



Final Drainage Report

Winsome Subdivision Filing No. 2 El Paso County, Colorado

Prepared for:

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Winsome, LLC

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Prepared by:

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PCD File No. SF-21-015

Project #: 196106000

Prepared: September 14, 2021

Kimley»Horn

CERTIFICATION

DESIGN ENGINEER'S STATEMENT

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparation of this report.

SIGNATURE (Affix Seal):

Brice Hammersland, P.E.
Colorado P.E. No. 56012



OWNER/DEVELOPER'S STATEMENT

I, the developer, have read and will comply with all of the requirements specified in this Drainage Report and Plan.

Winsome, LLC

Name of Developer

✓ Joseph W. DesJardin 10/29/2022
Authorized Signature Date

Joseph W. DesJardin
Printed Name

Director of Entitlements
Title

1864 Woodmoor Dr, Suite 100, Monument, CO 80132
Address:

EL PASO COUNTY

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 and 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

APPROVED
Engineering Department

Jennifer Irvine, P.E.
County Engineer/ ECM Administrator

11/16/2021 4:24:47 PM
dsdnijkamp
EPC Planning & Community
Development Department

Conditions:

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INTRODUCTION

PURPOSE AND SCOPE OF STUDY

The purpose of this Final Drainage Report (FDR) is to provide the hydrologic and hydraulic calculations and to document and finalize the drainage design methodology in support of the proposed Winsome Subdivision (“the Project”) Filing No. 2 (“the Site”) for Winsome LLC. The Project is located within the jurisdictional limits of El Paso County (“the County”). Thus, the guidelines for the hydrologic and hydraulic design components were based on the criteria for the County and City of Colorado Springs, described below.

LOCATION

The Project is located approximately 17 miles west of Monument, Colorado within Township 11 South, Range 65 West of the 6th Principal Meridian, County of El Paso, State of Colorado (the “Site”). More specifically, the Site is located north of Hodgen Road, and west of Meridian Road. A vicinity map has been provided in the **Appendix A** of this report.

The Site is currently owned by Winsome, LLC and will be developed by Winsome, LLC.

DESCRIPTION OF PROPERTY

The Project is located on approximately 768 acres of land consisting of vacant land with native vegetation and is classified as “Pasture and Meadow” per Table 6-6 of the City of Colorado Springs Drainage Criteria Manual. Filing No 2 consists of 61 residential lots and a commercial lot. The Site does not currently provide water quality or detention for the Project area. The existing land use is undeveloped vacant land.

The existing topography consists of slopes ranging from 1% to 16%. The West Kiowa Creek (“the Creek”) runs in the northwest corner of the site.

NRCS soil data is available for this Site and it has been noted that soils onsite are generally USCS Type B. The NRCS soil data can be found in **Appendix D** as part of the excerpts from the approved PDR. There are no major drainage ways or irrigation facilities within the Site.

Improvements will consist of mowing, clearing and grubbing, weed control, paved access road construction, roadway grading, one detention pond, roadside ditches, culverts, drainage swales, native seeding and a proposed channel to convey flows to the detention pond.

The Site proposes to plat 61 lots for single family development, one commercial lot, as well as, provide the grading, roadway and drainage improvements.

An updated Topographic field survey was completed for the Project by Edward-James Surveying, Inc. dated November 3th, 2020 and is the basis for design for the drainage improvements.

DRAINAGE BASINS

MAJOR BASIN DESCRIPTIONS

A preliminary drainage report was completed for the overall Winsome subdivision. This was previously completed by The Vertex Companies. This Final Drainage Report used the approved Preliminary Drainage Report prepared by The Vertex Companies (PDR) for the Filing No. 2 final design.

The Site improvements are located outside of the 100-year FEMA Zone A floodplain as determined by the Flood Insurance Rate Map (FIRM) number 08041C0350G effective date, December 7, 2018 (see **Appendix A**). A Conditional Letter of Map Revision (CLOMR) was submitted and approved under Winsome Filing No. 1, FEMA Case No.19-08-0185R (see **Appendix D**). The floodplain is located along the north side of Filing No. 2 and the site improvements are located outside of the floodplain limits. Refer to **Appendix D** for the CLOMR application approval letter from FEMA for Case No. 19-08-0185R.

The Project is located within El Paso County's West Kiowa Creek Drainage Basin.

EXISTING SUB-BASIN DESCRIPTIONS

Per the approved Preliminary Drainage Report prepared by The Vertex Companies (PDR). The Site was divided into 2 subbasins Eb and F. Drainage flows from southeast to northwest overland over vacant land to the West Kiowa Creek. Below is a description of the existing sub-basins.

Sub-Basin Eb

Per the approved PDR sub-basin Eb consists of an on-site area of 74.6 acres, located in the southeast corner of the property. Drainage flows overland from the southeast to the northwest and into the West Kiowa Creek. Runoff during the 5-year and 100-year events are 4.0 cfs and 85.8 cfs respectively. Refer to **Appendix D** for the Existing Conditions Drainage Map.

Sub-Basin Dc

Per the approved PDR sub-basin Dc consists of an on-site area of 249.7 acres, located in the center of the southern portion of the property. Drainage flows overland from the south to the north and into the West Kiowa Creek. Runoff during the 5-year and 100-year events are 28.10 cfs and 275.70 cfs respectively. Refer to **Appendix D** for the Existing Conditions Drainage Map.

Sub-basin F

Per the approved PDR sub-basin F consists of an on-site area of 44.5 acres, located in the northeast corner of the property. Drainage flows overland from south to north at the West Kiowa Creek. Runoff during the 5-year and 100-year events are 6.6 cfs and 56.6 cfs respectively. Refer to **Appendix D** for the Existing Conditions Drainage Map.

Offsite flows entering the Site from sub-basin Ea will be conveyed through the Site following historical drainage paths and outfall to West Kiowa Creek. Offsite flows from sub-basin Ea will be routed to Pond 5 and detained on site.

Excerpts from the approved PDR for the Existing Drainage Conditions are included in the **Appendix D** of this report for reference.

PROPOSED HEC-HMS SUB-BASIN DESCRIPTIONS

For the proposed condition, stormwater will generally maintain historic flow patterns from southwest to northeast. The proposed roadways will alter some of the existing flow paths. The roadway ditches will capture runoff from the roadways and direct flows back to the existing flow paths, which will ultimately outfall to Pond 5. To determine the design flows for the proposed culverts the existing basins were broken out and design points were created at each culvert crossing location.

The proposed project has been divided into 13 larger sub-basins for the HEC-HMS model and 5 sub basins for rational calculations.

Sub-Basin E0 is an offsite basin on the southeast side of Filing No. 2. Runoff from this basin will be directed to design point E0 where it will be directed to the north in an existing culvert to subbasin E1.1. This sub-basin has an area of 37.9 acres. The curve number for Sub-Basin E0 is 60.00. The basin will generate runoff of 4.9 cfs and 24.6 cfs in the minor and major storm event.

Sub-Basin E1.1 is an onsite basin on the southeast corner of Filing No. 2. The basin will remain unchanged for this report. This basin will drain into an existing swale and outfall into Basin E1.2 as it has done historically. Once developed, future flows will be directed to design point E1.5 through culvert E1.5 into Basin E2. This sub-basin has an area of 8.7 acres. The curve number for Sub-Basin E1.1 is 70.00. The basin will generate runoff of 2.7 cfs and 16.6 cfs in the minor and major storm event. When the basin gets developed a full spectrum detention pond will be required as part of the development and release at historic flows.

Sub-Basin E1.2 consists of 4 large lots. Runoff from this basin will be directed to design point E1.2 where it will be directed to the northwest in the proposed culvert E1.2 to subbasin E3. This sub-basin has an area of 15.3 acres. The curve number for Sub-Basin E1.2 is 65.00. The basin will generate runoff of 5.0 cfs and 21.4 cfs in the minor and major storm event.

Sub-Basin E2 consists of a portion of a large residential lot at the southwest corner of Flapjack Lane and Early Light Drive. Runoff from this basin will be directed to design point E2 where it will be directed to the north in the proposed culvert E2 to subbasin E3. This sub-basin has an area of 2.6 acres. The curve number for Sub-Basin E2 is 69.00. The basin will generate runoff of 2.3 cfs and 8.9 cfs in the minor and major storm event.

Sub-Basin E3 consists of 6 large residential lots west of Early Light Drive and south of Rambling Road. Runoff from this basin will be directed to design point E3 where it will be directed to the north in the proposed culvert E3 to subbasin E4. This sub-basin has an area of 19.8 acres. The curve number for Sub-Basin E3 is 66.00. The basin will generate runoff of 7.6 cfs and 33.7 cfs in the minor and major storm event.

Sub-Basin E4 consists of 5 large residential lots west of Early Light Drive and south of Alamar Way. Runoff from this basin will be directed to design point E4 where it will be directed to the north in E4 culvert to subbasin E7. This sub-basin has an area of 18.2 acres. The curve number for Sub-Basin E4 is 66.00. The basin will generate runoff of 7.6 cfs and 33.7 cfs in the minor and major storm event.

Sub-Basin E5 consists of several portions of 7 large residential lots south of Alamar Way near the southern terminus of Clove Hitch Ct. Runoff from this basin will be directed to design point E5 where it will be directed to the north in the proposed culvert E5 to subbasin E6. This sub-basin has an area of 13.5 acres. The curve number for Sub-Basin E5 is 65.00. The basin will

generate runoff of 3.9 cfs and 18.4 cfs in the minor and major storm event.

Sub-Basin E6 consists of 3 large residential lots north of Alamar Way. Runoff from this basin will be directed to Channel 10 where it will drain into the full spectrum detention Pond 5 which will outfall into West Kiowa Creek. This sub-basin has an area of 9.3 acres. The curve number for Sub-Basin E6 is 63.00. The basin will generate runoff of 2.7 cfs and 14.1 cfs in the minor and major storm event.

Sub-Basin E7 consists of several portions of 5 large residential lots on the north side of the site and west of Early Light Drive. Runoff from this basin will be directed to Channel E4 which drains to Channel 10. Channel 10 will convey flows into the full spectrum detention Pond 5 which will outfall into West Kiowa Creek. This sub-basin has an area of 10.2 acres. The curve number for Sub-Basin E7 is 65.00. The basin will generate runoff of 3.3 cfs and 16.1 cfs in the minor and major storm event.

Sub-Basin E8 consists of 2 large residential lots north of Alamar Way and detention Pond 5. Runoff from this basin will sheet flow to the north. Where it will drain into the full spectrum detention Pond 5 which will outfall into West Kiowa Creek. It should be noted that this basin accounts for the future half street buildout that will continue to the north. Refer to **Appendix B** for the basin area calculations. This sub-basin has an area of 15.8 acres. The curve number for Sub-Basin E8 is 62.00. The basin will generate runoff of 5.2 cfs and 25.6 cfs in the minor and major storm event.

Sub-Basin E9 consists of an undeveloped area north of Pond 5. Flows from this sub-basin are not required to be conveyed to a water quality facility according to Appendix I Section 1.7.1.B of El Paso County's Engineering Construction Manual (ECM). The sub-basin is identified as undeveloped land that will remain undeveloped under Section 1.7.1.B, number 7. Runoff from this basin will be directed to West Kiowa Creek as it has done historically. This sub-basin has an area of 3.82 acres. The curve number for Sub-Basin E9 is 61.00. The basin will generate runoff of 0.3 cfs and 5.8 cfs in the minor and major storm event.

Sub-Basin F1 consists of 7 large residential lots on the east of Early Light Drive and west of Meridian Road as well as a portion of Early Light Drive. Flows from this sub-basin are not required to be conveyed to a water quality facility according to Appendix I Section 1.7.1.B of El Paso County's Engineering Construction Manual (ECM). The sub-basin is identified as a large lot single family area with an impervious cover under 20 percent under Section 1.7.1.B, number 5. Runoff from this basin will be directed to an existing drainage channel which flows offsite and outfalls into West Kiowa Creek. This sub-basin has an area of 32.1 acres. The curve number for Sub-Basin F1 is 62.00. The basin will generate runoff of 8.1 cfs and 36.6 cfs in the minor and major storm event. When comparing the proposed results to the outfall location of F1 to the existing conditions sub-basin F. The total proposed peak flows for basin F1 and F3 total 51.1 cfs. This is below the existing conditions flow that was determined for basin F which resulted in a peak flow of 56.6 cfs. Runoff reduction is being accounted for to meet water quality requirements for the roadway runoff within this basin. Refer to the runoff reduction section for additional information.

Sub-Basin F2 consists of 2 large residential at the northeast corner of Woodbridge Terrace and Early Light Drive. Runoff from this basin will be directed to design point F2 where it will be directed to the northwest in the proposed culvert F2, routed through Channel 6 and outfalls to design point E4. This sub-basin has an area of 4.4 acres. The curve number for Sub-Basin F2 is 65.00. The basin will generate runoff of 2.2 cfs and 8.6 cfs in the minor and major storm event.

Sub-Basin F3 consists of 3 large residential at the northeast corner of the site along Meridian Road. Runoff from this basin will be directed to an existing drainage channel which flows offsite and outfalls into West Kiowa Creek. Flows from this sub-basin are not required to be conveyed to a water quality facility according to Appendix I Section 1.7.1.B of El Paso County's Engineering Construction Manual (ECM). The sub-basin is identified as a large lot single family area with an impervious cover under 20 percent under Section 1.7.1.B, number 5. This sub-basin has an area of 9.6 acres. The curve number for Sub-Basin F2 is 63.00. The basin will generate runoff of 2.2 cfs and 14.5 cfs in the minor and major storm event. As previously mentioned the total proposed peak flows for basin F1 and F3 total 51.1 cfs. This is below the existing conditions flow that was determined for basin F which resulted in a peak flow of 56.6 cfs. Sub-basin F3 is undeveloped land that will remain undeveloped following construction activities, therefore this basin will be excluded from PBMPs. Runoff reduction is being accounted for to meet water quality requirements for the roadway runoff within this basin. Refer to the runoff reduction section for additional information.

Per PDR sub-basin D1.2 is an off-site basin to the south of Hodgen Road consisting of agricultural land and large residential lots. Runoff from this basin will be directed to an existing culvert under Hodgen Road where it will be directed to subbasin D3. This sub-basin has an area of 49.90 acres. The curve number for Sub-Basin D1.2 is 60.00. The basin will generate runoff of 5.7 cfs and 34.1 cfs in the minor and major storm event.

Per PDR sub-basin D3 is an off-site basin consisting of 12 undeveloped, large residential lots. Runoff from this basin will be directed to design point O1 where it will be directed to the north in O1 culvert to subbasin D4. This sub-basin has an area of 41.20 acres. The curve number for Sub-Basin D3 is 64.00. The basin will generate runoff of 7.9 cfs and 44.2 cfs in the minor and major storm event.

Per PDR sub-basin D4 is an off-site basin consisting of 12 undeveloped, large residential lots. Runoff from this basin will be directed to design point O2 where it will be directed to the northwest in O2 culvert to an existing drainage channel which outfalls into West Kiowa Creek. This sub-basin has an area of 34.30 acres. The curve number for Sub-Basin D3 is 64.00. The basin will generate runoff of 7.7 cfs and 44.8 cfs in the minor and major storm event.

Sub-basin D5, sub-basin D6, and sub-basin C4 contain residential lots within Winsome Filing No. 2 however developed flows from these basins were accounted for in the Winsome Filing No. 1 Final Drainage Report, approved December 1st, 2020.

PROPOSED RATIONAL SUB-BASIN DESCRIPTIONS

Smaller sub-basins, labeled as DA#, were delineated to determine flows being conveyed through roadside ditches throughout the site.

Sub-Basin DA1 consists of portions of 1 residential lots at the southwest corner of FlapJack Lane and Early Light Drive. Runoff from this basin will be directed into design point E2. Where it will be directed to the north in the proposed E2 culvert to subbasin E3. This sub-basin has an area of 1.11 acres. The impervious value for Sub-Basin DA1 is 19%. The basin will generate runoff of 0.98 cfs and 3.82 cfs in the minor and major storm event.

Sub-Basin DA2 consists of portions of large residential lots south of Rambling Road. Runoff from this basin will be directed into design point E3. Where it will be directed to culvert E3 and outfall into Channel E3. This sub-basin has an area of 8.16 acres. The impervious value for Sub-Basin DA2 is 10%. The basin will generate runoff of 3.08 and 16.11 cfs in the minor and

major storm event.

Sub-Basin DA3 consists of portions of large residential lots located in the north side of the site, south of Alamar Way. Runoff from this basin will be directed into design point E5 and where it will be directed to the north in the proposed culvert E5 to Channel 9. This sub-basin has an area of 2.09 acres. The impervious value for Sub-Basin DA3 is 10%. The basin will generate runoff of 0.80 cfs and 4.19 cfs in the minor and major storm event.

Sub-Basin DA4 consists of 4 large residential lots located in the north side of the site, south of Alamar Way. Runoff from this basin will be directed into design point E5 and where it will be directed to the north in the proposed culvert E5 to Channel 9. This sub-basin has an area of 10.54 acres. The impervious value for Sub-Basin DA4 is 8%. The basin will generate runoff of 3.68 cfs and 21.00 cfs in the minor and major storm event.

Sub-Basin DA5 consists of portions of large residential lots located in the north side of the site, south of Alamar Way. Runoff from this basin will be directed into design point E5 and where it will be directed to the north in the proposed culvert E5 to Channel 9. This sub-basin has an area of 3.00 acres. The impervious value for Sub-Basin DA5 is 14%. The basin will generate runoff of 1.53 cfs and 7.00 cfs in the minor and major storm event.

DRAINAGE DESIGN CRITERIA

DEVELOPMENT CRITERIA REFERENCE

The proposed storm facilities are designed to be in compliance with the City of Colorado Springs and El Paso County “Drainage Criteria Manual (DCM)” dated October 2018 (“the MANUAL”), El Paso County “Engineering Criteria Manual” (“the Engineering Manual”), Chapter 6 and Section 3.2.1 of Chapter 13 of the City of Colorado Springs Drainage Criteria Manual dated May 2014 (“the Colorado Springs MANUAL”).

Site drainage is not significantly impacted by such constraints as utilities or existing development.

A preliminary drainage report was completed for the overall Winsome subdivision. This was previously completed by The Vertex Companies. This Final Drainage Report used the approved Preliminary Drainage Report prepared by The Vertex Companies (PDR) for the Site’s final design. The proposed release rate for Pond 5 are less than what was determined in the PDR.

HYDROLOGIC CRITERIA

The 5-year and 100-year design storm events were used in determining rainfall and runoff for the proposed drainage analysis per the MANUAL. Table 6-2 of the Colorado Springs MANUAL is the source for rainfall data for the 5-year and 100-year design storm events. Design runoff was calculated using the NRCS curve number method for developed conditions as established in the MANUAL. This aligns with what was completed in the PDR. The NRCS curve number method was used for existing conditions and proposed conditions due to the on-site and off-site basins containing more than 130 acres. Per the PDR the runoff curve numbers for the existing and proposed drainage basins used the curve numbers in DCM. The PDR developed the following values for the 2 ½ and 5 acre lots in **Table 1** below. These values were also used for the final design in this report.

Table 1: Values Extrapolated per the PDR

Lot Size (Acres)	% Imp	Soil Type			
		A	B	C	D
2 /12	11	N/A	64	76	81
5	7	N/A	60	72	77

The rainfall depths that were determined in the PDR were also used for the final design. The rainfall depths utilized the Frontal Storm which produced higher design flows. See **Table 2** below for the Frontal Storm rainfall values.

Table 2: Frontal Storm Rainfall Depths

Storm Event	Duration (HRS)	
	1 HR	24 HR
5 Year	1.5	2.7
100 Year	2.52	4.6

Calculations for the composite curve numbers are included in the **Appendix B**. Rational method peak flows were determined to size proposed ditch channels. The rational calculations utilized the frontal storm values of 1.5 inches and 2.52 inches for a 1-hour storm, for the 5-year and 100-year storms respectively.

The proposed impervious values were determined in the PDR and were utilized in this report for the final design.

The Site is providing one full spectrum detention pond as the Site is not significantly increasing the imperviousness of the Site, the Project is maintaining the historic drainage patterns as much as possible and not significantly increasing developed flows.

There are no additional provisions selected or deviations from the criteria in both the MANUAL and Colorado Springs MANUAL.

HYDRAULIC CRITERIA

Applicable design methods were utilized to size the proposed pond, culverts, and drainage channels, which includes the use of the UD-Detention spreadsheet, rational calculations spreadsheet, HY-8 and FlowMaster, V8i software.

Proposed drainage features on-site have been analyzed and sized for the following design storm events:

- Major Storm: 100-year Storm Event

For the stormwater modeling for the Site was completed utilizing the NRCS Curve Number Method as required by the City of Colorado Springs. The Rational Method peak flows were determined to size the proposed culverts and channels. The same assumptions were kept from the PDR for the time of concentration calculations. **Table 3** below outlines these assumptions from the PDR:

Table 3: Time of Concentration Assumptions

	Shape	Side Slope	Depth (ft)	Wetted Perimeter (ft)	Cross Sectional Area (sq. ft.)
< 100 Acre Basin Channels	Triangular	4:1	4	32.98	64
>100 Acre Basin Channels	Triangular	4:1	3	24.74	36

For the conveyance flow paths the same assumptions and method was carried through from the PDR. These flow paths were for between the basin and the main channels and used 3 profiles. Per the PDR the 3 profiles utilized are as follows: “triangular profiles were used for the majority of the conveyance channels, larger branching tributaries with an 8 ft bottom, and the main channels were modeled as trapezoidal with a 20 ft bottom.”

One full spectrum detention pond is proposed in order to maintain historic flows and water quality. Mile High Flood District's UD-detention spreadsheet was utilized to design the pond outlet structure. The same methodology that was used and approved by the County on Filing 1 was used to calibrate the UD-detention spreadsheet for this Filing. The UD-detention spreadsheet has area limitations when large tributary areas are entered into the spreadsheet. The flows entering the pond and the volume entering the pond are higher than what the HEC-HMS model results reflected. Therefore, the UD-detention spreadsheet was calibrated to show a similar 100-year flow entering the pond. The following steps were completed for the UD-detention spreadsheet calibration:

1. A UD-detention spreadsheet was developed for Pond 5 that reflected the total area draining to Pond 5 which reflected a higher 100-yr. This spreadsheet also developed the required water quality capture volume for Pond 5.
2. A second UD-detention spreadsheet was created for Pond 5 with an adjusted basin area. This area was adjusted until the 100-year peak inflow matched the HEC-HMS model. All other parameters in the UD-detention basin input were held constant and reflect the proposed conditions.
3. Once the calibration was completed the calculated runoff volume was compared between the HEC-HMS model and the UD-detention spreadsheet. The UD-detention spreadsheet resulted in a larger runoff volume and ultimately confirming this as a conservative approach.
4. The water quality capture volume and excessive runoff volume from step one was manually entered into the second UD-detention spreadsheet where the outlet structure design was developed.

5. The pond discharge curve values from UD-detention were then input into the HEC-HMS model to match the outflow hydrographs.

Pond	Basin Area (Acres)	UD-Detention Adjusted Area Value (Acres)	HEC-HMS In-Flow (Q100 cfs)	UD-Detention Adjusted In-Flow (Q100 cfs)	HEC-HMS In-Flow (Ac-Ft)	UD-Detention In-Flow (Ac-Ft)
5	155.65	151.30	160.9	161.0	11.6	18.8

HEC-HMS and Pond calculations are provided in **Appendix B** and **Appendix C**.

For Pond 5 a rock chute is proposed with a downstream stilling basin to dissipate the energy of the flow being conveyed into the pond through the rock chute. The stilling basin will have dual purposes one to assist in dissipating the energy before out falling into the pond bottom and two to serve as a forebay structure. The concrete lined trickle channels will convey flows to the outlet structures micro pool. The outlet structure is designed to provide full spectrum characteristics. The 100-year storm volume will be released via 42" RCP. An emergency spillway is proposed and designed to convey the 100-year flow with a depth of flow less than 1'. The outlet structure has been designed to provide a minimum of 1' of freeboard. A 15' wide access road is proposed from the right-of-way to the bottom of the pond for maintenance. The pond reduces proposed flows at the main outfall below historic levels relative to the impact of Filing 2. It should be noted that proposed basins F1 and F3 will not be directed to Pond 5. Instead, basins F1 and F3 will maintain the historic flow patterns and outfall points at the northeast corner of the site. Both basins outfall to the proposed HEC-HMS node Out-1 and then to node Reach 6 Kiowa Creek Outfall. When comparing the proposed Reach 6 Kiowa Creek Outfall node to the existing conditions model Reach-5. The proposed 100-year peak flow (2,026 cfs) remain less than the existing conditions peak flow (2,470 cfs). It should be noted when the commercial lot does get developed the site will be required to construct a detention pond as part of the development.

Channels and roadside ditches are designed to carry flows to Pond 5. The channels have varying bottom widths, and slopes, with equal 4:1 side slopes. The channel sizing and capacity calculations are provided in the **Appendix C** and channel design point are provided in the Proposed Drainage Maps

Roadside ditches are provided along the proposed roadways to route flows to the proposed culverts. The roadside ditches are sized to convey the major event flow. The majority of the roadside ditches have been designed to have an average depth of approximately 3 feet, a v-ditch, a left-side slope of 4:1, and a right-side slope of 4:1. Roadside ditch sizing and capacity calculations are provided in the **Appendix C**.

Culverts were sized to convey flows from the ditches and channels, underneath the Site's paved roads. The proposed culverts range in diameter from 18" to 48" and have been designed to convey the 100-year storm event. Culvert calculations are provided in the **Appendix C** and culvert locations are provided in the Proposed Drainage Maps.

THE FOUR STEP PROCESS

The Project was designed in accordance with the four-step process to minimize adverse impacts of urbanization, as outlined in Chapter 1 Section 4.0 of the Colorado Springs MANUAL.

Step 1. Employ Runoff Reduction Practices- The project is proposing a low-density residential development that will be designed to minimize the impact to the current existing terrain. The Site's proposed paved roadways will increase the Site's impervious area however roadside ditches and channels will be constructed to slow down the runoff velocity and reduce runoff peaks. The one full spectrum detention pond will be used to capture stormwater and maintain flows discharging off site at or below historic levels. For portions of (Early Light Drive and Woodbridge Terrace) runoff reduction has been employed by removing the ditch on the downhill side of the road and sending stormwater that contacts the road across a receiving previous area

Step 2. Implement BMPs That Provide a Water Quality Capture Volume with Slow Release –Permanent water quality measures and detention facilities will be necessary for the Project. Temporary water quality and erosion control measures will be provided during construction to prevent sediment laden water from discharging from the Site. Water quality measures are being used for all stormwater that contacts roadways.

Step 3 Stabilize Drainageways– Stabilizing proposed roadside ditches, swales, and channels by designing them with slopes that control the flow rates. Placement of riprap upstream and downstream of culverts to help reduce erosion of the roadside ditches. Rock chutes will be constructed to reduce the velocities of runoff entering the pond at the channel locations. We anticipate this will minimize erosion. Existing drainage ways have been graded to reduce the velocity of the water to minimize erosion. The existing natural channels have been analyzed for width and velocity for the 100-year storm event. Easements are proposed to accommodate the full width of the major storm event.

Step 4. Implement Site Specific and Other Source Control BMPs – The erosion control construction BMPs of the Project were designed to reduce contamination. Source control BMPs include the use of vehicle tracking control, culvert protection, stockpile management, and stabilized staging areas.

DRAINAGE FACILITY DESIGN

GENERAL CONCEPT

The proposed drainage patterns will match the historic patterns. To maintain historic flows, one full spectrum detention pond is being proposed and will capture and control the flows from the proposed development into a series of channels and culverts.

Provided in the **Appendix B** are hydrologic calculations utilizing the NRCS/HEC-HMS method for the proposed conditions. Provided in **Appendix C** are the hydraulic calculations for the proposed conditions HY-8 culvert calculations, Flowmaster details and cross sections for proposed drainage features. As previously mentioned, the existing drainage map can be found in **Appendix D** and the proposed drainage maps can be found in **Appendix E**.

SPECIFIC DETAILS

The existing conditions of the Site have flows conveying from the southeast to the northwest and discharging in the West Kiowa Creek. Runoff conditions for the Site were developed utilizing the previously referenced Hydrologic Criteria per the approved PDR for the Winsome subdivision. The proposed development looks to preserve the natural drainage patterns as much as possible.

Sub-basins E1.1 through E7, F1 and F2 consist of future residential lots, one commercial lot, and paved roadways. All basins have flows being captured and conveyed onsite with the exception of F1 and F3. Flows are conveyed from the southeast corner of the Site to the northwest corner through existing channels, roadside ditches, culverts and constructed channels. On site flows enter Pond 5 which then discharges into the West Kiowa Creek.

A Proposed Drainage Conditions Map and hydrologic calculations are included in the **Appendix B**, **Appendix C**, and **Appendix E** of this report for reference.

The Site will disturb more than 1 acre and will require a Colorado Discharge Permit System (CDPS) General Permit for Stormwater Discharge Associated with Construction Activities from the Colorado Department of Public Health and Environment (CDPHE).

There are no current drainage and bridge fees for the Project as the West Kiowa Creek Drainage Basin is not part of the El Paso County Drainage Basin Fee Program.

RUNOFF REDUCTION

Runoff reduction was implemented in two select areas of the site. The north east portion of Woodbridge Terrace, and the north portion of Early Light Drive have the road travel perpendicular to grade, therefore the roadside ditch has been removed on the downhill side of the road. All roadway runoff at these sections can be treated using the receiving pervious area between the roadway boundary and property line. Runoff reduction calculations and locations are provided in the **Appendix C**.

DRIVEWAY CULVERTS

Culverts were analyzed and sized for driveway crossings at each ditch crossing from the roadways. Design assumptions were made for the culverts to have a max slope of 2%. Refer to **Appendix C** for the driveway culvert calculations.

EXISTING MINOR DRAINAGE CHANNELS

The existing drainage channels within Filing 2 were analyzed to determine top widths for proposed easements and velocities for erosion. Proposed regrading of existing drainage channels E4 and E3 will be proposed as part of this Filing 2. All existing channels are fully vegetated and channels E4 and E3 will be reseeded as part of this Filing. RipRap protection is proposed on the outer bend of channel E4 to reduce the potential of erosion in this location. A portion of channel E4 will also be lined with Turf Reinforcement Mat or approved equal to reduce the potential of erosion within the channel. Per MHFD criteria a maximum velocity of 5 fps is allowed, and all channels except for channel E4 onsite are below this level. The Turf Reinforcement Mat material and performance specifications reflect a maximum allowable velocity of 10 fps. Refer to **Appendix C** for the channel calculations, maximum allowable velocity criteria per MHFD and Turf Reinforcement Mat.

SUMMARY

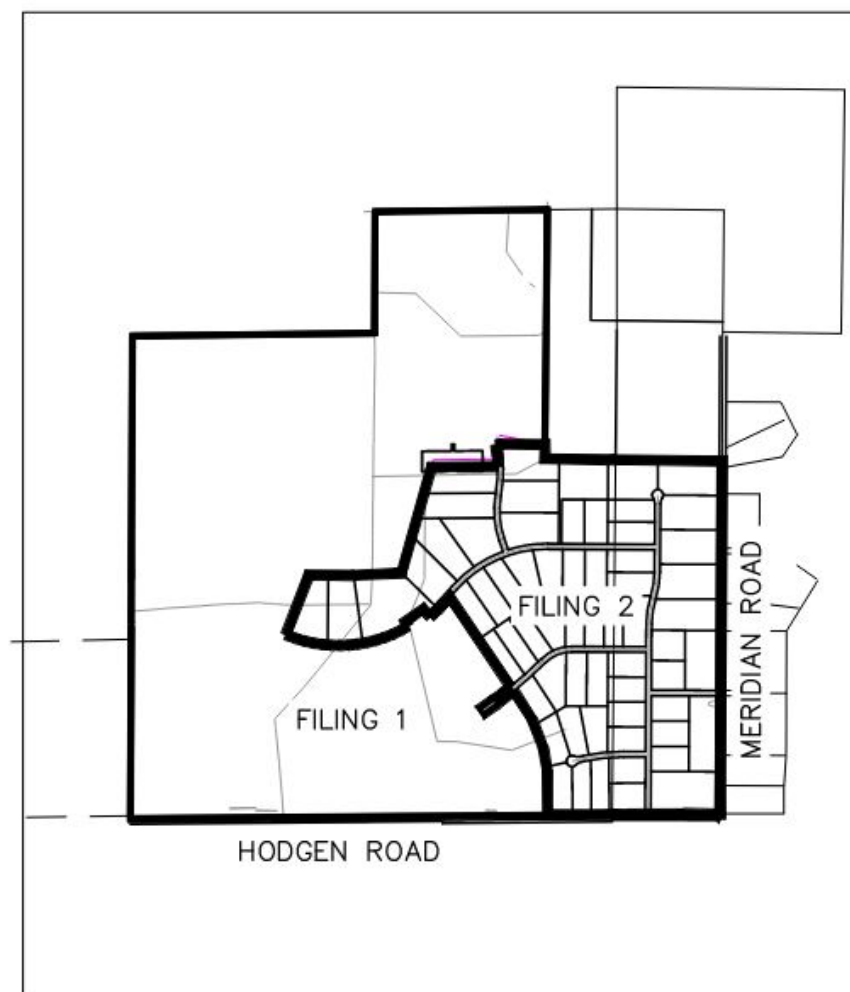
The proposed drainage design is to maintain the historic drainage patterns, the overall imperviousness and release rates for the Site. Runoff from the Site will flow overland to existing El Paso County drainage basins: The West Kiowa Creek Basin. The basin ultimately discharges to the West Kiowa Creek. The drainage design presented within this report conforms to the criteria presented in both the MANUAL and the Colorado Springs MANUAL. Additionally, the Site runoff and storm drain facilities will not adversely affect the downstream and surrounding developments, including West Kiowa Creek.

REFERENCES

1. City of Colorado Springs “Drainage Criteria Manual (DCM) Volume 1”, dated May, 2014
2. El Paso County “Drainage Criteria Manual”, dated October 31, 2018
3. El Paso County “Engineering Criteria Manual” Revision 6, dated December 13, 2016
4. Chapter 6 and Section 3.2.1. of Chapter 13-City of Colorado Springs Drainage Criteria Manual, May 2014.
5. Urban Drainage and Flood Control District Drainage Criteria Manual (UDFCDCM), Vol. 1, prepared by Wright-McLaughlin Engineers, June 2001, with latest revisions.
6. Flood Insurance Rate Map, El Paso County, Colorado and Incorporated Areas, Map Number 08041C0507F and 08041C0530F, Effective Date March 17, 1997, prepared by the Federal Emergency Management Agency (FEMA).
7. Winsome Subdivision Preliminary Drainage Report (PDR), prepared by The Vertex Companies, Inc, May 15, 2019. PCD File No. SP-18-006.
8. Request For Conditional Letter of Map Revision For West Kiowa Creek, prepared by The Vertex Companies, Inc., July 1, 2019. FEMA Case No. 19-08-0185R.

