CHIQUES CREEK FLOOD RESILIENCY STUDY

SUSQUEHANNA RIVER BASIN COMMISSION

NY ▪ PA ▪ MD ▪ USA

Prepared by:
Susquehanna River Basin Commission and
U.S. Army Corps of Engineers

DRAFT JANUARY 2018

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EXECUTIVE SUMMARY

The Susquehanna River Basin Commission (SRBC) has partnered with the Pennsylvania Department of Environmental Protection (PADEP), Pennsylvania State University (PSU), and local stakeholders to develop an alternate approach to Total Maximum Daily Load (TMDL) development in the Chiques Creek watershed in Lancaster and Lebanon Counties, Pennsylvania. As a compliment to this effort, SRBC received funding from PADEP to develop hydrologic and hydraulic modeling to evaluate alternatives for enhancing flood resiliency in the watershed. SRBC requested the assistance of the U.S. Army Corps of Engineers, Baltimore District, to develop these hydrologic and hydraulic models for priority flood risk reaches of Chiques Creek and/or its tributaries. Prior to the initiation of the hydrologic and hydraulic modeling, a flood risk characterization was performed by SRBC, with significant stakeholder input, to identify, map, and prioritize key flood risk zones to inform the siting of hydraulic modeling reaches and development of potential alternatives.

The USACE HEC-HMS rainfall runoff model was used to estimate peak flows for the Chiques Creek watershed, upstream of the confluence of Little Chiques Creek, as identified by the flood risk characterization. The HEC-HMS model for Chiques Creek was calibrated to the September 2011-Lee flood event, and existing-conditions peak flows were calculated for multiple points within the watershed for eight flood frequency storm events.

The USACE HEC-RAS hydraulic model was used to develop geo-referenced hydraulic models for Chiques Creek and its tributaries. The existing-conditions HEC-RAS models were developed to determine flood elevations along Chiques Creek and its tributaries at the time of this study and to be used as a baseline to determine the impacts of flood resiliency alternatives developed in this investigation. Peak flow data from the HEC-HMS model were input into HEC-RAS, and a steady state computation was completed for each flooding source.

Based upon the results of the hydrologic and hydraulic modeling, the stakeholder group concluded the study should focus on reducing flood risk in Manheim Borough, as the Borough has the greatest identified flood risk in the watershed. A total of sixteen alternatives were developed in this study. The alternatives were divided into watershed projects and channel projects, where the watershed projects attempted to use existing landscape features within the watershed upstream of Manheim Borough to attenuate flood peaks while maintaining the goal of improving water quality and environmental sustainability, and the channel projects evaluated geomorphological changes along the study reach to reduce flood elevations and/or depths. The alternatives developed in the investigation are listed in Table E.1.

Of the watershed alternatives studied, the most significant benefits to downstream peak flow reduction was Alternative W4. The potentially high cost and scope associated with the construction of Alternative W4 compared with the only modest peak flow reduction in Manheim Borough led to the study team concluding that the implementation of this alternative is not a viable path forward to reducing the flood risk in Manheim Borough.

Table E.1: Summary of Alternatives

Alternative	*Description*	*Viable?*	*Notes*
W1	Shearer's Creek Turnpike Detention	No	Minimal reduction in peak flows
W2	White Oak Dam Restoration	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction
W3	Hernley Road Improvements	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction
W4	White Oak Dam Restoration and Hernley Road Improvements	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction
W5	Doe Run Watershed Storage	No	Minimal reduction in peak flows
C2	Stream Improvements between Eby Street and Main Street	Yes	Estimated cost of $800,000-$900,000
C2A	Revised Stream Improvements between Eby Street and Main Street	No	Overall added benefit on flood risk reduction compared to Alternative C2 is minor compared to the potential scope and cost of construction
C3	Stream Improvements between Fruitville Pike and Steigel Street	No	Estimated cost of $1,000,000-$1,200,000
C4	Removal of Steigel Street Bridge	No	Minimal reduction in flood depths
C5	Weir Removal on Chiques Creek	No	Minimal reduction in flood depths in Manheim Borough
C6	Memorial Park Restoration	No	Minimal reduction in flood depths-should be considered for water quality benefits
C7	Removal of Oak Street Bridge	No	Minimal reduction in flood depths
C2C3	Stream Improvements between Eby Street and Main Street and between Fruitville Pike and Steigel Street	Yes	Estimated cost of $1,800,000-$2,100,000.
C2C3C6	Stream Improvements between Eby Street and Main Street and between Fruitville Pike and Steigel Street and Memorial Park Restoration	No	No benefit to completing Alternative C6 with Alternative C2C3
W4C2	White Oak Dam Restoration and Hernley Road Improvements and Stream Improvements between Eby Street and Main Street	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction

It was concluded by the project team that Alternative C2 is viable for consideration for implementation. Alternative C2 provides substantial flood risk reduction in Manheim Borough for smaller, more frequent flood events. Additionally, based on the evaluation of alternatives implemented collectively, Alternative C2C3 is a viable alternative for consideration.

Figure E.1: Alternative C2

The study team arrived at the following conclusions based upon the results of this investigation and the discussions at the project meetings:

1. Stakeholder input is critical to completing a study of this nature.

2. The ability of a green infrastructure project to mitigate flooding fully depends on the physical location of the project relative to the area of risk as well as the ultimate size of the project.

3. The alternatives studied here provide a comprehensive suite of options to consider for flood risk reduction in Manheim Borough. Regardless of whether or not a particular study alternative is implemented, the data gathered here should be used to inform flood risk in the Manheim area as it represents the best available data.

4. Storage type projects do not provide significant flood risk reduction in the Manheim area and are cost prohibitive to implement if value is directly based on flood risk reduction.

5. Channel reconfiguration projects within the Manheim area appear to offer the greatest potential for flood risk reduction benefits.

6. Flood risk reduction using Alternative C2 is achievable in numbers but must be evaluated at the community level for ultimate benefit.

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Project Disc (Digital Report, GIS Data, Modeling Files)

1 INTRODUCTION

1.1 BACKGROUND AND STUDY PURPOSE

The Susquehanna River Basin Commission (SRBC) has partnered with the Pennsylvania Department of Environmental Protection (PADEP), Pennsylvania State University (PSU), and local stakeholders to develop an alternate approach to Total Maximum Daily Load (TMDL) development in the Chiques Creek watershed in Lancaster and Lebanon Counties, Pennsylvania. As a compliment to this effort, SRBC received funding from PADEP to develop hydrologic and hydraulic modeling to evaluate alternatives for enhancing flood resiliency in the watershed.

SRBC has requested the assistance of the U.S. Army Corps of Engineers, Baltimore District, to develop these hydrologic and hydraulic models for priority flood risk reaches of Chiques Creek and/or its tributaries. These models were then used by SRBC to characterize existing conditions, simulate various alternatives under proposed conditions, and formulate recommendations for improving flood resiliency in the watershed.

1.2 STUDY AUTHORITY

This study was conducted by SRBC under a grant from PADEP, and by USACE, Baltimore District, for SRBC under the Floodplain Management Services Program (FPMS). The FPMS program is designed to provide planning-level assistance to communities and partners for floodplain related issues. The study is planning-level only; no detailed design or construction resulted from this investigation.

1.3 STUDY AREA

Prior to the initiation of the hydrologic and hydraulic modeling, a flood risk characterization was performed by SRBC, using existing datasets, including the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL), flood insurance repetitive claims and claims paid, census block populations, critical infrastructure including hospitals, water/wastewater treatment facilities, elderly housing, and shelters/distribution centers. Local stakeholder input on critical flood hazard areas was also solicited and evaluated. The goal of this characterization was to identify, map, and prioritize key flood risk zones to inform the siting of hydraulic modeling reaches and development of potential alternatives. The results of this characterization assisted in setting the limits of the study area.

Using the flood risk characterization results, the study area for the hydrologic analysis, is the Chiques Creek watershed to a point just upstream of the confluence of Little Chiques Creek. The study area for the hydraulic modeling is Chiques Creek from its confluence with the Susquehanna River and its tributaries upstream of the confluence of Little Chiques Creek (Figure 1.1).

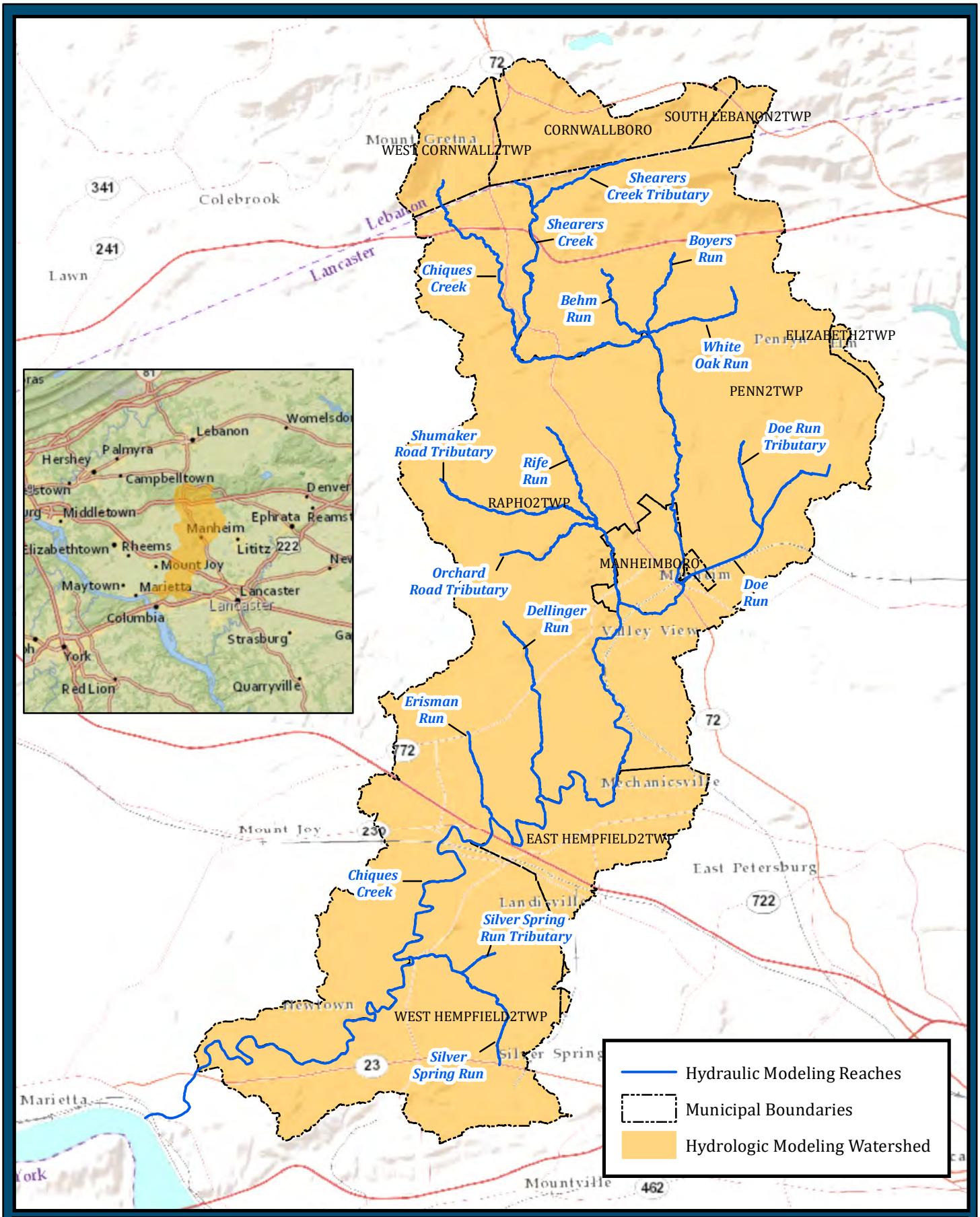

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Figure 1.1
Study Area

0 0.5 1 2 Miles
1 inch = 2 miles

Primary named tributaries to Chiques Creek in the study area include Behm Run, Boyers Run, Dellinger Run, Doe Run, Rife Run, and Shearers Creek. For the purposes of this investigation, previously unnamed tributaries to Chiques Creek were named. These watercourses include Doe Run Tributary, Erisman Run, Orchard Road Tributary, Shearers Creek Tributary, Shumaker Road Tributary, Silver Spring Run, and Silver Spring Run Tributary. The limits of the hydraulic modeling correspond to the limits of the existing 1-percent annual chance floodplain in the NFHL. For the hydrologic modeling, Landisville Run and Mill Road Tributary were also named, but hydraulic modeling was not completed for these watercourses.

The Chiques Creek watershed is approximately 126.0 square miles at its confluence with the Susquehanna River. The watershed upstream of the confluence of Little Chiques Creek, which is the area of hydrologic study in this investigation, is approximately 63.4 square miles, and spans West Hempfield Township, East Hempfield Township, Mt. Joy Borough, Rapho Township, Penn Township, Elizabeth Township, and Manheim Borough in Lancaster County and West Cornwall Township, South Lebanon Township, and Cornwall Borough in Lebanon County. The land use in the majority of the watershed is related to farming activities, with 56-percent of the land being farmsteads, pasture, and row crops. Development (residential, commercial, and industrial) covers approximately 19-percent of the watershed, with the majority of that in the Manheim Borough area.

Flooding is a regular occurrence along Chiques Creek, especially in Manheim Borough. The most recent major flooding occurred in September 2011 from the remnants of Tropical Storm Lee. The system dumped an average of 11 inches of rainfall over a 4-day period on the watershed, causing significant flooding in Manheim Borough and surrounding areas. Based upon Lancaster County Emergency Management Agency, 5 buildings were completely destroyed due to the flooding, and hundreds more sustained major or minor damages. Several smaller storms have caused minor damages and roadway closures since the September 2011 storm in Manheim Borough.

1.4 COORDINATION

SRBC managed the tasks of the overall investigation, and USACE led the hydrologic and hydraulic management tasks. Several meetings were held throughout the study process with SRBC, USACE, and other project partners to assure compatibility between flood resiliency goals and TMDL goals.

1.5 REPORT OUTLINE

The tasks completed in this investigation included field surveys; hydrologic analyses; hydraulic analyses; floodplain mapping; and the development and analysis of flood resiliency alternatives.

Section 1 of this report provides an introduction to the study by describing the purpose and study area, and outlining the data sources and previous studies. Section 2 describes the field survey completed to support the hydrologic and hydraulic analyses and Section 3

describes the development of land use and stormwater management data to support the analyses. Section 4 outlines the methodology and results of the existing-conditions hydrologic analysis and Section 5 describes the existing-conditions hydraulic analysis and floodplain mapping. Section 6 includes an outline of the development and analysis of flood resiliency alternatives and Section 7 is a summary of conclusions as a result of this investigation.

1.6 DATA SOURCES

Data was collected from various Federal, State, and local entities to support the analyses in this study. A list of this data in provided in Table 1.1, with the following entities contributing data to this investigation: SRBC, FEMA, National Weather Service (NWS), United State Geological Survey (USGS), Natural Resources Conservation Service (NRCS), Pennsylvania Department of Conservation and Natural Resources (PADCNR), Pennsylvania Department of Transportation (PENNDOT), Pennsylvania Turnpike Commission (PTC), Lancaster County Emergency Management Agency (LCEMA), Penn Township, Manheim Borough, and Land Studies, Inc.

Table 1.1: Data Collected

Data	*Date*	*Source*
Flood Insurance Study (FIS) for Lancaster County, Pennsylvania and Incorporated Areas	4/5/2016	FEMA
Flood Insurance Study (FIS) for Lebanon County, Pennsylvania and Incorporated Areas	6/5/2012	FEMA
Geographic Information System (GIS) Data Layers for Lancaster and Lebanon Counties (Land Use, Roads, Parcels, Stormwater Infrastructure, Buildings)	Various	SRBC
Radar-based Rainfall data for September 2011 Flood Event	Various	NWS
Point Precipitation Frequency Estimates for Chiques Creek Watershed (NOAA Atlas 14, Volume 2, Version 3)	2006	NWS
0.7-meter resolution Digital Elevation Model (DEM) for Lancaster County, Pennsylvania	Nov-Dec 2014	USGS
Soil Survey Data for Lancaster and Lebanon Counties	Sept 2016	NRCS
1-meter resolution DEM for Lebanon County, PA	2005	PADCNR

Table 1.1: Data Collected (Continued)

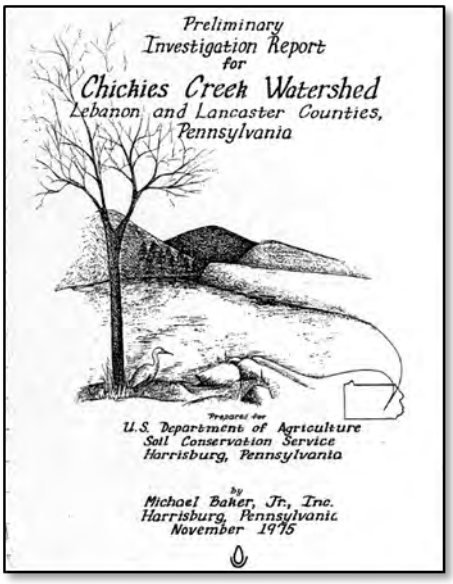
Data	*Date*	*Source*
Various Bridge Plans	Various	PENNDOT
Bridge Plans for Pennsylvania Turnpike	1949	PTC
StormNet Precipitation and Stream Stage data for Lancaster County	Various	LCEMA
Doe Run Elementary Plans	December 2015	Penn Twp.
Various Reports and Data	Various	Manheim Borough
Various Reports and Data	Various	Land Studies, Inc.

A "project DEM" was developed that spanned the Chiques Creek watershed. This DEM was used for delineating drainage areas and developing elevation-area curves for stormwater reservoirs for the hydrologic modeling, for overbank elevation data for cross-sections in the hydraulic model, for floodplain mapping, and for contour data for the development of flood resiliency alternatives. The project DEM was created by meshing the countywide DEMs obtained from USGS (Lancaster County) and PADCNR (Lebanon County). The horizontal coordinate system for the project DEM is Pennsylvania State Plane Feet South and the vertical datum is the North American Vertical Datum of 1988 (NAVD88).

1.7 PREVIOUS STUDIES

The Chiques Creek watershed has been studied extensively in the past, with the first known flood study being completed in 1964 (as referenced in a June 1978 study), and additional flood and environmental restoration studies being completed more recently by USACE and Land Studies, Inc. A list and brief description of previous investigations is provided below.

November 1975: Preliminary Investigation for Chickies Creek Watershed, Lebanon and Lancaster Counties

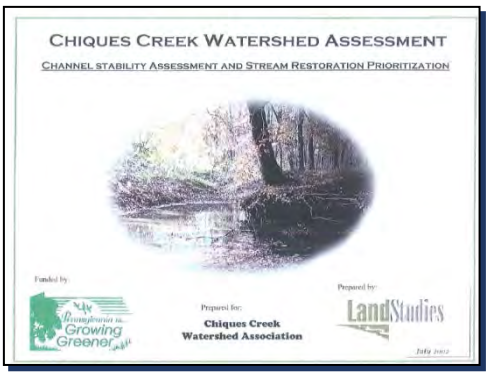


Michael Baker Jr., Inc. completed this study for the United States Department of Agriculture, Soil Conservation Service in November 1975. Local sponsors included the Lancaster County Conservation District, the County of Lancaster, and the Borough of Manheim. This report was prepared as the first step in the planning process for the Chiques Creek watershed, and was initiated under the criteria of Senate Document 19. The study investigated the feasibility of several alternatives to reduce flooding in the watershed, including single purpose (flood retention) and multi-purpose (flood retention and habitat creation) dams, channel improvements, and dikes. The study concluded that the inclusion of multi-purpose features in the watershed constitutes sound long-range conservation in the use of reservoir sites by providing fuller development of natural resources. The study also concluded that any of the alternatives are feasible with benefit cost ratios greater than one. None of the alternatives proposed in this 1975 investigation were carried forward to design or construction.

June 1978: Determination of Flood Discharges, Frequency Relationships, and Flood Plain Limits for Chickies Creek Watershed, Thru Manheim, Pennsylvania

This study was completed by the United States Department of Agriculture (USDA), Soil Conservation Service (SCS) to provide flood data for Chiques (then Chickies) Creek thru Manheim. A hydrologic model using the NRCS TR-20 program and a hydraulic model using the WSP-II program was developed for this investigation and calibrated to the Agnes event in 1972. The report contained several high water marks in Manheim Borough for Agnes, and concluded that the Agnes event in 1972 was roughly equivalent to the 1-percent annual chance flood (100-year flood) at the time of study.

July 2002: Chiques Creek Watershed Assessment



Land Studies, Inc. completed this assessment in July 2002 for the Chiques Creek Watershed Association. The goals of the assessment included to identify potential stream restoration projects; to identify sources of erosion and sediment; to determine the stable dimensions of the channel; and to classify stream types. Chiques Creek and its tributaries were divided into representative stream reaches in this assessment. The overall conclusion of the assessment

was that the stream channels in the watershed are suffering from excessive erosion and sedimentation, causing loss of land and degradation of water quality and loss of habitat, with the main cause of instability being current and historic land use practices. Fifteen stream reaches were identified as high priority, and since the time of this study, planning has occurred in order to implement some of the proposed solutions. A project was recently constructed in Reach R, Rife Run at Logan Park, where the floodplain was restored.

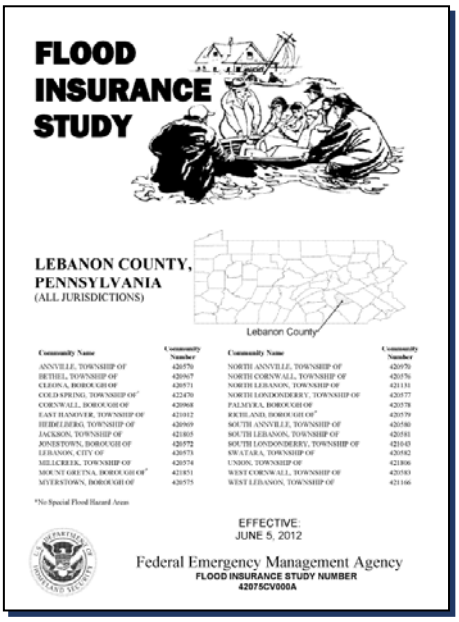
December 2004: Doe Run/Chiques Creek, Manheim Township, Pennsylvania Small Flood Control Project

This study was completed by USACE under Section 205 of the Flood Control Act of 1948, as amended, to consider plans for mitigating flooding from Chiques Creek and Doe Run in Manheim Borough. Alternative plans in this study included the construction of an impound area for floodwaters upstream of Manheim Borough along White Oak Road; a flood warning system alert Manheim Borough of an impending flood; and a relocation of Doe Run back to its historical location. The recommended plan during this investigation was a flood-warning system and flood-proofing individual buildings.

April 2010: Chiques Creek Stream Restoration/Flood Reduction Concept

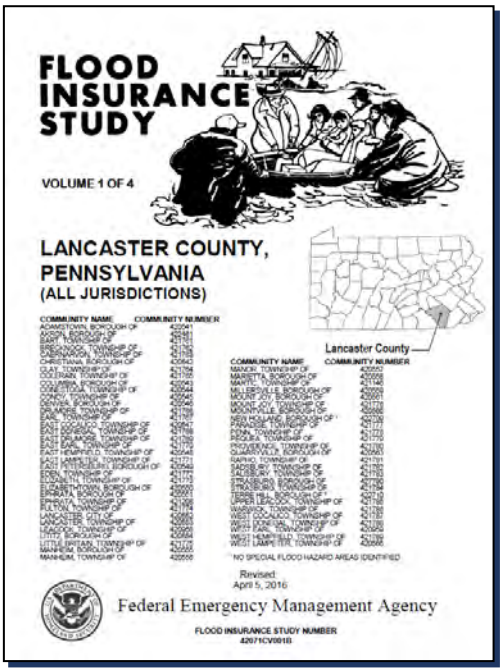
The goal of this effort, completed by USACE in 2010, was to create better in-stream habitat and improve conveyance of Chiques Creek in Manheim Borough. Ultimately, a stream channel re-alignment near Stiegel Street was proposed in this investigation to provide a better angle and flow towards the bridge and improve conveyance.

June 2012: Flood Insurance Study (FIS) for Lebanon County, Pennsylvania and Incorporated Areas



This FIS investigates the existence and severity of flood hazards in the geographic area of Lebanon County, Pennsylvania. Chiques Creek and its tributaries in Lebanon County has a Special Flood Hazard Area (SFHA), or 1-percent annual chance (100-year) floodplain, that is delineated a Zone A, meaning no detailed flood data is available. Thus, limited information is available from this report for Chiques Creek; however, as part of the FIS and delineation of the Zone A, FEMA developed approximate hydraulic models (in HEC-RAS format) for Chiques Creek and its tributaries in Lebanon County. These models were obtained from FEMA to use for reference in this current study.

April 2016: Flood Insurance Study (FIS) for Lancaster County, Pennsylvania and Incorporated Areas


FLOOD INSURANCE STUDY

VOLUME 1 OF 4

LANCASTER COUNTY, PENNSYLVANIA (ALL JURISDICTIONS)

Lancaster County

COMMUNITY NAME COMMUNITY NUMBER

Revised April 5, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER 42071CV001B

This FIS investigates the existence and severity of flood hazards in the geographic area of Lancaster County, Pennsylvania. Portions of Chiques Creek and Rife Run have a SFHA that is delineated a Zone AE, meaning detailed flood data is available. Other portions of Chiques Creek and all the other tributaries are delineated a Zone A, and the approximate Zone A HEC-RAS models were obtained from FEMA to use for reference in this current study.

For the detailed study portion of Chiques Creek in and upstream of Manheim Borough and Rife Run, peak discharges were taken from the TR-20 model developed by USDA SCS in 1978 (discussed above). For Chiques Creek south of Manheim Borough, the flood-flow frequency data was developed using regional flood flow frequency procedure developed by USACE in 1975. South of U.S. Route 283, peak flow estimates for Chiques Creek were established using a U.S. Water Resource Council log-Pearson Type III method. The procedure is based upon a log-Pearson Type III analysis of a large number of station records in the Susquehanna River basin through 1972, and transferred via standard equations to the Chiques Creek watershed. The USACE HEC-2 program was used to compute water surface elevations for all detailed study portions of Chiques Creek and Rife Run. This study was completed in 1982, although this FIS report is dated 2016.

2 FIELD SURVEY

Field surveys were completed by USACE staff in August 2016 through February 2017 to support the hydrologic and hydraulic modeling in this investigation. The field work included a detailed survey of 120 bridges, culverts, or weirs that cross Chiques Creek and its tributaries, numerous channel cross-sections at various locations within the study area, and a survey of nearly 60 man-made stormwater management facilities or natural stormwater storage areas within the Chiques Creek watershed (Figure 2.1).

The survey utilized relative positioning techniques yielding precision on the order of < 2 centimeters horizontally and vertically. More specifically, Real-Time Kinematic (RTK) Global Positioning System (GPS) techniques were used. The Trimble R8 GNSS (Global Navigation Satellite System) unit was utilized to perform the field survey.

Figure 2.1: Example Survey Points in Manheim Borough Area

All survey points were coded based upon Table 9 in the 2014 FEMA *Data Capture Technical Reference* (FEMA 2014) to ensure compatible data if any information is submitted to FEMA in the future for flood mapping changes based upon the results of this study.

3 LAND USE AND STORMWATER MANAGEMENT DATA

Land use data and existing stormwater management data is critical in accurately completing the hydrologic analysis for the Chiques Creek watershed.

3.1 LAND USE CATEGORIES

A GIS layer of the existing land use in the watershed was developed utilizing several GIS layers for Lancaster County and Lebanon County, provided by SRBC. These source layers, such as land use, road edges, building, and parcels, were merged to create the watershed specific layer. Twelve different land use categories were identified within the Chiques Creek watershed. These land use categories correspond to the land cover descriptions in the NRCS Technical Release 55 (TR-55) program, which is a component for determining sub-basin losses during hydrologic modeling (discussed in Section 4 of this report). A list of the land use categories for this investigation is shown in Table 3.1, and a map of the existing land use in the Chiques Creek watershed in shown in Figure 3.1.

Table 3.1: Land Use Categories for the Chiques Creek Watershed

Brush- Good Condition		Water	
Commercial and Business		Pasture	
Farmsteads		Residential- 1/8 acre-2 acre	
Impervious (Streets, Roads, Parking Lots)		Row Crops	
Industrial		Woods- Good Condition	
Open Space- Good Condition		Woods-Grass Combination -Good Condition	

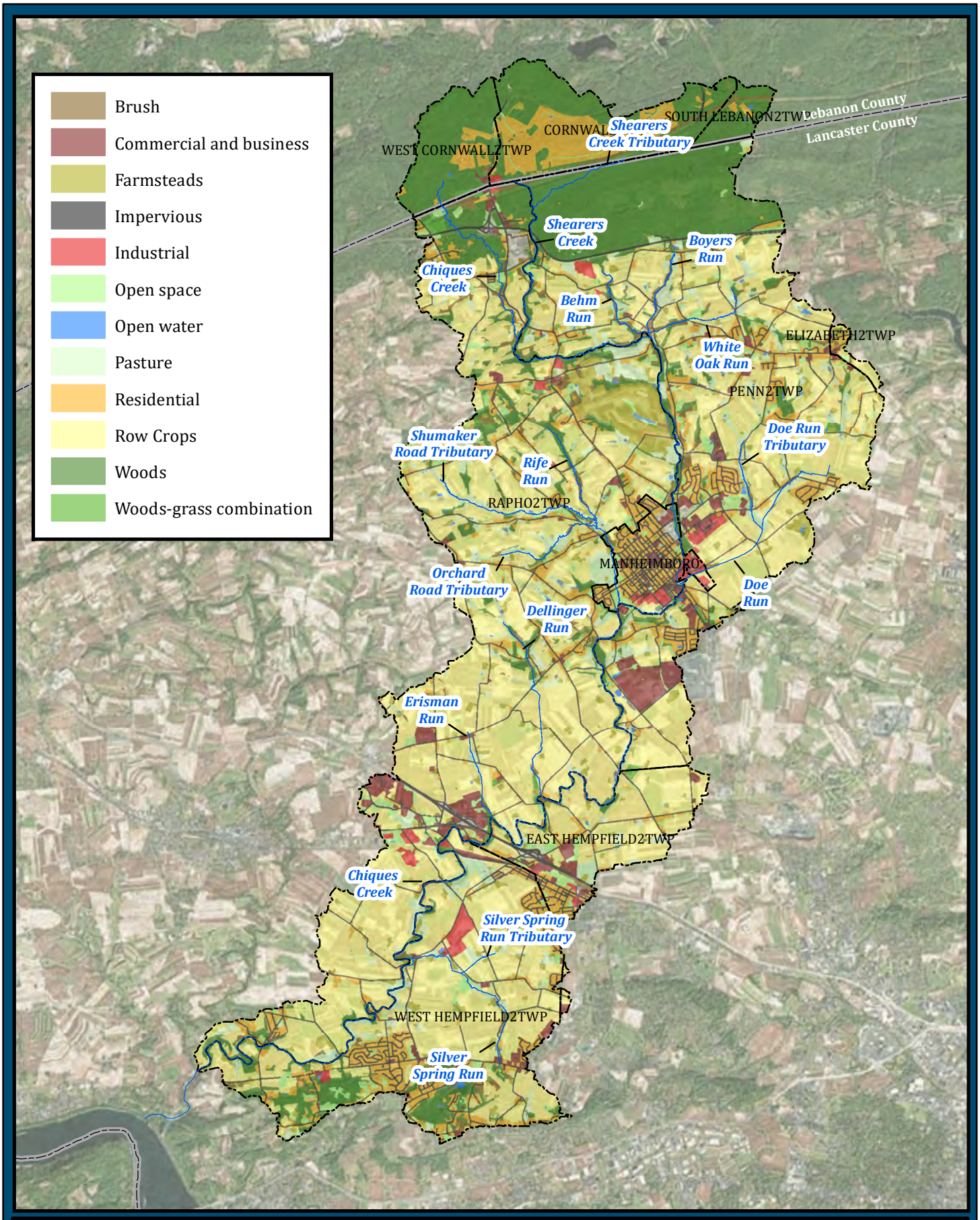


Figure 3.1

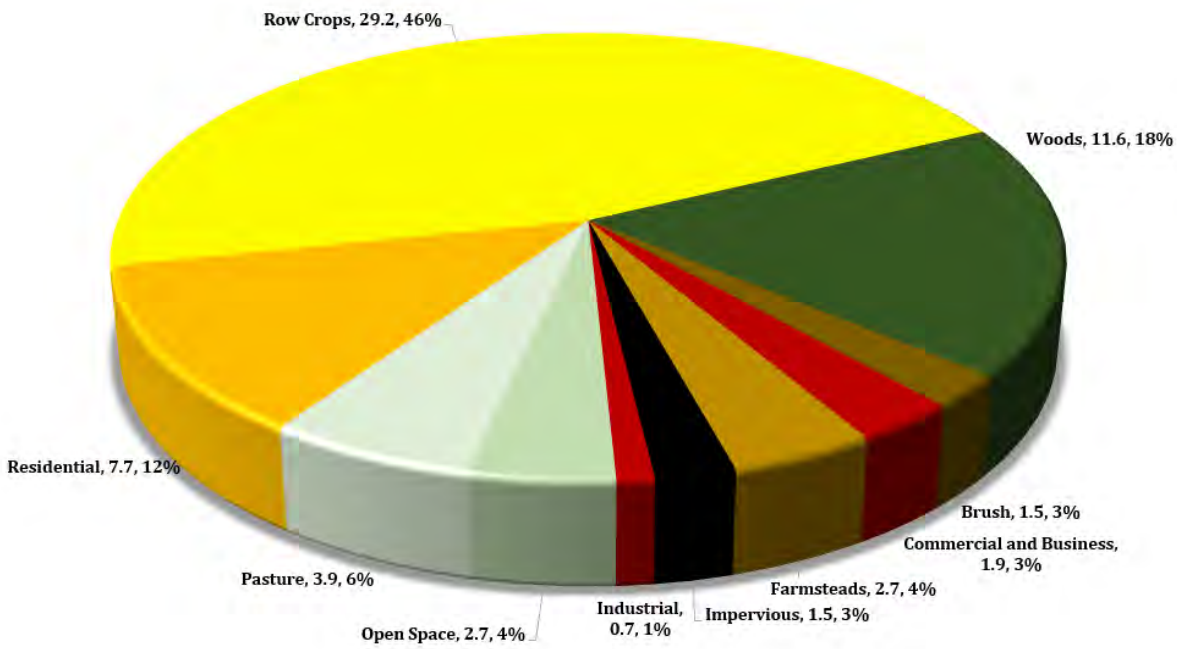
Existing-Conditiions Land Use in Chiques Creek Watershed

0 0.5 1 2 Miles

1 inch = 2 miles

Farming activities comprise 56-percent of the watershed land use, with 18-percent being wooded or mixed open space/wooded, and 4-percent being general open space. The remaining 19-percent of the watershed is considered developed, comprised on residential, commercial, industrial, and roadways. A breakdown of the existing land use in the Chiques Creek watershed is shown in Figure 3.2.

Figure 3.2: Breakdown of Existing Land Use in the Chiques Creek Watershed



3.2 STORMWATER MANAGEMENT FACILITIES

Stormwater management facilities (termed "reservoirs" for the purposes of this study) may have an impact of flows in the watershed. When a new development is constructed, the increase in runoff with increased impervious area must be mitigated to prevent and increase in flows in downstream areas. The reservoirs have less of an impact the further downstream from the outfall of the reservoir. For example, a stormwater reservoir in the headwaters of the Doe Run watershed will have more of an impact on the upper reaches of Doe Run than it will on Chiques Creek downstream of Manheim; however, since the hydrologic analysis in this investigation is developing flow data for numerous points within the watershed, the location and impact of these reservoirs must be considered when developing hydrologic information.

As a first step, a desktop analysis using the project DEM and recent aerial photography was conducted to assess the presence of designed stormwater reservoirs or natural areas where the storage of floodwaters would occur (Figure 3.3). If it was determined that the reservoir would have a potential impact of downstream peak flows, the reservoir outlet

Figure 3.3: Stormwater Reservoirs and Drainage Areas

Reservoir 8 is a designed stormwater reservoir for a residential development

Reservoir 38 is a natural stormwater storage area behind a railroad with no outlet pipe

structure was surveyed to include in the hydrologic model. Stormwater Best Management Practices (BMPs) such as bio-retention that were designed only for water-quality improvement and not water quantity management were not considered in the hydrologic modeling.

During this investigation, a total of 59 existing stormwater management reservoirs in the Chiques Creek watershed were identified for inclusion into the hydrologic model. Figure 3.4 shows the location of these reservoirs. Ponds 58 and 39 are associated with Doe Run Elementary School, which was under construction at the time of this study. Development plans for this school were obtained from Penn Township and these reservoirs were included in the model as if they were fully constructed, as the construction will be near completion in the near future.

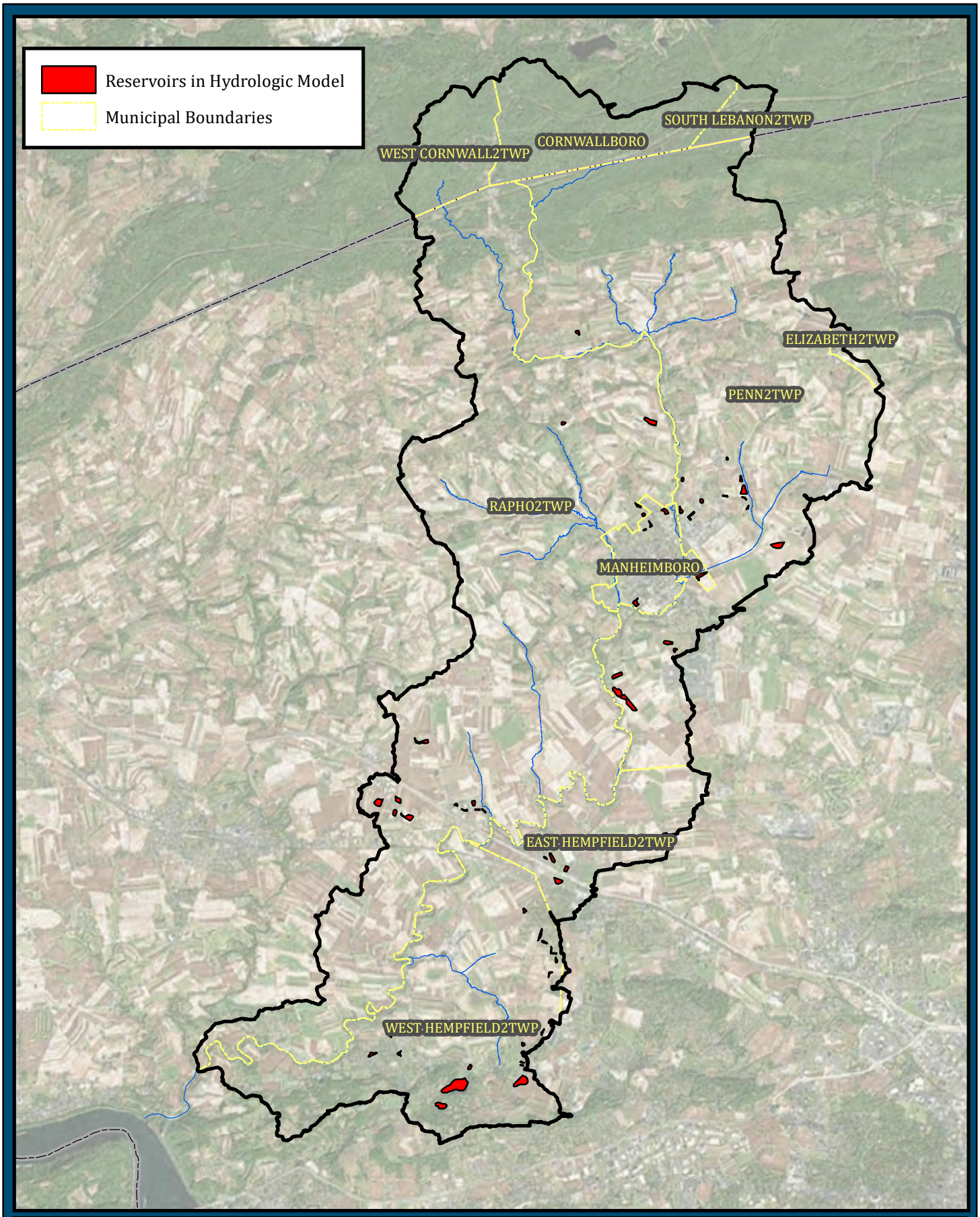


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Figure 3.4

Stormwater Reservoirs in the Chiques Creek Watershed

0 0.5 1 2 Miles

1 inch = 2 miles

4 HYDROLOGIC ANALYSIS

The USACE Hydrologic Modeling System (HMS), version 4.2.0, was used to estimate peak flows for the Chiques Creek watershed. HEC-HMS is a public domain software package developed by the USACE Hydrologic Engineering Center (HEC). HEC-HMS is designed to simulate the precipitation-runoff process in dendritic watershed systems. It is designed to be applicable in a wide range of geographic areas for solving the widest possible range of problems (USACE 2016). It is widely used and is an approved model by many Federal, State, and local agencies for flood and stormwater investigations.

The HEC-HMS model has three basic components. The physical representation of the watershed is accomplished with a *basin model*. Hydrologic elements are connected in a dendritic network to simulate runoff processes. Meteorological data analysis is performed by the *meteorological model*, which includes six different historical and synthetic precipitation methods. The simulation time span is controlled by *control specifications*. A simulation run is created by combining these three components.

Peak flows for eight storm events were calculated in this investigation. Table 4.1 lists these eight storm events.

Table 4.1: Modeled Storm Events

Recurrence Interval (years)	*Percent Chance of Occurring in Any Given Year*
2	50.0
5	20.0
10	10.0
25	4.0
50	2.0
100	1.0
200	0.4
500	0.2

Included in the model are several storm events used for verification of the results of the HEC-HMS model. These storms include August 2015, October 2012, October 2013, September 2015, and September 2011-Lee.

All hydrologic modeling was completed to comply with all of FEMA's guidance documents and standards. This was done in the event that the peak flows computed in this investigation were to be submitted to FEMA by SRBC or any of the local municipalities for a change to the effective Flood Insurance Rate Maps (FIRMs). The modeling completed in this study uses more up-to date data as the effective FEMA studies and better estimates the

peak flows on Chiques Creek. Because of this, using the results of the HEC-HMS modeling, the "1-percent plus" flood discharge was determined. The methodology for determining the 1-percent plus flood discharge is explained in Section 4.5 of this report.

4.1 BASIN MODEL

Hydrologic elements within a HEC-HMS basin model include junctions, sub-basins, reaches, and reservoirs. A junction represents a flow point within the watershed where flow accumulates. Sub-basins are the contributing drainage area to the flow points, reaches are the stream channel and corresponding floodplains between junctions (flow points), and reservoirs represent stormwater management facilities, man-made or natural.

Flow Points (Junctions)

The HEC-HMS basin model for the Chiques Creek watershed is set-up with a nomenclature system that consists of an abbreviation representing the watercourse and a number representing the distance upstream of the confluence of each watercourse. For example, Flow Point CHC20.57 is a flow point on Chiques Creek that is 20.57 miles upstream of the confluence with the Susquehanna River. Flow Point BOR2.07 is a flow point on Boyers Run that is 2.07 miles upstream of the confluence with Chiques Creek.

Flow points were generally located at road crossings, just downstream of confluences of tributaries, or at other hydrologically significant points in the watershed. A total of 141 flow points are included in the Chiques Creek HEC-HMS basin model. The location of these points is shown in Figure 4.1. Flow points CHC0.00 and CHC0.25 are shown on Figure 4.1, but are not included in the HEC-HMS model. These flow points were required for the hydraulic model, and peak flows for these tow flow points were computed using USGS regression equations via the StreamStats program. There is a large quarry present in the watershed. This quarry has a drainage area of approximately .09 square miles, and all flow into the quarry would accumulate in the quarry and not be released into the watershed. Therefore, this quarry was not included in the HEC-HMS model.

Sub-basins Drainage Area

The Chiques Creek watershed was divided into 186 sub-basins of similar land use and characteristics (Figure 4.1). Sub-basins are named based upon the flow point in which the contribute runoff to. SRBC obtained GIS data layers of the existing stormwater infrastructure within the watershed, including inlet locations, pipe locations, and pipe sizes. This data was limited in detail, but was used wherever possible in the delineation of sub-basins. Sub-basins were delineated using the project DEM described in Section 1.6 of this report. Significant detail was placed on the delineation of the sub-basin boundaries. In many applications of HEC-HMS, peak flows for only one study point are required, and the detail in the delineation of sub-basins is not necessary. For this study, however, detail was necessary to provide accurate peak flow data for many study points throughout the watershed to meet the objectives of the investigation.

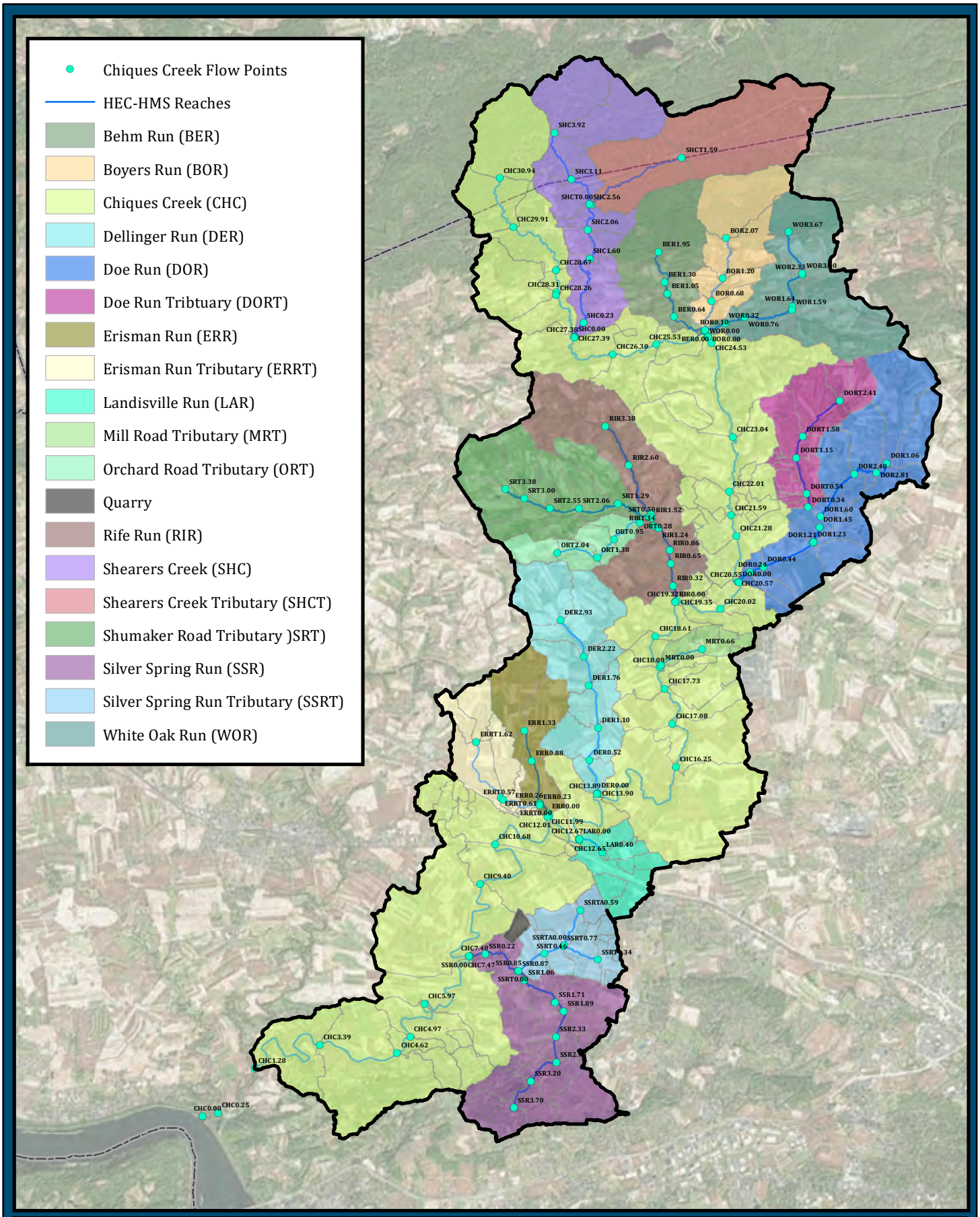

Figure 4..1
Flow Points and Sub-basins in the ChiquesCreek HEC-HMS Basin Model

0 0.5 1 2 Miles
1 inch = 2 miles

Sub-basins Loss Method

The SCS Curve Number Loss Method was chosen for the HEC-HMS basin models. Runoff Curve Numbers were developed by the NRCS in programs such as TR-55 and Technical Release 20 (TR-20), and are used in HEC-HMS and other applications to convert mass rainfall into mass runoff. CN is based upon soils, plant cover, the amount of impervious area, interception, and surface storage. CN's generally range from 30 to 98, with 30 having the least amount of runoff and 98 being impervious area, with the most amount of runoff. This method was chosen for this watershed as it is a widely used method in hydrologic modeling throughout the United States and is appropriate for a watershed that is vastly farmland.

A GIS routine was used to union the land use data discussed in Section 3.1 of this report with soil data for the watershed to compute the CN values. In regards to soils, a Hydrologic Soil Group (HSG) classification was developed by the NRCS to indicate the minimum rate of infiltration obtained for bare soil after prolonged wetting. The hydrologic soil groups are named A, B, C, and D, with Group A having low runoff potential and Group D having high runoff potential. Spatial soil data, dated 2016, was obtained from the NRCS to use in this investigation. Figure 4.2 shows the hydrologic soil groups within the Chiques Creek watershed, with the majority of soils in the being classified as Group B soils. Note that within the HEC-HMS basin model the percent imperviousness and initial abstraction were left blank. The impervious area was considered in the CN calculations and the initial abstraction was left blank in order to allow the program to calculate the standard values.

Sub-basins Transform Method

The SCS Unit Hydrograph Method was used as the transform method for the sub-basins in the HEC-HMS basin models. This method requires the input of the SCS lag time, which is defined as 60% of the time of concentration (T_c). Travel time (T_t) is the time it takes water to travel from one location to another in the watershed. T_t is a component of T_c, which is the time for runoff to travel from the most hydrologically remote point in the watershed to the point of interest. T_c is calculated by summing the travel time for consecutive flow components in each sub-basin. Methods outlined in the NRCS TR-55 were used to calculate the T_t and T_c for each sub-basin. Existing topographic mapping, field reconnaissance, and stormwater infrastructure information was used to determine flow paths and hydraulic characteristics of the flow paths.

Lag time is a critical factor in the estimation of peak flows within a watershed, and although lag time is defined as 60% of the T_c, it is often a variable that varies based upon regional factors. The level of confidence in the calculated T_c is relatively high because it is calculated based upon physical factors that can be field measured. The level of confidence in the lag time, however, is not as high when using the standard $0.6T_c$ definition, especially in this relatively smaller watershed. Therefore, for the HEC-HMS model, the T_c was used as the SCS lag time in the SCS Unit Hydrograph Method. The confidence in using the T_c in lieu of the lag time is high during the verification process, discussed in Section 4.4.

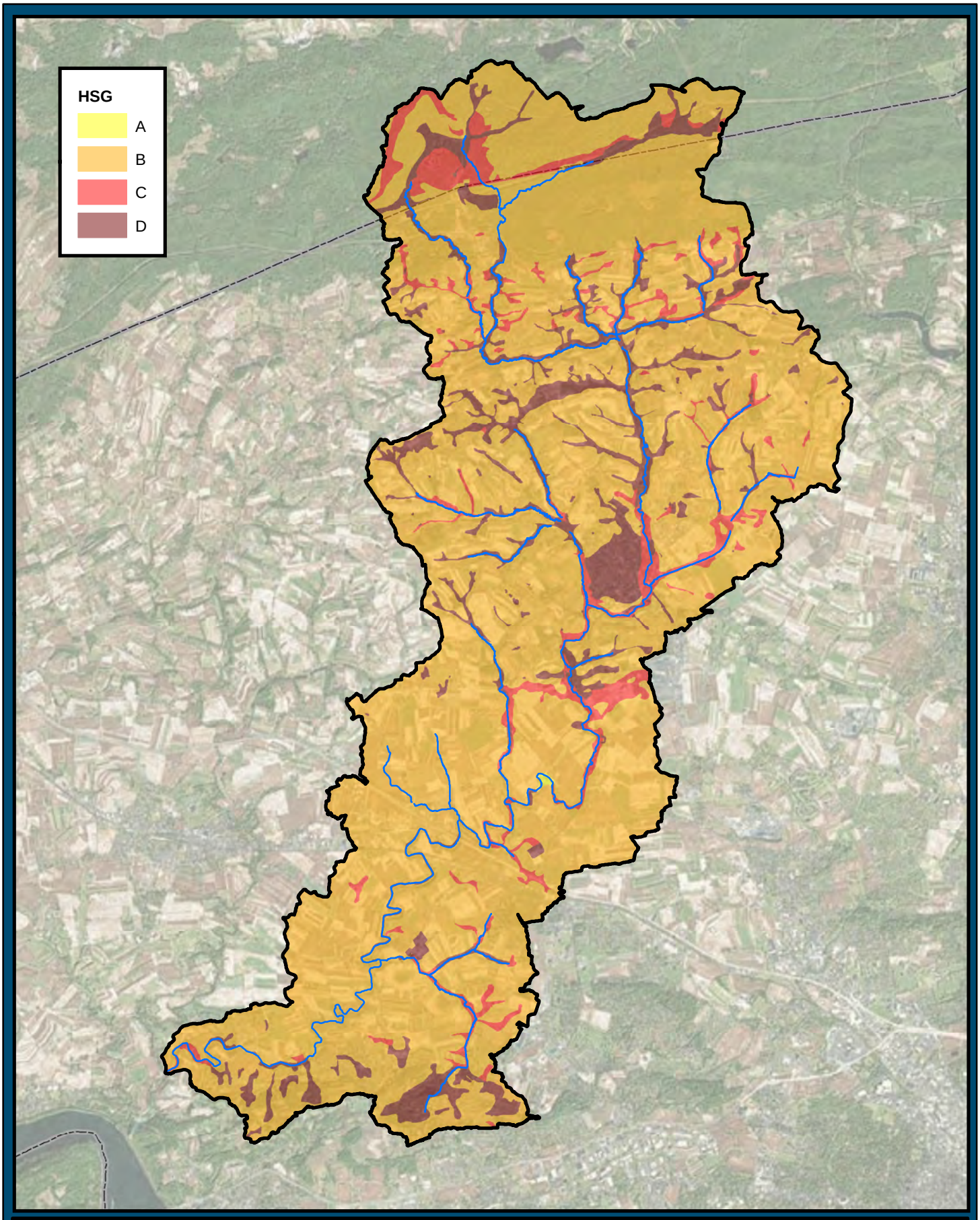

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Figure 4..2
Soils in the
Chiques Creek Watershed

0 0.5 1 2 Miles
1 inch = 2 miles

Sub-basins Baseflow

Baseflow is the portion of stream flow that comes from the sum of deep subsurface flow and delayed shallow subsurface flow, and in the realm of hydrologic modeling, is the amount of flow in a channel prior to the storm event occurring. For Chiques Creek and its tributaries, this flow amount is negligible and will not impact flood flows. Therefore, baseflow was not included in the HEC-HMS models.

Reaches and Routing

The Muskingum-Cunge Routing Method was used for the HEC-HMS basin models. This method is based on the combination of the conservation of mass and the diffusion representation of the conservation of momentum. It is designed to account for peak flow attenuation within the reaches. The 8-Point method was utilized for all reaches, as cross-sections were developed from the field survey and the project DEM. Aerial photographs and field data were used to assist in determining the Manning's n values for the channel and over bank areas. The cross-sections are stored as paired data within the HEC-HMS model.

Reservoirs

As discussed in Section 3.2, a total of 59 stormwater facilities were included as reservoirs in the basin model. For the majority of these reservoirs, the "outflow structures" method was used, and field survey data were used to model the orifice, riser, and spillway (if present), and dam top. Elevation-area curves for these reservoirs, input as paired data into the model, were developed from the project DEM. For reservoirs that are dry during normal (no rain) conditions, the initial elevation was set to the bottom of the reservoir. For reservoirs that are wet during normal conditions, the initial elevation was set to the top of water elevation from the field survey data.

Ponds 58 and 39 are associated with Doe Run Elementary School, which was under construction at the time of this study. Development plans for this school were obtained from Penn Township and these reservoirs were included in the model as if they were fully constructed, as the construction will be near completion in the near future. Data for the orifice, riser, spillway, and dam top were taken directly from the plans.

All input data into the Chiques Creek basin model is provided in Appendix A of this report. The data includes a table showing the drainage area, CN, and T_c used for each sub-basin, reach data, cross-section paired data, and reservoir input data.

4.2 METEOROLOGICAL MODEL

The Frequency Storm method was used as the meteorological model for the HEC-HMS model. This method is designed to produce a synthetic storm from statistical precipitation data to compute a hyetograph for each sub-basin. For this investigation, precipitation data

was taken from the NOAA Atlas 14, Volume 2, Version 3, at the latitude and longitude of the watershed (Table 4.2).

Table 4.2: Precipitation Data

Duration	*Recurrence Interval (years)*							
	2	*5*	*10*	*25*	*50*	*100*	*200*	*500*
1-hr	1.35	1.68	1.93	2.25	2.49	2.74	2.98	3.30
2-hr	1.59	2.01	2.34	2.80	3.17	3.56	3.97	4.55
3-hr	1.74	2.19	2.55	3.05	3.46	3.89	4.33	4.96
6-hr	2.15	2.70	3.16	3.82	4.37	4.97	5.61	6.55
12-hr	2.62	3.32	3.91	4.80	5.55	6.39	7.32	8.71
24-hr	3.03	3.85	4.56	5.63	6.56	7.59	8.74	10.5

4.3 CONTROL SPECIFICATIONS

A duration of 24-hours and a 1-minute time step was used for the HEC-HMS models. A 1-minute time step was chosen due to the small times of concentration within the watershed. A 1-minute time step is necessary in order to allow the program to perform computations within the limits established. The date was set randomly as 01Jan2017. The actual duration was set 36 hours to allow ample time for the watershed to respond to the 24-hour storm.

4.4 CALIBRATION AND VERIFICATION

Calibration is the adjustment of the basin model to replicate conditions during storm events with known historical data (i.e. stream flow and precipitation data). Verification is the determination that the model is accurate for the range of storm events to be modeled in the study. Both calibration and verification involve the input of known stream flow and precipitation data for various storms throughout a time period representative of current watershed conditions. There are no stream flow gages located in the Chiques Creek watershed. There is one stage gage located at Hamaker Road and several precipitation gages in or near the Chiques Creek watershed (Figure 4.3) that are operated by LCEMA through their StormNet program. There is also a camera at Elizabethtown Road operated by SRBC. Because there is no stream flow gage to measure the flow of floodwaters and compare it to the modeling results, direct calibration of the HEC-HMS model could not be performed. However, precipitation and stage data was collected from LCEMA for several more frequency, smaller flood events in order to verify the model is at a minimum simulating the timing of the peak at the Hamaker Road stage gage correctly. The Hamaker Road stage gage is located on reach CHC23.04_CHC22.01 in the HEC-HMS basin model, and the precipitation data was entered into the HEC-HMS as a “specified hyetograph” for all historical storms.

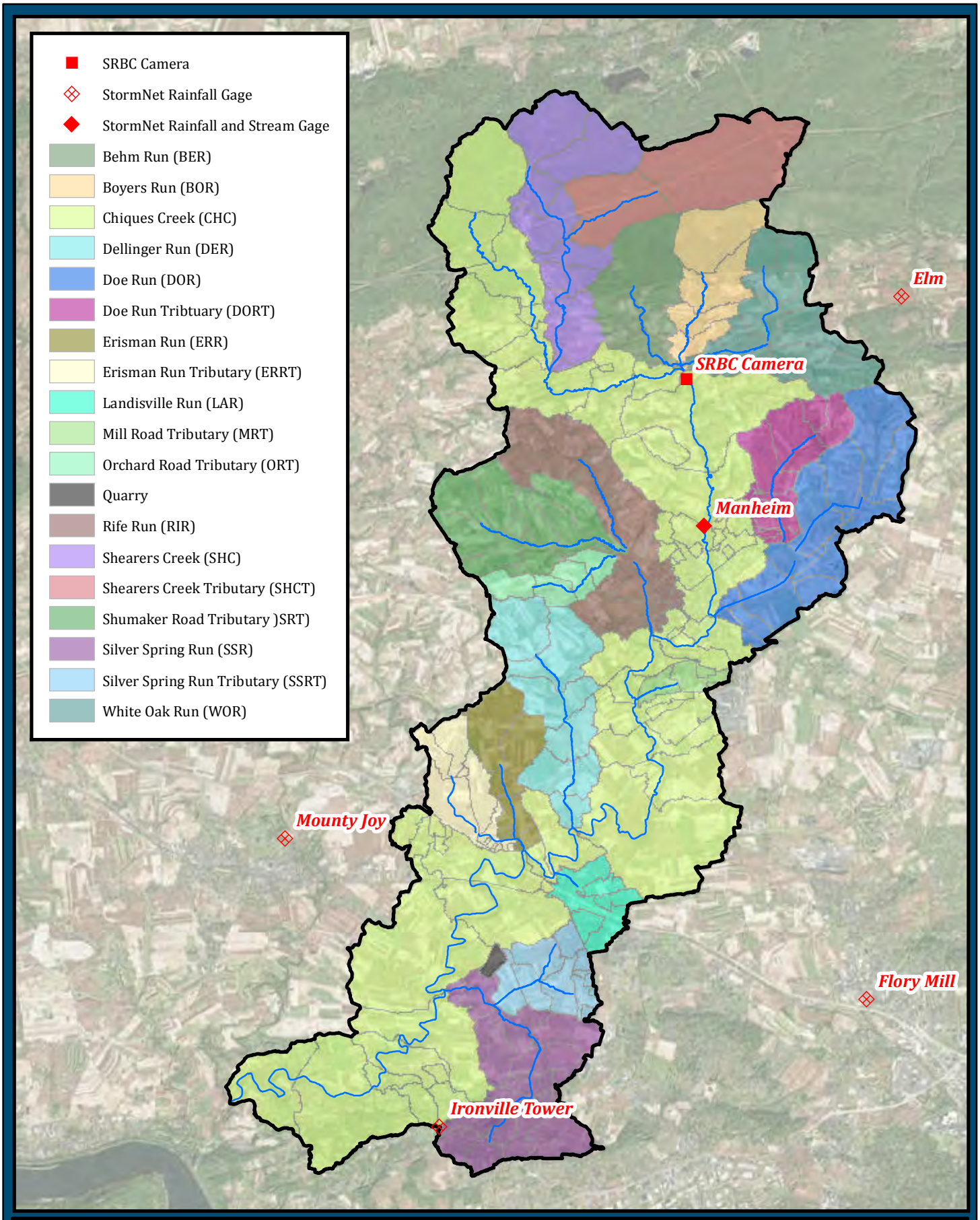


Figure 4.3

Precipitation and Stage Gages in Chiques Creek Watershed

0 0.5 1 2 Miles

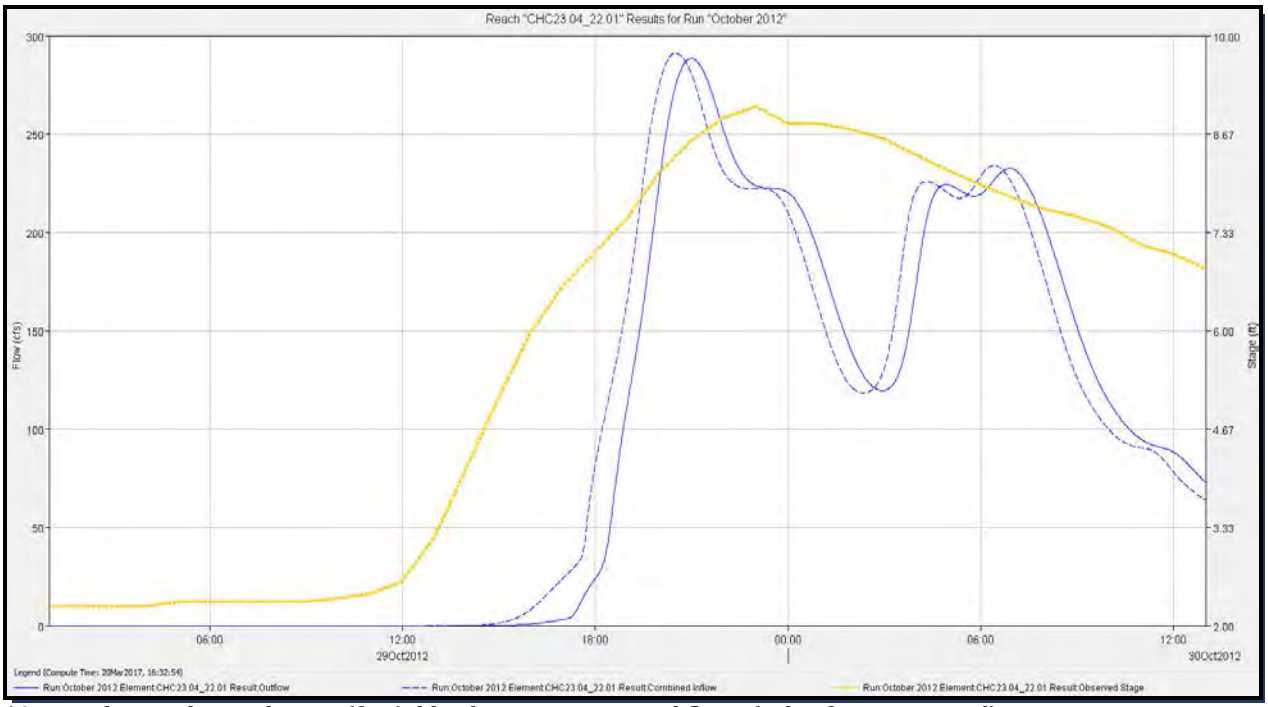
1 inch = 2 miles

Verification-More Frequent, Smaller Flood Events

Several historical storms were included in the HEC-HMS model, but only the October 2012, August 2015, and September 2015 had sufficient precipitation and stage data to adequately verify the results of the HEC-HMS model.

The October 2012 storm occurred over a 36 hour period between October 29-30, 2012. Only the Mount Joy and Ironville Gages recorded data during this event, as the Mount Joy gage recorded a total of 2.4 inches of rain and the Ironville gage recorded 2.0 inches of rain over the 36 hour period. The precipitation gage data was assigned to the appropriate HEC-HMS sub-basins and the model was run. The results showed that the peak of the stage at Hamaker Road corresponds well with the peak of the flow from the HEC-HMS model (Figure 4.4).

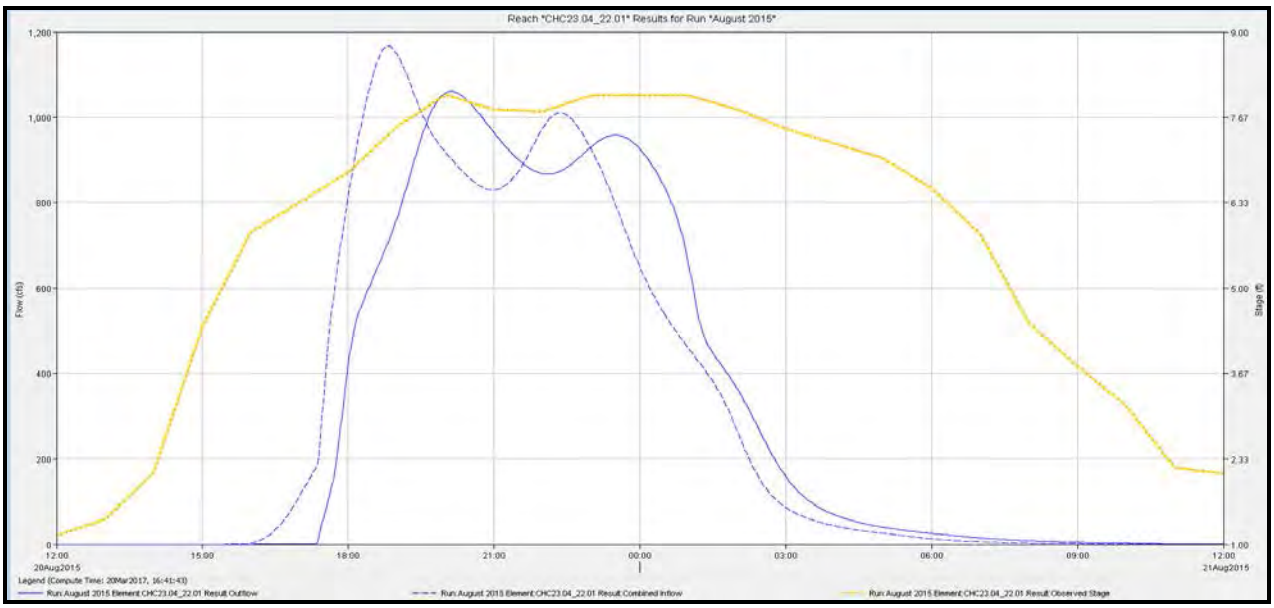
Figure 4.4: Verification of October 2012 Storm



**Orange line is observed stage (feet), blue lines are computed flows (cubic feet per second)*

The August 2015 storm occurred over a 24 hour period between August 20-21, 2015. For the duration of the storm, the Mount Joy precipitation gage recorded 4.5 inches of rain, the Manheim precipitation gage recorded 2.9 inches of rain, and the Ironville precipitation gage recorded only 0.8 inches of rain. The precipitation gage data was assigned to the appropriate HEC-HMS sub-basins and the model was run. The results showed that the peak of the stage at Hamaker Road corresponds well with the peak of the flow from the HEC-HMS model (Figure 4.5).

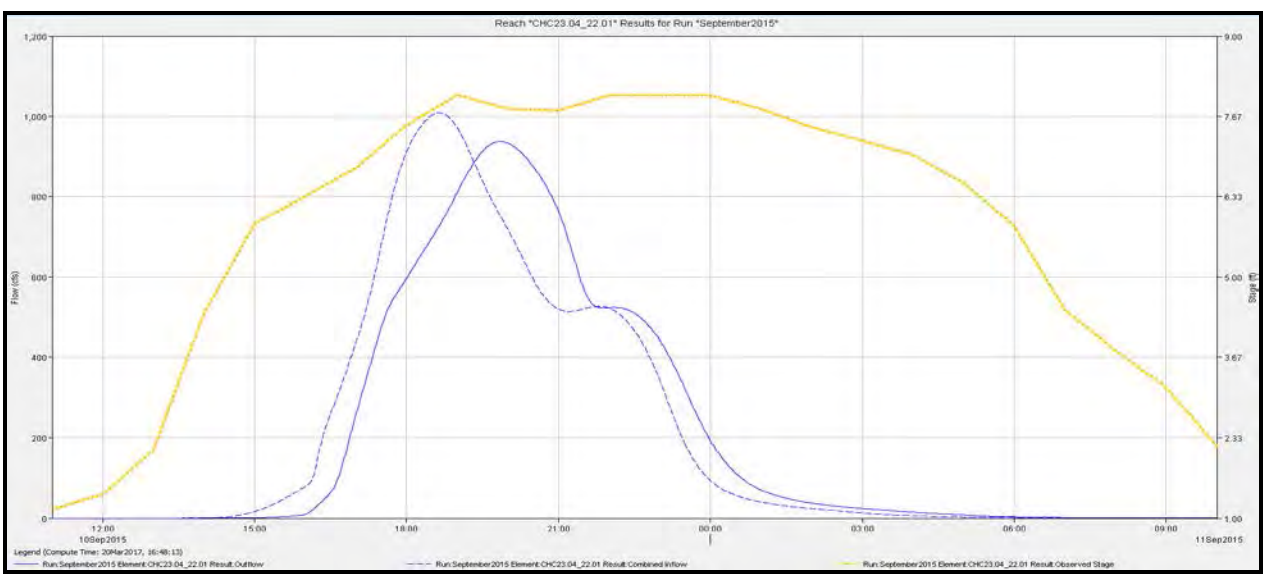
Figure 4.5: Verification of August 2015 Storm



**Orange line is observed stage (feet), blue lines are computed flows (cubic feet per second)*

The September 2015 storm occurred between September 10-11, 2015. For the duration of 24-hour storm, the Mount Joy precipitation gage recorded 1.5 inches of rain, the Manheim precipitation gage recorded 2.5 inches of rain, and the Ironville precipitation gage recorded 2.2 inches of rain. The precipitation gage data was assigned to the appropriate HEC-HMS sub-basins and the model was run. The results showed that the peak of the stage at Hamaker Road corresponds well with the peak of the flow from the HEC-HMS model (Figure 4.6).

Figure 4.6: Verification of September 2015 Storm



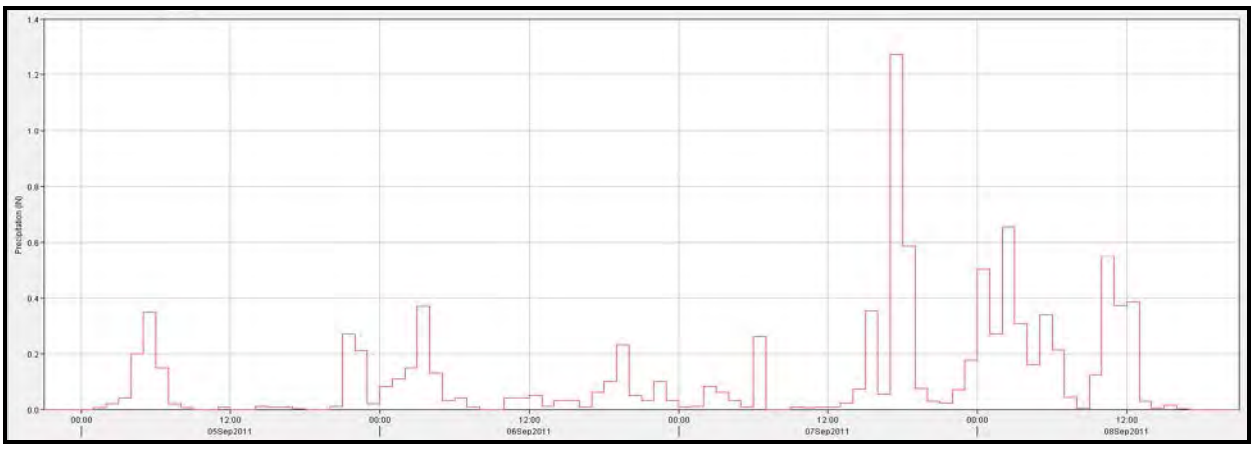
**Orange line is observed stage (feet), blue lines are computed flows (cubic feet per second)*

Based upon the comparison between the stage data at Hamaker Road and the computed peak flows from HEC-HMS, the model computes the timing of the peaks sufficiently, at least for these smaller, less frequent events. This validates the use of T_c in lieu of the SCS lag time in the SCS Unit Hydrograph Method, discussed above.

Verification-September 2011 Lee Event

For the September 2011 Lee storm event, the Hamaker Road stage gage was not operating, and, reliable precipitation data from StormNet was not available. To model the September 2011 Lee event, radar-based rainfall data for this event was obtained from the NWS. The radar-based data was in grid format, and 14 grids covered the Chiques Creek watershed. A specified hyetograph (Figure 4.7) was developed for each grid using the rainfall data.

Figure 4.7: Specified Hyetograph for September 2011 Storm-Area 11



Each sub-basin in the HEC-HMS basin model was assigned a hyetograph (Figure 4.8). The September 2011 storm was modeled with control specifications that started at 21:00 on 4 September 2011 and continued until 21:00 on 9 September 2011. A 1 minute time step was used. The system dumped an average of 11 inches of rainfall over a 4-day period on the watershed, with the most intense rainfall occurring in the evening of September 7, 2011.

The flows computed from this model run were later input into the hydraulic model to assure the model was estimating the September 2011 storm adequately, which it is based upon high water mark data (discussed is Section 5.2), as no other flow or stage data was available for this event. Computed peak flows for the September 2011-Lee storm is shown at select locations in the watershed in Table 4.3, with an example flood hydrograph at the Chiques Creek-Rife Run confluence (Flow Point CHC19.32) shown in Figure 4.9, which shows the peak of Rife Run occurring a few hours prior to the peak of Chiques Creek. Full results for the September 2011 event and all other storms are located in Appendix B.

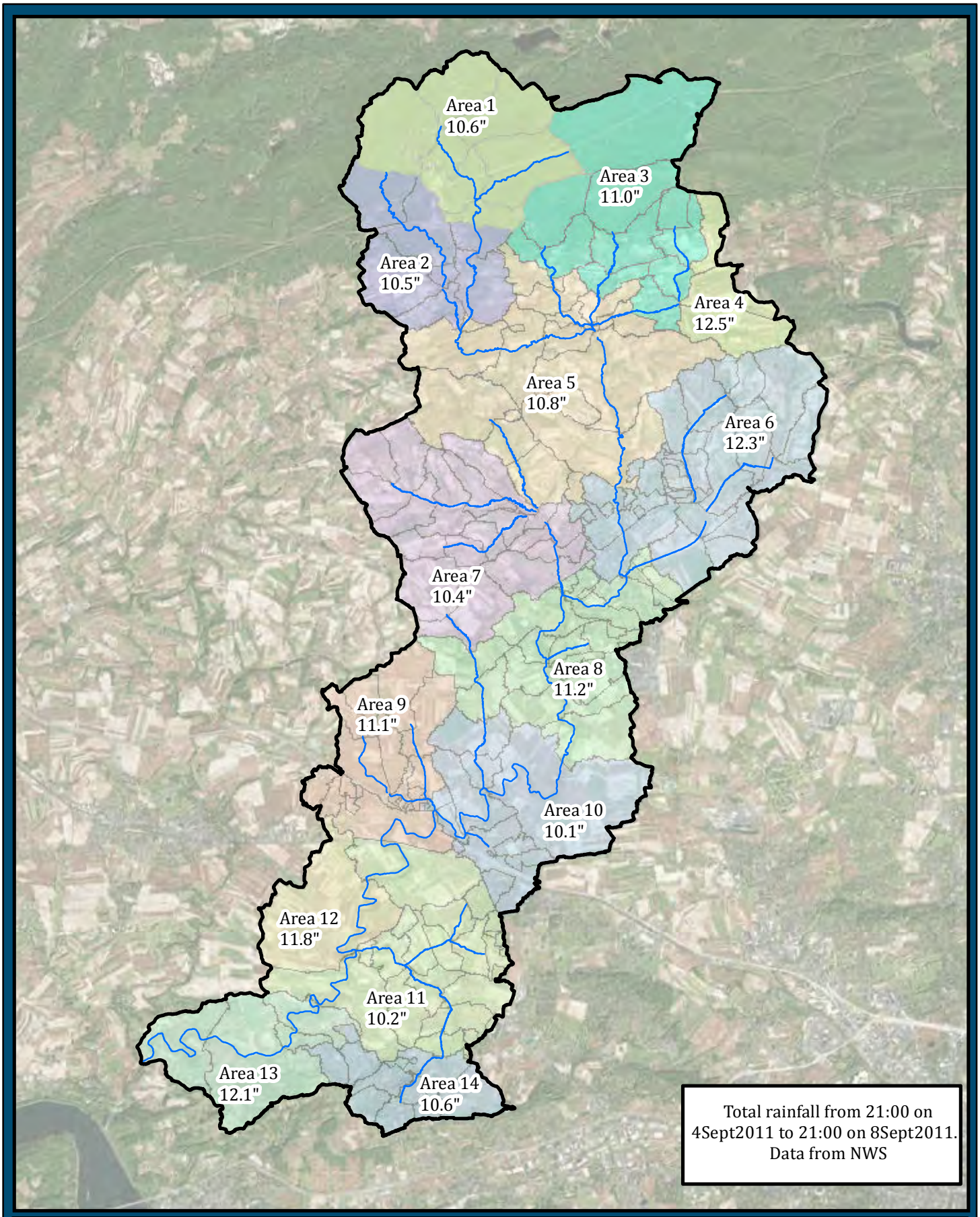


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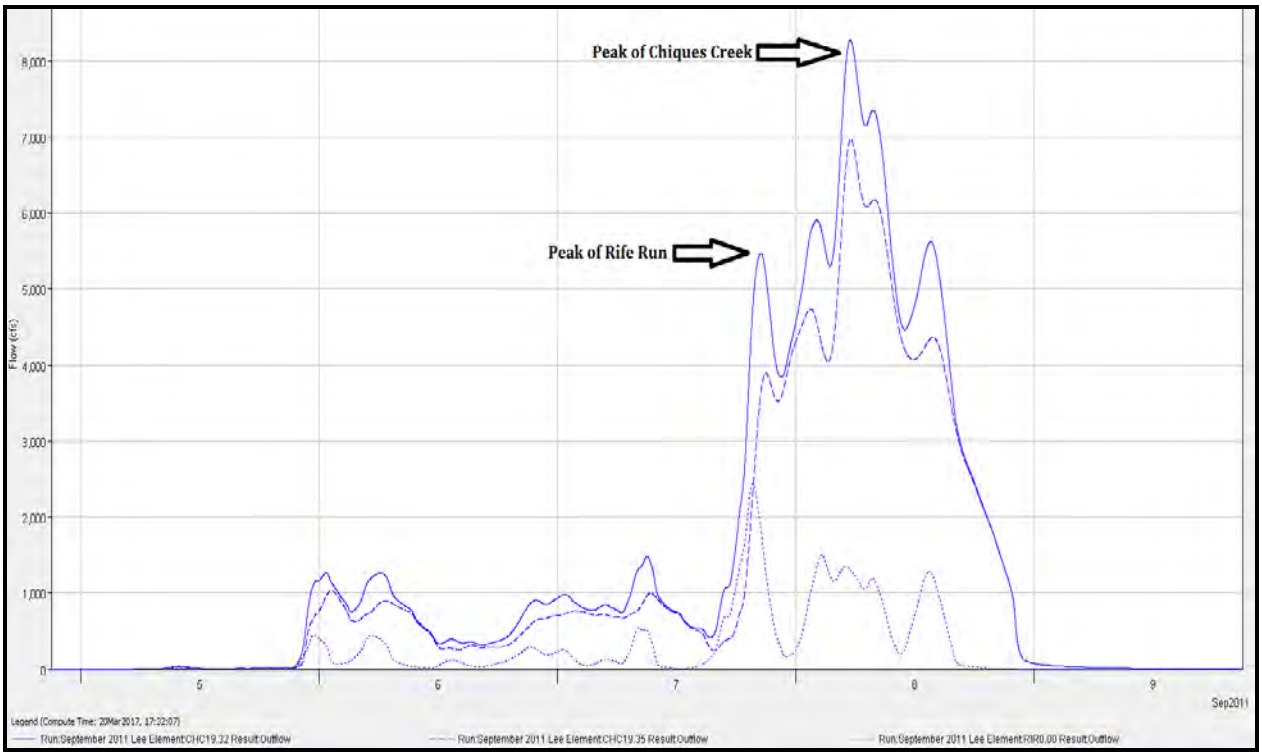
Figure 4.8
September 2011-Lee
Precipitation Totals

0 0.5 1 2 Miles
1 inch = 2 miles

Table 4.3: Peak Flow HEC-HMS Results for September 2011-Lee Storm

Flow Point	*Location*	*Drainage Area (sq. mi.)*	*Sept 2011-Lee Computed Flow (cfs)*
CHC26.30	At Lebanon Road	10.8	2,921
CHC20.57	Upstream of confluence of Doe Run	23.3	5,193
CHC19.32	Downstream of confluence of Rife Run	36.1	8,722
CHC3.39	At Kinderhook Road	62.5	10,642

Figure 4.9: Hydrograph (September 2011 Event) at Flow Point CHC19.32



4.5 EXISTING-CONDITIONS RESULTS

With the verification process confirming that the HEC-HMS model adequately simulates watershed response to rainfall for historical events, synthetic storms were run in the HEC-HMS model with confidence. Peak flows for the eight storm events shown in Table 4.1 and were calculated using HEC-HMS. As full summary of results for the HEC-HMS model is located in Appendix C. Table 4.4 provides abbreviated results at select locations in the Chiques Creek watershed.

Table 4.4: Existing-Conditions HEC-HMS Results

Flow Point	Stream	Location	Existing-Conditions Computed Peak Flow (cfs)								
			Drainage Area (sq. mi.)	2-year	5-year	10-year	25-year	50-year	100-year	200-year	500-year
CHC29.91	Chiques Creek	At PA Turnpike	1.7	146	276	401	603	808	1,039	1,291	1,659
CHC27.39	Chiques Creek	US of confluence of Shearers Creek	3.5	304	535	733	1,097	1,389	1,758	2,200	2,838
CHC27.38	Chiques Creek	DS of confluence of Shearers Creek	10.0	707	1,366	2,084	3,368	4,494	5,685	7,039	9,127
CHC26.30	Chiques Creek	At Lebanon Road	10.8	637	1,339	1,996	3,130	4,160	5,332	6,657	8,657
CHC24.64	Chiques Creek	US of confluence of Boyers Run	11.8	596	1,184	1,773	2,770	3,671	4,726	5,925	7,769
CHC24.53	Chiques Creek	At Elizabethtown Road	18.4	929	1,580	2,256	3,584	4,753	6,136	7,771	10,395
CHC22.01	Chiques Creek	At Hamaker Road	21.8	1,034	1,766	2,353	3,783	5,066	6,619	8,485	11,517
CHC20.57	Chiques Creek	US of confluence of Doe Run	23.3	1,018	1,729	2,365	3,802	5,107	6,679	8,536	11,498
CHC20.55	Chiques Creek	DS of confluence of Doe Run	28.8	1,292	2,108	2,889	4,267	5,771	7,575	9,710	13,115
CHC19.35	Chiques Creek	US of confluence of Rife Run	29.6	1,294	2,040	2,738	4,290	5,792	7,580	9,685	13,049
CHC19.32	Chiques Creek	DS of confuence of Rife Run	36.1	2,118	3,388	4,469	6,413	8,141	10,152	12,449	15,965
CHC16.25	Chiques Creek	At Colebrook Road	39.4	1,889	3,068	4,103	5,955	7,606	9,515	11,713	15,191
CHC9.40	Chiques Creek	At Newcomer Road	51.4	2,024	3,206	4,291	6,265	8,072	10,258	12,887	17,211
CHC4.62	Chiques Creek	At Bridge Valley Road	60.7	2,123	3,366	4,517	6,673	8,677	11,075	13,912	18,549
CHC1.28	Chiques Creek	US of confluence of Little Chiques Creek	63.4	2,024	3,184	4,259	6,315	8,257	10,588	13,326	17,752
CHC0.00	Chiques Creek	At confluence with Susquehanna River*	126.0	4,140	6,540	8,420	11,300	13,400	15,900	18,200	22,600
BER0.00	Behm Run	At confluence with Boyers Run	1.9	191	331	501	796	993	1,209	1,500	1,937
BOR0.00	Boyers Run	At confluence with Chiques Creek	6.6	703	1,303	1,910	2,969	3,816	4,748	5,785	7,297
DER0.00	Dellinger Run	At confluence with Chiques Creek	2.9	411	714	980	1,434	1,808	2,214	2,643	3,272
DOR0.00	Doe Run	At confluence with Chiques Creek	5.5	770	1,272	1,729	2,526	3,223	4,003	4,936	6,239
DORT0.34	Doe Run Trib	At Doe Run Road	1.7	337	553	717	980	1,205	1,538	1,872	2,320
ERR0.00	Erisman Run	At confluence with Chiques Creek	2.7	559	988	1,307	1,806	2,188	2,595	3,016	3,598
ERRT0.00	Erisman Run Trib	At confluence with Erisman Run	1.3	290	512	669	915	1,100	1,297	1,498	1,768
ORT0.28	Orchard Road Trib	At Old Line Road	0.8	191	304	400	571	717	864	1,010	1,213
RIR1.62	Rife Run	At Hernley Road	1.9	307	543	755	1,110	1,392	1,695	2,014	2,458
RIR0.00	Rife Run	At confluence with Chiques Creek	6.6	903	1,611	2,278	3,453	4,408	5,427	6,491	8,001
SHC0.00	Shearers Creek	At confluence with Chiques Creek	6.5	466	939	1,440	2,379	3,178	4,005	4,952	6,345
SHCT0.00	Shearers Creek Trib	At confluence with Shearers Creek	3.1	242	551	838	1,359	1,792	2,270	2,775	3,493
SRT0.50	Shumaker Road Trib	At Hernley Road	2.7	506	901	1,225	1,757	2,177	2,633	3,099	3,746
SSR2.70	Silver Spring Run	At Marietta Avenue	1.7	258	429	569	801	976	1,143	1,292	1,539
SSR0.00	Silver Spring Run	At confluence with Chiques Creek	4.8	790	1,331	1,835	2,702	3,395	4,134	4,879	5,893
SSRT0.46	Silver Spring Run Trib	At Eby Chiques Road	1.1	268	441	571	788	969	1,194	1,406	1,758
WOR0.00	White Oak Run	At confluence with Boyers Run	2.9	385	709	1,002	1,513	1,932	2,383	2,856	3,523

**Value computed using USGS Regression Equations via StreamStats program.*

Peak flow data for the 10-, 50-, 100-, and 500-year flood events were obtained from the effective FIS for Lancaster County for a few locations in Chiques Creek watershed. A comparison was made between the results of the HEC-HMS model with the results of the FEMA FIS, which was computed using the TR-20 rainfall-runoff model in 1978 and a USACE flood frequency procedure dated 1972. The results of the HEC-HMS model were also compared to an analysis completed using USGS regression equations via the StreamStats program at the same locations. The results of this comparison are shown in Table 4.5.

Table 4.5: Comparison between HEC-HMS Results and Other Methods

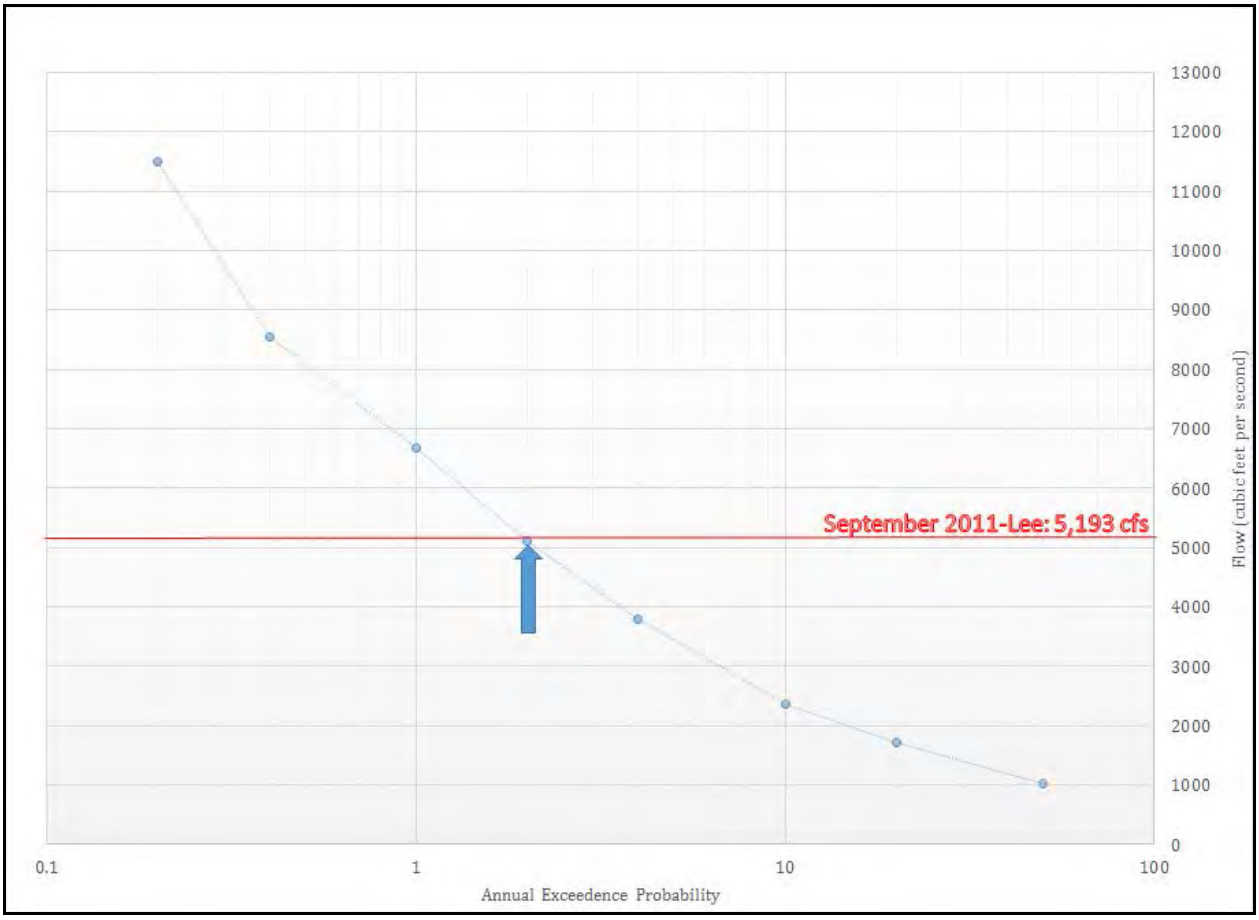
Flow Point	Location	Drainage Area (sq. mi.)	Computed Peak Flows (cubic feet per second)											
			10-year			50-year			100-year			500-year		
			Effective FEMA	2017 USGS Regression	2017 USACE HEC-HMS	Effective FEMA	2017 USGS Regression	2017 USACE HEC-HMS	Effective FEMA	2017 USGS Regression	2017 USACE HEC-HMS	Effective FEMA	2017 USGS Regression	2017 USACE HEC-HMS
CHC26.30	At Lebanon Road	10.8	950	2200	1996	1920	3930	4160	2510	4850	5332	4090	7500	8657
CHC20.57	Upstream of confluence of Doe Run	23.3	2420	3540	2365	4750	6140	5107	6032	7490	6679	9480	11300	11498
CHC19.32	Downstream of confluence of Rife Run	36.1	4349	4530	4469	8246	7700	8141	10524	9330	10152	16216	13900	15965
CHC3.39	At Kinderhook Road	62.5	5410	5380	4253	10130	8700	8227	13310	10400	10547	21820	15000	17672

As seen on Table 4.5, the results of the HEC-HMS model compare well with the results using the USGS regression equations. There is no more than approximately a 10-percent difference between the results of the HEC-HMS model and the USGS regression equations. The results of the HEC-HMS model compared to the effective FEMA FIS values are also comparable, especially in areas where the TR-20 model was used in the effective FEMA FIS, such as Flow Points CHC20.57 and CHC19.32. At the other two flow points, there is less of an agreement due to the fact that the effective FIS used different methodology.

After running the HEC-HMS model with the eight synthetic flows, frequency curves can be developed for any point in the watershed. Using these frequency curves, the approximate frequency of the September 2011-Lee storm can be determined, which varies in different parts of the watershed. At Flow Point CHC20.57, which is just upstream of the confluence of Doe Run in Manheim Borough, the September 2011-Lee event was approximately a 2-percent (50-year) annual chance storm (Figure4.10). Further upstream in the watershed, at Lebanon Road (Flow Point CHC26.30), the September 2011-Lee storm was between a 10-percent (10-year) annual chance storm and 4-percent (25-year) annual chance storm, and further downstream in the watershed, at Kinderhook Road (Flow Point CHC3.39), Lee was approximately a 1-percent annual (100-year)chance storm.

The "1-percent plus" flood discharge was determined using the results of the HEC-HMS model. Per FEMA's *Standard for Flood Risk Analysis and Mapping #84* (FEMA, undated) the 1-percent plus flood elevation is defined as the flood elevation derived by using discharges that include the average predictive error for the analysis. This error is added to the existing-conditions 1-percent flood discharge to determine the 1-percent plus flood discharge.

Figure 4.10: Flow Frequency Curve Upstream of Doe Run (Flow Point CHC20.57)



Per FEMA guidance, for rainfall-runoff models, an analytical approach using the 50-, 10-, and 1- percent annual chance flood discharges from the HEC-HMS model, equations from Water Resources Council (WRC) Bulletin 17B, and equivalent year of record determination per guidance in USACE Engineering Manual (EM) 1110-2-1619 was used to estimate the upper 84-percent confidence limit of the HEC-HMS results.

Using WRC Bulletin 17B and averaging the results of all flow points in the Chiques Creek watershed, a mean of 3.078, a standard deviation of .2640 standard deviation, and a generalized skew of .9251 was determined. Using tables in EM 110-2-1619, the equivalent period of record for the HEC-HMS model was determined to be 30-years based upon the high confidence in the verification of the model to historical storms. The variables were used to determine the upper 84-percent confidence limit for each flow point and this value was used for the 1-percent plus discharge, which is shown in the full summary of results located in Appendix C.

5 HYDRAULIC ANALYSIS

The USACE HEC-RAS (River Analysis System), version 5.0.3, was used to develop geo-referenced hydraulic models for Chiques Creek and its tributaries, calculate flood elevations for the existing-conditions 2-, 5-, 10-, 25-, 50-, 100-, 200- and 500-year flood events, and complete a 100-year floodway encroachment analysis for select reaches of Chiques Creek and Rife Run. HEC-RAS is software that performs one-dimensional steady and unsteady state river flow hydraulic calculations. It is an integrated system of software designed for interactive use for a multi-tasking environment. The system is comprised of a graphical user interface, separate analysis components, data storage and management capabilities, graphics and reporting facilities (USACE 2016). It is widely used and is an approved model for use in FEMA FIS's and floodplain mapping. The HEC-GeoRAS pre- and post-processor utilities were used to assist in the development of cross-sections and the mapping of the floodplain. All elevations in the modeling and mapping are referenced to the NAVD88 vertical datum and the Pennsylvania State Plane Feet South horizontal datum.

All hydraulic modeling was completed to comply with FEMA's guidance documents and standards. This was done in the event that the floodplain mapping completed in this investigation were to be submitted to FEMA by SRBC or any of the local municipalities for a change to the effective FIRMs. The modeling completed in this study uses more up-to date data as the effective FEMA studies and better estimates the flood elevations and floodplain boundaries for Chiques Creek and its tributaries.

5.1 EXISTING-CONDITIONS HEC-RAS MODEL

An Existing-Conditions HEC-RAS model was developed to determine flood elevations along Chiques Creek and its tributaries at the time of this study and to be used as a baseline to determine the impacts of flood resiliency alternatives developed in this investigation. Peak flow data from the HEC-HMS model were input into HEC-RAS, and a steady state computation was completed for each flooding source.

Topographic Data

The HEC-GeoRAS pre-processor, using the project DEM described in Section 1.6, was used to develop cross-sections for this study. The overbank portions of the cross-sections are from the DEM. The "wet sections" of the cross-sections were input based upon the channel field survey data described in Section 2 of this report. For intermediate cross-sections between surveyed sections, the channel dimensions were interpolated. The source of channel data for each cross-section is listed in the description box in the geometric data editor, along with any correlation between effective FEMA cross-sections.

The HEC-RAS model has cross-sections that have river stations generated by the HEC-GeoRAS program. The station identifier for all watercourses is the stream distance in feet upstream of the confluence with the receiving watercourse. For Chiques Creek, the receiving watercourse is the Susquehanna River. For Doe Run and Rife Run, the receiving watercourse in Chiques Creek.

Road Crossings

Data for road crossings (and weirs) were obtained from the field survey described in Section 2.0 of this report or from as-built plans provided by PENNDOT or PTC. The field team noted sizes, shapes and materials, as well as obtain inverts or top of culverts, low chord, high chord, top or road, and other required spot elevations using RTK GPS technology. The source of data for each road crossing is listed in the description box in the geometric data editor. A list of road crossings included in the HEC-RAS models is located in Appendix D.

Manning's Roughness Values

Roughness factors (Manning's "n") were chosen based upon engineering judgment, land use, aerial photography, and field observation. An n value of .150-.200 is considered high due to heavy obstructions such as large trees or for buildings, where an n value of .013 is considered low and is used for paved surfaces such as roads and parking lots. For Chiques Creek, base channel n values range from .040-.045 in the channel for the majority of the studied reach. The values were adjusted slightly up in some locations during the calibration process, discussed below. In upstream heavily wooded areas, channel n values range from .055-.060.

For tributaries, channel n values ranged from .038-.045 for the majority of the reaches, with higher values again used in upstream heavily wooded areas. Overbank n values for all flooding sources ranged from .013-.200.

Ineffective Flow Areas and Obstructions

Ineffective flow areas were set appropriately at bridges and other areas where flood flow would not be effective. Obstructions in the model represent buildings that would occupy storage space for floodwaters.

Contraction/Expansion Coefficients

Contraction/expansion values for the cross-sections at bridges were set at the FEMA recommended values of .3 and .5, respectively. All other cross-sections were assigned contraction/expansion coefficients of .1 and .3, respect

Reach Boundary Conditions

Normal depth was used as the downstream reach boundary condition for the HEC-RAS model for all watercourses. A normal depth slope was input into the HEC-RAS model based upon the developed channel profile. Using the time of peak data from the HEC-HMS model, a sensitivity analysis was performed using HEC-RAS, setting the downstream boundary condition at the upper reach tributaries to a known water surface elevation that corresponds to the flow from the Chiques Creek model. The results show that there is no difference in results using a known water surface elevation versus normal depth.

Therefore, normal depth was kept as the downstream boundary condition for all HEC-RAS modeling completed in this investigation.

Floodway Encroachment Analysis

A floodway encroachment analysis is required if the data developed in this investigation were to be submitted to FEMA for a map change. The regulatory floodway is defined as the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to convey the 100-year flood without cumulatively increasing the water-surface elevation by more than a designated height (surcharge). The NFIP standard surcharge of 1-ft has been adopted in Pennsylvania. HEC-RAS was used to complete the floodway encroachment analysis. Method 4 in HEC-RAS was initially used to specify a target water-surface increase, which is 1-ft. Method 1 was then employed to further refine the floodway encroachment stations. The floodway encroachment analysis would only be required by FEMA for reaches that have a floodway mapped currently on the effective FEMA FIRMs (although for Chiques Creek the floodway encroachment analysis was run for the entire length in HEC-RAS). For Chiques Creek, the reaches are XS 7132-60, XS 33479-19201, XS 5737-51346, XS 112299-104871, and XS 145949-137552. For Rife Run, the reach with floodways is XS 825-8478.

Modeling Notes

Special circumstances arise during HEC-RAS modeling that should be documented for future users of the model. A list of stream specific modeling notes for the HEC-RAS modeling is located in Appendix E.

5.2 CALIBRATION AND VERIFICATION

Calibration and verification in HEC-RAS modeling involves the input of a rating curve for a stream gage or high water marks (HWM) for a particular flood event to assure the hydraulic variables input into the model lead to accurate results. There are no stream flow gages located in the Chiques Creek watershed; however, a map showing the extent of the flooding from Chiques Creek during the September 2011 Lee event was provided by LCEMA. According the LCEMA, this map was created by walking the damage line immediately following the event. In addition to the LCEMA data, research was conducted by USACE to obtain photographs posted on-line during and after the September 2011-Lee event, and these photographs were used to determine debris lines to survey HWM for the calibration of the HEC-RAS model (Figure 5.1). This included photography from the SRBC camera located at Elizabethtown Road.

Figure 5.1: Surveyed HWM for September 2011-Lee Flood

Figure 5.1: Surveyed HWM for September 2011-Lee Flood (Continued)

The peak flows for the September 2011-Lee storm were input into the HEC-RAS model to simulate the event and compare to the Lancaster EMA data and surveyed HWM. For the "ChiquesCreek_Calibration" geometry file in the HEC-RAS model, the geometry differs slightly between XS 107673-108384. During the September 2011-Lee flood event, this portion of the channel had 3-5 feet of additional sediment than is existing today because after the event, PENNDOT removed this sediment to improve conveyance. Based upon a comparison of the September 2011-Lee flood using the calibration geometry versus the existing-conditions geometry, this removal of sediment would have had a minimal impact if Lee were to occur today (less than 0.2 ft.). This is due to the fact that Lee was such a larger event. This sediment removal likely has a greater impact for smaller, more frequent storms. Therefore, the September 2011-Lee flows were also input into the "ChiquesCreek_ExistingConditions" plan file.

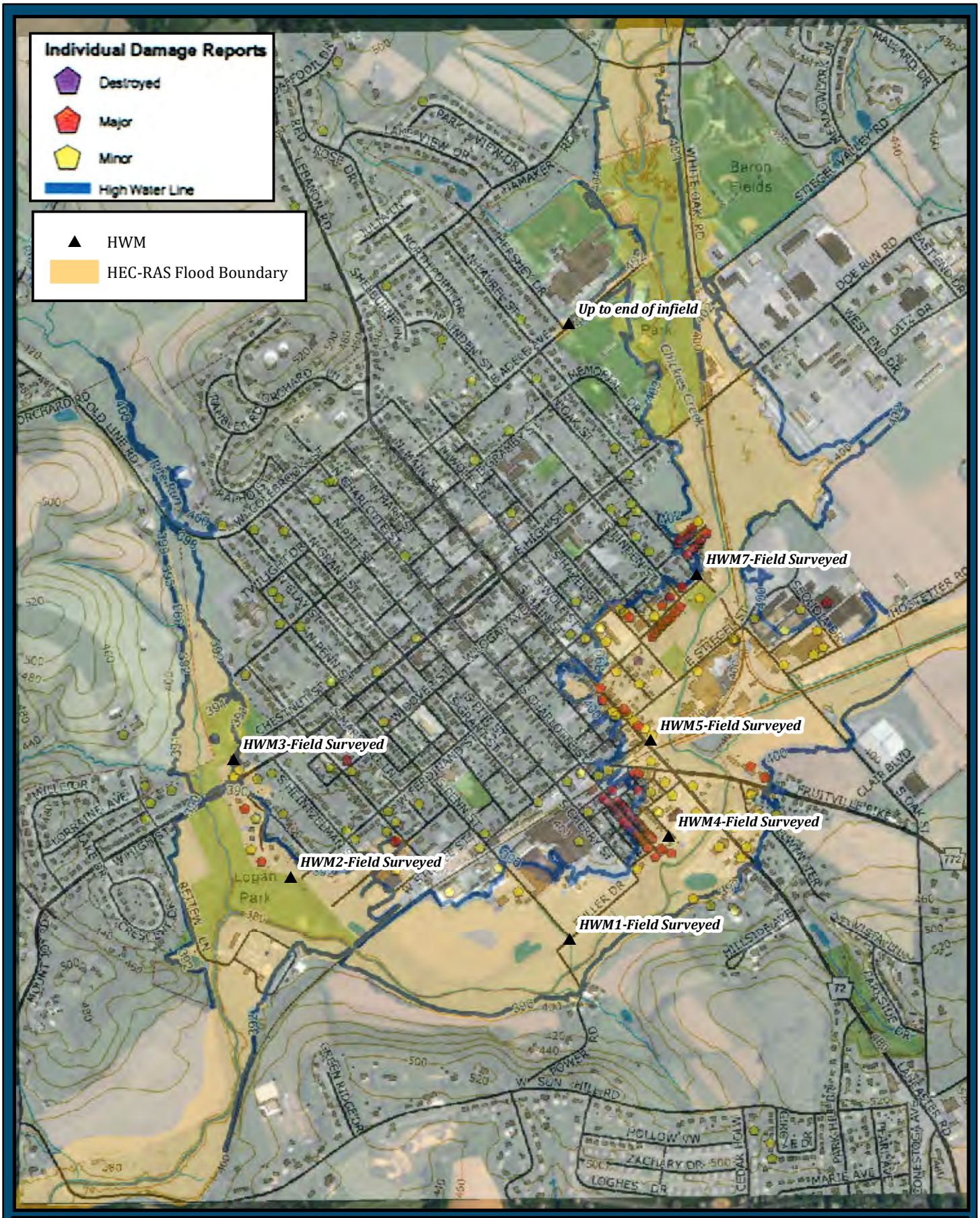
Initial runs of the September 2011-Lee flood event showed favorable results, with minimal alteration to base input variables to achieve calibration within a reasonable tolerance. Manning's n values were increased slightly (.043 to .045) for the reach through Manheim Borough and ineffective flows were adjusted accordingly for the significant area of contraction and expansion of floodwaters from the railroad bridge at Station 103385. This minimal changes to hydraulic variables also confirms the flows computed by HEC-HMS for this event are accurate. Table 5.1 shows the calibration results to the September 2011-Lee flood event.

Table 5.1: Calibration Results for September 2011-Lee Flood

HEC-RAS XS	*Flow (cfs)*	*Observed Flood Elevation (ft. NAVD88)*	*Computed Flood Elevation (feet NAVD88)*	*Difference (ft.)*
129520	5082	430.5	430.3	-0.2
113946	5254	403.7	403.8	0.1
110553	5193	398.7	398.6	-0.1
109141	5193	398.5	398.2	-0.3
107475	7292	396.3	396.2	-0.2
105859	7044	395.0	394.7	-0.3
102751	7044	392.3	392.1	-0.2
95546	8138	380.7	380.7	0.0
90026	8227	373.9	373.9	0.0

Flood mapping of the September 2011-Lee flood was also developed in order to compare the results of the modeling to the LCEMA damage map. The floodplain boundary of the September 2011-Lee flood event generated from the HEC-RAS model is shown on Figure 5.2, along with the LCEMA damage map (only Manheim Borough area shown). The floodplain mapping corresponds well with the LCEMA damage map. The mapping for areas outside of Manheim Borough was reviewed by the local municipalities and they confirmed that the HEC-RAS modeling/mapping does depict the flooding that occurred in September 2011.

Calibration of the HEC-RAS model to the smaller, more frequent flood events was not completed due to lack of data. There are no HWM or any historical data available for these storms other than on-line photographs, that do not specify a date or time the flooding occurred.



SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
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Figure 5.2

September 2011-Lee Floodplain Mapping in Manheim Borough

0 600 1,200 2,400 Feet

1 inch = 1,200 feet

5.3 EXISTING-CONDITIONS RESULTS

The peak flows computed using HEC-HMS for the eight frequencies and the 1-percent plus flood event were input into the HEC-RAS model to compute existing-conditions flood elevations for Chiques Creek and its tributaries. The plans were run in a sub-critical flow regime. Floodway data tables for Chiques Creek and Rife Run are provided in Appendix F. Flood profiles for Chiques Creek and all its tributaries are located in Appendix G. Detailed HEC-RAS output tables for Chiques Creek and its tributaries are located in Appendix H.

The HEC-RAS plan files were input into the CHECKRAS program to identify any deficiencies within the model. CHECKRAS is a program developed by FEMA to check the reasonableness of data from the HEC-RAS files. CHECKRAS reviews the HEC-RAS data to assure (1) the hydraulic estimates and assumptions made in the model appear to be justified; (2) the data is in accordance with FEMA requirements; and (3) the data is compatible with the assumptions and limitations of the HEC-RAS program. CHECKRAS report printouts for this study area located on the attached project disc.

The modeling completed in this study uses more up-to date data as the effective FEMA studies and better estimates the flood elevations for Chiques Creek and its tributaries. A comparison of 1-percent annual (100-year) chance flood elevations (or base flood elevations (BFEs) from the effective FEMA study and this revised study are shown in Table 5.2 for Chiques Creek and Rife Run.

Table 5.2: Comparison of Effective FEMA vs. Revised Study BFEs

HEC-RAS XS	*FEMA Lettered XS*	*Effective FEMA BFE (ft. NAVD88)*	*Revised BFE (ft. NAVD88)*	*Difference (ft.)*
Chiques Creek				
144197	BP	446.7	450.3	3.6
143365	BO	445.7	449.3	3.6
142662	BN	442.4	448.4	6.0
140990	BM	440.8	445.3	4.5
139930	BL	440.2	444.0	3.8
138937	BK	440.0	443.7	3.7
138644	BJ	438.2	440.5	2.3
138163	BI	437.9	440.2	2.3
137910	BH	437.7	439.9	2.2
111765	BG	400.4	401.9	1.5
110316	BF	399.8	399.2	-0.6
109740	BE	399.5	399.1	-0.4
109060	BD	399.1	398.9	-0.2
108231	BC	397.9	397.1	-0.8
107871	BB	397.0	396.8	-0.2
106849	BA	396.1	395.8	-0.3

Table 5.2: Comparison of Effective FEMA vs. Revised Study BFEs (Continued)

HEC-RAS XS	FEMA Lettered XS	Effective FEMA BFE (ft. NAVD88)	Revised BFE (ft. NAVD88)	Difference (ft.)
Chiques Creek				
105859	AZ	396.0	395.4	-0.6
105669	AY	396.0	395.4	-0.6
104871	AX	396.0	395.1	-0.9
85737	AW	369.2	369.8	0.6
83678	AV	367.6	368.1	0.5
81362	AU	364.8	365.1	0.3
78613	AT	362.7	362.0	-0.7
75873	AS	360.4	358.9	-1.5
72364	AR	354.7	354.8	0.1
70645	AQ	351.7	353.3	1.6
65279	AP	350.1	348.6	-1.5
62110	AO	349.2	344.3	-4.9
60263	AN	344.2	340.8	-3.4
57310	AM	336.8	335.6	-1.2
56936	AL	335.3	335.1	-0.2
55423	AK	331.4	331.8	0.4
54720	AJ	331.4	331.5	0.1
53776	AI	330.3	330.5	0.2
53049	AH	329.8	329.8	0.0
51846	AG	329.3	328.5	-0.8
51405	AF	327.2	328.0	0.8
33479	AE	307.5	308.0	0.5
32874	AD	307.3	305.5	-1.8
32814	AC	306.8	305.5	-1.3
32599	AB	306.8	304.3	-2.5
31654	AA	306.0	303.3	-2.7
31226	Z	304.8	301.8	-3.0
30237	Y	303.5	300.5	-3.0
28854	X	301.0	298.5	-2.5
26867	W	298.2	294.9	-3.3
24399	V	296.1	293.8	-2.3
20967	T	295.8	291.8	-4.0
19201	S	295.2	290.8	-4.4
6668	R	272.4	267.0	-5.4
6424	Q	269.8	265.9	-3.9
6339	P	269.8	265.3	-4.5
5162	O	269.4	265.0	-4.4
4663	N	269.0	264.8	-4.2
4185	M	267.7	263.2	-4.5

Table 5.2: Comparison of Effective FEMA vs. Revised Study BFEs (Continued)

HEC-RAS XS	*FEMA Lettered XS*	*Effective FEMA BFE (ft. NAVD88)*	*Revised BFE (ft. NAVD88)*	*Difference (ft.)*
Chiques Creek				
3914	L	267.4	263.4	-4.0
3150	K	264.7	262.7	-2.0
2681	J	264.0	262.0	-2.0
1853	I	262.5	261.3	-1.2
1368	H	261.2	260.8	-0.4
1076	G	258.5*	259.0	0.5
858	F	258.5*	257.2	n/a
607	E	258.5*	257.0	n/a
443	D	258.5*	255.6	n/a
332	C	258.5*	255.6	n/a
241	B	258.5*	255.6	n/a
60	A	258.5*	255.4	n/a
Rife Run				
6271	G	408.8	408.2	-0.6
5812	F	405.0	406.7	1.7
5168	E	399.4	405.3	5.9
4571	D	396.9	405.2	8.3
3520	C	393.2	395.1	1.9
1495	B	391.6*	389.5	n/a
825	A	391.6*	388.5	n/a

*Backwater areas

The significant increase in flood elevations on Rife Run at XS D and E are due to Old Line Road not being included in the effective FEMA model. This roadway and embankment causes significant backwater that was not accounted for in the effective FEMA model.

5.4 FLOODPLAIN MAPPING

The results of the Existing-Condition HEC-RAS model for Chiques Creek and its tributaries were used to create digital floodplain inundation, depth grids, and water surface elevation grids for all storm events included in this investigation (including September 2011-Lee, excluding 1-percent plus). The HEC-GeoRAS postprocessor and the project DEM were used to delineate the floodplain boundaries and develop the depth and water surface elevation grids. All mapping products are provided digitally in GIS shapefile and raster format, respectively, on the attached project disc. Appendix I contains flood mapping for each storm event in Manheim Borough, since that area is the primary focus of this investigation.

5.5 FLOOD IMPACTS

The results from the HEC-RAS modeling and flood mapping were used to determine the impacts to buildings as a result of flooding on Chiques Creek and its tributaries. A building footprint GIS layer from Lancaster County, provided by SRBC, was intersected with the floodplain mapping for each storm event to determine the total number of buildings that are located in the respective floodplain. The GIS layer contained all buildings, including outbuildings such as sheds and garages. All building impacts are in Lancaster County, no buildings are impacted by flooding in Lebanon County. Table 5.3 outlines the results of the flood impact analysis.

Table 5.3: No. of Buildings in Floodplain per Stream

Stream	*2-year*	*5-year*	*10-year*	*25-year*	*50-year*	*100-year*	*200-year*	*500-year*
Chiques Creek	25	76	161	280	396	531	690	906
Behm Run	0	0	0	0	0	0	0	1
Boyers Run	0	0	0	1	1	2	3	5
Dellinger Run	4	9	9	9	9	9	10	12
Doe Run	8	10	11	21	25	32	40	49
Doe Run Tributary	0	0	0	0	0	0	0	0
Erisman Run	2	3	3	3	3	3	3	3
Orchard Road Tributary	0	0	0	0	0	1	1	1
Rife Run	4	6	11	23	29	31	36	39
Shearers Creek	1	1	2	2	2	2	3	4
Shearers Creek Tributary	0	0	0	0	0	0	0	0
Shumaker Road Tributary	0	0	0	0	0	0	1	1
Silver Spring Run	4	6	7	9	9	10	11	12
Silver Spring Run Tributary	0	0	0	0	0	1	1	2
White Oak Run	1	2	2	2	2	2	5	6

6 FLOOD RESILIENCY ALTERNATIVES ANALYSIS

Evaluating use of green infrastructure on a watershed scale to reduce flood risk in the Chiques Creek watershed is the primary reason for undertaking this effort. The study was guided by a targeted stakeholder group consisting of Community representatives familiar with flood concerns in the region. After undertaking a broad desktop evaluation of flood risk in the entire Chiques Creek watershed, including Little Chiques Creek and Donegal Creek, the stakeholder group concluded the study should focus on reducing flood risk in Manheim Borough, as the Borough has the greatest identified flood risk in the watershed. For the purpose of the study, flood risk was strictly defined as a threat to residential and commercial structures, public health and safety infrastructure, and roads and bridges. Agricultural land and pasture was not considered in the risk analysis.

Alternatives selected for the analysis were developed from a comprehensive list of Best Management Practice (BMP) type projects developed for improving water quality in the watershed. The comprehensive list of projects included everything from small streambank stabilization projects to large scale floodplain restoration and reconnection projects. Recognizing that project scale will ultimately be a determining factor in any one project's ability to reduce the flood risk in Manheim Borough, a short list of projects was developed to be considered for baseline modeling. The shortlist of projects was divided into watershed projects and channel projects, where the watershed projects attempted to use existing landscape features within the watershed upstream of Manheim Borough to attenuate flood peaks while maintaining the goal of improving water quality and environmental sustainability, and the channel projects evaluated geomorphological changes along the study reach to reduce flood elevations and/or depths. Alternatives considering large flood control dams and levees/floodwalls, such as those developed in the November 1975 USDA study, were not evaluated in this current study. Although these alternatives may provide benefit to substantially reducing the flood risk in Manheim Borough, these types of projects are not considered "green infrastructure", which, as noted above, was the primary reason for undertaking this effort.

The fundamental difference between watershed projects and channel projects is the methodology used to analyze each. Watershed projects were all evaluated using the HEC-HMS model and are designated with a "W" in the alternative name. Channel projects are all evaluated using the HEC-RAS model and the frequency discharge values established by the HEC-HMS model and are designated with a "C" in the alternative name.

A total of sixteen alternatives were included on the shortlist of projects for evaluation. These sixteen alternatives include three stand-alone watershed projects and, one combined watershed project, eight stand-alone channel projects, two combined channel projects, and one alternative that combines a watershed project and channel project (s). Alternatives were evaluating solely on the level of reduction of peak flows (watershed projects) and flood elevations/depths (channel alternatives) for the 10-year, 100-year, and the September 2011-Lee storm event. Although all models for the developed alternatives were run with all storm events listed in Table 4.1, the 10-year, 100-year, and September 2011-Lee storm events were chosen to provide an evaluation for a more frequent storm event

that causes damages (10-year), to a recently occurring storm event (Lee), to a large, less frequent storm event (100-year). For the watershed projects, the evaluation of peak flow reduction was completed at five critical locations within the Chiques Creek watershed in Manheim Borough. These locations are listed on Table 6.1.

Table 6.1: Evaluation Locations for Watershed Projects

HEC-HMS Flow Point	*Location*
CHC22.01	At Hamaker Road
CHC20.57	Upstream of confluence with Doe Run
CHC20.55	Downstream of confluence with Doe Run
CHC19.35	Upstream of confluence with Rife Run
CHC19.32	Downstream of confluence with Rife Run

For channel projects, the evaluation of flood elevation/depth reduction was completed at twelve critical locations along Chiques Creek in Manheim Borough. These locations are listed on Table 6.2.

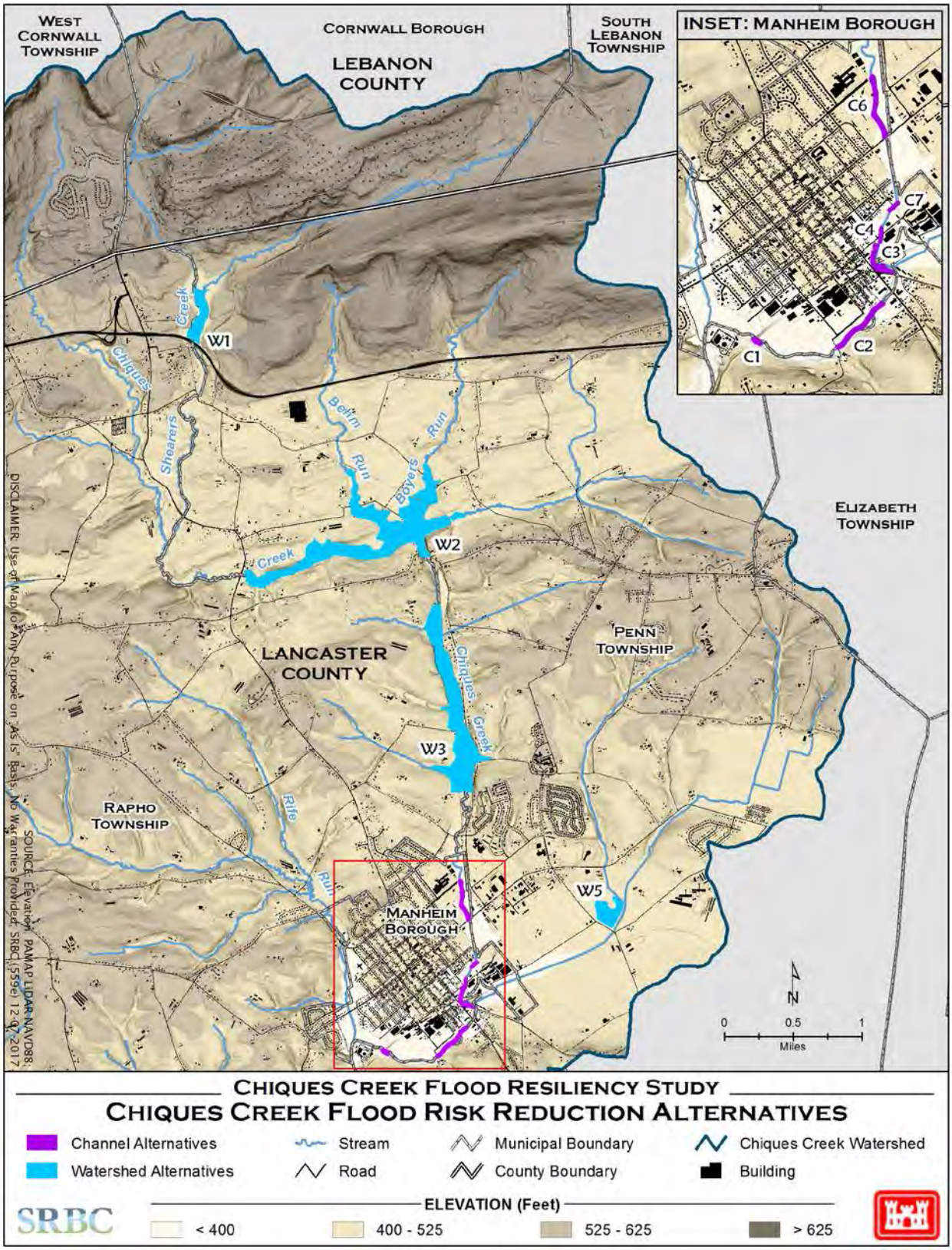
Table 6.2: Evaluation Locations for Channel Projects

HEC-RAS XS	*Location*
114230	At Manheim Farm Show
112748	At Manheim Veterans Park
110423	Downstream of South Oak Street
109610	At Tait Towers
109141	At AD Autos
108540	Downstream of Doe Run
108094	At Dollar General
107775	At Hondru Ford
107182	At South Cherry Street
105859	At South Penn Street
104213	At Fenner Precision
102751	Upstream of Wastewater Treatment Plant

Alternatives were not evaluated for other factors such as utility impacts, endangered species impacts, or recreational opportunities. For alternatives that were considered viable alternatives for possible implementation, planning level costs were developed for the alternative.

The general location of the alternative in the watershed is shown in Figure 6.1, with a discussion of each alternative provided in the following Sections. Appendix J contains concept-level mapping for each alternative, and Appendix K contains detailed HEC-HMS and/or HEC-RAS output data for each alternative.

Figure 6.1: Location of Developed Alternatives



6.1 ALTERNATIVE W1-SHEARER'S CREEK TURNPIKE DETENTION

Description

Alternative W1 evaluates the potential of providing flood storage upstream of the Pennsylvania Turnpike on Shearer's Creek. The alternative would include the placement of a weir structure upstream of the existing 47.44' x 17.0' concrete arch culvert at an elevation of 493.0 feet (NAVD 1988). The approximately 100 ft. long curved concrete weir would include a 24" round low flow orifice at elevation 482.7 ft. to slowly release water ponded behind the weir.

