for the required storm. Bulletin 195 contains historic data for multiple storm events for multiple locations throughout California. The bulletin uses a Pearson Type III Distribution to determine the precipitation values for storm events ranging from the 2-year to the 10,000-year. Based on the location of Fanita, the Poway rain gauge was used and the historical data was plotted.

Once the values are plotted and the required storm precipitation is obtained, a hydrologic analysis is needed to determine the discharge produced from the given storm event. An HEC-1 model was produced using the extrapolated values for the 55,000-year storm along with the required input parameters to describe the characteristic of the watershed.

55,000-Year Storm Hydrologic Results

The watershed draining to the Lake associated with Fanita was analyzed using the Natural Resources Conservation Service (NRCS) hydrologic method, consistent with the methodology described in Section 4 of the *San Diego County Hydrology Manual* dated June 2003 (June 2003 Hydrology Manual).

The 6-hour and 24-hour rainfall amounts were obtained based on rainfall data published in Department of Water Resources Bulletin No. 195, *Rainfall Analysis for Drainage Design Volume I, Short Duration Precipitation Frequency Data*, dated October 1976. Data for the Poway County Road Station (Poway CRS) gage Z06 7110.10 (page 461) was used. The Poway CRS gage is located approximately 7 miles northwest of the project site and is the most representative gage available in Bulletin No. 195 for the watershed draining to Fanita Park Lake. The 20-, 50-, 100-, 200-, 1,000-, and 10,000-year 6-hour and 24-hour rainfall amounts for Poway CRS gage were plotted on log-probability paper and extended to determine the 55,000-year 6-hour and 24-hour rainfall amounts. Based on the analysis of the rainfall, the 55,000-year 6-hour and 24-hour rainfall amounts are approximately 4.4 inches and 7.1 inches, respectively.

The United States Army Corps of Engineers (USACE) HEC-1 computer model was used to compute the runoff. Based on the analysis, the undetained peak flow rate of runoff from the 1.08-square mile watershed is approximately 3,844 cubic feet per second (cfs). This discharge was used to size the emergency spillway for the proposed lake. Since the spillway is placed at elevation 497 feet the spillway will have an available head of 5.5 feet to pass the 55,000-year storm. Using the weir equation with the parameters listed above the spillway length should be 185 feet.

HYDROLOGIC ANALYSES

Hydrologic Methodology and Criteria

The total watershed tributary to Sycamore Creek is approximately 17 square miles. The June 2003 *San Diego County Hydrology Manual* recommends that the Natural Resources Conservation Service (NRCS) hydrologic method be used for watersheds that are approximately one square mile and greater in size. The NRCS hydrologic method was used to determine the 100-year post-project peak discharge rate for the Sycamore Creek watershed.

A 24-hour nested storm pattern with the 2/3, 1/3 rainfall distribution, based on the USACE, Hydrologic Engineering Center (HEC) Training Document Number 15 was utilized for these analyses. The NRCS's rainfall distribution is based on the Rational Method's 6-hour intensity-duration relationship and as a result, the NRCS method now closely mimics the results of the Rational Method. Therefore, it is appropriate to use the NRCS Hydrologic method to assess the impacts that the proposed project would have on the watershed. Rational Method analyses have been prepared to model the on-site storm drain systems for watersheds less than 1 square mile. Please refer to the following reports (or any revisions thereafter) prepared by Rick Engineering Company for the Rational Method Analyses associated with the Fanita development:

- "Drainage Study for Fanita: Rock Point Village", dated November 30, 2006
- "Drainage Study for Fanita: Sycamore Glen/Oak View Village", dated February 6, 2007
- "Drainage Study for Fanita: Sage Hill Village", dated May 24, 2006
- "Drainage Study for Fanita: Cuyamaca Street", dated September 11, 2006
- "Drainage Study for Fanita: Fanita Parkway", dated September 13, 2006

The USACE HEC-1 computer program was used to determine the 100-year peak discharge flow rates for post-project scenario. The HEC-1 program allows the engineer to simulate both natural and improved or developed watersheds. Program parameter include

basin area, lag time, rainfall distribution, and infiltration rates. These parameters were determined from soil and vegetative cover/land use maps, and USGS topographic maps. Refer to Appendix D for the corresponding HEC-1 back up. The HEC-1 program also has the capability to model the effects of detention and storage runoff within a watershed as it effects the peak discharge within the stream.

Sycamore Creek Watershed Hydrology

Rainfall rates and distributions were developed using the criteria, as outlined in the June 2003 *San Diego County Hydrology Manual*. The NRCS Synthetic unit hydrograph with curvilinear transformation was used to develop runoff hydrographs for the watershed. This unit hydrograph is dimensionless and is a function of the watershed area and lag time. Lag time for the watershed was calculated using criteria presented in the Hydrology Manual

Runoff was estimated using NRCS curve numbers for the watershed. Estimated curve numbers are a function of land use or vegetative cover and soil type. The land uses were based on the County of San Diego land use and vegetative cover maps and the Fanita Tentative Map. Soil types were obtained from the Soil Conservation Service (SCS) soil survey for San Diego County. Curve numbers were then calculated using the method as outlined in the San Diego County Hydrology Manual.

The 100-year storm event was analyzed for the post-project scenario. Refer to Appendix E for the corresponding workmaps and supporting materials. In addition, located in Appendix A is the 100-year HEC-1 analysis for the post-project Sycamore Creek watershed.

Sycamore Creek Watershed Hydrology with Lake Water Loss

A routine within HEC-1 computes the elevation-outflow rating curve resulting from sudden water loss in the lake by determining the flow over the crest of the spillway area of the lake and/or through the loss of structural integrity as well as through the reservoir outlet works.

The HEC-1 routine simulates a loss of water from the lake using various input parameters. These input parameters describe the reservoir elevation-storage relationship, structure, spillway information and breach geometry. The characteristics from the loss of structural integrity of the lake are modeled by assuming the following parameters: geometric shape and elevation for the loss of structural integrity of the spillway area of the lake, a ponded water surface elevation at which the breach will begin, and a time (duration) for development of the breach geometry.

The geometric shape and elevation parameters for the loss of structural integrity of the spillway area of the lake were determined from the adjacent natural topography and assumptions from the document titled, "The NWS Dam-Break Flood Forecasting Model" prepared by the USACE Hydrologic Engineering Center. The breach side slopes and failure time were estimated based on the suggested range of values from the USACE document. The design of the lake allows for a permanent ponded water surface elevation of 492' with the crest of the spillway of the lake to be placed at elevation 497', which corresponds with the 100-year ponded water surface elevation, and the top of lake at elevation 502.5'.

Table 1 shows the HEC-1 input parameters, the suggested range for the loss of structural integrity based on information from the USACE document, and the assumed values used in the HEC-1 analysis.

Table 1: Parameters Utilized in HEC-1 Model

Input Parameters	Suggested Range	Assumed Value
Breach Width	Between ½ the height of the dam and 4 times the height of the dam	100-feet wide
Breach Side Slope (z)	Between vertical and 1:1 side slopes	0.5:1 (horiz:vert)
Failure Time	Between 0.5-hours and 4-hours	0.5 hrs
WSEL at Breach	1-5 feet above dam crest	497 ft (zero feet above dam crest)

WSEL = water surface elevation

Located in Appendix B is the 100-year HEC-1 analysis for the post-project Sycamore Creek watershed.

Hydrologic Results

100-Year Storm Event

A 100-Year hydrologic analysis was performed on the Sycamore Creek watershed. Rational Method analyses from the Fanita Tentative Map were used within the HEC-1 analysis to evaluate the impacts of the proposed Fanita development. The proposed development from Fanita that discharge into Sycamore Creek include: Rock Point Village, Sycamore Glen Village, Oak View Village, Fanita Parkway, portions of Sage Hill Village, and undisturbed natural terrain. The total area analyzed within this HEC-1 is approximately 17-square miles. A total of 13 basins were delineated to make up the 17-square mile watershed. The HEC-1 analysis was based on County of San Diego land use and vegetative cover maps and the Tentative Map for Fanita.

The HEC-1 analysis was analyzed using a trapezoidal channel routing option, which does not take into account channel storage. This option does not allow the discharge to dissipate as it travels downstream. Table 2 below displays the 100-year post-project peak discharges within Sycamore Creek.

Table 2: Hydrologic Results for 100-Year Storm Event

Location	Description	Peak Discharge (Q)
Cross Section 3600	Upstream end of Analysis	6,759 cfs
Cross Section 2500	Approximately 1100 feet upstream of Birchcrest Blvd	12,089 cfs
Cross Section 1900	Approximately 900 feet downstream of Ganley Rd	12,357 cfs
Cross Section 1000	Approximately 800 feet upstream of Mast Blvd	13,407 cfs

The results listed in Table 2 above can be found in Appendix A.

Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event

A 100-year HEC-1 hydrologic analysis was performed for the entire Sycamore Creek watershed. Rational Method analyses from the Fanita Tentative Map were used within the HEC-1 analysis to evaluate the impacts of the proposed Fanita development. The areas from Fanita that discharge into Sycamore Creek include: Rock Point Village, Sycamore Glen Village, Oak View Village, Fanita Parkway, portions of Sage Hill Village, and some undisturbed natural terrain. The total area analyzed within this HEC-1 is approximately 17-square miles. A total of 13 basins were delineated to make up the 17-square mile watershed. The HEC-1 analysis was based on County of San Diego land use and vegetative cover maps and the Tentative Map for Fanita.

The HEC-1 analysis for Scenario 1 calculated a peak discharge of 12,461 cfs at the downstream end where Sycamore Creek and the San Diego River confluence. The peak discharge at the downstream end for this scenario is less than the 100-year storm analysis because of the channel storage routing that was used for this analysis. The channel storage routing was used to demonstrate the dissipation of the lake water loss. Table 2 below displays the peak discharge along Sycamore Creek.

Table 3: Hydrologic Results for Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event

Location	Description	Peak Discharge (Q)
Cross Section 3600	Upstream end of Analysis	6,759 cfs
	Directly Downstream of Lake	5,298 cfs
Cross Section 3300	Confluence of Lake and Sycamore Creek	10,104 cfs
Cross Section 2900	Approximately 1200 feet downstream of the proposed lake	9,881 cfs
Cross Section 2500	Approximately 1100 feet upstream of Birchcrest Blvd	8,933 cfs
Cross Section 2200	Approximately 500 feet downstream of Birchcrest Blvd	12,560 cfs
Cross Section 1900	Approximately 900 feet downstream of Ganley Rd	12,378 cfs
Cross Section 1400	Approximately 300 feet upstream of Lake Canyon Road	12,291 cfs
Cross Section 1000	Approximately 800 feet upstream of Mast Blvd	12,073 cfs
Cross Section 800	Just upstream of Mast Blvd	12,060 cfs
Cross Section 500	Approximately 1000 feet upstream of Carlton Oaks Drive	12,023 cfs
Cross Section 300	Just upstream of Carlton Oaks Drive	11,966 cfs
Cross Section 100	San Diego River	12,461 cfs

As shown above, the discharge from a lake loss dissipates as it travels through Sycamore Creek. The HEC-1 results listed in Table 3 above can be found in Appendix B.

Scenario 2 – Lake Water Loss with No Storm Event

This scenario was analyzed to determine the impacts of a loss of structural integrity of the spillway area of the lake when there is no storm event. The same flow parameters are used as in Scenario 1 with the exception of the water surface elevation at the time of the loss of structural integrity at the spillway area. The lake is allowed to breach at elevation 492', the permanent pool elevation, rather than elevation 497'. Table 4 below displays the results for this scenario.

Table 4: Hydrologic Results for Scenario 2 – Lake Water Loss with No Storm Event

Location	Description	Peak Discharge (Q)
	Directly Downstream of Lake	3,411 cfs
Cross Section 3300	Confluence of Lake and Sycamore Creek	3,357 cfs
Cross Section 2900	Approximately 1200 feet downstream of the proposed lake	2,363 cfs
Cross Section 2500	Approximately 1100 feet upstream of Birchcrest Blvd	1,622 cfs
Cross Section 2200	Approximately 500 feet downstream of Birchcrest Blvd	1,435 cfs
Cross Section 1900	Approximately 900 feet downstream of Ganley Rd	1,201 cfs
Cross Section 1400	Approximately 300 feet upstream of Lake Canyon Road	870 cfs
Cross Section 1000	Approximately 800 feet upstream of Mast Blvd	729 cfs
Cross Section 800	Just upstream of Mast Blvd	720 cfs
Cross Section 500	Approximately 1000 feet upstream of Carlton Oaks Drive	670 cfs
Cross Section 300	Just upstream of Carlton Oaks Drive	627 cfs
Cross Section 100	San Diego River	625 cfs

As shown above, the discharge from a lake loss dissipates as it travels through Sycamore Creek. The results listed in Table 4 above can be found in Appendix B.

HYDRAULIC ANALYSIS

Hydraulic Methodology

The USACE Hydrologic Engineering Center - River Analysis System (HEC-RAS) was used to determine the hydraulic impacts to Sycamore Creek under the scenarios previously mentioned. The HEC-RAS program has the capability to calculate water surface profiles based on the energy equation and the momentum equation. Geometric information, Manning's roughness, and discharge as well as any known boundary conditions are required to complete the hydraulic model.

The Sycamore Creek HEC-RAS model was analyzed under a subcritical flow regime. In order for the program to operate, a downstream boundary condition must be specified. Sycamore Creek confluences with the San Diego River at the downstream end of the analysis. Therefore, the 100- water surface elevation within the San Diego River at this confluence point (elevation 318') was obtained from the FEMA Flood Insurance Rate Map Panel 0673C1634 F dated, June 19, 1997 and used for the 100-Year Storm Event and Scenario 1. However, for Scenario 2 critical depth was assumed due to the non-occurrence of a storm event.

Sycamore Creek stretches 3.5 miles flowing from north to south. Within this stretch there are two bridges that span Sycamore Creek. The two bridges are located at Mast Blvd. and Carlton Oaks Blvd. Both bridges were modeled based on As-Built information obtained from the City of Santee. The channel roughness that is used for this analysis was obtained during a recent site visit. The channel roughness was compared to values within the County of San Diego Drainage Design Manual, dated May 2005. The following section displays the hydraulic results for the scenarios.

Hydraulic Results

100-Year Storm Event

The 100-year hydraulic analysis for Sycamore Creek was created. The discharge that is used to model this scenario was obtained from the HEC-1 analysis for the 100-Year storm event located in Appendix A. As previously mentioned, the starting water surface elevation that is used for this analysis is elevation 318'. This information was obtained from the effective FEMA Flood Insurance Rate Map. Sycamore Creek flows adjacent to Padre Dam Waste Treatment Plant, Santee Recreational Lakes, and residential homes. During the 100-year storm event, Sycamore Creek does not have capacity to contain the 100-year storm within the channel banks. Therefore, flows inundate portions of the surrounding properties. Please refer to Map Pocket 1 for the 100-year floodplain for Sycamore Creek. Table 5 displays the hydraulic results for the 100-Year Analysis.

Scenario 1 – Lake Water Loss Coincident with 100-Year Storm Event

The hydraulic analysis for this scenario analyzes Sycamore Creek during a 100-year storm event with a loss of structural integrity of the spillway area of the lake. The flood wave peak discharge from the HEC-1 for Scenario 1 dissipates as it travels the length of the creek. This is due to the channel storage routing that is used within the HEC-1. Therefore, the discharge that is used to model this scenario was obtained from the HEC-1 analysis for the 100-Year Event and Scenario 1 located in Appendix A and B, respectively. At cross-section 1800 this scenario coincides with the 100-year peak flow in Sycamore Creek. Therefore, the 100-year flow rate was used from the downstream boundary of the analysis to cross section 1800. Upstream of cross-section 1800 the flow rate information was obtained for the HEC-1 analysis.

As previously mentioned, the starting water surface elevation that is used for this scenario is elevation 318'. The same information was used as in the 100-Year Scenario, with the exception of the flow rate as mentioned above. Please refer to Map Pocket 1 for the 100-year floodplain for Sycamore Creek with a loss of lake water. Table 5 displays the hydraulic results for Scenario 1.

Scenario 2 – Lake Water Loss with No Storm Event

The analysis that was performed for this scenario included a HEC-RAS model that analyzed Sycamore Creek during a loss of structural integrity of the spillway area of the lake with a non-occurrence of a storm. Since this scenario models the lake ponded at an elevation of 492' (the permanent pool elevation) the volume of water within the lake is less than that of Scenario 1. Also, the 100-year Sycamore Creek discharge at the confluence point for the lake and Sycamore Creek is higher than that of the outfall from the hydrologic results determined from Scenario 2. Therefore, the floodplain for this scenario does not extend as wide as the two other scenarios. Please refer to the workmap in Map Pocket 1 for the limits of inundation for Scenario 2. Table 5 displays the hydraulic results for Scenario 2.

Table 5: Hydraulic Results for Sycamore Creek

Location		Description	100-Year Scenario		Scenario 1		Scenario 2	
			Discharge (Q)	WSEL (ft)	Discharge (Q)	WSEL (ft)	Discharge (Q)	WSEL (ft)
↓ Direction of Flow ↓	Cross Section 3600	Upstream end of Analysis	6,759 cfs	492.4 ft	6,759 cfs	492.4 ft	--	--
	Cross Section 3300	Confluence of Lake and Sycamore Creek	6,759 cfs	475.2 ft	10,104 cfs	476.6 ft	3,357 cfs	472.7 ft
	Cross Section 2900	Approximately 1200 feet downstream of the proposed lake	6,759 cfs	454.5 ft	9,881 cfs	455.8 ft	2,363 cfs	450.1 ft
	Cross Section 2500	Approximately 1100 feet upstream of Birchcrest Blvd	12,089 cfs	426.0 ft	8,933 cfs	426.0 ft	1,622 cfs	418.7 ft
	Cross Section 2200	Approximately 500 feet downstream of Birchcrest Blvd	12,089 cfs	408.4 ft	12,560 cfs	410.1 ft	1,435 cfs	402.3 ft
	Cross Section 1900	Approximately 900 feet downstream of Ganley Rd	12,357 cfs	391.5 ft	12,378 cfs	393.6 ft	1,201 cfs	386.2 ft
	Cross Section 1400	Approximately 300 feet upstream of Lake Canyon Road	12357 cfs	363.7 ft	12,291 cfs	363.7 ft	870 cfs	358.1 ft
	Cross Section 1000	Approximately 800 feet upstream of Mast Blvd	13,407 cfs	342.4 ft	12,073 cfs	342.4 ft	729 cfs	339.0 ft
	Cross Section 800	Just upstream of Mast Blvd	13,407 cfs	335.1 ft	12,060 cfs	335.1 ft	720 cfs	329.7 ft
	Cross Section 500	Approximately 1000 feet upstream of Carlton Oaks Drive	13,407 cfs	326.1 ft	12,023 cfs	326.1 ft	670 cfs	321.2 ft
	Cross Section 300	Just upstream of Carlton Oaks Drive	13,407 cfs	325.1 ft	11,966 cfs	325.1 ft	627 cfs	315.9 ft
	Cross Section 100	San Diego River	13,407 cfs	318.0 ft	12,461 cfs	318.0 ft	625 cfs	308.9 ft

Note: cfs = cubic-feet-per-second; ft = feet, WSEL = water surface elevation

CONCLUSION

Hydrologic and hydraulic analyses have been performed for two scenarios to determine the potential effects the proposed lake will have on Sycamore Creek. A model of the Sycamore Creek watershed during a 100-year storm event with the proposed Fanita development was created. This analysis generated a baseline model that was used to compare the results of potential lake water loss scenarios. The first scenario models a loss of structural integrity of the spillway area of the lake during the 100-year storm event, where the lake ponds to the 100-year detained water surface elevation (elev. 497') before the spillway area looses structural integrity. It also assumes that the Sycamore Creek watershed peak occurs coincident with the loss of structural integrity. The second scenario analyzes a loss of structural integrity of the spillway area of the lake under no storm event, where the lake breaches at the maintained permanent water surface elevation (elev. 492'). The hydrologic results show that the discharge from the lake water loss in both scenarios dissipates as the flow travels down Sycamore Creek. These flow rates produced from the hydrologic analyses are then modeled in the hydraulic analyses and the water surface elevations are compared to the 100-Year floodplain. Due to the dissipation of the lake water loss flow rates the water surface elevations for both lake water loss scenarios are less than or equal to the 100-year floodplain at the downstream end (San Diego River). In addition, the more extreme scenario, Scenario 1, coincides (ties in) with the 100-year floodplain approximately 8,300 feet upstream of the San Diego River/Sycamore Creek confluence. The floodplains for the 100-year analysis and the two scenarios are shown on the exhibits located in Map Pocket 1.

Appendices to this report are available at the Santee Department of Development Services. To ensure availability or to make an appointment, please call:

Kevin Mallory, Principal Planner,
619-258-4100, extension 167.

Exhibit K

Site Plan and off-Site Improvements Exhibit



Project Site
Off-Site Improvements
CEQA Study Area
City of Santee/San Diego Municipal Boundary
Residential North
Residential West
Golf Course Redesign
Hotel and Clubhouse
Emergency Vehicle Access Only
Private Utility Maintenance Road
Residential / Resort Circulation Roadway

EXHIBIT- K

SITE PLAN AND OFFSITE IMPROVEMNETS

CARLTON OAKS COUNTRY CLUB AND RESORT

Source: Site Plan-Hunsaker & Associates (2024) & Graphic-ICF (2024)



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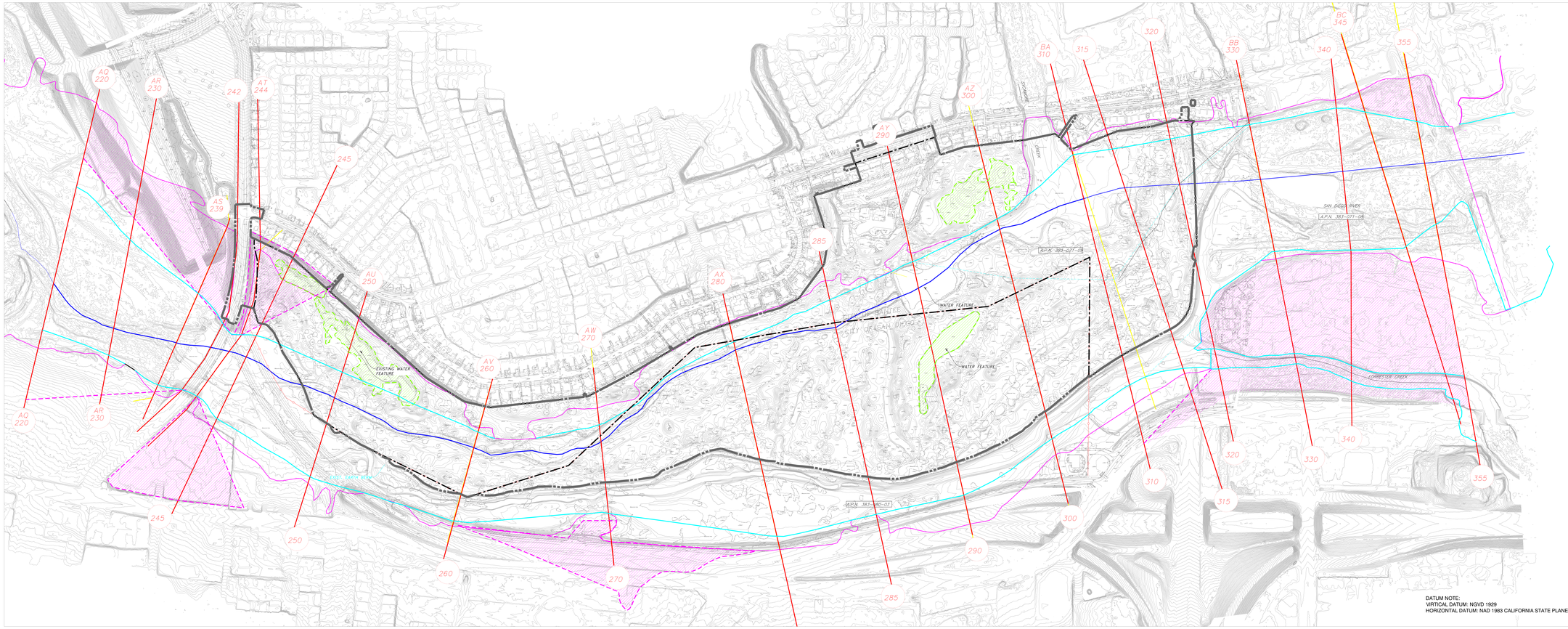
HUNSAKER & ASSOCIATES
SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

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WORKMAPS

Map Pocket #1

EXISTING CONDITIONS WORKMAP



LEGEND

- 100-YEAR FLOOD PLAIN PER FEMA FIRM
- 100-YEAR FLOODWAY PER FEMA FIRM
- FEMA FIRM CROSS SECTION LOCATION
- HEC-RAS CROSS SECTION LOCATION
- INEFFECTIVE AREA (HORIZONTAL)
- INEFFECTIVE AREA (VERTICAL)
- RIVER CENTER LINE
- CITY BOUNDARY
- SUBDIVISION BOUNDARY
- CEQA STUDY BOUNDARY

DATUM NOTE:
VERTICAL DATUM: NGVD 1929
HORIZONTAL DATUM: NAD 1983 CALIFORNIA STATE PLANE ZONE VI

PREPARED BY:
HUNSAKER & ASSOCIATES
IRVINE, CA
SAN DIEGO, CA
RIVERSIDE, CA
619.235.6471
949.583.1010
760.294.9271
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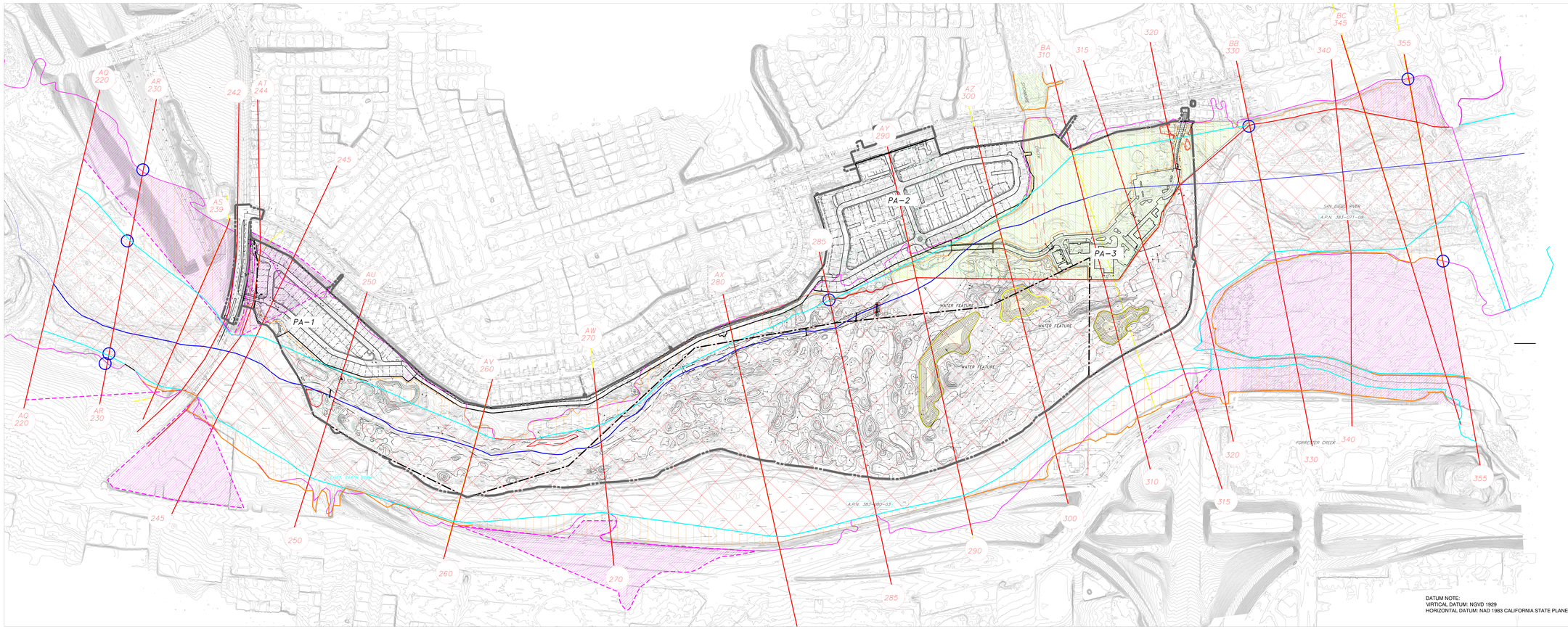
WORKMAP
EXISTING CONDITIONS
CARLTON OAKS GOLF COURSE
CITY OF SANTEE, CALIFORNIA

SHEET 1 OF 2

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Map Pocket #2

PROPOSED CONDITIONS WORKMAP



LEGEND

- 100-YEAR FLOOD PLAIN PER REVISED STUDY
- 100-YEAR FLOODWAY PER REVISED STUDY
- 100-YEAR FLOOD PLAIN PER FEMA FIRM
- 100-YEAR FLOODWAY PER FEMA FIRM
- HEC-RAS CROSS SECTION LOCATION
- FEMA FIRM CROSS SECTION LOCATION
- TIE IN LOCATIONS
- INEFFECTIVE AREA(HORIZONTAL)
- INEFFECTIVE AREA (PER PROPOSED PROJECT) (HORIZONTAL)
- PROPOSED INEFFECTIVE AREA (VERTICAL)
- RIVER CENTER LINE
- CITY BOUNDARY
- SUBDIVISION BOUNDARY
- CEQA STUDY BOUNDARY

SCALE 1"=100'

DATUM NOTE:
VERTICAL DATUM: NGVD 1929
HORIZONTAL DATUM: NAD 1983 CALIFORNIA STATE PLANE ZONE VI

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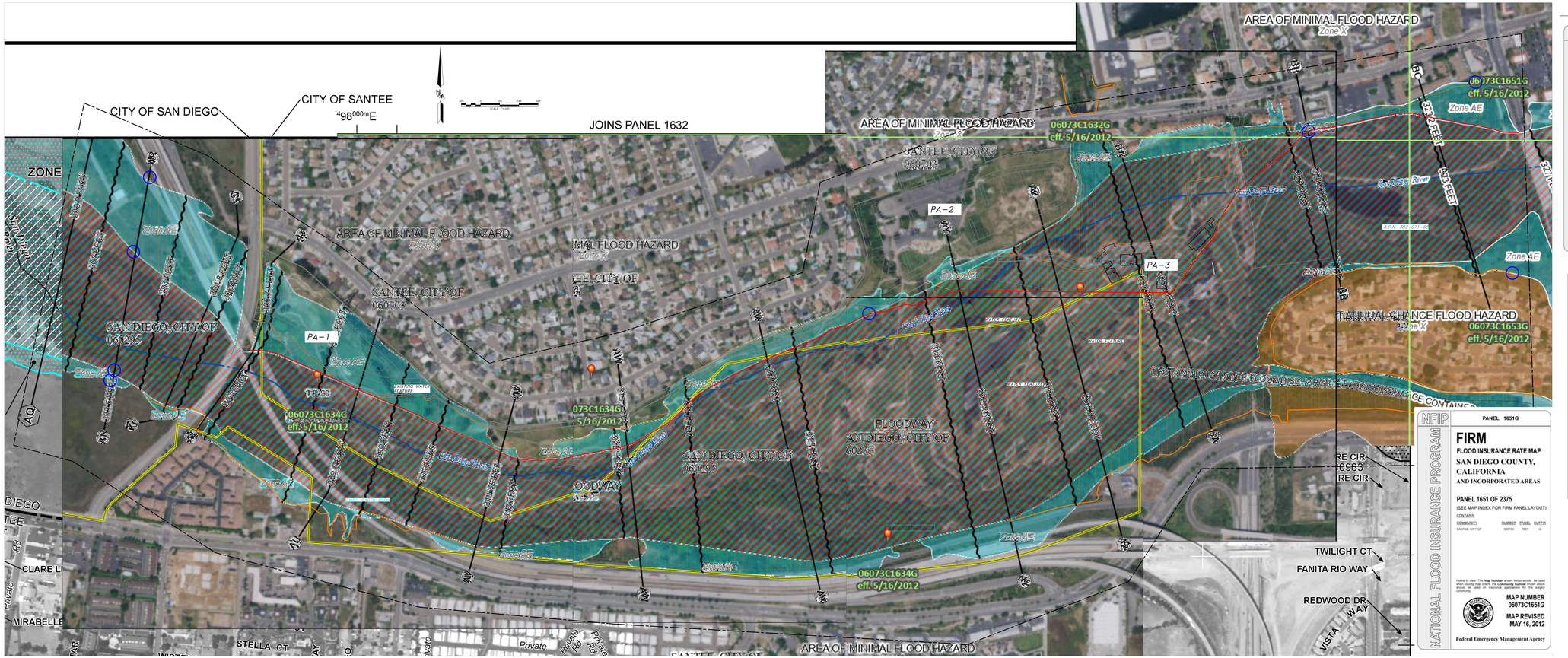
WORKMAP
PROPOSED CONDITIONS
CARLTON OAKS GOLF COURSE
CITY OF SANTEE, CALIFORNIA

SHEET 1 OF 1 SHEETS

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Map Pocket #3

ANNOTATED FIRM



NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1634G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1634 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL CAJON, CITY OF	060298	1634	G
SAN DIEGO, CITY OF	060295	1634	G
SANTEE, CITY OF	060703	1634	G

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

MAP NUMBER
06073C1634G
MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1653G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1653 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL CAJON, CITY OF	060298	1653	G
SANTEE, CITY OF	060703	1653	G

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

MAP NUMBER
06073C1653G
MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1651G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1651 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SANTEE, CITY OF	060703	1651	G