APPENDIX

APPENDIX A: FIGURES



VICINITY MAP

1"=2,000'

NOTES TO USERS

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

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

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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

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

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NIMS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Sp. of Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

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

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

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

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

El Paso County Vertical Datum Offset Table

Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

Panel Location Map

This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).

Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.

LEGEND

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

ZONE A

ZONE AE

ZONE AH

No Base Flood Elevations determined.
Base Flood Elevations determined.
Floor depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO

Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR

Special Flood Hazard Area Formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99

Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V

Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE

Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

ZONE X

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

OTHER AREAS

ZONE X

ZONE D

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

Floodplain boundary

Floodway boundary

Zone D Boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

Base Flood Elevation line and value; elevation in feet* (EL 987)

Base Flood Elevation value where uniform within zone; elevation in feet*

513

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A

A

Cross section line

23

23

Transect line

97° 07' 30.00"

32° 22' 30.00"

42°50'00"N

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

6000000 FT

1000-meter Universal Transverse Mercator grid ticks, zone 13

5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPS ZONE 0502), Lambert Conformal Conic Projection

DX5510

Bench mark (see explanation in Notes to Users section of this FIRM panel)

Refer to Map Repositories list on Map Index

M1.5

River Mile

Effective Date of Countywide Flood Insurance Rate Map
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

DECEMBER 7, 2018

to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision

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

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

MAP SCALE 1" = 2000'

1000 0 2000 4000

FEET

600 0 600 1200

METERS

NFIP

PANEL 0350G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

EL PASO COUNTY, COLORADO AND INCORPORATED AREAS

PANEL 350 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY

EL PASO COUNTY

NUMBER

080059

PANEL

0350

SUFFIX

G

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

MAP NUMBER

08041C0350G

MAP REVISED

DECEMBER 7, 2018

Federal Emergency Management Agency

THIS PANEL SHOWN AT A
SCALE OF 1"=1000'
ON MAP NUMBER 08041C0340

THIS PANEL SHOWN AT A
SCALE OF 1"=500'
ON MAP NUMBER 08041C0339

APPENDIX B: HYDROLOGY

IMPERVIOUS FACTOR CALCULATION TABLE - ALL BASINS

Design Pt		Basin	Area (Acre)	5 acre lot (7%)	2.5 acre lot (11%)	Open Space (2%)	Commerical (85%)	Roadway (100%)	Total % Check	Weighted Impervious
Pond 5	P5	E1.2	15.28	33%	61%	0%	0%	6%	100%	15%
		E2	2.60	0%	84%	0%	0%	16%	100%	25%
		E3	19.80	0%	94%	0%	0%	6%	100%	16%
		E4	18.20	0%	95%	0%	0%	5%	100%	16%
		E5	13.50	0%	97%	0%	0%	3%	100%	13%
		E6	9.26	34%	63%	0%	0%	2%	100%	11%
		E7	10.22	0%	98%	0%	0%	2%	100%	13%
		F2	4.40	88%	0%	0%	0%	12%	100%	19%
		E8	15.78	63%	0%	31%	0%	5%	100%	11%
		E9	3.82	0%	0%	100%	0%	0%	100%	2%
		E0	37.90	100%	0%	0%	0%	0%	100%	7%
	E1.1	8.71	0%	0%	91%	0%	9%	100%	11%	
Offsite	Offsite	F1	32.10	86%	10%	0%	0%	4%	100%	11%
		F3	9.62	93%	0%	0%	0%	7%	100%	14%
Total			201.19							11.2%

IMPERVIOUS FACTOR CALCULATION TABLE - BASINS GOING TO POND 5

Design Pt		Basin	Area (Acre)	5 acre lot (7%)	2.5 acre lot (11%)	Open Space (2%)	Commerical (85%)	Roadway (100%)	Total % Check	Weighted Impervious
Pond 5	P5	E1.2	15.28	33%	61%	0%	0%	6%	100%	15%
		E2	2.60	0%	84%	0%	0%	16%	100%	25%
		E3	19.80	0%	94%	0%	0%	6%	100%	16%
		E4	18.20	0%	95%	0%	0%	5%	100%	16%
		E5	13.50	0%	97%	0%	0%	3%	100%	13%
		E6	9.26	34%	63%	0%	0%	2%	100%	11%
		E7	10.22	0%	98%	0%	0%	2%	100%	13%
		E8	15.78	63%	0%	31%	0%	5%	100%	11%
		F2	4.40	88%	0%	0%	0%	12%	100%	19%
		E0	37.90	100%	0%	0%	0%	0%	100%	7%
		E1.1	8.71	0%	0%	91%	0%	9%	100%	11%
Total			155.65							12.3%



PROJECT NAME: Winsome Filing 2

5/17/2021

PROJECT NUMBER: 196106000

CALCULATED BY: TOS

CHECKED BY: BAH

RATIONAL CALCULATIONS SUMMARY

TRIBUTARY BASINS	TRIBUTARY AREA (AC)		
		Q5	Q100
On-Site Basins			
DA1	1.11	0.98	3.82
DA2	8.16	3.08	16.11
DA3	2.09	0.80	4.19
DA4	10.54	3.68	21.00
DA5	3.00	1.53	7.00
TOTAL	24.90	10.06	52.12



STANDARD FORM SF-1
RUNOFF COEFFICIENTS - IMPERVIOUS CALCULATION

PROJECT NAME: **Winsome Filing 2**
PROJECT NUMBER: **196106000**
CALCULATED BY: **TOS**
CHECKED BY: **BAH**

DATE: 5/17/2021

SOIL:

LAND USE:	Residential Lots (2.5 acres)	Residential Lots (5 acres)	Roadway	Commerical	Landscape						
	<u>AREA</u>	<u>AREA</u>	<u>AREA</u>	<u>AREA</u>	<u>AREA</u>						
2-YEAR COEFF.	0.12	0.12	0.89	0.79	0.02						
5-YEAR COEFF.	0.20	0.20	0.90	0.81	0.08						
10-YEAR COEFF.	0.27	0.27	0.92	0.83	0.15						
100-YEAR COEFF.	0.44	0.44	0.96	0.88	0.35						
IMPERVIOUS %	7%	11%	100%	95%	0%						
DESIGN BASIN	Residential Lots (2.5 acres) <u>AREA</u> (AC)	Residential Lots (5 acres) <u>AREA</u> (AC)	Roadway <u>AREA</u> (AC)	Commerical <u>AREA</u> (AC)	Landscape <u>AREA</u> (AC)	TOTAL AREA (AC)	C(2)	C(5)	C(10)	C(100)	Imp %
On-Site Basins											
DA1	0.97	0.00	0.14	0.00	0.00	1.11	0.22	0.29	0.35	0.51	19%
DA2	7.87	0.00	0.29	0.00	0.00	8.16	0.15	0.22	0.29	0.46	10%
DA3	2.02	0.00	0.07	0.00	0.00	2.09	0.15	0.22	0.29	0.46	10%
DA4	10.38	0.00	0.16	0.00	0.00	10.54	0.13	0.21	0.28	0.45	8%
DA5	2.78	0.00	0.22	0.00	0.00	3.00	0.18	0.25	0.32	0.48	14%
	24.02	0.00	0.88	0.00	0.00	24.90	0.15	0.22	0.29	0.46	10%
BASIN SUBTOTAL	96%	0%	4%	0%	0%	100%					

STANDARD FORM SF-2

Time of Concentration

PROJECT NAME: Winsome Filing 2
 PROJECT NUMBER: 196106000
 CALCULATED BY: TOS
 CHECKED BY: BAH

DATE: 5/17/2021

SUB-BASIN DATA			INITIAL TIME (T _i)			TRAVEL TIME (T _t)					T _c CHECK (URBANIZED BASINS)					FINAL T _c
DESIGN BASIN (1)	AREA Ac (2)	C5 (3)	LENGTH Ft (4)	SLOPE % (5)	T _i Min. (6)	LENGTH Ft. (7)	SLOPE % (8)	C _v (9)	VEL fps (11)	T _t Min. (12)	COMP. t _c (13)	TOTAL LENGTH (14)	TOTAL SLOPE (15)	TOTAL IMP. (16)	T _c Min. (17)	Min. (18)
On-Site Basins																
DA1	1.110	0.288	36	8.8%	4.3	464	3.7%	7.0	1.3	5.7	10.1	500	4.1%	19%	26.4	10.1
DA2	8.160	0.225	300	2.3%	21.0	559	7.4%	7.0	1.9	4.9	25.9	859	5.6%	10%	30.0	25.9
DA3	2.090	0.224	135	1.6%	16.0	551	2.1%	7.0	1.0	9.1	25.2	686	2.0%	10%	32.1	25.2
DA4	10.540	0.211	64	1.1%	12.8	1,056	4.7%	7.0	1.5	11.6	24.4	1120	4.5%	8%	33.2	24.4
DA5	3.000	0.250	157	3.7%	12.7	731	4.9%	7.0	1.5	7.9	20.5	888	4.7%	14%	29.9	20.5
$t_i = \frac{0.395(1.1 - C_s)\sqrt{L_i}}{S_o^{0.33}} \quad t_t = \frac{L_t}{60K\sqrt{S_o}} = \frac{L_t}{60V_t} \quad t_c = (26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$																



STANDARD FORM SF-3
STORM DRAINAGE DESIGN - RATIONAL METHOD 5 YEAR EVENT

PROJECT NAME: Winsome Filing 2
PROJECT NUMBER: 1.96E+08
CALCULATED BY: TOS
CHECKED BY: BAH

P₁ (1-Hour Rainfall)_m	1.5
--	------------

DATE: 5/17/2021

[illegible]

On-Site Basins

[illegible]



STANDARD FORM SF-3
STORM DRAINAGE DESIGN - RATIONAL METHOD 100 YEAR EVENT

PROJECT NAME: Winsome Filing 2
PROJECT NUMBER: 1.96E+08
CALCULATED BY: TOS
CHECKED BY: BAH

P₁ (1-Hour Rainfall) = 2.52

DATE: 5/17/2021

[illegible]

On-Site Basins

[illegible]

Project: **Winsome Filing 2**

Subject: **Lag Time Calculations (Velocity Method)**

Designed by: TOS Date: 5/19/2021

Checked by: BAH Date: 5/19/2021

2-yr, 24-hr Rainfall (in) = **2.1**

Sheet Flow Equation (TR-55 Equation 3-3)

$$T_t = \frac{0.007(n\ell)^{0.8}}{(P_2)^{0.5} S^{0.4}}$$

Shallow Concentrated Flow (TR-55 Equation 3-1)

$$T_t = \frac{\ell}{3,600V}$$

Channel Flow Velocity (Mannings Equation)

$$V = \frac{1.49r^{\frac{2}{3}}s^{\frac{1}{2}}}{n}$$

Time of Concentration Calculation

Drainage Area ID	Area (mi ²)	Sheet Flow					Shallow Concentrated Flow				Channel Flow Computations								Lag (min)
		n	Length (ft)	Slope (ft/ft)	P ₂ (in)	T _t (hr)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	T _t (hr)	n	Length (ft)	Slope (ft/ft)	Cross Section Area (ft ²)	Wetted Perimeter (ft)	Velocity (ft/sec)	T _t (min)	Total TOC (min)	
E0	0.06	0.1	300	0.020	2.1	0.35	1000	0.049	1.11	0.25	0.04	748	0.049	36.00	24.74	10.59	1.18	37.20	22.32
E1.1	0.01	0.1	283	0.040	2.1	0.25	442	0.032	0.90	0.14	0.00	#N/A	0.000	0.00	0	0.00	#N/A	23.45	14.07
E1.2	0.02	0.1	300	0.040	2.1	0.27	506	0.024	0.79	0.18	0.04	372	0.024	64.00	24.74	10.96	0.57	27.25	16.35
E2	0.00	0.1	55	0.020	2.1	0.09	0	#N/A	#N/A	#N/A	0.04	500	0.038	64.00	24.74	13.68	0.61	6.03	3.62
E3	0.03	0.1	300	0.020	2.1	0.35	100	0.054	1.17	0.02	0.04	101	0.054	64.00	24.74	16.31	0.10	22.59	13.55
E4	0.03	0.1	300	0.020	2.1	0.35	500	0.038	1.36	0.10	0.04	528	0.038	64.00	24.74	13.68	0.64	27.81	16.69
E5	0.02	0.1	300	0.020	2.1	0.35	500	0.047	1.52	0.09	0.04	335	0.047	64.00	24.74	15.22	0.37	26.92	16.15
E6	0.01	0.1	132	0.013	2.1	0.22	220	0.027	1.15	0.05	0.04	850	0.027	64.00	24.74	11.49	1.23	17.39	10.44
E8	0.02	0.1	80	0.024	2.1	0.11	330	0.048	1.53	0.06	1.04	520	0.020	64.00	24.74	9.93	0.87	11.34	6.80
E9	0.01	0.1	32	0.012	2.1	0.07	129	0.140	2.62	0.01	2.04	150	0.062	64.00	24.74	17.48	0.14	5.27	3.16
E7	0.02	0.1	300	0.021	2.1	0.34	200	0.027	1.14	0.05	0.04	474	0.027	64.00	24.74	11.51	0.69	21.34	12.80
F1	0.05	0.1	300	0.027	2.1	0.31	235	0.027	1.15	0.06	0.04	2123	0.035	64.00	24.74	13.13	2.69	24.78	14.87
F2	0.01	0.1	46	0.003	2.1	0.17	503	0.034	1.29	0.11	0.04	546	0.02	64.00	24.74	10.87	0.84	17.50	10.50
F3	0.02	0.1	205	0.024	2.1	0.24	200	0.024	1.08	0.05	0.04	1846	0.04	64.00	24.74	13.50	2.28	19.79	11.87

Calculated using the Velocity Method in chapter 15 of NRCS Part 630 Hydrology National Engineering Handbook, May 2010

Project: **Winsome Filing 2**

Subject: **Curve Number Calculations**

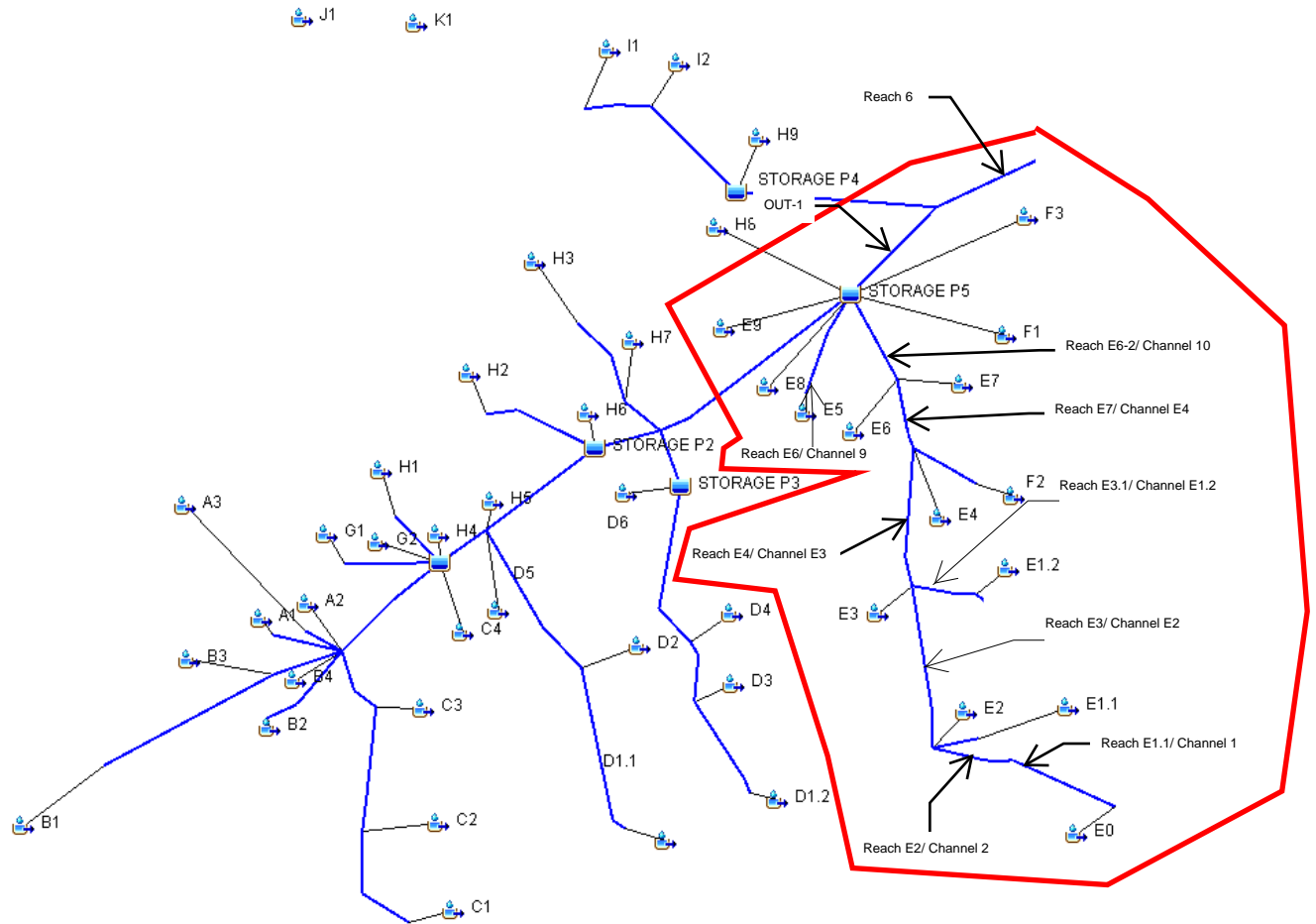
Designed by: TOS Date: 5/19/2021

Checked by: BAH Date: 5/19/2021

Drainage Area ID	Area (mi ²)	Area (ac)	Area (ft ²)	HSG	CN	Percent (%)	Initial Abstraction	Lag Time
E0	0.0592188	37.9	1650924	B	60	100%	0.667	22.32
E1.1	0.0136094	8.7	379408	B	70	100%	0.429	14.07
E1.2	0.0238750	15.3	665597	B	65	100%	0.543	16.35
E2	0.0040625	2.6	113256	B	69	100%	0.440	3.62
E3	0.0309375	19.8	862488	B	66	100%	0.514	13.55
E4	0.0284375	18.2	792792	B	66	100%	0.522	16.69
E5	0.0210938	13.5	588060	B	65	100%	0.538	16.15
E6	0.0144609	9.3	403148	B, C/D	63	100%	0.579	10.44
E8	0.0246594	15.8	687464	B, C/D	62	100%	0.603	6.80
E9	0.0059688	3.8	166399	B, C/D	61	100%	0.639	3.16
E7	0.0159688	10.2	445183	B	65	100%	0.542	12.80
F1	0.0501563	32.1	1398276	B	62	100%	0.624	14.87
F2	0.0068750	4.4	191664	B	65	100%	0.539	10.50
F3	0.0150313	9.6	419047	B	63	100%	0.592	11.87

Soils data obtained from NRCS Web Soil Survey, version 7 (Aug 2014)

Proposed Conditions Filing No. 2 HEC-HMS Layout



	HEC-HMS Curve Data		
	Stage-Area Realationship for Pond 5		
Elevation	Depth [ft]	Area [sq ft]	AC-FT
7298.00	0	325	0.01
7298.25	0.25	325	0.01
7298.50	0.5	325	0.01
7298.75	0.75	325	0.01
7299.00	1	2300	0.05
7299.25	1.25	8225	0.19
7299.50	1.5	14150	0.32
7299.75	1.75	20075	0.46
7300.00	2	26000	0.60
7300.25	2.25	33871	0.78
7300.50	2.5	41741	0.96
7300.75	2.75	49612	1.14
7301.00	3	57483	1.32
7301.25	3.25	63712	1.46
7301.50	3.5	69941	1.61
7301.75	3.75	76171	1.75
7302.00	4	82400	1.89
7302.25	4.25	86475	1.99
7302.50	4.5	90550	2.08
7302.75	4.75	94625	2.17
7303.00	5	98700	2.27
7303.25	5.25	101025	2.32
7303.50	5.5	103350	2.37
7303.75	5.75	105675	2.43
7304.00	6	108000	2.48

	HEC-HMS Curve Data	
	Stage-Discharge Relationship for Pond 5	
Elevation	Depth [ft]	Discharge [cfs]
7298	0	0.00
7298.25	0.25	0.05
7298.5	0.5	0.07
7298.75	0.75	0.09
7299	1	0.10
7299.25	1.25	0.16
7299.5	1.5	0.19
7299.75	1.75	0.22
7300	2	0.25
7300.25	2.25	0.30
7300.5	2.5	0.46
7300.75	2.75	0.55
7301	3	0.62
7301.25	3.25	0.68
7301.5	3.5	1.45
7301.75	3.75	4.96
7302	4	10.54
7302.25	4.25	18.09
7302.5	4.5	27.63
7302.75	4.75	39.22
7303	5	52.38
7303.25	5.25	67.01
7303.3	5.3	70.89
7303.4	5.4	77.54
7303.5	5.5	84.42
7303.75	5.75	93.58
7304	6	95.59

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr

Start of Run: 26Feb2019, 00:00
End of Run: 27Feb2019, 12:00
Compute Time: 09Sep2021, 18:17:52

Basin Model: Proposed Basins
Meteorologic Model: Prop Basins 5yr
Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A1	1.3529000	84.1	26Feb2019, 12:26	0.19
A2	0.0577812	4.7	26Feb2019, 12:14	0.19
A3	0.0648125	18.1	26Feb2019, 12:14	0.29
BOX CULVERT 1	7.9557326	375.9	26Feb2019, 12:43	0.19
BOX CULV 2	8.9615089	420.0	26Feb2019, 12:48	0.19
B1	5.9948000	286.7	26Feb2019, 12:42	0.19
B2	0.0204688	3.3	26Feb2019, 12:07	0.30
B3	0.0857813	6.8	26Feb2019, 12:15	0.19
B4	0.0648125	5.5	26Feb2019, 12:16	0.19
CLV E4	0.1670157	26.6	26Feb2019, 12:11	0.34
CULV B2	0.0204688	3.3	26Feb2019, 12:07	0.30
CULV C2	0.2892200	23.8	26Feb2019, 12:16	0.19
CULV C3	0.3143763	26.5	26Feb2019, 12:18	0.20
CULV D2	0.3593700	31.5	26Feb2019, 12:18	0.21
CULV D3	0.1423438	13.2	26Feb2019, 12:19	0.24
CULV D4	0.1959376	18.8	26Feb2019, 12:19	0.25
CULV E1.1	0.0592188	4.9	26Feb2019, 12:16	0.19
CULV E1.2	0.0238750	5.0	26Feb2019, 12:08	0.41
CULV E1.5	0.0136094	2.7	26Feb2019, 12:08	0.32
CULV E2	0.0768907	7.3	26Feb2019, 12:13	0.24
CULV E5	0.0210938	3.9	26Feb2019, 12:08	0.35
CULV F2	0.0068750	2.2	26Feb2019, 12:03	0.51
CULV H2	0.0610938	5.4	26Feb2019, 12:12	0.19
CULV H3	0.0090625	1.2	26Feb2019, 12:07	0.24
CULV I1	0.0106250	2.2	26Feb2019, 12:09	0.25
CULV-E3	0.1317032	18.6	26Feb2019, 12:09	0.31
C1	0.2542200	21.0	26Feb2019, 12:14	0.19

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
C2	0.0350000	3.1	26Feb2019, 12:11	0.19
C3	0.0251563	3.8	26Feb2019, 12:09	0.30
C4	0.0371875	1.9	26Feb2019, 12:16	0.12
D1.1	0.2520300	20.8	26Feb2019, 12:14	0.19
D1.2	0.0779688	5.8	26Feb2019, 12:18	0.19
D2	0.1073400	11.8	26Feb2019, 12:12	0.24
D3	0.0643750	8.1	26Feb2019, 12:15	0.30
D4	0.0535938	7.8	26Feb2019, 12:10	0.30
D5	0.0200000	0.8	26Feb2019, 12:10	0.08
D6	0.0653125	4.4	26Feb2019, 12:15	0.16
EX CULV C1	0.2542200	21.0	26Feb2019, 12:14	0.19
EX CULV D1.1	0.2520300	20.8	26Feb2019, 12:14	0.19
EX CULV D1.2	0.0779688	5.8	26Feb2019, 12:18	0.19
EX CULV E0	0.0592188	4.9	26Feb2019, 12:14	0.19
E0	0.0592188	4.9	26Feb2019, 12:14	0.19
E1.1	0.0136094	2.7	26Feb2019, 12:08	0.32
E1.2	0.0238750	5.0	26Feb2019, 12:08	0.41
E2	0.0040625	2.3	26Feb2019, 11:56	0.69
E3	0.0309375	7.6	26Feb2019, 12:06	0.43
E4	0.0284375	6.3	26Feb2019, 12:09	0.43
E5	0.0210938	3.9	26Feb2019, 12:08	0.35
E6	0.0144609	2.7	26Feb2019, 12:03	0.30
E7	0.0159688	3.3	26Feb2019, 12:05	0.35
E8	0.0246594	5.2	26Feb2019, 11:59	0.30
E9	0.0059688	0.3	26Feb2019, 11:55	0.05
F1	0.0501563	8.1	26Feb2019, 12:07	0.30
F2	0.0068750	2.2	26Feb2019, 12:03	0.51
F3	0.0150313	3.4	26Feb2019, 12:04	0.38
G1	0.0393750	2.5	26Feb2019, 12:08	0.12
G2	0.0331250	4.5	26Feb2019, 12:15	0.16
H1	0.0217187	3.4	26Feb2019, 12:10	0.22

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
H2	0.0610938	5.4	26Feb2019, 12:11	0.19
H3	0.0090625	1.2	26Feb2019, 12:07	0.24
H4	0.0423437	8.6	26Feb2019, 12:14	0.26
H5	0.0315625	7.4	26Feb2019, 12:14	0.26
H6	0.0493750	1.8	26Feb2019, 12:13	0.08
H7	0.0403125	4.4	26Feb2019, 12:13	0.17
H8	0.0132812	3.4	26Feb2019, 12:10	0.23
H9	0.0107812	1.8	26Feb2019, 12:09	0.22
I1	0.0106250	2.2	26Feb2019, 12:09	0.25
I2	0.0231250	4.8	26Feb2019, 12:09	0.25
J1	0.0157813	2.1	26Feb2019, 12:08	0.20
K1	0.0278125	10.3	26Feb2019, 12:09	0.34
OUT 2	0.0445312	7.0	26Feb2019, 12:22	0.24
OUT-1	9.2891451	427.7	26Feb2019, 12:51	0.19
REACH A1	1.3529000	83.8	26Feb2019, 12:31	0.19
Reach E3.1	0.0238750	5.0	26Feb2019, 12:11	0.41
Reach H7	0.0493750	5.6	26Feb2019, 12:13	0.18
Reach-A2	0.0648125	18.1	26Feb2019, 12:17	0.29
Reach-B1	5.9948000	286.6	26Feb2019, 12:46	0.19
Reach-B2	0.0204688	3.3	26Feb2019, 12:15	0.30
Reach-B3	6.0805813	288.7	26Feb2019, 12:50	0.19
Reach-B4-3	0.3143763	26.5	26Feb2019, 12:19	0.20
Reach-C1	0.2542200	20.9	26Feb2019, 12:17	0.19
Reach-C2	0.2892200	23.8	26Feb2019, 12:20	0.19
Reach-D1.1	0.2520300	20.7	26Feb2019, 12:20	0.19
Reach-D3	0.0779688	5.7	26Feb2019, 12:24	0.19
Reach-D4	0.1423438	13.2	26Feb2019, 12:24	0.24
Reach-D5	0.3593700	31.4	26Feb2019, 12:22	0.21
Reach-D6	0.1959376	18.7	26Feb2019, 12:23	0.25
Reach-E1.1	0.0592188	4.9	26Feb2019, 12:15	0.19
Reach-E2	0.0592188	4.9	26Feb2019, 12:18	0.19

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Reach-E3	0.0768907	7.3	26Feb2019, 12:18	0.24
Reach-E4	0.1317032	18.6	26Feb2019, 12:13	0.31
Reach-E6	0.0210938	3.8	26Feb2019, 12:13	0.35
Reach-E6-2	0.1974454	30.3	26Feb2019, 12:15	0.34
Reach-E7	0.1670157	26.6	26Feb2019, 12:14	0.34
Reach-F2	0.0068750	2.2	26Feb2019, 12:08	0.51
Reach-G2	0.0393750	2.4	26Feb2019, 12:14	0.12
Reach-H4	0.0217187	3.3	26Feb2019, 12:15	0.22
Reach-H6	0.0610938	5.4	26Feb2019, 12:14	0.19
Reach-H7-1	0.0090625	1.2	26Feb2019, 12:12	0.24
Reach-H9	0.0337500	7.0	26Feb2019, 12:12	0.25
Reach-I2-1	0.0106250	2.2	26Feb2019, 12:11	0.25
Reach-P3	0.2612501	21.0	26Feb2019, 12:30	0.23
Reach-1	7.9557326	375.8	26Feb2019, 12:45	0.19
Reach-2	8.1294825	384.2	26Feb2019, 12:47	0.19
Reach-3	8.5404150	400.2	26Feb2019, 12:47	0.19
Reach-4	8.6508838	404.1	26Feb2019, 12:49	0.19
Reach-5	8.9615089	420.0	26Feb2019, 12:49	0.19
Reach-6 Kiowa Outfall	9.3336763	429.0	26Feb2019, 12:51	0.19
STORAGE P1	0.1365624	8.1	26Feb2019, 12:33	0.19
STORAGE P2	0.1104688	4.8	26Feb2019, 12:27	0.14
STORAGE P3	0.2612501	21.0	26Feb2019, 12:29	0.23
STORAGE P4	0.0445312	7.0	26Feb2019, 12:18	0.24
STORAGE P5	0.2431986	6.7	26Feb2019, 13:03	0.25

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV E1.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	4.9 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:14
Peak Discharge:	4.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:16
Inflow Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV E1.2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	5.0 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	5.0 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Inflow Volume:	0.41 (IN)	Discharge Volume:	0.41 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV E1.5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2.7 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	2.7 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Inflow Volume:	0.32 (IN)	Discharge Volume:	0.32 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV E2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	7.3 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:12
Peak Discharge:	7.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:13
Inflow Volume:	0.24 (IN)	Discharge Volume:	0.24 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV-E3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	18.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:08
Peak Discharge:	18.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:09
Inflow Volume:	0.31 (IN)	Discharge Volume:	0.31 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CLV E4

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	26.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:10
Peak Discharge:	26.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:11
Inflow Volume:	0.34 (IN)	Discharge Volume:	0.34 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV E5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	3.9 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	3.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Inflow Volume:	0.35 (IN)	Discharge Volume:	0.35 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: CULV F2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2.2 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:02
Peak Discharge:	2.2 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:03
Inflow Volume:	0.51 (IN)	Discharge Volume:	0.51 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E0

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	4.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.19 (IN)
Loss Volume:	2.52 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E1.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	2.7 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.32 (IN)
Loss Volume:	2.39 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.32 (IN)	Discharge Volume:	0.32 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E1.2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	5.0 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.41 (IN)
Loss Volume:	2.30 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.41 (IN)	Discharge Volume:	0.41 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	2.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 11:56
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.69 (IN)
Loss Volume:	2.02 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.69 (IN)	Discharge Volume:	0.69 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	7.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:06
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.43 (IN)
Loss Volume:	2.27 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.43 (IN)	Discharge Volume:	0.43 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E4

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	6.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:09
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.43 (IN)
Loss Volume:	2.27 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.43 (IN)	Discharge Volume:	0.43 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	3.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.35 (IN)
Loss Volume:	2.35 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.35 (IN)	Discharge Volume:	0.35 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E6

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	2.7 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:03
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.30 (IN)
Loss Volume:	2.41 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.30 (IN)	Discharge Volume:	0.30 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E7

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	3.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:05
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.35 (IN)
Loss Volume:	2.35 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.35 (IN)	Discharge Volume:	0.35 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E8

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	5.2 (CFS)	Date/Time of Peak Discharge	26Feb2019, 11:59
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.30 (IN)
Loss Volume:	2.41 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.30 (IN)	Discharge Volume:	0.30 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: E9

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	0.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 11:55
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.05 (IN)
Loss Volume:	2.65 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.05 (IN)	Discharge Volume:	0.05 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: EX CULV E0

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	4.9 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:13
Peak Discharge:	4.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Inflow Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: F1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	19May2021, 11:48:19	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	8.1 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:07
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.30 (IN)
Loss Volume:	2.41 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.30 (IN)	Discharge Volume:	0.30 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: F2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	2.2 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:03
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.51 (IN)
Loss Volume:	2.19 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.51 (IN)	Discharge Volume:	0.51 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Subbasin: F3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	19May2021, 11:48:19	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	3.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:04
Precipitation Volume	2.71 (IN)	Direct Runoff Volume:	0.38 (IN)
Loss Volume:	2.33 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.38 (IN)	Discharge Volume:	0.38 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-6 Kiowa Outfall

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	19May2021, 18:43:35	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	431.7 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:50
Peak Discharge:	431.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:51
Inflow Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: OUT-1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	19May2021, 18:43:35	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	430.4 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:48
Peak Discharge:	430.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:51
Inflow Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reservoir: STORAGE P5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	09Sep2021, 18:17:52	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	35.3 (CFS)	Date/Time of Peak Inflow:	26Feb2019, 12:14
Peak Discharge:	6.7 (CFS)	Date/Time of Peak Discharge	26Feb2019, 13:03
Inflow Volume:	4.4 (AC-FT)	Peak Storage:	2.6 (AC-FT)
Discharge Volume	3.2 (AC-FT)	Peak Elevation:	7301.8 (FT)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reservoir: STORAGE P5