Results

The existing-conditions HEC-HMS model was modified to add a reservoir upstream of Node SHC2.06 to represent this alternative. A comparison of peak flows for the 10-year, 100 –year, and September 2011-Lee storm events at the five critical locations in Manheim Borough indicates minor reductions in peak flows. The maximum reduction in peak flow of was 1.8-percent, and occurred at CHC20.57 with the 10-year discharge.

Conclusion

The minimal reduction in peak flows is insignificant in terms of flood risk reduction related to the potential cost to construct the project and therefore Alternative W1 is found to have no benefit to reducing flood risk in Manheim Borough.

6.2 ALTERNATIVE W2-WHITE OAK DAM RESTORATION

Description

This alternative evaluates the restoration of the White Oak Dam (Elizabethtown Road) to better control runoff from 18.38 square mile drainage area above the proposed dam. Elizabethtown Road would be replaced with a perched bridge with a left bank elevation of 428.0 ft. (acting as an emergency spillway) and a top elevation of 430.0 ft. The culvert under the road would be replaced with an 8.0' x 4.0' concrete box culvert with an invert elevation of 418.0 ft. The upstream area would be excavated up to six feet to create a wetland storage area.

Results

The existing-conditions HEC-HMS model was modified to include a reservoir upstream of Node CHC24.53 to represent this alternative. A comparison of peak flows for the 10-year, 100 –year, and September 2011-Lee storm events indicates a modest reductions in peak flows over several of the flow points of interest. Three of the flow points of interest, CHC22.01, CHC20.57, and CHC19.35 have reductions in peak flows of greater than 10-

percent with the maximum discharge reduction of 18.5-percent occurring at CHC20.57 for a 10-year discharge.

Conclusion

While modest reductions in evaluated peak flows are obtained with this alternative, the overall effect on flood risk reduction is minor compared to the potential scope and cost of constructing the alternative. Therefore Alternative W2 is found to have no benefit to reducing flood risk in Manheim Borough and not considered viable in this study.

6.3 ALTERNATIVE W3-HERNLEY ROAD IMPROVEMENTS

Description

Alternative W3 includes the development of floodwater storage for a 21.0 square mile drainage area by restoring 2,500 linear feet of Chiques Creek downstream of Hernley Road. An inline embankment would be constructed that contains a 6.0' x 8.0' concrete box culvert for low flow and fish passage. A 40 ft. wide emergency spillway at elevation 412.0 and a dam top of 414.0 would be control high flows out of the storage area. Chiques Creek would be realigned at the current stream bed elevation with micro pools added for improved habitat. An outbuilding along White Oak Road would be relocated with this alternative.

Results

The existing-conditions HEC-HMS model was modified to include a reservoir upstream of Node CHC23.04 to represent this alternative. A comparison of peak flows for the 10-year, 100 –year, and September 2011-Lee storm events indicates a minor (less than 10-percent) reduction in peak flows over several of the flow points of interest. CHC20.55 has a reduction of 12.2-percent from the 10-year storm, which is the maximum flow reduction at all points and all storms.

Conclusion

Minor peak flow reductions are obtained with this alternative. Due to limited overall effect on flood risk reduction compared to the potential scope and cost of constructing the alternative, Alternative W2 found to have no benefit to reducing flood risk in Manheim Borough.

6.4 ALTERNATIVE W4-WHITE OAK DAM RESTORATION AND HERNLEY ROAD IMPROVEMENTS

Description

This alternative is the implementation of both Alternative W2 and Alternative W3, as described above.

Results

The existing-conditions HEC-HMS model was modified to include a reservoir upstream of Node CHC24.53 (Alternative W2) and a reservoir upstream of Node CHC23.04 (Alternative W3) to represent this alternative. A comparison of peak flows for the 10-year, 100 –year, and September 2011-Lee storm events indicates modest decreases in peak flows. Peak flow at CHC19.35 is reduced by more than 10-percent for both the 10-year and 100-year storms. The maximum reduction in peak flow is 30.2-percent, which occurs at CHC20.57 for the 10-year storm].

Conclusion

Combining both Alternative W2 and Alternative W3 does provide for enhanced benefit from completing both alternatives collectively, as peak flow reduction reaches 30-percent in some locations for a 10-year storm. However, the benefit realized is further reducing the low end of flood risk spectrum where damages are typically minimal. Due to limited overall effect on flood risk reduction compared to the potential scope and cost of constructing the alternative, Alternative W4 is found to have no significant benefit to reducing flood risk in Manheim Borough and is not considered viable in this study.

6.5 ALTERNATIVE W5-DOE RUN WATERSHED STORAGE

Description

Alternative W5 includes the construction of a wetland on the west bank of Doe Run upstream of Penryn Road. The wetland would capture stormwater collected from a 4.3 square mile drainage area, during high flows via a concrete weir diversion structure at the upstream end. The outflow structure would be a 3-inch low flow orifice at an elevation of 405.0 ft., a concrete weir structure at the top of a riser at elevation 408.0 ft., and a dam top elevation at 409.0 ft. Water would be conveyed from a northern wetland area to a southern wetland area through the riser and under Penryn Road via a 36-inch concrete pipe. Water would be introduced back into Doe Run via a rip-rap spillway on the southern wetland area.

Results

The existing-conditions HEC-HMS model was modified to include a reservoir upstream of Node DOR1.23 to represent this alternative. A comparison of peak flows for the 10-year, 100 –year, and September 2011-Lee storm events indicates an insignificant decrease in peak flows, with peak flows actually increasing in some locations due to the alteration of the time of peaks at the Doe Run-Chiques Creek confluence.

Conclusion

This alternative provides no apparent flood risk reduction in Manheim Borough and is therefore considered not viable in this study.

6.6 ALTERNATIVE C1-MODIFY RAILROAD CROSSING ABOVE RETTEW LANE

Description

This alternative includes the modification of both the channel and approach to the railroad bridge crossing immediately upstream of Rettew Lane by installing twin 96" corrugated metal pipes (CMP) on the left bank of railroad bridge embankment. The upstream invert elevation of these pipes would be at an elevation 385.8 feet to only function during high flow events. The excavation of a floodplain bench at this elevation would be required on the upstream end only.

Results

The existing-conditions HEC-RAS model was modified at Station 103385 (bridge) to include the twin 96" CMP pipes mitered to fill slope on left bank. Additional model parameters adjusted included adding a multiple opening analysis at this location and adjusting ineffective flow areas to account for the increase in expansion and contraction on the left bank. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show a maximum decrease in flood depth of 0.6 ft. for less frequent, larger storms in Manheim Borough. For more frequent, smaller storms, the reduction in flood depth does not exceed 0.2 -0.3 ft.

Conclusion

Alternative C1 provides minimal reduction in flood depths in Manheim Borough and is not considered a viable alternative in this study.

6.7 ALTERNATIVE C2-STREAM IMPROVEMENTS BETWEEN EBY STREET AND MAIN STREET

Description

Alternative C2 is a stream improvement project between Eby Street and Main Street in Manheim Borough. The stream would be re-aligned and a natural channel would be designed to improve conveyance. The natural channel, at a length of approximately 1,700 linear feet, would be trapezoidal with a 40 ft. wide bottom width, a 64 ft. wide top width, and 3 ft. depth. The top of banks would be at the same elevation of a large floodplain bench that would tie into existing high ground on the outer edges. The invert of the channel would remain at the existing elevation (no dredging). The floodplain bench would contain low vegetative cover. The modified channel is 3 ft. deep and includes a wide flood plain bench. HEC – RAS existing conditions model revised channel from XS 105731-107475 and uses Manning's n value of .035 for channel and .05 for floodplain bench.

Results

The existing-conditions HEC-RAS model was modified between XS 105731-107475 to include the stream improvement project. The natural channel was input into the model, Manning's n values were adjusted accordingly, and ineffective flow areas were modified to account for the alternative. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show a maximum decrease in flood depth of 2.5 ft. for a 10-year flood event at Hondru Ford (XS 107775). Flood elevations would have been 1.3 ft. less during the September 2011-Lee storm event at Hondru Ford if this alternative were in place, potentially eliminating damages from flooding at that location (Figure 6.2).

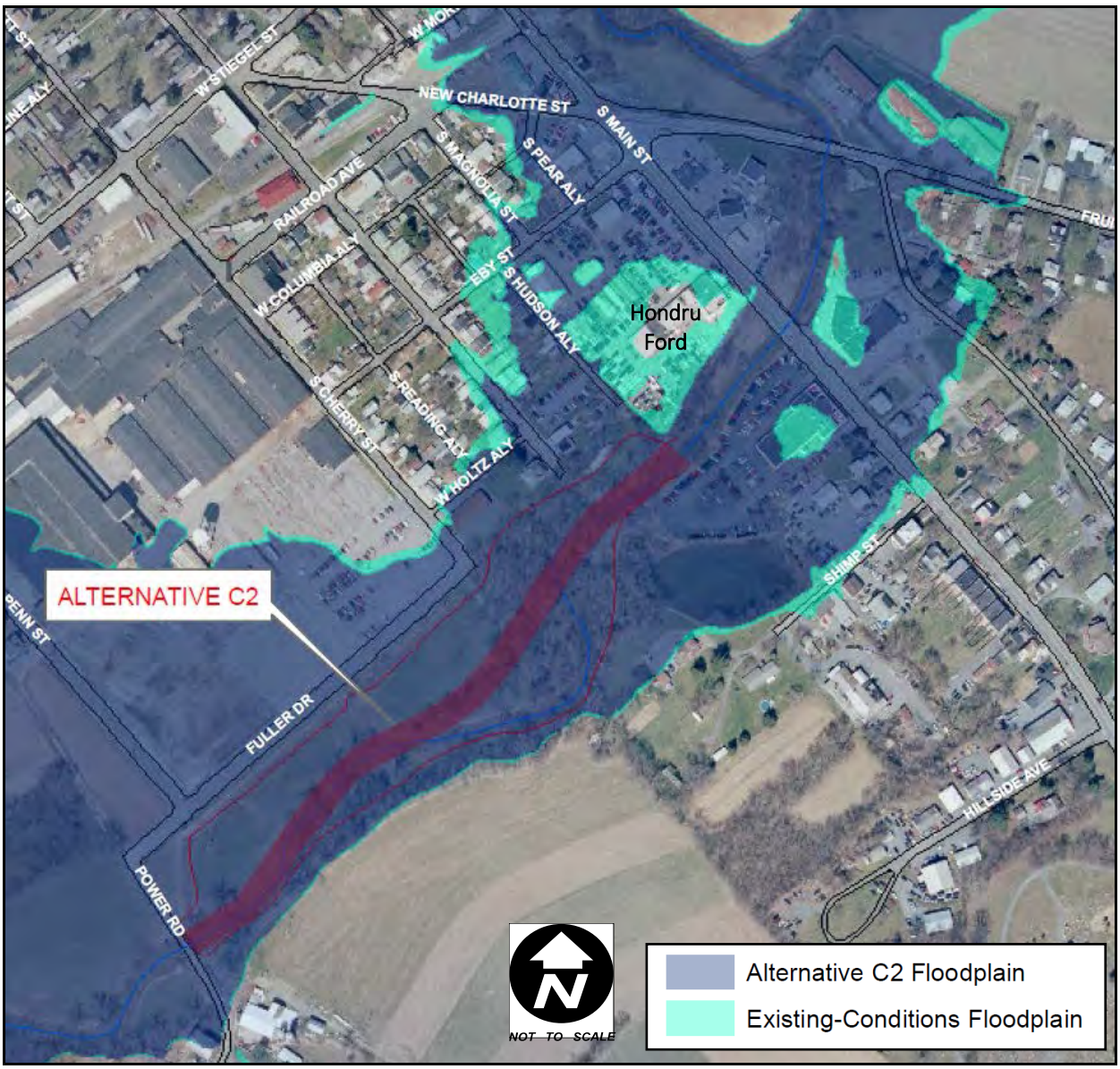
Conclusion

Alternative C2 provides considerable (greater than 1.0 feet) flood risk reduction in the central portion of the evaluated reach. This alternative is considered viable for this study and should be considered for stand-alone implementation or implementation with other alternatives.

Estimated Cost

The estimated cost of Alternative C2 is $800,000-$900,000. This cost is based upon cost data from previous studies and includes labor and materials for construction, design, permitting, and contingency. It does not include the cost of real estate acquisition or utility relocation, if necessary.

Figure 6.2: September 2011-Lee Storm Event Flooding w/Alternative C2



6.8 ALTERNATIVE C2A-REVISED STREAM IMPROVEMENTS BETWEEN EBY STREET AND MAIN STREET

Description

Alternative C2A is identical to Alternative C2, but contains a modified upper reach where the floodplain bench encroaches into an existing parking lot and pond to provide additional conveyance area.

Results

The existing-conditions HEC-RAS model was modified between XS 105731-107475 to include the stream improvement project (Alternative C2) and modifications to the upstream area (Alternative 2CA). A comparison of the flood elevations for Alternative C2 with the computed flood elevations with this alternative show insignificant decreases to flood elevations as a result of the modified upper reach.

Conclusion

This alternative was not considered viable as the increased scope and cost to implement would not provide incremental benefit to flood risk reduction. The results suggest that an iterative design process for Alternative C2 would yield a better design for flood risk reduction in Manheim Borough in lieu of Alternative C2A.

6.9 ALTERNATIVE C3-STREAM IMPROVEMENTS BETWEEN FRUITVILLE PIKE AND STEIGEL STREET

Description

This alternative is a stream improvement project between Fruitville Pike and Steigel Street, restoring a natural floodplain on the right bank with a floodplain bench at an elevation of 389.0 ft. With this stream improvement, conveyance under the existing railroad would be improved. A stone or concrete retaining wall would be constructed on the edge of the right bank. The existing stream bed elevation of Chiques Creek would be maintained with this alternative.

Results

The existing-conditions HEC-RAS model was modified in this reach to include the stream improvement project. The channel and floodplain modifications were input into the model, Manning's n values were adjusted accordingly, and ineffective flow areas were modified to account for the alternative. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show minimal reductions in flood depths (0.0-0.2 feet) for all profiles upstream of this improvements. However, further analysis shows that implementing Alternative 3 in combination with Alternative 2 provides added benefits in flood depth reduction. This is discussed in Section 6.14.

Conclusion

Alternative C3 as a stand -alone project does not provide a significant reduction in flood risk in the study area; however, the alternative should be considered in combination with other alternatives for potential stacked benefits of implementing multiple projects.

Estimated Cost

The estimated cost of Alternative C3 is $1,000,000-$1,200,000. This cost is based upon cost data from previous studies and includes labor and materials for construction, design, permitting, and contingency. It does not include the cost of real estate acquisition or utility relocation, if necessary.

6.10 ALTERNATIVE C4-REMOVAL OF STEIGEL STREET BRIDGE

Description

Alternative C4 includes the complete removal of the existing Steigel Street bridge and the rerouting traffic around this location. The concrete wall on the left bank downstream of the bridge would also be removed. Note that a concept-level map of this alternative was not prepared.

Results

The existing-conditions HEC-RAS model was modified to remove the existing Steigel Street bridge along with all associated ineffective flow areas. Contraction and expansion coefficient were also reduced to account for the removal of the bridge. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show insignificant reductions in flood depths for flood events upstream of this modification.

Conclusion

Alternative C4 provides minimal reduction in flood depths in Manheim Borough and is not considered a viable alternative in this study.

6.11 ALTERNATIVE C5-WEIR REMOVAL ON CHIQUES CREEK

Description

There are a total of eight concrete weirs along Chiques Creek. Alternative C5 is the removal of these weirs to determine if collectively, flood depths and elevations would be reduced in Manheim Borough. Note that a concept-level map of this alternative was not prepared.

Results

The existing-conditions HEC-RAS model was modified to remove all eight weirs along Chiques Creek. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show insignificant reductions in flood depths for all flood events within Manheim Borough with this alternative implemented.

Conclusion

Alternative C5 provides no reduction in flood depths in Manheim Borough and is not considered a viable alternative in this study.

6.12 ALTERNATIVE C6-MEMORIAL PARK RESTORATION

Description

Alternative C6 includes the channel modification and floodplain restoration in reach that passes through Memorial Park. Approximately 3,600 linear feet of stream would be restored, based pond a concept plan provided by Land Studies, Inc.

Results

The existing-conditions HEC-RAS model was modified by Land Studies, Inc. to include the stream restoration project outlined in this alternative. The revisions were made between XS 115220 and XS 112428. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show no reduction of flood depths within Manheim Borough except for at the Manheim Farm Show, where there is a decrease of approximately 0.5 ft. in flood depth for all storm events.

Conclusion

Alternative C6 provides minimal reduction in flood depths in Manheim Borough and is not considered a viable alternative for this study. However, this alternative may provide substantial benefits to water quality on Chiques Creek and should be considered for implementation in that regard.

Estimated Cost

Based upon information from Land Studies, Inc., the estimated cost of Alternative C6 is $1,520,000. This cost includes labor and materials for construction, design, permitting, and contingency. It does not include the cost of utility relocation, if necessary. Real estate acquisition is not anticipated with this alternative since Manheim Borough owns the land.

6.13 ALTERNATIVE C7-REMOVAL OF OAK STREET BRIDGE

Description

This alternative is the removal of the Oak Street bridge, which is currently closed to traffic. This alternative was specifically requested by Manheim Borough to include in this study to determine any benefits to reducing flooding this alternative may have. Note that a concept-level map of this alternative was not prepared.

Results

The existing-conditions HEC-RAS model was modified to remove the existing Oak Street bridge at Station 110532 and all associated ineffective flow areas. Contraction and expansion coefficient were also reduced to account for the removal of the bridge. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show zero reductions (or increases) in flood depths for all flood events upstream or downstream of this modification.

Conclusion

This alternative provides no reduction in flood depths in Manheim Borough and is not considered a viable alternative in this study.

6.14 ALTERNATIVE C2C3-COMBINATION OF ALTERNATIVES C2 AND C3

Description

This alternative evaluates the combined effect on flood depth reduction when the stream improvements between Eby Street and Main Street (Alternative C2) are completed in combination with stream improvements between Fruitville Pike and Steigel Street (Alternative C3).

Results

The existing-conditions HEC-RAS model was modified to include the stream improvement projects outlined in Alternative C2 and Alternative C3. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show that by completing Alternative C3 in addition to Alternative C2, additional decreases in flood depth for a 10-year flood event at AD Autos (XS 109141) would be 1.4 ft. This alternative would eliminate flooding during a 10-year flood event at the intersection of South Main Street and Fruitville Pike, and remove several residential homes from the 10-year floodplain (Figure 6.3). For a 100-year food event, an additional reduction of 0.6 ft. could be achieved.

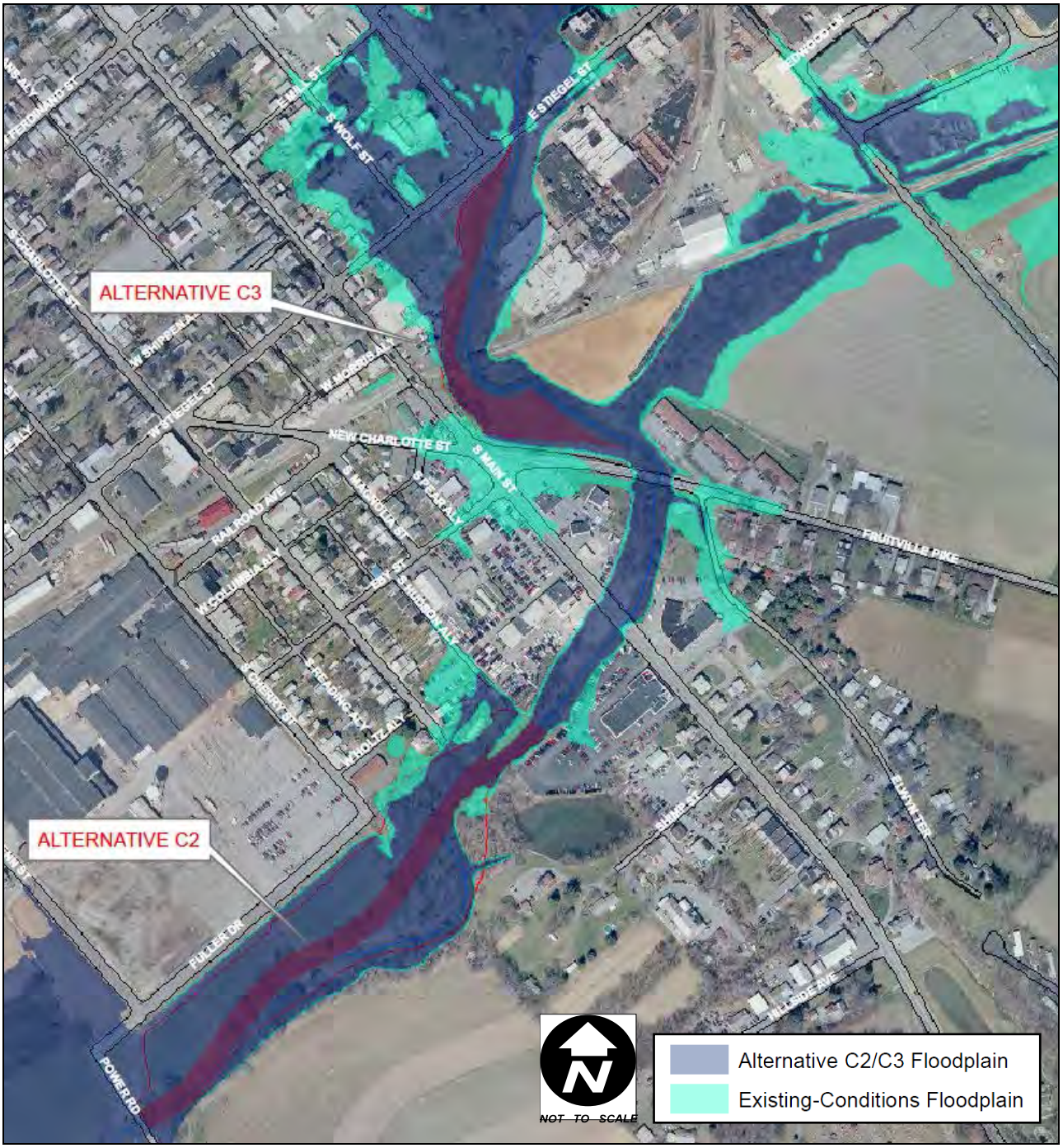
Conclusion

Alternative C2C3 provides considerable flood risk reduction in Manheim Borough, especially for smaller, more frequent flood events. This alternative is considered viable for this study and should be considered for implementation.

Estimated Cost

The estimated cost of Alternative C2C3 is $1,800,000-$2,100,000. This cost is determined by adding the estimated cost range of Alternative C2 with the estimated cost range of Alternative C3.

Figure 6.3: 10-year Storm Event Flooding w/Alternative C2C3



6.15 ALTERNATIVE C2C3C6-COMBINATION OF ALTERNATIVES C2, C3, AND C6

Description

Alternative C2C3C6 evaluates the combined effect on flood depth reduction when the stream improvements between Eby Street and Main Street (Alternative 2) are completed in combination with stream improvements between Fruitville Pike and Steigel Street (Alternative C3) and the floodplain restoration project in Memorial Park (Alternative C6).

Results

The existing-conditions HEC-RAS model was modified to include the stream improvement projects outlined in Alternative C2, Alternative C3, and Alternative C6. A comparison of the existing-conditions flood elevations with the computed flood elevations with this alternative show that no additional flood depth reduction is achieved by completing Alternative 6 with AlternativesC2C3. Alternative 6 is located too far upstream to of the other alternatives to benefit from a reduction in flood depths from those alternatives.

Conclusion

There is no benefit to completing Alternative C6 with Alternative C2C3.

6.16 ALTERNATIVE W4C2-COMBINATION OF ALTERNATIVES W4 AND C2

Description

This alternative evaluates the combined effect on flooding in Manheim Borough when White Oak Dam and Hernley Road improvements (Alternative W4) are completed in combination with stream improvements between Eby Street and Main Street (Alternative C2).

Results

The existing-conditions HEC-RAS model was modified to include the stream improvement projects outlined in Alternative C2, and the flow values computed in Alternative W4 were also added into the HEC-RAS model. A comparison of the existing-conditions flood elevations with the computed flood elevations for Alternative W4C2 show minimal additional reduction in flood depths by implementing Alternative W4 with Alternative C2.

Conclusion

This alternative was not considered viable as the increased scope and cost to implement Alternative W4 would not provide incremental benefit to flood risk reduction in Manheim Borough over completing Alternative C2 as a stand-alone project.

6.17 SUMMARY OF ALTERNATIVES

This study evaluated both "watershed" alternatives and "channel" alternatives. Of the watershed alternatives studied, the most significant benefits to downstream peak flow reduction was the combination of Alternatives W2 and Alternative W3, which is Alternative W4. The potentially high cost and scope associated with the construction of Alternative W4 compared with the only modest peak flow reduction in Manheim Borough led to the study team concluding that the implementation of this alternative is not a viable path forward to reducing the flood risk in Manheim Borough.

It was concluded by the project team that Alternative C2 is viable for consideration for implementation. Alternative C2 provides substantial flood risk reduction in Manheim Borough for smaller, more frequent flood events. Additionally, based on the evaluation of alternatives implemented collectively, Alternative C2C3 is a viable alternative for consideration. A summary of alternatives developed in this investigation is listed in Table 6.4.

Table 6.4: Summary of Alternatives

Alternative	*Description*	*Viable?*	*Notes*
W1	Shearer's Creek Turnpike Detention	No	Minimal reduction in peak flows
W2	White Oak Dam Restoration	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction
W3	Hernley Road Improvements	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction
W4	White Oak Dam Restoration and Hernley Road Improvements	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction
W5	Doe Run Watershed Storage	No	Minimal reduction in peak flows
C1	Modify Railroad Crossing above Rettew Lane	No	Minimal reduction in flood depths

Table 6.4: Summary of Alternatives (continued)

Alternative	*Description*	*Viable?*	*Notes*
C2	Stream Improvements between Eby Street and Main Street	Yes	Estimated cost of $800,000-$900,000
C2A	Revised Stream Improvements between Eby Street and Main Street	No	Overall added benefit on flood risk reduction compared to Alternative C2 is minor compared to the potential scope and cost of construction
C3	Stream Improvements between Fruitville Pike and Steigel Street	No	Estimated cost of $1,000,000-$1,200,000
C4	Removal of Steigel Street Bridge	No	Minimal reduction in flood depths
C5	Weir Removal on Chiques Creek	No	Minimal reduction in flood depths in Manheim Borough
C6	Memorial Park Restoration	No	Minimal reduction in flood depths-should be considered for water quality benefits
C7	Removal of Oak Street Bridge	No	Minimal reduction in flood depths
C2C3	Stream Improvements between Eby Street and Main Street and between Fruitville Pike and Steigel Street	Yes	Estimated cost of $1,800,000-$2,100,000.
C2C3C6	Stream Improvements between Eby Street and Main Street and between Fruitville Pike and Steigel Street and Memorial Park Restoration	No	No benefit to completing Alternative C6 with Alternative C2C3
W4C2	White Oak Dam Restoration and Hernley Road Improvements and Stream Improvements between Eby Street and Main Street	No	Overall effect on flood risk reduction is minor compared to the potential scope and cost of construction

7 CONCLUSIONS

SRBC received funding from PADEP to develop hydrologic and hydraulic modeling to evaluate alternatives for enhancing flood resiliency in the Chiques Creek watershed. Prior to the initiation of the hydrologic and hydraulic modeling, a flood risk characterization was performed by SRBC, with significant stakeholder input, to identify, map, and prioritize key flood risk zones to inform the siting of hydraulic modeling reaches and development of potential alternatives.

The USACE HEC-HMS rainfall runoff model was used to estimate peak flows for the Chiques Creek watershed, upstream of the confluence of Little Chiques Creek, as identified by the flood risk characterization. The HEC-HMS model for Chiques Creek was calibrated to the September 2011-Lee flood event, and existing-conditions peak flows were calculated for multiple points within the watershed for eight flood frequency storm events.

The USACE HEC-RAS hydraulic model was used to develop geo-referenced hydraulic models for Chiques Creek and its tributaries. The existing-conditions HEC-RAS models were developed to determine flood elevations along Chiques Creek and its tributaries at the time of this study and to be used as a baseline to determine the impacts of flood resiliency alternatives developed in this investigation. Peak flow data from the HEC-HMS model were input into HEC-RAS, and a steady state computation was completed for each flooding source.

Based upon the results of the hydrologic and hydraulic modeling, the stakeholder group concluded the study should focus on reducing flood risk in Manheim Borough, as the Borough has the greatest identified flood risk in the watershed. A total of sixteen alternatives were developed in this study. The alternatives were divided into watershed projects and channel projects, where the watershed projects attempted to use existing landscape features within the watershed upstream of Manheim Borough to attenuate flood peaks while maintaining the goal of improving water quality and environmental sustainability, and the channel projects evaluated geomorphological changes along the study reach to reduce flood elevations and/or depths.

Of the watershed alternatives studied, the most significant benefits to downstream peak flow reduction was Alternative W4. The potentially high cost and scope associated with the construction of Alternative W4 compared with the only modest peak flow reduction in Manheim Borough led to the study team concluding that the implementation of this alternative is not a viable path forward to reducing the flood risk in Manheim Borough.

It was concluded by the project team that Alternative C2 is viable for consideration for implementation. Alternative C2 provides substantial flood risk reduction in Manheim Borough for smaller, more frequent flood events. Additionally, based on the evaluation of alternatives implemented collectively, Alternative C2C3 is a viable alternative for consideration.

The study team arrived at the following conclusions based upon the results of this investigation and the discussions at the project meetings:

1. Stakeholder input is critical to completing a study of this nature.

2. The ability of a green infrastructure project to mitigate flooding fully depends on the physical location of the project relative to the area of risk as well as the ultimate size of the project.

3. The alternatives studied here provide a comprehensive suite of options to consider for flood risk reduction in Manheim Borough. Regardless of whether or not a particular study alternative is implemented, the data gathered here should be used to inform flood risk in the Manheim area as it represents the best available data.

4. Storage type projects do not provide significant flood risk reduction in the Manheim area and are cost prohibitive to implement if value is directly based on flood risk reduction.

5. Channel reconfiguration projects within the Manheim area appear to offer the greatest potential for flood risk reduction benefits.

6. Flood risk reduction using Alternative C2 is achievable in numbers but must be evaluated at the community level for ultimate benefit.

8 REFERENCES

Federal Emergency Management Agency, Data Capture Technical Reference, May 2014.

U.S. Army Corps of Engineers, Hydrologic Modeling System HEC-HMS, User's Manual, Version 4.2, August 2016.

Federal Emergency Management Agency, Standard for Flood Risk Analysis and Mapping #84.

U.S. Army Corps of Engineers, River Analysis System HEC-RAS, User's Manual, Version 5.0, February 2016.
1.

APPENDIX A

HEC-HMS Input Data

SUBBASIN	DRAINAGE AREA (SQ MI)	CN	TC (HR)	TC (MIN)
BER0.00A	0.1087	73	0.6	36.0
BER0.64A	0.3111	74	0.42	25.2
BER1.05A	0.279	73	0.65	39.0
BER1.30A	0.5289	67	0.66	39.6
BER1.95A	0.6201	55	0.51	30.6
BOR0.00A	0.0062	74	0.1	6.0
BOR0.10A	0.2331	73	0.79	47.4
BOR0.68A	0.2555	73	0.65	39.0
BOR1.20A	0.5429	69	0.88	52.8
BOR2.07A	0.8224	55	0.45	27.0
CHC10.68A	0.7377	77	0.75	45.0
CHC10.68B	0.0477	77	0.56	33.6
CHC10.68C	0.118	75	0.68	40.8
CHC10.68D	0.1638	85	0.96	57.6
CHC10.68E	0.0528	85	0.34	20.4
CHC12.01A	0.1403	74	0.15	9.0
CHC12.67A	0.5547	75	1.74	104.4
CHC13.90A	2.4712	74	5.29	317.4
CHC16.25A	0.7783	75	1.89	113.4
CHC17.08A	0.5852	76	1.27	76.2
CHC17.08B	0.3448	90	0.87	52.2
CHC17.73A	0.387	77	0.96	57.6
CHC17.73B	0.0626	92	0.36	21.6
CHC18.09A	0.1663	69	0.57	34.2
CHC18.61A	0.5761	70	0.43	25.8
CHC19.35A	0.3523	77	1.09	65.4
CHC19.35B	0.0175	87	0.23	13.8
CHC1.28A	0.8402	71	2.71	162.6
CHC20.02A	0.3588	81	0.75	45.0
CHC20.57A	0.5512	83	1.65	99.0
CHC21.28A	0.3509	84	0.91	54.6
CHC21.28B	0.0187	89	0.09	5.4
CHC21.28C	0.0073	79	0.85	51.0
CHC21.28D	0.0224	81	0.16	9.6
CHC21.28E	0.0497	71	0.23	13.8
CHC21.28F	0.1457	74	0.22	13.2
CHC21.59A	0.2001	77	0.69	41.4
CHC21.59B	0.0256	86	0.26	15.6
CHC21.59C	0.0275	84	0.17	10.2
CHC21.59D	0.0896	77	0.23	13.8
CHC22.01A	1.2726	73	0.13	7.8
CHC22.01B	0.0456	79	0.08	4.8
CHC23.04A	1.8763	72	1.75	105.0
CHC23.04B	0.2164	75	0.46	27.6
CHC24.64A	0.2517	67	1.4	84.0
CHC25.53A	0.6693	72	0.91	54.6
CHC25.53B	0.0163	69	0.1	6.0
CHC26.30A	0.8065	71	2.11	126.6

SUBBASIN	DRAINAGE AREA (SQ MI)	CN	TC (HR)	TC (MIN)
CHC27.39A	0.3314	72	0.77	46.2
CHC28.31A	0.095	72	0.31	18.6
CHC28.31B	0.7915	71	0.75	45.0
CHC28.67A	0.6654	63	0.74	44.4
CHC29.91A	0.6097	61	0.66	39.6
CHC30.94A	1.0461	65	0.89	53.4
CHC3.39A	1.8419	70	0.69	41.4
CHC4.62A	0.1505	73	0.33	19.8
CHC4.62B	0.1946	73	0.38	22.8
CHC4.97A	0.4693	71	1.35	81.0
CHC4.97B	0.058	76	0.36	21.6
CHC4.97C	0.2012	71	0.21	12.6
CHC5.97A	1.1314	74	0.95	57.0
CHC7.48A	2.2128	74	4.5	270.0
CHC9.40A	1.1576	74	1.15	69.0
DER0.00A	0.1924	73	0.33	19.8
DER0.52A	0.5165	75	0.62	37.2
DER1.10A	0.3712	75	0.67	40.2
DER1.76A	0.5078	70	0.67	40.2
DER2.22A	0.7235	71	0.86	51.6
DER2.93A	0.6085	74	0.62	37.2
DORT0.34A	0.0357	73	0.16	9.6
DORT0.34B	0.0234	72	0.16	9.6
DORT0.54A	0.2058	74	0.5	30.0
DORT0.54B	0.0280	64	0.2	12.0
DORT0.54C	0.0058	81	0.24	14.4
DORT0.54D	0.0832	76	0.65	39.0
DORT0.54E	0.0367	73	0.1	6.0
DORT1.15A	0.4022	75	0.38	22.8
DORT1.15B	0.0103	90	0.13	7.8
DORT1.58A	0.4931	73	0.56	33.6
DORT2.41A	0.2384	72	0.39	23.4
DORT2.41B	0.1294	74	0.37	22.2
DOR0.00A	0.0475	79	0.43	25.8
DOR0.24A	0.1218	76	0.44	26.4
DOR0.24B	0.1287	77	0.6	36.0
DOR0.44A	0.5212	76	0.78	46.8
DOR1.21A	0.243	76	0.96	57.6
DOR1.21B	0.2037	75	0.39	23.4
DOR1.23A	0.2095	77	0.55	33.0
DOR1.60A	0.5501	74	0.59	35.4
DOR2.40A	0.4594	74	0.76	45.6
DOR2.81A	0.2367	76	0.63	37.8
DOR3.06A	0.3648	73	0.56	33.6
DOR3.06B	0.7639	72	0.93	55.8
ERRT0.00A	0.1098	82	0.63	37.8
ERRT0.00B	0.0077	85	0.03	1.8
ERRT0.00C	0.0074	92	0.07	4.2

SUBBASIN	DRAINAGE AREA (SQ MI)	CN	TC (HR)	TC (MIN)
ERRT0.00D	0.0036	92	0.06	3.6
ERRT0.00E	0.0045	92	0.08	4.8
ERRT0.57A	0.2788	76	1.38	82.8
ERRT0.61A	0.4551	77	0.88	52.8
ERRT1.62A	0.1546	73	0.49	29.4
ERRT1.62B	0.2547	76	0.13	7.8
ERRT1.62C	0.0144	92	0.07	4.2
ERR0.00A	0.0718	72	0.29	17.4
ERR0.00B	0.0053	92	0.12	7.2
ERR0.23A	0.1922	73	0.41	24.6
ERR0.23B	0.0298	89	0.1	6.0
ERR0.88A	0.5048	75	0.94	56.4
ERR1.33A	0.5783	74	0.54	32.4
LAR0.00A	0.5827	76	1.47	88.2
LAR0.40A	0.0039	93	0.04	2.4
LAR0.40B	0.1091	89	0.48	28.8
LAR0.40C	0.1251	76	0.45	27.0
LAR0.40D	0.1245	73	0.38	22.8
MRT0.00A	0.1647	72	0.44	26.4
MRT0.66A	0.203	74	0.21	12.6
MRT0.66B	0.0376	75	0.11	6.6
MRT0.66C	0.0149	78	0.17	10.2
ORT0.28A	0.1786	70	0.38	22.8
ORT0.95A	0.1851	70	0.26	15.6
ORT1.38A	0.191	71	0.29	17.4
ORT2.04A	0.2289	73	0.41	24.6
RIR0.00A	0.0647	84	0.76	45.6
RIR0.32A	0.5587	72	0.81	48.6
RIR0.65A	0.1896	76	0.2	12.0
RIR0.86A	0.2984	72	0.61	36.6
RIR1.24A	0.098	70	0.17	10.2
RIR1.62A	0.5008	73	0.84	50.4
RIR2.60A	0.3125	72	0.37	22.2
RIR3.38A	1.0434	71	0.66	39.6
RIR3.38B	0.0294	70	0.07	4.2
SHCT0.00A	0.9966	60	0.67	40.2
SHCT1.59A	2.0504	61	0.6	36.0
SHC0.00A	0.0458	68	0.42	25.2
SHC0.23A	0.6386	73	1.24	74.4
SHC1.60A	0.2628	69	0.33	19.8
SHC2.06A	0.2828	58	0.4	24.0
SHC2.56A	0.4506	66	0.55	33.0
SHC3.11A	0.2775	74	0.21	12.6
SHC3.92A	0.6934	59	0.6	36.0
SHC3.92B	0.7957	63	0.78	46.8
SRT0.50A	0.4294	72	0.94	56.4
SRT1.29A	0.3191	71	0.9	54.0
SRT2.06A	0.4839	73	0.68	40.8

SUBBASIN	DRAINAGE AREA (SQ MI)	CN	TC (HR)	TC (MIN)
SRT2.55A	0.3465	72	0.43	25.8
SRT3.00A	0.7468	72	0.64	38.4
SRT3.38A	0.3636	72	0.48	28.8
SSRTA0.00A	0.2628	75	0.55	33.0
SSRTA0.59A	0.1379	73	0.33	19.8
SSRT0.00A	0.2236	73	0.58	34.8
SSRT0.46A	0.1893	74	0.33	19.8
SSRT0.77A	0.252	74	0.51	30.6
SSRT0.77B	0.0603	72	0.24	14.4
SSRT1.34A	0.1112	72	0.34	20.4
SSRT1.34B	0.0172	73	0.11	6.6
SSRT1.34C	0.0236	73	0.11	6.6
SSRT1.34D	0.0122	73	0.11	6.6
SSRT1.34E	0.0281	73	0.18	10.8
SSR0.00A	0.0601	73	0.14	8.4
SSR0.22A	0.2501	77	0.43	25.8
SSR0.87A	0.3806	74	0.86	51.6
SSR1.06A	0.2647	74	0.51	30.6
SSR1.71A	0.3665	76	0.87	52.2
SSR1.89A	0.3178	76	0.59	35.4
SSR1.89B	0.0231	92	0.07	4.2
SSR2.33A	0.175	77	0.25	15.0
SSR2.33B	0.0381	73	0.11	6.6
SSR2.70A	0.4613	72	0.58	34.8
SSR2.70B	0.0112	74	0.07	4.2
SSR2.70C	0.0064	93	0.17	10.2
SSR2.70D	0.0343	69	0.17	10.2
SSR2.70E	0.4472	74	0.45	27.0
SSR3.20A	0.1108	69	0.37	22.2
SSR3.20B	0.2023	69	0.25	15.0
SSR3.70A	0.1906	65	0.34	20.4
SSR3.70B	0.1861	63	0.25	15.0
WOR0.00A	0.0359	72	0.19	11.4
WOR0.32A	0.1901	70	0.73	43.8
WOR0.76A	0.3131	75	0.4	24.0
WOR1.59A	0.4536	75	0.6	36.0
WOR1.59B	0.76	71	0.95	57.0
WOR1.64A	0.2551	74	0.61	36.6
WOR2.33A	0.3233	69	0.5	30.0
WOR3.00A	0.353	72	0.5	30.0
WOR3.67A	0.211	56	0.17	10.2

Stream	Reach	ElevIn	ElevOut	LengthFt	Slope	NChan	NLB	NRB	Invert
Behm Run	BER0.64_0.00	429.84	420.89	3362	0.0026	0.045	0.08	0.08	426.1
Behm Run	BER1.05_0.64	435.78	429.84	2163	0.0027	0.045	0.08	0.08	428.19
Behm Run	BER1.30_1.05	441.23	435.78	1294	0.0042	0.05	0.1	0.1	434.2
Behm Run	BER1.95_1.30	469.37	441.23	3425	0.0082	0.05	0.1	0.1	454.26
Boyers Run	BOR.0.10_0.00	421.12	420.76	548	0.0006	0.045	0.06	0.06	419.57
Boyers Run	BOR0.68_0.10	429.54	421.12	3056	0.0027	0.045	0.06	0.06	422.9
Boyers Run	BOR1.20_0.68	447.86	429.54	2739	0.0067	0.045	0.08	0.08	434.92
Boyers Run	BOR2.07_1.20	488.19	447.86	4582	0.0088	0.045	0.08	0.08	447.61
Chiques Creek	CHC10.68_9.40	321.36	311.36	6737	0.0014	0.05	0.1	0.1	318.25
Chiques Creek	CHC11.99_10.68	334.39	321.36	6904	0.0018	0.05	0.1	0.1	329
Chiques Creek	CHC12.65_12.01	336.13	334.39	3386	0.0005	0.05	0.1	0.1	329.28
Chiques Creek	CHC13.89_12.67	345.09	336.13	6415	0.0013	0.05	0.1	0.1	339.62
Chiques Creek	CHC16.25_13.90	358.04	345.09	12411	0.001	0.05	0.1	0.1	344.11
Chiques Creek	CHC17.08_16.25	363.7	358.04	4386	0.0012	0.05	0.1	0.1	357.29
Chiques Creek	CHC17.73_17.08	369.11	363.7	3433	0.0015	0.05	0.1	0.1	365.8
Chiques Creek	CHC18.09_17.73	371.47	369.11	1899	0.0012	0.05	0.1	0.1	368.42
Chiques Creek	CHC18.61_18.09	374.74	371.47	2726	0.0012	0.05	0.1	0.1	372.83
Chiques Creek	CHC19.32_18.61	378.87	374.74	3754	0.0011	0.05	0.1	0.1	374.37
Chiques Creek	CHC20.02_19.35	383.55	378.87	3521	0.0013	0.05	0.08	0.08	379.3
Chiques Creek	CHC20.55_20.02	387.37	383.55	2783	0.0013	0.05	0.1	0.1	380.5
Chiques Creek	CHC21.28_20.57	393.79	387.37	3752	0.0017	0.05	0.12	0.08	388.6
Chiques Creek	CHC21.59_21.28	395.33	393.79	1626	0.0009	0.05	0.1	0.08	389.98
Chiques Creek	CHC22.01_21.59	398.18	395.33	2218	0.0012	0.05	0.1	0.1	393.47
Chiques Creek	CHC23.04_22.01	406.87	398.18	5462	0.0015	0.05	0.08	0.08	401.8
Chiques Creek	CHC24.53_23.04	420.75	406.87	7855	0.0017	0.05	0.12	0.12	410.28
Chiques Creek	CHC25.53_24.64	425.63	421.27	4720	0.0009	0.05	0.1	0.1	423.38
Chiques Creek	CHC26.30_25.53	434.14	425.63	4081	0.002	0.05	0.1	0.1	427.83
Chiques Creek	CHC27.38_26.30	442.09	434.14	5715	0.0013	0.05	0.12	0.12	435.2
Chiques Creek	CHC28.26_27.39	458.57	442.09	4613	0.0035	0.05	0.1	0.1	445.3
Chiques Creek	CHC28.67_28.31	474.88	459.47	1902	0.0081	0.05	0.08	0.08	470.17
Chiques Creek	CHC29.91_28.67	533.38	474.88	6542	0.0089	0.06	0.12	0.12	494.19
Chiques Creek	CHC30.94_29.91	606.68	533.38	5453	0.0134	0.06	0.12	0.12	546.32
Chiques Creek	CHC3.39_1.28	278.89	253.92	11133	0.0022	0.05	0.1	0.1	256.16
Chiques Creek	CHC4.62_3.39	280.91	278.89	6489	0.0003	0.05	0.1	0.1	276.07
Chiques Creek	CHC4.97_4.62	282.35	280.91	1863	0.0007	0.05	0.1	0.1	278.13

Chiques Creek	CHC5.97_4.97	289.3	280.91	5306	0.0015	0.05	0.1	0.1	282.41
Chiques Creek	CHC7.47_5.97	300.63	289.3	7937	0.0014	0.05	0.1	0.1	294.96
Chiques Creek	CHC9.40_7.47	311.36	300.63	10111	0.001	0.05	0.1	0.1	306.59
Dellinger Run	DER0.52_0.00	360.1	344.35	2740	0.0057	0.045	0.08	0.08	352.6
Dellinger Run	DER1.10_0.52	372.51	360.08	3053	0.004	0.045	0.08	0.08	369.78
Dellinger Run	DER1.76_1.10	394.64	372.51	3459	0.0064	0.045	0.06	0.06	378.66
Dellinger Run	DER2.22_1.76	411.02	394.64	2429	0.0067	0.045	0.06	0.1	401.13
Dellinger Run	DER2.93_2.22	449.29	411.02	3759	0.0102	0.05	0.12	0.12	429.79
Doe Run Tributary	DORT0.54_0.34	422.6	416.49	1054	0.0057	0.045	0.1	0.1	418.4
Doe Run Tributary	DORT1.15_0.54	444.92	422.6	3213	0.0069	0.045	0.08	0.08	430.04
Doe Run Tributary	DORT1.58_1.15	456.91	444.92	2282	0.0052	0.045	0.065	0.065	444.8
Doe Run Tributary	DORT2.41_1.58	496.59	456.91	4390	0.009	0.05	0.1	0.1	465.3
Doe Run	DOR0.24_0.00	389.91	386.65	1256	0.0025	0.05	0.1	0.1	385.38
Doe Run	DOR0.44_0.24	392.65	389.91	1049	0.0026	0.045	0.065	0.065	390.06
Doe Run	DOR1.21_0.44	402.5	392.65	4058	0.0024	0.045	0.065	0.065	393.16
Doe Run	DOR1.45_1.23	406.92	402.5	1152	0.0038	0.045	0.065	0.065	403
Doe Run	DOR2.40_1.60	427.11	408.3	4227	0.0044	0.045	0.06	0.06	411.52
Doe Run	DOR2.81_2.40	435.99	427.11	2189	0.004	0.045	0.06	0.06	428.75
Doe Run	DOR3.06_2.81	443.23	435.99	1332	0.0054	0.045	0.06	0.06	437.75
Ersiman Run Tributary	ERRT0.57_0.00	359.76	342.15	2989	0.0058	0.04	0.06	0.06	352.3
Ersiman Run Tributary	ERRT1.62_0.61	391.21	359.76	5331	0.0059	0.06	0.06	0.06	368.7
Erisman Run	ERR0.23_0.00	342.15	334.02	1214	0.0067	0.05	0.12	0.12	334.17
Erisman Run	ERR0.88_0.23	365.23	342.15	3291	0.007	0.05	0.06	0.06	348.7
Erisman Run	ERR1.33_0.88	379.61	365.23	2366	0.006	0.04	0.06	0.06	370.13
Landisville Run	LAR0.40_0.00	361.8	337.29	2128	0.0115	0.045	0.06	0.06	349.5
Mill Road Tributary	MRT0.66_0.00	412.27	372.68	3501	0.0113	0.045	0.06	0.06	393.4
Orchard Road Tributary	ORT0.95_0.28	445.15	417.37	3544	0.0078	0.045	0.06	0.06	428.56
Orchard Road Tributary	ORT1.38_0.95	470.28	445.15	2277	0.011	0.05	0.1	0.1	458.16
Orchard Road Tributary	ORT2.04_1.38	516.25	470.28	3485	0.0132	0.045	0.06	0.06	480.97
Rife Run	RIR0.32_0.00	382.68	378.89	1715	0.0022	0.045	0.065	0.065	380
Rife Run	RIR0.65_0.32	388.84	382.68	1723	0.0035	0.045	0.06	0.06	383.8
Rife Run	RIR0.86_0.65	393.04	388.84	1082	0.0038	0.04	0.06	0.06	388.7
Rife Run	RIR1.24_0.86	400.37	393.04	1984	0.0036	0.045	0.1	0.1	394.46
Rife Run	RIR2.60_1.62	434.36	407.43	5188	0.0052	0.05	0.1	0.1	428.98
Rife Run	RIR3.38_2.60	459.35	434.36	4112	0.006	0.06	0.12	0.12	449.6
Shearers Creek Tributary	SHCT1.59_0.00	724.99	502.44	8409	0.0264	0.06	0.12	0.12	559.8

Shearers Creek	SHC0.23_0.00	444.63	442.12	1231	0.002	0.05	0.12	0.12	442.6
Shearers Creek	SHC1.60_0.23	465.8	444.63	7226	0.0029	0.05	0.1	0.1	447.2
Shearers Creek	SHC2.06_1.60	479.89	465.8	2415	0.0058	0.06	0.12	0.12	466.6
Shearers Creek	SHC2.56_2.06	503.73	479.89	2648	0.009	0.06	0.12	0.12	487.55
Shearers Creek	SHC3.11_2.56	626.05	503.73	2886	0.0423	0.06	0.12	0.12	532.75
Shearers Creek	SHC3.92_3.11	698.88	626.05	4297	0.0169	0.06	0.12	0.12	680
Shumaker Road Tributary	SRT1.29_0.50	422.49	406.03	4183	0.0039	0.04	0.05	0.05	413.5
Shumaker Road Tributary	SRT2.06_1.29	441.84	422.49	4085	0.0047	0.045	0.06	0.06	428.1
Shumaker Road Tributary	SRT2.55_2.06	458.6	441.84	2576	0.0065	0.045	0.06	0.06	452.3
Shumaker Road Tributary	SRT3.00_2.55	473.36	458.6	2383	0.0061	0.045	0.06	0.06	465.45
Shumaker Road Tributary	SRT3.38_3.00	495.5	473.36	2018	0.011	0.045	0.06	0.06	484.5
Silver Spring Run Tributary A	SSRTA0.59_0.00	376.59	354.91	3101	0.007	0.045	0.06	0.06	356
Silver Spring Run Tributary	SSRT0.46_0.00	341.99	333.54	2454	0.0034	0.045	0.06	0.06	337.8
Silver Spring Run Tributary	SSRT0.77_0.46	354.91	341.99	1635	0.0079	0.045	0.06	0.06	346.5
Silver Spring Run Tributary	SSRT1.34_0.77	375.18	354.91	2995	0.0068	0.045	0.06	0.06	367
Silver Spring Run	SSR0.22_0.00	313.87	302.57	1174	0.0096	0.05	0.1	0.1	310.32
Silver Spring Run	SSR0.85_0.22	333.54	313.87	3306	0.0059	0.045	0.06	0.06	329.23
Silver Spring Run	SSR1.06_0.87	339.66	333.54	1027	0.0059	0.045	0.06	0.06	335.9
Silver Spring Run	SSR1.71_1.06	359.72	339.66	3419	0.0059	0.045	0.06	0.06	344.7
Silver Spring Run	SSR1.89_1.71	362.72	359.72	969	0.003	0.045	0.06	0.06	361.5
Silver Spring Run	SSR2.33_1.89	375.25	362.72	2343	0.0053	0.045	0.06	0.06	369.9
Silver Spring Run	SSR2.70_2.33	392.7	375.25	1959	0.0089	0.045	0.06	0.06	377.4
Silver Spring Run	SSR3.20_2.70	429.33	392.7	2635	0.0139	0.05	0.1	0.1	392.4
Silver Spring Run	SSR3.70_3.20	465.14	429.33	2651	0.0135	0.06	0.1	0.1	448
White Oak Run	WOR0.32_0.00	428.43	421.04	1687	0.0043	0.045	0.06	0.06	423.6
White Oak Run	WOR0.76_0.32	432.5	428.43	2329	0.0017	0.05	0.1	0.1	426.3
White Oak Run	WOR1.59_0.76	448.91	432.5	4377	0.0037	0.045	0.06	0.06	437
White Oak Run	WOR2.33_1.64	462.58	450.24	3660	0.0033	0.045	0.08	0.08	454.3
White Oak Run	WOR3.67_3.00	523.47	462.58	3480	0.0174	0.045	0.06	0.06	488

Reach:	BER0.64_0.00
RAS XS:	2390
Station	Elevation
0	438.33
337	429.66
472	429.57
475	426.1
485	426.1
487	429.9
619	429.94
837	443.94

Reach:	BER1.05_0.64
RAS XS:	3642
Station	Elevation
0	445.62
396	432.41
499	431.94
502	428.19
512	428.19
515	431.95
605	432.04
868	450.03

Reach:	BER1.30_1.05
RAS XS:	5677
Station	Elevation
0	449.09
1117	438.11
1234	437.96
1241	434.2
1267	434.2
1273	437.85
1364	438.24
1842	457.85

Reach:	BER1.95_1.30
RAS XS:	8729
Station	Elevation
0	465.4
203	457.81
299	457.72
306	454.26
312	454.26
316	457.72
342	461.41
575	473.56

Reach:	BOR.0.10_0.00
RAS XS:	263
Station	Elevation
0	445.96
1226	424.21
1410	423.63
1417	419.57
1427	419.57
1433	423.64
1645	424.03
1912	438.62

Reach:	BOR0.68_0.10
RAS XS:	1659
Station	Elevation
0	435.31
249	427.24
344	427.13
350	422.9
353	422.9
356	427.15
525	427.25
831	437.97

Reach:	BOR1.20_0.68
RAS XS:	5208
Station	Elevation
0	451.73
231	440.5
305	438.95
315	434.92
321	434.92
328	438.77
523	440.18
747	476.64

Reach:	BOR2.07_1.20
RAS XS:	6886
Station	Elevation
0	469.83
144	454.86
251	450.91
258	447.61
274	447.61
277	451.13
327	451.78
365	466.49

Reach:	CHC10.68_9.40
RAS XS:	54365
Station	Elevation
0	349.93
506	340.73
560	322.77
563	318.25
630	318.25
634	322.32
711	323.35
1000	349.37

Reach:	CHC11.99_10.68
RAS XS:	61225
Station	Elevation
0	358.71
367	337.2
458	334.74
462	329
532	329
539	334.7
613	335.27
1036	359.28

Reach:	CHC12.65_12.01
RAS XS:	64523
Station	Elevation
0	361.68
301	338.15
405	336.94
409	329.28
466	329.28
473	336.58
506	338.5
624	357.52

Reach:	CHC13.89_12.67
RAS XS:	71231
Station	Elevation
0	371.64
627	350.2
644	346.18
654	339.62
701	339.62
718	344.99
927	345.35
1341	367.95

Reach:	CHC16.25_13.90
RAS XS:	74414
Station	Elevation
0	372.39
672	353.03
716	350.02
721	344.11
771	344.11
777	350
900	350.15
1259	368.08

Reach:	CHC17.08_16.25
RAS XS:	87247
Station	Elevation
0	373.33
311	364.15
577	363.88
594	357.29
631	357.29
637	363.7
741	364.37
865	373.02

Reach:	CHC17.73_17.08
RAS XS:	92578
Station	Elevation
0	390.5
755	371.13
903	370.25
924	365.8
964	365.8
971	369.9
1085	370.37
1634	384.99

Reach:	CHC18.09_17.73
RAS XS:	94555
Station	Elevation
0	396.46
1406	374.4
1551	373.8
1566	368.42
1605	368.42
1635	373.06
1910	373.88

2110	397

Reach:	CHC18.61_18.09
RAS XS:	97601
Station	Elevation
0	400.15
631	378.84
736	378.14
742	372.83
793	372.83
806	377.48
917	379.68
1011	398.91

Reach:	CHC19.32_18.61
RAS XS:	99577
Station	Elevation
0	435.22
316	381.66
551	380.47
562	374.37
608	374.37
618	380.19
851	380.9
1692	428.54

Reach:	CHC20.02_19.35
RAS XS:	104213
Station	Elevation
0	402.91
269	394.26
293	384.8
300	379.3
334	379.3
344	384.87
566	384.98
1238	399.07

Reach:	CHC20.55_20.02
RAS XS:	106332
Station	Elevation
0	411.55
600	387.8
674	387.7
680	380.5
734	380.5
741	388.12

842	388.2
2168	402.48

Reach:	CHC21.28_20.57
RAS XS:	111366
Station	Elevation
0	401.65
2254	392.28
2412	393.06
2416	388.6
2442	388.6
2449	393.95
2486	394.11
3382	405.1
Reach:	CHC21.59_21.28
RAS XS:	113162
Station	Elevation
0	410.86
678	396.85
866	396.31
890	389.98
913	389.98
926	396.93
1158	399.39
1930	410.41

Reach:	CHC22.01_21.59
RAS XS:	114718
Station	Elevation
0	413.64
758	398.68
939	397.83
949	393.47
973	393.47
980	398.44
1076	399.3
1633	408.46

Reach:	CHC23.04_22.01
RAS XS:	120110
Station	Elevation
0	438.45
724	407.91
1075	406.48
1089	401.8
1120	401.8

1128	407.09
1229	407.28
1780	435.97

Reach:	CHC24.53_23.04
RAS XS:	126630
Station	Elevation
0	450
309	416.69
605	415.46
612	410.28
670	410.28
675	415.64
700	416.21
992	437.23

Reach:	CHC25.53_24.64
RAS XS:	133807
Station	Elevation
0	457.78
626	427.76
854	427.57
861	423.38
882	423.38
884	427.82
978	427.75
1277	451.15

Reach:	CHC26.30_25.53
RAS XS:	137552
Station	Elevation
0	472.62
202	433.18
458	432.86
468	427.83
485	427.83
491	432.71
582	435.61
764	462.11

Reach:	CHC27.38_26.30
RAS XS:	140990
Station	Elevation
0	464.18
238	440.05
459	439.31
463	435.2

486	435.2
490	439.27
564	440.83
715	464.82

Reach:	CHC28.26_27.39
RAS XS:	147403
Station	Elevation
0	465.83
204	451.89
390	451.4
398	445.3
408	445.3
414	451.92
454	452.02
511	462.06

Reach:	CHC28.67_28.31
RAS XS:	151100
Station	Elevation
0	503.07
356	475.43
480	473.84
487	470.17
500	470.17
503	473.99
577	473.99
778	487.96

Reach:	CHC29.91_28.67
RAS XS:	153493
Station	Elevation
0	514.63
472	497.64
486	496.95
493	494.19
506	494.19
509	496.79
607	497.25
845	512.07

Reach:	CHC3.39_1.28
RAS XS:	10819
Station	Elevation
0	303.68
336	266.36
390	264.52

396	256.16
457	256.16
463	264.35
928	268.89
1043	303

Reach:	CHC30.94_29.91
RAS XS:	159327
Station	Elevation
0	565
402	550.17
523	549.21
530	546.32
537	546.32
543	549.68
620	549.69
843	564.68

Reach:	CHC4.62_3.39
RAS XS:	21510
Station	Elevation
0	328
786	283.3
895	282.86
901	276.07
955	276.07
965	282.27
1080	283.27
1445	300.88

Reach:	CHC4.97_4.62
RAS XS:	25270
Station	Elevation
0	328.46
1025	286.97
1126	285.68
1136	278.13
1200	278.13
1213	284.62
1340	285.82
1809	318.57

Reach:	CHC5.97_4.97
RAS XS:	28854
Station	Elevation
0	336.65
306	292.48

340	289.99
350	282.41
404	282.41
417	289.47
461	292.48
548	321.18

Reach:	CHC7.47_5.97
RAS XS:	36517
Station	Elevation
0	392.78
361	306.34
402	300.54
405	294.96
456	294.96
463	301.42
675	302.8
877	328.74

Reach:	CHC9.40_7.47
RAS XS:	45420
Station	Elevation
0	347.92
256	313.59
354	311.84
364	306.59
438	306.59
448	311.67
545	316.88
757	349.68

Reach:	DER0.52_0.00
RAS XS:	1081
Station	Elevation
0	365.83
461	353.55
515	353.18
518	352.6
525	352.6
528	353.39
569	353.48
869	363.89

Reach:	DER1.10_0.52
RAS XS:	5353
Station	Elevation
0	379.39
521	372.51
699	371.97
702	369.78
712	369.78
716	372.37
812	372.56
1243	378.78

Reach:	DER1.76_1.10
RAS XS:	7035
Station	Elevation
0	388
482	383.28
758	382.46
761	378.66
768	378.66
771	381.52
1111	381.71
1510	386.67

Reach:	DER2.22_1.76
RAS XS:	10344
Station	Elevation
0	428.76
451	403.97
528	403.63
531	401.13
541	401.13
545	403.36
658	404.01
894	425.97

Reach:	DER2.93_2.22
RAS XS:	13675
Station	Elevation
0	470.36
212	436.05
293	432.37
297	429.79
303	429.79
310	432.97
337	433.06
434	464.23

Reach:	DOR0.24_0.00
RAS XS:	123
Station	Elevation
0	400.68
504	395.79
558	389.68
567	385.38
584	385.38
587	389.72
610	395.95
970	403.15

Reach:	DOR0.44_0.24
RAS XS:	1919
Station	Elevation
0	406.28
405	393.7
540	391.41
543	390.06
553	390.06
566	394.39
798	395.63
842	400.56

Reach:	DOR1.21_0.44
RAS XS:	3189
Station	Elevation
0	404.29
504	396.65
539	396.12
540	393.16
547	393.16
549	396.39
697	396.49
1371	403.53

Reach:	DOR1.45_1.23
RAS XS:	7152
Station	Elevation
0	414.06
816	407.48
884	407.23
890	403
909	403
912	405.96
1118	407.27
2553	415.34

Reach:	DOR2.40_1.60
RAS XS:	9045
Station	Elevation
0	423.92
516	414.66
662	413.28
668	411.52
681	411.52
685	413.36
735	413.5
1122	425.15

Reach:	DOR2.81_2.40
RAS XS:	13724
Station	Elevation
0	443.28
306	432.26
393	431.7
397	428.75
413	428.75
420	431.21
528	431.33
1200	451.12

Reach:	DOR3.06_2.81
RAS XS:	15348
Station	Elevation
0	447.39
922	440.88
1124	439.23
1127	437.75
1134	437.75
1136	439.39
1430	437.98
2228	450.96

Reach:	DORT0.54_0.34
RAS XS:	2300
Station	Elevation
0	441.14
238	425.16
311	421.71
318	418.4
331	418.4
334	421.6
350	426.07
675	444.67

Reach:	DORT1.15_0.54
RAS XS:	4072
Station	Elevation
0	467.16
255	432.96
352	433.45
356	430.04
364	430.04
365	432.7
411	432.56
522	463.88

Reach:	DORT1.58_1.15
RAS XS:	6800
Station	Elevation
0	479.83
350	449.42
484	447.34
487	444.8
496	444.8
501	447.34
521	455.85
642	474.23

Reach:	DORT2.41_1.58
RAS XS:	n/a
Station	Elevation
0	503
161	467.5
195	467.2
197	465.3
207	465.3
208	467.2
301	467.8
506	499

Reach:	ERR0.23_0.00
RAS XS:	631
Station	Elevation
0	355.85
323	346.24
358	336.09
359	334.17
369	334.17
373	336.15
457	338.27
651	350.2

Reach:	ERR0.88_0.23
RAS XS:	2748
Station	Elevation
0	369.81
191	353.56
318	350.08
321	348.7
324	348.7
331	350.04
364	351.41
528	361.14

Reach:	ERR1.33_0.88
RAS XS:	5561
Station	Elevation
0	386.17
354	370.9
378	370.56
381	370.13
385	370.13
389	370.61
485	370.96
808	379.01

Reach:	ERRT0.57_0.00
RAS XS:	n/a
Station	Elevation
0	359.3
88	354.6
134	353.7
140	352.3
151	352.3
162	353.7
235	354.7
370	363.4

Reach:	ERRT1.62_0.61
RAS XS:	n/a
Station	Elevation
0	380
312	371.5
397	369
404	368.7
424	368.7
454	369
538	371.5
800	380

Reach:	LAR0.40_0.00
RAS XS:	n/a
Station	Elevation
0	363.8
157	353.8
188	352.1
189	349.5
199	349.5
200	352.1
278	352.2
515	363.6

Reach:	MRT0.66_0.00
RAS XS:	n/a
Station	Elevation
0	415.7
175	397.2
315	396.7
316	393.4
323	393.4
324	396.7
444	397.3
541	415.7

Reach:	ORT0.95_0.28
RAS XS:	3001
Station	Elevation
0	474.95
201	432.7
275	431.72
278	428.56
288	428.56
292	430.97
366	432.6
467	458.39

Reach:	ORT1.38_0.95
RAS XS:	6434
Station	Elevation
0	510.99
168	465.29
219	459.81
223	458.16
232	458.16
236	460.23
252	460.33
436	498.18

Reach:	ORT2.04_1.38
RAS XS:	8079
Station	Elevation
0	519.62
269	484.15
306	483.38
314	480.97
323	480.97
326	483.5
400	488.17
555	514.68

Reach:	RIR0.32_0.00
RAS XS:	825
Station	Elevation
0	395
455	386
609	382
612	380
620	380
630	382
720	386
1200	395.33

Reach:	RIR0.65_0.32
RAS XS:	2375
Station	Elevation
0	398.74
283	387.63
780	386.5
786	383.8
799	383.8
803	387.6
910	387.85
1173	402.52

Reach:	RIR0.86_0.65
RAS XS:	3735
Station	Elevation
0	401.8
435	393.18
756	391.6
762	388.7
785	388.7
792	392.12
852	394.05
977	403.99

Reach:	RIR1.24_0.86
RAS XS:	5168
Station	Elevation
0	426.89
256	402.62
417	400.18
444	394.46
463	394.46
487	400.06
674	411.81
694	423.94

Reach:	RIR2.60_1.62
RAS XS:	13011
Station	Elevation
0	466.02
340	432.43
424	430.96
427	428.98
441	428.98
444	431.37
534	432.56
658	463.42

Reach:	RIR3.38_2.60
RAS XS:	16575
Station	Elevation
0	522.31
416	463.12
583	452.18
588	449.6
605	449.6
608	452.25
624	464.14
782	500.76

Reach:	SHC0.23_0.00
RAS XS:	520
Station	Elevation
0	463.59
347	446.11
521	445
525	442.6
539	442.6
546	445.71
606	445.86
885	454.5

Reach:	SHC1.60_0.23
RAS XS:	3552
Station	Elevation
0	472
320	452.33
444	450.94
459	447.2
484	447.2
491	451.05
612	452.84
996	463.44

Reach:	SHC2.06_1.60
RAS XS:	8979
Station	Elevation
0	512.74
396	476.82
406	470.34
409	466.6
426	466.6
433	470.64
612	468.32
922	491.72

Reach:	SHC2.56_2.06
RAS XS:	11594
Station	Elevation
0	523.94
426	497.52
439	490.33
443	487.55
477	487.55
486	491.43
516	492.28
659	545.3

Reach:	SHC3.11_2.56
RAS XS:	14904
Station	Elevation
0	575
258	542.22
326	536.15
332	532.75
348	532.75
351	535.5
398	540
620	560.82

Reach:	SHC3.92_3.11
RAS XS:	n/a
Station	Elevation
0	700
320	687
608	683
610	680
635	680
638	683
744	684
968	707

Reach:	SHCT1.59_0.00
RAS XS:	3235
Station	Elevation
0	581
273	564.9
282	563
289	559.8
315	559.8
320	563.1
328	564.4
691	581.75

Reach:	SRT1.29_0.50
RAS XS:	2251
Station	Elevation
0	446
257	415.75
311	415.6
314	413.5
327	413.5
331	415.57
394	415.58
613	441

Reach:	SRT2.06_1.29
RAS XS:	6097
Station	Elevation
0	477.7
506	430.66
559	431.15
562	428.1
570	428.1
576	430.73
695	432.3
852	466.12

Reach:	SRT2.55_2.06
RAS XS:	10300
Station	Elevation
0	485
335	455.12
361	454.75
368	452.3
374	452.3
381	454.55
408	454.37
600	475

Reach:	SRT3.00_2.55
RAS XS:	12384
Station	Elevation
0	489.12
358	468.04
398	468.56
404	465.45
412	465.45
413	466.91
442	467.39
480	487.17

Reach:	SRT3.38_3.00
RAS XS:	14660
Station	Elevation
0	505
215	488.32
308	487.15
313	484.5
322	484.5
325	486.77
381	487.73
563	509.13

Reach:	SSR0.22_0.00
RAS XS:	934
Station	Elevation
0	335
191	314.16
218	312.88
231	310.32
255	310.32
262	313.68
326	316.75
376	334.46

Reach:	SSR0.85_0.22
RAS XS:	3485
Station	Elevation
0	360
441	331.74
468	331.5
477	329.26
485	329.26
495	331.25
576	332.21
657	348.43

Reach:	SSR1.06_0.87
RAS XS:	5001
Station	Elevation
0	350
530	338.41
654	337.8
658	335.9
671	335.9
678	337.93
782	340.89
1370	349.28

Reach:	SSR1.71_1.06
RAS XS:	7012
Station	Elevation
0	359
442	347.44
583	347.06
590	344.7
596	344.7
599	347.03
710	346.5
871	364.02

Reach:	SSR1.89_1.71
RAS XS:	9500
Station	Elevation
0	375
138	365.18
296	362.7
299	361.5
305	361.5
309	362.45
437	364.23
658	375.11

Reach:	SSR2.33_1.89
RAS XS:	11398
Station	Elevation
0	385
307	373.07
428	372.01
441	369.9
454	369.9
461	371.8
517	372.66
873	386.1

Reach:	SSR2.70_2.33
RAS XS:	12395
Station	Elevation
0	395
299	380.28
349	379.04
355	377.4
359	377.4
366	379.12
403	379.6
700	386.8

Reach:	SSR3.20_2.70
RAS XS:	14096
Station	Elevation
0	406
389	398.21
550	396.9
556	392.4
569	392.4
576	396.15
723	396.5

911	405.29

Reach:	SSR3.70_3.20
RAS XS:	n/a
Station	Elevation
0	475
102	454
160	450
162	448
173	448
175	450
300	452
470	472

Reach:	SSRT0.46_0.00
RAS XS:	801
Station	Elevation
0	345
244	339.25
321	339.3
328	337.8
336	337.8
341	339.45
385	339.62
532	347.17

Reach:	SSRT0.77_0.46
RAS XS:	2956
Station	Elevation
0	355
136	349.2
216	348.45
223	346.5
230	346.5
236	348.56
283	349.79
313	355.13

Reach:	SSRT1.34_0.77
RAS XS:	n/a
Station	Elevation
0	382.7
177	372.7
267	369
270	367
278	367
280	369
402	370
683	382

Reach:	SSRTA0.59_0.00
RAS XS:	n/a
Station	Elevation
0	370.1
158	362
270	358
272	356
276	356
278	358
376	362
608	372

Reach:	WOR0.32_0.00
RAS XS:	1018
Station	Elevation
0	460
239	426.98
250	426.5
255	423.6
262	423.6
266	426.15
433	426.14
628	441.78

Reach:	WOR0.76_0.32
RAS XS:	2334
Station	Elevation
0	446
185	429.15
314	429.43
317	426.3
331	426.3
337	429.3
502	430.72
600	450

Reach:	WOR1.59_0.76
RAS XS:	5889
Station	Elevation
0	464
213	441.8
240	439.4
247	437
260	437
263	439.93
300	440.88
600	465

Reach:	WOR2.33_1.64
RAS XS:	9698
Station	Elevation
0	464
285	455.69
366	455.8
368	454.3
373	454.3
376	456.35
440	456.81
758	468

Reach:	WOR3.67_3.00
RAS XS:	n/a
Station	Elevation
0	502
150	495
265	490
267	488
285	488
287	490
415	495
670	502

Pond: 0 (CHC4.62B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	42" RCP at 328.24	9.62 sqft orifice at 328.24
2	9.5' weir at 332.99	9.5' weir at 332.99
3	450' dam top at 339.5	450' dam top at 339.5

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
328.24	0	0
329	0.02	0.02
330	0.07	0.09
331	0.22	0.31
332	0.24	0.55
333	0.19	0.74
334	0.18	0.92
335	0.18	1.11
336	0.18	1.29
337	0.17	1.45
338	0.18	1.63
339	0.18	1.81
340	0.18	1.99
341	0.19	2.18
342	0.19	2.37
343	0.24	2.62
344	0.22	2.84

Pond: 1 (CHC4.97C)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	36" CMP at 372.89	7.07 sqft orifice at 372.89
2	4.5' round vortex riser top at 377.89	14.1' weir at 377.89
3	450' dam top at 378.3	450' dam top at 378.3

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
371.9	0	0.000
372	0.00	0.001
373	0.08	0.081
374	0.16	0.242
375	0.10	0.338
376	0.06	0.397
377	0.05	0.448
378	0.07	0.513
379	0.09	0.606
380	0.08	0.690
381	0.06	0.745
382	0.07	0.813

Pond: 2 (CHC4.97B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	6" orifice plate at 345.66	.20 sqft orifice at 345.66
2	2' x 2' grate top	8.0' weir at 354.03
3	25' earth spillway at 355.78	25' weir at 355.78
4	600' dam top at 358.41	600' dam top at 358.41

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
345.66	0	0
347	0.02	0.02
348	0.19	0.21
349	0.12	0.34
350	0.11	0.45
351	0.12	0.56
352	0.08	0.64
353	0.08	0.72
354	0.08	0.80
355	0.09	0.90
356	0.11	1.01
357	0.13	1.14
358	0.15	1.29
359	0.17	1.46

Pond: 3 (CSSR3.70B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	Natural Ground	30' weir at 475.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
464	0	0
466	3.18	3.18
468	0.54	3.72
470	0.52	4.24
472	0.44	4.68
474	0.45	5.13
476	0.51	5.64

Pond: 4-Lake Grubb (CSSR3.20B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	6' x 4' RCP ellipse to 6' channel plus 20 ft. natural weir	26' weir at 438.5
2	350' dam top at 442.0	350' dam top at 442.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
438.3	0	0
440	16.20	16.20
442	0.83	17.03
444	0.77	17.80
446	0.64	18.44
448	0.66	19.10
450	0.66	19.76

Pond: 5 (SSR2.70D)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	12" CMP at 431.24	.79 sqft orifice at 431.24
2	18" vortex riser top at 432.74	4.7' weir at 432.74
3	194 ft. dam top at 437.0	194 ft. dam top at 437.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
431.24	0	0
432	0.01	0.01
433	0.09	0.10
434	0.17	0.28
435	0.22	0.49
436	0.15	0.65
437	0.15	0.80
438	0.21	1.00
439	0.19	1.20
440	0.17	1.37

Pond: 6 -Railroad (SSR2.70E)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	Twin 30" Cast Iron Pipes	Culvert- 50', US 409.7, DS 408.56
2	1300' dam top at 423.0	1300' dam top at 423.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
408.56	0	0
410	0.01	0.01
411	0.06	0.07
412	0.70	0.77
413	1.46	2.23
414	1.75	3.98
415	1.78	5.76
416	1.85	7.61
417	1.81	9.42
418	1.84	11.25
419	1.92	13.17
420	1.99	15.17
421	2.31	17.47
424		50.00

Pond: 7 (SSR2.70C)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	15" CMP projecting from fill	Culvert- 50ft., US-421.02, DS-420.95
2	250' dam top at 424.29	250' dam top at 424.29

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
420.95	0	0
421	0.01	0.01
422	0.15	0.16
423	0.11	0.27
424	0.14	0.41
426		2.00

Pond: 8 (SSR2.33B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	12" RCP at 409.96	.79 sqft orifice at 409.96
2	2.75 grate inlet top at 412.86	8.6' weir at 412.86
3	200 ft. dam top at 414.7	200 ft. dam top at 414.7

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
409.96	0	0
411	0.04	0.04
412	0.37	0.41
413	0.20	0.61
414	0.08	0.69
415	0.06	0.75
416	0.00	2.00

Pond: 9 (SSRT1.34E)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	11' orifice plate at 390.72	.64 sqft orifice at 390.72
2	660 ft. dam top at 398.03	660 ft. dam top at 398.03

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
390.72	0.00	0.00
392	0.04	0.04
393	0.11	0.14
394	0.07	0.21
395	0.07	0.28
396	0.09	0.38
397	0.11	0.49
398	0.18	0.67
399	0.20	0.88
400	0.92	1.80

Pond: 10 (SSRT1.34D)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	4" RCP at 395.47	.09 sqft orifice at 395.47
2	4' x 2' grate inlet top at 398.47	12' weir at 398.47
3	420 ft. dam top at 400.49	420 ft. dam top at 400.49

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
395.47	0	0
396	0.00	0.00
397	0.25	0.25
398	0.19	0.44
399	0.20	0.64
400	0.28	0.92
401	0.37	1.29
402	0.40	1.69
403	0.41	2.10

Pond: 11 (SSRT1.34C)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	24" CMP projecting from fill	Culvert: 24" CMP, 40', US-397.22, DS-396.57
2	900' dam top at 401.18	900' dam top at 401.18

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
396.57	0	0
398	0.02	0.02
399	0.15	0.17
400	0.23	0.40
401	0.31	0.71
402	0.45	1.16
404		5.00

Pond: 12 (SSRT1.34B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	12" CMP with flared ES	Culvert-12" CMP, 40', US-400.32, DS-399.32
2	450 ft. dam top at 404.83	450 ft. dam top at 404.83

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
399.32	0	0
401	0.00	0.00
402	0.19	0.19
403	0.21	0.40
404	0.16	0.55
405	0.12	0.67
406	0.12	0.80
407	0.10	0.89
408	0.16	1.05

Pond: 13 (SSRT0.77B)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	18" CMP with flared ES	Culvert-18" CMP, 75', US-400.79, DS-400.50
2	18' rip-rap spillway at 403.82	18' weir at 403.82
3	880 ft. dam top at 405.94	880 ft. dam top at 405.94

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
400.5	0	0
402	0.07	0.07
403	0.36	0.43
404	0.38	0.81
405	0.34	1.15
406	0.38	1.53
407	0.43	1.95
408	0.8	2.7

Pond: 14 (SSRTA0.59A)

Data Source: USACE field survey 11/29/16

Outflow Data		
Outflow	Field Data	Model
1	30" CMP with flared ES	Culvert-30" CMP, 45', US-376.75, DS-375.94
2	10' earth spillway at 380.86	10' weir at 380.86
3	300 ft. dam top at 382.41	300 ft. dam top at 382.41

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
375.94	0	0
377	0.00	0.00
378	0.33	0.33
379	0.24	0.58
380	0.13	0.71
381	0.16	0.87
382	0.23	1.09
383	0.4	1.5
384	0.46	1.99
385	0.77	2.76

Pond: 15 (CHC10.68B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" CMP at 352.22	0.79 orifice at 352.22
2	50' earth spillway at 358.50	50' weir at 358.50
3	4' x 2' grate top at 358.82	12' weir at 358.82
4	1150 ft. dam top at 360.28	1150 ft. dam top at 360.28

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
352.22	0	0
353	0.01	0.01
354	0.15	0.15
355	0.36	0.51
356	0.43	0.94
357	0.20	1.14
358	0.20	1.34
359	0.2	1.6
360	0.64	2.22
361	0.69	2.90
362	0.45	3.35
363	0.50	3.85
364	0.61	4.46

Pond: 16 (CHC10.68C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	8" CMP at 355.63	0.35 orifice at 355.63
2	2' x 4' grate at 364.09	12' weir at 364.09
3	100' earth spillway at 365.61	100' weir at 365.61
4	500 ft. dam top at 367.67	500 ft. dam top at 367.67

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
355.63	0	0
356	0.00	0.00
357	0.02	0.02
358	0.09	0.11
359	0.40	0.51
360	0.32	0.83
361	0.27	1.11
362	0.2	1.3
363	0.12	1.40
364	0.11	1.50
365	0.11	1.61
366	0.14	1.75
367	0.12	1.87
368	0.18	2.05
369	0.13	2.18
370	0.10	2.28
371	0.14	2.43

Pond: 17-Great Dane (CHC10.68E)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	15" RCP at 365.29	1.23 orifice at 365.29
2	2' x 4' grate at 376.23	12' weir at 376.23
3	40' earth spillway at 376.28	40' weir at 376.28
4	1000 ft. dam top at 378.76	1000 ft. dam top at 378.76

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
365.29	0	0
366	0.00	0.00
367	0.03	0.03
368	0.23	0.26
369	0.48	0.74
370	0.46	1.20
371	0.34	1.54
372	0.2	1.7
373	0.12	1.81
374	0.11	1.92
375	0.11	2.04
376	0.12	2.16
377	0.15	2.30
378	0.14	2.44
379	0.17	2.61
380	0.31	2.92
381	0.37	3.30

Pond: 18- (CHC10.68D)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	18" RCP at 365.67	1.77 orifice at 365.67
2	12" RCP at 370.40	0.79 orifice at 370.40
3	2' x 4' grate at 372.90	12' weir at 372.90
4	100' earth spillway at 373.63	100' weir at 373.63
5	1030 ft. dam top at 375.96	1000 ft. dam top at 375.96

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
365.67	0	0
367	0.15	0.15
368	0.59	0.74
369	1.07	1.82
370	1.30	3.11
371	0.58	3.69
372	0.23	3.92
373	0.2	4.1
374	0.21	4.31
375	0.18	4.48
376	0.21	4.69
377	0.30	5.00
378	1.08	6.08
379	0.99	7.06

Pond: 19 (ERR0.00B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	1.0' x .76' conc. Box at 351.80	.76 orifice at 351.80
2	8' rip-rap at 354.32	8' weir at 354.32
3	400 ft. dam top at 354.98	400 ft. dam top at 354.98

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
351.8	0	0
353	0.13	0.13
354	0.10	0.23
355	0.12	0.35
356	0.27	0.62
357	0.50	1.13
358	0.27	1.39
359	0.4	1.7

Pond: 20 (ERRT0.00B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" RCP at 350.59	0.79 orifice at 350.59
2	2' x 4' grate at 354.20	12' weir at 354.20
3	35' earth spillway at 353.42	35' weir at 353.42
4	420 ft. dam top at 355.06	420 ft. dam top at 355.06

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
350.9	0	0
351	0.00	0.00
352	0.12	0.12
353	0.12	0.24
354	0.07	0.31
355	0.07	0.38
356	0.06	0.44
357	0.0	0.5
358	0.05	0.53
359	0.11	0.64

Pond: 21 (ERR0.23B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	20" RCP at 351.7	2.2 orifice at 351.7
2	3.0' concrete weir at 355.2	3' weir at 355.2
3	4' x 2' grate at 357.2	12' weir at 357.2
4	100' earth spillway at 357.42	100' weir at 357.42
5	460 ft. dam top at 358.99	460 ft. dam top at 355.06

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
351.7	0	0
353	0.02	0.02
354	0.30	0.32
355	0.54	0.86
356	0.42	1.28
357	0.14	1.43
358	0.62	2.04
359	1.5	3.5
360	1.50	5.03
361	1.74	6.77
362	1.94	8.71

Pond: 22 (ERRT0.00C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	18" RCP at 358.21	1.77 orifice at 358.21
2	270 ft. dam top at 359.43	270 ft. dam top at 359.43

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
356.39	0	0
357	0.09	0.09
358	0.08	0.18
359	0.08	0.26
360	0.04	0.30
361	0.04	0.34
362	0.04	0.38
363	0.0	0.4

Pond: 23 (ERRT0.00D)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	6-1 in openings at 355.9	0.20 orifice at 355.9
2	18" round vortex riser at 357.42	4.7' weir at 357.42
3	15' earth spillway at 358.43	15' weir at 358.43
4	250 ft. dam top at 359.42	250 ft. dam top at 359.42

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
355.9	0	0
356	0.03	0.03
357	0.03	0.06
358	0.03	0.09
359	0.04	0.13
360	0.03	0.16
361	0.02	0.18
362	0.0	0.2

Pond: 24 (ERRT0.00E)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	7" RCP at 357.27	.28+C43 orifice at 357.27
2	8' earth spillway at 360.86	8' weir at 360.86
3	325 ft. dam top at 361.7	325 ft. dam top at 361.7

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
357.27	0	0
358	0.01	0.01
359	0.08	0.09
360	0.11	0.20
361	0.06	0.26
362	0.06	0.31
363	0.07	0.39
364	0.1	0.5

Pond: 25 (ERR1.62B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	8" RCP at 390.91	0.45 orifice at 390.91
2	10" RCP at 392.41	0.54 orifice at 392.41
3	12" RCP at 393.81	0.79 orifice at 393.81
4	4' x 2' grate at 396.21	12' weir at 396.21
5	30' earth spillway at 396.46	30' weir at 396.46
6	840 ft. dam top at 398.45	840 ft. dam top at 398.45

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
390.91	0	0
394	0.85	0.85
396	0.56	1.41
398	0.57	1.98
400	1.28	3.26

Pond: 26 (ERRT1.62C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	15" RCP with flared ES	Culvert-15" RCP, 78', US-395.68, DS-395.41
2	150 ft. dam top at 400.34	150 ft. dam top at 400.34

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
395.41	0	0
397	0.06	0.06
398	0.34	0.40
399	0.47	0.87
400	0.34	1.21
401	0.16	1.37
402	0.10	1.47
403	0.1	1.5

Pond: 27-Railroad (LAR0.40D)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	36" RCP	Culvert-36" RCP, 110', US-387.29, DS-386.45
2	1000 ft. dam top at 400.0	1000 ft. dam top at 400.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
386.45	0	0
388	0.00	0.00
389	0.04	0.04
390	0.55	0.59
391	0.91	1.50
392	1.01	2.51
393	0.90	3.41
394	0.8	4.2
395	1.01	5.22
396	1.21	6.43
400		50.00

Pond: 28 Lancaster Co. Offices (LAR0.40C)

Data Source: USACE field survey 1/10/2017

Outflow Data		
Outflow	Field Data	Model
1	7-1" round orifices at 386.7	0.26 orifice at 386.7
2	8' metal weir at 387.2	8' weir at 387.2
3	20' earth spillway at 389.4	20' weir at 389.4
4	360 ft. dam top at 390.3	360 ft. dam top at 390.3

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
385.2	0	0
386	1.03	1.03
388	0.45	1.48
390	0.16	1.64
392	0.43	2.07
394	0.62	2.69

Pond: 29-Spookynook Sports (LAR0.40B)

Data Source: USACE field survey 1/10/2017

Outflow Data		
Outflow	Field Data	Model
1	6" PVC orifice at 369.0	0.20 orifice at 369.0
2	2.5' x 0.25' concrete box at 374.0	0.625 orifice at 374.0
3	4' x 2' grate top at 375.0	12' weir at 375.0
4	200' earth spillway at 375.9	200' weir at 375.9
5	800 ft. dam top at 377.3	800 ft. dam top at 377.3

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
369	0	0
370	0.21	0.21
372	1.80	2.01
374	0.32	2.33
376	0.26	2.59
378	0.42	3.01

Pond: 30-Yamaha (LAR0.40A)

Data Source: USACE field survey 1/10/2017

Outflow Data		
Outflow	Field Data	Model
1	6" PVC orifice at 368.0	0.20 orifice at 368.0
2	16' earth spillway at 370.5	16' weir at 370.5
3	340 ft. dam top at 372.5	340 ft. dam top at 372.5

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
365	0	0
370	0.28	0.28
372	0.19	0.47
374	0.37	0.84

Pond: 31 (CHC17.08B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	36" RCP at 373.69	7.07 orifice at 373.69
2	Twin 36" RCP at 375.49	14.14' orifice at 375.49
3	4' x 2' grate at 379.33	12' weir at 379.33
4	550' earth spillway at 379.54	550' weir at 379.54
5	3000 ft. dam top at 381.46	3000 ft. dam top at 381.46

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
370.85	0	0
372	4.56	4.56
373	4.64	9.20
374	0.86	10.06
375	0.69	10.75
376	0.64	11.39
377	0.51	11.90
378	0.5	12.4
379	0.43	12.81
380	0.67	13.48
381	1.04	14.52
382	2.64	17.17
383	1.90	19.07
384	3.49	22.56
385	3.82	26.37

Pond: 32 (CHC17.73B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	36" RCP at 377.11	7.07 orifice at 377.11
2	5' x 2' grate top at 385.35	14' weir at 385.35
3	180' earth spillway at 387.99	180' weir at 387.99
4	960 ft. dam top at 390.73	960 ft. dam top at 390.73

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
377.11	0	0
381	2.53	2.53
382	0.14	2.67
383	0.13	2.80
384	0.13	2.93
385	0.13	3.06
386	0.13	3.19
387	0.1	3.3
388	0.33	3.66
389	0.36	4.02
390	0.47	4.49
391	0.67	5.16
392	0.72	5.88
393	0.87	6.75
394	0.91	7.66

Pond: 33 (MRT0.66C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	4" PVC at 460.21	0.09 orifice at 460.21
2	3" CI at 460.54	0.05 orifice at 460.54
3	7" concrete weir active at 464.29	0.6' weir at 464.29
4	4' x 2' grate at 466.04	12' weir at 466.04
5	100' earth spillway at 466.08	100' weir at 466.08
6	360 ft. dam top at 467.36	360 ft. dam top at 467.36

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
460.21	0	0
462	0.24	0.24
463	0.27	0.51
464	0.11	0.62
465	0.05	0.67
466	0.05	0.72
467	0.07	0.79
468	0.07	0.86
469	0.05	0.91
470	0.04	0.95
471	0.04	1.00
472	0.06	1.05
473	0.08	1.14
474	0.10	1.24

Pond: 34 (MRT0.66B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	2" RCP at 448.89	0.02 orifice at 448.89
2	7.5" RCP at 451.19	0.31 orifice at 451.19
3	4" RCP at 452.19	0.09 orifice at 452.19
4	4' x 2' grate at 454.39	12' weir at 454.39
5	180' earth spillway at 454.48	180' weir at 454.48
6	680 ft. dam top at 456.45	680 ft. dam top at 456.45

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
448.89	0	0
450	0.15	0.15
451	0.66	0.81
452	0.68	1.50
453	0.28	1.78
454	0.10	1.88
455	0.11	1.99
456	0.08	2.07
457	0.10	2.17
458	0.06	2.23
459	0.06	2.23

Pond: 35-Autumn Leaf Estates (RIR3.38B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	24" RCP at 520.56	3.14 sqft orifice at 520.56
2	4' x 2' weir at 524.63	12' weir at 524.63
3	18" RCP at 525.20	1.77 sqft orifice at 525.20
4	250' dam top at 528.15	250' dam top at 528.15

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
520.56	0	0
522	0.11	0.11
523	0.10	0.21
524	0.06	0.26
525	0.04	0.31
526	0.04	0.35
527	0.04	0.39
528	0.05	0.44
529	0.09	0.53
530	0.07	0.60
531	0.06	0.67
532	0.06	0.72
533	0.05	0.78
534	0.05	0.83

Pond: 36 (CHC19.35B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	36" RCP at 380.26	7.1 sq. ft. orifice at 380.26
2	4' x 2' grate at 383.97	12' weir at 383.97
3	650' dam top at 386.92	650' dam top at 386.92

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
380.26	0	0
382	0.10	0.10
383	0.31	0.41
384	0.46	0.87
385	0.46	1.34
386	0.43	1.76
390		5.00

Pond: 37-(DOR0.24B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	9" RCP at 393.37	.44 orifice at 393.37
2	4' x 2' grate top at 395.51	12' weir at 395.51
3	135' spillway at 396.95	135' weir at 396.95
4	920' dam top at 398.50	920' dam top at 398.50

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
392.9	0	0
393	0.00	0.00
394	0.18	0.18
395	1.80	1.98
396	0.35	2.33
397	0.26	2.59
398	0.28	2.87
399	0.83	3.70
400	1.00	4.70

Pond: 38-Railroad (DORT1.21B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	3500' dam top at 413.0	3500' dam top at 413.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
408.5	0	0
410	3.29	3.29
412	8.14	11.43
414	8.70	20.13
416	8.90	29.03

Pond: 39-Doe Run Elementary School Basin 1 (DORT0.34B)

Data Source: Harbor Engineering, Inc. Land Development Plan dated April 2016

Outflow Data		
Outflow	Field Data	Model
1	3" circular orifice at 425.5	.05 orifice at 425.5
2	24" x 6" orifice at 427.67	1.0 ft. orifice at 427.67
3	2' x 4' grate top at 429.17	12' weir at 429.17
4	15' rip rap spillway at 429.42	15' weir at 429.42
5	400' dam top at 432.0	400' dam top at 432.0

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
425.5	0	0
426	0.06	0.06
427	0.11	0.17
428	0.05	0.22
430	0.12	0.34
432	0.10	0.44
434	0.08	0.52
437	0.61	1.13

Pond: 40-Brookshire (DORT0.54D)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" RCP at 456.92	.79 sqft orifice at 456.92
2	4' x 2' grate at 460.92	12' weir at 460.92
3	250' earth spillway at 461.27	250' weir at 461.27
4	1200' dam top at 463.41	1200' dam top at 463.41

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
456.92	0	0
458	2.89	2.89
459	0.38	3.27
460	0.31	3.58
461	0.23	3.81
462	0.24	4.05
463	0.23	4.28
464	0.24	4.52
465	0.17	4.69
466	0.24	4.52

Pond: 41 (DORT0.54C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	4" RCP at 474.9	.09 sqft orifice at 474.9
2	7" RCP at 476.4	.26 sq. ft orifice at 476.4
3	4' x 2' grate at 478.4	12' weir at 478.4
4	350' dam top at 479.5	350' dam top at 479.5

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
474.9	0	0
476	0.00	0.00
477	0.12	0.12
478	0.07	0.20
479	0.09	0.28
480	0.12	0.40
481	0.16	0.56
482	0.33	0.89

Pond: 42 (DORT0.54E)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	2" RCP at 452.75	.08 sqft orifice at 452.75
2	3.5' x 2.5' concete box at 455.26	3.5' weir at 455.26
3	6.0' x 2.0' grate at 458.26	16' weir at 458.26
4	150' earth spillway at 460.22	150' weir at 460.22
5	1000' dam top at 462.42	1000' dam top at 462.42

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
452.75	0	0
453	0.02	0.02
454	0.12	0.14
455	0.20	0.34
456	0.11	0.44
457	0.11	0.55
458	0.09	0.64
459	0.09	0.73
460	0.10	0.83
461	0.13	0.96
462	0.11	1.07
463	0.13	1.21
464	0.10	1.30
465	0.10	1.40

Pond: 43 (DORT1.15B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	9" RCP at 513.42	.44 sqft orifice at 513.42
3	4' x 2' grate at 516.67	12' weir at 516.67
4	300' dam top at 517.94	350' dam top at 517.94

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
513.42	0	0
514	0.01	0.01
515	0.15	0.15
516	0.05	0.20
517	0.03	0.23
518	0.04	0.27
519	0.05	0.32
520	0.04	0.36
521	0.03	0.39
522	0.03	0.41

Pond: 44 (DORT2.41B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	8" cast iron pipe at 518.28	2.1 ft weir at 518.28
2	8' rock spillway at 519.11	8' weir at 519.11
3	250' dam top at 521.11	250' dam top at 521.11

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
518.28	0	0
521	3.21	3.21
522	0.37	3.58
523	0.28	3.87
524	0.31	4.18
525	0.33	4.50

Pond: 45 (CHC21.28F)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	42" round weir at 424.44	11.0 ft weir at 424.44
2	45' earth spillway at 429.64	45' weir at 429.64
3	400' dam top at 430.69	400' dam top at 430.69

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
424.44	0	0
425	0.68	0.68
426	0.11	0.79
427	0.07	0.86
428	0.08	0.93
429	0.12	1.05
430	0.16	1.22
431	0.21	1.42
432	0.19	1.61

Pond: 46 (CHC21.28B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	6" RCP at 404.56	.196 sqft orifice at 404.56
2	18" RCP at 406.06	1.77 sqft orifice at 406.06
3	4' x 2' grate at 409.56	12' weir at 409.56
4	30' earth spillway at 409.52	30' weir at 409.52
5	850' dam top at 412.17	850' dam top at 412.17

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
404.56	0	0
406	0.01	0.01
407	0.33	0.34
408	0.16	0.50
409	0.16	0.66
410	0.18	0.84
411	0.18	1.02
412	0.21	1.22
413	0.14	1.37
414	0.06	1.42
415	0.06	1.48

Pond: 47-Manheim Central Middle School (CHC21.59C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	6" RCP at 399.07	.196 sqft orifice at 399.07
2	2.5 x 2" weir at 404.57	2.5' weir at 404.57
3	4' x 2' grate at 405.57	12' weir at 405.57
4	27' earth spillway at 405.71	27' weir at 405.71
5	750' dam top at 406.84	750' dam top at 406.84

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
399.07	0	0
401	0.11	0.11
402	0.28	0.39
403	0.38	0.77
404	0.29	1.05
405	0.17	1.23
406	0.19	1.42
407	0.45	1.87
408	0.52	2.38

Pond: 48 (CHC22.01B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	2" RCP at 418.96	.08 sq. ft orifice at 418.96
2	4" PVC at 423.87	.09 sq. ft. orifice at 423.87
3	4' x 2' grate at 428.96	12' weir at 428.96
4	150' earth spillway at 429.03	150' weir at 429.03
5	470' dam top at 430.37	470' dam top at 430.37

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
418.96	0	0
421	0.14	0.14
422	0.16	0.30
423	0.07	0.37
424	0.04	0.42
425	0.05	0.47
426	0.04	0.51
427	0.04	0.55
428	0.04	0.59
429	0.06	0.65
430	0.09	0.74
431	0.04	0.78
432	0.03	0.81

Pond: 49-Manheim High School Field (CHC21.59B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	3 4' x 2' grates at 403.0	36' weir at 403.0
2	35' earth spillway at 404.27	35' weir at 404.27
3	850' dam top at 405.16	850' dam top at 405.16

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
403	0	0
404	0.53	0.53
405	0.92	1.45
406	0.66	2.11

Pond: 50 (CHC21.28C)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	3" PVC at 418.91	.049 sqft orifice at 418.91
2	4' x 2' grate at 421.91	12' weir at 421.91
3	10' earth spillway at 422.24	10' weir at 422.24
4	325' dam top at 423.32	325' dam top at 423.32

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
418.91	0	0
419	0.04	0.04
420	0.05	0.09
421	0.04	0.13
422	0.03	0.16
423	0.04	0.21
424	0.09	0.29

Pond: 51 (CHC21.28D)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" RCP at 410.44	.785 sq. ft. orifice at 410.44
2	5.4' weir at 412.86	5.4' weir at 412.86
3	4' x 2' grate at 413.44	12' weir at 413.44
4	25' earth spillway at 413.61	25' weir at 413.61
5	900' dam top at 415.01	900' dam top at 415.01

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
410.44	0	0
411	0.02	0.02
412	0.23	0.25
413	0.20	0.45
414	0.18	0.63
415	0.32	0.94
416	0.27	1.21

Pond: 52 (CHC21.28E)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	9" RCP at 421.77	.44 sq. ft. orifice at 421.77
2	4' x 2' grate at 427.97	12' weir at 427.97
3	90' earth spillway at 428.27	90' weir at 428.27
4	425' dam top at 430.08	425' dam top at 430.08

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
421.77	0	0
423	0.12	0.12
424	0.32	0.44
425	0.12	0.56
426	0.04	0.60
427	0.04	0.64
428	0.04	0.68
429	0.05	0.73
430	0.04	0.76
431	0.04	0.80
432	0.02	0.82
433	0.02	0.84
434	0.02	0.85
435	0.02	0.87
436	0.02	0.88
437	0.02	0.90
438	0.02	0.92

Pond: 53 (CHC1.59D)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" CMP at 437.51	.785 sqft orifice at 437.51
2	3.5' round CMP weir at 442.01	11' weir at 442.01
3	15' earth spillway at 443.13	15' weir at 443.13
4	460' dam top at 444.21	460' dam top at 444.21

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
437.51	0	0
440	0.19	0.19
441	0.14	0.33
442	0.10	0.43
443	0.11	0.54
444	0.13	0.67
445	0.14	0.81
446	0.12	0.93
447	0.11	1.04
448	0.12	1.16
449	0.12	1.28
450	0.12	1.40
451	0.15	1.55

Pond: 54 (CHC23.04B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	8" round CMP at 439.86	2.07' weir at 439.86
2	18" round CMP at 449.43	4.7' weir at 449.43
3	12' earth spillway at 449.69	12' weir at 449.69
4	300' dam top at 451.70	300' dam top at 451.70

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
439.86	0	0
443	2.78	2.78
444	0.19	2.97
445	0.15	3.12
446	0.14	3.26
447	0.14	3.40
448	0.15	3.55
449	0.15	3.70
450	0.17	3.87
451	0.17	4.04
452	0.18	4.21
453	0.14	4.35
454	0.15	4.50
455	0.16	4.66

Pond: 55 (CHC25.53B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" CMP at 471.69	12" CMP culvert, 55 ft. long, US 471.69, DS 467.3
2	15' earth spillway at 475.25	15' weir at 475.25
3	360' dam top at 477.25	360' dam top at 477.25

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
467.3	0	0
473	0.08	0.08
474	0.13	0.20
475	0.10	0.30
476	0.10	0.40
477	0.13	0.54
478	0.14	0.68
479	0.15	0.83
480	0.21	1.04
481	0.19	1.23

Pond: 56 (SSR1.89B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	12" RCP at 428.50	0.79 orifice at 428.50
2	4' x 2' grate at 431.50	12' weir at 431.5
3	550' dam top at 433.99	550' dam top at 433.99

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
428.5	0	0
429	0.01	0.01
430	0.09	0.10
431	0.12	0.23
432	0.14	0.36
433	0.13	0.49
434	0.26	0.75
435	0.54	1.29

Pond: 57 (SSR2.70B)

Data Source: USACE field survey 11/30/16

Outflow Data		
Outflow	Field Data	Model
1	6" x 3" concrete box at 423.50	0.125 orifice at 423.50
2	15" grate at 426.0	3.9' weir at 426.0
3	360' dam top at 426.5	360' dam top at 426.5

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
423.5	0	0
424	0.12	0.12
425	0.15	0.28
426	0.15	0.42
427	0.18	0.60
428	0.17	0.77

Pond: 58-Doe Run Elementary School Basin 2 (DORT0.54B)

Data Source: Harbor Engineering, Inc. Land Development Plan dated April 2016

Outflow Data		
Outflow	Field Data	Model
1	4" RCP at 445.0	.09 orifice at 445.0
2	18" x 9" orifice at 447.50	1.125 orifice at 447.50
3	2' x 4' grate top at 449.25	12' weir at 449.25
4	50' earth spillway at 449.50	50' weir at 449.50
5	550' dam top at 450.2	550' dam top at 450.2

Elevation-Acreage Data (Source: DEM)		
Elevation	Acreage	Cumulative Acreage
445	0	0
446	0.18	0.18
447	0.12	0.30
448	0.14	0.44
449	0.12	0.56
450	0.56	1.12
452	0.07	1.19

APPENDIX B

Historical Storms HEC-HMS Results

Project: ChiquesCreek Simulation Run: September 2011 Lee

Start of Run: 04Sep2011, 21:00 Basin Model: September 2011 Lee
End of Run: 09Sep2011, 21:00 Meteorologic Model: September 2011 Lee
Compute Time: 05Feb2017, 09:44:21 Control Specifications: September 2011 Lee

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	641.3	08Sep2011, 05:02	6.34
BER0.00A	0.1087	47.8	07Sep2011, 19:07	7.38
BER0.64	1.7391	637.8	08Sep2011, 04:32	6.33
BER0.64A	0.3111	143.9	07Sep2011, 19:03	7.52
BER0.64_0.00	1.7391	626.6	08Sep2011, 05:03	6.27
BER1.05	1.4280	594.1	08Sep2011, 04:23	6.07
BER1.05A	0.2790	121.3	07Sep2011, 19:09	7.38
BER1.05_0.64	1.4280	583.5	08Sep2011, 04:41	6.07
BER1.30	1.1490	502.4	08Sep2011, 04:20	5.76
BER1.30A	0.5289	254.4	08Sep2011, 04:13	6.69
BER1.30_1.05	1.1490	498.3	08Sep2011, 04:28	5.76
BER1.95	0.6201	262.9	08Sep2011, 04:08	4.98
BER1.95A	0.6201	262.9	08Sep2011, 04:08	4.98
BER1.95_1.30	0.6201	260.6	08Sep2011, 04:30	4.96
BOR0.00	6.6030	2778.3	08Sep2011, 04:57	7.01
BOR0.00A	0.0062	2.9	07Sep2011, 19:00	7.52
BOR0.10	6.5968	2841.2	08Sep2011, 04:53	7.01

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	97.6	07Sep2011, 19:14	7.38
BOR0.10_0.00	6.5968	2777.8	08Sep2011, 04:57	7.01
BOR0.68	1.6208	694.8	08Sep2011, 04:32	6.04
BOR0.68A	0.2555	131.4	08Sep2011, 04:13	7.52
BOR0.68_0.10	1.6208	684.5	08Sep2011, 04:54	6.04
BOR1.20	1.3653	596.4	08Sep2011, 04:18	5.77
BOR1.20A	0.5429	244.7	08Sep2011, 04:24	6.97
BOR1.20_0.68	1.3653	590.0	08Sep2011, 04:37	5.76
BOR2.07	0.8224	356.1	08Sep2011, 04:06	4.98
BOR2.07A	0.8224	356.1	08Sep2011, 04:06	4.98
BOR2.07_1.20	0.8224	355.5	08Sep2011, 04:15	4.97
CHC10.68	50.2637	9029.4	08Sep2011, 08:36	7.15
CHC10.68A	0.7377	506.9	07Sep2011, 18:24	8.16
CHC10.68B	0.0477	36.2	07Sep2011, 18:14	8.16
CHC10.68C	0.1180	81.9	07Sep2011, 18:20	7.89
CHC10.68D	0.1638	110.3	07Sep2011, 18:35	9.22
CHC10.68E	0.0528	47.8	07Sep2011, 18:03	9.22
CHC10.68_9.40	50.2637	9018.6	08Sep2011, 08:53	7.15
CHC11.99	49.1437	8967.8	08Sep2011, 08:18	7.13
CHC11.99_10.68	49.1437	8946.2	08Sep2011, 08:47	7.12
CHC12.01	46.4709	8723.4	08Sep2011, 09:12	7.08

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	64.0	07Sep2011, 19:00	6.80
CHC12.65	46.3306	8811.8	08Sep2011, 08:54	7.09
CHC12.65_12.01	46.3306	8719.9	08Sep2011, 09:08	7.08
CHC12.67	45.3853	8762.1	08Sep2011, 08:59	7.09
CHC12.67A	0.5547	178.1	07Sep2011, 19:56	6.93
CHC13.89	44.8306	8777.1	08Sep2011, 08:28	7.10
CHC13.89_12.67	44.8306	8718.4	08Sep2011, 09:02	7.09
CHC13.90	41.9107	8387.2	08Sep2011, 08:38	7.11
CHC13.90A	2.4712	416.1	08Sep2011, 07:48	6.80
CHC16.25	39.4395	8253.9	08Sep2011, 07:16	7.16
CHC16.25A	0.7783	305.7	08Sep2011, 05:00	8.02
CHC16.25_13.90	39.4395	7979.0	08Sep2011, 08:40	7.13
CHC17.08	38.6612	8227.0	08Sep2011, 06:47	7.16
CHC17.08A	0.5852	271.3	08Sep2011, 04:31	8.15
CHC17.08B	0.3448	191.4	08Sep2011, 04:15	9.99
CHC17.08_16.25	38.6612	8108.8	08Sep2011, 07:18	7.15
CHC17.73	37.7312	8129.6	08Sep2011, 06:25	7.13
CHC17.73A	0.3870	196.4	08Sep2011, 04:19	8.29
CHC17.73B	0.0626	40.5	07Sep2011, 19:02	10.24
CHC17.73_17.08	37.7312	8040.8	08Sep2011, 06:48	7.12
CHC18.09	37.2816	8138.2	08Sep2011, 06:11	7.11

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	86.1	08Sep2011, 04:06	7.19
CHC18.09_17.73	37.2816	8060.2	08Sep2011, 06:24	7.11
CHC18.61	36.6951	8158.9	08Sep2011, 05:55	7.11
CHC18.61A	0.5761	307.9	08Sep2011, 04:02	7.33
CHC18.61_18.09	36.6951	8049.8	08Sep2011, 06:11	7.10
CHC19.32	36.1190	8276.9	08Sep2011, 05:30	7.12
CHC19.32_18.61	36.1190	8077.0	08Sep2011, 05:54	7.11
CHC19.35	29.5506	6973.1	08Sep2011, 05:33	7.15
CHC19.35A	0.3523	172.7	08Sep2011, 04:24	8.29
CHC19.35B	0.0175	11.2	07Sep2011, 19:00	9.60
CHC1.28	63.3656	10701.5	08Sep2011, 13:56	7.16
CHC1.28A	0.8402	341.2	07Sep2011, 20:11	8.33
CHC20.02	29.1808	7043.5	08Sep2011, 05:14	7.14
CHC20.02A	0.3588	197.1	08Sep2011, 04:11	8.82
CHC20.02_19.35	29.1808	6894.9	08Sep2011, 05:35	7.14
CHC20.55	28.8220	7291.6	08Sep2011, 04:55	7.12
CHC20.55_20.02	28.8220	6983.9	08Sep2011, 05:15	7.12
CHC20.57	23.2797	5192.6	08Sep2011, 07:35	6.73
CHC20.57A	0.5512	334.2	08Sep2011, 04:49	10.17
CHC21.28	22.7285	5231.3	08Sep2011, 06:54	6.66
CHC21.28A	0.3509	265.0	08Sep2011, 04:15	10.31

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	15.7	08Sep2011, 04:00	10.96
CHC21.28C	0.0073	5.5	08Sep2011, 04:13	9.63
CHC21.28D	0.0224	18.3	08Sep2011, 04:00	9.90
CHC21.28E	0.0497	38.3	08Sep2011, 04:00	8.50
CHC21.28F	0.1457	114.7	08Sep2011, 04:00	8.93
CHC21.28_20.57	22.7285	5070.3	08Sep2011, 07:36	6.65
CHC21.59	22.1338	5254.3	08Sep2011, 06:38	6.58
CHC21.59A	0.2001	153.4	08Sep2011, 04:07	9.35
CHC21.59B	0.0256	21.3	08Sep2011, 04:00	10.57
CHC21.59C	0.0275	22.8	08Sep2011, 04:00	10.31
CHC21.59D	0.0896	71.8	08Sep2011, 04:00	9.35
CHC21.59_21.28	22.1338	5116.4	08Sep2011, 06:54	6.58
CHC22.01	21.7910	5354.7	08Sep2011, 06:17	6.54
CHC22.01A	1.2726	595.0	07Sep2011, 19:00	7.38
CHC22.01B	0.0456	37.0	08Sep2011, 04:00	9.63
CHC22.01_21.59	21.7910	5187.7	08Sep2011, 06:38	6.54
CHC23.04	20.4728	5238.6	08Sep2011, 05:42	6.49
CHC23.04A	1.8763	576.1	07Sep2011, 19:57	7.25
CHC23.04B	0.2164	100.8	07Sep2011, 19:04	7.65
CHC23.04_22.01	20.4728	5082.1	08Sep2011, 06:16	6.48
CHC24.53	18.3801	5081.8	08Sep2011, 04:57	6.40

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	4745.6	08Sep2011, 05:45	6.40
CHC24.63	18.3801	5081.8	08Sep2011, 04:57	6.40
CHC24.64	11.7771	2736.6	07Sep2011, 21:45	6.06
CHC24.64A	0.2517	78.5	07Sep2011, 19:41	6.56
CHC25.53	11.5254	2920.4	07Sep2011, 21:04	6.10
CHC25.53A	0.6693	266.2	07Sep2011, 19:19	7.25
CHC25.53B	0.0163	7.2	07Sep2011, 19:00	6.84
CHC25.53_24.64	11.5254	2718.3	07Sep2011, 21:45	6.05
CHC26.30	10.8398	2920.9	07Sep2011, 20:41	6.04
CHC26.30A	0.8065	219.4	07Sep2011, 20:16	7.11
CHC26.30_25.53	10.8398	2878.8	07Sep2011, 21:06	6.03
CHC27.38	10.0333	2911.1	07Sep2011, 19:58	5.99
CHC27.38_26.30	10.0333	2713.7	07Sep2011, 20:43	5.96
CHC27.39	3.5391	1042.3	07Sep2011, 19:32	6.17
CHC27.39A	0.3314	154.8	07Sep2011, 18:27	6.98
CHC28.26	3.2077	962.9	07Sep2011, 19:03	6.10
CHC28.26_27.39	3.2077	948.5	07Sep2011, 19:39	6.09
CHC28.31	3.2077	962.9	07Sep2011, 19:03	6.10
CHC28.31A	0.0950	52.5	07Sep2011, 18:03	6.98
CHC28.31B	0.7915	366.5	07Sep2011, 18:26	6.85
CHC28.67	2.3212	650.3	07Sep2011, 19:10	5.81

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	265.3	07Sep2011, 18:26	5.76
CHC28.67_28.31	2.3212	649.9	07Sep2011, 19:20	5.81
CHC29.91	1.6558	493.5	07Sep2011, 19:13	5.85
CHC29.91A	0.6097	239.6	07Sep2011, 18:21	5.48
CHC29.91_28.67	1.6558	491.5	07Sep2011, 19:55	5.83
CHC30.94	1.0461	339.2	07Sep2011, 19:08	6.07
CHC30.94A	1.0461	339.2	07Sep2011, 19:08	6.07
CHC30.94_29.91	1.0461	338.5	07Sep2011, 19:43	6.07
CHC3.39	62.5254	10641.8	08Sep2011, 13:11	7.14
CHC3.39A	1.8419	1525.8	07Sep2011, 18:20	8.18
CHC3.39_1.28	62.5254	10602.7	08Sep2011, 13:56	7.14
CHC4.62	60.6835	10677.6	08Sep2011, 13:09	7.15
CHC4.62A	0.1505	155.7	07Sep2011, 18:03	8.62
CHC4.62B	0.1946	169.8	07Sep2011, 18:06	7.16
CHC4.62_3.39	60.6835	10415.1	08Sep2011, 13:17	7.11
CHC4.97	60.3384	10671.3	08Sep2011, 13:05	7.15
CHC4.97A	0.4693	283.8	07Sep2011, 18:58	8.33
CHC4.97B	0.0580	53.5	07Sep2011, 18:05	7.56
CHC4.97C	0.2012	178.9	07Sep2011, 18:01	6.90
CHC4.97_4.62	60.3384	10625.5	08Sep2011, 13:11	7.15
CHC5.97	59.6099	10576.1	08Sep2011, 12:49	7.15

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	534.5	07Sep2011, 18:39	6.98
CHC5.97_4.97	59.6099	10556.5	08Sep2011, 13:06	7.14
CHC7.47	58.4785	10387.7	08Sep2011, 12:11	7.16
CHC7.47_5.97	58.4785	10313.5	08Sep2011, 12:50	7.15
CHC7.48	53.6341	9542.3	08Sep2011, 09:16	7.19
CHC7.48A	2.2128	615.5	07Sep2011, 21:47	8.40
CHC9.40	51.4213	9088.1	08Sep2011, 08:15	7.14
CHC9.40A	1.1576	503.7	07Sep2011, 18:55	6.98
CHC9.40_7.47	51.4213	9055.1	08Sep2011, 09:18	7.14
DER0.00	2.9199	1097.8	07Sep2011, 19:52	7.04
DER0.00A	0.1924	85.3	07Sep2011, 19:01	6.67
DER0.52	2.7275	1090.9	07Sep2011, 19:37	7.06
DER0.52A	0.5165	228.5	07Sep2011, 19:06	6.93
DER0.52_0.00	2.7275	1086.2	07Sep2011, 19:52	7.06
DER1.10	2.2110	965.0	07Sep2011, 19:22	7.16
DER1.10A	0.3712	199.1	08Sep2011, 04:08	8.02
DER1.10_0.52	2.2110	955.1	07Sep2011, 19:47	7.10
DER1.76	1.8398	791.8	07Sep2011, 19:07	7.02
DER1.76A	0.5078	260.3	08Sep2011, 04:08	7.33
DER1.76_1.10	1.8398	790.3	07Sep2011, 19:28	6.98
DER2.22	1.3320	568.6	07Sep2011, 18:44	6.91

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	291.6	07Sep2011, 18:44	6.73
DER2.22_1.76	1.3320	567.7	07Sep2011, 18:58	6.91
DER2.93	0.6085	277.8	07Sep2011, 18:23	7.13
DER2.93A	0.6085	277.8	07Sep2011, 18:23	7.13
DER2.93_2.22	0.6085	277.0	07Sep2011, 18:43	7.12
DORT0.34	1.6920	1222.5	08Sep2011, 04:12	8.85
DORT0.34A	0.0357	27.9	08Sep2011, 04:00	8.79
DORT0.34B	0.0234	18.2	08Sep2011, 04:00	8.64
DORT0.54	1.6329	1203.1	08Sep2011, 04:12	8.85
DORT0.54A	0.2058	159.3	08Sep2011, 04:03	8.93
DORT0.54B	0.0280	20.2	08Sep2011, 04:00	7.46
DORT0.54C	0.0058	4.7	08Sep2011, 04:00	9.90
DORT0.54D	0.0832	63.9	08Sep2011, 04:06	9.21
DORT0.54E	0.0367	28.8	08Sep2011, 04:00	8.79
DORT0.54_0.34	1.6329	1201.0	08Sep2011, 04:16	8.85
DORT1.15	1.2734	954.3	08Sep2011, 04:06	8.86
DORT1.15A	0.4022	316.6	08Sep2011, 04:01	9.07
DORT1.15B	0.0103	8.7	08Sep2011, 04:00	11.09
DORT1.15_0.54	1.2734	951.7	08Sep2011, 04:19	8.85
DORT1.58	0.8609	645.2	08Sep2011, 04:07	8.74
DORT1.58A	0.4931	375.9	08Sep2011, 04:04	8.79

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	643.9	08Sep2011, 04:18	8.73
DORT2.41	0.3678	282.1	08Sep2011, 04:03	8.74
DORT2.41A	0.2384	183.6	08Sep2011, 04:01	8.64
DORT2.41B	0.1294	101.2	08Sep2011, 04:01	8.93
DORT2.41_1.58	0.3678	280.6	08Sep2011, 04:31	8.67
DOR0.00	5.5423	3437.4	08Sep2011, 04:56	8.77
DOR0.00A	0.0475	27.3	08Sep2011, 04:02	8.56
DOR0.24	5.4948	3507.0	08Sep2011, 04:46	8.79
DOR0.24A	0.1218	68.5	08Sep2011, 04:02	8.15
DOR0.24B	0.1287	71.1	08Sep2011, 04:06	8.29
DOR0.24_0.00	5.4948	3432.8	08Sep2011, 04:56	8.78
DOR0.44A	0.5212	389.3	08Sep2011, 04:11	9.21
DOR0.44_0.24	5.2443	3436.3	08Sep2011, 04:47	8.82
DOR1.21	4.7231	3253.9	08Sep2011, 04:19	8.77
DOR1.21A	0.2430	173.3	08Sep2011, 04:18	9.21
DOR1.21B	0.2037	160.3	08Sep2011, 04:01	9.07
DOR1.21_0.44	4.7231	3169.8	08Sep2011, 04:46	8.77
DOR1.23	4.2764	2953.0	08Sep2011, 04:23	8.87
DOR1.23A	0.2095	164.4	08Sep2011, 04:04	9.35
DOR1.45	4.0669	2823.6	08Sep2011, 04:18	8.84
DOR1.45_1.23	4.0669	2814.4	08Sep2011, 04:25	8.84

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	1612.7	08Sep2011, 04:22	8.84
DOR1.60A	0.5501	420.7	08Sep2011, 04:05	8.93
DOR2.40	1.8248	1302.7	08Sep2011, 04:21	8.82
DOR2.40A	0.4594	339.9	08Sep2011, 04:10	8.93
DOR2.40_1.60	1.8248	1296.1	08Sep2011, 04:42	8.81
DOR2.81	1.3654	980.8	08Sep2011, 04:15	8.78
DOR2.81A	0.2367	182.3	08Sep2011, 04:06	9.21
DOR2.81_2.40	1.3654	977.3	08Sep2011, 04:27	8.78
DOR3.06	1.1287	805.2	08Sep2011, 04:10	8.69
DOR3.06A	0.3648	278.1	08Sep2011, 04:04	8.79
DOR3.06B	0.7639	532.9	08Sep2011, 04:17	8.64
DOR3.06_2.81	1.1287	804.1	08Sep2011, 04:18	8.69
DOR.44	5.2443	3449.7	08Sep2011, 04:42	8.82
ERRR0.57_0.00	1.1576	742.6	07Sep2011, 18:45	8.05
ERRT0.00	1.2906	816.7	07Sep2011, 18:43	8.14
ERRT0.00A	0.1098	84.8	07Sep2011, 18:17	8.83
ERRT0.00B	0.0077	4.0	07Sep2011, 19:00	8.21
ERRT0.00C	0.0074	7.2	07Sep2011, 18:00	10.11
ERRT0.00D	0.0036	3.5	07Sep2011, 18:00	10.11
ERRT0.00E	0.0045	4.4	07Sep2011, 18:00	10.11
ERRT0.57	1.1576	746.0	07Sep2011, 18:33	8.05

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	143.9	07Sep2011, 19:04	8.03
ERRT0.61	0.8788	624.3	07Sep2011, 18:31	8.06
ERRT0.61A	0.4551	293.2	07Sep2011, 18:31	8.16
ERRT1.62	0.4237	336.7	07Sep2011, 18:03	7.95
ERRT1.62A	0.1546	115.2	07Sep2011, 18:10	7.62
ERRT1.62B	0.2547	218.3	07Sep2011, 18:00	8.03
ERRT1.62C	0.0144	14.0	07Sep2011, 18:00	10.11
ERRT1.62_0.61	0.4237	331.2	07Sep2011, 18:31	7.94
ERR0.00	2.6728	1663.4	07Sep2011, 18:47	7.95
ERR0.00A	0.0718	31.4	07Sep2011, 19:01	6.53
ERR0.00B	0.0053	2.9	07Sep2011, 19:00	9.08
ERR0.23	2.5957	1634.2	07Sep2011, 18:42	7.99
ERR0.23A	0.1922	148.7	07Sep2011, 18:07	7.62
ERR0.23B	0.0298	28.5	07Sep2011, 18:00	9.73
ERR0.23_0.00	2.5957	1629.6	07Sep2011, 18:47	7.98
ERR0.26	1.3051	818.6	07Sep2011, 18:40	7.83
ERR0.88	1.0831	727.0	07Sep2011, 18:29	7.82
ERR0.88A	0.5048	308.0	07Sep2011, 18:34	7.89
ERR0.88_0.23	1.0831	723.6	07Sep2011, 18:43	7.82
ERR1.33	0.5783	426.1	07Sep2011, 18:13	7.76
ERR1.33A	0.5783	426.1	07Sep2011, 18:13	7.76

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	424.2	07Sep2011, 18:26	7.76
LAR0.00	0.9453	362.4	07Sep2011, 19:30	7.12
LAR0.00A	0.5827	206.8	07Sep2011, 19:42	7.06
LAR0.40	0.3626	160.9	07Sep2011, 19:12	7.23
LAR0.40A	0.0039	2.1	07Sep2011, 19:00	9.20
LAR0.40B	0.1091	57.8	07Sep2011, 19:02	8.71
LAR0.40C	0.1251	57.6	07Sep2011, 19:03	7.06
LAR0.40D	0.1245	55.0	07Sep2011, 19:02	6.67
LAR0.40_0.00	0.3626	160.4	07Sep2011, 19:24	7.23
MRT0.00	0.4202	226.0	08Sep2011, 04:07	7.77
MRT0.00A	0.1647	89.6	08Sep2011, 04:03	7.61
MRT0.66	0.2555	137.7	08Sep2011, 04:01	7.88
MRT0.66A	0.2030	114.1	08Sep2011, 04:00	7.88
MRT0.66B	0.0376	21.4	07Sep2011, 19:00	8.02
MRT0.66C	0.0149	8.8	07Sep2011, 19:00	8.42
MRT0.66_0.00	0.2555	137.2	08Sep2011, 04:08	7.88
ORT0.28	0.7836	353.5	07Sep2011, 18:26	6.74
ORT0.28A	0.1786	83.1	07Sep2011, 18:08	6.59
ORT0.95	0.6050	281.2	07Sep2011, 18:11	6.79
ORT0.95A	0.1851	88.7	07Sep2011, 18:03	6.59
ORT0.95_0.28	0.6050	279.8	07Sep2011, 18:30	6.78