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

MAP NUMBER
06073C1651G
MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/8/2024 at 4:55 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ANNOTATION LEGEND

100-YEAR FLOOD PLAIN PER REVISED STUDY

100-YEAR FLOODWAY PER REVISED STUDY

TIE IN LOCATIONS

STUDY AREA

PREPARED BY:

HUNSAKER & ASSOCIATES

ANNOTATED FIRM EXHIBIT

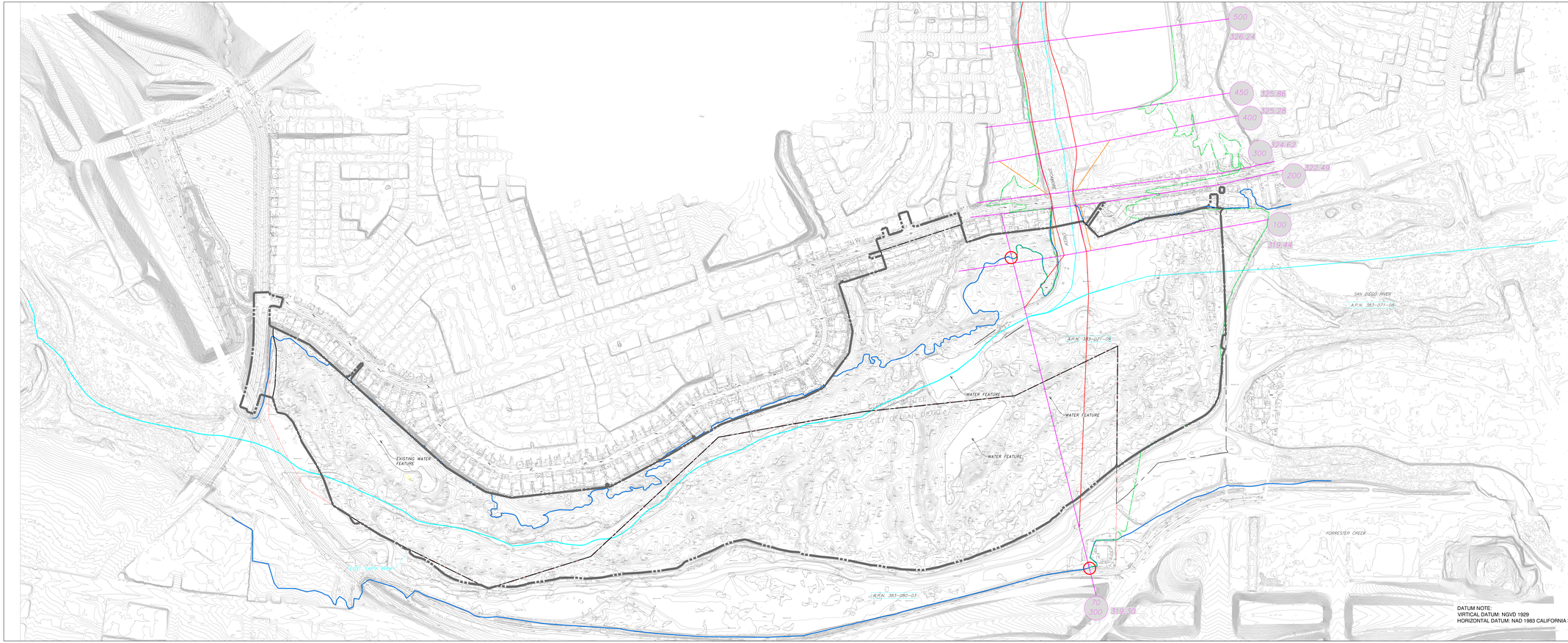
CARLTON OAKS GOLF COURSE

CITY OF SANTEE, CALIFORNIA

SHEET 1 OF 1

Map Pocket #4

SYCAMORE CREEK



LEGEND

- 100-YEAR FLOOD PLAIN FOR SAN DIEGO RIVER - EXISTING CONDITIONS WITH BSI FLOW RATES
- 100-YEAR SYCAMORE CREEK FLOOD PLAIN - EXISTING CONDITIONS
- TIE IN LOCATIONS
- RIVER CENTER LINE
- INEFFECTIVE AREA (PER EXISTING CONDITIONS) (HORIZONTAL)
- HEC-RAS CROSS SECTION LOCATION
- CITY BOUNDARY
- OVER BANK LINE
- SUBDIVISION BOUNDARY
- 100 YEAR WATER SURFACE ELEVATION PER SYCAMORE MODEL (XXX.XX)
- CEQA STUDY BOUNDARY

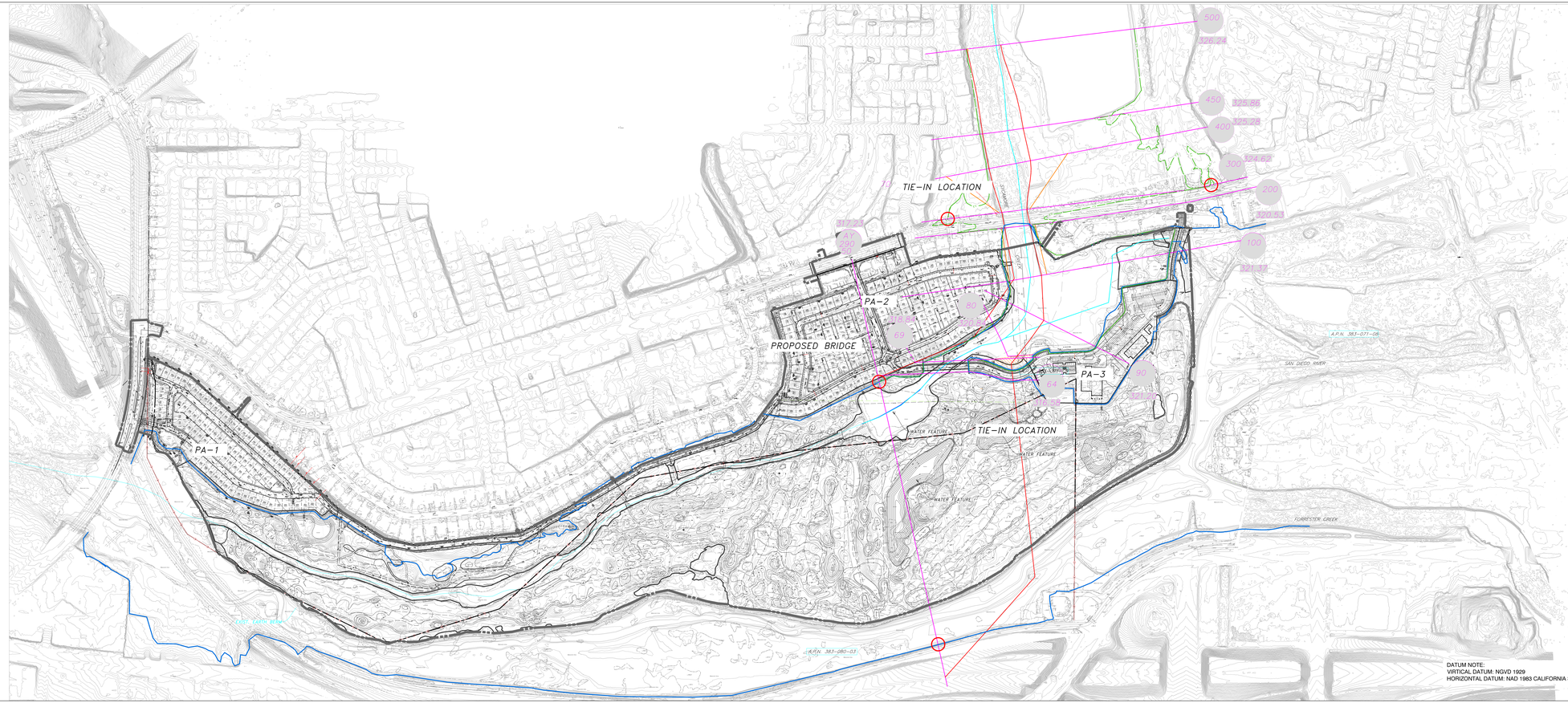
DATUM NOTE:
VRTICAL DATUM: NGVD 1929
HORIZONTAL DATUM: NAD 1983 CALIFORNIA STATE PLANE ZONE VI

PREPARED BY:
HUNSAKER & ASSOCIATES
SAN DIEGO, IRVINE, RIVERSIDE
619.814.4900 · www.hunsaker.com

WORKMAP
SYCAMORE CREEK
CARLTON OAKS GOLF COURSE
EXISTING CONDITIONS
CITY OF SANTEE, CALIFORNIA

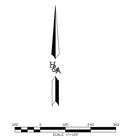
SHEET 1 OF 1

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LEGEND

- 100-YEAR FLOOD PLAIN FOR SAN DIEGO RIVER - PROPOSED CONDITIONS WITH BSI FLOW RATES
- 100-YEAR SYCAMORE CREEK FLOOD PLAIN - PROPOSED CONDITIONS
- TIE IN LOCATIONS
- RIVER CENTER LINE
- INEFFECTIVE AREA (PER PROPOPSED CONDITIONS) (HORIZONTAL)
- HEC-RAS CROSS SECTION LOCATION
- CITY BOUNDARY
- OVER BANK LINE
- SUBDIVISION BOUNDARY
- 100 YEAR WATER SURFACE ELEVATION PER SYCAMORE MODEL (XXX.XX)
- CEQA STUDY BOUNDARY



DATUM NOTE:
VERTICAL DATUM: NGVD 1929
HORIZONTAL DATUM: NAD 1983 CALIFORNIA STATE PLANE ZONE VI

PREPARED BY:
HUNSAKER & ASSOCIATES
SAN DIEGO, IRVINE, RIVERSIDE
619.462.1515 www.hunsaker.com

WORKMAP
SYCAMORE CREEK
CARLTON OAKS GOLF COURSE
CITY OF SANTEE, CALIFORNIA

SHEET 1 OF 1

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Map Pocket #4

BSI REPORT
FLOOD MAPS

112 206



Photogrammetry · Computer Graphics
AIRBORNE SYSTEMS, INC.

MAP COMPLETED JULY 8, 1992 BY BSI CONSULTANTS INC. W.O. No. S 92-01

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	Appd	BENCH MARK	SCALE	Office	Designed By	Drawn By	Checked By	Submitted 8-7-92	Approved 8-12-92	CITY OF SANTEE ENGINEERING DEPARTMENT	Drawing No.
Contractor						COMPILED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY DATED APRIL 22, 1989.	Horizontal 1"=200'	Field	N.B.	J.D.	R.C.S.	By Craig M. Steinmetz SENIOR CIVIL ENGINEER	By James A. Williamson III ASST. DIRECTOR OF PUBLIC WORKS	SAN DIEGO RIVER FLOOD STUDY SANTEE DISCHARGE RATES	92-165
Inspector						HORIZONTAL & VERTICAL CONTROL IS BASED ON R.O.S. 11252	Vertical	Traffic	Plans Prepared Under Supervision Of Date 8-4-92						Sheet 2 of 9
Date Completed									R.C.E. No. 43212 Expires 3-31-96				R.C.E. No. 12725 Expires 3-31-93		

117206


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CARLTON HILLS BLVD.
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SEE SHEET 3



MAP COMPLETED JULY 8, 1992 BY BSI CONSULTANTS INC. W.O. No. S92-01

CONSTRUCTION RECORD	REFERENCES	Date	By	REVISIONS	Appd	BENCH MARK
Contractor						COMPILED BY PHOTOGRAMMETRIC METHODS FROM PHOTOGRAPHY DATED APRIL 22, 1989.
Inspector						HORIZONTAL & VERTICAL CONTROL IS BASED ON R.O.S. 11252
Date Completed						

SCALE	
Horizontal	1"=200'
Vertical	

Office ____ Field ____ Traffic ____

Designed By	Drawn By	Checked By
N.B.	J.D.	R.C.S.

Plans Prepared Under Supervision Of
R.C.E. No. 43212 Date 8-4-92 Expires 3-31-96

Submitted 8-7-92
By _____ SENIOR CIVIL ENGINEER

Approved 8-10-92
By _____ ASST. DIRECTOR OF PUBLIC WORKS
R.C.E. No. 12725 Expires 3-31-93

CITY OF SANTEE ENGINEERING DEPARTMENT

SAN DIEGO RIVER FLOOD STUDY
SANTEE DISCHARGE RATES

Drawing No. 92-167
Sheet 4 of 9

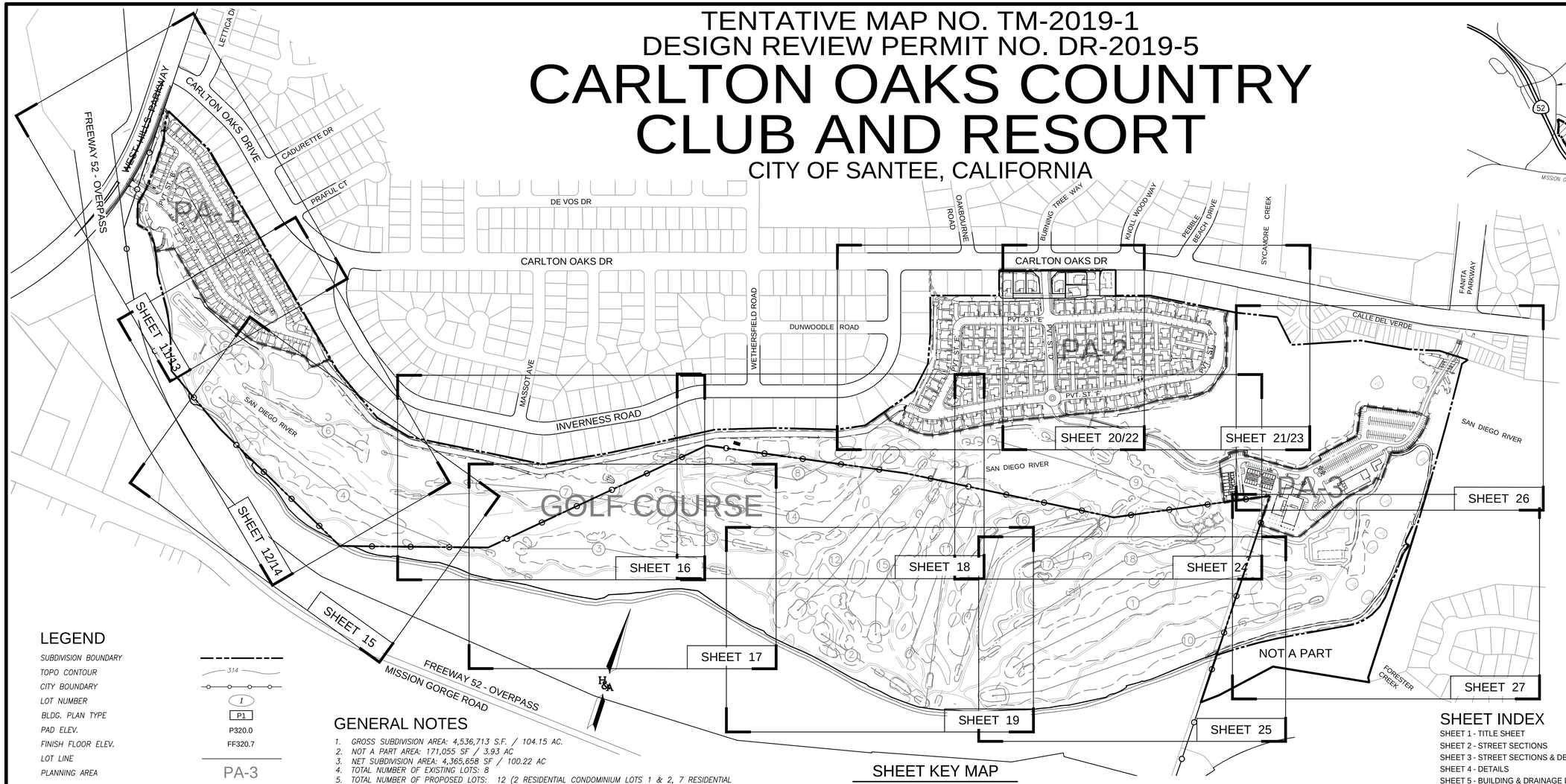
Map Pocket #5

Site Plan and
Preliminary
Grading Plan

TENTATIVE MAP NO. TM-2019-1
DESIGN REVIEW PERMIT NO. DR-2019-5

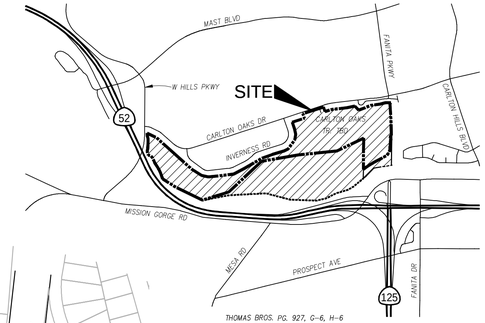
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA



SHEET KEY MAP

NOT TO SCALE



THOMAS BROS. PG. 927, G-6, H-6

VICINITY MAP

NOT TO SCALE

LEGEND

- SUBDIVISION BOUNDARY
- TOPO CONTOUR — 314
- CITY BOUNDARY
- LOT NUMBER — 1
- BLDG. PLAN TYPE — P1
- PAD ELEV. — P320.0
- FINISH FLOOR ELEV. — FF320.7
- LOT LINE
- PLANNING AREA — PA-3
- LAND USE BOUNDARY
- PLANNING AREA BOUNDARY
- SLOPE (2:1)
- DAYLIGHT LINE
- CUT/FILL LINE — C / F
- BROW DITCH
- STREET ELEVATION — 314.6
- PERCENT OF GRADE — 2%
- SEWER MAIN
- SEWER FORCE MAIN — FM
- WATER MAIN — W
- FIRE WATER MAIN — FW
- RECLAIMED WATER MAIN — RW
- FIRE HYDRANT
- STORM DRAIN
- EASEMENT CALLOUT EXISTING — 1
- EASEMENT CALLOUT PROPOSED — 1
- EASEMENT LINE
- DESIGN NOTE CALLOUT — 1
- RETAINING WALL
- FUEL MODIFICATION ZONE
- FEMA BASE FLOOD ELEVATION — 314.2
- FEMA FLOOD PLAIN 100 YR.
- FEMA FLOOD PLAIN 100 YR. PROP.
- FENCE *
- WALL *
- CULTURAL AREA

* SEE LANDSCAPE PLAN FOR DETAILS

GENERAL NOTES

1. GROSS SUBDIVISION AREA: 4,536,713 S.F. / 104.15 AC.
2. NOT A PART AREA: 171,055 SF / 3.93 AC
3. NET SUBDIVISION AREA: 4,365,658 SF / 100.22 AC
4. TOTAL NUMBER OF EXISTING LOTS: 8
5. TOTAL NUMBER OF PROPOSED LOTS: 12 (2 RESIDENTIAL CONDOMINIUM LOTS 1 & 2, 7 RESIDENTIAL SINGLE FAMILY LOTS 3–9, 1 PRIVATE DRIVE LOT 10, 1 GOLF COURSE LOTS 11, 1 HOTEL/RESORT LOT 12)
6. TOTAL NUMBER OF DWELLING UNITS: 243
7. MINIMUM LOT SIZE: 6,000 SF
8. ASSESSOR PARCEL NUMBER: 383–071–06, 383–071–09, 383–221–01, 383–221–02, 383–221–03, 383–221–04, 383–241–08 & 383–242–01
9. EXISTING/PROPSED GENERAL PLAN LAND USE: PD, P/OS, R2
10. EXISTING/PROPOSED ZONING: PD, P/OS, R2
11. FEMA PANEL 06073C1634G, ZONE AE
12. THOMAS BROTHERS COORDINATES: PAGE 927 G–6 & H–6
13. SOILS REPORT: GEOCON, INC. DATED FEBRUARY 4, 2022
14. ALL CUT AND FILL SLOPES SHALL BE CONSTRUCTED AT A RATIO OF 2:1 MAX.
15. FINISHED GRADES ARE APPROXIMATE AND SUBJECT TO CHANGE IN FINAL DESIGN CONSISTENT WITH THE CITY OF SANTEE SUBSTANTIAL CONFORMANCE GUIDELINES.
16. EVIDENCE SHALL BE PROVIDED OF HAVING OBTAINED GRADING AND ACCESS RIGHTS UPON ADJACENT PROPERTY WHERE REQUIRED.
17. ALL PROPOSED UTILITIES SHALL BE UNDERGROUNDED AND EASEMENTS PROVIDED, REMOVED OR RELOCATED AS REQUIRED BY THE DIRECTOR OF DEVELOPMENT SERVICES, PUBLIC UTILITIES AND THEIR APPROPRIATE DISTRICTS.
18. PUBLIC WATER AND SEWER TO BE INSTALLED IN ACCORDANCE WITH THE STANDARDS OF PDMWD.
19. SEWER, WATER AND STORM DRAIN SHOWN IS PRELIMINARY AND SUBJECT TO MODIFICATION IN FINAL DESIGN.
20. TEMPORARY AND PERMANENT STRUCTURAL BEST MANAGEMENT PRACTICES WILL BE INCORPORATED IN THE DESIGN AND IMPLEMENTATION OF THE DEVELOPMENT TO THE MAXIMUM EXTENT POSSIBLE.
21. MULTIPLE FINAL MAPS MAY BE FILED IN ACCORDANCE WITH THE PROVISIONS OF ARTICLE 4 OF SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
22. GRADING IN ADVANCE OF FINAL MAP RECORDATION IS REQUESTED HEREON.
23. MODEL UNITS MAY BE BUILT PRIOR TO FINAL MAP RECORDATION PER THE MAP ACT SECTION 66499.30(A)(8).
24. FUEL MODIFICATION ZONES SHOWN ON THIS MAP ARE PER THE CURRENT FIRE PROTECTION PLAN BY DUDEK & ASSOCIATES. PLEASE REFER TO THE FPP FOR DETAILS.
25. STREET LIGHT LOCATIONS SHOWN ON PLAN ARE CONCEPTUAL AND ARE SUBJECT TO CHANGE IN FINAL DESIGN AND SHALL CONFORM TO RSD E–01.
26. PROPOSED LOT AREAS ARE PRELIMINARY AND MAY VARY AS ALLOWED BY SUBSTANTIAL CONFORMANCE.
27. THIS TENTATIVE MAP DESIGN COMPLIES WITH THE CARLTON OAKS COUNTRY CLUB AND RESORT PLANNED DEVELOPMENT DISTRICT STANDARDS.

CONDOMINIUM NOTE

THIS IS A MAP OF A CONDOMINIUM PROJECT AS DEFINED IN SECTION 4125 OF THE CIVIL CODE OF THE STATE OF CALIFORNIA AND IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. THE TOTAL NUMBER OF RESIDENTIAL CONDOMINIUM DWELLING UNITS IS 236 (86 UNITS LOT 1, 150 UNITS LOT 2).

TOPOGRAPHY SOURCE

TOPOGRAPHY USED FOR THIS TENTATIVE MAP WAS FLOWN ON 6/12/2014 INLAND AERIAL CONTROL PROVIDED BY SB&O.

BENCHMARK

STATION 2012 PER R.O.S. NO. 11252 – A STANDARD STREET SURVEY MONUMENT STAMPED RCE 9954, NO CENTERPUNCH AT THE CL OF MASSOT AVE. 5' N'LY OF CL OF INVERNESS ROAD. ELEV. 320.0 (NGVD '29)

APPLICANT

ALIKA, LLC
9200 INWOOD DR.
SANTEE, CA 92071
(949)929–9123

OWNER

APN: 383–071–06, 383–071–09
383–242–01, 383–221–01
THROUGH 383–221–04
ALIKA, LLC
A CALIFORNIA LIMITED LIABILITY CO.
9200 INWOOD DR.
SANTEE, CA 92071
(949)929–9123

Oct 27, 2022
LINA MAYLING CHEN — *DATE*

Oct 27, 2022
JOHN CHEN — *DATE*

APN: 383–241–08
9225 INWOOD DR.
SANTEE, CA 92071
(949)929–9123

Oct 27, 2022
KEVIN SHIGEO FUKUYAMA — *DATE*

EARTHWORK QUANTITIES

RAW CUT: 258,244 C.Y., RAW FILL: 512,445 C.Y.
BULK: 0 CY, SHRINK: 72,579 C.Y.
CONSTRUCTION SPOILS: 47,760 C.Y.
IMPORT: 279,020 C.Y.

DISTRICTS / UTILITIES

WATER	PADRE DAM MUNICIPAL WATER DISTRICT
SEWER	PADRE DAM MUNICIPAL WATER DISTRICT
RECLAIMED WATER	PADRE DAM MUNICIPAL WATER DISTRICT
GAS	SAN DIEGO GAS & ELECTRIC
ELECTRIC	SAN DIEGO GAS & ELECTRIC
TELEPHONE	AT&T
CABLE	COX CABLE

LEGAL DESCRIPTION

SEE SHEET 6

EASEMENTS

SEE SHEET 6 & 7

CIVIL ENGINEER

HUNSAKER & ASSOCIATES, SAN DIEGO, INC
9707 WAPLES STREET
SAN DIEGO, CA 92121
(858) 558–4500

REGISTERED PROFESSIONAL ENGINEER — ALISA S. VIALPANDO — No. 47945 — CIVIL — STATE OF CALIFORNIA

5/16/25
ALISA S. VIALPANDO R.C.E. 47945 — *DATE*

CONSULTANTS

ARCHITECT RESIDENTIAL

BASSENIAN LAGONI ARCHITECTS
2031 ORCHARD DRIVE
NEWPORT BEACH, CA 92660
(949) 553–9100

KTGY ARCHITECTURE+PLANNING
17911 VON KARMAN AVENUE
SUITE 200
IRVINE, CA 92614
(949) 851–2133

ARCHITECT HOTEL

ATELIER 5 DESIGN
2333 KAPPIOLANI BLVD., #1420
HONOLULU, HI 96826
(808) 800–0888

GOLF COURSE

CARY BICKLER, INC GOLF COURSE DESIGN
1220 ROSECRANS STREET, SUITE 314
SAN DIEGO, CA 92106
(619) 223–3240

LANDSCAPE ARCHITECT RESIDENTIAL

SCHMIDT DESIGN GROUP, INC.
1310 ROSECRANS STREET, SUITE G
SAN DIEGO, CA 92106
(619) 236–1462

LANDSCAPE ARCHITECT HOTEL/GOLF COURSE

PROJECT LINKS
43955 PORT MARIA ROAD
BERMUDA DUNES, CA 92203
(760) 275–8700

ENVIRONMENTAL

ICF
525 B STREET, SUITE 1700
SAN DIEGO, CA 92101
(858) 578–8964

FIRE PROTECTION PLAN

DUDEK AND ASSOCIATES
605 THIRD STREET
ENCINITAS, CA 92024
(760) 942–5147

SHEET INDEX

SHEET 1 - TITLE SHEET	SHEET 21 - TENTATIVE MAP
SHEET 2 - STREET SECTIONS	SHEET 22 - PRELIMINARY GRADING PLAN
SHEET 3 - STREET SECTIONS & DETAILS	SHEET 23 - PRELIMINARY GRADING PLAN
SHEET 4 - DETAILS	SHEET 24 - TENTATIVE MAP
SHEET 5 - BUILDING & DRAINAGE DETAILS	SHEET 25 - TENTATIVE MAP
SHEET 6 - BOUNDARY & ENCUMBRANCES	SHEET 26 - TENTATIVE MAP
SHEET 7 - BOUNDARY & ENCUMBRANCES	SHEET 27 - TENTATIVE MAP
SHEET 8 - PROPOSED LOTS / SUMMARY TABLES	SHEET 28 - SITE SECTIONS
SHEET 9 - TRAIL PLAN	SHEET 29 - SITE SECTIONS
SHEET 10 - TRAIL OFFER OF DEDICATION	SHEET 30 - EXIT. BUILDINGS & SITE IMP.
SHEET 11 - TENTATIVE MAP	SHEET 31 - EXIT. BUILDINGS & SITE IMP.
SHEET 12 - TENTATIVE MAP	SHEET 32 - FLOOD MAP PROPOSED
SHEET 13 - PRELIMINARY GRADING PLAN	SHEET 33 - FLOOD MAP PROPOSED
SHEET 14 - PRELIMINARY GRADING PLAN	SHEET 34 - FIRE ACCESS PLAN
SHEET 15 - TENTATIVE MAP	SHEET 35 - FIRE HOSE PULL
SHEET 16 - TENTATIVE MAP	SHEET 36 - FIRE HOSE PULL
SHEET 17 - TENTATIVE MAP	SHEET 37 - FIRE TURN MOVEMENTS
SHEET 18 - TENTATIVE MAP	SHEET 38 - FIRE TURN MOVEMENTS
SHEET 19 - TENTATIVE MAP	SHEET 39 - FIRE TURN MOVEMENTS
SHEET 20 - TENTATIVE MAP	SHEET 40 - FIRE TURN MOVEMENTS

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

REVISION		
ORIGINAL – PRIOR ENGINEER	9/09/20	SB&O
PLAN REVISIONS – PRIOR ENGINEER	2/01/21	SB&O
PLAN REVISIONS – PRIOR ENGINEER	1/27/22	SB&O
PLAN REVISIONS	10/28/22	H&A
PLAN REVISIONS	4/28/23	H&A
PLAN REVISIONS	2/12/24	H&A
PLAN REVISIONS	10/29/24	H&A
PLAN REVISIONS	2/03/25	H&A
SHEETS 11&13 – REMOVE STORM DRAIN	3/24/25	H&A
ADJUST LOTS 6–10	5/16/25	H&A

TENTATIVE MAP / SITE PLAN
PRELIMINARY GRADING PLAN

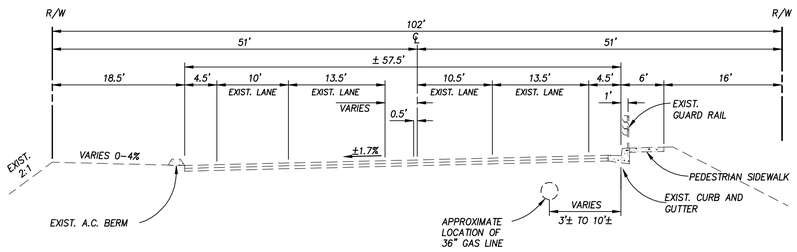
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 1 OF 40

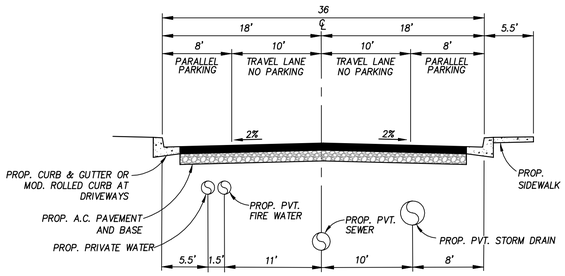
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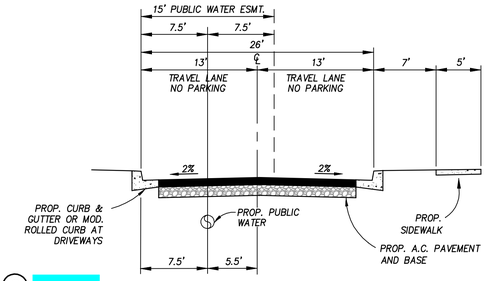
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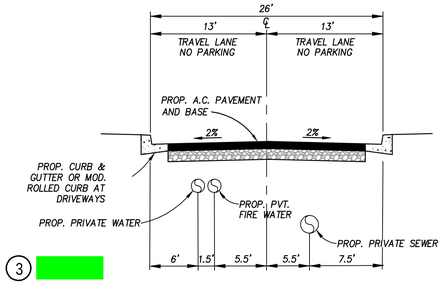
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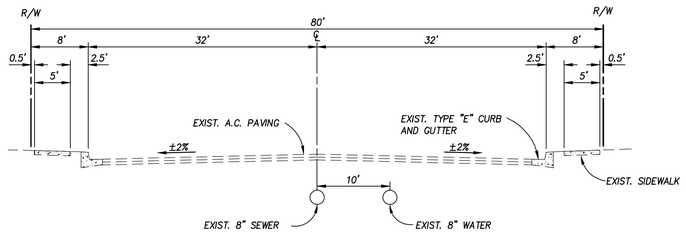
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NOT TO SCALE



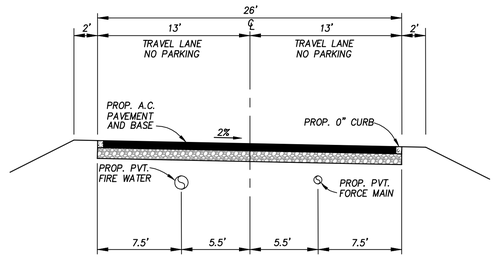
PUBLIC
EXIST. CARLTON OAKS DRIVE

NOT TO SCALE

PUBLIC WORKS ALTERNATIVE STANDARDS FOR CARLTON OAKS COUNTRY CLUB AND RESORT

THE STREET DESIGN CRITERIA SET FORTH IN THE PUBLIC WORKS STANDARDS FOR LOCAL STREETS WILL APPLY TO DRIVES "A-F" AND 20 FOOT DRIVES WITHIN THE SITE, EXCEPT FOR THE FOLLOWING ALTERNATIVE STANDARDS LISTED BELOW:

1. DESIGN SPEED: 10 MPH
2. CURB-TO-CURB DISTANCE: 20-36 FEET LOCATIONS AS SHOWN ON PLANS
3. MIN. HORIZONTAL RADIUS: 41 FEET
4. HORIZONTAL ALIGNMENT: AS SHOWN ON PLANS
5. MIN. TANGENT BETWEEN REVERSING CURVES: AS SHOWN ON PLANS
6. MIN. CURB LINE RADIUS: 28 FEET
7. CURBS: 6" CURB, 4" CURB AND ROLLED CURB AS SHOWN ON PLANS
8. CROSS GUTTERS: 6 FEET MIN. WIDTH
9. SIDEWALKS: ONE SIDE OF THE STREET, NO SIDEWALKS FOR 20 FOOT DRIVES

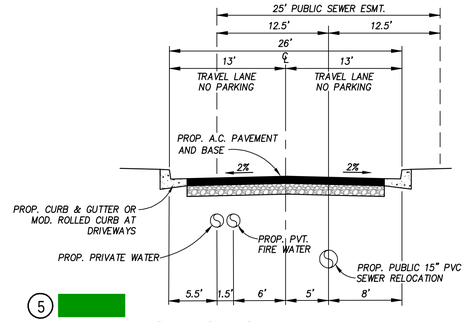


ACCESS ROADWAY FOR THE PURPOSES OF CONNECTIVITY VIA GOLF CARTS, PRIVATE/PUBLIC UTILITY MAINT., GOLF COURSE MAINT.