Start of Run: 26Feb2019, 00:00 Basin Model: Proposed Basins
End of Run: 27Feb2019, 12:00 Meteorologic Model: Prop Basins 5yr
Compute Time: 04Jun2021, 14:49:53 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	00:00	0.0	0.0		0.1
26Feb2019	00:01	0.0	0.0		0.0
26Feb2019	00:02	0.0	0.0		0.0
26Feb2019	00:03	0.0	0.0		0.0
26Feb2019	00:04	0.0	0.0		0.0
26Feb2019	00:05	0.0	0.0		0.0
26Feb2019	00:06	0.0	0.0		0.0
26Feb2019	00:07	0.0	0.0		0.0
26Feb2019	00:08	0.0	0.0		0.0
26Feb2019	00:09	0.0	0.0		0.0
26Feb2019	00:10	0.0	0.0		0.0
26Feb2019	00:11	0.0	0.0		0.0
26Feb2019	00:12	0.0	0.0		0.0
26Feb2019	00:13	0.0	0.0		0.0
26Feb2019	00:14	0.0	0.0		0.0
26Feb2019	00:15	0.0	0.0		0.0
26Feb2019	00:16	0.0	0.0		0.0
26Feb2019	00:17	0.0	0.0		0.0
26Feb2019	00:18	0.0	0.0		0.0
26Feb2019	00:19	0.0	0.0		0.0
26Feb2019	00:20	0.1	0.0		0.1
26Feb2019	00:21	0.1	0.0		0.1
26Feb2019	00:22	0.1	0.0		0.1
26Feb2019	00:23	0.1	0.0		0.1
26Feb2019	00:24	0.1	0.0		0.1
26Feb2019	00:25	0.1	0.0		0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	00:26	0.1	0.0		0.1
26Feb2019	00:27	0.1	0.0		0.1
26Feb2019	00:28	0.1	0.0		0.1
26Feb2019	00:29	0.1	0.0		0.1
26Feb2019	00:30	0.1	0.0		0.1
26Feb2019	00:31	0.1	0.0	7298.8	0.1
26Feb2019	00:32	0.1	0.0	7298.8	0.1
26Feb2019	00:33	0.1	0.0	7298.8	0.1
26Feb2019	00:34	0.1	0.0	7298.8	0.1
26Feb2019	00:35	0.1	0.0	7298.8	0.1
26Feb2019	00:36	0.1	0.0	7298.8	0.1
26Feb2019	00:37	0.1	0.0	7298.8	0.1
26Feb2019	00:38	0.1	0.0	7298.8	0.1
26Feb2019	00:39	0.1	0.0	7298.8	0.1
26Feb2019	00:40	0.1	0.0	7298.8	0.1
26Feb2019	00:41	0.1	0.0	7298.8	0.1
26Feb2019	00:42	0.2	0.0	7298.8	0.1
26Feb2019	00:43	0.2	0.0	7298.8	0.1
26Feb2019	00:44	0.2	0.0	7298.8	0.1
26Feb2019	00:45	0.2	0.0	7298.8	0.1
26Feb2019	00:46	0.2	0.0	7298.8	0.1
26Feb2019	00:47	0.2	0.0	7298.8	0.1
26Feb2019	00:48	0.2	0.0	7298.8	0.1
26Feb2019	00:49	0.2	0.0	7298.8	0.1
26Feb2019	00:50	0.2	0.0	7298.8	0.1
26Feb2019	00:51	0.2	0.0	7298.9	0.1
26Feb2019	00:52	0.3	0.0	7298.9	0.1
26Feb2019	00:53	0.3	0.0	7298.9	0.1
26Feb2019	00:54	0.3	0.0	7298.9	0.1
26Feb2019	00:55	0.3	0.0	7298.9	0.1
26Feb2019	00:56	0.3	0.0	7298.9	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	00:57	0.3	0.0	7298.9	0.1
26Feb2019	00:58	0.3	0.0	7299.0	0.1
26Feb2019	00:59	0.3	0.0	7299.0	0.1
26Feb2019	01:00	0.4	0.0	7299.0	0.1
26Feb2019	01:01	0.4	0.0	7299.0	0.1
26Feb2019	01:02	0.4	0.0	7299.0	0.1
26Feb2019	01:03	0.4	0.0	7299.0	0.1
26Feb2019	01:04	0.4	0.0	7299.0	0.1
26Feb2019	01:05	0.4	0.0	7299.0	0.1
26Feb2019	01:06	0.4	0.0	7299.0	0.1
26Feb2019	01:07	0.4	0.0	7299.0	0.1
26Feb2019	01:08	0.4	0.0	7299.0	0.1
26Feb2019	01:09	0.4	0.0	7299.0	0.1
26Feb2019	01:10	0.4	0.0	7299.0	0.1
26Feb2019	01:11	0.4	0.0	7299.0	0.1
26Feb2019	01:12	0.5	0.0	7299.0	0.1
26Feb2019	01:13	0.5	0.0	7299.0	0.1
26Feb2019	01:14	0.5	0.0	7299.1	0.1
26Feb2019	01:15	0.5	0.0	7299.1	0.1
26Feb2019	01:16	0.5	0.0	7299.1	0.1
26Feb2019	01:17	0.5	0.0	7299.1	0.1
26Feb2019	01:18	0.5	0.0	7299.1	0.1
26Feb2019	01:19	0.5	0.0	7299.1	0.1
26Feb2019	01:20	0.5	0.0	7299.1	0.1
26Feb2019	01:21	0.5	0.0	7299.1	0.1
26Feb2019	01:22	0.5	0.0	7299.1	0.1
26Feb2019	01:23	0.5	0.0	7299.1	0.1
26Feb2019	01:24	0.5	0.0	7299.1	0.1
26Feb2019	01:25	0.5	0.0	7299.1	0.1
26Feb2019	01:26	0.5	0.0	7299.1	0.1
26Feb2019	01:27	0.5	0.0	7299.1	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	01:28	0.5	0.0	7299.1	0.1
26Feb2019	01:29	0.5	0.0	7299.1	0.1
26Feb2019	01:30	0.5	0.0	7299.1	0.1
26Feb2019	01:31	0.5	0.0	7299.1	0.1
26Feb2019	01:32	0.5	0.0	7299.1	0.1
26Feb2019	01:33	0.5	0.0	7299.1	0.1
26Feb2019	01:34	0.6	0.0	7299.2	0.1
26Feb2019	01:35	0.6	0.0	7299.2	0.1
26Feb2019	01:36	0.6	0.0	7299.2	0.1
26Feb2019	01:37	0.6	0.0	7299.2	0.1
26Feb2019	01:38	0.6	0.0	7299.2	0.1
26Feb2019	01:39	0.6	0.0	7299.2	0.1
26Feb2019	01:40	0.6	0.0	7299.2	0.1
26Feb2019	01:41	0.6	0.0	7299.2	0.1
26Feb2019	01:42	0.6	0.0	7299.2	0.1
26Feb2019	01:43	0.6	0.0	7299.2	0.1
26Feb2019	01:44	0.6	0.0	7299.2	0.1
26Feb2019	01:45	0.6	0.0	7299.2	0.1
26Feb2019	01:46	0.6	0.0	7299.2	0.1
26Feb2019	01:47	0.6	0.0	7299.2	0.1
26Feb2019	01:48	0.6	0.0	7299.2	0.1
26Feb2019	01:49	0.6	0.0	7299.2	0.1
26Feb2019	01:50	0.6	0.0	7299.2	0.1
26Feb2019	01:51	0.6	0.0	7299.2	0.1
26Feb2019	01:52	0.6	0.0	7299.2	0.1
26Feb2019	01:53	0.6	0.0	7299.2	0.2
26Feb2019	01:54	0.6	0.0	7299.3	0.2
26Feb2019	01:55	0.6	0.0	7299.3	0.2
26Feb2019	01:56	0.6	0.0	7299.3	0.2
26Feb2019	01:57	0.6	0.0	7299.3	0.2
26Feb2019	01:58	0.6	0.0	7299.3	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	01:59	0.6	0.0	7299.3	0.2
26Feb2019	02:00	0.6	0.0	7299.3	0.2
26Feb2019	02:01	0.6	0.0	7299.3	0.2
26Feb2019	02:02	0.6	0.0	7299.3	0.2
26Feb2019	02:03	0.6	0.0	7299.3	0.2
26Feb2019	02:04	0.6	0.0	7299.3	0.2
26Feb2019	02:05	0.6	0.0	7299.3	0.2
26Feb2019	02:06	0.6	0.0	7299.3	0.2
26Feb2019	02:07	0.6	0.0	7299.3	0.2
26Feb2019	02:08	0.6	0.0	7299.3	0.2
26Feb2019	02:09	0.6	0.0	7299.3	0.2
26Feb2019	02:10	0.6	0.0	7299.3	0.2
26Feb2019	02:11	0.6	0.0	7299.3	0.2
26Feb2019	02:12	0.6	0.0	7299.3	0.2
26Feb2019	02:13	0.6	0.0	7299.3	0.2
26Feb2019	02:14	0.6	0.0	7299.3	0.2
26Feb2019	02:15	0.6	0.0	7299.3	0.2
26Feb2019	02:16	0.6	0.0	7299.3	0.2
26Feb2019	02:17	0.6	0.0	7299.3	0.2
26Feb2019	02:18	0.6	0.0	7299.3	0.2
26Feb2019	02:19	0.6	0.0	7299.3	0.2
26Feb2019	02:20	0.6	0.0	7299.3	0.2
26Feb2019	02:21	0.6	0.0	7299.3	0.2
26Feb2019	02:22	0.6	0.0	7299.3	0.2
26Feb2019	02:23	0.6	0.1	7299.3	0.2
26Feb2019	02:24	0.6	0.1	7299.3	0.2
26Feb2019	02:25	0.6	0.1	7299.3	0.2
26Feb2019	02:26	0.6	0.1	7299.3	0.2
26Feb2019	02:27	0.6	0.1	7299.3	0.2
26Feb2019	02:28	0.6	0.1	7299.3	0.2
26Feb2019	02:29	0.6	0.1	7299.3	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	02:30	0.6	0.1	7299.3	0.2
26Feb2019	02:31	0.6	0.1	7299.3	0.2
26Feb2019	02:32	0.6	0.1	7299.3	0.2
26Feb2019	02:33	0.6	0.1	7299.3	0.2
26Feb2019	02:34	0.6	0.1	7299.4	0.2
26Feb2019	02:35	0.6	0.1	7299.4	0.2
26Feb2019	02:36	0.6	0.1	7299.4	0.2
26Feb2019	02:37	0.6	0.1	7299.4	0.2
26Feb2019	02:38	0.6	0.1	7299.4	0.2
26Feb2019	02:39	0.6	0.1	7299.4	0.2
26Feb2019	02:40	0.6	0.1	7299.4	0.2
26Feb2019	02:41	0.6	0.1	7299.4	0.2
26Feb2019	02:42	0.6	0.1	7299.4	0.2
26Feb2019	02:43	0.6	0.1	7299.4	0.2
26Feb2019	02:44	0.6	0.1	7299.4	0.2
26Feb2019	02:45	0.6	0.1	7299.4	0.2
26Feb2019	02:46	0.6	0.1	7299.4	0.2
26Feb2019	02:47	0.6	0.1	7299.4	0.2
26Feb2019	02:48	0.6	0.1	7299.4	0.2
26Feb2019	02:49	0.6	0.1	7299.4	0.2
26Feb2019	02:50	0.6	0.1	7299.4	0.2
26Feb2019	02:51	0.6	0.1	7299.4	0.2
26Feb2019	02:52	0.6	0.1	7299.4	0.2
26Feb2019	02:53	0.6	0.1	7299.4	0.2
26Feb2019	02:54	0.6	0.1	7299.4	0.2
26Feb2019	02:55	0.6	0.1	7299.4	0.2
26Feb2019	02:56	0.6	0.1	7299.4	0.2
26Feb2019	02:57	0.6	0.1	7299.4	0.2
26Feb2019	02:58	0.6	0.1	7299.4	0.2
26Feb2019	02:59	0.6	0.1	7299.4	0.2
26Feb2019	03:00	0.6	0.1	7299.4	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	03:01	0.6	0.1	7299.4	0.2
26Feb2019	03:02	0.6	0.1	7299.4	0.2
26Feb2019	03:03	0.6	0.1	7299.4	0.2
26Feb2019	03:04	0.6	0.1	7299.4	0.2
26Feb2019	03:05	0.6	0.1	7299.4	0.2
26Feb2019	03:06	0.7	0.1	7299.4	0.2
26Feb2019	03:07	0.7	0.1	7299.4	0.2
26Feb2019	03:08	0.7	0.1	7299.4	0.2
26Feb2019	03:09	0.7	0.1	7299.4	0.2
26Feb2019	03:10	0.7	0.1	7299.4	0.2
26Feb2019	03:11	0.7	0.1	7299.4	0.2
26Feb2019	03:12	0.7	0.1	7299.4	0.2
26Feb2019	03:13	0.7	0.1	7299.4	0.2
26Feb2019	03:14	0.7	0.1	7299.5	0.2
26Feb2019	03:15	0.7	0.1	7299.5	0.2
26Feb2019	03:16	0.7	0.1	7299.5	0.2
26Feb2019	03:17	0.7	0.1	7299.5	0.2
26Feb2019	03:18	0.7	0.1	7299.5	0.2
26Feb2019	03:19	0.7	0.1	7299.5	0.2
26Feb2019	03:20	0.7	0.1	7299.5	0.2
26Feb2019	03:21	0.7	0.1	7299.5	0.2
26Feb2019	03:22	0.7	0.1	7299.5	0.2
26Feb2019	03:23	0.7	0.1	7299.5	0.2
26Feb2019	03:24	0.7	0.1	7299.5	0.2
26Feb2019	03:25	0.7	0.1	7299.5	0.2
26Feb2019	03:26	0.7	0.1	7299.5	0.2
26Feb2019	03:27	0.7	0.1	7299.5	0.2
26Feb2019	03:28	0.7	0.1	7299.5	0.2
26Feb2019	03:29	0.7	0.1	7299.5	0.2
26Feb2019	03:30	0.7	0.1	7299.5	0.2
26Feb2019	03:31	0.7	0.1	7299.5	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	03:32	0.7	0.1	7299.5	0.2
26Feb2019	03:33	0.7	0.1	7299.5	0.2
26Feb2019	03:34	0.7	0.1	7299.5	0.2
26Feb2019	03:35	0.7	0.1	7299.5	0.2
26Feb2019	03:36	0.7	0.1	7299.5	0.2
26Feb2019	03:37	0.7	0.1	7299.5	0.2
26Feb2019	03:38	0.7	0.1	7299.5	0.2
26Feb2019	03:39	0.7	0.1	7299.5	0.2
26Feb2019	03:40	0.7	0.1	7299.5	0.2
26Feb2019	03:41	0.7	0.1	7299.5	0.2
26Feb2019	03:42	0.7	0.1	7299.5	0.2
26Feb2019	03:43	0.7	0.1	7299.5	0.2
26Feb2019	03:44	0.7	0.1	7299.5	0.2
26Feb2019	03:45	0.7	0.1	7299.5	0.2
26Feb2019	03:46	0.7	0.1	7299.5	0.2
26Feb2019	03:47	0.7	0.1	7299.5	0.2
26Feb2019	03:48	0.7	0.1	7299.5	0.2
26Feb2019	03:49	0.7	0.1	7299.5	0.2
26Feb2019	03:50	0.7	0.1	7299.5	0.2
26Feb2019	03:51	0.7	0.1	7299.5	0.2
26Feb2019	03:52	0.7	0.1	7299.5	0.2
26Feb2019	03:53	0.7	0.1	7299.5	0.2
26Feb2019	03:54	0.7	0.1	7299.5	0.2
26Feb2019	03:55	0.7	0.1	7299.5	0.2
26Feb2019	03:56	0.7	0.1	7299.5	0.2
26Feb2019	03:57	0.7	0.1	7299.5	0.2
26Feb2019	03:58	0.7	0.1	7299.5	0.2
26Feb2019	03:59	0.7	0.1	7299.5	0.2
26Feb2019	04:00	0.7	0.1	7299.5	0.2
26Feb2019	04:01	0.7	0.1	7299.6	0.2
26Feb2019	04:02	0.7	0.1	7299.6	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	04:03	0.7	0.1	7299.6	0.2
26Feb2019	04:04	0.7	0.1	7299.6	0.2
26Feb2019	04:05	0.7	0.1	7299.6	0.2
26Feb2019	04:06	0.7	0.1	7299.6	0.2
26Feb2019	04:07	0.7	0.1	7299.6	0.2
26Feb2019	04:08	0.7	0.1	7299.6	0.2
26Feb2019	04:09	0.7	0.1	7299.6	0.2
26Feb2019	04:10	0.7	0.1	7299.6	0.2
26Feb2019	04:11	0.7	0.1	7299.6	0.2
26Feb2019	04:12	0.7	0.1	7299.6	0.2
26Feb2019	04:13	0.7	0.1	7299.6	0.2
26Feb2019	04:14	0.7	0.1	7299.6	0.2
26Feb2019	04:15	0.7	0.1	7299.6	0.2
26Feb2019	04:16	0.7	0.1	7299.6	0.2
26Feb2019	04:17	0.7	0.1	7299.6	0.2
26Feb2019	04:18	0.7	0.1	7299.6	0.2
26Feb2019	04:19	0.7	0.1	7299.6	0.2
26Feb2019	04:20	0.7	0.1	7299.6	0.2
26Feb2019	04:21	0.7	0.1	7299.6	0.2
26Feb2019	04:22	0.7	0.1	7299.6	0.2
26Feb2019	04:23	0.7	0.1	7299.6	0.2
26Feb2019	04:24	0.7	0.1	7299.6	0.2
26Feb2019	04:25	0.7	0.1	7299.6	0.2
26Feb2019	04:26	0.7	0.1	7299.6	0.2
26Feb2019	04:27	0.7	0.1	7299.6	0.2
26Feb2019	04:28	0.7	0.1	7299.6	0.2
26Feb2019	04:29	0.7	0.1	7299.6	0.2
26Feb2019	04:30	0.7	0.1	7299.6	0.2
26Feb2019	04:31	0.7	0.1	7299.6	0.2
26Feb2019	04:32	0.7	0.1	7299.6	0.2
26Feb2019	04:33	0.7	0.1	7299.6	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	04:34	0.7	0.1	7299.6	0.2
26Feb2019	04:35	0.7	0.1	7299.6	0.2
26Feb2019	04:36	0.7	0.1	7299.6	0.2
26Feb2019	04:37	0.7	0.1	7299.6	0.2
26Feb2019	04:38	0.7	0.1	7299.6	0.2
26Feb2019	04:39	0.7	0.1	7299.6	0.2
26Feb2019	04:40	0.7	0.1	7299.6	0.2
26Feb2019	04:41	0.7	0.1	7299.6	0.2
26Feb2019	04:42	0.7	0.1	7299.6	0.2
26Feb2019	04:43	0.7	0.1	7299.6	0.2
26Feb2019	04:44	0.7	0.1	7299.6	0.2
26Feb2019	04:45	0.7	0.1	7299.6	0.2
26Feb2019	04:46	0.7	0.1	7299.6	0.2
26Feb2019	04:47	0.8	0.1	7299.6	0.2
26Feb2019	04:48	0.8	0.1	7299.6	0.2
26Feb2019	04:49	0.8	0.1	7299.6	0.2
26Feb2019	04:50	0.8	0.2	7299.6	0.2
26Feb2019	04:51	0.8	0.2	7299.6	0.2
26Feb2019	04:52	0.8	0.2	7299.6	0.2
26Feb2019	04:53	0.8	0.2	7299.6	0.2
26Feb2019	04:54	0.8	0.2	7299.6	0.2
26Feb2019	04:55	0.8	0.2	7299.7	0.2
26Feb2019	04:56	0.8	0.2	7299.7	0.2
26Feb2019	04:57	0.8	0.2	7299.7	0.2
26Feb2019	04:58	0.8	0.2	7299.7	0.2
26Feb2019	04:59	0.8	0.2	7299.7	0.2
26Feb2019	05:00	0.8	0.2	7299.7	0.2
26Feb2019	05:01	0.8	0.2	7299.7	0.2
26Feb2019	05:02	0.8	0.2	7299.7	0.2
26Feb2019	05:03	0.8	0.2	7299.7	0.2
26Feb2019	05:04	0.8	0.2	7299.7	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	05:05	0.8	0.2	7299.7	0.2
26Feb2019	05:06	0.8	0.2	7299.7	0.2
26Feb2019	05:07	0.8	0.2	7299.7	0.2
26Feb2019	05:08	0.8	0.2	7299.7	0.2
26Feb2019	05:09	0.8	0.2	7299.7	0.2
26Feb2019	05:10	0.8	0.2	7299.7	0.2
26Feb2019	05:11	0.8	0.2	7299.7	0.2
26Feb2019	05:12	0.8	0.2	7299.7	0.2
26Feb2019	05:13	0.8	0.2	7299.7	0.2
26Feb2019	05:14	0.8	0.2	7299.7	0.2
26Feb2019	05:15	0.8	0.2	7299.7	0.2
26Feb2019	05:16	0.8	0.2	7299.7	0.2
26Feb2019	05:17	0.8	0.2	7299.7	0.2
26Feb2019	05:18	0.8	0.2	7299.7	0.2
26Feb2019	05:19	0.8	0.2	7299.7	0.2
26Feb2019	05:20	0.8	0.2	7299.7	0.2
26Feb2019	05:21	0.8	0.2	7299.7	0.2
26Feb2019	05:22	0.8	0.2	7299.7	0.2
26Feb2019	05:23	0.8	0.2	7299.7	0.2
26Feb2019	05:24	0.8	0.2	7299.7	0.2
26Feb2019	05:25	0.8	0.2	7299.7	0.2
26Feb2019	05:26	0.8	0.2	7299.7	0.2
26Feb2019	05:27	0.8	0.2	7299.7	0.2
26Feb2019	05:28	0.8	0.2	7299.7	0.2
26Feb2019	05:29	0.8	0.2	7299.7	0.2
26Feb2019	05:30	0.8	0.2	7299.7	0.2
26Feb2019	05:31	0.8	0.2	7299.7	0.2
26Feb2019	05:32	0.8	0.2	7299.7	0.2
26Feb2019	05:33	0.8	0.2	7299.7	0.2
26Feb2019	05:34	0.8	0.2	7299.7	0.2
26Feb2019	05:35	0.8	0.2	7299.7	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	05:36	0.8	0.2	7299.7	0.2
26Feb2019	05:37	0.8	0.2	7299.7	0.2
26Feb2019	05:38	0.8	0.2	7299.7	0.2
26Feb2019	05:39	0.8	0.2	7299.7	0.2
26Feb2019	05:40	0.8	0.2	7299.7	0.2
26Feb2019	05:41	0.8	0.2	7299.7	0.2
26Feb2019	05:42	0.8	0.2	7299.7	0.2
26Feb2019	05:43	0.8	0.2	7299.8	0.2
26Feb2019	05:44	0.8	0.2	7299.8	0.2
26Feb2019	05:45	0.8	0.2	7299.8	0.2
26Feb2019	05:46	0.8	0.2	7299.8	0.2
26Feb2019	05:47	0.9	0.2	7299.8	0.2
26Feb2019	05:48	0.9	0.2	7299.8	0.2
26Feb2019	05:49	0.9	0.2	7299.8	0.2
26Feb2019	05:50	0.9	0.2	7299.8	0.2
26Feb2019	05:51	0.9	0.2	7299.8	0.2
26Feb2019	05:52	0.9	0.2	7299.8	0.2
26Feb2019	05:53	0.9	0.2	7299.8	0.2
26Feb2019	05:54	0.9	0.2	7299.8	0.2
26Feb2019	05:55	0.9	0.2	7299.8	0.2
26Feb2019	05:56	0.9	0.2	7299.8	0.2
26Feb2019	05:57	0.9	0.2	7299.8	0.2
26Feb2019	05:58	0.9	0.2	7299.8	0.2
26Feb2019	05:59	0.9	0.2	7299.8	0.2
26Feb2019	06:00	0.9	0.2	7299.8	0.2
26Feb2019	06:01	0.9	0.2	7299.8	0.2
26Feb2019	06:02	0.9	0.2	7299.8	0.2
26Feb2019	06:03	0.9	0.2	7299.8	0.2
26Feb2019	06:04	0.9	0.2	7299.8	0.2
26Feb2019	06:05	0.9	0.2	7299.8	0.2
26Feb2019	06:06	0.9	0.2	7299.8	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	06:07	0.9	0.2	7299.8	0.2
26Feb2019	06:08	0.9	0.2	7299.8	0.2
26Feb2019	06:09	0.9	0.2	7299.8	0.2
26Feb2019	06:10	0.9	0.2	7299.8	0.2
26Feb2019	06:11	0.9	0.2	7299.8	0.2
26Feb2019	06:12	0.9	0.2	7299.8	0.2
26Feb2019	06:13	0.9	0.2	7299.8	0.2
26Feb2019	06:14	0.9	0.2	7299.8	0.2
26Feb2019	06:15	0.9	0.2	7299.8	0.2
26Feb2019	06:16	0.9	0.2	7299.8	0.2
26Feb2019	06:17	0.9	0.2	7299.8	0.2
26Feb2019	06:18	0.9	0.2	7299.8	0.2
26Feb2019	06:19	0.9	0.2	7299.8	0.2
26Feb2019	06:20	0.9	0.2	7299.8	0.2
26Feb2019	06:21	0.9	0.2	7299.8	0.2
26Feb2019	06:22	0.9	0.2	7299.8	0.2
26Feb2019	06:23	0.9	0.2	7299.8	0.2
26Feb2019	06:24	0.9	0.2	7299.8	0.2
26Feb2019	06:25	0.9	0.2	7299.8	0.2
26Feb2019	06:26	0.9	0.2	7299.8	0.2
26Feb2019	06:27	0.9	0.2	7299.8	0.2
26Feb2019	06:28	0.9	0.2	7299.8	0.2
26Feb2019	06:29	0.9	0.2	7299.8	0.2
26Feb2019	06:30	0.9	0.2	7299.8	0.2
26Feb2019	06:31	0.9	0.2	7299.8	0.2
26Feb2019	06:32	0.9	0.2	7299.8	0.2
26Feb2019	06:33	0.9	0.2	7299.8	0.2
26Feb2019	06:34	0.9	0.2	7299.8	0.2
26Feb2019	06:35	0.9	0.2	7299.8	0.2
26Feb2019	06:36	0.9	0.2	7299.8	0.2
26Feb2019	06:37	0.9	0.2	7299.8	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	06:38	0.9	0.2	7299.8	0.2
26Feb2019	06:39	0.9	0.2	7299.8	0.2
26Feb2019	06:40	0.9	0.2	7299.9	0.2
26Feb2019	06:41	0.9	0.2	7299.9	0.2
26Feb2019	06:42	0.9	0.2	7299.9	0.2
26Feb2019	06:43	0.9	0.2	7299.9	0.2
26Feb2019	06:44	1.0	0.2	7299.9	0.2
26Feb2019	06:45	1.0	0.3	7299.9	0.2
26Feb2019	06:46	1.0	0.3	7299.9	0.2
26Feb2019	06:47	1.0	0.3	7299.9	0.2
26Feb2019	06:48	1.0	0.3	7299.9	0.2
26Feb2019	06:49	1.0	0.3	7299.9	0.2
26Feb2019	06:50	1.0	0.3	7299.9	0.2
26Feb2019	06:51	1.0	0.3	7299.9	0.2
26Feb2019	06:52	1.0	0.3	7299.9	0.2
26Feb2019	06:53	1.0	0.3	7299.9	0.2
26Feb2019	06:54	1.0	0.3	7299.9	0.2
26Feb2019	06:55	1.0	0.3	7299.9	0.2
26Feb2019	06:56	1.0	0.3	7299.9	0.2
26Feb2019	06:57	1.0	0.3	7299.9	0.2
26Feb2019	06:58	1.0	0.3	7299.9	0.2
26Feb2019	06:59	1.0	0.3	7299.9	0.2
26Feb2019	07:00	1.0	0.3	7299.9	0.2
26Feb2019	07:01	1.0	0.3	7299.9	0.2
26Feb2019	07:02	1.0	0.3	7299.9	0.2
26Feb2019	07:03	1.0	0.3	7299.9	0.2
26Feb2019	07:04	1.0	0.3	7299.9	0.2
26Feb2019	07:05	1.0	0.3	7299.9	0.2
26Feb2019	07:06	1.0	0.3	7299.9	0.2
26Feb2019	07:07	1.0	0.3	7299.9	0.2
26Feb2019	07:08	1.0	0.3	7299.9	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	07:09	1.0	0.3	7299.9	0.2
26Feb2019	07:10	1.0	0.3	7299.9	0.2
26Feb2019	07:11	1.0	0.3	7299.9	0.2
26Feb2019	07:12	1.0	0.3	7299.9	0.2
26Feb2019	07:13	1.0	0.3	7299.9	0.2
26Feb2019	07:14	1.0	0.3	7299.9	0.2
26Feb2019	07:15	1.0	0.3	7299.9	0.2
26Feb2019	07:16	1.0	0.3	7299.9	0.2
26Feb2019	07:17	1.0	0.3	7299.9	0.2
26Feb2019	07:18	1.0	0.3	7299.9	0.2
26Feb2019	07:19	1.0	0.3	7299.9	0.2
26Feb2019	07:20	1.0	0.3	7299.9	0.2
26Feb2019	07:21	1.0	0.3	7299.9	0.2
26Feb2019	07:22	1.0	0.3	7299.9	0.2
26Feb2019	07:23	1.0	0.3	7299.9	0.2
26Feb2019	07:24	1.0	0.3	7299.9	0.2
26Feb2019	07:25	1.0	0.3	7299.9	0.2
26Feb2019	07:26	1.0	0.3	7299.9	0.2
26Feb2019	07:27	1.0	0.3	7299.9	0.2
26Feb2019	07:28	1.0	0.3	7299.9	0.2
26Feb2019	07:29	1.0	0.3	7299.9	0.2
26Feb2019	07:30	1.0	0.3	7299.9	0.2
26Feb2019	07:31	1.0	0.3	7300.0	0.2
26Feb2019	07:32	1.0	0.3	7300.0	0.2
26Feb2019	07:33	1.0	0.3	7300.0	0.2
26Feb2019	07:34	1.0	0.3	7300.0	0.2
26Feb2019	07:35	1.0	0.3	7300.0	0.2
26Feb2019	07:36	1.0	0.3	7300.0	0.2
26Feb2019	07:37	1.0	0.3	7300.0	0.2
26Feb2019	07:38	1.0	0.3	7300.0	0.2
26Feb2019	07:39	1.0	0.3	7300.0	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	07:40	1.1	0.3	7300.0	0.2
26Feb2019	07:41	1.1	0.3	7300.0	0.2
26Feb2019	07:42	1.1	0.3	7300.0	0.2
26Feb2019	07:43	1.1	0.3	7300.0	0.2
26Feb2019	07:44	1.1	0.3	7300.0	0.2
26Feb2019	07:45	1.1	0.3	7300.0	0.2
26Feb2019	07:46	1.1	0.3	7300.0	0.2
26Feb2019	07:47	1.1	0.3	7300.0	0.2
26Feb2019	07:48	1.1	0.3	7300.0	0.2
26Feb2019	07:49	1.1	0.3	7300.0	0.2
26Feb2019	07:50	1.1	0.3	7300.0	0.2
26Feb2019	07:51	1.1	0.3	7300.0	0.2
26Feb2019	07:52	1.1	0.3	7300.0	0.2
26Feb2019	07:53	1.1	0.3	7300.0	0.2
26Feb2019	07:54	1.1	0.3	7300.0	0.2
26Feb2019	07:55	1.1	0.3	7300.0	0.3
26Feb2019	07:56	1.1	0.3	7300.0	0.3
26Feb2019	07:57	1.1	0.3	7300.0	0.3
26Feb2019	07:58	1.1	0.3	7300.0	0.3
26Feb2019	07:59	1.1	0.3	7300.0	0.3
26Feb2019	08:00	1.1	0.3	7300.0	0.3
26Feb2019	08:01	1.1	0.3	7300.0	0.3
26Feb2019	08:02	1.1	0.3	7300.0	0.3
26Feb2019	08:03	1.1	0.3	7300.0	0.3
26Feb2019	08:04	1.1	0.3	7300.0	0.3
26Feb2019	08:05	1.1	0.3	7300.0	0.3
26Feb2019	08:06	1.1	0.3	7300.0	0.3
26Feb2019	08:07	1.1	0.3	7300.0	0.3
26Feb2019	08:08	1.1	0.3	7300.0	0.3
26Feb2019	08:09	1.1	0.3	7300.0	0.3
26Feb2019	08:10	1.1	0.3	7300.0	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	08:11	1.1	0.3	7300.0	0.3
26Feb2019	08:12	1.1	0.3	7300.0	0.3
26Feb2019	08:13	1.1	0.3	7300.0	0.3
26Feb2019	08:14	1.1	0.3	7300.0	0.3
26Feb2019	08:15	1.1	0.3	7300.0	0.3
26Feb2019	08:16	1.1	0.3	7300.0	0.3
26Feb2019	08:17	1.1	0.4	7300.0	0.3
26Feb2019	08:18	1.1	0.4	7300.0	0.3
26Feb2019	08:19	1.1	0.4	7300.0	0.3
26Feb2019	08:20	1.1	0.4	7300.0	0.3
26Feb2019	08:21	1.1	0.4	7300.0	0.3
26Feb2019	08:22	1.1	0.4	7300.0	0.3
26Feb2019	08:23	1.1	0.4	7300.0	0.3
26Feb2019	08:24	1.1	0.4	7300.1	0.3
26Feb2019	08:25	1.1	0.4	7300.1	0.3
26Feb2019	08:26	1.2	0.4	7300.1	0.3
26Feb2019	08:27	1.2	0.4	7300.1	0.3
26Feb2019	08:28	1.2	0.4	7300.1	0.3
26Feb2019	08:29	1.2	0.4	7300.1	0.3
26Feb2019	08:30	1.2	0.4	7300.1	0.3
26Feb2019	08:31	1.2	0.4	7300.1	0.3
26Feb2019	08:32	1.2	0.4	7300.1	0.3
26Feb2019	08:33	1.2	0.4	7300.1	0.3
26Feb2019	08:34	1.2	0.4	7300.1	0.3
26Feb2019	08:35	1.2	0.4	7300.1	0.3
26Feb2019	08:36	1.2	0.4	7300.1	0.3
26Feb2019	08:37	1.2	0.4	7300.1	0.3
26Feb2019	08:38	1.2	0.4	7300.1	0.3
26Feb2019	08:39	1.2	0.4	7300.1	0.3
26Feb2019	08:40	1.2	0.4	7300.1	0.3
26Feb2019	08:41	1.2	0.4	7300.1	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	08:42	1.2	0.4	7300.1	0.3
26Feb2019	08:43	1.2	0.4	7300.1	0.3
26Feb2019	08:44	1.2	0.4	7300.1	0.3
26Feb2019	08:45	1.2	0.4	7300.1	0.3
26Feb2019	08:46	1.3	0.4	7300.1	0.3
26Feb2019	08:47	1.3	0.4	7300.1	0.3
26Feb2019	08:48	1.3	0.4	7300.1	0.3
26Feb2019	08:49	1.3	0.4	7300.1	0.3
26Feb2019	08:50	1.3	0.4	7300.1	0.3
26Feb2019	08:51	1.3	0.4	7300.1	0.3
26Feb2019	08:52	1.3	0.4	7300.1	0.3
26Feb2019	08:53	1.3	0.4	7300.1	0.3
26Feb2019	08:54	1.3	0.4	7300.1	0.3
26Feb2019	08:55	1.3	0.4	7300.1	0.3
26Feb2019	08:56	1.3	0.4	7300.1	0.3
26Feb2019	08:57	1.3	0.4	7300.1	0.3
26Feb2019	08:58	1.3	0.4	7300.1	0.3
26Feb2019	08:59	1.3	0.4	7300.1	0.3