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	199.6	07Sep2011, 18:09	6.87
ORT1.38A	0.1910	92.6	07Sep2011, 18:04	6.73
ORT1.38_0.95	0.4199	199.3	07Sep2011, 18:19	6.87
ORT2.04	0.2289	110.9	07Sep2011, 18:10	6.99
ORT2.04A	0.2289	110.9	07Sep2011, 18:10	6.99
ORT2.04_1.38	0.2289	110.8	07Sep2011, 18:19	6.99
Pond 0	0.1946	156.3	07Sep2011, 18:16	7.17
Pond 1	0.2012	178.8	07Sep2011, 18:02	6.89
Pond 10	0.0122	4.4	08Sep2011, 03:03	6.85
Pond 11	0.0236	14.2	07Sep2011, 18:04	6.85
Pond 12	0.0172	4.6	07Sep2011, 19:04	6.85
Pond 13	0.0603	34.8	07Sep2011, 18:10	6.71
Pond 14	0.1379	74.7	07Sep2011, 18:18	6.85
Pond 15	0.0477	9.3	07Sep2011, 19:39	8.16
Pond 16	0.3346	117.8	07Sep2011, 18:26	8.75
Pond 17	0.0528	14.5	07Sep2011, 19:15	9.22
Pond 18	0.1638	30.6	07Sep2011, 20:18	9.22
Pond 19	0.0053	2.9	07Sep2011, 19:01	9.08
Pond 2	0.0580	35.7	07Sep2011, 18:26	7.56
Pond 20	0.0077	4.0	07Sep2011, 19:00	8.21
Pond 21	0.0298	23.2	07Sep2011, 18:05	9.73

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	6.7	07Sep2011, 18:02	9.66
Pond 23	0.0036	3.5	07Sep2011, 18:00	10.11
Pond 24	0.0045	2.2	07Sep2011, 18:08	10.10
Pond 25	0.2547	217.2	07Sep2011, 18:01	8.03
Pond 26	0.0144	7.5	07Sep2011, 18:07	10.11
Pond 27	0.1245	49.2	07Sep2011, 19:14	6.66
Pond 28	0.1251	53.9	07Sep2011, 19:14	6.92
Pond 29	0.1091	56.6	07Sep2011, 19:10	8.22
Pond 3	0.1861	35.5	08Sep2011, 11:30	1.66
Pond 30	0.0039	1.4	07Sep2011, 19:03	7.86
Pond 31	0.3448	124.0	08Sep2011, 04:55	9.26
Pond 32	0.0626	35.6	08Sep2011, 04:11	10.24
Pond 33	0.0149	3.6	08Sep2011, 04:14	8.42
Pond 34	0.0376	20.5	08Sep2011, 04:03	7.65
Pond 35	0.0294	13.2	07Sep2011, 19:00	6.97
Pond 36	0.0175	11.2	07Sep2011, 19:00	9.61
Pond 37	0.1287	68.8	08Sep2011, 04:16	8.29
Pond 38	0.2037	160.1	08Sep2011, 04:03	6.21
Pond 39	0.0234	18.2	08Sep2011, 04:01	8.64
Pond 4	0.2023	133.7	07Sep2011, 18:15	6.52
Pond 40	0.0832	61.1	08Sep2011, 04:19	9.21

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	4.2	08Sep2011, 04:09	9.90
Pond 42	0.0367	28.3	08Sep2011, 04:02	8.79
Pond 43	0.0103	8.7	08Sep2011, 04:00	11.09
Pond 44	0.1294	99.3	08Sep2011, 04:07	8.93
Pond 45	0.1457	114.3	08Sep2011, 04:02	8.93
Pond 46	0.0187	13.7	08Sep2011, 04:03	10.96
Pond 47	0.0275	22.5	08Sep2011, 04:03	10.31
Pond 48	0.0456	37.0	08Sep2011, 04:00	9.52
Pond 49	0.0256	21.3	08Sep2011, 04:00	10.57
Pond 5	0.0343	28.8	07Sep2011, 18:04	6.62
Pond 50	0.0073	5.4	08Sep2011, 04:18	9.63
Pond 51	0.0721	56.5	08Sep2011, 04:01	8.94
Pond 52	0.0497	38.2	08Sep2011, 04:01	8.50
Pond 53	0.0896	71.7	08Sep2011, 04:01	9.35
Pond 54	0.2164	61.8	07Sep2011, 19:30	7.65
Pond 55	0.0163	5.2	07Sep2011, 19:05	6.70
Pond 56	0.0231	18.4	07Sep2011, 18:01	9.28
Pond 57	0.0112	3.5	08Sep2011, 03:04	6.98
Pond 58	0.0280	20.1	08Sep2011, 04:02	7.46
Pond 6	0.4472	126.8	07Sep2011, 19:19	7.30
Pond 7	0.0064	3.6	07Sep2011, 18:13	9.39

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	20.0	07Sep2011, 18:07	6.85
Pond 9	0.0281	7.4	07Sep2011, 19:08	6.85
RIR0.00	6.5684	2436.5	07Sep2011, 19:40	6.96
RIR0.00A	0.0647	36.0	08Sep2011, 04:11	9.22
RIR0.32	6.5037	2437.2	07Sep2011, 19:29	6.94
RIR0.32A	0.5587	232.2	07Sep2011, 18:39	6.86
RIR0.32_0.00	6.5037	2408.8	07Sep2011, 19:41	6.94
RIR0.65	5.9450	2248.2	07Sep2011, 19:23	6.95
RIR0.65A	0.1896	100.4	07Sep2011, 18:01	7.39
RIR0.65_0.32	5.9450	2244.0	07Sep2011, 19:32	6.95
RIR0.86	5.7554	2233.8	07Sep2011, 19:19	6.94
RIR0.86A	0.2984	132.5	07Sep2011, 18:23	6.86
RIR0.86_0.65	5.7554	2230.3	07Sep2011, 19:25	6.94
RIR1.24	5.4570	2135.1	07Sep2011, 19:12	6.94
RIR1.24A	0.0980	47.4	07Sep2011, 18:01	6.59
RIR1.24_0.86	5.4570	2127.8	07Sep2011, 19:21	6.94
RIR1.34	5.3590	2118.9	07Sep2011, 19:16	6.95
RIR1.52	4.5754	1835.9	07Sep2011, 19:21	6.99
RIR1.62	1.8861	732.5	07Sep2011, 19:35	7.19
RIR1.62A	0.5008	206.6	07Sep2011, 19:16	7.38
RIR2.60	1.3853	567.1	07Sep2011, 19:11	7.13

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	141.4	07Sep2011, 19:02	7.25
RIR2.60_1.62	1.3853	558.0	07Sep2011, 19:45	7.12
RIR3.38	1.0728	447.4	07Sep2011, 19:04	7.11
RIR3.38A	1.0434	438.6	07Sep2011, 19:10	7.11
RIR3.38B	0.0294	13.2	07Sep2011, 19:00	6.97
RIR3.38_2.60	1.0728	443.5	07Sep2011, 19:21	7.10
SHCT0.00	3.0470	1132.5	08Sep2011, 04:21	5.69
SHCT0.00A	0.9966	297.8	07Sep2011, 19:03	5.38
SHCT1.59	2.0504	931.6	08Sep2011, 04:11	5.84
SHCT1.59A	2.0504	931.6	08Sep2011, 04:11	5.84
SHCT1.59_0.00	2.0504	931.1	08Sep2011, 04:22	5.84
SHC0.00	6.4942	1956.9	07Sep2011, 20:09	5.89
SHC0.00A	0.0458	19.3	07Sep2011, 19:03	6.70
SHC0.23	6.4484	1976.1	07Sep2011, 19:58	5.89
SHC0.23A	0.6386	260.3	07Sep2011, 19:00	7.12
SHC0.23_0.00	6.4484	1954.5	07Sep2011, 20:09	5.89
SHC1.60	5.8098	1838.0	07Sep2011, 19:20	5.78
SHC1.60A	0.2628	137.7	07Sep2011, 18:04	6.58
SHC1.60_0.23	5.8098	1792.6	07Sep2011, 20:04	5.76
SHC2.06	5.5470	1796.7	07Sep2011, 19:13	5.74
SHC2.06A	0.2828	90.5	08Sep2011, 01:05	5.10

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	1789.4	07Sep2011, 19:24	5.74
SHC2.56	5.2642	1724.3	07Sep2011, 19:09	5.78
SHC2.56A	0.4506	155.7	07Sep2011, 18:27	6.21
SHC2.56_2.06	5.2642	1722.4	07Sep2011, 19:15	5.78
SHC3.11	1.7666	559.4	07Sep2011, 19:01	5.81
SHC3.11A	0.2775	116.6	07Sep2011, 18:02	7.29
SHC3.11_2.56	1.7666	559.4	07Sep2011, 19:05	5.81
SHC3.92	1.4891	454.8	07Sep2011, 19:03	5.54
SHC3.92A	0.6934	208.8	08Sep2011, 01:14	5.24
SHC3.92B	0.7957	251.4	07Sep2011, 19:04	5.80
SHC3.92_3.11	1.4891	454.7	07Sep2011, 19:11	5.54
SRT0.50	2.6893	1143.8	07Sep2011, 19:10	6.84
SRT0.50A	0.4294	172.5	07Sep2011, 18:52	6.86
SRT1.29	2.2599	977.3	07Sep2011, 18:55	6.86
SRT1.29A	0.3191	127.3	07Sep2011, 18:48	6.73
SRT1.29_0.50	2.2599	974.4	07Sep2011, 19:11	6.84
SRT2.06	1.9408	853.3	07Sep2011, 18:36	6.89
SRT2.06A	0.4839	213.0	07Sep2011, 18:28	6.99
SRT2.06_1.29	1.9408	850.4	07Sep2011, 18:55	6.89
SRT2.55	1.4569	643.7	07Sep2011, 18:29	6.86
SRT2.55A	0.3465	164.1	07Sep2011, 18:11	6.86

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	642.9	07Sep2011, 18:38	6.86
SRT3.00	1.1104	496.6	07Sep2011, 18:23	6.86
SRT3.00A	0.7468	328.0	07Sep2011, 18:25	6.86
SRT3.00_2.55	1.1104	495.7	07Sep2011, 18:33	6.86
SRT3.38	0.3636	169.2	07Sep2011, 18:14	6.86
SRT3.38A	0.3636	169.2	07Sep2011, 18:14	6.86
SRT3.38_3.00	0.3636	169.0	07Sep2011, 18:21	6.86
SSRTA0.00	0.4007	208.6	07Sep2011, 18:25	7.02
SSRTA0.00A	0.2628	154.1	07Sep2011, 18:15	7.11
SSRTA0.59	0.1379	74.7	07Sep2011, 18:18	6.85
SSRTA0.59A	0.1379	86.2	07Sep2011, 18:04	6.85
SSRTA0.59_0.00	0.1379	73.6	07Sep2011, 18:40	6.84
SSRT0.00	1.3182	678.2	07Sep2011, 18:31	6.92
SSRT0.00A	0.2236	124.6	07Sep2011, 18:17	6.85
SSRT0.46	1.0946	570.9	07Sep2011, 18:18	6.94
SSRT0.46A	0.1893	120.4	07Sep2011, 18:04	6.98
SSRT0.46_0.00	1.0946	565.9	07Sep2011, 18:34	6.94
SSRT0.77	0.9053	476.6	07Sep2011, 18:17	6.93
SSRT0.77A	0.2520	148.2	07Sep2011, 18:13	6.98
SSRT0.77B	0.0603	37.9	07Sep2011, 18:02	6.71
SSRT0.77_0.46	0.9053	475.9	07Sep2011, 18:25	6.93

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	94.4	07Sep2011, 18:05	6.77
SSRT1.34A	0.1112	68.0	07Sep2011, 18:05	6.71
SSRT1.34B	0.0172	11.2	07Sep2011, 18:00	6.85
SSRT1.34C	0.0236	15.4	07Sep2011, 18:00	6.85
SSRT1.34D	0.0122	7.9	07Sep2011, 18:00	6.85
SSRT1.34E	0.0281	18.1	07Sep2011, 18:01	6.85
SSRT1.34_0.77	0.1923	93.4	07Sep2011, 18:26	6.77
SSR0.00	4.8444	2327.1	07Sep2011, 18:58	6.81
SSR0.00A	0.0601	39.0	07Sep2011, 18:00	6.85
SSR0.22	4.7843	2310.1	07Sep2011, 18:55	6.81
SSR0.22A	0.2501	160.7	07Sep2011, 18:09	7.37
SSR0.22_0.00	4.7843	2308.5	07Sep2011, 18:58	6.81
SSR0.85	4.5342	2225.2	07Sep2011, 18:46	6.78
SSR0.85_0.22	4.5342	2219.7	07Sep2011, 18:56	6.78
SSR0.87	3.2160	1591.6	07Sep2011, 18:50	6.72
SSR0.87A	0.3806	187.4	07Sep2011, 18:33	6.98
SSR1.06	2.8354	1417.5	07Sep2011, 18:47	6.69
SSR1.06A	0.2647	155.7	07Sep2011, 18:13	6.98
SSR1.06_0.87	2.8354	1415.8	07Sep2011, 18:52	6.69
SSR1.71	2.5707	1317.3	07Sep2011, 18:34	6.66
SSR1.71A	0.3665	185.9	07Sep2011, 18:34	7.24

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	1312.7	07Sep2011, 18:49	6.66
SSR1.89	2.2042	1135.6	07Sep2011, 18:28	6.56
SSR1.89A	0.3178	185.7	07Sep2011, 18:17	7.24
SSR1.89B	0.0231	18.6	07Sep2011, 18:00	9.27
SSR1.89_1.71	2.2042	1131.4	07Sep2011, 18:34	6.56
SSR2.33	1.8633	955.7	07Sep2011, 18:20	6.41
SSR2.33A	0.1750	119.4	07Sep2011, 18:02	7.37
SSR2.33B	0.0381	24.8	07Sep2011, 18:00	6.85
SSR2.33_1.89	1.8633	952.7	07Sep2011, 18:31	6.41
SSR2.70	1.6502	864.3	07Sep2011, 18:16	6.30
SSR2.70A	0.4613	357.0	07Sep2011, 18:15	7.03
SSR2.70B	0.0112	7.4	07Sep2011, 18:00	6.98
SSR2.70C	0.0064	5.2	07Sep2011, 18:00	9.40
SSR2.70D	0.0343	29.6	07Sep2011, 18:01	6.62
SSR2.70E	0.4472	383.7	07Sep2011, 18:09	7.30
SSR2.70_2.33	1.6502	862.4	07Sep2011, 18:24	6.30
SSR3.20	0.6898	361.9	07Sep2011, 18:13	5.10
SSR3.20A	0.1108	90.5	07Sep2011, 18:06	6.62
SSR3.20B	0.2023	172.1	07Sep2011, 18:02	6.62
SSR3.20_2.70	0.6898	361.6	07Sep2011, 18:18	5.10
SSR3.70	0.3767	145.1	07Sep2011, 18:05	3.90

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	145.1	07Sep2011, 18:05	6.08
SSR3.70B	0.1861	139.7	07Sep2011, 18:03	5.80
SSR3.70_3.20	0.3767	144.5	07Sep2011, 18:19	3.90
WOR0.00	2.8951	1467.1	08Sep2011, 04:53	7.95
WOR0.00A	0.0359	16.5	07Sep2011, 19:00	7.25
WOR0.32	2.8592	1467.0	08Sep2011, 04:46	7.97
WOR0.32A	0.1901	77.2	07Sep2011, 19:12	6.97
WOR0.32_0.00	2.8592	1464.6	08Sep2011, 04:53	7.96
WOR0.76	2.6691	1471.1	08Sep2011, 04:30	8.06
WOR0.76A	0.3131	178.8	08Sep2011, 04:04	7.79
WOR0.76_0.32	2.6691	1420.7	08Sep2011, 04:48	8.04
WOR1.59	2.3560	1401.6	08Sep2011, 04:20	8.10
WOR1.59A	0.4536	330.4	08Sep2011, 04:09	9.24
WOR1.59B	0.7600	476.0	08Sep2011, 04:24	8.67
WOR1.59_0.76	2.3560	1386.6	08Sep2011, 04:35	8.09
WOR1.64	1.1424	620.0	08Sep2011, 04:26	7.27
WOR1.64A	0.2551	134.4	08Sep2011, 04:11	7.65
WOR2.33	0.8873	519.9	08Sep2011, 04:06	7.20
WOR2.33A	0.3233	231.5	08Sep2011, 04:06	8.37
WOR2.33_1.64	0.8873	506.3	08Sep2011, 04:33	7.16
WOR3.00	0.5640	288.5	08Sep2011, 04:07	6.53

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	190.3	08Sep2011, 04:07	7.38
WOR3.67	0.2110	98.4	08Sep2011, 04:00	5.12
WOR3.67A	0.2110	98.4	08Sep2011, 04:00	5.12
WOR3.67_3.00	0.2110	98.3	08Sep2011, 04:08	5.12

APPENDIX C

Existing-Condition HEC-HMS Results

Project: ChiquesCreek Simulation Run: 2YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 2YR_24HR
Compute Time: 31Jan2017, 15:51:38 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	190.8	01Jan2017, 15:06	0.57
BER0.00A	0.1087	27.7	01Jan2017, 13:52	0.88
BER0.64	1.7391	205.5	01Jan2017, 13:59	0.56
BER0.64A	0.3111	98.5	01Jan2017, 13:43	0.93
BER0.64_0.00	1.7391	183.6	01Jan2017, 15:06	0.55
BER1.05	1.4280	157.3	01Jan2017, 14:07	0.48
BER1.05A	0.2790	68.2	01Jan2017, 13:54	0.88
BER1.05_0.64	1.4280	153.6	01Jan2017, 14:15	0.48
BER1.30	1.1490	97.8	01Jan2017, 14:05	0.38
BER1.30A	0.5289	81.2	01Jan2017, 13:58	0.60
BER1.30_1.05	1.1490	97.3	01Jan2017, 14:11	0.38
BER1.95	0.6201	22.5	01Jan2017, 13:58	0.20
BER1.95A	0.6201	22.5	01Jan2017, 13:58	0.20
BER1.95_1.30	0.6201	22.3	01Jan2017, 14:15	0.20
BOR0.00	6.6030	702.8	01Jan2017, 15:13	0.66
BOR0.00A	0.0062	2.5	01Jan2017, 13:31	0.93
BOR0.10	6.5968	728.9	01Jan2017, 15:10	0.66

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	51.1	01Jan2017, 14:02	0.88
BOR0.10_0.00	6.5968	702.4	01Jan2017, 15:13	0.66
BOR0.68	1.6208	158.2	01Jan2017, 14:17	0.47
BOR0.68A	0.2555	62.5	01Jan2017, 13:54	0.88
BOR0.68_0.10	1.6208	143.2	01Jan2017, 15:10	0.47
BOR1.20	1.3653	114.0	01Jan2017, 14:12	0.39
BOR1.20A	0.5429	82.3	01Jan2017, 14:10	0.68
BOR1.20_0.68	1.3653	113.5	01Jan2017, 14:21	0.39
BOR2.07	0.8224	32.1	01Jan2017, 13:54	0.20
BOR2.07A	0.8224	32.1	01Jan2017, 13:54	0.20
BOR2.07_1.20	0.8224	31.9	01Jan2017, 14:14	0.20
CHC10.68	50.2637	2015.3	01Jan2017, 22:14	0.76
CHC10.68A	0.7377	213.7	01Jan2017, 13:58	1.09
CHC10.68B	0.0477	16.0	01Jan2017, 13:48	1.09
CHC10.68C	0.1180	32.1	01Jan2017, 13:55	0.98
CHC10.68D	0.1638	62.9	01Jan2017, 14:07	1.61
CHC10.68E	0.0528	30.3	01Jan2017, 13:37	1.61
CHC10.68_9.40	50.2637	2007.2	01Jan2017, 22:48	0.76
CHC11.99	49.1437	1993.9	01Jan2017, 21:39	0.76
CHC11.99_10.68	49.1437	1986.9	01Jan2017, 22:16	0.75
CHC12.01	46.4709	1941.5	01Jan2017, 21:42	0.74

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	55.4	01Jan2017, 13:32	0.93
CHC12.65	46.3306	1999.3	01Jan2017, 21:11	0.75
CHC12.65_12.01	46.3306	1939.6	01Jan2017, 21:42	0.74
CHC12.67	45.3853	1978.1	01Jan2017, 21:12	0.74
CHC12.67A	0.5547	80.7	01Jan2017, 15:03	0.98
CHC13.89	44.8306	1988.4	01Jan2017, 20:22	0.75
CHC13.89_12.67	44.8306	1965.3	01Jan2017, 21:13	0.74
CHC13.90	41.9107	1920.7	01Jan2017, 20:27	0.74
CHC13.90A	2.4712	148.8	01Jan2017, 19:22	0.91
CHC16.25	39.4395	1888.9	01Jan2017, 18:36	0.75
CHC16.25A	0.7783	106.3	01Jan2017, 15:14	0.98
CHC16.25_13.90	39.4395	1777.3	01Jan2017, 20:30	0.73
CHC17.08	38.6612	1919.2	01Jan2017, 17:45	0.74
CHC17.08A	0.5852	114.3	01Jan2017, 14:31	1.03
CHC17.08B	0.3448	173.6	01Jan2017, 14:00	2.01
CHC17.08_16.25	38.6612	1853.1	01Jan2017, 18:38	0.74
CHC17.73	37.7312	1896.2	01Jan2017, 17:12	0.74
CHC17.73A	0.3870	97.1	01Jan2017, 14:10	1.09
CHC17.73B	0.0626	45.6	01Jan2017, 13:35	2.19
CHC17.73_17.08	37.7312	1862.1	01Jan2017, 17:46	0.74
CHC18.09	37.2816	1909.2	01Jan2017, 16:50	0.73

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	32.8	01Jan2017, 13:52	0.69
CHC18.09_17.73	37.2816	1874.8	01Jan2017, 17:13	0.73
CHC18.61	36.6951	1941.2	01Jan2017, 16:26	0.73
CHC18.61A	0.5761	139.3	01Jan2017, 13:44	0.73
CHC18.61_18.09	36.6951	1889.0	01Jan2017, 16:51	0.73
CHC19.32	36.1190	2118.1	01Jan2017, 15:42	0.74
CHC19.32_18.61	36.1190	1921.1	01Jan2017, 16:26	0.73
CHC19.35	29.5506	1294.0	01Jan2017, 16:06	0.72
CHC19.35A	0.3523	81.5	01Jan2017, 14:18	1.09
CHC19.35B	0.0175	11.4	01Jan2017, 13:33	1.77
CHC1.28	63.3656	2023.8	02Jan2017, 02:32	0.72
CHC1.28A	0.8402	66.8	01Jan2017, 16:20	0.78
CHC20.02	29.1808	1314.2	01Jan2017, 15:30	0.71
CHC20.02A	0.3588	129.7	01Jan2017, 13:57	1.34
CHC20.02_19.35	29.1808	1265.8	01Jan2017, 16:07	0.71
CHC20.55	28.8220	1291.5	01Jan2017, 15:22	0.71
CHC20.55_20.02	28.8220	1282.8	01Jan2017, 15:32	0.70
CHC20.57	23.2797	1017.9	01Jan2017, 19:01	0.66
CHC20.57A	0.5512	132.9	01Jan2017, 14:51	1.47
CHC21.28	22.7285	1016.0	01Jan2017, 17:53	0.64
CHC21.28A	0.3509	132.5	01Jan2017, 14:05	1.54

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	13.5	01Jan2017, 13:30	1.93
CHC21.28C	0.0073	2.2	01Jan2017, 14:03	1.21
CHC21.28D	0.0224	12.1	01Jan2017, 13:32	1.34
CHC21.28E	0.0497	15.6	01Jan2017, 13:35	0.78
CHC21.28F	0.1457	54.6	01Jan2017, 13:34	0.93
CHC21.28_20.57	22.7285	991.1	01Jan2017, 19:04	0.64
CHC21.59	22.1338	1017.7	01Jan2017, 17:29	0.62
CHC21.59A	0.2001	60.8	01Jan2017, 13:55	1.09
CHC21.59B	0.0256	15.9	01Jan2017, 13:34	1.69
CHC21.59C	0.0275	16.5	01Jan2017, 13:32	1.54
CHC21.59D	0.0896	38.8	01Jan2017, 13:34	1.09
CHC21.59_21.28	22.1338	989.3	01Jan2017, 17:54	0.62
CHC22.01	21.7910	1033.5	01Jan2017, 16:58	0.62
CHC22.01A	1.2726	481.4	01Jan2017, 13:32	0.87
CHC22.01B	0.0456	23.6	01Jan2017, 13:30	1.21
CHC22.01_21.59	21.7910	1001.6	01Jan2017, 17:31	0.61
CHC23.04	20.4728	1104.6	01Jan2017, 15:38	0.60
CHC23.04A	1.8763	218.8	01Jan2017, 15:07	0.82
CHC23.04B	0.2164	70.3	01Jan2017, 13:44	0.98
CHC23.04_22.01	20.4728	991.7	01Jan2017, 16:59	0.60
CHC24.53	18.3801	928.5	01Jan2017, 15:13	0.58

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	887.7	01Jan2017, 15:42	0.58
CHC24.63	18.3801	928.5	01Jan2017, 15:13	0.58
CHC24.64	11.7771	596.4	01Jan2017, 19:03	0.54
CHC24.64A	0.2517	23.3	01Jan2017, 14:48	0.60
CHC25.53	11.5254	638.1	01Jan2017, 17:43	0.53
CHC25.53A	0.6693	124.8	01Jan2017, 14:10	0.82
CHC25.53B	0.0163	5.1	01Jan2017, 13:31	0.69
CHC25.53_24.64	11.5254	590.2	01Jan2017, 19:03	0.53
CHC26.30	10.8398	637.1	01Jan2017, 16:47	0.52
CHC26.30A	0.8065	76.6	01Jan2017, 15:36	0.78
CHC26.30_25.53	10.8398	615.7	01Jan2017, 17:44	0.52
CHC27.38	10.0333	707.1	01Jan2017, 15:23	0.50
CHC27.38_26.30	10.0333	580.2	01Jan2017, 16:51	0.50
CHC27.39	3.5391	304.3	01Jan2017, 14:48	0.57
CHC27.39A	0.3314	68.7	01Jan2017, 14:02	0.83
CHC28.26	3.2077	274.6	01Jan2017, 14:35	0.55
CHC28.26_27.39	3.2077	270.9	01Jan2017, 14:52	0.55
CHC28.31	3.2077	274.6	01Jan2017, 14:35	0.55
CHC28.31A	0.0950	29.4	01Jan2017, 13:38	0.83
CHC28.31B	0.7915	154.6	01Jan2017, 14:01	0.78
CHC28.67	2.3212	183.2	01Jan2017, 14:42	0.46

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	64.3	01Jan2017, 14:06	0.44
CHC28.67_28.31	2.3212	183.0	01Jan2017, 14:47	0.46
CHC29.91	1.6558	145.7	01Jan2017, 14:24	0.47
CHC29.91A	0.6097	50.3	01Jan2017, 14:02	0.38
CHC29.91_28.67	1.6558	145.0	01Jan2017, 14:47	0.47
CHC30.94	1.0461	109.8	01Jan2017, 14:14	0.52
CHC30.94A	1.0461	109.8	01Jan2017, 14:14	0.52
CHC30.94_29.91	1.0461	109.5	01Jan2017, 14:31	0.52
CHC3.39	62.5254	2015.2	02Jan2017, 02:09	0.73
CHC3.39A	1.8419	348.1	01Jan2017, 13:58	0.73
CHC3.39_1.28	62.5254	2014.6	02Jan2017, 02:36	0.72
CHC4.62	60.6835	2123.2	02Jan2017, 01:16	0.76
CHC4.62A	0.1505	48.6	01Jan2017, 13:39	0.88
CHC4.62B	0.1946	60.1	01Jan2017, 13:41	0.88
CHC4.62_3.39	60.6835	2012.0	02Jan2017, 02:19	0.73
CHC4.97	60.3384	2131.9	02Jan2017, 01:04	0.76
CHC4.97A	0.4693	61.9	01Jan2017, 14:40	0.78
CHC4.97B	0.0580	21.6	01Jan2017, 13:39	1.04
CHC4.97C	0.2012	64.2	01Jan2017, 13:34	0.78
CHC4.97_4.62	60.3384	2120.2	02Jan2017, 01:19	0.76
CHC5.97	59.6099	2124.6	02Jan2017, 00:49	0.76

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	235.2	01Jan2017, 14:12	0.92
CHC5.97_4.97	59.6099	2122.6	02Jan2017, 01:05	0.76
CHC7.47	58.4785	2127.5	01Jan2017, 23:47	0.77
CHC7.47_5.97	58.4785	2111.0	02Jan2017, 00:49	0.76
CHC7.48	53.6341	2065.6	01Jan2017, 23:50	0.76
CHC7.48A	2.2128	149.8	01Jan2017, 18:25	0.92
CHC9.40	51.4213	2023.9	01Jan2017, 22:48	0.76
CHC9.40A	1.1576	211.8	01Jan2017, 14:24	0.92
CHC9.40_7.47	51.4213	1997.6	01Jan2017, 23:56	0.75
DER0.00	2.9199	411.1	01Jan2017, 15:45	0.87
DER0.00A	0.1924	62.1	01Jan2017, 13:39	0.88
DER0.52	2.7275	406.1	01Jan2017, 15:26	0.87
DER0.52A	0.5165	146.8	01Jan2017, 13:52	0.98
DER0.52_0.00	2.7275	402.2	01Jan2017, 15:45	0.87
DER1.10	2.2110	387.6	01Jan2017, 14:51	0.84
DER1.10A	0.3712	101.5	01Jan2017, 13:55	0.98
DER1.10_0.52	2.2110	373.1	01Jan2017, 15:26	0.85
DER1.76	1.8398	354.6	01Jan2017, 14:23	0.81
DER1.76A	0.5078	98.6	01Jan2017, 13:57	0.73
DER1.76_1.10	1.8398	351.0	01Jan2017, 14:52	0.82
DER2.22	1.3320	291.4	01Jan2017, 14:07	0.84

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	130.0	01Jan2017, 14:08	0.78
DER2.22_1.76	1.3320	288.2	01Jan2017, 14:27	0.85
DER2.93	0.6085	162.4	01Jan2017, 13:52	0.93
DER2.93A	0.6085	162.4	01Jan2017, 13:52	0.93
DER2.93_2.22	0.6085	161.6	01Jan2017, 14:06	0.93
DORT0.34	1.6920	337.1	01Jan2017, 14:15	0.91
DORT0.34A	0.0357	13.3	01Jan2017, 13:32	0.88
DORT0.34B	0.0234	8.3	01Jan2017, 13:33	0.83
DORT0.54	1.6329	332.7	01Jan2017, 14:12	0.91
DORT0.54A	0.2058	60.9	01Jan2017, 13:46	0.93
DORT0.54B	0.0280	5.5	01Jan2017, 13:35	0.48
DORT0.54C	0.0058	3.0	01Jan2017, 13:34	1.34
DORT0.54D	0.0832	24.6	01Jan2017, 13:53	1.04
DORT0.54E	0.0367	14.3	01Jan2017, 13:31	0.88
DORT0.54_0.34	1.6329	332.2	01Jan2017, 14:15	0.91
DORT1.15	1.2734	290.0	01Jan2017, 13:52	0.91
DORT1.15A	0.4022	139.4	01Jan2017, 13:41	0.98
DORT1.15B	0.0103	7.6	01Jan2017, 13:30	2.01
DORT1.15_0.54	1.2734	288.5	01Jan2017, 14:17	0.91
DORT1.58	0.8609	209.1	01Jan2017, 13:51	0.87
DORT1.58A	0.4931	129.9	01Jan2017, 13:50	0.87

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	205.4	01Jan2017, 14:07	0.86
DORT2.41	0.3678	92.0	01Jan2017, 13:46	0.86
DORT2.41A	0.2384	68.6	01Jan2017, 13:42	0.83
DORT2.41B	0.1294	42.8	01Jan2017, 13:40	0.93
DORT2.41_1.58	0.3678	86.9	01Jan2017, 14:14	0.85
DOR0.00	5.5423	770.1	01Jan2017, 15:29	0.91
DOR0.00A	0.0475	19.6	01Jan2017, 13:42	1.21
DOR0.24	5.4948	769.2	01Jan2017, 15:25	0.90
DOR0.24A	0.1218	42.6	01Jan2017, 13:43	1.03
DOR0.24B	0.1287	41.9	01Jan2017, 13:50	1.09
DOR0.24_0.00	5.4948	767.1	01Jan2017, 15:30	0.90
DOR0.44A	0.5212	139.3	01Jan2017, 14:00	1.03
DOR0.44_0.24	5.2443	750.0	01Jan2017, 15:25	0.90
DOR1.21	4.7231	723.0	01Jan2017, 14:39	0.88
DOR1.21A	0.2430	57.4	01Jan2017, 14:11	1.03
DOR1.21B	0.2037	70.1	01Jan2017, 13:41	0.98
DOR1.21_0.44	4.7231	708.9	01Jan2017, 15:21	0.88
DOR1.23	4.2764	678.0	01Jan2017, 14:42	0.91
DOR1.23A	0.2095	70.9	01Jan2017, 13:48	1.09
DOR1.45	4.0669	660.2	01Jan2017, 14:30	0.90
DOR1.45_1.23	4.0669	657.3	01Jan2017, 14:47	0.90

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	392.1	01Jan2017, 14:54	0.90
DOR1.60A	0.5501	150.6	01Jan2017, 13:51	0.93
DOR2.40	1.8248	357.2	01Jan2017, 14:22	0.89
DOR2.40A	0.4594	109.9	01Jan2017, 14:00	0.93
DOR2.40_1.60	1.8248	349.2	01Jan2017, 14:56	0.89
DOR2.81	1.3654	275.9	01Jan2017, 14:09	0.87
DOR2.81A	0.2367	71.0	01Jan2017, 13:52	1.03
DOR2.81_2.40	1.3654	271.6	01Jan2017, 14:27	0.87
DOR3.06	1.1287	220.0	01Jan2017, 14:00	0.84
DOR3.06A	0.3648	96.2	01Jan2017, 13:50	0.87
DOR3.06B	0.7639	140.4	01Jan2017, 14:12	0.82
DOR3.06_2.81	1.1287	218.9	01Jan2017, 14:14	0.84
DOR.44	5.2443	752.0	01Jan2017, 15:19	0.90
ERRR0.57_0.00	1.1576	269.8	01Jan2017, 14:40	1.05
ERRT0.00	1.2906	290.4	01Jan2017, 14:39	1.09
ERRT0.00A	0.1098	45.4	01Jan2017, 13:50	1.40
ERRT0.00B	0.0077	5.0	01Jan2017, 13:30	1.61
ERRT0.00C	0.0074	5.8	01Jan2017, 13:30	2.19
ERRT0.00D	0.0036	2.8	01Jan2017, 13:30	2.19
ERRT0.00E	0.0045	3.5	01Jan2017, 13:30	2.19
ERRT0.57	1.1576	276.2	01Jan2017, 14:20	1.05

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	51.4	01Jan2017, 14:38	1.03
ERRT0.61	0.8788	228.8	01Jan2017, 14:19	1.05
ERRT0.61A	0.4551	120.5	01Jan2017, 14:06	1.09
ERRT1.62	0.4237	126.3	01Jan2017, 13:39	1.02
ERRT1.62A	0.1546	43.4	01Jan2017, 13:46	0.88
ERRT1.62B	0.2547	112.2	01Jan2017, 13:31	1.03
ERRT1.62C	0.0144	11.3	01Jan2017, 13:30	2.19
ERRT1.62_0.61	0.4237	117.0	01Jan2017, 14:21	1.01
ERR0.00	2.6728	558.8	01Jan2017, 14:42	1.02
ERR0.00A	0.0718	22.7	01Jan2017, 13:37	0.83
ERR0.00B	0.0053	4.1	01Jan2017, 13:30	2.19
ERR0.23	2.5957	558.7	01Jan2017, 14:36	1.03
ERR0.23A	0.1922	57.8	01Jan2017, 13:42	0.88
ERR0.23B	0.0298	21.5	01Jan2017, 13:30	1.93
ERR0.23_0.00	2.5957	554.7	01Jan2017, 14:42	1.03
ERR0.26	1.3051	293.8	01Jan2017, 14:24	0.96
ERR0.88	1.0831	276.0	01Jan2017, 14:07	0.95
ERR0.88A	0.5048	113.3	01Jan2017, 14:10	0.98
ERR0.88_0.23	1.0831	273.7	01Jan2017, 14:25	0.95
ERR1.33	0.5783	165.0	01Jan2017, 13:48	0.93
ERR1.33A	0.5783	165.0	01Jan2017, 13:48	0.93

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	163.5	01Jan2017, 14:06	0.93
LAR0.00	0.9453	133.9	01Jan2017, 14:24	1.00
LAR0.00A	0.5827	102.4	01Jan2017, 14:44	1.03
LAR0.40	0.3626	51.4	01Jan2017, 13:57	0.95
LAR0.40A	0.0039	3.1	01Jan2017, 13:30	2.28
LAR0.40B	0.1091	67.3	01Jan2017, 13:41	1.93
LAR0.40C	0.1251	43.4	01Jan2017, 13:43	1.03
LAR0.40D	0.1245	38.5	01Jan2017, 13:41	0.88
LAR0.40_0.00	0.3626	51.3	01Jan2017, 14:03	0.95
MRT0.00	0.4202	122.9	01Jan2017, 13:43	0.87
MRT0.00A	0.1647	45.3	01Jan2017, 13:44	0.83
MRT0.66	0.2555	78.2	01Jan2017, 13:34	0.90
MRT0.66A	0.2030	76.6	01Jan2017, 13:34	0.93
MRT0.66B	0.0376	16.1	01Jan2017, 13:31	0.98
MRT0.66C	0.0149	7.0	01Jan2017, 13:32	1.15
MRT0.66_0.00	0.2555	77.6	01Jan2017, 13:43	0.90
ORT0.28	0.7836	190.6	01Jan2017, 13:51	0.78
ORT0.28A	0.1786	45.5	01Jan2017, 13:42	0.73
ORT0.95	0.6050	155.0	01Jan2017, 13:43	0.80
ORT0.95A	0.1851	53.0	01Jan2017, 13:36	0.73
ORT0.95_0.28	0.6050	153.7	01Jan2017, 13:55	0.80

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	114.6	01Jan2017, 13:42	0.83
ORT1.38A	0.1910	56.6	01Jan2017, 13:38	0.78
ORT1.38_0.95	0.4199	114.3	01Jan2017, 13:50	0.83
ORT2.04	0.2289	68.9	01Jan2017, 13:42	0.88
ORT2.04A	0.2289	68.9	01Jan2017, 13:42	0.88
ORT2.04_1.38	0.2289	68.7	01Jan2017, 13:52	0.88
Pond 0	0.1946	59.8	01Jan2017, 13:43	0.87
Pond 1	0.2012	53.2	01Jan2017, 13:41	0.77
Pond 10	0.0122	0.6	01Jan2017, 15:12	0.88
Pond 11	0.0236	8.3	01Jan2017, 13:34	0.88
Pond 12	0.0172	3.7	01Jan2017, 13:39	0.88
Pond 13	0.0603	7.8	01Jan2017, 13:52	0.82
Pond 14	0.1379	29.2	01Jan2017, 13:55	0.88
Pond 15	0.0477	6.8	01Jan2017, 14:29	1.09
Pond 16	0.3346	34.7	01Jan2017, 15:59	1.27
Pond 17	0.0528	12.3	01Jan2017, 14:04	1.61
Pond 18	0.1638	18.3	01Jan2017, 15:44	1.61
Pond 19	0.0053	3.9	01Jan2017, 13:34	2.19
Pond 2	0.0580	2.3	01Jan2017, 16:36	1.04
Pond 20	0.0077	4.4	01Jan2017, 13:31	1.61
Pond 21	0.0298	16.9	01Jan2017, 13:35	1.93

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	5.3	01Jan2017, 13:32	1.74
Pond 23	0.0036	2.7	01Jan2017, 13:31	2.19
Pond 24	0.0045	2.0	01Jan2017, 13:36	2.19
Pond 25	0.2547	78.5	01Jan2017, 13:38	1.03
Pond 26	0.0144	6.8	01Jan2017, 13:35	2.19
Pond 27	0.1245	35.5	01Jan2017, 13:48	0.87
Pond 28	0.1251	19.8	01Jan2017, 14:14	0.89
Pond 29	0.1091	4.6	01Jan2017, 18:26	1.12
Pond 3	0.1861	0.0	01Jan2017, 01:00	0.00
Pond 30	0.0039	0.5	01Jan2017, 13:50	0.94
Pond 31	0.3448	32.4	01Jan2017, 16:09	1.28
Pond 32	0.0626	36.7	01Jan2017, 13:49	2.19
Pond 33	0.0149	1.0	01Jan2017, 14:17	1.15
Pond 34	0.0376	1.1	01Jan2017, 17:40	0.67
Pond 35	0.0294	9.8	01Jan2017, 13:32	0.73
Pond 36	0.0175	11.4	01Jan2017, 13:33	1.76
Pond 37	0.1287	14.3	01Jan2017, 14:43	1.09
Pond 38	0.2037	0.0	01Jan2017, 01:00	0.00
Pond 39	0.0234	3.8	01Jan2017, 13:45	0.83
Pond 4	0.2023	14.7	01Jan2017, 14:08	0.58
Pond 40	0.0832	4.5	01Jan2017, 16:03	1.04

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	1.8	01Jan2017, 13:48	1.34
Pond 42	0.0367	5.8	01Jan2017, 13:41	0.88
Pond 43	0.0103	3.6	01Jan2017, 13:42	2.01
Pond 44	0.1294	29.5	01Jan2017, 13:56	0.92
Pond 45	0.1457	49.0	01Jan2017, 13:40	0.93
Pond 46	0.0187	10.8	01Jan2017, 13:35	1.93
Pond 47	0.0275	1.9	01Jan2017, 15:19	1.54
Pond 48	0.0456	1.6	01Jan2017, 17:36	1.00
Pond 49	0.0256	15.9	01Jan2017, 13:35	1.69
Pond 5	0.0343	9.0	01Jan2017, 13:38	0.69
Pond 50	0.0073	0.4	01Jan2017, 16:54	1.21
Pond 51	0.0721	8.4	01Jan2017, 13:47	0.95
Pond 52	0.0497	3.6	01Jan2017, 14:09	0.78
Pond 53	0.0896	32.5	01Jan2017, 13:42	1.09
Pond 54	0.2164	33.0	01Jan2017, 14:15	0.97
Pond 55	0.0163	3.2	01Jan2017, 13:37	0.55
Pond 56	0.0231	17.7	01Jan2017, 13:31	2.19
Pond 57	0.0112	0.7	01Jan2017, 14:02	0.93
Pond 58	0.0280	0.6	01Jan2017, 16:53	0.48
Pond 6	0.4472	73.7	01Jan2017, 14:10	0.93
Pond 7	0.0064	3.5	01Jan2017, 13:39	2.27

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	6.0	01Jan2017, 13:42	0.88
Pond 9	0.0281	5.4	01Jan2017, 13:46	0.88
RIR0.00	6.5684	903.3	01Jan2017, 15:32	0.83
RIR0.00A	0.0647	27.0	01Jan2017, 13:56	1.54
RIR0.32	6.5037	919.5	01Jan2017, 15:20	0.82
RIR0.32A	0.5587	112.2	01Jan2017, 14:04	0.82
RIR0.32_0.00	6.5037	897.1	01Jan2017, 15:33	0.82
RIR0.65	5.9450	888.7	01Jan2017, 15:06	0.82
RIR0.65A	0.1896	79.7	01Jan2017, 13:33	1.03
RIR0.65_0.32	5.9450	879.9	01Jan2017, 15:20	0.82
RIR0.86	5.7554	885.5	01Jan2017, 14:57	0.81
RIR0.86A	0.2984	70.5	01Jan2017, 13:53	0.83
RIR0.86_0.65	5.7554	877.6	01Jan2017, 15:06	0.81
RIR1.24	5.4570	869.3	01Jan2017, 14:51	0.81
RIR1.24A	0.0980	30.6	01Jan2017, 13:33	0.73
RIR1.24_0.86	5.4570	864.5	01Jan2017, 14:58	0.81
RIR1.34	5.3590	864.6	01Jan2017, 14:51	0.81
RIR1.52	4.5754	810.9	01Jan2017, 14:53	0.82
RIR1.62	1.8861	306.6	01Jan2017, 14:48	0.81
RIR1.62A	0.5008	105.5	01Jan2017, 14:05	0.87
RIR2.60	1.3853	258.9	01Jan2017, 14:04	0.79

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	91.5	01Jan2017, 13:41	0.83
RIR2.60_1.62	1.3853	249.6	01Jan2017, 14:54	0.78
RIR3.38	1.0728	220.9	01Jan2017, 13:56	0.77
RIR3.38A	1.0434	219.1	01Jan2017, 13:56	0.78
RIR3.38B	0.0294	10.0	01Jan2017, 13:30	0.73
RIR3.38_2.60	1.0728	218.7	01Jan2017, 14:11	0.77
SHCT0.00	3.0470	241.5	01Jan2017, 14:15	0.36
SHCT0.00A	0.9966	71.2	01Jan2017, 14:04	0.34
SHCT1.59	2.0504	177.1	01Jan2017, 13:58	0.37
SHCT1.59A	2.0504	177.1	01Jan2017, 13:58	0.37
SHCT1.59_0.00	2.0504	176.9	01Jan2017, 14:18	0.37
SHC0.00	6.4942	466.0	01Jan2017, 15:30	0.47
SHC0.00A	0.0458	9.7	01Jan2017, 13:44	0.64
SHC0.23	6.4484	488.5	01Jan2017, 15:13	0.46
SHC0.23A	0.6386	103.7	01Jan2017, 14:31	0.87
SHC0.23_0.00	6.4484	464.1	01Jan2017, 15:30	0.47
SHC1.60	5.8098	429.6	01Jan2017, 14:46	0.42
SHC1.60A	0.2628	65.6	01Jan2017, 13:40	0.69
SHC1.60_0.23	5.8098	412.9	01Jan2017, 15:15	0.42
SHC2.06	5.5470	433.0	01Jan2017, 14:22	0.41
SHC2.06A	0.2828	20.9	01Jan2017, 13:47	0.28

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	417.8	01Jan2017, 14:46	0.41
SHC2.56	5.2642	424.8	01Jan2017, 14:15	0.42
SHC2.56A	0.4506	70.4	01Jan2017, 13:52	0.56
SHC2.56_2.06	5.2642	423.7	01Jan2017, 14:22	0.42
SHC3.11	1.7666	137.4	01Jan2017, 14:15	0.47
SHC3.11A	0.2775	104.7	01Jan2017, 13:34	0.93
SHC3.11_2.56	1.7666	137.4	01Jan2017, 14:20	0.47
SHC3.92	1.4891	119.1	01Jan2017, 14:05	0.38
SHC3.92A	0.6934	46.4	01Jan2017, 14:00	0.31
SHC3.92B	0.7957	74.2	01Jan2017, 14:08	0.44
SHC3.92_3.11	1.4891	119.0	01Jan2017, 14:17	0.38
SRT0.50	2.6893	506.2	01Jan2017, 14:54	0.83
SRT0.50A	0.4294	78.6	01Jan2017, 14:12	0.82
SRT1.29	2.2599	462.2	01Jan2017, 14:34	0.83
SRT1.29A	0.3191	55.8	01Jan2017, 14:10	0.78
SRT1.29_0.50	2.2599	456.9	01Jan2017, 14:55	0.83
SRT2.06	1.9408	423.0	01Jan2017, 14:09	0.84
SRT2.06A	0.4839	115.3	01Jan2017, 13:56	0.87
SRT2.06_1.29	1.9408	416.6	01Jan2017, 14:36	0.84
SRT2.55	1.4569	323.3	01Jan2017, 14:02	0.82
SRT2.55A	0.3465	96.0	01Jan2017, 13:44	0.83

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	321.8	01Jan2017, 14:14	0.82
SRT3.00	1.1104	267.1	01Jan2017, 13:53	0.82
SRT3.00A	0.7468	171.5	01Jan2017, 13:54	0.82
SRT3.00_2.55	1.1104	263.7	01Jan2017, 14:07	0.82
SRT3.38	0.3636	96.3	01Jan2017, 13:46	0.83
SRT3.38A	0.3636	96.3	01Jan2017, 13:46	0.83
SRT3.38_3.00	0.3636	96.1	01Jan2017, 13:51	0.83
SSRTA0.00	0.4007	103.3	01Jan2017, 13:53	0.94
SSRTA0.00A	0.2628	79.2	01Jan2017, 13:49	0.98
SSRTA0.59	0.1379	29.2	01Jan2017, 13:55	0.88
SSRTA0.59A	0.1379	44.6	01Jan2017, 13:39	0.88
SSRTA0.59_0.00	0.1379	29.1	01Jan2017, 14:07	0.88
SSRT0.00	1.3182	304.1	01Jan2017, 14:12	0.91
SSRT0.00A	0.2236	58.0	01Jan2017, 13:51	0.88
SSRT0.46	1.0946	267.8	01Jan2017, 13:56	0.91
SSRT0.46A	0.1893	64.8	01Jan2017, 13:39	0.93
SSRT0.46_0.00	1.0946	263.2	01Jan2017, 14:15	0.91
SSRT0.77	0.9053	233.8	01Jan2017, 13:49	0.91
SSRT0.77A	0.2520	73.9	01Jan2017, 13:47	0.93
SSRT0.77B	0.0603	19.9	01Jan2017, 13:35	0.83
SSRT0.77_0.46	0.9053	232.4	01Jan2017, 14:00	0.91

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	50.9	01Jan2017, 13:37	0.85
SSRT1.34A	0.1112	33.5	01Jan2017, 13:39	0.83
SSRT1.34B	0.0172	6.7	01Jan2017, 13:31	0.88
SSRT1.34C	0.0236	9.1	01Jan2017, 13:31	0.88
SSRT1.34D	0.0122	4.7	01Jan2017, 13:31	0.88
SSRT1.34E	0.0281	10.3	01Jan2017, 13:33	0.88
SSRT1.34_0.77	0.1923	50.4	01Jan2017, 13:49	0.85
SSR0.00	4.8444	790.1	01Jan2017, 14:41	0.88
SSR0.00A	0.0601	22.7	01Jan2017, 13:32	0.88
SSR0.22	4.7843	787.3	01Jan2017, 14:38	0.88
SSR0.22A	0.2501	93.0	01Jan2017, 13:42	1.09
SSR0.22_0.00	4.7843	786.9	01Jan2017, 14:41	0.88
SSR0.85	4.5342	768.7	01Jan2017, 14:25	0.86
SSR0.85_0.22	4.5342	766.4	01Jan2017, 14:39	0.86
SSR0.87	3.2160	509.9	01Jan2017, 14:38	0.85
SSR0.87A	0.3806	84.6	01Jan2017, 14:06	0.93
SSR1.06	2.8354	453.2	01Jan2017, 14:37	0.84
SSR1.06A	0.2647	77.6	01Jan2017, 13:47	0.93
SSR1.06_0.87	2.8354	452.6	01Jan2017, 14:43	0.84
SSR1.71	2.5707	431.2	01Jan2017, 14:18	0.82
SSR1.71A	0.3665	92.0	01Jan2017, 14:06	1.03

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	429.8	01Jan2017, 14:40	0.83
SSR1.89	2.2042	347.9	01Jan2017, 14:15	0.79
SSR1.89A	0.3178	98.4	01Jan2017, 13:50	1.03
SSR1.89B	0.0231	18.1	01Jan2017, 13:30	2.19
SSR1.89_1.71	2.2042	346.3	01Jan2017, 14:22	0.79
SSR2.33	1.8633	283.2	01Jan2017, 14:04	0.73
SSR2.33A	0.1750	74.6	01Jan2017, 13:35	1.09
SSR2.33B	0.0381	14.7	01Jan2017, 13:31	0.88
SSR2.33_1.89	1.8633	280.1	01Jan2017, 14:21	0.73
SSR2.70	1.6502	258.1	01Jan2017, 13:56	0.69
SSR2.70A	0.4613	111.8	01Jan2017, 13:51	0.82
SSR2.70B	0.0112	4.7	01Jan2017, 13:30	0.93
SSR2.70C	0.0064	5.1	01Jan2017, 13:31	2.28
SSR2.70D	0.0343	10.1	01Jan2017, 13:33	0.69
SSR2.70E	0.4472	137.9	01Jan2017, 13:44	0.93
SSR2.70_2.33	1.6502	257.2	01Jan2017, 14:06	0.69
SSR3.20	0.6898	70.0	01Jan2017, 13:50	0.42
SSR3.20A	0.1108	26.6	01Jan2017, 13:41	0.69
SSR3.20B	0.2023	54.8	01Jan2017, 13:36	0.69
SSR3.20_2.70	0.6898	69.9	01Jan2017, 13:58	0.42
SSR3.70	0.3767	34.5	01Jan2017, 13:41	0.26

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	34.5	01Jan2017, 13:41	0.52
SSR3.70B	0.1861	31.5	01Jan2017, 13:37	0.45
SSR3.70_3.20	0.3767	34.3	01Jan2017, 13:52	0.26
WOR0.00	2.8951	384.5	01Jan2017, 15:21	0.80
WOR0.00A	0.0359	12.4	01Jan2017, 13:34	0.83
WOR0.32	2.8592	383.5	01Jan2017, 15:10	0.80
WOR0.32A	0.1901	35.2	01Jan2017, 14:00	0.73
WOR0.32_0.00	2.8592	382.8	01Jan2017, 15:21	0.80
WOR0.76	2.6691	394.0	01Jan2017, 14:41	0.80
WOR0.76A	0.3131	106.8	01Jan2017, 13:41	0.98
WOR0.76_0.32	2.6691	371.3	01Jan2017, 15:11	0.80
WOR1.59	2.3560	378.8	01Jan2017, 14:18	0.78
WOR1.59A	0.4536	131.1	01Jan2017, 13:51	0.98
WOR1.59B	0.7600	128.0	01Jan2017, 14:13	0.78
WOR1.59_0.76	2.3560	372.6	01Jan2017, 14:42	0.78
WOR1.64	1.1424	186.2	01Jan2017, 14:32	0.70
WOR1.64A	0.2551	68.8	01Jan2017, 13:52	0.93
WOR2.33	0.8873	175.9	01Jan2017, 13:49	0.63
WOR2.33A	0.3233	68.0	01Jan2017, 13:48	0.69
WOR2.33_1.64	0.8873	155.1	01Jan2017, 14:35	0.63
WOR3.00	0.5640	108.0	01Jan2017, 13:49	0.60

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	91.8	01Jan2017, 13:47	0.83
WOR3.67	0.2110	17.0	01Jan2017, 13:35	0.23
WOR3.67A	0.2110	17.0	01Jan2017, 13:35	0.23
WOR3.67_3.00	0.2110	16.9	01Jan2017, 13:51	0.23

Project: ChiquesCreek Simulation Run: 5YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 5YR_24HR
Compute Time: 31Jan2017, 15:48:04 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	331.4	01Jan2017, 15:08	1.01
BER0.00A	0.1087	45.3	01Jan2017, 13:50	1.42
BER0.64	1.7391	340.6	01Jan2017, 14:27	0.98
BER0.64A	0.3111	155.6	01Jan2017, 13:42	1.49
BER0.64_0.00	1.7391	320.8	01Jan2017, 15:09	0.98
BER1.05	1.4280	321.9	01Jan2017, 14:02	0.87
BER1.05A	0.2790	111.9	01Jan2017, 13:53	1.42
BER1.05_0.64	1.4280	297.5	01Jan2017, 14:30	0.87
BER1.30	1.1490	218.6	01Jan2017, 14:00	0.74
BER1.30A	0.5289	150.1	01Jan2017, 13:56	1.05
BER1.30_1.05	1.1490	217.5	01Jan2017, 14:05	0.74
BER1.95	0.6201	73.0	01Jan2017, 13:53	0.47
BER1.95A	0.6201	73.0	01Jan2017, 13:53	0.47
BER1.95_1.30	0.6201	72.5	01Jan2017, 14:05	0.47
BOR0.00	6.6030	1302.6	01Jan2017, 15:03	1.12
BOR0.00A	0.0062	3.8	01Jan2017, 13:31	1.49
BOR0.10	6.5968	1347.0	01Jan2017, 14:56	1.12

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	84.6	01Jan2017, 14:01	1.42
BOR0.10_0.00	6.5968	1302.1	01Jan2017, 15:03	1.12
BOR0.68	1.6208	335.3	01Jan2017, 14:09	0.85
BOR0.68A	0.2555	102.5	01Jan2017, 13:53	1.42
BOR0.68_0.10	1.6208	317.6	01Jan2017, 14:41	0.86
BOR1.20	1.3653	249.9	01Jan2017, 14:04	0.75
BOR1.20A	0.5429	147.8	01Jan2017, 14:08	1.17
BOR1.20_0.68	1.3653	248.9	01Jan2017, 14:12	0.75
BOR2.07	0.8224	103.8	01Jan2017, 13:49	0.47
BOR2.07A	0.8224	103.8	01Jan2017, 13:49	0.47
BOR2.07_1.20	0.8224	103.1	01Jan2017, 14:03	0.47
CHC10.68	50.2637	3193.7	01Jan2017, 21:29	1.26
CHC10.68A	0.7377	332.2	01Jan2017, 13:57	1.69
CHC10.68B	0.0477	24.6	01Jan2017, 13:47	1.70
CHC10.68C	0.1180	51.1	01Jan2017, 13:54	1.55
CHC10.68D	0.1638	89.5	01Jan2017, 14:06	2.32
CHC10.68E	0.0528	42.0	01Jan2017, 13:36	2.32
CHC10.68_9.40	50.2637	3178.7	01Jan2017, 22:02	1.26
CHC11.99	49.1437	3168.1	01Jan2017, 20:50	1.26
CHC11.99_10.68	49.1437	3152.4	01Jan2017, 21:30	1.25
CHC12.01	46.4709	3082.6	01Jan2017, 20:55	1.24

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	84.2	01Jan2017, 13:32	1.49
CHC12.65	46.3306	3192.1	01Jan2017, 20:25	1.25
CHC12.65_12.01	46.3306	3079.4	01Jan2017, 20:55	1.24
CHC12.67	45.3853	3156.4	01Jan2017, 20:27	1.24
CHC12.67A	0.5547	131.8	01Jan2017, 15:00	1.55
CHC13.89	44.8306	3170.8	01Jan2017, 19:45	1.24
CHC13.89_12.67	44.8306	3133.0	01Jan2017, 20:28	1.24
CHC13.90	41.9107	3049.6	01Jan2017, 19:48	1.23
CHC13.90A	2.4712	242.9	01Jan2017, 19:13	1.47
CHC16.25	39.4395	3067.6	01Jan2017, 17:58	1.24
CHC16.25A	0.7783	173.7	01Jan2017, 15:10	1.55
CHC16.25_13.90	39.4395	2810.0	01Jan2017, 19:50	1.22
CHC17.08	38.6612	3120.9	01Jan2017, 17:16	1.24
CHC17.08A	0.5852	183.3	01Jan2017, 14:29	1.62
CHC17.08B	0.3448	233.9	01Jan2017, 14:00	2.78
CHC17.08_16.25	38.6612	3002.7	01Jan2017, 18:00	1.24
CHC17.73	37.7312	3102.7	01Jan2017, 16:46	1.23
CHC17.73A	0.3870	152.3	01Jan2017, 14:09	1.69
CHC17.73B	0.0626	59.4	01Jan2017, 13:35	2.97
CHC17.73_17.08	37.7312	3032.7	01Jan2017, 17:16	1.23
CHC18.09	37.2816	3131.0	01Jan2017, 16:27	1.22

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	57.4	01Jan2017, 13:50	1.17
CHC18.09_17.73	37.2816	3067.8	01Jan2017, 16:46	1.22
CHC18.61	36.6951	3187.3	01Jan2017, 16:05	1.22
CHC18.61A	0.5761	235.2	01Jan2017, 13:43	1.23
CHC18.61_18.09	36.6951	3098.0	01Jan2017, 16:27	1.22
CHC19.32	36.1190	3388.4	01Jan2017, 15:24	1.23
CHC19.32_18.61	36.1190	3153.9	01Jan2017, 16:05	1.22
CHC19.35	29.5506	2039.7	01Jan2017, 16:05	1.20
CHC19.35A	0.3523	128.2	01Jan2017, 14:17	1.69
CHC19.35B	0.0175	15.4	01Jan2017, 13:32	2.50
CHC1.28	63.3656	3184.1	02Jan2017, 02:04	1.20
CHC1.28A	0.8402	115.6	01Jan2017, 16:13	1.29
CHC20.02	29.1808	2045.6	01Jan2017, 15:38	1.19
CHC20.02A	0.3588	191.6	01Jan2017, 13:56	1.99
CHC20.02_19.35	29.1808	2011.5	01Jan2017, 19:29	1.19
CHC20.55	28.8220	2106.7	01Jan2017, 15:12	1.19
CHC20.55_20.02	28.8220	2008.5	01Jan2017, 19:01	1.18
CHC20.57	23.2797	1729.1	01Jan2017, 18:45	1.12
CHC20.57A	0.5512	195.1	01Jan2017, 14:49	2.15
CHC21.28	22.7285	1731.6	01Jan2017, 17:41	1.10
CHC21.28A	0.3509	190.2	01Jan2017, 14:04	2.24

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	17.8	01Jan2017, 13:30	2.68
CHC21.28C	0.0073	3.4	01Jan2017, 14:02	1.84
CHC21.28D	0.0224	17.0	01Jan2017, 13:31	2.00
CHC21.28E	0.0497	25.0	01Jan2017, 13:34	1.29
CHC21.28F	0.1457	83.9	01Jan2017, 13:34	1.49
CHC21.28_20.57	22.7285	1688.6	01Jan2017, 18:47	1.10
CHC21.59	22.1338	1744.6	01Jan2017, 17:17	1.08
CHC21.59A	0.2001	94.2	01Jan2017, 13:54	1.69
CHC21.59B	0.0256	21.7	01Jan2017, 13:33	2.41
CHC21.59C	0.0275	22.8	01Jan2017, 13:31	2.24
CHC21.59D	0.0896	57.6	01Jan2017, 13:34	1.70
CHC21.59_21.28	22.1338	1693.7	01Jan2017, 17:42	1.08
CHC22.01	21.7910	1765.8	01Jan2017, 16:48	1.07
CHC22.01A	1.2726	738.4	01Jan2017, 13:31	1.42
CHC22.01B	0.0456	33.7	01Jan2017, 13:30	1.84
CHC22.01_21.59	21.7910	1721.9	01Jan2017, 17:18	1.07
CHC23.04	20.4728	1729.3	01Jan2017, 15:59	1.05
CHC23.04A	1.8763	376.1	01Jan2017, 15:03	1.35
CHC23.04B	0.2164	110.0	01Jan2017, 13:43	1.55
CHC23.04_22.01	20.4728	1700.5	01Jan2017, 16:49	1.05
CHC24.53	18.3801	1579.8	01Jan2017, 15:06	1.02

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	1449.2	01Jan2017, 19:04	1.01
CHC24.63	18.3801	1579.8	01Jan2017, 15:06	1.02
CHC24.64	11.7771	1184.0	01Jan2017, 18:01	0.97
CHC24.64A	0.2517	44.2	01Jan2017, 14:43	1.05
CHC25.53	11.5254	1339.0	01Jan2017, 16:57	0.96
CHC25.53A	0.6693	211.7	01Jan2017, 14:08	1.35
CHC25.53B	0.0163	8.2	01Jan2017, 13:31	1.17
CHC25.53_24.64	11.5254	1171.6	01Jan2017, 18:01	0.96
CHC26.30	10.8398	1339.4	01Jan2017, 16:21	0.94
CHC26.30A	0.8065	133.5	01Jan2017, 15:29	1.29
CHC26.30_25.53	10.8398	1297.4	01Jan2017, 16:58	0.94
CHC27.38	10.0333	1367.7	01Jan2017, 15:36	0.91
CHC27.38_26.30	10.0333	1227.9	01Jan2017, 16:23	0.91
CHC27.39	3.5391	534.7	01Jan2017, 14:14	1.01
CHC27.39A	0.3314	115.7	01Jan2017, 14:00	1.35
CHC28.26	3.2077	549.4	01Jan2017, 14:12	0.98
CHC28.26_27.39	3.2077	481.9	01Jan2017, 15:01	0.97
CHC28.31	3.2077	549.4	01Jan2017, 14:12	0.98
CHC28.31A	0.0950	47.2	01Jan2017, 13:37	1.36
CHC28.31B	0.7915	264.8	01Jan2017, 13:59	1.29
CHC28.67	2.3212	325.2	01Jan2017, 15:03	0.85

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	133.9	01Jan2017, 14:02	0.84
CHC28.67_28.31	2.3212	325.0	01Jan2017, 15:08	0.85
CHC29.91	1.6558	275.5	01Jan2017, 14:09	0.86
CHC29.91A	0.6097	112.1	01Jan2017, 13:59	0.74
CHC29.91_28.67	1.6558	272.9	01Jan2017, 15:09	0.86
CHC30.94	1.0461	217.0	01Jan2017, 14:11	0.94
CHC30.94A	1.0461	217.0	01Jan2017, 14:11	0.94
CHC30.94_29.91	1.0461	215.0	01Jan2017, 14:45	0.94
CHC3.39	62.5254	3176.1	02Jan2017, 01:20	1.21
CHC3.39A	1.8419	605.3	01Jan2017, 13:56	1.22
CHC3.39_1.28	62.5254	3168.7	02Jan2017, 02:06	1.20
CHC4.62	60.6835	3366.2	02Jan2017, 00:27	1.26
CHC4.62A	0.1505	77.0	01Jan2017, 13:38	1.42
CHC4.62B	0.1946	95.9	01Jan2017, 13:40	1.42
CHC4.62_3.39	60.6835	3151.5	02Jan2017, 01:31	1.21
CHC4.97	60.3384	3381.9	02Jan2017, 00:10	1.26
CHC4.97A	0.4693	108.2	01Jan2017, 14:36	1.29
CHC4.97B	0.0580	33.0	01Jan2017, 13:39	1.62
CHC4.97C	0.2012	102.6	01Jan2017, 13:34	1.29
CHC4.97_4.62	60.3384	3360.5	02Jan2017, 00:27	1.25
CHC5.97	59.6099	3374.9	01Jan2017, 23:49	1.26

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	386.1	01Jan2017, 14:10	1.48
CHC5.97_4.97	59.6099	3367.7	02Jan2017, 00:10	1.26
CHC7.47	58.4785	3377.0	01Jan2017, 22:58	1.27
CHC7.47_5.97	58.4785	3353.5	01Jan2017, 23:49	1.26
CHC7.48	53.6341	3280.1	01Jan2017, 23:01	1.26
CHC7.48A	2.2128	245.1	01Jan2017, 18:17	1.48
CHC9.40	51.4213	3205.6	01Jan2017, 22:01	1.26
CHC9.40A	1.1576	349.8	01Jan2017, 14:22	1.48
CHC9.40_7.47	51.4213	3158.4	01Jan2017, 23:07	1.25
DER0.00	2.9199	713.9	01Jan2017, 15:23	1.41
DER0.00A	0.1924	98.4	01Jan2017, 13:38	1.42
DER0.52	2.7275	704.5	01Jan2017, 15:06	1.41
DER0.52A	0.5165	232.9	01Jan2017, 13:51	1.55
DER0.52_0.00	2.7275	699.6	01Jan2017, 15:23	1.41
DER1.10	2.2110	660.0	01Jan2017, 14:40	1.38
DER1.10A	0.3712	161.6	01Jan2017, 13:53	1.55
DER1.10_0.52	2.2110	648.0	01Jan2017, 15:08	1.38
DER1.76	1.8398	595.1	01Jan2017, 14:20	1.34
DER1.76A	0.5078	171.0	01Jan2017, 13:55	1.23
DER1.76_1.10	1.8398	591.4	01Jan2017, 14:43	1.34
DER2.22	1.3320	480.7	01Jan2017, 14:10	1.38

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	224.0	01Jan2017, 14:06	1.29
DER2.22_1.76	1.3320	477.5	01Jan2017, 14:25	1.38
DER2.93	0.6085	261.6	01Jan2017, 13:51	1.48
DER2.93A	0.6085	261.6	01Jan2017, 13:51	1.48
DER2.93_2.22	0.6085	259.0	01Jan2017, 14:12	1.48
DORT0.34	1.6920	552.9	01Jan2017, 14:07	1.46
DORT0.34A	0.0357	20.5	01Jan2017, 13:32	1.42
DORT0.34B	0.0234	12.9	01Jan2017, 13:32	1.36
DORT0.54	1.6329	545.8	01Jan2017, 14:03	1.46
DORT0.54A	0.2058	97.0	01Jan2017, 13:45	1.49
DORT0.54B	0.0280	10.1	01Jan2017, 13:34	0.89
DORT0.54C	0.0058	4.3	01Jan2017, 13:33	2.00
DORT0.54D	0.0832	38.5	01Jan2017, 13:52	1.62
DORT0.54E	0.0367	21.8	01Jan2017, 13:31	1.42
DORT0.54_0.34	1.6329	543.6	01Jan2017, 14:07	1.46
DORT1.15	1.2734	461.4	01Jan2017, 13:47	1.46
DORT1.15A	0.4022	216.2	01Jan2017, 13:40	1.55
DORT1.15B	0.0103	9.9	01Jan2017, 13:30	2.78
DORT1.15_0.54	1.2734	457.0	01Jan2017, 14:06	1.46
DORT1.58	0.8609	298.4	01Jan2017, 13:50	1.40
DORT1.58A	0.4931	211.4	01Jan2017, 13:48	1.42

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	295.2	01Jan2017, 14:04	1.40
DORT2.41	0.3678	162.5	01Jan2017, 13:44	1.40
DORT2.41A	0.2384	111.2	01Jan2017, 13:41	1.36
DORT2.41B	0.1294	67.2	01Jan2017, 13:39	1.49
DORT2.41_1.58	0.3678	155.9	01Jan2017, 14:26	1.38
DOR0.00	5.5423	1272.2	01Jan2017, 15:18	1.45
DOR0.00A	0.0475	29.1	01Jan2017, 13:41	1.84
DOR0.24	5.4948	1272.2	01Jan2017, 15:13	1.44
DOR0.24A	0.1218	65.6	01Jan2017, 13:42	1.62
DOR0.24B	0.1287	64.6	01Jan2017, 13:49	1.70
DOR0.24_0.00	5.4948	1267.8	01Jan2017, 15:18	1.44
DOR0.44A	0.5212	220.0	01Jan2017, 13:59	1.62
DOR0.44_0.24	5.2443	1238.4	01Jan2017, 15:14	1.43
DOR1.21	4.7231	1187.0	01Jan2017, 14:39	1.41
DOR1.21A	0.2430	91.4	01Jan2017, 14:09	1.62
DOR1.21B	0.2037	108.9	01Jan2017, 13:40	1.55
DOR1.21_0.44	4.7231	1169.2	01Jan2017, 15:10	1.41
DOR1.23	4.2764	1118.0	01Jan2017, 14:42	1.47
DOR1.23A	0.2095	108.8	01Jan2017, 13:47	1.69
DOR1.45	4.0669	1093.7	01Jan2017, 14:34	1.45
DOR1.45_1.23	4.0669	1086.5	01Jan2017, 14:43	1.45

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	673.8	01Jan2017, 14:42	1.45
DOR1.60A	0.5501	241.9	01Jan2017, 13:50	1.49
DOR2.40	1.8248	602.5	01Jan2017, 14:18	1.43
DOR2.40A	0.4594	178.7	01Jan2017, 13:59	1.49
DOR2.40_1.60	1.8248	594.0	01Jan2017, 14:45	1.44
DOR2.81	1.3654	462.2	01Jan2017, 14:06	1.42
DOR2.81A	0.2367	111.1	01Jan2017, 13:51	1.62
DOR2.81_2.40	1.3654	456.3	01Jan2017, 14:23	1.42
DOR3.06	1.1287	370.9	01Jan2017, 13:59	1.37
DOR3.06A	0.3648	156.5	01Jan2017, 13:48	1.42
DOR3.06B	0.7639	238.4	01Jan2017, 14:09	1.35
DOR3.06_2.81	1.1287	369.1	01Jan2017, 14:11	1.37
DOR.44	5.2443	1243.3	01Jan2017, 15:06	1.43
ERRR0.57_0.00	1.1576	469.5	01Jan2017, 14:24	1.64
ERRT0.00	1.2906	511.6	01Jan2017, 14:23	1.69
ERRT0.00A	0.1098	66.0	01Jan2017, 13:50	2.07
ERRT0.00B	0.0077	6.8	01Jan2017, 13:30	2.32
ERRT0.00C	0.0074	7.5	01Jan2017, 13:30	2.97
ERRT0.00D	0.0036	3.6	01Jan2017, 13:30	2.97
ERRT0.00E	0.0045	4.5	01Jan2017, 13:30	2.97
ERRT0.57	1.1576	474.1	01Jan2017, 14:09	1.64

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	82.5	01Jan2017, 14:36	1.62
ERRT0.61	0.8788	404.7	01Jan2017, 14:08	1.64
ERRT0.61A	0.4551	188.3	01Jan2017, 14:04	1.69
ERRT1.62	0.4237	228.5	01Jan2017, 13:35	1.60
ERRT1.62A	0.1546	70.1	01Jan2017, 13:45	1.42
ERRT1.62B	0.2547	166.3	01Jan2017, 13:31	1.62
ERRT1.62C	0.0144	14.5	01Jan2017, 13:30	2.97
ERRT1.62_0.61	0.4237	217.7	01Jan2017, 14:09	1.59
ERR0.00	2.6728	988.3	01Jan2017, 14:27	1.61
ERR0.00A	0.0718	36.2	01Jan2017, 13:37	1.36
ERR0.00B	0.0053	5.3	01Jan2017, 13:30	2.97
ERR0.23	2.5957	992.3	01Jan2017, 14:21	1.61
ERR0.23A	0.1922	92.6	01Jan2017, 13:41	1.42
ERR0.23B	0.0298	28.3	01Jan2017, 13:30	2.68
ERR0.23_0.00	2.5957	981.2	01Jan2017, 14:27	1.61
ERR0.26	1.3051	485.4	01Jan2017, 14:17	1.53
ERR0.88	1.0831	442.6	01Jan2017, 14:04	1.52
ERR0.88A	0.5048	182.9	01Jan2017, 14:09	1.55
ERR0.88_0.23	1.0831	439.3	01Jan2017, 14:20	1.52
ERR1.33	0.5783	263.9	01Jan2017, 13:47	1.48
ERR1.33A	0.5783	263.9	01Jan2017, 13:47	1.48

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	261.9	01Jan2017, 14:02	1.48
LAR0.00	0.9453	242.9	01Jan2017, 14:29	1.59
LAR0.00A	0.5827	164.6	01Jan2017, 14:41	1.62
LAR0.40	0.3626	92.5	01Jan2017, 14:03	1.55
LAR0.40A	0.0039	4.0	01Jan2017, 13:30	3.07
LAR0.40B	0.1091	90.5	01Jan2017, 13:41	2.68
LAR0.40C	0.1251	66.9	01Jan2017, 13:42	1.62
LAR0.40D	0.1245	61.4	01Jan2017, 13:40	1.42
LAR0.40_0.00	0.3626	92.4	01Jan2017, 14:08	1.55
MRT0.00	0.4202	192.9	01Jan2017, 13:42	1.42
MRT0.00A	0.1647	74.0	01Jan2017, 13:43	1.36
MRT0.66	0.2555	119.9	01Jan2017, 13:34	1.46
MRT0.66A	0.2030	117.5	01Jan2017, 13:33	1.49
MRT0.66B	0.0376	24.0	01Jan2017, 13:31	1.55
MRT0.66C	0.0149	10.2	01Jan2017, 13:32	1.77
MRT0.66_0.00	0.2555	119.2	01Jan2017, 13:41	1.46
ORT0.28	0.7836	304.1	01Jan2017, 13:55	1.30
ORT0.28A	0.1786	76.2	01Jan2017, 13:41	1.23
ORT0.95	0.6050	254.1	01Jan2017, 13:43	1.32
ORT0.95A	0.1851	86.9	01Jan2017, 13:36	1.23
ORT0.95_0.28	0.6050	251.1	01Jan2017, 14:00	1.32

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	190.0	01Jan2017, 13:41	1.36
ORT1.38A	0.1910	91.8	01Jan2017, 13:37	1.29
ORT1.38_0.95	0.4199	189.1	01Jan2017, 13:50	1.36
ORT2.04	0.2289	110.2	01Jan2017, 13:41	1.42
ORT2.04A	0.2289	110.2	01Jan2017, 13:41	1.42
ORT2.04_1.38	0.2289	110.0	01Jan2017, 13:50	1.42
Pond 0	0.1946	85.4	01Jan2017, 13:49	1.42
Pond 1	0.2012	75.6	01Jan2017, 13:43	1.29
Pond 10	0.0122	0.7	01Jan2017, 16:07	1.42
Pond 11	0.0236	11.6	01Jan2017, 13:35	1.42
Pond 12	0.0172	4.2	01Jan2017, 13:42	1.42
Pond 13	0.0603	22.7	01Jan2017, 13:46	1.35
Pond 14	0.1379	47.4	01Jan2017, 13:54	1.42
Pond 15	0.0477	7.7	01Jan2017, 14:41	1.70
Pond 16	0.3346	51.8	01Jan2017, 14:58	1.92
Pond 17	0.0528	13.4	01Jan2017, 14:11	2.32
Pond 18	0.1638	23.4	01Jan2017, 15:50	2.32
Pond 19	0.0053	4.4	01Jan2017, 13:36	2.97
Pond 2	0.0580	2.7	01Jan2017, 18:03	1.56
Pond 20	0.0077	5.1	01Jan2017, 13:32	2.32
Pond 21	0.0298	19.1	01Jan2017, 13:37	2.68

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	6.7	01Jan2017, 13:33	2.52
Pond 23	0.0036	3.6	01Jan2017, 13:31	2.97
Pond 24	0.0045	2.2	01Jan2017, 13:37	2.97
Pond 25	0.2547	156.4	01Jan2017, 13:34	1.62
Pond 26	0.0144	7.5	01Jan2017, 13:36	2.97
Pond 27	0.1245	46.0	01Jan2017, 13:55	1.42
Pond 28	0.1251	41.6	01Jan2017, 14:05	1.48
Pond 29	0.1091	12.9	01Jan2017, 15:20	1.78
Pond 3	0.1861	0.0	01Jan2017, 01:00	0.00
Pond 30	0.0039	1.1	01Jan2017, 13:37	1.73
Pond 31	0.3448	44.0	01Jan2017, 16:04	2.05
Pond 32	0.0626	45.5	01Jan2017, 13:51	2.97
Pond 33	0.0149	1.2	01Jan2017, 15:27	1.77
Pond 34	0.0376	1.7	01Jan2017, 17:45	1.20
Pond 35	0.0294	15.4	01Jan2017, 13:32	1.23
Pond 36	0.0175	15.4	01Jan2017, 13:33	2.50
Pond 37	0.1287	32.9	01Jan2017, 14:26	1.69
Pond 38	0.2037	0.0	01Jan2017, 01:00	0.00
Pond 39	0.0234	5.9	01Jan2017, 13:46	1.36
Pond 4	0.2023	40.1	01Jan2017, 13:56	1.06
Pond 40	0.0832	5.3	01Jan2017, 16:42	1.62

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	2.1	01Jan2017, 13:51	2.00
Pond 42	0.0367	13.8	01Jan2017, 13:37	1.42
Pond 43	0.0103	7.4	01Jan2017, 13:38	2.78
Pond 44	0.1294	55.8	01Jan2017, 13:51	1.48
Pond 45	0.1457	77.5	01Jan2017, 13:39	1.49
Pond 46	0.0187	12.8	01Jan2017, 13:35	2.68
Pond 47	0.0275	2.1	01Jan2017, 16:05	2.24
Pond 48	0.0456	2.0	01Jan2017, 18:42	1.42
Pond 49	0.0256	21.7	01Jan2017, 13:34	2.41
Pond 5	0.0343	15.4	01Jan2017, 13:37	1.17
Pond 50	0.0073	1.5	01Jan2017, 14:59	1.84
Pond 51	0.0721	15.6	01Jan2017, 13:41	1.51
Pond 52	0.0497	4.4	01Jan2017, 14:20	1.29
Pond 53	0.0896	55.0	01Jan2017, 13:38	1.70
Pond 54	0.2164	46.8	01Jan2017, 14:18	1.55
Pond 55	0.0163	4.5	01Jan2017, 13:38	1.04
Pond 56	0.0231	22.9	01Jan2017, 13:31	2.97
Pond 57	0.0112	0.9	01Jan2017, 15:01	1.49
Pond 58	0.0280	2.5	01Jan2017, 14:06	0.89
Pond 6	0.4472	94.5	01Jan2017, 14:17	1.49
Pond 7	0.0064	4.2	01Jan2017, 13:42	3.07

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	11.3	01Jan2017, 13:40	1.42
Pond 9	0.0281	6.5	01Jan2017, 13:49	1.42
RIR0.00	6.5684	1611.4	01Jan2017, 15:12	1.36
RIR0.00A	0.0647	38.5	01Jan2017, 13:56	2.24
RIR0.32	6.5037	1654.6	01Jan2017, 15:00	1.35
RIR0.32A	0.5587	189.3	01Jan2017, 14:02	1.35
RIR0.32_0.00	6.5037	1600.7	01Jan2017, 15:12	1.35
RIR0.65	5.9450	1587.6	01Jan2017, 14:50	1.35
RIR0.65A	0.1896	119.3	01Jan2017, 13:33	1.62
RIR0.65_0.32	5.9450	1574.9	01Jan2017, 15:01	1.35
RIR0.86	5.7554	1579.7	01Jan2017, 14:44	1.34
RIR0.86A	0.2984	117.3	01Jan2017, 13:51	1.35
RIR0.86_0.65	5.7554	1571.1	01Jan2017, 14:50	1.34
RIR1.24	5.4570	1552.3	01Jan2017, 14:38	1.34
RIR1.24A	0.0980	49.2	01Jan2017, 13:33	1.23
RIR1.24_0.86	5.4570	1538.5	01Jan2017, 14:45	1.34
RIR1.34	5.3590	1546.0	01Jan2017, 14:38	1.34
RIR1.52	4.5754	1443.1	01Jan2017, 14:39	1.35
RIR1.62	1.8861	542.5	01Jan2017, 14:38	1.33
RIR1.62A	0.5008	175.2	01Jan2017, 14:03	1.42
RIR2.60	1.3853	437.4	01Jan2017, 14:02	1.30

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	148.0	01Jan2017, 13:40	1.35
RIR2.60_1.62	1.3853	430.1	01Jan2017, 14:44	1.30
RIR3.38	1.0728	375.8	01Jan2017, 13:54	1.29
RIR3.38A	1.0434	372.7	01Jan2017, 13:54	1.29
RIR3.38B	0.0294	15.8	01Jan2017, 13:30	1.23
RIR3.38_2.60	1.0728	370.7	01Jan2017, 14:10	1.29
SHCT0.00	3.0470	550.6	01Jan2017, 14:08	0.72
SHCT0.00A	0.9966	166.1	01Jan2017, 14:00	0.69
SHCT1.59	2.0504	393.6	01Jan2017, 13:55	0.73
SHCT1.59A	2.0504	393.6	01Jan2017, 13:55	0.73
SHCT1.59_0.00	2.0504	393.0	01Jan2017, 14:10	0.73
SHC0.00	6.4942	939.1	01Jan2017, 15:40	0.85
SHC0.00A	0.0458	17.0	01Jan2017, 13:43	1.11
SHC0.23	6.4484	958.6	01Jan2017, 15:28	0.85
SHC0.23A	0.6386	174.5	01Jan2017, 14:28	1.42
SHC0.23_0.00	6.4484	936.4	01Jan2017, 15:40	0.85
SHC1.60	5.8098	984.5	01Jan2017, 14:27	0.80
SHC1.60A	0.2628	110.9	01Jan2017, 13:39	1.17
SHC1.60_0.23	5.8098	857.7	01Jan2017, 15:30	0.79
SHC2.06	5.5470	974.7	01Jan2017, 14:13	0.78
SHC2.06A	0.2828	52.3	01Jan2017, 13:45	0.60

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	960.7	01Jan2017, 14:28	0.78
SHC2.56	5.2642	951.4	01Jan2017, 14:07	0.79
SHC2.56A	0.4506	131.8	01Jan2017, 13:50	1.00
SHC2.56_2.06	5.2642	949.0	01Jan2017, 14:13	0.79
SHC3.11	1.7666	299.2	01Jan2017, 14:07	0.86
SHC3.11A	0.2775	160.5	01Jan2017, 13:33	1.49
SHC3.11_2.56	1.7666	299.0	01Jan2017, 14:11	0.86
SHC3.92	1.4891	264.5	01Jan2017, 14:01	0.75
SHC3.92A	0.6934	113.0	01Jan2017, 13:56	0.64
SHC3.92B	0.7957	155.0	01Jan2017, 14:05	0.84
SHC3.92_3.11	1.4891	264.2	01Jan2017, 14:10	0.75
SRT0.50	2.6893	900.8	01Jan2017, 14:39	1.36
SRT0.50A	0.4294	133.4	01Jan2017, 14:10	1.35
SRT1.29	2.2599	808.9	01Jan2017, 14:23	1.36
SRT1.29A	0.3191	96.4	01Jan2017, 14:08	1.29
SRT1.29_0.50	2.2599	798.7	01Jan2017, 14:41	1.36
SRT2.06	1.9408	729.9	01Jan2017, 14:04	1.37
SRT2.06A	0.4839	189.6	01Jan2017, 13:55	1.42
SRT2.06_1.29	1.9408	720.8	01Jan2017, 14:24	1.37
SRT2.55	1.4569	554.2	01Jan2017, 13:57	1.35
SRT2.55A	0.3465	156.6	01Jan2017, 13:42	1.35

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	551.9	01Jan2017, 14:07	1.35
SRT3.00	1.1104	443.5	01Jan2017, 13:52	1.35
SRT3.00A	0.7468	286.0	01Jan2017, 13:53	1.35
SRT3.00_2.55	1.1104	440.3	01Jan2017, 14:02	1.35
SRT3.38	0.3636	158.0	01Jan2017, 13:45	1.35
SRT3.38A	0.3636	158.0	01Jan2017, 13:45	1.35
SRT3.38_3.00	0.3636	157.6	01Jan2017, 13:51	1.35
SSRTA0.00	0.4007	159.7	01Jan2017, 13:53	1.51
SSRTA0.00A	0.2628	124.9	01Jan2017, 13:47	1.55
SSRTA0.59	0.1379	47.4	01Jan2017, 13:54	1.42
SSRTA0.59A	0.1379	70.6	01Jan2017, 13:38	1.42
SSRTA0.59_0.00	0.1379	46.6	01Jan2017, 14:12	1.42
SSRT0.00	1.3182	509.4	01Jan2017, 14:06	1.46
SSRT0.00A	0.2236	94.6	01Jan2017, 13:49	1.42
SSRT0.46	1.0946	440.8	01Jan2017, 13:51	1.47
SSRT0.46A	0.1893	101.2	01Jan2017, 13:38	1.49
SSRT0.46_0.00	1.0946	432.7	01Jan2017, 14:08	1.47
SSRT0.77	0.9053	373.6	01Jan2017, 13:48	1.46
SSRT0.77A	0.2520	117.9	01Jan2017, 13:46	1.49
SSRT0.77B	0.0603	31.5	01Jan2017, 13:35	1.36
SSRT0.77_0.46	0.9053	372.4	01Jan2017, 13:57	1.46

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	76.6	01Jan2017, 13:38	1.38
SSRT1.34A	0.1112	54.0	01Jan2017, 13:39	1.36
SSRT1.34B	0.0172	10.2	01Jan2017, 13:31	1.42
SSRT1.34C	0.0236	14.0	01Jan2017, 13:31	1.42
SSRT1.34D	0.0122	7.2	01Jan2017, 13:31	1.42
SSRT1.34E	0.0281	15.9	01Jan2017, 13:33	1.42
SSRT1.34_0.77	0.1923	75.8	01Jan2017, 13:50	1.38
SSR0.00	4.8444	1330.5	01Jan2017, 14:35	1.41
SSR0.00A	0.0601	34.9	01Jan2017, 13:32	1.42
SSR0.22	4.7843	1327.2	01Jan2017, 14:32	1.41
SSR0.22A	0.2501	141.3	01Jan2017, 13:41	1.69
SSR0.22_0.00	4.7843	1326.4	01Jan2017, 14:35	1.41
SSR0.85	4.5342	1296.0	01Jan2017, 14:22	1.39
SSR0.85_0.22	4.5342	1292.0	01Jan2017, 14:33	1.39
SSR0.87	3.2160	879.9	01Jan2017, 14:30	1.36
SSR0.87A	0.3806	138.4	01Jan2017, 14:04	1.49
SSR1.06	2.8354	774.4	01Jan2017, 14:28	1.35
SSR1.06A	0.2647	123.8	01Jan2017, 13:46	1.49
SSR1.06_0.87	2.8354	773.0	01Jan2017, 14:33	1.35
SSR1.71	2.5707	732.2	01Jan2017, 14:12	1.33
SSR1.71A	0.3665	145.8	01Jan2017, 14:04	1.62

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	728.7	01Jan2017, 14:30	1.33
SSR1.89	2.2042	593.8	01Jan2017, 14:06	1.28
SSR1.89A	0.3178	153.5	01Jan2017, 13:49	1.62
SSR1.89B	0.0231	23.3	01Jan2017, 13:30	2.97
SSR1.89_1.71	2.2042	590.5	01Jan2017, 14:13	1.28
SSR2.33	1.8633	474.0	01Jan2017, 13:58	1.20
SSR2.33A	0.1750	111.1	01Jan2017, 13:34	1.69
SSR2.33B	0.0381	22.5	01Jan2017, 13:31	1.42
SSR2.33_1.89	1.8633	470.4	01Jan2017, 14:13	1.20
SSR2.70	1.6502	428.9	01Jan2017, 13:52	1.15
SSR2.70A	0.4613	185.3	01Jan2017, 13:50	1.35
SSR2.70B	0.0112	7.0	01Jan2017, 13:30	1.49
SSR2.70C	0.0064	6.5	01Jan2017, 13:30	3.07
SSR2.70D	0.0343	16.5	01Jan2017, 13:33	1.17
SSR2.70E	0.4472	218.5	01Jan2017, 13:43	1.49
SSR2.70_2.33	1.6502	427.4	01Jan2017, 14:01	1.15
SSR3.20	0.6898	143.1	01Jan2017, 13:47	0.76
SSR3.20A	0.1108	45.3	01Jan2017, 13:40	1.17
SSR3.20B	0.2023	91.1	01Jan2017, 13:35	1.17
SSR3.20_2.70	0.6898	142.8	01Jan2017, 13:54	0.76
SSR3.70	0.3767	63.7	01Jan2017, 13:40	0.48

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	63.7	01Jan2017, 13:40	0.94
SSR3.70B	0.1861	59.9	01Jan2017, 13:36	0.84
SSR3.70_3.20	0.3767	63.4	01Jan2017, 13:49	0.48
WOR0.00	2.8951	709.0	01Jan2017, 15:02	1.32
WOR0.00A	0.0359	19.4	01Jan2017, 13:33	1.36
WOR0.32	2.8592	708.2	01Jan2017, 14:54	1.32
WOR0.32A	0.1901	61.3	01Jan2017, 13:58	1.23
WOR0.32_0.00	2.8592	706.3	01Jan2017, 15:02	1.32
WOR0.76	2.6691	735.3	01Jan2017, 14:30	1.32
WOR0.76A	0.3131	166.0	01Jan2017, 13:40	1.55
WOR0.76_0.32	2.6691	683.7	01Jan2017, 14:55	1.32
WOR1.59	2.3560	710.9	01Jan2017, 14:13	1.29
WOR1.59A	0.4536	207.6	01Jan2017, 13:50	1.55
WOR1.59B	0.7600	221.5	01Jan2017, 14:11	1.29
WOR1.59_0.76	2.3560	696.3	01Jan2017, 14:32	1.28
WOR1.64	1.1424	352.0	01Jan2017, 14:19	1.18
WOR1.64A	0.2551	110.7	01Jan2017, 13:51	1.49
WOR2.33	0.8873	312.6	01Jan2017, 13:46	1.09
WOR2.33A	0.3233	118.2	01Jan2017, 13:47	1.17
WOR2.33_1.64	0.8873	284.3	01Jan2017, 14:22	1.09
WOR3.00	0.5640	194.6	01Jan2017, 13:45	1.04

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	151.0	01Jan2017, 13:46	1.35
WOR3.67	0.2110	43.8	01Jan2017, 13:34	0.51
WOR3.67A	0.2110	43.8	01Jan2017, 13:34	0.51
WOR3.67_3.00	0.2110	43.6	01Jan2017, 13:45	0.51

Project: ChiquesCreek Simulation Run: 10YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 10YR_24HR
Compute Time: 31Jan2017, 15:23:55 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	500.6	01Jan2017, 14:53	1.42
BER0.00A	0.1087	59.5	01Jan2017, 13:50	1.91
BER0.64	1.7391	514.6	01Jan2017, 14:18	1.38
BER0.64A	0.3111	200.8	01Jan2017, 13:41	1.98
BER0.64_0.00	1.7391	484.0	01Jan2017, 14:54	1.39
BER1.05	1.4280	468.9	01Jan2017, 14:00	1.24
BER1.05A	0.2790	147.4	01Jan2017, 13:52	1.91
BER1.05_0.64	1.4280	443.3	01Jan2017, 14:22	1.24
BER1.30	1.1490	329.8	01Jan2017, 13:58	1.08
BER1.30A	0.5289	209.5	01Jan2017, 13:54	1.47
BER1.30_1.05	1.1490	328.3	01Jan2017, 14:02	1.08
BER1.95	0.6201	124.3	01Jan2017, 13:51	0.75
BER1.95A	0.6201	124.3	01Jan2017, 13:51	0.75
BER1.95_1.30	0.6201	123.5	01Jan2017, 14:01	0.75
BOR0.00	6.6030	1909.5	01Jan2017, 14:53	1.55
BOR0.00A	0.0062	4.8	01Jan2017, 13:31	1.98
BOR0.10	6.5968	1990.3	01Jan2017, 14:49	1.55

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	112.0	01Jan2017, 14:00	1.91
BOR0.10_0.00	6.5968	1908.9	01Jan2017, 14:53	1.55
BOR0.68	1.6208	463.6	01Jan2017, 14:16	1.22
BOR0.68A	0.2555	135.0	01Jan2017, 13:52	1.91
BOR0.68_0.10	1.6208	453.6	01Jan2017, 14:41	1.22
BOR1.20	1.3653	375.1	01Jan2017, 14:01	1.09
BOR1.20A	0.5429	203.9	01Jan2017, 14:06	1.61
BOR1.20_0.68	1.3653	367.9	01Jan2017, 14:21	1.09
BOR2.07	0.8224	175.4	01Jan2017, 13:47	0.75
BOR2.07A	0.8224	175.4	01Jan2017, 13:47	0.75
BOR2.07_1.20	0.8224	174.4	01Jan2017, 13:59	0.75
CHC10.68	50.2637	4277.6	01Jan2017, 21:02	1.72
CHC10.68A	0.7377	426.1	01Jan2017, 13:56	2.22
CHC10.68B	0.0477	31.4	01Jan2017, 13:47	2.22
CHC10.68C	0.1180	66.3	01Jan2017, 13:53	2.06
CHC10.68D	0.1638	109.6	01Jan2017, 14:06	2.92
CHC10.68E	0.0528	50.5	01Jan2017, 13:35	2.92
CHC10.68_9.40	50.2637	4253.9	01Jan2017, 21:33	1.71
CHC11.99	49.1437	4243.2	01Jan2017, 20:25	1.72
CHC11.99_10.68	49.1437	4220.2	01Jan2017, 21:03	1.71
CHC12.01	46.4709	4120.8	01Jan2017, 20:31	1.69

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	106.2	01Jan2017, 13:32	1.98
CHC12.65	46.3306	4276.9	01Jan2017, 20:02	1.70
CHC12.65_12.01	46.3306	4116.6	01Jan2017, 20:31	1.69
CHC12.67	45.3853	4227.1	01Jan2017, 20:03	1.69
CHC12.67A	0.5547	174.6	01Jan2017, 14:58	2.06
CHC13.89	44.8306	4247.7	01Jan2017, 19:26	1.70
CHC13.89_12.67	44.8306	4194.1	01Jan2017, 20:04	1.69
CHC13.90	41.9107	4053.3	01Jan2017, 19:29	1.68
CHC13.90A	2.4712	325.0	01Jan2017, 19:09	1.96
CHC16.25	39.4395	4102.6	01Jan2017, 17:40	1.69
CHC16.25A	0.7783	230.3	01Jan2017, 15:08	2.06
CHC16.25_13.90	39.4395	3730.1	01Jan2017, 19:30	1.67
CHC17.08	38.6612	4163.9	01Jan2017, 17:00	1.69
CHC17.08A	0.5852	239.6	01Jan2017, 14:27	2.14
CHC17.08B	0.3448	278.1	01Jan2017, 13:59	3.41
CHC17.08_16.25	38.6612	4009.8	01Jan2017, 17:41	1.69
CHC17.73	37.7312	4140.4	01Jan2017, 16:33	1.68
CHC17.73A	0.3870	196.6	01Jan2017, 14:08	2.22
CHC17.73B	0.0626	69.2	01Jan2017, 13:35	3.62
CHC17.73_17.08	37.7312	4046.9	01Jan2017, 17:03	1.68
CHC18.09	37.2816	4174.7	01Jan2017, 16:16	1.67

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	78.0	01Jan2017, 13:49	1.61
CHC18.09_17.73	37.2816	4093.4	01Jan2017, 16:34	1.67
CHC18.61	36.6951	4246.5	01Jan2017, 15:55	1.67
CHC18.61A	0.5761	313.3	01Jan2017, 13:42	1.68
CHC18.61_18.09	36.6951	4130.3	01Jan2017, 16:16	1.67
CHC19.32	36.1190	4468.8	01Jan2017, 15:17	1.68
CHC19.32_18.61	36.1190	4201.1	01Jan2017, 15:55	1.67
CHC19.35	29.5506	2738.2	01Jan2017, 16:02	1.64
CHC19.35A	0.3523	165.9	01Jan2017, 14:16	2.22
CHC19.35B	0.0175	18.3	01Jan2017, 13:32	3.11
CHC1.28	63.3656	4259.4	02Jan2017, 01:57	1.63
CHC1.28A	0.8402	158.6	01Jan2017, 16:09	1.75
CHC20.02	29.1808	2763.4	01Jan2017, 15:36	1.63
CHC20.02A	0.3588	239.3	01Jan2017, 13:55	2.56
CHC20.02_19.35	29.1808	2713.0	01Jan2017, 19:37	1.63
CHC20.55	28.8220	2888.6	01Jan2017, 15:09	1.63
CHC20.55_20.02	28.8220	2711.4	01Jan2017, 15:37	1.62
CHC20.57	23.2797	2365.4	01Jan2017, 20:22	1.56
CHC20.57A	0.5512	243.9	01Jan2017, 14:48	2.74
CHC21.28	22.7285	2347.4	01Jan2017, 19:44	1.53
CHC21.28A	0.3509	234.2	01Jan2017, 14:03	2.83

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	20.8	01Jan2017, 13:30	3.31
CHC21.28C	0.0073	4.3	01Jan2017, 14:01	2.39
CHC21.28D	0.0224	20.7	01Jan2017, 13:31	2.56
CHC21.28E	0.0497	32.4	01Jan2017, 13:34	1.76
CHC21.28F	0.1457	106.5	01Jan2017, 13:33	1.98
CHC21.28_20.57	22.7285	2331.7	01Jan2017, 20:26	1.53
CHC21.59	22.1338	2330.2	01Jan2017, 19:34	1.50
CHC21.59A	0.2001	120.6	01Jan2017, 13:53	2.22
CHC21.59B	0.0256	25.9	01Jan2017, 13:33	3.02
CHC21.59C	0.0275	27.3	01Jan2017, 13:31	2.83
CHC21.59D	0.0896	71.9	01Jan2017, 13:33	2.22
CHC21.59_21.28	22.1338	2315.6	01Jan2017, 19:46	1.50
CHC22.01	21.7910	2352.6	01Jan2017, 16:51	1.49
CHC22.01A	1.2726	936.6	01Jan2017, 13:31	1.90
CHC22.01B	0.0456	41.1	01Jan2017, 13:30	2.39
CHC22.01_21.59	21.7910	2310.5	01Jan2017, 19:35	1.49
CHC23.04	20.4728	2326.2	01Jan2017, 16:06	1.46
CHC23.04A	1.8763	511.0	01Jan2017, 15:01	1.82
CHC23.04B	0.2164	141.2	01Jan2017, 13:43	2.06
CHC23.04_22.01	20.4728	2283.2	01Jan2017, 19:19	1.47
CHC24.53	18.3801	2255.6	01Jan2017, 17:34	1.43

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	2154.7	01Jan2017, 18:41	1.42
CHC24.63	18.3801	2255.6	01Jan2017, 17:34	1.43
CHC24.64	11.7771	1773.1	01Jan2017, 17:43	1.36
CHC24.64A	0.2517	63.0	01Jan2017, 14:40	1.47
CHC25.53	11.5254	2005.5	01Jan2017, 16:47	1.36
CHC25.53A	0.6693	284.1	01Jan2017, 14:07	1.83
CHC25.53B	0.0163	10.7	01Jan2017, 13:31	1.61
CHC25.53_24.64	11.5254	1755.1	01Jan2017, 17:43	1.36
CHC26.30	10.8398	1996.3	01Jan2017, 16:17	1.33
CHC26.30A	0.8065	183.3	01Jan2017, 15:26	1.75
CHC26.30_25.53	10.8398	1949.0	01Jan2017, 16:48	1.33
CHC27.38	10.0333	2083.5	01Jan2017, 15:25	1.30
CHC27.38_26.30	10.0333	1842.5	01Jan2017, 16:19	1.29
CHC27.39	3.5391	732.8	01Jan2017, 14:54	1.41
CHC27.39A	0.3314	154.4	01Jan2017, 13:59	1.83
CHC28.26	3.2077	737.5	01Jan2017, 14:01	1.38
CHC28.26_27.39	3.2077	668.4	01Jan2017, 14:56	1.37
CHC28.31	3.2077	737.5	01Jan2017, 14:01	1.38
CHC28.31A	0.0950	61.2	01Jan2017, 13:37	1.83
CHC28.31B	0.7915	356.5	01Jan2017, 13:58	1.75
CHC28.67	2.3212	459.6	01Jan2017, 15:16	1.23

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	197.4	01Jan2017, 14:01	1.21
CHC28.67_28.31	2.3212	458.5	01Jan2017, 15:27	1.23
CHC29.91	1.6558	400.8	01Jan2017, 14:33	1.24
CHC29.91A	0.6097	169.4	01Jan2017, 13:57	1.09
CHC29.91_28.67	1.6558	395.4	01Jan2017, 15:19	1.24
CHC30.94	1.0461	313.7	01Jan2017, 14:09	1.34
CHC30.94A	1.0461	313.7	01Jan2017, 14:09	1.34
CHC30.94_29.91	1.0461	311.0	01Jan2017, 14:40	1.33
CHC3.39	62.5254	4253.1	02Jan2017, 00:54	1.65
CHC3.39A	1.8419	820.5	01Jan2017, 13:55	1.68
CHC3.39_1.28	62.5254	4238.7	02Jan2017, 01:58	1.63
CHC4.62	60.6835	4516.9	01Jan2017, 23:48	1.71
CHC4.62A	0.1505	99.4	01Jan2017, 13:37	1.91
CHC4.62B	0.1946	124.3	01Jan2017, 13:39	1.91
CHC4.62_3.39	60.6835	4215.5	02Jan2017, 00:56	1.65
CHC4.97	60.3384	4539.6	01Jan2017, 23:31	1.71
CHC4.97A	0.4693	147.9	01Jan2017, 14:35	1.75
CHC4.97B	0.0580	41.9	01Jan2017, 13:38	2.14
CHC4.97C	0.2012	132.8	01Jan2017, 13:33	1.76
CHC4.97_4.62	60.3384	4509.1	01Jan2017, 23:48	1.71
CHC5.97	59.6099	4530.4	01Jan2017, 23:12	1.72

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	509.8	01Jan2017, 14:08	1.98
CHC5.97_4.97	59.6099	4520.8	01Jan2017, 23:32	1.71
CHC7.47	58.4785	4531.6	01Jan2017, 22:27	1.73
CHC7.47_5.97	58.4785	4501.2	01Jan2017, 23:13	1.72
CHC7.48	53.6341	4395.2	01Jan2017, 22:30	1.71
CHC7.48A	2.2128	328.0	01Jan2017, 18:13	1.97
CHC9.40	51.4213	4291.3	01Jan2017, 21:32	1.72
CHC9.40A	1.1576	464.0	01Jan2017, 14:21	1.98
CHC9.40_7.47	51.4213	4220.8	01Jan2017, 22:36	1.70
DER0.00	2.9199	980.3	01Jan2017, 15:13	1.90
DER0.00A	0.1924	127.0	01Jan2017, 13:37	1.91
DER0.52	2.7275	967.4	01Jan2017, 14:58	1.90
DER0.52A	0.5165	301.6	01Jan2017, 13:50	2.06
DER0.52_0.00	2.7275	961.3	01Jan2017, 15:13	1.90
DER1.10	2.2110	903.9	01Jan2017, 14:34	1.86
DER1.10A	0.3712	209.7	01Jan2017, 13:53	2.06
DER1.10_0.52	2.2110	887.1	01Jan2017, 14:59	1.86
DER1.76	1.8398	807.9	01Jan2017, 14:16	1.81
DER1.76A	0.5078	231.4	01Jan2017, 13:54	1.68
DER1.76_1.10	1.8398	802.9	01Jan2017, 14:37	1.82
DER2.22	1.3320	639.3	01Jan2017, 14:08	1.86

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	302.8	01Jan2017, 14:04	1.75
DER2.22_1.76	1.3320	635.7	01Jan2017, 14:21	1.86
DER2.93	0.6085	341.3	01Jan2017, 13:50	1.98
DER2.93A	0.6085	341.3	01Jan2017, 13:50	1.98
DER2.93_2.22	0.6085	338.5	01Jan2017, 14:09	1.98
DORT0.34	1.6920	717.4	01Jan2017, 14:03	1.95
DORT0.34A	0.0357	26.0	01Jan2017, 13:32	1.91
DORT0.34B	0.0234	16.5	01Jan2017, 13:32	1.83
DORT0.54	1.6329	707.8	01Jan2017, 13:59	1.96
DORT0.54A	0.2058	125.8	01Jan2017, 13:45	1.98
DORT0.54B	0.0280	13.9	01Jan2017, 13:34	1.27
DORT0.54C	0.0058	5.2	01Jan2017, 13:33	2.56
DORT0.54D	0.0832	49.6	01Jan2017, 13:51	2.14
DORT0.54E	0.0367	27.6	01Jan2017, 13:31	1.91
DORT0.54_0.34	1.6329	705.2	01Jan2017, 14:03	1.96
DORT1.15	1.2734	586.6	01Jan2017, 13:46	1.95
DORT1.15A	0.4022	276.4	01Jan2017, 13:39	2.06
DORT1.15B	0.0103	11.6	01Jan2017, 13:30	3.41
DORT1.15_0.54	1.2734	582.1	01Jan2017, 14:03	1.95
DORT1.58	0.8609	394.5	01Jan2017, 14:11	1.89
DORT1.58A	0.4931	277.2	01Jan2017, 13:48	1.90

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	385.1	01Jan2017, 14:25	1.88
DORT2.41	0.3678	217.9	01Jan2017, 13:42	1.88
DORT2.41A	0.2384	145.4	01Jan2017, 13:40	1.83
DORT2.41B	0.1294	86.4	01Jan2017, 13:39	1.98
DORT2.41_1.58	0.3678	212.8	01Jan2017, 14:18	1.86
DOR0.00	5.5423	1728.7	01Jan2017, 15:12	1.92
DOR0.00A	0.0475	36.4	01Jan2017, 13:40	2.39
DOR0.24	5.4948	1730.7	01Jan2017, 15:06	1.92
DOR0.24A	0.1218	83.6	01Jan2017, 13:41	2.14
DOR0.24B	0.1287	82.3	01Jan2017, 13:49	2.22
DOR0.24_0.00	5.4948	1723.0	01Jan2017, 15:12	1.92
DOR0.44A	0.5212	284.6	01Jan2017, 13:58	2.14
DOR0.44_0.24	5.2443	1684.0	01Jan2017, 15:07	1.91
DOR1.21	4.7231	1617.6	01Jan2017, 14:32	1.88
DOR1.21A	0.2430	118.8	01Jan2017, 14:08	2.14
DOR1.21B	0.2037	139.2	01Jan2017, 13:39	2.06
DOR1.21_0.44	4.7231	1586.3	01Jan2017, 15:04	1.88
DOR1.23	4.2764	1519.0	01Jan2017, 14:35	1.96
DOR1.23A	0.2095	138.5	01Jan2017, 13:46	2.22
DOR1.45	4.0669	1477.3	01Jan2017, 14:28	1.94
DOR1.45_1.23	4.0669	1472.3	01Jan2017, 14:37	1.94

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	919.8	01Jan2017, 14:36	1.94
DOR1.60A	0.5501	315.2	01Jan2017, 13:49	1.98
DOR2.40	1.8248	816.0	01Jan2017, 14:14	1.92
DOR2.40A	0.4594	234.6	01Jan2017, 13:58	1.98
DOR2.40_1.60	1.8248	802.7	01Jan2017, 14:40	1.92
DOR2.81	1.3654	620.1	01Jan2017, 14:03	1.90
DOR2.81A	0.2367	142.9	01Jan2017, 13:50	2.14
DOR2.81_2.40	1.3654	613.4	01Jan2017, 14:18	1.90
DOR3.06	1.1287	495.9	01Jan2017, 13:58	1.85
DOR3.06A	0.3648	205.2	01Jan2017, 13:48	1.90
DOR3.06B	0.7639	320.0	01Jan2017, 14:08	1.83
DOR3.06_2.81	1.1287	494.5	01Jan2017, 14:07	1.85
DOR.44	5.2443	1690.2	01Jan2017, 15:00	1.91
ERRR0.57_0.00	1.1576	609.0	01Jan2017, 14:19	2.16
ERRT0.00	1.2906	669.1	01Jan2017, 14:18	2.22
ERRT0.00A	0.1098	81.7	01Jan2017, 13:49	2.65
ERRT0.00B	0.0077	8.1	01Jan2017, 13:30	2.92
ERRT0.00C	0.0074	8.6	01Jan2017, 13:30	3.62
ERRT0.00D	0.0036	4.2	01Jan2017, 13:30	3.62
ERRT0.00E	0.0045	5.2	01Jan2017, 13:30	3.62
ERRT0.57	1.1576	613.8	01Jan2017, 14:06	2.16

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	108.1	01Jan2017, 14:34	2.14
ERRT0.61	0.8788	524.8	01Jan2017, 14:05	2.16
ERRT0.61A	0.4551	242.5	01Jan2017, 14:03	2.22
ERRT1.62	0.4237	293.3	01Jan2017, 13:35	2.10
ERRT1.62A	0.1546	91.5	01Jan2017, 13:44	1.91
ERRT1.62B	0.2547	207.1	01Jan2017, 13:31	2.14
ERRT1.62C	0.0144	16.8	01Jan2017, 13:30	3.62
ERRT1.62_0.61	0.4237	282.5	01Jan2017, 14:05	2.10
ERR0.00	2.6728	1307.4	01Jan2017, 14:22	2.12
ERR0.00A	0.0718	46.9	01Jan2017, 13:36	1.83
ERR0.00B	0.0053	6.2	01Jan2017, 13:30	3.62
ERR0.23	2.5957	1303.5	01Jan2017, 14:17	2.12
ERR0.23A	0.1922	120.3	01Jan2017, 13:41	1.91
ERR0.23B	0.0298	33.1	01Jan2017, 13:30	3.31
ERR0.23_0.00	2.5957	1296.4	01Jan2017, 14:22	2.12
ERR0.26	1.3051	635.6	01Jan2017, 14:15	2.03
ERR0.88	1.0831	576.5	01Jan2017, 14:02	2.02
ERR0.88A	0.5048	239.5	01Jan2017, 14:08	2.06
ERR0.88_0.23	1.0831	572.7	01Jan2017, 14:18	2.02
ERR1.33	0.5783	343.0	01Jan2017, 13:47	1.98
ERR1.33A	0.5783	343.0	01Jan2017, 13:47	1.98

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	340.6	01Jan2017, 14:00	1.98
LAR0.00	0.9453	339.1	01Jan2017, 14:28	2.12
LAR0.00A	0.5827	215.8	01Jan2017, 14:40	2.14
LAR0.40	0.3626	135.0	01Jan2017, 14:12	2.08
LAR0.40A	0.0039	4.6	01Jan2017, 13:30	3.72
LAR0.40B	0.1091	107.3	01Jan2017, 13:40	3.31
LAR0.40C	0.1251	85.3	01Jan2017, 13:42	2.14
LAR0.40D	0.1245	79.5	01Jan2017, 13:39	1.91
LAR0.40_0.00	0.3626	134.9	01Jan2017, 14:16	2.08
MRT0.00	0.4202	241.0	01Jan2017, 13:44	1.90
MRT0.00A	0.1647	97.0	01Jan2017, 13:42	1.83
MRT0.66	0.2555	152.0	01Jan2017, 13:33	1.95
MRT0.66A	0.2030	149.2	01Jan2017, 13:33	1.98
MRT0.66B	0.0376	30.0	01Jan2017, 13:31	2.06
MRT0.66C	0.0149	12.7	01Jan2017, 13:32	2.30
MRT0.66_0.00	0.2555	144.9	01Jan2017, 13:46	1.94
ORT0.28	0.7836	400.4	01Jan2017, 13:57	1.76
ORT0.28A	0.1786	101.0	01Jan2017, 13:40	1.68
ORT0.95	0.6050	340.6	01Jan2017, 13:41	1.79
ORT0.95A	0.1851	113.9	01Jan2017, 13:35	1.68
ORT0.95_0.28	0.6050	335.4	01Jan2017, 14:02	1.79

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	250.5	01Jan2017, 13:40	1.84
ORT1.38A	0.1910	119.9	01Jan2017, 13:36	1.76
ORT1.38_0.95	0.4199	249.4	01Jan2017, 13:49	1.84
ORT2.04	0.2289	143.2	01Jan2017, 13:41	1.91
ORT2.04A	0.2289	143.2	01Jan2017, 13:41	1.91
ORT2.04_1.38	0.2289	142.9	01Jan2017, 13:49	1.91
Pond 0	0.1946	101.0	01Jan2017, 13:52	1.91
Pond 1	0.2012	132.8	01Jan2017, 13:34	1.75
Pond 10	0.0122	0.7	01Jan2017, 17:05	1.91
Pond 11	0.0236	14.8	01Jan2017, 13:35	1.91
Pond 12	0.0172	4.5	01Jan2017, 13:44	1.91
Pond 13	0.0603	34.4	01Jan2017, 13:42	1.83
Pond 14	0.1379	72.9	01Jan2017, 13:49	1.91
Pond 15	0.0477	8.2	01Jan2017, 14:48	2.22
Pond 16	0.3346	77.0	01Jan2017, 14:27	2.46
Pond 17	0.0528	14.1	01Jan2017, 14:16	2.92
Pond 18	0.1638	25.9	01Jan2017, 16:01	2.92
Pond 19	0.0053	4.8	01Jan2017, 13:37	3.62
Pond 2	0.0580	5.8	01Jan2017, 15:29	1.94
Pond 20	0.0077	5.6	01Jan2017, 13:32	2.92
Pond 21	0.0298	32.9	01Jan2017, 13:31	3.31

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	7.6	01Jan2017, 13:33	3.16
Pond 23	0.0036	4.2	01Jan2017, 13:30	3.62
Pond 24	0.0045	2.3	01Jan2017, 13:38	3.62
Pond 25	0.2547	200.5	01Jan2017, 13:34	2.14
Pond 26	0.0144	7.9	01Jan2017, 13:37	3.62
Pond 27	0.1245	52.8	01Jan2017, 13:58	1.90
Pond 28	0.1251	60.3	01Jan2017, 14:01	1.99
Pond 29	0.1091	30.6	01Jan2017, 14:31	2.39
Pond 3	0.1861	0.0	01Jan2017, 01:00	0.00
Pond 30	0.0039	1.3	01Jan2017, 13:37	2.38
Pond 31	0.3448	84.1	01Jan2017, 15:19	2.68
Pond 32	0.0626	51.5	01Jan2017, 13:52	3.62
Pond 33	0.0149	1.3	01Jan2017, 16:03	2.30
Pond 34	0.0376	2.2	01Jan2017, 17:36	1.64
Pond 35	0.0294	18.8	01Jan2017, 13:32	1.68
Pond 36	0.0175	18.3	01Jan2017, 13:33	3.11
Pond 37	0.1287	49.8	01Jan2017, 14:19	2.22
Pond 38	0.2037	0.0	01Jan2017, 01:00	0.00
Pond 39	0.0234	12.5	01Jan2017, 13:40	1.83
Pond 4	0.2023	65.1	01Jan2017, 13:52	1.51
Pond 40	0.0832	5.9	01Jan2017, 17:21	2.13

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	2.4	01Jan2017, 13:53	2.56
Pond 42	0.0367	20.3	01Jan2017, 13:36	1.91
Pond 43	0.0103	10.7	01Jan2017, 13:34	3.41
Pond 44	0.1294	76.3	01Jan2017, 13:49	1.97
Pond 45	0.1457	100.3	01Jan2017, 13:38	1.98
Pond 46	0.0187	14.1	01Jan2017, 13:36	3.31
Pond 47	0.0275	2.2	01Jan2017, 16:49	2.83
Pond 48	0.0456	3.8	01Jan2017, 16:06	1.76
Pond 49	0.0256	25.9	01Jan2017, 13:34	3.02
Pond 5	0.0343	20.6	01Jan2017, 13:36	1.61
Pond 50	0.0073	3.1	01Jan2017, 14:33	2.39
Pond 51	0.0721	23.0	01Jan2017, 13:37	2.01
Pond 52	0.0497	4.9	01Jan2017, 14:27	1.76
Pond 53	0.0896	70.4	01Jan2017, 13:37	2.22
Pond 54	0.2164	59.2	01Jan2017, 14:19	2.05
Pond 55	0.0163	5.1	01Jan2017, 13:40	1.48
Pond 56	0.0231	26.6	01Jan2017, 13:31	3.62
Pond 57	0.0112	1.0	01Jan2017, 15:13	1.98
Pond 58	0.0280	4.9	01Jan2017, 13:56	1.27
Pond 6	0.4472	110.4	01Jan2017, 14:20	1.98
Pond 7	0.0064	4.5	01Jan2017, 13:43	3.71

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	19.9	01Jan2017, 13:37	1.91
Pond 9	0.0281	7.1	01Jan2017, 13:52	1.91
RIR0.00	6.5684	2277.7	01Jan2017, 15:02	1.83
RIR0.00A	0.0647	47.3	01Jan2017, 13:55	2.83
RIR0.32	6.5037	2335.1	01Jan2017, 14:50	1.82
RIR0.32A	0.5587	253.1	01Jan2017, 14:01	1.83
RIR0.32_0.00	6.5037	2262.3	01Jan2017, 15:02	1.82
RIR0.65	5.9450	2225.8	01Jan2017, 14:41	1.82
RIR0.65A	0.1896	149.4	01Jan2017, 13:33	2.14
RIR0.65_0.32	5.9450	2209.4	01Jan2017, 14:51	1.82
RIR0.86	5.7554	2218.7	01Jan2017, 14:35	1.81
RIR0.86A	0.2984	155.4	01Jan2017, 13:50	1.83
RIR0.86_0.65	5.7554	2206.8	01Jan2017, 14:41	1.81
RIR1.24	5.4570	2190.8	01Jan2017, 14:28	1.81
RIR1.24A	0.0980	63.8	01Jan2017, 13:32	1.68
RIR1.24_0.86	5.4570	2153.2	01Jan2017, 14:36	1.81
RIR1.34	5.3590	2182.6	01Jan2017, 14:28	1.81
RIR1.52	4.5754	1977.1	01Jan2017, 14:31	1.82
RIR1.62	1.8861	755.1	01Jan2017, 14:29	1.81
RIR1.62A	0.5008	232.5	01Jan2017, 14:02	1.90
RIR2.60	1.3853	589.5	01Jan2017, 14:00	1.77

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	193.1	01Jan2017, 13:39	1.83
RIR2.60_1.62	1.3853	581.9	01Jan2017, 14:36	1.77
RIR3.38	1.0728	504.0	01Jan2017, 13:53	1.75
RIR3.38A	1.0434	499.6	01Jan2017, 13:53	1.75
RIR3.38B	0.0294	20.3	01Jan2017, 13:30	1.68
RIR3.38_2.60	1.0728	496.9	01Jan2017, 14:10	1.75
SHCT0.00	3.0470	838.2	01Jan2017, 14:05	1.06
SHCT0.00A	0.9966	255.6	01Jan2017, 13:58	1.02
SHCT1.59	2.0504	592.8	01Jan2017, 13:53	1.08
SHCT1.59A	2.0504	592.8	01Jan2017, 13:53	1.08
SHCT1.59_0.00	2.0504	592.2	01Jan2017, 14:07	1.08
SHC0.00	6.4942	1439.5	01Jan2017, 15:28	1.23
SHC0.00A	0.0458	23.0	01Jan2017, 13:42	1.54
SHC0.23	6.4484	1491.7	01Jan2017, 15:16	1.23
SHC0.23A	0.6386	233.8	01Jan2017, 14:27	1.90
SHC0.23_0.00	6.4484	1435.7	01Jan2017, 15:28	1.23
SHC1.60	5.8098	1498.6	01Jan2017, 14:22	1.16
SHC1.60A	0.2628	147.7	01Jan2017, 13:38	1.61
SHC1.60_0.23	5.8098	1336.6	01Jan2017, 15:18	1.16
SHC2.06	5.5470	1478.9	01Jan2017, 14:10	1.14
SHC2.06A	0.2828	81.2	01Jan2017, 13:44	0.91

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	1461.9	01Jan2017, 14:22	1.14
SHC2.56	5.2642	1440.9	01Jan2017, 14:04	1.15
SHC2.56A	0.4506	184.6	01Jan2017, 13:49	1.40
SHC2.56_2.06	5.2642	1436.4	01Jan2017, 14:10	1.15
SHC3.11	1.7666	450.7	01Jan2017, 14:04	1.23
SHC3.11A	0.2775	203.8	01Jan2017, 13:33	1.98
SHC3.11_2.56	1.7666	450.6	01Jan2017, 14:08	1.23
SHC3.92	1.4891	400.1	01Jan2017, 13:59	1.10
SHC3.92A	0.6934	176.2	01Jan2017, 13:54	0.97
SHC3.92B	0.7957	228.9	01Jan2017, 14:03	1.21
SHC3.92_3.11	1.4891	399.7	01Jan2017, 14:07	1.10
SRT0.50	2.6893	1224.6	01Jan2017, 14:32	1.84
SRT0.50A	0.4294	179.1	01Jan2017, 14:09	1.83
SRT1.29	2.2599	1086.3	01Jan2017, 14:19	1.84
SRT1.29A	0.3191	130.5	01Jan2017, 14:07	1.76
SRT1.29_0.50	2.2599	1075.7	01Jan2017, 14:34	1.84
SRT2.06	1.9408	972.7	01Jan2017, 14:02	1.85
SRT2.06A	0.4839	250.1	01Jan2017, 13:54	1.90
SRT2.06_1.29	1.9408	963.0	01Jan2017, 14:20	1.85
SRT2.55	1.4569	737.1	01Jan2017, 13:56	1.83
SRT2.55A	0.3465	205.3	01Jan2017, 13:42	1.83

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	734.4	01Jan2017, 14:05	1.83
SRT3.00	1.1104	586.6	01Jan2017, 13:52	1.83
SRT3.00A	0.7468	379.7	01Jan2017, 13:52	1.83
SRT3.00_2.55	1.1104	583.4	01Jan2017, 14:02	1.83
SRT3.38	0.3636	207.8	01Jan2017, 13:44	1.83
SRT3.38A	0.3636	207.8	01Jan2017, 13:44	1.83
SRT3.38_3.00	0.3636	207.1	01Jan2017, 13:53	1.83
SSRTA0.00	0.4007	207.6	01Jan2017, 13:51	2.01
SSRTA0.00A	0.2628	161.3	01Jan2017, 13:47	2.06
SSRTA0.59	0.1379	72.9	01Jan2017, 13:49	1.91
SSRTA0.59A	0.1379	91.1	01Jan2017, 13:37	1.91
SSRTA0.59_0.00	0.1379	71.2	01Jan2017, 14:12	1.90
SSRT0.00	1.3182	668.0	01Jan2017, 14:02	1.95
SSRT0.00A	0.2236	124.1	01Jan2017, 13:49	1.91
SSRT0.46	1.0946	570.5	01Jan2017, 13:49	1.96
SSRT0.46A	0.1893	129.7	01Jan2017, 13:37	1.98
SSRT0.46_0.00	1.0946	561.9	01Jan2017, 14:05	1.96
SSRT0.77	0.9053	479.8	01Jan2017, 13:48	1.96
SSRT0.77A	0.2520	153.0	01Jan2017, 13:45	1.98
SSRT0.77B	0.0603	40.6	01Jan2017, 13:34	1.83
SSRT0.77_0.46	0.9053	478.7	01Jan2017, 13:56	1.96

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	97.0	01Jan2017, 13:37	1.86
SSRT1.34A	0.1112	70.2	01Jan2017, 13:38	1.83
SSRT1.34B	0.0172	12.9	01Jan2017, 13:31	1.91
SSRT1.34C	0.0236	17.7	01Jan2017, 13:31	1.91
SSRT1.34D	0.0122	9.1	01Jan2017, 13:31	1.91
SSRT1.34E	0.0281	20.3	01Jan2017, 13:32	1.91
SSRT1.34_0.77	0.1923	94.8	01Jan2017, 13:59	1.86
SSR0.00	4.8444	1834.7	01Jan2017, 14:31	1.88
SSR0.00A	0.0601	44.3	01Jan2017, 13:31	1.91
SSR0.22	4.7843	1831.4	01Jan2017, 14:28	1.88
SSR0.22A	0.2501	178.8	01Jan2017, 13:41	2.22
SSR0.22_0.00	4.7843	1829.5	01Jan2017, 14:31	1.88
SSR0.85	4.5342	1788.7	01Jan2017, 14:19	1.86
SSR0.85_0.22	4.5342	1780.9	01Jan2017, 14:29	1.86
SSR0.87	3.2160	1209.3	01Jan2017, 14:24	1.82
SSR0.87A	0.3806	182.2	01Jan2017, 14:03	1.98
SSR1.06	2.8354	1057.0	01Jan2017, 14:21	1.80
SSR1.06A	0.2647	160.6	01Jan2017, 13:45	1.98
SSR1.06_0.87	2.8354	1055.0	01Jan2017, 14:26	1.80
SSR1.71	2.5707	990.7	01Jan2017, 14:07	1.78
SSR1.71A	0.3665	189.1	01Jan2017, 14:03	2.14