4

PRIVATE UTILITY MAINTENANCE ROADWAY

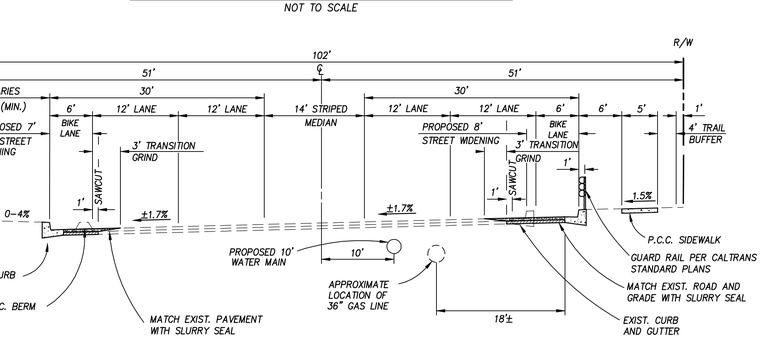
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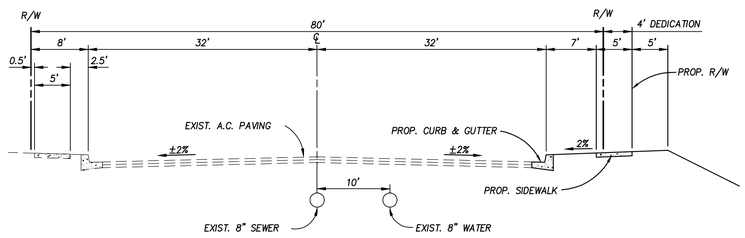
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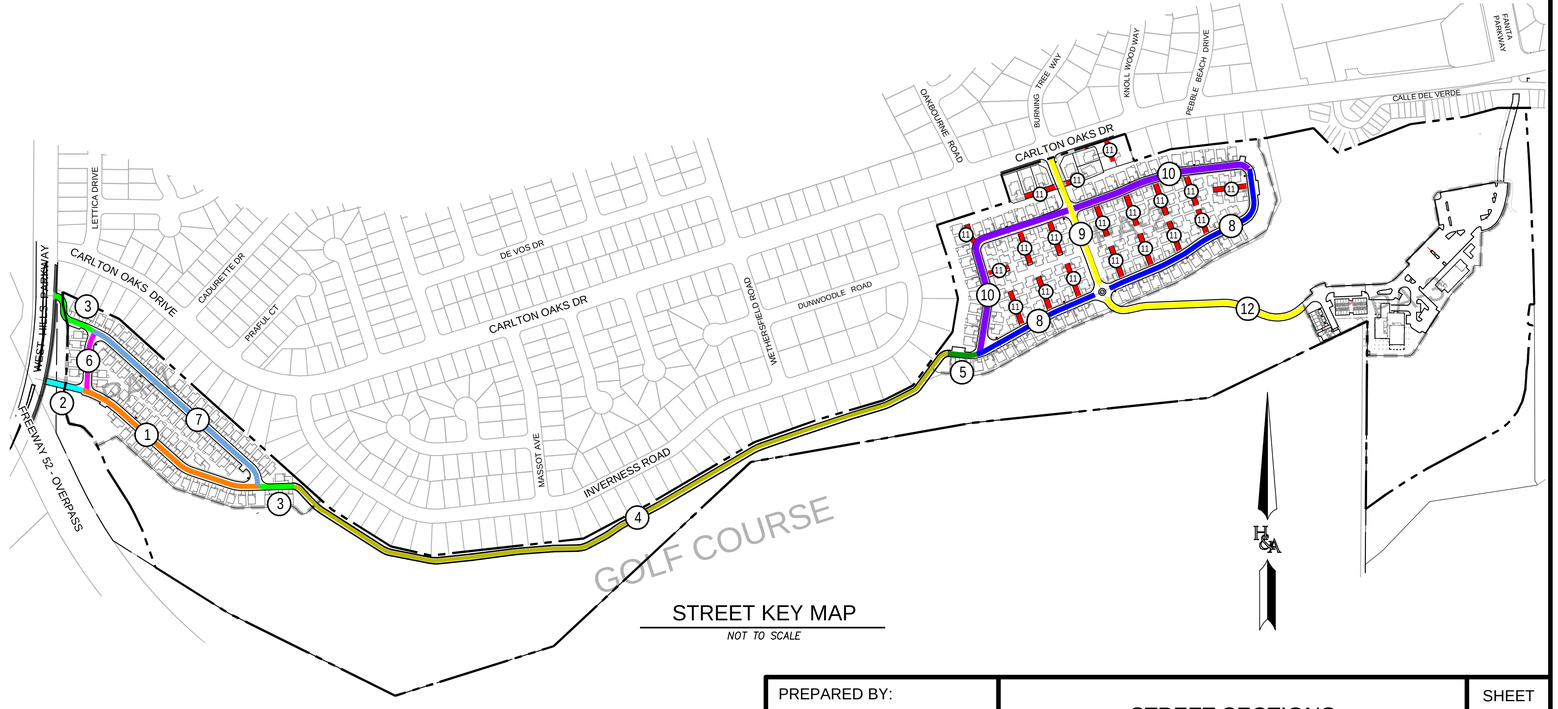
PUBLIC
PROP. WEST HILLS PARKWAY

NOT TO SCALE
±24+50.00



PUBLIC
PROP. CARLTON OAKS DRIVE

NOT TO SCALE



STREET KEY MAP

NOT TO SCALE

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING
ENGINEERING
SURVEYING

9707 Waples Street
San Diego, Ca 92121
PH(858)558-4500- FX(858)558-1414

STREET SECTIONS

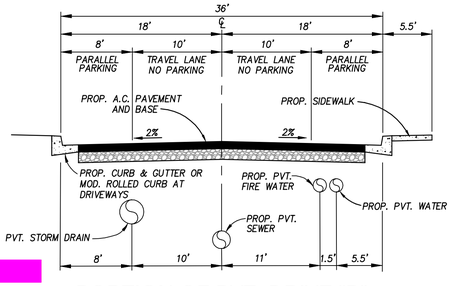
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 2 OF 40

WO NO. 2167-0228

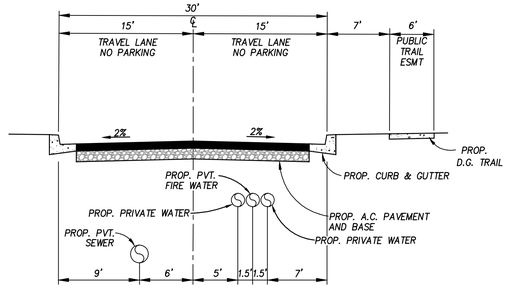
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6

PORTION OF PVT. DRIVE "B"

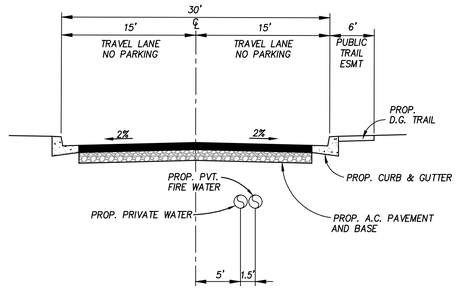
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9

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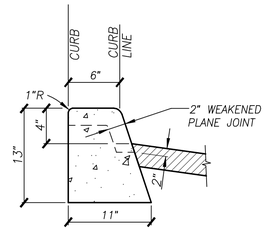
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12

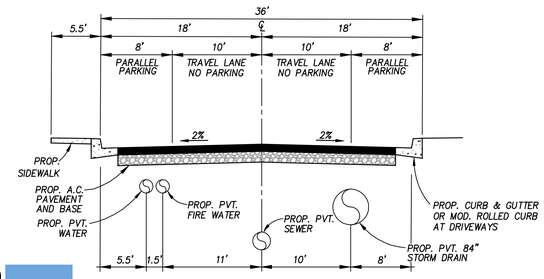
PORTION OF PVT. DRIVE "D"

NOT TO SCALE



4" MOD. 'G-1' CURB

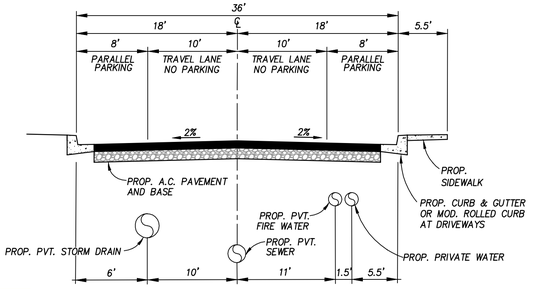
NOT TO SCALE



7

PORTION OF PVT. DRIVE "C"

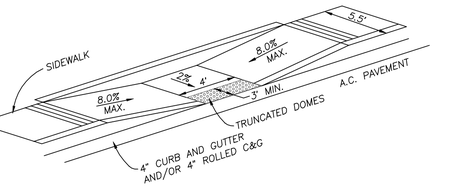
NOT TO SCALE



10

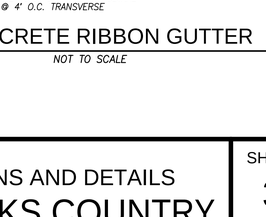
PORTION OF PVT. DRIVE "E"

NOT TO SCALE



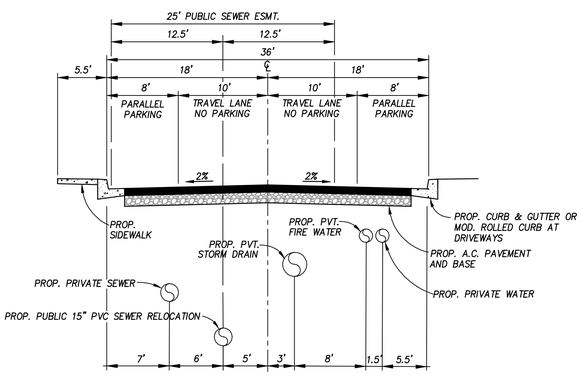
4" MOD. ROLLED 'G-4' CURB

NOT TO SCALE



0" MOD. CURB

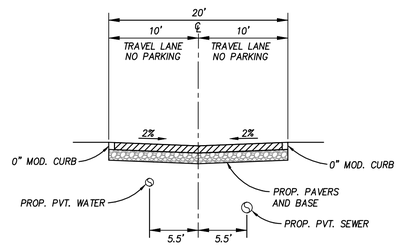
NOT TO SCALE



8

PORTION OF PVT. DRIVE "F"

NOT TO SCALE



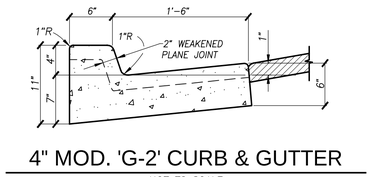
11

PVT. 20' DRIVE

NOT TO SCALE

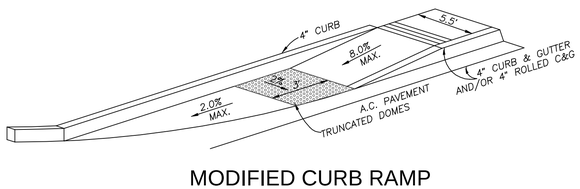
MODIFIED CURB RAMP

NOT TO SCALE



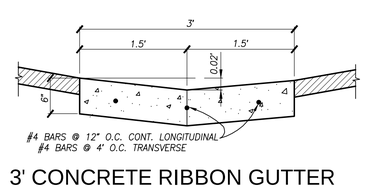
4" MOD. 'G-2' CURB & GUTTER

NOT TO SCALE



MODIFIED CURB RAMP

NOT TO SCALE



3' CONCRETE RIBBON GUTTER

NOT TO SCALE

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC.

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

STREET SECTIONS AND DETAILS

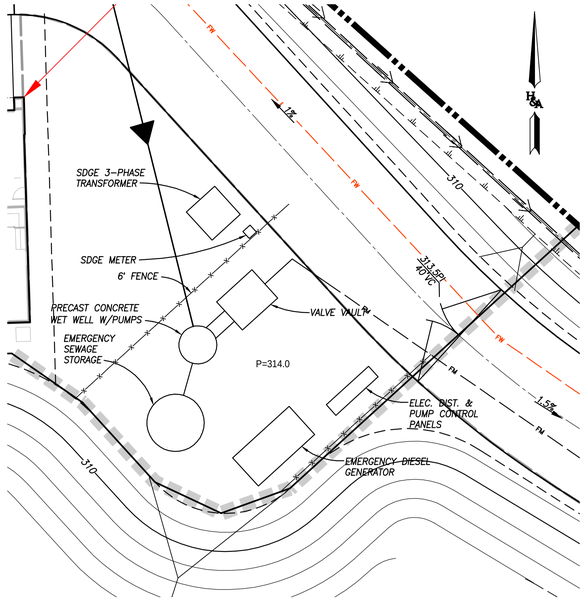
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 3 OF 40

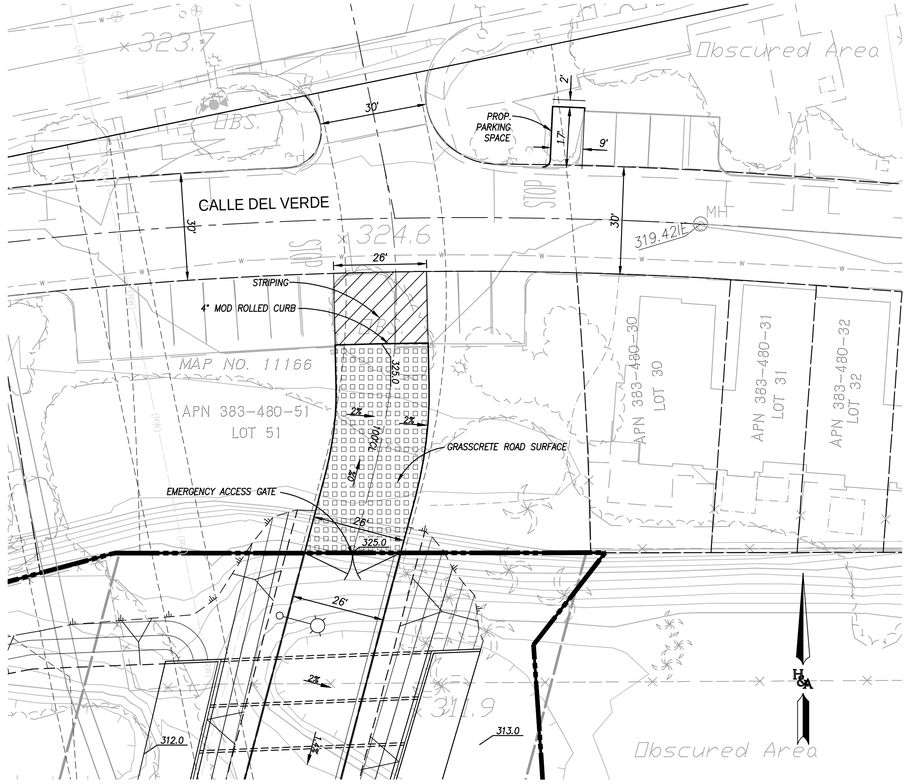
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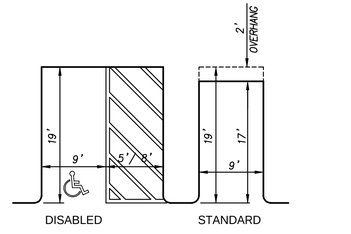
SEWER PUMP STATION DETAIL

SCALE: 1"=15'



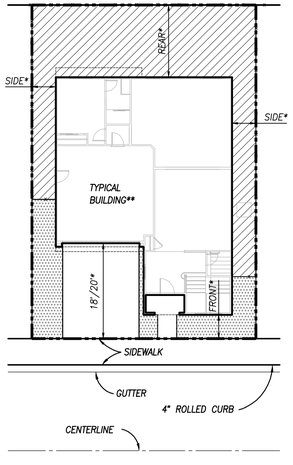
VISTA DEL VERDE EVA DETAIL

SCALE: 1"=20'



TYPICAL PARKING DETAIL

NOT TO SCALE



REAR YARD USES REGULATED BY CC & R'S ARCHITECURAL REVIEW

LEGEND

- CONDOMINIUM RESIDENTIAL UNIT BOUNDARY
- HOA MAINTENANCE
- REAR YARD USES REGULATED BY CC&R'S AND PD DEVELOPMENT DISTRICT STANDARDS

* BUILDING SETBACK PER PD DEVELOPMENT DISTRICT STANDARDS

** ARCHITECTURAL FLOOR PLANS AND ELEVATIONS PER PD DEVELOPMENT DISTRICT STANDARDS

CONDOMINIUM UNIT BOUNDARY DETAIL

SCALE: 1"=15'

PREPARED BY:
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PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

DETAILS

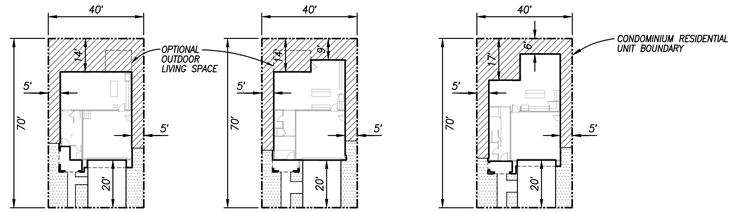
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 4 OF 40

WO NO. 2167-0228

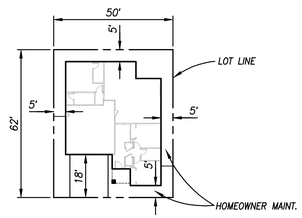
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PLAN 1 PLAN 2 PLAN 3

PA-1 40x70 PRODUCT
TYPICAL CONDIMINIUM UNIT SETBACKS

NOT TO SCALE

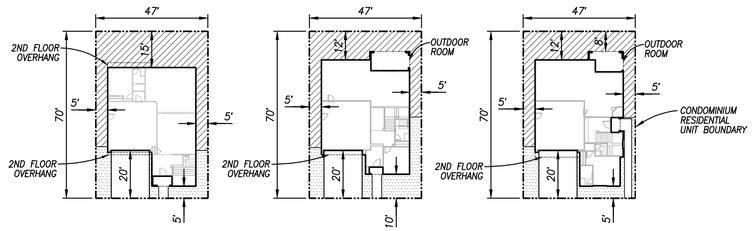


LEGEND

- LOT LINE
- CONDOMINIUM RESIDENTIAL UNIT BOUNDARY
- HOA MAINTENANCE
- REAR YARD USES REGULATED BY CC&R'S AND PD DEVELOPMENT DISTRICT STANDARDS

PA-2 50x62 PRODUCT
TYPICAL LOT SETBACKS

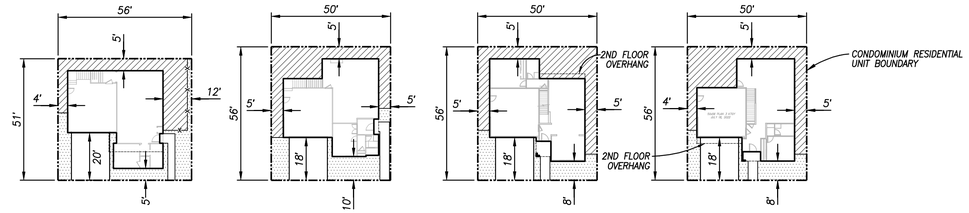
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PLAN 1 PLAN 2 PLAN 3

PA-2 47x70 PRODUCT
TYPICAL CONDIMINIUM UNIT SETBACKS

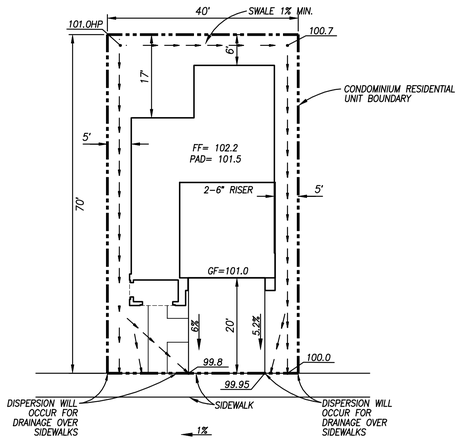
NOT TO SCALE



PLAN 1X PLAN 1 PLAN 2 PLAN 3

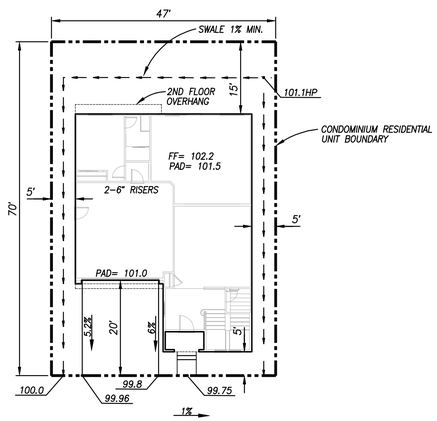
PA-2 50x56 PRODUCT
TYPICAL CONDIMINIUM UNIT SETBACKS

NOT TO SCALE



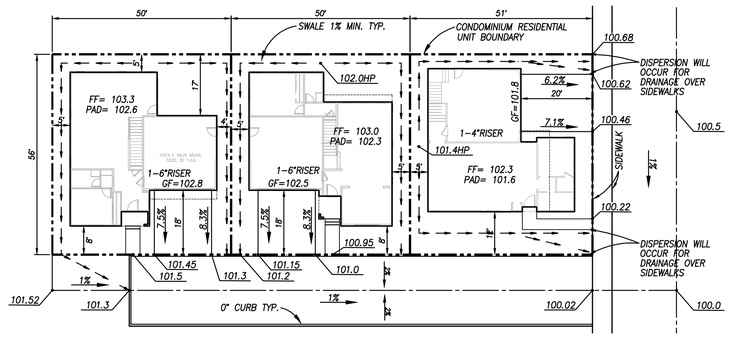
PA-1 40x70
TYPICAL DRAINAGE DETAIL

NOT TO SCALE



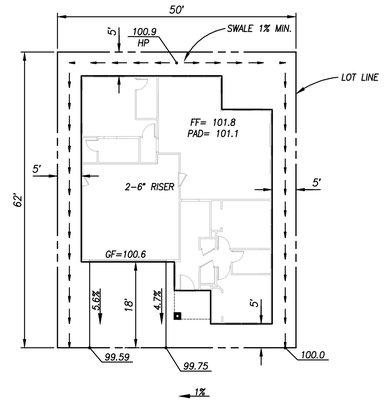
PA-2 47x70
TYPICAL DRAINAGE DETAIL

NOT TO SCALE



PA-2 50x56
TYPICAL DRAINAGE DETAIL

NOT TO SCALE



PA-2 50x62
TYPICAL DRAINAGE DETAIL

NOT TO SCALE

PREPARED BY:

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PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500· FX(858)558-1414

BUILDING AND DRAINAGE DETAILS

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 5 OF 40

WO NO. 2167-0228

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TITLE REFERENCE

THE DATA SHOWN HEREON IS BASED ON THE PRELIMINARY TITLE REPORT ISSUED BY CHICAGO TITLE INSURANCE COMPANY AS ORDER NO. 00115078-996-SD1-RT4 DATED SEPTEMBER 16, 2022.

ASSESSOR'S PARCEL NUMBERS

383-071-06
383-071-09
383-221-01
383-221-02
383-221-03
383-221-04
383-241-08
383-242-01

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF SANTEE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A: APN: 383-071-06-00 AND 383-071-09-00

PARCELS 1 AND 2 OF PARCEL MAP NO. 16978, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, OCTOBER 19, 1992 AS INSTRUMENT NO. 92-0665040 OFFICIAL RECORDS.

EXCEPT THEREFROM THAT PORTION OF PARCEL 2 CONVEYED TO THE CITY OF SAN DIEGO BY GRANT DEED RECORDED OCTOBER 25, 2012 AS INSTRUMENT NO. 2012-0658044 OFFICIAL RECORDS.

PARCEL B: INTENTIONALLY OMITTED

PARCEL C: APNS: 383-221-01, 383-221-02, 383-221-03, 383-221-04, 383-242-01-00

LOTS 9 THROUGH 13 INCLUSIVE OF CARLTON COUNTY CLUB ESTATES, UNIT NO. 1, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 4402, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, NOVEMBER 25, 1959.

PARCEL C1:

A NON-EXCLUSIVE EASEMENT FOR EMERGENCY INGRESS AND EGRESS OVER, UNDER, ALONG AND ACROSS THOSE PORTIONS OF LOT 51 AND LOT A OF CITY OF SANTEE TRACT NO. 83-11, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 11166, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY ON FEBRUARY 28, 1985, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEING A STRIP OF LAND 28.00 FEET IN WIDTH, LYING 14.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHEAST CORNER OF PARCEL 2 OF PARCEL MAP NO. 16978, IN SAID CITY, COUNTY AND STATE, FILED IN THE OFFICE OF SAID COUNTY RECORDER ON OCTOBER 19, 1992; THENCE ALONG THE NORTHERLY LINE THEREOF SOUTH 89°56'38" WEST (SOUTH 89°59'19" WEST PER SAID MAP 11166), 70.59 FEET TO THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID NORTHERLY LINE NORTH 14°48'30" EAST, 22.33 FEET TO THE BEGINNING OF A 196.00 FOOT RADIUS CURVE CONCAVE WESTERLY; THENCE NORTHERLY ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 26°29'43" A DISTANCE OF 90.64 FEET; THENCE NORTH 11°41'13" WEST, 20.48 FEET TO A POINT ON THE SOUTHEASTERLY SIDELINE OF CARLTON OAKS DRIVE, AND THE POINT OF TERMINUS.

THE SIDELINES OF THE AFOREMENTIONED STRIP OF LAND TO TERMINATE SOUTHERLY IN SAID NORTHERLY LINE OF PARCEL 2, AND NORTHERLY IN SAID SOUTHEASTERLY SIDELINE OF CARLTON OAKS DRIVE.

SAID EASEMENT GRANTED BY "GRANT OF EMERGENCY ACCESS EASEMENT" RECORDED JUNE 6, 2022 AS INSTRUMENT NO. 2022-0237599 OFFICIAL RECORDS.

PARCEL D: APN: 383-241-08-00

LOT 8 IN CARLTON CLUB ESTATES UNIT NO. 1, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 4402, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, NOVEMBER 25, 1959.

EXCEPTING THEREFROM OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER OR THAT MAY BE PRODUCED FROM A DEPTH BELOW 500 FEET OF THE SURFACE OF SAID LAND WITHOUT RIGHT OF ENTRY UPON THE SURFACE OF SAID LAND FOR THE PURPOSES OF MINING, DRILLING, EXPLORING, OR EXTRACTING SUCH OIL, GAS AND OTHER HYDROCARBON SUBSTANCES OR OTHER USE OF OR RIGHTS IN OR TO ANY PORTION OF THE SURFACE OF SAID LAND TO A DEPTH OF 500 FEET BELOW THE SURFACE THEREOF.

TOGETHER WITH THOSE PORTIONS OF INWOOD DRIVE AS DEDICATED AND ACCEPTED ON MAP NO 4402, WHICH IF VACATED WOULD REVERT TO SAID LAND BY OPERATION OF LAW.

FUTURE DISPOSITION

EASEMENTS AND RIGHT OF WAY THAT ARE QUITCLAIMED/VACATED WILL BENEFIT THE UNDERLYING FEE OWNER.

2 EASEMENT TO REMAIN
3 EASEMENT TO REMAIN
4 EASEMENT TO BE QUITCLAIMED
5 PORTION OF EASEMENT TO BE QUITCLAIMED AND REDEDICATED
6 EASEMENT TO REMAIN
7 EASEMENT TO REMAIN
8 EASEMENT TO BE QUITCLAIMED
9 EASEMENT TO REMAIN
9A EASEMENT TO REMAIN
10 EASEMENT TO REMAIN
10A EASEMENT TO REMAIN
11 EASEMENT TO REMAIN
12 IOD TO BE QUITCLAIMED
15 EASEMENT TO REMAIN
17 EASEMENT TO REMAIN
35 EASEMENT TO BE QUITCLAIMED
36 EASEMENT TO BE QUITCLAIMED
37 EASEMENT TO BE QUITCLAIMED
38 EASEMENT TO BE QUITCLAIMED
39 EASEMENT TO BE QUITCLAIMED
45 PUBLIC RIGHT OF WAY TO BE VACATED

TITLE EXCEPTIONS

A. PROPERTY TAXES, WHICH ARE A LIEN DUE AND PAYABLE, INCLUDING ANY ASSESSMENTS COLLECTED WITH TAXES TO BE LEVIED FOR THE FISCAL YEAR 2022-2023.

B. THE LIEN OF SUPPLEMENTAL OR ESCAPED ASSESSMENTS OF PROPERTY TAXES, IF ANY, MADE PURSUANT TO THE PROVISIONS OF CHAPTER 3.5 (COMMENCING WITH SECTION 75) OR PART 2, CHAPTER 3, ARTICLES 3 AND 4, RESPECTIVELY, OF THE REVENUE AND TAXATION CODE OF THE STATE OF CALIFORNIA AS A RESULT OF THE TRANSFER OF TITLE TO THE VESTEE NAMED IN SCHEDULE A OR AS A RESULT OF CHANGES IN OWNERSHIP OR NEW CONSTRUCTION OCCURRING PRIOR TO DATE OF POLICY.

1. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

THE FOLLOWING MATTERS AFFECT PARCEL A:

2 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: FEBRUARY 18, 1959
RECORDING NO: BOOK 7504, PAGE 247 OF OFFICIAL RECORDS
AFFECTS: THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD

3 ASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: AUGUST 31, 1960
RECORDING NO: 176990 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

4 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: MARCH 4, 1963
RECORDING NO: 37204 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

5 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SANTEE COUNTY WATER DISTRICT
PURPOSE: PIPE LINES
RECORDING DATE: JULY 1, 1964
RECORDING NO: 118613 OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

6 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: COUNTY OF SAN DIEGO
PURPOSE: STORM DRAIN
RECORDING DATE: JULY 16, 1964
RECORDING NO: 128524 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

7 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SANTEE COUNTY WATER DISTRICT
PURPOSE: PIPE LINES
RECORDING DATE: JULY 16, 1964
RECORDING NO: 128602 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

8 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: MARCH 9, 1966
RECORDING NO: 40587 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

9 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SANTEE COUNTY WATER DISTRICT
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: AUGUST 19, 1966
RECORDING NO: 135476 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

9A EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SANTEE COUNTY WATER DISTRICT
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: MARCH 2, 1967
RECORDING NO: 28755 OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

10 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SANTEE COUNTY WATER DISTRICT
PURPOSE: PIPE LINES
RECORDING DATE: MAY 7, 1971
RECORDING NO: 95224 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

10A EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SANTEE COUNTY WATER DISTRICT
PURPOSE: PUBLIC UTILITIES
RECORDING DATE: APRIL 21, 1975
RECORDING NO: 75-092314 OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

11 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: PACIFIC BELL, A CALIFORNIA CORPORATION
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: MARCH 16, 1984
RECORDING NO: 84-97309 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

12 THE RIGHT TO EXTEND AND MAINTAIN DRAINAGE FACILITIES, EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF THE EXTENSION OF FANITA PARKWAY AS OFFERED DEDICATION AND REJECTED ON PARCEL MAP NO. 16978.

TITLE EXCEPTIONS (CONT.)

13. THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF ACCESS TO OR FROM THE STREET, HIGHWAY, OR FREEWAY ABUTTING SAID LAND, SUCH RIGHTS HAVING BEEN RELINQUISHED BY THE DOCUMENT, RECORDING DATE: APRIL 28, 1992
RECORDING NO: 92-249184 OF OFFICIAL RECORDS
AFFECTS: SAID LAND ABUTTING HIGHWAY 52

14. THE OWNERSHIP OF SAID LAND DOES NOT INCLUDE RIGHTS OF ACCESS TO OR FROM THE STREET, HIGHWAY, OR FREEWAY ABUTTING SAID LAND, SUCH RIGHTS HAVING BEEN RELINQUISHED BY THE DOCUMENT, RECORDING DATE: DECEMBER 9, 1996
RECORDING NO: 96-0613956 OF OFFICIAL RECORDS
AFFECTS: SAID LAND ABUTTING HIGHWAY 52

15 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: PADRE DAM MUNICIPAL WATER DISTRICT
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: DECEMBER 10, 2008
RECORDING NO: 2008-0630934 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

16. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: CITY OF SAN DIEGO
PURPOSE: ACCESS EASEMENT
RECORDING DATE: OCTOBER 25, 2012
RECORDING NO: 2012-0658045 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

17 BERM MAINTENANCE EASEMENT
RECORDING DATE: OCTOBER 25, 2012
RECORDING NO.: 2012-0658046 OF OFFICIAL RECORDS

18. INTENTIONALLY OMITTED

19. INTENTIONALLY OMITTED

19A. A DEED OF TRUST GIVEN TO SECURE THE ORIGINAL AMOUNT SHOWN BELOW, AND ANY OTHER AMOUNT PAYABLE UNDER THE TERMS THEREOF.
AMOUNT: $400,000.00
DATED: DECEMBER 31, 2020
TRUSTOR/GRANTOR ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
TRUSTEE: FIRST AMERICAN TITLE COMPANY
BENEFICIARY: LENNAR HOMES OF CALIFORNIA, INC., A CALIFORNIA CORPORATION
RECORDING DATE: JANUARY 13, 2021
RECORDING NO: 2021-0027010, OF OFFICIAL RECORDS
AFFECTS: THE HEREIN DESCRIBED LAND AND OTHER LAND.