26Feb2019	09:00	1.4	0.4	7300.1	0.3
26Feb2019	09:01	1.4	0.4	7300.1	0.3
26Feb2019	09:02	1.4	0.4	7300.1	0.3
26Feb2019	09:03	1.4	0.4	7300.1	0.3
26Feb2019	09:04	1.4	0.4	7300.1	0.3
26Feb2019	09:05	1.4	0.4	7300.1	0.3
26Feb2019	09:06	1.4	0.4	7300.1	0.3
26Feb2019	09:07	1.4	0.4	7300.1	0.3
26Feb2019	09:08	1.4	0.4	7300.1	0.3
26Feb2019	09:09	1.4	0.4	7300.1	0.3
26Feb2019	09:10	1.4	0.4	7300.1	0.3
26Feb2019	09:11	1.4	0.4	7300.1	0.3
26Feb2019	09:12	1.4	0.4	7300.1	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	09:13	1.5	0.4	7300.2	0.3
26Feb2019	09:14	1.5	0.4	7300.2	0.3
26Feb2019	09:15	1.5	0.4	7300.2	0.3
26Feb2019	09:16	1.5	0.4	7300.2	0.3
26Feb2019	09:17	1.5	0.4	7300.2	0.3
26Feb2019	09:18	1.5	0.4	7300.2	0.3
26Feb2019	09:19	1.5	0.4	7300.2	0.3
26Feb2019	09:20	1.5	0.4	7300.2	0.3
26Feb2019	09:21	1.5	0.4	7300.2	0.3
26Feb2019	09:22	1.5	0.4	7300.2	0.3
26Feb2019	09:23	1.5	0.4	7300.2	0.3
26Feb2019	09:24	1.5	0.4	7300.2	0.3
26Feb2019	09:25	1.5	0.4	7300.2	0.3
26Feb2019	09:26	1.6	0.5	7300.2	0.3
26Feb2019	09:27	1.6	0.5	7300.2	0.3
26Feb2019	09:28	1.6	0.5	7300.2	0.3
26Feb2019	09:29	1.6	0.5	7300.2	0.3
26Feb2019	09:30	1.6	0.5	7300.2	0.3
26Feb2019	09:31	1.6	0.5	7300.2	0.3
26Feb2019	09:32	1.6	0.5	7300.2	0.3
26Feb2019	09:33	1.6	0.5	7300.2	0.3
26Feb2019	09:34	1.6	0.5	7300.2	0.3
26Feb2019	09:35	1.6	0.5	7300.2	0.3
26Feb2019	09:36	1.6	0.5	7300.2	0.3
26Feb2019	09:37	1.6	0.5	7300.2	0.3
26Feb2019	09:38	1.6	0.5	7300.2	0.3
26Feb2019	09:39	1.6	0.5	7300.2	0.3
26Feb2019	09:40	1.6	0.5	7300.2	0.3
26Feb2019	09:41	1.6	0.5	7300.2	0.3
26Feb2019	09:42	1.6	0.5	7300.2	0.3
26Feb2019	09:43	1.6	0.5	7300.2	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	09:44	1.6	0.5	7300.2	0.3
26Feb2019	09:45	1.6	0.5	7300.2	0.3
26Feb2019	09:46	1.7	0.5	7300.2	0.3
26Feb2019	09:47	1.7	0.5	7300.2	0.3
26Feb2019	09:48	1.7	0.5	7300.2	0.3
26Feb2019	09:49	1.7	0.5	7300.2	0.3
26Feb2019	09:50	1.7	0.5	7300.2	0.3
26Feb2019	09:51	1.7	0.5	7300.2	0.3
26Feb2019	09:52	1.7	0.5	7300.3	0.3
26Feb2019	09:53	1.7	0.5	7300.3	0.3
26Feb2019	09:54	1.7	0.5	7300.3	0.3
26Feb2019	09:55	1.7	0.5	7300.3	0.3
26Feb2019	09:56	1.7	0.5	7300.3	0.3
26Feb2019	09:57	1.7	0.5	7300.3	0.3
26Feb2019	09:58	1.7	0.5	7300.3	0.3
26Feb2019	09:59	1.7	0.5	7300.3	0.3
26Feb2019	10:00	1.7	0.5	7300.3	0.3
26Feb2019	10:01	1.7	0.5	7300.3	0.3
26Feb2019	10:02	1.7	0.5	7300.3	0.3
26Feb2019	10:03	1.7	0.5	7300.3	0.3
26Feb2019	10:04	1.8	0.5	7300.3	0.3
26Feb2019	10:05	1.8	0.5	7300.3	0.3
26Feb2019	10:06	1.8	0.5	7300.3	0.3
26Feb2019	10:07	1.8	0.5	7300.3	0.3
26Feb2019	10:08	1.8	0.5	7300.3	0.3
26Feb2019	10:09	1.8	0.5	7300.3	0.3
26Feb2019	10:10	1.8	0.5	7300.3	0.3
26Feb2019	10:11	1.8	0.5	7300.3	0.3
26Feb2019	10:12	1.8	0.5	7300.3	0.3
26Feb2019	10:13	1.8	0.5	7300.3	0.3
26Feb2019	10:14	1.8	0.5	7300.3	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	10:15	1.9	0.5	7300.3	0.3
26Feb2019	10:16	1.9	0.5	7300.3	0.3
26Feb2019	10:17	1.9	0.5	7300.3	0.3
26Feb2019	10:18	1.9	0.6	7300.3	0.3
26Feb2019	10:19	1.9	0.6	7300.3	0.3
26Feb2019	10:20	1.9	0.6	7300.3	0.3
26Feb2019	10:21	1.9	0.6	7300.3	0.3
26Feb2019	10:22	1.9	0.6	7300.3	0.3
26Feb2019	10:23	2.0	0.6	7300.3	0.3
26Feb2019	10:24	2.0	0.6	7300.3	0.3
26Feb2019	10:25	2.0	0.6	7300.3	0.3
26Feb2019	10:26	2.0	0.6	7300.3	0.3
26Feb2019	10:27	2.0	0.6	7300.3	0.3
26Feb2019	10:28	2.0	0.6	7300.3	0.3
26Feb2019	10:29	2.0	0.6	7300.3	0.3
26Feb2019	10:30	2.1	0.6	7300.3	0.3
26Feb2019	10:31	2.1	0.6	7300.3	0.3
26Feb2019	10:32	2.1	0.6	7300.4	0.3
26Feb2019	10:33	2.1	0.6	7300.4	0.3
26Feb2019	10:34	2.1	0.6	7300.4	0.3
26Feb2019	10:35	2.1	0.6	7300.4	0.3
26Feb2019	10:36	2.2	0.6	7300.4	0.3
26Feb2019	10:37	2.2	0.6	7300.4	0.3
26Feb2019	10:38	2.2	0.6	7300.4	0.3
26Feb2019	10:39	2.2	0.6	7300.4	0.4
26Feb2019	10:40	2.2	0.6	7300.4	0.4
26Feb2019	10:41	2.2	0.6	7300.4	0.4
26Feb2019	10:42	2.3	0.6	7300.4	0.4
26Feb2019	10:43	2.3	0.6	7300.4	0.4
26Feb2019	10:44	2.3	0.6	7300.4	0.4
26Feb2019	10:45	2.3	0.6	7300.4	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	10:46	2.3	0.6	7300.4	0.4
26Feb2019	10:47	2.4	0.6	7300.4	0.4
26Feb2019	10:48	2.4	0.6	7300.4	0.4
26Feb2019	10:49	2.4	0.6	7300.4	0.4
26Feb2019	10:50	2.4	0.6	7300.4	0.4
26Feb2019	10:51	2.5	0.6	7300.4	0.4
26Feb2019	10:52	2.5	0.6	7300.4	0.4
26Feb2019	10:53	2.5	0.6	7300.4	0.4
26Feb2019	10:54	2.5	0.6	7300.4	0.4
26Feb2019	10:55	2.6	0.6	7300.4	0.4
26Feb2019	10:56	2.6	0.6	7300.4	0.4
26Feb2019	10:57	2.6	0.7	7300.4	0.4
26Feb2019	10:58	2.6	0.7	7300.4	0.4
26Feb2019	10:59	2.7	0.7	7300.4	0.4
26Feb2019	11:00	2.7	0.7	7300.4	0.4
26Feb2019	11:01	2.7	0.7	7300.4	0.4
26Feb2019	11:02	2.7	0.7	7300.4	0.4
26Feb2019	11:03	2.8	0.7	7300.4	0.4
26Feb2019	11:04	2.8	0.7	7300.5	0.4
26Feb2019	11:05	2.8	0.7	7300.5	0.4
26Feb2019	11:06	2.9	0.7	7300.5	0.4
26Feb2019	11:07	2.9	0.7	7300.5	0.4
26Feb2019	11:08	2.9	0.7	7300.5	0.4
26Feb2019	11:09	2.9	0.7	7300.5	0.4
26Feb2019	11:10	3.0	0.7	7300.5	0.4
26Feb2019	11:11	3.0	0.7	7300.5	0.4
26Feb2019	11:12	3.1	0.7	7300.5	0.4
26Feb2019	11:13	3.1	0.7	7300.5	0.4
26Feb2019	11:14	3.1	0.7	7300.5	0.4
26Feb2019	11:15	3.2	0.7	7300.5	0.4
26Feb2019	11:16	3.2	0.7	7300.5	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	11:17	3.2	0.7	7300.5	0.4
26Feb2019	11:18	3.3	0.7	7300.5	0.4
26Feb2019	11:19	3.3	0.7	7300.5	0.4
26Feb2019	11:20	3.4	0.7	7300.5	0.4
26Feb2019	11:21	3.4	0.7	7300.5	0.4
26Feb2019	11:22	3.5	0.7	7300.5	0.4
26Feb2019	11:23	3.5	0.7	7300.5	0.5
26Feb2019	11:24	3.6	0.7	7300.5	0.5
26Feb2019	11:25	3.6	0.8	7300.5	0.5
26Feb2019	11:26	3.7	0.8	7300.5	0.5
26Feb2019	11:27	3.7	0.8	7300.5	0.5
26Feb2019	11:28	3.8	0.8	7300.5	0.5
26Feb2019	11:29	3.8	0.8	7300.6	0.5
26Feb2019	11:30	3.9	0.8	7300.6	0.5
26Feb2019	11:31	3.9	0.8	7300.6	0.5
26Feb2019	11:32	4.0	0.8	7300.6	0.5
26Feb2019	11:33	4.1	0.8	7300.6	0.5
26Feb2019	11:34	4.2	0.8	7300.6	0.5
26Feb2019	11:35	4.3	0.8	7300.6	0.5
26Feb2019	11:36	4.4	0.8	7300.6	0.5
26Feb2019	11:37	4.5	0.8	7300.6	0.5
26Feb2019	11:38	4.7	0.8	7300.6	0.5
26Feb2019	11:39	4.9	0.8	7300.6	0.5
26Feb2019	11:40	5.1	0.8	7300.6	0.5
26Feb2019	11:41	5.3	0.8	7300.6	0.5
26Feb2019	11:42	5.6	0.8	7300.6	0.5
26Feb2019	11:43	5.8	0.8	7300.6	0.5
26Feb2019	11:44	6.1	0.9	7300.6	0.5
26Feb2019	11:45	6.5	0.9	7300.6	0.5
26Feb2019	11:46	6.9	0.9	7300.7	0.5
26Feb2019	11:47	7.3	0.9	7300.7	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	11:48	7.8	0.9	7300.7	0.5
26Feb2019	11:49	8.3	0.9	7300.7	0.5
26Feb2019	11:50	8.9	0.9	7300.7	0.5
26Feb2019	11:51	9.5	0.9	7300.7	0.5
26Feb2019	11:52	10.3	0.9	7300.7	0.5
26Feb2019	11:53	11.2	1.0	7300.7	0.5
26Feb2019	11:54	12.2	1.0	7300.7	0.5
26Feb2019	11:55	13.3	1.0	7300.8	0.5
26Feb2019	11:56	14.4	1.0	7300.8	0.5
26Feb2019	11:57	15.7	1.0	7300.8	0.5
26Feb2019	11:58	16.9	1.0	7300.8	0.5
26Feb2019	11:59	18.2	1.1	7300.8	0.6
26Feb2019	12:00	19.6	1.1	7300.8	0.6
26Feb2019	12:01	21.0	1.1	7300.9	0.6
26Feb2019	12:02	22.4	1.1	7300.9	0.6
26Feb2019	12:03	23.8	1.2	7300.9	0.6
26Feb2019	12:04	25.3	1.2	7300.9	0.6
26Feb2019	12:05	26.6	1.2	7301.0	0.6
26Feb2019	12:06	28.1	1.3	7301.0	0.6
26Feb2019	12:07	29.5	1.3	7301.0	0.6
26Feb2019	12:08	30.8	1.4	7301.1	0.6
26Feb2019	12:09	32.1	1.4	7301.1	0.6
26Feb2019	12:10	33.1	1.5	7301.1	0.6
26Feb2019	12:11	34.0	1.5	7301.2	0.6
26Feb2019	12:12	34.6	1.5	7301.2	0.7
26Feb2019	12:13	35.1	1.6	7301.2	0.7
26Feb2019	12:14	35.3	1.6	7301.3	0.7
26Feb2019	12:15	35.3	1.7	7301.3	0.8
26Feb2019	12:16	35.1	1.7	7301.3	1.0
26Feb2019	12:17	34.7	1.8	7301.3	1.1
26Feb2019	12:18	34.1	1.8	7301.4	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	12:19	33.4	1.9	7301.4	1.4
26Feb2019	12:20	32.6	1.9	7301.4	1.5
26Feb2019	12:21	31.7	2.0	7301.5	1.6
26Feb2019	12:22	30.7	2.0	7301.5	1.8
26Feb2019	12:23	29.7	2.0	7301.5	2.1
26Feb2019	12:24	28.7	2.1	7301.5	2.7
26Feb2019	12:25	27.7	2.1	7301.6	3.2
26Feb2019	12:26	26.7	2.1	7301.6	3.7
26Feb2019	12:27	25.7	2.2	7301.6	4.2
26Feb2019	12:28	24.7	2.2	7301.6	4.6
26Feb2019	12:29	23.7	2.2	7301.6	5.0
26Feb2019	12:30	22.8	2.2	7301.6	5.4
26Feb2019	12:31	21.8	2.3	7301.7	5.7
26Feb2019	12:32	21.0	2.3	7301.7	6.1
26Feb2019	12:33	20.1	2.3	7301.7	6.4
26Feb2019	12:34	19.3	2.3	7301.7	6.6
26Feb2019	12:35	18.5	2.3	7301.7	6.9
26Feb2019	12:36	17.8	2.4	7301.7	7.1
26Feb2019	12:37	17.1	2.4	7301.7	7.3
26Feb2019	12:38	16.4	2.4	7301.7	7.5
26Feb2019	12:39	15.7	2.4	7301.7	7.7
26Feb2019	12:40	15.1	2.4	7301.7	7.9
26Feb2019	12:41	14.5	2.4	7301.7	8.0
26Feb2019	12:42	14.0	2.4	7301.7	8.1
26Feb2019	12:43	13.4	2.4	7301.8	8.3
26Feb2019	12:44	12.9	2.4	7301.8	8.4
26Feb2019	12:45	12.4	2.5	7301.8	8.6
26Feb2019	12:46	12.0	2.5	7301.8	8.7
26Feb2019	12:47	11.5	2.5	7301.8	8.7
26Feb2019	12:48	11.1	2.5	7301.8	8.8
26Feb2019	12:49	10.7	2.5	7301.8	8.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	12:50	10.3	2.5	7301.8	8.9
26Feb2019	12:51	9.9	2.5	7301.8	9.0
26Feb2019	12:52	9.6	2.5	7301.8	9.0
26Feb2019	12:53	9.3	2.5	7301.8	9.0
26Feb2019	12:54	8.9	2.5	7301.8	9.0
26Feb2019	12:55	8.6	2.5	7301.8	9.0
26Feb2019	12:56	8.4	2.5	7301.8	9.0
26Feb2019	12:57	8.1	2.5	7301.8	9.0
26Feb2019	12:58	7.8	2.5	7301.8	8.9
26Feb2019	12:59	7.6	2.5	7301.8	8.9
26Feb2019	13:00	7.4	2.5	7301.8	8.9
26Feb2019	13:01	7.1	2.5	7301.8	8.8
26Feb2019	13:02	6.9	2.5	7301.8	8.8
26Feb2019	13:03	6.7	2.5	7301.8	8.7
26Feb2019	13:04	6.6	2.5	7301.8	8.6
26Feb2019	13:05	6.4	2.5	7301.8	8.6
26Feb2019	13:06	6.2	2.4	7301.8	8.5
26Feb2019	13:07	6.1	2.4	7301.8	8.4
26Feb2019	13:08	5.9	2.4	7301.8	8.4
26Feb2019	13:09	5.8	2.4	7301.8	8.3
26Feb2019	13:10	5.6	2.4	7301.8	8.2
26Feb2019	13:11	5.5	2.4	7301.7	8.1
26Feb2019	13:12	5.4	2.4	7301.7	8.1
26Feb2019	13:13	5.2	2.4	7301.7	8.0
26Feb2019	13:14	5.1	2.4	7301.7	8.0
26Feb2019	13:15	5.0	2.4	7301.7	7.9
26Feb2019	13:16	4.9	2.4	7301.7	7.9
26Feb2019	13:17	4.8	2.4	7301.7	7.8
26Feb2019	13:18	4.7	2.4	7301.7	7.7
26Feb2019	13:19	4.6	2.4	7301.7	7.7
26Feb2019	13:20	4.5	2.4	7301.7	7.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	13:21	4.5	2.4	7301.7	7.5
26Feb2019	13:22	4.4	2.4	7301.7	7.5
26Feb2019	13:23	4.3	2.4	7301.7	7.4
26Feb2019	13:24	4.2	2.4	7301.7	7.3
26Feb2019	13:25	4.1	2.4	7301.7	7.3
26Feb2019	13:26	4.1	2.4	7301.7	7.2
26Feb2019	13:27	4.0	2.4	7301.7	7.1
26Feb2019	13:28	3.9	2.4	7301.7	7.1
26Feb2019	13:29	3.9	2.4	7301.7	7.0
26Feb2019	13:30	3.8	2.4	7301.7	7.0
26Feb2019	13:31	3.8	2.3	7301.7	6.9
26Feb2019	13:32	3.7	2.3	7301.7	6.8
26Feb2019	13:33	3.7	2.3	7301.7	6.8
26Feb2019	13:34	3.6	2.3	7301.7	6.7
26Feb2019	13:35	3.6	2.3	7301.7	6.6
26Feb2019	13:36	3.5	2.3	7301.7	6.6
26Feb2019	13:37	3.5	2.3	7301.7	6.5
26Feb2019	13:38	3.4	2.3	7301.7	6.4
26Feb2019	13:39	3.4	2.3	7301.7	6.4
26Feb2019	13:40	3.3	2.3	7301.7	6.3
26Feb2019	13:41	3.3	2.3	7301.7	6.3
26Feb2019	13:42	3.3	2.3	7301.7	6.2
26Feb2019	13:43	3.2	2.3	7301.7	6.1
26Feb2019	13:44	3.2	2.3	7301.7	6.1
26Feb2019	13:45	3.2	2.3	7301.7	6.0
26Feb2019	13:46	3.1	2.3	7301.7	5.9
26Feb2019	13:47	3.1	2.3	7301.7	5.9
26Feb2019	13:48	3.0	2.3	7301.7	5.8
26Feb2019	13:49	3.0	2.3	7301.7	5.8
26Feb2019	13:50	3.0	2.3	7301.7	5.7
26Feb2019	13:51	3.0	2.3	7301.7	5.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	13:52	2.9	2.3	7301.6	5.6
26Feb2019	13:53	2.9	2.3	7301.6	5.5
26Feb2019	13:54	2.9	2.3	7301.6	5.5
26Feb2019	13:55	2.8	2.3	7301.6	5.4
26Feb2019	13:56	2.8	2.2	7301.6	5.4
26Feb2019	13:57	2.8	2.2	7301.6	5.3
26Feb2019	13:58	2.8	2.2	7301.6	5.3
26Feb2019	13:59	2.7	2.2	7301.6	5.2
26Feb2019	14:00	2.7	2.2	7301.6	5.2
26Feb2019	14:01	2.7	2.2	7301.6	5.1
26Feb2019	14:02	2.7	2.2	7301.6	5.1
26Feb2019	14:03	2.6	2.2	7301.6	5.0
26Feb2019	14:04	2.6	2.2	7301.6	5.0
26Feb2019	14:05	2.6	2.2	7301.6	4.9
26Feb2019	14:06	2.6	2.2	7301.6	4.9
26Feb2019	14:07	2.5	2.2	7301.6	4.8
26Feb2019	14:08	2.5	2.2	7301.6	4.8
26Feb2019	14:09	2.5	2.2	7301.6	4.7
26Feb2019	14:10	2.5	2.2	7301.6	4.7
26Feb2019	14:11	2.4	2.2	7301.6	4.6
26Feb2019	14:12	2.4	2.2	7301.6	4.6
26Feb2019	14:13	2.4	2.2	7301.6	4.5
26Feb2019	14:14	2.4	2.2	7301.6	4.5
26Feb2019	14:15	2.4	2.2	7301.6	4.5
26Feb2019	14:16	2.3	2.2	7301.6	4.4
26Feb2019	14:17	2.3	2.2	7301.6	4.4
26Feb2019	14:18	2.3	2.2	7301.6	4.3
26Feb2019	14:19	2.3	2.2	7301.6	4.3
26Feb2019	14:20	2.3	2.2	7301.6	4.2
26Feb2019	14:21	2.3	2.2	7301.6	4.2
26Feb2019	14:22	2.2	2.2	7301.6	4.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	14:23	2.2	2.2	7301.6	4.1
26Feb2019	14:24	2.2	2.2	7301.6	4.1
26Feb2019	14:25	2.2	2.2	7301.6	4.0
26Feb2019	14:26	2.2	2.2	7301.6	4.0
26Feb2019	14:27	2.2	2.2	7301.6	4.0
26Feb2019	14:28	2.1	2.2	7301.6	3.9
26Feb2019	14:29	2.1	2.2	7301.6	3.9
26Feb2019	14:30	2.1	2.1	7301.6	3.9
26Feb2019	14:31	2.1	2.1	7301.6	3.8
26Feb2019	14:32	2.1	2.1	7301.6	3.8
26Feb2019	14:33	2.1	2.1	7301.6	3.8
26Feb2019	14:34	2.1	2.1	7301.6	3.7
26Feb2019	14:35	2.1	2.1	7301.6	3.7
26Feb2019	14:36	2.0	2.1	7301.6	3.6
26Feb2019	14:37	2.0	2.1	7301.6	3.6
26Feb2019	14:38	2.0	2.1	7301.6	3.6
26Feb2019	14:39	2.0	2.1	7301.6	3.6
26Feb2019	14:40	2.0	2.1	7301.6	3.5
26Feb2019	14:41	2.0	2.1	7301.6	3.5
26Feb2019	14:42	2.0	2.1	7301.6	3.5
26Feb2019	14:43	2.0	2.1	7301.6	3.4
26Feb2019	14:44	2.0	2.1	7301.6	3.4
26Feb2019	14:45	2.0	2.1	7301.6	3.4
26Feb2019	14:46	1.9	2.1	7301.6	3.3
26Feb2019	14:47	1.9	2.1	7301.6	3.3
26Feb2019	14:48	1.9	2.1	7301.6	3.3
26Feb2019	14:49	1.9	2.1	7301.6	3.3
26Feb2019	14:50	1.9	2.1	7301.6	3.2
26Feb2019	14:51	1.9	2.1	7301.6	3.2
26Feb2019	14:52	1.9	2.1	7301.6	3.2
26Feb2019	14:53	1.9	2.1	7301.6	3.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	14:54	1.9	2.1	7301.6	3.1
26Feb2019	14:55	1.9	2.1	7301.6	3.1
26Feb2019	14:56	1.9	2.1	7301.5	3.1
26Feb2019	14:57	1.8	2.1	7301.5	3.0
26Feb2019	14:58	1.8	2.1	7301.5	3.0
26Feb2019	14:59	1.8	2.1	7301.5	3.0
26Feb2019	15:00	1.8	2.1	7301.5	3.0
26Feb2019	15:01	1.8	2.1	7301.5	2.9
26Feb2019	15:02	1.8	2.1	7301.5	2.9
26Feb2019	15:03	1.8	2.1	7301.5	2.9
26Feb2019	15:04	1.8	2.1	7301.5	2.9
26Feb2019	15:05	1.8	2.1	7301.5	2.9
26Feb2019	15:06	1.8	2.1	7301.5	2.8
26Feb2019	15:07	1.8	2.1	7301.5	2.8
26Feb2019	15:08	1.8	2.1	7301.5	2.8
26Feb2019	15:09	1.8	2.1	7301.5	2.8
26Feb2019	15:10	1.8	2.1	7301.5	2.7
26Feb2019	15:11	1.7	2.1	7301.5	2.7
26Feb2019	15:12	1.7	2.1	7301.5	2.7
26Feb2019	15:13	1.7	2.1	7301.5	2.7
26Feb2019	15:14	1.7	2.1	7301.5	2.7
26Feb2019	15:15	1.7	2.1	7301.5	2.6
26Feb2019	15:16	1.7	2.1	7301.5	2.6
26Feb2019	15:17	1.7	2.1	7301.5	2.6
26Feb2019	15:18	1.7	2.1	7301.5	2.6
26Feb2019	15:19	1.7	2.1	7301.5	2.6
26Feb2019	15:20	1.7	2.1	7301.5	2.6
26Feb2019	15:21	1.7	2.1	7301.5	2.5
26Feb2019	15:22	1.7	2.1	7301.5	2.5
26Feb2019	15:23	1.7	2.1	7301.5	2.5
26Feb2019	15:24	1.7	2.1	7301.5	2.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	15:25	1.7	2.1	7301.5	2.5
26Feb2019	15:26	1.7	2.1	7301.5	2.4
26Feb2019	15:27	1.6	2.1	7301.5	2.4
26Feb2019	15:28	1.6	2.1	7301.5	2.4
26Feb2019	15:29	1.6	2.1	7301.5	2.4
26Feb2019	15:30	1.6	2.1	7301.5	2.4
26Feb2019	15:31	1.6	2.1	7301.5	2.4
26Feb2019	15:32	1.6	2.0	7301.5	2.4
26Feb2019	15:33	1.6	2.0	7301.5	2.3
26Feb2019	15:34	1.6	2.0	7301.5	2.3
26Feb2019	15:35	1.6	2.0	7301.5	2.3
26Feb2019	15:36	1.6	2.0	7301.5	2.3
26Feb2019	15:37	1.6	2.0	7301.5	2.3
26Feb2019	15:38	1.6	2.0	7301.5	2.3
26Feb2019	15:39	1.6	2.0	7301.5	2.2
26Feb2019	15:40	1.6	2.0	7301.5	2.2
26Feb2019	15:41	1.6	2.0	7301.5	2.2
26Feb2019	15:42	1.6	2.0	7301.5	2.2
26Feb2019	15:43	1.5	2.0	7301.5	2.2
26Feb2019	15:44	1.5	2.0	7301.5	2.2
26Feb2019	15:45	1.5	2.0	7301.5	2.2
26Feb2019	15:46	1.5	2.0	7301.5	2.2
26Feb2019	15:47	1.5	2.0	7301.5	2.1
26Feb2019	15:48	1.5	2.0	7301.5	2.1
26Feb2019	15:49	1.5	2.0	7301.5	2.1
26Feb2019	15:50	1.5	2.0	7301.5	2.1
26Feb2019	15:51	1.5	2.0	7301.5	2.1
26Feb2019	15:52	1.5	2.0	7301.5	2.1
26Feb2019	15:53	1.5	2.0	7301.5	2.1
26Feb2019	15:54	1.5	2.0	7301.5	2.1
26Feb2019	15:55	1.5	2.0	7301.5	2.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	15:56	1.5	2.0	7301.5	2.0
26Feb2019	15:57	1.5	2.0	7301.5	2.0
26Feb2019	15:58	1.5	2.0	7301.5	2.0
26Feb2019	15:59	1.5	2.0	7301.5	2.0
26Feb2019	16:00	1.5	2.0	7301.5	2.0
26Feb2019	16:01	1.4	2.0	7301.5	2.0
26Feb2019	16:02	1.4	2.0	7301.5	2.0
26Feb2019	16:03	1.4	2.0	7301.5	2.0
26Feb2019	16:04	1.4	2.0	7301.5	1.9
26Feb2019	16:05	1.4	2.0	7301.5	1.9
26Feb2019	16:06	1.4	2.0	7301.5	1.9
26Feb2019	16:07	1.4	2.0	7301.5	1.9
26Feb2019	16:08	1.4	2.0	7301.5	1.9
26Feb2019	16:09	1.4	2.0	7301.5	1.9
26Feb2019	16:10	1.4	2.0	7301.5	1.9
26Feb2019	16:11	1.4	2.0	7301.5	1.9
26Feb2019	16:12	1.4	2.0	7301.5	1.9
26Feb2019	16:13	1.4	2.0	7301.5	1.8
26Feb2019	16:14	1.4	2.0	7301.5	1.8
26Feb2019	16:15	1.4	2.0	7301.5	1.8
26Feb2019	16:16	1.4	2.0	7301.5	1.8
26Feb2019	16:17	1.4	2.0	7301.5	1.8
26Feb2019	16:18	1.3	2.0	7301.5	1.8
26Feb2019	16:19	1.3	2.0	7301.5	1.8
26Feb2019	16:20	1.3	2.0	7301.5	1.8
26Feb2019	16:21	1.3	2.0	7301.5	1.8
26Feb2019	16:22	1.3	2.0	7301.5	1.8
26Feb2019	16:23	1.3	2.0	7301.5	1.8
26Feb2019	16:24	1.3	2.0	7301.5	1.8
26Feb2019	16:25	1.3	2.0	7301.5	1.8
26Feb2019	16:26	1.3	2.0	7301.5	1.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	16:27	1.3	2.0	7301.5	1.8
26Feb2019	16:28	1.3	2.0	7301.5	1.8
26Feb2019	16:29	1.3	2.0	7301.5	1.8
26Feb2019	16:30	1.3	2.0	7301.5	1.8
26Feb2019	16:31	1.3	2.0	7301.5	1.8
26Feb2019	16:32	1.3	2.0	7301.5	1.8
26Feb2019	16:33	1.3	2.0	7301.5	1.8
26Feb2019	16:34	1.3	2.0	7301.5	1.8
26Feb2019	16:35	1.3	2.0	7301.5	1.8
26Feb2019	16:36	1.3	2.0	7301.5	1.8
26Feb2019	16:37	1.2	2.0	7301.5	1.8
26Feb2019	16:38	1.2	2.0	7301.5	1.8
26Feb2019	16:39	1.2	2.0	7301.5	1.8
26Feb2019	16:40	1.2	2.0	7301.5	1.8
26Feb2019	16:41	1.2	2.0	7301.5	1.8
26Feb2019	16:42	1.2	2.0	7301.5	1.8
26Feb2019	16:43	1.2	2.0	7301.5	1.8
26Feb2019	16:44	1.2	2.0	7301.5	1.8
26Feb2019	16:45	1.2	2.0	7301.5	1.8
26Feb2019	16:46	1.2	2.0	7301.5	1.7
26Feb2019	16:47	1.2	2.0	7301.5	1.7
26Feb2019	16:48	1.2	2.0	7301.5	1.7
26Feb2019	16:49	1.2	2.0	7301.5	1.7
26Feb2019	16:50	1.2	2.0	7301.5	1.7
26Feb2019	16:51	1.2	2.0	7301.5	1.7
26Feb2019	16:52	1.2	2.0	7301.5	1.7
26Feb2019	16:53	1.2	2.0	7301.5	1.7
26Feb2019	16:54	1.2	2.0	7301.5	1.7
26Feb2019	16:55	1.2	2.0	7301.5	1.7
26Feb2019	16:56	1.2	2.0	7301.5	1.7
26Feb2019	16:57	1.2	2.0	7301.5	1.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	16:58	1.2	2.0	7301.5	1.7
26Feb2019	16:59	1.2	2.0	7301.5	1.7
26Feb2019	17:00	1.2	2.0	7301.5	1.7
26Feb2019	17:01	1.2	2.0	7301.5	1.7
26Feb2019	17:02	1.2	2.0	7301.5	1.7
26Feb2019	17:03	1.2	2.0	7301.5	1.7
26Feb2019	17:04	1.2	2.0	7301.5	1.7
26Feb2019	17:05	1.2	2.0	7301.5	1.7
26Feb2019	17:06	1.2	2.0	7301.5	1.7
26Feb2019	17:07	1.2	2.0	7301.5	1.7
26Feb2019	17:08	1.2	2.0	7301.5	1.7
26Feb2019	17:09	1.2	2.0	7301.5	1.7
26Feb2019	17:10	1.2	2.0	7301.5	1.7
26Feb2019	17:11	1.2	2.0	7301.5	1.7
26Feb2019	17:12	1.2	2.0	7301.5	1.7
26Feb2019	17:13	1.2	2.0	7301.5	1.7
26Feb2019	17:14	1.2	2.0	7301.5	1.7
26Feb2019	17:15	1.2	2.0	7301.5	1.7
26Feb2019	17:16	1.2	2.0	7301.5	1.7
26Feb2019	17:17	1.2	2.0	7301.5	1.7
26Feb2019	17:18	1.2	2.0	7301.5	1.7
26Feb2019	17:19	1.2	2.0	7301.5	1.7
26Feb2019	17:20	1.2	2.0	7301.5	1.7
26Feb2019	17:21	1.2	2.0	7301.5	1.7
26Feb2019	17:22	1.2	2.0	7301.5	1.7
26Feb2019	17:23	1.3	2.0	7301.5	1.7
26Feb2019	17:24	1.3	2.0	7301.5	1.7
26Feb2019	17:25	1.3	2.0	7301.5	1.7
26Feb2019	17:26	1.3	2.0	7301.5	1.7
26Feb2019	17:27	1.3	2.0	7301.5	1.7
26Feb2019	17:28	1.3	2.0	7301.5	1.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	17:29	1.2	2.0	7301.5	1.7
26Feb2019	17:30	1.2	2.0	7301.5	1.7
26Feb2019	17:31	1.2	2.0	7301.5	1.7
26Feb2019	17:32	1.2	2.0	7301.5	1.7
26Feb2019	17:33	1.2	2.0	7301.5	1.7
26Feb2019	17:34	1.2	2.0	7301.5	1.7
26Feb2019	17:35	1.2	2.0	7301.5	1.7
26Feb2019	17:36	1.2	2.0	7301.5	1.6
26Feb2019	17:37	1.2	2.0	7301.5	1.6
26Feb2019	17:38	1.3	2.0	7301.5	1.6
26Feb2019	17:39	1.3	2.0	7301.5	1.6
26Feb2019	17:40	1.3	2.0	7301.5	1.6
26Feb2019	17:41	1.3	2.0	7301.5	1.6
26Feb2019	17:42	1.3	2.0	7301.5	1.6
26Feb2019	17:43	1.2	2.0	7301.5	1.6
26Feb2019	17:44	1.2	2.0	7301.5	1.6
26Feb2019	17:45	1.2	2.0	7301.5	1.6
26Feb2019	17:46	1.2	2.0	7301.5	1.6
26Feb2019	17:47	1.2	2.0	7301.5	1.6
26Feb2019	17:48	1.2	2.0	7301.5	1.6
26Feb2019	17:49	1.2	2.0	7301.5	1.6
26Feb2019	17:50	1.2	2.0	7301.5	1.6
26Feb2019	17:51	1.2	2.0	7301.5	1.6
26Feb2019	17:52	1.2	2.0	7301.5	1.6
26Feb2019	17:53	1.2	2.0	7301.5	1.6
26Feb2019	17:54	1.1	1.9	7301.5	1.6
26Feb2019	17:55	1.1	1.9	7301.5	1.6
26Feb2019	17:56	1.1	1.9	7301.5	1.6
26Feb2019	17:57	1.1	1.9	7301.5	1.6