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	985.7	01Jan2017, 14:23	1.78
SSR1.89	2.2042	807.8	01Jan2017, 14:01	1.72
SSR1.89A	0.3178	197.0	01Jan2017, 13:48	2.14
SSR1.89B	0.0231	26.9	01Jan2017, 13:30	3.62
SSR1.89_1.71	2.2042	802.8	01Jan2017, 14:08	1.72
SSR2.33	1.8633	634.9	01Jan2017, 13:55	1.63
SSR2.33A	0.1750	138.9	01Jan2017, 13:34	2.22
SSR2.33B	0.0381	28.5	01Jan2017, 13:31	1.91
SSR2.33_1.89	1.8633	632.1	01Jan2017, 14:07	1.63
SSR2.70	1.6502	568.8	01Jan2017, 13:51	1.56
SSR2.70A	0.4613	245.3	01Jan2017, 13:49	1.83
SSR2.70B	0.0112	8.8	01Jan2017, 13:30	1.98
SSR2.70C	0.0064	7.5	01Jan2017, 13:30	3.72
SSR2.70D	0.0343	21.5	01Jan2017, 13:32	1.61
SSR2.70E	0.4472	282.5	01Jan2017, 13:42	1.98
SSR2.70_2.33	1.6502	567.1	01Jan2017, 13:59	1.56
SSR3.20	0.6898	208.1	01Jan2017, 13:46	1.07
SSR3.20A	0.1108	60.5	01Jan2017, 13:40	1.61
SSR3.20B	0.2023	120.4	01Jan2017, 13:35	1.61
SSR3.20_2.70	0.6898	207.7	01Jan2017, 13:52	1.07
SSR3.70	0.3767	88.3	01Jan2017, 13:39	0.68

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	88.3	01Jan2017, 13:39	1.34
SSR3.70B	0.1861	83.9	01Jan2017, 13:36	1.21
SSR3.70_3.20	0.3767	88.0	01Jan2017, 13:47	0.68
WOR0.00	2.8951	1001.9	01Jan2017, 14:52	1.78
WOR0.00A	0.0359	24.9	01Jan2017, 13:33	1.83
WOR0.32	2.8592	1001.3	01Jan2017, 14:45	1.78
WOR0.32A	0.1901	83.2	01Jan2017, 13:57	1.68
WOR0.32_0.00	2.8592	998.3	01Jan2017, 14:52	1.78
WOR0.76	2.6691	1039.3	01Jan2017, 14:24	1.78
WOR0.76A	0.3131	212.5	01Jan2017, 13:40	2.06
WOR0.76_0.32	2.6691	962.6	01Jan2017, 14:46	1.79
WOR1.59	2.3560	999.1	01Jan2017, 14:08	1.74
WOR1.59A	0.4536	268.7	01Jan2017, 13:49	2.06
WOR1.59B	0.7600	300.3	01Jan2017, 14:10	1.75
WOR1.59_0.76	2.3560	978.9	01Jan2017, 14:26	1.74
WOR1.64	1.1424	493.5	01Jan2017, 14:13	1.61
WOR1.64A	0.2551	144.4	01Jan2017, 13:50	1.98
WOR2.33	0.8873	425.0	01Jan2017, 13:44	1.51
WOR2.33A	0.3233	159.8	01Jan2017, 13:46	1.61
WOR2.33_1.64	0.8873	392.0	01Jan2017, 14:17	1.51
WOR3.00	0.5640	265.7	01Jan2017, 13:44	1.44

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	198.9	01Jan2017, 13:45	1.83
WOR3.67	0.2110	67.5	01Jan2017, 13:34	0.80
WOR3.67A	0.2110	67.5	01Jan2017, 13:34	0.80
WOR3.67_3.00	0.2110	67.3	01Jan2017, 13:43	0.80

Project: ChiquesCreek Simulation Run: 25YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 25YR_24HR
Compute Time: 31Jan2017, 15:32:20 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	796.0	01Jan2017, 14:39	2.17
BER0.00A	0.1087	82.7	01Jan2017, 13:49	2.78
BER0.64	1.7391	797.0	01Jan2017, 14:08	2.12
BER0.64A	0.3111	272.9	01Jan2017, 13:40	2.87
BER0.64_0.00	1.7391	765.1	01Jan2017, 14:41	2.13
BER1.05	1.4280	686.9	01Jan2017, 13:56	1.94
BER1.05A	0.2790	205.4	01Jan2017, 13:51	2.78
BER1.05_0.64	1.4280	668.8	01Jan2017, 14:16	1.95
BER1.30	1.1490	487.6	01Jan2017, 13:54	1.74
BER1.30A	0.5289	310.4	01Jan2017, 13:53	2.25
BER1.30_1.05	1.1490	486.2	01Jan2017, 14:00	1.74
BER1.95	0.6201	221.5	01Jan2017, 13:49	1.31
BER1.95A	0.6201	221.5	01Jan2017, 13:49	1.31
BER1.95_1.30	0.6201	215.3	01Jan2017, 14:16	1.30
BOR0.00	6.6030	2968.7	01Jan2017, 14:43	2.32
BOR0.00A	0.0062	6.3	01Jan2017, 13:30	2.88
BOR0.10	6.5968	3102.6	01Jan2017, 14:39	2.33

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	157.3	01Jan2017, 13:59	2.78
BOR0.10_0.00	6.5968	2967.8	01Jan2017, 14:43	2.32
BOR0.68	1.6208	724.4	01Jan2017, 14:16	1.91
BOR0.68A	0.2555	188.2	01Jan2017, 13:51	2.78
BOR0.68_0.10	1.6208	704.6	01Jan2017, 14:38	1.92
BOR1.20	1.3653	599.6	01Jan2017, 13:58	1.75
BOR1.20A	0.5429	299.4	01Jan2017, 14:05	2.42
BOR1.20_0.68	1.3653	588.2	01Jan2017, 14:19	1.75
BOR2.07	0.8224	309.4	01Jan2017, 13:46	1.31
BOR2.07A	0.8224	309.4	01Jan2017, 13:46	1.31
BOR2.07_1.20	0.8224	307.9	01Jan2017, 13:56	1.31
CHC10.68	50.2637	6237.8	01Jan2017, 20:39	2.55
CHC10.68A	0.7377	577.2	01Jan2017, 13:56	3.15
CHC10.68B	0.0477	42.1	01Jan2017, 13:46	3.16
CHC10.68C	0.1180	91.0	01Jan2017, 13:52	2.97
CHC10.68D	0.1638	141.0	01Jan2017, 14:05	3.95
CHC10.68E	0.0528	63.3	01Jan2017, 13:35	3.95
CHC10.68_9.40	50.2637	6208.4	01Jan2017, 21:08	2.54
CHC11.99	49.1437	6178.8	01Jan2017, 20:05	2.54
CHC11.99_10.68	49.1437	6150.4	01Jan2017, 20:40	2.54
CHC12.01	46.4709	5992.6	01Jan2017, 20:11	2.51

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	140.6	01Jan2017, 13:31	2.88
CHC12.65	46.3306	6197.1	01Jan2017, 19:41	2.53
CHC12.65_12.01	46.3306	5986.6	01Jan2017, 20:12	2.51
CHC12.67	45.3853	6121.3	01Jan2017, 19:43	2.52
CHC12.67A	0.5547	246.6	01Jan2017, 14:56	2.97
CHC13.89	44.8306	6141.8	01Jan2017, 19:04	2.52
CHC13.89_12.67	44.8306	6070.7	01Jan2017, 19:44	2.51
CHC13.90	41.9107	5867.4	01Jan2017, 19:08	2.50
CHC13.90A	2.4712	469.5	01Jan2017, 19:04	2.84
CHC16.25	39.4395	5955.4	01Jan2017, 17:19	2.51
CHC16.25A	0.7783	325.9	01Jan2017, 15:06	2.96
CHC16.25_13.90	39.4395	5397.9	01Jan2017, 19:09	2.48
CHC17.08	38.6612	6026.9	01Jan2017, 16:44	2.51
CHC17.08A	0.5852	332.9	01Jan2017, 14:26	3.06
CHC17.08B	0.3448	345.2	01Jan2017, 13:59	4.48
CHC17.08_16.25	38.6612	5809.3	01Jan2017, 17:20	2.50
CHC17.73	37.7312	5967.9	01Jan2017, 16:18	2.49
CHC17.73A	0.3870	268.5	01Jan2017, 14:07	3.16
CHC17.73B	0.0626	83.6	01Jan2017, 13:34	4.71
CHC17.73_17.08	37.7312	5829.0	01Jan2017, 16:45	2.49
CHC18.09	37.2816	6018.0	01Jan2017, 16:02	2.48

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	112.3	01Jan2017, 13:48	2.43
CHC18.09_17.73	37.2816	5897.3	01Jan2017, 16:19	2.48
CHC18.61	36.6951	6126.3	01Jan2017, 15:42	2.48
CHC18.61A	0.5761	441.1	01Jan2017, 13:41	2.51
CHC18.61_18.09	36.6951	5952.5	01Jan2017, 16:02	2.48
CHC19.32	36.1190	6412.8	01Jan2017, 15:09	2.49
CHC19.32_18.61	36.1190	6058.2	01Jan2017, 15:43	2.48
CHC19.35	29.5506	4290.1	01Jan2017, 19:58	2.44
CHC19.35A	0.3523	227.5	01Jan2017, 14:15	3.16
CHC19.35B	0.0175	22.5	01Jan2017, 13:32	4.16
CHC1.28	63.3656	6314.8	02Jan2017, 01:25	2.41
CHC1.28A	0.8402	234.2	01Jan2017, 16:05	2.60
CHC20.02	29.1808	4275.4	01Jan2017, 19:41	2.43
CHC20.02A	0.3588	314.4	01Jan2017, 13:55	3.55
CHC20.02_19.35	29.1808	4264.6	01Jan2017, 20:00	2.43
CHC20.55	28.8220	4266.6	01Jan2017, 19:27	2.42
CHC20.55_20.02	28.8220	4249.9	01Jan2017, 19:43	2.42
CHC20.57	23.2797	3802.3	01Jan2017, 19:39	2.34
CHC20.57A	0.5512	322.7	01Jan2017, 14:47	3.75
CHC21.28	22.7285	3788.5	01Jan2017, 19:01	2.31
CHC21.28A	0.3509	302.8	01Jan2017, 14:03	3.85

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	25.2	01Jan2017, 13:30	4.38
CHC21.28C	0.0073	5.7	01Jan2017, 14:00	3.35
CHC21.28D	0.0224	26.3	01Jan2017, 13:31	3.55
CHC21.28E	0.0497	44.3	01Jan2017, 13:34	2.60
CHC21.28F	0.1457	142.0	01Jan2017, 13:33	2.88
CHC21.28_20.57	22.7285	3746.8	01Jan2017, 19:41	2.30
CHC21.59	22.1338	3768.9	01Jan2017, 18:50	2.28
CHC21.59A	0.2001	162.8	01Jan2017, 13:52	3.16
CHC21.59B	0.0256	32.1	01Jan2017, 13:32	4.06
CHC21.59C	0.0275	34.0	01Jan2017, 13:31	3.85
CHC21.59D	0.0896	94.0	01Jan2017, 13:33	3.16
CHC21.59_21.28	22.1338	3736.9	01Jan2017, 19:01	2.27
CHC22.01	21.7910	3783.2	01Jan2017, 18:32	2.26
CHC22.01A	1.2726	1245.6	01Jan2017, 13:31	2.78
CHC22.01B	0.0456	52.4	01Jan2017, 13:30	3.35
CHC22.01_21.59	21.7910	3739.3	01Jan2017, 18:50	2.26
CHC23.04	20.4728	3738.5	01Jan2017, 17:57	2.23
CHC23.04A	1.8763	743.1	01Jan2017, 14:58	2.68
CHC23.04B	0.2164	191.1	01Jan2017, 13:42	2.97
CHC23.04_22.01	20.4728	3687.2	01Jan2017, 18:33	2.23
CHC24.53	18.3801	3584.0	01Jan2017, 17:06	2.18

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	3458.2	01Jan2017, 18:02	2.17
CHC24.63	18.3801	3584.0	01Jan2017, 17:06	2.18
CHC24.64	11.7771	2769.5	01Jan2017, 17:17	2.10
CHC24.64A	0.2517	96.3	01Jan2017, 14:38	2.25
CHC25.53	11.5254	3146.0	01Jan2017, 16:23	2.11
CHC25.53A	0.6693	404.9	01Jan2017, 14:06	2.69
CHC25.53B	0.0163	14.5	01Jan2017, 13:31	2.43
CHC25.53_24.64	11.5254	2739.6	01Jan2017, 17:18	2.09
CHC26.30	10.8398	3130.2	01Jan2017, 15:57	2.07
CHC26.30A	0.8065	270.0	01Jan2017, 15:23	2.60
CHC26.30_25.53	10.8398	3055.0	01Jan2017, 16:24	2.07
CHC27.38	10.0333	3367.7	01Jan2017, 15:11	2.03
CHC27.38_26.30	10.0333	2881.9	01Jan2017, 15:59	2.02
CHC27.39	3.5391	1097.3	01Jan2017, 14:37	2.18
CHC27.39A	0.3314	218.7	01Jan2017, 13:58	2.69
CHC28.26	3.2077	1015.5	01Jan2017, 14:02	2.13
CHC28.26_27.39	3.2077	971.8	01Jan2017, 14:41	2.13
CHC28.31	3.2077	1015.5	01Jan2017, 14:02	2.13
CHC28.31A	0.0950	83.7	01Jan2017, 13:36	2.69
CHC28.31B	0.7915	509.2	01Jan2017, 13:57	2.60
CHC28.67	2.3212	683.9	01Jan2017, 15:22	1.95

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	310.2	01Jan2017, 13:59	1.92
CHC28.67_28.31	2.3212	680.4	01Jan2017, 15:33	1.95
CHC29.91	1.6558	602.9	01Jan2017, 14:40	1.96
CHC29.91A	0.6097	272.8	01Jan2017, 13:55	1.76
CHC29.91_28.67	1.6558	591.5	01Jan2017, 15:23	1.96
CHC30.94	1.0461	483.9	01Jan2017, 14:07	2.08
CHC30.94A	1.0461	483.9	01Jan2017, 14:07	2.08
CHC30.94_29.91	1.0461	480.4	01Jan2017, 14:46	2.08
CHC3.39	62.5254	6298.4	02Jan2017, 00:16	2.44
CHC3.39A	1.8419	1179.8	01Jan2017, 13:54	2.50
CHC3.39_1.28	62.5254	6283.0	02Jan2017, 01:27	2.41
CHC4.62	60.6835	6673.1	01Jan2017, 23:04	2.53
CHC4.62A	0.1505	135.1	01Jan2017, 13:37	2.78
CHC4.62B	0.1946	169.7	01Jan2017, 13:39	2.78
CHC4.62_3.39	60.6835	6242.9	02Jan2017, 00:18	2.44
CHC4.97	60.3384	6703.9	01Jan2017, 22:48	2.54
CHC4.97A	0.4693	215.8	01Jan2017, 14:33	2.60
CHC4.97B	0.0580	55.8	01Jan2017, 13:37	3.06
CHC4.97C	0.2012	180.9	01Jan2017, 13:33	2.60
CHC4.97_4.62	60.3384	6661.6	01Jan2017, 23:04	2.53
CHC5.97	59.6099	6689.6	01Jan2017, 22:30	2.55

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	714.5	01Jan2017, 14:07	2.87
CHC5.97_4.97	59.6099	6676.8	01Jan2017, 22:48	2.54
CHC7.47	58.4785	6681.8	01Jan2017, 21:49	2.55
CHC7.47_5.97	58.4785	6646.3	01Jan2017, 22:30	2.54
CHC7.48	53.6341	6457.4	01Jan2017, 21:58	2.54
CHC7.48A	2.2128	473.2	01Jan2017, 18:08	2.86
CHC9.40	51.4213	6264.9	01Jan2017, 21:07	2.55
CHC9.40A	1.1576	654.4	01Jan2017, 14:19	2.87
CHC9.40_7.47	51.4213	6184.8	01Jan2017, 22:06	2.53
DER0.00	2.9199	1434.3	01Jan2017, 15:04	2.77
DER0.00A	0.1924	172.6	01Jan2017, 13:37	2.78
DER0.52	2.7275	1415.4	01Jan2017, 14:49	2.77
DER0.52A	0.5165	412.4	01Jan2017, 13:49	2.97
DER0.52_0.00	2.7275	1407.1	01Jan2017, 15:04	2.77
DER1.10	2.2110	1311.7	01Jan2017, 14:29	2.72
DER1.10A	0.3712	287.6	01Jan2017, 13:52	2.97
DER1.10_0.52	2.2110	1289.3	01Jan2017, 14:52	2.72
DER1.76	1.8398	1161.8	01Jan2017, 14:12	2.67
DER1.76A	0.5078	332.2	01Jan2017, 13:53	2.51
DER1.76_1.10	1.8398	1154.8	01Jan2017, 14:33	2.67
DER2.22	1.3320	900.5	01Jan2017, 14:06	2.72

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	435.0	01Jan2017, 14:03	2.60
DER2.22_1.76	1.3320	896.3	01Jan2017, 14:18	2.73
DER2.93	0.6085	470.7	01Jan2017, 13:50	2.87
DER2.93A	0.6085	470.7	01Jan2017, 13:50	2.87
DER2.93_2.22	0.6085	467.3	01Jan2017, 14:07	2.87
DORT0.34	1.6920	979.8	01Jan2017, 14:00	2.83
DORT0.34A	0.0357	34.7	01Jan2017, 13:32	2.78
DORT0.34B	0.0234	22.2	01Jan2017, 13:32	2.69
DORT0.54	1.6329	965.9	01Jan2017, 13:56	2.83
DORT0.54A	0.2058	172.1	01Jan2017, 13:44	2.88
DORT0.54B	0.0280	20.1	01Jan2017, 13:33	2.00
DORT0.54C	0.0058	6.6	01Jan2017, 13:33	3.55
DORT0.54D	0.0832	67.4	01Jan2017, 13:51	3.06
DORT0.54E	0.0367	36.5	01Jan2017, 13:30	2.78
DORT0.54_0.34	1.6329	962.2	01Jan2017, 14:00	2.83
DORT1.15	1.2734	789.5	01Jan2017, 13:45	2.84
DORT1.15A	0.4022	371.5	01Jan2017, 13:38	2.97
DORT1.15B	0.0103	14.0	01Jan2017, 13:30	4.49
DORT1.15_0.54	1.2734	784.4	01Jan2017, 14:00	2.84
DORT1.58	0.8609	614.7	01Jan2017, 13:58	2.76
DORT1.58A	0.4931	384.1	01Jan2017, 13:47	2.78

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	604.9	01Jan2017, 14:12	2.76
DORT2.41	0.3678	297.1	01Jan2017, 13:43	2.75
DORT2.41A	0.2384	200.3	01Jan2017, 13:39	2.69
DORT2.41B	0.1294	117.0	01Jan2017, 13:38	2.88
DORT2.41_1.58	0.3678	293.0	01Jan2017, 14:11	2.74
DOR0.00	5.5423	2525.5	01Jan2017, 15:08	2.77
DOR0.00A	0.0475	47.7	01Jan2017, 13:40	3.35
DOR0.24	5.4948	2573.6	01Jan2017, 14:59	2.78
DOR0.24A	0.1218	112.1	01Jan2017, 13:41	3.06
DOR0.24B	0.1287	110.7	01Jan2017, 13:48	3.16
DOR0.24_0.00	5.4948	2517.7	01Jan2017, 15:08	2.77
DOR0.44A	0.5212	389.1	01Jan2017, 13:57	3.06
DOR0.44_0.24	5.2443	2508.3	01Jan2017, 14:59	2.76
DOR1.21	4.7231	2422.3	01Jan2017, 14:30	2.73
DOR1.21A	0.2430	163.6	01Jan2017, 14:07	3.06
DOR1.21B	0.2037	187.4	01Jan2017, 13:39	2.97
DOR1.21_0.44	4.7231	2358.2	01Jan2017, 14:57	2.73
DOR1.23	4.2764	2281.7	01Jan2017, 14:31	2.84
DOR1.23A	0.2095	185.6	01Jan2017, 13:46	3.16
DOR1.45	4.0669	2222.5	01Jan2017, 14:25	2.82
DOR1.45_1.23	4.0669	2210.2	01Jan2017, 14:33	2.82

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	1344.4	01Jan2017, 14:28	2.82
DOR1.60A	0.5501	433.9	01Jan2017, 13:48	2.87
DOR2.40	1.8248	1163.0	01Jan2017, 14:10	2.80
DOR2.40A	0.4594	326.0	01Jan2017, 13:57	2.87
DOR2.40_1.60	1.8248	1148.3	01Jan2017, 14:33	2.80
DOR2.81	1.3654	875.9	01Jan2017, 14:02	2.78
DOR2.81A	0.2367	193.9	01Jan2017, 13:50	3.06
DOR2.81_2.40	1.3654	868.6	01Jan2017, 14:15	2.78
DOR3.06	1.1287	703.8	01Jan2017, 13:57	2.72
DOR3.06A	0.3648	284.4	01Jan2017, 13:47	2.78
DOR3.06B	0.7639	456.5	01Jan2017, 14:07	2.69
DOR3.06_2.81	1.1287	702.0	01Jan2017, 14:06	2.72
DOR.44	5.2443	2518.3	01Jan2017, 14:54	2.76
ERRR0.57_0.00	1.1576	827.6	01Jan2017, 14:16	3.08
ERRT0.00	1.2906	915.1	01Jan2017, 14:14	3.15
ERRT0.00A	0.1098	106.0	01Jan2017, 13:48	3.65
ERRT0.00B	0.0077	9.9	01Jan2017, 13:30	3.95
ERRT0.00C	0.0074	10.3	01Jan2017, 13:30	4.71
ERRT0.00D	0.0036	5.0	01Jan2017, 13:30	4.71
ERRT0.00E	0.0045	6.3	01Jan2017, 13:30	4.71
ERRT0.57	1.1576	833.0	01Jan2017, 14:04	3.08

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	150.5	01Jan2017, 14:33	3.06
ERRT0.61	0.8788	710.3	01Jan2017, 14:02	3.08
ERRT0.61A	0.4551	330.3	01Jan2017, 14:03	3.16
ERRT1.62	0.4237	391.8	01Jan2017, 13:34	3.02
ERRT1.62A	0.1546	126.1	01Jan2017, 13:44	2.78
ERRT1.62B	0.2547	269.9	01Jan2017, 13:31	3.06
ERRT1.62C	0.0144	20.1	01Jan2017, 13:30	4.71
ERRT1.62_0.61	0.4237	380.0	01Jan2017, 14:02	3.01
ERR0.00	2.6728	1805.8	01Jan2017, 14:18	3.03
ERR0.00A	0.0718	63.9	01Jan2017, 13:35	2.69
ERR0.00B	0.0053	7.4	01Jan2017, 13:30	4.71
ERR0.23	2.5957	1793.6	01Jan2017, 14:13	3.04
ERR0.23A	0.1922	164.7	01Jan2017, 13:40	2.78
ERR0.23B	0.0298	40.2	01Jan2017, 13:30	4.38
ERR0.23_0.00	2.5957	1786.0	01Jan2017, 14:18	3.04
ERR0.26	1.3051	879.4	01Jan2017, 14:12	2.93
ERR0.88	1.0831	794.2	01Jan2017, 14:01	2.92
ERR0.88A	0.5048	332.4	01Jan2017, 14:07	2.97
ERR0.88_0.23	1.0831	789.5	01Jan2017, 14:15	2.92
ERR1.33	0.5783	470.6	01Jan2017, 13:46	2.87
ERR1.33A	0.5783	470.6	01Jan2017, 13:46	2.87

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	467.7	01Jan2017, 13:58	2.87
LAR0.00	0.9453	510.9	01Jan2017, 14:12	3.05
LAR0.00A	0.5827	300.9	01Jan2017, 14:39	3.06
LAR0.40	0.3626	262.3	01Jan2017, 13:58	3.03
LAR0.40A	0.0039	5.5	01Jan2017, 13:30	4.82
LAR0.40B	0.1091	132.3	01Jan2017, 13:40	4.38
LAR0.40C	0.1251	114.4	01Jan2017, 13:41	3.06
LAR0.40D	0.1245	108.6	01Jan2017, 13:39	2.78
LAR0.40_0.00	0.3626	260.7	01Jan2017, 14:06	3.03
MRT0.00	0.4202	330.3	01Jan2017, 13:45	2.75
MRT0.00A	0.1647	134.3	01Jan2017, 13:41	2.69
MRT0.66	0.2555	202.2	01Jan2017, 13:33	2.81
MRT0.66A	0.2030	198.6	01Jan2017, 13:33	2.88
MRT0.66B	0.0376	39.2	01Jan2017, 13:31	2.97
MRT0.66C	0.0149	16.3	01Jan2017, 13:31	3.25
MRT0.66_0.00	0.2555	199.5	01Jan2017, 13:48	2.80
ORT0.28	0.7836	571.3	01Jan2017, 13:56	2.61
ORT0.28A	0.1786	141.5	01Jan2017, 13:39	2.51
ORT0.95	0.6050	480.8	01Jan2017, 13:40	2.64
ORT0.95A	0.1851	157.4	01Jan2017, 13:35	2.51
ORT0.95_0.28	0.6050	474.4	01Jan2017, 14:00	2.64

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	348.8	01Jan2017, 13:39	2.70
ORT1.38A	0.1910	164.8	01Jan2017, 13:36	2.60
ORT1.38_0.95	0.4199	347.0	01Jan2017, 13:47	2.70
ORT2.04	0.2289	196.1	01Jan2017, 13:40	2.78
ORT2.04A	0.2289	196.1	01Jan2017, 13:40	2.78
ORT2.04_1.38	0.2289	195.8	01Jan2017, 13:48	2.78
Pond 0	0.1946	152.1	01Jan2017, 13:48	2.78
Pond 1	0.2012	180.8	01Jan2017, 13:33	2.60
Pond 10	0.0122	4.1	01Jan2017, 13:46	2.78
Pond 11	0.0236	18.4	01Jan2017, 13:36	2.78
Pond 12	0.0172	5.0	01Jan2017, 13:50	2.78
Pond 13	0.0603	51.1	01Jan2017, 13:40	2.69
Pond 14	0.1379	114.7	01Jan2017, 13:44	2.78
Pond 15	0.0477	9.0	01Jan2017, 15:03	3.16
Pond 16	0.3346	122.9	01Jan2017, 14:03	3.40
Pond 17	0.0528	15.0	01Jan2017, 14:23	3.95
Pond 18	0.1638	31.5	01Jan2017, 16:10	3.95
Pond 19	0.0053	5.3	01Jan2017, 13:38	4.71
Pond 2	0.0580	24.2	01Jan2017, 14:08	2.80
Pond 20	0.0077	6.3	01Jan2017, 13:32	3.95
Pond 21	0.0298	40.1	01Jan2017, 13:30	4.38

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	8.8	01Jan2017, 13:33	4.25
Pond 23	0.0036	5.0	01Jan2017, 13:30	4.71
Pond 24	0.0045	2.5	01Jan2017, 13:40	4.71
Pond 25	0.2547	264.6	01Jan2017, 13:33	3.06
Pond 26	0.0144	8.4	01Jan2017, 13:38	4.71
Pond 27	0.1245	61.3	01Jan2017, 14:03	2.78
Pond 28	0.1251	97.9	01Jan2017, 13:54	2.91
Pond 29	0.1091	103.1	01Jan2017, 13:59	3.43
Pond 3	0.1861	0.0	01Jan2017, 01:00	0.00
Pond 30	0.0039	1.5	01Jan2017, 13:42	3.47
Pond 31	0.3448	122.7	01Jan2017, 15:10	3.76
Pond 32	0.0626	60.0	01Jan2017, 13:53	4.71
Pond 33	0.0149	1.6	01Jan2017, 16:23	3.21
Pond 34	0.0376	2.8	01Jan2017, 18:26	2.30
Pond 35	0.0294	23.8	01Jan2017, 13:33	2.51
Pond 36	0.0175	22.5	01Jan2017, 13:32	4.17
Pond 37	0.1287	95.5	01Jan2017, 14:04	3.15
Pond 38	0.2037	6.5	02Jan2017, 00:04	0.10
Pond 39	0.0234	21.9	01Jan2017, 13:34	2.69
Pond 4	0.2023	110.8	01Jan2017, 13:49	2.32
Pond 40	0.0832	6.8	01Jan2017, 18:37	2.73

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	3.3	01Jan2017, 13:52	3.55
Pond 42	0.0367	29.6	01Jan2017, 13:35	2.78
Pond 43	0.0103	13.8	01Jan2017, 13:33	4.49
Pond 44	0.1294	104.0	01Jan2017, 13:48	2.86
Pond 45	0.1457	135.7	01Jan2017, 13:38	2.88
Pond 46	0.0187	15.6	01Jan2017, 13:37	4.38
Pond 47	0.0275	4.6	01Jan2017, 14:22	3.68
Pond 48	0.0456	48.5	01Jan2017, 13:33	2.67
Pond 49	0.0256	32.1	01Jan2017, 13:34	4.06
Pond 5	0.0343	27.7	01Jan2017, 13:37	2.43
Pond 50	0.0073	5.3	01Jan2017, 14:15	3.33
Pond 51	0.0721	30.7	01Jan2017, 13:34	2.90
Pond 52	0.0497	16.7	01Jan2017, 13:58	2.60
Pond 53	0.0896	92.9	01Jan2017, 13:36	3.16
Pond 54	0.2164	81.5	01Jan2017, 14:19	2.96
Pond 55	0.0163	7.9	01Jan2017, 13:39	2.29
Pond 56	0.0231	32.0	01Jan2017, 13:31	4.71
Pond 57	0.0112	3.6	01Jan2017, 13:43	2.88
Pond 58	0.0280	7.2	01Jan2017, 13:57	2.00
Pond 6	0.4472	122.9	01Jan2017, 14:28	2.87
Pond 7	0.0064	4.9	01Jan2017, 13:44	4.81

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	32.0	01Jan2017, 13:35	2.78
Pond 9	0.0281	7.9	01Jan2017, 14:00	2.78
RIR0.00	6.5684	3452.5	01Jan2017, 14:51	2.69
RIR0.00A	0.0647	60.8	01Jan2017, 13:54	3.85
RIR0.32	6.5037	3524.8	01Jan2017, 14:40	2.68
RIR0.32A	0.5587	359.2	01Jan2017, 14:00	2.69
RIR0.32_0.00	6.5037	3427.9	01Jan2017, 14:51	2.68
RIR0.65	5.9450	3331.2	01Jan2017, 14:34	2.68
RIR0.65A	0.1896	196.1	01Jan2017, 13:32	3.06
RIR0.65_0.32	5.9450	3311.4	01Jan2017, 14:42	2.68
RIR0.86	5.7554	3320.4	01Jan2017, 14:29	2.67
RIR0.86A	0.2984	218.0	01Jan2017, 13:50	2.69
RIR0.86_0.65	5.7554	3307.1	01Jan2017, 14:34	2.67
RIR1.24	5.4570	3253.5	01Jan2017, 14:21	2.67
RIR1.24A	0.0980	87.2	01Jan2017, 13:32	2.51
RIR1.24_0.86	5.4570	3212.4	01Jan2017, 14:30	2.67
RIR1.34	5.3590	3240.9	01Jan2017, 14:21	2.67
RIR1.52	4.5754	2862.8	01Jan2017, 14:25	2.68
RIR1.62	1.8861	1109.7	01Jan2017, 14:23	2.66
RIR1.62A	0.5008	327.3	01Jan2017, 14:01	2.78
RIR2.60	1.3853	852.8	01Jan2017, 13:58	2.61

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	265.6	01Jan2017, 13:38	2.69
RIR2.60_1.62	1.3853	841.0	01Jan2017, 14:29	2.62
RIR3.38	1.0728	718.1	01Jan2017, 13:51	2.60
RIR3.38A	1.0434	709.8	01Jan2017, 13:52	2.60
RIR3.38B	0.0294	27.4	01Jan2017, 13:30	2.51
RIR3.38_2.60	1.0728	709.5	01Jan2017, 14:08	2.59
SHCT0.00	3.0470	1359.3	01Jan2017, 14:01	1.73
SHCT0.00A	0.9966	419.1	01Jan2017, 13:56	1.68
SHCT1.59	2.0504	949.6	01Jan2017, 13:52	1.75
SHCT1.59A	2.0504	949.6	01Jan2017, 13:52	1.75
SHCT1.59_0.00	2.0504	948.8	01Jan2017, 14:03	1.75
SHC0.00	6.4942	2378.9	01Jan2017, 15:13	1.94
SHC0.00A	0.0458	33.0	01Jan2017, 13:41	2.34
SHC0.23	6.4484	2471.9	01Jan2017, 15:01	1.94
SHC0.23A	0.6386	333.6	01Jan2017, 14:25	2.78
SHC0.23_0.00	6.4484	2373.0	01Jan2017, 15:13	1.94
SHC1.60	5.8098	2401.8	01Jan2017, 14:13	1.85
SHC1.60A	0.2628	207.5	01Jan2017, 13:37	2.43
SHC1.60_0.23	5.8098	2209.5	01Jan2017, 15:03	1.85
SHC2.06	5.5470	2345.1	01Jan2017, 14:04	1.82
SHC2.06A	0.2828	133.0	01Jan2017, 13:42	1.53

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	2332.7	01Jan2017, 14:15	1.82
SHC2.56	5.2642	2267.9	01Jan2017, 14:01	1.84
SHC2.56A	0.4506	274.2	01Jan2017, 13:48	2.17
SHC2.56_2.06	5.2642	2264.5	01Jan2017, 14:06	1.84
SHC3.11	1.7666	703.9	01Jan2017, 14:10	1.94
SHC3.11A	0.2775	271.4	01Jan2017, 13:33	2.87
SHC3.11_2.56	1.7666	703.8	01Jan2017, 14:13	1.94
SHC3.92	1.4891	645.2	01Jan2017, 13:57	1.77
SHC3.92A	0.6934	291.8	01Jan2017, 13:52	1.60
SHC3.92B	0.7957	360.8	01Jan2017, 14:01	1.92
SHC3.92_3.11	1.4891	642.4	01Jan2017, 14:13	1.77
SRT0.50	2.6893	1756.9	01Jan2017, 14:27	2.70
SRT0.50A	0.4294	255.6	01Jan2017, 14:07	2.69
SRT1.29	2.2599	1543.3	01Jan2017, 14:15	2.70
SRT1.29A	0.3191	187.7	01Jan2017, 14:05	2.60
SRT1.29_0.50	2.2599	1530.2	01Jan2017, 14:28	2.70
SRT2.06	1.9408	1373.5	01Jan2017, 14:00	2.71
SRT2.06A	0.4839	349.2	01Jan2017, 13:53	2.78
SRT2.06_1.29	1.9408	1361.5	01Jan2017, 14:15	2.72
SRT2.55	1.4569	1039.5	01Jan2017, 13:54	2.69
SRT2.55A	0.3465	284.0	01Jan2017, 13:41	2.69

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	1036.1	01Jan2017, 14:02	2.69
SRT3.00	1.1104	820.8	01Jan2017, 13:52	2.69
SRT3.00A	0.7468	533.7	01Jan2017, 13:51	2.69
SRT3.00_2.55	1.1104	817.0	01Jan2017, 14:00	2.69
SRT3.38	0.3636	288.7	01Jan2017, 13:43	2.69
SRT3.38A	0.3636	288.7	01Jan2017, 13:43	2.69
SRT3.38_3.00	0.3636	287.6	01Jan2017, 13:53	2.69
SSRTA0.00	0.4007	298.4	01Jan2017, 13:54	2.90
SSRTA0.00A	0.2628	219.6	01Jan2017, 13:46	2.97
SSRTA0.59	0.1379	114.7	01Jan2017, 13:44	2.78
SSRTA0.59A	0.1379	123.8	01Jan2017, 13:37	2.78
SSRTA0.59_0.00	0.1379	109.1	01Jan2017, 14:06	2.78
SSRT0.00	1.3182	929.8	01Jan2017, 14:00	2.84
SSRT0.00A	0.2236	172.2	01Jan2017, 13:48	2.78
SSRT0.46	1.0946	787.9	01Jan2017, 13:49	2.85
SSRT0.46A	0.1893	174.8	01Jan2017, 13:37	2.88
SSRT0.46_0.00	1.0946	778.2	01Jan2017, 14:04	2.85
SSRT0.77	0.9053	664.5	01Jan2017, 13:49	2.84
SSRT0.77A	0.2520	209.4	01Jan2017, 13:44	2.87
SSRT0.77B	0.0603	55.1	01Jan2017, 13:34	2.69
SSRT0.77_0.46	0.9053	663.2	01Jan2017, 13:56	2.84

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	130.6	01Jan2017, 13:38	2.73
SSRT1.34A	0.1112	96.3	01Jan2017, 13:37	2.69
SSRT1.34B	0.0172	17.1	01Jan2017, 13:31	2.78
SSRT1.34C	0.0236	23.4	01Jan2017, 13:31	2.78
SSRT1.34D	0.0122	12.1	01Jan2017, 13:31	2.78
SSRT1.34E	0.0281	27.1	01Jan2017, 13:32	2.78
SSRT1.34_0.77	0.1923	128.0	01Jan2017, 14:00	2.73
SSR0.00	4.8444	2701.8	01Jan2017, 14:23	2.73
SSR0.00A	0.0601	58.9	01Jan2017, 13:31	2.78
SSR0.22	4.7843	2697.7	01Jan2017, 14:20	2.73
SSR0.22A	0.2501	237.8	01Jan2017, 13:40	3.16
SSR0.22_0.00	4.7843	2694.2	01Jan2017, 14:23	2.73
SSR0.85	4.5342	2621.6	01Jan2017, 14:12	2.71
SSR0.85_0.22	4.5342	2611.0	01Jan2017, 14:21	2.71
SSR0.87	3.2160	1760.1	01Jan2017, 14:17	2.65
SSR0.87A	0.3806	254.4	01Jan2017, 14:02	2.87
SSR1.06	2.8354	1528.8	01Jan2017, 14:14	2.62
SSR1.06A	0.2647	219.9	01Jan2017, 13:44	2.87
SSR1.06_0.87	2.8354	1526.0	01Jan2017, 14:18	2.62
SSR1.71	2.5707	1413.0	01Jan2017, 14:02	2.59
SSR1.71A	0.3665	259.6	01Jan2017, 14:02	3.06

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	1406.8	01Jan2017, 14:17	2.60
SSR1.89	2.2042	1158.8	01Jan2017, 13:56	2.52
SSR1.89A	0.3178	266.8	01Jan2017, 13:48	3.06
SSR1.89B	0.0231	32.2	01Jan2017, 13:30	4.71
SSR1.89_1.71	2.2042	1153.4	01Jan2017, 14:02	2.52
SSR2.33	1.8633	906.3	01Jan2017, 13:51	2.40
SSR2.33A	0.1750	181.9	01Jan2017, 13:33	3.16
SSR2.33B	0.0381	37.8	01Jan2017, 13:31	2.78
SSR2.33_1.89	1.8633	903.1	01Jan2017, 14:02	2.40
SSR2.70	1.6502	800.8	01Jan2017, 13:49	2.31
SSR2.70A	0.4613	343.3	01Jan2017, 13:48	2.69
SSR2.70B	0.0112	11.6	01Jan2017, 13:30	2.88
SSR2.70C	0.0064	9.0	01Jan2017, 13:30	4.82
SSR2.70D	0.0343	29.6	01Jan2017, 13:32	2.43
SSR2.70E	0.4472	385.0	01Jan2017, 13:42	2.87
SSR2.70_2.33	1.6502	799.1	01Jan2017, 13:57	2.31
SSR3.20	0.6898	315.8	01Jan2017, 13:46	1.65
SSR3.20A	0.1108	85.5	01Jan2017, 13:39	2.43
SSR3.20B	0.2023	167.4	01Jan2017, 13:34	2.43
SSR3.20_2.70	0.6898	315.4	01Jan2017, 13:51	1.65
SSR3.70	0.3767	129.3	01Jan2017, 13:38	1.05

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	129.3	01Jan2017, 13:38	2.09
SSR3.70B	0.1861	124.0	01Jan2017, 13:35	1.92
SSR3.70_3.20	0.3767	128.5	01Jan2017, 13:51	1.05
WOR0.00	2.8951	1513.0	01Jan2017, 14:42	2.62
WOR0.00A	0.0359	33.6	01Jan2017, 13:32	2.69
WOR0.32	2.8592	1512.8	01Jan2017, 14:35	2.62
WOR0.32A	0.1901	119.9	01Jan2017, 13:56	2.51
WOR0.32_0.00	2.8592	1508.5	01Jan2017, 14:42	2.62
WOR0.76	2.6691	1549.6	01Jan2017, 14:17	2.62
WOR0.76A	0.3131	286.2	01Jan2017, 13:39	2.97
WOR0.76_0.32	2.6691	1444.4	01Jan2017, 14:37	2.63
WOR1.59	2.3560	1471.1	01Jan2017, 14:04	2.58
WOR1.59A	0.4536	366.9	01Jan2017, 13:48	2.97
WOR1.59B	0.7600	433.0	01Jan2017, 14:08	2.60
WOR1.59_0.76	2.3560	1446.3	01Jan2017, 14:20	2.58
WOR1.64	1.1424	729.6	01Jan2017, 14:08	2.41
WOR1.64A	0.2551	199.0	01Jan2017, 13:49	2.87
WOR2.33	0.8873	611.2	01Jan2017, 13:43	2.28
WOR2.33A	0.3233	228.7	01Jan2017, 13:45	2.43
WOR2.33_1.64	0.8873	571.2	01Jan2017, 14:11	2.27
WOR3.00	0.5640	383.6	01Jan2017, 13:42	2.20

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	276.8	01Jan2017, 13:44	2.69
WOR3.67	0.2110	108.5	01Jan2017, 13:33	1.38
WOR3.67A	0.2110	108.5	01Jan2017, 13:33	1.38
WOR3.67_3.00	0.2110	108.2	01Jan2017, 13:41	1.38

Project: ChiquesCreek Simulation Run: 50YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 50YR_24HR
Compute Time: 31Jan2017, 15:36:07 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	992.7	01Jan2017, 14:34	2.84
BER0.00A	0.1087	100.7	01Jan2017, 13:48	3.56
BER0.64	1.7391	964.3	01Jan2017, 14:01	2.79
BER0.64A	0.3111	327.8	01Jan2017, 13:40	3.66
BER0.64_0.00	1.7391	950.4	01Jan2017, 14:38	2.79
BER1.05	1.4280	847.4	01Jan2017, 14:10	2.59
BER1.05A	0.2790	250.6	01Jan2017, 13:51	3.56
BER1.05_0.64	1.4280	830.8	01Jan2017, 14:25	2.60
BER1.30	1.1490	662.1	01Jan2017, 14:02	2.35
BER1.30A	0.5289	391.7	01Jan2017, 13:53	2.96
BER1.30_1.05	1.1490	646.5	01Jan2017, 14:15	2.35
BER1.95	0.6201	306.2	01Jan2017, 13:48	1.85
BER1.95A	0.6201	306.2	01Jan2017, 13:48	1.85
BER1.95_1.30	0.6201	301.2	01Jan2017, 14:09	1.84
BOR0.00	6.6030	3815.7	01Jan2017, 14:38	3.02
BOR0.00A	0.0062	7.5	01Jan2017, 13:30	3.66
BOR0.10	6.5968	3978.5	01Jan2017, 14:34	3.03

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	192.9	01Jan2017, 13:58	3.56
BOR0.10_0.00	6.5968	3814.7	01Jan2017, 14:38	3.02
BOR0.68	1.6208	960.1	01Jan2017, 14:12	2.55
BOR0.68A	0.2555	229.5	01Jan2017, 13:51	3.56
BOR0.68_0.10	1.6208	928.8	01Jan2017, 14:33	2.56
BOR1.20	1.3653	788.8	01Jan2017, 13:57	2.37
BOR1.20A	0.5429	376.6	01Jan2017, 14:04	3.15
BOR1.20_0.68	1.3653	778.2	01Jan2017, 14:14	2.36
BOR2.07	0.8224	425.0	01Jan2017, 13:45	1.85
BOR2.07A	0.8224	425.0	01Jan2017, 13:45	1.85
BOR2.07_1.20	0.8224	423.1	01Jan2017, 13:54	1.85
CHC10.68	50.2637	8028.9	01Jan2017, 20:31	3.28
CHC10.68A	0.7377	693.2	01Jan2017, 13:55	3.97
CHC10.68B	0.0477	50.2	01Jan2017, 13:46	3.97
CHC10.68C	0.1180	110.0	01Jan2017, 13:52	3.76
CHC10.68D	0.1638	164.5	01Jan2017, 14:05	4.83
CHC10.68E	0.0528	72.6	01Jan2017, 13:35	4.83
CHC10.68_9.40	50.2637	7998.9	01Jan2017, 21:00	3.27
CHC11.99	49.1437	7952.7	01Jan2017, 19:59	3.28
CHC11.99_10.68	49.1437	7924.9	01Jan2017, 20:33	3.27
CHC12.01	46.4709	7714.0	01Jan2017, 20:07	3.24

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	166.1	01Jan2017, 13:31	3.66
CHC12.65	46.3306	7945.8	01Jan2017, 19:32	3.26
CHC12.65_12.01	46.3306	7706.3	01Jan2017, 20:07	3.24
CHC12.67	45.3853	7847.8	01Jan2017, 19:35	3.25
CHC12.67A	0.5547	305.1	01Jan2017, 14:55	3.76
CHC13.89	44.8306	7863.8	01Jan2017, 18:55	3.25
CHC13.89_12.67	44.8306	7782.7	01Jan2017, 19:36	3.24
CHC13.90	41.9107	7514.6	01Jan2017, 18:59	3.23
CHC13.90A	2.4712	592.3	01Jan2017, 19:01	3.62
CHC16.25	39.4395	7605.9	01Jan2017, 17:06	3.24
CHC16.25A	0.7783	403.8	01Jan2017, 15:05	3.76
CHC16.25_13.90	39.4395	6922.4	01Jan2017, 18:59	3.21
CHC17.08	38.6612	7681.8	01Jan2017, 16:34	3.24
CHC17.08A	0.5852	407.0	01Jan2017, 14:26	3.86
CHC17.08B	0.3448	394.4	01Jan2017, 13:59	5.39
CHC17.08_16.25	38.6612	7411.9	01Jan2017, 17:08	3.23
CHC17.73	37.7312	7603.6	01Jan2017, 16:09	3.22
CHC17.73A	0.3870	324.4	01Jan2017, 14:07	3.97
CHC17.73B	0.0626	93.8	01Jan2017, 13:34	5.62
CHC17.73_17.08	37.7312	7426.2	01Jan2017, 16:35	3.21
CHC18.09	37.2816	7666.8	01Jan2017, 15:54	3.21

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	139.4	01Jan2017, 13:48	3.16
CHC18.09_17.73	37.2816	7511.5	01Jan2017, 16:10	3.21
CHC18.61	36.6951	7807.1	01Jan2017, 15:36	3.21
CHC18.61A	0.5761	540.6	01Jan2017, 13:41	3.25
CHC18.61_18.09	36.6951	7582.2	01Jan2017, 15:54	3.21
CHC19.32	36.1190	8141.1	01Jan2017, 15:06	3.21
CHC19.32_18.61	36.1190	7718.9	01Jan2017, 15:36	3.21
CHC19.35	29.5506	5791.8	01Jan2017, 19:29	3.16
CHC19.35A	0.3523	275.8	01Jan2017, 14:14	3.97
CHC19.35B	0.0175	25.5	01Jan2017, 13:31	5.05
CHC1.28	63.3656	8257.1	02Jan2017, 00:57	3.10
CHC1.28A	0.8402	298.1	01Jan2017, 16:02	3.35
CHC20.02	29.1808	5777.1	01Jan2017, 19:12	3.15
CHC20.02A	0.3588	371.0	01Jan2017, 13:54	4.39
CHC20.02_19.35	29.1808	5755.4	01Jan2017, 19:30	3.14
CHC20.55	28.8220	5770.9	01Jan2017, 18:53	3.14
CHC20.55_20.02	28.8220	5740.3	01Jan2017, 19:12	3.13
CHC20.57	23.2797	5107.4	01Jan2017, 19:06	3.04
CHC20.57A	0.5512	384.1	01Jan2017, 14:47	4.61
CHC21.28	22.7285	5082.2	01Jan2017, 18:28	3.00
CHC21.28A	0.3509	354.3	01Jan2017, 14:02	4.72

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	28.4	01Jan2017, 13:30	5.28
CHC21.28C	0.0073	6.8	01Jan2017, 14:00	4.18
CHC21.28D	0.0224	30.3	01Jan2017, 13:31	4.40
CHC21.28E	0.0497	53.3	01Jan2017, 13:33	3.36
CHC21.28F	0.1457	168.5	01Jan2017, 13:33	3.66
CHC21.28_20.57	22.7285	5030.8	01Jan2017, 19:07	3.00
CHC21.59	22.1338	5054.3	01Jan2017, 18:18	2.97
CHC21.59A	0.2001	195.2	01Jan2017, 13:52	3.97
CHC21.59B	0.0256	36.6	01Jan2017, 13:32	4.94
CHC21.59C	0.0275	38.9	01Jan2017, 13:31	4.72
CHC21.59D	0.0896	110.2	01Jan2017, 13:33	3.97
CHC21.59_21.28	22.1338	5014.7	01Jan2017, 18:29	2.97
CHC22.01	21.7910	5066.1	01Jan2017, 18:03	2.95
CHC22.01A	1.2726	1475.1	01Jan2017, 13:31	3.55
CHC22.01B	0.0456	60.5	01Jan2017, 13:30	4.18
CHC22.01_21.59	21.7910	5015.7	01Jan2017, 18:19	2.95
CHC23.04	20.4728	4998.3	01Jan2017, 17:33	2.91
CHC23.04A	1.8763	934.3	01Jan2017, 14:57	3.44
CHC23.04B	0.2164	228.9	01Jan2017, 13:41	3.76
CHC23.04_22.01	20.4728	4937.7	01Jan2017, 18:04	2.92
CHC24.53	18.3801	4752.6	01Jan2017, 16:49	2.85

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	4603.3	01Jan2017, 17:38	2.85
CHC24.63	18.3801	4752.6	01Jan2017, 16:49	2.85
CHC24.64	11.7771	3670.9	01Jan2017, 16:59	2.75
CHC24.64A	0.2517	124.2	01Jan2017, 14:37	2.96
CHC25.53	11.5254	4187.7	01Jan2017, 16:11	2.77
CHC25.53A	0.6693	501.1	01Jan2017, 14:05	3.45
CHC25.53B	0.0163	17.5	01Jan2017, 13:31	3.16
CHC25.53_24.64	11.5254	3628.8	01Jan2017, 17:00	2.75
CHC26.30	10.8398	4159.6	01Jan2017, 15:47	2.73
CHC26.30A	0.8065	342.6	01Jan2017, 15:21	3.35
CHC26.30_25.53	10.8398	4063.3	01Jan2017, 16:11	2.73
CHC27.38	10.0333	4493.7	01Jan2017, 15:03	2.69
CHC27.38_26.30	10.0333	3833.3	01Jan2017, 15:48	2.68
CHC27.39	3.5391	1388.9	01Jan2017, 14:32	2.88
CHC27.39A	0.3314	269.4	01Jan2017, 13:57	3.45
CHC28.26	3.2077	1264.0	01Jan2017, 14:28	2.82
CHC28.26_27.39	3.2077	1235.7	01Jan2017, 14:53	2.82
CHC28.31	3.2077	1264.0	01Jan2017, 14:28	2.82
CHC28.31A	0.0950	100.7	01Jan2017, 13:36	3.46
CHC28.31B	0.7915	630.1	01Jan2017, 13:56	3.35
CHC28.67	2.3212	933.3	01Jan2017, 15:09	2.61

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	404.0	01Jan2017, 13:58	2.57
CHC28.67_28.31	2.3212	929.7	01Jan2017, 15:19	2.61
CHC29.91	1.6558	807.5	01Jan2017, 14:32	2.62
CHC29.91A	0.6097	359.3	01Jan2017, 13:54	2.39
CHC29.91_28.67	1.6558	796.9	01Jan2017, 15:11	2.62
CHC30.94	1.0461	624.8	01Jan2017, 14:06	2.76
CHC30.94A	1.0461	624.8	01Jan2017, 14:06	2.76
CHC30.94_29.91	1.0461	621.2	01Jan2017, 14:41	2.76
CHC3.39	62.5254	8226.3	02Jan2017, 00:00	3.14
CHC3.39A	1.8419	1464.8	01Jan2017, 13:54	3.24
CHC3.39_1.28	62.5254	8213.9	02Jan2017, 00:59	3.10
CHC4.62	60.6835	8676.8	01Jan2017, 22:47	3.26
CHC4.62A	0.1505	162.1	01Jan2017, 13:36	3.56
CHC4.62B	0.1946	204.3	01Jan2017, 13:38	3.56
CHC4.62_3.39	60.6835	8153.7	02Jan2017, 00:02	3.13
CHC4.97	60.3384	8710.0	01Jan2017, 22:30	3.27
CHC4.97A	0.4693	271.3	01Jan2017, 14:32	3.35
CHC4.97B	0.0580	66.3	01Jan2017, 13:37	3.87
CHC4.97C	0.2012	217.3	01Jan2017, 13:33	3.35
CHC4.97_4.62	60.3384	8661.8	01Jan2017, 22:47	3.26
CHC5.97	59.6099	8689.4	01Jan2017, 22:13	3.28

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	876.1	01Jan2017, 14:07	3.65
CHC5.97_4.97	59.6099	8674.9	01Jan2017, 22:31	3.27
CHC7.47	58.4785	8671.2	01Jan2017, 21:35	3.29
CHC7.47_5.97	58.4785	8632.9	01Jan2017, 22:14	3.27
CHC7.48	53.6341	8347.1	01Jan2017, 21:46	3.27
CHC7.48A	2.2128	596.0	01Jan2017, 18:05	3.64
CHC9.40	51.4213	8072.4	01Jan2017, 20:58	3.28
CHC9.40A	1.1576	806.2	01Jan2017, 14:19	3.65
CHC9.40_7.47	51.4213	7993.9	01Jan2017, 21:57	3.25
DER0.00	2.9199	1807.5	01Jan2017, 14:58	3.54
DER0.00A	0.1924	207.2	01Jan2017, 13:36	3.56
DER0.52	2.7275	1783.4	01Jan2017, 14:45	3.54
DER0.52A	0.5165	497.7	01Jan2017, 13:49	3.76
DER0.52_0.00	2.7275	1773.8	01Jan2017, 14:58	3.54
DER1.10	2.2110	1639.4	01Jan2017, 14:26	3.48
DER1.10A	0.3712	347.7	01Jan2017, 13:51	3.76
DER1.10_0.52	2.2110	1613.2	01Jan2017, 14:48	3.48
DER1.76	1.8398	1442.4	01Jan2017, 14:10	3.43
DER1.76A	0.5078	412.0	01Jan2017, 13:52	3.25
DER1.76_1.10	1.8398	1434.0	01Jan2017, 14:30	3.43
DER2.22	1.3320	1105.8	01Jan2017, 14:05	3.49

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	540.4	01Jan2017, 14:03	3.35
DER2.22_1.76	1.3320	1101.2	01Jan2017, 14:16	3.49
DER2.93	0.6085	570.7	01Jan2017, 13:49	3.66
DER2.93A	0.6085	570.7	01Jan2017, 13:49	3.66
DER2.93_2.22	0.6085	566.9	01Jan2017, 14:06	3.66
DORT0.34	1.6920	1205.4	01Jan2017, 14:12	3.59
DORT0.34A	0.0357	41.2	01Jan2017, 13:31	3.56
DORT0.34B	0.0234	26.4	01Jan2017, 13:31	3.46
DORT0.54	1.6329	1194.9	01Jan2017, 14:10	3.59
DORT0.54A	0.2058	207.5	01Jan2017, 13:43	3.66
DORT0.54B	0.0280	24.9	01Jan2017, 13:33	2.67
DORT0.54C	0.0058	7.7	01Jan2017, 13:32	4.40
DORT0.54D	0.0832	81.0	01Jan2017, 13:50	3.87
DORT0.54E	0.0367	43.2	01Jan2017, 13:30	3.56
DORT0.54_0.34	1.6329	1190.4	01Jan2017, 14:13	3.59
DORT1.15	1.2734	1039.9	01Jan2017, 13:58	3.63
DORT1.15A	0.4022	443.4	01Jan2017, 13:38	3.76
DORT1.15B	0.0103	15.7	01Jan2017, 13:30	5.39
DORT1.15_0.54	1.2734	1029.1	01Jan2017, 14:12	3.63
DORT1.58	0.8609	771.4	01Jan2017, 13:57	3.54
DORT1.58A	0.4931	466.7	01Jan2017, 13:46	3.56

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	768.3	01Jan2017, 14:07	3.54
DORT2.41	0.3678	377.1	01Jan2017, 13:41	3.52
DORT2.41A	0.2384	242.4	01Jan2017, 13:39	3.46
DORT2.41B	0.1294	140.1	01Jan2017, 13:38	3.66
DORT2.41_1.58	0.3678	371.1	01Jan2017, 14:07	3.52
DOR0.00	5.5423	3223.1	01Jan2017, 15:03	3.55
DOR0.00A	0.0475	56.1	01Jan2017, 13:39	4.18
DOR0.24	5.4948	3293.8	01Jan2017, 14:53	3.55
DOR0.24A	0.1218	133.6	01Jan2017, 13:40	3.87
DOR0.24B	0.1287	132.2	01Jan2017, 13:48	3.97
DOR0.24_0.00	5.4948	3213.5	01Jan2017, 15:03	3.55
DOR0.44A	0.5212	470.0	01Jan2017, 13:57	3.86
DOR0.44_0.24	5.2443	3215.2	01Jan2017, 14:53	3.54
DOR1.21	4.7231	3117.0	01Jan2017, 14:24	3.51
DOR1.21A	0.2430	198.6	01Jan2017, 14:07	3.87
DOR1.21B	0.2037	223.7	01Jan2017, 13:38	3.76
DOR1.21_0.44	4.7231	3010.8	01Jan2017, 14:51	3.50
DOR1.23	4.2764	2935.0	01Jan2017, 14:25	3.61
DOR1.23A	0.2095	221.4	01Jan2017, 13:45	3.97
DOR1.45	4.0669	2850.2	01Jan2017, 14:18	3.59
DOR1.45_1.23	4.0669	2831.2	01Jan2017, 14:26	3.59

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	1683.1	01Jan2017, 14:24	3.60
DOR1.60A	0.5501	525.3	01Jan2017, 13:48	3.66
DOR2.40	1.8248	1435.1	01Jan2017, 14:09	3.58
DOR2.40A	0.4594	397.3	01Jan2017, 13:56	3.66
DOR2.40_1.60	1.8248	1418.3	01Jan2017, 14:30	3.58
DOR2.81	1.3654	1077.9	01Jan2017, 14:01	3.55
DOR2.81A	0.2367	233.0	01Jan2017, 13:49	3.87
DOR2.81_2.40	1.3654	1070.0	01Jan2017, 14:13	3.55
DOR3.06	1.1287	868.5	01Jan2017, 13:57	3.49
DOR3.06A	0.3648	345.5	01Jan2017, 13:46	3.56
DOR3.06B	0.7639	565.3	01Jan2017, 14:06	3.45
DOR3.06_2.81	1.1287	866.5	01Jan2017, 14:05	3.49
DOR.44	5.2443	3229.7	01Jan2017, 14:48	3.54
ERRR0.57_0.00	1.1576	994.7	01Jan2017, 14:14	3.88
ERRT0.00	1.2906	1100.4	01Jan2017, 14:13	3.96
ERRT0.00A	0.1098	124.1	01Jan2017, 13:48	4.50
ERRT0.00B	0.0077	11.2	01Jan2017, 13:30	4.83
ERRT0.00C	0.0074	11.5	01Jan2017, 13:30	5.62
ERRT0.00D	0.0036	5.6	01Jan2017, 13:30	5.62
ERRT0.00E	0.0045	7.0	01Jan2017, 13:30	5.62
ERRT0.57	1.1576	1000.6	01Jan2017, 14:03	3.88

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	184.2	01Jan2017, 14:33	3.87
ERRT0.61	0.8788	849.1	01Jan2017, 14:01	3.89
ERRT0.61A	0.4551	398.3	01Jan2017, 14:02	3.97
ERRT1.62	0.4237	462.3	01Jan2017, 13:35	3.81
ERRT1.62A	0.1546	152.8	01Jan2017, 13:43	3.56
ERRT1.62B	0.2547	315.9	01Jan2017, 13:31	3.87
ERRT1.62C	0.0144	22.4	01Jan2017, 13:30	5.62
ERRT1.62_0.61	0.4237	451.0	01Jan2017, 14:01	3.81
ERR0.00	2.6728	2187.9	01Jan2017, 14:16	3.83
ERR0.00A	0.0718	76.9	01Jan2017, 13:35	3.46
ERR0.00B	0.0053	8.2	01Jan2017, 13:30	5.62
ERR0.23	2.5957	2170.0	01Jan2017, 14:11	3.84
ERR0.23A	0.1922	198.6	01Jan2017, 13:39	3.56
ERR0.23B	0.0298	45.1	01Jan2017, 13:30	5.28
ERR0.23_0.00	2.5957	2161.7	01Jan2017, 14:16	3.84
ERR0.26	1.3051	1071.2	01Jan2017, 14:10	3.72
ERR0.88	1.0831	962.9	01Jan2017, 14:00	3.70
ERR0.88A	0.5048	405.4	01Jan2017, 14:06	3.76
ERR0.88_0.23	1.0831	957.8	01Jan2017, 14:13	3.70
ERR1.33	0.5783	568.6	01Jan2017, 13:45	3.66
ERR1.33A	0.5783	568.6	01Jan2017, 13:45	3.66

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	565.4	01Jan2017, 13:57	3.66
LAR0.00	0.9453	627.6	01Jan2017, 14:10	3.86
LAR0.00A	0.5827	369.1	01Jan2017, 14:38	3.86
LAR0.40	0.3626	334.7	01Jan2017, 13:50	3.85
LAR0.40A	0.0039	6.1	01Jan2017, 13:30	5.74
LAR0.40B	0.1091	150.2	01Jan2017, 13:39	5.28
LAR0.40C	0.1251	136.4	01Jan2017, 13:41	3.87
LAR0.40D	0.1245	130.8	01Jan2017, 13:38	3.56
LAR0.40_0.00	0.3626	333.6	01Jan2017, 14:00	3.84
MRT0.00	0.4202	397.6	01Jan2017, 13:44	3.50
MRT0.00A	0.1647	163.0	01Jan2017, 13:41	3.46
MRT0.66	0.2555	239.6	01Jan2017, 13:32	3.55
MRT0.66A	0.2030	235.5	01Jan2017, 13:32	3.66
MRT0.66B	0.0376	46.0	01Jan2017, 13:30	3.76
MRT0.66C	0.0149	19.0	01Jan2017, 13:31	4.08
MRT0.66_0.00	0.2555	237.3	01Jan2017, 13:47	3.53
ORT0.28	0.7836	717.2	01Jan2017, 13:53	3.37
ORT0.28A	0.1786	172.9	01Jan2017, 13:39	3.25
ORT0.95	0.6050	586.6	01Jan2017, 13:39	3.40
ORT0.95A	0.1851	190.6	01Jan2017, 13:34	3.25
ORT0.95_0.28	0.6050	581.8	01Jan2017, 13:56	3.40

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	418.6	01Jan2017, 13:39	3.46
ORT1.38A	0.1910	199.1	01Jan2017, 13:35	3.35
ORT1.38_0.95	0.4199	417.2	01Jan2017, 13:46	3.46
ORT2.04	0.2289	236.4	01Jan2017, 13:39	3.56
ORT2.04A	0.2289	236.4	01Jan2017, 13:39	3.56
ORT2.04_1.38	0.2289	235.9	01Jan2017, 13:49	3.56
Pond 0	0.1946	189.3	01Jan2017, 13:47	3.56
Pond 1	0.2012	217.2	01Jan2017, 13:33	3.35
Pond 10	0.0122	9.4	01Jan2017, 13:38	3.52
Pond 11	0.0236	19.8	01Jan2017, 13:36	3.56
Pond 12	0.0172	5.3	01Jan2017, 14:00	3.56
Pond 13	0.0603	62.8	01Jan2017, 13:39	3.45
Pond 14	0.1379	148.2	01Jan2017, 13:38	3.56
Pond 15	0.0477	11.2	01Jan2017, 15:02	3.97
Pond 16	0.3346	146.9	01Jan2017, 13:58	4.23
Pond 17	0.0528	15.7	01Jan2017, 14:27	4.83
Pond 18	0.1638	52.3	01Jan2017, 15:35	4.83
Pond 19	0.0053	5.6	01Jan2017, 13:38	5.62
Pond 2	0.0580	41.2	01Jan2017, 13:59	3.56
Pond 20	0.0077	10.3	01Jan2017, 13:31	4.83
Pond 21	0.0298	45.1	01Jan2017, 13:30	5.28

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	11.2	01Jan2017, 13:31	5.17
Pond 23	0.0036	5.6	01Jan2017, 13:30	5.62
Pond 24	0.0045	2.9	01Jan2017, 13:40	5.62
Pond 25	0.2547	307.7	01Jan2017, 13:33	3.87
Pond 26	0.0144	8.7	01Jan2017, 13:40	5.62
Pond 27	0.1245	66.1	01Jan2017, 14:07	3.55
Pond 28	0.1251	126.3	01Jan2017, 13:50	3.71
Pond 29	0.1091	142.2	01Jan2017, 13:49	4.31
Pond 3	0.1861	0.0	01Jan2017, 01:00	0.00
Pond 30	0.0039	2.2	01Jan2017, 13:37	4.39
Pond 31	0.3448	146.0	01Jan2017, 15:09	4.66
Pond 32	0.0626	65.8	01Jan2017, 13:54	5.62
Pond 33	0.0149	2.4	01Jan2017, 15:32	3.94
Pond 34	0.0376	3.3	01Jan2017, 19:03	2.79
Pond 35	0.0294	27.1	01Jan2017, 13:34	3.26
Pond 36	0.0175	25.5	01Jan2017, 13:32	5.06
Pond 37	0.1287	126.7	01Jan2017, 13:56	3.97
Pond 38	0.2037	24.7	01Jan2017, 17:06	0.90
Pond 39	0.0234	26.2	01Jan2017, 13:33	3.46
Pond 4	0.2023	145.2	01Jan2017, 13:47	3.05
Pond 40	0.0832	7.5	01Jan2017, 19:24	3.11

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	6.0	01Jan2017, 13:44	4.40
Pond 42	0.0367	36.8	01Jan2017, 13:35	3.56
Pond 43	0.0103	15.6	01Jan2017, 13:32	5.39
Pond 44	0.1294	136.3	01Jan2017, 13:43	3.65
Pond 45	0.1457	162.6	01Jan2017, 13:37	3.66
Pond 46	0.0187	16.6	01Jan2017, 13:38	5.28
Pond 47	0.0275	7.9	01Jan2017, 14:11	4.47
Pond 48	0.0456	60.3	01Jan2017, 13:31	3.46
Pond 49	0.0256	36.6	01Jan2017, 13:33	4.94
Pond 5	0.0343	33.7	01Jan2017, 13:36	3.16
Pond 50	0.0073	6.7	01Jan2017, 14:07	4.14
Pond 51	0.0721	62.5	01Jan2017, 13:43	3.68
Pond 52	0.0497	46.8	01Jan2017, 13:41	3.36
Pond 53	0.0896	109.3	01Jan2017, 13:35	3.97
Pond 54	0.2164	100.1	01Jan2017, 14:19	3.76
Pond 55	0.0163	15.6	01Jan2017, 13:34	3.02
Pond 56	0.0231	35.8	01Jan2017, 13:30	5.62
Pond 57	0.0112	13.4	01Jan2017, 13:31	3.66
Pond 58	0.0280	9.3	01Jan2017, 13:58	2.67
Pond 6	0.4472	131.2	01Jan2017, 14:33	3.66
Pond 7	0.0064	5.3	01Jan2017, 13:45	5.73

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	39.9	01Jan2017, 13:35	3.56
Pond 9	0.0281	9.5	01Jan2017, 14:03	3.56
RIR0.00	6.5684	4408.2	01Jan2017, 14:45	3.46
RIR0.00A	0.0647	70.9	01Jan2017, 13:54	4.72
RIR0.32	6.5037	4481.7	01Jan2017, 14:35	3.44
RIR0.32A	0.5587	443.0	01Jan2017, 13:59	3.45
RIR0.32_0.00	6.5037	4375.0	01Jan2017, 14:45	3.44
RIR0.65	5.9450	4207.4	01Jan2017, 14:29	3.44
RIR0.65A	0.1896	230.6	01Jan2017, 13:32	3.87
RIR0.65_0.32	5.9450	4187.1	01Jan2017, 14:37	3.44
RIR0.86	5.7554	4188.9	01Jan2017, 14:25	3.43
RIR0.86A	0.2984	266.8	01Jan2017, 13:49	3.45
RIR0.86_0.65	5.7554	4176.0	01Jan2017, 14:29	3.43
RIR1.24	5.4570	4080.7	01Jan2017, 14:19	3.43
RIR1.24A	0.0980	104.9	01Jan2017, 13:32	3.26
RIR1.24_0.86	5.4570	4040.6	01Jan2017, 14:26	3.43
RIR1.34	5.3590	4063.9	01Jan2017, 14:19	3.43
RIR1.52	4.5754	3565.2	01Jan2017, 14:22	3.44
RIR1.62	1.8861	1392.0	01Jan2017, 14:20	3.42
RIR1.62A	0.5008	402.1	01Jan2017, 14:01	3.56
RIR2.60	1.3853	1061.4	01Jan2017, 13:58	3.37

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	321.1	01Jan2017, 13:38	3.45
RIR2.60_1.62	1.3853	1048.6	01Jan2017, 14:26	3.37
RIR3.38	1.0728	895.7	01Jan2017, 13:51	3.35
RIR3.38A	1.0434	875.3	01Jan2017, 13:52	3.35
RIR3.38B	0.0294	32.7	01Jan2017, 13:30	3.26
RIR3.38_2.60	1.0728	882.2	01Jan2017, 14:07	3.34
SHCT0.00	3.0470	1791.6	01Jan2017, 14:00	2.35
SHCT0.00A	0.9966	557.3	01Jan2017, 13:55	2.29
SHCT1.59	2.0504	1246.9	01Jan2017, 13:51	2.38
SHCT1.59A	2.0504	1246.9	01Jan2017, 13:51	2.38
SHCT1.59_0.00	2.0504	1245.7	01Jan2017, 14:02	2.38
SHC0.00	6.4942	3177.9	01Jan2017, 15:05	2.59
SHC0.00A	0.0458	40.9	01Jan2017, 13:41	3.06
SHC0.23	6.4484	3292.7	01Jan2017, 14:54	2.59
SHC0.23A	0.6386	413.9	01Jan2017, 14:25	3.55
SHC0.23_0.00	6.4484	3170.4	01Jan2017, 15:05	2.59
SHC1.60	5.8098	3154.0	01Jan2017, 14:13	2.49
SHC1.60A	0.2628	253.9	01Jan2017, 13:37	3.15
SHC1.60_0.23	5.8098	2943.8	01Jan2017, 14:56	2.48
SHC2.06	5.5470	3081.8	01Jan2017, 14:05	2.46
SHC2.06A	0.2828	176.1	01Jan2017, 13:42	2.11

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	3062.9	01Jan2017, 14:14	2.46
SHC2.56	5.2642	2979.5	01Jan2017, 14:01	2.48
SHC2.56A	0.4506	346.1	01Jan2017, 13:47	2.86
SHC2.56_2.06	5.2642	2974.5	01Jan2017, 14:06	2.48
SHC3.11	1.7666	931.6	01Jan2017, 14:08	2.60
SHC3.11A	0.2775	321.8	01Jan2017, 13:32	3.66
SHC3.11_2.56	1.7666	931.3	01Jan2017, 14:12	2.60
SHC3.92	1.4891	851.3	01Jan2017, 13:56	2.40
SHC3.92A	0.6934	389.8	01Jan2017, 13:51	2.20
SHC3.92B	0.7957	470.7	01Jan2017, 14:00	2.57
SHC3.92_3.11	1.4891	847.5	01Jan2017, 14:11	2.40
SRT0.50	2.6893	2177.1	01Jan2017, 14:24	3.46
SRT0.50A	0.4294	316.6	01Jan2017, 14:07	3.45
SRT1.29	2.2599	1902.9	01Jan2017, 14:12	3.46
SRT1.29A	0.3191	233.5	01Jan2017, 14:05	3.35
SRT1.29_0.50	2.2599	1888.0	01Jan2017, 14:25	3.46
SRT2.06	1.9408	1687.5	01Jan2017, 13:59	3.48
SRT2.06A	0.4839	426.5	01Jan2017, 13:52	3.56
SRT2.06_1.29	1.9408	1674.5	01Jan2017, 14:13	3.48
SRT2.55	1.4569	1276.3	01Jan2017, 13:53	3.45
SRT2.55A	0.3465	344.4	01Jan2017, 13:41	3.45

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	1272.6	01Jan2017, 14:01	3.45
SRT3.00	1.1104	1003.5	01Jan2017, 13:51	3.45
SRT3.00A	0.7468	654.0	01Jan2017, 13:51	3.45
SRT3.00_2.55	1.1104	999.3	01Jan2017, 13:59	3.45
SRT3.38	0.3636	351.2	01Jan2017, 13:43	3.45
SRT3.38A	0.3636	351.2	01Jan2017, 13:43	3.45
SRT3.38_3.00	0.3636	350.2	01Jan2017, 13:53	3.45
SSRTA0.00	0.4007	393.5	01Jan2017, 13:53	3.69
SSRTA0.00A	0.2628	264.1	01Jan2017, 13:45	3.76
SSRTA0.59	0.1379	148.2	01Jan2017, 13:38	3.56
SSRTA0.59A	0.1379	148.5	01Jan2017, 13:36	3.56
SSRTA0.59_0.00	0.1379	145.4	01Jan2017, 13:58	3.56
SSRT0.00	1.3182	1142.7	01Jan2017, 14:01	3.62
SSRT0.00A	0.2236	209.5	01Jan2017, 13:47	3.56
SSRT0.46	1.0946	968.6	01Jan2017, 13:51	3.63
SSRT0.46A	0.1893	209.0	01Jan2017, 13:36	3.66
SSRT0.46_0.00	1.0946	959.4	01Jan2017, 14:04	3.63
SSRT0.77	0.9053	830.2	01Jan2017, 13:51	3.62
SSRT0.77A	0.2520	252.6	01Jan2017, 13:44	3.66
SSRT0.77B	0.0603	66.0	01Jan2017, 13:33	3.46
SSRT0.77_0.46	0.9053	828.0	01Jan2017, 13:57	3.62

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	158.6	01Jan2017, 13:37	3.50
SSRT1.34A	0.1112	116.2	01Jan2017, 13:37	3.46
SSRT1.34B	0.0172	20.2	01Jan2017, 13:31	3.56
SSRT1.34C	0.0236	27.7	01Jan2017, 13:31	3.56
SSRT1.34D	0.0122	14.3	01Jan2017, 13:31	3.56
SSRT1.34E	0.0281	32.2	01Jan2017, 13:32	3.56
SSRT1.34_0.77	0.1923	155.5	01Jan2017, 14:01	3.49
SSR0.00	4.8444	3394.9	01Jan2017, 14:19	3.48
SSR0.00A	0.0601	69.8	01Jan2017, 13:31	3.56
SSR0.22	4.7843	3388.3	01Jan2017, 14:17	3.48
SSR0.22A	0.2501	282.0	01Jan2017, 13:40	3.97
SSR0.22_0.00	4.7843	3384.9	01Jan2017, 14:20	3.48
SSR0.85	4.5342	3281.8	01Jan2017, 14:10	3.45
SSR0.85_0.22	4.5342	3269.6	01Jan2017, 14:18	3.45
SSR0.87	3.2160	2187.9	01Jan2017, 14:13	3.38
SSR0.87A	0.3806	311.0	01Jan2017, 14:02	3.66
SSR1.06	2.8354	1896.2	01Jan2017, 14:11	3.34
SSR1.06A	0.2647	265.3	01Jan2017, 13:44	3.66
SSR1.06_0.87	2.8354	1893.0	01Jan2017, 14:15	3.34
SSR1.71	2.5707	1738.9	01Jan2017, 14:00	3.31
SSR1.71A	0.3665	314.4	01Jan2017, 14:02	3.87

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	1731.1	01Jan2017, 14:14	3.31
SSR1.89	2.2042	1432.6	01Jan2017, 13:54	3.22
SSR1.89A	0.3178	320.0	01Jan2017, 13:47	3.87
SSR1.89B	0.0231	36.0	01Jan2017, 13:30	5.62
SSR1.89_1.71	2.2042	1425.0	01Jan2017, 13:59	3.22
SSR2.33	1.8633	1116.3	01Jan2017, 13:47	3.08
SSR2.33A	0.1750	213.8	01Jan2017, 13:33	3.97
SSR2.33B	0.0381	44.7	01Jan2017, 13:31	3.56
SSR2.33_1.89	1.8633	1113.6	01Jan2017, 13:58	3.08
SSR2.70	1.6502	976.4	01Jan2017, 13:48	2.97
SSR2.70A	0.4613	419.6	01Jan2017, 13:48	3.45
SSR2.70B	0.0112	13.6	01Jan2017, 13:30	3.66
SSR2.70C	0.0064	10.0	01Jan2017, 13:30	5.74
SSR2.70D	0.0343	35.8	01Jan2017, 13:32	3.16
SSR2.70E	0.4472	463.2	01Jan2017, 13:41	3.66
SSR2.70_2.33	1.6502	974.6	01Jan2017, 13:56	2.97
SSR3.20	0.6898	399.4	01Jan2017, 13:45	2.16
SSR3.20A	0.1108	104.8	01Jan2017, 13:39	3.16
SSR3.20B	0.2023	203.6	01Jan2017, 13:34	3.16
SSR3.20_2.70	0.6898	399.1	01Jan2017, 13:50	2.16
SSR3.70	0.3767	161.9	01Jan2017, 13:38	1.40

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	161.9	01Jan2017, 13:38	2.77
SSR3.70B	0.1861	155.8	01Jan2017, 13:35	2.57
SSR3.70_3.20	0.3767	160.7	01Jan2017, 13:52	1.40
WOR0.00	2.8951	1932.1	01Jan2017, 14:36	3.36
WOR0.00A	0.0359	40.1	01Jan2017, 13:32	3.46
WOR0.32	2.8592	1932.2	01Jan2017, 14:30	3.36
WOR0.32A	0.1901	149.0	01Jan2017, 13:56	3.25
WOR0.32_0.00	2.8592	1926.9	01Jan2017, 14:36	3.36
WOR0.76	2.6691	1955.0	01Jan2017, 14:14	3.37
WOR0.76A	0.3131	341.8	01Jan2017, 13:39	3.76
WOR0.76_0.32	2.6691	1836.1	01Jan2017, 14:32	3.37
WOR1.59	2.3560	1841.4	01Jan2017, 14:02	3.32
WOR1.59A	0.4536	442.4	01Jan2017, 13:48	3.76
WOR1.59B	0.7600	539.5	01Jan2017, 14:08	3.35
WOR1.59_0.76	2.3560	1813.4	01Jan2017, 14:17	3.32
WOR1.64	1.1424	916.8	01Jan2017, 14:05	3.12
WOR1.64A	0.2551	241.2	01Jan2017, 13:49	3.66
WOR2.33	0.8873	758.1	01Jan2017, 13:42	2.98
WOR2.33A	0.3233	282.8	01Jan2017, 13:44	3.15
WOR2.33_1.64	0.8873	713.8	01Jan2017, 14:08	2.97
WOR3.00	0.5640	476.7	01Jan2017, 13:41	2.89

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	337.0	01Jan2017, 13:44	3.45
WOR3.67	0.2110	142.0	01Jan2017, 13:33	1.94
WOR3.67A	0.2110	142.0	01Jan2017, 13:33	1.94
WOR3.67_3.00	0.2110	141.6	01Jan2017, 13:40	1.94

Project: ChiquesCreek Simulation Run: 100YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 100YR_24HR
Compute Time: 31Jan2017, 15:40:03 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	1208.5	01Jan2017, 14:37	3.63
BER0.00A	0.1087	119.8	01Jan2017, 13:48	4.45
BER0.64	1.7391	1182.0	01Jan2017, 14:19	3.57
BER0.64A	0.3111	385.6	01Jan2017, 13:39	4.56
BER0.64_0.00	1.7391	1161.4	01Jan2017, 14:41	3.58
BER1.05	1.4280	1065.0	01Jan2017, 14:10	3.35
BER1.05A	0.2790	298.6	01Jan2017, 13:50	4.45
BER1.05_0.64	1.4280	1037.6	01Jan2017, 14:25	3.36
BER1.30	1.1490	838.2	01Jan2017, 14:02	3.09
BER1.30A	0.5289	479.8	01Jan2017, 13:52	3.78
BER1.30_1.05	1.1490	821.7	01Jan2017, 14:14	3.08
BER1.95	0.6201	401.9	01Jan2017, 13:47	2.50
BER1.95A	0.6201	401.9	01Jan2017, 13:47	2.50
BER1.95_1.30	0.6201	396.1	01Jan2017, 14:09	2.49
BOR0.00	6.6030	4748.3	01Jan2017, 14:34	3.83
BOR0.00A	0.0062	8.6	01Jan2017, 13:30	4.56
BOR0.10	6.5968	4931.7	01Jan2017, 14:31	3.84

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	230.8	01Jan2017, 13:58	4.45
BOR0.10_0.00	6.5968	4747.2	01Jan2017, 14:34	3.83
BOR0.68	1.6208	1209.0	01Jan2017, 14:13	3.31
BOR0.68A	0.2555	273.5	01Jan2017, 13:50	4.45
BOR0.68_0.10	1.6208	1183.1	01Jan2017, 14:31	3.32
BOR1.20	1.3653	1007.9	01Jan2017, 14:02	3.10
BOR1.20A	0.5429	460.1	01Jan2017, 14:04	4.00
BOR1.20_0.68	1.3653	997.8	01Jan2017, 14:16	3.10
BOR2.07	0.8224	555.0	01Jan2017, 13:44	2.50
BOR2.07A	0.8224	555.0	01Jan2017, 13:44	2.50
BOR2.07_1.20	0.8224	548.7	01Jan2017, 14:01	2.50
CHC10.68	50.2637	10192.8	01Jan2017, 20:33	4.13
CHC10.68A	0.7377	815.4	01Jan2017, 13:55	4.89
CHC10.68B	0.0477	58.7	01Jan2017, 13:45	4.90
CHC10.68C	0.1180	130.2	01Jan2017, 13:51	4.67
CHC10.68D	0.1638	188.9	01Jan2017, 14:05	5.82
CHC10.68E	0.0528	82.1	01Jan2017, 13:34	5.82
CHC10.68_9.40	50.2637	10167.9	01Jan2017, 21:02	4.11
CHC11.99	49.1437	10097.6	01Jan2017, 20:04	4.12
CHC11.99_10.68	49.1437	10075.3	01Jan2017, 20:36	4.11
CHC12.01	46.4709	9812.0	01Jan2017, 20:21	4.08

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	192.6	01Jan2017, 13:31	4.56
CHC12.65	46.3306	10035.7	01Jan2017, 19:31	4.10
CHC12.65_12.01	46.3306	9802.9	01Jan2017, 20:22	4.08
CHC12.67	45.3853	9914.6	01Jan2017, 19:35	4.09
CHC12.67A	0.5547	368.1	01Jan2017, 14:55	4.67
CHC13.89	44.8306	9906.1	01Jan2017, 18:52	4.09
CHC13.89_12.67	44.8306	9834.2	01Jan2017, 19:37	4.08
CHC13.90	41.9107	9479.6	01Jan2017, 18:59	4.07
CHC13.90A	2.4712	730.0	01Jan2017, 18:59	4.51
CHC16.25	39.4395	9515.1	01Jan2017, 16:56	4.08
CHC16.25A	0.7783	488.0	01Jan2017, 15:04	4.67
CHC16.25_13.90	39.4395	8749.6	01Jan2017, 18:59	4.04
CHC17.08	38.6612	9585.9	01Jan2017, 16:25	4.07
CHC17.08A	0.5852	486.1	01Jan2017, 14:25	4.78
CHC17.08B	0.3448	445.4	01Jan2017, 13:59	6.40
CHC17.08_16.25	38.6612	9264.5	01Jan2017, 16:59	4.07
CHC17.73	37.7312	9485.9	01Jan2017, 16:01	4.05
CHC17.73A	0.3870	383.6	01Jan2017, 14:06	4.90
CHC17.73B	0.0626	104.4	01Jan2017, 13:34	6.64
CHC17.73_17.08	37.7312	9268.5	01Jan2017, 16:27	4.05
CHC18.09	37.2816	9560.0	01Jan2017, 15:47	4.04

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	168.5	01Jan2017, 13:47	4.00
CHC18.09_17.73	37.2816	9366.2	01Jan2017, 16:02	4.04
CHC18.61	36.6951	9736.2	01Jan2017, 15:30	4.05
CHC18.61A	0.5761	646.3	01Jan2017, 13:40	4.11
CHC18.61_18.09	36.6951	9451.7	01Jan2017, 15:47	4.04
CHC19.32	36.1190	10151.6	01Jan2017, 15:02	4.05
CHC19.32_18.61	36.1190	9623.4	01Jan2017, 15:30	4.04
CHC19.35	29.5506	7580.2	01Jan2017, 19:04	3.98
CHC19.35A	0.3523	327.0	01Jan2017, 14:14	4.90
CHC19.35B	0.0175	28.6	01Jan2017, 13:31	6.05
CHC1.28	63.3656	10588.0	02Jan2017, 00:34	3.90
CHC1.28A	0.8402	368.8	01Jan2017, 16:00	4.22
CHC20.02	29.1808	7567.9	01Jan2017, 18:45	3.97
CHC20.02A	0.3588	430.0	01Jan2017, 13:54	5.35
CHC20.02_19.35	29.1808	7531.4	01Jan2017, 19:04	3.97
CHC20.55	28.8220	7574.9	01Jan2017, 18:24	3.96
CHC20.55_20.02	28.8220	7519.7	01Jan2017, 18:46	3.96
CHC20.57	23.2797	6678.8	01Jan2017, 18:37	3.84
CHC20.57A	0.5512	448.9	01Jan2017, 14:46	5.58
CHC21.28	22.7285	6647.9	01Jan2017, 18:00	3.81
CHC21.28A	0.3509	408.0	01Jan2017, 14:02	5.70

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	31.6	01Jan2017, 13:30	6.28
CHC21.28C	0.0073	8.0	01Jan2017, 14:00	5.13
CHC21.28D	0.0224	34.4	01Jan2017, 13:31	5.36
CHC21.28E	0.0497	62.7	01Jan2017, 13:33	4.22
CHC21.28F	0.1457	196.2	01Jan2017, 13:32	4.56
CHC21.28_20.57	22.7285	6575.3	01Jan2017, 18:39	3.80
CHC21.59	22.1338	6614.0	01Jan2017, 17:50	3.77
CHC21.59A	0.2001	229.2	01Jan2017, 13:52	4.90
CHC21.59B	0.0256	41.2	01Jan2017, 13:32	5.93
CHC21.59C	0.0275	43.8	01Jan2017, 13:31	5.70
CHC21.59D	0.0896	127.2	01Jan2017, 13:32	4.90
CHC21.59_21.28	22.1338	6559.6	01Jan2017, 18:01	3.77
CHC22.01	21.7910	6618.6	01Jan2017, 17:36	3.75
CHC22.01A	1.2726	1715.0	01Jan2017, 13:31	4.44
CHC22.01B	0.0456	69.0	01Jan2017, 13:30	5.13
CHC22.01_21.59	21.7910	6563.2	01Jan2017, 17:50	3.75
CHC23.04	20.4728	6514.0	01Jan2017, 17:10	3.71
CHC23.04A	1.8763	1142.8	01Jan2017, 14:56	4.32
CHC23.04B	0.2164	268.7	01Jan2017, 13:41	4.67
CHC23.04_22.01	20.4728	6448.5	01Jan2017, 17:37	3.71
CHC24.53	18.3801	6136.4	01Jan2017, 16:33	3.64

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	5967.6	01Jan2017, 17:16	3.64
CHC24.63	18.3801	6136.4	01Jan2017, 16:33	3.64
CHC24.64	11.7771	4725.9	01Jan2017, 16:45	3.53
CHC24.64A	0.2517	155.0	01Jan2017, 14:36	3.78
CHC25.53	11.5254	5378.3	01Jan2017, 16:01	3.55
CHC25.53A	0.6693	604.4	01Jan2017, 14:05	4.33
CHC25.53B	0.0163	20.6	01Jan2017, 13:30	4.00
CHC25.53_24.64	11.5254	4668.5	01Jan2017, 16:46	3.52
CHC26.30	10.8398	5332.2	01Jan2017, 15:40	3.51
CHC26.30A	0.8065	422.3	01Jan2017, 15:20	4.22
CHC26.30_25.53	10.8398	5215.1	01Jan2017, 16:02	3.51
CHC27.38	10.0333	5684.9	01Jan2017, 14:57	3.48
CHC27.38_26.30	10.0333	4922.4	01Jan2017, 15:41	3.45
CHC27.39	3.5391	1757.6	01Jan2017, 14:41	3.70
CHC27.39A	0.3314	323.6	01Jan2017, 13:57	4.33
CHC28.26	3.2077	1634.7	01Jan2017, 14:19	3.62
CHC28.26_27.39	3.2077	1589.3	01Jan2017, 14:47	3.63
CHC28.31	3.2077	1634.7	01Jan2017, 14:19	3.62
CHC28.31A	0.0950	118.7	01Jan2017, 13:35	4.34
CHC28.31B	0.7915	759.8	01Jan2017, 13:56	4.22
CHC28.67	2.3212	1222.9	01Jan2017, 14:58	3.39

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	507.2	01Jan2017, 13:57	3.34
CHC28.67_28.31	2.3212	1219.9	01Jan2017, 15:07	3.39
CHC29.91	1.6558	1039.1	01Jan2017, 14:27	3.40
CHC29.91A	0.6097	455.1	01Jan2017, 13:53	3.13
CHC29.91_28.67	1.6558	1027.4	01Jan2017, 15:03	3.40
CHC30.94	1.0461	779.7	01Jan2017, 14:05	3.56
CHC30.94A	1.0461	779.7	01Jan2017, 14:05	3.56
CHC30.94_29.91	1.0461	775.7	01Jan2017, 14:37	3.56
CHC3.39	62.5254	10546.5	01Jan2017, 23:46	3.94
CHC3.39A	1.8419	1771.1	01Jan2017, 13:53	4.10
CHC3.39_1.28	62.5254	10531.5	02Jan2017, 00:36	3.90
CHC4.62	60.6835	11074.7	01Jan2017, 22:37	4.08
CHC4.62A	0.1505	190.6	01Jan2017, 13:36	4.45
CHC4.62B	0.1946	240.8	01Jan2017, 13:38	4.45
CHC4.62_3.39	60.6835	10455.1	01Jan2017, 23:47	3.93
CHC4.97	60.3384	11107.1	01Jan2017, 22:21	4.09
CHC4.97A	0.4693	331.6	01Jan2017, 14:32	4.22
CHC4.97B	0.0580	77.1	01Jan2017, 13:37	4.79
CHC4.97C	0.2012	255.5	01Jan2017, 13:32	4.22
CHC4.97_4.62	60.3384	11056.0	01Jan2017, 22:37	4.08
CHC5.97	59.6099	11077.9	01Jan2017, 22:04	4.11

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	1048.5	01Jan2017, 14:06	4.55
CHC5.97_4.97	59.6099	11063.1	01Jan2017, 22:22	4.09
CHC7.47	58.4785	11043.3	01Jan2017, 21:29	4.13
CHC7.47_5.97	58.4785	11007.6	01Jan2017, 22:06	4.10
CHC7.48	53.6341	10629.1	01Jan2017, 21:41	4.11
CHC7.48A	2.2128	733.1	01Jan2017, 18:03	4.53
CHC9.40	51.4213	10258.1	01Jan2017, 20:59	4.12
CHC9.40A	1.1576	969.0	01Jan2017, 14:18	4.55
CHC9.40_7.47	51.4213	10190.5	01Jan2017, 21:56	4.09
DER0.00	2.9199	2213.7	01Jan2017, 14:54	4.42
DER0.00A	0.1924	243.6	01Jan2017, 13:36	4.45
DER0.52	2.7275	2184.5	01Jan2017, 14:41	4.42
DER0.52A	0.5165	587.6	01Jan2017, 13:48	4.67
DER0.52_0.00	2.7275	2173.1	01Jan2017, 14:53	4.42
DER1.10	2.2110	1992.1	01Jan2017, 14:24	4.36
DER1.10A	0.3712	411.2	01Jan2017, 13:51	4.67
DER1.10_0.52	2.2110	1962.0	01Jan2017, 14:45	4.36
DER1.76	1.8398	1742.8	01Jan2017, 14:09	4.30
DER1.76A	0.5078	497.7	01Jan2017, 13:52	4.11
DER1.76_1.10	1.8398	1733.3	01Jan2017, 14:28	4.30
DER2.22	1.3320	1325.0	01Jan2017, 14:04	4.37

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	653.8	01Jan2017, 14:02	4.22
DER2.22_1.76	1.3320	1320.0	01Jan2017, 14:14	4.37
DER2.93	0.6085	676.5	01Jan2017, 13:49	4.56
DER2.93A	0.6085	676.5	01Jan2017, 13:49	4.56
DER2.93_2.22	0.6085	672.4	01Jan2017, 14:05	4.55
DORT0.34	1.6920	1538.1	01Jan2017, 14:07	4.47
DORT0.34A	0.0357	48.0	01Jan2017, 13:31	4.45
DORT0.34B	0.0234	30.8	01Jan2017, 13:31	4.34
DORT0.54	1.6329	1523.1	01Jan2017, 14:04	4.48
DORT0.54A	0.2058	244.9	01Jan2017, 13:43	4.56
DORT0.54B	0.0280	30.1	01Jan2017, 13:33	3.46
DORT0.54C	0.0058	8.8	01Jan2017, 13:32	5.36
DORT0.54D	0.0832	95.4	01Jan2017, 13:50	4.79
DORT0.54E	0.0367	50.1	01Jan2017, 13:30	4.45
DORT0.54_0.34	1.6329	1515.9	01Jan2017, 14:08	4.48
DORT1.15	1.2734	1303.9	01Jan2017, 13:54	4.52
DORT1.15A	0.4022	518.6	01Jan2017, 13:37	4.67
DORT1.15B	0.0103	17.5	01Jan2017, 13:30	6.40
DORT1.15_0.54	1.2734	1295.0	01Jan2017, 14:06	4.53
DORT1.58	0.8609	951.3	01Jan2017, 13:54	4.43
DORT1.58A	0.4931	554.3	01Jan2017, 13:46	4.44

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	945.7	01Jan2017, 14:04	4.43
DORT2.41	0.3678	449.0	01Jan2017, 13:39	4.41
DORT2.41A	0.2384	286.9	01Jan2017, 13:38	4.33
DORT2.41B	0.1294	164.4	01Jan2017, 13:37	4.56
DORT2.41_1.58	0.3678	444.1	01Jan2017, 14:03	4.42
DOR0.00	5.5423	4003.4	01Jan2017, 14:58	4.45
DOR0.00A	0.0475	64.8	01Jan2017, 13:39	5.13
DOR0.24	5.4948	4089.4	01Jan2017, 14:47	4.45
DOR0.24A	0.1218	156.1	01Jan2017, 13:40	4.79
DOR0.24B	0.1287	154.8	01Jan2017, 13:47	4.90
DOR0.24_0.00	5.4948	3991.7	01Jan2017, 14:58	4.45
DOR0.44A	0.5212	555.4	01Jan2017, 13:57	4.78
DOR0.44_0.24	5.2443	3996.6	01Jan2017, 14:48	4.43
DOR1.21	4.7231	3862.3	01Jan2017, 14:19	4.40
DOR1.21A	0.2430	235.8	01Jan2017, 14:06	4.78
DOR1.21B	0.2037	261.8	01Jan2017, 13:38	4.67
DOR1.21_0.44	4.7231	3726.0	01Jan2017, 14:46	4.39
DOR1.23	4.2764	3637.5	01Jan2017, 14:20	4.50
DOR1.23A	0.2095	258.8	01Jan2017, 13:45	4.90
DOR1.45	4.0669	3516.3	01Jan2017, 14:14	4.48
DOR1.45_1.23	4.0669	3495.9	01Jan2017, 14:21	4.48

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	2048.1	01Jan2017, 14:21	4.49
DOR1.60A	0.5501	622.1	01Jan2017, 13:47	4.56
DOR2.40	1.8248	1725.1	01Jan2017, 14:08	4.47
DOR2.40A	0.4594	473.1	01Jan2017, 13:56	4.56
DOR2.40_1.60	1.8248	1706.7	01Jan2017, 14:28	4.47
DOR2.81	1.3654	1293.6	01Jan2017, 14:00	4.44
DOR2.81A	0.2367	274.2	01Jan2017, 13:49	4.78
DOR2.81_2.40	1.3654	1284.9	01Jan2017, 14:12	4.44
DOR3.06	1.1287	1045.1	01Jan2017, 13:56	4.37
DOR3.06A	0.3648	410.4	01Jan2017, 13:46	4.45
DOR3.06B	0.7639	682.2	01Jan2017, 14:06	4.33
DOR3.06_2.81	1.1287	1042.6	01Jan2017, 14:04	4.37
DOR.44	5.2443	4014.4	01Jan2017, 14:43	4.43
ERRR0.57_0.00	1.1576	1172.4	01Jan2017, 14:13	4.80
ERRT0.00	1.2906	1297.2	01Jan2017, 14:11	4.89
ERRT0.00A	0.1098	142.8	01Jan2017, 13:48	5.47
ERRT0.00B	0.0077	12.6	01Jan2017, 13:30	5.82
ERRT0.00C	0.0074	12.8	01Jan2017, 13:30	6.64
ERRT0.00D	0.0036	6.2	01Jan2017, 13:30	6.64
ERRT0.00E	0.0045	7.8	01Jan2017, 13:30	6.64
ERRT0.57	1.1576	1178.6	01Jan2017, 14:02	4.80

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	220.4	01Jan2017, 14:32	4.78
ERRT0.61	0.8788	997.0	01Jan2017, 14:00	4.81
ERRT0.61A	0.4551	470.1	01Jan2017, 14:02	4.90
ERRT1.62	0.4237	539.2	01Jan2017, 13:34	4.72
ERRT1.62A	0.1546	180.9	01Jan2017, 13:43	4.45
ERRT1.62B	0.2547	363.7	01Jan2017, 13:31	4.78
ERRT1.62C	0.0144	24.8	01Jan2017, 13:30	6.64
ERRT1.62_0.61	0.4237	527.4	01Jan2017, 14:00	4.72
ERR0.00	2.6728	2595.3	01Jan2017, 14:14	4.74
ERR0.00A	0.0718	90.5	01Jan2017, 13:35	4.34
ERR0.00B	0.0053	9.1	01Jan2017, 13:30	6.64
ERR0.23	2.5957	2570.8	01Jan2017, 14:10	4.75
ERR0.23A	0.1922	234.4	01Jan2017, 13:39	4.45
ERR0.23B	0.0298	50.3	01Jan2017, 13:30	6.28
ERR0.23_0.00	2.5957	2561.5	01Jan2017, 14:14	4.75
ERR0.26	1.3051	1275.7	01Jan2017, 14:08	4.62
ERR0.88	1.0831	1141.7	01Jan2017, 13:59	4.61
ERR0.88A	0.5048	483.1	01Jan2017, 14:06	4.67
ERR0.88_0.23	1.0831	1136.1	01Jan2017, 14:12	4.61
ERR1.33	0.5783	672.1	01Jan2017, 13:45	4.56
ERR1.33A	0.5783	672.1	01Jan2017, 13:45	4.56

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	668.7	01Jan2017, 13:56	4.55
LAR0.00	0.9453	735.5	01Jan2017, 14:09	4.78
LAR0.00A	0.5827	442.1	01Jan2017, 14:38	4.78
LAR0.40	0.3626	387.7	01Jan2017, 13:47	4.78
LAR0.40A	0.0039	6.8	01Jan2017, 13:30	6.76
LAR0.40B	0.1091	168.7	01Jan2017, 13:39	6.28
LAR0.40C	0.1251	159.5	01Jan2017, 13:40	4.79
LAR0.40D	0.1245	154.1	01Jan2017, 13:38	4.45
LAR0.40_0.00	0.3626	387.1	01Jan2017, 13:56	4.78
MRT0.00	0.4202	469.3	01Jan2017, 13:43	4.37
MRT0.00A	0.1647	193.3	01Jan2017, 13:41	4.34
MRT0.66	0.2555	279.2	01Jan2017, 13:32	4.40
MRT0.66A	0.2030	274.1	01Jan2017, 13:32	4.56
MRT0.66B	0.0376	53.1	01Jan2017, 13:30	4.67
MRT0.66C	0.0149	21.8	01Jan2017, 13:31	5.01
MRT0.66_0.00	0.2555	277.4	01Jan2017, 13:45	4.39
ORT0.28	0.7836	863.9	01Jan2017, 13:49	4.24
ORT0.28A	0.1786	206.2	01Jan2017, 13:38	4.11
ORT0.95	0.6050	694.1	01Jan2017, 13:39	4.27
ORT0.95A	0.1851	225.7	01Jan2017, 13:34	4.11
ORT0.95_0.28	0.6050	689.7	01Jan2017, 13:53	4.27

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	493.0	01Jan2017, 13:39	4.34
ORT1.38A	0.1910	235.3	01Jan2017, 13:35	4.22
ORT1.38_0.95	0.4199	491.5	01Jan2017, 13:46	4.34
ORT2.04	0.2289	279.1	01Jan2017, 13:39	4.45
ORT2.04A	0.2289	279.1	01Jan2017, 13:39	4.45
ORT2.04_1.38	0.2289	278.4	01Jan2017, 13:50	4.45
Pond 0	0.1946	226.0	01Jan2017, 13:46	4.45
Pond 1	0.2012	255.5	01Jan2017, 13:33	4.22
Pond 10	0.0122	13.7	01Jan2017, 13:36	4.38
Pond 11	0.0236	21.5	01Jan2017, 13:37	4.45
Pond 12	0.0172	14.8	01Jan2017, 13:39	4.45
Pond 13	0.0603	74.9	01Jan2017, 13:38	4.33
Pond 14	0.1379	174.4	01Jan2017, 13:37	4.45
Pond 15	0.0477	30.2	01Jan2017, 14:24	4.90
Pond 16	0.3346	169.8	01Jan2017, 13:57	5.17
Pond 17	0.0528	16.5	01Jan2017, 14:31	5.82
Pond 18	0.1638	107.0	01Jan2017, 14:56	5.82
Pond 19	0.0053	5.9	01Jan2017, 13:39	6.64
Pond 2	0.0580	61.5	01Jan2017, 13:52	4.46
Pond 20	0.0077	12.5	01Jan2017, 13:30	5.82
Pond 21	0.0298	50.2	01Jan2017, 13:30	6.28

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	12.8	01Jan2017, 13:30	6.19
Pond 23	0.0036	6.2	01Jan2017, 13:30	6.64
Pond 24	0.0045	5.1	01Jan2017, 13:36	6.64
Pond 25	0.2547	356.3	01Jan2017, 13:33	4.78
Pond 26	0.0144	9.1	01Jan2017, 13:42	6.64
Pond 27	0.1245	71.0	01Jan2017, 14:11	4.44
Pond 28	0.1251	150.8	01Jan2017, 13:49	4.63
Pond 29	0.1091	167.2	01Jan2017, 13:44	5.31
Pond 3	0.1861	0.0	01Jan2017, 01:00	0.00
Pond 30	0.0039	5.4	01Jan2017, 13:32	5.41
Pond 31	0.3448	166.6	01Jan2017, 15:10	5.67
Pond 32	0.0626	68.8	01Jan2017, 13:56	6.64
Pond 33	0.0149	3.5	01Jan2017, 14:19	4.78
Pond 34	0.0376	5.8	01Jan2017, 16:32	3.39
Pond 35	0.0294	30.5	01Jan2017, 13:34	4.11
Pond 36	0.0175	28.6	01Jan2017, 13:32	6.05
Pond 37	0.1287	152.5	01Jan2017, 13:52	4.89
Pond 38	0.2037	50.0	01Jan2017, 14:43	1.81
Pond 39	0.0234	30.7	01Jan2017, 13:33	4.34
Pond 4	0.2023	162.4	01Jan2017, 13:49	3.90
Pond 40	0.0832	14.1	01Jan2017, 16:49	3.84

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	8.0	01Jan2017, 13:40	5.36
Pond 42	0.0367	44.0	01Jan2017, 13:35	4.45
Pond 43	0.0103	17.4	01Jan2017, 13:31	6.40
Pond 44	0.1294	162.6	01Jan2017, 13:41	4.55
Pond 45	0.1457	190.7	01Jan2017, 13:37	4.56
Pond 46	0.0187	17.5	01Jan2017, 13:38	6.28
Pond 47	0.0275	17.1	01Jan2017, 13:53	5.38
Pond 48	0.0456	68.8	01Jan2017, 13:31	4.38
Pond 49	0.0256	41.2	01Jan2017, 13:33	5.93
Pond 5	0.0343	40.3	01Jan2017, 13:36	4.00
Pond 50	0.0073	8.0	01Jan2017, 14:03	5.06
Pond 51	0.0721	91.9	01Jan2017, 13:37	4.58
Pond 52	0.0497	62.3	01Jan2017, 13:35	4.22
Pond 53	0.0896	126.3	01Jan2017, 13:35	4.90
Pond 54	0.2164	120.6	01Jan2017, 14:20	4.66
Pond 55	0.0163	19.8	01Jan2017, 13:33	3.87
Pond 56	0.0231	39.7	01Jan2017, 13:30	6.64
Pond 57	0.0112	15.6	01Jan2017, 13:30	4.56
Pond 58	0.0280	22.1	01Jan2017, 13:44	3.46
Pond 6	0.4472	139.1	01Jan2017, 14:38	4.56
Pond 7	0.0064	5.6	01Jan2017, 13:46	6.75

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	47.9	01Jan2017, 13:34	4.45
Pond 9	0.0281	35.9	01Jan2017, 13:36	4.45
RIR0.00	6.5684	5427.1	01Jan2017, 14:40	4.33
RIR0.00A	0.0647	81.4	01Jan2017, 13:54	5.70
RIR0.32	6.5037	5491.9	01Jan2017, 14:31	4.32
RIR0.32A	0.5587	532.9	01Jan2017, 13:59	4.33
RIR0.32_0.00	6.5037	5384.4	01Jan2017, 14:41	4.32
RIR0.65	5.9450	5131.2	01Jan2017, 14:26	4.32
RIR0.65A	0.1896	266.4	01Jan2017, 13:32	4.78
RIR0.65_0.32	5.9450	5110.0	01Jan2017, 14:33	4.32
RIR0.86	5.7554	5105.2	01Jan2017, 14:22	4.30
RIR0.86A	0.2984	318.8	01Jan2017, 13:49	4.33
RIR0.86_0.65	5.7554	5091.5	01Jan2017, 14:26	4.30
RIR1.24	5.4570	4953.1	01Jan2017, 14:16	4.30
RIR1.24A	0.0980	123.5	01Jan2017, 13:32	4.11
RIR1.24_0.86	5.4570	4914.0	01Jan2017, 14:24	4.30
RIR1.34	5.3590	4931.1	01Jan2017, 14:17	4.31
RIR1.52	4.5754	4323.6	01Jan2017, 14:20	4.32
RIR1.62	1.8861	1694.8	01Jan2017, 14:18	4.29
RIR1.62A	0.5008	481.9	01Jan2017, 14:00	4.44
RIR2.60	1.3853	1284.6	01Jan2017, 13:57	4.24

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	379.6	01Jan2017, 13:38	4.33
RIR2.60_1.62	1.3853	1270.3	01Jan2017, 14:23	4.24
RIR3.38	1.0728	1078.2	01Jan2017, 13:51	4.21
RIR3.38A	1.0434	1052.3	01Jan2017, 13:51	4.22
RIR3.38B	0.0294	38.2	01Jan2017, 13:30	4.11
RIR3.38_2.60	1.0728	1063.1	01Jan2017, 14:07	4.21
SHCT0.00	3.0470	2270.2	01Jan2017, 13:59	3.09
SHCT0.00A	0.9966	711.0	01Jan2017, 13:54	3.02
SHCT1.59	2.0504	1575.1	01Jan2017, 13:50	3.12
SHCT1.59A	2.0504	1575.1	01Jan2017, 13:50	3.12
SHCT1.59_0.00	2.0504	1573.4	01Jan2017, 14:02	3.12
SHC0.00	6.4942	4004.5	01Jan2017, 15:00	3.36
SHC0.00A	0.0458	49.2	01Jan2017, 13:40	3.89
SHC0.23	6.4484	4124.7	01Jan2017, 14:50	3.36
SHC0.23A	0.6386	500.4	01Jan2017, 14:24	4.44
SHC0.23_0.00	6.4484	3995.0	01Jan2017, 15:00	3.35
SHC1.60	5.8098	3884.6	01Jan2017, 14:12	3.24
SHC1.60A	0.2628	303.1	01Jan2017, 13:36	4.00
SHC1.60_0.23	5.8098	3686.8	01Jan2017, 14:52	3.24
SHC2.06	5.5470	3783.3	01Jan2017, 14:05	3.21
SHC2.06A	0.2828	223.9	01Jan2017, 13:41	2.82

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	3768.7	01Jan2017, 14:14	3.21
SHC2.56	5.2642	3653.2	01Jan2017, 14:03	3.23
SHC2.56A	0.4506	424.0	01Jan2017, 13:47	3.67
SHC2.56_2.06	5.2642	3648.9	01Jan2017, 14:08	3.23
SHC3.11	1.7666	1159.1	01Jan2017, 14:13	3.37
SHC3.11A	0.2775	374.5	01Jan2017, 13:32	4.56
SHC3.11_2.56	1.7666	1158.7	01Jan2017, 14:18	3.37
SHC3.92	1.4891	1080.0	01Jan2017, 13:55	3.15
SHC3.92A	0.6934	498.9	01Jan2017, 13:51	2.92
SHC3.92B	0.7957	591.9	01Jan2017, 14:00	3.34
SHC3.92_3.11	1.4891	1074.9	01Jan2017, 14:17	3.14
SRT0.50	2.6893	2632.6	01Jan2017, 14:21	4.34
SRT0.50A	0.4294	382.1	01Jan2017, 14:06	4.33
SRT1.29	2.2599	2293.0	01Jan2017, 14:10	4.34
SRT1.29A	0.3191	282.8	01Jan2017, 14:04	4.22
SRT1.29_0.50	2.2599	2275.5	01Jan2017, 14:22	4.34
SRT2.06	1.9408	2028.7	01Jan2017, 13:57	4.36
SRT2.06A	0.4839	508.7	01Jan2017, 13:52	4.44
SRT2.06_1.29	1.9408	2014.1	01Jan2017, 14:11	4.36
SRT2.55	1.4569	1534.3	01Jan2017, 13:52	4.33
SRT2.55A	0.3465	408.5	01Jan2017, 13:40	4.33

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	1530.0	01Jan2017, 13:59	4.33
SRT3.00	1.1104	1198.3	01Jan2017, 13:51	4.33
SRT3.00A	0.7468	782.4	01Jan2017, 13:50	4.33
SRT3.00_2.55	1.1104	1193.9	01Jan2017, 13:58	4.33
SRT3.38	0.3636	417.4	01Jan2017, 13:42	4.33
SRT3.38A	0.3636	417.4	01Jan2017, 13:42	4.33
SRT3.38_3.00	0.3636	416.4	01Jan2017, 13:52	4.33
SSRTA0.00	0.4007	476.3	01Jan2017, 13:49	4.59
SSRTA0.00A	0.2628	311.2	01Jan2017, 13:45	4.67
SSRTA0.59	0.1379	174.4	01Jan2017, 13:37	4.45
SSRTA0.59A	0.1379	174.6	01Jan2017, 13:36	4.45
SSRTA0.59_0.00	0.1379	172.5	01Jan2017, 13:56	4.45
SSRT0.00	1.3182	1396.2	01Jan2017, 14:00	4.51
SSRT0.00A	0.2236	249.0	01Jan2017, 13:47	4.45
SSRT0.46	1.0946	1193.8	01Jan2017, 13:49	4.53
SSRT0.46A	0.1893	244.7	01Jan2017, 13:36	4.56
SSRT0.46_0.00	1.0946	1173.4	01Jan2017, 14:02	4.52
SSRT0.77	0.9053	1006.9	01Jan2017, 13:47	4.52
SSRT0.77A	0.2520	298.2	01Jan2017, 13:43	4.56
SSRT0.77B	0.0603	77.5	01Jan2017, 13:33	4.34
SSRT0.77_0.46	0.9053	1005.0	01Jan2017, 13:53	4.52

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	220.6	01Jan2017, 13:38	4.38
SSRT1.34A	0.1112	137.2	01Jan2017, 13:36	4.34
SSRT1.34B	0.0172	23.4	01Jan2017, 13:30	4.45
SSRT1.34C	0.0236	32.1	01Jan2017, 13:30	4.45
SSRT1.34D	0.0122	16.6	01Jan2017, 13:30	4.45
SSRT1.34E	0.0281	37.6	01Jan2017, 13:32	4.45
SSRT1.34_0.77	0.1923	206.8	01Jan2017, 14:02	4.37
SSR0.00	4.8444	4134.4	01Jan2017, 14:16	4.34
SSR0.00A	0.0601	81.2	01Jan2017, 13:31	4.45
SSR0.22	4.7843	4124.9	01Jan2017, 14:13	4.33
SSR0.22A	0.2501	328.2	01Jan2017, 13:39	4.90
SSR0.22_0.00	4.7843	4121.3	01Jan2017, 14:16	4.33
SSR0.85	4.5342	3981.4	01Jan2017, 14:07	4.30
SSR0.85_0.22	4.5342	3966.8	01Jan2017, 14:15	4.30
SSR0.87	3.2160	2633.5	01Jan2017, 14:10	4.22
SSR0.87A	0.3806	371.4	01Jan2017, 14:01	4.56
SSR1.06	2.8354	2277.5	01Jan2017, 14:07	4.17
SSR1.06A	0.2647	313.2	01Jan2017, 13:43	4.56
SSR1.06_0.87	2.8354	2273.5	01Jan2017, 14:11	4.17
SSR1.71	2.5707	2072.2	01Jan2017, 13:57	4.14
SSR1.71A	0.3665	372.5	01Jan2017, 14:01	4.78

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	2063.3	01Jan2017, 14:10	4.14
SSR1.89	2.2042	1711.4	01Jan2017, 13:51	4.03
SSR1.89A	0.3178	376.0	01Jan2017, 13:47	4.78
SSR1.89B	0.0231	39.9	01Jan2017, 13:30	6.64
SSR1.89_1.71	2.2042	1702.4	01Jan2017, 13:57	4.03
SSR2.33	1.8633	1331.9	01Jan2017, 13:43	3.87
SSR2.33A	0.1750	246.8	01Jan2017, 13:33	4.90
SSR2.33B	0.0381	51.9	01Jan2017, 13:30	4.45
SSR2.33_1.89	1.8633	1326.8	01Jan2017, 13:54	3.87
SSR2.70	1.6502	1142.8	01Jan2017, 13:48	3.74
SSR2.70A	0.4613	500.8	01Jan2017, 13:47	4.33
SSR2.70B	0.0112	15.7	01Jan2017, 13:30	4.56
SSR2.70C	0.0064	11.1	01Jan2017, 13:30	6.76
SSR2.70D	0.0343	42.3	01Jan2017, 13:32	4.00
SSR2.70E	0.4472	545.5	01Jan2017, 13:41	4.56
SSR2.70_2.33	1.6502	1140.9	01Jan2017, 13:55	3.74
SSR3.20	0.6898	471.6	01Jan2017, 13:45	2.77
SSR3.20A	0.1108	125.5	01Jan2017, 13:38	4.00
SSR3.20B	0.2023	241.9	01Jan2017, 13:34	4.00
SSR3.20_2.70	0.6898	471.3	01Jan2017, 13:50	2.77
SSR3.70	0.3767	196.8	01Jan2017, 13:37	1.80

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	196.8	01Jan2017, 13:37	3.56
SSR3.70B	0.1861	190.0	01Jan2017, 13:34	3.35
SSR3.70_3.20	0.3767	195.6	01Jan2017, 13:51	1.80
WOR0.00	2.8951	2382.9	01Jan2017, 14:32	4.22
WOR0.00A	0.0359	46.9	01Jan2017, 13:32	4.34
WOR0.32	2.8592	2383.2	01Jan2017, 14:26	4.22
WOR0.32A	0.1901	180.4	01Jan2017, 13:55	4.11
WOR0.32_0.00	2.8592	2376.6	01Jan2017, 14:32	4.22
WOR0.76	2.6691	2388.1	01Jan2017, 14:11	4.24
WOR0.76A	0.3131	400.2	01Jan2017, 13:38	4.67
WOR0.76_0.32	2.6691	2256.5	01Jan2017, 14:28	4.23
WOR1.59	2.3560	2236.1	01Jan2017, 14:00	4.18
WOR1.59A	0.4536	521.9	01Jan2017, 13:47	4.67
WOR1.59B	0.7600	654.3	01Jan2017, 14:07	4.22
WOR1.59_0.76	2.3560	2204.1	01Jan2017, 14:14	4.18
WOR1.64	1.1424	1117.5	01Jan2017, 14:03	3.96
WOR1.64A	0.2551	285.8	01Jan2017, 13:48	4.56
WOR2.33	0.8873	915.8	01Jan2017, 13:41	3.80
WOR2.33A	0.3233	340.7	01Jan2017, 13:44	4.00
WOR2.33_1.64	0.8873	867.5	01Jan2017, 14:06	3.79
WOR3.00	0.5640	576.7	01Jan2017, 13:41	3.69

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	400.9	01Jan2017, 13:43	4.33
WOR3.67	0.2110	178.7	01Jan2017, 13:33	2.61
WOR3.67A	0.2110	178.7	01Jan2017, 13:33	2.61
WOR3.67_3.00	0.2110	178.2	01Jan2017, 13:39	2.61

Project: ChiquesCreek Simulation Run: 200YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 200YR_24HR
Compute Time: 31Jan2017, 15:43:59 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	1500.0	01Jan2017, 14:36	4.56
BER0.00A	0.1087	139.1	01Jan2017, 13:47	5.47
BER0.64	1.7391	1480.2	01Jan2017, 14:16	4.49
BER0.64A	0.3111	443.3	01Jan2017, 13:39	5.59
BER0.64_0.00	1.7391	1441.5	01Jan2017, 14:38	4.50
BER1.05	1.4280	1322.3	01Jan2017, 14:07	4.25
BER1.05A	0.2790	347.5	01Jan2017, 13:50	5.47
BER1.05_0.64	1.4280	1289.2	01Jan2017, 14:21	4.25
BER1.30	1.1490	1038.8	01Jan2017, 14:00	3.96
BER1.30A	0.5289	571.4	01Jan2017, 13:52	4.74
BER1.30_1.05	1.1490	1023.5	01Jan2017, 14:11	3.95
BER1.95	0.6201	505.3	01Jan2017, 13:46	3.30
BER1.95A	0.6201	505.3	01Jan2017, 13:46	3.30
BER1.95_1.30	0.6201	499.3	01Jan2017, 14:06	3.29
BOR0.00	6.6030	5784.7	01Jan2017, 14:32	4.78
BOR0.00A	0.0062	9.8	01Jan2017, 13:30	5.59
BOR0.10	6.5968	5983.1	01Jan2017, 14:29	4.79

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	269.8	01Jan2017, 13:57	5.47
BOR0.10_0.00	6.5968	5783.6	01Jan2017, 14:32	4.78
BOR0.68	1.6208	1476.5	01Jan2017, 14:13	4.20
BOR0.68A	0.2555	318.3	01Jan2017, 13:50	5.47
BOR0.68_0.10	1.6208	1446.3	01Jan2017, 14:30	4.20
BOR1.20	1.3653	1234.6	01Jan2017, 14:02	3.96
BOR1.20A	0.5429	547.6	01Jan2017, 14:03	4.98
BOR1.20_0.68	1.3653	1226.3	01Jan2017, 14:16	3.97
BOR2.07	0.8224	694.8	01Jan2017, 13:44	3.29
BOR2.07A	0.8224	694.8	01Jan2017, 13:44	3.29
BOR2.07_1.20	0.8224	687.3	01Jan2017, 14:02	3.29
CHC10.68	50.2637	12801.0	01Jan2017, 20:41	5.09
CHC10.68A	0.7377	939.1	01Jan2017, 13:54	5.95
CHC10.68B	0.0477	67.2	01Jan2017, 13:45	5.96
CHC10.68C	0.1180	150.6	01Jan2017, 13:51	5.71
CHC10.68D	0.1638	213.5	01Jan2017, 14:05	6.93
CHC10.68E	0.0528	91.3	01Jan2017, 13:34	6.93
CHC10.68_9.40	50.2637	12778.4	01Jan2017, 21:07	5.08
CHC11.99	49.1437	12689.7	01Jan2017, 20:14	5.09
CHC11.99_10.68	49.1437	12669.4	01Jan2017, 20:45	5.07
CHC12.01	46.4709	12369.9	01Jan2017, 20:41	5.04

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	218.7	01Jan2017, 13:31	5.59
CHC12.65	46.3306	12540.1	01Jan2017, 19:44	5.07
CHC12.65_12.01	46.3306	12359.1	01Jan2017, 20:41	5.04
CHC12.67	45.3853	12401.9	01Jan2017, 19:55	5.05
CHC12.67A	0.5547	434.9	01Jan2017, 14:54	5.71
CHC13.89	44.8306	12338.8	01Jan2017, 19:05	5.06
CHC13.89_12.67	44.8306	12310.7	01Jan2017, 20:03	5.04
CHC13.90	41.9107	11878.9	01Jan2017, 20:12	5.03
CHC13.90A	2.4712	882.3	01Jan2017, 18:57	5.53
CHC16.25	39.4395	11712.6	01Jan2017, 16:47	5.04
CHC16.25A	0.7783	577.4	01Jan2017, 15:03	5.71
CHC16.25_13.90	39.4395	11056.3	01Jan2017, 20:31	5.00
CHC17.08	38.6612	11767.6	01Jan2017, 16:17	5.04
CHC17.08A	0.5852	568.4	01Jan2017, 14:25	5.83
CHC17.08B	0.3448	495.9	01Jan2017, 13:59	7.53
CHC17.08_16.25	38.6612	11396.6	01Jan2017, 16:50	5.03
CHC17.73	37.7312	11642.4	01Jan2017, 15:54	5.02
CHC17.73A	0.3870	444.3	01Jan2017, 14:06	5.95
CHC17.73B	0.0626	114.5	01Jan2017, 13:34	7.78
CHC17.73_17.08	37.7312	11384.2	01Jan2017, 16:19	5.01
CHC18.09	37.2816	11723.6	01Jan2017, 15:41	5.01

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	198.4	01Jan2017, 13:47	4.98
CHC18.09_17.73	37.2816	11488.3	01Jan2017, 15:55	5.00
CHC18.61	36.6951	11935.6	01Jan2017, 15:24	5.01
CHC18.61A	0.5761	753.6	01Jan2017, 13:40	5.10
CHC18.61_18.09	36.6951	11583.0	01Jan2017, 15:41	5.00
CHC19.32	36.1190	12449.1	01Jan2017, 15:00	5.01
CHC19.32_18.61	36.1190	11794.0	01Jan2017, 15:24	5.01
CHC19.35	29.5506	9685.3	01Jan2017, 18:42	4.94
CHC19.35A	0.3523	379.8	01Jan2017, 14:14	5.95
CHC19.35B	0.0175	31.6	01Jan2017, 13:31	7.17
CHC1.28	63.3656	13325.9	02Jan2017, 00:08	4.82
CHC1.28A	0.8402	445.7	01Jan2017, 15:59	5.22
CHC20.02	29.1808	9680.0	01Jan2017, 18:24	4.93
CHC20.02A	0.3588	489.1	01Jan2017, 13:54	6.44
CHC20.02_19.35	29.1808	9621.9	01Jan2017, 18:42	4.92
CHC20.55	28.8220	9709.6	01Jan2017, 18:02	4.92
CHC20.55_20.02	28.8220	9618.1	01Jan2017, 18:24	4.91
CHC20.57	23.2797	8536.4	01Jan2017, 18:14	4.78
CHC20.57A	0.5512	516.0	01Jan2017, 14:46	6.68
CHC21.28	22.7285	8508.2	01Jan2017, 17:38	4.74
CHC21.28A	0.3509	461.8	01Jan2017, 14:02	6.80

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	34.7	01Jan2017, 13:30	7.41
CHC21.28C	0.0073	9.2	01Jan2017, 13:59	6.20
CHC21.28D	0.0224	38.4	01Jan2017, 13:31	6.44
CHC21.28E	0.0497	72.1	01Jan2017, 13:33	5.23
CHC21.28F	0.1457	223.5	01Jan2017, 13:32	5.59
CHC21.28_20.57	22.7285	8399.7	01Jan2017, 18:16	4.73
CHC21.59	22.1338	8479.7	01Jan2017, 17:26	4.70
CHC21.59A	0.2001	263.5	01Jan2017, 13:51	5.96
CHC21.59B	0.0256	45.6	01Jan2017, 13:32	7.05
CHC21.59C	0.0275	48.6	01Jan2017, 13:31	6.81
CHC21.59D	0.0896	143.7	01Jan2017, 13:32	5.96
CHC21.59_21.28	22.1338	8393.7	01Jan2017, 17:38	4.70
CHC22.01	21.7910	8484.9	01Jan2017, 17:11	4.68
CHC22.01A	1.2726	1950.8	01Jan2017, 13:31	5.46
CHC22.01B	0.0456	77.1	01Jan2017, 13:30	6.20
CHC22.01_21.59	21.7910	8414.1	01Jan2017, 17:26	4.68
CHC23.04	20.4728	8328.0	01Jan2017, 16:48	4.64
CHC23.04A	1.8763	1365.4	01Jan2017, 14:56	5.33
CHC23.04B	0.2164	308.4	01Jan2017, 13:40	5.71
CHC23.04_22.01	20.4728	8261.4	01Jan2017, 17:13	4.63
CHC24.53	18.3801	7770.8	01Jan2017, 16:17	4.56