19B. A DEED OF TRUST TO SECURE AN INDEBTEDNESS IN THE AMOUNT SHOWN BELOW,
AMOUNT: $3,421,000.00
DATED: OCTOBER 6, 2021
TRUSTOR/GRANTOR ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
TRUSTEE: FIDELITY NATIONAL TITLE COMPANY
BENEFICIARY: CALIFORNIA INTERNATIONAL BANK
RECORDING DATE: NOVEMBER 4, 2021
RECORDING NO: 2021-0768936 OFFICIAL
AFFECTS: THE HEREIN DESCRIBED LAND AND OTHER LAND.

19C. ASSIGNMENT OF RENTS AND LEASES
ASSIGNED TO: CALIFORNIA INTERNATIONAL BANK
ASSIGNED BY: ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
RECORDING DATE: NOVEMBER 4, 2021
RECORDING NO: 2021-0768937 OFFICIAL RECORDS
AFFECTS: THE HEREIN DESCRIBED LAND AND OTHER LAND.

19D. AN UNRECORDED LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN AS DISCLOSED BY THE DOCUMENT ENTITLED: SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AND ESTOPPEL AGREEMENT
LESSOR: ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
LESSEE: KEANU LLC
RECORDING DATE: NOVEMBER 4, 2021
RECORDING NO: 2021-0768938 OFFICIAL RECORDS

THE MATTERS AFFECT PARCEL B HAVE BEEN INTENTIONALLY OMITTED (ITEMS 20-34)

MATTERS AFFECTING PARCEL C AND D

34A. COVENANTS, CONDITIONS AND RESTRICTIONS ("BUT OMITTING, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS CONTROLLED OR PERMITTED BY ANY APPLICABLE FEDERAL OR STATE LAW, ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, MEDICAL CONDITION, NATIONAL ORIGIN, SOURCE OF INCOME, OR ANCESTRY" AS SET FORTH IN THE DOCUMENT RECORDED: NOVEMBER 27, 1959 IN BOOK 8015, PAGE 230 OF OFFICIAL RECORDS

NOTE: SECTION 12956.1 OF THE GOVERNMENT CODE PROVIDES THE FOLLOWING: "IF THIS DOCUMENT CONTAINS ANY RESTRICTION BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, NATIONAL ORIGIN, SOURCE OF INCOME AS DEFINED IN SUBDIVISION (P) OF SECTION 12955, OR ANCESTRY, THAT RESTRICTION VIOLATES STATE AND FEDERAL FAIR HOUSING LAWS AND IS VOID, AND MAY BE REMOVED PURSUANT TO SECTION 12956.2 OF THE GOVERNMENT CODE. LAWFUL RESTRICTIONS UNDER STATE AND FEDERAL LAW ON THE AGE OF OCCUPANTS IN SENIOR HOUSING OR HOUSING FOR OLDER PERSONS SHALL NOT BE CONSTRUED AS RESTRICTIONS BASED ON FAMILIAL STATUS."

NOTE: IF YOU SHOULD REQUEST A COPY OF THE DOCUMENT REFERRED TO ABOVE, CALIFORNIA LAW REQUIRES THAT A COUNTY RECORDER, TITLE INSURANCE COMPANY, ESCROW COMPANY, REAL ESTATE BROKER, REAL ESTATE AGENT, OR ASSOCIATION THAT PROVIDES A COPY OF A DECLARATION, GOVERNING DOCUMENT, OR DEED TO ANY PERSON SHALL PLACE A COVER PAGE OVER, OR STAMP ON THE FIRST PAGE OF THE PREVIOUSLY RECORDED DOCUMENT OR DOCUMENTS A STATEMENT, IN AT LEAST 14-POINT BOLDFACE TYPE, RELATING TO UNLAWFUL RESTRICTIONS.

SAID COVENANTS, CONDITIONS AND RESTRICTIONS PROVIDE THAT A VIOLATION THEREOF SHALL NOT DEFEAT THE LIEN OF ANY MORTGAGE OR DEED OF TRUST MADE IN GOOD FAITH AND FOR VALUE.

35 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: THE PACIFIC TELEPHONE AND TELEGRAPH COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: JANUARY 18, 1960
RECORDING NO: 10227 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

TITLE EXCEPTIONS (CONT.)

36 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: OCTOBER 4, 1960
RECORDING NO: 198406 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

37 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: MARCH 4, 1963
RECORDING NO: 37211 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

38 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: THE PACIFIC TELEPHONE AND TELEGRAPH COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: MAY 3, 1963
RECORDING NO: 77398 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

39 EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: MARCH 9, 1966
RECORDING NO: 40584 OF OFFICIAL RECORDS
AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

40. A DEED OF TRUST GIVEN TO SECURE THE ORIGINAL AMOUNT SHOWN BELOW, AND ANY OTHER AMOUNT PAYABLE UNDER THE TERMS THEREOF.
AMOUNT: $400,000.00
DATED: DECEMBER 31, 2020
TRUSTOR/GRANTOR ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
TRUSTEE: FIRST AMERICAN TITLE COMPANY
BENEFICIARY: LENNAR HOMES OF CALIFORNIA, INC., A CALIFORNIA CORPORATION
RECORDING DATE: JANUARY 13, 2021
RECORDING NO: 2021-0027010, OF OFFICIAL RECORDS
AFFECTS: THE HEREIN DESCRIBED LAND AND OTHER LAND.

41. A DEED OF TRUST TO SECURE AN INDEBTEDNESS IN THE AMOUNT SHOWN BELOW,
AMOUNT: $3,421,000.00
DATED: OCTOBER 6, 2021
TRUSTOR/GRANTOR ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
TRUSTEE: FIDELITY NATIONAL TITLE COMPANY
BENEFICIARY: CALIFORNIA INTERNATIONAL BANK
RECORDING DATE: NOVEMBER 4, 2021
RECORDING NO: 2021-0768936 OFFICIAL
AFFECTS: THE HEREIN DESCRIBED LAND AND OTHER LAND.

42. ASSIGNMENT OF RENTS AND LEASES
ASSIGNED TO: CALIFORNIA INTERNATIONAL BANK
ASSIGNED BY: ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
RECORDING DATE: NOVEMBER 4, 2021
RECORDING NO: 2021-0768937 OFFICIAL RECORDS
AFFECTS: THE HEREIN DESCRIBED LAND AND OTHER LAND.

43. AN UNRECORDED LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN AS DISCLOSED BY THE DOCUMENT ENTITLED: SUBORDINATION, NON-DISTURBANCE AND ATTORNMENT AND ESTOPPEL AGREEMENT
LESSOR: ALIKA LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
LESSEE: KEANU LLC
RECORDING DATE: NOVEMBER 4, 2021
RECORDING NO: 2021-0768938 OFFICIAL RECORDS

44. A DEED OF TRUST TO SECURE AN INDEBTEDNESS IN THE AMOUNT SHOWN BELOW,
AMOUNT: $510,400.00
DATED: APRIL 28, 2020
TRUSTOR/GRANTOR LINA MAYLING CHEN AND KEVIN SHIGEO FUKUYAMA, WIFE AND HUSBAND AS COMMUNITY PROPERTY
TRUSTEE: FIRST AMERICAN TITLE COMPANY
BENEFICIARY: MORTGAGE ELECTRONIC REGISTRATION SYSTEMS, INC.
RECORDING DATE: APRIL 30, 2020
RECORDING NO: 2020-0221628 OFFICIAL RECORDS

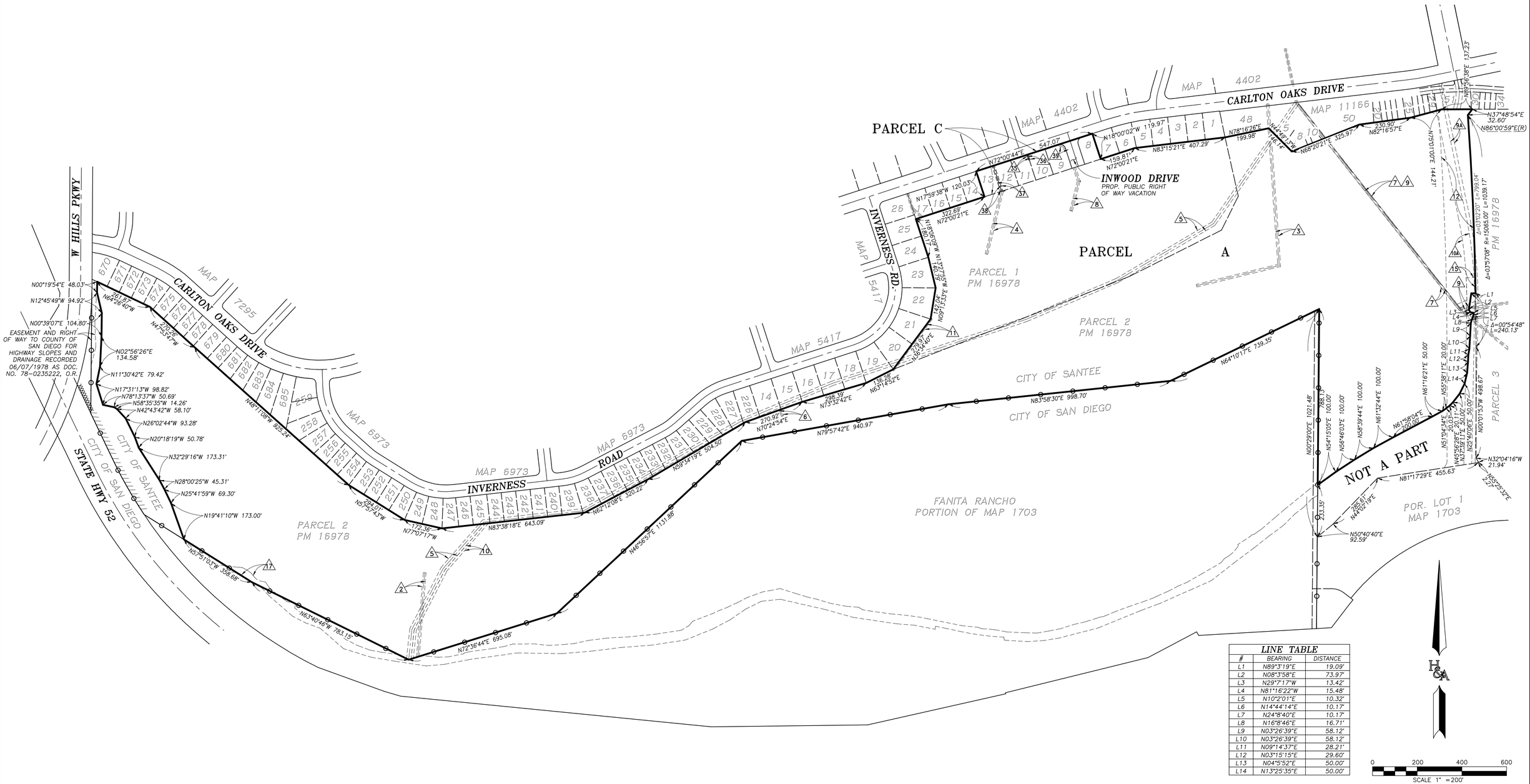
45. THE RIGHTS OF THE PUBLIC IN AND TO THAT PORTION OF THE HEREIN DESCRIBED LAND LYING WITHIN INWOOD DRIVE.

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 FX(858)558-1414

BOUNDARY AND ENCUMBRANCES
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

WO NO. 2167-0228

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LINE TABLE		
#	BEARING	DISTANCE
L1	N89°3'19"E	19.09'
L2	N08°3'58"E	73.97'
L3	N29°7'17"W	13.42'
L4	N81°16'22"W	15.48'
L5	N10°2'01"E	10.32'
L6	N14°44'14"E	10.17'
L7	N24°8'40"E	10.17'
L8	N16°8'46"E	16.71'
L9	N03°26'39"E	58.12'
L10	N03°26'39"E	58.12'
L11	N09°14'37"E	28.21'
L12	N03°15'15"E	29.60'
L13	N04°5'52"E	50.00'
L14	N13°25'35"E	50.00'

0 200 400 600
SCALE 1" = 200'

PREPARED BY:
HUNSAKER & ASSOCIATES
SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

BOUNDARY AND ENCUMBRANCES
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

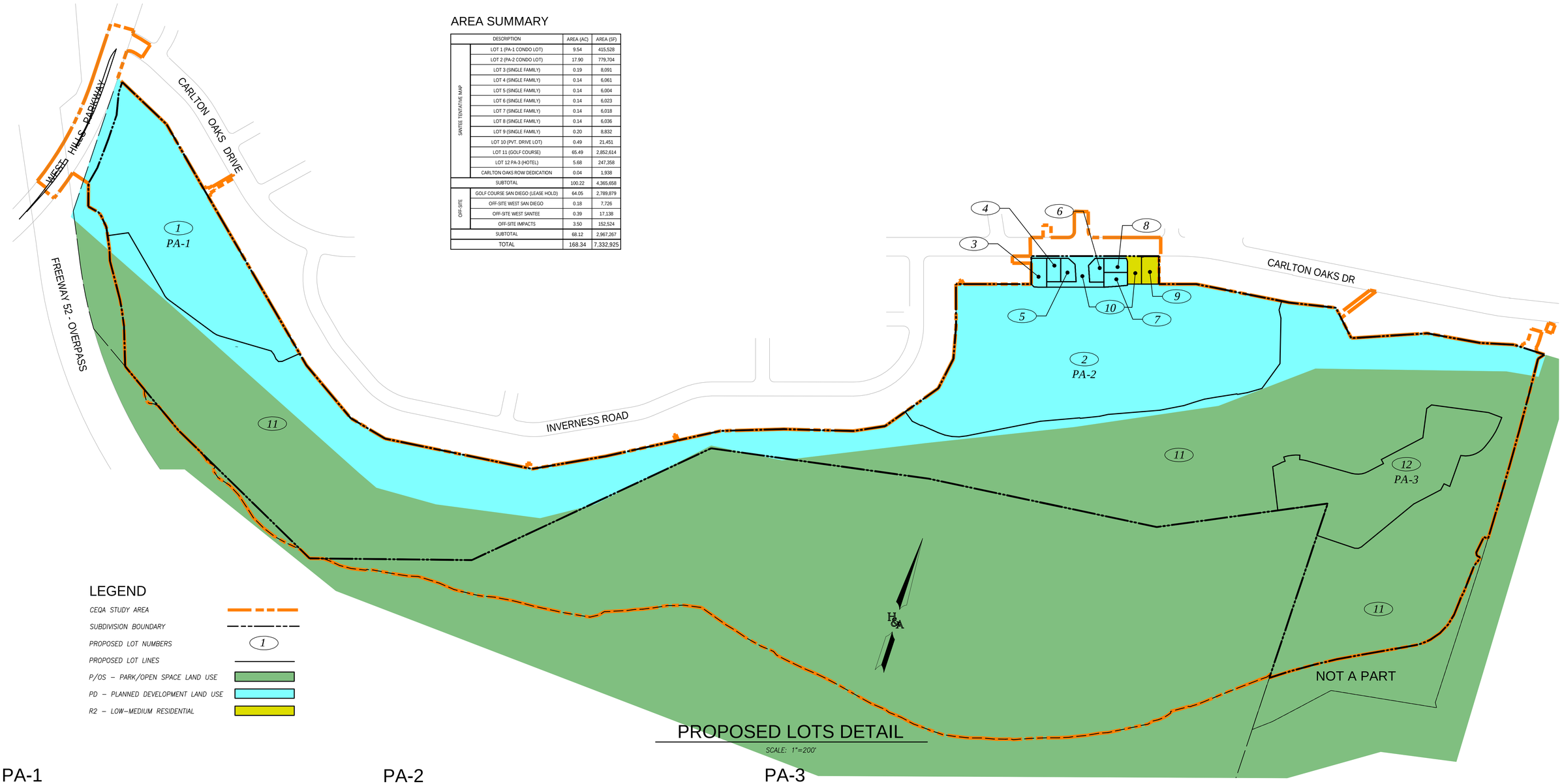
SHEET 7 OF 40

WO NO. 2167-0228

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AREA SUMMARY

	DESCRIPTION	AREA (AC)	AREA (SF)
SANTEE TENTATIVE MAP	LOT 1 (PA-1 CONDO LOT)	9.54	415,528
	LOT 2 (PA-2 CONDO LOT)	17.90	779,704
	LOT 3 (SINGLE FAMILY)	0.19	8,091
	LOT 4 (SINGLE FAMILY)	0.14	6,061
	LOT 5 (SINGLE FAMILY)	0.14	6,004
	LOT 6 (SINGLE FAMILY)	0.14	6,023
	LOT 7 (SINGLE FAMILY)	0.14	6,018
	LOT 8 (SINGLE FAMILY)	0.14	6,036
	LOT 9 (SINGLE FAMILY)	0.20	8,832
	LOT 10 (PVT. DRIVE LOT)	0.49	21,451
	LOT 11 (GOLF COURSE)	65.49	2,852,614
	LOT 12 PA-3 (HOTEL)	5.68	247,358
	CARLTON OAKS ROW DEDICATION	0.04	1,938
SUBTOTAL		100.22	4,365,658
OFF-SITE	GOLF COURSE SAN DIEGO (LEASE HOLD)	64.05	2,789,879
	OFF-SITE WEST SAN DIEGO	0.18	7,726
	OFF-SITE WEST SANTEE	0.39	17,138
	OFF-SITE IMPACTS	3.50	152,524
SUBTOTAL		68.12	2,967,267
TOTAL		168.34	7,332,925



LEGEND

- CEQA STUDY AREA
- SUBDIVISION BOUNDARY
- PROPOSED LOT NUMBERS (1)
- PROPOSED LOT LINES
- P/OS – PARK/OPEN SPACE LAND USE
- PD – PLANNED DEVELOPMENT LAND USE
- R2 – LOW–MEDIUM RESIDENTIAL

PROPOSED LOTS DETAIL

SCALE: 1"=200'

PA-1

ARCHITECTURAL SUMMARY

ARCHITECTURE	BUILDING COVERAGE (SF)	LIVING AREA (SF)	# OF UNITS	TOTAL BUILDING COVERAGE (SF)	TOTAL LIVING AREA (SF)
PLAN 1	1,153	1,647	29	33,437	47,763
PLAN 2	1,235	1,814	29	35,815	52,606
PLAN 3	1,257	2,019	28	35,196	56,532
TOTAL			86	104,448	156,901

PARKING SUMMARY

TYPE	SPACES
GARAGE	172
PARALLEL	55
DISABLED	3
TOTAL	230

REQUIRED: 2.25 SPACE PER UNIT = 194 SPACES

AREA SUMMARY

DESCRIPTION	AREA (SF)	AREA (AC)	PERCENTAGE OF TOTAL AREA
BUILDING COVERAGE	104,448	2.4	25.1%
STREETS/DRIVEWAYS	117,635	2.70	28.3%
SIDEWALKS	11,156	0.26	2.7%
PRIVATE YARDS	68,616	1.58	16.5%
ACTIVE REC AREA	11,173	0.26	2.7%
LANDSCAPE	102,500	2.35	24.7%
TOTAL	415,528	9.54	100.0%

PA-2

ARCHITECTURAL SUMMARY

ARCHITECTURE	BUILDING COVERAGE (SF)	LIVING AREA (SF)	# OF UNITS	TOTAL BUILDING COVERAGE (SF)	TOTAL LIVING AREA (SF)
PLAN 1 (47x70)	1,537	2,494	20	30,740	49,880
PLAN 2 (47x70)	1,508	2,379	20	30,160	47,580
PLAN 3 (47x70)	1,578	2,614	20	31,560	52,280
PLAN 1 (50x56)	1,324	2,003	14	18,536	28,042
PLAN 1X (50x56)	1,340	2,063	14	18,760	28,882
PLAN 2 (50x56)	1,314	2,085	31	40,734	64,635
PLAN 3 (50x56)	1,343	2,275	31	41,633	70,525
SINGLE FAMILY *	2,134	2,000	7	14,938	14,000
TOTAL			157	227,061	355,824

* INCLUDES EXISTING HOME TO REMAIN LOT 9

PARKING SUMMARY

TYPE	SPACES
GARAGE	314
STANDARD	6
PARALLEL	81
DISABLED	4
TOTAL	405

REQUIRED: 2.25 SPACE PER UNIT = 353 SPACES

AREA SUMMARY

DESCRIPTION	AREA (SF)	AREA (AC)	PERCENTAGE OF TOTAL AREA
BUILDING COVERAGE	227,061	5.21	29.1%
STREETS/DRIVEWAYS	232,311	5.33	29.8%
SIDEWALKS	20,549	0.47	2.6%
PRIVATE YARDS	114,847	2.64	14.7%
ACTIVE REC AREA	21,349	0.49	2.7%
LANDSCAPE	163,629	3.75	21.0%
TOTAL	779,746	17.90	100.0%

PA-3

ARCHITECTURAL SUMMARY

ARCHITECTURE	AREA (SF)
CLUBHOUSE AND HOTEL	
ADMIN	1,912
CIRC	1,761
COTTAGE A	6,204
COTTAGE B	2,135
GOLF TOURNAMENT HALL	4,800
HOTEL	16,720
KIOSK	150
KITCHEN	3,233
RESTAURANT	3,675
RR	683
STOR	260
GOLF FACILITIES	
CART BARN	6,012
LEARNING CENTER	1,258
PRO SHOP	1,200
STOR	1,258
TOTAL	51,926

AREA SUMMARY

DESCRIPTION	AREA (SF)	AREA (AC)	PERCENTAGE OF TOTAL AREA
BUILDING COVERAGE	42,094	0.97	17.0%
STREETS/DRIVEWAYS	124,704	2.86	50.4%
LANDSCAPE$_2$	80,560	1.85	32.6%
TOTAL	247,358	5.68	100.0%

NOTES:
1 – BUILDING COVERAGE DOES NOT INCLUDE HOTEL SECOND FLOOR (8,360 SF)
2 – LANDSCAPE INCLUDES SIDEWALK/HARDSCAPE AREAS

PARKING SUMMARY

TYPE	SPACES
STANDARD	285
DISABLED	8
TOTAL	293

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

PROPOSED LOTS / SUMMARY TABLES

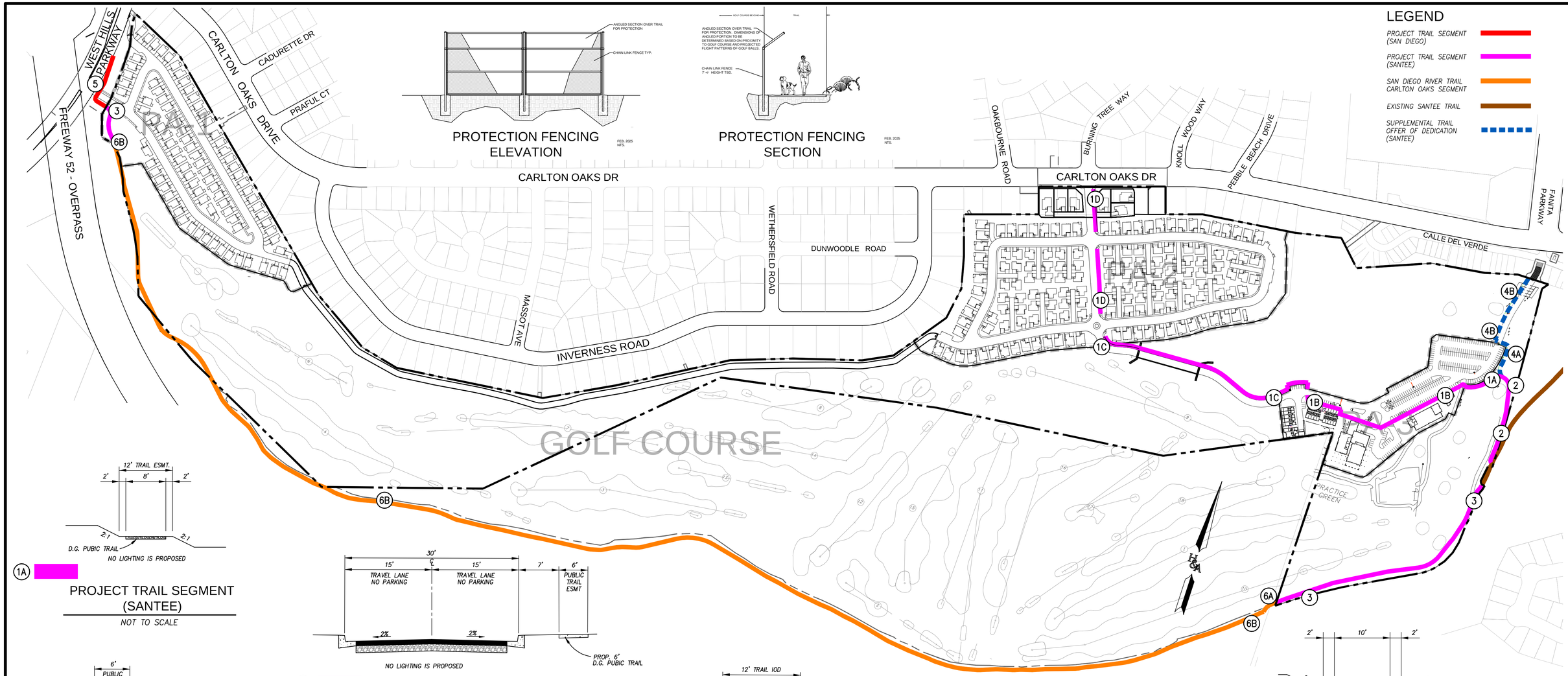
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 8 OF 40

WO NO. 2167-0228

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PROTECTION FENCING ELEVATION

FEB. 2025
NTS.

PROTECTION FENCING SECTION

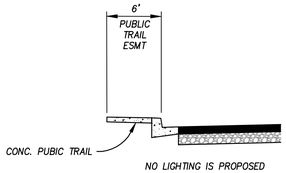
FEB. 2025
NTS.

LEGEND

- PROJECT TRAIL SEGMENT (SAN DIEGO)
- PROJECT TRAIL SEGMENT (SANTEE)
- SAN DIEGO RIVER TRAIL CARLTON OAKS SEGMENT
- EXISTING SANTEE TRAIL
- SUPPLEMENTAL TRAIL OFFER OF DEDICATION (SANTEE)

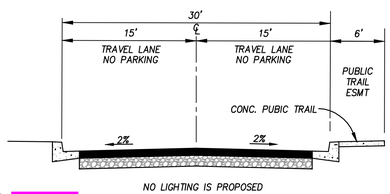
1A — PROJECT TRAIL SEGMENT (SANTEE)

NOT TO SCALE



1B — PROJECT TRAIL SEGMENT (SANTEE)

NOT TO SCALE

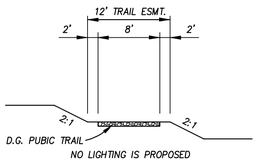


1C — PROJECT TRAIL SEGMENT (SANTEE)

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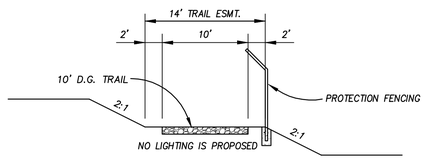
1D — PROJECT TRAIL SEGMENT (SANTEE)

NOT TO SCALE



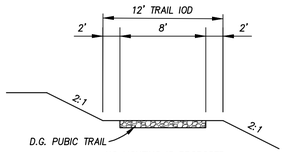
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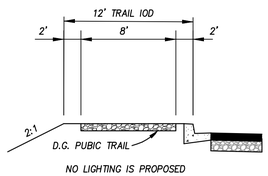
3 — PROJECT TRAIL SEGMENT (SANTEE)

NOT TO SCALE



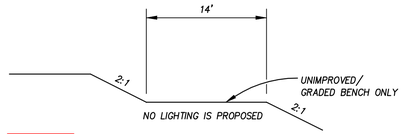
4A — SUPPLEMENTAL TRAIL OFFER OF DEDICATION (SANTEE)

NOT TO SCALE



4B — SUPPLEMENTAL TRAIL OFFER OF DEDICATION (SANTEE)

NOT TO SCALE

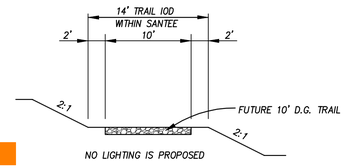


5 — PROJECT TRAIL SEGMENT (SAN DIEGO)

NOT TO SCALE

6A — SAN DIEGO RIVER TRAIL CARLTON OAKS SEGMENT

NOT TO SCALE



6B — FUTURE SAN DIEGO RIVER TRAIL CARLTON OAKS SEGMENT

NOT TO SCALE

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC.
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

TRAIL PLAN

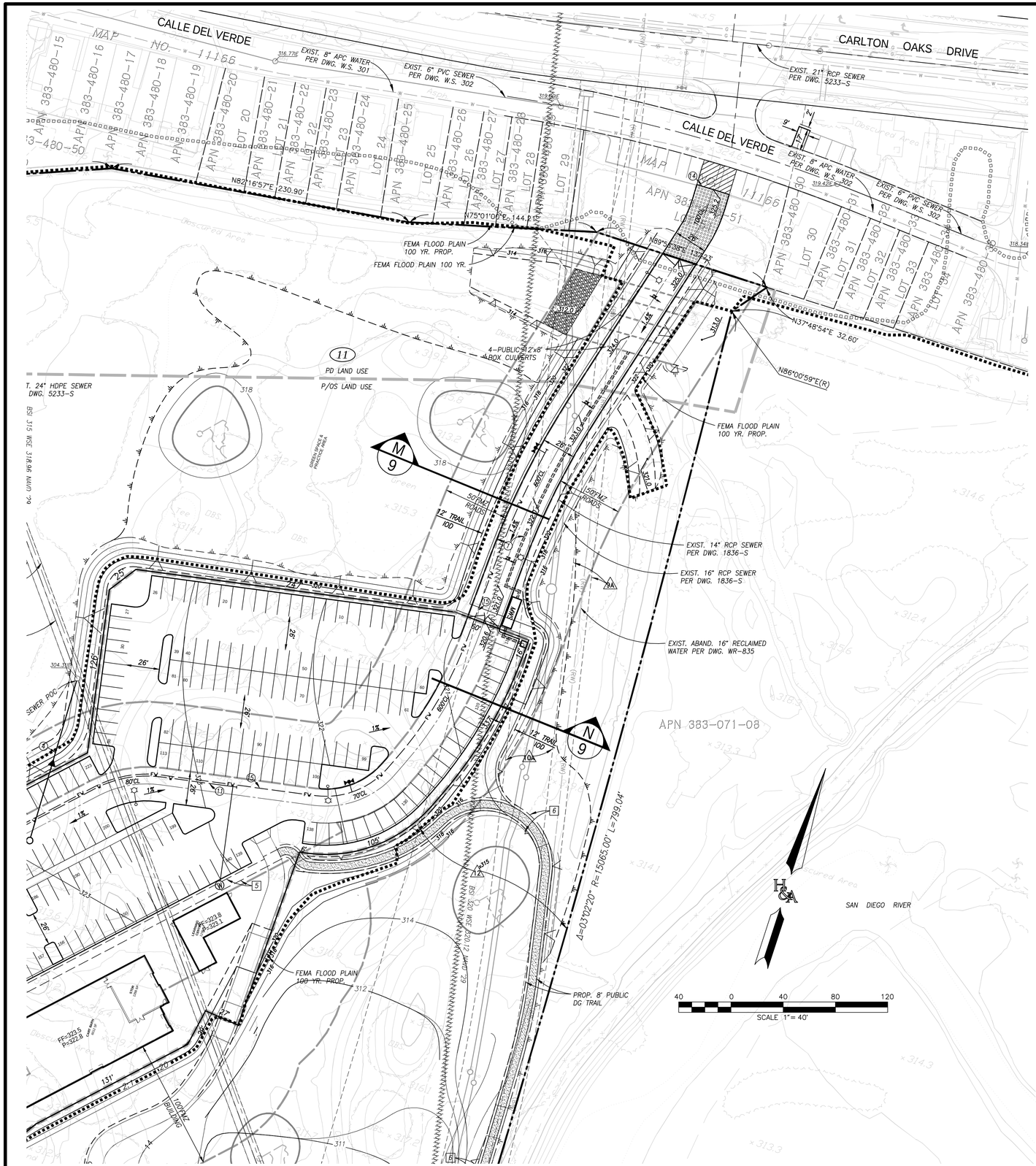
CARLTON OAKS COUNTRY CLUB AND RESORT

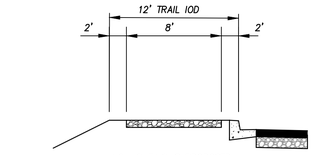
CITY OF SANTEE, CALIFORNIA

SHEET 9 OF 40

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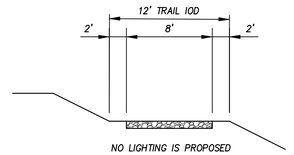


NO LIGHTING IS PROPOSED

SUPPLEMENTAL TRAIL
OFFER OF DEDICATION (SANTEE)

SECTION "M"

NOT TO SCALE



NO LIGHTING IS PROPOSED

SUPPLEMENTAL TRAIL
OFFER OF DEDICATION (SANTEE)

SECTION "N"

NOT TO SCALE

DESIGN NOTES

1. PROP. PRIVATE STORM DRAIN
2. PROP. PRIVATE 84" RCP STORM DRAIN
3. PROP. PUBLIC 15" PVC SEWER
4. PROP. PRIVATE 8" PVC SEWER
5. PROP. PRIVATE 4" PVC SEWER
6. PROP. PRIVATE 4" PVC SEWER FORCE MAIN
7. PROP. PUBLIC 10" PVC WATER
8. NOT USED
9. PROP. PRIVATE 8" PVC FIRE WATER
10. PROP. PRIVATE 6" PVC WATER
11. PROP. PRIVATE 4" PVC WATER
12. PROP. MASTER WATER METER
13. PROP. BACKFLOW
14. PROP. 4" MOD. ROLLED CURB
15. PROP. PRIVATE 10" PVC FIRE WATER
16. PROP. PRIVATE 12" PVC FIRE WATER
17. PROP. PRIVATE 90" RCP STORM DRAIN
18. PROP. PRIVATE 42" RCP STORM DRAIN
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20. PROP. PRIVATE 18" RCP STORM DRAIN
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22. PROP. PRIVATE 36" RCP STORM DRAIN
23. UNIMPROVED GRADED BENCH FUTURE TRAIL BY OTHERS
24. 14' GRADED TRAIL AND 10' D.G.
25. FUTURE TRAIL IMP. BY OTHERS
26. PROP. PRIVATE (3)-78" RCP STORM DRAIN

PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
5. 6' PUBLIC TRAIL
6. 12' PUBLIC TRAIL
7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
1220 Rosecrans Street, Suite 314
San Diego, California 92106
Phone: (619) 223-3240
E-mail: cb@bickler.com Web Site: www.bickler.com

PREPARED BY:
HUNSAKER & ASSOCIATES
SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

SUPPLEMENTAL TRAIL
OFFER OF DEDICATION (SANTEE)

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 10 OF 40

WO NO. 2167-0228

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PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
5. 6' PUBLIC TRAIL
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7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

DESIGN NOTES

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2. PROP. PRIVATE 84" RCP STORM DRAIN
3. PROP. PUBLIC 15" PVC SEWER
4. PROP. PRIVATE 8" PVC SEWER
5. PROP. PRIVATE 4" PVC SEWER
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7. PROP. PUBLIC 10" PVC WATER
8. NOT USED
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H&A

40 0 40 80 120
SCALE 1"= 40'

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TENTATIVE MAP / SITE PLAN
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 11 OF 40

SEE SHEET NO. 12

WO NO. 2167-0228

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NO. 11

SHEET SEE

NO. 15

SHEET SEE

INVERNESS ROAD

EXIST. 10" ACP WATER PER DWG. 2929-5

EXIST. 8" VCP SEWER PER DWG. 2929-5

EXIST. ABAND. 8" SEWER FORCE MAIN S-17-A PER DWG. 2929-5

EXIST. 12" ACP WATER PER DWG. 2929-5

EXIST. ABAND. 15" VCP SEWER S-17-A PER DWG. 2929-5

APN 383-431-03 LOT 683

APN 383-431-05 LOT 684

APN 383-431-06 LOT 685

APN 383-381-28 LOT 259 MAP NO. 7295

APN 383-381-03 LOT 258 MAP NO. 6973

APN 383-381-04 LOT 257

APN 383-381-05 LOT 256

APN 383-381-06 LOT 255

APN 383-381-07 LOT 254

APN 383-381-08 LOT 253

APN 383-381-09 LOT 252

APN 383-381-10 LOT 251

APN 383-381-11 LOT 250

APN 383-381-12 LOT 249

APN 383-381-13 LOT 248

N48°11'08"W 925.24'

N57°57'43"W 284.01'

N77°07'17"W 172.36'

866'

59'

FEMA FLOOD PLAIN 100 YR.