26Feb2019	17:58	1.1	1.9	7301.5	1.6
26Feb2019	17:59	1.1	1.9	7301.5	1.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	18:00	1.1	1.9	7301.5	1.6
26Feb2019	18:01	1.1	1.9	7301.5	1.6
26Feb2019	18:02	1.1	1.9	7301.5	1.6
26Feb2019	18:03	1.0	1.9	7301.5	1.6
26Feb2019	18:04	1.0	1.9	7301.5	1.6
26Feb2019	18:05	1.0	1.9	7301.5	1.6
26Feb2019	18:06	1.0	1.9	7301.5	1.6
26Feb2019	18:07	1.0	1.9	7301.5	1.6
26Feb2019	18:08	1.0	1.9	7301.5	1.6
26Feb2019	18:09	1.0	1.9	7301.5	1.6
26Feb2019	18:10	1.0	1.9	7301.5	1.6
26Feb2019	18:11	1.0	1.9	7301.4	1.6
26Feb2019	18:12	1.0	1.9	7301.4	1.6
26Feb2019	18:13	1.0	1.9	7301.4	1.6
26Feb2019	18:14	1.0	1.9	7301.4	1.6
26Feb2019	18:15	1.0	1.9	7301.4	1.6
26Feb2019	18:16	1.0	1.9	7301.4	1.6
26Feb2019	18:17	1.0	1.9	7301.4	1.6
26Feb2019	18:18	1.0	1.9	7301.4	1.6
26Feb2019	18:19	1.0	1.9	7301.4	1.6
26Feb2019	18:20	1.0	1.9	7301.4	1.6
26Feb2019	18:21	1.0	1.9	7301.4	1.6
26Feb2019	18:22	1.0	1.9	7301.4	1.6
26Feb2019	18:23	1.0	1.9	7301.4	1.6
26Feb2019	18:24	1.0	1.9	7301.4	1.6
26Feb2019	18:25	1.0	1.9	7301.4	1.5
26Feb2019	18:26	1.0	1.9	7301.4	1.5
26Feb2019	18:27	1.0	1.9	7301.4	1.5
26Feb2019	18:28	1.0	1.9	7301.4	1.5
26Feb2019	18:29	1.0	1.9	7301.4	1.5
26Feb2019	18:30	1.0	1.9	7301.4	1.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	18:31	1.0	1.9	7301.4	1.5
26Feb2019	18:32	1.0	1.9	7301.4	1.5
26Feb2019	18:33	0.9	1.9	7301.4	1.5
26Feb2019	18:34	0.9	1.9	7301.4	1.5
26Feb2019	18:35	0.9	1.9	7301.4	1.5
26Feb2019	18:36	0.9	1.9	7301.4	1.5
26Feb2019	18:37	0.9	1.9	7301.4	1.5
26Feb2019	18:38	0.9	1.9	7301.4	1.5
26Feb2019	18:39	0.9	1.9	7301.4	1.5
26Feb2019	18:40	0.9	1.9	7301.4	1.5
26Feb2019	18:41	0.9	1.9	7301.4	1.5
26Feb2019	18:42	0.9	1.9	7301.4	1.5
26Feb2019	18:43	0.9	1.9	7301.4	1.5
26Feb2019	18:44	0.9	1.9	7301.4	1.5
26Feb2019	18:45	0.9	1.9	7301.4	1.5
26Feb2019	18:46	0.9	1.9	7301.4	1.5
26Feb2019	18:47	0.9	1.9	7301.4	1.5
26Feb2019	18:48	0.9	1.9	7301.4	1.5
26Feb2019	18:49	0.9	1.9	7301.4	1.5
26Feb2019	18:50	0.9	1.9	7301.4	1.5
26Feb2019	18:51	0.9	1.9	7301.4	1.5
26Feb2019	18:52	0.9	1.9	7301.4	1.5
26Feb2019	18:53	0.9	1.9	7301.4	1.5
26Feb2019	18:54	0.9	1.9	7301.4	1.5
26Feb2019	18:55	0.9	1.9	7301.4	1.5
26Feb2019	18:56	0.9	1.9	7301.4	1.5
26Feb2019	18:57	0.9	1.9	7301.4	1.5
26Feb2019	18:58	0.9	1.9	7301.4	1.5
26Feb2019	18:59	0.9	1.9	7301.4	1.5
26Feb2019	19:00	0.9	1.9	7301.4	1.5
26Feb2019	19:01	0.9	1.9	7301.4	1.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	19:02	0.9	1.9	7301.4	1.5
26Feb2019	19:03	0.9	1.9	7301.4	1.5
26Feb2019	19:04	0.9	1.9	7301.4	1.5
26Feb2019	19:05	0.9	1.9	7301.4	1.5
26Feb2019	19:06	0.9	1.9	7301.4	1.5
26Feb2019	19:07	0.9	1.9	7301.4	1.4
26Feb2019	19:08	0.9	1.9	7301.4	1.4
26Feb2019	19:09	0.9	1.9	7301.4	1.4
26Feb2019	19:10	0.9	1.9	7301.4	1.4
26Feb2019	19:11	0.9	1.9	7301.4	1.4
26Feb2019	19:12	0.9	1.9	7301.4	1.4
26Feb2019	19:13	0.9	1.9	7301.4	1.4
26Feb2019	19:14	0.9	1.9	7301.4	1.4
26Feb2019	19:15	0.9	1.9	7301.4	1.4
26Feb2019	19:16	0.9	1.9	7301.4	1.4
26Feb2019	19:17	0.9	1.9	7301.4	1.4
26Feb2019	19:18	0.9	1.9	7301.4	1.4
26Feb2019	19:19	0.9	1.9	7301.4	1.4
26Feb2019	19:20	0.9	1.9	7301.4	1.4
26Feb2019	19:21	0.9	1.9	7301.4	1.4
26Feb2019	19:22	0.9	1.9	7301.4	1.4
26Feb2019	19:23	0.9	1.9	7301.4	1.4
26Feb2019	19:24	0.9	1.9	7301.4	1.4
26Feb2019	19:25	0.8	1.9	7301.4	1.4
26Feb2019	19:26	0.8	1.9	7301.4	1.4
26Feb2019	19:27	0.8	1.9	7301.4	1.4
26Feb2019	19:28	0.8	1.9	7301.4	1.4
26Feb2019	19:29	0.8	1.9	7301.4	1.4
26Feb2019	19:30	0.8	1.9	7301.4	1.4
26Feb2019	19:31	0.8	1.9	7301.4	1.4
26Feb2019	19:32	0.8	1.9	7301.4	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	19:33	0.8	1.9	7301.4	1.4
26Feb2019	19:34	0.8	1.9	7301.4	1.4
26Feb2019	19:35	0.8	1.9	7301.4	1.4
26Feb2019	19:36	0.8	1.9	7301.4	1.4
26Feb2019	19:37	0.8	1.9	7301.4	1.4
26Feb2019	19:38	0.8	1.9	7301.4	1.4
26Feb2019	19:39	0.8	1.9	7301.4	1.4
26Feb2019	19:40	0.8	1.9	7301.4	1.4
26Feb2019	19:41	0.8	1.9	7301.4	1.4
26Feb2019	19:42	0.8	1.9	7301.4	1.4
26Feb2019	19:43	0.8	1.9	7301.4	1.4
26Feb2019	19:44	0.8	1.9	7301.4	1.4
26Feb2019	19:45	0.8	1.9	7301.4	1.4
26Feb2019	19:46	0.8	1.9	7301.4	1.4
26Feb2019	19:47	0.8	1.9	7301.4	1.4
26Feb2019	19:48	0.8	1.9	7301.4	1.4
26Feb2019	19:49	0.8	1.9	7301.4	1.4
26Feb2019	19:50	0.8	1.9	7301.4	1.4
26Feb2019	19:51	0.8	1.9	7301.4	1.4
26Feb2019	19:52	0.8	1.9	7301.4	1.3
26Feb2019	19:53	0.8	1.9	7301.4	1.3
26Feb2019	19:54	0.8	1.9	7301.4	1.3
26Feb2019	19:55	0.8	1.9	7301.4	1.3
26Feb2019	19:56	0.8	1.9	7301.4	1.3
26Feb2019	19:57	0.8	1.9	7301.4	1.3
26Feb2019	19:58	0.8	1.9	7301.4	1.3
26Feb2019	19:59	0.8	1.9	7301.4	1.3
26Feb2019	20:00	0.8	1.9	7301.4	1.3
26Feb2019	20:01	0.8	1.9	7301.4	1.3
26Feb2019	20:02	0.8	1.9	7301.4	1.3
26Feb2019	20:03	0.8	1.9	7301.4	1.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	20:04	0.8	1.8	7301.4	1.3
26Feb2019	20:05	0.8	1.8	7301.4	1.3
26Feb2019	20:06	0.8	1.8	7301.4	1.3
26Feb2019	20:07	0.8	1.8	7301.4	1.3
26Feb2019	20:08	0.8	1.8	7301.4	1.3
26Feb2019	20:09	0.8	1.8	7301.4	1.3
26Feb2019	20:10	0.8	1.8	7301.4	1.3
26Feb2019	20:11	0.8	1.8	7301.4	1.3
26Feb2019	20:12	0.8	1.8	7301.4	1.3
26Feb2019	20:13	0.8	1.8	7301.4	1.3
26Feb2019	20:14	0.8	1.8	7301.4	1.3
26Feb2019	20:15	0.8	1.8	7301.4	1.3
26Feb2019	20:16	0.8	1.8	7301.4	1.3
26Feb2019	20:17	0.8	1.8	7301.4	1.3
26Feb2019	20:18	0.8	1.8	7301.4	1.3
26Feb2019	20:19	0.8	1.8	7301.4	1.3
26Feb2019	20:20	0.7	1.8	7301.4	1.3
26Feb2019	20:21	0.7	1.8	7301.4	1.3
26Feb2019	20:22	0.7	1.8	7301.4	1.3
26Feb2019	20:23	0.7	1.8	7301.4	1.3
26Feb2019	20:24	0.7	1.8	7301.4	1.3
26Feb2019	20:25	0.7	1.8	7301.4	1.3
26Feb2019	20:26	0.7	1.8	7301.4	1.3
26Feb2019	20:27	0.7	1.8	7301.4	1.3
26Feb2019	20:28	0.7	1.8	7301.4	1.3
26Feb2019	20:29	0.7	1.8	7301.4	1.3
26Feb2019	20:30	0.7	1.8	7301.4	1.3
26Feb2019	20:31	0.7	1.8	7301.4	1.3
26Feb2019	20:32	0.7	1.8	7301.4	1.3
26Feb2019	20:33	0.7	1.8	7301.4	1.3
26Feb2019	20:34	0.7	1.8	7301.4	1.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	20:35	0.7	1.8	7301.4	1.3
26Feb2019	20:36	0.7	1.8	7301.4	1.3
26Feb2019	20:37	0.7	1.8	7301.4	1.2
26Feb2019	20:38	0.7	1.8	7301.4	1.2
26Feb2019	20:39	0.7	1.8	7301.4	1.2
26Feb2019	20:40	0.7	1.8	7301.4	1.2
26Feb2019	20:41	0.7	1.8	7301.4	1.2
26Feb2019	20:42	0.7	1.8	7301.4	1.2
26Feb2019	20:43	0.7	1.8	7301.4	1.2
26Feb2019	20:44	0.7	1.8	7301.4	1.2
26Feb2019	20:45	0.7	1.8	7301.4	1.2
26Feb2019	20:46	0.7	1.8	7301.4	1.2
26Feb2019	20:47	0.7	1.8	7301.4	1.2
26Feb2019	20:48	0.7	1.8	7301.4	1.2
26Feb2019	20:49	0.7	1.8	7301.4	1.2
26Feb2019	20:50	0.7	1.8	7301.4	1.2
26Feb2019	20:51	0.7	1.8	7301.4	1.2
26Feb2019	20:52	0.7	1.8	7301.4	1.2
26Feb2019	20:53	0.7	1.8	7301.4	1.2
26Feb2019	20:54	0.7	1.8	7301.4	1.2
26Feb2019	20:55	0.7	1.8	7301.4	1.2
26Feb2019	20:56	0.7	1.8	7301.4	1.2
26Feb2019	20:57	0.7	1.8	7301.4	1.2
26Feb2019	20:58	0.7	1.8	7301.4	1.2
26Feb2019	20:59	0.7	1.8	7301.4	1.2
26Feb2019	21:00	0.7	1.8	7301.4	1.2
26Feb2019	21:01	0.7	1.8	7301.4	1.2
26Feb2019	21:02	0.7	1.8	7301.4	1.2
26Feb2019	21:03	0.7	1.8	7301.4	1.2
26Feb2019	21:04	0.7	1.8	7301.4	1.2
26Feb2019	21:05	0.7	1.8	7301.4	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	21:06	0.7	1.8	7301.4	1.2
26Feb2019	21:07	0.7	1.8	7301.4	1.2
26Feb2019	21:08	0.7	1.8	7301.4	1.2
26Feb2019	21:09	0.7	1.8	7301.4	1.2
26Feb2019	21:10	0.7	1.8	7301.4	1.2
26Feb2019	21:11	0.7	1.8	7301.4	1.2
26Feb2019	21:12	0.7	1.8	7301.4	1.2
26Feb2019	21:13	0.7	1.8	7301.4	1.2
26Feb2019	21:14	0.7	1.8	7301.4	1.2
26Feb2019	21:15	0.7	1.8	7301.4	1.2
26Feb2019	21:16	0.7	1.8	7301.4	1.2
26Feb2019	21:17	0.7	1.8	7301.4	1.2
26Feb2019	21:18	0.7	1.8	7301.4	1.2
26Feb2019	21:19	0.7	1.8	7301.4	1.2
26Feb2019	21:20	0.7	1.8	7301.4	1.2
26Feb2019	21:21	0.7	1.8	7301.4	1.2
26Feb2019	21:22	0.7	1.8	7301.4	1.2
26Feb2019	21:23	0.7	1.8	7301.4	1.1
26Feb2019	21:24	0.7	1.8	7301.4	1.1
26Feb2019	21:25	0.7	1.8	7301.4	1.1
26Feb2019	21:26	0.7	1.8	7301.4	1.1
26Feb2019	21:27	0.7	1.8	7301.4	1.1
26Feb2019	21:28	0.7	1.8	7301.4	1.1
26Feb2019	21:29	0.7	1.8	7301.4	1.1
26Feb2019	21:30	0.7	1.8	7301.4	1.1
26Feb2019	21:31	0.7	1.8	7301.4	1.1
26Feb2019	21:32	0.7	1.8	7301.4	1.1
26Feb2019	21:33	0.7	1.8	7301.4	1.1
26Feb2019	21:34	0.7	1.8	7301.4	1.1
26Feb2019	21:35	0.7	1.8	7301.3	1.1
26Feb2019	21:36	0.7	1.8	7301.3	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	21:37	0.7	1.8	7301.3	1.1
26Feb2019	21:38	0.7	1.8	7301.3	1.1
26Feb2019	21:39	0.7	1.8	7301.3	1.1
26Feb2019	21:40	0.7	1.8	7301.3	1.1
26Feb2019	21:41	0.7	1.8	7301.3	1.1
26Feb2019	21:42	0.7	1.8	7301.3	1.1
26Feb2019	21:43	0.7	1.8	7301.3	1.1
26Feb2019	21:44	0.7	1.8	7301.3	1.1
26Feb2019	21:45	0.7	1.8	7301.3	1.1
26Feb2019	21:46	0.7	1.8	7301.3	1.1
26Feb2019	21:47	0.7	1.8	7301.3	1.1
26Feb2019	21:48	0.7	1.8	7301.3	1.1
26Feb2019	21:49	0.7	1.8	7301.3	1.1
26Feb2019	21:50	0.7	1.8	7301.3	1.1
26Feb2019	21:51	0.7	1.8	7301.3	1.1
26Feb2019	21:52	0.7	1.8	7301.3	1.1
26Feb2019	21:53	0.7	1.8	7301.3	1.1
26Feb2019	21:54	0.7	1.8	7301.3	1.1
26Feb2019	21:55	0.7	1.8	7301.3	1.1
26Feb2019	21:56	0.7	1.8	7301.3	1.1
26Feb2019	21:57	0.7	1.8	7301.3	1.1
26Feb2019	21:58	0.7	1.8	7301.3	1.1
26Feb2019	21:59	0.6	1.8	7301.3	1.1
26Feb2019	22:00	0.6	1.8	7301.3	1.1
26Feb2019	22:01	0.6	1.8	7301.3	1.1
26Feb2019	22:02	0.6	1.8	7301.3	1.1
26Feb2019	22:03	0.6	1.8	7301.3	1.1
26Feb2019	22:04	0.6	1.8	7301.3	1.1
26Feb2019	22:05	0.6	1.8	7301.3	1.1
26Feb2019	22:06	0.6	1.8	7301.3	1.1
26Feb2019	22:07	0.6	1.8	7301.3	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	22:08	0.6	1.8	7301.3	1.1
26Feb2019	22:09	0.6	1.8	7301.3	1.1
26Feb2019	22:10	0.6	1.8	7301.3	1.1
26Feb2019	22:11	0.6	1.8	7301.3	1.1
26Feb2019	22:12	0.6	1.8	7301.3	1.1
26Feb2019	22:13	0.6	1.8	7301.3	1.1
26Feb2019	22:14	0.6	1.8	7301.3	1.1
26Feb2019	22:15	0.6	1.8	7301.3	1.1
26Feb2019	22:16	0.6	1.8	7301.3	1.1
26Feb2019	22:17	0.6	1.8	7301.3	1.1
26Feb2019	22:18	0.6	1.8	7301.3	1.0
26Feb2019	22:19	0.6	1.8	7301.3	1.0
26Feb2019	22:20	0.6	1.8	7301.3	1.0
26Feb2019	22:21	0.6	1.8	7301.3	1.0
26Feb2019	22:22	0.6	1.8	7301.3	1.0
26Feb2019	22:23	0.6	1.8	7301.3	1.0
26Feb2019	22:24	0.6	1.8	7301.3	1.0
26Feb2019	22:25	0.6	1.8	7301.3	1.0
26Feb2019	22:26	0.6	1.8	7301.3	1.0
26Feb2019	22:27	0.6	1.8	7301.3	1.0
26Feb2019	22:28	0.6	1.8	7301.3	1.0
26Feb2019	22:29	0.6	1.8	7301.3	1.0
26Feb2019	22:30	0.6	1.8	7301.3	1.0
26Feb2019	22:31	0.6	1.8	7301.3	1.0
26Feb2019	22:32	0.6	1.7	7301.3	1.0
26Feb2019	22:33	0.6	1.7	7301.3	1.0
26Feb2019	22:34	0.6	1.7	7301.3	1.0
26Feb2019	22:35	0.6	1.7	7301.3	1.0
26Feb2019	22:36	0.6	1.7	7301.3	1.0
26Feb2019	22:37	0.6	1.7	7301.3	1.0
26Feb2019	22:38	0.6	1.7	7301.3	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	22:39	0.6	1.7	7301.3	1.0
26Feb2019	22:40	0.6	1.7	7301.3	1.0
26Feb2019	22:41	0.6	1.7	7301.3	1.0
26Feb2019	22:42	0.6	1.7	7301.3	1.0
26Feb2019	22:43	0.6	1.7	7301.3	1.0
26Feb2019	22:44	0.6	1.7	7301.3	1.0
26Feb2019	22:45	0.6	1.7	7301.3	1.0
26Feb2019	22:46	0.6	1.7	7301.3	1.0
26Feb2019	22:47	0.6	1.7	7301.3	1.0
26Feb2019	22:48	0.6	1.7	7301.3	1.0
26Feb2019	22:49	0.6	1.7	7301.3	1.0
26Feb2019	22:50	0.6	1.7	7301.3	1.0
26Feb2019	22:51	0.6	1.7	7301.3	1.0
26Feb2019	22:52	0.6	1.7	7301.3	1.0
26Feb2019	22:53	0.6	1.7	7301.3	1.0
26Feb2019	22:54	0.6	1.7	7301.3	1.0
26Feb2019	22:55	0.6	1.7	7301.3	1.0
26Feb2019	22:56	0.6	1.7	7301.3	1.0
26Feb2019	22:57	0.6	1.7	7301.3	1.0
26Feb2019	22:58	0.6	1.7	7301.3	1.0
26Feb2019	22:59	0.6	1.7	7301.3	1.0
26Feb2019	23:00	0.6	1.7	7301.3	1.0
26Feb2019	23:01	0.6	1.7	7301.3	1.0
26Feb2019	23:02	0.6	1.7	7301.3	1.0
26Feb2019	23:03	0.6	1.7	7301.3	1.0
26Feb2019	23:04	0.6	1.7	7301.3	1.0
26Feb2019	23:05	0.6	1.7	7301.3	1.0
26Feb2019	23:06	0.6	1.7	7301.3	1.0
26Feb2019	23:07	0.6	1.7	7301.3	1.0
26Feb2019	23:08	0.6	1.7	7301.3	1.0
26Feb2019	23:09	0.6	1.7	7301.3	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	23:10	0.6	1.7	7301.3	1.0
26Feb2019	23:11	0.6	1.7	7301.3	1.0
26Feb2019	23:12	0.6	1.7	7301.3	1.0
26Feb2019	23:13	0.6	1.7	7301.3	1.0
26Feb2019	23:14	0.6	1.7	7301.3	1.0
26Feb2019	23:15	0.6	1.7	7301.3	1.0
26Feb2019	23:16	0.6	1.7	7301.3	1.0
26Feb2019	23:17	0.6	1.7	7301.3	1.0
26Feb2019	23:18	0.6	1.7	7301.3	1.0
26Feb2019	23:19	0.6	1.7	7301.3	1.0
26Feb2019	23:20	0.6	1.7	7301.3	1.0
26Feb2019	23:21	0.6	1.7	7301.3	1.0
26Feb2019	23:22	0.6	1.7	7301.3	1.0
26Feb2019	23:23	0.6	1.7	7301.3	1.0
26Feb2019	23:24	0.6	1.7	7301.3	0.9
26Feb2019	23:25	0.6	1.7	7301.3	0.9
26Feb2019	23:26	0.6	1.7	7301.3	0.9
26Feb2019	23:27	0.6	1.7	7301.3	0.9
26Feb2019	23:28	0.6	1.7	7301.3	0.9
26Feb2019	23:29	0.6	1.7	7301.3	0.9
26Feb2019	23:30	0.6	1.7	7301.3	0.9
26Feb2019	23:31	0.6	1.7	7301.3	0.9
26Feb2019	23:32	0.6	1.7	7301.3	0.9
26Feb2019	23:33	0.6	1.7	7301.3	0.9
26Feb2019	23:34	0.6	1.7	7301.3	0.9
26Feb2019	23:35	0.6	1.7	7301.3	0.9
26Feb2019	23:36	0.6	1.7	7301.3	0.9
26Feb2019	23:37	0.6	1.7	7301.3	0.9
26Feb2019	23:38	0.6	1.7	7301.3	0.9
26Feb2019	23:39	0.6	1.7	7301.3	0.9
26Feb2019	23:40	0.6	1.7	7301.3	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	23:41	0.6	1.7	7301.3	0.9
26Feb2019	23:42	0.6	1.7	7301.3	0.9
26Feb2019	23:43	0.6	1.7	7301.3	0.9
26Feb2019	23:44	0.6	1.7	7301.3	0.9
26Feb2019	23:45	0.6	1.7	7301.3	0.9
26Feb2019	23:46	0.6	1.7	7301.3	0.9
26Feb2019	23:47	0.6	1.7	7301.3	0.9
26Feb2019	23:48	0.6	1.7	7301.3	0.9
26Feb2019	23:49	0.6	1.7	7301.3	0.9
26Feb2019	23:50	0.6	1.7	7301.3	0.9
26Feb2019	23:51	0.6	1.7	7301.3	0.9
26Feb2019	23:52	0.6	1.7	7301.3	0.9
26Feb2019	23:53	0.6	1.7	7301.3	0.9
26Feb2019	23:54	0.6	1.7	7301.3	0.9
26Feb2019	23:55	0.6	1.7	7301.3	0.9
26Feb2019	23:56	0.6	1.7	7301.3	0.9
26Feb2019	23:57	0.6	1.7	7301.3	0.9
26Feb2019	23:58	0.6	1.7	7301.3	0.9
26Feb2019	23:59	0.6	1.7	7301.3	0.9
27Feb2019	00:00	0.6	1.7	7301.3	0.9
27Feb2019	00:01	0.6	1.7	7301.3	0.9
27Feb2019	00:02	0.6	1.7	7301.3	0.9
27Feb2019	00:03	0.6	1.7	7301.3	0.9
27Feb2019	00:04	0.6	1.7	7301.3	0.9
27Feb2019	00:05	0.6	1.7	7301.3	0.9
27Feb2019	00:06	0.6	1.7	7301.3	0.9
27Feb2019	00:07	0.6	1.7	7301.3	0.9
27Feb2019	00:08	0.6	1.7	7301.3	0.9
27Feb2019	00:09	0.6	1.7	7301.3	0.9
27Feb2019	00:10	0.6	1.7	7301.3	0.9
27Feb2019	00:11	0.5	1.7	7301.3	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	00:12	0.5	1.7	7301.3	0.9
27Feb2019	00:13	0.5	1.7	7301.3	0.9
27Feb2019	00:14	0.5	1.7	7301.3	0.9
27Feb2019	00:15	0.5	1.7	7301.3	0.9
27Feb2019	00:16	0.5	1.7	7301.3	0.9
27Feb2019	00:17	0.5	1.7	7301.3	0.9
27Feb2019	00:18	0.5	1.7	7301.3	0.9
27Feb2019	00:19	0.5	1.7	7301.3	0.9
27Feb2019	00:20	0.5	1.7	7301.3	0.9
27Feb2019	00:21	0.5	1.7	7301.3	0.9
27Feb2019	00:22	0.5	1.7	7301.3	0.9
27Feb2019	00:23	0.5	1.7	7301.3	0.9
27Feb2019	00:24	0.5	1.7	7301.3	0.9
27Feb2019	00:25	0.5	1.7	7301.3	0.9
27Feb2019	00:26	0.5	1.7	7301.3	0.9
27Feb2019	00:27	0.4	1.7	7301.3	0.9
27Feb2019	00:28	0.4	1.7	7301.3	0.9
27Feb2019	00:29	0.4	1.7	7301.3	0.9
27Feb2019	00:30	0.4	1.7	7301.3	0.9
27Feb2019	00:31	0.4	1.7	7301.3	0.9
27Feb2019	00:32	0.4	1.7	7301.3	0.9
27Feb2019	00:33	0.4	1.7	7301.3	0.9
27Feb2019	00:34	0.4	1.7	7301.3	0.9
27Feb2019	00:35	0.4	1.7	7301.3	0.8
27Feb2019	00:36	0.4	1.7	7301.3	0.8
27Feb2019	00:37	0.4	1.7	7301.3	0.8
27Feb2019	00:38	0.4	1.7	7301.3	0.8
27Feb2019	00:39	0.3	1.7	7301.3	0.8
27Feb2019	00:40	0.3	1.7	7301.3	0.8
27Feb2019	00:41	0.3	1.7	7301.3	0.8
27Feb2019	00:42	0.3	1.7	7301.3	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	00:43	0.3	1.7	7301.3	0.8
27Feb2019	00:44	0.3	1.7	7301.3	0.8
27Feb2019	00:45	0.3	1.7	7301.3	0.8
27Feb2019	00:46	0.3	1.7	7301.3	0.8
27Feb2019	00:47	0.3	1.7	7301.3	0.8
27Feb2019	00:48	0.3	1.7	7301.3	0.8
27Feb2019	00:49	0.3	1.7	7301.3	0.8
27Feb2019	00:50	0.2	1.7	7301.3	0.8
27Feb2019	00:51	0.2	1.7	7301.3	0.8
27Feb2019	00:52	0.2	1.7	7301.3	0.8
27Feb2019	00:53	0.2	1.7	7301.3	0.8
27Feb2019	00:54	0.2	1.7	7301.3	0.8
27Feb2019	00:55	0.2	1.7	7301.3	0.8
27Feb2019	00:56	0.2	1.7	7301.3	0.8
27Feb2019	00:57	0.2	1.7	7301.3	0.8
27Feb2019	00:58	0.2	1.7	7301.3	0.8
27Feb2019	00:59	0.2	1.7	7301.3	0.8
27Feb2019	01:00	0.2	1.7	7301.3	0.8
27Feb2019	01:01	0.2	1.7	7301.3	0.8
27Feb2019	01:02	0.2	1.7	7301.3	0.8
27Feb2019	01:03	0.2	1.7	7301.3	0.8
27Feb2019	01:04	0.2	1.7	7301.3	0.8
27Feb2019	01:05	0.2	1.7	7301.3	0.8
27Feb2019	01:06	0.1	1.7	7301.3	0.8
27Feb2019	01:07	0.1	1.7	7301.3	0.8
27Feb2019	01:08	0.1	1.7	7301.3	0.8
27Feb2019	01:09	0.1	1.7	7301.3	0.8
27Feb2019	01:10	0.1	1.7	7301.3	0.8
27Feb2019	01:11	0.1	1.7	7301.3	0.8
27Feb2019	01:12	0.1	1.7	7301.3	0.8
27Feb2019	01:13	0.1	1.7	7301.3	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	01:14	0.1	1.7	7301.3	0.8
27Feb2019	01:15	0.1	1.7	7301.3	0.8
27Feb2019	01:16	0.1	1.7	7301.3	0.8
27Feb2019	01:17	0.1	1.7	7301.3	0.7
27Feb2019	01:18	0.1	1.7	7301.3	0.7
27Feb2019	01:19	0.1	1.7	7301.3	0.7
27Feb2019	01:20	0.1	1.7	7301.3	0.7
27Feb2019	01:21	0.1	1.7	7301.3	0.7
27Feb2019	01:22	0.1	1.7	7301.3	0.7
27Feb2019	01:23	0.1	1.7	7301.3	0.7
27Feb2019	01:24	0.1	1.7	7301.3	0.7
27Feb2019	01:25	0.1	1.6	7301.3	0.7
27Feb2019	01:26	0.1	1.6	7301.3	0.7
27Feb2019	01:27	0.1	1.6	7301.3	0.7
27Feb2019	01:28	0.1	1.6	7301.3	0.7
27Feb2019	01:29	0.1	1.6	7301.3	0.7
27Feb2019	01:30	0.1	1.6	7301.3	0.7
27Feb2019	01:31	0.1	1.6	7301.3	0.7
27Feb2019	01:32	0.1	1.6	7301.3	0.7
27Feb2019	01:33	0.1	1.6	7301.3	0.7
27Feb2019	01:34	0.1	1.6	7301.3	0.7
27Feb2019	01:35	0.1	1.6	7301.3	0.7
27Feb2019	01:36	0.1	1.6	7301.3	0.7
27Feb2019	01:37	0.1	1.6	7301.3	0.7
27Feb2019	01:38	0.1	1.6	7301.3	0.7
27Feb2019	01:39	0.1	1.6	7301.3	0.7
27Feb2019	01:40	0.1	1.6	7301.3	0.7
27Feb2019	01:41	0.1	1.6	7301.3	0.7
27Feb2019	01:42	0.0	1.6	7301.3	0.7
27Feb2019	01:43	0.0	1.6	7301.3	0.7
27Feb2019	01:44	0.0	1.6	7301.3	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	01:45	0.0	1.6	7301.3	0.7
27Feb2019	01:46	0.0	1.6	7301.3	0.7
27Feb2019	01:47	0.0	1.6	7301.2	0.7
27Feb2019	01:48	0.0	1.6	7301.2	0.7
27Feb2019	01:49	0.0	1.6	7301.2	0.7
27Feb2019	01:50	0.0	1.6	7301.2	0.7
27Feb2019	01:51	0.0	1.6	7301.2	0.7
27Feb2019	01:52	0.0	1.6	7301.2	0.7
27Feb2019	01:53	0.0	1.6	7301.2	0.7
27Feb2019	01:54	0.0	1.6	7301.2	0.7
27Feb2019	01:55	0.0	1.6	7301.2	0.7
27Feb2019	01:56	0.0	1.6	7301.2	0.7
27Feb2019	01:57	0.0	1.6	7301.2	0.7
27Feb2019	01:58	0.0	1.6	7301.2	0.7
27Feb2019	01:59	0.0	1.6	7301.2	0.7
27Feb2019	02:00	0.0	1.6	7301.2	0.7
27Feb2019	02:01	0.0	1.6	7301.2	0.7
27Feb2019	02:02	0.0	1.6	7301.2	0.7
27Feb2019	02:03	0.0	1.6	7301.2	0.7
27Feb2019	02:04	0.0	1.6	7301.2	0.7
27Feb2019	02:05	0.0	1.6	7301.2	0.7
27Feb2019	02:06	0.0	1.6	7301.2	0.7
27Feb2019	02:07	0.0	1.6	7301.2	0.7
27Feb2019	02:08	0.0	1.6	7301.2	0.7
27Feb2019	02:09	0.0	1.6	7301.2	0.7
27Feb2019	02:10	0.0	1.6	7301.2	0.7
27Feb2019	02:11	0.0	1.6	7301.2	0.7
27Feb2019	02:12	0.0	1.6	7301.2	0.7
27Feb2019	02:13	0.0	1.6	7301.2	0.7
27Feb2019	02:14	0.0	1.6	7301.2	0.7
27Feb2019	02:15	0.0	1.6	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	02:16	0.0	1.6	7301.2	0.7
27Feb2019	02:17	0.0	1.6	7301.2	0.7
27Feb2019	02:18	0.0	1.6	7301.2	0.7
27Feb2019	02:19	0.0	1.6	7301.2	0.7
27Feb2019	02:20	0.0	1.6	7301.2	0.7
27Feb2019	02:21	0.0	1.6	7301.2	0.7
27Feb2019	02:22	0.0	1.6	7301.2	0.7
27Feb2019	02:23	0.0	1.6	7301.2	0.7
27Feb2019	02:24	0.0	1.6	7301.2	0.7
27Feb2019	02:25	0.0	1.6	7301.2	0.7
27Feb2019	02:26	0.0	1.6	7301.2	0.7
27Feb2019	02:27	0.0	1.6	7301.2	0.7
27Feb2019	02:28	0.0	1.6	7301.2	0.7
27Feb2019	02:29	0.0	1.6	7301.2	0.7
27Feb2019	02:30	0.0	1.6	7301.2	0.7
27Feb2019	02:31	0.0	1.6	7301.2	0.7
27Feb2019	02:32	0.0	1.6	7301.2	0.7
27Feb2019	02:33	0.0	1.6	7301.2	0.7
27Feb2019	02:34	0.0	1.6	7301.2	0.7
27Feb2019	02:35	0.0	1.6	7301.2	0.7
27Feb2019	02:36	0.0	1.6	7301.2	0.7
27Feb2019	02:37	0.0	1.6	7301.2	0.7
27Feb2019	02:38	0.0	1.6	7301.2	0.7
27Feb2019	02:39	0.0	1.6	7301.2	0.7
27Feb2019	02:40	0.0	1.6	7301.2	0.7
27Feb2019	02:41	0.0	1.6	7301.2	0.7
27Feb2019	02:42	0.0	1.6	7301.2	0.7
27Feb2019	02:43	0.0	1.6	7301.2	0.7
27Feb2019	02:44	0.0	1.6	7301.2	0.7
27Feb2019	02:45	0.0	1.6	7301.2	0.7
27Feb2019	02:46	0.0	1.6	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	02:47	0.0	1.6	7301.2	0.7
27Feb2019	02:48	0.0	1.6	7301.2	0.7
27Feb2019	02:49	0.0	1.6	7301.2	0.7
27Feb2019	02:50	0.0	1.6	7301.2	0.7
27Feb2019	02:51	0.0	1.6	7301.2	0.7
27Feb2019	02:52	0.0	1.6	7301.2	0.7
27Feb2019	02:53	0.0	1.6	7301.2	0.7
27Feb2019	02:54	0.0	1.6	7301.2	0.7
27Feb2019	02:55	0.0	1.6	7301.2	0.7
27Feb2019	02:56	0.0	1.6	7301.2	0.7