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	7587.8	01Jan2017, 16:56	4.55
CHC24.63	18.3801	7770.8	01Jan2017, 16:17	4.56
CHC24.64	11.7771	5924.7	01Jan2017, 16:33	4.43
CHC24.64A	0.2517	188.1	01Jan2017, 14:35	4.74
CHC25.53	11.5254	6719.6	01Jan2017, 15:52	4.47
CHC25.53A	0.6693	711.6	01Jan2017, 14:04	5.34
CHC25.53B	0.0163	23.6	01Jan2017, 13:30	4.99
CHC25.53_24.64	11.5254	5848.4	01Jan2017, 16:33	4.42
CHC26.30	10.8398	6657.1	01Jan2017, 15:33	4.42
CHC26.30A	0.8065	508.2	01Jan2017, 15:19	5.22
CHC26.30_25.53	10.8398	6510.8	01Jan2017, 15:53	4.41
CHC27.38	10.0333	7039.4	01Jan2017, 14:53	4.39
CHC27.38_26.30	10.0333	6156.9	01Jan2017, 15:34	4.35
CHC27.39	3.5391	2200.4	01Jan2017, 14:37	4.64
CHC27.39A	0.3314	379.4	01Jan2017, 13:56	5.35
CHC28.26	3.2077	2032.7	01Jan2017, 14:14	4.56
CHC28.26_27.39	3.2077	1975.9	01Jan2017, 14:41	4.57
CHC28.31	3.2077	2032.7	01Jan2017, 14:14	4.56
CHC28.31A	0.0950	136.7	01Jan2017, 13:35	5.35
CHC28.31B	0.7915	893.6	01Jan2017, 13:56	5.22
CHC28.67	2.3212	1547.5	01Jan2017, 14:50	4.30

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	616.9	01Jan2017, 13:57	4.25
CHC28.67_28.31	2.3212	1544.7	01Jan2017, 14:58	4.30
CHC29.91	1.6558	1291.4	01Jan2017, 14:23	4.32
CHC29.91A	0.6097	557.3	01Jan2017, 13:53	4.01
CHC29.91_28.67	1.6558	1278.4	01Jan2017, 14:57	4.32
CHC30.94	1.0461	944.4	01Jan2017, 14:05	4.49
CHC30.94A	1.0461	944.4	01Jan2017, 14:05	4.49
CHC30.94_29.91	1.0461	940.1	01Jan2017, 14:34	4.49
CHC3.39	62.5254	13272.0	01Jan2017, 23:26	4.86
CHC3.39A	1.8419	2086.9	01Jan2017, 13:53	5.09
CHC3.39_1.28	62.5254	13252.2	02Jan2017, 00:10	4.81
CHC4.62	60.6835	13911.9	01Jan2017, 22:28	5.02
CHC4.62A	0.1505	218.9	01Jan2017, 13:36	5.47
CHC4.62B	0.1946	277.2	01Jan2017, 13:37	5.47
CHC4.62_3.39	60.6835	13157.3	01Jan2017, 23:27	4.86
CHC4.97	60.3384	13944.6	01Jan2017, 22:12	5.04
CHC4.97A	0.4693	395.6	01Jan2017, 14:31	5.22
CHC4.97B	0.0580	87.9	01Jan2017, 13:36	5.84
CHC4.97C	0.2012	293.6	01Jan2017, 13:32	5.23
CHC4.97_4.62	60.3384	13888.9	01Jan2017, 22:28	5.02
CHC5.97	59.6099	13905.7	01Jan2017, 21:57	5.06

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	1226.8	01Jan2017, 14:06	5.58
CHC5.97_4.97	59.6099	13889.9	01Jan2017, 22:13	5.03
CHC7.47	58.4785	13853.8	01Jan2017, 21:26	5.09
CHC7.47_5.97	58.4785	13819.3	01Jan2017, 21:59	5.05
CHC7.48	53.6341	13356.0	01Jan2017, 21:38	5.06
CHC7.48A	2.2128	883.6	01Jan2017, 18:01	5.56
CHC9.40	51.4213	12886.5	01Jan2017, 21:03	5.09
CHC9.40A	1.1576	1138.9	01Jan2017, 14:18	5.58
CHC9.40_7.47	51.4213	12817.8	01Jan2017, 21:52	5.04
DER0.00	2.9199	2643.1	01Jan2017, 14:50	5.44
DER0.00A	0.1924	279.7	01Jan2017, 13:36	5.47
DER0.52	2.7275	2608.5	01Jan2017, 14:37	5.44
DER0.52A	0.5165	678.5	01Jan2017, 13:48	5.71
DER0.52_0.00	2.7275	2595.8	01Jan2017, 14:49	5.43
DER1.10	2.2110	2358.8	01Jan2017, 14:22	5.38
DER1.10A	0.3712	475.5	01Jan2017, 13:51	5.71
DER1.10_0.52	2.2110	2325.8	01Jan2017, 14:42	5.37
DER1.76	1.8398	2053.4	01Jan2017, 14:07	5.31
DER1.76A	0.5078	586.0	01Jan2017, 13:52	5.10
DER1.76_1.10	1.8398	2042.7	01Jan2017, 14:27	5.31
DER2.22	1.3320	1550.1	01Jan2017, 14:03	5.39

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	771.6	01Jan2017, 14:02	5.22
DER2.22_1.76	1.3320	1544.8	01Jan2017, 14:13	5.39
DER2.93	0.6085	783.8	01Jan2017, 13:48	5.59
DER2.93A	0.6085	783.8	01Jan2017, 13:48	5.59
DER2.93_2.22	0.6085	779.3	01Jan2017, 14:04	5.58
DORT0.34	1.6920	1871.5	01Jan2017, 14:04	5.50
DORT0.34A	0.0357	54.7	01Jan2017, 13:31	5.47
DORT0.34B	0.0234	35.2	01Jan2017, 13:31	5.35
DORT0.54	1.6329	1851.7	01Jan2017, 14:00	5.50
DORT0.54A	0.2058	282.5	01Jan2017, 13:42	5.59
DORT0.54B	0.0280	35.4	01Jan2017, 13:33	4.38
DORT0.54C	0.0058	9.8	01Jan2017, 13:32	6.44
DORT0.54D	0.0832	109.9	01Jan2017, 13:49	5.83
DORT0.54E	0.0367	56.9	01Jan2017, 13:30	5.47
DORT0.54_0.34	1.6329	1841.4	01Jan2017, 14:04	5.50
DORT1.15	1.2734	1572.8	01Jan2017, 13:51	5.55
DORT1.15A	0.4022	593.5	01Jan2017, 13:37	5.71
DORT1.15B	0.0103	19.2	01Jan2017, 13:30	7.53
DORT1.15_0.54	1.2734	1563.1	01Jan2017, 14:03	5.55
DORT1.58	0.8609	1120.8	01Jan2017, 13:52	5.45
DORT1.58A	0.4931	642.9	01Jan2017, 13:46	5.47

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	1115.4	01Jan2017, 14:01	5.46
DORT2.41	0.3678	518.6	01Jan2017, 13:39	5.43
DORT2.41A	0.2384	331.7	01Jan2017, 13:38	5.35
DORT2.41B	0.1294	188.7	01Jan2017, 13:37	5.59
DORT2.41_1.58	0.3678	514.0	01Jan2017, 14:01	5.44
DOR0.00	5.5423	4935.6	01Jan2017, 14:52	5.49
DOR0.00A	0.0475	73.4	01Jan2017, 13:39	6.20
DOR0.24	5.4948	5057.2	01Jan2017, 14:42	5.48
DOR0.24A	0.1218	178.4	01Jan2017, 13:39	5.83
DOR0.24B	0.1287	177.5	01Jan2017, 13:47	5.96
DOR0.24_0.00	5.4948	4921.6	01Jan2017, 14:52	5.48
DOR0.44A	0.5212	642.4	01Jan2017, 13:56	5.83
DOR0.44_0.24	5.2443	4938.4	01Jan2017, 14:43	5.46
DOR1.21	4.7231	4772.8	01Jan2017, 14:14	5.43
DOR1.21A	0.2430	274.0	01Jan2017, 14:06	5.83
DOR1.21B	0.2037	299.6	01Jan2017, 13:38	5.71
DOR1.21_0.44	4.7231	4585.9	01Jan2017, 14:41	5.42
DOR1.23	4.2764	4363.1	01Jan2017, 14:16	5.53
DOR1.23A	0.2095	296.1	01Jan2017, 13:44	5.95
DOR1.45	4.0669	4202.1	01Jan2017, 14:10	5.51
DOR1.45_1.23	4.0669	4179.8	01Jan2017, 14:18	5.51

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	2429.4	01Jan2017, 14:19	5.51
DOR1.60A	0.5501	719.9	01Jan2017, 13:47	5.59
DOR2.40	1.8248	2024.4	01Jan2017, 14:07	5.49
DOR2.40A	0.4594	550.5	01Jan2017, 13:56	5.59
DOR2.40_1.60	1.8248	2004.2	01Jan2017, 14:26	5.49
DOR2.81	1.3654	1516.1	01Jan2017, 14:00	5.46
DOR2.81A	0.2367	315.6	01Jan2017, 13:48	5.83
DOR2.81_2.40	1.3654	1506.9	01Jan2017, 14:11	5.46
DOR3.06	1.1287	1227.6	01Jan2017, 13:56	5.38
DOR3.06A	0.3648	476.0	01Jan2017, 13:46	5.47
DOR3.06B	0.7639	803.6	01Jan2017, 14:05	5.34
DOR3.06_2.81	1.1287	1224.8	01Jan2017, 14:03	5.38
DOR.44	5.2443	4965.3	01Jan2017, 14:38	5.46
ERRR0.57_0.00	1.1576	1351.2	01Jan2017, 14:11	5.85
ERRT0.00	1.2906	1498.0	01Jan2017, 14:09	5.94
ERRT0.00A	0.1098	161.5	01Jan2017, 13:47	6.56
ERRT0.00B	0.0077	13.9	01Jan2017, 13:30	6.93
ERRT0.00C	0.0074	14.0	01Jan2017, 13:30	7.78
ERRT0.00D	0.0036	6.8	01Jan2017, 13:30	7.78
ERRT0.00E	0.0045	8.5	01Jan2017, 13:30	7.78
ERRT0.57	1.1576	1357.2	01Jan2017, 14:01	5.85

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	258.2	01Jan2017, 14:32	5.83
ERRT0.61	0.8788	1146.6	01Jan2017, 13:59	5.86
ERRT0.61A	0.4551	543.3	01Jan2017, 14:02	5.95
ERRT1.62	0.4237	618.5	01Jan2017, 13:33	5.77
ERRT1.62A	0.1546	209.3	01Jan2017, 13:42	5.47
ERRT1.62B	0.2547	410.4	01Jan2017, 13:31	5.83
ERRT1.62C	0.0144	27.2	01Jan2017, 13:30	7.78
ERRT1.62_0.61	0.4237	605.6	01Jan2017, 13:57	5.76
ERR0.00	2.6728	3016.2	01Jan2017, 14:12	5.79
ERR0.00A	0.0718	104.1	01Jan2017, 13:34	5.35
ERR0.00B	0.0053	10.0	01Jan2017, 13:30	7.78
ERR0.23	2.5957	2983.0	01Jan2017, 14:08	5.80
ERR0.23A	0.1922	270.2	01Jan2017, 13:39	5.47
ERR0.23B	0.0298	55.2	01Jan2017, 13:30	7.41
ERR0.23_0.00	2.5957	2973.3	01Jan2017, 14:13	5.80
ERR0.26	1.3051	1486.4	01Jan2017, 14:07	5.66
ERR0.88	1.0831	1323.5	01Jan2017, 13:59	5.64
ERR0.88A	0.5048	563.1	01Jan2017, 14:05	5.71
ERR0.88_0.23	1.0831	1317.7	01Jan2017, 14:11	5.64
ERR1.33	0.5783	776.4	01Jan2017, 13:44	5.59
ERR1.33A	0.5783	776.4	01Jan2017, 13:44	5.59

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	772.8	01Jan2017, 13:55	5.58
LAR0.00	0.9453	843.9	01Jan2017, 14:10	5.83
LAR0.00A	0.5827	518.6	01Jan2017, 14:37	5.83
LAR0.40	0.3626	439.8	01Jan2017, 13:45	5.84
LAR0.40A	0.0039	7.4	01Jan2017, 13:30	7.90
LAR0.40B	0.1091	186.7	01Jan2017, 13:39	7.41
LAR0.40C	0.1251	182.5	01Jan2017, 13:40	5.83
LAR0.40D	0.1245	177.4	01Jan2017, 13:37	5.47
LAR0.40_0.00	0.3626	438.7	01Jan2017, 13:54	5.84
MRT0.00	0.4202	525.4	01Jan2017, 13:46	5.37
MRT0.00A	0.1647	224.0	01Jan2017, 13:40	5.35
MRT0.66	0.2555	318.7	01Jan2017, 13:32	5.42
MRT0.66A	0.2030	312.1	01Jan2017, 13:32	5.59
MRT0.66B	0.0376	60.0	01Jan2017, 13:30	5.71
MRT0.66C	0.0149	24.5	01Jan2017, 13:31	6.08
MRT0.66_0.00	0.2555	316.5	01Jan2017, 13:55	5.38
ORT0.28	0.7836	1009.6	01Jan2017, 13:48	5.24
ORT0.28A	0.1786	239.8	01Jan2017, 13:38	5.10
ORT0.95	0.6050	804.5	01Jan2017, 13:39	5.28
ORT0.95A	0.1851	260.8	01Jan2017, 13:34	5.10
ORT0.95_0.28	0.6050	800.2	01Jan2017, 13:52	5.28

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	569.4	01Jan2017, 13:38	5.36
ORT1.38A	0.1910	271.5	01Jan2017, 13:34	5.23
ORT1.38_0.95	0.4199	567.8	01Jan2017, 13:46	5.36
ORT2.04	0.2289	321.7	01Jan2017, 13:39	5.47
ORT2.04A	0.2289	321.7	01Jan2017, 13:39	5.47
ORT2.04_1.38	0.2289	321.0	01Jan2017, 13:51	5.47
Pond 0	0.1946	263.2	01Jan2017, 13:45	5.47
Pond 1	0.2012	293.5	01Jan2017, 13:33	5.22
Pond 10	0.0122	16.7	01Jan2017, 13:35	5.37
Pond 11	0.0236	35.8	01Jan2017, 13:33	5.47
Pond 12	0.0172	26.6	01Jan2017, 13:31	5.47
Pond 13	0.0603	85.8	01Jan2017, 13:38	5.35
Pond 14	0.1379	200.4	01Jan2017, 13:37	5.47
Pond 15	0.0477	49.2	01Jan2017, 14:10	5.96
Pond 16	0.3346	253.8	01Jan2017, 14:37	6.24
Pond 17	0.0528	17.2	01Jan2017, 14:34	6.93
Pond 18	0.1638	160.9	01Jan2017, 14:39	6.93
Pond 19	0.0053	7.8	01Jan2017, 13:37	7.78
Pond 2	0.0580	81.5	01Jan2017, 13:45	5.50
Pond 20	0.0077	13.9	01Jan2017, 13:30	6.93
Pond 21	0.0298	55.2	01Jan2017, 13:30	7.41

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	14.0	01Jan2017, 13:30	7.32
Pond 23	0.0036	6.8	01Jan2017, 13:30	7.78
Pond 24	0.0045	6.9	01Jan2017, 13:34	7.78
Pond 25	0.2547	409.3	01Jan2017, 13:32	5.83
Pond 26	0.0144	9.4	01Jan2017, 13:47	7.78
Pond 27	0.1245	75.5	01Jan2017, 14:15	5.47
Pond 28	0.1251	179.1	01Jan2017, 13:45	5.68
Pond 29	0.1091	185.9	01Jan2017, 13:42	6.43
Pond 3	0.1861	5.1	02Jan2017, 01:16	0.11
Pond 30	0.0039	6.9	01Jan2017, 13:31	6.55
Pond 31	0.3448	185.9	01Jan2017, 15:11	6.80
Pond 32	0.0626	71.1	01Jan2017, 13:59	7.78
Pond 33	0.0149	5.1	01Jan2017, 14:14	5.77
Pond 34	0.0376	19.8	01Jan2017, 13:57	4.37
Pond 35	0.0294	41.6	01Jan2017, 13:32	5.11
Pond 36	0.0175	31.6	01Jan2017, 13:32	7.17
Pond 37	0.1287	175.9	01Jan2017, 13:51	5.95
Pond 38	0.2037	183.0	01Jan2017, 14:04	2.85
Pond 39	0.0234	35.1	01Jan2017, 13:33	5.35
Pond 4	0.2023	183.2	01Jan2017, 13:50	4.88
Pond 40	0.0832	43.1	01Jan2017, 14:45	4.82

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	9.4	01Jan2017, 13:38	6.44
Pond 42	0.0367	51.9	01Jan2017, 13:34	5.47
Pond 43	0.0103	19.1	01Jan2017, 13:31	7.53
Pond 44	0.1294	187.3	01Jan2017, 13:40	5.58
Pond 45	0.1457	217.9	01Jan2017, 13:36	5.59
Pond 46	0.0187	22.6	01Jan2017, 13:37	7.41
Pond 47	0.0275	35.1	01Jan2017, 13:42	6.44
Pond 48	0.0456	76.9	01Jan2017, 13:30	5.45
Pond 49	0.0256	45.6	01Jan2017, 13:33	7.05
Pond 5	0.0343	46.9	01Jan2017, 13:36	4.99
Pond 50	0.0073	9.2	01Jan2017, 14:03	6.13
Pond 51	0.0721	108.9	01Jan2017, 13:35	5.61
Pond 52	0.0497	72.0	01Jan2017, 13:34	5.23
Pond 53	0.0896	142.7	01Jan2017, 13:35	5.96
Pond 54	0.2164	142.6	01Jan2017, 14:20	5.71
Pond 55	0.0163	23.2	01Jan2017, 13:32	4.85
Pond 56	0.0231	43.5	01Jan2017, 13:30	7.78
Pond 57	0.0112	17.7	01Jan2017, 13:30	5.59
Pond 58	0.0280	33.8	01Jan2017, 13:37	4.38
Pond 6	0.4472	146.6	01Jan2017, 14:43	5.59
Pond 7	0.0064	5.8	01Jan2017, 13:49	7.89

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	55.8	01Jan2017, 13:34	5.47
Pond 9	0.0281	42.8	01Jan2017, 13:32	5.47
RIR0.00	6.5684	6490.8	01Jan2017, 14:36	5.34
RIR0.00A	0.0647	91.8	01Jan2017, 13:54	6.81
RIR0.32	6.5037	6551.8	01Jan2017, 14:27	5.33
RIR0.32A	0.5587	625.6	01Jan2017, 13:59	5.34
RIR0.32_0.00	6.5037	6436.7	01Jan2017, 14:37	5.33
RIR0.65	5.9450	6093.2	01Jan2017, 14:23	5.33
RIR0.65A	0.1896	301.5	01Jan2017, 13:32	5.83
RIR0.65_0.32	5.9450	6071.0	01Jan2017, 14:29	5.33
RIR0.86	5.7554	6058.1	01Jan2017, 14:19	5.31
RIR0.86A	0.2984	371.8	01Jan2017, 13:48	5.35
RIR0.86_0.65	5.7554	6043.6	01Jan2017, 14:23	5.31
RIR1.24	5.4570	5858.6	01Jan2017, 14:14	5.31
RIR1.24A	0.0980	142.0	01Jan2017, 13:31	5.11
RIR1.24_0.86	5.4570	5814.6	01Jan2017, 14:21	5.31
RIR1.34	5.3590	5828.6	01Jan2017, 14:14	5.32
RIR1.52	4.5754	5108.2	01Jan2017, 14:18	5.33
RIR1.62	1.8861	2013.5	01Jan2017, 14:15	5.30
RIR1.62A	0.5008	564.2	01Jan2017, 14:00	5.47
RIR2.60	1.3853	1517.6	01Jan2017, 13:56	5.24

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	438.4	01Jan2017, 13:37	5.35
RIR2.60_1.62	1.3853	1502.1	01Jan2017, 14:21	5.24
RIR3.38	1.0728	1262.1	01Jan2017, 13:51	5.21
RIR3.38A	1.0434	1234.0	01Jan2017, 13:51	5.22
RIR3.38B	0.0294	43.7	01Jan2017, 13:30	5.11
RIR3.38_2.60	1.0728	1245.7	01Jan2017, 14:06	5.21
SHCT0.00	3.0470	2774.8	01Jan2017, 14:00	3.96
SHCT0.00A	0.9966	875.5	01Jan2017, 13:54	3.89
SHCT1.59	2.0504	1923.6	01Jan2017, 13:50	4.00
SHCT1.59A	2.0504	1923.6	01Jan2017, 13:50	4.00
SHCT1.59_0.00	2.0504	1921.1	01Jan2017, 14:02	4.00
SHC0.00	6.4942	4951.8	01Jan2017, 14:56	4.26
SHC0.00A	0.0458	57.8	01Jan2017, 13:40	4.86
SHC0.23	6.4484	5086.8	01Jan2017, 14:47	4.26
SHC0.23A	0.6386	591.2	01Jan2017, 14:24	5.46
SHC0.23_0.00	6.4484	4940.3	01Jan2017, 14:56	4.25
SHC1.60	5.8098	4807.3	01Jan2017, 14:13	4.14
SHC1.60A	0.2628	353.0	01Jan2017, 13:36	4.98
SHC1.60_0.23	5.8098	4556.6	01Jan2017, 14:49	4.13
SHC2.06	5.5470	4695.6	01Jan2017, 14:06	4.10
SHC2.06A	0.2828	274.3	01Jan2017, 13:41	3.66

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	4667.2	01Jan2017, 14:14	4.10
SHC2.56	5.2642	4534.1	01Jan2017, 14:03	4.12
SHC2.56A	0.4506	504.7	01Jan2017, 13:46	4.62
SHC2.56_2.06	5.2642	4526.8	01Jan2017, 14:07	4.12
SHC3.11	1.7666	1433.2	01Jan2017, 14:10	4.27
SHC3.11A	0.2775	426.5	01Jan2017, 13:32	5.59
SHC3.11_2.56	1.7666	1432.8	01Jan2017, 14:15	4.27
SHC3.92	1.4891	1324.2	01Jan2017, 13:54	4.03
SHC3.92A	0.6934	615.7	01Jan2017, 13:50	3.77
SHC3.92B	0.7957	721.1	01Jan2017, 13:59	4.25
SHC3.92_3.11	1.4891	1319.0	01Jan2017, 14:15	4.03
SRT0.50	2.6893	3099.4	01Jan2017, 14:19	5.35
SRT0.50A	0.4294	450.2	01Jan2017, 14:06	5.34
SRT1.29	2.2599	2690.8	01Jan2017, 14:09	5.35
SRT1.29A	0.3191	334.1	01Jan2017, 14:04	5.22
SRT1.29_0.50	2.2599	2671.8	01Jan2017, 14:20	5.35
SRT2.06	1.9408	2374.9	01Jan2017, 13:56	5.37
SRT2.06A	0.4839	592.5	01Jan2017, 13:51	5.47
SRT2.06_1.29	1.9408	2359.4	01Jan2017, 14:09	5.37
SRT2.55	1.4569	1795.9	01Jan2017, 13:51	5.34
SRT2.55A	0.3465	472.9	01Jan2017, 13:40	5.35

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	1791.2	01Jan2017, 13:58	5.34
SRT3.00	1.1104	1396.5	01Jan2017, 13:50	5.34
SRT3.00A	0.7468	913.4	01Jan2017, 13:50	5.34
SRT3.00_2.55	1.1104	1391.7	01Jan2017, 13:57	5.34
SRT3.38	0.3636	484.3	01Jan2017, 13:42	5.35
SRT3.38A	0.3636	484.3	01Jan2017, 13:42	5.35
SRT3.38_3.00	0.3636	483.4	01Jan2017, 13:51	5.35
SSRTA0.00	0.4007	550.9	01Jan2017, 13:48	5.63
SSRTA0.00A	0.2628	358.4	01Jan2017, 13:45	5.71
SSRTA0.59	0.1379	200.4	01Jan2017, 13:37	5.47
SSRTA0.59A	0.1379	200.6	01Jan2017, 13:36	5.47
SSRTA0.59_0.00	0.1379	198.5	01Jan2017, 13:54	5.47
SSRT0.00	1.3182	1657.0	01Jan2017, 13:59	5.54
SSRT0.00A	0.2236	289.0	01Jan2017, 13:47	5.47
SSRT0.46	1.0946	1406.2	01Jan2017, 13:48	5.56
SSRT0.46A	0.1893	280.3	01Jan2017, 13:35	5.59
SSRT0.46_0.00	1.0946	1395.2	01Jan2017, 14:02	5.55
SSRT0.77	0.9053	1209.2	01Jan2017, 13:51	5.55
SSRT0.77A	0.2520	344.2	01Jan2017, 13:43	5.59
SSRT0.77B	0.0603	88.9	01Jan2017, 13:33	5.35
SSRT0.77_0.46	0.9053	1205.2	01Jan2017, 13:56	5.55

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	278.7	01Jan2017, 13:33	5.39
SSRT1.34A	0.1112	158.2	01Jan2017, 13:36	5.35
SSRT1.34B	0.0172	26.6	01Jan2017, 13:30	5.47
SSRT1.34C	0.0236	36.5	01Jan2017, 13:30	5.47
SSRT1.34D	0.0122	18.9	01Jan2017, 13:30	5.47
SSRT1.34E	0.0281	42.8	01Jan2017, 13:31	5.47
SSRT1.34_0.77	0.1923	268.3	01Jan2017, 13:54	5.39
SSR0.00	4.8444	4879.0	01Jan2017, 14:13	5.33
SSR0.00A	0.0601	92.4	01Jan2017, 13:31	5.47
SSR0.22	4.7843	4865.5	01Jan2017, 14:11	5.32
SSR0.22A	0.2501	374.0	01Jan2017, 13:39	5.95
SSR0.22_0.00	4.7843	4861.5	01Jan2017, 14:13	5.32
SSR0.85	4.5342	4680.2	01Jan2017, 14:05	5.29
SSR0.85_0.22	4.5342	4665.2	01Jan2017, 14:12	5.29
SSR0.87	3.2160	3057.1	01Jan2017, 14:08	5.19
SSR0.87A	0.3806	433.5	01Jan2017, 14:01	5.59
SSR1.06	2.8354	2636.4	01Jan2017, 14:05	5.14
SSR1.06A	0.2647	361.5	01Jan2017, 13:43	5.59
SSR1.06_0.87	2.8354	2631.5	01Jan2017, 14:09	5.14
SSR1.71	2.5707	2378.8	01Jan2017, 13:55	5.09
SSR1.71A	0.3665	431.9	01Jan2017, 14:01	5.83

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	2369.6	01Jan2017, 14:08	5.09
SSR1.89	2.2042	1963.2	01Jan2017, 13:50	4.97
SSR1.89A	0.3178	432.3	01Jan2017, 13:46	5.83
SSR1.89B	0.0231	43.6	01Jan2017, 13:30	7.78
SSR1.89_1.71	2.2042	1952.9	01Jan2017, 13:54	4.97
SSR2.33	1.8633	1521.6	01Jan2017, 13:41	4.78
SSR2.33A	0.1750	279.2	01Jan2017, 13:33	5.96
SSR2.33B	0.0381	59.0	01Jan2017, 13:30	5.47
SSR2.33_1.89	1.8633	1514.2	01Jan2017, 13:51	4.78
SSR2.70	1.6502	1292.1	01Jan2017, 13:50	4.64
SSR2.70A	0.4613	583.4	01Jan2017, 13:47	5.34
SSR2.70B	0.0112	17.8	01Jan2017, 13:30	5.59
SSR2.70C	0.0064	12.1	01Jan2017, 13:30	7.90
SSR2.70D	0.0343	48.8	01Jan2017, 13:32	4.98
SSR2.70E	0.4472	628.0	01Jan2017, 13:40	5.59
SSR2.70_2.33	1.6502	1290.5	01Jan2017, 13:57	4.64
SSR3.20	0.6898	543.1	01Jan2017, 13:46	3.50
SSR3.20A	0.1108	146.3	01Jan2017, 13:38	4.98
SSR3.20B	0.2023	280.3	01Jan2017, 13:33	4.98
SSR3.20_2.70	0.6898	541.0	01Jan2017, 13:58	3.50
SSR3.70	0.3767	232.7	01Jan2017, 13:37	2.33

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	232.7	01Jan2017, 13:37	4.50
SSR3.70B	0.1861	225.1	01Jan2017, 13:34	4.26
SSR3.70_3.20	0.3767	231.1	01Jan2017, 13:53	2.33
WOR0.00	2.8951	2855.7	01Jan2017, 14:28	5.22
WOR0.00A	0.0359	53.7	01Jan2017, 13:32	5.35
WOR0.32	2.8592	2855.3	01Jan2017, 14:23	5.22
WOR0.32A	0.1901	212.8	01Jan2017, 13:55	5.10
WOR0.32_0.00	2.8592	2848.0	01Jan2017, 14:28	5.21
WOR0.76	2.6691	2838.5	01Jan2017, 14:09	5.23
WOR0.76A	0.3131	458.3	01Jan2017, 13:38	5.71
WOR0.76_0.32	2.6691	2695.5	01Jan2017, 14:25	5.22
WOR1.59	2.3560	2642.1	01Jan2017, 13:59	5.17
WOR1.59A	0.4536	602.3	01Jan2017, 13:47	5.71
WOR1.59B	0.7600	774.1	01Jan2017, 14:07	5.22
WOR1.59_0.76	2.3560	2607.0	01Jan2017, 14:13	5.17
WOR1.64	1.1424	1324.3	01Jan2017, 14:01	4.93
WOR1.64A	0.2551	331.0	01Jan2017, 13:48	5.59
WOR2.33	0.8873	1077.2	01Jan2017, 13:41	4.75
WOR2.33A	0.3233	399.9	01Jan2017, 13:43	4.98
WOR2.33_1.64	0.8873	1026.0	01Jan2017, 14:04	4.74
WOR3.00	0.5640	679.4	01Jan2017, 13:40	4.62

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	465.6	01Jan2017, 13:43	5.35
WOR3.67	0.2110	217.0	01Jan2017, 13:32	3.42
WOR3.67A	0.2110	217.0	01Jan2017, 13:32	3.42
WOR3.67_3.00	0.2110	216.6	01Jan2017, 13:39	3.42

Project: ChiquesCreek Simulation Run: 500YR

Start of Run: 01Jan2017, 01:00 Basin Model: ExistingConditions
End of Run: 02Jan2017, 13:00 Meteorologic Model: 500YR_24HR
Compute Time: 31Jan2017, 15:27:43 Control Specifications:24HR_STORM

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BER0.00	1.8478	1937.2	01Jan2017, 14:32	6.04
BER0.00A	0.1087	165.7	01Jan2017, 13:47	7.08
BER0.64	1.7391	1907.8	01Jan2017, 14:12	5.97
BER0.64A	0.3111	521.6	01Jan2017, 13:38	7.21
BER0.64_0.00	1.7391	1856.1	01Jan2017, 14:34	5.97
BER1.05	1.4280	1678.7	01Jan2017, 14:04	5.70
BER1.05A	0.2790	414.8	01Jan2017, 13:50	7.07
BER1.05_0.64	1.4280	1643.2	01Jan2017, 14:18	5.70
BER1.30	1.1490	1322.9	01Jan2017, 13:58	5.37
BER1.30A	0.5289	700.1	01Jan2017, 13:51	6.26
BER1.30_1.05	1.1490	1307.1	01Jan2017, 14:08	5.37
BER1.95	0.6201	656.0	01Jan2017, 13:46	4.60
BER1.95A	0.6201	656.0	01Jan2017, 13:46	4.60
BER1.95_1.30	0.6201	649.6	01Jan2017, 14:04	4.60
BOR0.00	6.6030	7296.6	01Jan2017, 14:29	6.29
BOR0.00A	0.0062	11.3	01Jan2017, 13:30	7.21
BOR0.10	6.5968	7530.4	01Jan2017, 14:26	6.30

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
BOR0.10A	0.2331	324.0	01Jan2017, 13:57	7.08
BOR0.10_0.00	6.5968	7295.3	01Jan2017, 14:29	6.29
BOR0.68	1.6208	1870.4	01Jan2017, 14:10	5.64
BOR0.68A	0.2555	379.9	01Jan2017, 13:50	7.07
BOR0.68_0.10	1.6208	1834.6	01Jan2017, 14:26	5.63
BOR1.20	1.3653	1559.8	01Jan2017, 14:00	5.37
BOR1.20A	0.5429	671.0	01Jan2017, 14:03	6.53
BOR1.20_0.68	1.3653	1551.1	01Jan2017, 14:13	5.37
BOR2.07	0.8224	897.8	01Jan2017, 13:43	4.60
BOR2.07A	0.8224	897.8	01Jan2017, 13:43	4.60
BOR2.07_1.20	0.8224	890.6	01Jan2017, 13:59	4.60
CHC10.68	50.2637	17105.5	01Jan2017, 20:37	6.62
CHC10.68A	0.7377	1108.6	01Jan2017, 13:54	7.60
CHC10.68B	0.0477	78.7	01Jan2017, 13:44	7.61
CHC10.68C	0.1180	178.6	01Jan2017, 13:51	7.34
CHC10.68D	0.1638	247.0	01Jan2017, 14:05	8.64
CHC10.68E	0.0528	103.5	01Jan2017, 13:34	8.64
CHC10.68_9.40	50.2637	17066.4	01Jan2017, 20:58	6.59
CHC11.99	49.1437	16981.7	01Jan2017, 20:12	6.61
CHC11.99_10.68	49.1437	16945.0	01Jan2017, 20:39	6.60
CHC12.01	46.4709	16550.3	01Jan2017, 20:28	6.57

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC12.01A	0.1403	253.6	01Jan2017, 13:31	7.21
CHC12.65	46.3306	16760.4	01Jan2017, 20:02	6.60
CHC12.65_12.01	46.3306	16536.1	01Jan2017, 20:28	6.57
CHC12.67	45.3853	16596.3	01Jan2017, 20:08	6.58
CHC12.67A	0.5547	530.5	01Jan2017, 14:53	7.34
CHC13.89	44.8306	16528.3	01Jan2017, 19:45	6.59
CHC13.89_12.67	44.8306	16483.6	01Jan2017, 20:12	6.57
CHC13.90	41.9107	15962.6	01Jan2017, 19:57	6.56
CHC13.90A	2.4712	1111.3	01Jan2017, 18:55	7.14
CHC16.25	39.4395	15191.0	01Jan2017, 16:38	6.57
CHC16.25A	0.7783	706.0	01Jan2017, 15:02	7.33
CHC16.25_13.90	39.4395	14897.5	01Jan2017, 20:04	6.52
CHC17.08	38.6612	15154.0	01Jan2017, 16:09	6.57
CHC17.08A	0.5852	684.3	01Jan2017, 14:25	7.47
CHC17.08B	0.3448	564.7	01Jan2017, 13:59	9.27
CHC17.08_16.25	38.6612	14893.7	01Jan2017, 19:21	6.56
CHC17.73	37.7312	14975.4	01Jan2017, 15:47	6.54
CHC17.73A	0.3870	528.3	01Jan2017, 14:06	7.60
CHC17.73B	0.0626	128.0	01Jan2017, 13:34	9.52
CHC17.73_17.08	37.7312	14687.4	01Jan2017, 19:03	6.54
CHC18.09	37.2816	15054.2	01Jan2017, 15:34	6.53

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC18.09A	0.1663	239.8	01Jan2017, 13:46	6.54
CHC18.09_17.73	37.2816	14767.0	01Jan2017, 15:48	6.53
CHC18.61	36.6951	15319.2	01Jan2017, 15:18	6.54
CHC18.61A	0.5761	900.6	01Jan2017, 13:40	6.67
CHC18.61_18.09	36.6951	14869.2	01Jan2017, 15:34	6.53
CHC19.32	36.1190	15965.0	01Jan2017, 14:56	6.54
CHC19.32_18.61	36.1190	15133.9	01Jan2017, 15:18	6.53
CHC19.35	29.5506	13048.9	01Jan2017, 18:16	6.46
CHC19.35A	0.3523	453.3	01Jan2017, 14:14	7.60
CHC19.35B	0.0175	35.6	01Jan2017, 13:31	8.90
CHC1.28	63.3656	17752.3	01Jan2017, 23:32	6.27
CHC1.28A	0.8402	559.2	01Jan2017, 15:57	6.80
CHC20.02	29.1808	13052.8	01Jan2017, 17:59	6.45
CHC20.02A	0.3588	569.4	01Jan2017, 13:54	8.12
CHC20.02_19.35	29.1808	12961.1	01Jan2017, 18:16	6.44
CHC20.55	28.8220	13114.8	01Jan2017, 17:39	6.43
CHC20.55_20.02	28.8220	12968.8	01Jan2017, 17:59	6.43
CHC20.57	23.2797	11497.7	01Jan2017, 17:49	6.27
CHC20.57A	0.5512	610.3	01Jan2017, 14:46	8.38
CHC21.28	22.7285	11480.5	01Jan2017, 17:13	6.23
CHC21.28A	0.3509	535.3	01Jan2017, 14:02	8.51

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC21.28B	0.0187	38.7	01Jan2017, 13:30	9.15
CHC21.28C	0.0073	10.8	01Jan2017, 13:59	7.87
CHC21.28D	0.0224	43.7	01Jan2017, 13:31	8.13
CHC21.28E	0.0497	84.9	01Jan2017, 13:32	6.81
CHC21.28F	0.1457	260.2	01Jan2017, 13:32	7.21
CHC21.28_20.57	22.7285	11306.4	01Jan2017, 17:50	6.22
CHC21.59	22.1338	11478.7	01Jan2017, 16:59	6.19
CHC21.59A	0.2001	310.3	01Jan2017, 13:51	7.61
CHC21.59B	0.0256	51.4	01Jan2017, 13:32	8.77
CHC21.59C	0.0275	54.9	01Jan2017, 13:30	8.52
CHC21.59D	0.0896	165.9	01Jan2017, 13:32	7.61
CHC21.59_21.28	22.1338	11323.6	01Jan2017, 17:14	6.18
CHC22.01	21.7910	11517.2	01Jan2017, 16:42	6.17
CHC22.01A	1.2726	2267.2	01Jan2017, 13:31	7.06
CHC22.01B	0.0456	88.0	01Jan2017, 13:30	7.87
CHC22.01_21.59	21.7910	11389.2	01Jan2017, 17:00	6.16
CHC23.04	20.4728	11281.9	01Jan2017, 16:20	6.12
CHC23.04A	1.8763	1686.9	01Jan2017, 14:55	6.92
CHC23.04B	0.2164	362.4	01Jan2017, 13:40	7.34
CHC23.04_22.01	20.4728	11204.6	01Jan2017, 16:43	6.11
CHC24.53	18.3801	10395.3	01Jan2017, 15:57	6.03

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC24.53_23.04	18.3801	10190.6	01Jan2017, 16:32	6.02
CHC24.63	18.3801	10395.3	01Jan2017, 15:57	6.03
CHC24.64	11.7771	7769.1	01Jan2017, 16:18	5.88
CHC24.64A	0.2517	236.2	01Jan2017, 14:35	6.27
CHC25.53	11.5254	8746.3	01Jan2017, 15:43	5.93
CHC25.53A	0.6693	861.6	01Jan2017, 14:04	6.94
CHC25.53B	0.0163	27.8	01Jan2017, 13:30	6.54
CHC25.53_24.64	11.5254	7662.3	01Jan2017, 16:19	5.88
CHC26.30	10.8398	8656.7	01Jan2017, 15:25	5.88
CHC26.30A	0.8065	633.8	01Jan2017, 15:17	6.80
CHC26.30_25.53	10.8398	8466.0	01Jan2017, 15:44	5.87
CHC27.38	10.0333	9126.6	01Jan2017, 14:53	5.86
CHC27.38_26.30	10.0333	8025.8	01Jan2017, 15:26	5.81
CHC27.39	3.5391	2837.9	01Jan2017, 14:31	6.14
CHC27.39A	0.3314	456.9	01Jan2017, 13:56	6.94
CHC28.26	3.2077	2632.6	01Jan2017, 14:40	6.06
CHC28.26_27.39	3.2077	2590.5	01Jan2017, 15:01	6.06
CHC28.31	3.2077	2632.6	01Jan2017, 14:40	6.06
CHC28.31A	0.0950	161.0	01Jan2017, 13:35	6.94
CHC28.31B	0.7915	1080.1	01Jan2017, 13:55	6.80
CHC28.67	2.3212	2037.0	01Jan2017, 14:42	5.76

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC28.67A	0.6654	773.8	01Jan2017, 13:56	5.71
CHC28.67_28.31	2.3212	2034.5	01Jan2017, 14:49	5.76
CHC29.91	1.6558	1659.1	01Jan2017, 14:20	5.79
CHC29.91A	0.6097	703.8	01Jan2017, 13:52	5.44
CHC29.91_28.67	1.6558	1644.3	01Jan2017, 14:51	5.78
CHC30.94	1.0461	1180.1	01Jan2017, 14:04	5.98
CHC30.94A	1.0461	1180.1	01Jan2017, 14:04	5.98
CHC30.94_29.91	1.0461	1175.3	01Jan2017, 14:31	5.99
CHC3.39	62.5254	17673.7	01Jan2017, 22:54	6.33
CHC3.39A	1.8419	2526.9	01Jan2017, 13:52	6.65
CHC3.39_1.28	62.5254	17645.9	01Jan2017, 23:34	6.27
CHC4.62	60.6835	18549.3	01Jan2017, 22:07	6.52
CHC4.62A	0.1505	257.3	01Jan2017, 13:35	7.08
CHC4.62B	0.1946	326.7	01Jan2017, 13:37	7.08
CHC4.62_3.39	60.6835	17517.8	01Jan2017, 22:56	6.32
CHC4.97	60.3384	18594.7	01Jan2017, 21:53	6.54
CHC4.97A	0.4693	487.0	01Jan2017, 14:30	6.80
CHC4.97B	0.0580	102.4	01Jan2017, 13:36	7.48
CHC4.97C	0.2012	345.0	01Jan2017, 13:32	6.81
CHC4.97_4.62	60.3384	18518.6	01Jan2017, 22:07	6.51
CHC5.97	59.6099	18543.6	01Jan2017, 21:40	6.56

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
CHC5.97A	1.1314	1475.5	01Jan2017, 14:06	7.20
CHC5.97_4.97	59.6099	18520.6	01Jan2017, 21:54	6.53
CHC7.47	58.4785	18474.7	01Jan2017, 21:13	6.60
CHC7.47_5.97	58.4785	18427.8	01Jan2017, 21:41	6.55
CHC7.48	53.6341	17813.8	01Jan2017, 21:24	6.57
CHC7.48A	2.2128	1108.6	01Jan2017, 17:59	7.17
CHC9.40	51.4213	17211.3	01Jan2017, 20:55	6.61
CHC9.40A	1.1576	1377.9	01Jan2017, 14:18	7.20
CHC9.40_7.47	51.4213	17100.6	01Jan2017, 21:35	6.54
DER0.00	2.9199	3271.5	01Jan2017, 14:44	7.03
DER0.00A	0.1924	328.8	01Jan2017, 13:35	7.08
DER0.52	2.7275	3230.0	01Jan2017, 14:33	7.03
DER0.52A	0.5165	802.7	01Jan2017, 13:48	7.34
DER0.52_0.00	2.7275	3214.1	01Jan2017, 14:44	7.03
DER1.10	2.2110	2885.1	01Jan2017, 14:19	6.96
DER1.10A	0.3712	563.8	01Jan2017, 13:50	7.34
DER1.10_0.52	2.2110	2845.7	01Jan2017, 14:38	6.95
DER1.76	1.8398	2486.3	01Jan2017, 14:06	6.90
DER1.76A	0.5078	708.8	01Jan2017, 13:51	6.67
DER1.76_1.10	1.8398	2476.3	01Jan2017, 14:23	6.89
DER2.22	1.3320	1862.0	01Jan2017, 14:02	6.98

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DER2.22A	0.7235	936.6	01Jan2017, 14:01	6.80
DER2.22_1.76	1.3320	1856.4	01Jan2017, 14:12	6.98
DER2.93	0.6085	930.8	01Jan2017, 13:48	7.20
DER2.93A	0.6085	930.8	01Jan2017, 13:48	7.20
DER2.93_2.22	0.6085	926.1	01Jan2017, 14:03	7.20
DORT0.34	1.6920	2320.0	01Jan2017, 14:00	7.10
DORT0.34A	0.0357	63.6	01Jan2017, 13:31	7.08
DORT0.34B	0.0234	41.2	01Jan2017, 13:31	6.94
DORT0.54	1.6329	2288.6	01Jan2017, 13:56	7.11
DORT0.54A	0.2058	333.7	01Jan2017, 13:42	7.21
DORT0.54B	0.0280	42.7	01Jan2017, 13:32	5.86
DORT0.54C	0.0058	11.2	01Jan2017, 13:32	8.13
DORT0.54D	0.0832	129.7	01Jan2017, 13:49	7.47
DORT0.54E	0.0367	66.1	01Jan2017, 13:30	7.08
DORT0.54_0.34	1.6329	2277.8	01Jan2017, 14:01	7.11
DORT1.15	1.2734	1926.6	01Jan2017, 13:48	7.17
DORT1.15A	0.4022	694.4	01Jan2017, 13:37	7.34
DORT1.15B	0.0103	21.4	01Jan2017, 13:30	9.27
DORT1.15_0.54	1.2734	1916.1	01Jan2017, 13:59	7.16
DORT1.58	0.8609	1343.9	01Jan2017, 13:50	7.06
DORT1.58A	0.4931	764.4	01Jan2017, 13:45	7.07

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DORT1.58_1.15	0.8609	1339.1	01Jan2017, 13:58	7.06
DORT2.41	0.3678	612.5	01Jan2017, 13:38	7.03
DORT2.41A	0.2384	392.4	01Jan2017, 13:38	6.94
DORT2.41B	0.1294	221.4	01Jan2017, 13:36	7.21
DORT2.41_1.58	0.3678	608.1	01Jan2017, 13:59	7.04
DOR0.00	5.5423	6239.2	01Jan2017, 14:46	7.11
DOR0.00A	0.0475	85.0	01Jan2017, 13:38	7.87
DOR0.24	5.4948	6368.7	01Jan2017, 14:36	7.10
DOR0.24A	0.1218	208.7	01Jan2017, 13:39	7.47
DOR0.24B	0.1287	208.3	01Jan2017, 13:46	7.61
DOR0.24_0.00	5.4948	6221.1	01Jan2017, 14:46	7.10
DOR0.44A	0.5212	761.9	01Jan2017, 13:56	7.47
DOR0.44_0.24	5.2443	6205.9	01Jan2017, 14:37	7.07
DOR1.21	4.7231	5909.5	01Jan2017, 14:13	7.04
DOR1.21A	0.2430	327.0	01Jan2017, 14:06	7.47
DOR1.21B	0.2037	350.8	01Jan2017, 13:37	7.34
DOR1.21_0.44	4.7231	5728.3	01Jan2017, 14:36	7.03
DOR1.23	4.2764	5403.6	01Jan2017, 14:15	7.14
DOR1.23A	0.2095	346.8	01Jan2017, 13:44	7.60
DOR1.45	4.0669	5197.8	01Jan2017, 14:10	7.11
DOR1.45_1.23	4.0669	5174.2	01Jan2017, 14:16	7.11

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
DOR1.60	2.3749	2965.6	01Jan2017, 14:17	7.12
DOR1.60A	0.5501	853.8	01Jan2017, 13:46	7.20
DOR2.40	1.8248	2440.8	01Jan2017, 14:06	7.10
DOR2.40A	0.4594	657.6	01Jan2017, 13:55	7.21
DOR2.40_1.60	1.8248	2418.9	01Jan2017, 14:25	7.10
DOR2.81	1.3654	1826.0	01Jan2017, 14:00	7.06
DOR2.81A	0.2367	372.2	01Jan2017, 13:48	7.47
DOR2.81_2.40	1.3654	1816.2	01Jan2017, 14:10	7.06
DOR3.06	1.1287	1482.5	01Jan2017, 13:56	6.98
DOR3.06A	0.3648	566.0	01Jan2017, 13:45	7.07
DOR3.06B	0.7639	973.7	01Jan2017, 14:05	6.93
DOR3.06_2.81	1.1287	1479.5	01Jan2017, 14:03	6.98
DOR.44	5.2443	6233.9	01Jan2017, 14:33	7.08
ERRR0.57_0.00	1.1576	1590.2	01Jan2017, 14:09	7.49
ERRT0.00	1.2906	1767.5	01Jan2017, 14:07	7.59
ERRT0.00A	0.1098	186.6	01Jan2017, 13:47	8.26
ERRT0.00B	0.0077	15.6	01Jan2017, 13:30	8.64
ERRT0.00C	0.0074	15.5	01Jan2017, 13:30	9.52
ERRT0.00D	0.0036	7.6	01Jan2017, 13:30	9.52
ERRT0.00E	0.0045	9.4	01Jan2017, 13:30	9.52
ERRT0.57	1.1576	1597.3	01Jan2017, 13:59	7.49

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERRT0.57A	0.2788	311.6	01Jan2017, 14:31	7.47
ERRT0.61	0.8788	1344.6	01Jan2017, 13:57	7.50
ERRT0.61A	0.4551	644.4	01Jan2017, 14:01	7.60
ERRT1.62	0.4237	720.4	01Jan2017, 13:32	7.40
ERRT1.62A	0.1546	248.0	01Jan2017, 13:42	7.08
ERRT1.62B	0.2547	472.7	01Jan2017, 13:30	7.47
ERRT1.62C	0.0144	30.2	01Jan2017, 13:30	9.52
ERRT1.62_0.61	0.4237	706.1	01Jan2017, 13:55	7.39
ERR0.00	2.6728	3598.3	01Jan2017, 14:09	7.42
ERR0.00A	0.0718	122.5	01Jan2017, 13:34	6.94
ERR0.00B	0.0053	11.1	01Jan2017, 13:30	9.52
ERR0.23	2.5957	3551.3	01Jan2017, 14:06	7.43
ERR0.23A	0.1922	318.9	01Jan2017, 13:38	7.08
ERR0.23B	0.0298	61.7	01Jan2017, 13:30	9.15
ERR0.23_0.00	2.5957	3540.8	01Jan2017, 14:10	7.43
ERR0.26	1.3051	1787.1	01Jan2017, 14:04	7.28
ERR0.88	1.0831	1574.1	01Jan2017, 13:58	7.27
ERR0.88A	0.5048	674.2	01Jan2017, 14:05	7.34
ERR0.88_0.23	1.0831	1569.2	01Jan2017, 14:09	7.26
ERR1.33	0.5783	918.8	01Jan2017, 13:44	7.20
ERR1.33A	0.5783	918.8	01Jan2017, 13:44	7.20

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ERR1.33_0.88	0.5783	915.1	01Jan2017, 13:55	7.20
LAR0.00	0.9453	988.0	01Jan2017, 14:07	7.48
LAR0.00A	0.5827	627.1	01Jan2017, 14:37	7.47
LAR0.40	0.3626	503.4	01Jan2017, 13:42	7.50
LAR0.40A	0.0039	8.2	01Jan2017, 13:30	9.65
LAR0.40B	0.1091	210.6	01Jan2017, 13:39	9.15
LAR0.40C	0.1251	213.4	01Jan2017, 13:39	7.47
LAR0.40D	0.1245	209.1	01Jan2017, 13:37	7.08
LAR0.40_0.00	0.3626	502.9	01Jan2017, 13:50	7.50
MRT0.00	0.4202	675.1	01Jan2017, 13:50	6.97
MRT0.00A	0.1647	265.7	01Jan2017, 13:40	6.94
MRT0.66	0.2555	439.7	01Jan2017, 13:35	7.03
MRT0.66A	0.2030	363.1	01Jan2017, 13:32	7.21
MRT0.66B	0.0376	69.3	01Jan2017, 13:30	7.34
MRT0.66C	0.0149	28.2	01Jan2017, 13:31	7.74
MRT0.66_0.00	0.2555	434.3	01Jan2017, 13:53	6.98
ORT0.28	0.7836	1212.8	01Jan2017, 13:47	6.83
ORT0.28A	0.1786	285.7	01Jan2017, 13:37	6.67
ORT0.95	0.6050	959.4	01Jan2017, 13:39	6.87
ORT0.95A	0.1851	308.5	01Jan2017, 13:33	6.67
ORT0.95_0.28	0.6050	955.1	01Jan2017, 13:51	6.87

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
ORT1.38	0.4199	677.3	01Jan2017, 13:39	6.95
ORT1.38A	0.1910	320.6	01Jan2017, 13:34	6.81
ORT1.38_0.95	0.4199	675.6	01Jan2017, 13:45	6.95
ORT2.04	0.2289	379.8	01Jan2017, 13:38	7.08
ORT2.04A	0.2289	379.8	01Jan2017, 13:38	7.08
ORT2.04_1.38	0.2289	379.1	01Jan2017, 13:49	7.07
Pond 0	0.1946	312.4	01Jan2017, 13:45	7.08
Pond 1	0.2012	345.0	01Jan2017, 13:32	6.81
Pond 10	0.0122	20.6	01Jan2017, 13:34	6.96
Pond 11	0.0236	42.4	01Jan2017, 13:31	7.08
Pond 12	0.0172	30.9	01Jan2017, 13:31	7.08
Pond 13	0.0603	101.2	01Jan2017, 13:38	6.94
Pond 14	0.1379	235.6	01Jan2017, 13:36	7.08
Pond 15	0.0477	70.9	01Jan2017, 13:59	7.61
Pond 16	0.3346	372.7	01Jan2017, 14:21	7.91
Pond 17	0.0528	18.2	01Jan2017, 15:25	8.64
Pond 18	0.1638	224.5	01Jan2017, 14:24	8.64
Pond 19	0.0053	10.0	01Jan2017, 13:35	9.52
Pond 2	0.0580	100.5	01Jan2017, 13:41	7.12
Pond 20	0.0077	15.6	01Jan2017, 13:30	8.64
Pond 21	0.0298	61.7	01Jan2017, 13:30	9.15

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 22	0.0074	15.5	01Jan2017, 13:30	9.07
Pond 23	0.0036	7.5	01Jan2017, 13:30	9.52
Pond 24	0.0045	8.7	01Jan2017, 13:33	9.52
Pond 25	0.2547	472.2	01Jan2017, 13:31	7.47
Pond 26	0.0144	9.9	01Jan2017, 14:01	9.52
Pond 27	0.1245	81.0	01Jan2017, 14:20	7.07
Pond 28	0.1251	213.1	01Jan2017, 13:41	7.32
Pond 29	0.1091	209.8	01Jan2017, 13:42	8.16
Pond 3	0.1861	31.5	01Jan2017, 18:44	1.58
Pond 30	0.0039	8.1	01Jan2017, 13:31	8.30
Pond 31	0.3448	210.7	01Jan2017, 15:14	8.54
Pond 32	0.0626	74.5	01Jan2017, 14:03	9.52
Pond 33	0.0149	23.1	01Jan2017, 13:40	7.35
Pond 34	0.0376	65.0	01Jan2017, 13:34	5.91
Pond 35	0.0294	50.6	01Jan2017, 13:31	6.68
Pond 36	0.0175	35.5	01Jan2017, 13:32	8.90
Pond 37	0.1287	206.9	01Jan2017, 13:50	7.59
Pond 38	0.2037	338.0	01Jan2017, 13:44	4.48
Pond 39	0.0234	41.0	01Jan2017, 13:32	6.94
Pond 4	0.2023	215.4	01Jan2017, 13:51	6.43
Pond 40	0.0832	99.7	01Jan2017, 14:16	6.38

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 41	0.0058	11.0	01Jan2017, 13:36	8.13
Pond 42	0.0367	64.1	01Jan2017, 13:33	7.08
Pond 43	0.0103	21.4	01Jan2017, 13:31	9.28
Pond 44	0.1294	220.3	01Jan2017, 13:39	7.20
Pond 45	0.1457	255.2	01Jan2017, 13:36	7.21
Pond 46	0.0187	35.6	01Jan2017, 13:34	9.15
Pond 47	0.0275	50.5	01Jan2017, 13:37	8.08
Pond 48	0.0456	87.8	01Jan2017, 13:30	7.12
Pond 49	0.0256	51.4	01Jan2017, 13:32	8.77
Pond 5	0.0343	55.0	01Jan2017, 13:36	6.54
Pond 50	0.0073	10.8	01Jan2017, 14:02	7.79
Pond 51	0.0721	127.5	01Jan2017, 13:34	7.22
Pond 52	0.0497	84.7	01Jan2017, 13:34	6.81
Pond 53	0.0896	165.7	01Jan2017, 13:33	7.61
Pond 54	0.2164	186.1	01Jan2017, 14:18	7.33
Pond 55	0.0163	27.5	01Jan2017, 13:32	6.41
Pond 56	0.0231	48.4	01Jan2017, 13:30	9.53
Pond 57	0.0112	20.5	01Jan2017, 13:30	7.21
Pond 58	0.0280	42.3	01Jan2017, 13:35	5.86
Pond 6	0.4472	156.2	01Jan2017, 14:55	7.21
Pond 7	0.0064	5.9	01Jan2017, 13:54	9.64

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Pond 8	0.0381	67.8	01Jan2017, 13:32	7.08
Pond 9	0.0281	49.9	01Jan2017, 13:32	7.08
RIR0.00	6.5684	8001.4	01Jan2017, 14:32	6.93
RIR0.00A	0.0647	105.8	01Jan2017, 13:54	8.52
RIR0.32	6.5037	8057.2	01Jan2017, 14:23	6.92
RIR0.32A	0.5587	754.7	01Jan2017, 13:58	6.94
RIR0.32_0.00	6.5037	7931.5	01Jan2017, 14:32	6.92
RIR0.65	5.9450	7458.5	01Jan2017, 14:19	6.92
RIR0.65A	0.1896	348.4	01Jan2017, 13:31	7.47
RIR0.65_0.32	5.9450	7434.3	01Jan2017, 14:25	6.92
RIR0.86	5.7554	7406.1	01Jan2017, 14:16	6.90
RIR0.86A	0.2984	444.8	01Jan2017, 13:48	6.94
RIR0.86_0.65	5.7554	7390.3	01Jan2017, 14:20	6.90
RIR1.24	5.4570	7136.7	01Jan2017, 14:11	6.90
RIR1.24A	0.0980	167.0	01Jan2017, 13:31	6.67
RIR1.24_0.86	5.4570	7086.8	01Jan2017, 14:18	6.90
RIR1.34	5.3590	7092.3	01Jan2017, 14:12	6.91
RIR1.52	4.5754	6198.1	01Jan2017, 14:15	6.92
RIR1.62	1.8861	2457.9	01Jan2017, 14:13	6.89
RIR1.62A	0.5008	678.6	01Jan2017, 14:00	7.07
RIR2.60	1.3853	1843.7	01Jan2017, 13:54	6.82

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
RIR2.60A	0.3125	518.2	01Jan2017, 13:37	6.94
RIR2.60_1.62	1.3853	1825.8	01Jan2017, 14:18	6.82
RIR3.38	1.0728	1515.3	01Jan2017, 13:50	6.79
RIR3.38A	1.0434	1485.5	01Jan2017, 13:50	6.80
RIR3.38B	0.0294	51.1	01Jan2017, 13:30	6.68
RIR3.38_2.60	1.0728	1497.9	01Jan2017, 14:05	6.79
SHCT0.00	3.0470	3493.2	01Jan2017, 14:01	5.38
SHCT0.00A	0.9966	1112.7	01Jan2017, 13:53	5.30
SHCT1.59	2.0504	2421.6	01Jan2017, 13:49	5.42
SHCT1.59A	2.0504	2421.6	01Jan2017, 13:49	5.42
SHCT1.59_0.00	2.0504	2418.1	01Jan2017, 14:04	5.42
SHC0.00	6.4942	6345.2	01Jan2017, 14:53	5.71
SHC0.00A	0.0458	69.6	01Jan2017, 13:39	6.40
SHC0.23	6.4484	6500.4	01Jan2017, 14:44	5.71
SHC0.23A	0.6386	719.9	01Jan2017, 14:23	7.07
SHC0.23_0.00	6.4484	6330.7	01Jan2017, 14:53	5.70
SHC1.60	5.8098	6146.4	01Jan2017, 14:12	5.58
SHC1.60A	0.2628	421.0	01Jan2017, 13:36	6.54
SHC1.60_0.23	5.8098	5839.9	01Jan2017, 14:46	5.56
SHC2.06	5.5470	5989.2	01Jan2017, 14:05	5.53
SHC2.06A	0.2828	346.4	01Jan2017, 13:40	5.03

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SHC2.06_1.60	5.5470	5960.9	01Jan2017, 14:13	5.53
SHC2.56	5.2642	5777.1	01Jan2017, 14:03	5.56
SHC2.56A	0.4506	617.8	01Jan2017, 13:46	6.13
SHC2.56_2.06	5.2642	5767.8	01Jan2017, 14:07	5.56
SHC3.11	1.7666	1833.2	01Jan2017, 14:08	5.73
SHC3.11A	0.2775	496.2	01Jan2017, 13:32	7.21
SHC3.11_2.56	1.7666	1832.5	01Jan2017, 14:13	5.73
SHC3.92	1.4891	1675.5	01Jan2017, 13:54	5.46
SHC3.92A	0.6934	783.7	01Jan2017, 13:50	5.16
SHC3.92B	0.7957	906.1	01Jan2017, 13:58	5.71
SHC3.92_3.11	1.4891	1670.0	01Jan2017, 14:13	5.46
SRT0.50	2.6893	3746.0	01Jan2017, 14:17	6.94
SRT0.50A	0.4294	545.7	01Jan2017, 14:06	6.94
SRT1.29	2.2599	3239.7	01Jan2017, 14:07	6.95
SRT1.29A	0.3191	406.1	01Jan2017, 14:04	6.81
SRT1.29_0.50	2.2599	3219.8	01Jan2017, 14:18	6.94
SRT2.06	1.9408	2851.9	01Jan2017, 13:55	6.97
SRT2.06A	0.4839	708.2	01Jan2017, 13:51	7.07
SRT2.06_1.29	1.9408	2835.0	01Jan2017, 14:08	6.97
SRT2.55	1.4569	2156.2	01Jan2017, 13:50	6.94
SRT2.55A	0.3465	560.9	01Jan2017, 13:39	6.94

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SRT2.55_2.06	1.4569	2150.9	01Jan2017, 13:57	6.94
SRT3.00	1.1104	1669.0	01Jan2017, 13:50	6.94
SRT3.00A	0.7468	1094.3	01Jan2017, 13:49	6.93
SRT3.00_2.55	1.1104	1664.1	01Jan2017, 13:56	6.94
SRT3.38	0.3636	575.8	01Jan2017, 13:41	6.94
SRT3.38A	0.3636	575.8	01Jan2017, 13:41	6.94
SRT3.38_3.00	0.3636	574.9	01Jan2017, 13:50	6.94
SSRTA0.00	0.4007	651.5	01Jan2017, 13:47	7.25
SSRTA0.00A	0.2628	422.7	01Jan2017, 13:44	7.34
SSRTA0.59	0.1379	235.6	01Jan2017, 13:36	7.08
SSRTA0.59A	0.1379	235.7	01Jan2017, 13:35	7.08
SSRTA0.59_0.00	0.1379	233.8	01Jan2017, 13:53	7.08
SSRT0.00	1.3182	2051.8	01Jan2017, 13:57	7.15
SSRT0.00A	0.2236	343.9	01Jan2017, 13:46	7.08
SSRT0.46	1.0946	1757.5	01Jan2017, 13:45	7.17
SSRT0.46A	0.1893	328.3	01Jan2017, 13:35	7.21
SSRT0.46_0.00	1.0946	1728.5	01Jan2017, 13:58	7.17
SSRT0.77	0.9053	1475.2	01Jan2017, 13:45	7.16
SSRT0.77A	0.2520	406.6	01Jan2017, 13:43	7.21
SSRT0.77B	0.0603	104.3	01Jan2017, 13:33	6.94
SSRT0.77_0.46	0.9053	1473.3	01Jan2017, 13:50	7.16

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSRT1.34	0.1923	328.8	01Jan2017, 13:32	6.99
SSRT1.34A	0.1112	186.6	01Jan2017, 13:36	6.94
SSRT1.34B	0.0172	30.9	01Jan2017, 13:30	7.08
SSRT1.34C	0.0236	42.4	01Jan2017, 13:30	7.08
SSRT1.34D	0.0122	21.9	01Jan2017, 13:30	7.08
SSRT1.34E	0.0281	49.9	01Jan2017, 13:31	7.08
SSRT1.34_0.77	0.1923	325.2	01Jan2017, 13:48	7.00
SSR0.00	4.8444	5892.5	01Jan2017, 14:10	6.93
SSR0.00A	0.0601	107.5	01Jan2017, 13:31	7.08
SSR0.22	4.7843	5870.0	01Jan2017, 14:08	6.93
SSR0.22A	0.2501	435.7	01Jan2017, 13:38	7.60
SSR0.22_0.00	4.7843	5865.8	01Jan2017, 14:10	6.93
SSR0.85	4.5342	5621.2	01Jan2017, 14:02	6.89
SSR0.85_0.22	4.5342	5604.3	01Jan2017, 14:09	6.89
SSR0.87	3.2160	3628.9	01Jan2017, 14:07	6.79
SSR0.87A	0.3806	519.7	01Jan2017, 14:01	7.21
SSR1.06	2.8354	3121.0	01Jan2017, 14:04	6.73
SSR1.06A	0.2647	427.1	01Jan2017, 13:43	7.21
SSR1.06_0.87	2.8354	3116.8	01Jan2017, 14:08	6.73
SSR1.71	2.5707	2806.9	01Jan2017, 13:57	6.68
SSR1.71A	0.3665	513.9	01Jan2017, 14:01	7.47

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR1.71_1.06	2.5707	2798.6	01Jan2017, 14:08	6.68
SSR1.89	2.2042	2304.7	01Jan2017, 13:51	6.55
SSR1.89A	0.3178	509.0	01Jan2017, 13:46	7.47
SSR1.89B	0.0231	48.5	01Jan2017, 13:30	9.52
SSR1.89_1.71	2.2042	2296.9	01Jan2017, 13:55	6.55
SSR2.33	1.8633	1786.2	01Jan2017, 13:45	6.36
SSR2.33A	0.1750	322.5	01Jan2017, 13:32	7.61
SSR2.33B	0.0381	68.5	01Jan2017, 13:30	7.08
SSR2.33_1.89	1.8633	1782.6	01Jan2017, 13:54	6.36
SSR2.70	1.6502	1539.2	01Jan2017, 13:49	6.21
SSR2.70A	0.4613	696.9	01Jan2017, 13:46	6.94
SSR2.70B	0.0112	20.5	01Jan2017, 13:30	7.21
SSR2.70C	0.0064	13.5	01Jan2017, 13:30	9.65
SSR2.70D	0.0343	57.6	01Jan2017, 13:31	6.54
SSR2.70E	0.4472	740.0	01Jan2017, 13:40	7.21
SSR2.70_2.33	1.6502	1537.1	01Jan2017, 13:56	6.21
SSR3.20	0.6898	652.4	01Jan2017, 13:45	5.02
SSR3.20A	0.1108	175.0	01Jan2017, 13:37	6.54
SSR3.20B	0.2023	332.7	01Jan2017, 13:33	6.54
SSR3.20_2.70	0.6898	651.0	01Jan2017, 13:55	5.02
SSR3.70	0.3767	282.4	01Jan2017, 13:37	3.81

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SSR3.70A	0.1906	282.4	01Jan2017, 13:37	5.99
SSR3.70B	0.1861	273.8	01Jan2017, 13:34	5.72
SSR3.70_3.20	0.3767	280.8	01Jan2017, 13:53	3.81
WOR0.00	2.8951	3523.3	01Jan2017, 14:25	6.79
WOR0.00A	0.0359	62.8	01Jan2017, 13:31	6.94
WOR0.32	2.8592	3521.3	01Jan2017, 14:20	6.79
WOR0.32A	0.1901	258.1	01Jan2017, 13:54	6.67
WOR0.32_0.00	2.8592	3513.3	01Jan2017, 14:25	6.78
WOR0.76	2.6691	3469.5	01Jan2017, 14:07	6.81
WOR0.76A	0.3131	536.8	01Jan2017, 13:37	7.34
WOR0.76_0.32	2.6691	3314.2	01Jan2017, 14:21	6.79
WOR1.59	2.3560	3205.4	01Jan2017, 13:58	6.74
WOR1.59A	0.4536	711.9	01Jan2017, 13:47	7.34
WOR1.59B	0.7600	942.6	01Jan2017, 14:06	6.80
WOR1.59_0.76	2.3560	3167.5	01Jan2017, 14:11	6.74
WOR1.64	1.1424	1611.4	01Jan2017, 13:59	6.47
WOR1.64A	0.2551	392.9	01Jan2017, 13:47	7.21
WOR2.33	0.8873	1302.5	01Jan2017, 13:40	6.27
WOR2.33A	0.3233	481.8	01Jan2017, 13:43	6.54
WOR2.33_1.64	0.8873	1247.1	01Jan2017, 14:02	6.26
WOR3.00	0.5640	822.5	01Jan2017, 13:40	6.12

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
WOR3.00A	0.3530	554.1	01Jan2017, 13:42	6.94
WOR3.67	0.2110	271.3	01Jan2017, 13:32	4.75
WOR3.67A	0.2110	271.3	01Jan2017, 13:32	4.75
WOR3.67_3.00	0.2110	270.8	01Jan2017, 13:39	4.75

APPENDIX D

Road Crossings in HEC-RAS Models

HEC-RAS Station	Name	Details
Chiques Creek		
160193	Private Drive	Triple 36" round CMP pipes in concrete headwall.
157883	PA Turnpike	Single 16.0 ft. wide by 10.0 ft. high concrete arch in concrete headwall.
151421	Cider Press Road	Single span concrete/stone bridge with stone headwall. Total span is 15.0 feet.
149524	Pinch Road	Single span concrete bridge with concrete headwall. Total span is 16.0 feet.
146191	Private Drive	Single 10 ft. round corrugated metal pipe projecting from fill.
146071	Private Drive	Single span concrete bridge with concrete headwall. Total span is 14.0 feet.
138875	Lebanon Road	Single span concrete bridge with concrete headwall. Total span is 58 feet.
129492	Elizabethtown Rd	Main opening data is a single span concrete bridge with span of 13.0 feet. Right bank culvert three 6.0' x 4.0' CMP ellipses, headwall upstream, projecting from fill downstream.
127172	Private Drive	Dual span cast-in-place irregular concrete bridge, total span is 27.0 feet. Irregular concrete pier, 4 ft. at bottom, 1 ft. at top.
124003	Aband. Railroad	Single span metal bridge. Skewed opening size is 36.0 feet.
121646	Hernley Road	Single span concrete bridge with stone headwall. Total span is 38.0 feet.
116569	Aband. Railroad	Multi-span concrete/metal bridge/ Total span is 119 feet. Three piers. Center pier is 4.0' round concrete pier. Others are 2.5 ft. triangular nosed concrete piers.
116189	Hamaker Road	Single span concrete bridge with concrete headwall. Total span is 46.0 feet.
113967	Shearers Bridge	Single span wooden bridge. Total span is 70.0 feet. Erected 1971.
112443	Weir	Single concrete weir, 3 ft.wide.
112338	High Street	Total span is 96.0 feet. Two 3.0' traingular nosed piers.
110532	Oak Street	Single span concrete/metal bridge with metal truss. Total span is 42.0 feet.
109700	Steigel Street	Total span is 50 feet skewed. 2.0' triangular nosed pier.
109032	Railroad	Dual span metal/wood bridge with 9.0'-10.0' stone pier. Total span is 130 feet. Built in 1926.
108342	Fruitville Pike	Dual span concrete bridge on skew. Total opening is 112 feet wide. 3.0 feet round pier in center.
107908	Main Street	Dual span concrete bridge with 3.0' triangular nosed pier. Total span is 123.0 feet, skewed. Built in 1954.
105700	Eby Street	Single span concrete bridge with concrete headwalls. Total span is 47.0 feet.
103385	Railroad	Single span metal/concrete bridge. Total span is 61.0 feet.
101750	Rettew Lane	Dual span concrete bridge. Total span is 103 feet. 3.0' round concrete pier.
98254	Sun Hill Road	Single span wood covered bridge. Total span is 83.0 feet. Built in 1874.
95505	Mill Road	Single span perched concrete bridge. Total span is 60.0 feet.
93607	Private Drive	Single span perched wood bridge. Total span is 32.5 feet.
90194	Auction Road	Single span arched concrete bridge. Total span is 68.0 feet.
86023	Weir	Single stone/ concrete weir, 2 ft.wide.
86011	Footbridge	Single span metal bridge, total span at top is 55.5 feet.
85783	Colebrook Road	Dual span concrete bridge, total span is 124.0 feet. 4.0' hammerhead pier. Culvert on left low lying area is a 24" CMP projecting from fill.
72393	Erisman Road	Single span wood covered bridge. Total span is 75.0 feet. Stone headwalls.
62886	Footbridge	Single span wood bridge.
62032	U.S. Route 283	Concrete arch modeled as culvert, 98 ft. wide by 20.0 feet high.
60291	Weir	Single stone/ concrete weir, 3 ft.wide.
60065	Chiques Road	Concrete arch. Span is 58 feet, height is 17 ft. upstream and 17.5 ft. downstream. Concrete headwalls. Built in 1921.
57147	Old Harrisburg Pike	Dual span concrete bridge. Total span is 92.0 feet. 3.0' triangular nosed pier in center.
56354	Railroad	Twin stone arches. Left arch is 60 ft. wide by 28' high. Right arch is 60' wide by 34' high. Stone 90-degree headwalls.
51577	Weir	ingle stone/ concrete weir, 4 ft.wide.
51305	Eby Chiques Rd	Dual span stone/concrete bridge with concrete headwalls. Total span is 81.0 ft. Pier is circular, 2.0' wide.
49631	Newcomer Road	Dual span concrete bridge with concrete headwalls. Total span is 75.0 ft. Pier is circular, 3.0' wide.
39875	Weir	Single stone/ concrete weir, 4 ft.wide.
39551	Garfield Road	Main opening is single span concrete bridge, total span is 81.5 ft. Built in 2011. Right bank culvert is twin 5.0' round concrete pipes in concrete headwall.
38829	Old Mill Building	Upstream is 14' x 6.5' concrete box, changes to 14.0' x 7.0' stone arch, modeled as downstream since opening is smaller. Building over culvert.
38616	Garfield Road	Dual span concrete bridge with concrete headwalls. 3.0' triangular nosed pier. Total span is 74.0 ft.
32803	Weir	Single stone/ concrete weir, 2 ft.wide.
32240	Weir	Single stone/ concrete weir, 2 ft.wide.
31530	Siegrist Road	Single span wood truss bridge with stone headwalls. Total span in 88.1 ft. Built in 1885.
24369	Bridge Valley Rd	Single span wood truss bridge with stone headwalls. Total span in 88.0 ft. Built in 1869.
17869	Kinderhook Road	Twin span concrete bridge on skew. Flow total opening is 102.0 feet, with 2.5 ft. concrete hammerhead pier in center
17247	Weir	Single concrete weir, 3 ft.wide. 10 ft. low flow notch in center.
6380	Marietta Avenue	Dual span concrete bridge with concrete headwalls. Total span is 102.5 feet. Pier in center is 3.0' to 2.5' triangular nosed. Built in 1941.
959	Chiques Hill Rd	Twin span concrete bridge on skew. Flow total opening is 72.6 feet, with 4 ft. concrete pier in center. Unskewed opening is 204.0 feet. Old abutments to remain.
555	River Trail	Triple span concrete bridge with two tiangular nosed piers. Total span is 110.8 ft. Piers are 5.0' at base and 2.5' at top. On right bank, 7.5' by 7.5' concrete opening. Built in 2014.
128	Railroad	Triple span stone arches with 6.0' wide traingular nosed piers. Arches are 39.0 feet wide and 22.0 feet high in center, 10 ft. higher at piers.
Behm Run		

HEC-RAS Station	Name	Details
7928	Private Drive	Two 30" HDPES and one 6" PVC pipes projecting from fill.
6795	Mountain Road	Single 9.8' span concrete bridge with 45 degree concrete headwalls.
6647	Private Drive	Single 36" RCP projecting from fill.
5484	Abandoned Railroad	Single concrete arch, odd shape, 15'x10'. Mitered to fill slope.
3341	Newport Road	Single 24'x3.5' concrete box culvert with 45 degree concrete headwalls.
Boyers Run		
6321	Private Drive	Two CMP pipes projecting from fill (one 34"x30" ellipse and one 18" circular).
3581	Boyer Road	Single 6.5'x5.0' CMP ellipse projecting from fill with flared end section.
1910	Abandoned Railroad	Single span 15.0'x10.0' concrete bridge with 90 degree concrete headwall and a 6.0'x7.0' concrete box culvert with a 90 degree concrete headwall.
774	Newport Road	Single span 12.0'x5.0' concrete bridge with 45 degree concrete headwalls.
Dellinger Run		
11660	Fairview Road	Single span 25.0'x7.0' bridge with 180 degree concrete headwalls.
10930	Private Drive	Single span 20.0'x4.5' bridge with concrete headwalls.
9216	Mount Joy Road	Single 6.0'x3.0' CMP arch projecting from fill.
5776	Weaver Road	Single span 11.5'x5.5' concrete bridge with 90 degree concrete headwalls.
89	Auction Road	Single 30.0'x5.0' concrete box culvert with 180 degree concrete headwalls.
Doe Run		
14800	Private Drive	Twin 36"x32" CMP ellipses in concrete headwall.
12584	Doe Run Road	Single 9.5'x5.5' concrete box culvert in 45 degree concrete headwalls.
8382	Private Drive	Single 8.5' span concrete bridge with straight concrete headwalls.
6415	Penryn Road	Four 6.0'x4.8' CMP ellipses in concrete headwall. On left bank, twin 3.0'x2.0' CMP ellipses with concrete headwall on upstream side, projecting from fill on downstream side.
2289	Private Drive	PSingle 10.0' span concrete bridge with straight concrete headwalls. 48" cast iron pipe projecting from fill on left bank.
1232	Oak Street	Single 19.0' span concrete bridge with 45 degree concrete headwall. On left bank, 5.5'x3.0' CMP ellipse projecting from fill.
1125	Railroad	Dual span concrete bridge with concrete headwalls. Total span 26.5', skewed.
962	Railroad	Dual span concrete bridge with 45 degree concrete headwalls. Total span 26.0', skewed.
Doe Run Tributary		
6025	Cool Spring Road	Single 12.0' span concrete bridge with 45 degree concrete headwalls.
1746	Doe Run Road	Single 22.0' span concrete bridge with 45 degree concrete headwalls.
Erisman Run		
6759	Mount Joy Road	Single 62"x43" CMP ellipse projecting from fill.
6570	Private Drive	Single 15.8' span concrete bridge with metal rail.
4618	Rohrer Road	Single 40"x26" CMP ellipse projecting from fill.
87	Auction Road	Single 10.0'x5.0' concrete box culvert with 45 degree concrete headwalls.
Orchard Road Tributary		
7250	Private Drive	Single 36" CMP, switches to 30" smooth HDPE on downstream side.
5310	Private Drive	Estimated single 4.0'x3.0' concrete box culvert with 45 degree headwalls.
1428	Old Line Road	Single 12.0'x7.0' concrete box culvert with 45 degree headwalls.
957	Hernley Road	Single 12.0'x6.0' concrete box culvert with headwall.
Rife Run		
13683	Rife Run Road	Single 20' x 9' CMP arch culvert in concrete headwall. Concrete bottom with 0.3 ft. low flow notch.
8509	Hernley Road	Single 19.5' x 5.0' concrete box culvert in concrete headwall.
6486	Private Drive	Single span concrete bridge. Total span is 18 ft.
4479	Old Line Road	Single span concrete bridge. Total span is 39 ft.
1683	High Street	Dual span concrete bridge with 2.5 ft. triangular nosed pier. Total span is 59.5 feet.
546	Footbridge	Wood bridge, total span is 135 ft. Center pier is 16 ft. wide mound of dirt/stone. Right bank, six 0.7 ft. round wood piers.
Shearers Creek		
10769	Pennsylvania Turnpike	Single 47.44'x17.0' concrete arch culvert with concrete headwalls.
9658	Private Drive	Estimated single 16.0' span concrete bridge with 45 degree concrete headwalls.
8429	Mountain Road	Single 24.0' span concrete bridge with 45 degree concrete headwalls.
1173	Lebanon Road	Single 59.0' span concrete bridge with 45 degree concrete headwalls.
Shumaker Road Tributary		
15482	Private Drive	Two CMP pipes (one 18" and one 24") projecting from fill.
13462	Private Drive	Single 8.5' span concrete bridge with concrete headwalls.
11080	Private Drive	Single 8.5' span concrete bridge with concrete headwalls and concrete rail.
8497	Private Drive	Twin 60" RCPs in 45 degree concrete headwalls.
4409	Shumaker Road	Single 26.0' span concrete bridge with 180 degree concrete headwalls.
226	Hernley Road	12.0'x6.0' concrete box culvert with 180 degree headwalls.

HEC-RAS Station	Name	Details
Silver Spring Run		
14017	Marietta Avenue	Single 14.0'x4.8' concrete box culvert in 45 degree concrete headwall.
13812	Private Drive	Single 9.5'x3.3' concrete box culvert in concrete headwall. Grate on top.
12066	Silver Spring Road	Single 8.0' span concrete box culvert. Height 3.0' on upstream side, 4.0' on downstream.
9722	Meadow Spring Road	Twin concrete arches in concrete headwalls. one 5.5'x3.0', another 4.0'x2.5' (2.0' high on downstream side)
8652	Silver Spring Road	Concrete arch in concrete headwalls, 5.5'x4.0' (5.0' high on downstream side).
5576	Private Drive	Main culvert is a 48" cast iron culvert in stone headwalls. Far right bank culvert is a 24" smooth HDPE with flared end section.
1164	Private Drive	Dual span stone/concrete bridge with stone headwalls. Total span in 24.5'.
346	Prospect Road	22.5'x10.0' concrete box culvert with 45 degree headwalls.
Silver Spring Run Tributary		
2428	Eby Chiques Road	Single 10.0'x4.3' concrete box culvert with concrete rail and 45 degree headwalls.
1763	Private Drive	Single perched 48" crushed cast iron circular culvert.
181	Quarry Road	Single 8.0' span concrete bridge with straight concrete headwall.
White Oak Run		
8632	Airy Hill Road	Single 10' span concrete bridge with 45 degree concrete headwalls.
8374	Locust Grove Road	Single 7.5' span concrete bridge with 45 degree concrete headwalls.
6779	Private Drive	Twin 5.0' cast iron pipes projecting from fill.
3996	Gish Road	Single 10.0'x4.0' concrete box culvert in straight concrete headwalls.
1649	Abandoned Railro	Double 10.0'x9.5' concrete box culvert in concrete headwalls.
501	Newport Road	Single 16.0'x3.0' concrete box culvert with 45 degree concrete headwalls.

APPENDIX E

HEC-RAS Modeling Notes

CHIQUES CREEK FLOOD RESILIENCY STUDY
HEC-RAS MODELING NOTES

Behm Run

- Bridge 5484- Secondary culvert on left bank not included due to area being ineffective flow.

Boyers Run

- None

Chiques Creek

- Bridge 959- All data from PENNDOT construction plans S-34756 dated August 2015, as bridge was under construction at time of study.

Dellinger Run

- None

Doe Run

- None

Doe Run Tributary

- None

Erisman Run

- None

Orchard Road Tributary

- None

Rife Run

- From XS 112-1575, elevation data from "Grading Plan-Logan Park-Rife Run Floodplain Restoration", completed after DEM development.

- Bridge 8509- Right bank culvert not included as it is ineffective flow.

Shearers Creek

- None

Shearers Creek Tributary

- None

Shumaker Road Tributary

- None

Silver Spring Run

- None

Silver Spring Run Tributary

- None

APPENDIX F

Floodway Data Tables

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
60	60	236	4,670	3.6	258.7	255.4[2]	255.4	0.0
164	164	209	3,504	5.2	258.7	255.6[2]	255.6	0.0
517	517	478	3,794	4.2	258.7	256.1[2]	256.1	0.0
607	607	568	3,995	4.0	258.7	257.0[2]	257.0	0.0
858	858	265	2,172	8.3	258.7	257.2	257.2	0.0
1076	1,076	266	2,685	6.5	259.0	259.0	259.0	0.0
1604	1,604	362	3,913	3.9	261.1	261.1	261.2	0.1
2230	2,230	261	2,903	5.2	261.6	261.6	261.7	0.1
2938	2,938	243	2,909	5.2	262.2	262.2	262.4	0.2
3357	3,357	407	4,269	3.5	263.1	263.1	263.3	0.2
3914	3,914	343	3,619	4.2	263.4	263.4	263.7	0.3
4400	4,400	324	3,776	4.0	264.5	264.5	264.7	0.2
4908	4,908	353	3,936	3.8	264.8	264.8	265.1	0.3
5439	5,439	504	5,211	2.9	265.3	265.3	265.6	0.3
5905	5,905	528	5,350	2.8	265.5	265.5	265.8	0.3
6339	6,339	125	1,876	8.1	265.5	265.5	265.8	0.3
6424	6,424	125	1,908	8.1	265.9	265.9	266.2	0.3
6904	6,904	218	2,174	4.9	267.4	267.4	267.6	0.2
7474-18906[3]								
19596	19,596	312	3,448	3.1	291.3	291.3	291.4	0.1
19986	19,986	351	3,857	2.7	291.5	291.5	291.7	0.2

[1] Feet above confluence with the Susquehanna River

[2] Elevation computed without consideration of backwater effects from the Susquehanna River

[3] Floodway not computed/shown for this cross section

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
20444	20,444	444	4,981	2.1	291.7	291.7	291.9	0.2
20967	20,967	482	4,855	2.2	291.8	291.8	292.0	0.2
21510	21,510	466	4,232	2.5	292.0	292.0	292.2	0.2
22151	22,151	124	1,218	9.1	292.1	292.1	292.2	0.1
22799	22,799	552	5,329	2.1	293.4	293.4	293.6	0.2
23311	23,311	637	6,160	1.8	293.5	293.5	293.7	0.2
23791	23,791	543	4,535	2.4	293.5	293.5	293.8	0.3
24340	24,340	382	3,621	3.1	293.7	293.7	293.9	0.2
24861	24,861	315	3,435	3.2	294.1	294.1	294.4	0.3
25270	25,270	323	3,380	3.3	294.3	294.3	294.6	0.3
25611	25,611	457	3,949	2.8	294.5	294.5	294.8	0.3
26232	26,232	446	3,907	2.8	294.8	294.8	295.1	0.3
26867	26,867	200	1,931	5.8	294.9	294.9	295.1	0.2
27201	27,201	124	1,453	7.7	295.1	295.1	295.4	0.3
27842	27,842	158	1,610	6.9	296.4	296.4	296.7	0.3
28138	28,138	161	1,775	6.3	297.1	297.1	297.5	0.4
28854	28,854	159	1,778	6.2	298.5	298.5	298.8	0.3
29605	29,605	168	2,145	5.2	299.7	299.7	300.0	0.3
30092	30,092	231	2,550	4.4	300.4	300.4	300.7	0.3
30447	30,447	248	2,335	4.7	300.7	300.7	300.9	0.2
31043	31,043	172	1,916	5.8	301.6	301.6	301.9	0.3

[1] Feet above confluence with the Susquehanna River

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
31498	31,498	301	2,997	3.7	302.7	302.7	303.1	0.3
31558	31,558	301	2,634	4.2	303.0	303.0	303.4	0.4
32117	32,117	258	2,586	4.3	303.6	303.6	304.0	0.4
32599	32,599	159	1,595	7.0	304.3	304.3	304.7	0.4
32982	32,982	175	1,601	6.9	305.6	305.6	305.9	0.3
33479	33,479	181	1,895	5.9	308.0	308.0	308.3	0.3
34203-51257[2]								
51405	51,405	249	1,941	5.3	328.0	328.0	328.4	0.4
51607	51,607	210	2,115	4.9	328.3	328.3	328.6	0.3
52053	52,053	158	1,814	5.7	328.7	328.7	329.0	0.3
52504	52,504	153	1,804	5.7	329.1	329.1	329.4	0.3
53049	53,049	156	1,969	5.2	329.8	329.8	330.2	0.4
53408	53,408	234	2,583	4.0	330.3	330.3	330.7	0.4
54021	54,021	220	2,375	4.3	330.7	330.7	331.0	0.3
54720	54,720	258	2,535	4.0	331.5	331.5	331.8	0.3
55196	55,196	156	1,715	5.9	331.6	331.6	331.9	0.3
55590	55,590	110	1,346	7.6	331.9	331.9	332.3	0.4
56104	56,104	169	1,908	5.3	333.4	333.4	333.7	0.3
56527	56,527	186	2,204	4.6	334.8	334.8	335.0	0.2
57093	57,093	116	1,537	6.6	335.1	335.1	335.4	0.3
57310	57,310	173	2,157	4.7	335.6	335.6	335.9	0.3

[1] Feet above confluence with the Susquehanna River

[2] Floodway not computed/shown for this cross section

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
57843	57,843	177	2,178	4.6	336.3	336.3	336.5	0.2
58180	58,180	244	2,959	3.4	336.7	336.7	337.0	0.3
58785	58,785	159	1,771	5.7	336.9	336.9	337.2	0.3
59174	59,174	233	2,756	3.7	337.8	337.8	338.0	0.2
59728	59,728	196	2,310	4.4	338.1	338.1	338.4	0.3
60017	60,017	84	1,159	8.8	338.1	338.1	338.4	0.3
60102	60,102	95	1,506	6.7	340.1	340.1	340.2	0.1
60316	60,316	177	1,550	6.5	340.7	340.7	341.3	0.6
60983	60,983	219	2,034	5.0	342.9	342.9	343.3	0.4
61505	61,505	294	2,854	3.5	343.8	343.8	344.2	0.4
61952	61,952	130	1,465	6.9	344.1	344.1	344.5	0.4
62214	62,214	243	2,977	3.4	345.9	345.9	346.3	0.4
62746	62,746	237	2,455	4.1	346.3	346.3	346.6	0.3
62907	62,907	209	2,124	4.8	346.7	346.7	346.9	0.2
63117	63,117	305	3,415	3.0	347.5	347.5	347.8	0.3
63503	63,503	438	5,105	1.9	347.8	347.8	348.1	0.3
64167	64,167	267	2,922	3.4	348.1	348.1	348.3	0.2
64890	64,890	297	3,343	3.0	348.5	348.5	348.7	0.2
65468	65,468	168	2,080	4.8	348.5	348.5	348.8	0.3
65875	65,875	320	3,390	3.0	349.0	349.0	349.3	0.3
66256	66,256	190	2,134	4.7	349.1	349.1	349.3	0.2

[1] Feet above confluence with the Susquehanna River

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
66848	66,848	355	3,856	2.6	349.7	349.7	349.9	0.2
67426	67,426	207	2,160	4.6	349.8	349.8	350.0	0.2
68109	68,109	318	2,706	3.7	350.4	350.4	350.7	0.3
68451	68,451	418	3,670	2.7	350.8	350.8	351.0	0.2
69178	69,178	188	1,917	5.2	351.0	351.0	351.2	0.2
69765	69,765	187	1,834	5.4	351.9	351.9	352.1	0.2
70292	70,292	314	2,568	3.9	352.7	352.7	352.9	0.2
70874	70,874	299	3,022	3.3	353.5	353.5	353.8	0.3
71231	71,231	376	3,485	2.8	354.0	354.0	354.3	0.3
71785	71,785	429	3,431	2.9	354.4	354.4	354.6	0.2
72364	72,364	291	2,055	4.8	354.8	354.8	355.0	0.2
72423	72,423	325	2,559	3.9	355.3	355.3	356.0	0.7
73063	73,063	500	4,750	2.1	355.9	355.9	356.6	0.7
73520	73,520	461	3,747	2.5	356.0	356.0	356.7	0.7
74090	74,090	286	2,031	4.7	356.4	356.4	356.9	0.5
74615	74,615	286	2,222	4.3	357.2	357.2	357.7	0.5
75192	75,192	487	3,708	2.6	358.4	358.4	358.7	0.3
75873	75,873	348	2,418	3.9	358.9	358.9	359.2	0.3
76630	76,630	291	2,550	3.7	360.4	360.4	360.7	0.3
77271	77,271	289	2,589	3.7	361.2	361.2	361.6	0.4
78047	78,047	802	5,960	1.6	361.9	361.9	362.2	0.3

[1] Feet above confluence with the Susquehanna River

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
78613	78,613	853	5,909	1.6	362.0	362.0	362.3	0.3
79236	79,236	526	4,083	2.3	362.2	362.2	362.6	0.4
79584	79,584	451	3,313	2.9	362.4	362.4	362.7	0.3
80097	80,097	302	2,178	4.4	362.8	362.8	363.1	0.3
80537	80,537	286	2,385	4.0	363.5	363.5	363.8	0.3
80918	80,918	327	2,070	4.6	363.9	363.9	364.1	0.2
81362	81,362	425	2,769	3.4	365.1	365.1	365.3	0.2
81743	81,743	312	2,485	3.8	365.4	365.4	365.6	0.2
82179	82,179	358	2,803	3.4	365.9	365.9	366.1	0.2
82723	82,723	378	2,842	3.4	366.5	366.5	366.7	0.2
83090	83,090	238	2,288	4.2	367.1	367.1	367.3	0.2
83678	83,678	449	3,657	2.6	368.1	368.1	368.3	0.2
84028	84,028	322	2,621	3.6	368.3	368.3	368.6	0.3
84497	84,497	358	3,171	3.0	369.1	369.1	369.3	0.2
84892	84,892	350	3,413	2.8	369.5	369.5	369.7	0.2
85279	85,279	773	6,430	1.6	369.8	369.8	370.0	0.2
85737	85,737	872	6,695	1.6	369.8	369.8	370.1	0.3
85828-104213[2]								
104871	104,871	431	4,343	1.7	395.1	395.1	395.3	0.2
105184	105,184	350	3,566	2.1	395.2	395.2	395.4	0.2
105669	105,669	566	5,177	1.5	395.4	395.4	395.5	0.1

[1] Feet above confluence with the Susquehanna River

[2] Floodway not computed/shown for this cross section

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
106103	106,103	541	3,137	2.4	395.5	395.5	395.6	0.1
106584	106,584	356	2,924	2.6	395.7	395.7	395.8	0.1
107182	107,182	440	2,395	3.2	396.0	396.0	396.2	0.2
107475	107,475	640	3,458	2.5	396.5	396.5	396.7	0.2
107950	107,950	782	3,230	2.4	396.9	396.9	397.3	0.4
108295	108,295	579	3,655	2.1	397.3	397.3	397.6	0.3
108384	108,384	657	4,449	1.7	397.5	397.5	397.8	0.3
108987	108,987	326	1,850	3.6	397.5	397.5	397.8	0.3
109060	109,060	346	2,275	2.9	398.9	398.9	399.1	0.2
109541	109,541	488	3,676	1.8	399.1	399.1	399.3	0.2
109993	109,993	458	3,456	1.9	399.1	399.1	399.4	0.3
110423	110,423	442	2,650	2.5	399.2	399.2	399.5	0.3
110853	110,853	118	777	8.6	399.3	399.3	399.6	0.3
111366	111,366	233	1,571	6.0	400.6	400.6	400.9	0.3
111765	111,765	458	3,604	3.1	401.9	401.9	402.2	0.3
112299	112,299	253	1,890	3.5	402.5	402.5	402.8	0.3
112411-137089[2]								
137552	137,552	376	2,620	2.1	439.6	439.6	439.8	0.2
138163	138,163	457	2,572	2.1	440.2	440.2	440.4	0.2
138644	138,644	488	2,602	2.1	440.5	440.5	440.8	0.3
138830	138,830	213	1,201	4.4	441.6	441.6	442.0	0.4

[1] Feet above confluence with the Susquehanna River

[2] Floodway not computed/shown for this cross section

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
138937	138,937	213	1,837	2.9	443.7	443.7	444.2	0.5
139650	139,650	413	3,135	1.7	443.9	443.9	444.6	0.7
139930	139,930	374	2,709	2.0	444.0	444.0	444.7	0.7
140437	140,437	306	2,147	2.5	444.4	444.4	445.0	0.6
140990	140,990	331	2,313	2.3	445.3	445.3	445.7	0.5
141364	141,364	361	2,659	2.0	446.0	446.0	446.5	0.5
141692	141,692	232	1,672	3.2	446.6	446.6	447.0	0.4
142035	142,035	239	1,877	2.8	447.5	447.5	447.8	0.3
142662	142,662	324	2,507	2.1	448.4	448.4	448.7	0.3
143120	143,120	327	2,419	2.2	449.0	449.0	449.2	0.2
143688	143,688	377	2,642	2.0	449.8	449.8	450.1	0.3
144197	144,197	451	2,721	2.1	450.3	450.3	450.6	0.3
144562	144,562	429	2,478	2.3	450.8	450.8	451.0	0.2
145076	145,076	329	1,655	1.1	451.5	451.5	451.7	0.2
145470	145,470	286	1,388	1.3	451.6	451.6	451.9	0.3
146092-163433[2]								

[1] Feet above confluence with the Susquehanna River

[2] Floodway not computed/shown for this cross section

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE [1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
412	412	493	1,914	3.0	392.8	387.9[2]	388.0	0.1
825	825	188	1,131	4.9	392.8	388.5[2]	388.7	0.2
1395	1,395	359	1,923	2.9	392.8	389.5[2]	389.9	0.4
1636	1,636	222	783	7.0	392.8	389.4[2]	389.8	0.4
1745	1,745	226	1,339	4.1	392.8	391.6[2]	392.3	0.7
2146	2,146	355	1,984	2.6	392.8	392.1[2]	392.9	0.8
2600	2,600	416	1,807	2.8	392.8	392.5[2]	393.2	0.7
3085	3,085	269	1,115	4.6	393.6	393.6	394.1	0.5
3520	3,520	229	969	5.3	395.1	395.1	395.6	0.5
3947	3,947	226	905	5.6	396.6	396.6	397.1	0.5
4444	4,444	261	777	6.6	399.1	399.1	399.2	0.1
4532	4,532	208	2,324	2.2	405.3	405.3	406.0	0.7
5004	5,004	296	2,312	2.2	405.5	405.5	406.2	0.7
5457	5,457	264	1,601	3.2	405.9	405.9	406.6	0.7
6022	6,022	182	1,130	4.5	407.1	407.1	407.6	0.5
6457	6,457	249	1,284	3.9	408.4	408.4	409.0	0.6
6512	6,512	249	1,822	2.7	410.1	410.1	410.9	0.8
6926	6,926	347	2,112	2.3	410.4	410.4	411.2	0.8
7472	7,472	277	1,358	3.2	410.8	410.8	411.5	0.7
7912	7,912	203	931	4.6	411.5	411.5	412.1	0.6
8478	8,478	135	491	3.5	412.6	412.6	413.2	0.6
8536-17813[3]								

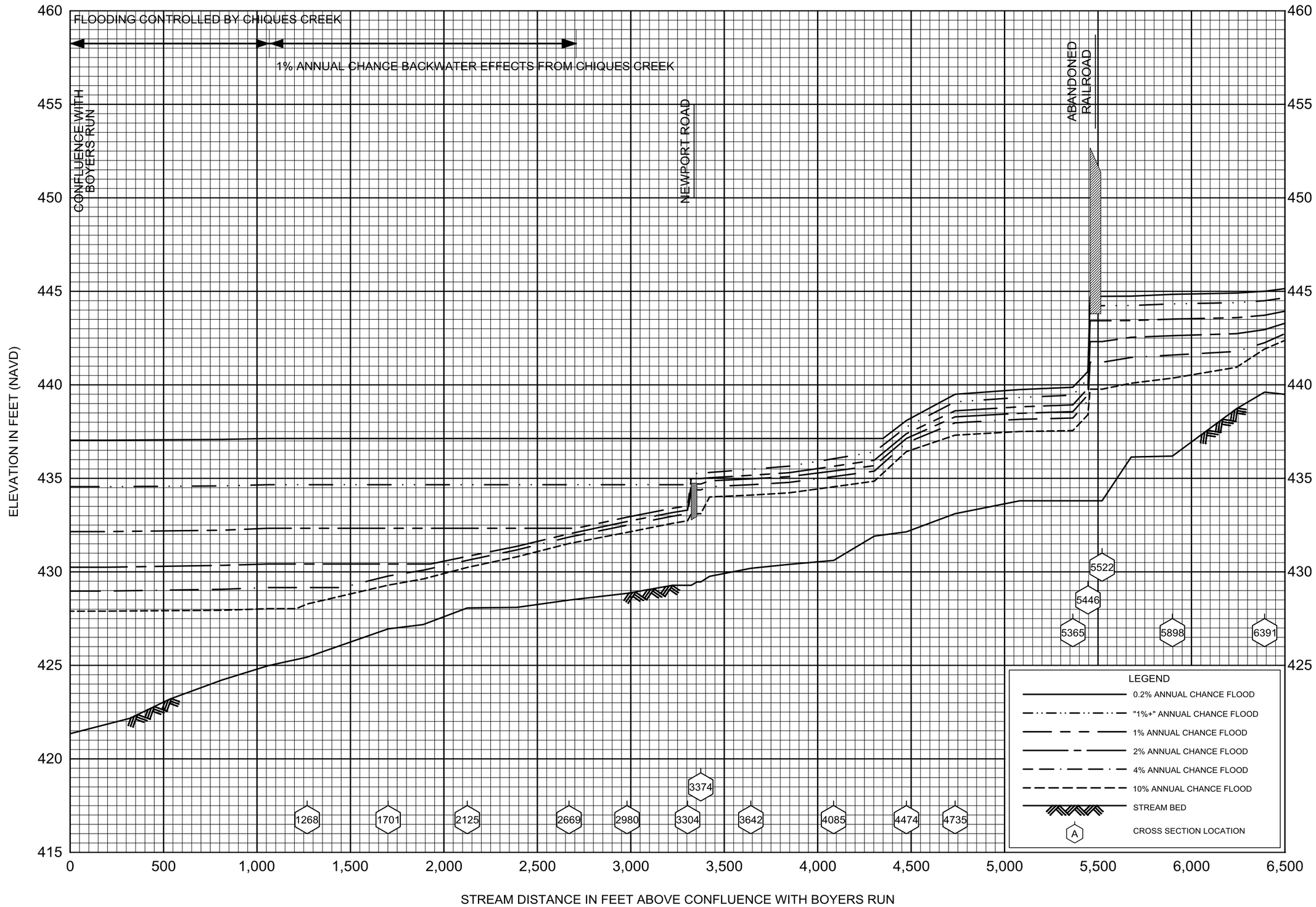
[1] Feet above confluence with Chiques Creek

[2] Elevation computed without consideration of backwater effects from Chiques Creek

[3] Floodway not computed/shown for this cross section

APPENDIX G

Flood Profiles



FLOOD PROFILES

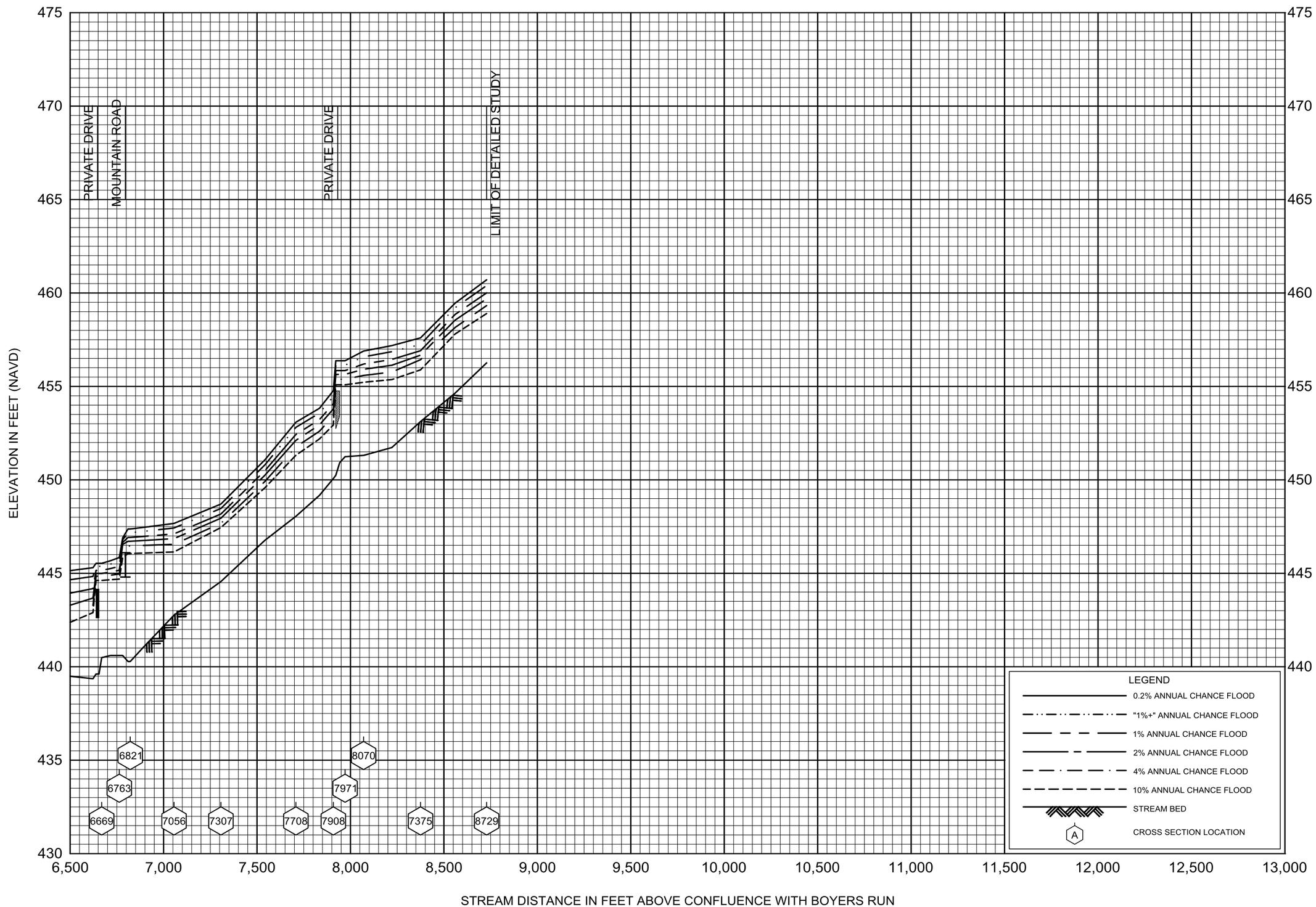
BEHM RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

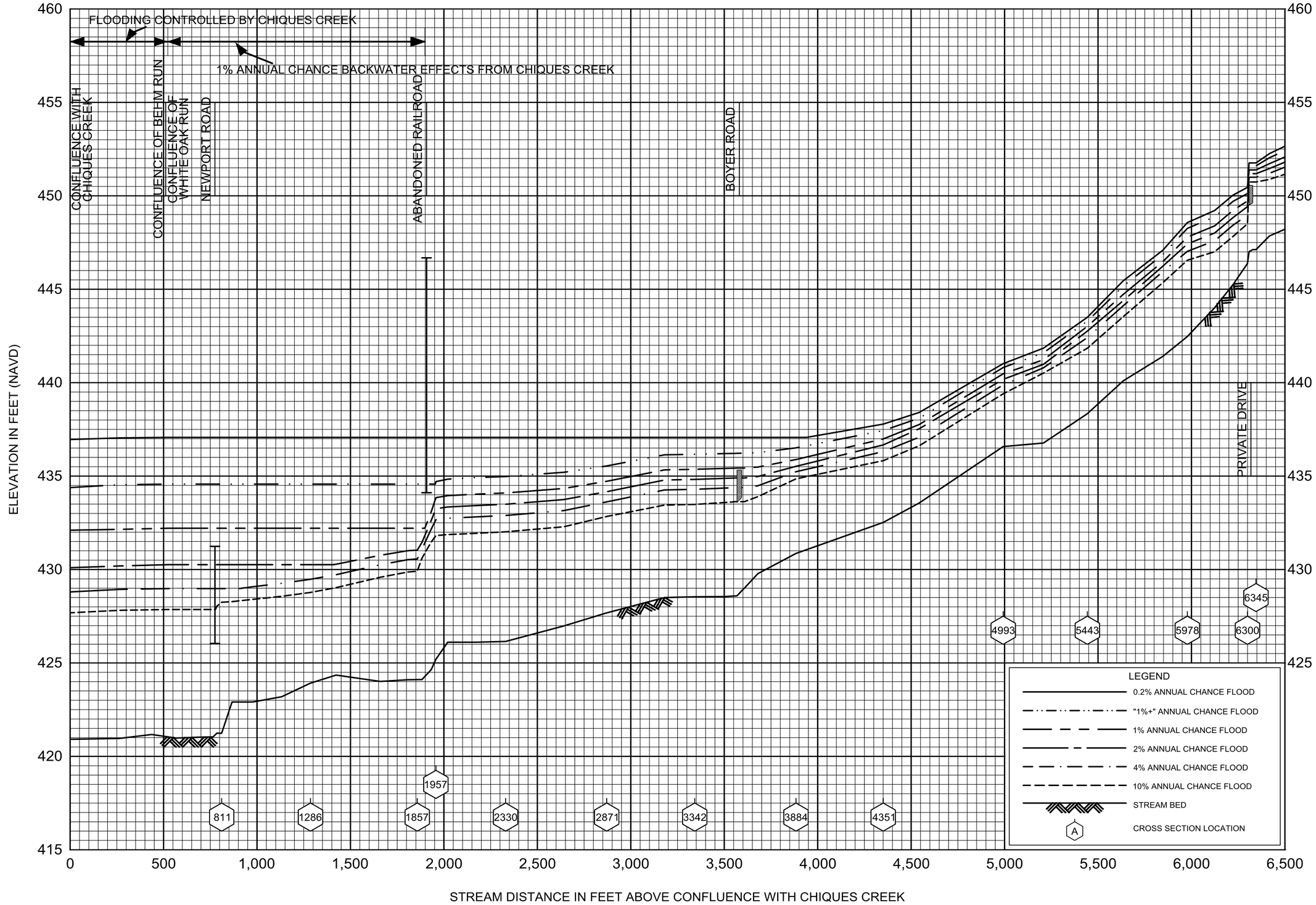
BEHM RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

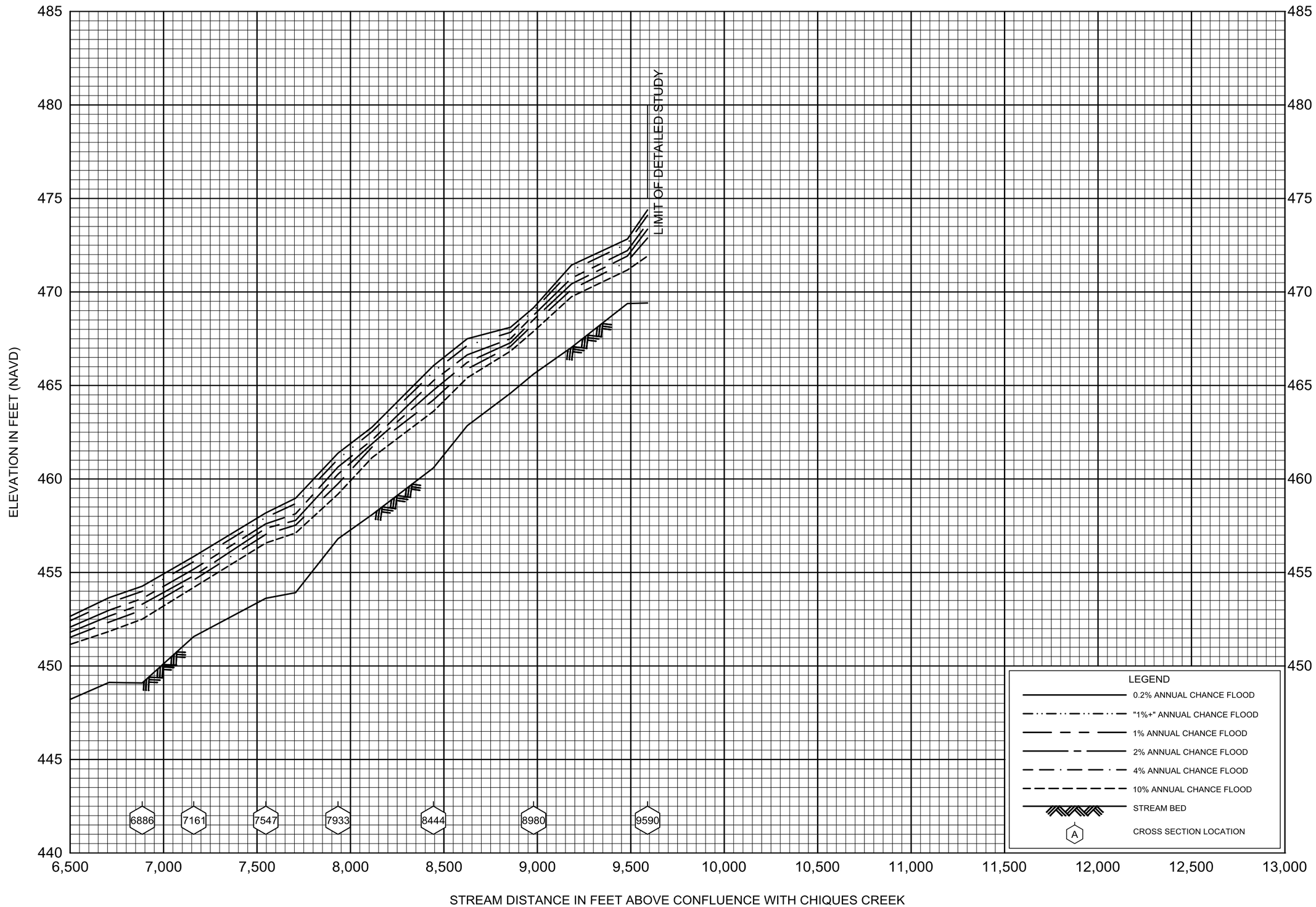
BOYERS RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

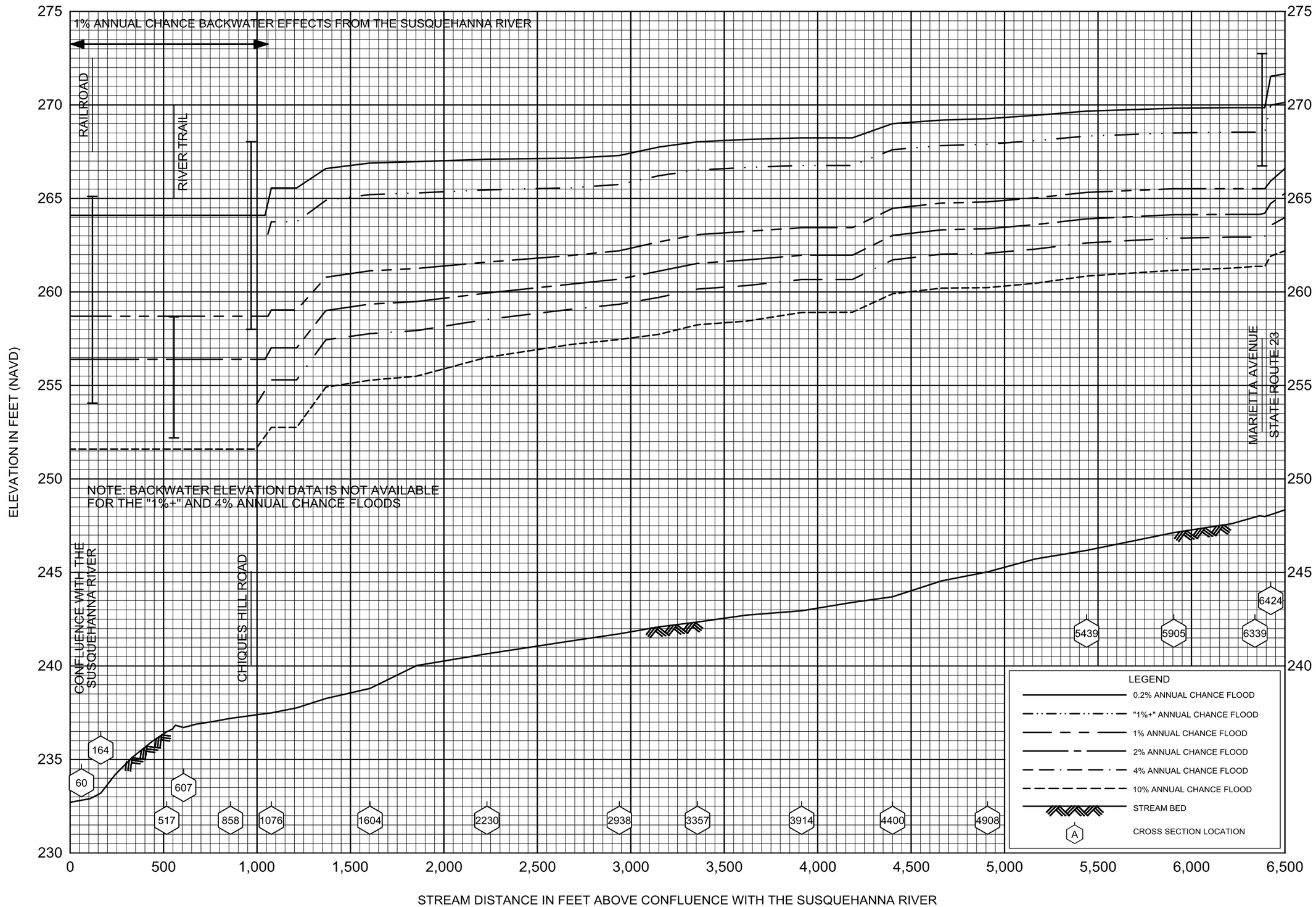
BOYERS RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

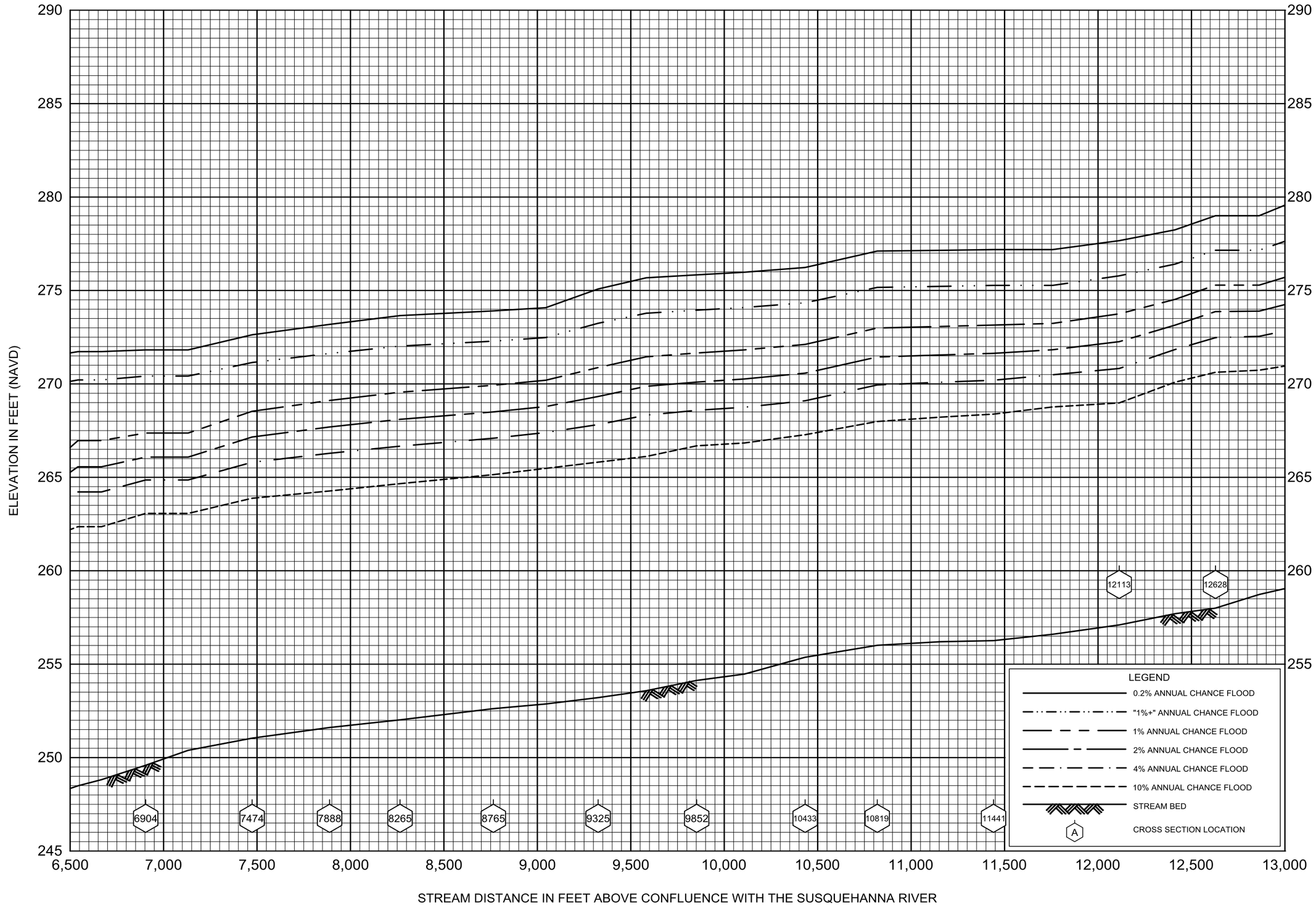
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

01P



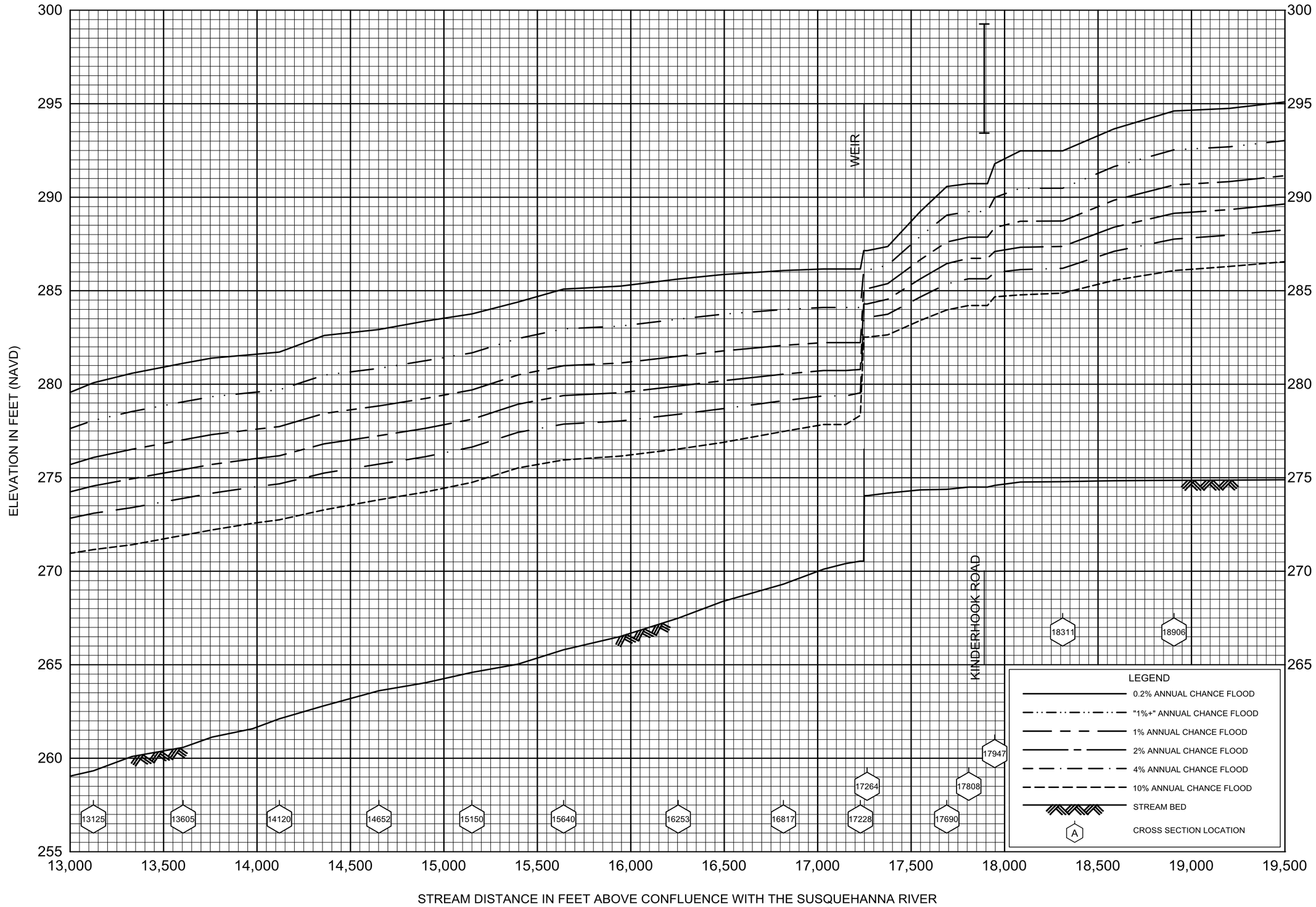
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