FEMA FLOOD PLAIN 100 YR. PROP.

PVT. STREET 'C'

PVT. STREET 'A'

PVT. SEWER LIFT STA. P=314.0

SEE DETAIL SHT. 4

RETAIN. WALL

MSE RETAINING WALL

107'HZ BUILDING

PD LAND USE

P/OS LAND USE

SAN DIEGO RIVER (NORTH)

14' TRAIL 100

CITY OF SANTEE

CITY OF SAN DIEGO

N25°41'59"W 69.30'

N19°41'10"W 173.00'

N57°51'03"W 358.69'

N63°40'46"W 783.15'

SCALE 1"=40'

PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
5. 6' PUBLIC TRAIL
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7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

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FA-1

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TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 12 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-03-2025:20:07

PROPOSED EASEMENTS

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SCALE 1" = 40'

PREPARED BY:

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PRELIMINARY GRADING AND STORM DRAIN PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 13 OF 40

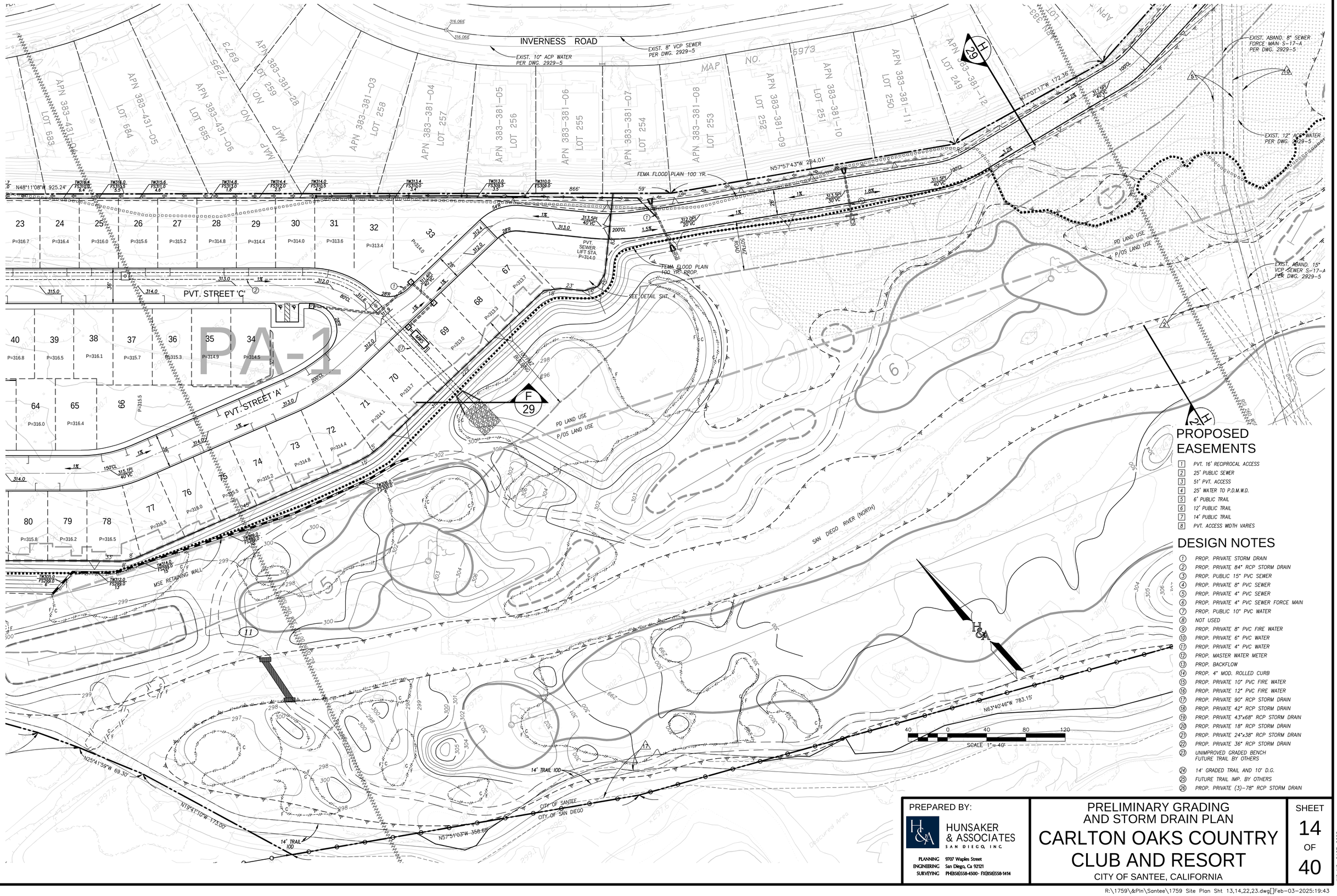
SHEET NO. 14

SEE

PA-1

WO NO. 2167-0228

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SHEET 13 NO.

SEE SHEET 15

PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
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PRELIMINARY GRADING AND STORM DRAIN PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 14 OF 40

WO NO. 2167-0228

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SEE SHEET NO. 16

SEE SHEET NO. 12

SEE SHEET NO. 16

PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
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8. PVT. ACCESS WIDTH VARIES

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SCALE 1"= 40'

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
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TENTATIVE MAP / SITE PLAN

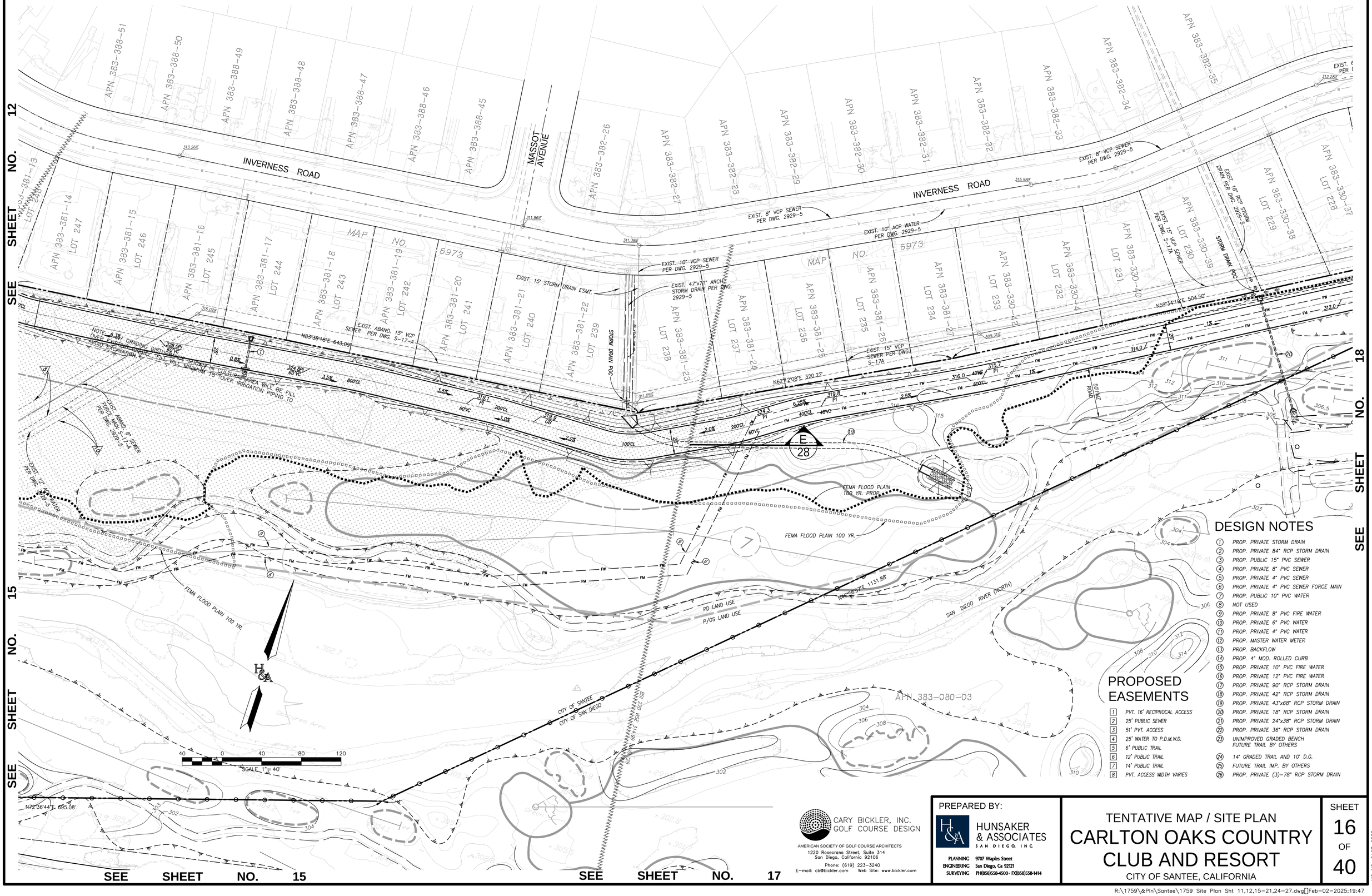
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 15 OF 40

WO NO. 2167-0228

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DESIGN NOTES

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2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
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8. PVT. ACCESS WIDTH VARIES

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TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 16 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-02-2025:19:47

SEE SHEET NO. 16

SEE SHEET NO. 18

SEE SHEET NO. 15

SEE SHEET NO. 19

FEMA FLOOD PLAIN 100 YR. PROP.

FEMA FLOOD PLAIN 100 YR.

FW

PD LAND USE

P/OS LAND USE

SAN DIEGO RIVER (NORTH)

CITY OF SANTEE

CITY OF SAN DIEGO

APN 383-080-03

SAVE NATURE SYCAMORE

SAN DIEGO RIVER (SOUTH)

SCALE 1"= 40'

DESIGN NOTES

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TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 17 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-02-2025:19:49

SEE SHEET NO. 20

SEE SHEET NO. 16

SEE SHEET NO. 24

SEE SHEET NO. 19

INVERNESS ROAD

EXIST. 6" VCP SEWER PER DWG. W.S. 565

EXIST. 27" RCP STORM DRAIN PER DWG. W.S.-567

EXIST. 8" VCP SEWER PER DWG. W.S.-567

EXIST. 15" VCP SEWER PER DWG. S-17A

EXIST. 15" VCP SEWER PER DWG. S-16A

SEWER POC

STORM DRAIN POC

FEMA FLOOD PLAIN 100 YR.

FEMA FLOOD PLAIN 100 YR. PROP.

PD LAND USE

P/OS LAND USE

NURSERY GREEN

CITY OF SANTEE

CITY OF SAN DIEGO

SAN DIEGO RIVER (NORTH)

SAVE MATURE SYCAMORE

APN 383-330-03

N79°57'42"E 940.97'

N70°24'54"E 270.92'

N56°34'40"E 279.97'

N56°34'40"E 136.28'

PVT. STREET

MAP NO. 5417

MAP NO. 6973

MAP NO. 5417

APN 383-330-37 LOT 228

APN 383-330-36 LOT 227

APN 383-330-35 LOT 226

APN 383-330-07 LOT 14

APN 383-330-08 LOT 15

APN 383-330-09 LOT 16

APN 383-330-10 LOT 17

APN 383-330-11 LOT 18

APN 383-330-12 LOT 19

APN 383-330-13 LOT 20

LOT 21

383-320-16

PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
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40 0 40 80 120
SCALE 1"= 40'

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PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 18 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-02-2025:19:52

SEE SHEET NO. 18

SEE SHEET NO. 17

SEE SHEET NO. 24

SEE SHEET NO. 25

SEE SHEET NO. 25

APN 383-080-03

SAN DIEGO RIVER (SOUTH)

Obscured Area

DESIGN NOTES

1. PROP. PRIVATE STORM DRAIN
2. PROP. PRIVATE 84" RCP STORM DRAIN
3. PROP. PUBLIC 15" PVC SEWER
4. PROP. PRIVATE 8" PVC SEWER
5. PROP. PRIVATE 4" PVC SEWER
6. PROP. PRIVATE 4" PVC SEWER FORCE MAIN
7. PROP. PUBLIC 10" PVC WATER
8. NOT USED
9. PROP. PRIVATE 8" PVC FIRE WATER
10. PROP. PRIVATE 6" PVC WATER
11. PROP. PRIVATE 4" PVC WATER
12. PROP. MASTER WATER METER
13. PROP. BACKFLOW
14. PROP. 4" MOD. ROLLED CURB
15. PROP. PRIVATE 10" PVC FIRE WATER
16. PROP. PRIVATE 12" PVC FIRE WATER
17. PROP. PRIVATE 90" RCP STORM DRAIN
18. PROP. PRIVATE 42" RCP STORM DRAIN
19. PROP. PRIVATE 43"x68" RCP STORM DRAIN
20. PROP. PRIVATE 18" RCP STORM DRAIN
21. PROP. PRIVATE 24"x38" RCP STORM DRAIN
22. PROP. PRIVATE 36" RCP STORM DRAIN
23. UNIMPROVED GRADED BENCH
    FUTURE TRAIL BY OTHERS
24. 14' GRADED TRAIL AND 10' D.G.
25. FUTURE TRAIL IMP. BY OTHERS
26. PROP. PRIVATE (3)-78" RCP STORM DRAIN

40 0 40 80 120
SCALE 1"= 40'

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
1220 Rosecrans Street, Suite 314
San Diego, California 92106
Phone: (619) 223-3240
E-mail: cb@bickler.com Web Site: www.bickler.com

PREPARED BY:
HUNSAKER & ASSOCIATES
SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
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TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-02-2025:19:53

PROPOSED EASEMENTS

1. PVT. 20' ACCESS TO LOT 9
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
5. 6' PUBLIC TRAIL
6. 12' PUBLIC TRAIL
7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

DESIGN NOTES

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SCALE 1"= 40'

SEE SHEET NO. 18

SEE SHEET NO. 24

SEE SHEET NO. 21

SEE SHEET NO. 24

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
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TENTATIVE MAP / SITE PLAN

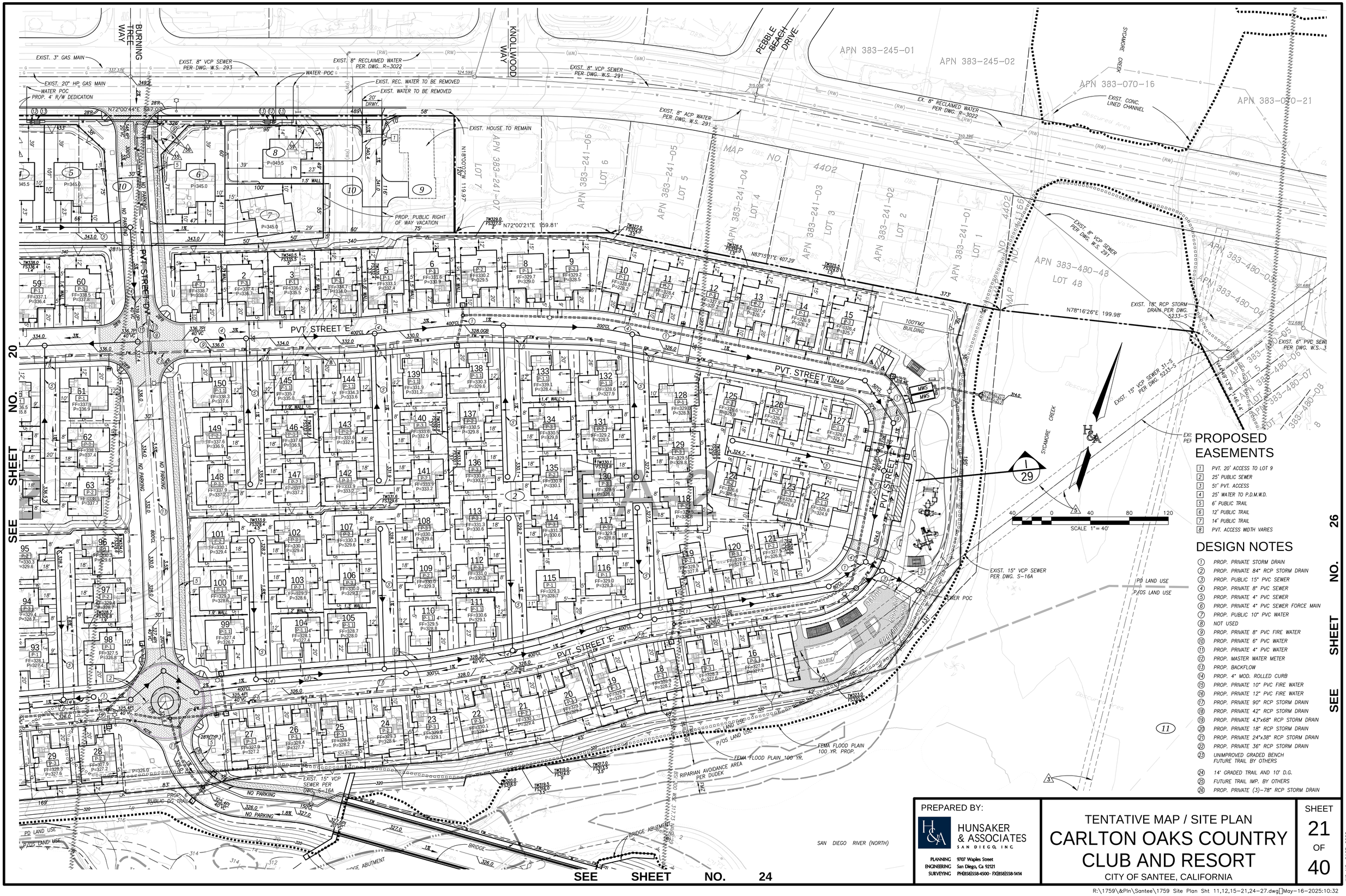
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 20 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]May-16-2025:10:32



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TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 21 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]May-16-2025:10:32

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SCALE 1" = 40'

PA-2

PREPARED BY:

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PRELIMINARY GRADING AND STORM DRAIN PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 22 OF 40

SEE SHEET NO. 23

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 13,14,22,23.dwg[]May-16-2025:10:30

SEE SHEET 22

SEE SHEET 24

PA-2

BURNING TREE WAY

KNOLLWOOD WAY

PEBBLE BEACH DRIVE

SYCAMORE CREEK

PVT. STREET 'D'

PVT. STREET 'E'

PVT. STREET 'F'

PVT. STREET 'I'

APN 383-245-01

APN 383-245-02

APN 383-070-16

APN 383-070-21

APN 383-241-06 LOT 6

APN 383-241-05 LOT 5

APN 383-241-04 LOT 4

APN 383-241-03 LOT 3

APN 383-241-02 LOT 2

APN 383-241-01 LOT 1

APN 383-241-07 LOT 7

MAP NO. 4402

APN 383-480-48 LOT 48

APN 383-480-05

APN 383-480-04

APN 383-480-06

APN 383-480-07

APN 383-480-03

EXIST. 3" GAS MAIN

EXIST. 20" HP GAS MAIN

WATER POC

PROP. 4' R/W DEDICATION

EXIST. 8" VCP SEWER PER DWG. W.S. 293

EXIST. 8" RECLAIMED WATER PER DWG. R-3022

WATER POC

EXIST. REC. WATER TO BE REMOVED

EXIST. WATER TO BE REMOVED

EXIST. 8" VCP SEWER PER DWG. W.S. 291

EXIST. 8" ACP WATER PER DWG. W.S. 291

EX. 8" RECLAIMED WATER PER DWG. R-3022

EXIST. CONC. LINED CHANNEL

EXIST. HOUSE TO REMAIN

PROP. PUBLIC RIGHT OF WAY VACATION 75'

N72°00'44"E 547.07'

N18°00'02"W 119.97'

N72°00'21"E 159.81'

N83°15'21"E 407.29'

N78°16'26"E 199.98'

EXIST. 8" VCP SEWER PER DWG. W.S. 291

EXIST. 18" RCP STORM DRAIN PER DWG. 5233-S

EXIST. 6" PVC SEWER PER DWG. W.S. 3

EXIST. 15" VCP SEWER 31-S PER DWG. 5233-S

EXIST. 15" VCP SEWER PER DWG. S-16A

PROP. PUBLIC DG TRAIL

NO PARKING

1.5' WALL

1.9' WALL

1.2' WALL

1.3' WALL

1.4' WALL

100'FMZ BUILDING

MWS

SEWER POC

PD LAND USE

P/OS LAND USE

FEMA FLOOD PLAIN 100 YR. PROP.

FEMA FLOOD PLAIN 100 YR.

RIPARIAN AVOIDANCE AREA PER DUDEK

BRIDGE

BRIDGE ABUTMENT

SAN DIEGO RIVER (NORTH)

SCALE 1"= 40'

PROPOSED EASEMENTS

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3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
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7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

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PREPARED BY:

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ENGINEERING San Diego, Ca 92121
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PRELIMINARY GRADING AND STORM DRAIN PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 23 OF 40

WO NO. 2167-0228

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SEE SHEET NO. 20

SEE SHEET NO. 21

PROPOSED EASEMENTS

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2. 25' PUBLIC SEWER
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SEE SHEET NO. 18

SEE SHEET NO. 26

SEE SHEET NO. 27

SEE SHEET NO. 25

SCALE 1" = 40'

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
1220 Rosecrans Street, Suite 314
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TENTATIVE MAP / SITE PLAN
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 24 OF 40

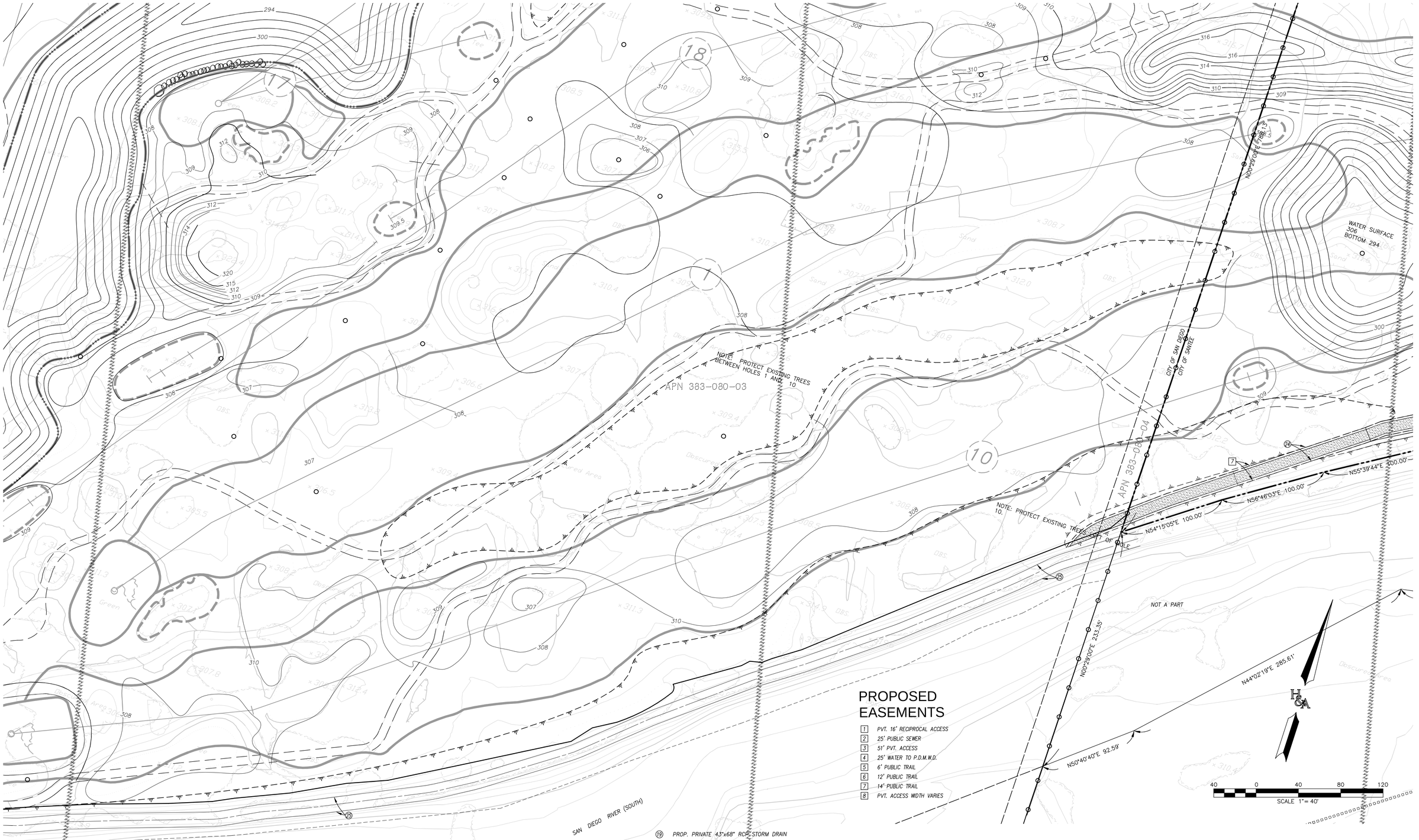
WO NO. 2167-0228

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SEE SHEET NO. 24

SEE SHEET NO. 19

SEE SHEET NO. 27



PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
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TENTATIVE MAP / SITE PLAN

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 25 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-02-2025:20:02

CALLE DEL VERDE

CARLTON OAKS DRIVE

EXIST. 15" VCP SEWER 31-S PER DWG. 5233-S

EXIST. 15" VCP SEWER PER DWG. S-16A

EXIST. 6" PVC SEWER PER DWG. W.S. 301

EXIST. 24" HDPE SEWER PER DWG. 5233-S

EXIST. 8" APC WATER PER DWG. W.S. 301

EXIST. 6" PVC SEWER PER DWG. W.S. 302

EXIST. 21" RCP SEWER PER DWG. 5233-S

EXIST. 6" APC WATER PER DWG. W.S. 302

EXIST. 6" PVC SEWER PER DWG. W.S. 302

N44°49'13"W 146.14'

N68°20'21"E 325.97'

N82°16'57"E 230.90'

N75°01'00"E 144.21'

N37°48'54"E 32.60'

N86°00'59"E(R)

FEMA FLOOD PLAIN 100 YR. PROP.

FEMA FLOOD PLAIN 100 YR.

4-PUBLIC 12'x8' BOX CULVERTS

PD LAND USE

P/OS LAND USE

SAN DIEGO RIVER (NORTH)

EXIST. 14" RCP SEWER PER DWG. 1836-S

EXIST. 16" RCP SEWER PER DWG. 1836-S

EXIST. ABAND. 16" RECLAIMED WATER PER DWG. WR-835

PROP. 8' PUBLIC DG TRAIL

Δ=03°02'20" R=15065.00' L=799.04'

SAN DIEGO RIVER

APN 383-071-08

SEWER POC

Well No. 3

HOTEL

POOL

DRIVEWAY

FIRE LANE

LOADING

DROP-OFF

TRASH ENCL.

CART BARN

GOLF MAINT. FACILITY

CITY OF SANTEE / CITY OF SAN DIEGO

SEE SHEET NO. 21

SEE SHEET NO. 24

SEE SHEET NO. 27

PA-3

PROPOSED EASEMENTS

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TENTATIVE MAP / SITE PLAN
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 26 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 11,12,15-21,24-27.dwg[]Feb-02-2025:20:09

SEE SHEET NO. 26

SEE SHEET NO. 24

SEE SHEET NO. 25

SEE SHEET NO. 27

CITY OF SAN DIEGO

CUT W...

FF=323.3
P=322.5

26'

24'

IRRIG

LAWN

144'

PATIO AREA

ENTRY

170'

15'

TOOTHZ BUILDING

EXIST. BLDG. TO REMAIN

FEMA FLOOD PLAIN
100 YR. PROP.