27Feb2019	02:57	0.0	1.6	7301.2	0.7
27Feb2019	02:58	0.0	1.6	7301.2	0.7
27Feb2019	02:59	0.0	1.6	7301.2	0.7
27Feb2019	03:00	0.0	1.6	7301.2	0.7
27Feb2019	03:01	0.0	1.6	7301.2	0.7
27Feb2019	03:02	0.0	1.6	7301.2	0.7
27Feb2019	03:03	0.0	1.6	7301.2	0.7
27Feb2019	03:04	0.0	1.6	7301.2	0.7
27Feb2019	03:05	0.0	1.6	7301.2	0.7
27Feb2019	03:06	0.0	1.6	7301.2	0.7
27Feb2019	03:07	0.0	1.6	7301.2	0.7
27Feb2019	03:08	0.0	1.6	7301.2	0.7
27Feb2019	03:09	0.0	1.6	7301.2	0.7
27Feb2019	03:10	0.0	1.6	7301.2	0.7
27Feb2019	03:11	0.0	1.6	7301.2	0.7
27Feb2019	03:12	0.0	1.6	7301.2	0.7
27Feb2019	03:13	0.0	1.6	7301.2	0.7
27Feb2019	03:14	0.0	1.6	7301.2	0.7
27Feb2019	03:15	0.0	1.6	7301.2	0.7
27Feb2019	03:16	0.0	1.6	7301.2	0.7
27Feb2019	03:17	0.0	1.5	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	03:18	0.0	1.5	7301.2	0.7
27Feb2019	03:19	0.0	1.5	7301.2	0.7
27Feb2019	03:20	0.0	1.5	7301.2	0.7
27Feb2019	03:21	0.0	1.5	7301.2	0.7
27Feb2019	03:22	0.0	1.5	7301.2	0.7
27Feb2019	03:23	0.0	1.5	7301.2	0.7
27Feb2019	03:24	0.0	1.5	7301.2	0.7
27Feb2019	03:25	0.0	1.5	7301.2	0.7
27Feb2019	03:26	0.0	1.5	7301.2	0.7
27Feb2019	03:27	0.0	1.5	7301.2	0.7
27Feb2019	03:28	0.0	1.5	7301.2	0.7
27Feb2019	03:29	0.0	1.5	7301.2	0.7
27Feb2019	03:30	0.0	1.5	7301.2	0.7
27Feb2019	03:31	0.0	1.5	7301.2	0.7
27Feb2019	03:32	0.0	1.5	7301.2	0.7
27Feb2019	03:33	0.0	1.5	7301.2	0.7
27Feb2019	03:34	0.0	1.5	7301.2	0.7
27Feb2019	03:35	0.0	1.5	7301.2	0.7
27Feb2019	03:36	0.0	1.5	7301.2	0.7
27Feb2019	03:37	0.0	1.5	7301.2	0.7
27Feb2019	03:38	0.0	1.5	7301.2	0.7
27Feb2019	03:39	0.0	1.5	7301.2	0.6
27Feb2019	03:40	0.0	1.5	7301.2	0.6
27Feb2019	03:41	0.0	1.5	7301.2	0.6
27Feb2019	03:42	0.0	1.5	7301.2	0.6
27Feb2019	03:43	0.0	1.5	7301.2	0.6
27Feb2019	03:44	0.0	1.5	7301.2	0.6
27Feb2019	03:45	0.0	1.5	7301.2	0.6
27Feb2019	03:46	0.0	1.5	7301.2	0.6
27Feb2019	03:47	0.0	1.5	7301.2	0.6
27Feb2019	03:48	0.0	1.5	7301.2	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	03:49	0.0	1.5	7301.2	0.6
27Feb2019	03:50	0.0	1.5	7301.2	0.6
27Feb2019	03:51	0.0	1.5	7301.2	0.6
27Feb2019	03:52	0.0	1.5	7301.2	0.6
27Feb2019	03:53	0.0	1.5	7301.2	0.6
27Feb2019	03:54	0.0	1.5	7301.2	0.6
27Feb2019	03:55	0.0	1.5	7301.2	0.6
27Feb2019	03:56	0.0	1.5	7301.2	0.6
27Feb2019	03:57	0.0	1.5	7301.2	0.6
27Feb2019	03:58	0.0	1.5	7301.2	0.6
27Feb2019	03:59	0.0	1.5	7301.2	0.6
27Feb2019	04:00	0.0	1.5	7301.2	0.6
27Feb2019	04:01	0.0	1.5	7301.2	0.6
27Feb2019	04:02	0.0	1.5	7301.2	0.6
27Feb2019	04:03	0.0	1.5	7301.2	0.6
27Feb2019	04:04	0.0	1.5	7301.2	0.6
27Feb2019	04:05	0.0	1.5	7301.2	0.6
27Feb2019	04:06	0.0	1.5	7301.2	0.6
27Feb2019	04:07	0.0	1.5	7301.2	0.6
27Feb2019	04:08	0.0	1.5	7301.2	0.6
27Feb2019	04:09	0.0	1.5	7301.2	0.6
27Feb2019	04:10	0.0	1.5	7301.2	0.6
27Feb2019	04:11	0.0	1.5	7301.2	0.6
27Feb2019	04:12	0.0	1.5	7301.2	0.6
27Feb2019	04:13	0.0	1.5	7301.2	0.6
27Feb2019	04:14	0.0	1.5	7301.2	0.6
27Feb2019	04:15	0.0	1.5	7301.2	0.6
27Feb2019	04:16	0.0	1.5	7301.2	0.6
27Feb2019	04:17	0.0	1.5	7301.2	0.6
27Feb2019	04:18	0.0	1.5	7301.2	0.6
27Feb2019	04:19	0.0	1.5	7301.2	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	04:20	0.0	1.5	7301.2	0.6
27Feb2019	04:21	0.0	1.5	7301.2	0.6
27Feb2019	04:22	0.0	1.5	7301.2	0.6
27Feb2019	04:23	0.0	1.5	7301.1	0.6
27Feb2019	04:24	0.0	1.5	7301.1	0.6
27Feb2019	04:25	0.0	1.5	7301.1	0.6
27Feb2019	04:26	0.0	1.5	7301.1	0.6
27Feb2019	04:27	0.0	1.5	7301.1	0.6
27Feb2019	04:28	0.0	1.5	7301.1	0.6
27Feb2019	04:29	0.0	1.5	7301.1	0.6
27Feb2019	04:30	0.0	1.5	7301.1	0.6
27Feb2019	04:31	0.0	1.5	7301.1	0.6
27Feb2019	04:32	0.0	1.5	7301.1	0.6
27Feb2019	04:33	0.0	1.5	7301.1	0.6
27Feb2019	04:34	0.0	1.5	7301.1	0.6
27Feb2019	04:35	0.0	1.5	7301.1	0.6
27Feb2019	04:36	0.0	1.5	7301.1	0.6
27Feb2019	04:37	0.0	1.5	7301.1	0.6
27Feb2019	04:38	0.0	1.5	7301.1	0.6
27Feb2019	04:39	0.0	1.5	7301.1	0.6
27Feb2019	04:40	0.0	1.5	7301.1	0.6
27Feb2019	04:41	0.0	1.5	7301.1	0.6
27Feb2019	04:42	0.0	1.5	7301.1	0.6
27Feb2019	04:43	0.0	1.5	7301.1	0.6
27Feb2019	04:44	0.0	1.5	7301.1	0.6
27Feb2019	04:45	0.0	1.5	7301.1	0.6
27Feb2019	04:46	0.0	1.5	7301.1	0.6
27Feb2019	04:47	0.0	1.5	7301.1	0.6
27Feb2019	04:48	0.0	1.5	7301.1	0.6
27Feb2019	04:49	0.0	1.5	7301.1	0.6
27Feb2019	04:50	0.0	1.5	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	04:51	0.0	1.5	7301.1	0.6
27Feb2019	04:52	0.0	1.5	7301.1	0.6
27Feb2019	04:53	0.0	1.5	7301.1	0.6
27Feb2019	04:54	0.0	1.5	7301.1	0.6
27Feb2019	04:55	0.0	1.5	7301.1	0.6
27Feb2019	04:56	0.0	1.5	7301.1	0.6
27Feb2019	04:57	0.0	1.5	7301.1	0.6
27Feb2019	04:58	0.0	1.5	7301.1	0.6
27Feb2019	04:59	0.0	1.5	7301.1	0.6
27Feb2019	05:00	0.0	1.5	7301.1	0.6
27Feb2019	05:01	0.0	1.5	7301.1	0.6
27Feb2019	05:02	0.0	1.5	7301.1	0.6
27Feb2019	05:03	0.0	1.5	7301.1	0.6
27Feb2019	05:04	0.0	1.5	7301.1	0.6
27Feb2019	05:05	0.0	1.5	7301.1	0.6
27Feb2019	05:06	0.0	1.5	7301.1	0.6
27Feb2019	05:07	0.0	1.5	7301.1	0.6
27Feb2019	05:08	0.0	1.5	7301.1	0.6
27Feb2019	05:09	0.0	1.5	7301.1	0.6
27Feb2019	05:10	0.0	1.5	7301.1	0.6
27Feb2019	05:11	0.0	1.4	7301.1	0.6
27Feb2019	05:12	0.0	1.4	7301.1	0.6
27Feb2019	05:13	0.0	1.4	7301.1	0.6
27Feb2019	05:14	0.0	1.4	7301.1	0.6
27Feb2019	05:15	0.0	1.4	7301.1	0.6
27Feb2019	05:16	0.0	1.4	7301.1	0.6
27Feb2019	05:17	0.0	1.4	7301.1	0.6
27Feb2019	05:18	0.0	1.4	7301.1	0.6
27Feb2019	05:19	0.0	1.4	7301.1	0.6
27Feb2019	05:20	0.0	1.4	7301.1	0.6
27Feb2019	05:21	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	05:22	0.0	1.4	7301.1	0.6
27Feb2019	05:23	0.0	1.4	7301.1	0.6
27Feb2019	05:24	0.0	1.4	7301.1	0.6
27Feb2019	05:25	0.0	1.4	7301.1	0.6
27Feb2019	05:26	0.0	1.4	7301.1	0.6
27Feb2019	05:27	0.0	1.4	7301.1	0.6
27Feb2019	05:28	0.0	1.4	7301.1	0.6
27Feb2019	05:29	0.0	1.4	7301.1	0.6
27Feb2019	05:30	0.0	1.4	7301.1	0.6
27Feb2019	05:31	0.0	1.4	7301.1	0.6
27Feb2019	05:32	0.0	1.4	7301.1	0.6
27Feb2019	05:33	0.0	1.4	7301.1	0.6
27Feb2019	05:34	0.0	1.4	7301.1	0.6
27Feb2019	05:35	0.0	1.4	7301.1	0.6
27Feb2019	05:36	0.0	1.4	7301.1	0.6
27Feb2019	05:37	0.0	1.4	7301.1	0.6
27Feb2019	05:38	0.0	1.4	7301.1	0.6
27Feb2019	05:39	0.0	1.4	7301.1	0.6
27Feb2019	05:40	0.0	1.4	7301.1	0.6
27Feb2019	05:41	0.0	1.4	7301.1	0.6
27Feb2019	05:42	0.0	1.4	7301.1	0.6
27Feb2019	05:43	0.0	1.4	7301.1	0.6
27Feb2019	05:44	0.0	1.4	7301.1	0.6
27Feb2019	05:45	0.0	1.4	7301.1	0.6
27Feb2019	05:46	0.0	1.4	7301.1	0.6
27Feb2019	05:47	0.0	1.4	7301.1	0.6
27Feb2019	05:48	0.0	1.4	7301.1	0.6
27Feb2019	05:49	0.0	1.4	7301.1	0.6
27Feb2019	05:50	0.0	1.4	7301.1	0.6
27Feb2019	05:51	0.0	1.4	7301.1	0.6
27Feb2019	05:52	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	05:53	0.0	1.4	7301.1	0.6
27Feb2019	05:54	0.0	1.4	7301.1	0.6
27Feb2019	05:55	0.0	1.4	7301.1	0.6
27Feb2019	05:56	0.0	1.4	7301.1	0.6
27Feb2019	05:57	0.0	1.4	7301.1	0.6
27Feb2019	05:58	0.0	1.4	7301.1	0.6
27Feb2019	05:59	0.0	1.4	7301.1	0.6
27Feb2019	06:00	0.0	1.4	7301.1	0.6
27Feb2019	06:01	0.0	1.4	7301.1	0.6
27Feb2019	06:02	0.0	1.4	7301.1	0.6
27Feb2019	06:03	0.0	1.4	7301.1	0.6
27Feb2019	06:04	0.0	1.4	7301.1	0.6
27Feb2019	06:05	0.0	1.4	7301.1	0.6
27Feb2019	06:06	0.0	1.4	7301.1	0.6
27Feb2019	06:07	0.0	1.4	7301.1	0.6
27Feb2019	06:08	0.0	1.4	7301.1	0.6
27Feb2019	06:09	0.0	1.4	7301.1	0.6
27Feb2019	06:10	0.0	1.4	7301.1	0.6
27Feb2019	06:11	0.0	1.4	7301.1	0.6
27Feb2019	06:12	0.0	1.4	7301.1	0.6
27Feb2019	06:13	0.0	1.4	7301.1	0.6
27Feb2019	06:14	0.0	1.4	7301.1	0.6
27Feb2019	06:15	0.0	1.4	7301.1	0.6
27Feb2019	06:16	0.0	1.4	7301.1	0.6
27Feb2019	06:17	0.0	1.4	7301.1	0.6
27Feb2019	06:18	0.0	1.4	7301.1	0.6
27Feb2019	06:19	0.0	1.4	7301.1	0.6
27Feb2019	06:20	0.0	1.4	7301.1	0.6
27Feb2019	06:21	0.0	1.4	7301.1	0.6
27Feb2019	06:22	0.0	1.4	7301.1	0.6
27Feb2019	06:23	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	06:24	0.0	1.4	7301.1	0.6
27Feb2019	06:25	0.0	1.4	7301.1	0.6
27Feb2019	06:26	0.0	1.4	7301.1	0.6
27Feb2019	06:27	0.0	1.4	7301.1	0.6
27Feb2019	06:28	0.0	1.4	7301.1	0.6
27Feb2019	06:29	0.0	1.4	7301.1	0.6
27Feb2019	06:30	0.0	1.4	7301.1	0.6
27Feb2019	06:31	0.0	1.4	7301.1	0.6
27Feb2019	06:32	0.0	1.4	7301.1	0.6
27Feb2019	06:33	0.0	1.4	7301.1	0.6
27Feb2019	06:34	0.0	1.4	7301.1	0.6
27Feb2019	06:35	0.0	1.4	7301.1	0.6
27Feb2019	06:36	0.0	1.4	7301.1	0.6
27Feb2019	06:37	0.0	1.4	7301.1	0.6
27Feb2019	06:38	0.0	1.4	7301.1	0.6
27Feb2019	06:39	0.0	1.4	7301.1	0.6
27Feb2019	06:40	0.0	1.4	7301.1	0.6
27Feb2019	06:41	0.0	1.4	7301.1	0.6
27Feb2019	06:42	0.0	1.4	7301.1	0.6
27Feb2019	06:43	0.0	1.4	7301.1	0.6
27Feb2019	06:44	0.0	1.4	7301.1	0.6
27Feb2019	06:45	0.0	1.4	7301.1	0.6
27Feb2019	06:46	0.0	1.4	7301.1	0.6
27Feb2019	06:47	0.0	1.4	7301.1	0.6
27Feb2019	06:48	0.0	1.4	7301.1	0.6
27Feb2019	06:49	0.0	1.4	7301.1	0.6
27Feb2019	06:50	0.0	1.4	7301.1	0.6
27Feb2019	06:51	0.0	1.4	7301.1	0.6
27Feb2019	06:52	0.0	1.4	7301.1	0.6
27Feb2019	06:53	0.0	1.4	7301.1	0.6
27Feb2019	06:54	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	06:55	0.0	1.4	7301.1	0.6
27Feb2019	06:56	0.0	1.4	7301.1	0.6
27Feb2019	06:57	0.0	1.4	7301.1	0.6
27Feb2019	06:58	0.0	1.4	7301.1	0.6
27Feb2019	06:59	0.0	1.4	7301.1	0.6
27Feb2019	07:00	0.0	1.4	7301.1	0.6
27Feb2019	07:01	0.0	1.4	7301.1	0.6
27Feb2019	07:02	0.0	1.4	7301.1	0.6
27Feb2019	07:03	0.0	1.4	7301.1	0.6
27Feb2019	07:04	0.0	1.4	7301.0	0.6
27Feb2019	07:05	0.0	1.4	7301.0	0.6
27Feb2019	07:06	0.0	1.4	7301.0	0.6
27Feb2019	07:07	0.0	1.3	7301.0	0.6
27Feb2019	07:08	0.0	1.3	7301.0	0.6
27Feb2019	07:09	0.0	1.3	7301.0	0.6
27Feb2019	07:10	0.0	1.3	7301.0	0.6
27Feb2019	07:11	0.0	1.3	7301.0	0.6
27Feb2019	07:12	0.0	1.3	7301.0	0.6
27Feb2019	07:13	0.0	1.3	7301.0	0.6
27Feb2019	07:14	0.0	1.3	7301.0	0.6
27Feb2019	07:15	0.0	1.3	7301.0	0.6
27Feb2019	07:16	0.0	1.3	7301.0	0.6
27Feb2019	07:17	0.0	1.3	7301.0	0.6
27Feb2019	07:18	0.0	1.3	7301.0	0.6
27Feb2019	07:19	0.0	1.3	7301.0	0.6
27Feb2019	07:20	0.0	1.3	7301.0	0.6
27Feb2019	07:21	0.0	1.3	7301.0	0.6
27Feb2019	07:22	0.0	1.3	7301.0	0.6
27Feb2019	07:23	0.0	1.3	7301.0	0.6
27Feb2019	07:24	0.0	1.3	7301.0	0.6
27Feb2019	07:25	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	07:26	0.0	1.3	7301.0	0.6
27Feb2019	07:27	0.0	1.3	7301.0	0.6
27Feb2019	07:28	0.0	1.3	7301.0	0.6
27Feb2019	07:29	0.0	1.3	7301.0	0.6
27Feb2019	07:30	0.0	1.3	7301.0	0.6
27Feb2019	07:31	0.0	1.3	7301.0	0.6
27Feb2019	07:32	0.0	1.3	7301.0	0.6
27Feb2019	07:33	0.0	1.3	7301.0	0.6
27Feb2019	07:34	0.0	1.3	7301.0	0.6
27Feb2019	07:35	0.0	1.3	7301.0	0.6
27Feb2019	07:36	0.0	1.3	7301.0	0.6
27Feb2019	07:37	0.0	1.3	7301.0	0.6
27Feb2019	07:38	0.0	1.3	7301.0	0.6
27Feb2019	07:39	0.0	1.3	7301.0	0.6
27Feb2019	07:40	0.0	1.3	7301.0	0.6
27Feb2019	07:41	0.0	1.3	7301.0	0.6
27Feb2019	07:42	0.0	1.3	7301.0	0.6
27Feb2019	07:43	0.0	1.3	7301.0	0.6
27Feb2019	07:44	0.0	1.3	7301.0	0.6
27Feb2019	07:45	0.0	1.3	7301.0	0.6
27Feb2019	07:46	0.0	1.3	7301.0	0.6
27Feb2019	07:47	0.0	1.3	7301.0	0.6
27Feb2019	07:48	0.0	1.3	7301.0	0.6
27Feb2019	07:49	0.0	1.3	7301.0	0.6
27Feb2019	07:50	0.0	1.3	7301.0	0.6
27Feb2019	07:51	0.0	1.3	7301.0	0.6
27Feb2019	07:52	0.0	1.3	7301.0	0.6
27Feb2019	07:53	0.0	1.3	7301.0	0.6
27Feb2019	07:54	0.0	1.3	7301.0	0.6
27Feb2019	07:55	0.0	1.3	7301.0	0.6
27Feb2019	07:56	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	07:57	0.0	1.3	7301.0	0.6
27Feb2019	07:58	0.0	1.3	7301.0	0.6
27Feb2019	07:59	0.0	1.3	7301.0	0.6
27Feb2019	08:00	0.0	1.3	7301.0	0.6
27Feb2019	08:01	0.0	1.3	7301.0	0.6
27Feb2019	08:02	0.0	1.3	7301.0	0.6
27Feb2019	08:03	0.0	1.3	7301.0	0.6
27Feb2019	08:04	0.0	1.3	7301.0	0.6
27Feb2019	08:05	0.0	1.3	7301.0	0.6
27Feb2019	08:06	0.0	1.3	7301.0	0.6
27Feb2019	08:07	0.0	1.3	7301.0	0.6
27Feb2019	08:08	0.0	1.3	7301.0	0.6
27Feb2019	08:09	0.0	1.3	7301.0	0.6
27Feb2019	08:10	0.0	1.3	7301.0	0.6
27Feb2019	08:11	0.0	1.3	7301.0	0.6
27Feb2019	08:12	0.0	1.3	7301.0	0.6
27Feb2019	08:13	0.0	1.3	7301.0	0.6
27Feb2019	08:14	0.0	1.3	7301.0	0.6
27Feb2019	08:15	0.0	1.3	7301.0	0.6
27Feb2019	08:16	0.0	1.3	7301.0	0.6
27Feb2019	08:17	0.0	1.3	7301.0	0.6
27Feb2019	08:18	0.0	1.3	7301.0	0.6
27Feb2019	08:19	0.0	1.3	7301.0	0.6
27Feb2019	08:20	0.0	1.3	7301.0	0.6
27Feb2019	08:21	0.0	1.3	7301.0	0.6
27Feb2019	08:22	0.0	1.3	7301.0	0.6
27Feb2019	08:23	0.0	1.3	7301.0	0.6
27Feb2019	08:24	0.0	1.3	7301.0	0.6
27Feb2019	08:25	0.0	1.3	7301.0	0.6
27Feb2019	08:26	0.0	1.3	7301.0	0.6
27Feb2019	08:27	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	08:28	0.0	1.3	7301.0	0.6
27Feb2019	08:29	0.0	1.3	7301.0	0.6
27Feb2019	08:30	0.0	1.3	7301.0	0.6
27Feb2019	08:31	0.0	1.3	7301.0	0.6
27Feb2019	08:32	0.0	1.3	7301.0	0.6
27Feb2019	08:33	0.0	1.3	7301.0	0.6
27Feb2019	08:34	0.0	1.3	7301.0	0.6
27Feb2019	08:35	0.0	1.3	7301.0	0.6
27Feb2019	08:36	0.0	1.3	7301.0	0.6
27Feb2019	08:37	0.0	1.3	7301.0	0.6
27Feb2019	08:38	0.0	1.3	7301.0	0.6
27Feb2019	08:39	0.0	1.3	7301.0	0.6
27Feb2019	08:40	0.0	1.3	7301.0	0.6
27Feb2019	08:41	0.0	1.3	7301.0	0.6
27Feb2019	08:42	0.0	1.3	7301.0	0.6
27Feb2019	08:43	0.0	1.3	7301.0	0.6
27Feb2019	08:44	0.0	1.3	7301.0	0.6
27Feb2019	08:45	0.0	1.3	7301.0	0.6
27Feb2019	08:46	0.0	1.3	7301.0	0.6
27Feb2019	08:47	0.0	1.3	7301.0	0.6
27Feb2019	08:48	0.0	1.3	7301.0	0.6
27Feb2019	08:49	0.0	1.3	7301.0	0.6
27Feb2019	08:50	0.0	1.3	7301.0	0.6
27Feb2019	08:51	0.0	1.3	7301.0	0.6
27Feb2019	08:52	0.0	1.3	7301.0	0.6
27Feb2019	08:53	0.0	1.3	7301.0	0.6
27Feb2019	08:54	0.0	1.3	7301.0	0.6
27Feb2019	08:55	0.0	1.3	7301.0	0.6
27Feb2019	08:56	0.0	1.3	7301.0	0.6
27Feb2019	08:57	0.0	1.3	7301.0	0.6
27Feb2019	08:58	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	08:59	0.0	1.3	7301.0	0.6
27Feb2019	09:00	0.0	1.3	7301.0	0.6
27Feb2019	09:01	0.0	1.3	7301.0	0.6
27Feb2019	09:02	0.0	1.3	7301.0	0.6
27Feb2019	09:03	0.0	1.3	7301.0	0.6
27Feb2019	09:04	0.0	1.3	7301.0	0.6
27Feb2019	09:05	0.0	1.3	7301.0	0.6
27Feb2019	09:06	0.0	1.3	7301.0	0.6
27Feb2019	09:07	0.0	1.3	7301.0	0.6
27Feb2019	09:08	0.0	1.2	7301.0	0.6
27Feb2019	09:09	0.0	1.2	7301.0	0.6
27Feb2019	09:10	0.0	1.2	7301.0	0.6
27Feb2019	09:11	0.0	1.2	7301.0	0.6
27Feb2019	09:12	0.0	1.2	7301.0	0.6
27Feb2019	09:13	0.0	1.2	7301.0	0.6
27Feb2019	09:14	0.0	1.2	7301.0	0.6
27Feb2019	09:15	0.0	1.2	7301.0	0.6
27Feb2019	09:16	0.0	1.2	7301.0	0.6
27Feb2019	09:17	0.0	1.2	7301.0	0.6
27Feb2019	09:18	0.0	1.2	7301.0	0.6
27Feb2019	09:19	0.0	1.2	7301.0	0.6
27Feb2019	09:20	0.0	1.2	7301.0	0.6
27Feb2019	09:21	0.0	1.2	7301.0	0.6
27Feb2019	09:22	0.0	1.2	7301.0	0.6
27Feb2019	09:23	0.0	1.2	7301.0	0.6
27Feb2019	09:24	0.0	1.2	7301.0	0.6
27Feb2019	09:25	0.0	1.2	7301.0	0.6
27Feb2019	09:26	0.0	1.2	7301.0	0.6
27Feb2019	09:27	0.0	1.2	7301.0	0.6
27Feb2019	09:28	0.0	1.2	7301.0	0.6
27Feb2019	09:29	0.0	1.2	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	09:30	0.0	1.2	7301.0	0.6
27Feb2019	09:31	0.0	1.2	7301.0	0.6
27Feb2019	09:32	0.0	1.2	7301.0	0.6
27Feb2019	09:33	0.0	1.2	7301.0	0.6
27Feb2019	09:34	0.0	1.2	7301.0	0.6
27Feb2019	09:35	0.0	1.2	7301.0	0.6
27Feb2019	09:36	0.0	1.2	7301.0	0.6
27Feb2019	09:37	0.0	1.2	7301.0	0.6
27Feb2019	09:38	0.0	1.2	7301.0	0.6
27Feb2019	09:39	0.0	1.2	7301.0	0.6
27Feb2019	09:40	0.0	1.2	7301.0	0.6
27Feb2019	09:41	0.0	1.2	7301.0	0.6
27Feb2019	09:42	0.0	1.2	7301.0	0.6
27Feb2019	09:43	0.0	1.2	7300.9	0.6
27Feb2019	09:44	0.0	1.2	7300.9	0.6
27Feb2019	09:45	0.0	1.2	7300.9	0.6
27Feb2019	09:46	0.0	1.2	7300.9	0.6
27Feb2019	09:47	0.0	1.2	7300.9	0.6
27Feb2019	09:48	0.0	1.2	7300.9	0.6
27Feb2019	09:49	0.0	1.2	7300.9	0.6
27Feb2019	09:50	0.0	1.2	7300.9	0.6
27Feb2019	09:51	0.0	1.2	7300.9	0.6
27Feb2019	09:52	0.0	1.2	7300.9	0.6
27Feb2019	09:53	0.0	1.2	7300.9	0.6
27Feb2019	09:54	0.0	1.2	7300.9	0.6
27Feb2019	09:55	0.0	1.2	7300.9	0.6
27Feb2019	09:56	0.0	1.2	7300.9	0.6
27Feb2019	09:57	0.0	1.2	7300.9	0.6
27Feb2019	09:58	0.0	1.2	7300.9	0.6
27Feb2019	09:59	0.0	1.2	7300.9	0.6
27Feb2019	10:00	0.0	1.2	7300.9	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	10:01	0.0	1.2	7300.9	0.6
27Feb2019	10:02	0.0	1.2	7300.9	0.6
27Feb2019	10:03	0.0	1.2	7300.9	0.6
27Feb2019	10:04	0.0	1.2	7300.9	0.6
27Feb2019	10:05	0.0	1.2	7300.9	0.6
27Feb2019	10:06	0.0	1.2	7300.9	0.6
27Feb2019	10:07	0.0	1.2	7300.9	0.6
27Feb2019	10:08	0.0	1.2	7300.9	0.6
27Feb2019	10:09	0.0	1.2	7300.9	0.6
27Feb2019	10:10	0.0	1.2	7300.9	0.6
27Feb2019	10:11	0.0	1.2	7300.9	0.6
27Feb2019	10:12	0.0	1.2	7300.9	0.6
27Feb2019	10:13	0.0	1.2	7300.9	0.6
27Feb2019	10:14	0.0	1.2	7300.9	0.6
27Feb2019	10:15	0.0	1.2	7300.9	0.6
27Feb2019	10:16	0.0	1.2	7300.9	0.6
27Feb2019	10:17	0.0	1.2	7300.9	0.6
27Feb2019	10:18	0.0	1.2	7300.9	0.6
27Feb2019	10:19	0.0	1.2	7300.9	0.6
27Feb2019	10:20	0.0	1.2	7300.9	0.6
27Feb2019	10:21	0.0	1.2	7300.9	0.6
27Feb2019	10:22	0.0	1.2	7300.9	0.6
27Feb2019	10:23	0.0	1.2	7300.9	0.6
27Feb2019	10:24	0.0	1.2	7300.9	0.6
27Feb2019	10:25	0.0	1.2	7300.9	0.6
27Feb2019	10:26	0.0	1.2	7300.9	0.6
27Feb2019	10:27	0.0	1.2	7300.9	0.6
27Feb2019	10:28	0.0	1.2	7300.9	0.6
27Feb2019	10:29	0.0	1.2	7300.9	0.6
27Feb2019	10:30	0.0	1.2	7300.9	0.6
27Feb2019	10:31	0.0	1.2	7300.9	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	10:32	0.0	1.2	7300.9	0.6
27Feb2019	10:33	0.0	1.2	7300.9	0.6
27Feb2019	10:34	0.0	1.2	7300.9	0.6
27Feb2019	10:35	0.0	1.2	7300.9	0.6
27Feb2019	10:36	0.0	1.2	7300.9	0.6
27Feb2019	10:37	0.0	1.2	7300.9	0.6
27Feb2019	10:38	0.0	1.2	7300.9	0.6
27Feb2019	10:39	0.0	1.2	7300.9	0.6
27Feb2019	10:40	0.0	1.2	7300.9	0.6
27Feb2019	10:41	0.0	1.2	7300.9	0.6
27Feb2019	10:42	0.0	1.2	7300.9	0.6
27Feb2019	10:43	0.0	1.2	7300.9	0.6
27Feb2019	10:44	0.0	1.2	7300.9	0.6
27Feb2019	10:45	0.0	1.2	7300.9	0.6
27Feb2019	10:46	0.0	1.2	7300.9	0.6
27Feb2019	10:47	0.0	1.2	7300.9	0.6
27Feb2019	10:48	0.0	1.2	7300.9	0.6
27Feb2019	10:49	0.0	1.2	7300.9	0.6
27Feb2019	10:50	0.0	1.2	7300.9	0.6
27Feb2019	10:51	0.0	1.2	7300.9	0.6
27Feb2019	10:52	0.0	1.2	7300.9	0.6
27Feb2019	10:53	0.0	1.2	7300.9	0.6
27Feb2019	10:54	0.0	1.2	7300.9	0.6
27Feb2019	10:55	0.0	1.2	7300.9	0.6
27Feb2019	10:56	0.0	1.2	7300.9	0.6
27Feb2019	10:57	0.0	1.2	7300.9	0.6
27Feb2019	10:58	0.0	1.2	7300.9	0.6
27Feb2019	10:59	0.0	1.2	7300.9	0.6
27Feb2019	11:00	0.0	1.2	7300.9	0.6
27Feb2019	11:01	0.0	1.2	7300.9	0.6
27Feb2019	11:02	0.0	1.2	7300.9	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	11:03	0.0	1.2	7300.9	0.6
27Feb2019	11:04	0.0	1.2	7300.9	0.6
27Feb2019	11:05	0.0	1.2	7300.9	0.6
27Feb2019	11:06	0.0	1.2	7300.9	0.6
27Feb2019	11:07	0.0	1.2	7300.9	0.6
27Feb2019	11:08	0.0	1.2	7300.9	0.6
27Feb2019	11:09	0.0	1.2	7300.9	0.6
27Feb2019	11:10	0.0	1.2	7300.9	0.6
27Feb2019	11:11	0.0	1.2	7300.9	0.6
27Feb2019	11:12	0.0	1.1	7300.9	0.6
27Feb2019	11:13	0.0	1.1	7300.9	0.6
27Feb2019	11:14	0.0	1.1	7300.9	0.6
27Feb2019	11:15	0.0	1.1	7300.9	0.6
27Feb2019	11:16	0.0	1.1	7300.9	0.6
27Feb2019	11:17	0.0	1.1	7300.9	0.6
27Feb2019	11:18	0.0	1.1	7300.9	0.6
27Feb2019	11:19	0.0	1.1	7300.9	0.6
27Feb2019	11:20	0.0	1.1	7300.9	0.6
27Feb2019	11:21	0.0	1.1	7300.9	0.6
27Feb2019	11:22	0.0	1.1	7300.9	0.6
27Feb2019	11:23	0.0	1.1	7300.9	0.6
27Feb2019	11:24	0.0	1.1	7300.9	0.6
27Feb2019	11:25	0.0	1.1	7300.9	0.6
27Feb2019	11:26	0.0	1.1	7300.9	0.6
27Feb2019	11:27	0.0	1.1	7300.9	0.6
27Feb2019	11:28	0.0	1.1	7300.9	0.6
27Feb2019	11:29	0.0	1.1	7300.9	0.6
27Feb2019	11:30	0.0	1.1	7300.9	0.6
27Feb2019	11:31	0.0	1.1	7300.9	0.6
27Feb2019	11:32	0.0	1.1	7300.9	0.6
27Feb2019	11:33	0.0	1.1	7300.9	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	11:34	0.0	1.1	7300.9	0.6
27Feb2019	11:35	0.0	1.1	7300.9	0.6
27Feb2019	11:36	0.0	1.1	7300.9	0.6
27Feb2019	11:37	0.0	1.1	7300.9	0.6
27Feb2019	11:38	0.0	1.1	7300.9	0.6
27Feb2019	11:39	0.0	1.1	7300.9	0.6
27Feb2019	11:40	0.0	1.1	7300.9	0.6
27Feb2019	11:41	0.0	1.1	7300.9	0.6
27Feb2019	11:42	0.0	1.1	7300.9	0.6
27Feb2019	11:43	0.0	1.1	7300.9	0.6
27Feb2019	11:44	0.0	1.1	7300.9	0.6
27Feb2019	11:45	0.0	1.1	7300.9	0.6
27Feb2019	11:46	0.0	1.1	7300.9	0.6
27Feb2019	11:47	0.0	1.1	7300.9	0.6
27Feb2019	11:48	0.0	1.1	7300.9	0.6
27Feb2019	11:49	0.0	1.1	7300.9	0.6
27Feb2019	11:50	0.0	1.1	7300.9	0.6
27Feb2019	11:51	0.0	1.1	7300.9	0.6
27Feb2019	11:52	0.0	1.1	7300.9	0.6
27Feb2019	11:53	0.0	1.1	7300.9	0.6
27Feb2019	11:54	0.0	1.1	7300.9	0.6
27Feb2019	11:55	0.0	1.1	7300.9	0.6
27Feb2019	11:56	0.0	1.1	7300.9	0.6
27Feb2019	11:57	0.0	1.1	7300.9	0.6
27Feb2019	11:58	0.0	1.1	7300.9	0.6
27Feb2019	11:59	0.0	1.1	7300.9	0.6
27Feb2019	12:00	0.0	1.1	7300.9	0.6