FLOOD PROFILES

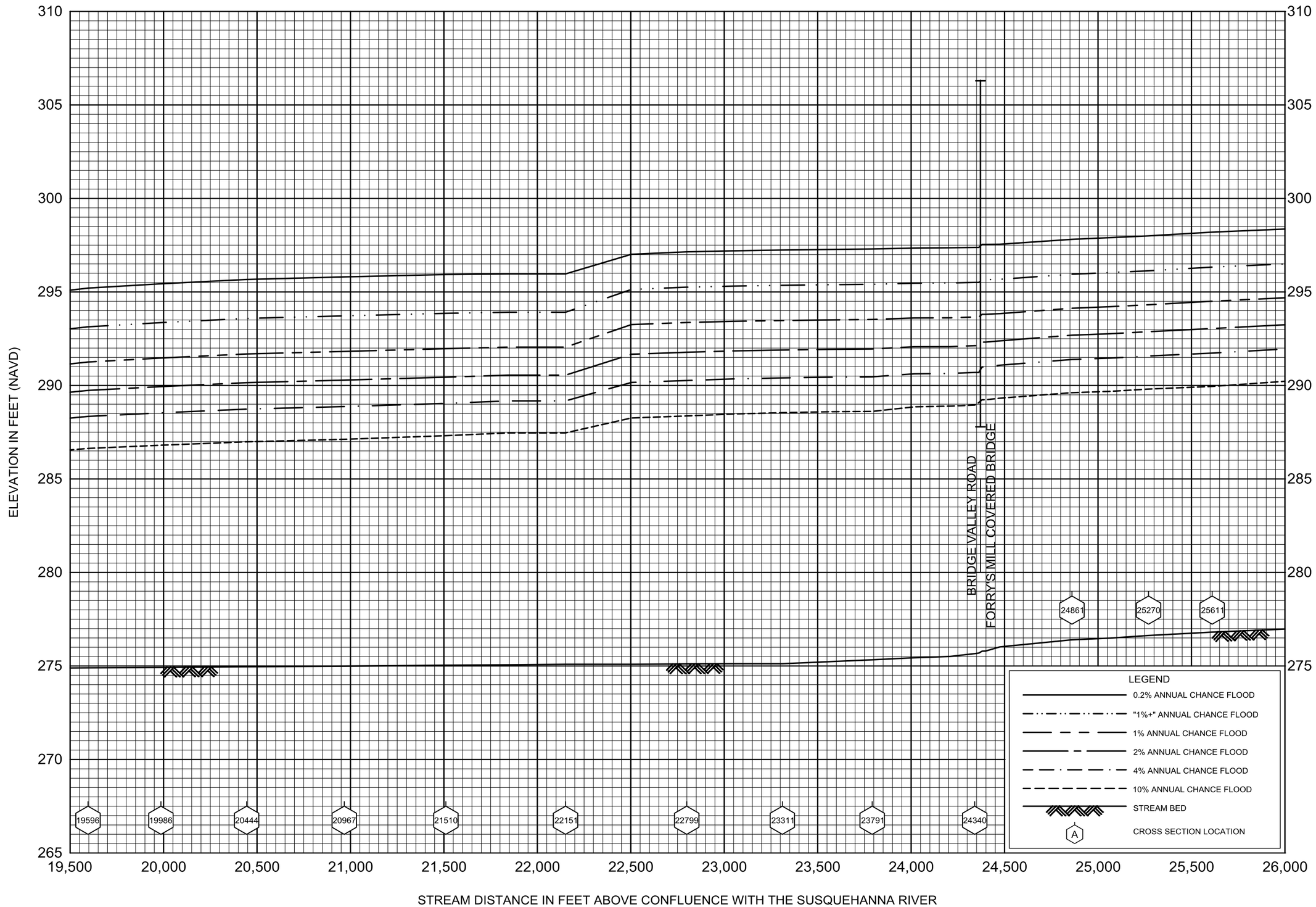
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

03P



FLOOD PROFILES

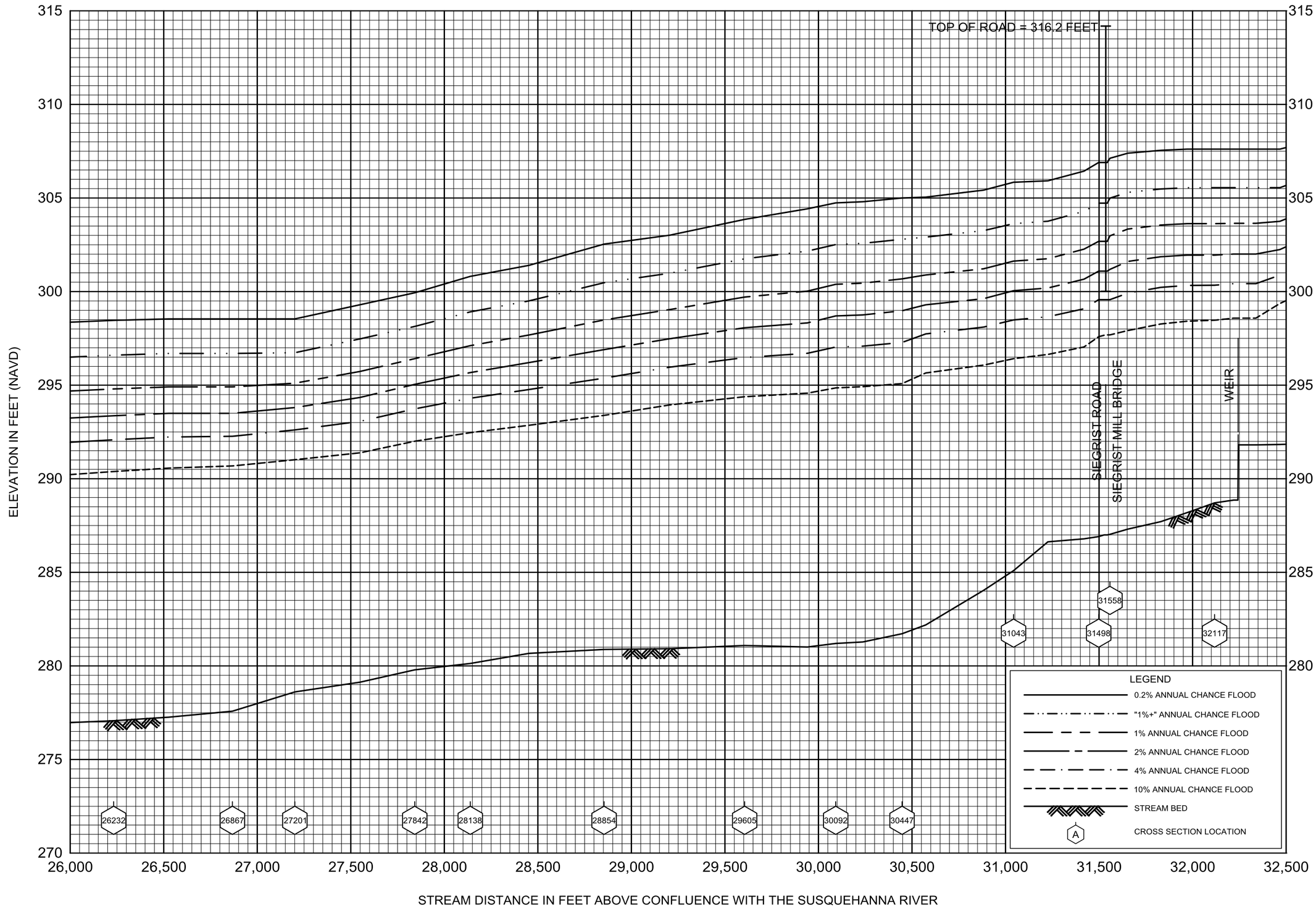
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

04P



FLOOD PROFILES

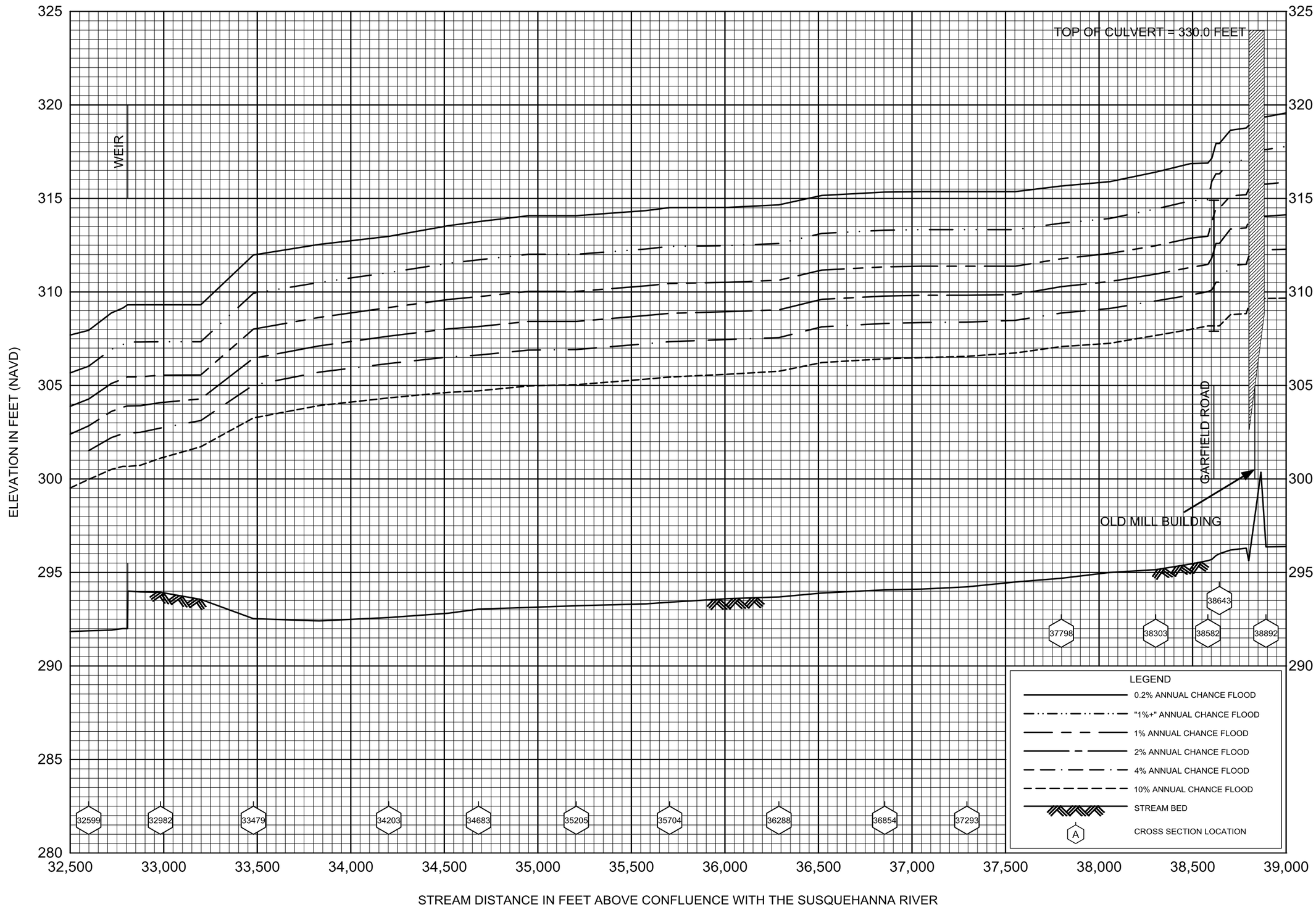
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

05P



FLOOD PROFILES

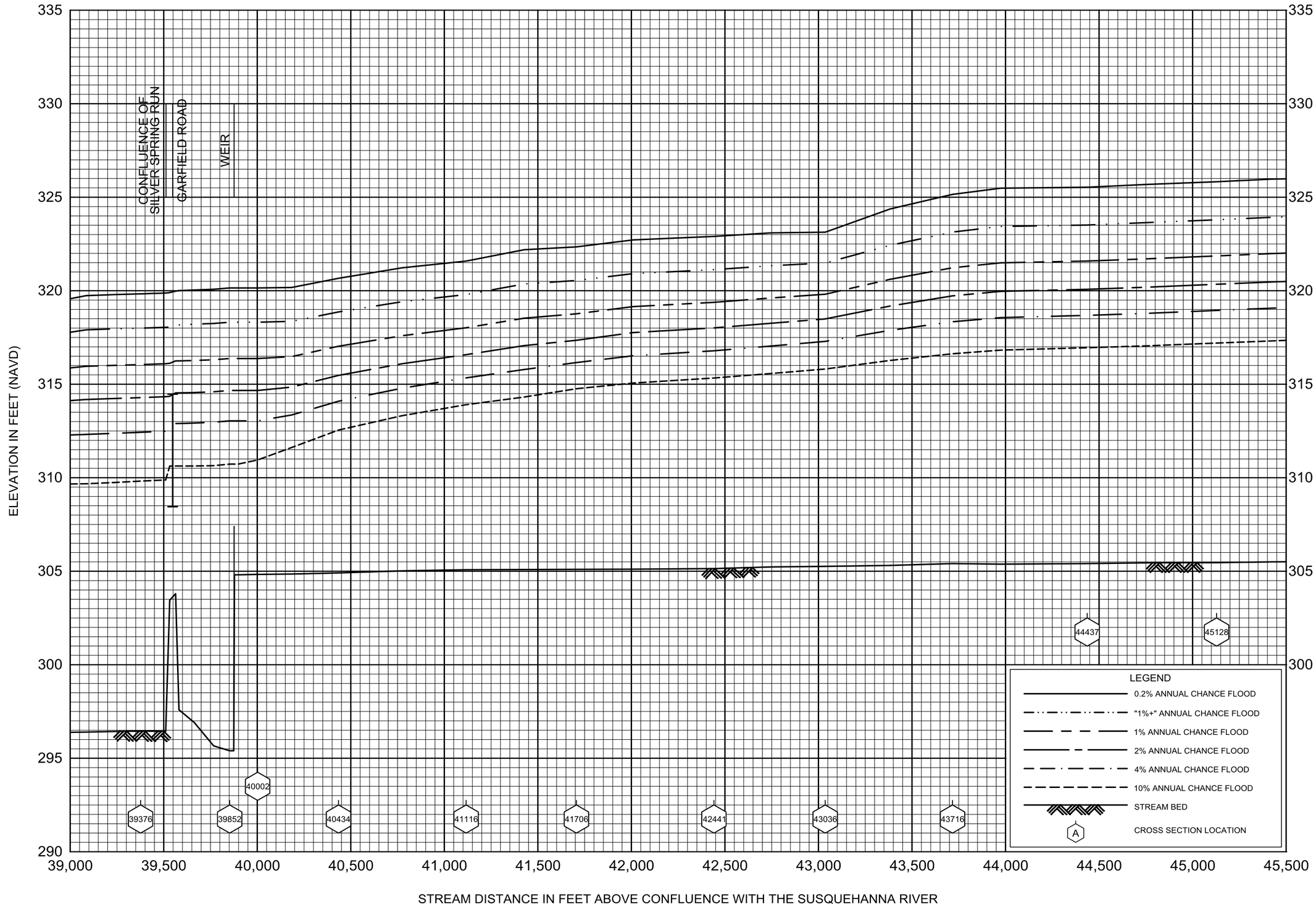
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

06P



FLOOD PROFILES

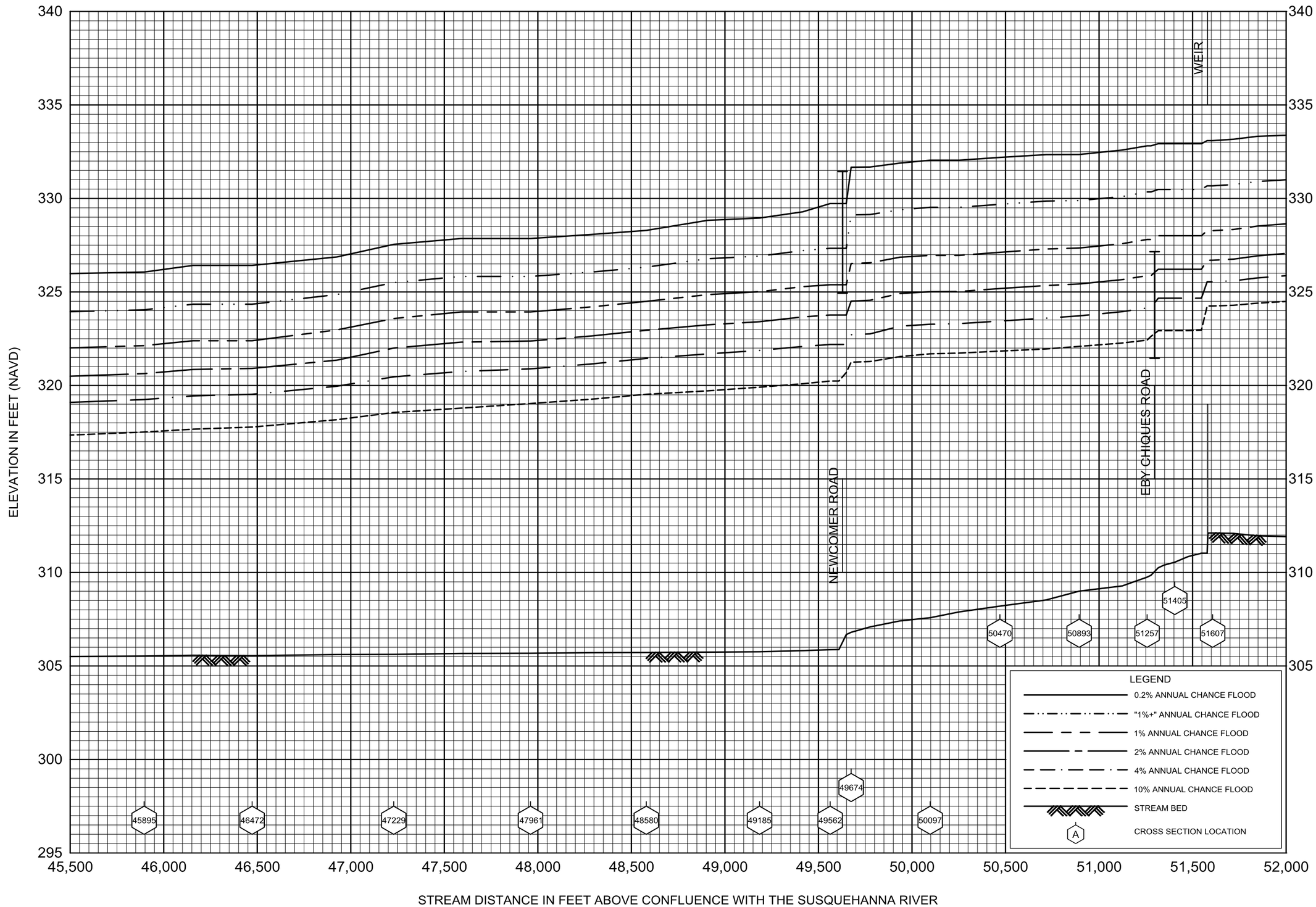
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

07P



FLOOD PROFILES

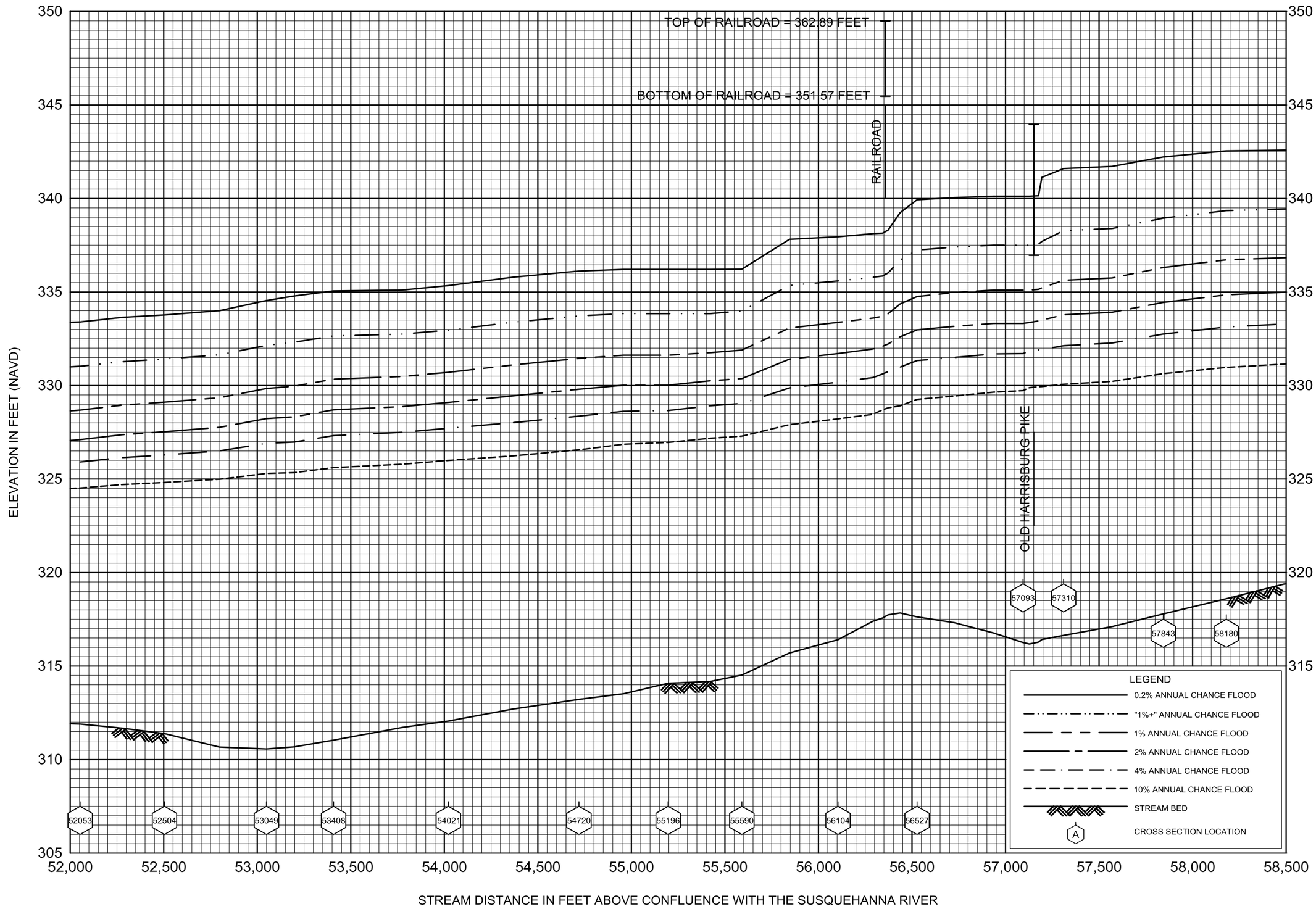
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

08P



FLOOD PROFILES

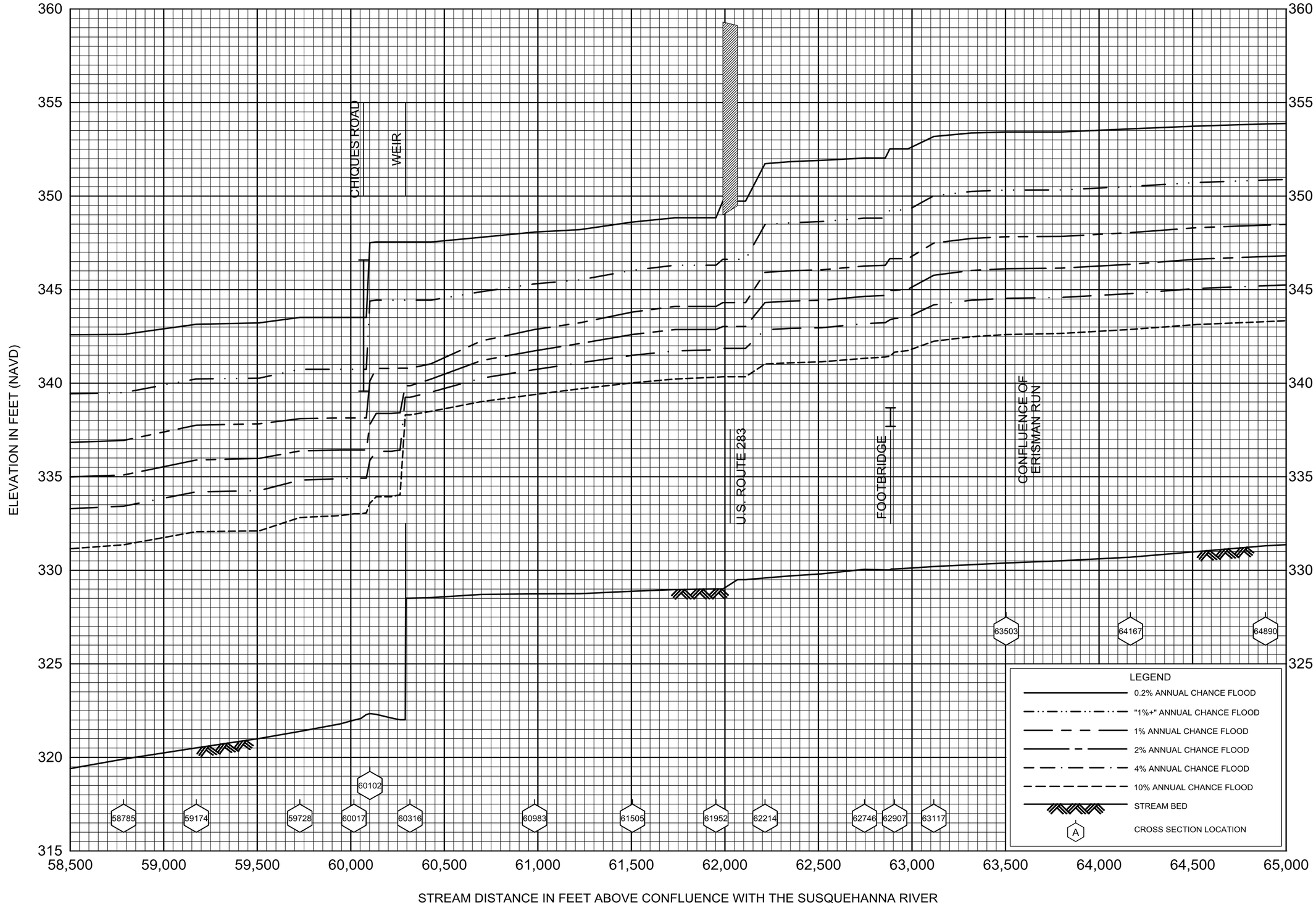
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)

09P



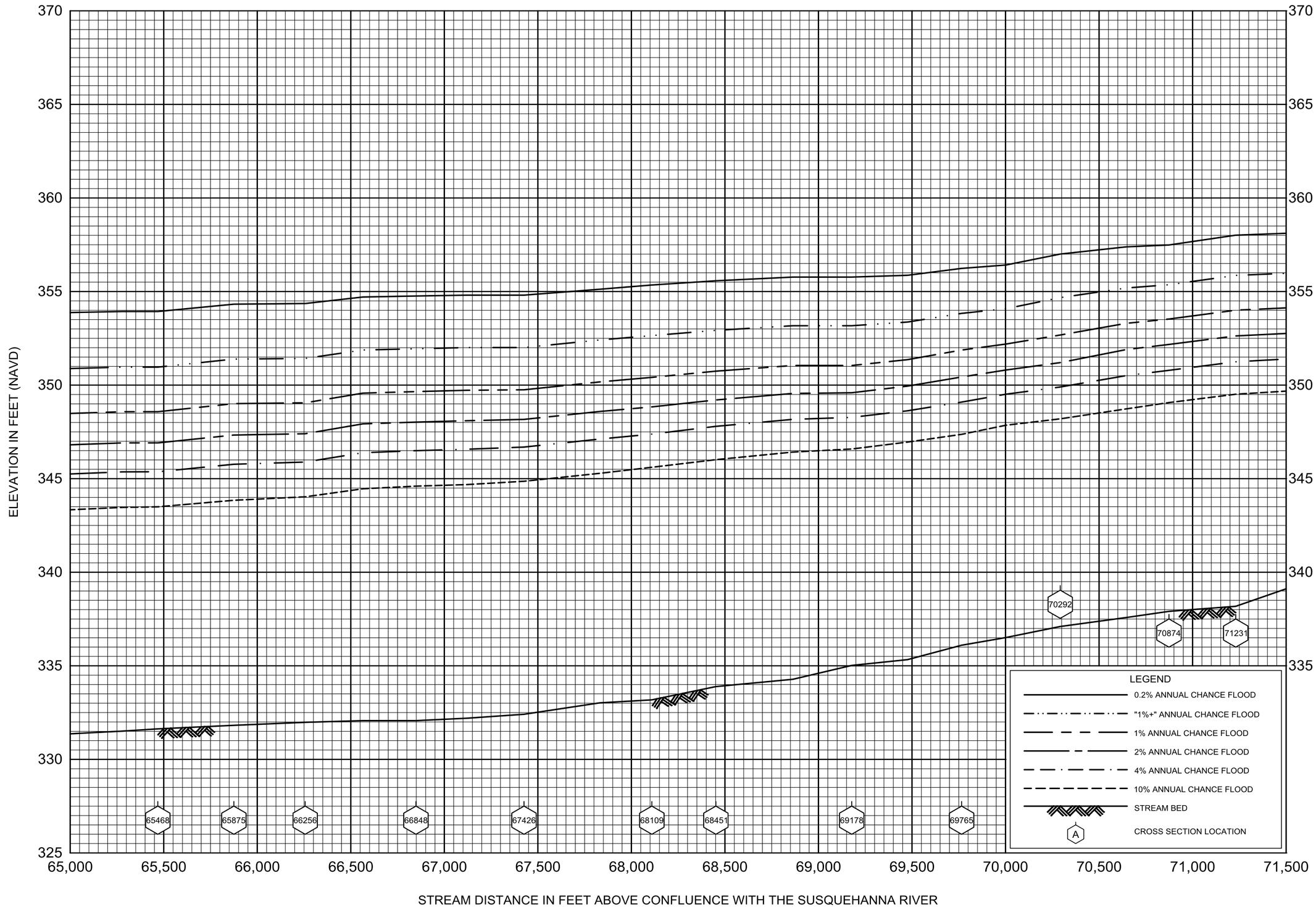
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



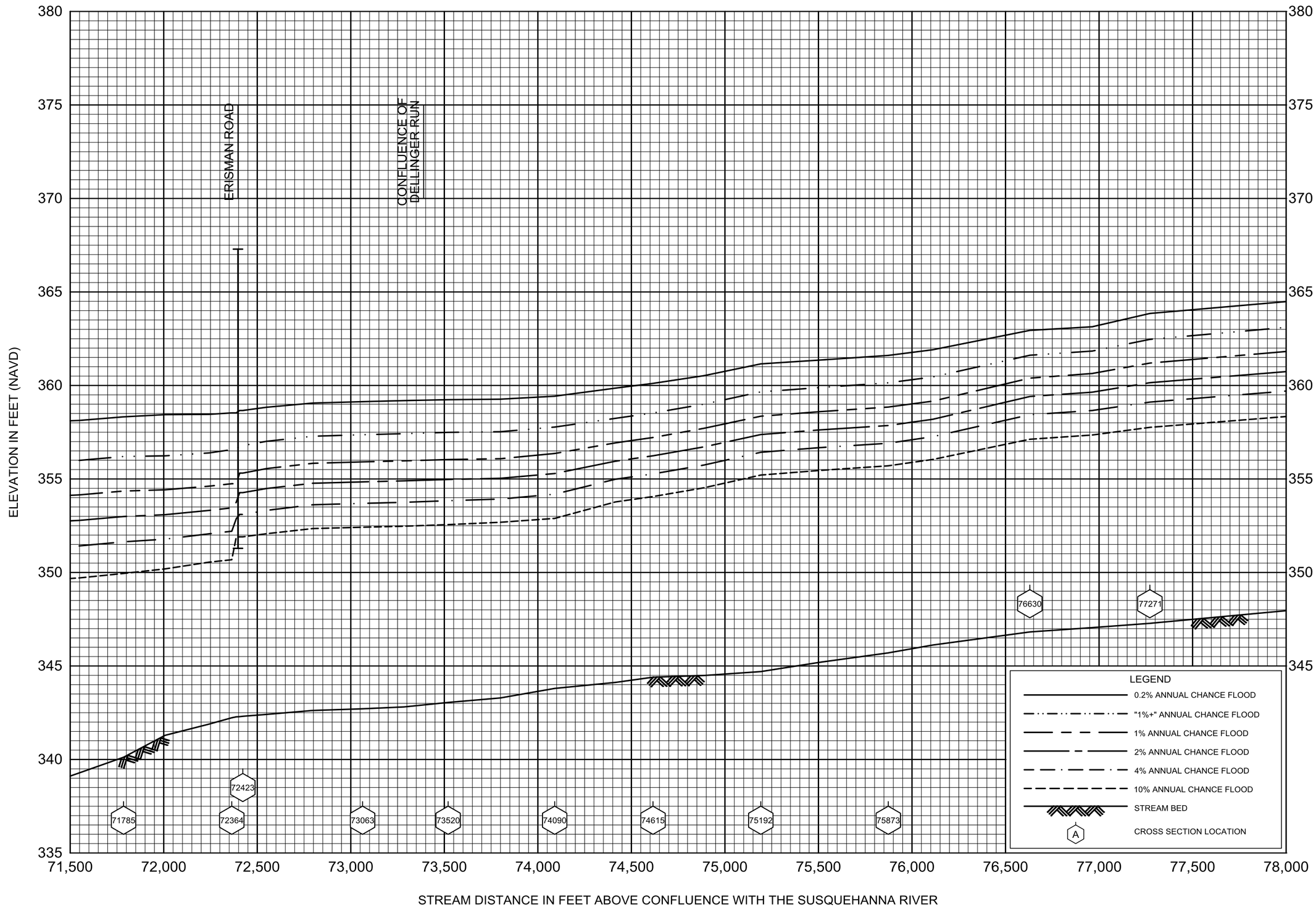
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



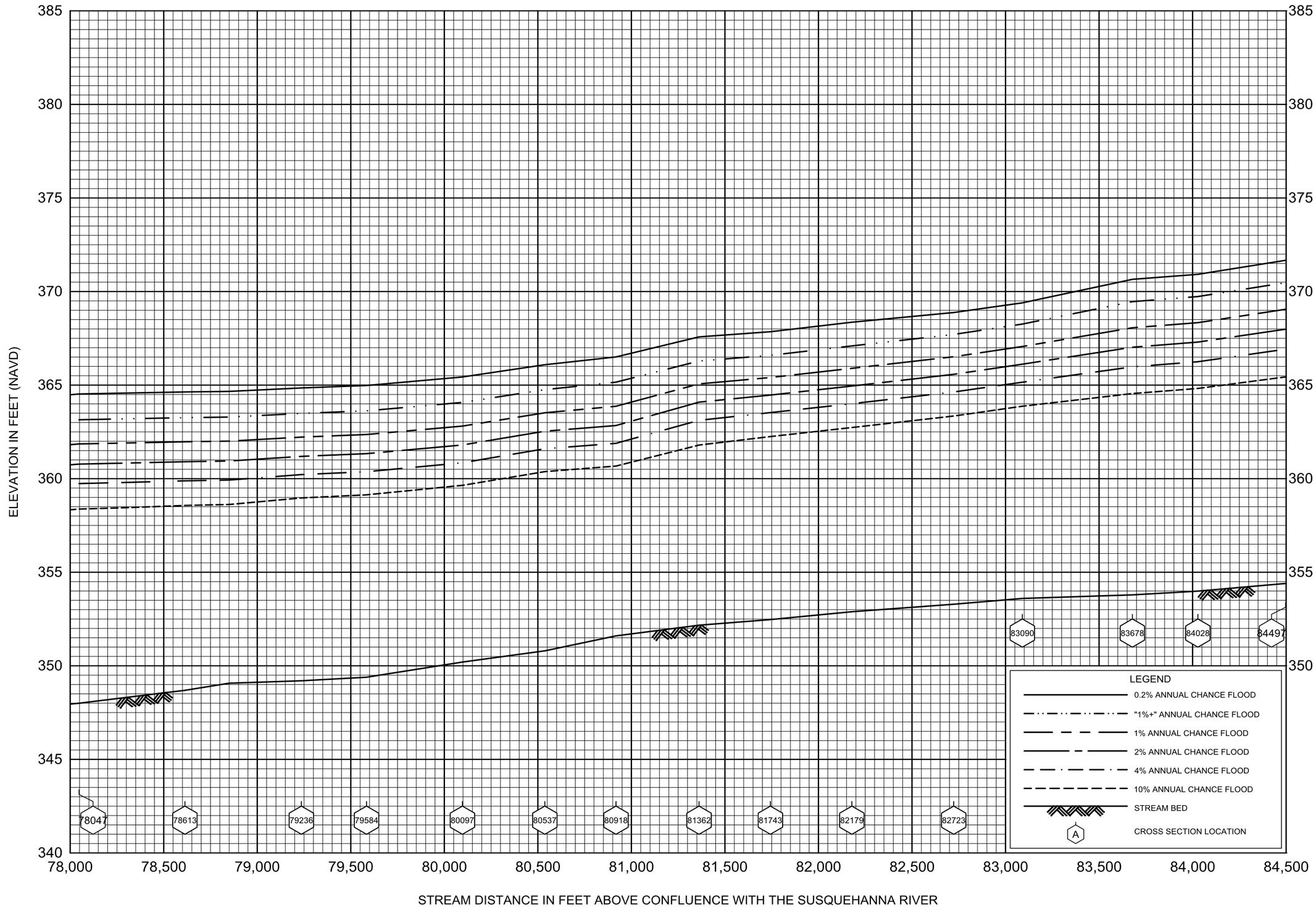
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



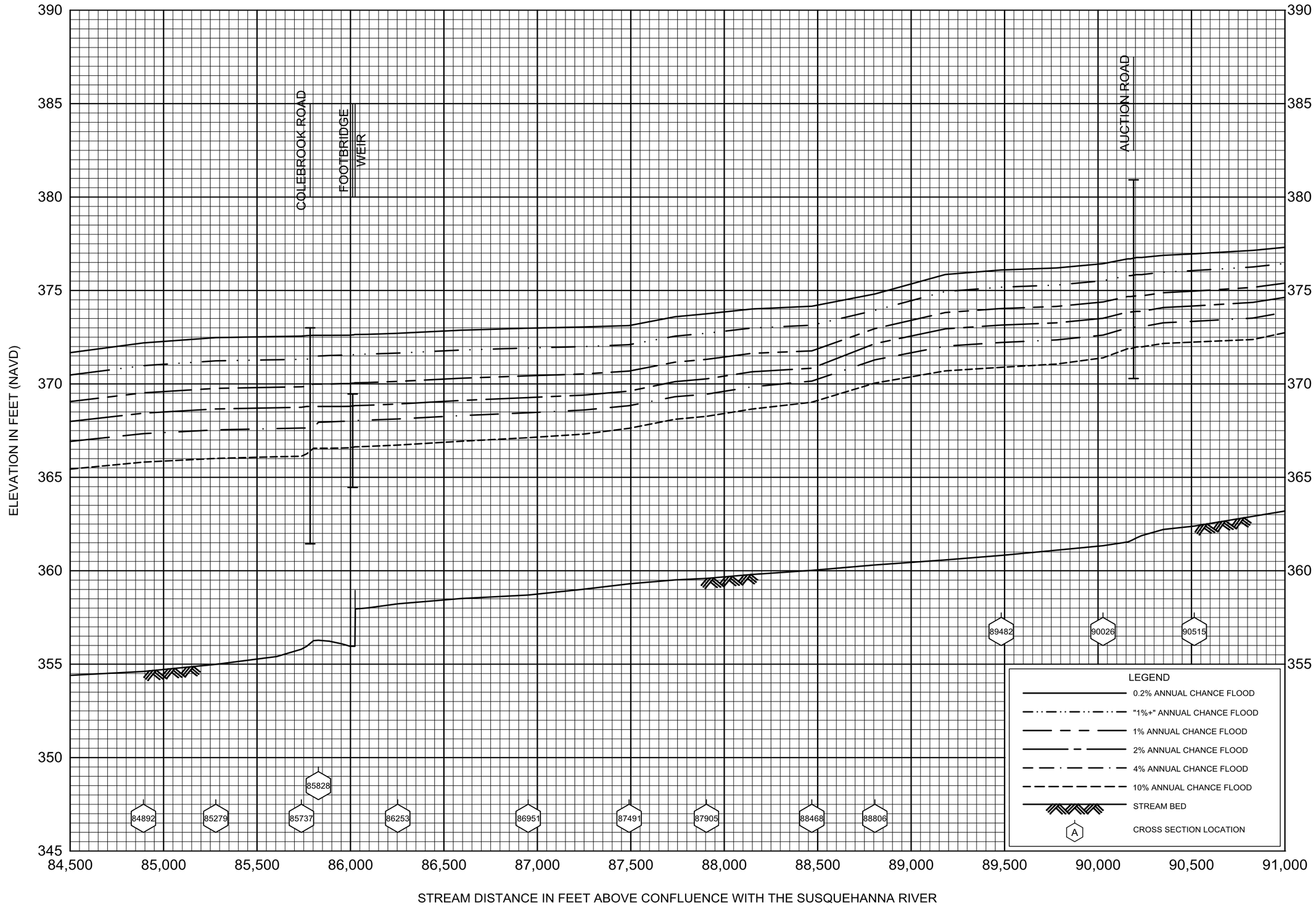
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



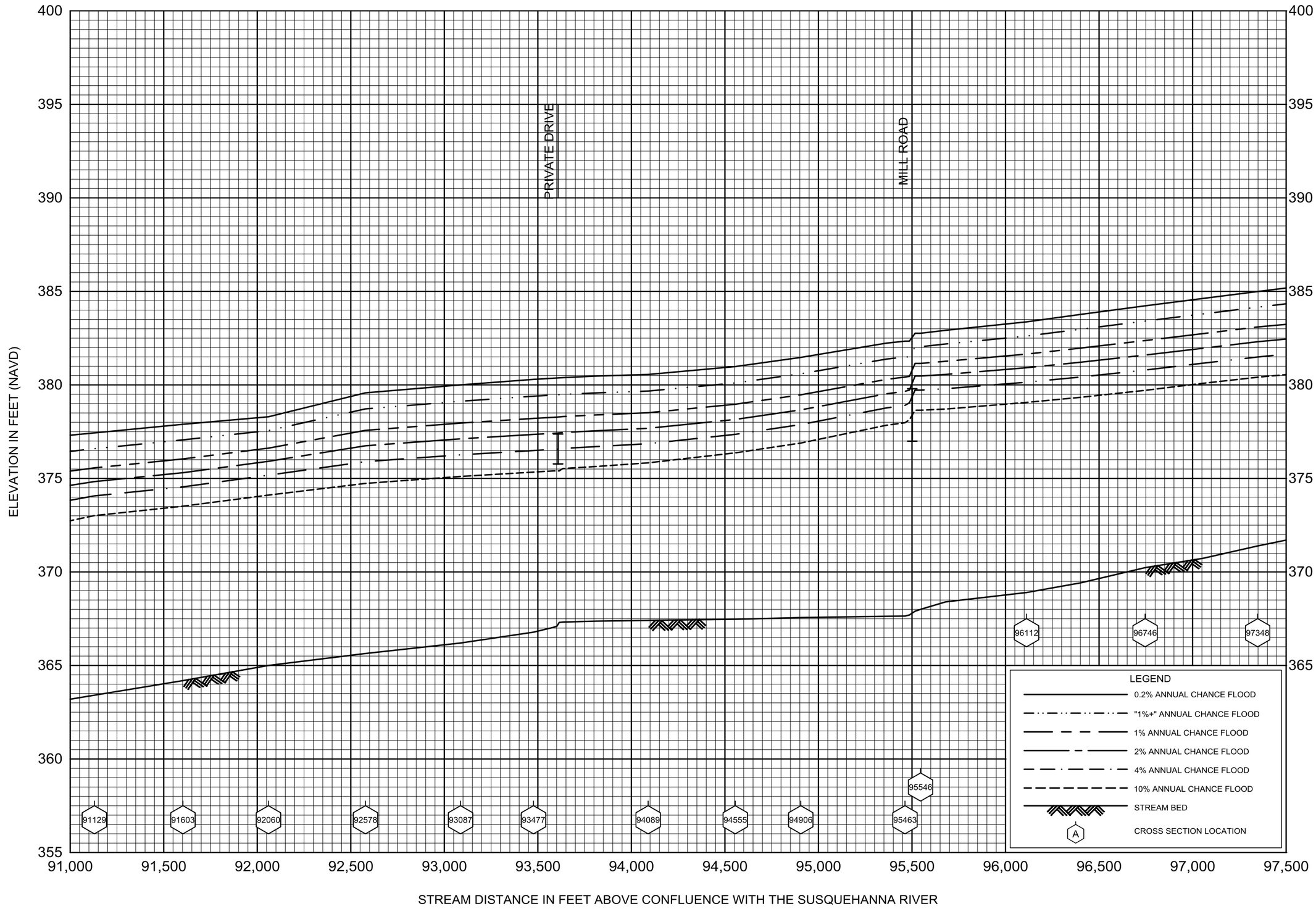
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



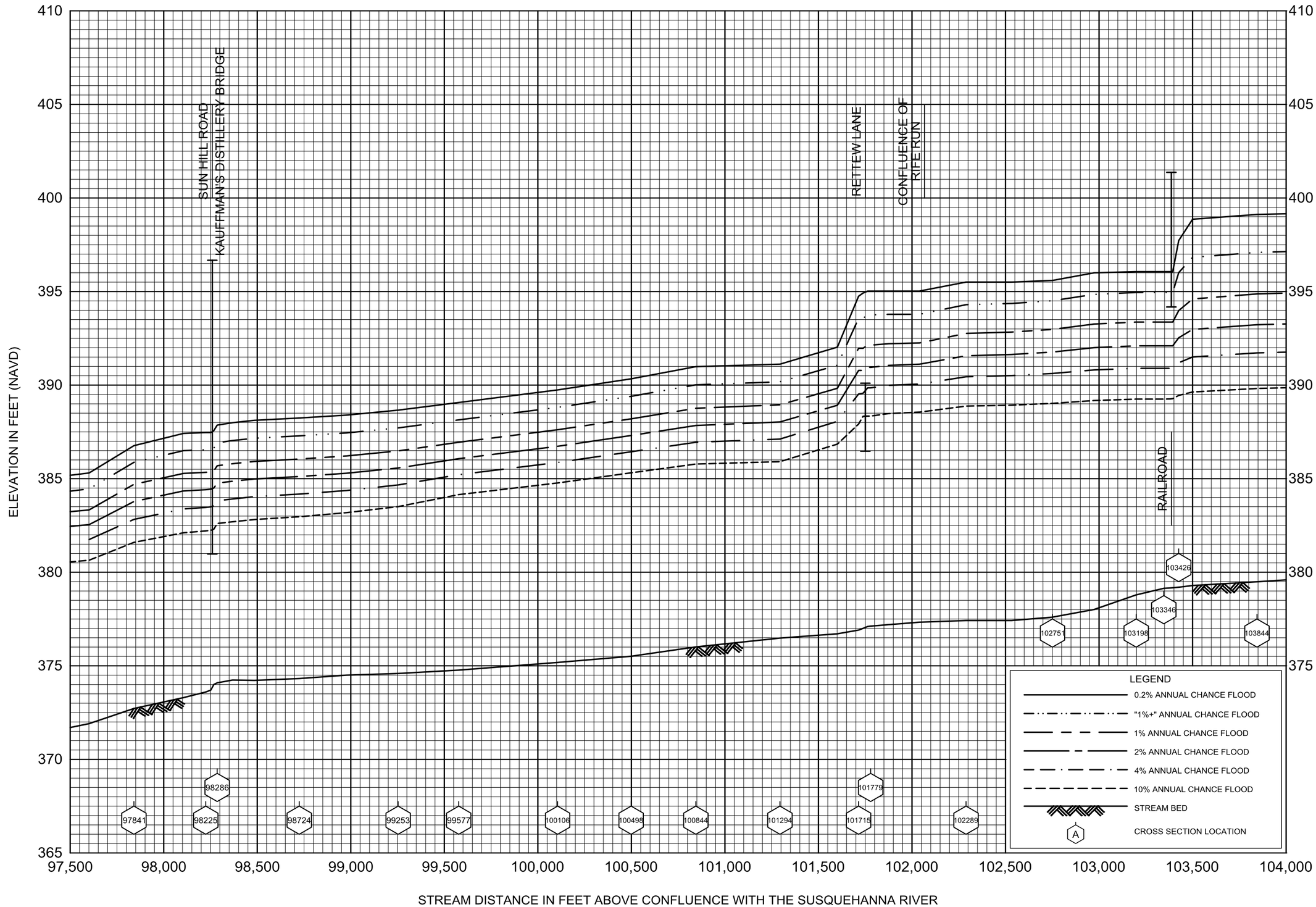
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



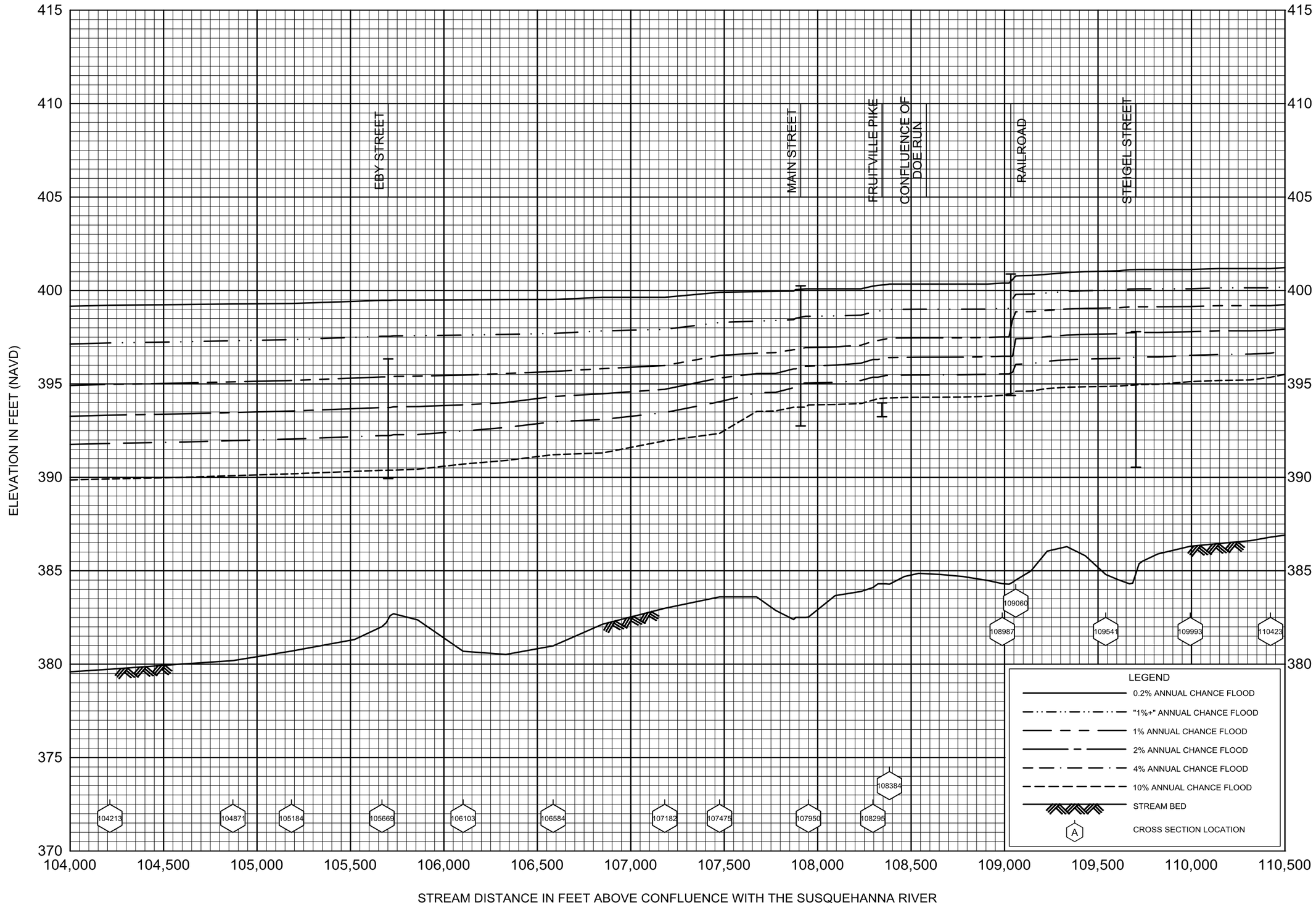
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



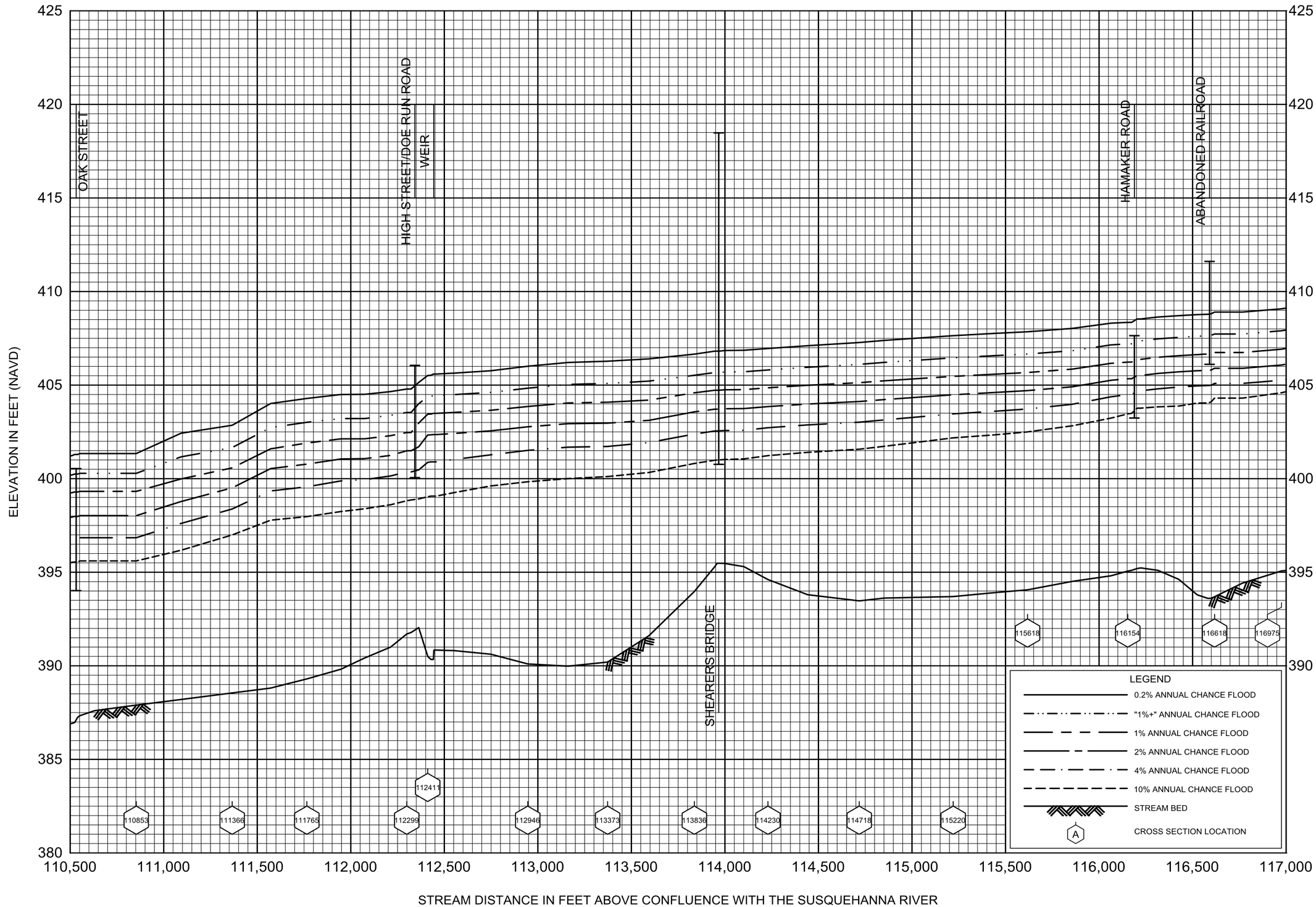
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



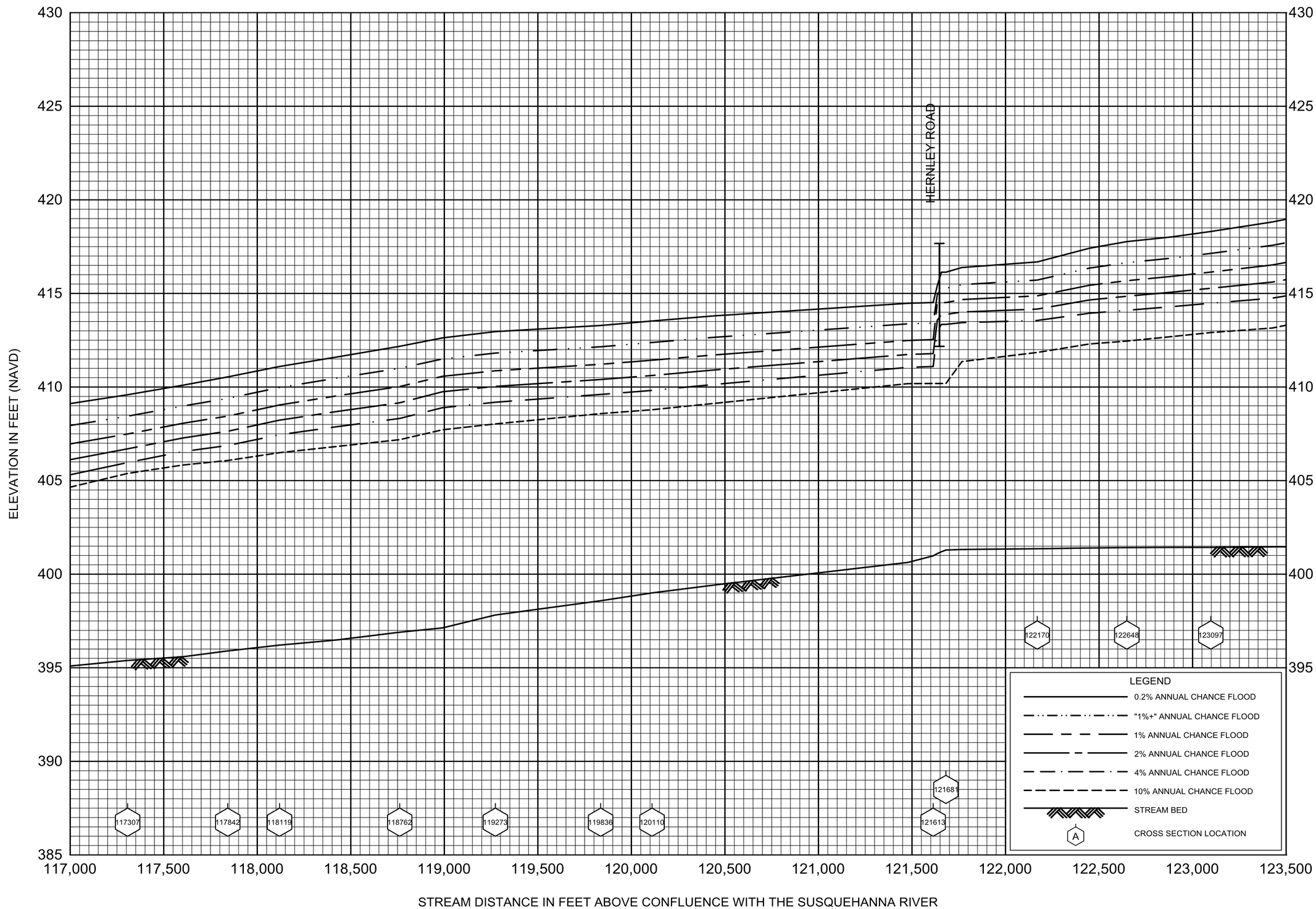
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



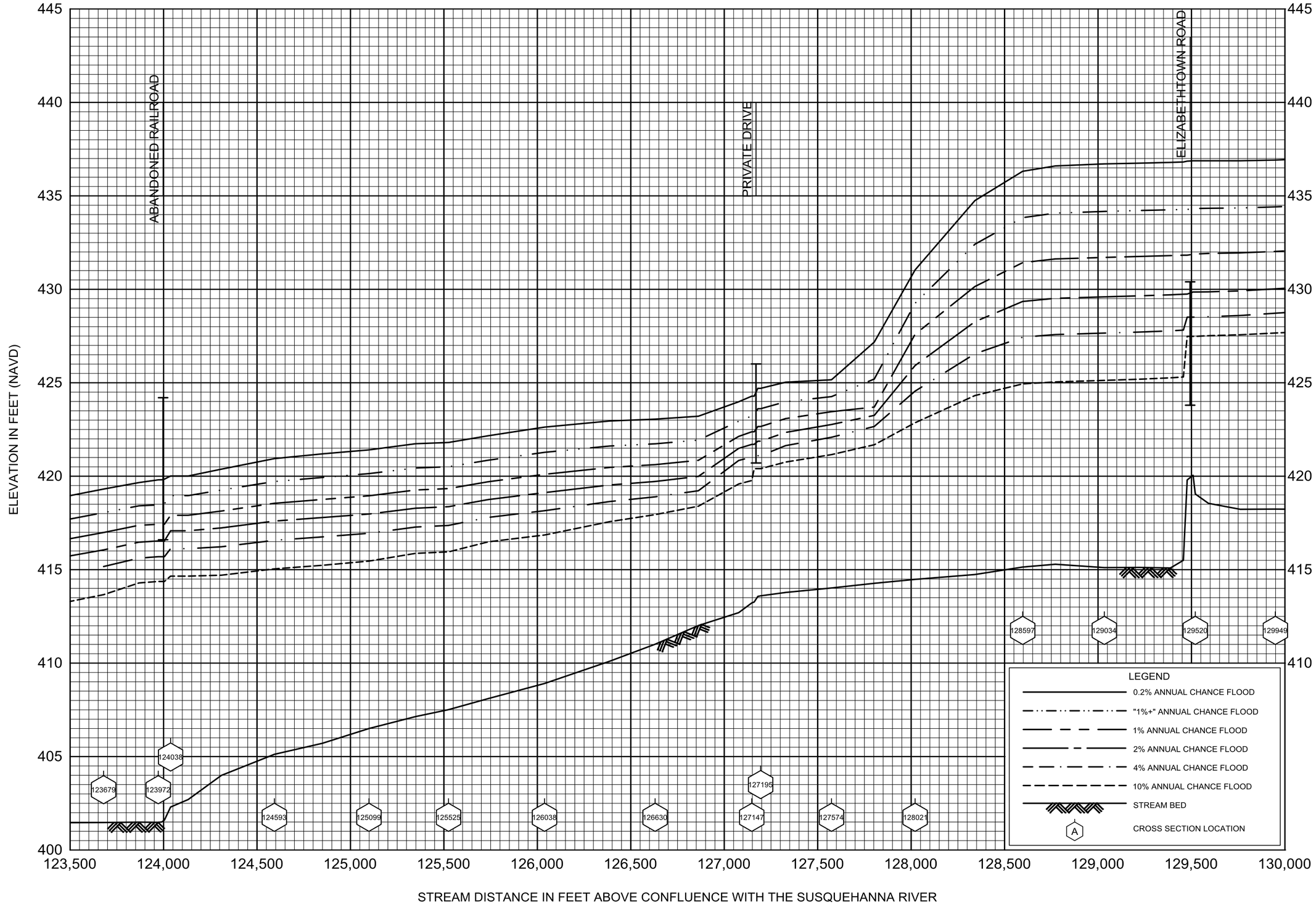
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



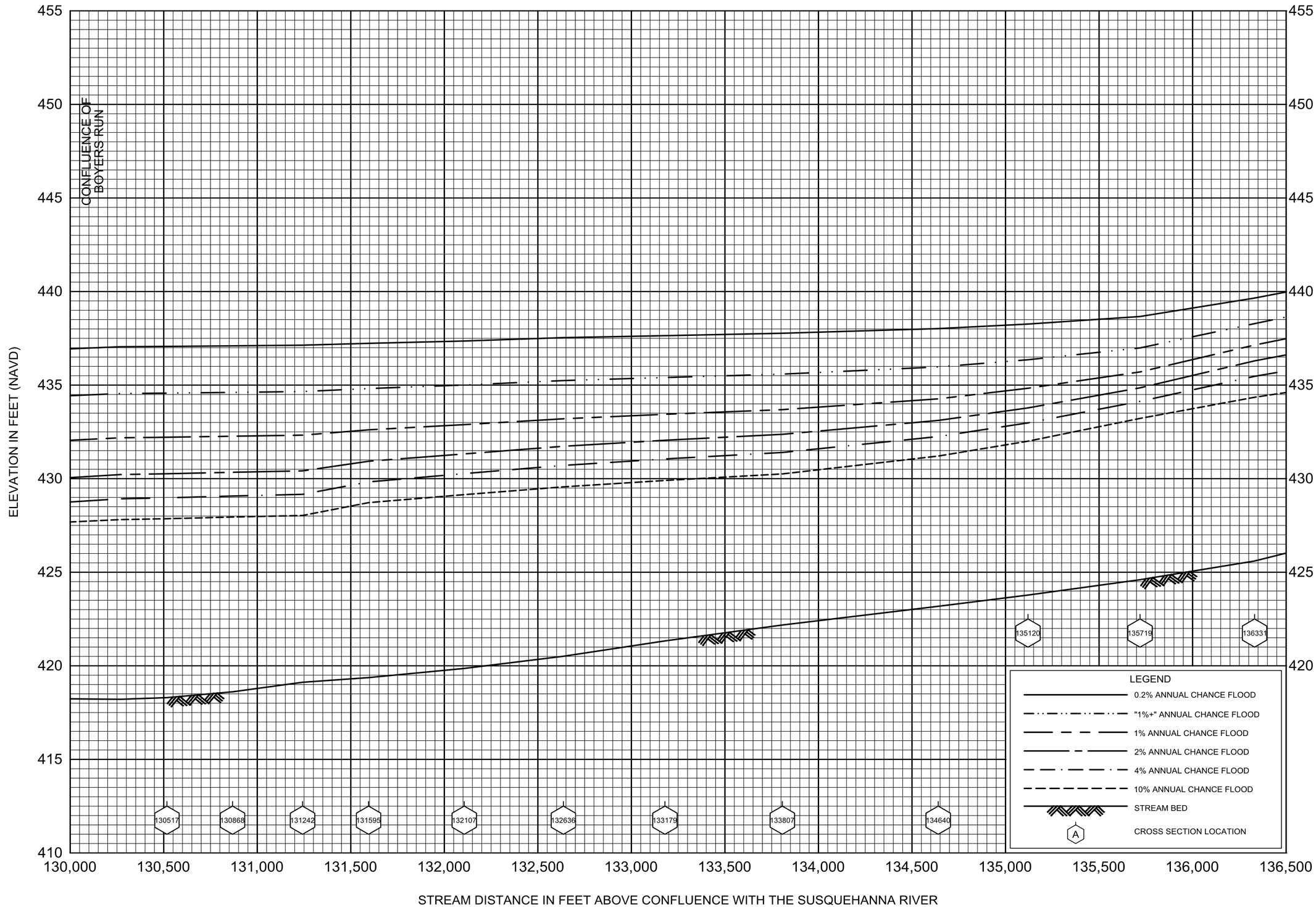
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



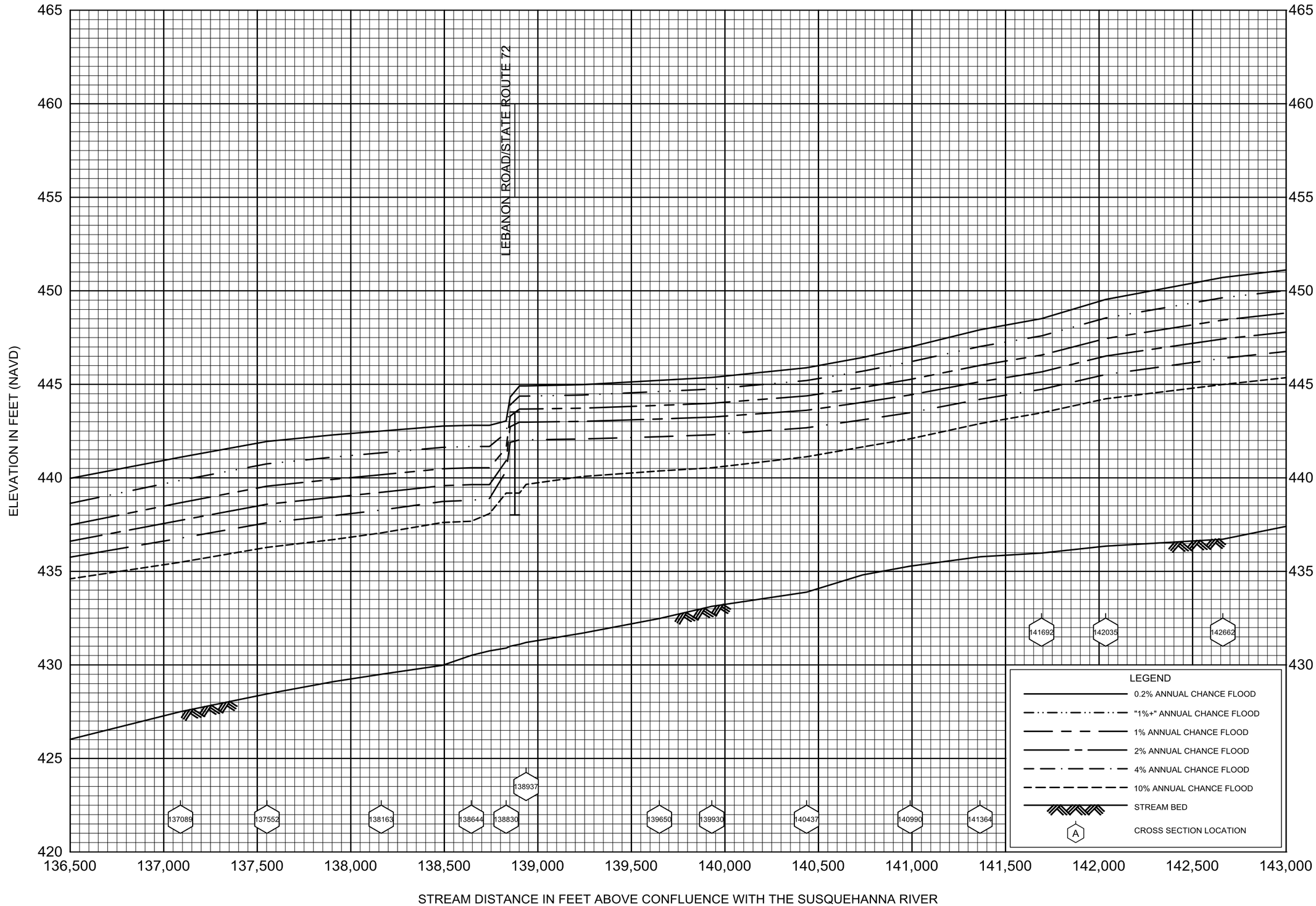
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



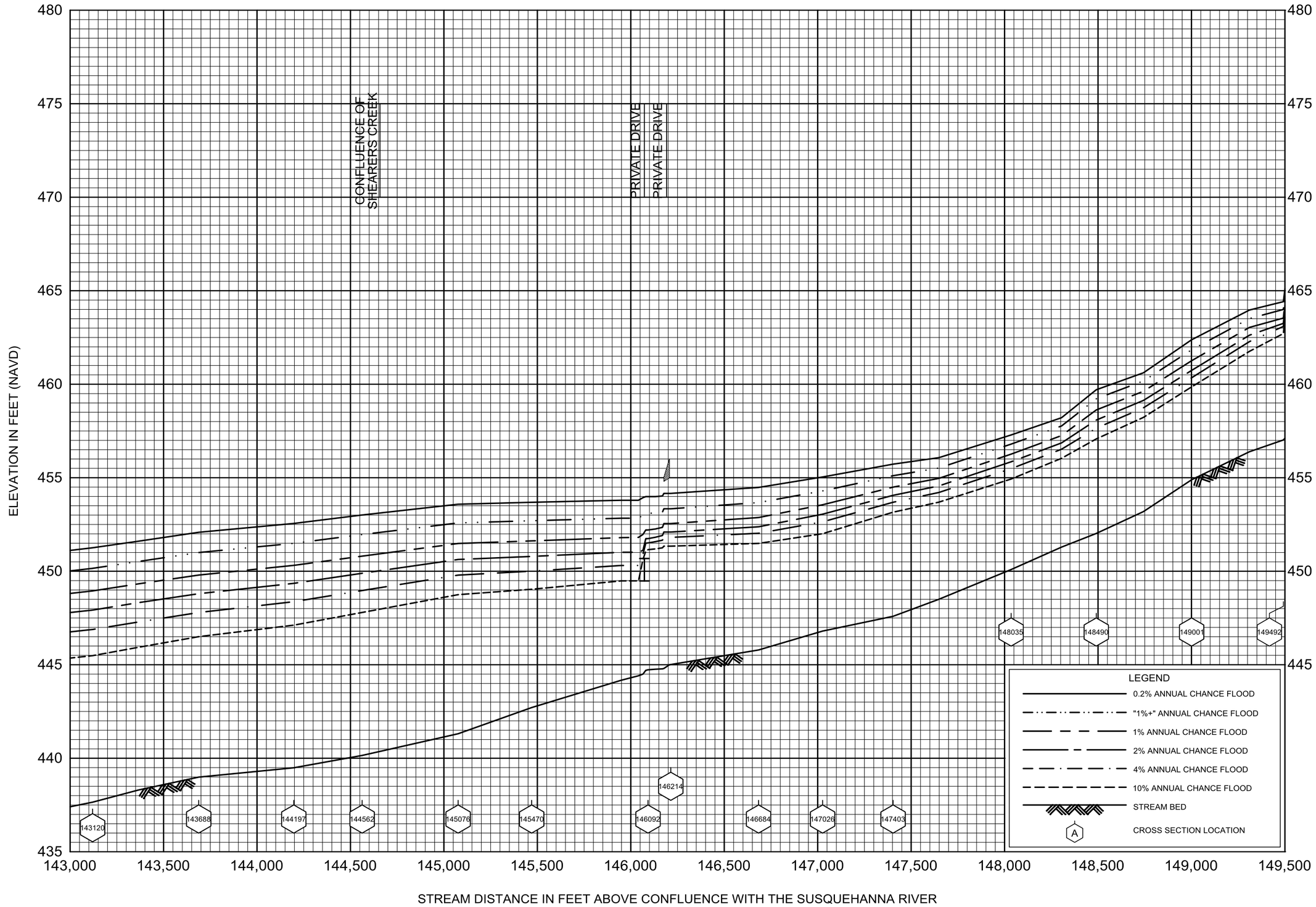
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



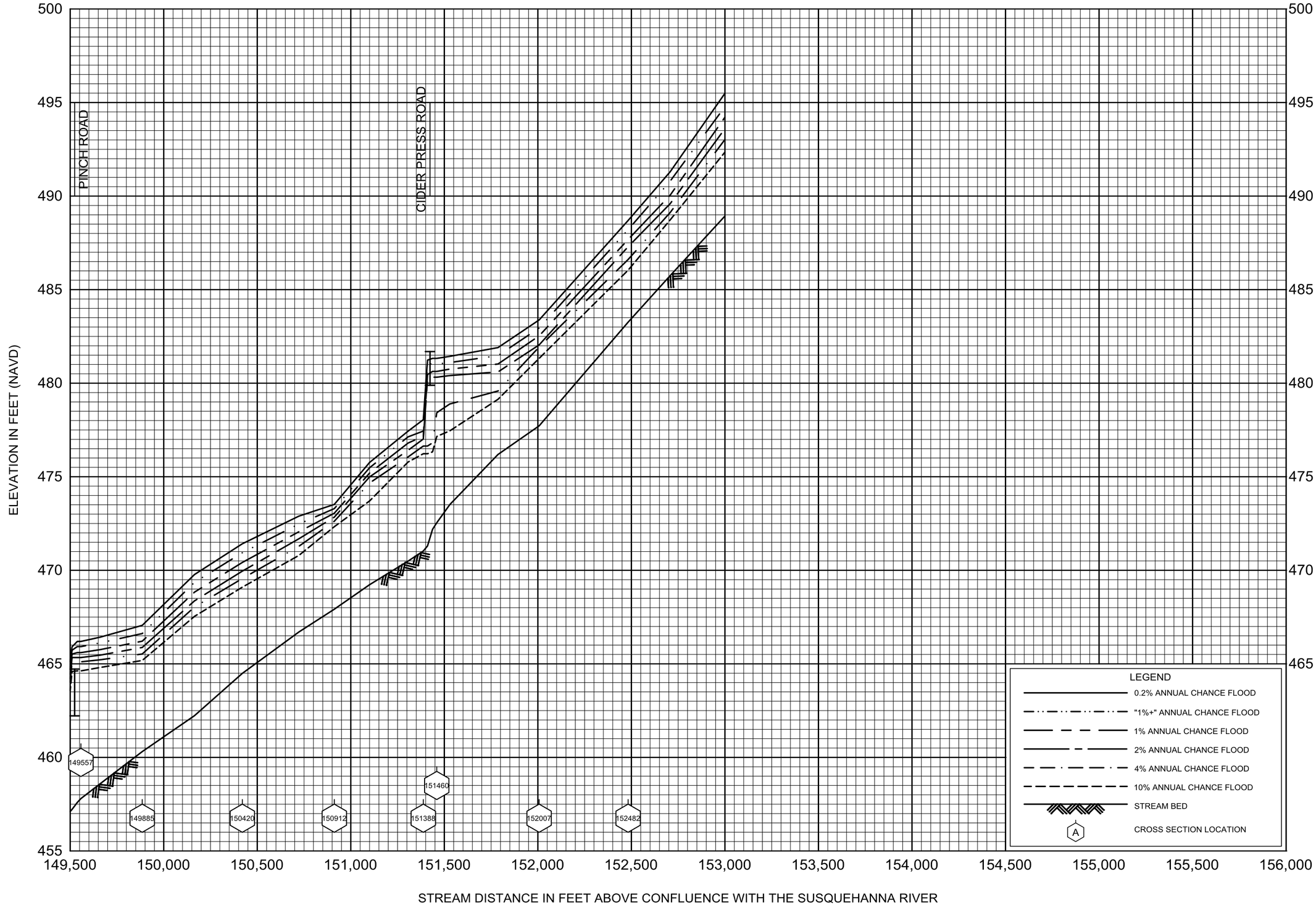
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



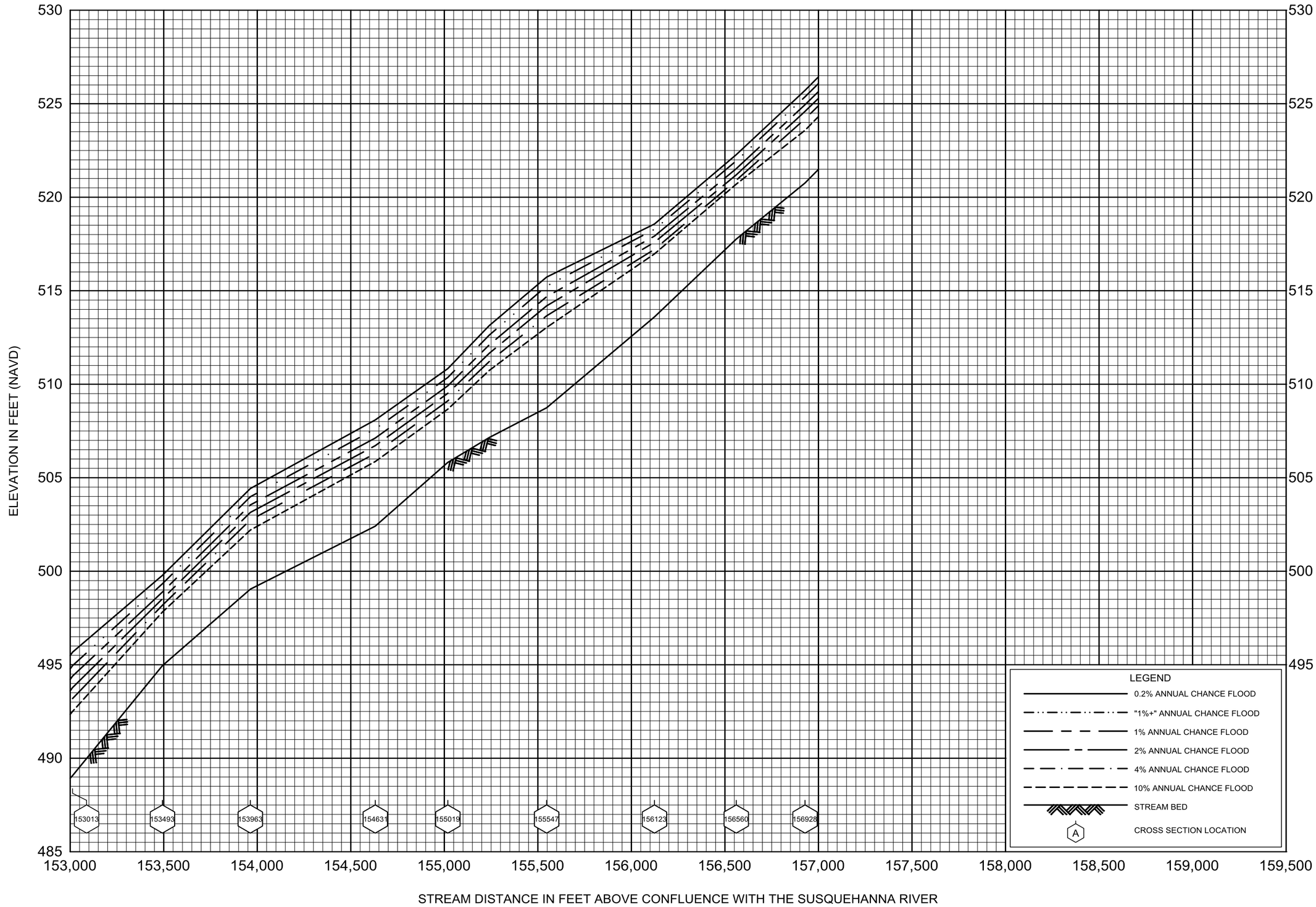
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



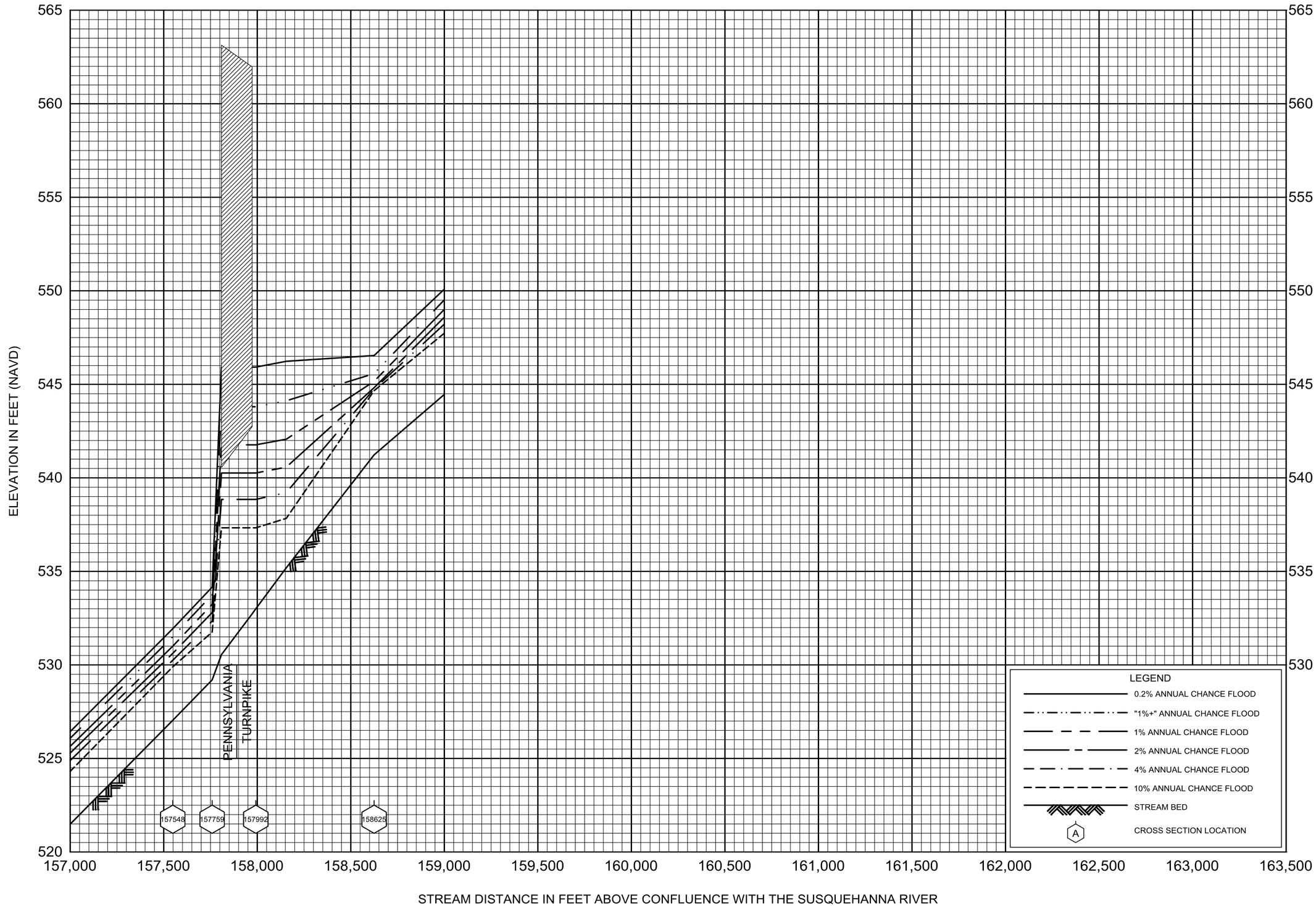
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



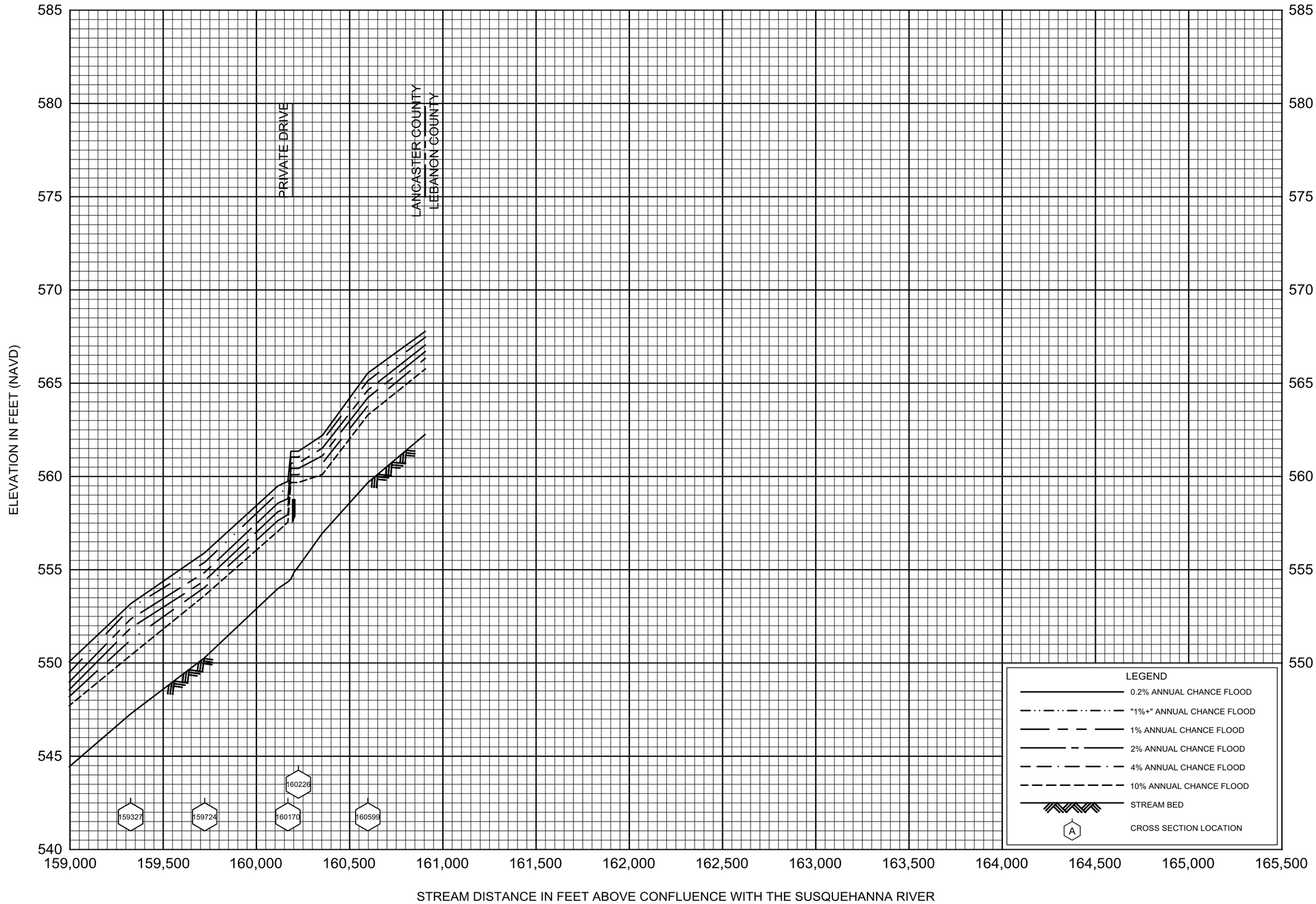
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



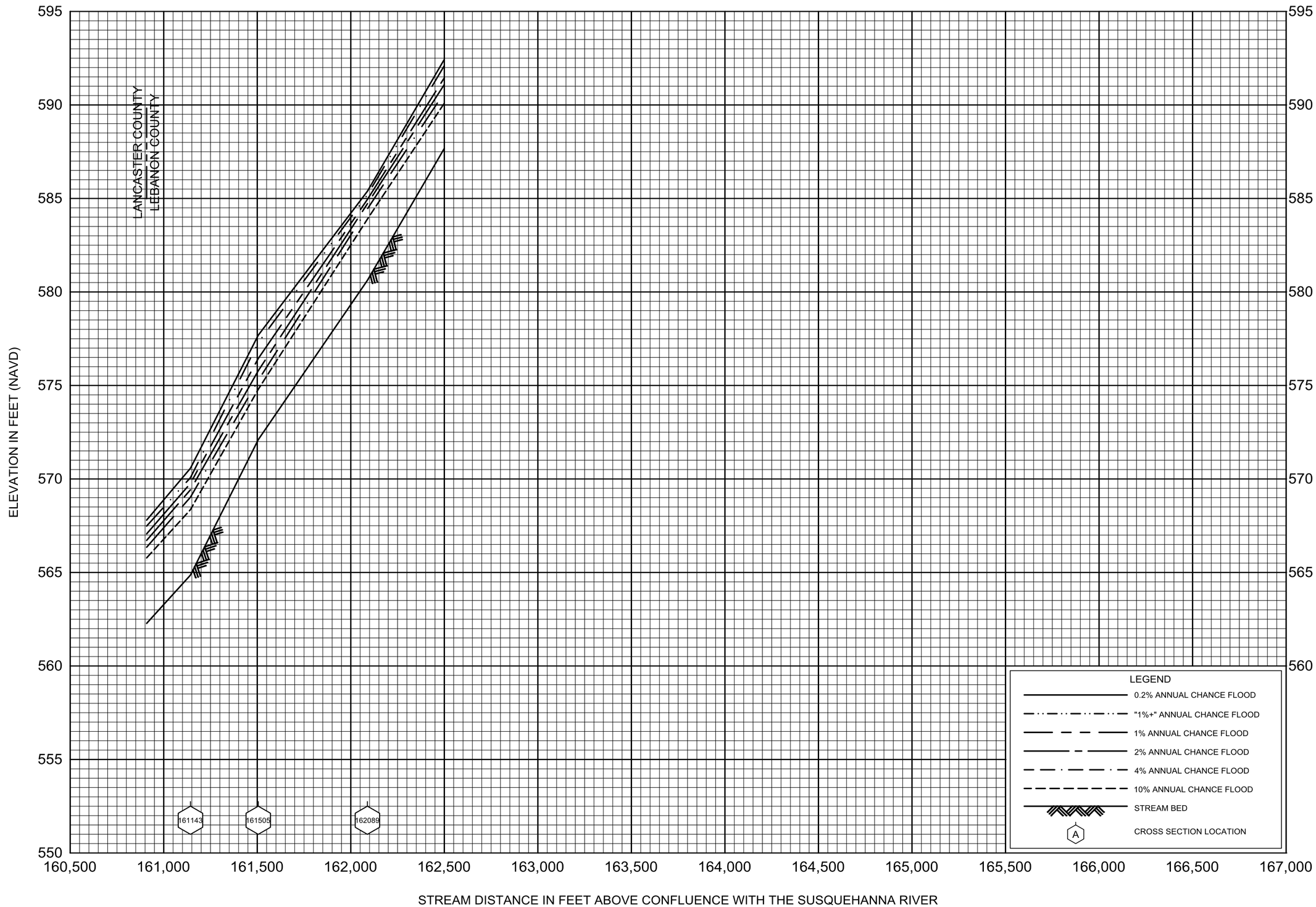
FLOOD PROFILES

CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JUDRISDICTIONS)



FLOOD PROFILES

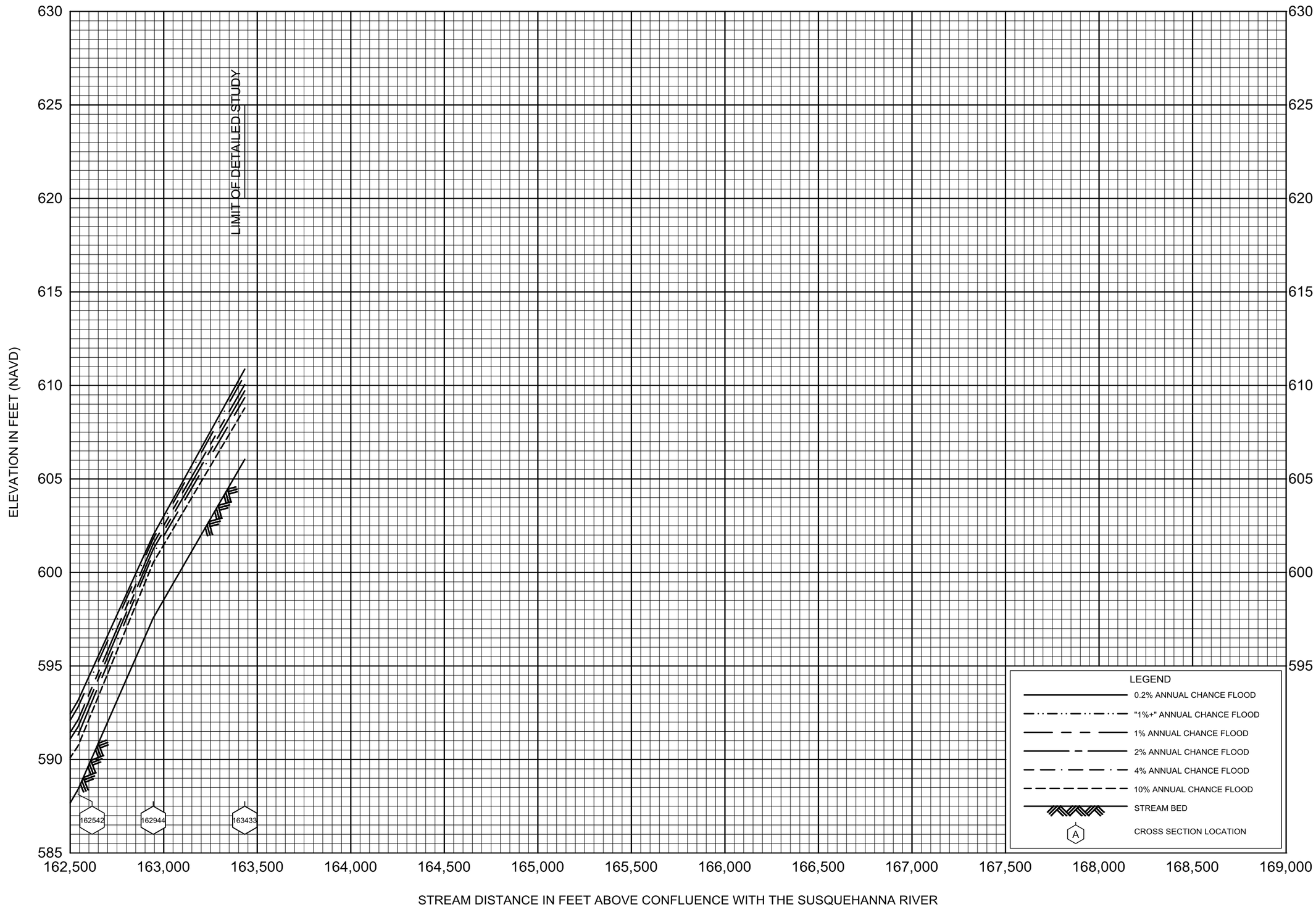
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LEBANON COUNTY, PA

(ALL JUDRISDICTIONS)

01P



FLOOD PROFILES

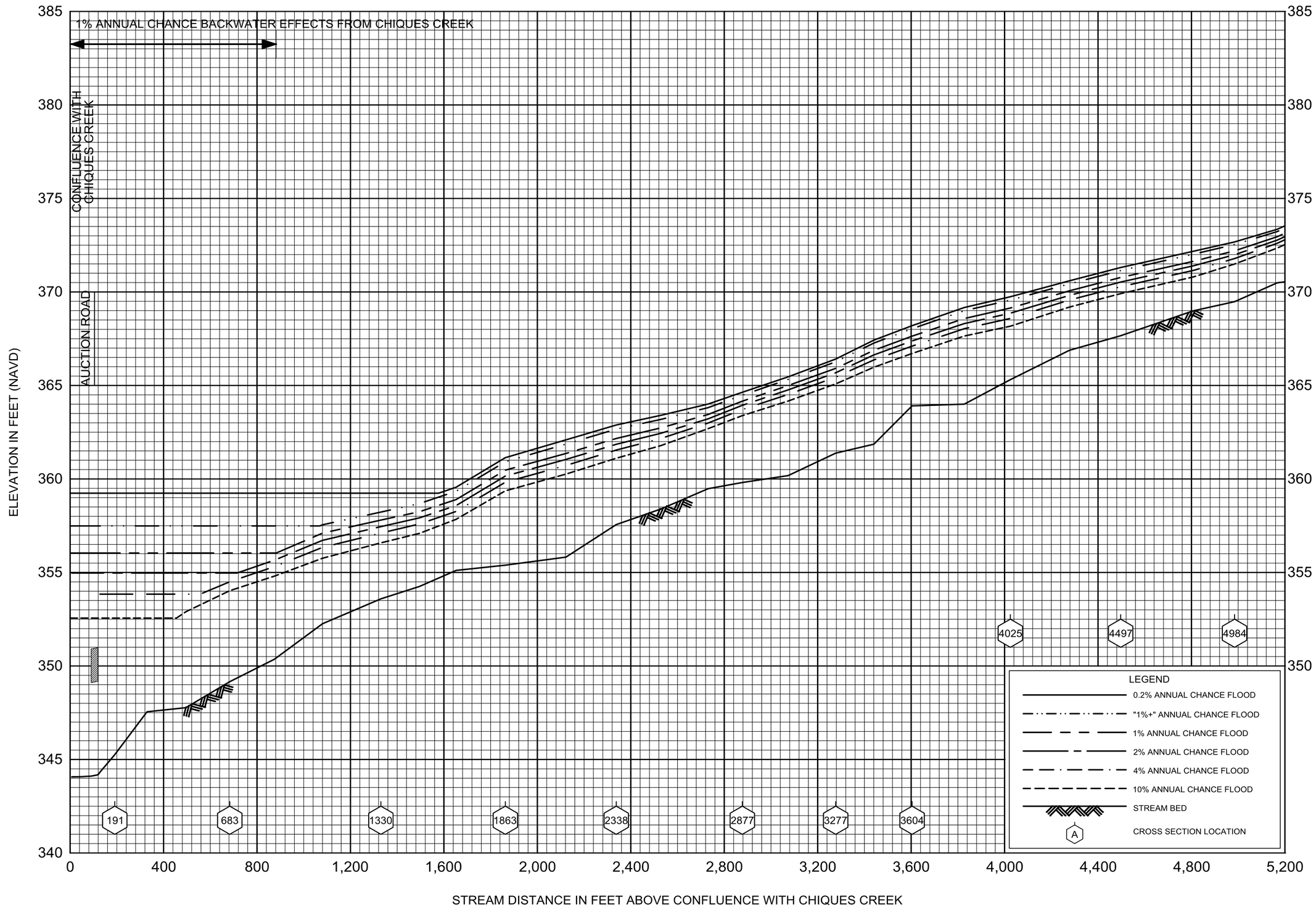
CHIQUES CREEK

U.S. ARMY CORPS OF ENGINEERS

LEBANON COUNTY, PA

(ALL JUDRISDICTIONS)

02P



FLOOD PROFILES

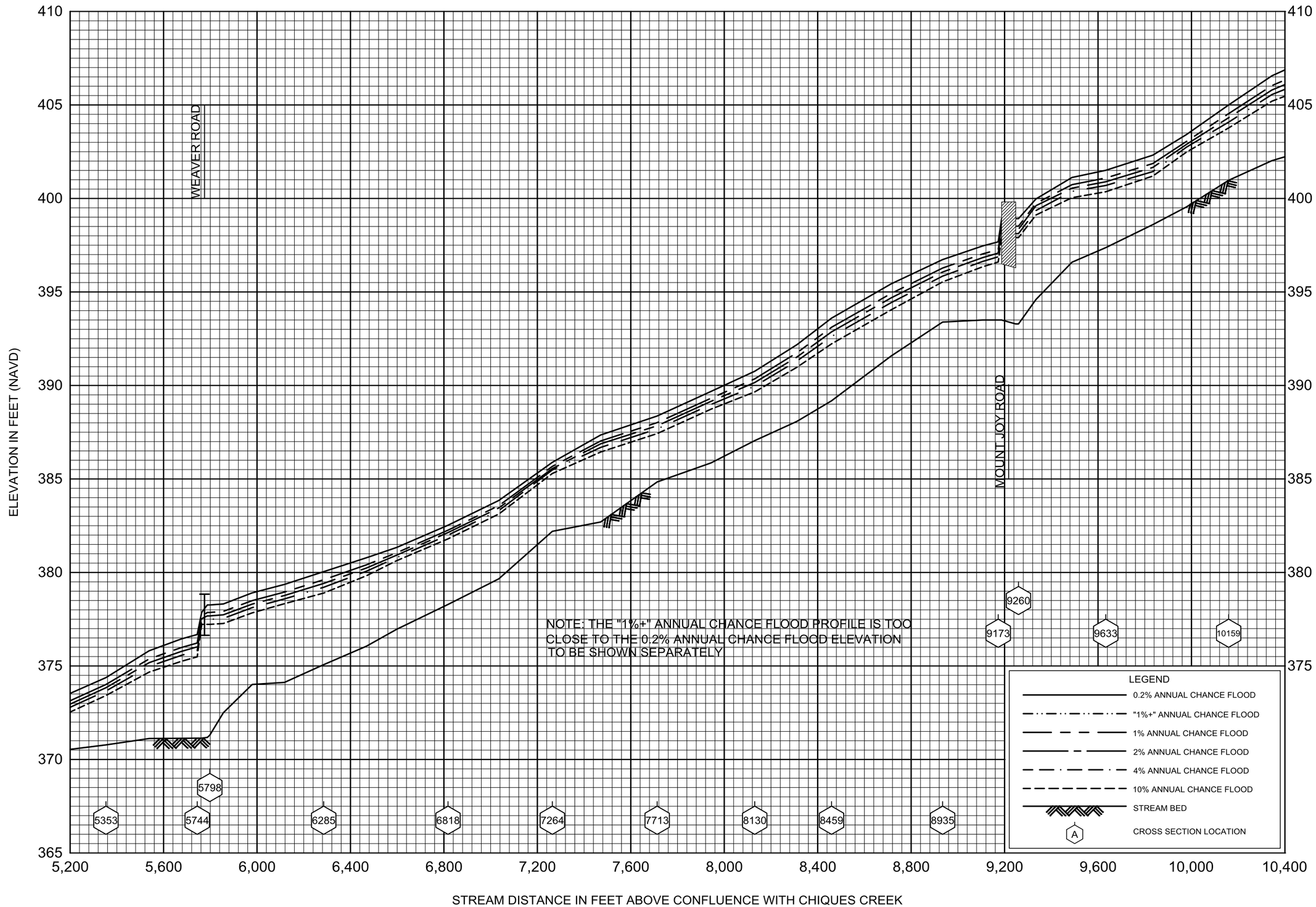
DELLINGER RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

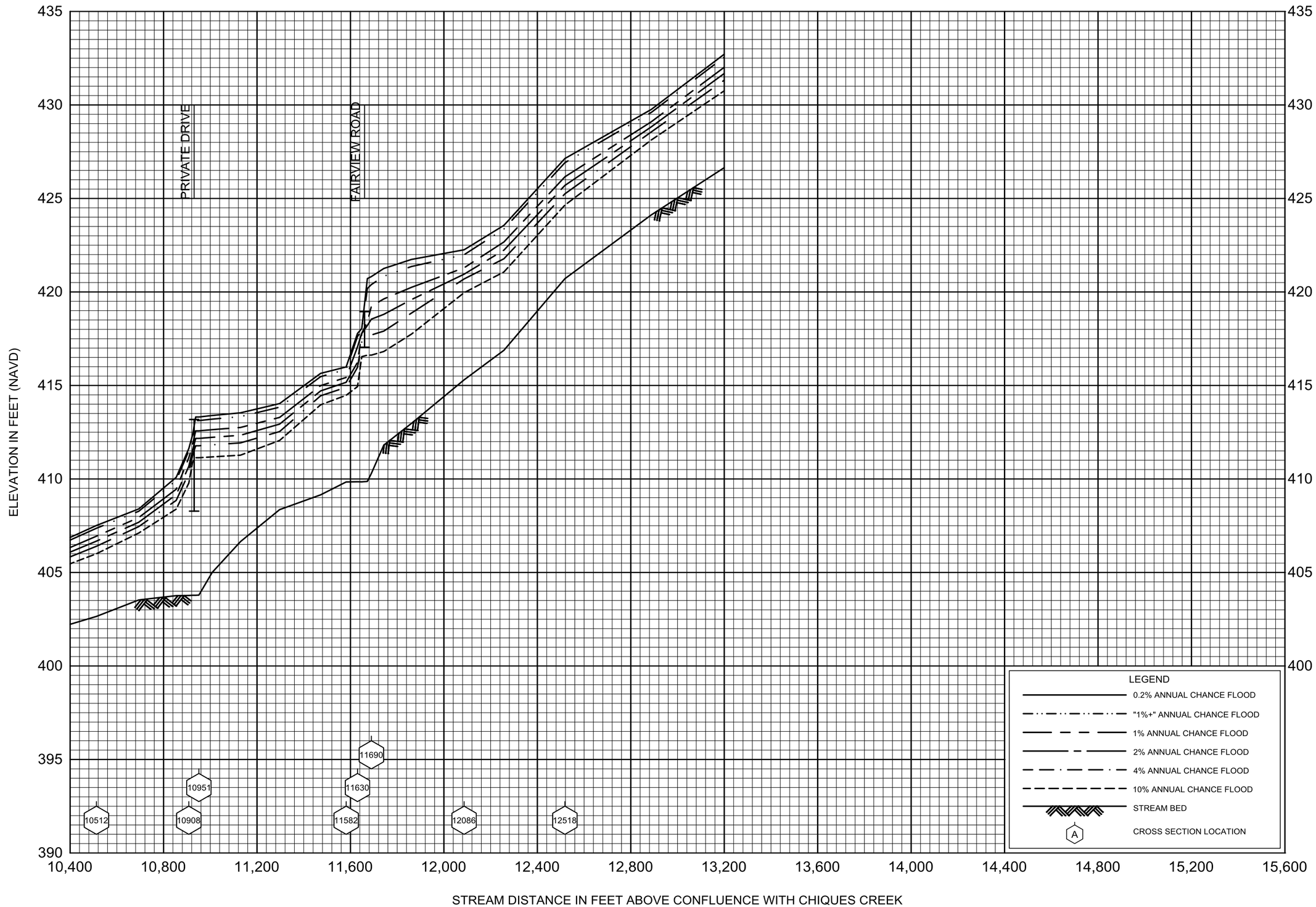
DELLINGER RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

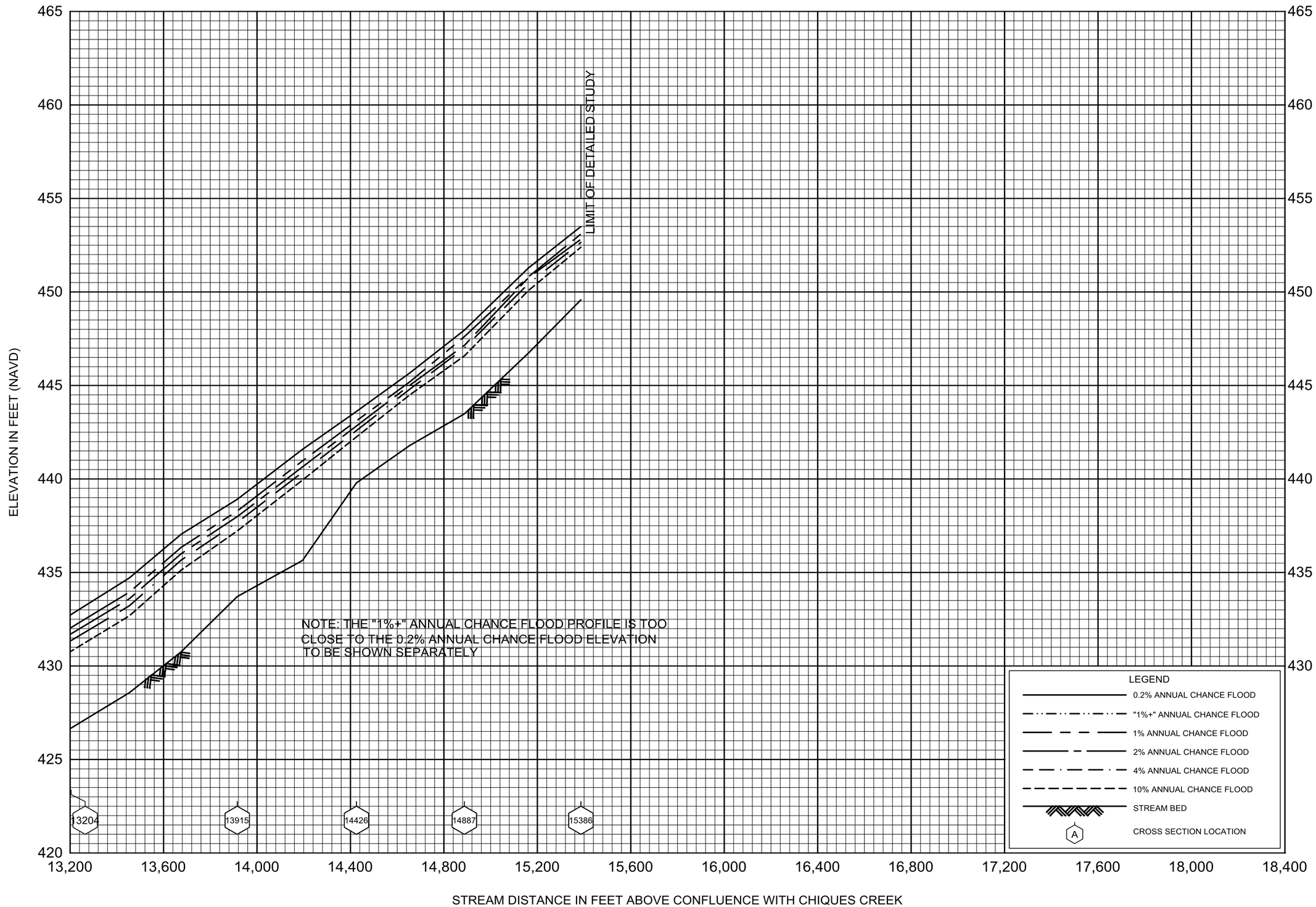
DELLINGER RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



FLOOD PROFILES

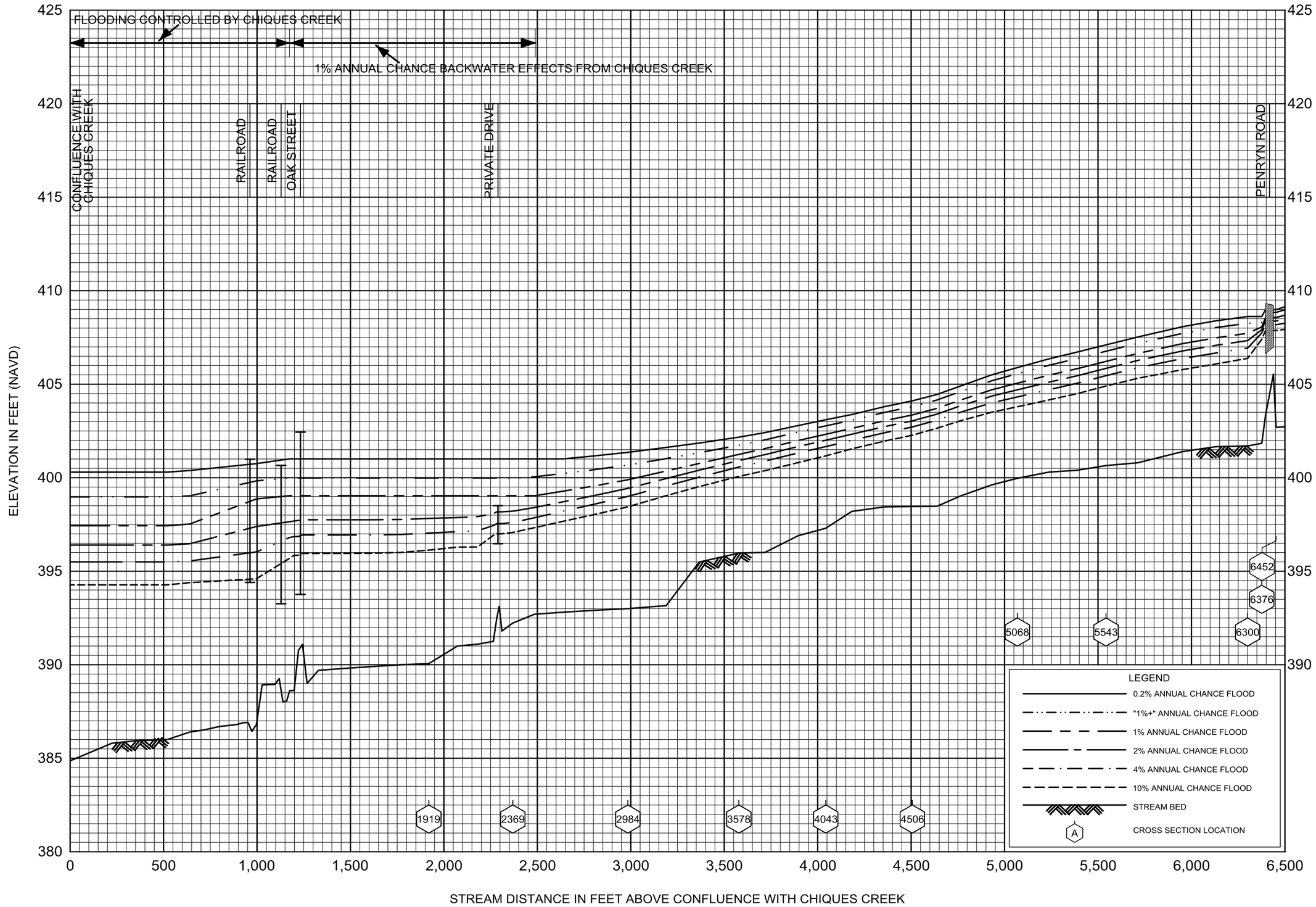
DELLINGER RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

04P



FLOOD PROFILES

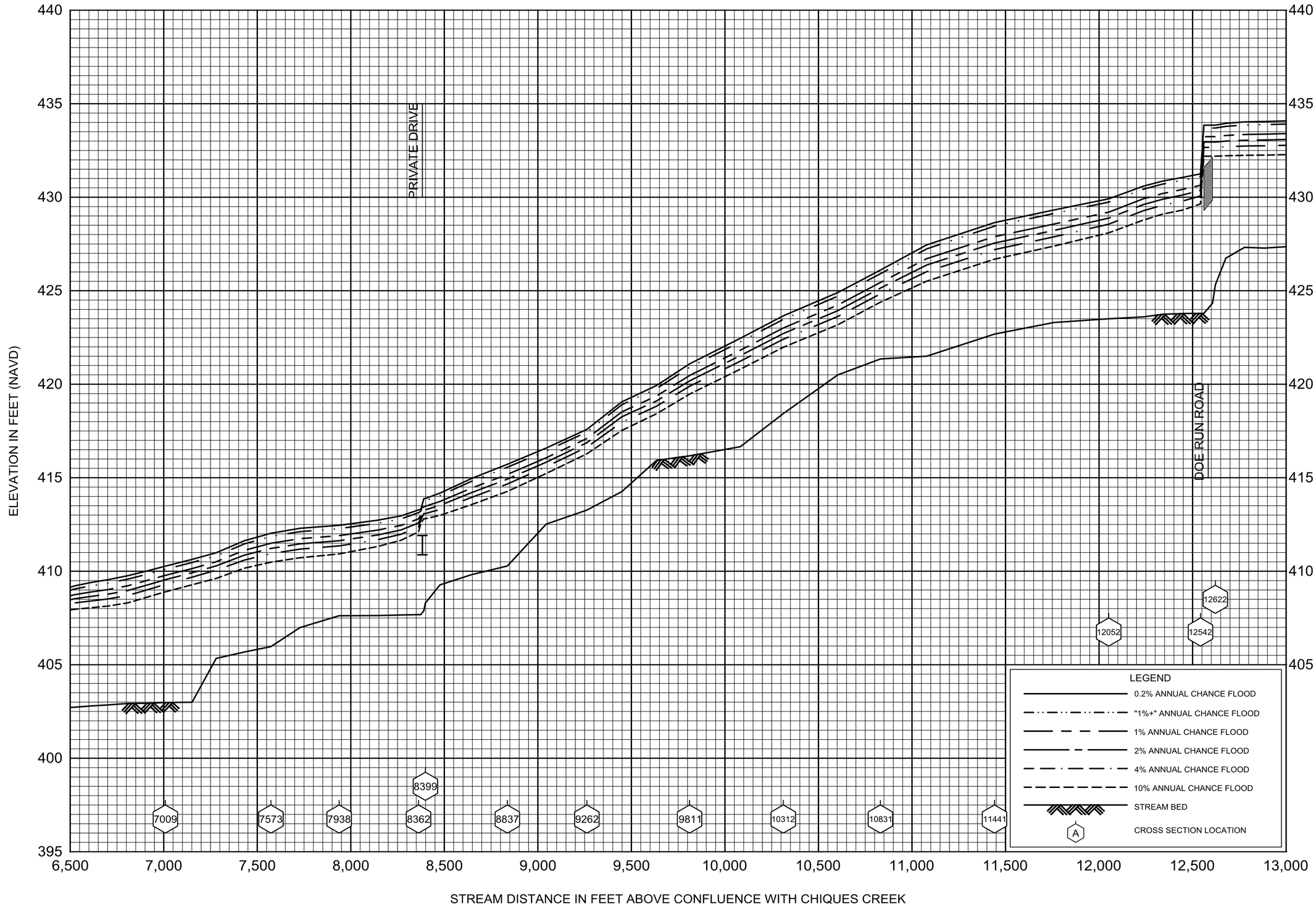
DOE RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

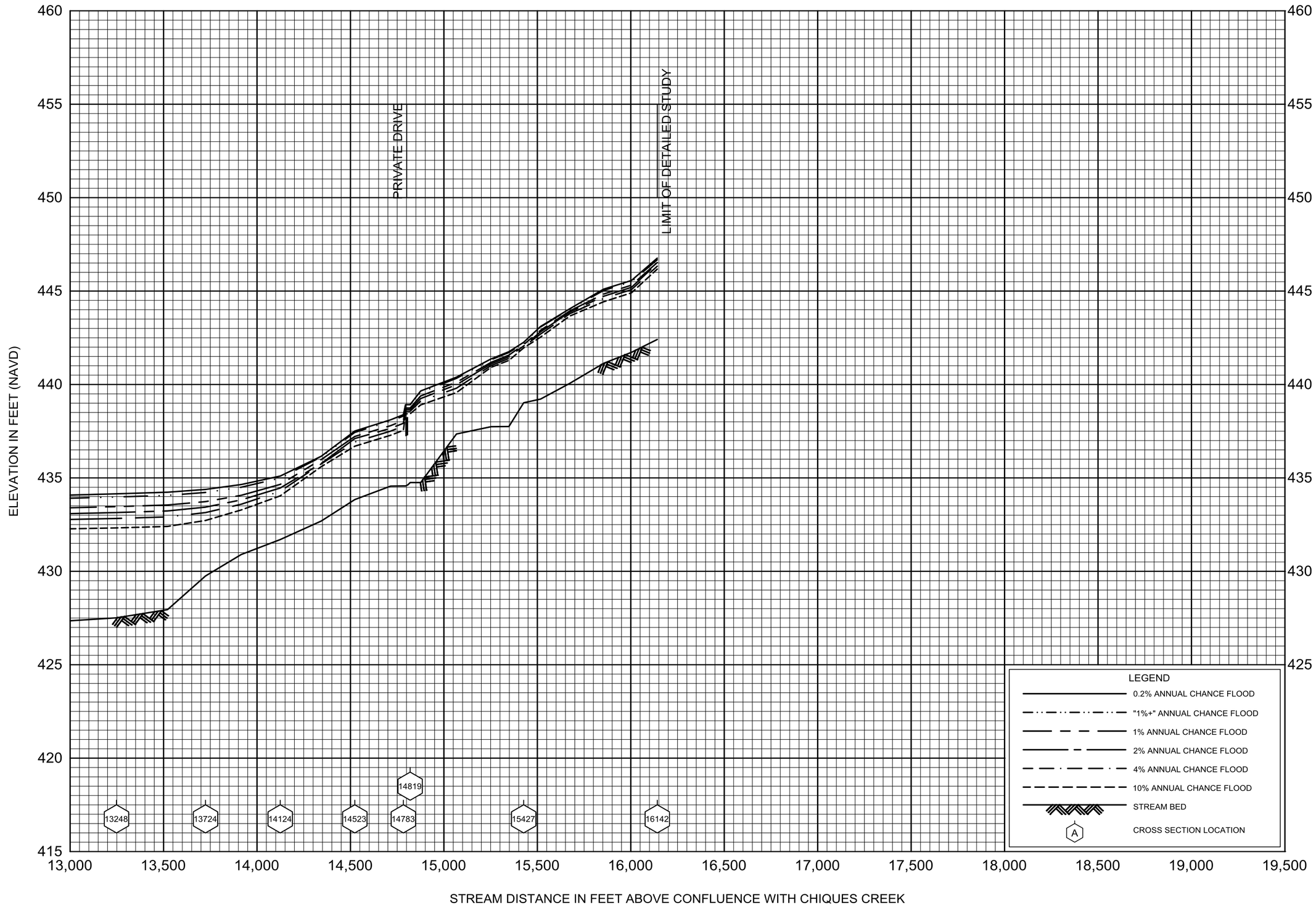
DOE RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

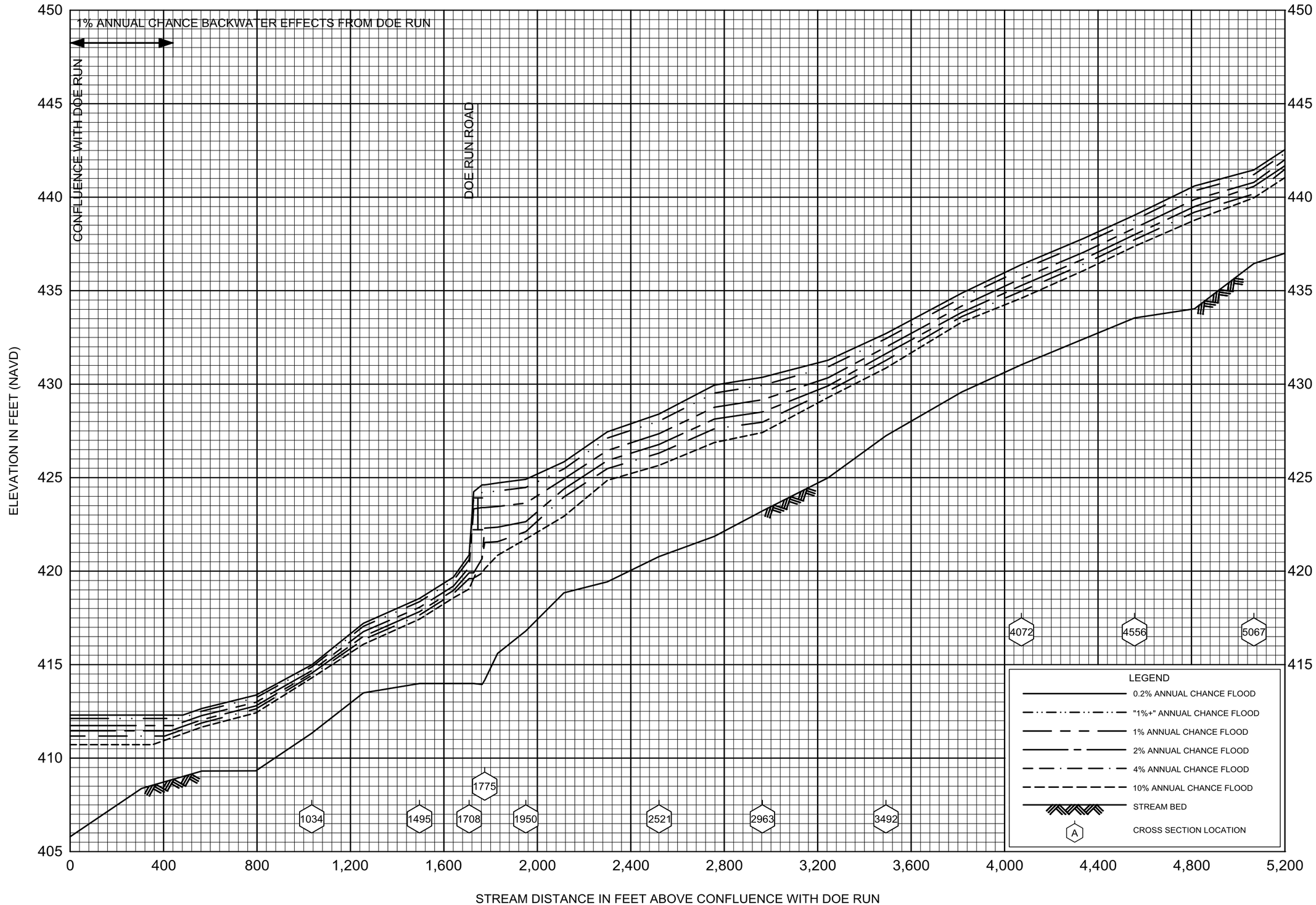
DOE RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