WATER SURFACE
306
BOTTOM 294

Well No. 2

PROP. 8' PUBLIC
DG TRAIL

SAN DIEGO RIVER (SOUTH)

(RW)

R=5065.00'
Δ=00°54'48"
L=240.13'

EXIST. 24" HDPE SEWER
PER DWG. 5233-S

APN 383-071-02

FORESTER CREEK

NOT A PART

SAN DIEGO RIVER (SOUTH)

N61°58'04"E 200.00'

N61°32'44"E 100.00'

N55°39'44"E 200.00'

S46°03'E 100.00'

N61°16'21"E 50.00'

N55°38'17"E 20.00'

N51°04'34"E 20.03'

N45°58'28"E 20.11'

N37°39'17"E 50.00'

N25°40'08"E 50.00'

N00°01'57"W 498.67'

N81°17'29"E 455.63'

N32°04'16"W 21.94'

N55°25'32"E 2.27'

S2°19'E 285.61'

LINE TABLE		
#	BEARING	DISTANCE
L1	N89°3'19"E	19.09'
L2	N08°3'58"E	73.97'
L3	N29°7'17"W	13.42'
L4	N81°16'22"W	15.48'
L5	N10°2'01"E	10.32'
L6	N14°44'14"E	10.17'
L7	N24°8'40"E	10.17'
L8	N16°8'46"E	16.71'
L9	N03°26'39"E	58.12'
L10	N03°26'39"E	58.12'
L11	N09°14'37"E	28.21'
L12	N03°15'15"E	29.60'
L13	N04°5'52"E	50.00'
L14	N13°25'35"E	50.00'

PROPOSED EASEMENTS

1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
5. 6' PUBLIC TRAIL
6. 12' PUBLIC TRAIL
7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

DESIGN NOTES

1. PROP. PRIVATE STORM DRAIN
2. PROP. PRIVATE 84" RCP STORM DRAIN
3. PROP. PUBLIC 15" PVC SEWER
4. PROP. PRIVATE 8" PVC SEWER
5. PROP. PRIVATE 4" PVC SEWER
6. PROP. PRIVATE 4" PVC SEWER FORCE MAIN
7. PROP. PUBLIC 10" PVC WATER
8. NOT USED
9. PROP. PRIVATE 8" PVC FIRE WATER
10. PROP. PRIVATE 6" PVC WATER
11. PROP. PRIVATE 4" PVC WATER
12. PROP. MASTER WATER METER
13. PROP. BACKFLOW
14. PROP. 4" MOD. ROLLED CURB
15. PROP. PRIVATE 10" PVC FIRE WATER
16. PROP. PRIVATE 12" PVC FIRE WATER
17. PROP. PRIVATE 90" RCP STORM DRAIN
18. PROP. PRIVATE 42" RCP STORM DRAIN
19. PROP. PRIVATE 43"x68" RCP STORM DRAIN
20. PROP. PRIVATE 18" RCP STORM DRAIN
21. PROP. PRIVATE 24"x38" RCP STORM DRAIN
22. PROP. PRIVATE 36" RCP STORM DRAIN
23. UNIMPROVED GRADED BENCH
    FUTURE TRAIL BY OTHERS
24. 14' GRADED TRAIL AND 10' D.G.
25. FUTURE TRAIL IMP. BY OTHERS
26. PROP. PRIVATE (3)-78" RCP STORM DRAIN

H&A

40 0 40 80 120
SCALE 1" = 40'

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
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TENTATIVE MAP / SITE PLAN

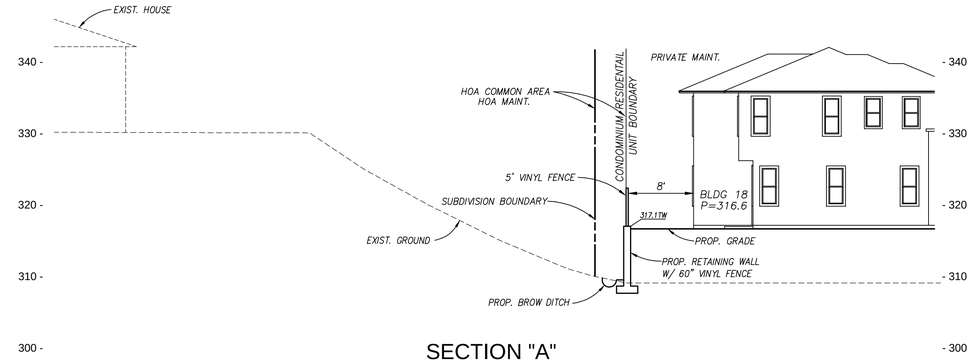
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 27 OF 40

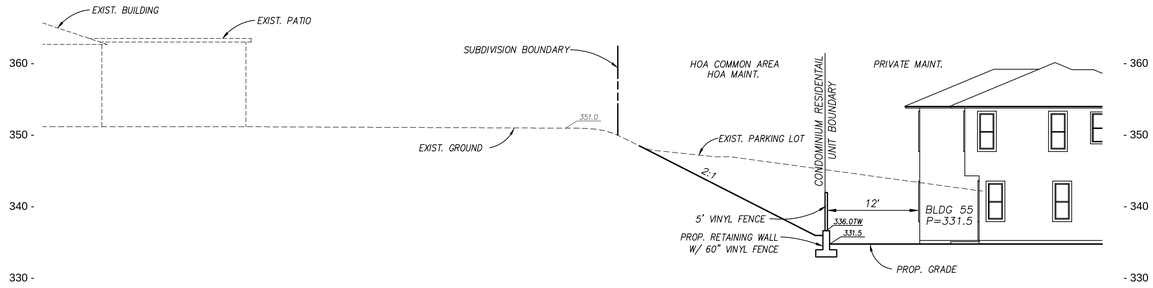
WO NO. 2167-0228

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SECTION "A"

SCALE: HORIZ/VERT 1"=10'

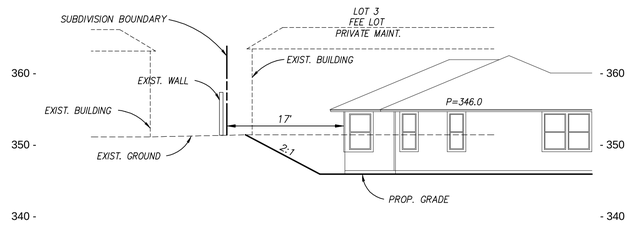


SECTION "C"

SCALE: HORIZ/VERT 1"=10'

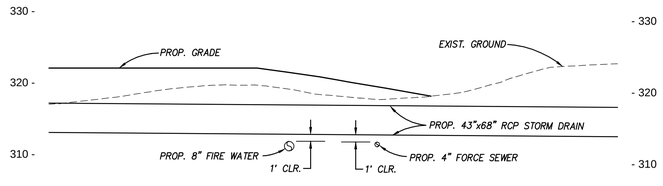
SECTION "B"

SCALE: HORIZ/VERT 1"=10'



SECTION "D"

SCALE: HORIZ/VERT 1"=10'



SECTION "E"

SCALE: HORIZ/VERT 1"=10'

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SITE SECTIONS

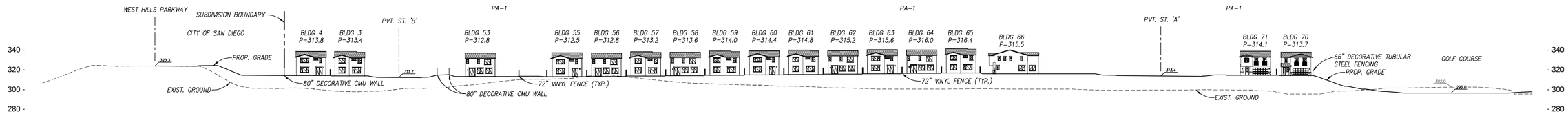
CARLTON OAKS COUNTRY CLUB AND RESORT

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SHEET 28 OF 40

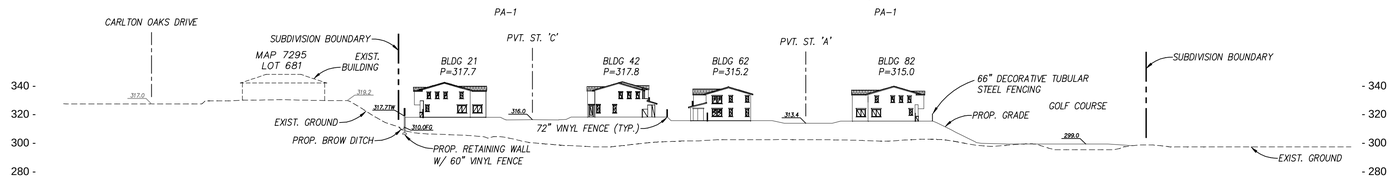
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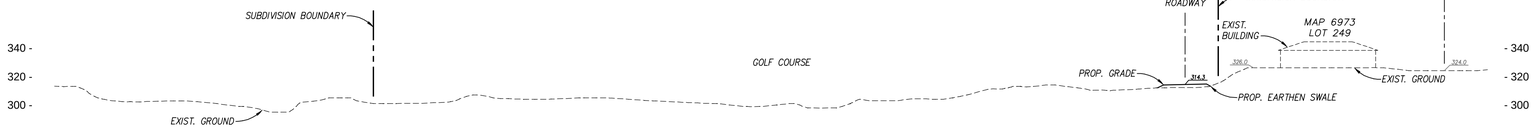
SECTION "F"

SCALE: HORIZ/VERT 1"=50'



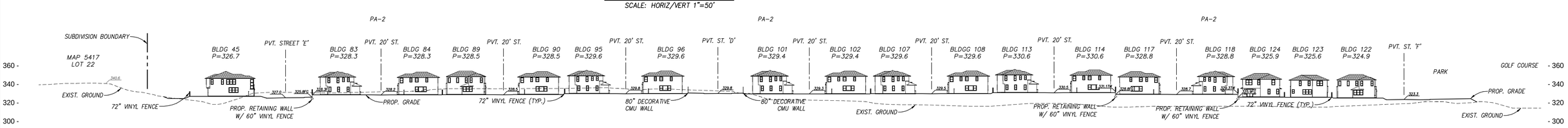
SECTION "G"

SCALE: HORIZ/VERT 1"=50'



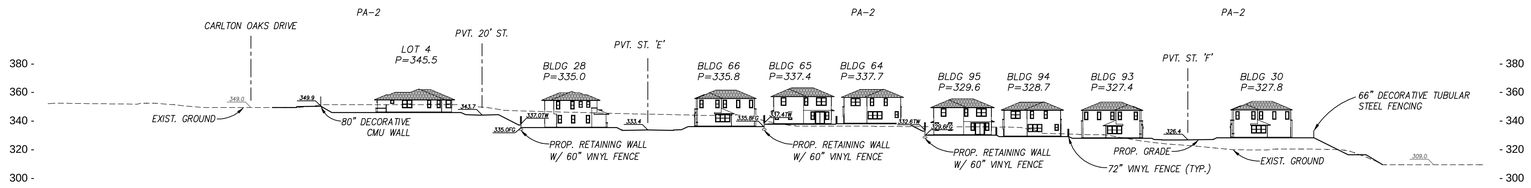
SECTION "H"

SCALE: HORIZ/VERT 1"=50'



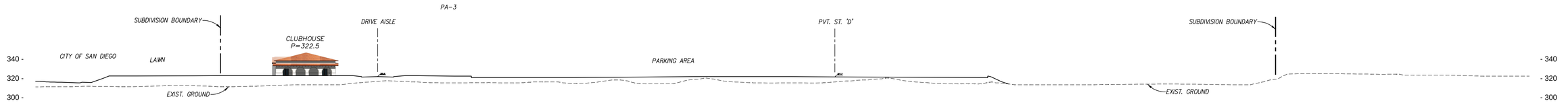
SECTION "I"

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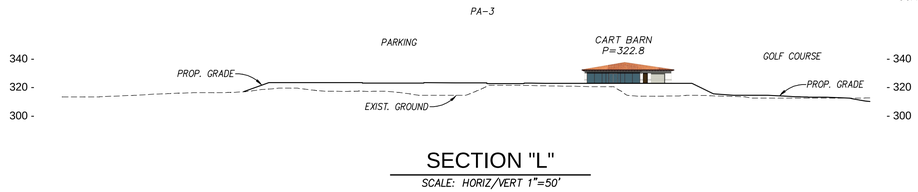
SECTION "J"

SCALE: HORIZ/VERT 1"=50'



SECTION "K"

SCALE: HORIZ/VERT 1"=50'



SECTION "L"

SCALE: HORIZ/VERT 1"=50'

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SITE SECTIONS

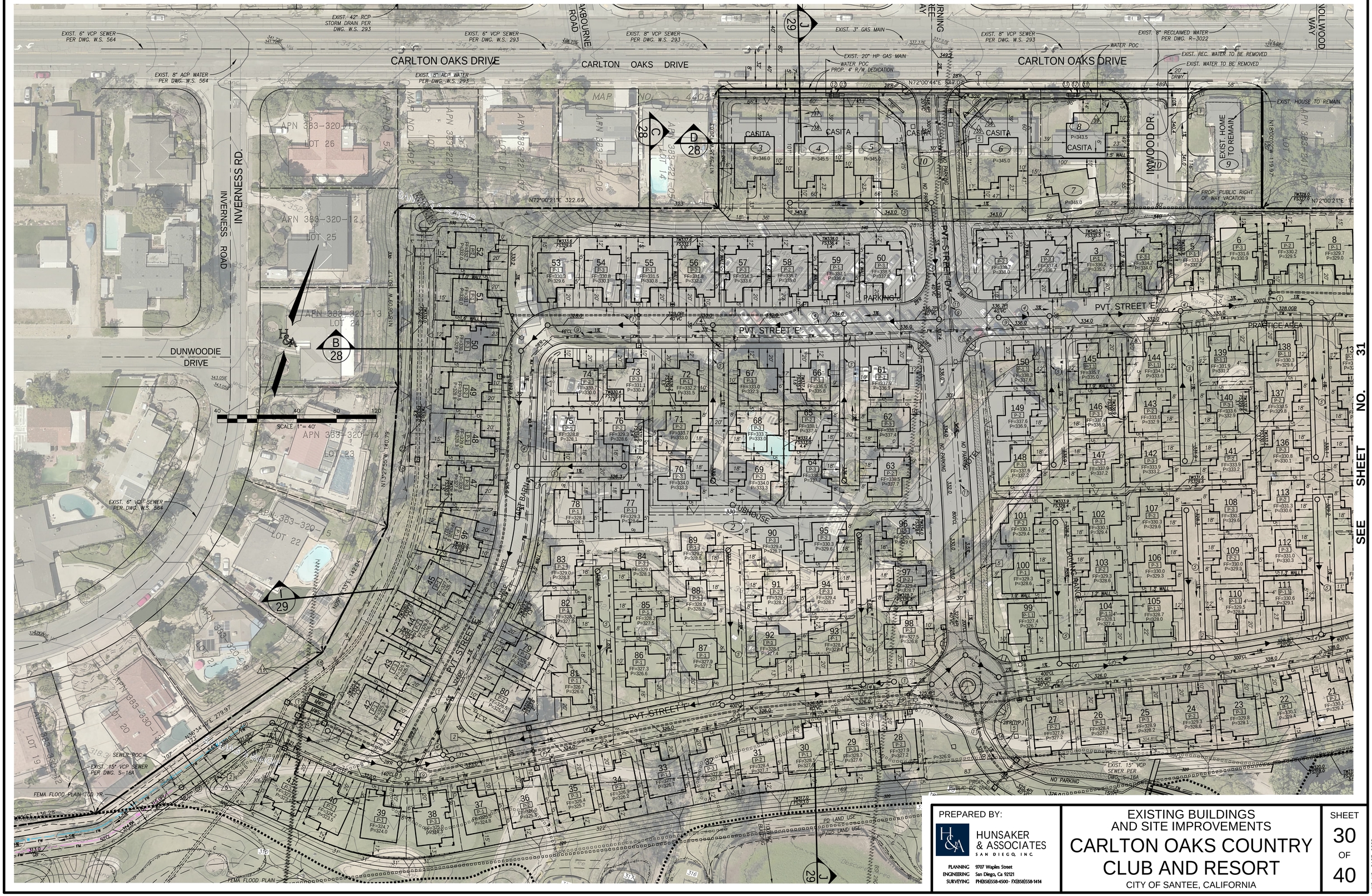
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 29 OF 40

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EXISTING BUILDINGS AND SITE IMPROVEMENTS

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 30 OF 40

SEE SHEET NO. 31

WO NO. 2167-0228

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SEE SHEET NO. 30

SEE SHEET NO. 32

CARLTON OAKS DRIVE

BURNING TREE WAY

KNOLLWOOD WAY

PEBBLE BEACH DRIVE

INWOOD DR.

PVT. STREET 'D'

PVT. STREET 'E'

PVT. STREET 'F'

PVT. STREET 'G'

PRACTICE AREA

DRIVING RANGE

PROP. PUBLIC RIGHT OF WAY VACATION

EXIST. HOUSE TO REMAIN.

EXIST. HOME TO REMAIN

EXIST. 3" GAS MAIN

EXIST. 20" HP GAS MAIN

WATER POC

PROP. 4' R/W DEDICATION

EXIST. 8" VCP SEWER PER DWG. W.S. 293

EXIST. 8" RECLAIMED WATER PER DWG. R-3022

EXIST. REC. WATER TO BE REMOVED

EXIST. WATER TO BE REMOVED

EXIST. 8" VCP SEWER PER DWG. W.S. 291

EXIST. 8" ACP WATER PER DWG. W.S. 291

EX. 8" RECLAIMED WATER PER DWG. R-3022

EXIST. CONC. LINED CHANNEL

EXIST. 8" VCP SEWER PER DWG. W.S. 291

EXIST. 18" RCP STORM DRAIN PER DWG. 5233-S

EXIST. 6" PVC SEWER PER DWG. W.S. 301

EXIST. 15" VCP SEWER 31-S PER DWG. 5233-S

EXIST. 15" VCP SEWER PER DWG. S-16A

EXIST. 15" VCP SEWER PER DWG. S-16A

SEWER POC

N72°00'44"E 547.02'

N72°00'21"E 159.81'

N18°00'20"W 119.97'

N83°15'01"E 407.29'

N78°16'26"E 199.98'

APN 383-245-01

APN 383-245-02

APN 383-070-16

APN 383-070-21

APN 383-241-06 LOT 6

APN 383-241-05 LOT 5

APN 383-241-04 LOT 4

APN 383-241-03 LOT 3

APN 383-241-02 LOT 2

APN 383-241-01 LOT 1

MAP NO. 4402

APN 383-480-48 LOT 48

APN 383-480-05

APN 383-480-07 LOT 7

APN 383-480-03 LOT 8

APN 383-480-06 LOT 6

100'FMZ BUILDING

MWS

SYCAMORE CREEK

PD LAND USE
P/OS LAND USE

FEMA FLOOD PLAIN 100 YR.

FEMA FLOOD PLAIN 100 YR. PROP.

RIPARIAN AVOIDANCE AREA PER DUDEK

PROP. PUBLIC BIKE TRAIL

BRIDGE

BRIDGE ABUTMENT

SAN DIEGO RIVER (NORTH)

NO PARKING

PARKING

CASITA

SCALE 1" = 40'

29

11

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EXISTING BUILDINGS AND SITE IMPROVEMENTS

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 31 OF 40

WO NO. 2167-0228

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1" = 200'

LEGEND

- 100-YEAR FLOOD PLAIN PER REVISED STUDY
- 100-YEAR FLOODWAY PER REVISED STUDY
- 100-YEAR FLOOD PLAIN PER FEMA FIRM
- 100-YEAR FLOODWAY PER FEMA FIRM
- HEC-RAS CROSS SECTION LOCATION
- RIVER CENTER LINE
- CITY BOUNDARY
- TIE IN LOCATIONS

DATUM NOTE:
VIRTICAL DATUM: NGVD 1929
HORIZONTAL DATUM: NAD 1983 CALIFORNIA STATE PLANE ZONE VI

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FLOOD MAP PROPOSED CONDITIONS

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 32 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 32 & 33.dwg[]May-20-2024:19:29

SEE SHEET NO. 32

CARLTON OAKS DRIVE
CALLE DEL VERDE
SYCAMORE CREEK
FANITA PARKWAY
PEPPER BEACH DRIVE
MAIN
OAKBOURNE ROAD
PVT. DRIVE 'D'
PVT. DRIVE 'E'
PVT. DRIVE 'F'
INVERNESS ROAD
DUNWOODIE DRIVE
WETHERSFIELD ROAD

AX 280
AY 290
AZ 300
BA 310
315
320
BB 330
340
BC 345
355
285

280
285
290
300
310
315
320
330
340
355

1" = 200'

LEGEND

- 100-YEAR FLOOD PLAIN PER REVISED STUDY
- 100-YEAR FLOODWAY PER REVISED STUDY
- 100-YEAR FLOOD PLAIN PER FEMA FIRM
- 100-YEAR FLOODWAY PER FEMA FIRM
- HEC-RAS CROSS SECTION LOCATION
- RIVER CENTER LINE
- CITY BOUNDARY
- TIE IN LOCATIONS

DATUM NOTE:
VIRTICAL DATUM: NGVD 1929
HORIZONTAL DATUM: NAD 1983 CALIFORNIA STATE PLANE ZONE VI

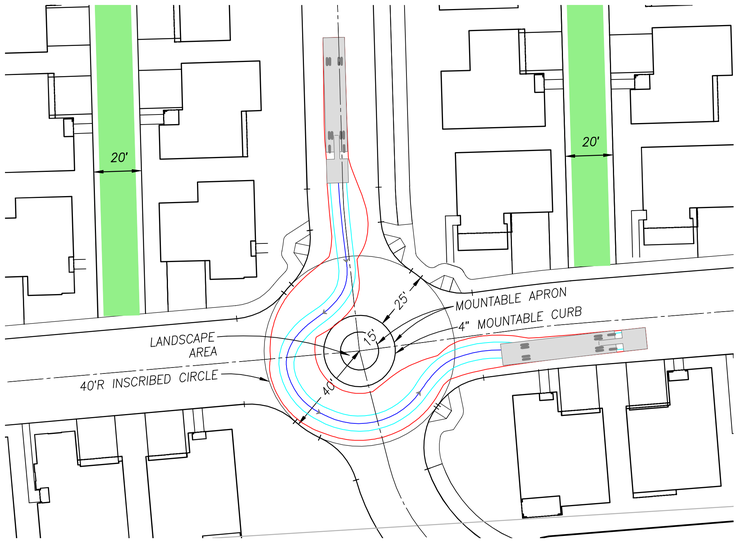
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FLOOD MAP PROPOSED CONDITIONS
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 33 OF 40

WO NO. 2167-0228

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AUTOTURN DETAILS
100' TRACTOR DRAWN AERIAL

TRACTOR:

STEERING LOCK ANGLE:	45.0°
LOCK TO LOCK TIME:	6 SEC.
WIDTH:	108 IN.
AXLE TRACK:	82.92 IN.
WHEELBASE:	164 IN.
FRONT OVERHANG:	76.0 IN.
PIN LOCATION:	REAR AXLE

TILLER (REAR STEERABLE):

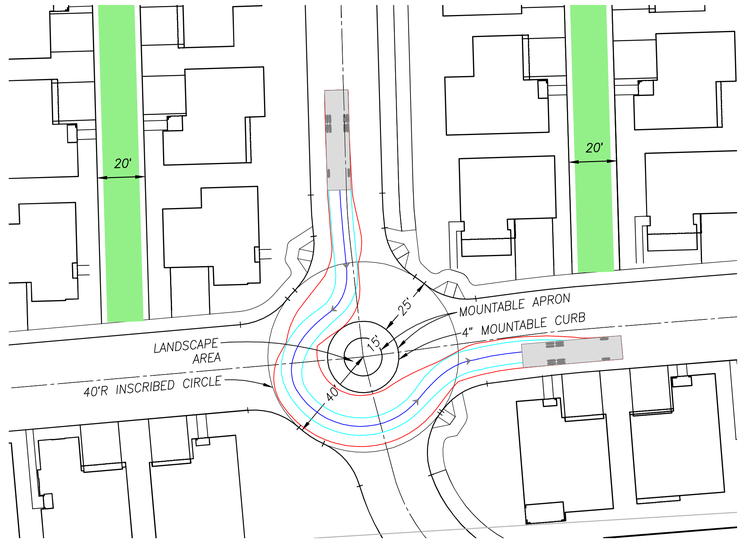
STEERING LOCK ANGLE:	45.0°
LOCK TO LOCK TIME:	6 SEC.
WIDTH:	108 IN.
AXLE TRACK:	82.92 IN.
WHEELBASE (FROM PIN):	372.0 IN.
REAR OVERHANG:	120.0 IN.
PIN OVERHANG:	60.0 IN.

100' TRACTOR DRAWN AERIAL
ROUNDABOUT TURN MOVEMENT

SCALE: 1"=30'

LEGEND

- PATH
- FRONT TIRES
- VEHICLE BODY

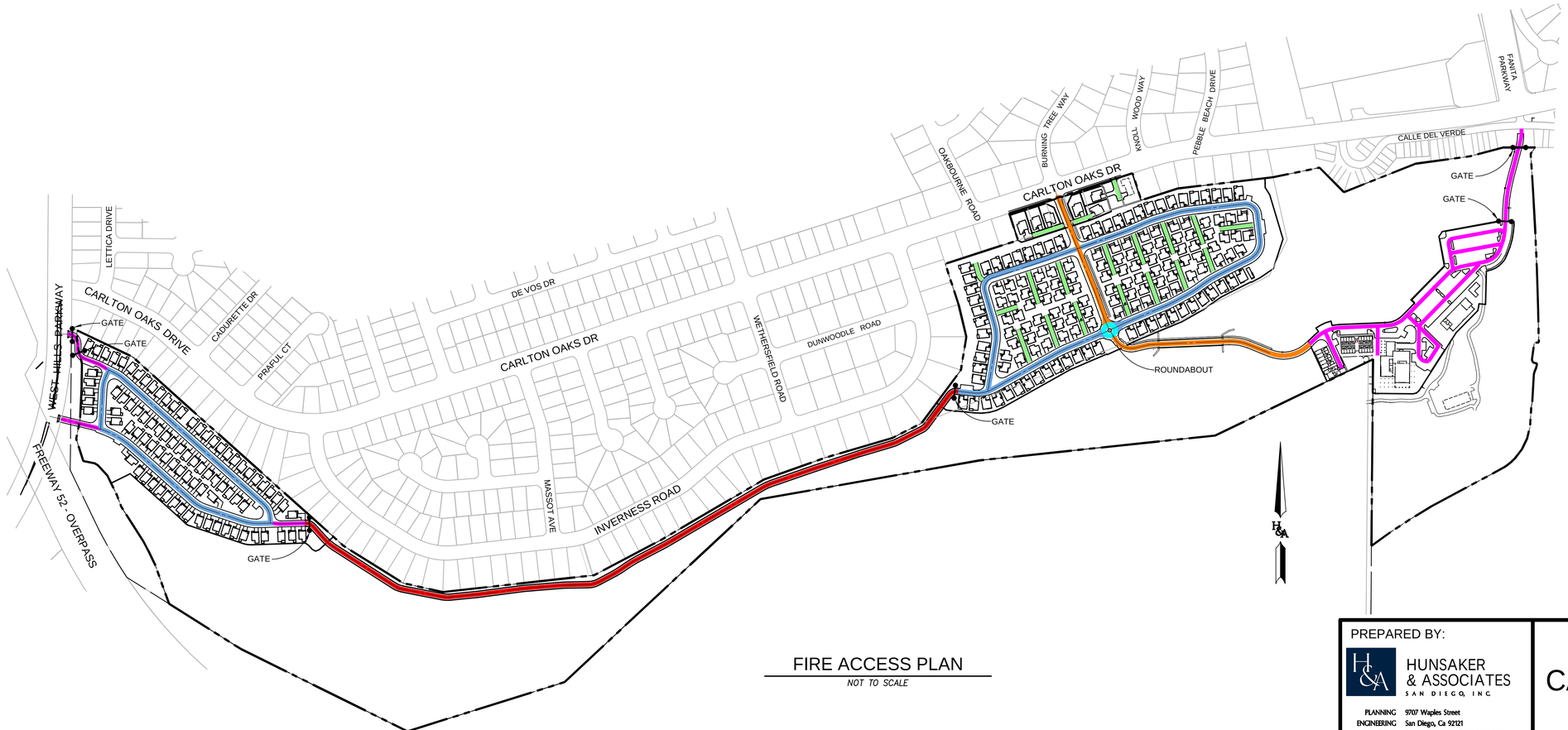


AUTOTURN DETAILS
42' FIRE TRUCK

STEERING LOCK ANGLE:	45.0°
LOCK TO LOCK TIME:	6 SEC.
WIDTH:	118.0 IN.
AXLE TRACK:	111.0 IN.
WHEELBASE:	250.0 IN.
FRONT OVERHANG:	85.0 IN.

42' FIRE TRUCK
ROUNDABOUT TURN MOVEMENT

SCALE: 1"=30'



FIRE ACCESS PLAN

NOT TO SCALE

LEGEND

- 26' PRIVATE UTILITY MAINTENANCE ROADWAY
- 26' PVT. FIRE APPARATUS ACCESS ROAD
- 20' PVT. FIRE APPARATUS ACCESS ROAD
- 30' PVT. FIRE APPARATUS ACCESS ROAD
- 32' PVT. FIRE APPARATUS ACCESS ROAD
- 36' PVT. FIRE APPARATUS ACCESS ROAD
- ACCESS GATE

ALL PRIVATE STREETS PROVIDE A MINIMUM WIDTH OF 20-FEET AS ALLOWED BY THE EXCEPTIONS TO CALIFORNIA FIRE CODE SECTION 503.2.1

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FIRE ACCESS PLAN
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 34 OF 40

WO NO. 2167-0228

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APN 383-245-01

APN 383-245-02

MAP NO. 4402

MAP NO. 5417

APN 383-320-11
LOT 26

APN 383-320-12
LOT 25

APN 383-320-13
LOT 24

APN 383-320-14
LOT 23

APN 383-320-15
LOT 22

APN 383-320-16
LOT 21

APN 383-221-08
LOT 17

APN 383-221-07
LOT 16

APN 383-221-06
LOT 15

APN 383-221-05
LOT 14

APN 383-241-07
LOT 7

APN 383-241-06
LOT 6

APN 383-241-05
LOT 5

APN 383-241-04
LOT 4

APN 383-241-03
LOT 3

APN 383-241-02
LOT 2

APN 383-241-01
LOT 1

MAP NO. 11165

N72°00'44"E 547.03'

N72°00'21"E 322.69'

N72°00'21"E 159.81'

N83°15'21"E 407.29'

N30°34'40"E 279.97'

N09°13'37"E 142.04'

N13°27'55"W 140.79'

SCALE 1" = 50'

0 50 100 150

LEGEND

FH — FIRE HYDRANT

TRUCK — FIRE TRUCK

150' HOSE PULL

NOTE: ALL PA-2 BUILDINGS ARE TWO STORY & ROOF OVERHANGS DO NOT PROTRUDE INTO FIRE LANES

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FIRE HOSE PULL

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SHEET 35 OF 40

WO NO. 2167-0228

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PA-3

APN 383-071-08

1 STORY

2 STORY

TRUCK

20' PAVED FIRE LANE

20' FIRE LANE

LIMITS OF ROOF OVERHANG DOES NOT PROTRUDE INTO FIRE LANE

150' HOSE PULL

143' HOSE PULL

46' HOSE PULL

SCALE 1"= 40'

LEGEND

- FIRE HYDRANT
- FIRE TRUCK
- 150' HOSE PULL
- ROOF OVERHANG

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
1220 Rosecrans Street, Suite 314
San Diego, California 92106
Phone: (619) 223-3240
E-mail: cb@bickler.com Web Site: www.bickler.com

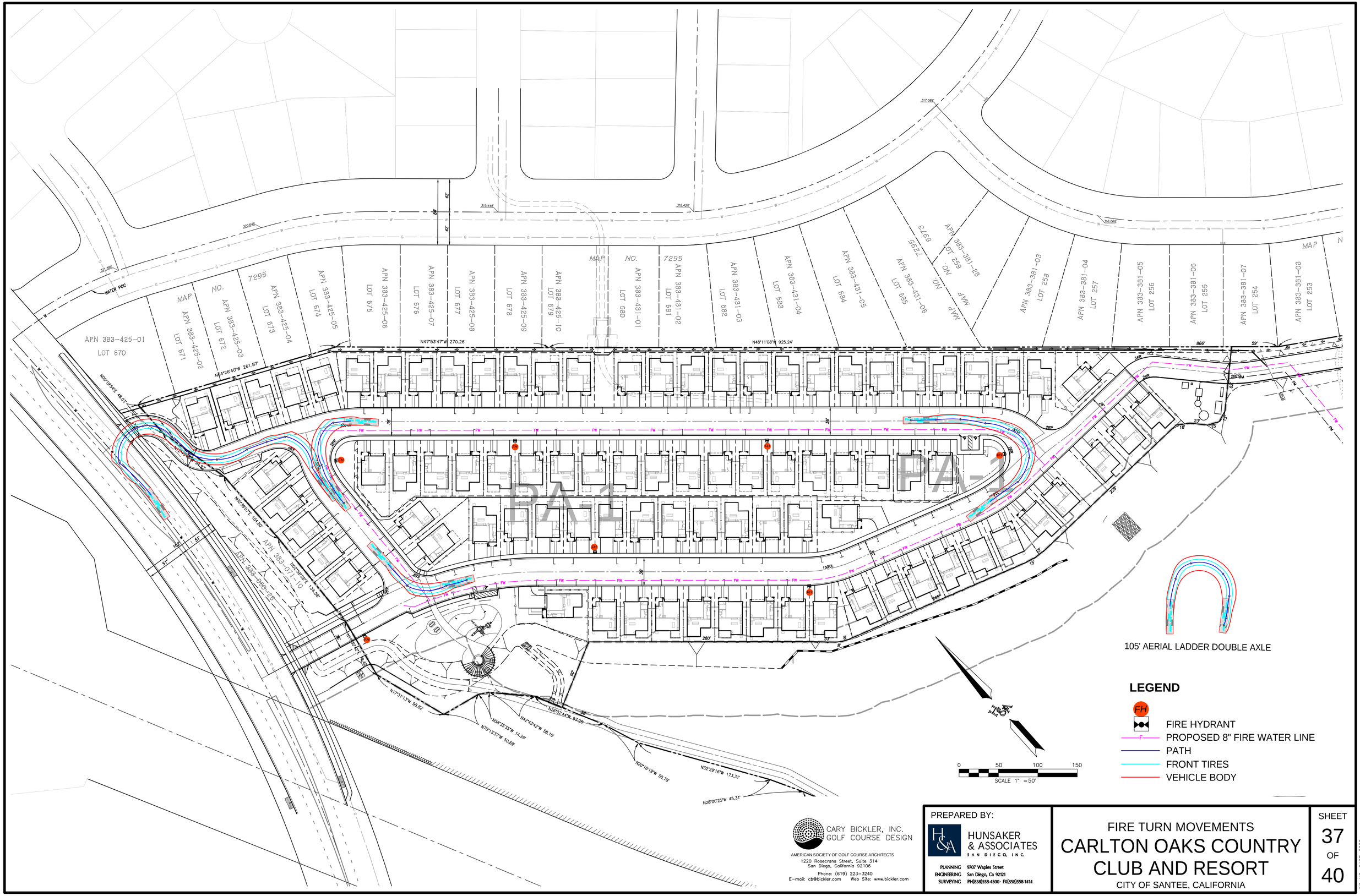
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FIRE HOSE PULL
CARLTON OAKS COUNTRY CLUB AND RESORT
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SHEET 36 OF 40

WO NO. 2167-0228

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FIRE TURN MOVEMENTS
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 37 OF 40

WO NO. 2167-0228

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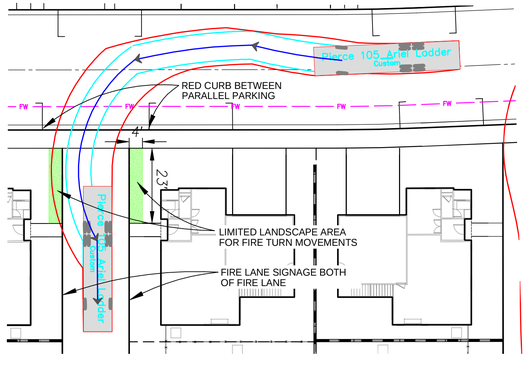
SEE DETAIL BELOW