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E1.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	4.9 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:13
Peak Discharge:	4.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:15
Inflow Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach E1.2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2.7 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	2.7 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Inflow Volume:	0.32 (IN)	Discharge Volume:	0.32 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	4.9 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:15
Peak Discharge:	4.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:18
Inflow Volume:	0.19 (IN)	Discharge Volume:	0.19 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach E3.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	5.0 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	5.0 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:11
Inflow Volume:	0.41 (IN)	Discharge Volume:	0.41 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	7.3 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:12
Peak Discharge:	7.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:18
Inflow Volume:	0.24 (IN)	Discharge Volume:	0.24 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E4

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	18.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:08
Peak Discharge:	18.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:13
Inflow Volume:	0.31 (IN)	Discharge Volume:	0.31 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E6

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	3.9 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	3.8 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:13
Inflow Volume:	0.35 (IN)	Discharge Volume:	0.35 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E7

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	26.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:10
Peak Discharge:	26.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Inflow Volume:	0.34 (IN)	Discharge Volume:	0.34 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-F2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	18May2021, 16:01:51	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2.2 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:02
Peak Discharge:	2.2 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Inflow Volume:	0.51 (IN)	Discharge Volume:	0.51 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basin 5yr
Reach: Reach-E6-2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 5yr
Compute Time:	04Jun2021, 14:49:53	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	30.4 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:12
Peak Discharge:	30.3 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:15
Inflow Volume:	0.34 (IN)	Discharge Volume:	0.34 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr

Start of Run: 26Feb2019, 00:00
End of Run: 27Feb2019, 12:00
Compute Time: 09Sep2021, 17:03:24

Basin Model: Proposed Basins
Meteorologic Model: Prop Basins 100yr
Control Specifications:Control 1

A1	1.3529000	402.8	26Feb2019, 12:28	0.56
A2	0.0577812	36.8	26Feb2019, 12:16	0.73
A3	0.0648125	81.5	26Feb2019, 12:13	1.60
BOX CULVERT 1	7.9557326	1722.9	26Feb2019, 12:41	0.57
BOX CULV 2	8.9615089	1934.2	26Feb2019, 12:44	0.59
B1	5.9948000	1289.0	26Feb2019, 12:44	0.56
B2	0.0204688	17.2	26Feb2019, 12:09	0.83
B3	0.0857813	49.3	26Feb2019, 12:17	0.70
B4	0.0648125	46.3	26Feb2019, 12:17	0.83
CLV E4	0.1670157	117.6	26Feb2019, 12:12	0.91
CULV B2	0.0204688	17.2	26Feb2019, 12:09	0.83
CULV C2	0.2892200	120.4	26Feb2019, 12:18	0.55
CULV C3	0.3143763	134.2	26Feb2019, 12:19	0.57
CULV D2	0.3593700	170.8	26Feb2019, 12:18	0.61
CULV D3	0.1423438	64.0	26Feb2019, 12:20	0.68
CULV D4	0.1959376	92.3	26Feb2019, 12:19	0.72
CULV E1.1	0.0592188	24.6	26Feb2019, 12:17	0.55
CULV E1.2	0.0238750	21.4	26Feb2019, 12:10	1.03
CULV E1.5	0.0136094	16.6	26Feb2019, 12:08	1.05
CULV E2	0.0768907	36.6	26Feb2019, 12:14	0.69
CULV E5	0.0210938	18.4	26Feb2019, 12:10	0.95
CULV F2	0.0068750	8.6	26Feb2019, 12:05	1.20
CULV H2	0.0610938	46.5	26Feb2019, 12:13	0.78
CULV H3	0.0090625	8.4	26Feb2019, 12:08	0.82
CULV I1	0.0106250	13.6	26Feb2019, 12:08	1.04
CULV-E3	0.1317032	84.6	26Feb2019, 12:11	0.85
C1	0.2542200	105.6	26Feb2019, 12:16	0.55

C2	0.0350000	16.1	26Feb2019, 12:13	0.55
C3	0.0251563	19.1	26Feb2019, 12:11	0.83
C4	0.0371875	19.1	26Feb2019, 12:18	0.59
D1.1	0.2520300	105.2	26Feb2019, 12:16	0.55
D1.2	0.0779688	28.2	26Feb2019, 12:20	0.55
D2	0.1073400	69.8	26Feb2019, 12:14	0.77
D3	0.0643750	38.1	26Feb2019, 12:17	0.83
D4	0.0535938	38.6	26Feb2019, 12:12	0.83
D5	0.0200000	15.0	26Feb2019, 12:12	0.61
D6	0.0653125	28.1	26Feb2019, 12:17	0.55
EX CULV C1	0.2542200	105.6	26Feb2019, 12:16	0.55
EX CULV D1.1	0.2520300	105.2	26Feb2019, 12:16	0.55
EX CULV D1.2	0.0779688	28.2	26Feb2019, 12:20	0.55
EX CULV E0	0.0592188	24.6	26Feb2019, 12:16	0.55
E0	0.0592188	24.6	26Feb2019, 12:16	0.55
E1.1	0.0136094	16.6	26Feb2019, 12:08	1.05
E1.2	0.0238750	21.4	26Feb2019, 12:10	1.03
E2	0.0040625	8.9	26Feb2019, 11:56	1.58
E3	0.0309375	33.7	26Feb2019, 12:07	1.11
E4	0.0284375	27.0	26Feb2019, 12:10	1.10
E5	0.0210938	18.4	26Feb2019, 12:10	0.95
E6	0.0144609	14.1	26Feb2019, 12:05	0.80
E7	0.0159688	16.2	26Feb2019, 12:07	0.95
E8	0.0246594	25.6	26Feb2019, 12:01	0.76
E9	0.0059688	5.8	26Feb2019, 11:56	0.36
F1	0.0501563	36.6	26Feb2019, 12:09	0.77
F2	0.0068750	8.6	26Feb2019, 12:04	1.20
F3	0.0150313	14.5	26Feb2019, 12:06	0.93
G1	0.0393750	30.9	26Feb2019, 12:10	0.63
G2	0.0331250	32.7	26Feb2019, 12:14	0.98
H1	0.0217187	24.0	26Feb2019, 12:10	0.94

H2	0.0610938	46.6	26Feb2019, 12:13	0.78
H3	0.0090625	8.4	26Feb2019, 12:08	0.82
H4	0.0423437	46.7	26Feb2019, 12:13	1.24
H5	0.0315625	37.5	26Feb2019, 12:13	1.36
H6	0.0493750	31.2	26Feb2019, 12:15	0.59
H7	0.0403125	38.6	26Feb2019, 12:12	0.84
H8	0.0132812	18.2	26Feb2019, 12:09	1.29
H9	0.0107812	12.9	26Feb2019, 12:08	0.94
I1	0.0106250	13.6	26Feb2019, 12:08	1.04
I2	0.0231250	29.9	26Feb2019, 12:08	1.04
J1	0.0157813	18.0	26Feb2019, 12:07	0.87
K1	0.0278125	43.4	26Feb2019, 12:08	1.61
OUT 2	0.0445312	27.5	26Feb2019, 12:25	1.01
OUT-1	9.2891451	2005.0	26Feb2019, 12:45	0.60
REACH A1	1.3529000	402.3	26Feb2019, 12:31	0.56
Reach E3.1	0.0238750	21.4	26Feb2019, 12:12	1.03
Reach H7	0.0493750	46.9	26Feb2019, 12:12	0.84
Reach-A2	0.0648125	81.4	26Feb2019, 12:15	1.60
Reach-B1	5.9948000	1288.9	26Feb2019, 12:46	0.56
Reach-B2	0.0204688	17.2	26Feb2019, 12:14	0.83
Reach-B3	6.0805813	1301.2	26Feb2019, 12:48	0.56
Reach-B4-3	0.3143763	134.2	26Feb2019, 12:19	0.57
Reach-C1	0.2542200	105.5	26Feb2019, 12:18	0.55
Reach-C2	0.2892200	120.3	26Feb2019, 12:20	0.55
Reach-D1.1	0.2520300	105.1	26Feb2019, 12:20	0.55
Reach-D3	0.0779688	28.2	26Feb2019, 12:24	0.55
Reach-D4	0.1423438	64.0	26Feb2019, 12:23	0.68
Reach-D5	0.3593700	170.6	26Feb2019, 12:20	0.61
Reach-D6	0.1959376	92.2	26Feb2019, 12:22	0.72
Reach-E1.1	0.0592188	24.6	26Feb2019, 12:17	0.55
Reach-E2	0.0592188	24.5	26Feb2019, 12:19	0.55

Reach-E3	0.0768907	36.6	26Feb2019, 12:17	0.69
Reach-E4	0.1317032	84.5	26Feb2019, 12:14	0.85
Reach-E6	0.0210938	18.4	26Feb2019, 12:13	0.95
Reach-E6-2	0.1974454	137.3	26Feb2019, 12:14	0.90
Reach-E7	0.1670157	117.5	26Feb2019, 12:14	0.91
Reach-F2	0.0068750	8.6	26Feb2019, 12:08	1.20
Reach-G2	0.0393750	30.8	26Feb2019, 12:13	0.63
Reach-H4	0.0217187	24.0	26Feb2019, 12:13	0.94
Reach-H6	0.0610938	46.5	26Feb2019, 12:15	0.78
Reach-H7-1	0.0090625	8.4	26Feb2019, 12:12	0.82
Reach-H9	0.0337500	43.3	26Feb2019, 12:10	1.04
Reach-I2-1	0.0106250	13.6	26Feb2019, 12:09	1.04
Reach-P3	0.2612501	79.0	26Feb2019, 12:37	0.68
Reach-1	7.9557326	1722.8	26Feb2019, 12:42	0.57
Reach-2	8.1294825	1754.4	26Feb2019, 12:43	0.58
Reach-3	8.5404150	1831.4	26Feb2019, 12:42	0.58
Reach-4	8.6508838	1852.0	26Feb2019, 12:44	0.58
Reach-5	8.9615089	1934.1	26Feb2019, 12:44	0.59
Reach-6 Kiowa Outfall	9.3336763	2026.1	26Feb2019, 12:45	0.60
STORAGE P1	0.1365624	25.4	26Feb2019, 12:42	0.95
STORAGE P2	0.1104688	21.0	26Feb2019, 12:39	0.69
STORAGE P3	0.2612501	79.0	26Feb2019, 12:36	0.68
STORAGE P4	0.0445312	27.5	26Feb2019, 12:22	1.01
STORAGE P5	0.2431986	73.4	26Feb2019, 12:32	0.80

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV E1.5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	04Jun2021, 13:52:40	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	16.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	16.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Inflow Volume:	1.05 (IN)	Discharge Volume:	1.05 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV E1.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	24.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:16
Peak Discharge:	24.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:17
Inflow Volume:	0.55 (IN)	Discharge Volume:	0.55 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV E1.2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	04Jun2021, 13:52:40	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	21.4 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:09
Peak Discharge:	21.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:10
Inflow Volume:	1.03 (IN)	Discharge Volume:	1.03 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV E2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	DATA CHANGED, RECOMPUTE	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	36.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:12
Peak Discharge:	36.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Inflow Volume:	0.69 (IN)	Discharge Volume:	0.69 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV-E3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	DATA CHANGED, RECOMPUTE Control Specifications: Control 1		

Volume Units:IN

Computed Results

Peak Inflow:	84.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:10
Peak Discharge:	84.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:11
Inflow Volume:	0.85 (IN)	Discharge Volume:	0.85 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CLV E4

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	DATA CHANGED, RECOMPUTE	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	117.7 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:11
Peak Discharge:	117.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:12
Inflow Volume:	0.91 (IN)	Discharge Volume:	0.91 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV E5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	18.4 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:09
Peak Discharge:	18.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:10
Inflow Volume:	0.95 (IN)	Discharge Volume:	0.95 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: CULV F2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	8.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:03
Peak Discharge:	8.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:05
Inflow Volume:	1.20 (IN)	Discharge Volume:	1.20 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E0

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	24.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:16
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.55 (IN)
Loss Volume:	4.05 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.55 (IN)	Discharge Volume:	0.55 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-E1.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	24.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:15
Peak Discharge:	24.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:17
Inflow Volume:	0.55 (IN)	Discharge Volume:	0.55 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E1.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	16.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	1.05 (IN)
Loss Volume:	3.54 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	1.05 (IN)	Discharge Volume:	1.05 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E1.2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	21.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:10
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	1.03 (IN)
Loss Volume:	3.56 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	1.03 (IN)	Discharge Volume:	1.03 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	8.9 (CFS)	Date/Time of Peak Discharge	26Feb2019, 11:56
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	1.58 (IN)
Loss Volume:	3.02 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	1.58 (IN)	Discharge Volume:	1.58 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	33.7 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:07
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	1.11 (IN)
Loss Volume:	3.49 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	1.11 (IN)	Discharge Volume:	1.11 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E4

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	27.0 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:10
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	1.10 (IN)
Loss Volume:	3.49 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	1.10 (IN)	Discharge Volume:	1.10 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	18.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:10
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.95 (IN)
Loss Volume:	3.65 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.95 (IN)	Discharge Volume:	0.95 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E6

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	14.1 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:05
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.80 (IN)
Loss Volume:	3.79 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.80 (IN)	Discharge Volume:	0.80 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E7

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	16.2 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:07
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.95 (IN)
Loss Volume:	3.65 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.95 (IN)	Discharge Volume:	0.95 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E8

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	25.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:01
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.76 (IN)
Loss Volume:	3.84 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.76 (IN)	Discharge Volume:	0.76 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: E9

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	5.8 (CFS)	Date/Time of Peak Discharge	26Feb2019, 11:56
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.36 (IN)
Loss Volume:	4.24 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.36 (IN)	Discharge Volume:	0.36 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: EX CULV E0

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	24.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:15
Peak Discharge:	24.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:16
Inflow Volume:	0.55 (IN)	Discharge Volume:	0.55 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: F1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	19May2021, 11:47:46	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	36.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:09
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.77 (IN)
Loss Volume:	3.82 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.77 (IN)	Discharge Volume:	0.77 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: F2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	8.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:04
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	1.20 (IN)
Loss Volume:	3.39 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	1.20 (IN)	Discharge Volume:	1.20 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Subbasin: F3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	19May2021, 11:47:46	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Discharge:	14.5 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:06
Precipitation Volume	4.60 (IN)	Direct Runoff Volume:	0.93 (IN)
Loss Volume:	3.67 (IN)	Baseflow Volume:	0.00 (IN)
Excess Volume:	0.93 (IN)	Discharge Volume:	0.93 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-6 Kiowa Outfall

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	19May2021, 18:42:54	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2035.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:43
Peak Discharge:	2035.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:44
Inflow Volume:	0.60 (IN)	Discharge Volume:	0.60 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: OUT-1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	09Sep2021, 17:03:24	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2005.1 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:42
Peak Discharge:	2005.0 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:45
Inflow Volume:	0.60 (IN)	Discharge Volume:	0.60 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reservoir: STORAGE P5

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	09Sep2021, 18:12:01	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	160.9 (CFS)	Date/Time of Peak Inflow:	26Feb2019, 12:12
Peak Discharge:	73.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:32
Inflow Volume:	11.6 (AC-FT)	Peak Storage:	5.8 (AC-FT)
Discharge Volume	10.3 (AC-FT)	Peak Elevation:	7303.3 (FT)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reservoir: STORAGE P5