FLOOD PROFILES

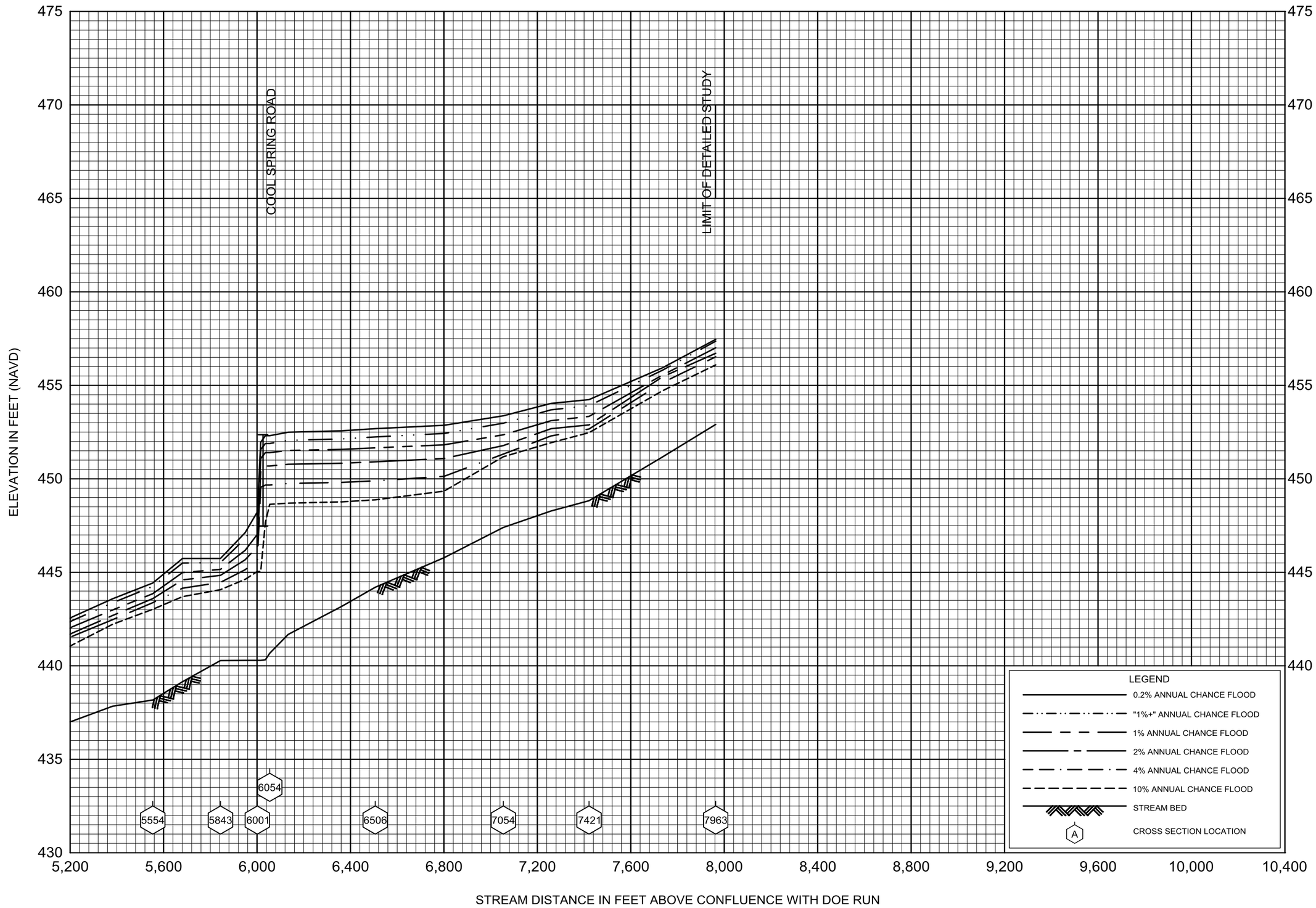
DOE RUN TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

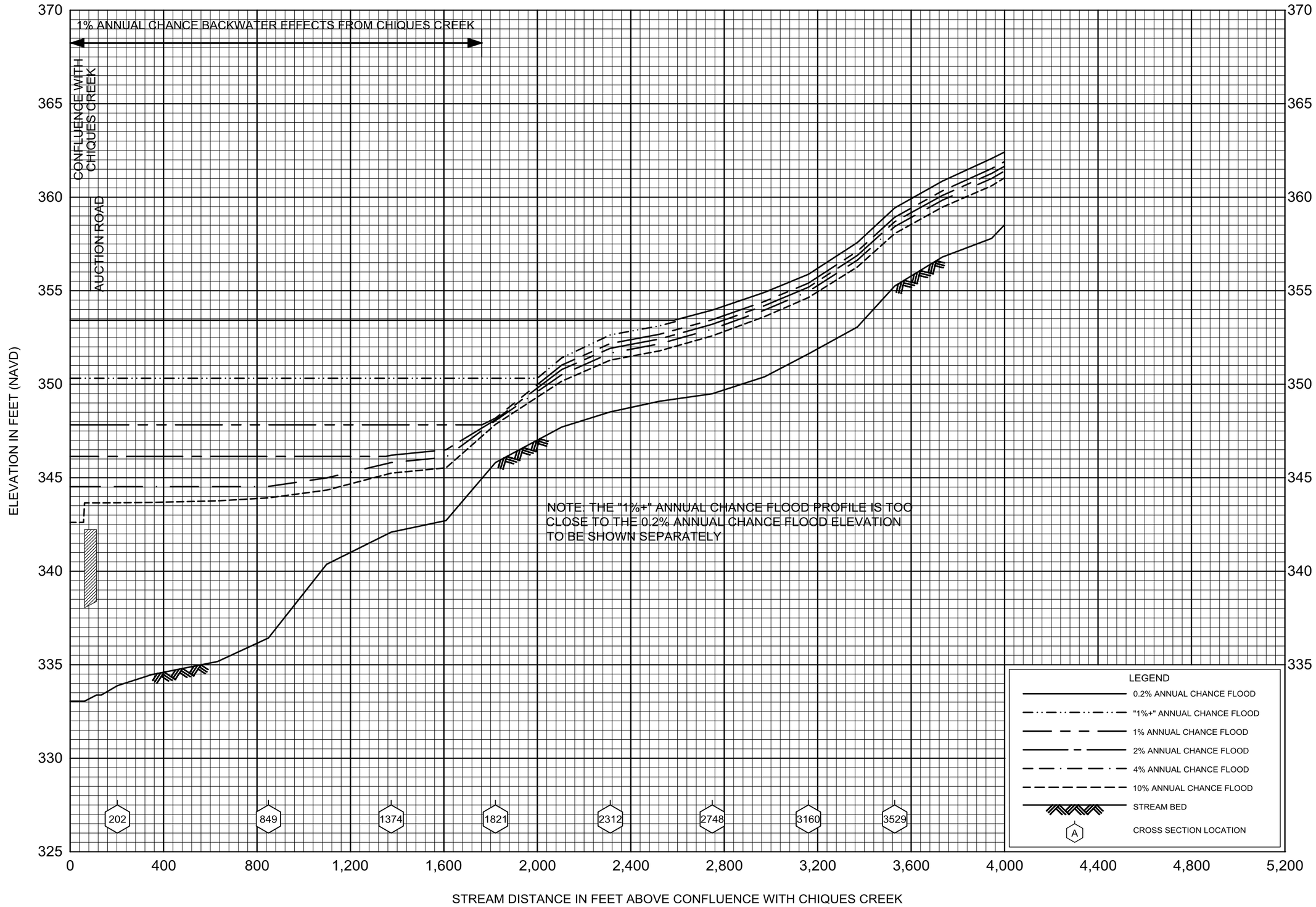
DOE RUN TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

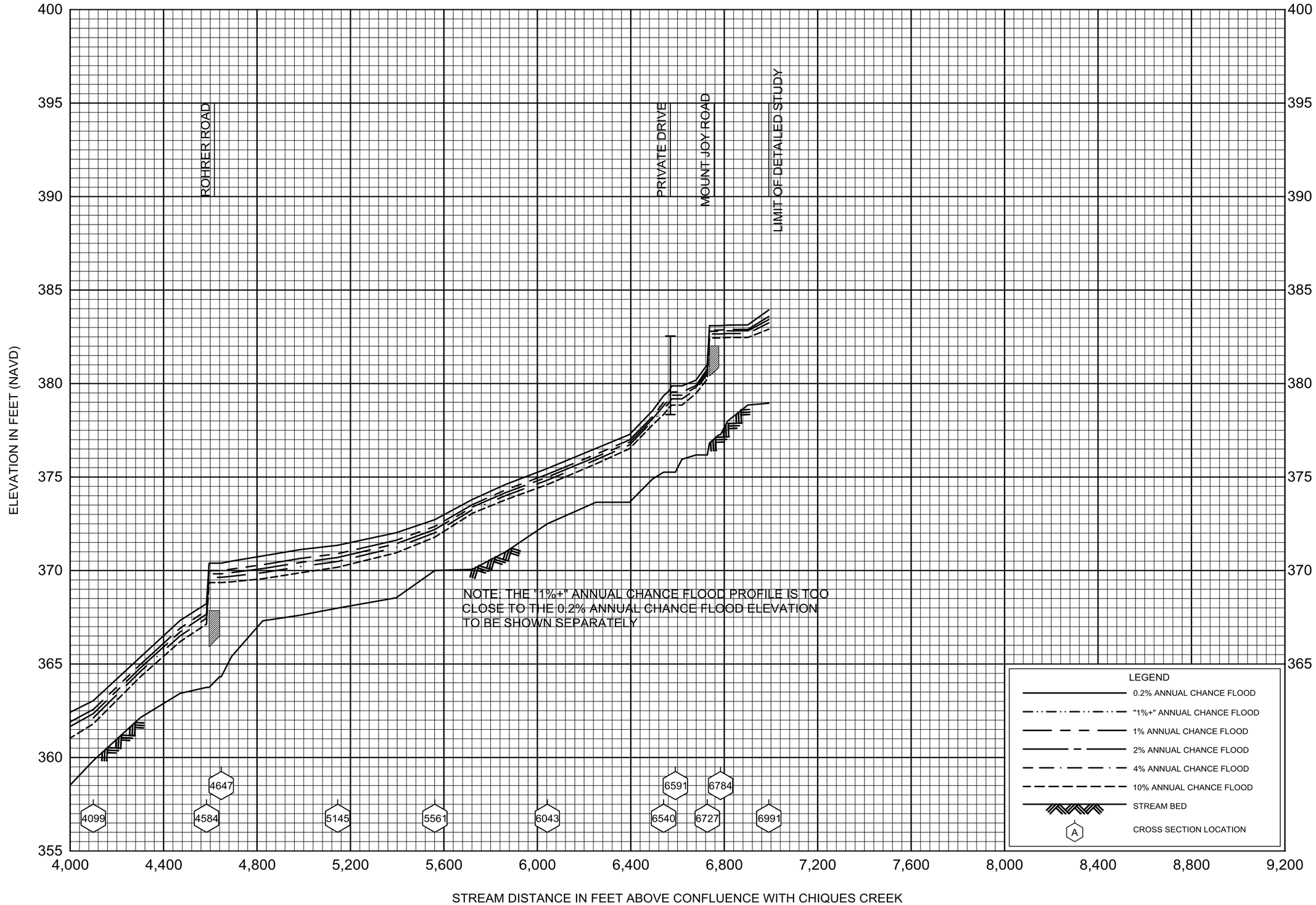
ERISMAN RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

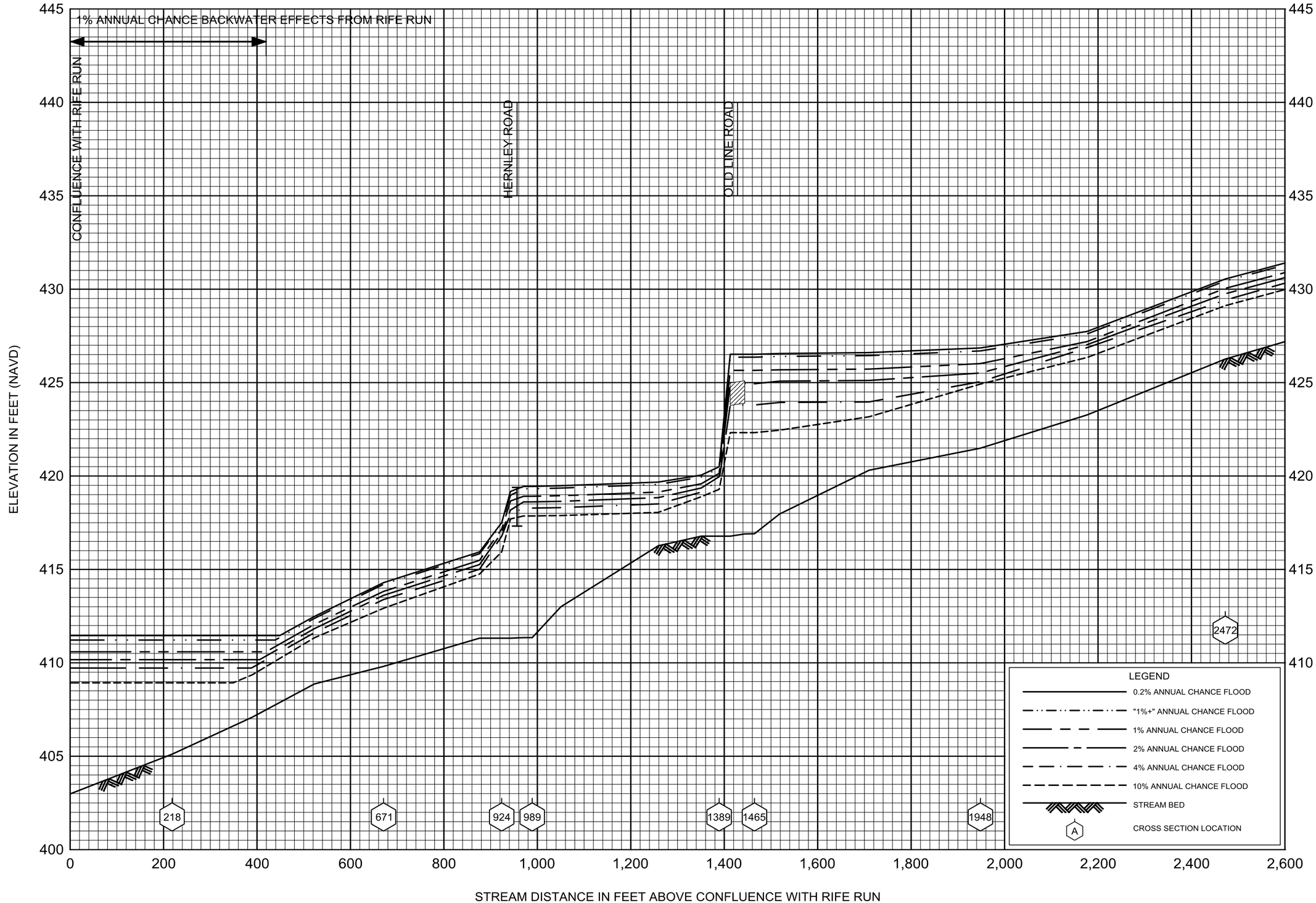
ERISMAN RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

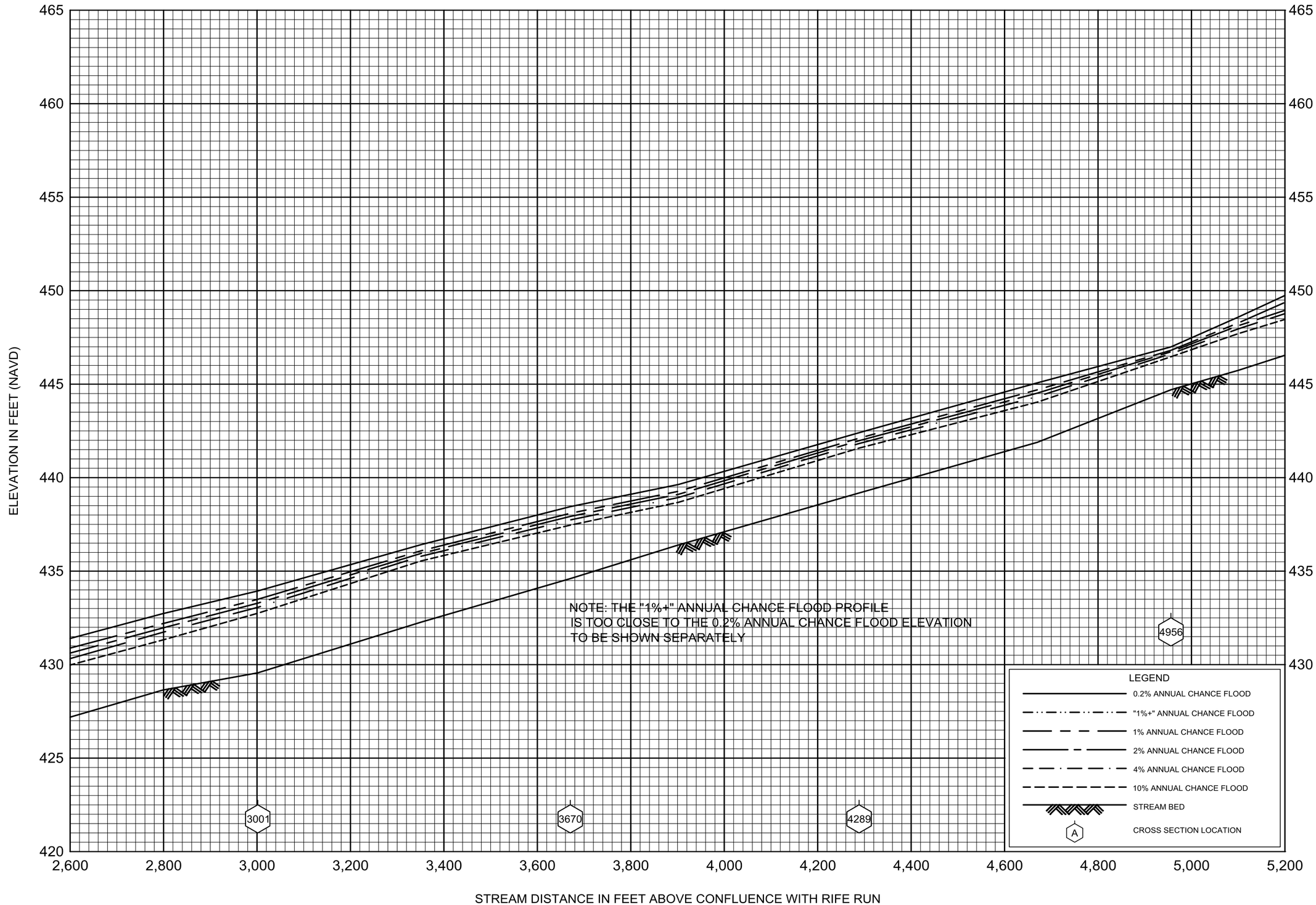
ORCHARD ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

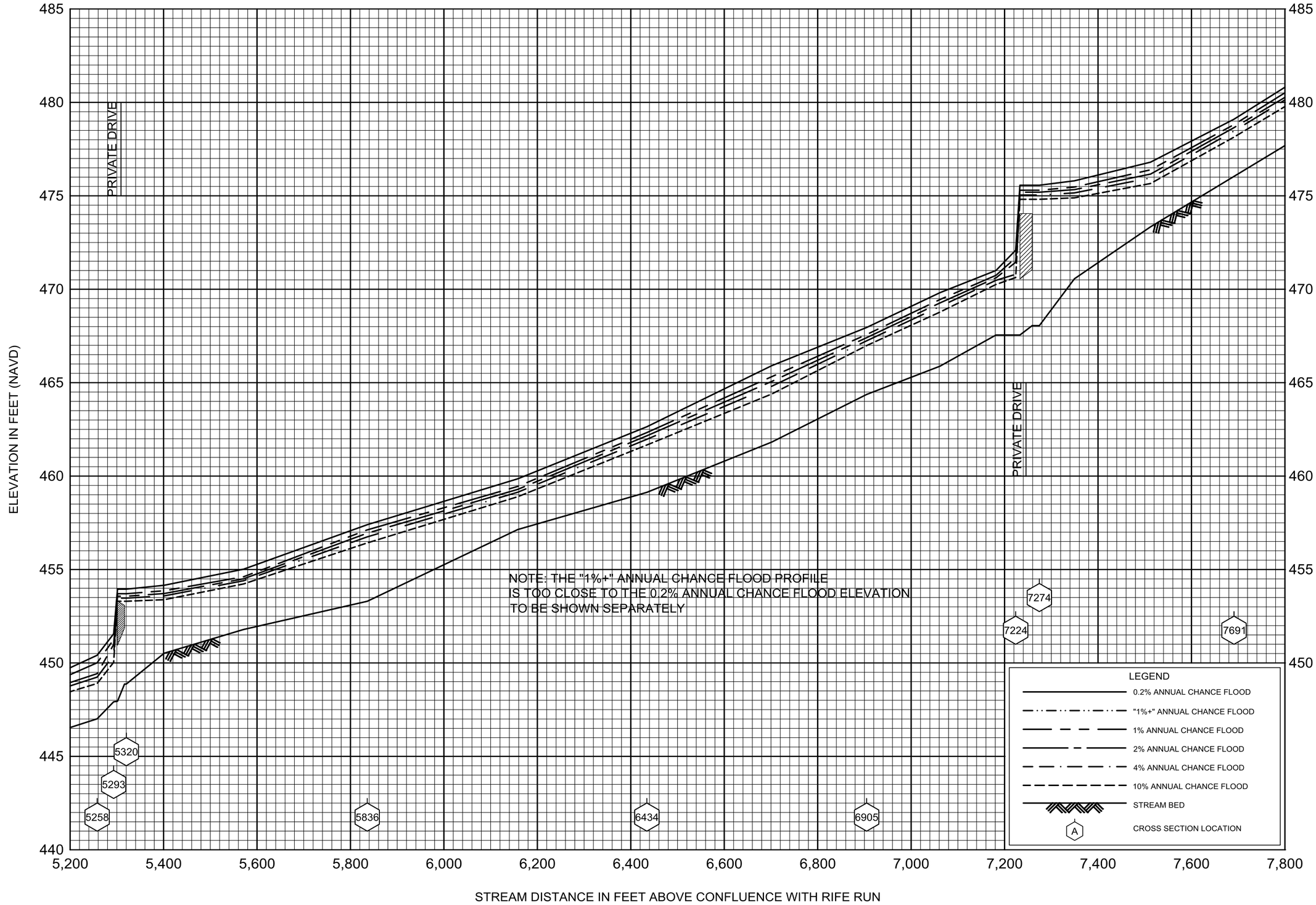
ORCHARD ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

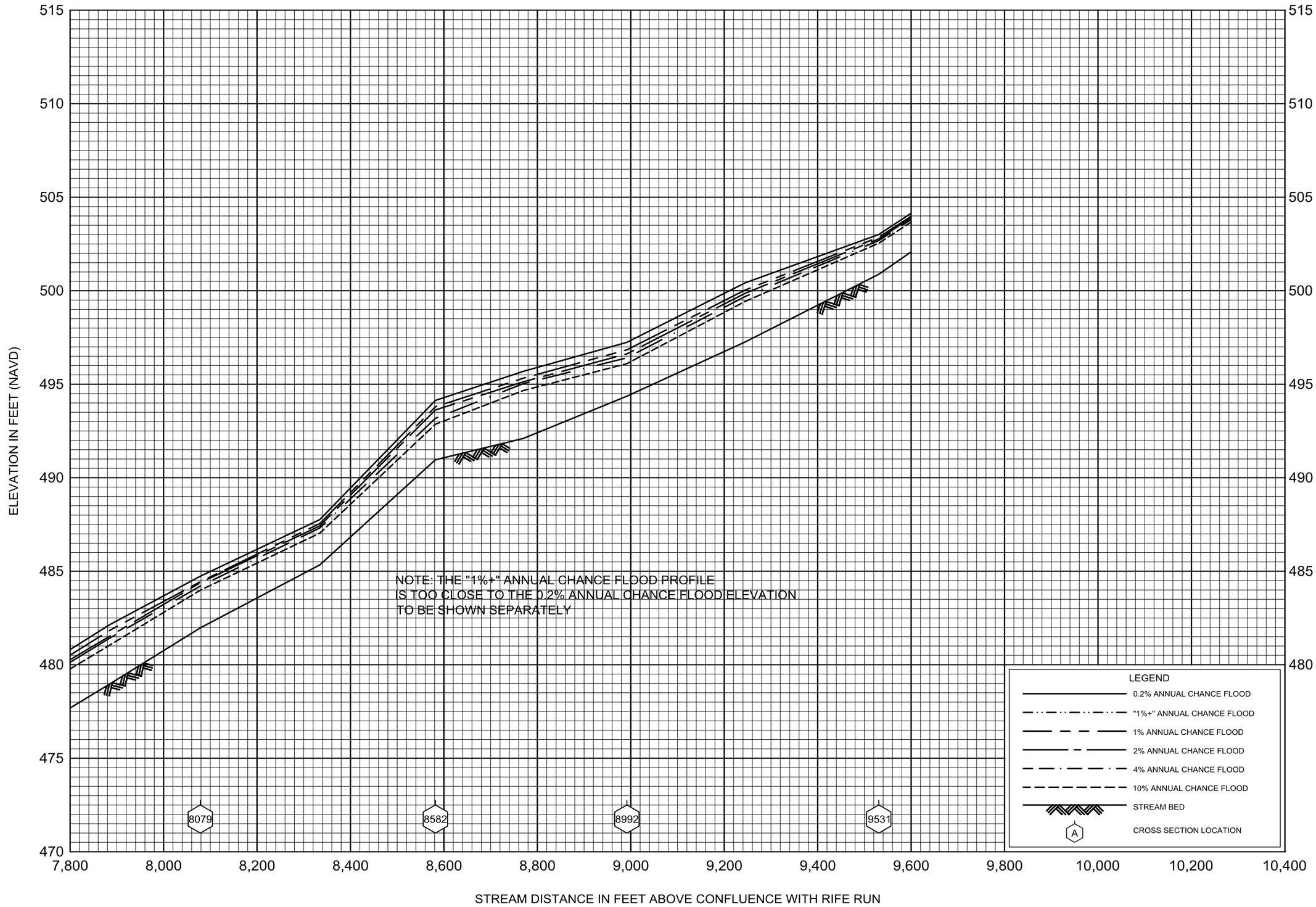
ORCHARD ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



FLOOD PROFILES

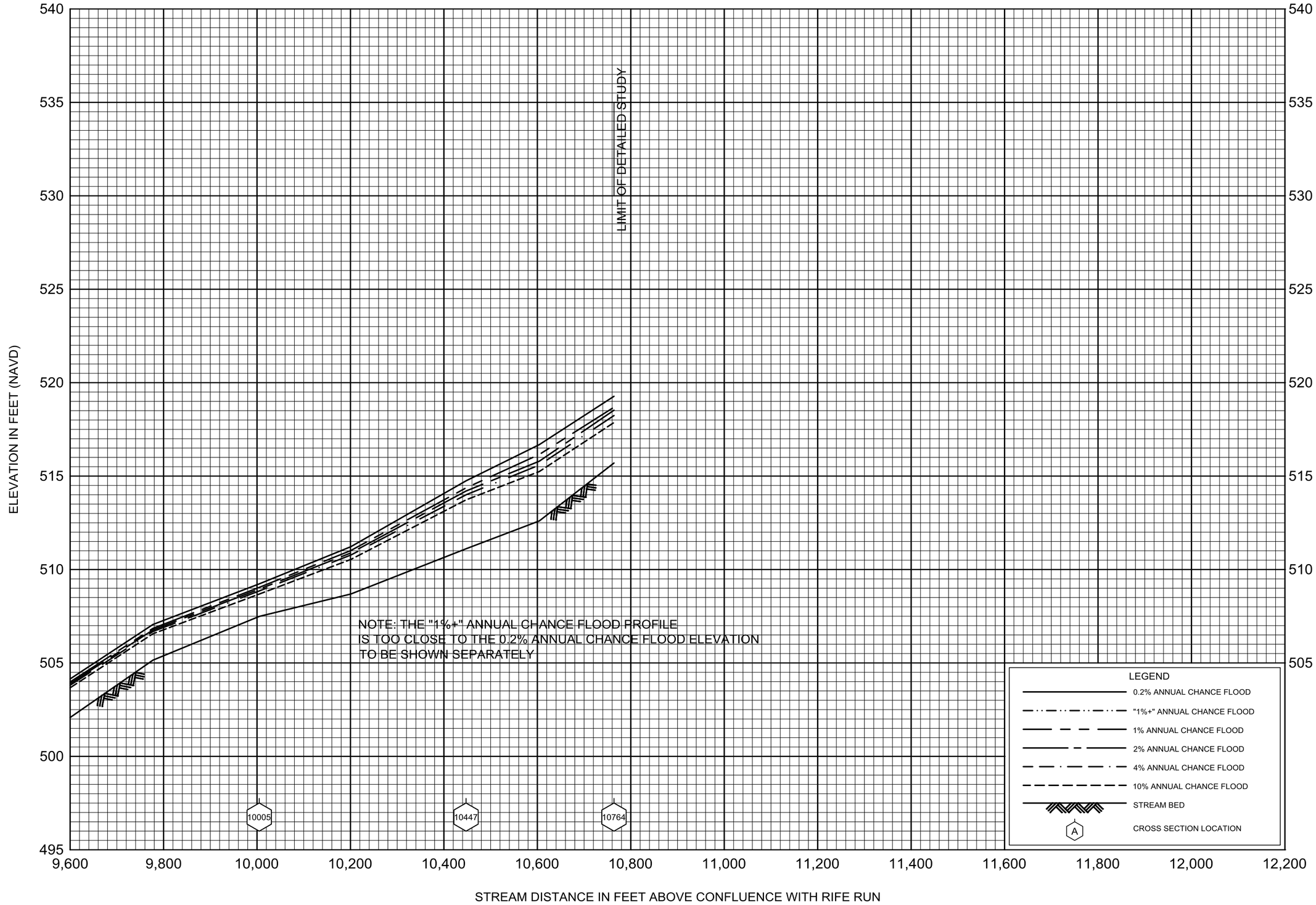
ORCHARD ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

04P



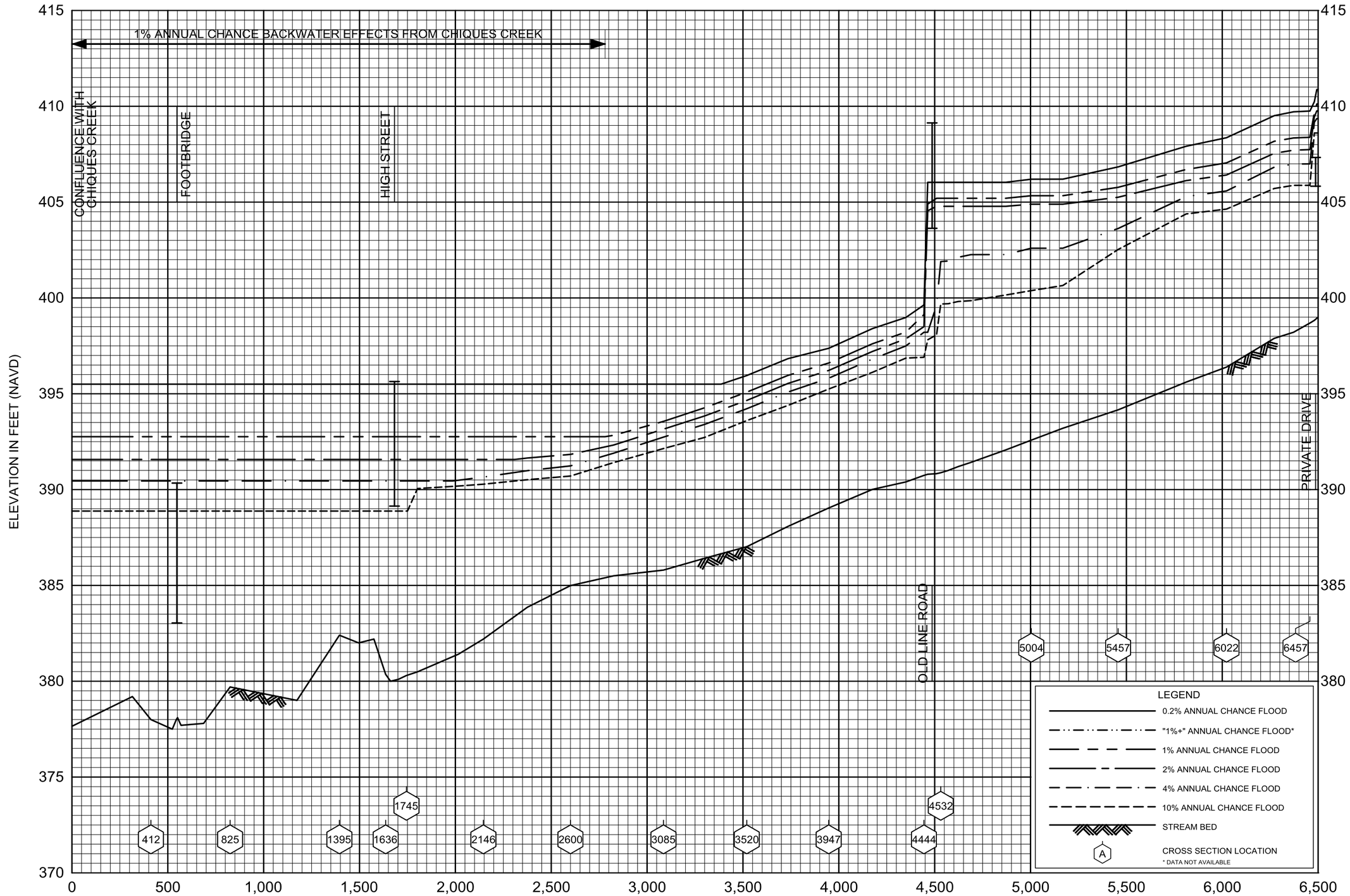
FLOOD PROFILES

ORCHARD ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

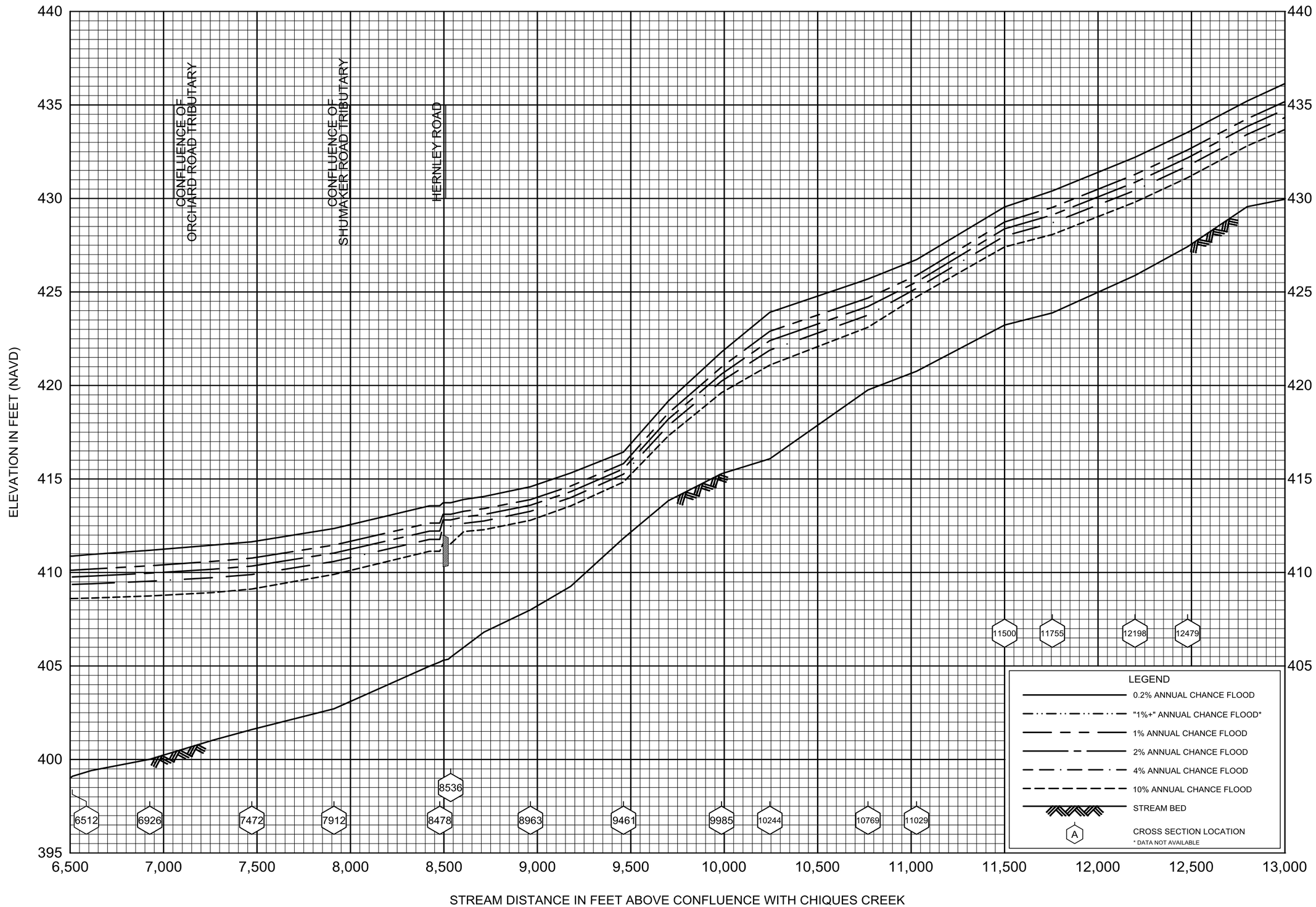
RIFE RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

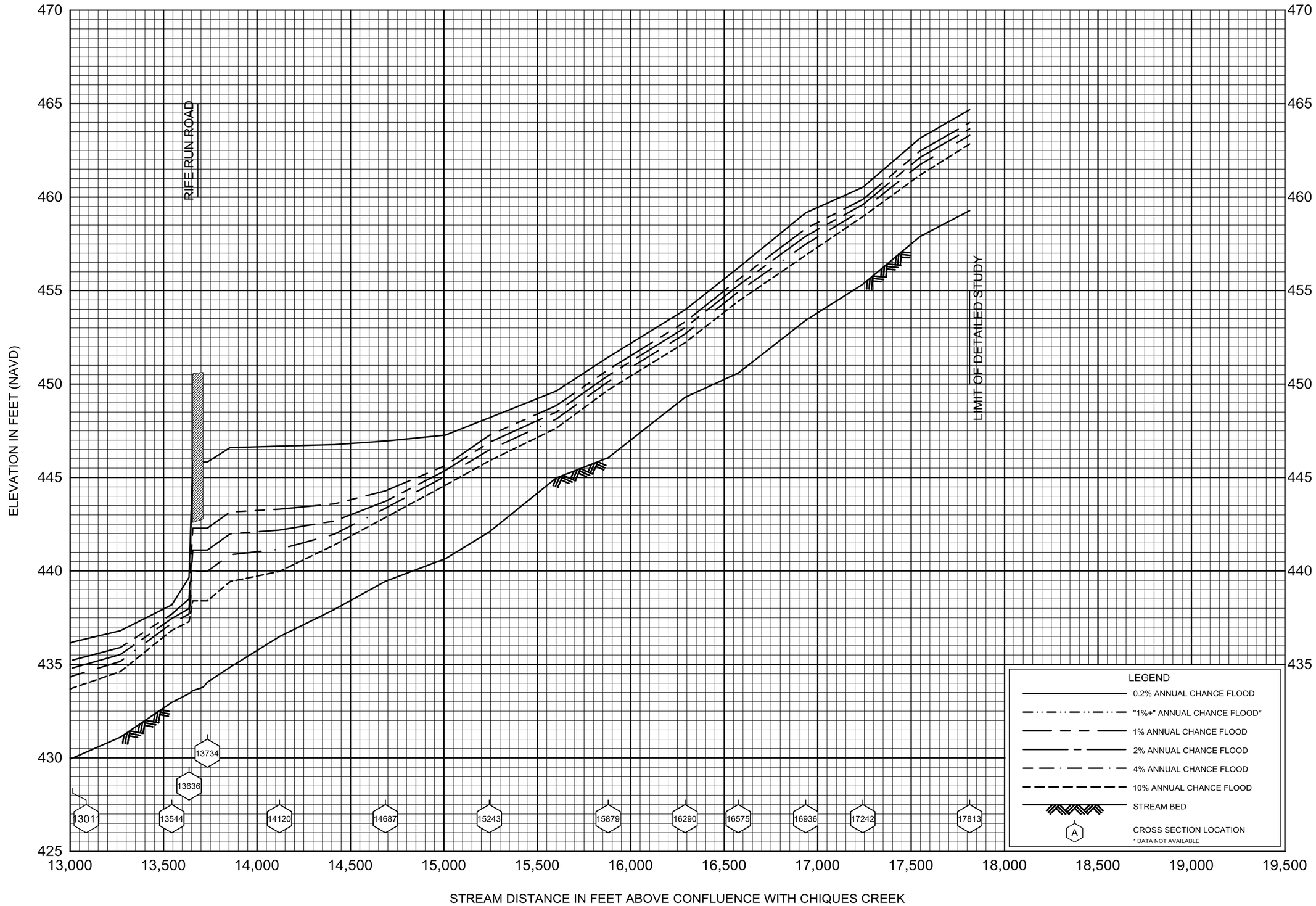
RIFE RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

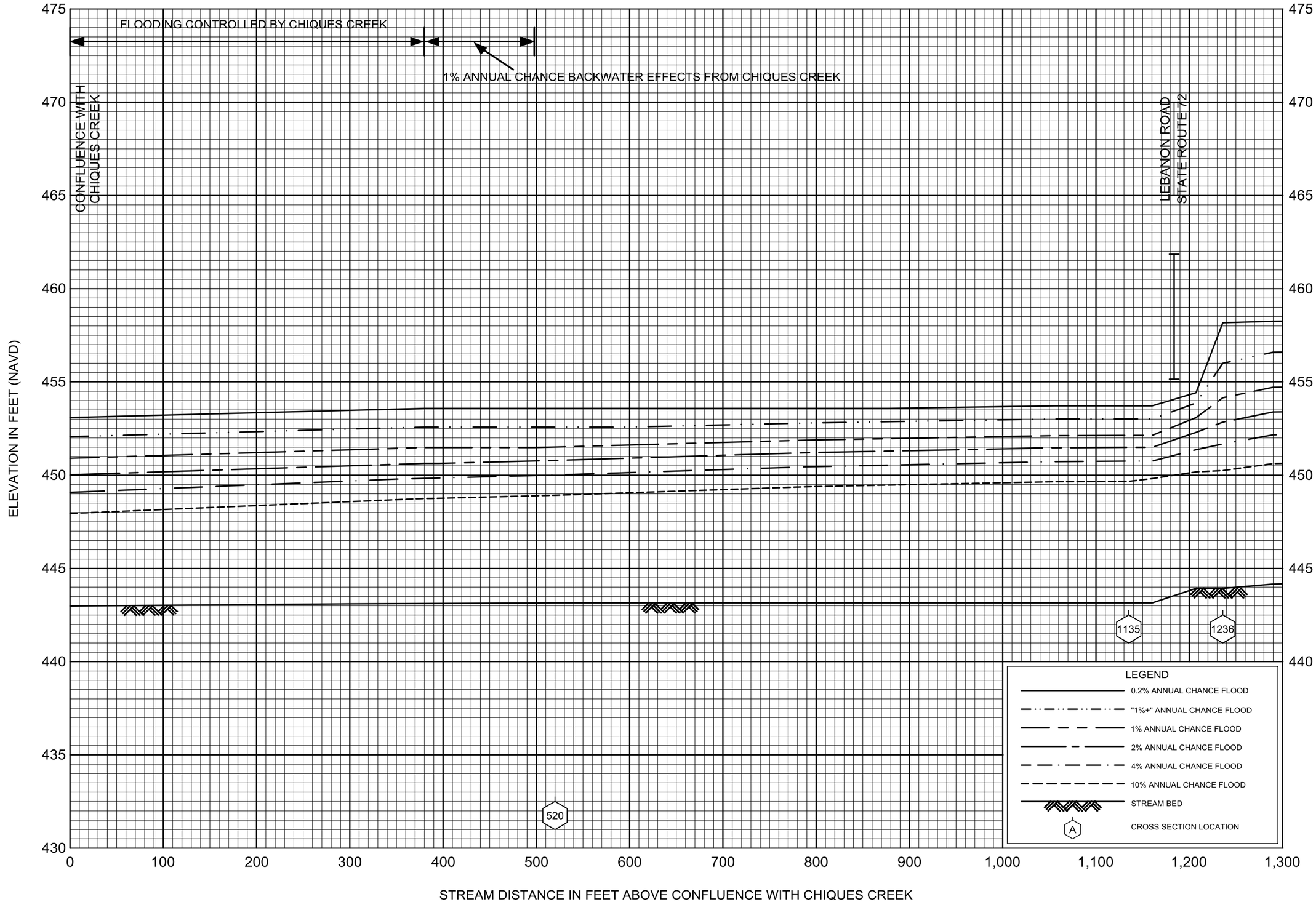
RIFE RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



FLOOD PROFILES

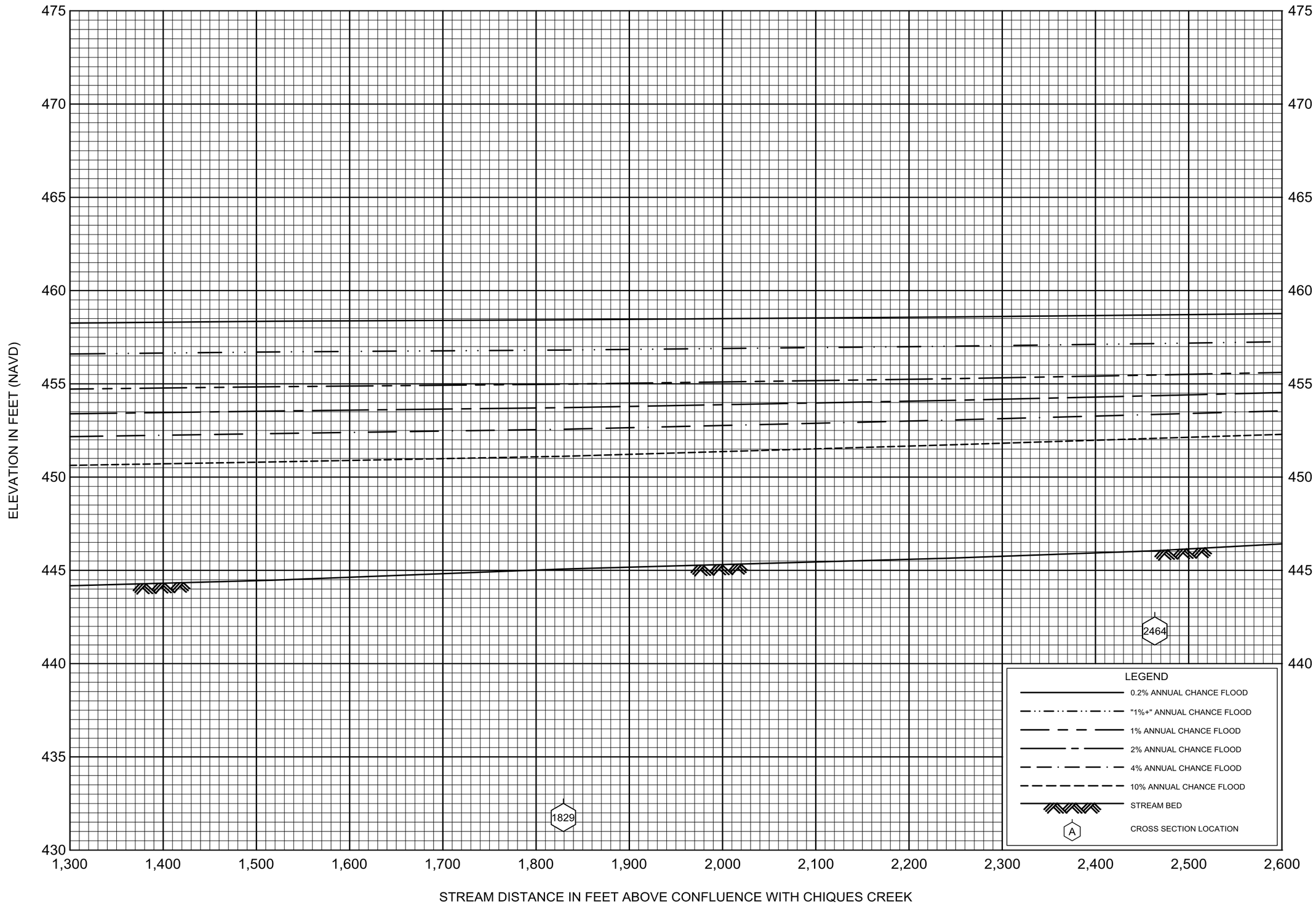
SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

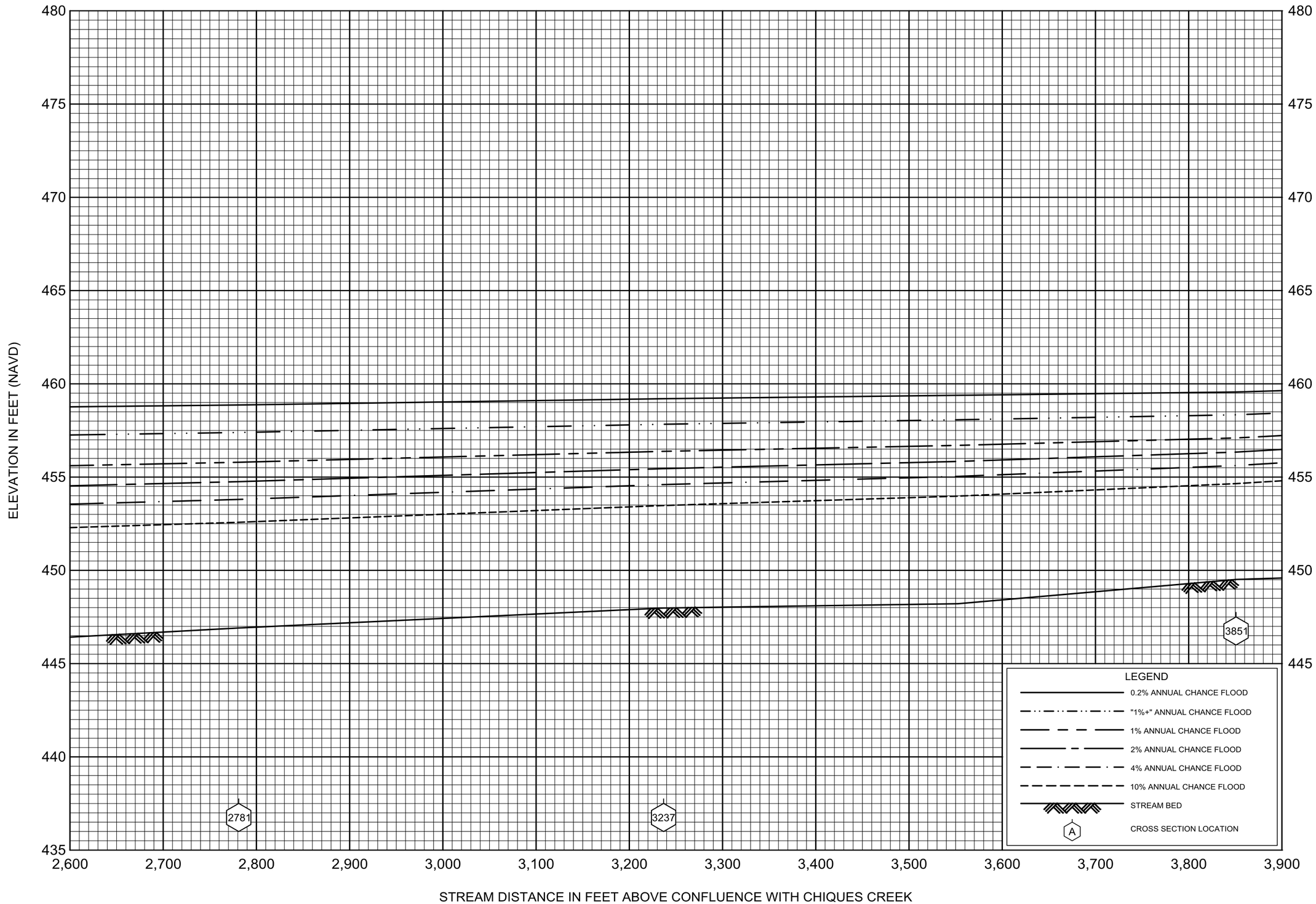
SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

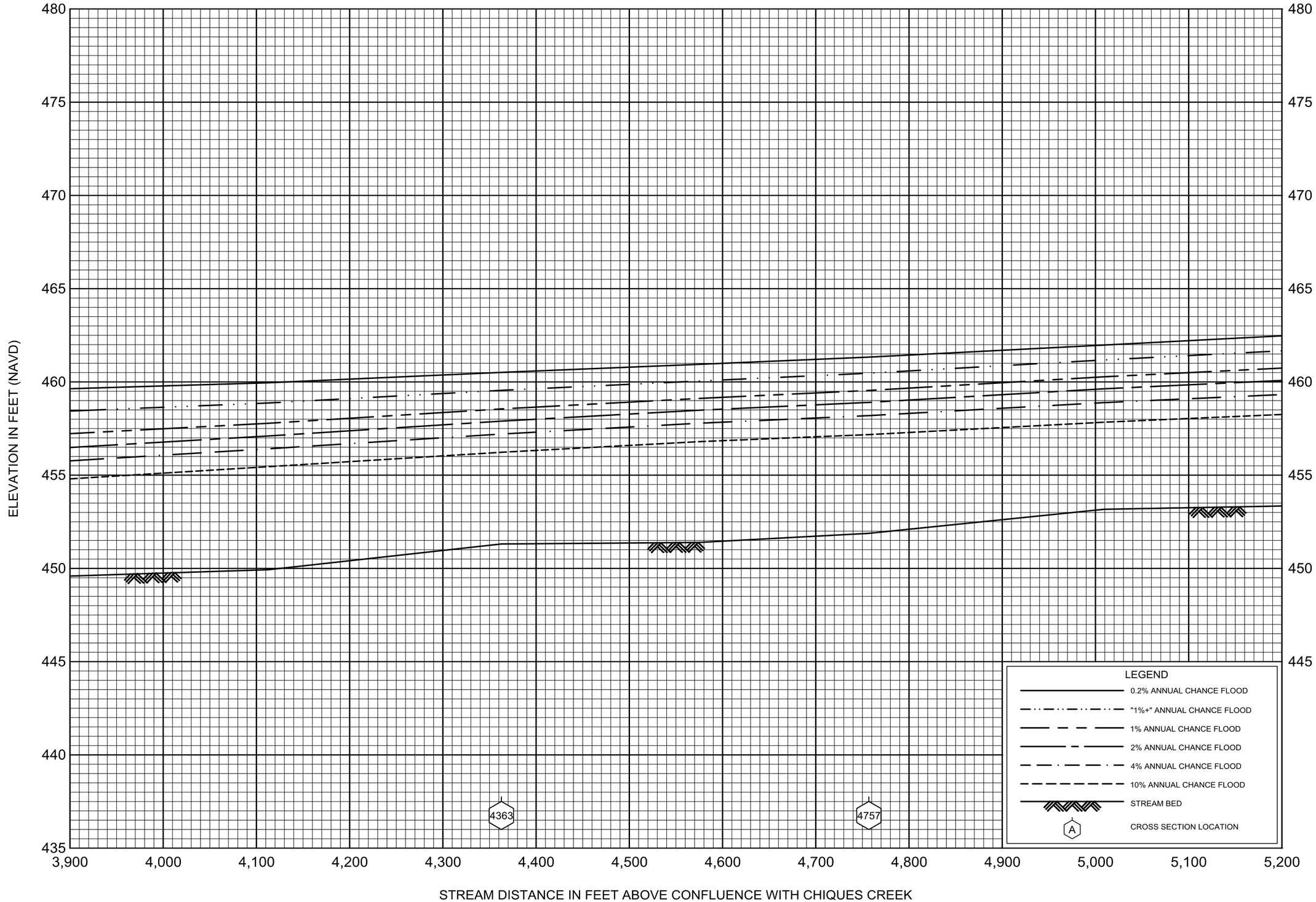
SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



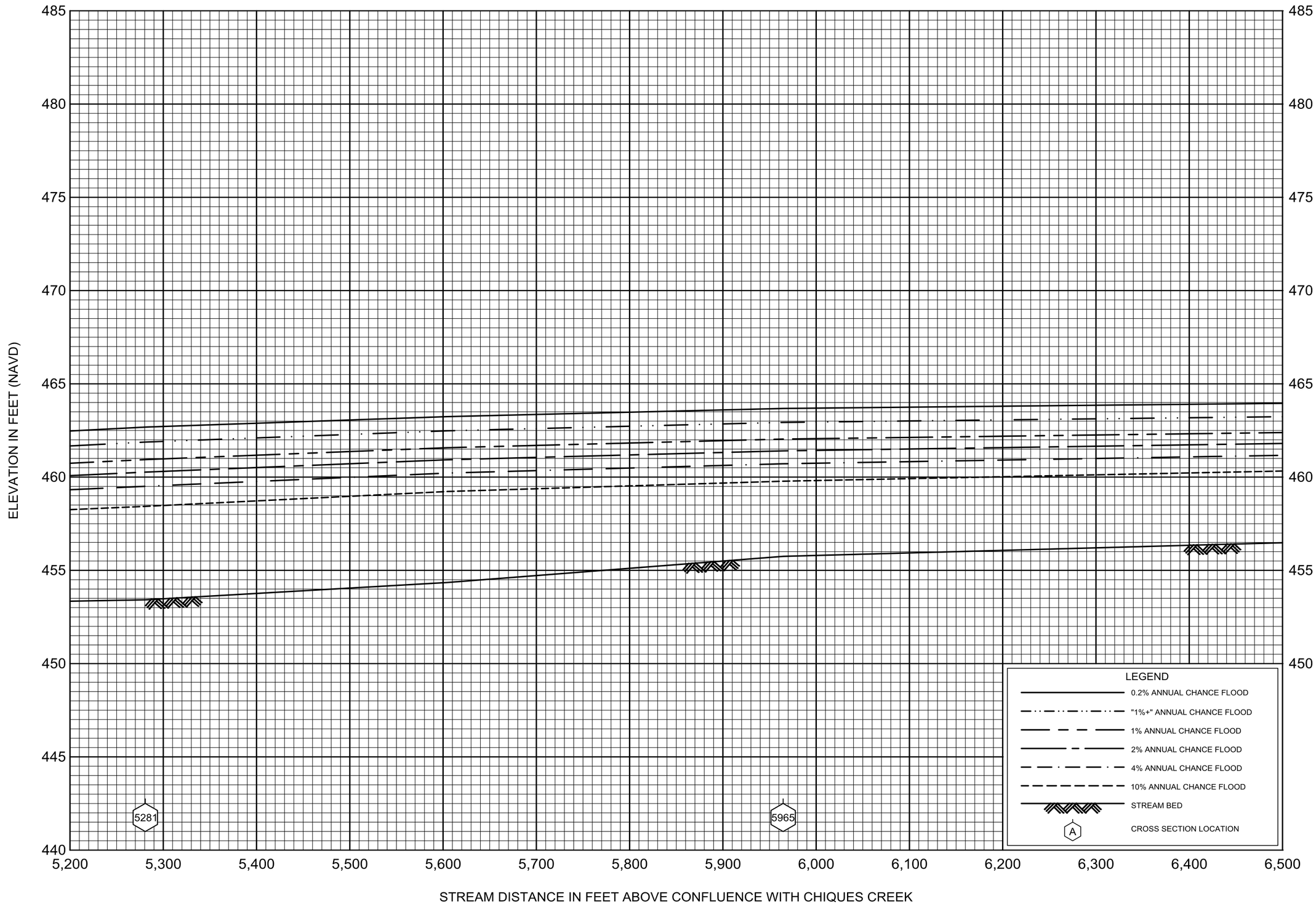
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



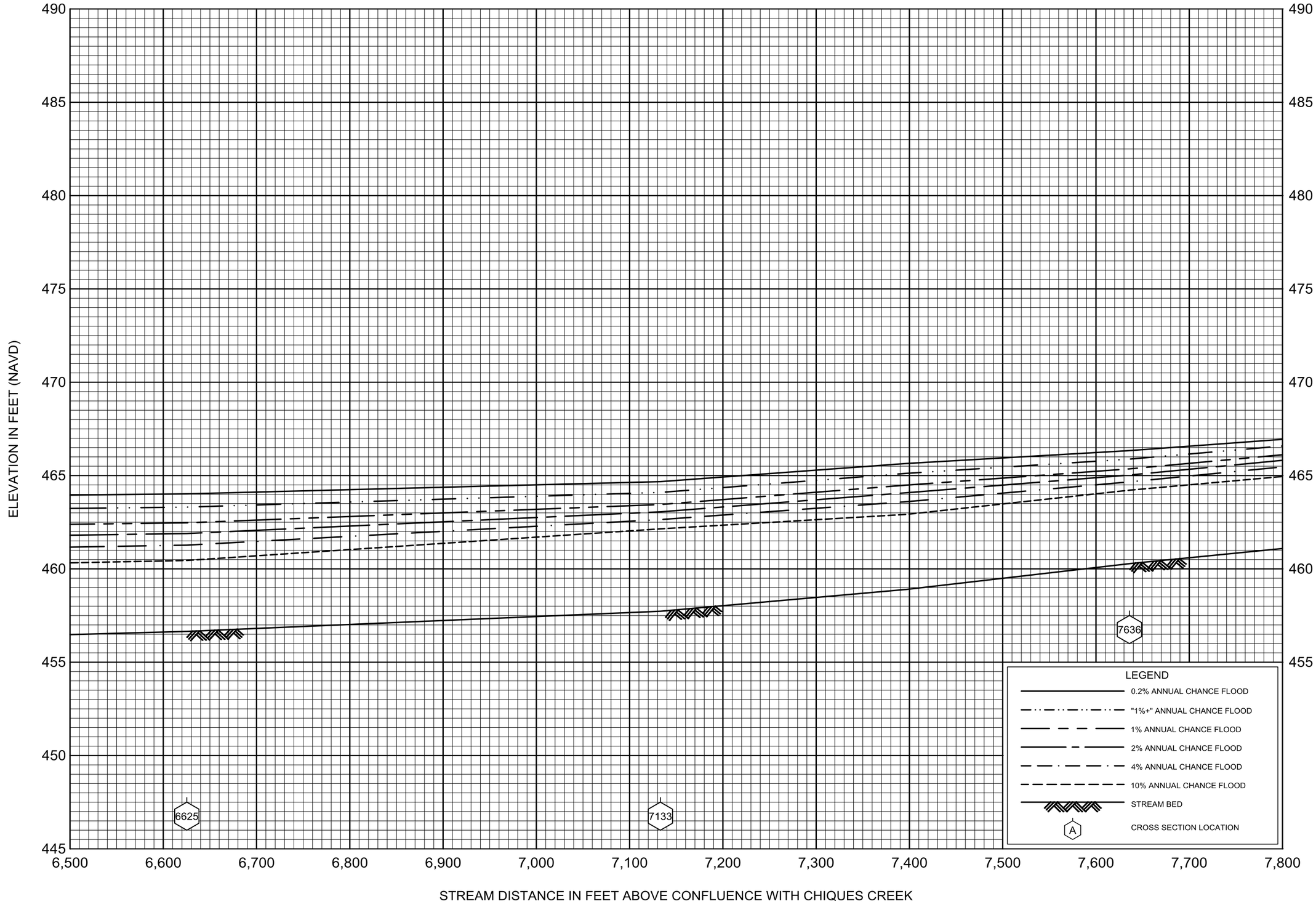
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

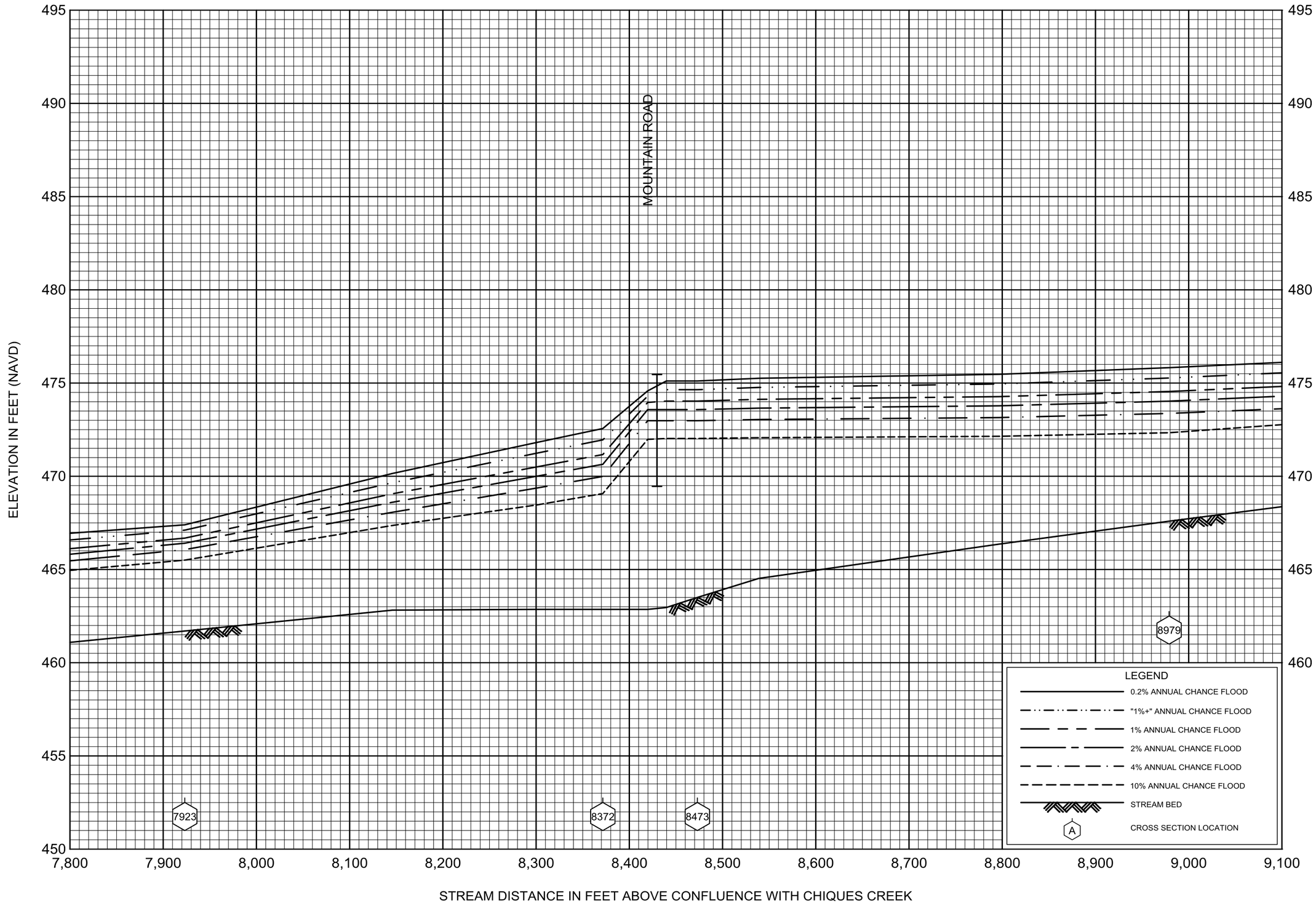
SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

06P



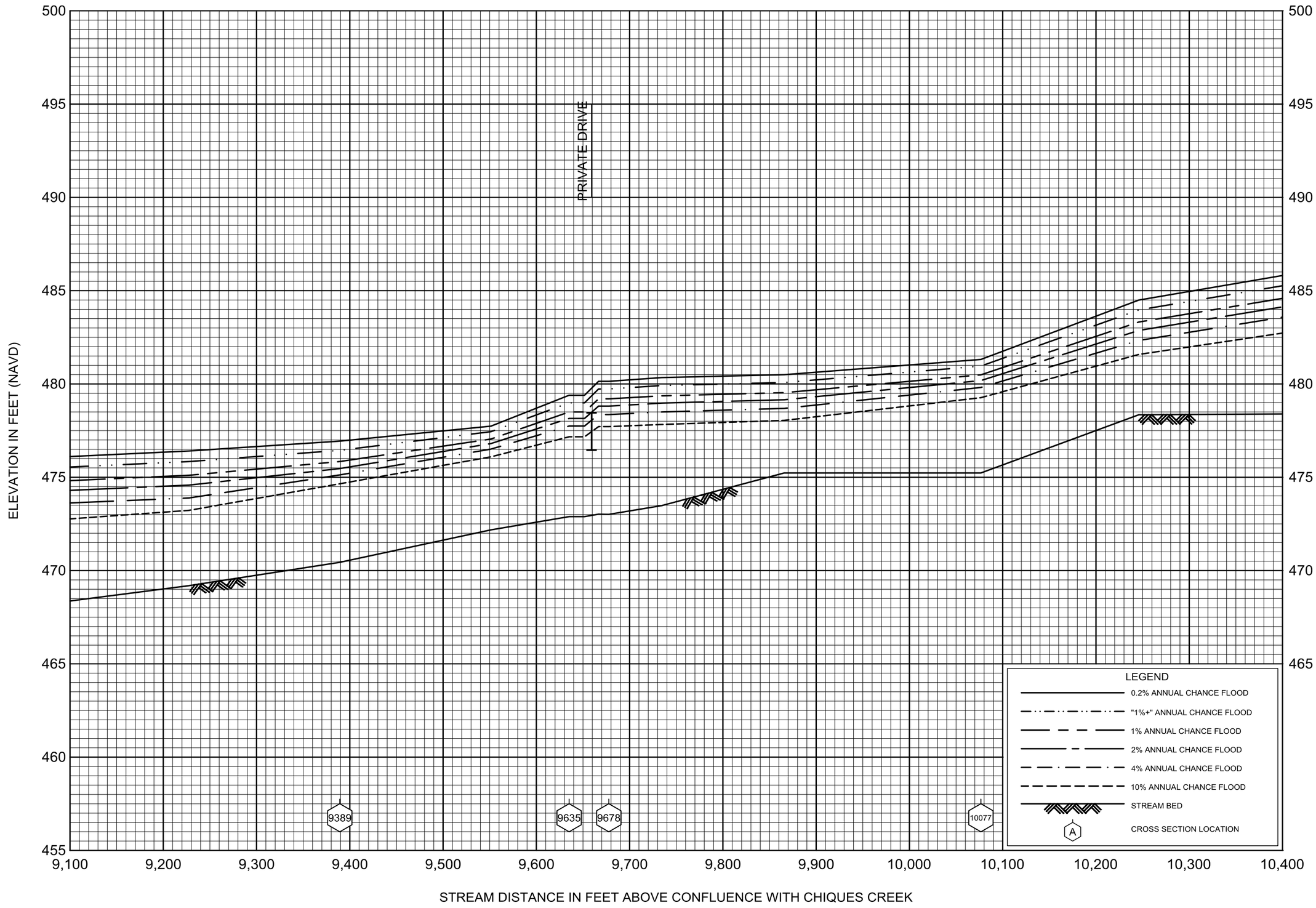
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



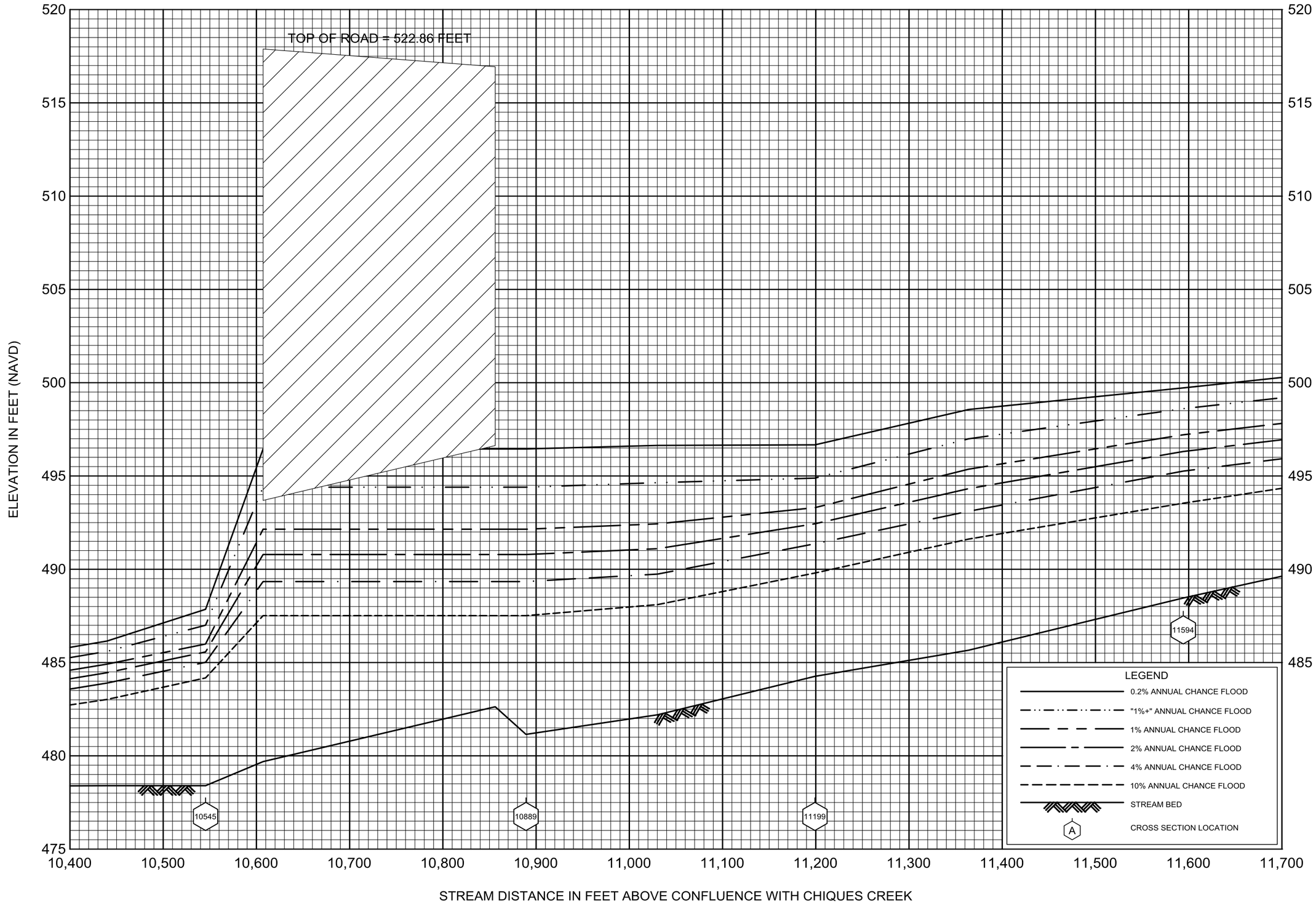
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

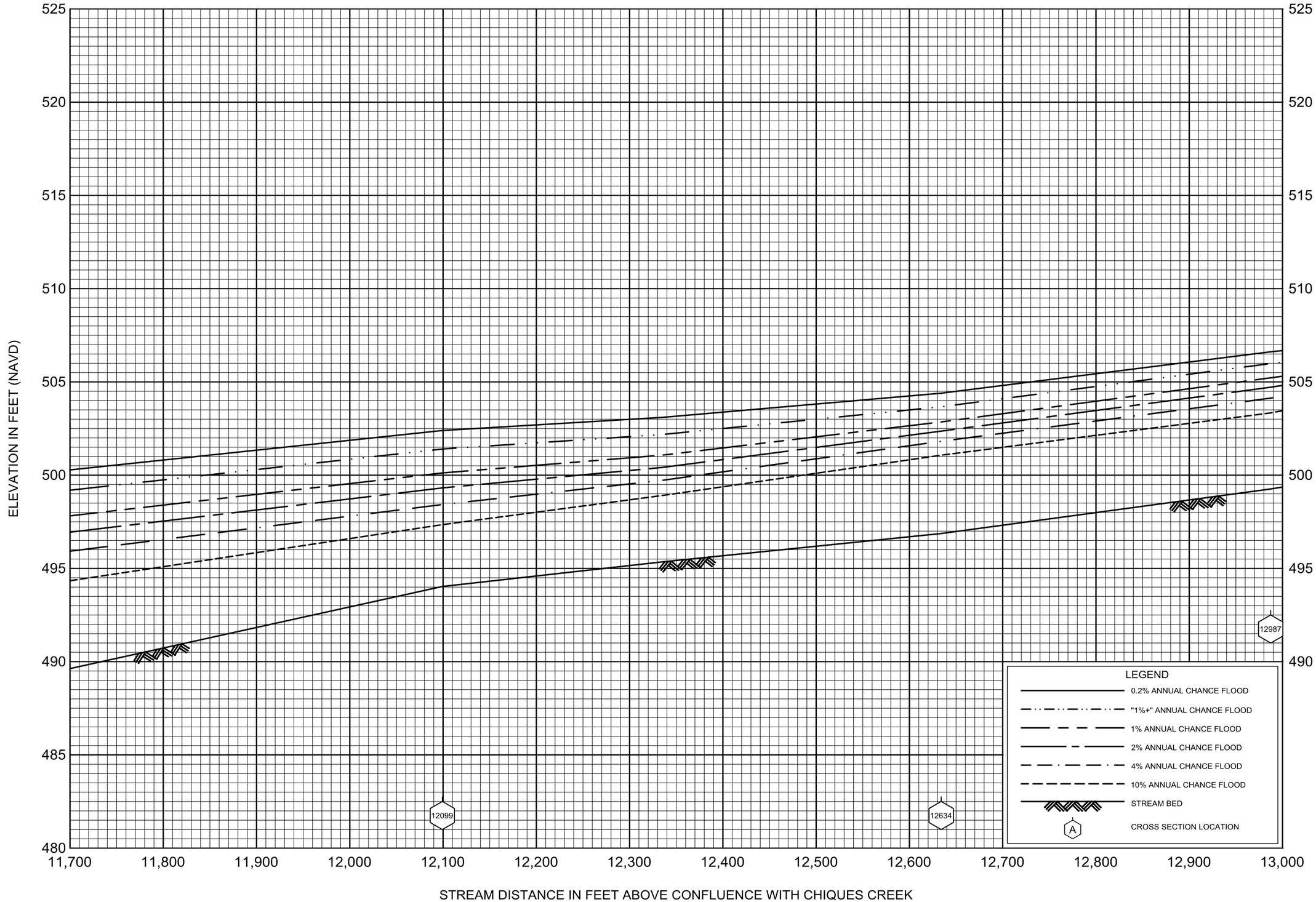
SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

09P



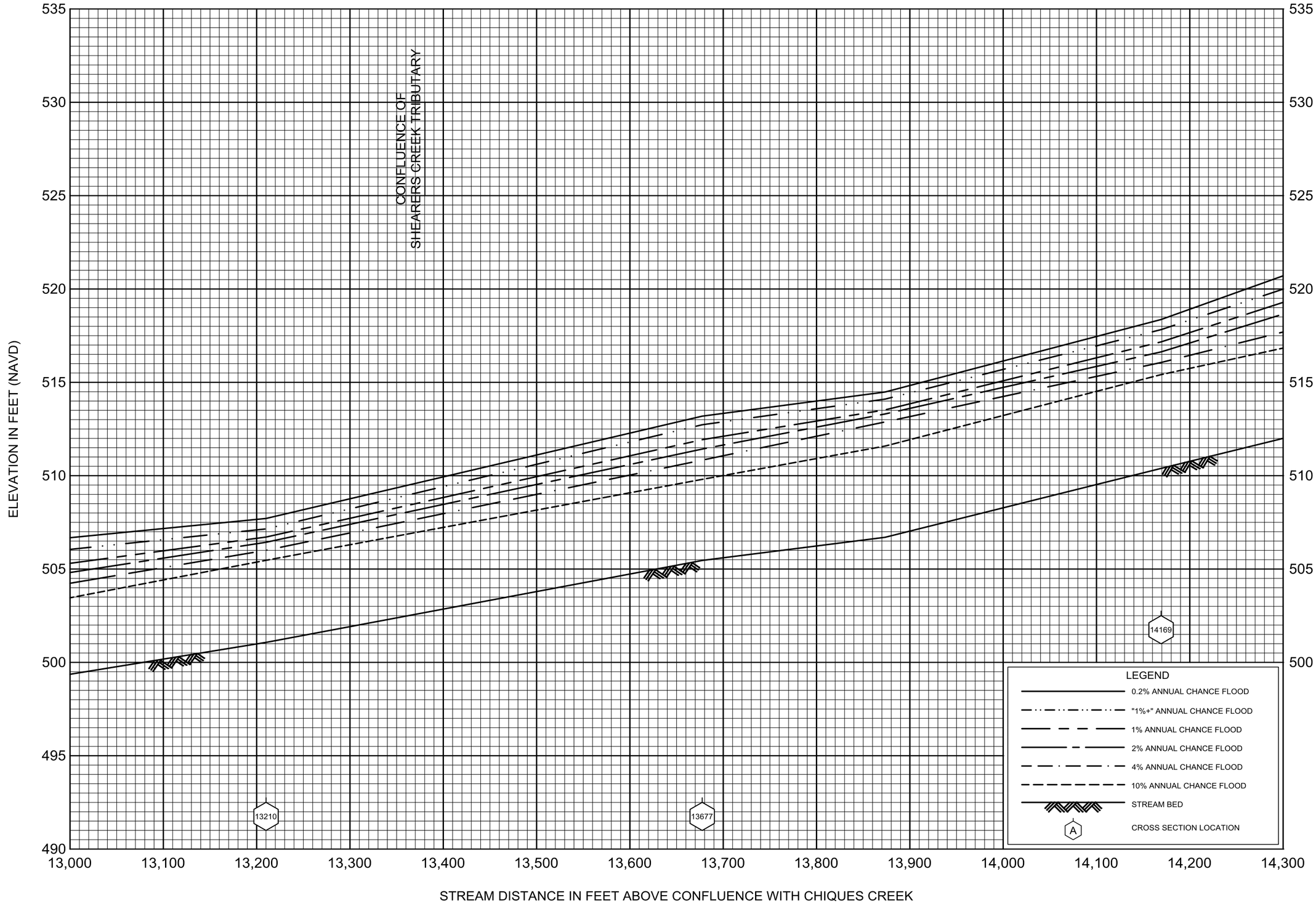
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



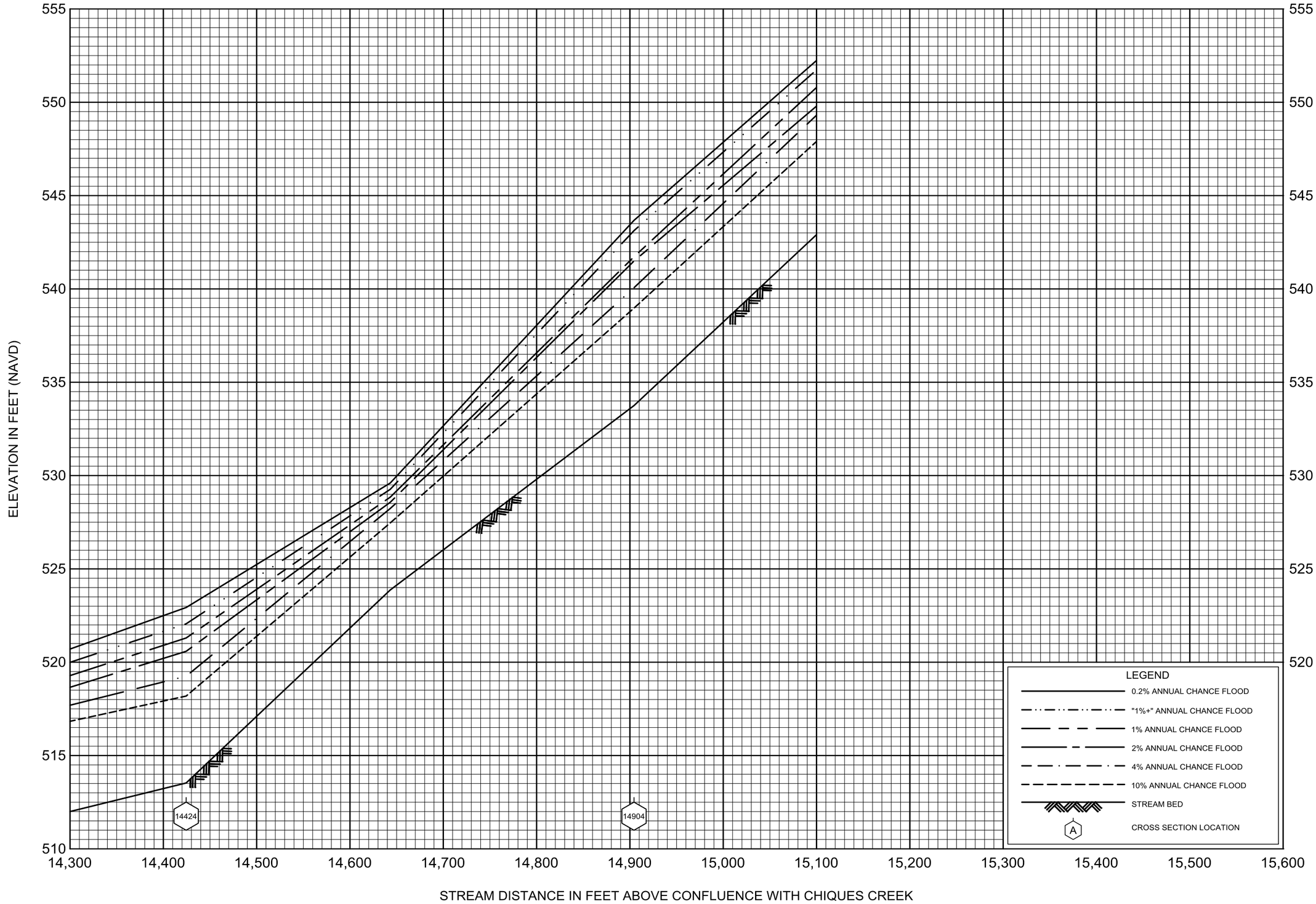
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



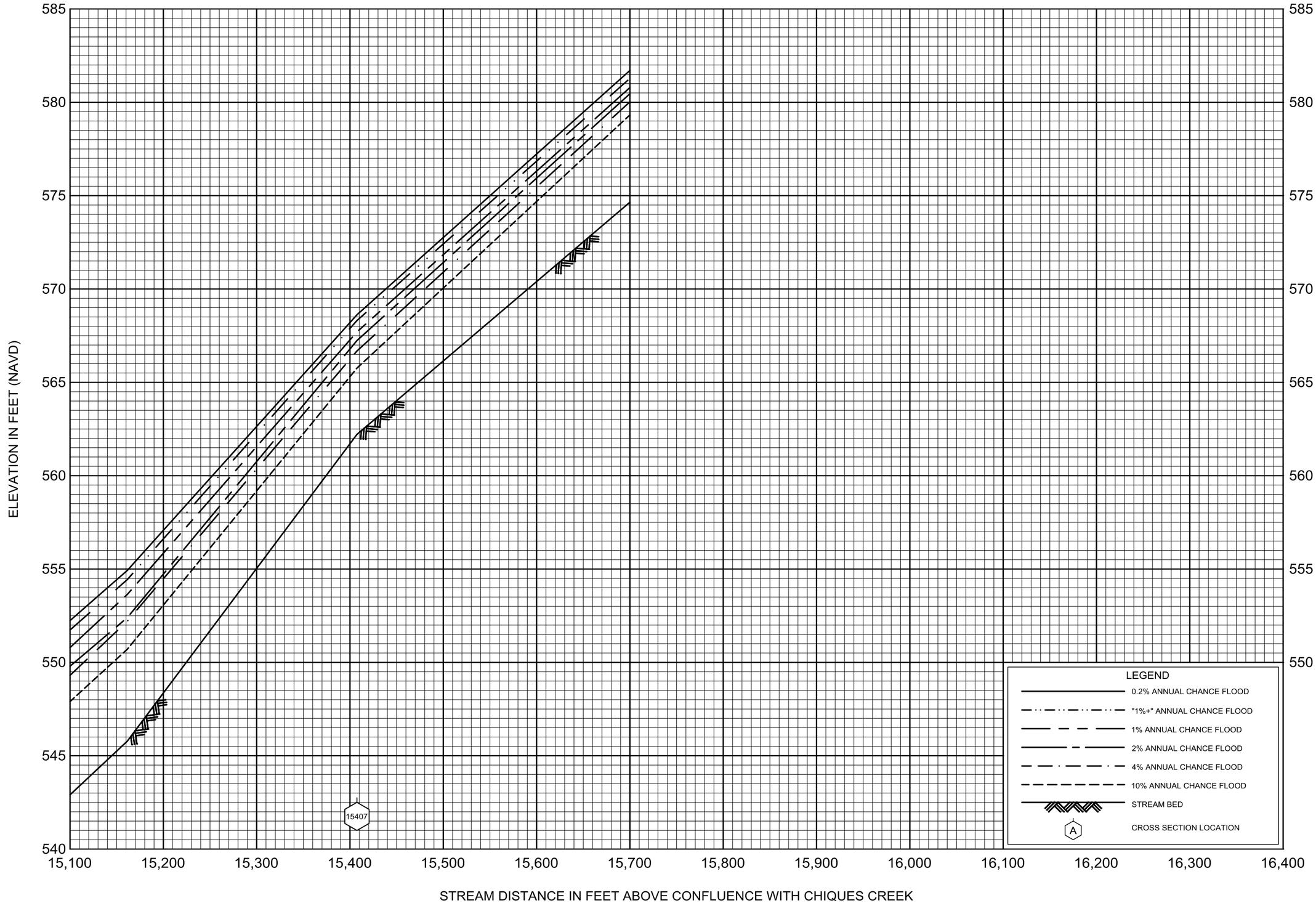
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



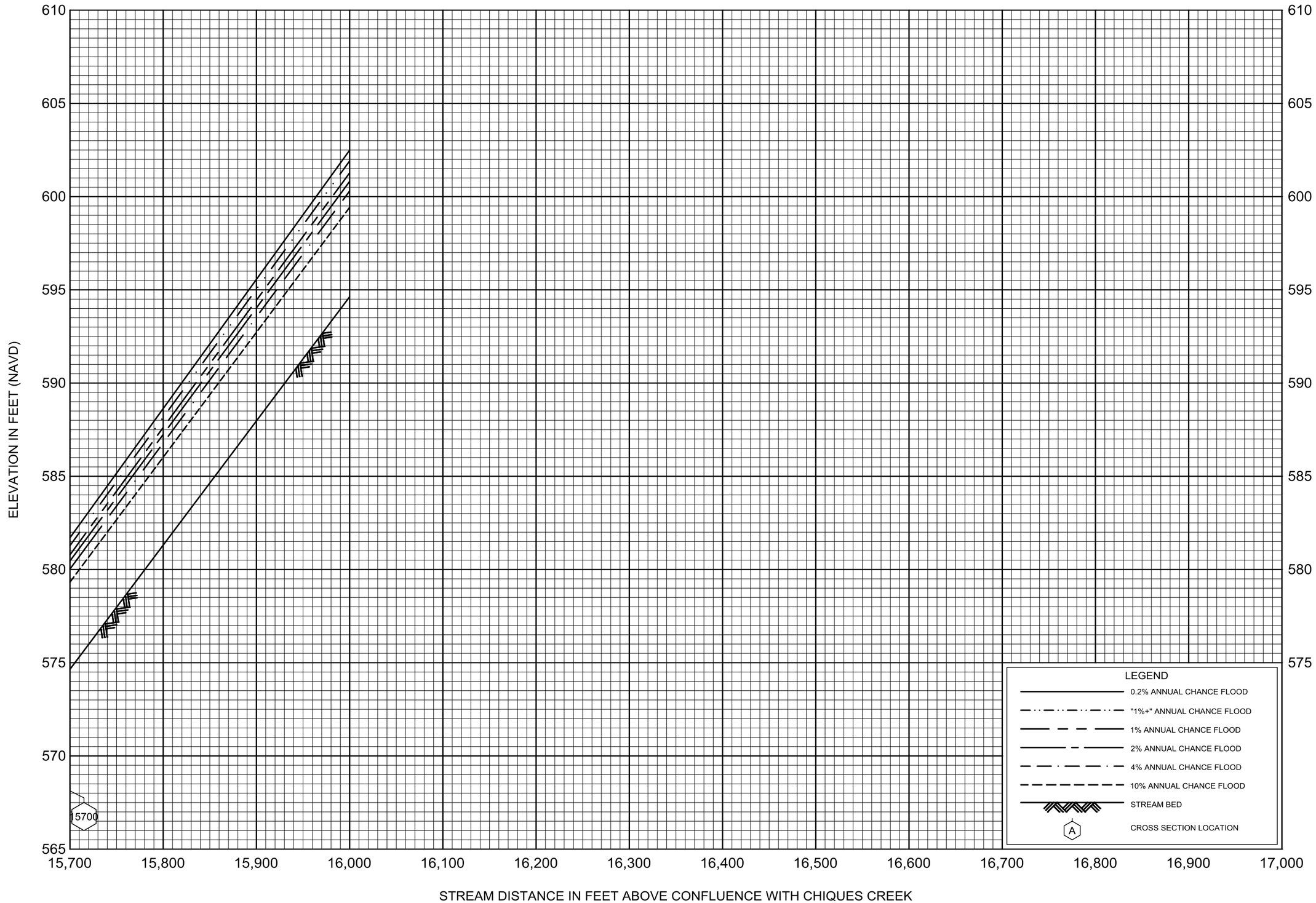
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



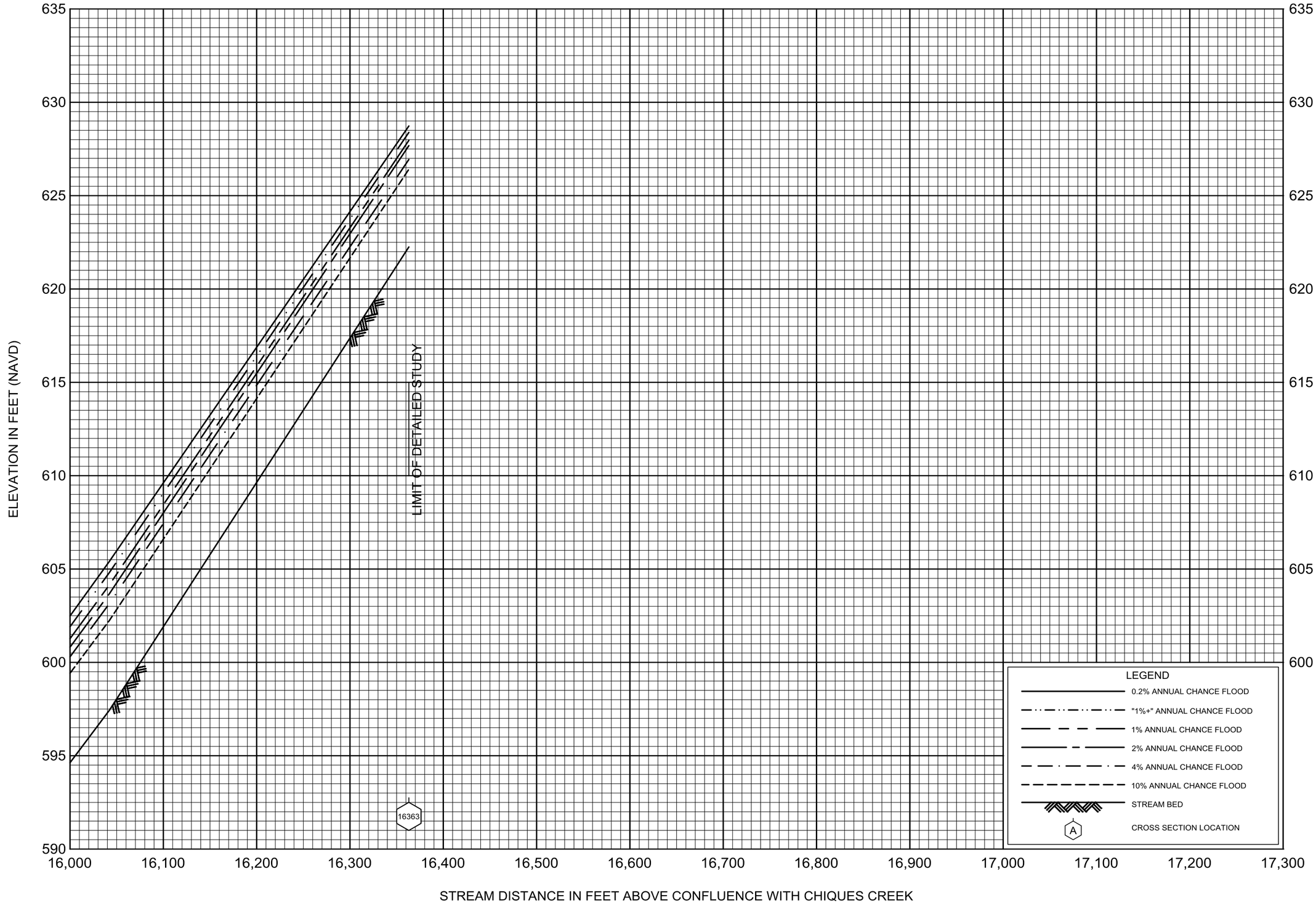
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



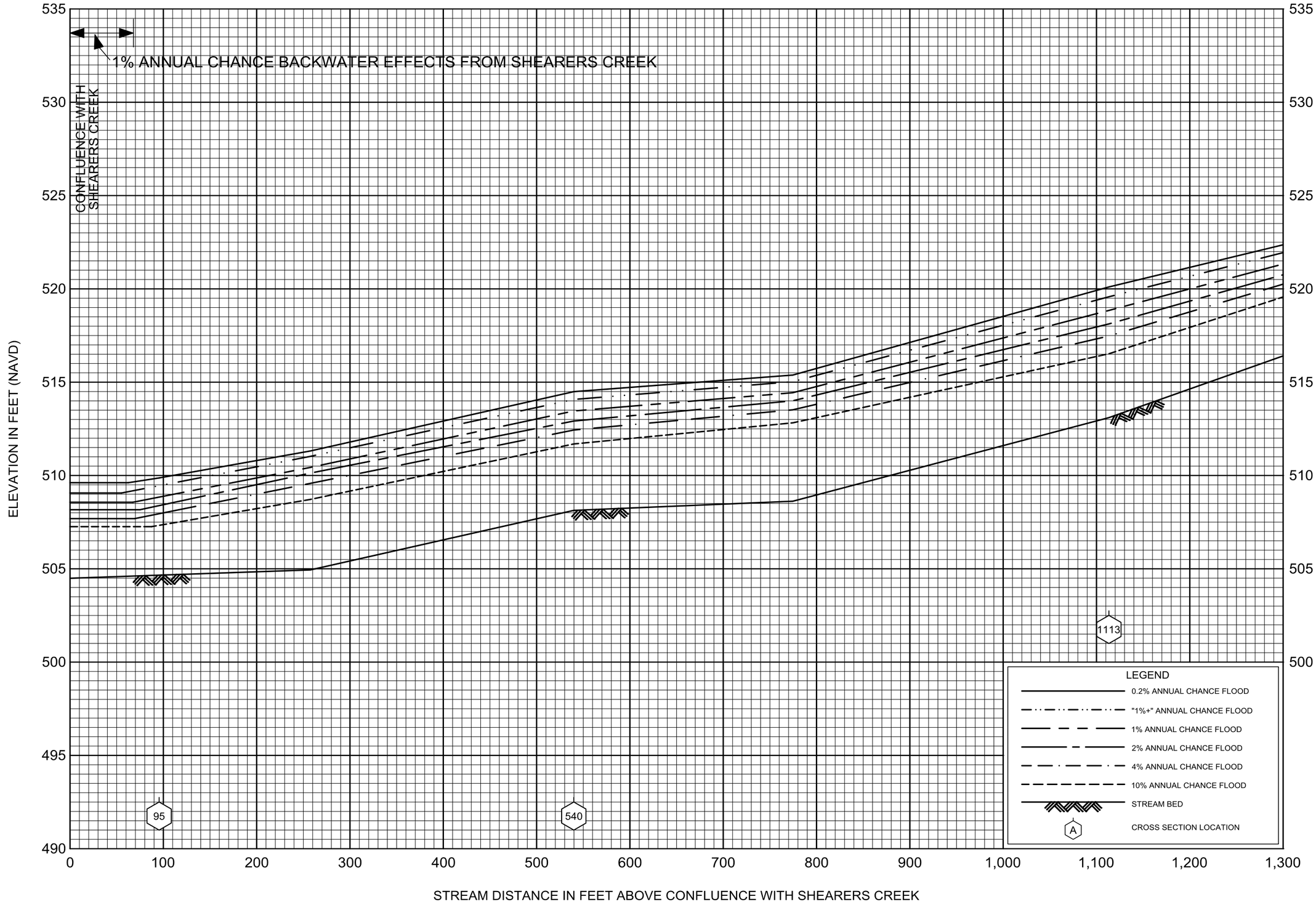
FLOOD PROFILES

SHEARERS CREEK

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

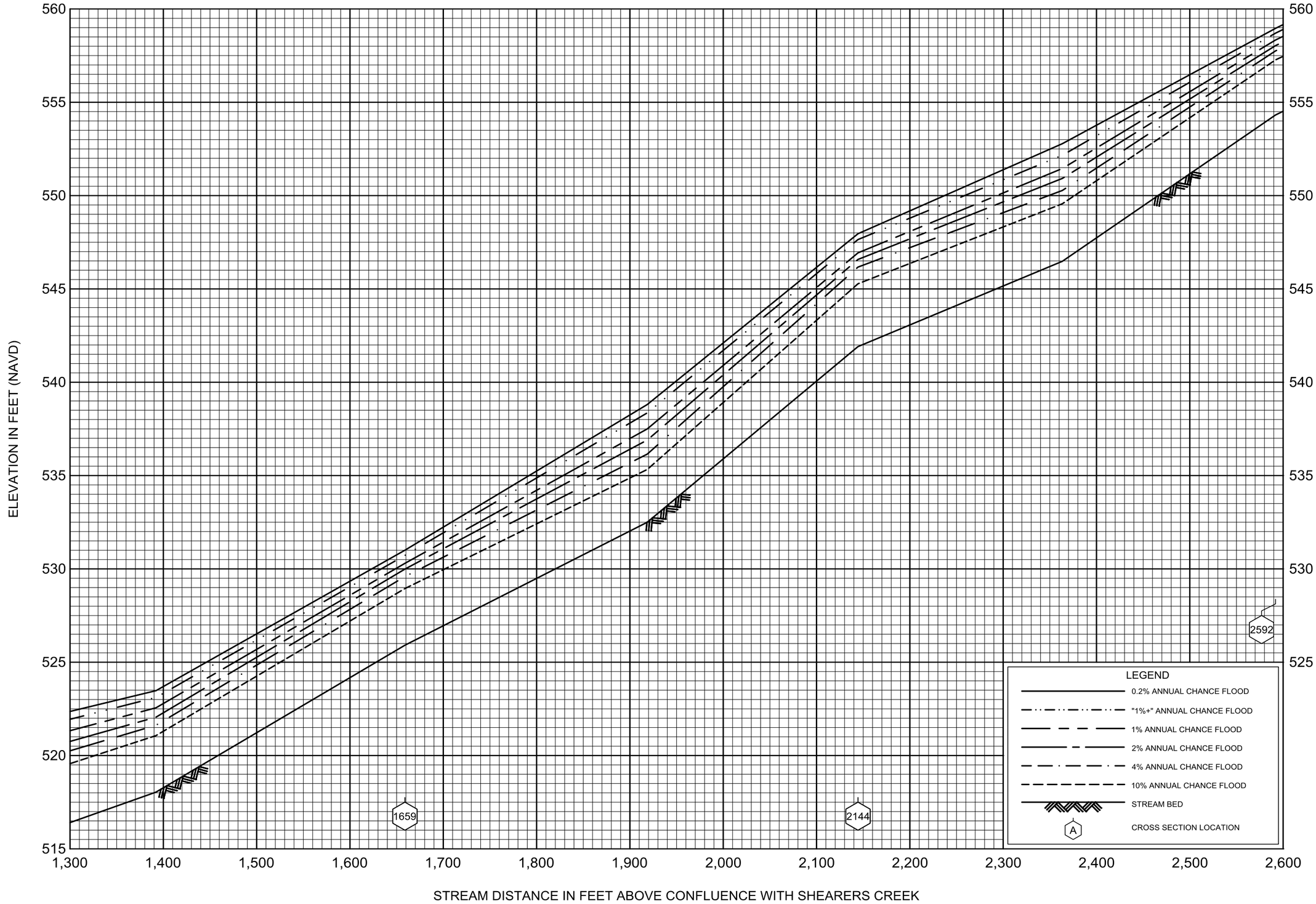
SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



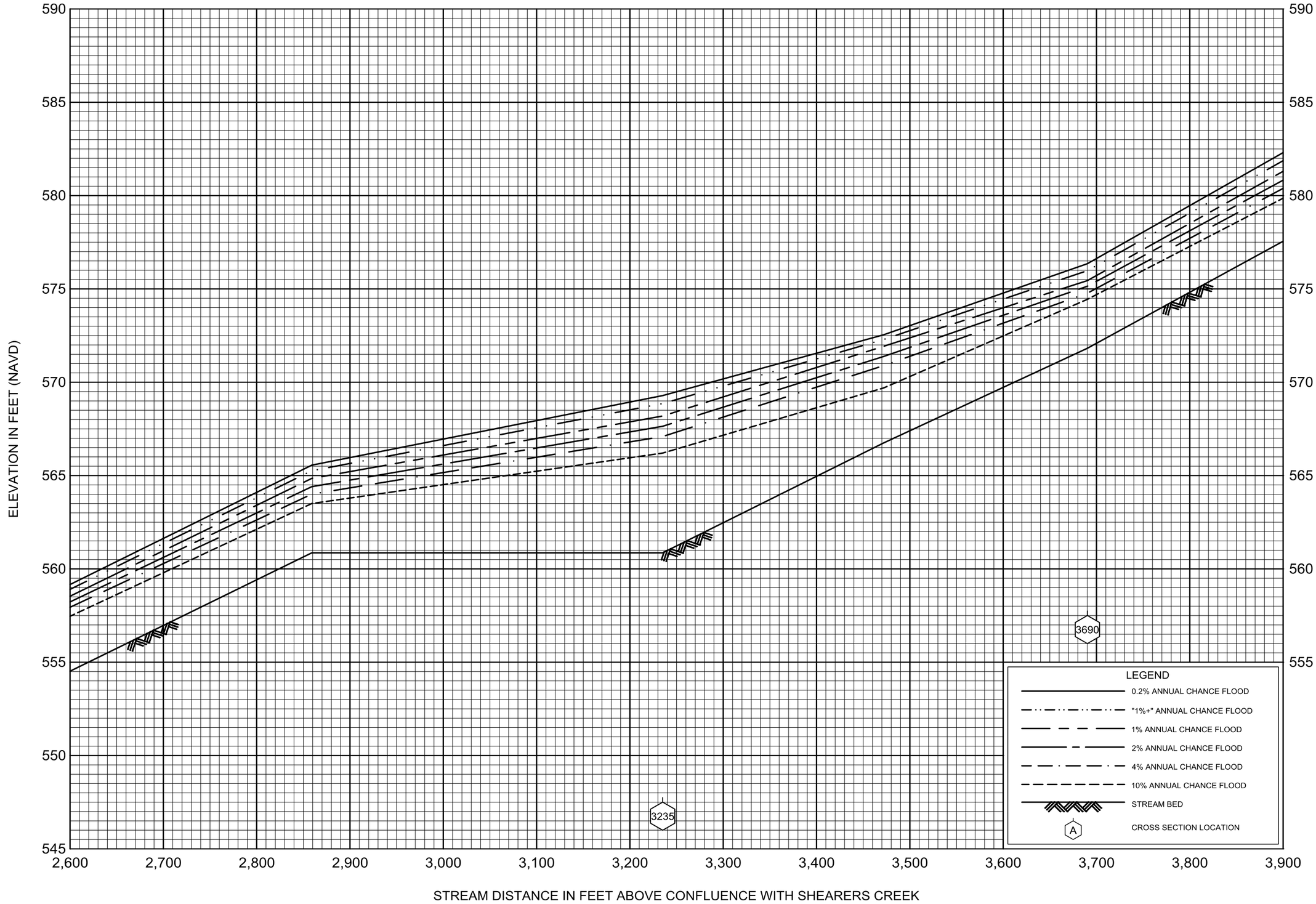
FLOOD PROFILES

SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

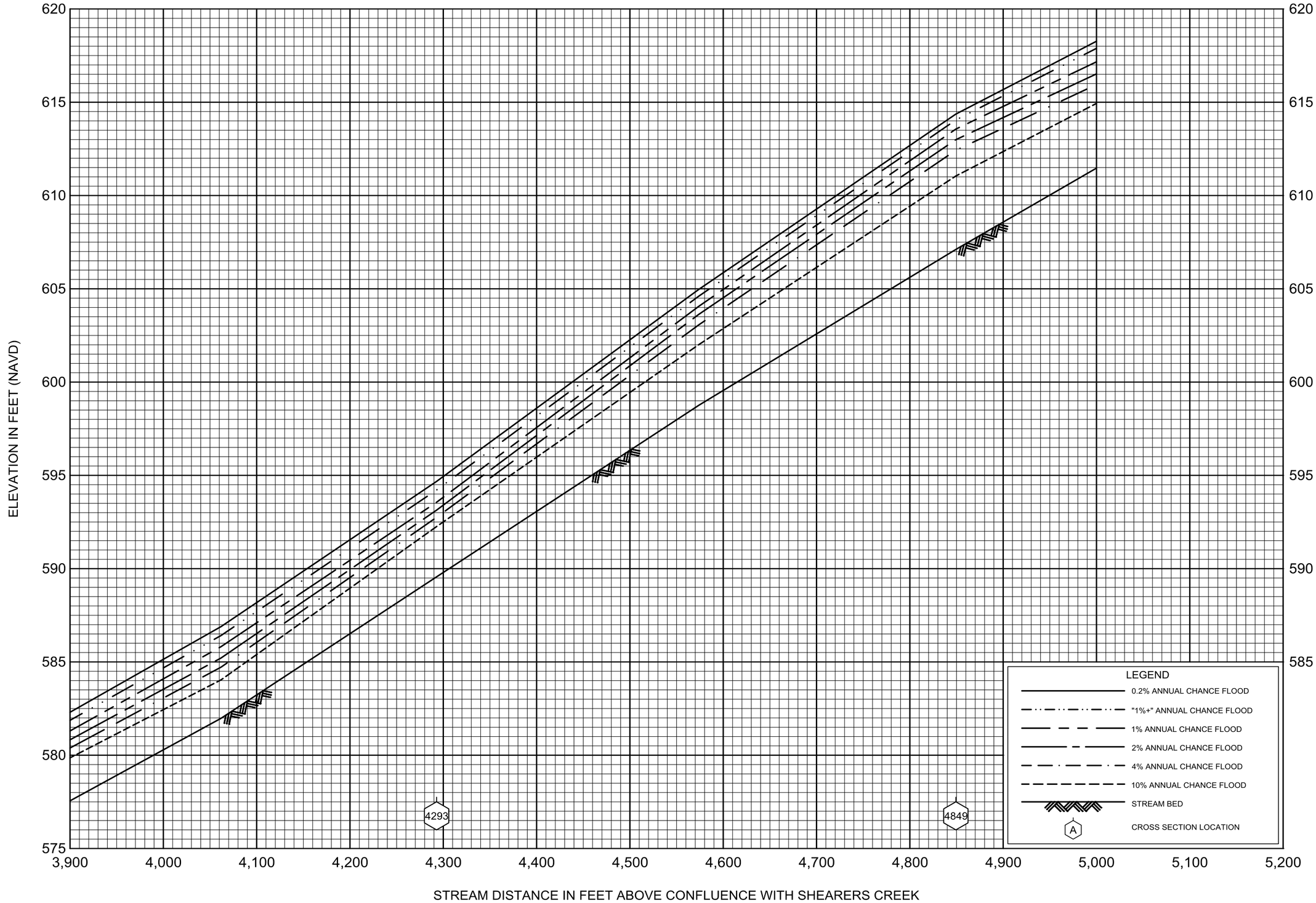
SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



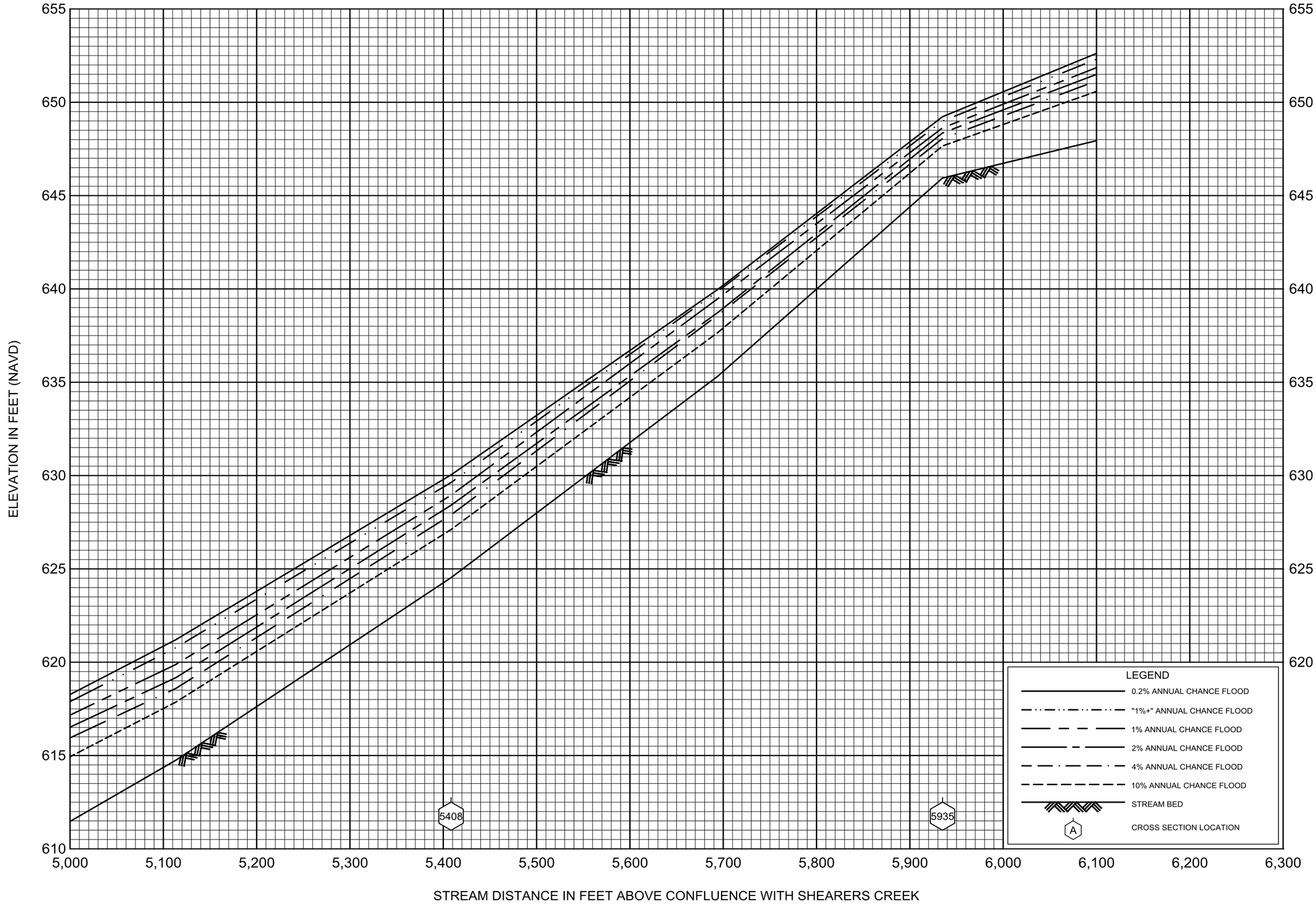
FLOOD PROFILES

SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

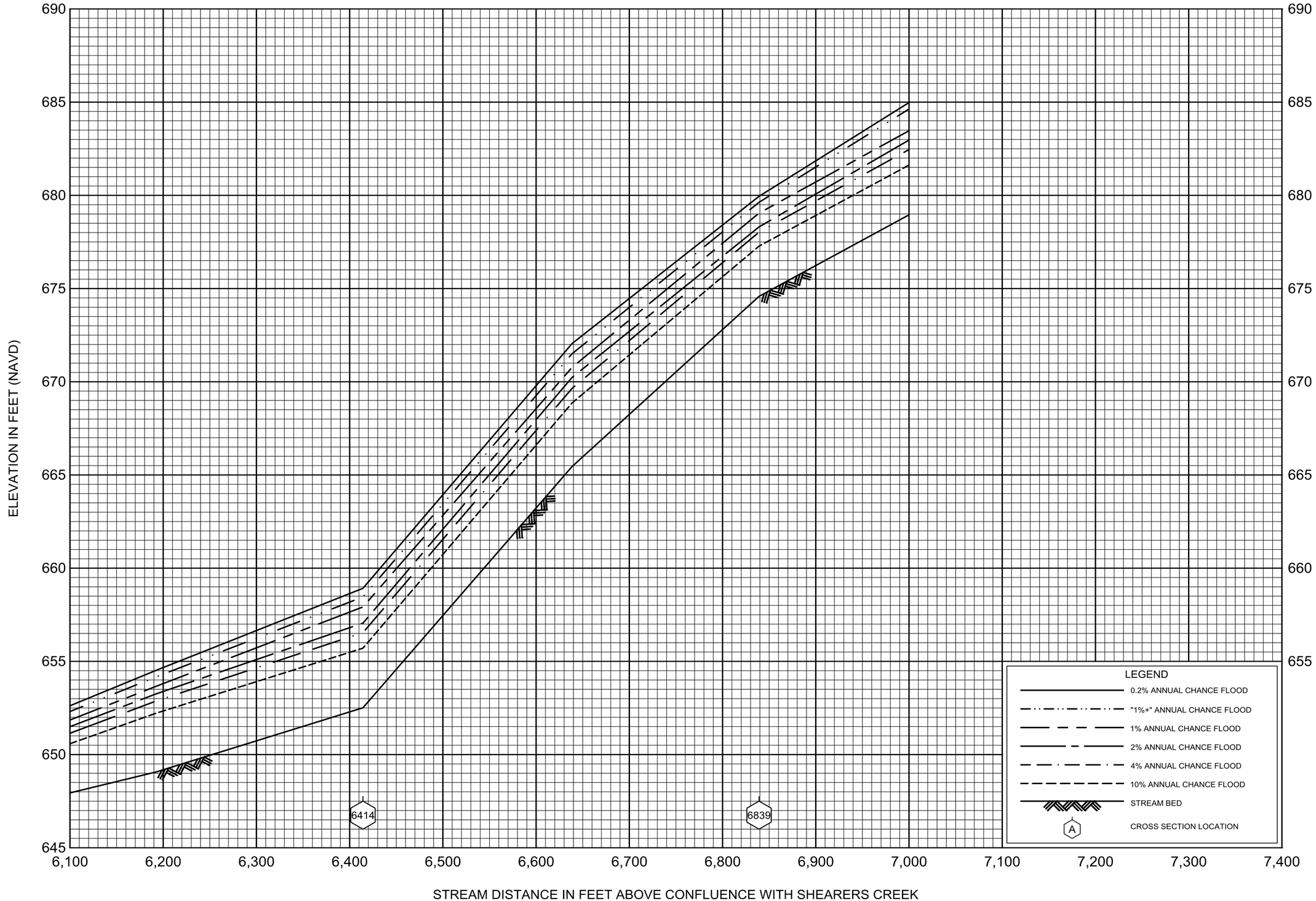
SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

05P



FLOOD PROFILES

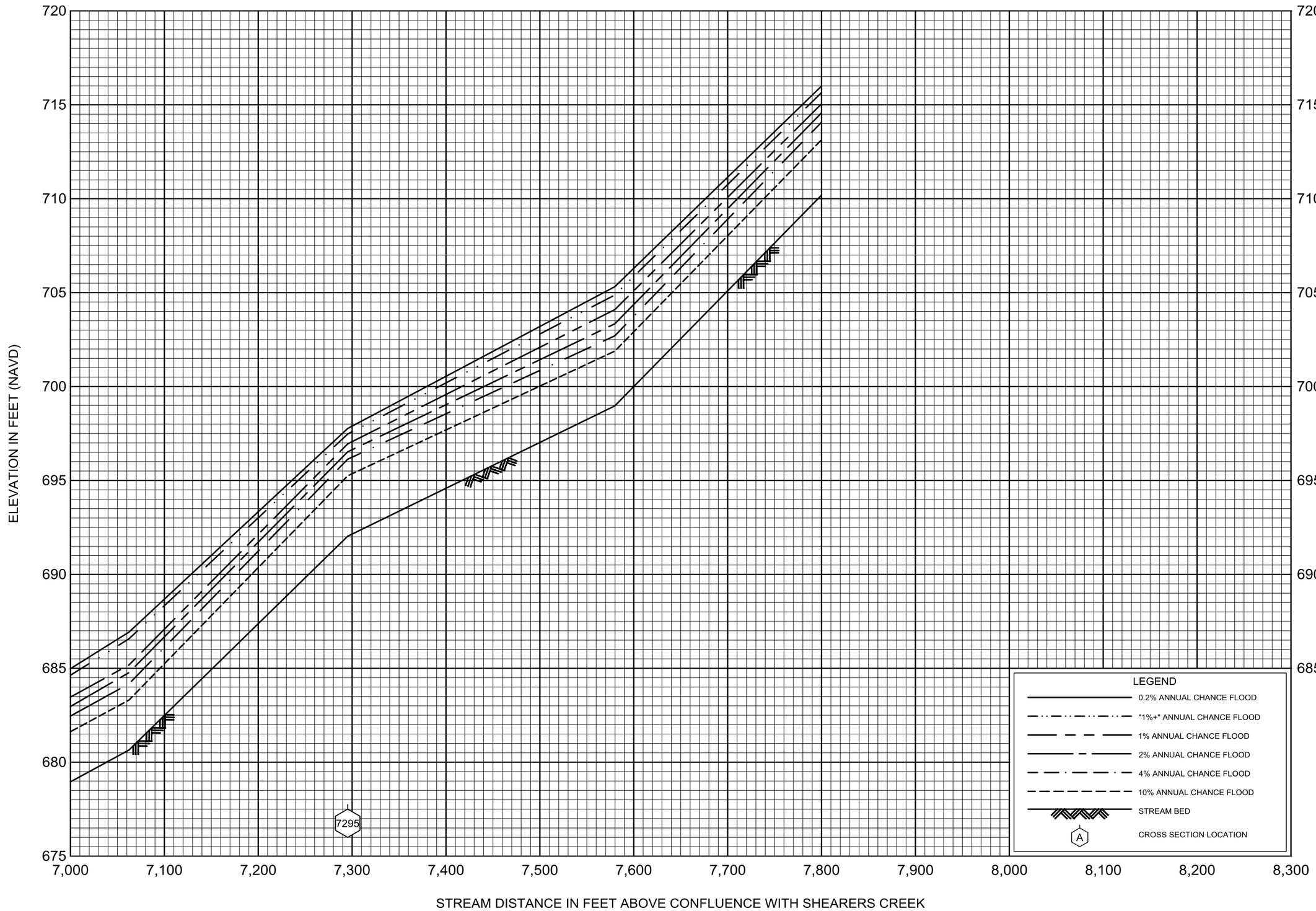
SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

06P



FLOOD PROFILES

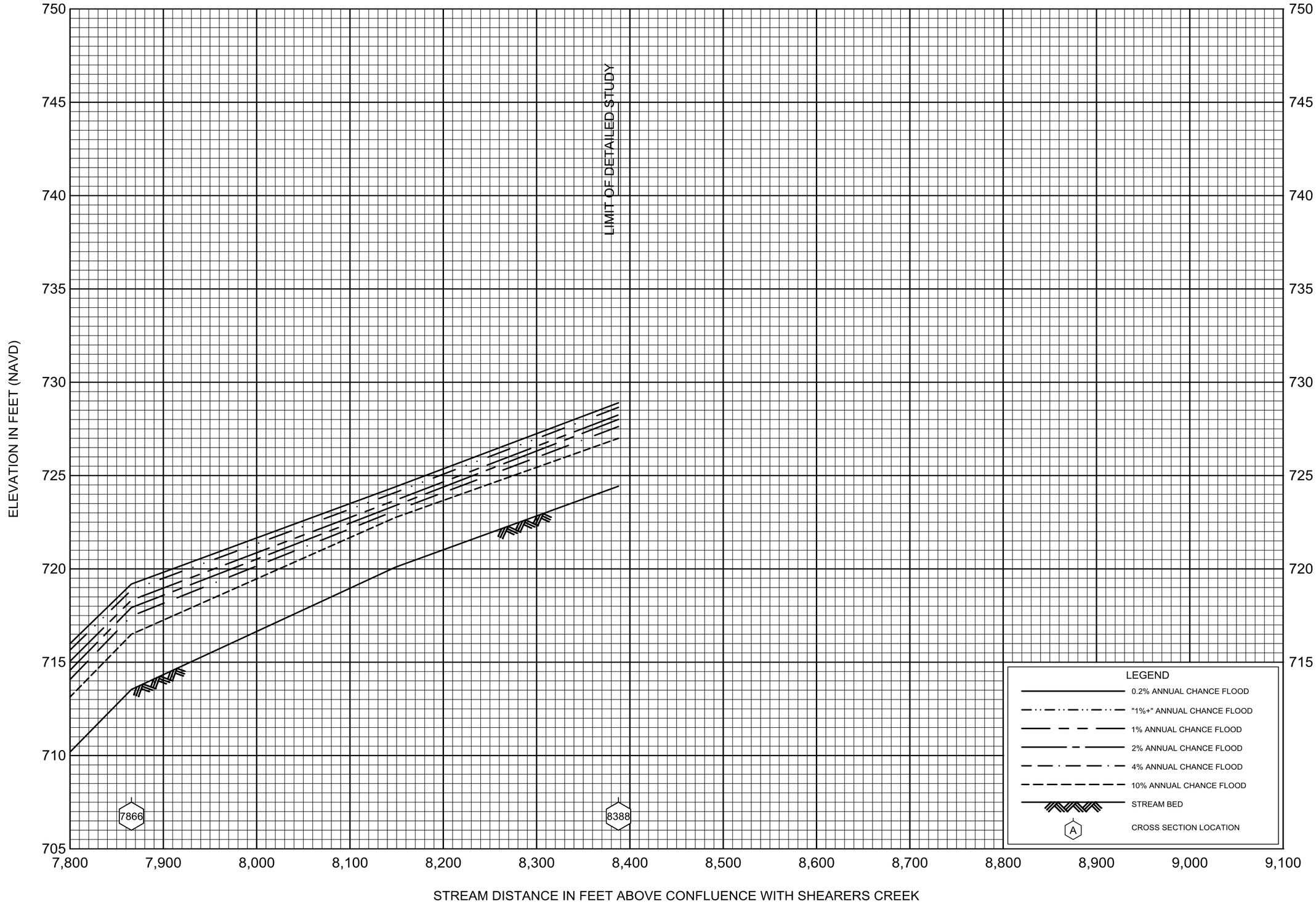
SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