DA 2

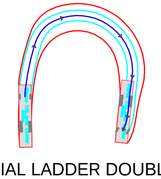
DA 2

SCALE 1" = 50'

0 50 100 150



TYPICAL 20' FIRE LANE DETAIL
NOT TO SCALE



105' AERIAL LADDER DOUBLE AXLE
NOT TO SCALE

LEGEND

- FH — FIRE HYDRANT
- F — PROPOSED 8" FIRE WATER LINE
- PATH
- FRONT TIRES
- VEHICLE BODY

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING
ENGINEERING
SURVEYING

9707 Waples Street
San Diego, Ca 92121
PH(858)558-4500- FX(858)558-1414

FIRE TURN MOVEMENTS

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 38 OF 40

WO NO. 2167-0228

R:\1759\&Pln\Santee\1759 Site Plan Sht 37,38,40.dwg[]May-16-2025:09:03

APN 383-320-11
LOT 26

APN 383-320-12
LOT 25

APN 383-320-13
LOT 24

APN 383-320-14
LOT 23

APN 383-320-15
LOT 22

APN 383-320-16
LOT 21

APN 383-245-01

APN 383-245-02

MAP NO. 4402

APN 383-221-08 LOT 17

APN 383-221-07 LOT 16

APN 383-221-06 LOT 15

APN 383-221-05 LOT 14

APN 383-241-07 LOT 7

APN 383-241-06 LOT 6

APN 383-241-05 LOT 5

APN 383-241-04 LOT 4

APN 383-241-03 LOT 3

APN 383-241-02 LOT 2

APN 383-241-01 LOT 1

MAP NO. 11166

MAP NO. 5417

MAP NO. 4402

N72°00'21"E 322.69'

N72°00'21"E 947.03'

N72°00'21"E 959.81'

N17°59'39"W 120.03'

N18°00'00"W 139.37'

N83°15'21"E 407.29'

N18°06'50"W 138.17'

N13°27'55"W 140.79'

N69°13'53"E 142.04'

S6°34'10"E 279.97'

SCALE 1" = 50'

0 50 100 150

PA-2

PA-2

Well No. 2

LEGEND

FH — FIRE HYDRANT

F — PROPOSED 8" FIRE WATER LINE

PATH

FRONT TIRES

VEHICLE BODY

105' AERIAL LADDER DOUBLE AXLE

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500· FX(858)558-1414

FIRE TURN MOVEMENTS

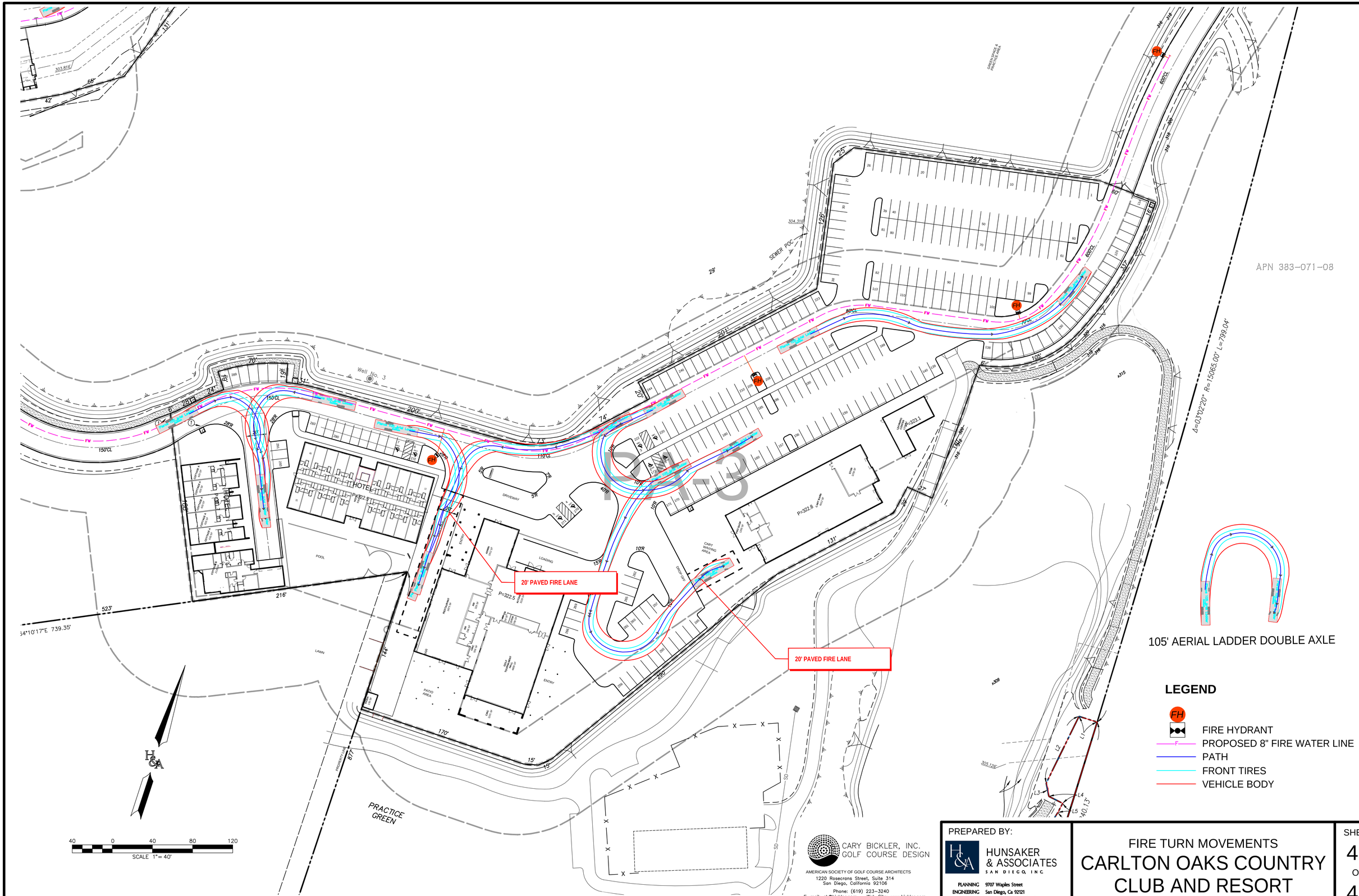
CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 39 OF 40

WO NO. 2167-0228

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CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
1220 Rosecrans Street, Suite 314
San Diego, California 92106
Phone: (619) 223-3240
E-mail: cb@bickler.com Web Site: www.bickler.com

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING
ENGINEERING
SURVEYING
9707 Waples Street
San Diego, Ca 92121
PH(858)558-4500- FX(858)558-1414

FIRE TURN MOVEMENTS
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

SHEET 40 OF 40

WO NO. 2167-0228

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APPENDIX A

MT-2 Forms

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency

OVERVIEW & CONCURRENCE FORM

OMB Control Number: 1660-0016
Expiration: 1/31/2024

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.
PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).
ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.
DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

A. REQUESTED RESPONSE FROM DHS-FEMA

This request is for a (check one):

☒ CLOMR: A letter from DHS-FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72). All CLOMRs require documentation of compliance with the Endangered Species Act. Refer to the Instructions for details.

☐ LOMR: A letter from DHS-FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See 44 CFR Ch. 1, Parts 60, 65 & 72).

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
060703	City of Santee; San Diego County	CA; CA	06073C	1634G;1651G;1653G	05/16/2012
060295	City of San Diego; San Diego County	CA; CA	06073C	1634G	05/16/2012

2. a. Flooding Source: San Diego River

b. Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH) ☐ Alluvial Fan ☐ Lakes ☐ Other (Attach Description)

3. Project Name/Identifier: Carlton Oaks Country Club and Resort/ TM 2019-1 & DR 2019-5

4. FEMA zone designations (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

a. Effective: AE, X

b. Revised: AE, X

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

- [x] Physical Change
- [ ] Improved Methodology/Data
- [x] Regulatory Floodway Revision
- [ ] Base Map Changes
- [ ] Coastal Analysis
- [x] Hydraulic Analysis
- [ ] Hydrologic Analysis
- [ ] Corrections
- [ ] Weir-Dam Changes
- [ ] Levee Certification
- [ ] Alluvial Fan Analysis
- [ ] Natural Changes
- [x] New Topographic Data
- [ ] Other (Attach Description)

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

Structures:
- [ ] Channelization
- [ ] Levee/Floodwall
- [x] Bridge/Culvert
- [ ] Dam
- [x] Fill
- [ ] Other (Attach Description)

6. [x] Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

Has the review fee for the appropriate request category been included? [x] Yes Fee amount: $ 6500

[ ] No, Attach Explanation

- **Please see the DHS-FEMA Web site at http://www.fema.gov/forms-documents-and-software/flood-map-related-fees for Fee Amounts and Exemptions.**

D. SIGNATURES

1. REQUESTOR'S SIGNATURE

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: Alisa S. Vialpando	Company: Hunsaker & Associates San Diego, Inc.
Mailing Address: 9707 Waples Street, San Diego, CA 92121	Daytime Telephone: (858) 558-4500 Fax No.: (858) 558-1414
	E-mail Address: AVialpando@HunsakerSD.com
	Date: 02/06/2024

Signature of Requestor (required): Alisa S. Vialpando

2. COMMUNITY CONCURRENCE

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirements for when fill is placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: Carl Schmitz P.E., Director of Engineering / City Engineer

Mailing Address: 10601 N. Magnolia Avenue Santee, CA 92071	Community Name: City of Santee
	Daytime Telephone: 619-258-4100X169 Fax No.:
	E-mail Address:
Community Official's Signature (required):	Date: 4/8/24

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

☒ Physical Change	☐ Improved Methodology/Data	☒ Regulatory Floodway Revision	☐ Base Map Changes
☐ Coastal Analysis	☒ Hydraulic Analysis	☐ Hydrologic Analysis	☐ Corrections
☐ Weir-Dam Changes	☐ Levee Certification	☐ Alluvial Fan Analysis	☐ Natural Changes
☒ New Topographic Data	☐ Other (Attach Description)		

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

Structures: ☐ Channelization	☐ Levee/Floodwall	☒ Bridge/Culvert	
☐ Dam	☒ Fill	☐ Other (Attach Description)	

6. ☒ Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☒ Yes Fee amount: $ 6500

☐ No, Attach Explanation

- **Please see the DHS-FEMA Web site at http://www.fema.gov/forms-documents-and-software/flood-map-related-fees for Fee Amounts and Exemptions.**

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Mailing Address: 9707 Waples Street, San Diego, CA 92121	Daytime Telephone: (858) 558-4500 Fax No.: (858) 558-1414
	E-mail Address: AVialpando@HunsakerSD.com
	Date: 02/06/2024

Signature of Requestor (required): Alisa S. Vialpando

DSD Proj # 645381
Carlton Oaks Country Club & Resort

2. COMMUNITY CONCURRENCE

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirements for when fill is placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. For Conditional LOMR requests, the applicant has documented Endangered Species Act (ESA) compliance to FEMA prior to FEMA's review of the Conditional LOMR application. For LOMR requests, I acknowledge that compliance with Sections 9 and 10 of the ESA has been achieved independently of FEMA's process. For actions authorized, funded, or being carried out by Federal or State agencies, documentation from the agency showing its compliance with Section 7(a)(2) of the ESA will be submitted. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title: Emir Williams, Floodplain Management, Stormwater Department

Mailing Address: 9370 Chesapeake Drive, Suite 100 San Diego, CA 92123	Community Name: City of San Diego
	Daytime Telephone: 619-235-1000 Fax No.: N/A
	E-mail Address: Ewilliams@sandiego.gov

Community Official's Signature (required): Emir Williams Date: 06/14/2024

3. CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Alisa S.Vialpando		License No.: 47945	Expiration Date: 12/31/2025
Company Name: Hunsaker Associates SAn Diego, Inc.		Mailing Address: 9707 Waples Street, San Diego, CA 92121	
Telephone No.: (858) 558-4500	Fax No.: (858) 558-1414		
E-mail Address: AVialpando@HunsakerSD.com			
Signature: Alisa S. Vialpando			Date: 02/06/2024

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if ...
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☒ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

☒ Physical Change	☐ Improved Methodology/Data	☒ Regulatory Floodway Revision	☐ Base Map Changes
☐ Coastal Analysis	☒ Hydraulic Analysis	☐ Hydrologic Analysis	☐ Corrections
☐ Weir-Dam Changes	☐ Levee Certification	☐ Alluvial Fan Analysis	☐ Natural Changes
☒ New Topographic Data	☐ Other (Attach Description)		

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following structures (check all that apply)

Structures:	☐ Channelization	☐ Levee/Floodwall	☒ Bridge/Culvert
	☐ Dam	☒ Fill	☐ Other (Attach Description)

6. ☒ Documentation of ESA compliance is submitted (required to initiate CLOMR review). Please refer to the instructions for more information.

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☒ Yes Fee amount: $ 6500

☐ No, Attach Explanation

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Mailing Address: 9707 Waples Street, San Diego, CA 92121	Daytime Telephone: (858) 558-4500	Fax No.: (858) 558-1414
	E-mail Address: AVialpando@HunsakerSD.com	
	Date: 02/06/2024	

Signature of Requestor (required): Alisa S. Vialpando

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Community Official's Name and Title:		
Mailing Address:	Community Name:	
	Daytime Telephone:	Fax No.:
	E-mail Address:	
Community Official's Signature (required):	Date:	

3. CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.2(b) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: Alisa S.Vialpando		License No.: 47945	Expiration Date: 12/31/2025
Company Name: Hunsaker Associates SAn Diego, Inc.		Mailing Address: 9707 Waples Street, San Diego, CA 92121	
Telephone No.: (858) 558-4500	Fax No.: (858) 558-1414		
E-mail Address: AVialpando@HunsakerSD.com			
Signature: Alisa S. Vialpando		Date: 02/06/2024	

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and (Number)	Required if …
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☒ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

Seal (Optional)

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

RIVERINE HYDROLOGY & HYDRAULICS FORM (FORM 2)

OMB Control Number: 1660-0016
Expiration: 1/31/2024

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.
PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).
ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.
DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

Flooding Source: San Diego River

Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply):

☒ Not revised (skip to section B) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	Effective/FIS (cfs)	Revised (cfs)

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Precipitation/Runoff Model → Specify Model: _____ Duration: _____ Rainfall Amount: _____

☐ Statistical Analysis of Gage Records

☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters), and documentation to support the new analysis.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review. 4. HEC-RAS File Description**:

5. Impacts of Sediment Transport on Hydrology

Is the hydrology for the revised flooding source(s) affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevation (ft.)	
			Effective	Proposed/Revised
Downstream Limit*	Downstream of West Hills Pkwy Bridge	230	301.52	301.76
Upstream Limit*	Downstream of Carlton Hills Blvd	355	321.67	321.84

*Proposed/Revised elevations must tie-into the Effective elevations within 0.5 foot at the downstream and upstream limits of revision.

2. Hydraulic Method/Model Used: HEC-RAS 5.0.7 March 2019

☒ Steady State ☐ Unsteady State ☒ One-Dimensional ☐ Two-Dimentional

3. Pre-Submittal Review of Hydraulic Models*

DHS-FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS.

4. HEC-RAS File Description**:

Models Submitted	Natural Run		Floodway Run		Datum
Duplicate Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
	USDRFWY.DAT	Plan 01	USDRFWY.DAT	Plan 01	NGVD 29
Corrected Effective Model*	File Name:	Plan Name:	File Name:	Plan Name:	
	CorrectedEffective	Plan 01	CorrectedEffective	Plan 01	NGVD 29
Existing or Pre-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
	CarltonOaksExisti	Plan 01	CarltonOaksExisti	Plan 01	NGVD 29
Revised or Post-Project Conditions Model	File Name:	Plan Name:	File Name:	Plan Name:	
	CarltonOaksPR	Plan 01	CarltonOaksPR	Plan 04	NGVD 29
Other - (attach description)	File Name:	Plan Name:	File Name:	Plan Name:	

* For details, refer to the corresponding section of the instructions.
**See instructions for information about modeling other then HEC-RAS. ☒ Digital Models Submitted? (Required)

C. MAPPING REQUIREMENTS

A **certified topographic work map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Topographic Information: ☒ Digital Mapping (GIS/CADD) Data Submitted (preferred)

Source: Aerial Survey and Proposed Plans | Date: 06-12-2014

Vertical Datum: NGVD 29 | Spatial Projection: NAD83 CCS '83 California, Zone 6

Accuracy: 1 foot (Note: For cross sections located out of the project area (XS# 330-355, and 242-220), cross sections from the corrected effective model were used to determine tie in locations.)

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM**, at the same scale as the original, annotated to show the boundaries of the revised 1%-and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%-and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area on revision.

☒ Annotated FIRM and/or FBFM (Required)

D. COMMON REGULATORY REQUIREMENTS*

1. For LOMR/CLOMR requests, do Base Flood Elevations (BFEs) or Special Flood Hazard Areas (SFHAs) increase compared to the effective BFEs? ☒ Yes ☐ No

   If Yes, please attach **proof of property owner notification**. Examples of property owner notifications can be found in the MT-2 Form 2 Instructions.

2. For CLOMR requests, if either of the following is true, please submit **evidence of compliance with Section 65.12 of the NFIP regulations**:

   - The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot compared to pre-project conditions.
   - The proposed project encroaches upon a SFHA with or without BFEs established and would result in increases above 1.00 foot compared to pre-project conditions.

3. Does the request involve the placement or proposed placement of fill? ☒ Yes ☐ No

   If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(A)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

4. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☐ No

   If Yes, attach **evidence of regulatory floodway revision notification**. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.

5. For CLOMR requests, please submit documentation to FEMA and the community to show that you have complied with Sections 9 and 10 of the Endangered Species Act (ESA). For actions authorized, funded, or being carried out by Federal or State agencies, please submit documentation from the agency showing its compliance with Section 7(a)(2) of the ESA. Please see the MT-2 instructions for more detail.

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

RIVERINE STRUCTURES FORM (FORM 3)

OMB Control Number: 1660-0016
Expiration: 1/31/2024

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472 , Paperwork Reduction Project (1660-0016). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

PRIVACY ACT STATEMENT

AUTHORITY: The National Flood Insurance Act of 1968, Public Law 90-448, as amended by the Flood Disaster Protection Act of 1973, Public Law 93-234.
PRINCIPAL PURPOSE(S): This information is being collected for the purpose of determining an applicant's eligibility to request changes to National Flood Insurance Program (NFIP) Flood Insurance Rate Maps (FIRM).
ROUTINE USE(S): The information on this form may be disclosed as generally permitted under 5 U.S.C § 552a(b) of the Privacy Act of 1974, as amended. This includes using this information as necessary and authorized by the routine uses published in DHS/FEMA/NFIP/LOMA-1 National Flood Insurance Program (NFIP); Letter of Map Amendment (LOMA) February 15, 2006, 71 FR 7990.
DISCLOSURE: The disclosure of information on this form is voluntary; however, failure to provide the information requested may delay or prevent FEMA from processing a determination regarding a requested change to a (NFIP) Flood Insurance Rate Maps (FIRM).

Flooding Source: San Diego River

Note: Fill out one form for each flooding source studied

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization:	complete Section B
Bridge/Culvert:	complete Section C
Dam:	complete Section D
Levee/Floodwall:	complete Section E
Sediment Transport:	complete Section F (if required)

Description Of Modeled Structure

1. Name of Structure: Proposed Box Culvert under the Resort Entry Road

   Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: 420 ft downstream of Cross section 320, crossing under the proposed entry road of the Resort Area

   Downstream Limit/Cross Section: 320

   Upstream Limit/Cross Section: 330

2. Name of Structure: Proposed Bridge Crossing from residential north to proposed Resort

   Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: Bridge crossing from the proposed residential north to the resort. 180 ft downstream of cross section 290

   Downstream Limit/Cross Section: 290

   Upstream Limit/Cross Section: 300

3. Name of Structure: Existing West Hills Pkwy Bridge

   Type (check one): ☐ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

   Location of Structure: West of the project at West Hills Pkwy

   Downstream Limit/Cross Section: 242

   Upstream Limit/Cross Section: 244

NOTE: FOR MORE STRUCTURES, ATTACH ADDITIONAL PAGES AS NEEDED.

B. CHANNELIZATION

Flooding Source: _____

Name of Structure: _____

1. Hydraulic Considerations

The channel was designated to carry _____(cfs) and/or the _____ - year flood

The design elevation in the channel is based on (check one):

☐ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet to channel ☐ At Drop Structures ☐ At Transitions

☐ Other locations (specify): _____

2. Channel Design Plans

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Accessory Structures

The channelization includes (check one):

☐ Levees [Attach Section E (Levee/Floodwall)] ☐ Drop structures ☐ Superelevated sections ☐ Energy dissipater

☐ Transitions in cross sectional geometry ☐ Debris basin/detention basin [Attach Section D (Dam/Basin)] ☐ Weir

☐ Other (Describe): _____

4. Sediment Transport Considerations

Are the hydraulics of the channel affected by sediment transport? ☐ Yes ☐ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: San Diego River

Name of Structure: Proposed Box Culvert under the Resort Entry Road

1. This revision reflects (check one):

☒ Bridge/Culvert not modeled in the FIS Proposed culvert and bridge

☐ Modified Bridge/Culvert previously modeled in the FIS

☒ Revised analysis of Bridge/Culvert previously modeled in the FIS Existing West Hills Parkway Bridge in the duplicate effective model (HEC-2), was adjusted to reflect the current methodology for bridge modeling (using HEC-RAS 5.0.7).

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8): HEC-RAS

If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

☒ Dimensions (height, width, span, radius, length)
☒ Shape (culverts only)
☐ Material
☐ Beveling and Rounding
☐ Wink Wall Angle
☐ Skew Angle
☒ Distance between Cross Sections
☒ Erosion Protection
☒ Low Chord Elevations - Upstream and Downstream
☒ Top of Road Elevations - Upstream and Downstream
☒ Structure Invert Elevations - Upstream and Downstream
☐ Stream Invert Elevations - Upstream and Downstream
☒ Cross-Section Locations

4. Sediment Transport Considerations

Are the hydraulics of the channel affected by sediment transport? ☐ Yes ☒ No

If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

There is no indication from historical records that sediment transport can affect the BFE. Additionally,based on the stream morphology, vegetative cover, development of the watershed, and bank conditions, there is no potential for debris and sediment transport to affect the BFE or a structure

D. DAM/BASIN

Flooding Source: _____

Name of Structure: _____

1. This request is for (check one): ☐ Existing Dam/Basin ☐ New Dam/Basin ☐ Modification of existing Dam/Basin

2. The Dam/Basin was designed by (check one): ☐ Federal Agency ☐ State Agency ☐ Private Organization

   ☐ Local Government Agency Name of the Agency or Organization: _____

3. The Dam was permitted as (check one): ☐ Federal Dam ☐ State Dam

   Provide the permit or identification number (ID) for the dam and the appropriate permitting agency or organization

   Permit or ID number _____ Permitting Agency or Organization _____

   a. ☐ Local Government Dam ☐ Private Dam

   Provided related drawings, specification and supporting design information.

4. Does the project involve revised hydrology? ☐ Yes ☐ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2).

   Was the dam/basin designed using critical duration storm? (must account for the maximum volume of runoff)

   ☐ Yes, provide supporting documentation with your completed Form 2.

   ☐ No, provide a written explanation and justification for not using the critical duration storm.

5. Does the submittal include debris/sediment yield analysis? ☐ Yes ☐ No

   If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why debris/sediment analysis was not considered?

6. Does the Base Flood Elevation behind the dam/basin or downstream of the dam/basin change? ☐ Yes ☐ No

   If Yes, complete the Riverine Hydrology & Hydraulics Form (Form 2) and complete the table below.

	Stillwater Elevation Behind the Dam/Basin	
FREQUENCY (% annual chance)	FIS	REVISED
10-year (10%)		
50-year (2%)		
100-year (1%)		
500-year (0.2%)		
Normal Pool Elevation		

7. Please attach a copy of the formal Operation and Maintenance Plan

E. LEVEE/FLOODWALL

1. System Elements

   a. This Levee/Floodwall analysis is based on (check one): ☐ Upgrading of an existing levee/floodwall system ☐ A newly constructed levee/floodwall system ☐ Reanalysis of an existing levee/floodwall system

   b. Levee elements and locations are (check one):

   ☐ Earthen embankment, dike, berm, etc Stationed _____ to _____

   ☐ Structured floodwall Stationed _____ to _____

   ☐ Other (describe): _____ Stationed _____ to _____

E. LEVEE/FLOODWALL (CONTINUED)

c. Structural Type (check one): ☐ Monolithic cast-in place reinforced concrete ☐ Reinforced concrete masonry block ☐ Sheet piling ☐ Other (describe): _____

d. Has this levee/floodwall system been certified by a Federal agency to provide protection from the base flood?

☐ Yes ☐ No

If Yes, by which agency? _____

e. Attach certified drawings containing the following information (indicate drawing sheet numbers):

1. Plan of the levee embankment and floodwall structures. Sheet Numbers: _____
2. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers: _____
3. A profile of the levee/floodwall system showing the Base Flood Elevation (BFE), levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers: _____
4. A layout detail for the embankment protection measures. Sheet Numbers: _____
5. Location, layout, and size and shape of the levee embankment features, foundation treatment, Floodwall structure, closure structures, and pump stations. Sheet Numbers: _____

2. Freeboard

a. The minimum freeboard provided above the BFE is:

_____

Riverine

3.0 feet or more at the downstream end and throughout	☐ Yes	☐ No
3.5 feet or more at the upstream end	☐ Yes	☐ No
4.0 feet within 100 feet upstream of all structures and/or constrictions	☐ Yes	☐ No

Coastal

1.0 foot above the height of the one percent wave associated with the 1%-annual-chance stillwater surge elevation or maximum wave runup (whichever is greater).	☐ Yes	☐ No
2.0 feet above the 1%-annual-chance stillwater surge elevation	☐ Yes	☐ No

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation addressing Paragraph 65.10(b)(1)(ii) of the NFIP Regulations.

If No is answered to any of the above, please attach an explanation.

b. Is there an indication from historical records that ice-jamming can affect the BFE? ☐ Yes ☐ No

3. Closures

a. Openings through the levee system (check one): ☐ Exists ☐ Does not exist

If opening exists, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note: Geotechnical and geologic data
In addition to the required detailed analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers [USACE] EM-1110-2-1906 Form 2086.)

E. LEVEE/FLOODWALL (CONTINUED)

4. Embarkment Protection

a. The maximum levee slope land side is: _____

b. The maximum levee slope flood side is: _____

c. The range of velocities along the levee during the base flood is: _____ (min) to _____ (max)

d. Embankment material is protected by (describe what kind): _____

e. Riprap Design Parameters (check one): ☐ Velocity ☐ Tractive Stress
Attach referrences

Reach	Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
					D_{100}	D_{50}	Thickness	
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								
Sta _____ to _____								

(Extend table on an added sheet as needed and reference each entry)

f. Is a bedding/filter analysis and design attached? ☐ Yes ☐ No

g. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

Attach engineering analysis to support construction plans.

5. Embarkment and Foundation Stability

a. Identify locations and describe the basis for selection of critical location for analysis:

☐ Overall height: STA:_____ , height _____ ft.

☐ Limiting foundation soil strength:

Strength ϕ = _____ degrees, c = _____ psf

Slope: SS = _____ (h) to _____ (v)

(Repeat as needed on an added sheet for additional locations)

b. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):

c. Summary of stability analysis results: _____

E. LEVEE/FLOODWALL (CONTINUED)

5. Embarkment and Foundation Stability (continued)

Case	Loading Conditions	Critical Safety Factor	Criteria (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: USACE EM-1110-2-1913 Table 6-1)

d. Was a seepage analysis for the embankment performed? ☐ Yes ☐ No
If Yes, describe methodology used:

e. Was a seepage analysis for the embankment performed? ☐ Yes ☐ No

f. Were uplift pressures at the embankment landside toe checked? ☐ Yes ☐ No

g. Were seepage exit gradients checked for piping potential? ☐ Yes ☐ No

h. The duration of the base flood hydrograph against the embankment is _____ hours.

Attach engineering analysis to support construction plans.

6. Floodwall and Foundation Stability

a. Describe analysis submittal based on Code (check one): ☐ UBC (1988) ☐ Other (specify): _____

b. Stability analysis submitted provides for: ☐ Overturning ☐ Sliding ☐ If not, explain: _____

c. Loading included in the analyses were: ☐ Lateral earth @ P_A = _____ psf; P_p = _____ psf

☐ Surcharge-Slope @ _____, ☐ surface _____ psf

☐ Wind @ P_w = _____ psf

☐ Seepage (Uplift); _____ ☐ Earthquake @ P_{eq} = _____ %g

☐ 1%-annual-chance significant wave height: _____ ft.

☐ 1%-annual-chance significant wave period: _____ sec.

d. Summary of Stability Analysis Results: Factors of Safety.
Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

Loading Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)
Note: (Extend table on an added sheet as needed and reference)

E. LEVEE/FLOODWALL (CONTINUED)

e. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

f. Foundation scour protection ☐ is, ☐ is not provided. If provided, attach explanation and supporting documentation:

Attach engineering analysis to support construction plans.

7. Settlement

a. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin?

b. The computed settlement range is _____ ft. to _____ ft.

c. Settlement of the levee crest is determined to be primarily from : ☐ Foundation consolidation

☐ Embankment compression ☐ Other (Describe): _____

d. Differential settlement of floodwalls ☐ has ☐ has not been accommodated in the structural design and construction

Attach engineering analysis to support construction plans.

8. Interior Drainage

a. Specify size of each interior watershed:

Drainage to pressure conduit: _____ acres

Drainage to ponding area: _____ acres

b. Relationship Established:

Ponding elevation vs. storage	☐ Yes	☐ No
Ponding elevation vs. gravity flow	☐ Yes	☐ No
Differential head vs. gravity flow	☐ Yes	☐ No

c. The river flow duration curve is enclosed: ☐ Yes ☐ No

d. Specify the discharge capacity of the head pressure conduit: _____ cfs

e. Which flooding conditions were analyzed?

Gravity flow (Interior Watershed)	☐ Yes	☐ No
Common storm (River Watershed)	☐ Yes	☐ No
Historical ponding probability	☐ Yes	☐ No
Coastal wave overtopping	☐ Yes	☐ No

If No for any of the above, attach explanation.

f. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection.
☐ Yes ☐ No If No, attach explanation.

g. The rate of seepage through the levee system for the base flood is : _____ cfs

h. The length of levee system used to drive this seepage rate in item g: _____ ft.

E. LEVEE/FLOODWALL (CONTINUED)

8. Interior Drainage (continued)

i. Will pumping plants be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants: _____ For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operation be automatic? ☐ Yes ☐ No

If the pumps are electric; are there backup power sources? ☐ Yes ☐ No

(Reference: USACE EM-1110-2-3101, 3102, 3103, 3104, and 3105)
Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

9. Other Design Criteria

a. The following items have been addressed as stated:

Liquefaction ☐ is ☐ is not a problem

Hydrocompaction ☐ is ☐ is not a problem

Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

b. For each of these problems, state the basic facts and corrective action taken:

Attach supporting documentation

c. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure? ☐ Yes ☐ No

d. Sediment Transport Considerations:

Was sediment transport considered? ☐ Yes ☐ No

If Yes, then fill out Section F (Sediment Transport). If No, then attach your explanation for why sediment transport was not considered.

10. Operational Plan and Criteria

a. Are the planned/installed works in full compliance with Part 65.10 of the NFIP Regulations? ☐ Yes ☐ No

b. Does the operation plan incorporate all the provisions for closure devices as required in Paragraph 65.10(c)(1) of the NFIP regulations? ☐ Yes ☐ No

c. Does the operation plan incorporate all the provisions for interior drainage as required in Paragraph 65.10(c)(2) of the NFIP regulations? ☐ Yes ☐ No

If the answer is No to any of the above, please attach supporting documentation.

E. LEVEE/FLOODWALL (CONTINUED)

11. Maintenance Plan

Please attach a copy of the fomal maintenance plan for the levee/floodwall

12. Operational and Maintenance Plan

Please attach a copy of the formal Operations and Maintenance Plan for the levee/floodwall.

CERTIFICATION OF THE LEVEE DOCUMENTATION

This certification is to be signed and sealed by a licensed registered professional engineer authorized by law to certify elevation information data, hydrologic and hydraulic analysis, and any other supporting information as per NFIP regulations paragraph 65.10(e) and as described in the MT-2 Forms Instructions. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: _____ License No.: _____ Expiration Date: _____

Company Name: Telephone No.: _____ Fax No.: _____

Signature: _____ Date: _____ E-mail Address: _____

CERTIFICATION OF THE LEVEE DOCUMENTATION

Flooding Source: _____

Name of Structure: _____

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the Base Flood Elevation (BFE); and/or based on the stream morphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including scour and deposition) to affect the BFEs, then provide the following information along with the supporting documentation:

Sediment load associated with the base flood discharge: Volume _____ acres-feet

Debris load associated with the base flood discharge: Volume _____ acres-feet

Sediment transport rate _____ (percent concentration by volume)

Method used to estimate sediment transport: _____

Most sediment transport formulas are intended for a range of hydraulic conditions and sediment sizes; attach a detailed explanation for using the selected method.

Method used to estimate scour and/or deposition: _____

Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport: _____

Please note that bulked flows are used to evaluate the performance of a structure during the base flood; however, FEMA does not map BFEs based on bulked flows.