07P



FLOOD PROFILES

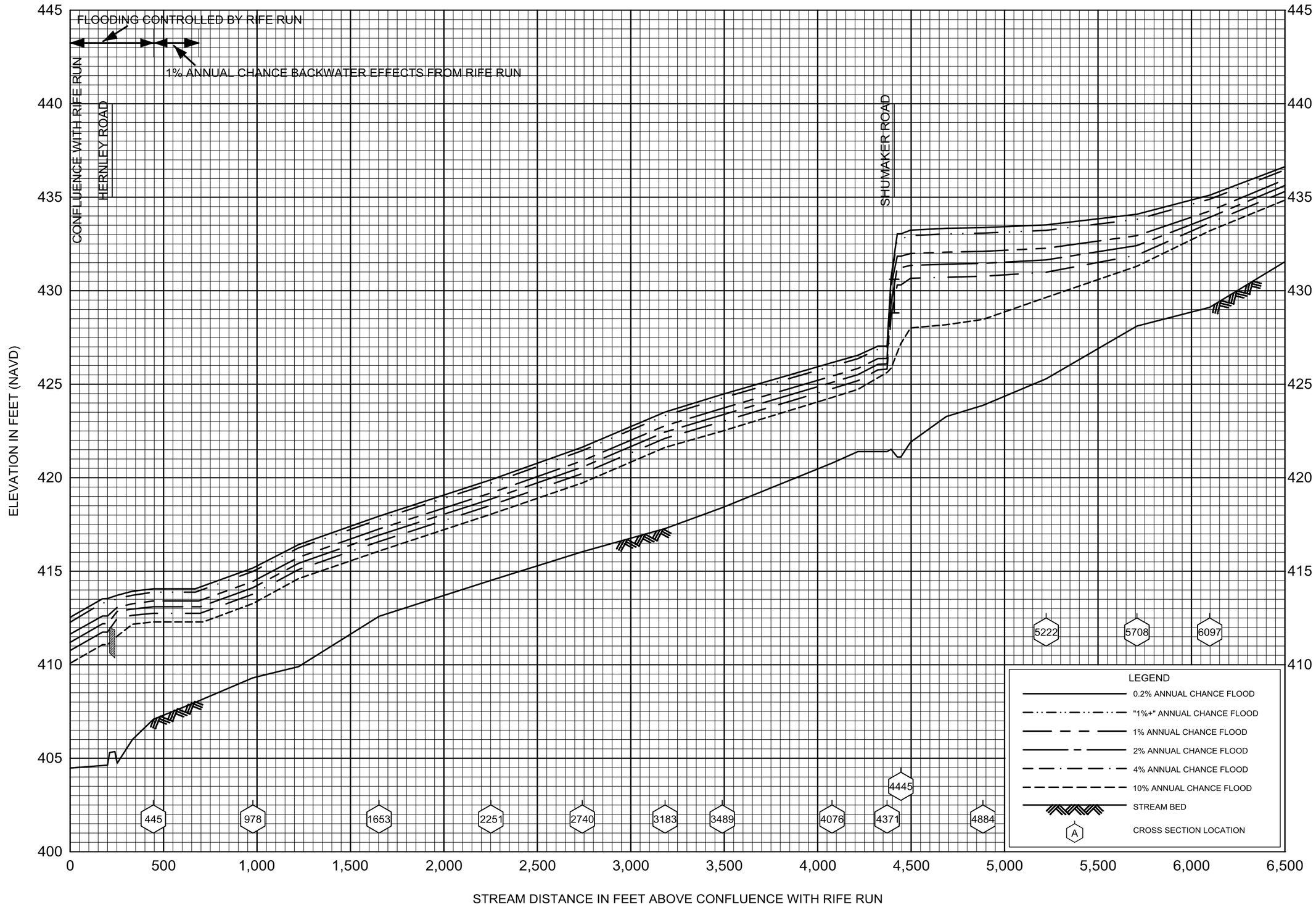
SHEARERS CREEK TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

08P



FLOOD PROFILES

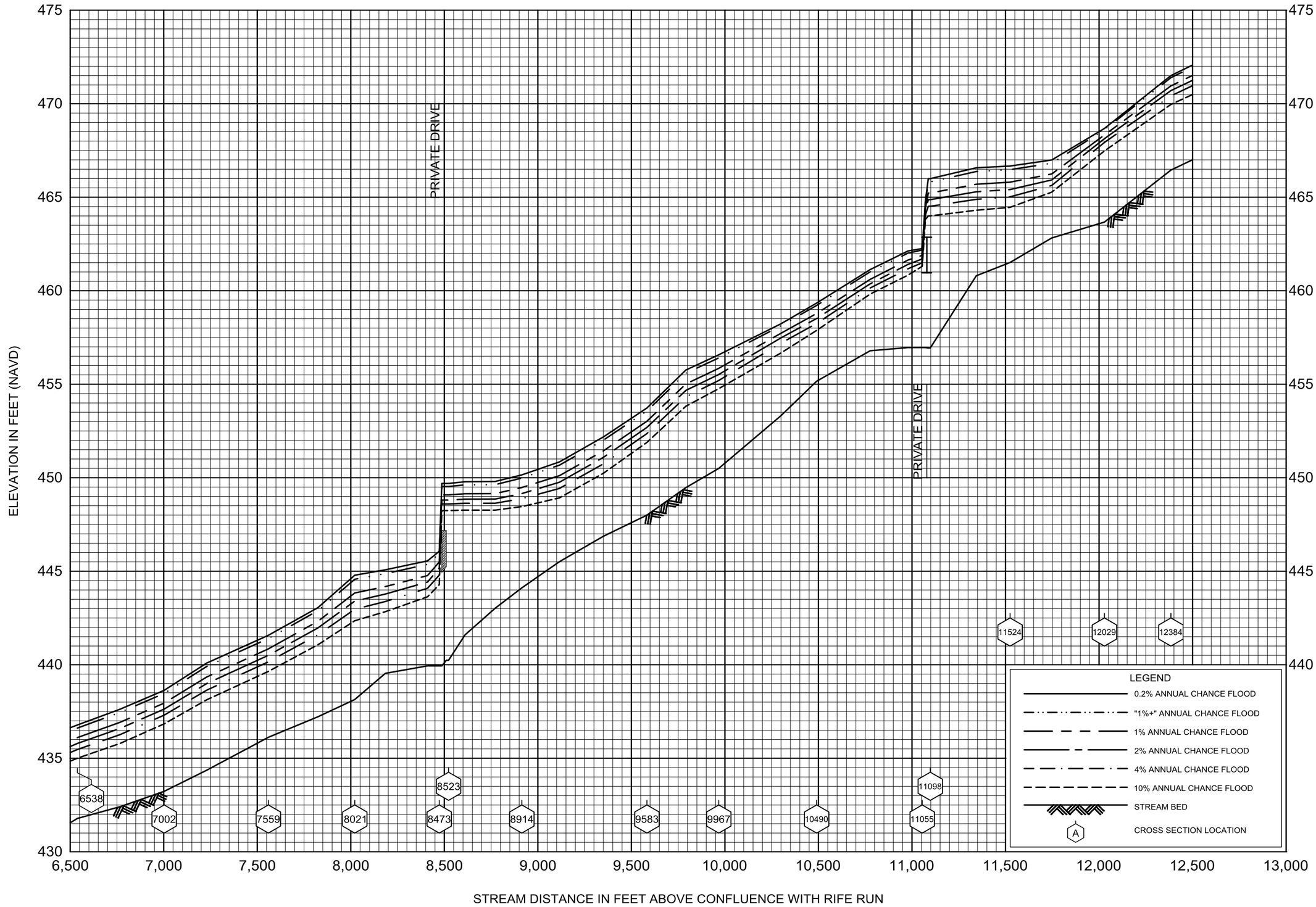
SHUMAKER ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

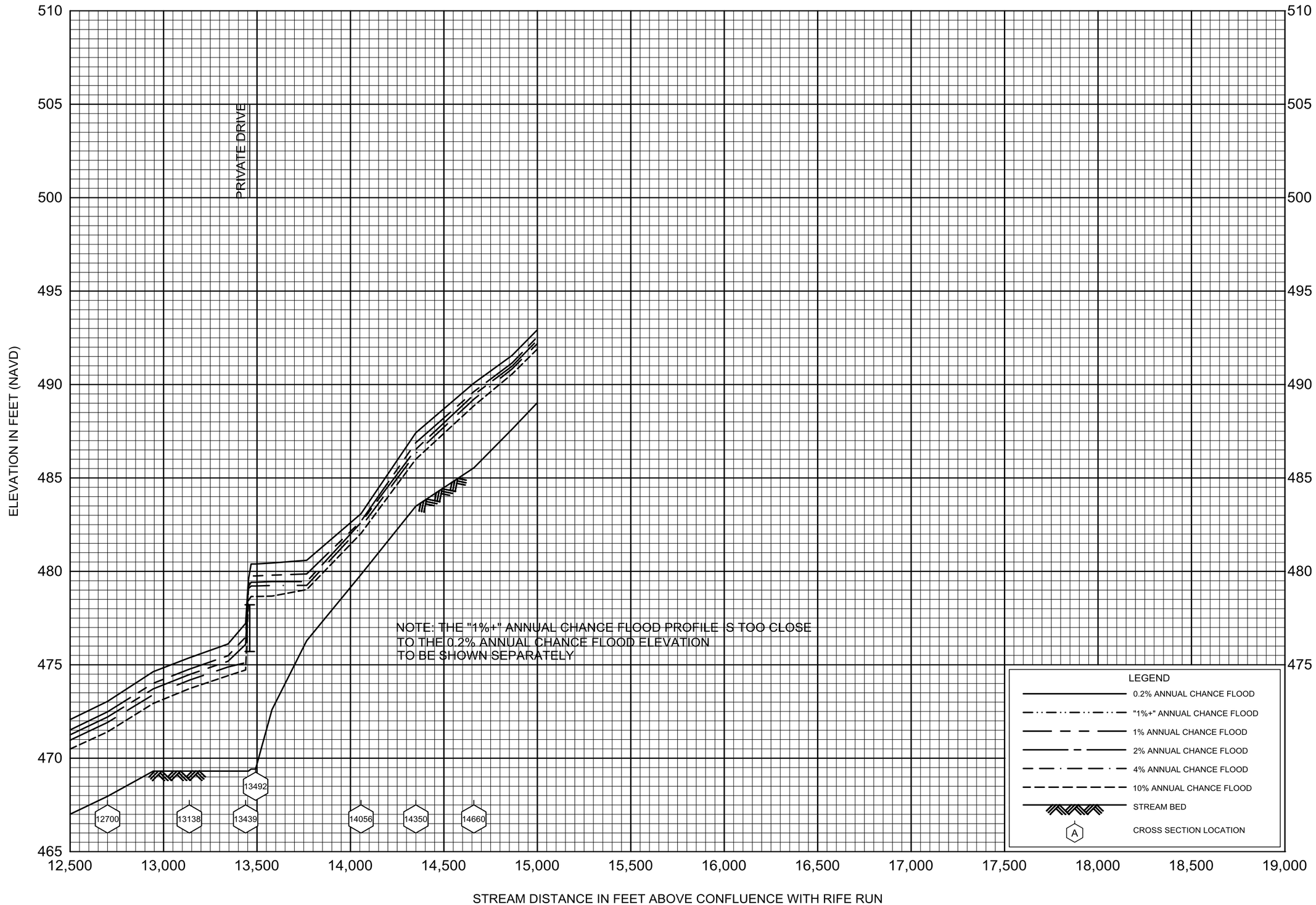
SHUMAKER ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

02P



FLOOD PROFILES

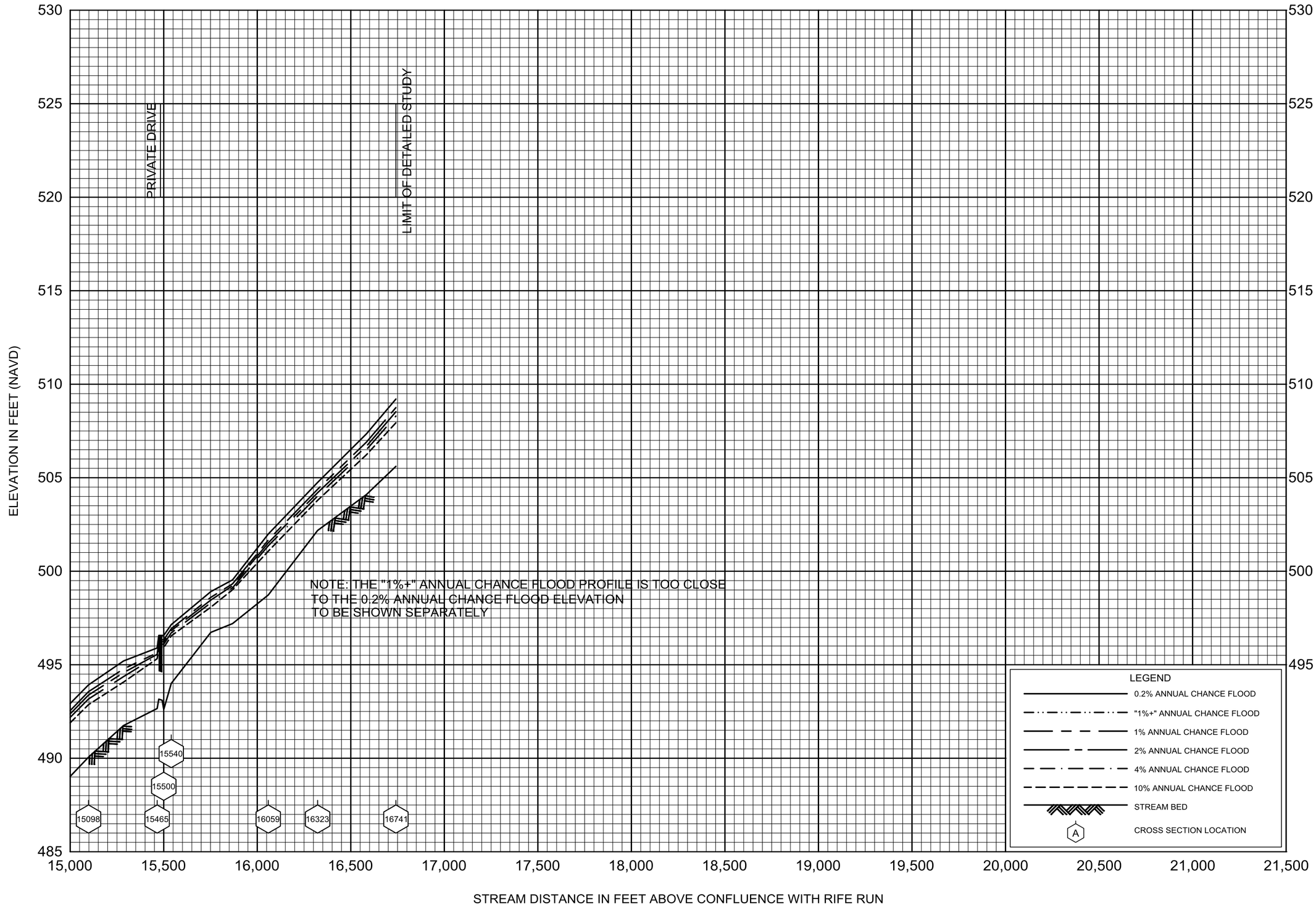
SHUMAKER ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



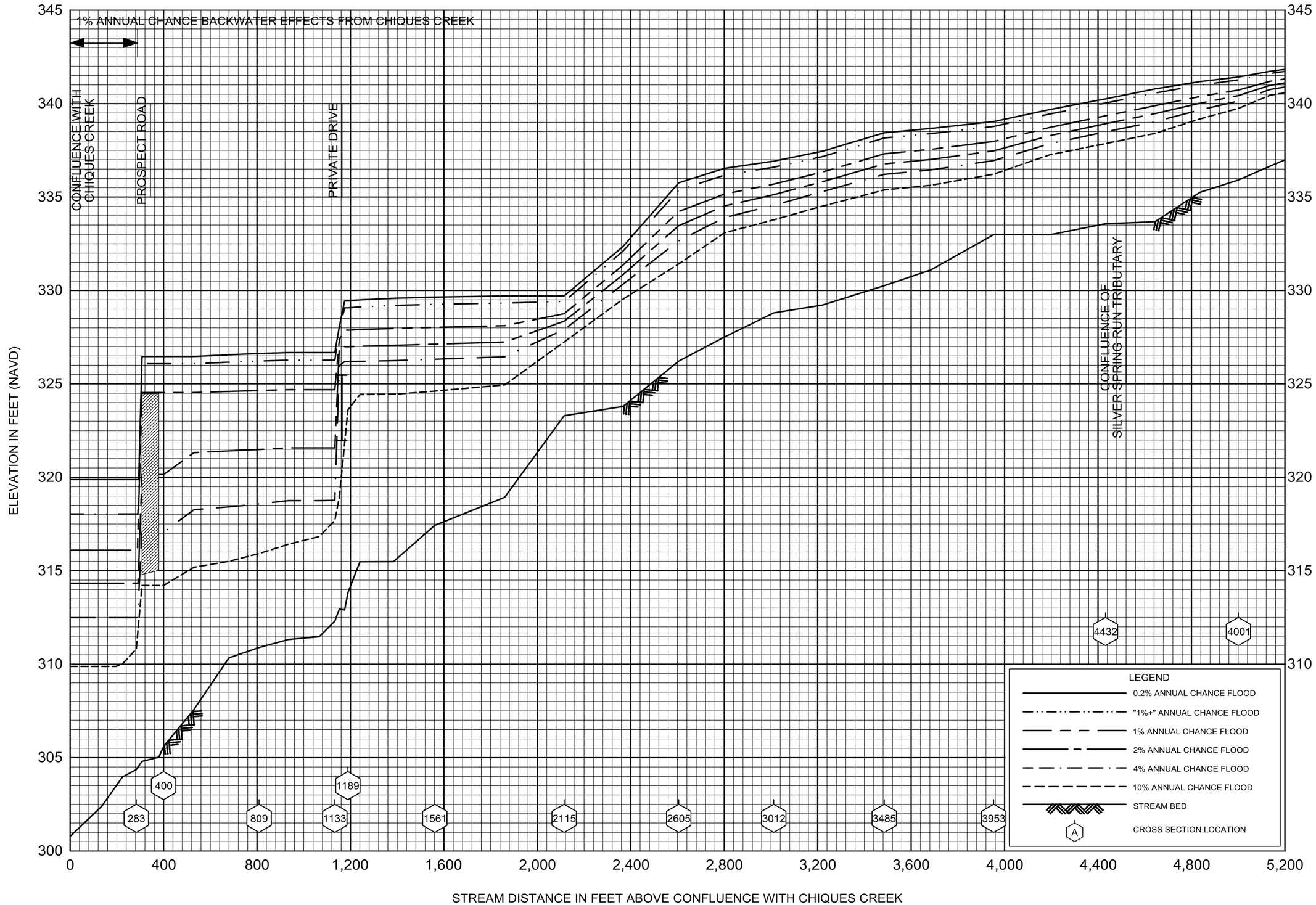
FLOOD PROFILES

SHUMAKER ROAD TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

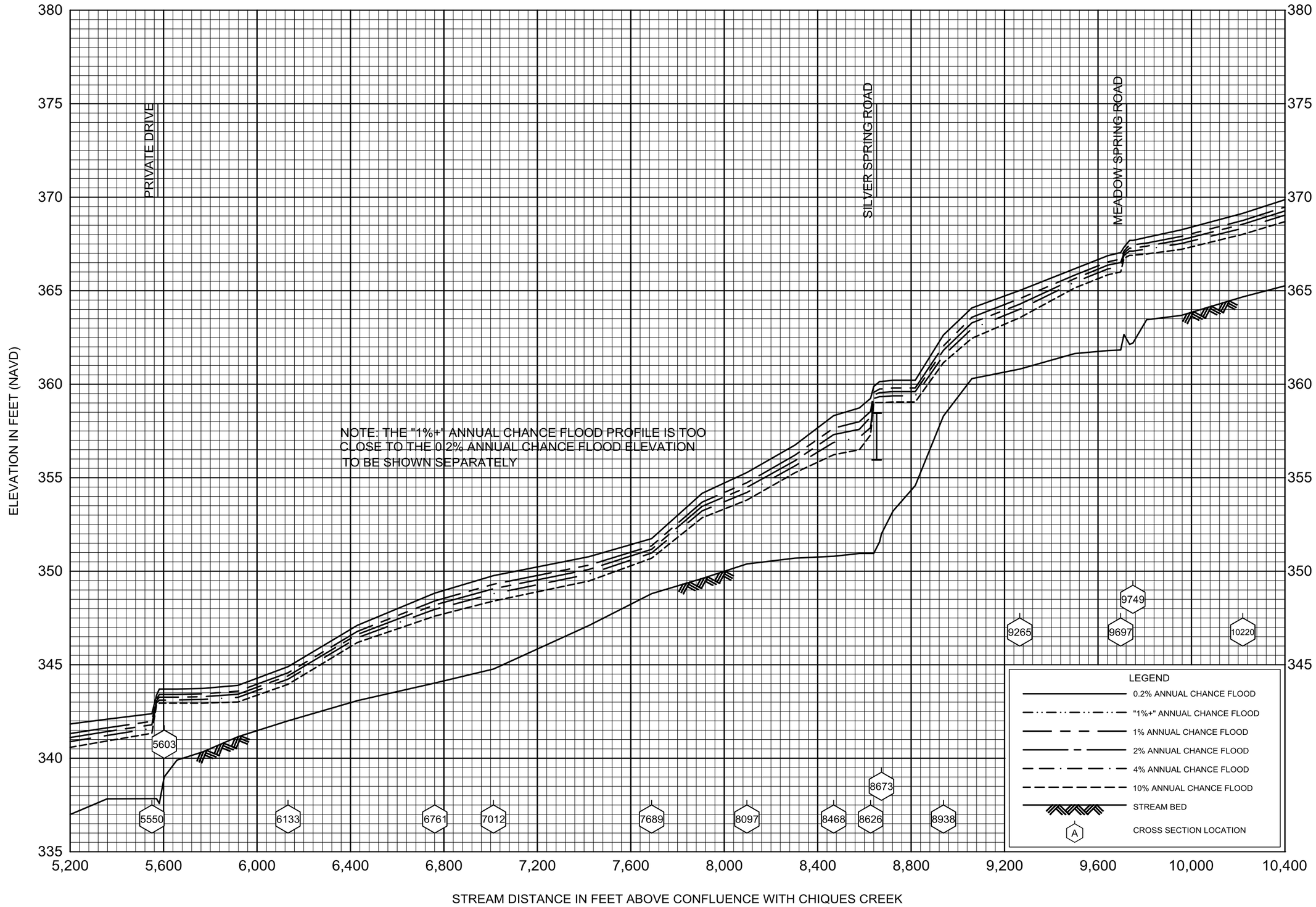
SILVER SPRING RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



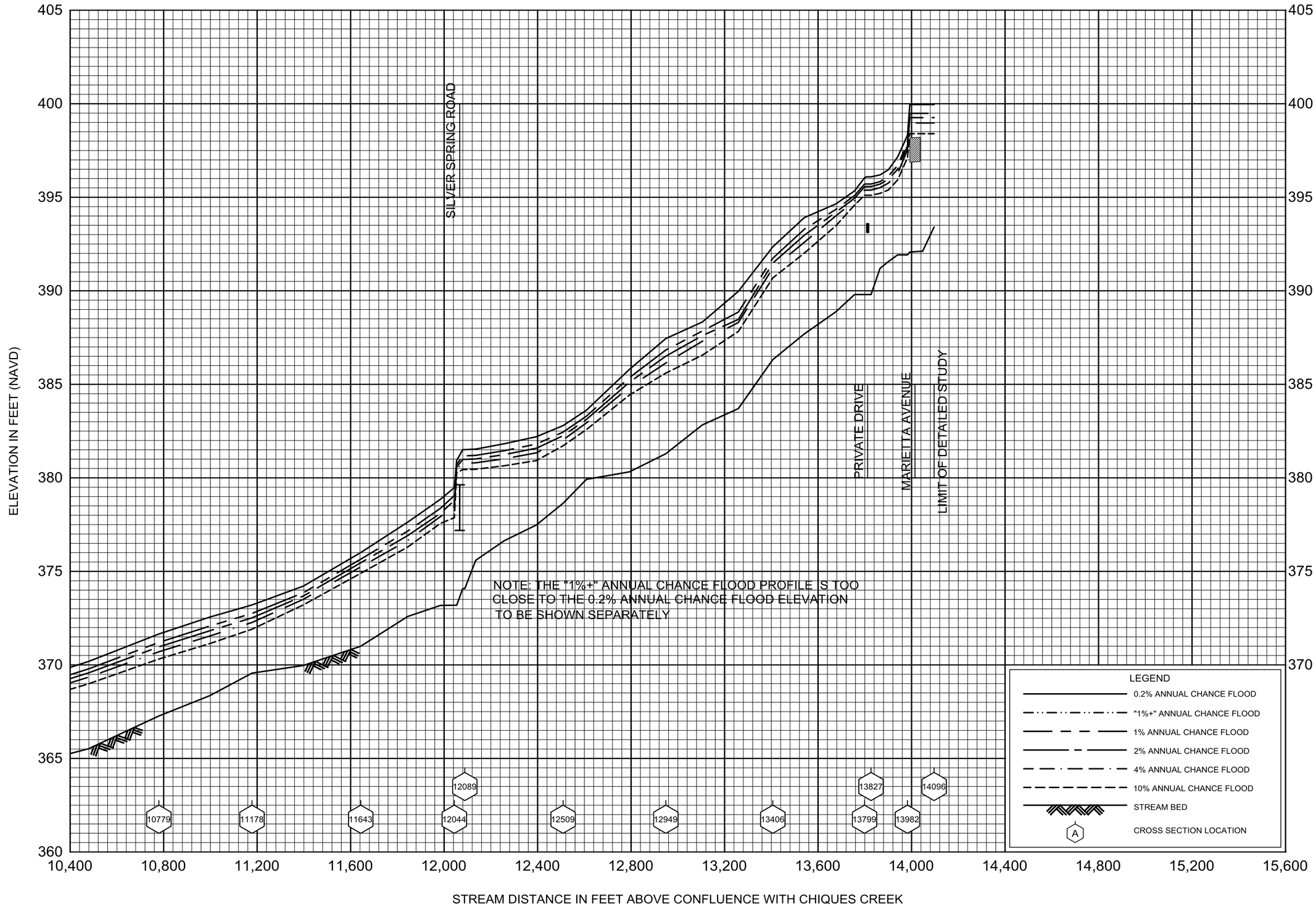
FLOOD PROFILES

SILVER SPRING RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)



FLOOD PROFILES

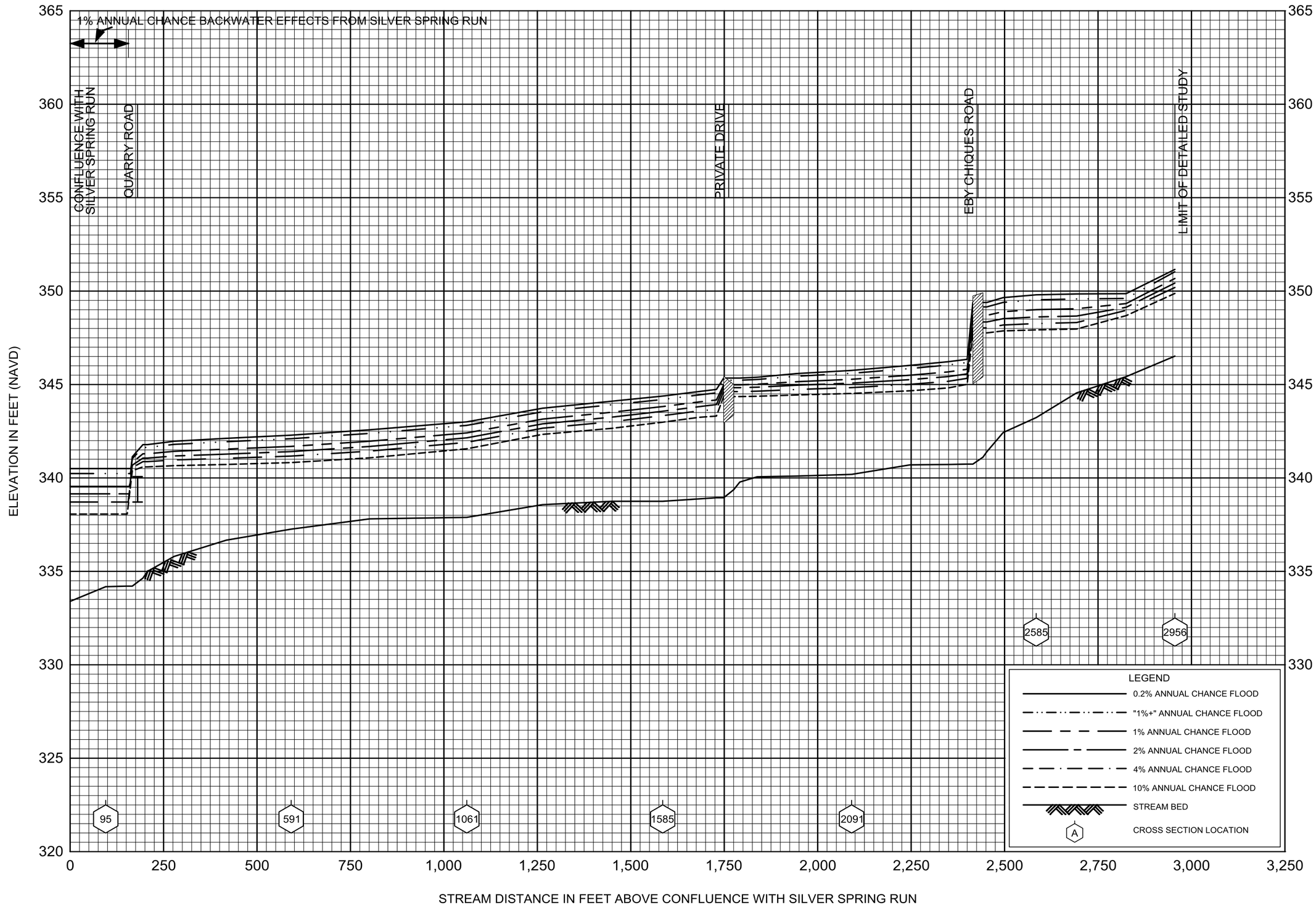
SILVER SPRING RUN

FEDERAL EMERGENCY MANAGEMENT AGENCY

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

03P



FLOOD PROFILES

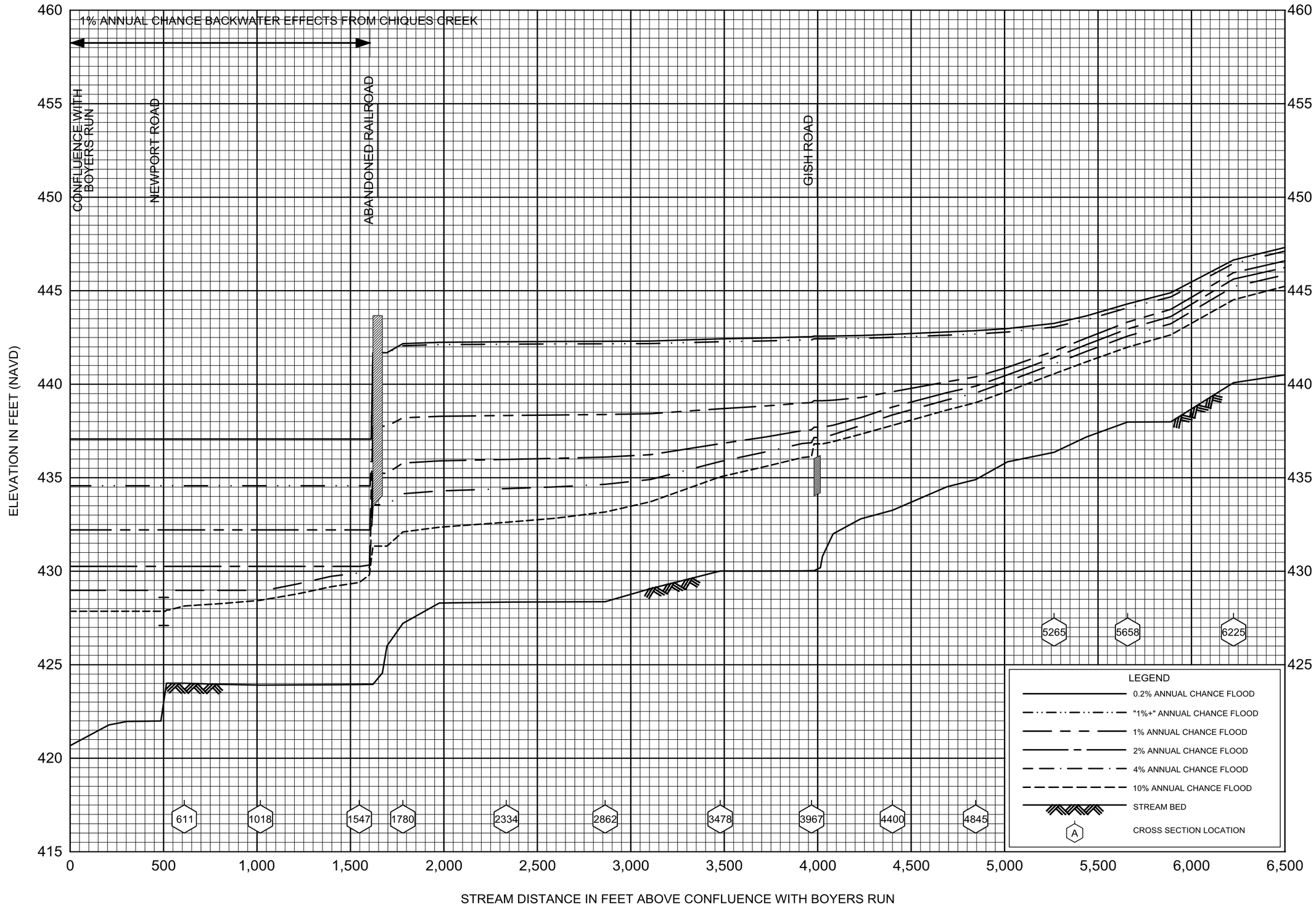
SILVER SPRING RUN TRIBUTARY

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

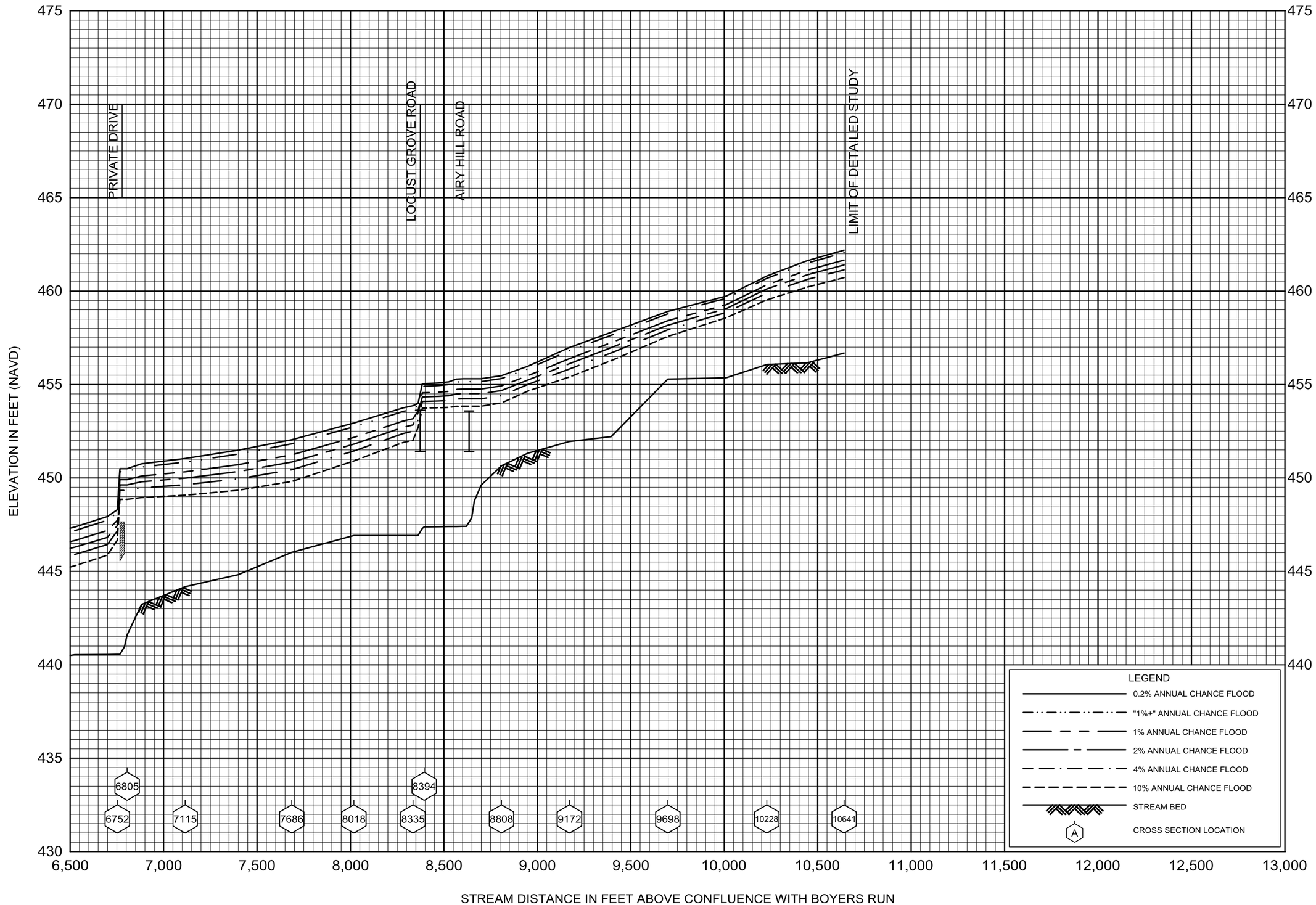
WHITE OAK RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

01P



FLOOD PROFILES

WHITE OAK RUN

U.S. ARMY CORPS OF ENGINEERS

LANCASTER COUNTY, PA

(ALL JURISDICTIONS)

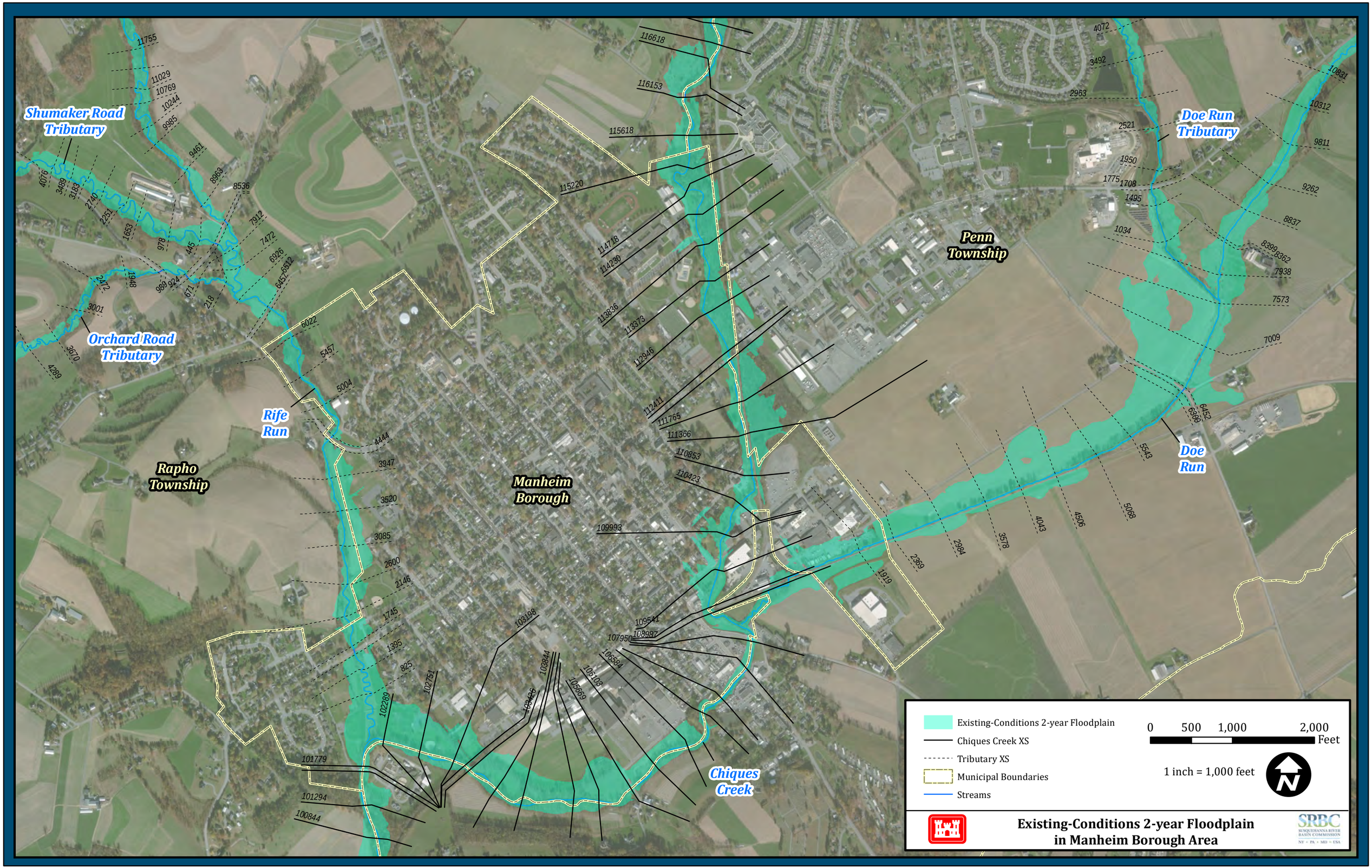
02P

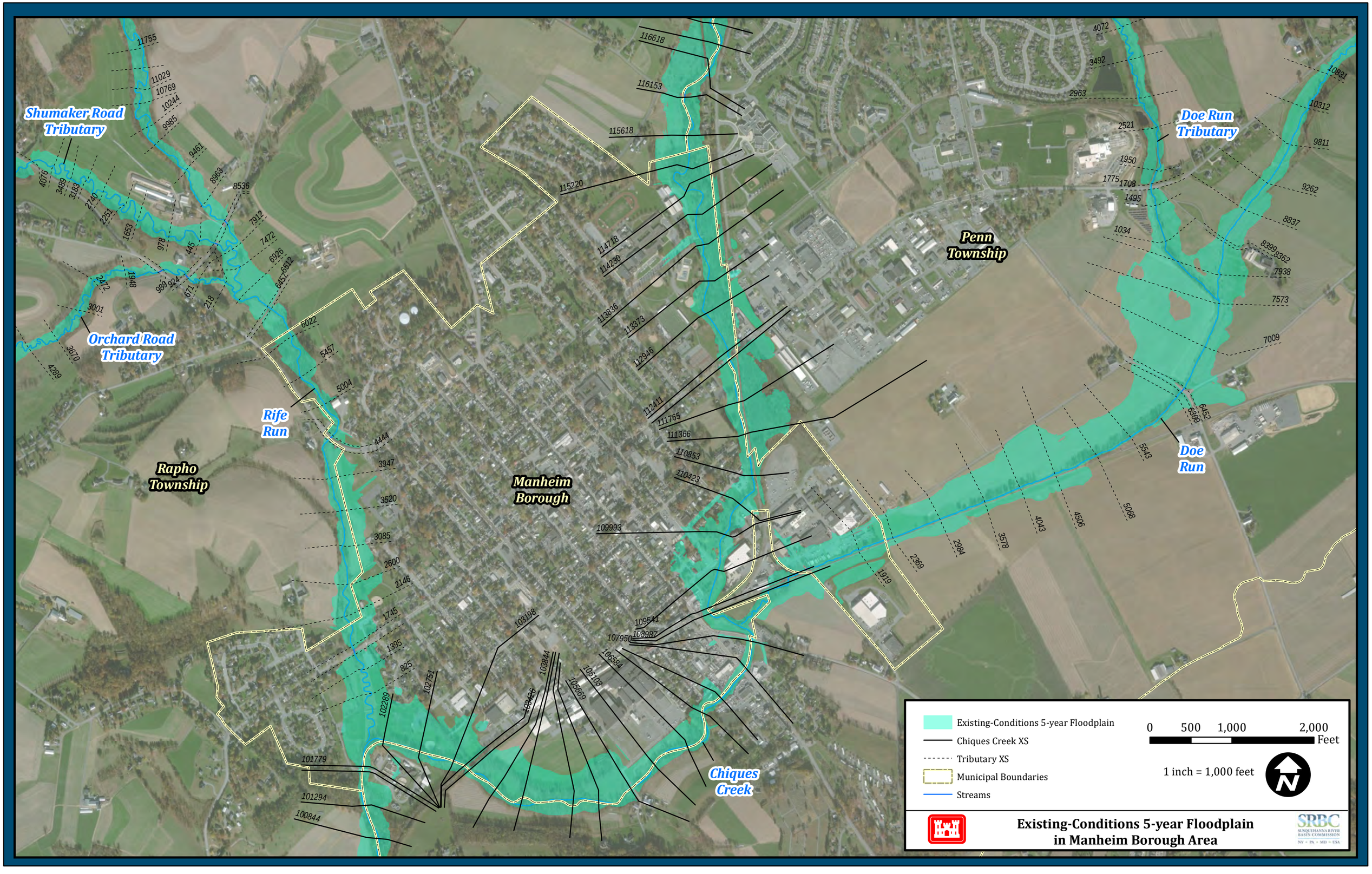
APPENDIX H

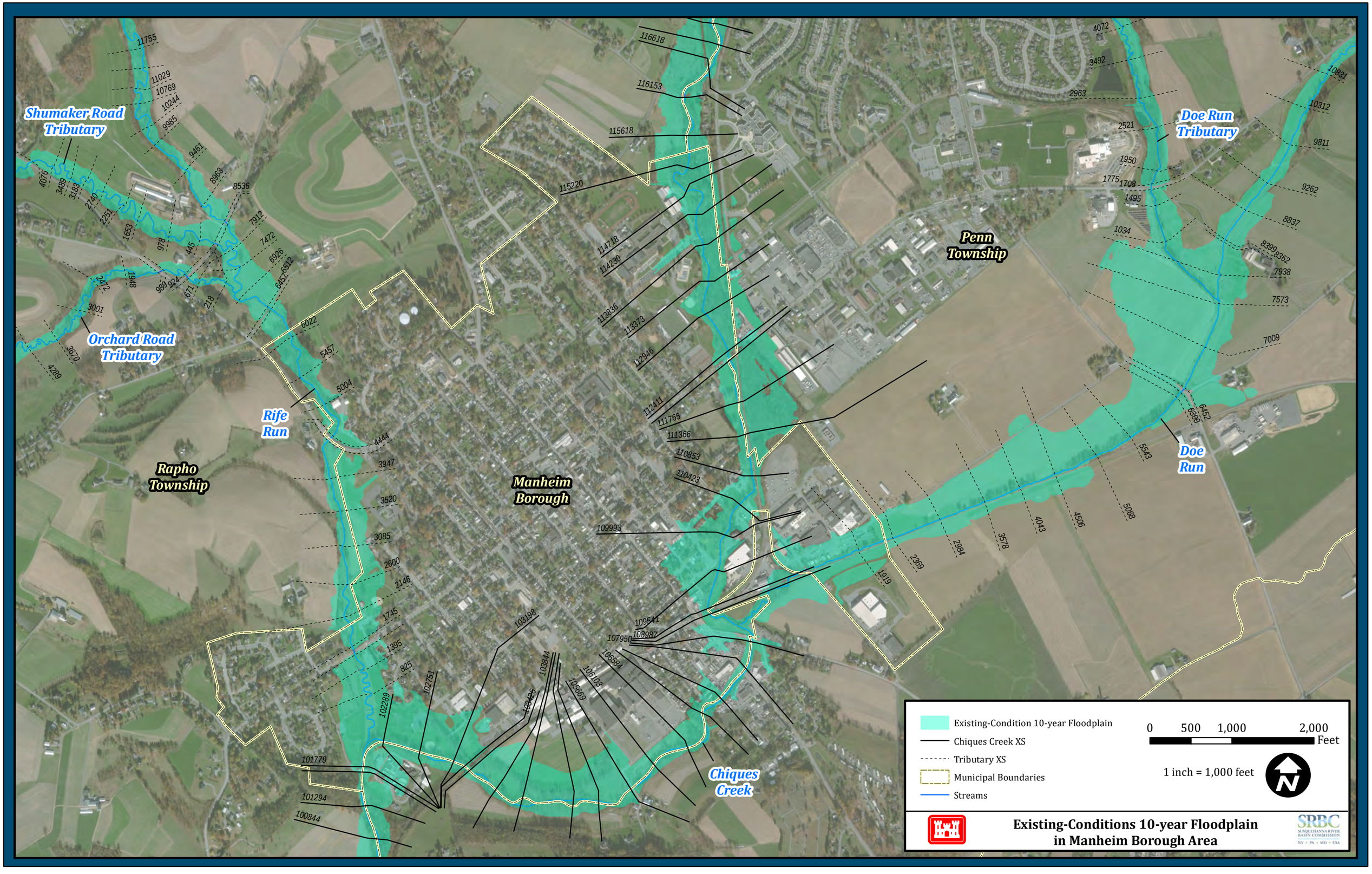
HEC-RAS Output Tables

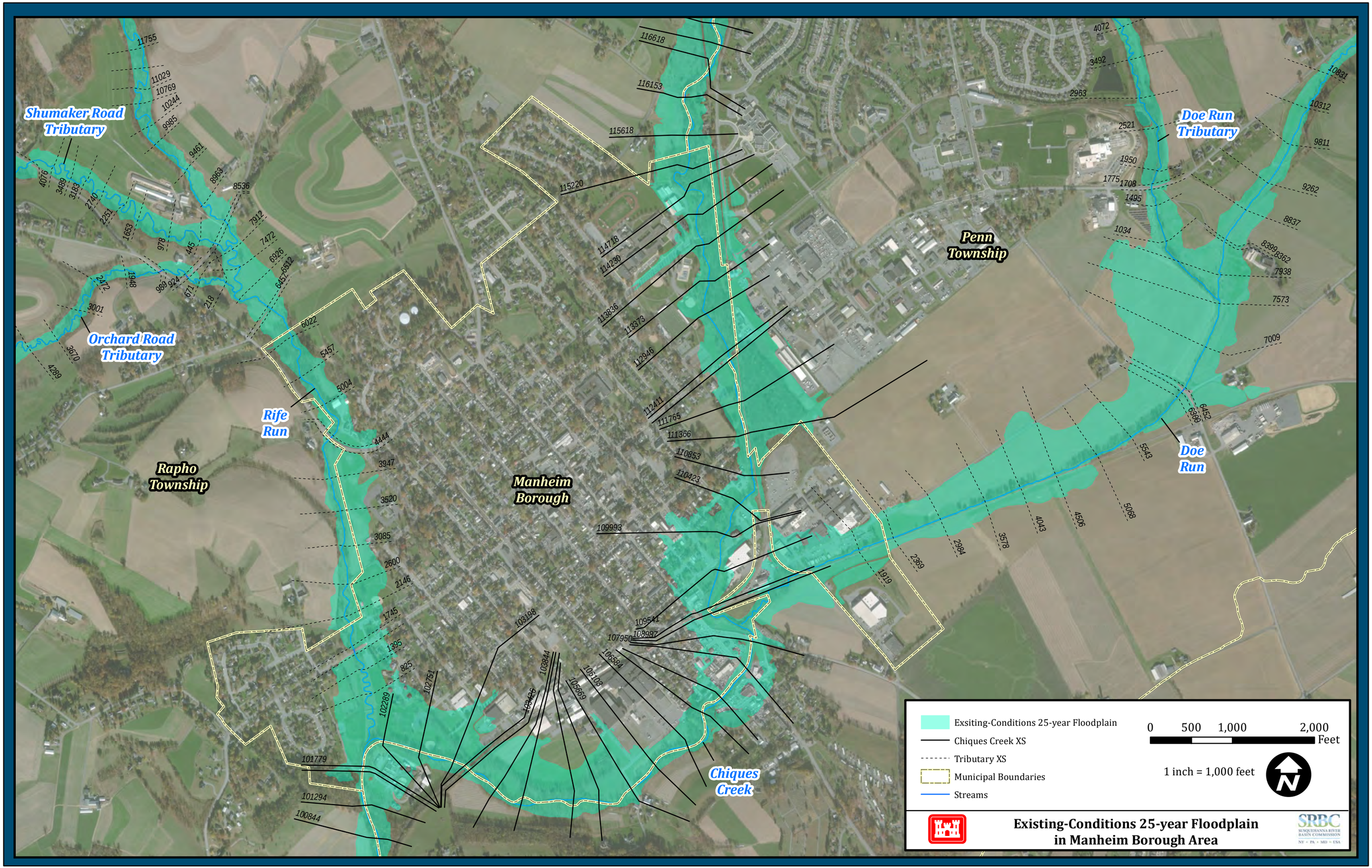
APPENDIX I

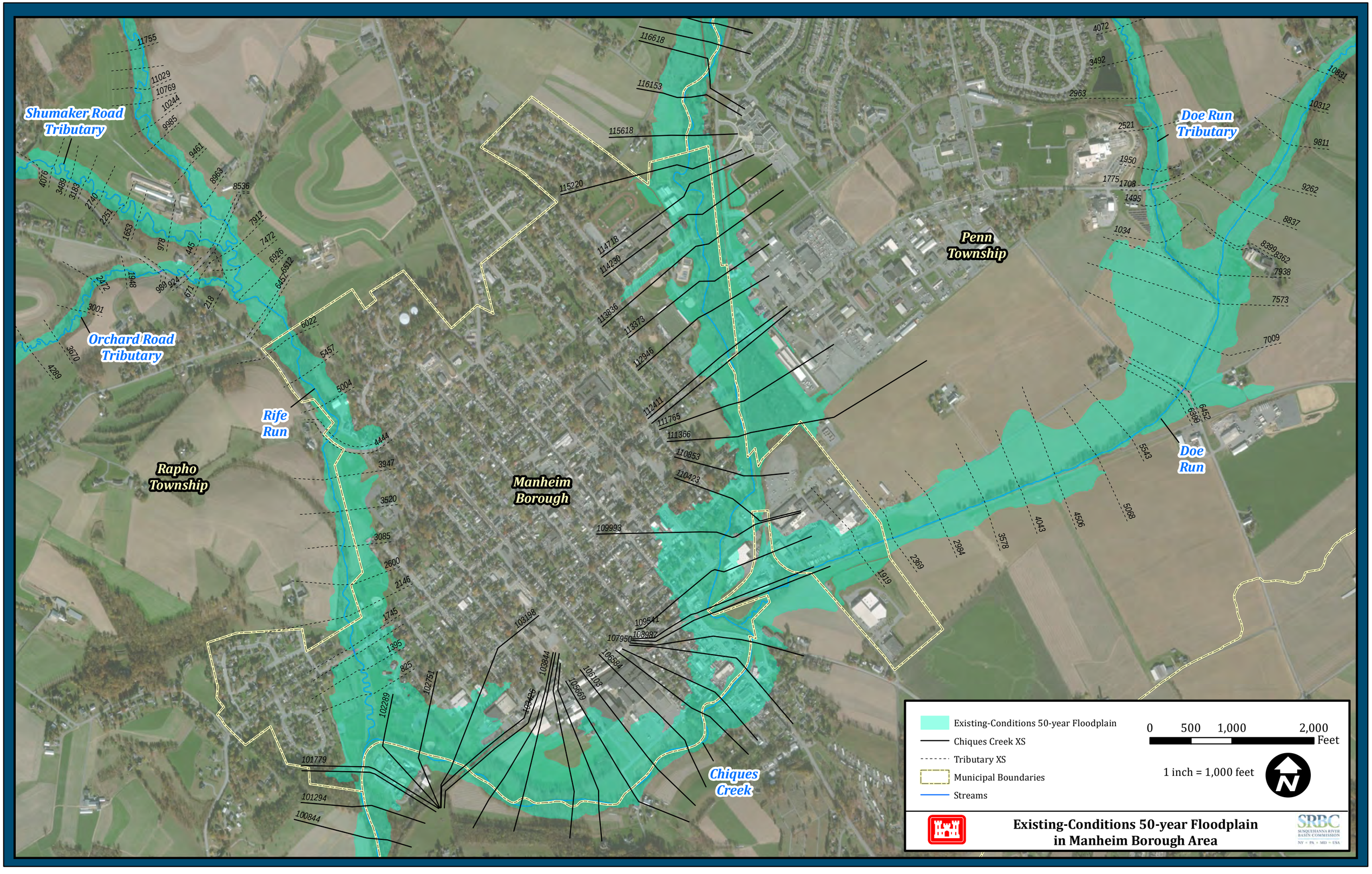
Flood Mapping for Manheim Borough

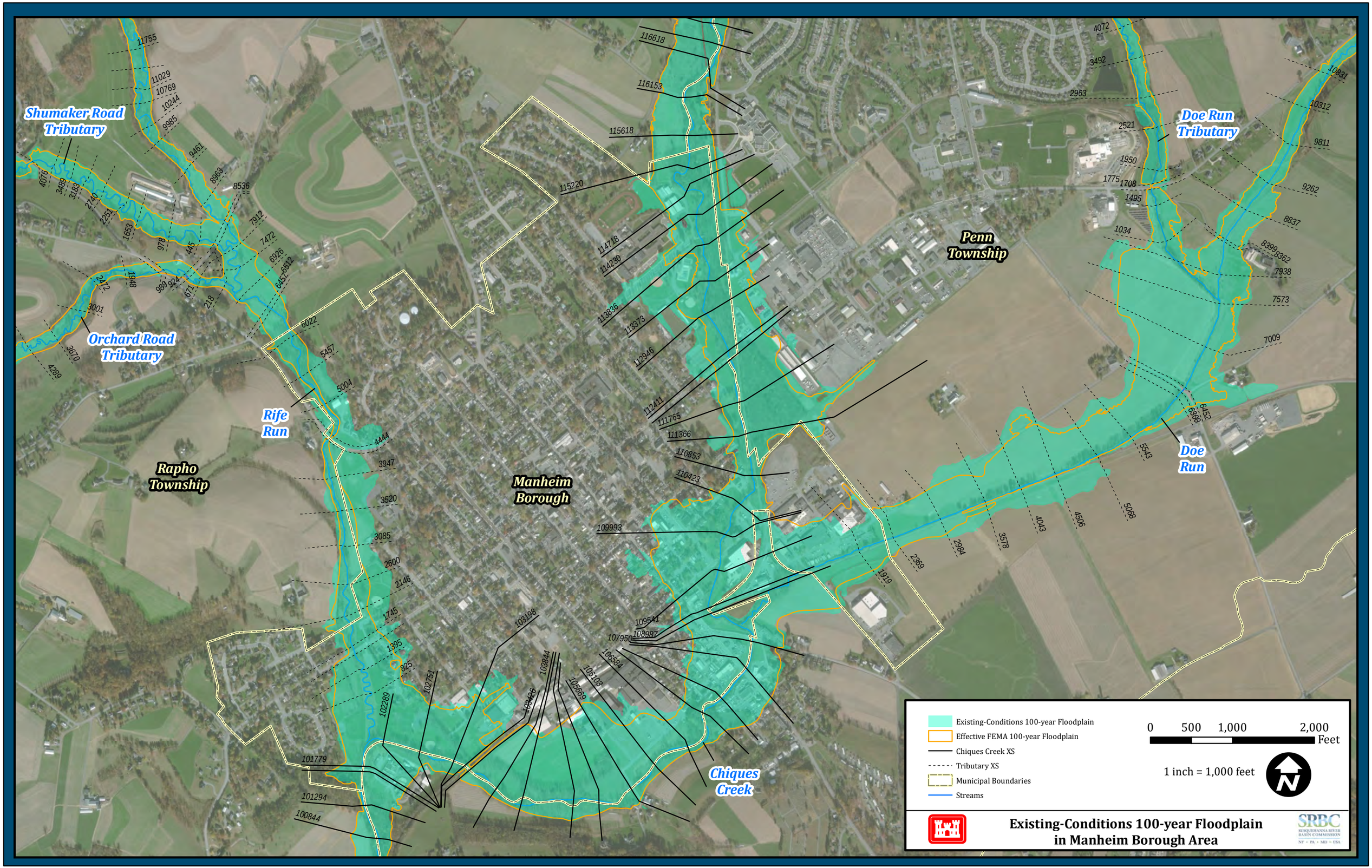

Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Conditions 2-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 2-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA

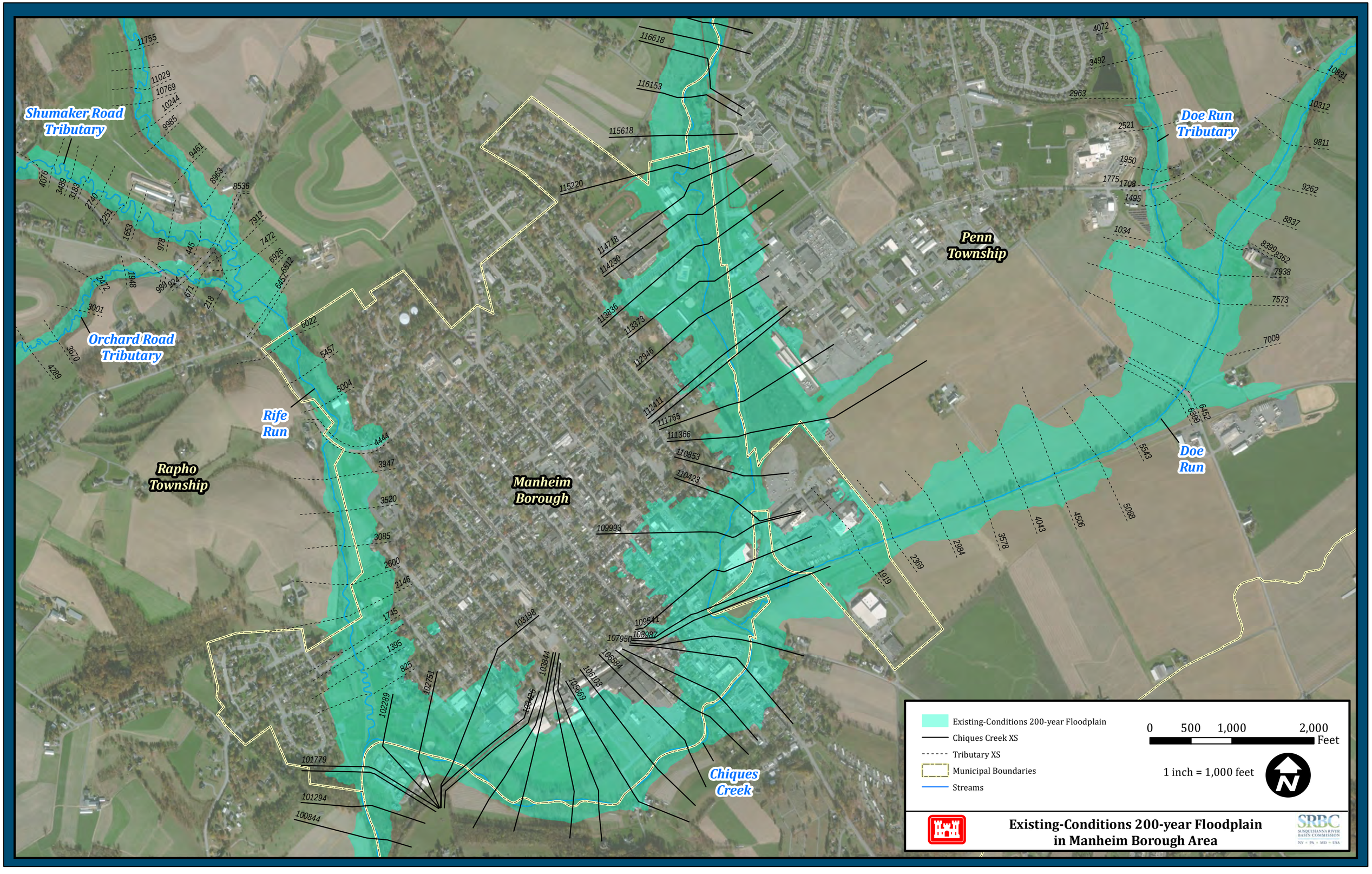

Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Conditions 5-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 5-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA

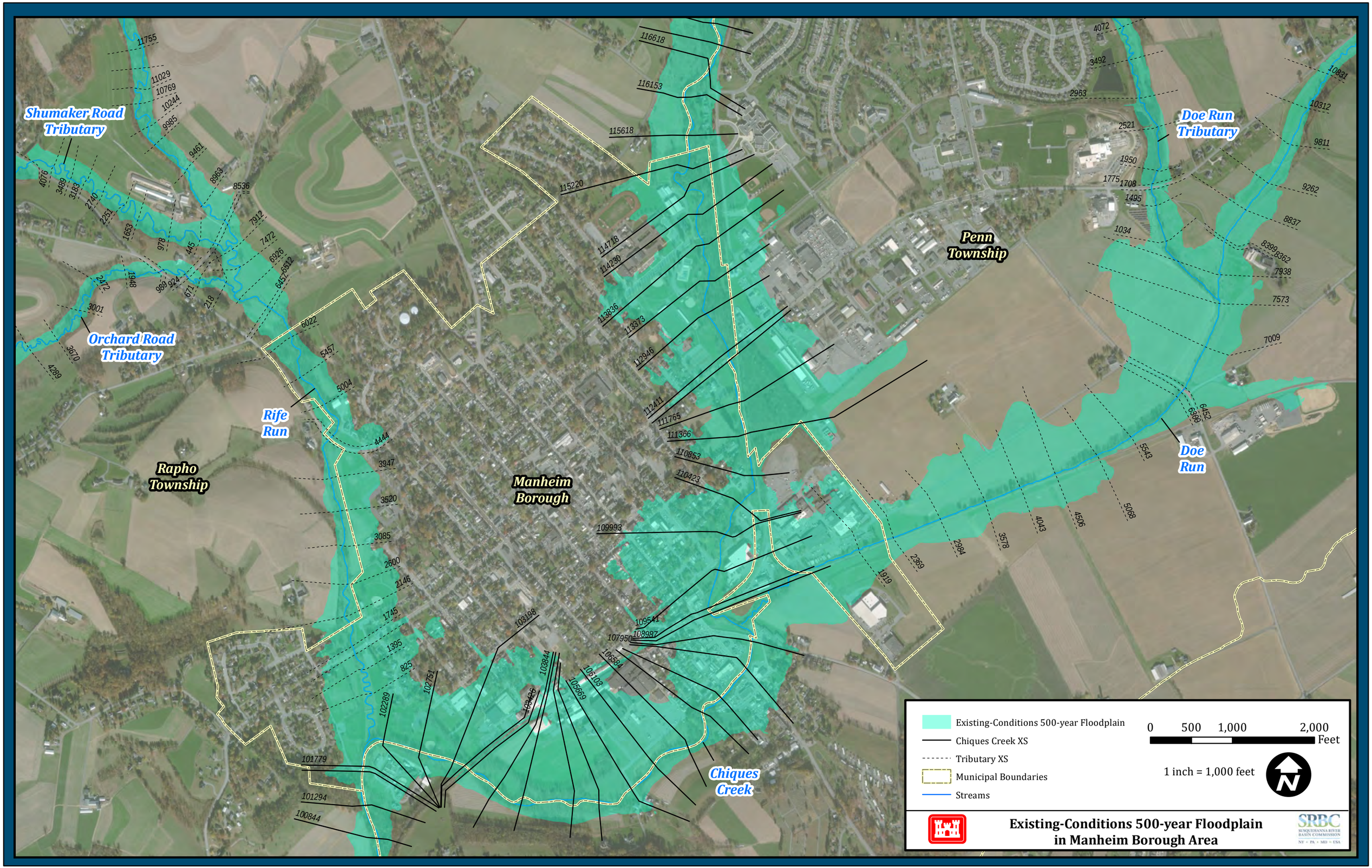

Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Condition 10-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 10-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA

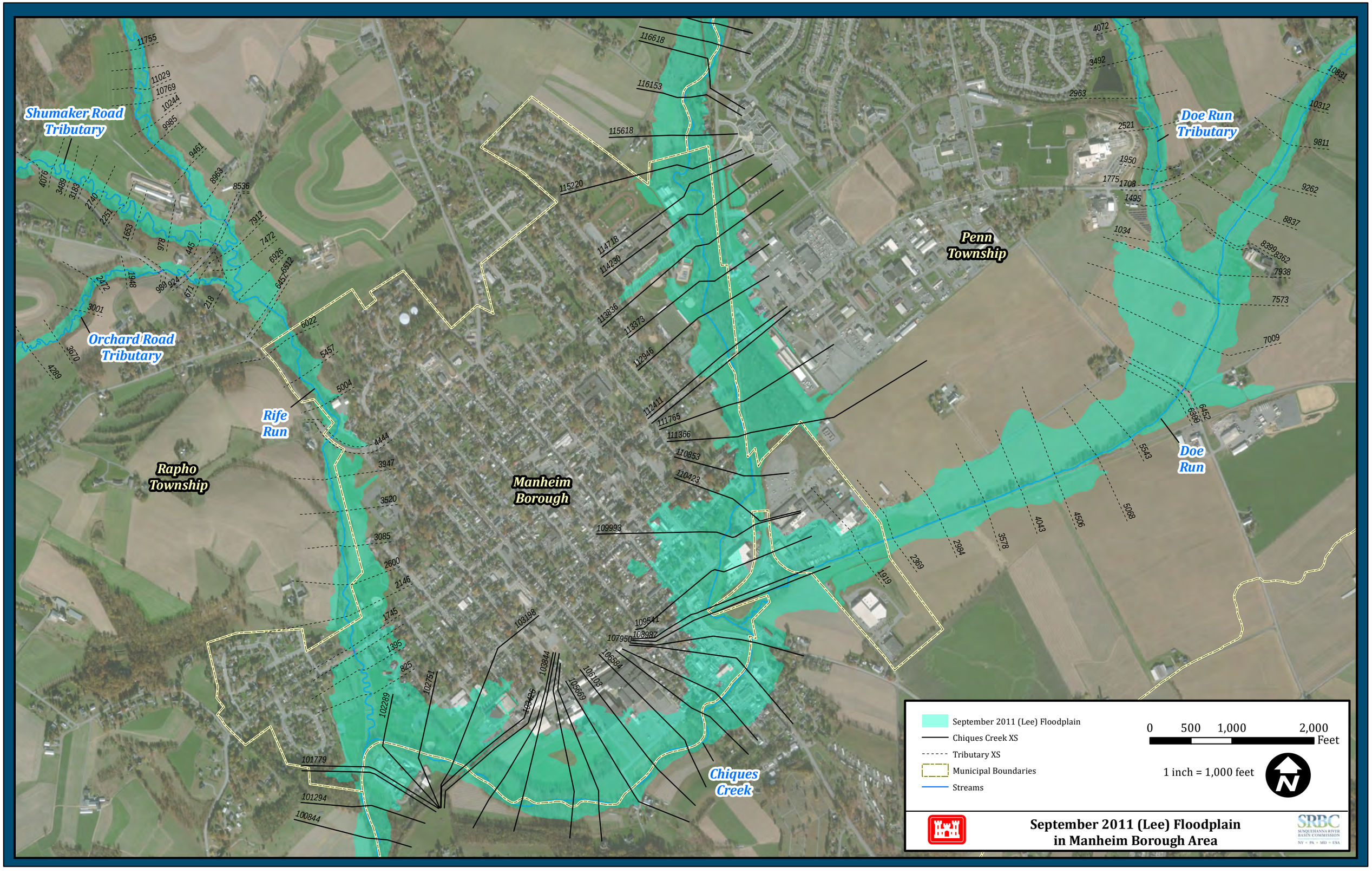

Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Exsiting-Conditions 25-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 25-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA


Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Conditions 50-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 50-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA


Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Conditions 100-year Floodplain
Effective FEMA 100-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 100-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA

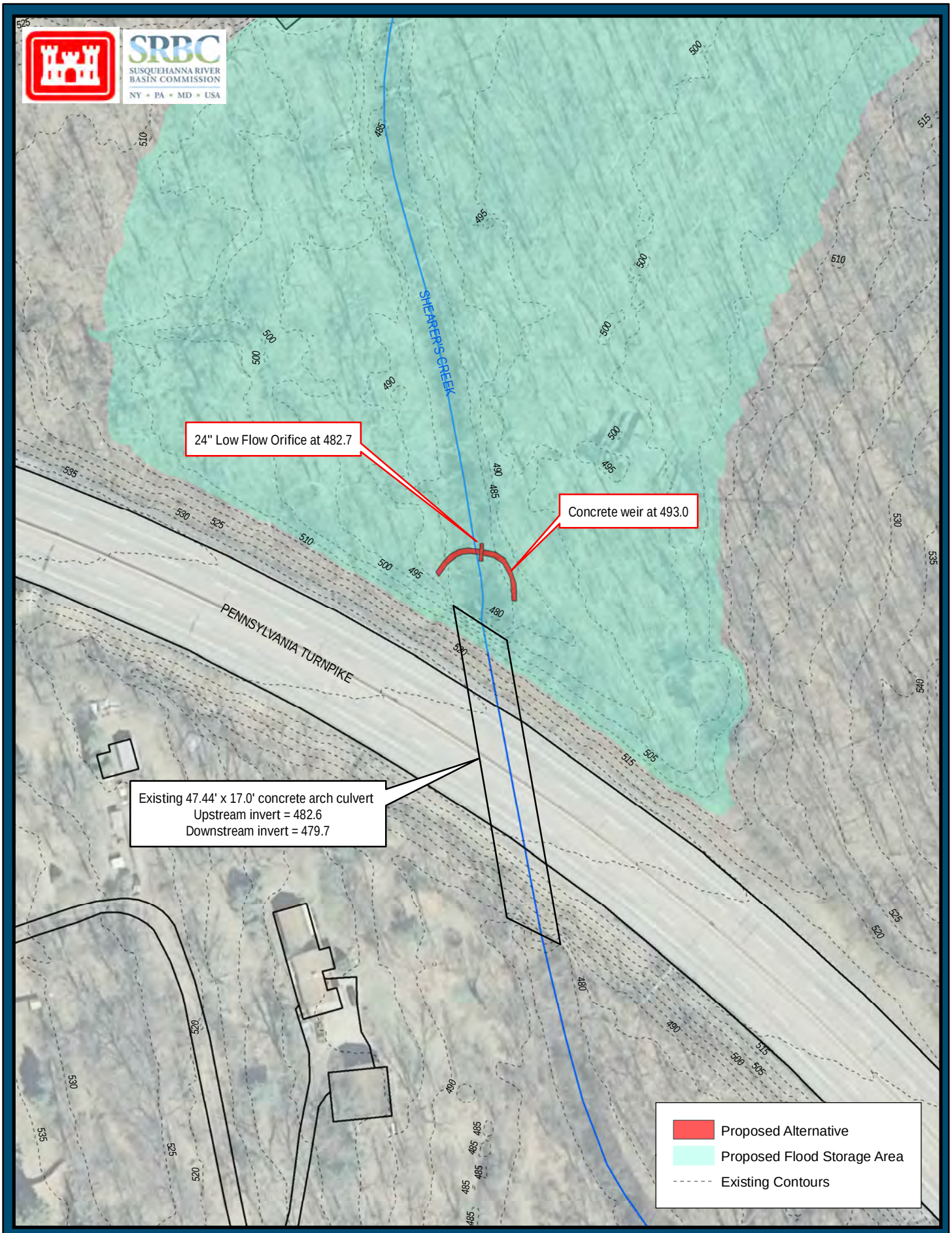

Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Conditions 200-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 200-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA


Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
Existing-Conditions 500-year Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
Existing-Conditions 500-year Floodplain in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA


Shumaker Road Tributary
Orchard Road Tributary
Rife Run
Rapho Township
Manheim Borough
Penn Township
Doe Run Tributary
Doe Run
Chiques Creek
September 2011 (Lee) Floodplain
Chiques Creek XS
Tributary XS
Municipal Boundaries
Streams
0 500 1,000 2,000 Feet
1 inch = 1,000 feet
N
September 2011 (Lee) Floodplain
in Manheim Borough Area
SRBC
SUSQUEHANNA RIVER BASIN COMMISSION
NY • PA • MD • USA

APPENDIX J

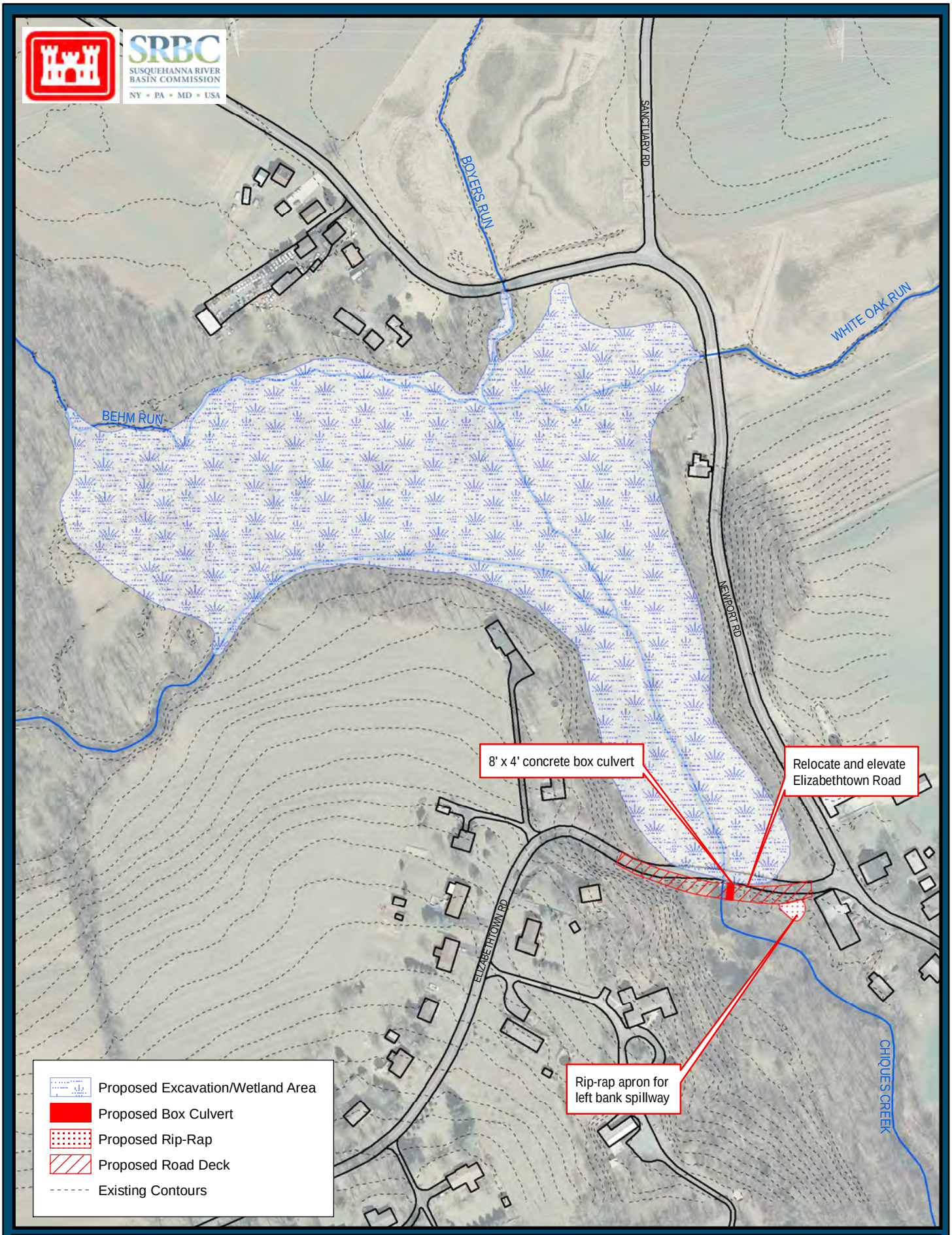
Mapping of Alternatives



ALTERNATIVE W1
SHEARER'S CREEK TURNPIKE DETENTION

0 25 50 100 Feet

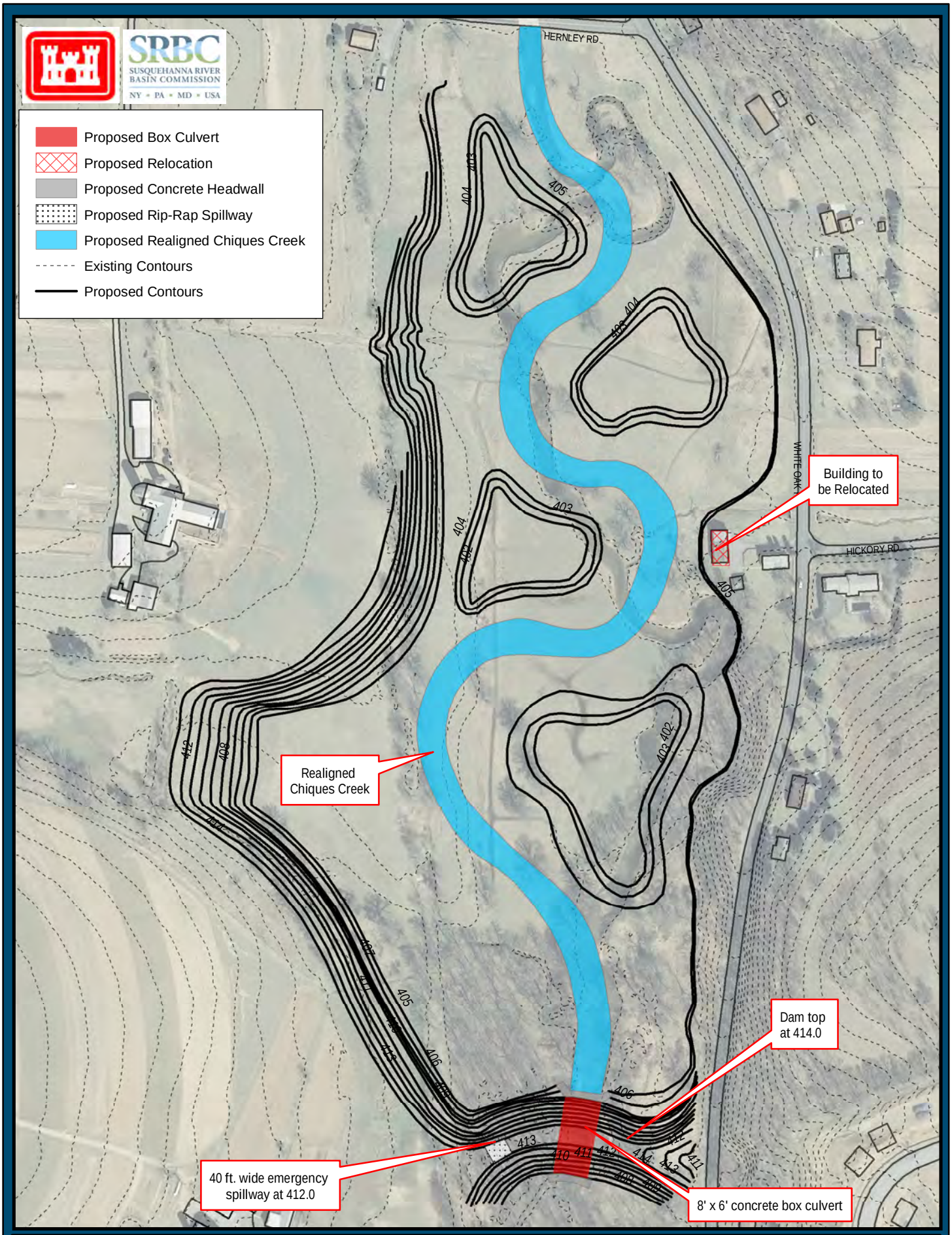
1 inch = 100 feet



ALTERNATIVE W2
WHITE OAK DAM RESTORATION

0 62.5125 250 Feet

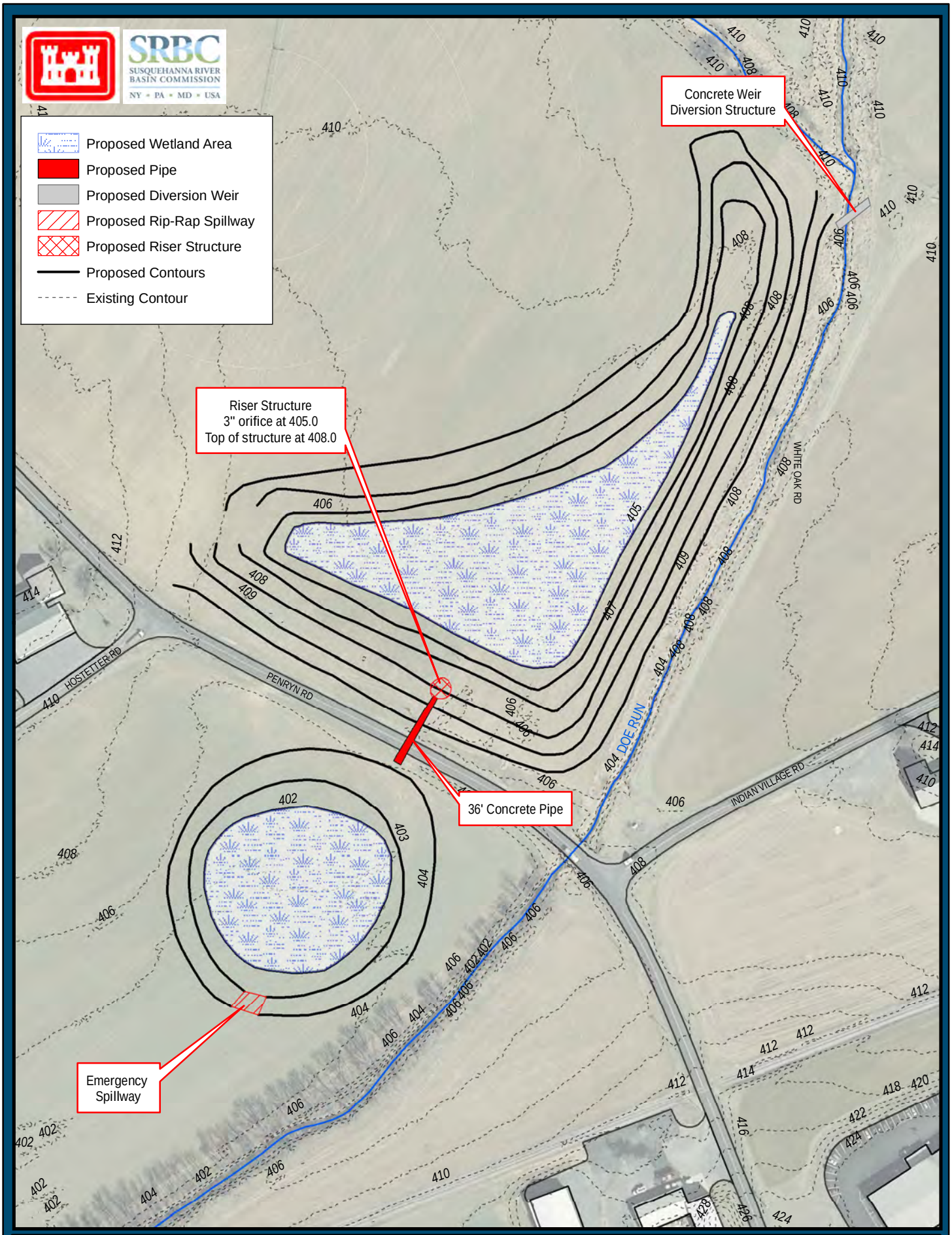
1 inch = 250 feet



ALTERNATIVE W3
HERNLEY ROAD IMPROVEMENTS

0 62.5125 250 Feet

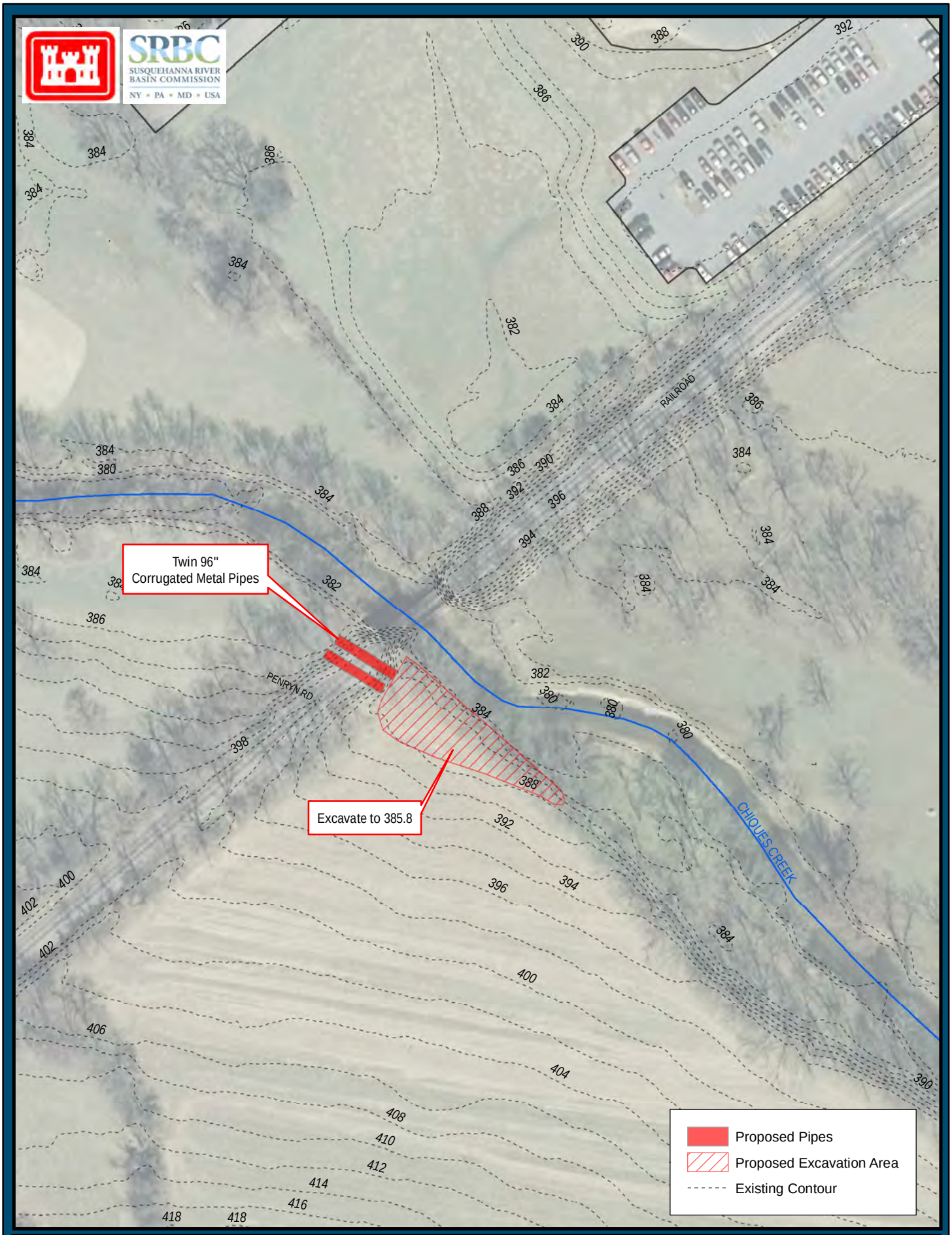
1 inch = 250 feet



ALTERNATIVE W5
DOE RUN WATERSHED STORAGE

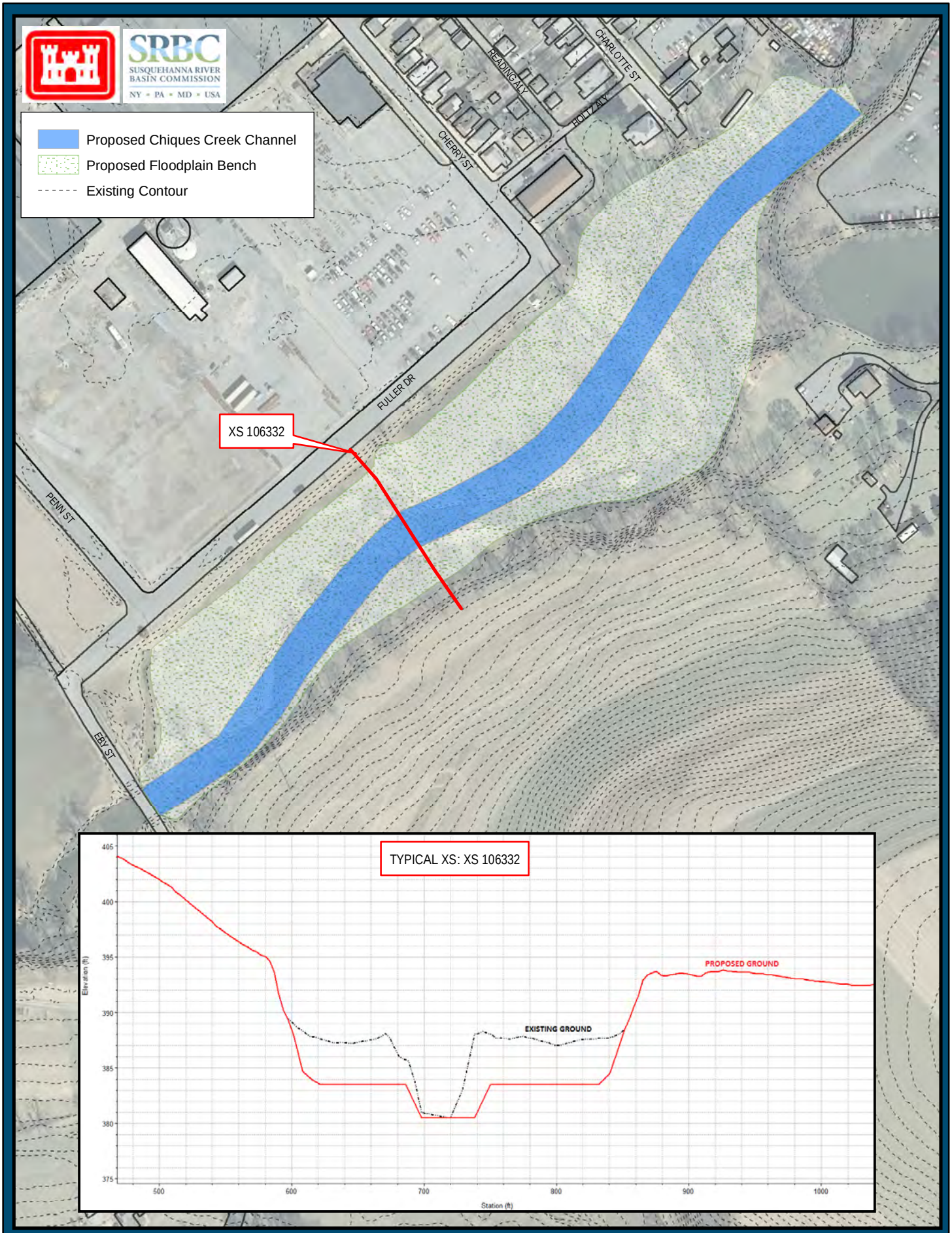
0 50 100 200 Feet

1 inch = 200 feet



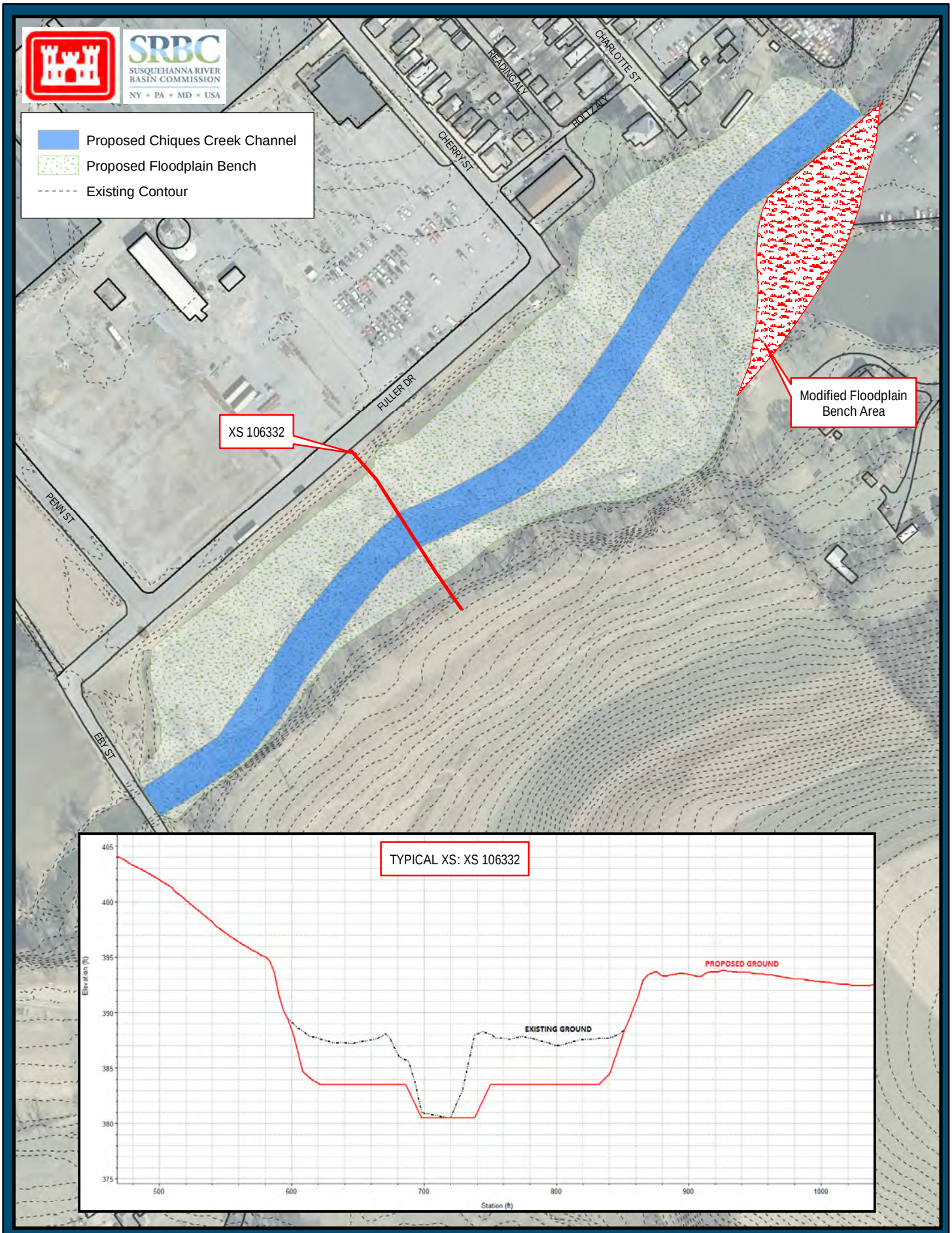
ALTERNATIVE C1
MODIFY RAILROAD CROSSING ABOVE RETTEW LANE

0 25 50 100 Feet
1 inch = 100 feet



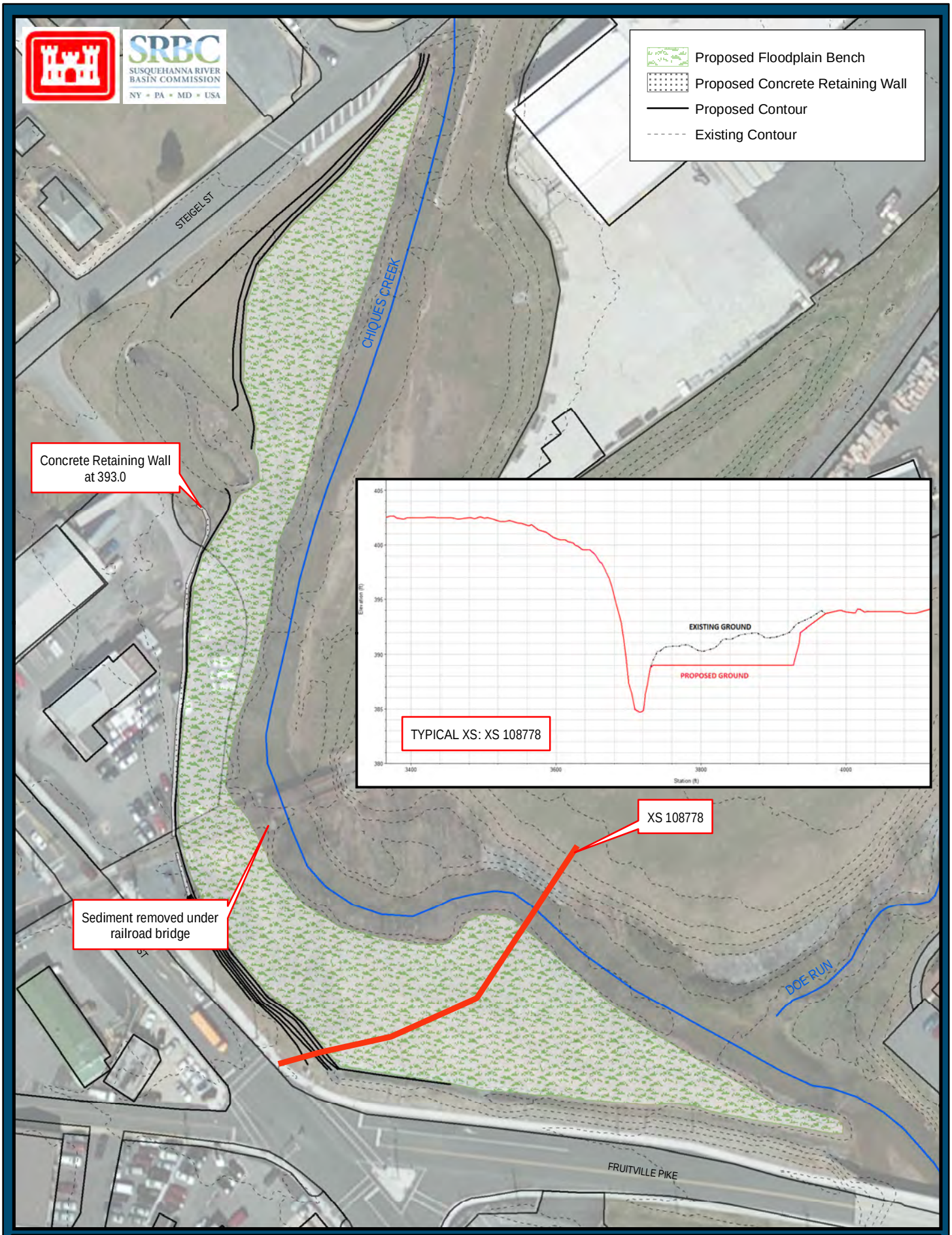
ALTERNATIVE C2
STREAM IMPROVEMENTS BETWEEN EBY STREET AND MAIN STREET

0 50 100 200 Feet
1 inch = 200 feet



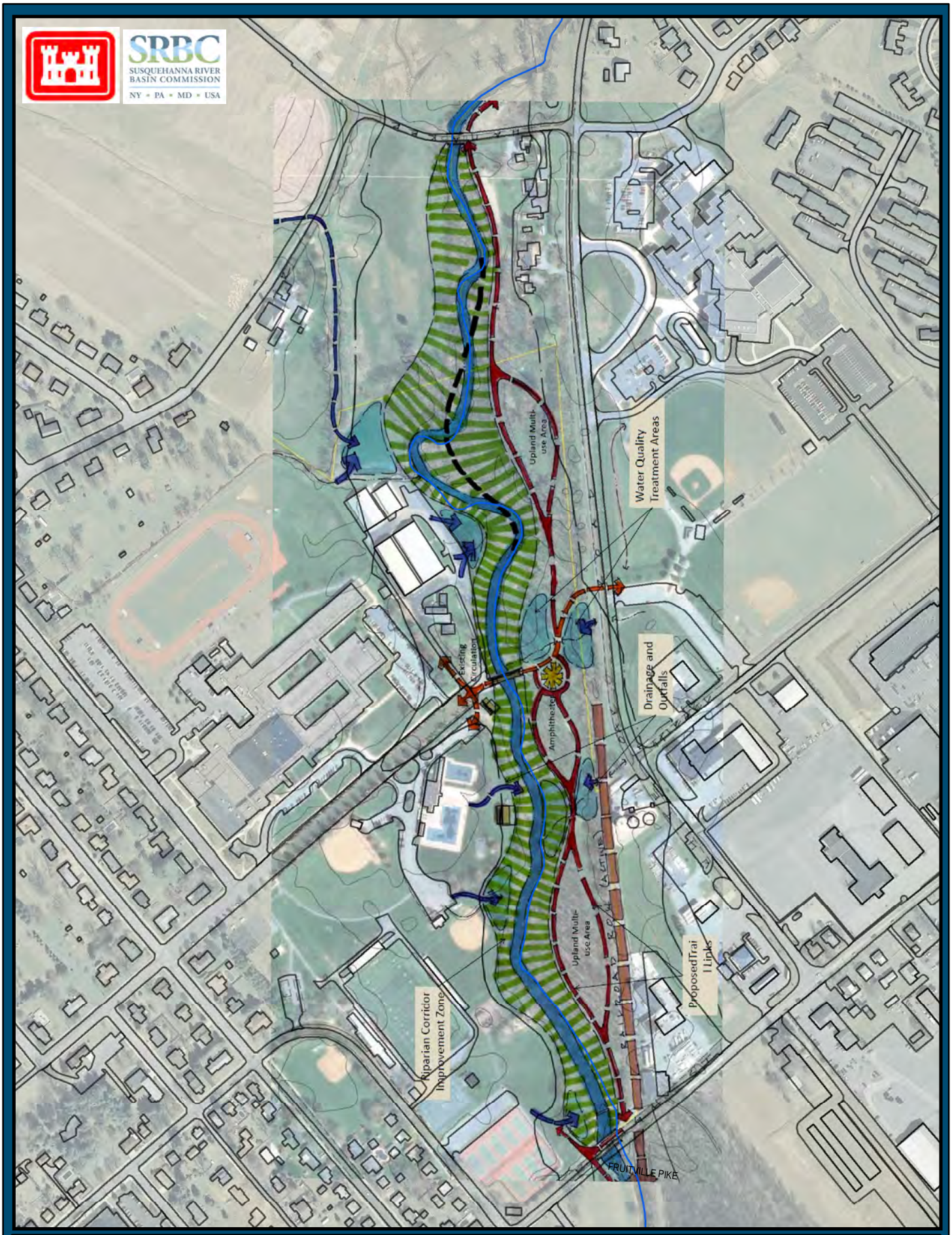
ALTERNATIVE C2A
REVISED STREAM IMPROVEMENTS BETWEEN EBY STREET AND MAIN STREET

0 50 100 200 Feet
1 inch = 200 feet



ALTERNATIVE C3
STREAM IMPROVEMENTS BETWEEN FRUITVILLE PIKE AND STEIGEL ST.

0 25 50 100 Feet
1 inch = 100 feet



ALTERNATIVE C6
MEMORIAL PARK RESTORATION

0 100 200 400 Feet
1 inch = 400 feet

APPENDIX K

Alternatives Modeling Output Data

WATERSHED ALTERNATIVES HEC-HMS RESULTS

ALTERNATIVE W1										
		Q10			Q100			Sept 2011 (Lee)		
Location	HEC-HMS Flow Point	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change
At Hamaker Road	CHC22.01	2353	2350	-0.1	6619	6532	-1.3	5355	5346	-0.2
Upstream of confluence with Doe Run	CHC20.57	2365	2322	-1.8	6679	6593	-1.3	5193	5183	-0.2
Downstream of confluence with Doe Run	CHC20.55	2889	2889	0.0	7575	7475	-1.3	7292	7315	0.3
Upstream of confluence with Rife Run	CHC19.35	2738	2738	0.0	7580	7491	-1.2	6973	6995	0.3
Downstream of confluence with Rife Run	CHC19.32	4469	4469	0.0	10152	10151	0.0	8277	8299	0.3

ALTERNATIVE W2										
		Q10			Q100			Sept 2011 (Lee)		
Location	HEC-HMS Flow Point	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change
At Hamaker Road	CHC22.01	2353	1962	-16.6	6619	6289	-5.0	5355	5008	-6.5
Upstream of confluence with Doe Run	CHC20.57	2365	1928	-18.5	6679	6162	-7.7	5193	4878	-6.1
Downstream of confluence with Doe Run	CHC20.55	2889	2859	-1.0	7575	6917	-8.7	7292	7247	-0.6
Upstream of confluence with Rife Run	CHC19.35	2738	2693	-1.6	7580	6820	-10.0	6973	6946	-0.4
Downstream of confluence with Rife Run	CHC19.32	4469	4462	-0.2	10152	9918	-2.3	8277	8259	-0.2

ALTERNATIVE W3										
		Q10			Q100			Sept 2011 (Lee)		
Location	HEC-HMS Flow Point	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change
At Hamaker Road	CHC22.01	2353	2303	-2.1	6619	6626	0.1	5355	5274	-1.5
Upstream of confluence with Doe Run	CHC20.57	2365	2269	-4.1	6679	6645	-0.5	5193	5168	-0.5
Downstream of confluence with Doe Run	CHC20.55	2889	2537	-12.2	7575	7551	-0.3	7292	7337	0.6
Upstream of confluence with Rife Run	CHC19.35	2738	2504	-8.5	7580	7519	-0.8	6973	7043	1.0
Downstream of confluence with Rife Run	CHC19.32	4469	4196	-6.1	10152	9247	-8.9	8277	8337	0.7

ALTERNATIVE W4										
		Q10			Q100			Sept 2011 (Lee)		
Location	HEC-HMS Flow Point	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change
At Hamaker Road	CHC22.01	2353	1736	-26.2	6619	6254	-5.5	5355	4952	-7.5
Upstream of confluence with Doe Run	CHC20.57	2365	1651	-30.2	6679	6103	-8.6	5193	4910	-5.4
Downstream of confluence with Doe Run	CHC20.55	2889	2477	-14.3	7575	6866	-9.4	7292	7269	-0.3
Upstream of confluence with Rife Run	CHC19.35	2738	2358	-13.9	7580	6750	-10.9	6973	6974	0.0
Downstream of confluence with Rife Run	CHC19.32	4469	4195	-6.1	10152	9207	-9.3	8277	8280	0.0

ALTERNATIVE W5										
		Q10			Q100			Sept 2011 (Lee)		
Location	HEC-HMS Flow Point	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change	Existing (cfs)	Alternative (cfs)	% Change
At Hamaker Road	CHC22.01	2353	2353	0.0	6619	6619	0.0	5355	5355	0.0
Upstream of confluence with Doe Run	CHC20.57	2365	2365	0.0	6679	6679	0.0	5193	5193	0.0
Downstream of confluence with Doe Run	CHC20.55	2889	2932	1.5	7575	7558	-0.2	7292	7362	1.0
Upstream of confluence with Rife Run	CHC19.35	2738	2728	-0.4	7580	7561	-0.3	6973	7030	0.8
Downstream of confluence with Rife Run	CHC19.32	4469	4429	-0.9	10152	10359	2.0	8277	8344	0.8

CHANNEL ALTERNATIVES HEC-RAS RESULTS

ALTERNATIVE C1

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ALTERNATIVE C1 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.6	397.9	399.2	400.1	400.9	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	400.9	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.8	399.8	400.6	398.1
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.4	398.5	400.0	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	396.9	398.1	399.7	396.6
At Hondru Ford	107775	390.9	392.5	393.6	394.5	395.5	396.5	397.9	399.5	396.2
At South Cherry Street	107182	390.0	391.2	391.9	393.4	394.6	395.8	397.2	399.1	395.4
At South Penn Street	105859	388.4	389.4	390.4	392.2	393.6	395.1	396.8	399.0	394.4
At Fenner Precision	104213	387.1	388.6	389.8	391.7	393.1	394.6	396.3	398.6	393.8
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0
At Tait Towers	109610	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0
At AD Autos	109141	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	0.0
Downstream of Doe Run	108540	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.4	-0.1
At Dollar General	108094	0.0	0.0	0.0	0.0	0.0	-0.1	-0.4	-0.4	-0.1
At Hondru Ford	107775	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.3	-0.4	-0.1
At South Cherry Street	107182	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.4	-0.5	-0.2
At South Penn Street	105859	0.0	0.0	-0.1	-0.1	-0.2	-0.3	-0.5	-0.5	-0.3
At Fenner Precision	104213	0.0	0.0	-0.1	-0.1	-0.3	-0.4	-0.6	-0.6	-0.3
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C2

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ALTERNATIVE C2 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.6	395.1	396.2	397.5	399.0	400.1	401.0	398.1
At Tait Towers	109610	392.2	393.3	394.1	395.8	397.3	398.9	400.0	400.9	397.9
At AD Autos	109141	391.8	393.0	393.7	395.3	397.0	398.7	399.8	400.6	397.7
Downstream of Doe Run	108540	390.2	391.5	392.7	394.6	395.9	396.9	398.3	400.1	396.7
At Dollar General	108094	389.6	390.8	391.8	393.7	395.2	396.3	397.8	399.8	396.0
At Hondru Ford	107775	389.1	390.2	391.1	392.8	394.1	395.7	397.5	399.7	395.0
At South Cherry Street	107182	388.6	389.7	390.7	392.6	394.0	395.6	397.4	399.6	394.9
At South Penn Street	105859	388.5	389.5	390.5	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	0.0	-0.1	-0.3	-0.4	-0.4	-0.2	0.1	-0.1	-0.4
At Tait Towers	109610	-0.2	-0.4	-0.8	-0.6	-0.4	-0.2	0.1	-0.1	-0.4
At AD Autos	109141	-0.2	-0.5	-1.0	-0.8	-0.5	-0.2	0.1	-0.2	-0.5
Downstream of Doe Run	108540	-1.2	-1.5	-1.6	-0.9	-0.6	-0.6	-0.5	-0.3	-0.6
At Dollar General	108094	-1.5	-1.9	-2.1	-1.4	-0.8	-0.7	-0.6	-0.3	-0.7
At Hondru Ford	107775	-1.8	-2.3	-2.5	-1.8	-1.4	-1.0	-0.6	-0.3	-1.3
At South Cherry Street	107182	-1.4	-1.5	-1.2	-0.9	-0.7	-0.4	-0.2	-0.1	-0.6
At South Penn Street	105859	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C2A

EXISTING-CONDITIONS WSE (FEET NAVD88)										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ALTERNATIVE C2A WSE (FEET NAVD88)										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.6	395.1	396.2	397.5	399.0	400.1	401.0	398.1
At Tait Towers	109610	392.2	393.3	394.0	395.7	397.3	398.8	400.0	400.9	397.9
At AD Autos	109141	391.8	393.0	393.6	395.2	396.9	398.6	399.8	400.6	397.7
Downstream of Doe Run	108540	390.1	391.5	392.6	394.5	395.8	396.9	398.3	400.1	396.6
At Dollar General	108094	389.5	390.7	391.7	393.5	395.2	396.3	397.8	399.8	395.9
At Hondru Ford	107775	389.0	390.0	390.9	392.6	393.9	395.5	397.5	399.6	394.8
At South Cherry Street	107182	388.6	389.7	390.7	392.6	394.0	395.6	397.4	399.6	394.9
At South Penn Street	105859	388.5	389.5	390.5	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ADDITIOANL REDUCTION IN WSE WITH ALTERNATIVE C2A OVER C2										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Tait Towers	109610	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0
At AD Autos	109141	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Downstream of Doe Run	108540	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	-0.1
At Dollar General	108094	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	-0.1
At Hondru Ford	107775	-0.1	-0.2	-0.2	-0.2	-0.2	-0.1	-0.1	0.0	-0.2
At South Cherry Street	107182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Penn Street	105859	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C3

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ALTERNATIVE C3 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.5	394.6	395.3	396.5	397.7	399.1	400.1	401.2	398.3
At Tait Towers	109610	391.8	393.5	394.7	396.2	397.5	399.0	400.0	401.1	398.2
At AD Autos	109141	391.6	393.2	394.5	395.9	397.2	398.7	399.7	400.7	398.0
Downstream of Doe Run	108540	391.3	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	-0.2	-0.1	-0.1	-0.1	-0.2	-0.1	0.0	0.1	-0.1
At Tait Towers	109610	-0.5	-0.2	-0.1	-0.1	-0.1	-0.1	0.1	0.1	-0.1
At AD Autos	109141	-0.5	-0.2	-0.1	-0.2	-0.2	-0.2	-0.1	-0.1	-0.2
Downstream of Doe Run	108540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Dollar General	108094	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Hondru Ford	107775	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Cherry Street	107182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Penn Street	105859	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C4

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ALTERNATIVE C4 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.6	394.6	395.3	396.6	397.8	399.2	400.0	401.1	398.4
At Tait Towers	109610	392.4	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Tait Towers	109610	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At AD Autos	109141	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of Doe Run	108540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Dollar General	108094	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Hondru Ford	107775	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Cherry Street	107182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Penn Street	105859	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C5

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

ALTERNATIVE C5 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Tait Towers	109610	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At AD Autos	109141	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of Doe Run	108540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Dollar General	108094	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Hondru Ford	107775	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Cherry Street	107182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Penn Street	105859	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C6

EXISTING-CONDITIONS WSE (FEET NAVD88)										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.2	400.2	400.6	402.2	403.4	404.5	405.4	406.7	403.6
At Manheim Veterans Park	112748	397.2	398.6	399.4	401.2	402.5	403.6	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.7	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.6	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	401.5	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	401.2	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.9	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.8	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	400.5	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	400.3	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	400.0	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	396.0	392.1

ALTERNATIVE C6 WSE (FEET NAVD88)										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	-0.4	-0.3	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.4
At Manheim Veterans Park	112748	-0.3	-0.2	-0.2	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Tait Towers	109610	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At AD Autos	109141	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of Doe Run	108540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Dollar General	108094	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Hondru Ford	107775	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Cherry Street	107182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Penn Street	105859	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C7

EXISTING-CONDITIONS WSE (FEET NAVD88)										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.2	400.2	400.6	402.2	403.4	404.5	405.4	406.7	403.6
At Manheim Veterans Park	112748	397.2	398.6	399.4	401.2	402.5	403.6	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.7	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.6	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	401.5	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	401.2	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.9	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.8	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	400.5	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	400.3	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	400.0	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	396.0	392.1

ALTERNATIVE C7 WSE (FEET NAVD88)										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.1	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.1	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	400.8	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	400.3	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.1	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.0	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	399.6	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE										
Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Tait Towers	109610	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At AD Autos	109141	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of Doe Run	108540	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Dollar General	108094	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Hondru Ford	107775	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Cherry Street	107182	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At South Penn Street	105859	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C2C3

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.2	400.2	400.6	402.2	403.4	404.5	405.4	406.7	403.6
At Manheim Veterans Park	112748	397.2	398.6	399.4	401.2	402.5	403.6	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.7	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.6	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	401.5	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	401.2	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.9	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.8	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	400.5	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	400.3	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	400.0	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	396.0	392.1

ALTERNATIVE C2C3 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.6	400.5	401.2	402.7	403.9	404.9	405.7	407.0	404.0
At Manheim Veterans Park	112748	397.5	398.8	399.6	401.3	402.6	403.7	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.4	394.5	395.1	396.1	397.3	398.8	400.1	401.1	397.9
At Tait Towers	109610	391.3	392.6	393.6	395.5	397.1	398.7	400.1	401.0	397.8
At AD Autos	109141	390.9	392.1	393.1	395.0	396.7	398.3	399.7	400.6	397.5
Downstream of Doe Run	108540	390.1	391.5	392.6	394.5	395.9	396.9	398.3	400.1	396.7
At Dollar General	108094	389.6	390.8	391.8	393.7	395.2	396.3	397.8	399.8	396.0
At Hondru Ford	107775	389.1	390.2	391.1	392.8	394.1	395.7	397.5	399.7	395.0
At South Cherry Street	107182	388.6	389.7	390.7	392.6	394.0	395.6	397.4	399.6	394.9
At South Penn Street	105859	388.5	389.5	390.5	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Manheim Veterans Park	112748	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	-0.3	-0.1	-0.3	-0.6	-0.5	-0.4	0.1	-0.1	-0.5
At Tait Towers	109610	-1.0	-1.1	-1.3	-0.8	-0.6	-0.4	0.1	-0.1	-0.5
At AD Autos	109141	-1.2	-1.4	-1.5	-1.0	-0.8	-0.5	0.0	-0.2	-0.7
Downstream of Doe Run	108540	-1.2	-1.5	-1.6	-0.9	-0.6	-0.6	-0.5	-0.3	-0.6
At Dollar General	108094	-1.5	-1.9	-2.1	-1.4	-0.8	-0.7	-0.6	-0.3	-0.7
At Hondru Ford	107775	-1.8	-2.3	-2.5	-1.8	-1.4	-1.0	-0.6	-0.3	-1.3
At South Cherry Street	107182	-1.4	-1.5	-1.2	-0.9	-0.7	-0.4	-0.2	-0.1	-0.6
At South Penn Street	105859	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ALTERNATIVE C2C3C6

EXISTING-CONDITIONS WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.2	400.2	400.6	402.2	403.4	404.5	405.4	406.7	403.6
At Manheim Veterans Park	112748	397.2	398.6	399.4	401.2	402.5	403.6	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.7	394.7	395.4	396.7	397.9	399.2	400.1	401.7	398.4
At Tait Towers	109610	392.3	393.7	394.9	396.4	397.7	399.1	400.0	401.6	398.3
At AD Autos	109141	392.1	393.4	394.6	396.1	397.4	398.9	399.7	401.5	398.2
Downstream of Doe Run	108540	391.4	393.0	394.3	395.5	396.4	397.5	398.8	401.2	397.2
At Dollar General	108094	391.1	392.7	393.9	395.1	396.0	397.0	398.4	400.9	396.7
At Hondru Ford	107775	390.9	392.5	393.6	394.6	395.6	396.7	398.2	400.8	396.3
At South Cherry Street	107182	390.0	391.2	392.0	393.5	394.7	396.0	397.6	400.5	395.5
At South Penn Street	105859	388.4	389.4	390.4	392.3	393.8	395.4	397.3	400.3	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	400.0	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	396.0	392.1

ALTERNATIVE C2C3C6 WSE (FEET NAVD88)

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	399.2	400.2	400.6	402.2	403.4	404.5	405.4	406.7	403.6
At Manheim Veterans Park	112748	397.2	398.6	399.4	401.2	402.5	403.6	404.5	405.8	402.7
Downstream of South Oak Street	110423	393.4	394.5	395.1	396.1	397.3	398.8	400.1	401.1	397.9
At Tait Towers	109610	391.3	392.6	393.6	395.5	397.1	398.7	400.1	401.0	397.8
At AD Autos	109141	390.9	392.1	393.1	395.0	396.7	398.3	399.7	400.6	397.5
Downstream of Doe Run	108540	390.1	391.5	392.6	394.5	395.9	396.9	398.3	400.1	396.7
At Dollar General	108094	389.6	390.8	391.8	393.7	395.2	396.3	397.8	399.8	396.0
At Hondru Ford	107775	389.1	390.2	391.1	392.8	394.1	395.7	397.5	399.7	395.0
At South Cherry Street	107182	388.6	389.7	390.7	392.6	394.0	395.6	397.4	399.6	394.9
At South Penn Street	105859	388.5	389.5	390.5	392.3	393.8	395.4	397.3	399.5	394.7
At Fenner Precision	104213	387.1	388.6	389.9	391.8	393.3	395.0	396.9	399.2	394.2
Upstream of Wastewater Treatment Plant	102751	386.1	387.8	389.0	390.6	391.8	393.0	394.2	395.6	392.1

REDUCTION IN WSE WITH ALTERNATIVE

Location	HEC-RAS XS	2YR	5YR	10YR	25YR	50YR	100YR	200YR	500YR	LEE
At Manheim Farm Show	114230	-0.4	-0.3	-0.6	-0.5	-0.4	-0.4	-0.3	-0.3	-0.4
At Manheim Veterans Park	112748	-0.3	-0.2	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0
Downstream of South Oak Street	110423	-0.3	-0.1	-0.3	-0.6	-0.5	-0.4	0.1	-0.1	-0.5
At Tait Towers	109610	-1.0	-1.1	-1.3	-0.8	-0.6	-0.4	0.1	-0.1	-0.5
At AD Autos	109141	-1.2	-1.4	-1.5	-1.0	-0.8	-0.5	0.0	-0.2	-0.7
Downstream of Doe Run	108540	-1.2	-1.5	-1.6	-0.9	-0.6	-0.6	-0.5	-0.3	-0.6
At Dollar General	108094	-1.5	-1.9	-2.1	-1.4	-0.8	-0.7	-0.6	-0.3	-0.7
At Hondru Ford	107775	-1.8	-2.3	-2.5	-1.8	-1.4	-1.0	-0.6	-0.3	-1.3
At South Cherry Street	107182	-1.4	-1.5	-1.2	-0.9	-0.7	-0.4	-0.2	-0.1	-0.6
At South Penn Street	105859	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
At Fenner Precision	104213	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upstream of Wastewater Treatment Plant	102751	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ATTACHMENT

SRBC
SUSQUEHANNA RIVER
BASIN COMMISSION
NY ▪ PA ▪ MD ▪ USA