If a sediment analysis has not been performed, an explanation as to why sediment transport (including scour and deposition) will not affect the BFEs or structures must be provided.

There is no indication from historical records that sediment transport can affect the BFE. Additionally,based on the stream morphology, vegetative cover, development of the watershed, and bank conditions, there is no potential for debris and sediment transport to affect the BFE or a structure.

PROPOSED EASEMENTS

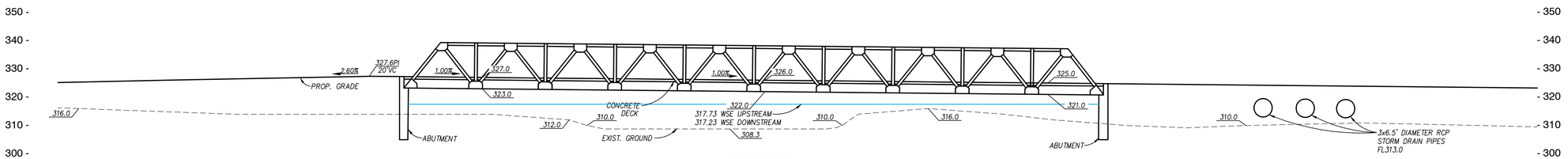
1. PVT. 16' RECIPROCAL ACCESS
2. 25' PUBLIC SEWER
3. 51' PVT. ACCESS
4. 25' WATER TO P.D.M.W.D.
5. 6' PUBLIC TRAIL
6. 10' PUBLIC TRAIL
7. 14' PUBLIC TRAIL
8. PVT. ACCESS WIDTH VARIES

DESIGN NOTES

1. PROP. PRIVATE STORM DRAIN
2. PROP. PRIVATE 84" RCP STORM DRAIN
3. PROP. PUBLIC 15" PVC SEWER
4. PROP. PRIVATE 8" PVC SEWER
5. PROP. PRIVATE 4" PVC SEWER
6. PROP. PRIVATE 4" PVC SEWER FORCE MAIN
7. PROP. PUBLIC 10" PVC WATER
8. NOT USED
9. PROP. PRIVATE 8" PVC FIRE WATER
10. PROP. PRIVATE 6" PVC WATER
11. PROP. PRIVATE 4" PVC WATER
12. PROP. MASTER WATER METER
13. PROP. BACKFLOW
14. PROP. 4" MOD. ROLLED CURB
15. PROP. PRIVATE 10" PVC FIRE WATER
16. PROP. PRIVATE 12" PVC FIRE WATER
17. PROP. PRIVATE 90" RCP STORM DRAIN
18. PROP. PRIVATE 42" RCP STORM DRAIN
19. PROP. PRIVATE 43"x68" RCP STORM DRAIN
20. PROP. PRIVATE 18" RCP STORM DRAIN
21. PROP. PRIVATE 24"x38" RCP STORM DRAIN
22. PROP. PRIVATE 36" RCP STORM DRAIN
23. UNIMPROVED GRADED BENCH FUTURE TRAIL BY OTHERS

PVT. DRIVE
PD LAND USE
EXIST. 15" VCP SEWER PER DWG. 16A
PROP. 6' PUBLIC DG TRAIL
NO PARKING
BRIDGE
BRIDGE ABUTMENT
SAN DIEGO RIVER (NORTH)
FEMA FLOOD PLAIN 100 YR. PROP.
SAVE 2 MATURE SYCAMORES, WELL AND ELECTRICAL BOX
HOTEL
SCALE 1"= 40'

PLAN



SECTION "A"

SCALE: HORIZ/VERT 1"=20'

CARY BICKLER, INC.
GOLF COURSE DESIGN
AMERICAN SOCIETY OF GOLF COURSE ARCHITECTS
1220 Rosecrans Street, Suite 314
San Diego, California 92106
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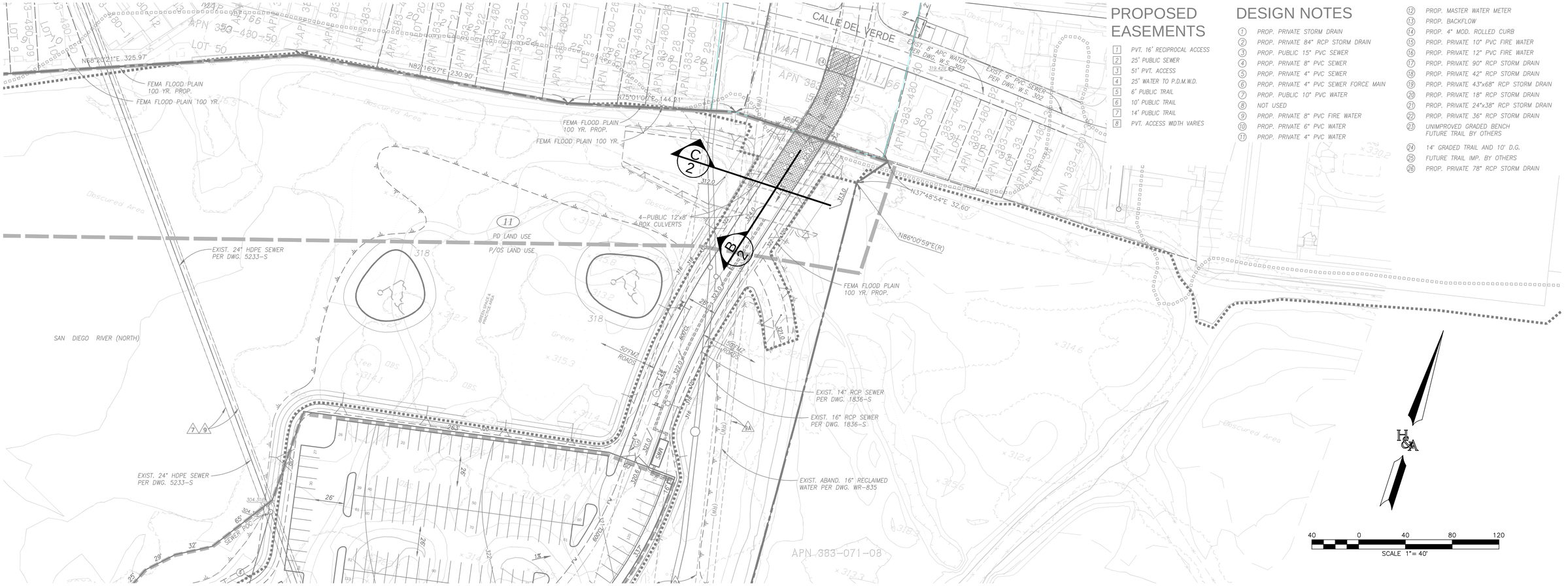
PREPARED BY:
HUNSAKER & ASSOCIATES
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ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

BRIDGE & CULVERT SECTIONS EXHIBIT
CARLTON OAKS COUNTRY CLUB AND RESORT
CITY OF SANTEE, CALIFORNIA

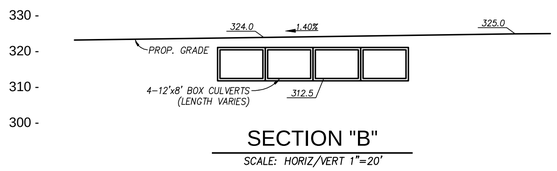
SHEET 1 OF 2

WO NO. 2167-0228

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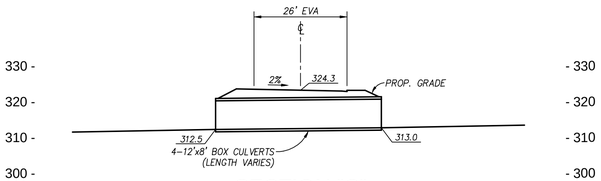


PLAN



SECTION "B"

SCALE: HORIZ/VERT 1"=20'



SECTION "C"

SCALE: HORIZ/VERT 1"=20'

CARY BICKLER, INC.
GOLF COURSE DESIGN
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BRIDGE & CULVERT SECTIONS EXHIBIT

CARLTON OAKS COUNTRY CLUB AND RESORT

CITY OF SANTEE, CALIFORNIA

SHEET 2 OF 2

WO NO. 2167-0228

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APPENDIX B

Endangered Species Act Compliance

February 12, 2024

Federal Emergency Management Agency
LOMC Clearinghouse
Attn: LOMC Manager
847 South Pickett Street
Alexandria, VA 22304-4605

Subject: Carlton Oaks Country Club and Resort – ESA Compliance

Dear LOMC Manager:

The purpose of this letter is to demonstrate how the Carlton Oaks Country Club and Resort (proposed project) will obtain Endangered Species Act (ESA) compliance, in conjunction with the application for CLOMR for the subject property. The attached biological technical report indicates the following:

- The proposed 169-acre Carlton Oaks Country Club and Resort Project is located at 9200 Inwood Drive, which is on the south side of Carlton Oaks Drive and the east side of West Hills Parkway, along the boundary between the City of Santee and the City of San Diego. Lands within the City of San Diego are covered by the MSCP San Diego Subarea Plan (City of San Diego 1997). The draft Santee MSCP Subarea Plan is used as the guidance document for projects occurring within the City of Santee, but the proposed project will not utilize the Santee MSCP Subarea Plan for ESA coverage.
- Focused, protocol-level surveys were conducted for ESA-listed species least Bell's vireo, coastal California gnatcatcher, and southwestern willow flycatcher, and for proposed threatened southwestern pond turtle. Focused surveys in 2019 and 2022 revealed multiple breeding pairs of least Bell's vireo throughout the biological study area (BSA). Surveys for California gnatcatcher, southwestern willow flycatcher, and southwestern pond turtle were negative and determined to be absent from the BSA. Other ESA species were not expected or determined to have low potential to occur based on biological determination including factors such as of lack of suitable habitat or being outside of the species range.
- The entire project site and most of the BSA is within designated USFWS Critical Habitat for least Bell's vireo. The physical and biological factors that support the feeding, nesting, roosting, and sheltering of least Bell's vireo are present in riparian woodland vegetation which generally contains both canopy and shrub layers. All riparian woodland vegetation within the BSA was included in the survey area for least Bell's vireo. The remainder of the BSA within the USFWS Critical Habitat does not contain primary constituent elements for least Bells' vireo; golf course vegetation outside of the riparian areas are not suitable habitat. Riparian habitat, including southern cottonwood-willow riparian forest, along the San Diego River (South Channel) and the northeastern corner of the site, are considered occupied habitat. The USFWS Carlsbad Fish and

Wildlife Office species occurrence data (USFWS 2018) also showed that least Bell's vireo were observed along the San Diego River (South Channel) in the southwestern area near West Hills Parkway in 2016. All mule-fat scrub and southern cottonwood-willow riparian forest in the BSA, with the exception of the isolated 0.37-acre riparian patch to the west of the existing golf clubhouse (between golf course and existing housing), were determined to be occupied by least Bell's vireo. Vireo were confirmed absent in the isolated riparian patch through protocol surveys conducted in 2019 and 2022.

- Per Section 4.2.3.1, *Impact-BIO-5. Least Bell's Vireo Breeding Habitat*, the proposed project would have permanent direct impacts on occupied least Bell's vireo breeding habitat within designated critical habitat within the City of Santee. The project would have no direct impacts on least Bell's vireo habitat within the City of San Diego.
- The proposed project includes several mitigation measures to compensate for loss of breeding habitat and to avoid breeding season impacts on least Bell's vireo. The following mitigation measures are relevant for least Bell's vireo:
    - MM-BIO-3 *Mitigate Permanent and Certain Temporary Impacts within City of Santee on Sensitive Riparian and Wetland Vegetation Communities* in Section 5.1.1, the project would provide compensatory mitigation for loss of riparian habitat at the ratios described in the MSCP Santee Subarea Plan.
    - MM-BIO-5 specifies the requirements for the Habitat Mitigation and Monitoring Plan (HMMP) which details how riparian mitigation would occur within mitigation sites.
    - MM-BIO-6 specifies the requirement for an RMP which would detail the long-term management of mitigation sites.
    - MM-BIO-15 *Mitigation, Monitoring, and Reporting Conditions for Potential Impacts to Occupied Least Bell's Vireo Habitat* is based on City of San Diego standard practices. It provides avoidance of direct habitat removal during the breeding season and provides for noise buffers to protect least Bell's vireo breeding in adjacent off-site riparian habitat.
    - MM-BIO-14. *Compensatory Mitigation of Impacts on Occupied Least Bell's Vireo Habitat* memorializes the requirement to obtain ESA coverage prior to the implementation of project impacts. It describes "Mitigation for direct impacts on occupied least Bell's vireo riparian habitat, identified by the USFWS as critical habitat for least Bell's vireo, shall be addressed through Section 7 consultation as part of the Clean Water Act Section 404 permitting process and the Fish and Game Code Section 2080 Incidental Take Permit (if required). The results of the Section 7 consultation and conditions of the Incidental Take Permit (if required) would determine the need, if any, for special conditions or habitat mitigation beyond the mitigation identified for impacts on riparian habitat identified in MM-BIO-3 and MM-BIO-4, the minimization of temporary noise impacts and avoidance of direct impacts as described in MM-BIO-15."

The project would have impacts on USACE jurisdictional waterways and would result in 'take' of least Bell's vireo through loss of habitat. As described in MM-BIO-14, the project will need to obtain permits prior to project implementation. As least Bell's vireo is an ESA listed species which occurs within habitat within and adjacent to the jurisdiction of the USACE, the USACE can conduct ESA

Section 7 consultation with the USFWS for this species. The project proponent would have a Biological Assessment prepared, which would detail the effects of the project on least Bell's vireo and which would be based on the information in the attached biological technical report. The Biological Assessment would be submitted as part of the permit application to USACE for a Clean Water Act Section 404 permit. The USFWS will utilize the Biological Assessment to prepare a biological opinion with a "no jeopardy" determination and with reasonable and prudent measures applied.

The USACE permit application and subsequent ESA Section 7 consultation with USFWS will be initiated after the circulation of the draft EIR.

Sincerely,



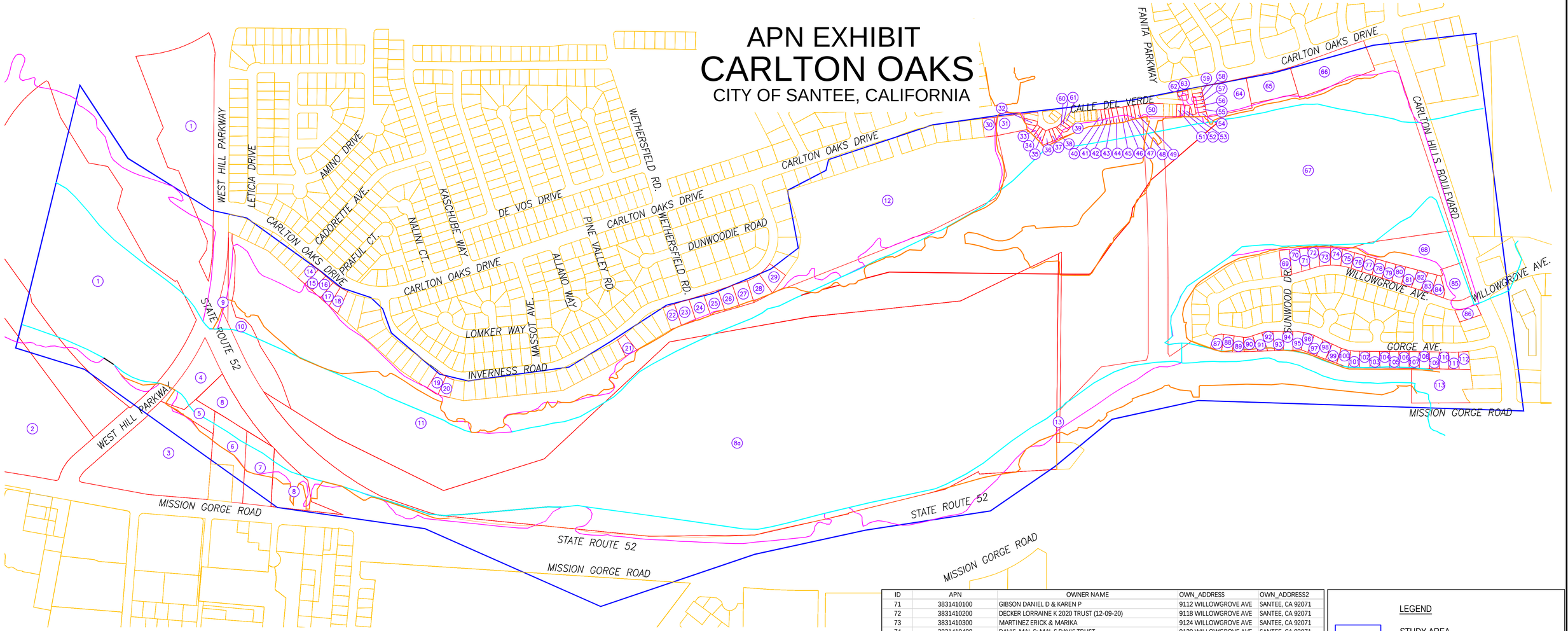
Dale Ritenour
Senior Biologist

Attachment: Biological Technical Report for the Carlton Oaks

APPENDIX C

Notifications and Support Documentation

APN EXHIBIT
CARLTON OAKS
CITY OF SANTEE, CALIFORNIA



ID	APN	OWNER NAME	OWN_ADDRESS	OWN_ADDRESS2
1	3830602000	OKTOGON MAST LLC	8440 MAST BLVD	SAN DIEGO, CA 92124
2	3830501400	MIDWEST TELEVISION INC	0 MISSION GORGE RD	SAN DIEGO, CA 92171
3	3830611001	AZIZIAN, SAM	59 Via Sovana	SANTEE, CA 92071
	3830611002	WAGNER, KARLI	60 Via Sovana	SANTEE, CA 92072
	3830611022	ODENBRETT MATTHEW & MARINA	80 Via Sovana	SANTEE, CA 92073
	38306-1026	SMITH BRIAN C	84 Via Sovana	SANTEE, CA 92074
	3830611025	ANCHETA MICHAEL B & CRYSTAL M	83 Via Sovana	SANTEE, CA 92075
	3830610903	NGUYEN LAM DUY & KHLOE TRAN REVOCABLE LIVING TRUST	93 Via Sovana	SANTEE, CA 92076
	3830610901	MILLER FAMILY 1996 TRUST (10-05-96)	91 Via Sovana	SANTEE, CA 92077
	3830610902	ORQUIA, AARON JOSEPH; ORQUIA, REBEKAH	92 Via Sovana	SANTEE, CA 92078
4	3830602500	COUNTY OF SAN DIEGO	0 MAST BLVD	SAN DIEGO, CA
5	3830610600	LYON TREVISO L L C	0 MISSION GORGE RD	SANTEE, CA 92071
6	3830610200	PRESERVATION TRUST (08-28-00)	7970 MISSION GORGE RD	SANTEE, CA 92071
7	3830610300	PRESERVATION TRUST (08-28-00)	7980 MISSION GORGE RD	SANTEE, CA 92071
8	3830800300	EAST CNTY ADVANCED WATER PURIFICATION JO,	0 MISSION GORGE RD	SAN DIEGO, CA 92171
8a	7601430700	ALIKA LLC	9200 INWOOD DR	SANTEE, CA 92071
9	3830602600	CITY OF SAN DIEGO	0 INWOOD DR	SAN DIEGO, CA 92171
10	3830711000	CITY OF SAN DIEGO	0 MAST BLVD	SANTEE, CA 92071
11	3830710900	ALIKA LLC	9200 INWOOD DR	SANTEE, CA 92071
12	3830710600	ALIKA LLC	9200 INWOOD DR	SANTEE, CA 92071
13	3830800400	EAST CNTY ADVANCED WATER PURIFICATION JO,	0 MISSION GORGE RD	SAN DIEGO, CA 92171
13	3830800300	EAST CNTY ADVANCED WATER PURIFICATION JO,	0 MISSION GORGE RD	SANTEE, CA 92071
13	7601430700	ALIKA LLC	9200 INWOOD DR	SANTEE, CA 92071
14	3834251000	NATALE MARCELLO J	8335 CARLTON OAKS DR	SANTEE, CA 92071
15	383310100	MACKIE JANINE	8339 CARLTON OAKS DR	SANTEE, CA 92071
16	3834310200	ROMEO DENNIS	8343 CARLTON OAKS DR	SANTEE, CA 92071
17	3834310300	KAROLEWICZ MICHELE;FERNANDES JOSEPH	8347 CARLTON OAKS DR	SANTEE, CA 92071
18	3834310400	BRYAN RAY D & VICKI K	8351 CARLTON OAKS DR	SANTEE, CA 92071
19	3833811100	NYANS JULIE M LIVING TRUST (03-28-12)	9041 INVERNESS RD	SANTEE, CA 92071
20	3833811200	GILBERT, MELISSA MARIE; MELISSA M GILBERT TRUST,	9045 INVERNESS RD	SANTEE, CA 92071
21	3833304000	KERSELL FAMILY REVOCABLE TRUST (10-05-09)	9131 INVERNESS RD	SANTEE, CA 92071
22	3833303500	SUMMY MARK & BARBARA TRUST (10-27-06)	9141 INVERNESS RD	SANTEE, CA 92071
23	3833300700	BAUER TRUST (12-01-17)	9145 INVERNESS RD	SANTEE, CA 92071
24	3833300800	SAWAYA IBRAHIM A SEPARATE PROPERTY TRUST (01-30-88)	9203 INVERNESS RD	SANTEE, CA 92071
25	3833300900	OLSEN AARON & CARA LIVING TRUST (03-11-19)	9207 INVERNESS RD	SANTEE, CA 92071
26	3833301000	GROSSO ERNEST J	9211 INVERNESS RD	SANTEE, CA 92071
27	3833301100	WOOD DAVID A & ROTTER SARAH K LIVING TRUST (02-10-22)	9215 INVERNESS RD	SANTEE, CA 92071
28	3833301200	MORABITO, LEANDRO; PEREIRA, NICOLE	9219 INVERNESS RD	SANTEE, CA 92071
29	3833301300	CHUBB EUGENE FAMILY TRUST (06-08-93)	9223 INVERNESS RD	SANTEE, CA 92071
30	3832410100	SUMMERS JOHN M & RACHEL M	8929 CARLTON OAKS DR	SANTEE, CA 92071

ID	APN	OWNER NAME	OWN_ADDRESS	OWN_ADDRESS2
31	3834804800	VISTA DEL VERDE OF SANTEE	CALLE DEL VERDE	SANTEE, CA 92071
32	3834800400	YORK, EVELYN M; EVELYN M YORK 2022 FAMILY TRUST,	9003 CALLE DEL VERDE	SANTEE, CA 92071
33	3834800500	SPENCER RICHARD & VALERIE FAMILY 2002 TRUST (10-08-02)	9005 CALLE DEL VERDE	SANTEE, CA 92071
34	3834800600	HARLING LINDA D TRUST	9007 CALLE DEL VERDE	SANTEE, CA 92071
35	3834800700	BENNETT-HAUSER NANCY M TR	9009 CALLE DEL VERDE	SANTEE, CA 92071
36	3834800800	CABANISS KYLE W & AMANDA S	9011 CALLE DEL VERDE	SANTEE, CA 92071
37	3834800900	JONES DALLAS W & SHANNON R	9013 CALLE DEL VERDE	SANTEE, CA 92071
38	3834801000	RABASCO TRACY B	9015 CALLE DEL VERDE	SANTEE, CA 92071
39	3834805000	VISTA DEL VERDE OF SANTEE	0 CALLE DEL VERDE	SANTEE, CA 92071
40	3834802000	LEU FAMILY TRUST (03-01-19)	9035 CALLE DEL VERDE	SANTEE, CA 92071
41	3834802100	ALAYZA, DIEGO IGNACIO; CHIHWARO, JULIE RAZKALLAH	9037 CALLE DEL VERDE	SANTEE, CA 92071
42	3834802200	WHISLER JOHN & CHRISTINA	9039 CALLE DEL VERDE	SANTEE, CA 92071
43	3834802300	MOONEY REBECCA L; MOONEY ROBERT N & PAMELA S	9041 CALLE DEL VERDE	SANTEE, CA 92071
44	3834802400	MARKSBURY KERRY SEPARATE PROPERTY TRUST (07-22-15)	9043 CALLE DEL VERDE	SANTEE, CA 92071
45	3834802500	GALLAGHER HELGA; GALLAGHER WILLIAM H	9045 CALLE DEL VERDE	SANTEE, CA 92071
46	3834802600	DANIELS NORMAN R & PATRICIA A	9047 CALLE DEL VERDE	SANTEE, CA 92071
47	3834802700	PREVES RUSSELL R	9049 CALLE DEL VERDE	SANTEE, CA 92071
48	3834802800	TEITELBAUM, JOSHUA E; TEITELBAUM, HANNA J	9051 CALLE DEL VERDE	SANTEE, CA 92071
49	3834802900	VANINA BRIAN & SANDOVAL NICOLE	9053 CALLE DEL VERDE	SANTEE, CA 92071
50	3834805100	VISTA DEL VERDE OF SANTEE	0 CALLE DEL VERDE	SANTEE, CA 92071
51	3834803300	BENEDICT MICHAEL W	9061 CALLE DEL VERDE	SANTEE, CA 92071
52	3834803400	POST LADD FAMILY TRUST (07-20-15)	9063 CALLE DEL VERDE	SANTEE, CA 92071
53	3834803500	BENEDICT MICHAEL W	9065 CALLE DEL VERDE	SANTEE, CA 92071
54	3834805200	VISTA DEL VERDE OF SANTEE	0 CALLE DEL VERDE	SANTEE, CA 92071
55	3834803600	ASHBAUGH MARY L FAMILY TRUST (09-11-21)	9201 CAMINO DEL VERDE	SANTEE, CA 92071
56	3834803700	WHITTAKER, CRISTIN	9203 CAMINO DEL VERDE	SANTEE, CA 92071
57	3834803800	KLOSTERMAN RYAN J & EMILY M	9205 CAMINO DEL VERDE	SANTEE, CA 92071
58	3834803900	PETTUS FAMILY TRUST (02-18-93)	9207 CAMINO DEL VERDE	SANTEE, CA 92071
59	3834804000	SEABOCH, TODD LYNN; SAUNDRA LEE PAPRITZ REVOCABLE TRU	9209 CAMINO DEL VERDE	SANTEE, CA 92071
60	3834801100	AWES FAMILY SURVIVORS TRUST (03-15-04); AWES FAMILY DEC	9017 CALLE DEL VERDE	SANTEE, CA 92071
61	3834801200	LOPEZ JEAN M 2020 FAMILY TRUST (02-21-20)	9019 CALLE DEL VERDE	SANTEE, CA 92071
62	3834804300	DODD MICHAEL R & LIU SU RONG; DODD DANILO J	9210 CAMINO DEL VERDE	SANTEE, CA 92071
63	3834804200	NUGENT SEAN M & KRISTIN N	9212 CAMINO DEL VERDE	SANTEE, CA 92071
64	3832801600	OAKS LTD THE	9205 CARLTON OAKS DR	SANTEE, CA 92071
65	3832801300	CARLTON HILLS SOUTHERN BAPTIST CHURCH	9225 CARLTON OAKS DR	SANTEE, CA 92071
66	3832801700	CARLTON OAKS INVESTMENTS LLC	9249 CARLTON OAKS DR	SANTEE, CA 92071
67	3830710800	CITY OF SANTEE	INWOOD DR	SANTEE, CA 92071
68	3830710400	FARIS AL MAWLA	CARLTON HILLS BLVD	SANTEE, CA 92071
69	3831310200	HILL FAMILY TRUST (05-05-08)	9064 WILLOWGROVE AVE	SANTEE, CA 92071
70	3831310100	BERNAL STEVEN & PATRICIA L	9106 WILLOWGROVE AVE	SANTEE, CA 92071

ID	APN	OWNER NAME	OWN_ADDRESS	OWN_ADDRESS2
71	3831410100	GIBSON DANIEL D & KAREN P	9112 WILLOWGROVE AVE	SANTEE, CA 92071
72	3831410200	DECKER LORRAINE K 2020 TRUST (12-09-20)	9118 WILLOWGROVE AVE	SANTEE, CA 92071
73	3831410300	MARTINEZ ERICK & MARIKA	9124 WILLOWGROVE AVE	SANTEE, CA 92071
74	3831410400	DAVIS, MAL S; MAL S DAVIS TRUST,	9130 WILLOWGROVE AVE	SANTEE, CA 92071
75	3831410500	FRANCISCO THERON & KRISTINA	9138 WILLOWGROVE AVE	SANTEE, CA 92071
76	3831410600	SALSBERRY, MARK RAY; SALSBERRY, LINDA JOAN	9144 WILLOWGROVE AVE	SANTEE, CA 92071
77	3831410700	DEMARS FAMILY TRUST (12-05-17)	9150 WILLOWGROVE AVE	SANTEE, CA 92071
78	3831410800	SHEFFER HAZEL	9156 WILLOWGROVE AVE	SANTEE, CA 92071
79	3831410900	TRUONG, NAM; NGUYEN, TRINH	9164 WILLOWGROVE AVE	SANTEE, CA 92071
80	3831411000	CASTANEDA JAVIER JR & KELLY Y	9170 WILLOWGROVE AVE	SANTEE, CA 92071
81	3831510100	GENESTA MARCOS A & WALADANH	9176 WILLOWGROVE AVE	SANTEE, CA 92071
82	3831510200	STAFFORD PAUL N 2007 TRUST (10-17-07); JONES BARRY L & DC	9184 WILLOWGROVE AVE	SANTEE, CA 92071
83	3831510300	KOVAL JOHN & LAURA	9212 WILLOWGROVE AVE	SANTEE, CA 92071
84	3831510400	PENA, DENISE; MAK, JESSE	9220 WILLOWGROVE AVE	SANTEE, CA 92071
85	3831510800	RYS FRANK TR	9016-20 CARLTON HILLS BLV	SANTEE, CA 92071
86	3831520400	YARWICK TERRY J LIVING TRUST (05-18-11)	980 CARLTON HILLS BLVD	SANTEE, CA 92071
87	3831311500	SAGUN TRISTAN & DELISA	9017 GORGE AVE	SANTEE, CA 92071
88	3831311600	ADJEMIAN CRAIG A & KRISTINA N	9023 GORGE AVE	SANTEE, CA 92071
89	3831311700	BARROW FRANKIE G & M DELIA	9031 GORGE AVE	SANTEE, CA 92071
90	3831311800	CABALLERO FAMILY TRUST (03-25-15)	9037 GORGE AVE	SANTEE, CA 92071
91	3831311900	BAUDOUR JEFFREY R & VICKI A	9043 GORGE AVE	SANTEE, CA 92071
92	3831312000	ANDRUS DAVID	9049 GORGE AVE	SANTEE, CA 92071
93	3831312100	BUNCH CHESTER M TRUST (10-14-09)	9055 GORGE AVE	SANTEE, CA 92071
94	3831312200	PARKER RICKEY V JR & ERI	9063 GORGE AVE	SANTEE, CA 92071
95	3831312300	PALMER LYNDA L; PALMER RICHARD	9105 GORGE AVE	SANTEE, CA 92071
96	3831430100	POWELL, ERIC; POWELL, NADIA	9111 GORGE AVE	SANTEE, CA 92071
97	3831430200	ACOSTA, RAMON; THE JORGE E GUEVARA TRUST,	9119 GORGE AVE	SANTEE, CA 92071
98	3831430300	HUFF KEVIN B	9127 GORGE AVE	SANTEE, CA 92071
99	3831430400	TYNDALL MICHAEL C FAMILY REVOCABLE TRUST	9133 GORGE AVE	SANTEE, CA 92071
100	3831430500	NGUYEN TINH VAN	9139 GORGE AVE	SANTEE, CA 92071
101	3831430600	DEYOE DARAN & BARBARA J	9145 GORGE AVE	SANTEE, CA 92071
102	3831430700	DEYOE DARAN & BARBARA	9151 GORGE AVE	SANTEE, CA 92071
103	3831430800	HEDGREN SANDRA M 2019 TRUST (04-23-19)	9157 GORGE AVE	SANTEE, CA 92071
104	3831430900	LUNA RODNEY & KIMBERLY 2021 FAMILY TRUST (05-25-21)	9165 GORGE AVE	SANTEE, CA 92071
105	3831431000	STINDE FAMILY TRUST (05-02-07)	9171 GORGE AVE	SANTEE, CA 92071
106	3831530100	PISHNY KATHLEEN M REVOCABLE 2015 TRUST	9177 GORGE AVE	SANTEE, CA 92071
107	3831530200	HADDIX MARLO J & ALICIA M	9185 GORGE AVE	SANTEE, CA 92071
108	3831530300	SAUNDERS WILSON T & AMBROSE ELIZABETH D	9203 GORGE AVE	SANTEE, CA 92071
109	3831530400	LABERGE LAURA M	9209 GORGE AVE	SANTEE, CA 92071
110	3831530500	MILLER ANDRE F	9217 GORGE AVE	SANTEE, CA 92071

ID	APN	OWNER NAME	OWN_ADDRESS	OWN_ADDRESS2
111	3831530600	MURILLO EILEEN R	9223 GORGE AVE	SANTEE, CA 92071
112	3831530700	GARCIA JUAN D	9231 GORGE AVE	SANTEE, CA 92071
113	3831531200	CITY OF SANTEE	0 MISSION GORGE RD	SANTEE, CA 92071

LEGEND

- STUDY AREA
- PARCELS/LOTS
- AFFECTED PARCELS/LOTS
- (1) ID NUMBER
- 100-YR FLOOD PLAIN PER FEMA FIRM
- 100-YR FLOODWAY PER FEMA FIRM
- 100-YR FLOOD PLAIN PER REVISED STUDY
- 100-YR FLOODWAY PER REVISED STUDY

H&A

300 0 300 600 900

SCALE 1"= 300'

W.O.# 0000-0000

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