Start of Run: 26Feb2019, 00:00 Basin Model: Proposed Basins
End of Run: 27Feb2019, 12:00 Meteorologic Model: Prop Basins 100yr
Compute Time: 09Sep2021, 17:03:24 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	00:00	0.0	0.0	7298.0	0.0
26Feb2019	00:01	0.0	0.0	7298.0	0.0
26Feb2019	00:02	0.0	0.0	7298.0	0.0
26Feb2019	00:03	0.0	0.0	7298.0	0.0
26Feb2019	00:04	0.0	0.0	7298.0	0.0
26Feb2019	00:05	0.0	0.0	7298.0	0.0
26Feb2019	00:06	0.0	0.0	7298.0	0.0
26Feb2019	00:07	0.0	0.0	7298.0	0.0
26Feb2019	00:08	0.0	0.0	7298.0	0.0
26Feb2019	00:09	0.0	0.0	7298.0	0.0
26Feb2019	00:10	0.0	0.0	7298.0	0.0
26Feb2019	00:11	0.0	0.0	7298.0	0.0
26Feb2019	00:12	0.0	0.0	7298.0	0.0
26Feb2019	00:13	0.0	0.0	7298.0	0.0
26Feb2019	00:14	0.0	0.0	7298.0	0.0
26Feb2019	00:15	0.0	0.0	7298.0	0.0
26Feb2019	00:16	0.1	0.0	7298.0	0.0
26Feb2019	00:17	0.1	0.0	7298.0	0.0
26Feb2019	00:18	0.1	0.0	7298.0	0.0
26Feb2019	00:19	0.1	0.0	7298.0	0.0
26Feb2019	00:20	0.1	0.0	7298.1	0.0
26Feb2019	00:21	0.1	0.0	7298.1	0.0
26Feb2019	00:22	0.1	0.0	7298.1	0.0
26Feb2019	00:23	0.1	0.0	7298.1	0.0
26Feb2019	00:24	0.1	0.0	7298.1	0.0
26Feb2019	00:25	0.1	0.0	7298.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	00:26	0.1	0.0	7298.1	0.0
26Feb2019	00:27	0.1	0.0	7298.1	0.0
26Feb2019	00:28	0.1	0.0	7298.1	0.0
26Feb2019	00:29	0.1	0.0	7298.1	0.0
26Feb2019	00:30	0.1	0.0	7298.2	0.0
26Feb2019	00:31	0.1	0.0	7298.2	0.0
26Feb2019	00:32	0.1	0.0	7298.2	0.0
26Feb2019	00:33	0.1	0.0	7298.2	0.0
26Feb2019	00:34	0.2	0.0	7298.2	0.0
26Feb2019	00:35	0.2	0.0	7298.2	0.0
26Feb2019	00:36	0.2	0.0	7298.2	0.0
26Feb2019	00:37	0.2	0.0	7298.3	0.1
26Feb2019	00:38	0.2	0.0	7298.3	0.1
26Feb2019	00:39	0.2	0.0	7298.3	0.1
26Feb2019	00:40	0.2	0.0	7298.3	0.1
26Feb2019	00:41	0.2	0.0	7298.3	0.1
26Feb2019	00:42	0.2	0.0	7298.4	0.1
26Feb2019	00:43	0.2	0.0	7298.4	0.1
26Feb2019	00:44	0.3	0.0	7298.4	0.1
26Feb2019	00:45	0.3	0.0	7298.4	0.1
26Feb2019	00:46	0.3	0.0	7298.5	0.1
26Feb2019	00:47	0.3	0.0	7298.5	0.1
26Feb2019	00:48	0.3	0.0	7298.5	0.1
26Feb2019	00:49	0.3	0.0	7298.6	0.1
26Feb2019	00:50	0.4	0.0	7298.6	0.1
26Feb2019	00:51	0.4	0.0	7298.6	0.1
26Feb2019	00:52	0.4	0.0	7298.7	0.1
26Feb2019	00:53	0.4	0.0	7298.7	0.1
26Feb2019	00:54	0.4	0.0	7298.8	0.1
26Feb2019	00:55	0.5	0.0	7298.8	0.1
26Feb2019	00:56	0.5	0.0	7298.8	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	00:57	0.5	0.0	7298.8	0.1
26Feb2019	00:58	0.5	0.0	7298.8	0.1
26Feb2019	00:59	0.6	0.0	7298.9	0.1
26Feb2019	01:00	0.6	0.0	7298.9	0.1
26Feb2019	01:01	0.6	0.0	7298.9	0.1
26Feb2019	01:02	0.6	0.0	7298.9	0.1
26Feb2019	01:03	0.6	0.0	7299.0	0.1
26Feb2019	01:04	0.7	0.0	7299.0	0.1
26Feb2019	01:05	0.7	0.0	7299.0	0.1
26Feb2019	01:06	0.7	0.0	7299.0	0.1
26Feb2019	01:07	0.7	0.0	7299.0	0.1
26Feb2019	01:08	0.7	0.0	7299.0	0.1
26Feb2019	01:09	0.7	0.0	7299.0	0.1
26Feb2019	01:10	0.8	0.0	7299.0	0.1
26Feb2019	01:11	0.8	0.0	7299.1	0.1
26Feb2019	01:12	0.8	0.0	7299.1	0.1
26Feb2019	01:13	0.8	0.0	7299.1	0.1
26Feb2019	01:14	0.8	0.0	7299.1	0.1
26Feb2019	01:15	0.8	0.0	7299.1	0.1
26Feb2019	01:16	0.8	0.0	7299.1	0.1
26Feb2019	01:17	0.8	0.0	7299.1	0.1
26Feb2019	01:18	0.8	0.0	7299.1	0.1
26Feb2019	01:19	0.9	0.0	7299.1	0.1
26Feb2019	01:20	0.9	0.0	7299.1	0.1
26Feb2019	01:21	0.9	0.0	7299.1	0.1
26Feb2019	01:22	0.9	0.0	7299.1	0.1
26Feb2019	01:23	0.9	0.0	7299.2	0.1
26Feb2019	01:24	0.9	0.0	7299.2	0.1
26Feb2019	01:25	0.9	0.0	7299.2	0.1
26Feb2019	01:26	0.9	0.0	7299.2	0.1
26Feb2019	01:27	0.9	0.0	7299.2	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	01:28	0.9	0.0	7299.2	0.1
26Feb2019	01:29	0.9	0.0	7299.2	0.2
26Feb2019	01:30	0.9	0.0	7299.2	0.2
26Feb2019	01:31	0.9	0.0	7299.2	0.2
26Feb2019	01:32	0.9	0.0	7299.2	0.2
26Feb2019	01:33	0.9	0.0	7299.2	0.2
26Feb2019	01:34	0.9	0.0	7299.3	0.2
26Feb2019	01:35	1.0	0.0	7299.3	0.2
26Feb2019	01:36	1.0	0.0	7299.3	0.2
26Feb2019	01:37	1.0	0.0	7299.3	0.2
26Feb2019	01:38	1.0	0.0	7299.3	0.2
26Feb2019	01:39	1.0	0.0	7299.3	0.2
26Feb2019	01:40	1.0	0.1	7299.3	0.2
26Feb2019	01:41	1.0	0.1	7299.3	0.2
26Feb2019	01:42	1.0	0.1	7299.3	0.2
26Feb2019	01:43	1.0	0.1	7299.3	0.2
26Feb2019	01:44	1.0	0.1	7299.3	0.2
26Feb2019	01:45	1.0	0.1	7299.3	0.2
26Feb2019	01:46	1.0	0.1	7299.3	0.2
26Feb2019	01:47	1.0	0.1	7299.3	0.2
26Feb2019	01:48	1.0	0.1	7299.3	0.2
26Feb2019	01:49	1.0	0.1	7299.3	0.2
26Feb2019	01:50	1.0	0.1	7299.3	0.2
26Feb2019	01:51	1.0	0.1	7299.3	0.2
26Feb2019	01:52	1.0	0.1	7299.3	0.2
26Feb2019	01:53	1.0	0.1	7299.3	0.2
26Feb2019	01:54	1.0	0.1	7299.3	0.2
26Feb2019	01:55	1.0	0.1	7299.3	0.2
26Feb2019	01:56	1.0	0.1	7299.4	0.2
26Feb2019	01:57	1.0	0.1	7299.4	0.2
26Feb2019	01:58	1.0	0.1	7299.4	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	01:59	1.0	0.1	7299.4	0.2
26Feb2019	02:00	1.0	0.1	7299.4	0.2
26Feb2019	02:01	1.0	0.1	7299.4	0.2
26Feb2019	02:02	1.0	0.1	7299.4	0.2
26Feb2019	02:03	1.0	0.1	7299.4	0.2
26Feb2019	02:04	1.0	0.1	7299.4	0.2
26Feb2019	02:05	1.0	0.1	7299.4	0.2
26Feb2019	02:06	1.0	0.1	7299.4	0.2
26Feb2019	02:07	1.0	0.1	7299.4	0.2
26Feb2019	02:08	1.0	0.1	7299.4	0.2
26Feb2019	02:09	1.0	0.1	7299.4	0.2
26Feb2019	02:10	1.0	0.1	7299.4	0.2
26Feb2019	02:11	1.0	0.1	7299.4	0.2
26Feb2019	02:12	1.0	0.1	7299.4	0.2
26Feb2019	02:13	1.0	0.1	7299.4	0.2
26Feb2019	02:14	1.0	0.1	7299.4	0.2
26Feb2019	02:15	1.0	0.1	7299.4	0.2
26Feb2019	02:16	1.0	0.1	7299.4	0.2
26Feb2019	02:17	1.0	0.1	7299.4	0.2
26Feb2019	02:18	1.0	0.1	7299.5	0.2
26Feb2019	02:19	1.0	0.1	7299.5	0.2
26Feb2019	02:20	1.0	0.1	7299.5	0.2
26Feb2019	02:21	1.0	0.1	7299.5	0.2
26Feb2019	02:22	1.0	0.1	7299.5	0.2
26Feb2019	02:23	1.0	0.1	7299.5	0.2
26Feb2019	02:24	1.0	0.1	7299.5	0.2
26Feb2019	02:25	1.1	0.1	7299.5	0.2
26Feb2019	02:26	1.1	0.1	7299.5	0.2
26Feb2019	02:27	1.1	0.1	7299.5	0.2
26Feb2019	02:28	1.1	0.1	7299.5	0.2
26Feb2019	02:29	1.1	0.1	7299.5	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	02:30	1.1	0.1	7299.5	0.2
26Feb2019	02:31	1.1	0.1	7299.5	0.2
26Feb2019	02:32	1.1	0.1	7299.5	0.2
26Feb2019	02:33	1.1	0.1	7299.5	0.2
26Feb2019	02:34	1.1	0.1	7299.5	0.2
26Feb2019	02:35	1.1	0.1	7299.5	0.2
26Feb2019	02:36	1.1	0.1	7299.5	0.2
26Feb2019	02:37	1.1	0.1	7299.5	0.2
26Feb2019	02:38	1.1	0.1	7299.5	0.2
26Feb2019	02:39	1.1	0.1	7299.5	0.2
26Feb2019	02:40	1.1	0.1	7299.5	0.2
26Feb2019	02:41	1.1	0.1	7299.5	0.2
26Feb2019	02:42	1.1	0.1	7299.5	0.2
26Feb2019	02:43	1.1	0.1	7299.5	0.2
26Feb2019	02:44	1.1	0.1	7299.5	0.2
26Feb2019	02:45	1.1	0.1	7299.6	0.2
26Feb2019	02:46	1.1	0.1	7299.6	0.2
26Feb2019	02:47	1.1	0.1	7299.6	0.2
26Feb2019	02:48	1.1	0.1	7299.6	0.2
26Feb2019	02:49	1.1	0.1	7299.6	0.2
26Feb2019	02:50	1.1	0.1	7299.6	0.2
26Feb2019	02:51	1.1	0.1	7299.6	0.2
26Feb2019	02:52	1.1	0.1	7299.6	0.2
26Feb2019	02:53	1.1	0.1	7299.6	0.2
26Feb2019	02:54	1.1	0.1	7299.6	0.2
26Feb2019	02:55	1.1	0.1	7299.6	0.2
26Feb2019	02:56	1.1	0.1	7299.6	0.2
26Feb2019	02:57	1.1	0.1	7299.6	0.2
26Feb2019	02:58	1.1	0.1	7299.6	0.2
26Feb2019	02:59	1.1	0.1	7299.6	0.2
26Feb2019	03:00	1.1	0.1	7299.6	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	03:01	1.1	0.1	7299.6	0.2
26Feb2019	03:02	1.1	0.1	7299.6	0.2
26Feb2019	03:03	1.1	0.1	7299.6	0.2
26Feb2019	03:04	1.1	0.1	7299.6	0.2
26Feb2019	03:05	1.1	0.2	7299.6	0.2
26Feb2019	03:06	1.1	0.2	7299.6	0.2
26Feb2019	03:07	1.1	0.2	7299.6	0.2
26Feb2019	03:08	1.1	0.2	7299.6	0.2
26Feb2019	03:09	1.1	0.2	7299.6	0.2
26Feb2019	03:10	1.1	0.2	7299.6	0.2
26Feb2019	03:11	1.1	0.2	7299.6	0.2
26Feb2019	03:12	1.1	0.2	7299.6	0.2
26Feb2019	03:13	1.1	0.2	7299.6	0.2
26Feb2019	03:14	1.1	0.2	7299.6	0.2
26Feb2019	03:15	1.1	0.2	7299.6	0.2
26Feb2019	03:16	1.1	0.2	7299.7	0.2
26Feb2019	03:17	1.1	0.2	7299.7	0.2
26Feb2019	03:18	1.1	0.2	7299.7	0.2
26Feb2019	03:19	1.1	0.2	7299.7	0.2
26Feb2019	03:20	1.1	0.2	7299.7	0.2
26Feb2019	03:21	1.1	0.2	7299.7	0.2
26Feb2019	03:22	1.1	0.2	7299.7	0.2
26Feb2019	03:23	1.1	0.2	7299.7	0.2
26Feb2019	03:24	1.1	0.2	7299.7	0.2
26Feb2019	03:25	1.1	0.2	7299.7	0.2
26Feb2019	03:26	1.1	0.2	7299.7	0.2
26Feb2019	03:27	1.1	0.2	7299.7	0.2
26Feb2019	03:28	1.1	0.2	7299.7	0.2
26Feb2019	03:29	1.1	0.2	7299.7	0.2
26Feb2019	03:30	1.1	0.2	7299.7	0.2
26Feb2019	03:31	1.2	0.2	7299.7	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	03:32	1.2	0.2	7299.7	0.2
26Feb2019	03:33	1.2	0.2	7299.7	0.2
26Feb2019	03:34	1.2	0.2	7299.7	0.2
26Feb2019	03:35	1.2	0.2	7299.7	0.2
26Feb2019	03:36	1.2	0.2	7299.7	0.2
26Feb2019	03:37	1.2	0.2	7299.7	0.2
26Feb2019	03:38	1.2	0.2	7299.7	0.2
26Feb2019	03:39	1.2	0.2	7299.7	0.2
26Feb2019	03:40	1.2	0.2	7299.7	0.2
26Feb2019	03:41	1.2	0.2	7299.7	0.2
26Feb2019	03:42	1.2	0.2	7299.7	0.2
26Feb2019	03:43	1.2	0.2	7299.7	0.2
26Feb2019	03:44	1.2	0.2	7299.7	0.2
26Feb2019	03:45	1.2	0.2	7299.7	0.2
26Feb2019	03:46	1.2	0.2	7299.8	0.2
26Feb2019	03:47	1.2	0.2	7299.8	0.2
26Feb2019	03:48	1.2	0.2	7299.8	0.2
26Feb2019	03:49	1.2	0.2	7299.8	0.2
26Feb2019	03:50	1.2	0.2	7299.8	0.2
26Feb2019	03:51	1.2	0.2	7299.8	0.2
26Feb2019	03:52	1.2	0.2	7299.8	0.2
26Feb2019	03:53	1.2	0.2	7299.8	0.2
26Feb2019	03:54	1.2	0.2	7299.8	0.2
26Feb2019	03:55	1.2	0.2	7299.8	0.2
26Feb2019	03:56	1.2	0.2	7299.8	0.2
26Feb2019	03:57	1.2	0.2	7299.8	0.2
26Feb2019	03:58	1.2	0.2	7299.8	0.2
26Feb2019	03:59	1.2	0.2	7299.8	0.2
26Feb2019	04:00	1.2	0.2	7299.8	0.2
26Feb2019	04:01	1.2	0.2	7299.8	0.2
26Feb2019	04:02	1.2	0.2	7299.8	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	04:03	1.2	0.2	7299.8	0.2
26Feb2019	04:04	1.2	0.2	7299.8	0.2
26Feb2019	04:05	1.2	0.2	7299.8	0.2
26Feb2019	04:06	1.2	0.2	7299.8	0.2
26Feb2019	04:07	1.2	0.2	7299.8	0.2
26Feb2019	04:08	1.2	0.2	7299.8	0.2
26Feb2019	04:09	1.2	0.2	7299.8	0.2
26Feb2019	04:10	1.2	0.2	7299.8	0.2
26Feb2019	04:11	1.2	0.2	7299.8	0.2
26Feb2019	04:12	1.2	0.2	7299.8	0.2
26Feb2019	04:13	1.2	0.2	7299.8	0.2
26Feb2019	04:14	1.2	0.2	7299.8	0.2
26Feb2019	04:15	1.2	0.2	7299.8	0.2
26Feb2019	04:16	1.2	0.2	7299.8	0.2
26Feb2019	04:17	1.2	0.2	7299.8	0.2
26Feb2019	04:18	1.2	0.2	7299.8	0.2
26Feb2019	04:19	1.2	0.2	7299.8	0.2
26Feb2019	04:20	1.2	0.2	7299.8	0.2
26Feb2019	04:21	1.2	0.3	7299.8	0.2
26Feb2019	04:22	1.2	0.3	7299.8	0.2
26Feb2019	04:23	1.2	0.3	7299.8	0.2
26Feb2019	04:24	1.2	0.3	7299.8	0.2
26Feb2019	04:25	1.2	0.3	7299.9	0.2
26Feb2019	04:26	1.2	0.3	7299.9	0.2
26Feb2019	04:27	1.2	0.3	7299.9	0.2
26Feb2019	04:28	1.2	0.3	7299.9	0.2
26Feb2019	04:29	1.2	0.3	7299.9	0.2
26Feb2019	04:30	1.2	0.3	7299.9	0.2
26Feb2019	04:31	1.2	0.3	7299.9	0.2
26Feb2019	04:32	1.2	0.3	7299.9	0.2
26Feb2019	04:33	1.3	0.3	7299.9	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	04:34	1.3	0.3	7299.9	0.2
26Feb2019	04:35	1.3	0.3	7299.9	0.2
26Feb2019	04:36	1.3	0.3	7299.9	0.2
26Feb2019	04:37	1.3	0.3	7299.9	0.2
26Feb2019	04:38	1.3	0.3	7299.9	0.2
26Feb2019	04:39	1.3	0.3	7299.9	0.2
26Feb2019	04:40	1.3	0.3	7299.9	0.2
26Feb2019	04:41	1.3	0.3	7299.9	0.2
26Feb2019	04:42	1.3	0.3	7299.9	0.2
26Feb2019	04:43	1.3	0.3	7299.9	0.2
26Feb2019	04:44	1.3	0.3	7299.9	0.2
26Feb2019	04:45	1.3	0.3	7299.9	0.2
26Feb2019	04:46	1.3	0.3	7299.9	0.2
26Feb2019	04:47	1.3	0.3	7299.9	0.2
26Feb2019	04:48	1.3	0.3	7299.9	0.2
26Feb2019	04:49	1.3	0.3	7299.9	0.2
26Feb2019	04:50	1.3	0.3	7299.9	0.2
26Feb2019	04:51	1.3	0.3	7299.9	0.2
26Feb2019	04:52	1.3	0.3	7299.9	0.2
26Feb2019	04:53	1.3	0.3	7299.9	0.2
26Feb2019	04:54	1.3	0.3	7299.9	0.2
26Feb2019	04:55	1.3	0.3	7299.9	0.2
26Feb2019	04:56	1.3	0.3	7299.9	0.2
26Feb2019	04:57	1.3	0.3	7299.9	0.2
26Feb2019	04:58	1.3	0.3	7299.9	0.2
26Feb2019	04:59	1.3	0.3	7299.9	0.2
26Feb2019	05:00	1.3	0.3	7299.9	0.2
26Feb2019	05:01	1.3	0.3	7299.9	0.2
26Feb2019	05:02	1.3	0.3	7300.0	0.2
26Feb2019	05:03	1.3	0.3	7300.0	0.2
26Feb2019	05:04	1.3	0.3	7300.0	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	05:05	1.3	0.3	7300.0	0.2
26Feb2019	05:06	1.3	0.3	7300.0	0.2
26Feb2019	05:07	1.3	0.3	7300.0	0.2
26Feb2019	05:08	1.3	0.3	7300.0	0.2
26Feb2019	05:09	1.3	0.3	7300.0	0.2
26Feb2019	05:10	1.3	0.3	7300.0	0.2
26Feb2019	05:11	1.4	0.3	7300.0	0.2
26Feb2019	05:12	1.4	0.3	7300.0	0.2
26Feb2019	05:13	1.4	0.3	7300.0	0.2
26Feb2019	05:14	1.4	0.3	7300.0	0.2
26Feb2019	05:15	1.4	0.3	7300.0	0.2
26Feb2019	05:16	1.4	0.3	7300.0	0.2
26Feb2019	05:17	1.4	0.3	7300.0	0.2
26Feb2019	05:18	1.4	0.3	7300.0	0.2
26Feb2019	05:19	1.4	0.3	7300.0	0.2
26Feb2019	05:20	1.4	0.3	7300.0	0.3
26Feb2019	05:21	1.4	0.3	7300.0	0.3
26Feb2019	05:22	1.4	0.3	7300.0	0.3
26Feb2019	05:23	1.4	0.3	7300.0	0.3
26Feb2019	05:24	1.4	0.3	7300.0	0.3
26Feb2019	05:25	1.4	0.3	7300.0	0.3
26Feb2019	05:26	1.4	0.3	7300.0	0.3
26Feb2019	05:27	1.4	0.3	7300.0	0.3
26Feb2019	05:28	1.4	0.3	7300.0	0.3
26Feb2019	05:29	1.4	0.4	7300.0	0.3
26Feb2019	05:30	1.4	0.4	7300.0	0.3
26Feb2019	05:31	1.4	0.4	7300.0	0.3
26Feb2019	05:32	1.4	0.4	7300.0	0.3
26Feb2019	05:33	1.4	0.4	7300.0	0.3
26Feb2019	05:34	1.4	0.4	7300.0	0.3
26Feb2019	05:35	1.4	0.4	7300.0	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	05:36	1.4	0.4	7300.0	0.3
26Feb2019	05:37	1.4	0.4	7300.0	0.3
26Feb2019	05:38	1.4	0.4	7300.0	0.3
26Feb2019	05:39	1.4	0.4	7300.0	0.3
26Feb2019	05:40	1.4	0.4	7300.0	0.3
26Feb2019	05:41	1.4	0.4	7300.1	0.3
26Feb2019	05:42	1.4	0.4	7300.1	0.3
26Feb2019	05:43	1.4	0.4	7300.1	0.3
26Feb2019	05:44	1.4	0.4	7300.1	0.3
26Feb2019	05:45	1.5	0.4	7300.1	0.3
26Feb2019	05:46	1.5	0.4	7300.1	0.3
26Feb2019	05:47	1.5	0.4	7300.1	0.3
26Feb2019	05:48	1.5	0.4	7300.1	0.3
26Feb2019	05:49	1.5	0.4	7300.1	0.3
26Feb2019	05:50	1.5	0.4	7300.1	0.3
26Feb2019	05:51	1.5	0.4	7300.1	0.3
26Feb2019	05:52	1.5	0.4	7300.1	0.3
26Feb2019	05:53	1.5	0.4	7300.1	0.3
26Feb2019	05:54	1.5	0.4	7300.1	0.3
26Feb2019	05:55	1.5	0.4	7300.1	0.3
26Feb2019	05:56	1.5	0.4	7300.1	0.3
26Feb2019	05:57	1.5	0.4	7300.1	0.3
26Feb2019	05:58	1.5	0.4	7300.1	0.3
26Feb2019	05:59	1.5	0.4	7300.1	0.3
26Feb2019	06:00	1.5	0.4	7300.1	0.3
26Feb2019	06:01	1.5	0.4	7300.1	0.3
26Feb2019	06:02	1.5	0.4	7300.1	0.3
26Feb2019	06:03	1.5	0.4	7300.1	0.3
26Feb2019	06:04	1.5	0.4	7300.1	0.3
26Feb2019	06:05	1.5	0.4	7300.1	0.3
26Feb2019	06:06	1.5	0.4	7300.1	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	06:07	1.5	0.4	7300.1	0.3
26Feb2019	06:08	1.5	0.4	7300.1	0.3
26Feb2019	06:09	1.5	0.4	7300.1	0.3
26Feb2019	06:10	1.5	0.4	7300.1	0.3
26Feb2019	06:11	1.5	0.4	7300.1	0.3
26Feb2019	06:12	1.5	0.4	7300.1	0.3
26Feb2019	06:13	1.5	0.4	7300.1	0.3
26Feb2019	06:14	1.5	0.4	7300.1	0.3
26Feb2019	06:15	1.5	0.4	7300.1	0.3
26Feb2019	06:16	1.5	0.4	7300.1	0.3
26Feb2019	06:17	1.5	0.4	7300.1	0.3
26Feb2019	06:18	1.6	0.4	7300.1	0.3
26Feb2019	06:19	1.6	0.4	7300.1	0.3
26Feb2019	06:20	1.6	0.4	7300.1	0.3
26Feb2019	06:21	1.6	0.4	7300.1	0.3
26Feb2019	06:22	1.6	0.4	7300.2	0.3
26Feb2019	06:23	1.6	0.4	7300.2	0.3
26Feb2019	06:24	1.6	0.4	7300.2	0.3
26Feb2019	06:25	1.6	0.4	7300.2	0.3
26Feb2019	06:26	1.6	0.4	7300.2	0.3
26Feb2019	06:27	1.6	0.4	7300.2	0.3
26Feb2019	06:28	1.6	0.4	7300.2	0.3
26Feb2019	06:29	1.6	0.5	7300.2	0.3
26Feb2019	06:30	1.6	0.5	7300.2	0.3
26Feb2019	06:31	1.6	0.5	7300.2	0.3
26Feb2019	06:32	1.6	0.5	7300.2	0.3
26Feb2019	06:33	1.6	0.5	7300.2	0.3
26Feb2019	06:34	1.6	0.5	7300.2	0.3
26Feb2019	06:35	1.6	0.5	7300.2	0.3
26Feb2019	06:36	1.6	0.5	7300.2	0.3
26Feb2019	06:37	1.6	0.5	7300.2	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	06:38	1.6	0.5	7300.2	0.3
26Feb2019	06:39	1.6	0.5	7300.2	0.3
26Feb2019	06:40	1.6	0.5	7300.2	0.3
26Feb2019	06:41	1.6	0.5	7300.2	0.3
26Feb2019	06:42	1.6	0.5	7300.2	0.3
26Feb2019	06:43	1.6	0.5	7300.2	0.3
26Feb2019	06:44	1.6	0.5	7300.2	0.3
26Feb2019	06:45	1.6	0.5	7300.2	0.3
26Feb2019	06:46	1.6	0.5	7300.2	0.3
26Feb2019	06:47	1.6	0.5	7300.2	0.3
26Feb2019	06:48	1.6	0.5	7300.2	0.3
26Feb2019	06:49	1.6	0.5	7300.2	0.3
26Feb2019	06:50	1.6	0.5	7300.2	0.3
26Feb2019	06:51	1.7	0.5	7300.2	0.3
26Feb2019	06:52	1.7	0.5	7300.2	0.3
26Feb2019	06:53	1.7	0.5	7300.2	0.3
26Feb2019	06:54	1.7	0.5	7300.2	0.3
26Feb2019	06:55	1.7	0.5	7300.2	0.3
26Feb2019	06:56	1.7	0.5	7300.2	0.3
26Feb2019	06:57	1.7	0.5	7300.2	0.3
26Feb2019	06:58	1.7	0.5	7300.2	0.3
26Feb2019	06:59	1.7	0.5	7300.3	0.3
26Feb2019	07:00	1.7	0.5	7300.3	0.3
26Feb2019	07:01	1.7	0.5	7300.3	0.3
26Feb2019	07:02	1.7	0.5	7300.3	0.3
26Feb2019	07:03	1.7	0.5	7300.3	0.3
26Feb2019	07:04	1.7	0.5	7300.3	0.3
26Feb2019	07:05	1.7	0.5	7300.3	0.3
26Feb2019	07:06	1.7	0.5	7300.3	0.3
26Feb2019	07:07	1.7	0.5	7300.3	0.3
26Feb2019	07:08	1.7	0.5	7300.3	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	07:09	1.7	0.5	7300.3	0.3
26Feb2019	07:10	1.7	0.5	7300.3	0.3
26Feb2019	07:11	1.7	0.5	7300.3	0.3
26Feb2019	07:12	1.7	0.5	7300.3	0.3
26Feb2019	07:13	1.7	0.5	7300.3	0.3
26Feb2019	07:14	1.7	0.5	7300.3	0.3
26Feb2019	07:15	1.7	0.5	7300.3	0.3
26Feb2019	07:16	1.7	0.5	7300.3	0.3
26Feb2019	07:17	1.7	0.5	7300.3	0.3
26Feb2019	07:18	1.7	0.5	7300.3	0.3
26Feb2019	07:19	1.7	0.5	7300.3	0.3
26Feb2019	07:20	1.7	0.5	7300.3	0.3
26Feb2019	07:21	1.7	0.5	7300.3	0.3
26Feb2019	07:22	1.7	0.6	7300.3	0.3
26Feb2019	07:23	1.7	0.6	7300.3	0.3
26Feb2019	07:24	1.8	0.6	7300.3	0.3
26Feb2019	07:25	1.8	0.6	7300.3	0.3
26Feb2019	07:26	1.8	0.6	7300.3	0.3
26Feb2019	07:27	1.8	0.6	7300.3	0.3
26Feb2019	07:28	1.8	0.6	7300.3	0.3
26Feb2019	07:29	1.8	0.6	7300.3	0.3
26Feb2019	07:30	1.8	0.6	7300.3	0.3
26Feb2019	07:31	1.8	0.6	7300.3	0.3
26Feb2019	07:32	1.8	0.6	7300.3	0.3
26Feb2019	07:33	1.8	0.6	7300.3	0.3
26Feb2019	07:34	1.8	0.6	7300.3	0.3
26Feb2019	07:35	1.8	0.6	7300.3	0.4
26Feb2019	07:36	1.8	0.6	7300.3	0.4
26Feb2019	07:37	1.8	0.6	7300.3	0.4
26Feb2019	07:38	1.8	0.6	7300.3	0.4
26Feb2019	07:39	1.8	0.6	7300.3	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	07:40	1.8	0.6	7300.3	0.4
26Feb2019	07:41	1.8	0.6	7300.3	0.4
26Feb2019	07:42	1.8	0.6	7300.3	0.4
26Feb2019	07:43	1.8	0.6	7300.3	0.4
26Feb2019	07:44	1.8	0.6	7300.4	0.4
26Feb2019	07:45	1.8	0.6	7300.4	0.4
26Feb2019	07:46	1.8	0.6	7300.4	0.4
26Feb2019	07:47	1.8	0.6	7300.4	0.4
26Feb2019	07:48	1.8	0.6	7300.4	0.4
26Feb2019	07:49	1.8	0.6	7300.4	0.4
26Feb2019	07:50	1.8	0.6	7300.4	0.4
26Feb2019	07:51	1.8	0.6	7300.4	0.4
26Feb2019	07:52	1.8	0.6	7300.4	0.4
26Feb2019	07:53	1.8	0.6	7300.4	0.4
26Feb2019	07:54	1.8	0.6	7300.4	0.4
26Feb2019	07:55	1.8	0.6	7300.4	0.4
26Feb2019	07:56	1.8	0.6	7300.4	0.4
26Feb2019	07:57	1.8	0.6	7300.4	0.4
26Feb2019	07:58	1.9	0.6	7300.4	0.4
26Feb2019	07:59	1.9	0.6	7300.4	0.4
26Feb2019	08:00	1.9	0.6	7300.4	0.4
26Feb2019	08:01	1.9	0.6	7300.4	0.4
26Feb2019	08:02	1.9	0.6	7300.4	0.4
26Feb2019	08:03	1.9	0.6	7300.4	0.4
26Feb2019	08:04	1.9	0.6	7300.4	0.4
26Feb2019	08:05	1.9	0.6	7300.4	0.4
26Feb2019	08:06	1.9	0.6	7300.4	0.4
26Feb2019	08:07	1.9	0.6	7300.4	0.4
26Feb2019	08:08	1.9	0.6	7300.4	0.4
26Feb2019	08:09	1.9	0.6	7300.4	0.4
26Feb2019	08:10	1.9	0.6	7300.4	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	08:11	1.9	0.6	7300.4	0.4
26Feb2019	08:12	1.9	0.7	7300.4	0.4
26Feb2019	08:13	1.9	0.7	7300.4	0.4
26Feb2019	08:14	1.9	0.7	7300.4	0.4
26Feb2019	08:15	1.9	0.7	7300.4	0.4
26Feb2019	08:16	1.9	0.7	7300.4	0.4
26Feb2019	08:17	1.9	0.7	7300.4	0.4
26Feb2019	08:18	1.9	0.7	7300.4	0.4
26Feb2019	08:19	1.9	0.7	7300.4	0.4
26Feb2019	08:20	1.9	0.7	7300.4	0.4
26Feb2019	08:21	1.9	0.7	7300.4	0.4
26Feb2019	08:22	1.9	0.7	7300.4	0.4
26Feb2019	08:23	2.0	0.7	7300.4	0.4
26Feb2019	08:24	2.0	0.7	7300.4	0.4
26Feb2019	08:25	2.0	0.7	7300.4	0.4
26Feb2019	08:26	2.0	0.7	7300.4	0.4
26Feb2019	08:27	2.0	0.7	7300.5	0.4
26Feb2019	08:28	2.0	0.7	7300.5	0.4
26Feb2019	08:29	2.0	0.7	7300.5	0.4
26Feb2019	08:30	2.0	0.7	7300.5	0.4
26Feb2019	08:31	2.0	0.7	7300.5	0.4
26Feb2019	08:32	2.0	0.7	7300.5	0.4
26Feb2019	08:33	2.0	0.7	7300.5	0.4
26Feb2019	08:34	2.0	0.7	7300.5	0.4
26Feb2019	08:35	2.0	0.7	7300.5	0.4
26Feb2019	08:36	2.1	0.7	7300.5	0.4
26Feb2019	08:37	2.1	0.7	7300.5	0.4
26Feb2019	08:38	2.1	0.7	7300.5	0.4
26Feb2019	08:39	2.1	0.7	7300.5	0.4
26Feb2019	08:40	2.1	0.7	7300.5	0.5
26Feb2019	08:41	2.1	0.7	7300.5	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	08:42	2.1	0.7	7300.5	0.5
26Feb2019	08:43	2.1	0.7	7300.5	0.5
26Feb2019	08:44	2.1	0.7	7300.5	0.5
26Feb2019	08:45	2.1	0.7	7300.5	0.5
26Feb2019	08:46	2.2	0.7	7300.5	0.5
26Feb2019	08:47	2.2	0.7	7300.5	0.5
26Feb2019	08:48	2.2	0.7	7300.5	0.5
26Feb2019	08:49	2.2	0.7	7300.5	0.5
26Feb2019	08:50	2.2	0.7	7300.5	0.5
26Feb2019	08:51	2.2	0.7	7300.5	0.5
26Feb2019	08:52	2.2	0.7	7300.5	0.5
26Feb2019	08:53	2.2	0.7	7300.5	0.5
26Feb2019	08:54	2.3	0.7	7300.5	0.5
26Feb2019	08:55	2.3	0.7	7300.5	0.5
26Feb2019	08:56	2.3	0.7	7300.5	0.5
26Feb2019	08:57	2.3	0.8	7300.5	0.5
26Feb2019	08:58	2.3	0.8	7300.5	0.5
26Feb2019	08:59	2.3	0.8	7300.5	0.5
26Feb2019	09:00	2.3	0.8	7300.5	0.5
26Feb2019	09:01	2.4	0.8	7300.5	0.5
26Feb2019	09:02	2.4	0.8	7300.5	0.5
26Feb2019	09:03	2.4	0.8	7300.5	0.5
26Feb2019	09:04	2.4	0.8	7300.5	0.5
26Feb2019	09:05	2.4	0.8	7300.5	0.5
26Feb2019	09:06	2.4	0.8	7300.5	0.5
26Feb2019	09:07	2.4	0.8	7300.6	0.5
26Feb2019	09:08	2.4	0.8	7300.6	0.5
26Feb2019	09:09	2.5	0.8	7300.6	0.5
26Feb2019	09:10	2.5	0.8	7300.6	0.5
26Feb2019	09:11	2.5	0.8	7300.6	0.5
26Feb2019	09:12	2.5	0.8	7300.6	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	09:13	2.5	0.8	7300.6	0.5
26Feb2019	09:14	2.5	0.8	7300.6	0.5
26Feb2019	09:15	2.5	0.8	7300.6	0.5
26Feb2019	09:16	2.6	0.8	7300.6	0.5
26Feb2019	09:17	2.6	0.8	7300.6	0.5
26Feb2019	09:18	2.6	0.8	7300.6	0.5
26Feb2019	09:19	2.6	0.8	7300.6	0.5
26Feb2019	09:20	2.6	0.8	7300.6	0.5
26Feb2019	09:21	2.6	0.8	7300.6	0.5
26Feb2019	09:22	2.6	0.8	7300.6	0.5
26Feb2019	09:23	2.6	0.8	7300.6	0.5
26Feb2019	09:24	2.7	0.8	7300.6	0.5
26Feb2019	09:25	2.7	0.8	7300.6	0.5
26Feb2019	09:26	2.7	0.8	7300.6	0.5
26Feb2019	09:27	2.7	0.8	7300.6	0.5
26Feb2019	09:28	2.7	0.8	7300.6	0.5
26Feb2019	09:29	2.7	0.8	7300.6	0.5
26Feb2019	09:30	2.7	0.8	7300.6	0.5
26Feb2019	09:31	2.7	0.8	7300.6	0.5
26Feb2019	09:32	2.7	0.8	7300.6	0.5
26Feb2019	09:33	2.7	0.9	7300.6	0.5
26Feb2019	09:34	2.7	0.9	7300.6	0.5
26Feb2019	09:35	2.8	0.9	7300.6	0.5
26Feb2019	09:36	2.8	0.9	7300.6	0.5
26Feb2019	09:37	2.8	0.9	7300.6	0.5
26Feb2019	09:38	2.8	0.9	7300.6	0.5
26Feb2019	09:39	2.8	0.9	7300.6	0.5
26Feb2019	09:40	2.8	0.9	7300.6	0.5
26Feb2019	09:41	2.8	0.9	7300.6	0.5
26Feb2019	09:42	2.8	0.9	7300.6	0.5
26Feb2019	09:43	2.8	0.9	7300.7	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	09:44	2.8	0.9	7300.7	0.5
26Feb2019	09:45	2.8	0.9	7300.7	0.5
26Feb2019	09:46	2.8	0.9	7300.7	0.5
26Feb2019	09:47	2.8	0.9	7300.7	0.5
26Feb2019	09:48	2.8	0.9	7300.7	0.5
26Feb2019	09:49	2.9	0.9	7300.7	0.5
26Feb2019	09:50	2.9	0.9	7300.7	0.5
26Feb2019	09:51	2.9	0.9	7300.7	0.5
26Feb2019	09:52	2.9	0.9	7300.7	0.5
26Feb2019	09:53	2.9	0.9	7300.7	0.5
26Feb2019	09:54	2.9	0.9	7300.7	0.5
26Feb2019	09:55	2.9	0.9	7300.7	0.5
26Feb2019	09:56	2.9	0.9	7300.7	0.5
26Feb2019	09:57	2.9	0.9	7300.7	0.5
26Feb2019	09:58	2.9	0.9	7300.7	0.5
26Feb2019	09:59	2.9	0.9	7300.7	0.5
26Feb2019	10:00	3.0	0.9	7300.7	0.5
26Feb2019	10:01	3.0	0.9	7300.7	0.5
26Feb2019	10:02	3.0	0.9	7300.7	0.5
26Feb2019	10:03	3.0	0.9	7300.7	0.5
26Feb2019	10:04	3.0	1.0	7300.7	0.5
26Feb2019	10:05	3.0	1.0	7300.7	0.5
26Feb2019	10:06	3.0	1.0	7300.7	0.5
26Feb2019	10:07	3.0	1.0	7300.7	0.5
26Feb2019	10:08	3.1	1.0	7300.7	0.5
26Feb2019	10:09	3.1	1.0	7300.7	0.5
26Feb2019	10:10	3.1	1.0	7300.7	0.5
26Feb2019	10:11	3.1	1.0	7300.7	0.5
26Feb2019	10:12	3.1	1.0	7300.7	0.5
26Feb2019	10:13	3.2	1.0	7300.7	0.5
26Feb2019	10:14	3.2	1.0	7300.8	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	10:15	3.2	1.0	7300.8	0.6
26Feb2019	10:16	3.2	1.0	7300.8	0.6
26Feb2019	10:17	3.2	1.0	7300.8	0.6
26Feb2019	10:18	3.3	1.0	7300.8	0.6
26Feb2019	10:19	3.3	1.0	7300.8	0.6
26Feb2019	10:20	3.3	1.0	7300.8	0.6
26Feb2019	10:21	3.3	1.0	7300.8	0.6
26Feb2019	10:22	3.3	1.0	7300.8	0.6
26Feb2019	10:23	3.4	1.0	7300.8	0.6
26Feb2019	10:24	3.4	1.0	7300.8	0.6
26Feb2019	10:25	3.4	1.0	7300.8	0.6
26Feb2019	10:26	3.4	1.0	7300.8	0.6
26Feb2019	10:27	3.5	1.0	7300.8	0.6
26Feb2019	10:28	3.5	1.0	7300.8	0.6
26Feb2019	10:29	3.5	1.0	7300.8	0.6
26Feb2019	10:30	3.5	1.0	7300.8	0.6
26Feb2019	10:31	3.6	1.1	7300.8	0.6
26Feb2019	10:32	3.6	1.1	7300.8	0.6
26Feb2019	10:33	3.6	1.1	7300.8	0.6
26Feb2019	10:34	3.7	1.1	7300.8	0.6
26Feb2019	10:35	3.7	1.1	7300.8	0.6
26Feb2019	10:36	3.7	1.1	7300.8	0.6
26Feb2019	10:37	3.8	1.1	7300.8	0.6
26Feb2019	10:38	3.8	1.1	7300.8	0.6
26Feb2019	10:39	3.8	1.1	7300.8	0.6
26Feb2019	10:40	3.9	1.1	7300.8	0.6
26Feb2019	10:41	3.9	1.1	7300.8	0.6
26Feb2019	10:42	3.9	1.1	7300.8	0.6
26Feb2019	10:43	4.0	1.1	7300.8	0.6
26Feb2019	10:44	4.0	1.1	7300.9	0.6
26Feb2019	10:45	4.0	1.1	7300.9	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	10:46	4.1	1.1	7300.9	0.6
26Feb2019	10:47	4.1	1.1	7300.9	0.6
26Feb2019	10:48	4.1	1.1	7300.9	0.6
26Feb2019	10:49	4.2	1.1	7300.9	0.6
26Feb2019	10:50	4.2	1.1	7300.9	0.6
26Feb2019	10:51	4.3	1.1	7300.9	0.6
26Feb2019	10:52	4.3	1.1	7300.9	0.6
26Feb2019	10:53	4.3	1.2	7300.9	0.6
26Feb2019	10:54	4.4	1.2	7300.9	0.6
26Feb2019	10:55	4.4	1.2	7300.9	0.6
26Feb2019	10:56	4.5	1.2	7300.9	0.6
26Feb2019	10:57	4.5	1.2	7300.9	0.6
26Feb2019	10:58	4.6	1.2	7300.9	0.6
26Feb2019	10:59	4.6	1.2	7300.9	0.6
26Feb2019	11:00	4.7	1.2	7300.9	0.6
26Feb2019	11:01	4.7	1.2	7300.9	0.6
26Feb2019	11:02	4.7	1.2	7300.9	0.6
26Feb2019	11:03	4.8	1.2	7300.9	0.6
26Feb2019	11:04	4.8	1.2	7300.9	0.6
26Feb2019	11:05	4.9	1.2	7300.9	0.6
26Feb2019	11:06	5.0	1.2	7300.9	0.6
26Feb2019	11:07	5.0	1.2	7301.0	0.6
26Feb2019	11:08	5.1	1.2	7301.0	0.6
26Feb2019	11:09	5.1	1.2	7301.0	0.6
26Feb2019	11:10	5.2	1.3	7301.0	0.6
26Feb2019	11:11	5.2	1.3	7301.0	0.6
26Feb2019	11:12	5.3	1.3	7301.0	0.6
26Feb2019	11:13	5.4	1.3	7301.0	0.6
26Feb2019	11:14	5.4	1.3	7301.0	0.6
26Feb2019	11:15	5.5	1.3	7301.0	0.6
26Feb2019	11:16	5.6	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	11:17	5.6	1.3	7301.0	0.6
26Feb2019	11:18	5.7	1.3	7301.0	0.6
26Feb2019	11:19	5.8	1.3	7301.0	0.6
26Feb2019	11:20	5.9	1.3	7301.0	0.6
26Feb2019	11:21	5.9	1.3	7301.0	0.6
26Feb2019	11:22	6.0	1.3	7301.0	0.6
26Feb2019	11:23	6.1	1.3	7301.0	0.6
26Feb2019	11:24	6.2	1.3	7301.0	0.6
26Feb2019	11:25	6.3	1.4	7301.0	0.6
26Feb2019	11:26	6.4	1.4	7301.1	0.6
26Feb2019	11:27	6.5	1.4	7301.1	0.6
26Feb2019	11:28	6.5	1.4	7301.1	0.6
26Feb2019	11:29	6.6	1.4	7301.1	0.6
26Feb2019	11:30	6.7	1.4	7301.1	0.6
26Feb2019	11:31	6.9	1.4	7301.1	0.6
26Feb2019	11:32	7.0	1.4	7301.1	0.6
26Feb2019	11:33	7.1	1.4	7301.1	0.6
26Feb2019	11:34	7.3	1.4	7301.1	0.6
26Feb2019	11:35	7.5	1.4	7301.1	0.6
26Feb2019	11:36	7.7	1.5	7301.1	0.6
26Feb2019	11:37	7.9	1.5	7301.1	0.6
26Feb2019	11:38	8.2	1.5	7301.1	0.7
26Feb2019	11:39	8.5	1.5	7301.1	0.7
26Feb2019	11:40	8.9	1.5	7301.1	0.7
26Feb2019	11:41	9.3	1.5	7301.2	0.7
26Feb2019	11:42	9.7	1.5	7301.2	0.7
26Feb2019	11:43	10.2	1.5	7301.2	0.7
26Feb2019	11:44	10.8	1.5	7301.2	0.7
26Feb2019	11:45	11.4	1.6	7301.2	0.7
26Feb2019	11:46	12.1	1.6	7301.2	0.7
26Feb2019	11:47	12.9	1.6	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	11:48	13.7	1.6	7301.2	0.7
26Feb2019	11:49	14.8	1.6	7301.2	0.7
26Feb2019	11:50	16.2	1.6	7301.3	0.7
26Feb2019	11:51	18.0	1.7	7301.3	0.7
26Feb2019	11:52	20.6	1.7	7301.3	0.8
26Feb2019	11:53	24.1	1.7	7301.3	0.8
26Feb2019	11:54	28.5	1.8	7301.3	0.9
26Feb2019	11:55	33.6	1.8	7301.4	1.0
26Feb2019	11:56	39.3	1.8	7301.4	1.1
26Feb2019	11:57	45.6	1.9	7301.4	1.2
26Feb2019	11:58	52.3	2.0	7301.5	1.3
26Feb2019	11:59	59.3	2.0	7301.5	1.6
26Feb2019	12:00	67.1	2.1	7301.6	2.3
26Feb2019	12:01	75.5	2.2	7301.6	3.1
26Feb2019	12:02	84.5	2.3	7301.7	4.0
26Feb2019	12:03	94.4	2.4	7301.8	5.0
26Feb2019	12:04	105.0	2.6	7301.8	6.6
26Feb2019	12:05	115.6	2.7	7301.9	8.3
26Feb2019	12:06	125.9	2.9	7302.0	10.2
26Feb2019	12:07	135.0	3.0	7302.1	12.7
26Feb2019	12:08	142.6	3.2	7302.2	15.3
26Feb2019	12:09	149.0	3.4	7302.3	18.1
26Feb2019	12:10	154.0	3.6	7302.3	21.5
26Feb2019	12:11	157.8	3.7	7302.4	24.9
26Feb2019	12:12	160.1	3.9	7302.5	28.5
26Feb2019	12:13	160.9	4.1	7302.6	32.4
26Feb2019	12:14	160.3	4.3	7302.7	36.2
26Feb2019	12:15	158.5	4.5	7302.8	39.9
26Feb2019	12:16	155.8	4.6	7302.8	43.6
26Feb2019	12:17	152.3	4.8	7302.9	47.2
26Feb2019	12:18	148.2	4.9	7303.0	50.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	12:19	143.5	5.0	7303.0	53.7
26Feb2019	12:20	138.3	5.1	7303.1	56.7
26Feb2019	12:21	132.8	5.3	7303.1	59.4
26Feb2019	12:22	127.0	5.3	7303.2	61.8
26Feb2019	12:23	121.1	5.4	7303.2	64.0
26Feb2019	12:24	115.3	5.5	7303.2	65.8
26Feb2019	12:25	109.5	5.6	7303.3	67.6
26Feb2019	12:26	103.8	5.6	7303.3	69.3
26Feb2019	12:27	98.2	5.7	7303.3	70.8
26Feb2019	12:28	92.9	5.7	7303.3	71.7
26Feb2019	12:29	87.8	5.7	7303.3	72.4
26Feb2019	12:30	82.9	5.7	7303.3	72.9
26Feb2019	12:31	78.4	5.8	7303.3	73.2
26Feb2019	12:32	74.1	5.8	7303.3	73.4
26Feb2019	12:33	70.1	5.8	7303.3	73.3
26Feb2019	12:34	66.3	5.7	7303.3	73.1
26Feb2019	12:35	62.7	5.7	7303.3	72.8
26Feb2019	12:36	59.4	5.7	7303.3	72.3
26Feb2019	12:37	56.2	5.7	7303.3	71.8
26Feb2019	12:38	53.2	5.7	7303.3	71.1
26Feb2019	12:39	50.3	5.7	7303.3	70.3
26Feb2019	12:40	47.6	5.6	7303.3	69.3
26Feb2019	12:41	45.1	5.6	7303.3	68.3
26Feb2019	12:42	42.6	5.6	7303.3	67.2
26Feb2019	12:43	40.4	5.5	7303.2	66.3
26Feb2019	12:44	38.2	5.5	7303.2	65.3
26Feb2019	12:45	36.2	5.4	7303.2	64.4
26Feb2019	12:46	34.3	5.4	7303.2	63.4
26Feb2019	12:47	32.5	5.4	7303.2	62.3
26Feb2019	12:48	30.8	5.3	7303.2	61.3
26Feb2019	12:49	29.2	5.3	7303.1	60.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	12:50	27.7	5.2	7303.1	59.1
26Feb2019	12:51	26.3	5.2	7303.1	58.0
26Feb2019	12:52	25.0	5.2	7303.1	56.9
26Feb2019	12:53	23.8	5.1	7303.1	55.7
26Feb2019	12:54	22.7	5.1	7303.0	54.6
26Feb2019	12:55	21.6	5.0	7303.0	53.5
26Feb2019	12:56	20.7	5.0	7303.0	52.4
26Feb2019	12:57	19.8	4.9	7303.0	51.3
26Feb2019	12:58	18.9	4.9	7303.0	50.3
26Feb2019	12:59	18.1	4.8	7302.9	49.3
26Feb2019	13:00	17.4	4.8	7302.9	48.3
26Feb2019	13:01	16.7	4.8	7302.9	47.3
26Feb2019	13:02	16.0	4.7	7302.9	46.3
26Feb2019	13:03	15.4	4.7	7302.9	45.3
26Feb2019	13:04	14.8	4.6	7302.8	44.3
26Feb2019	13:05	14.3	4.6	7302.8	43.4
26Feb2019	13:06	13.7	4.6	7302.8	42.4
26Feb2019	13:07	13.3	4.5	7302.8	41.5
26Feb2019	13:08	12.8	4.5	7302.8	40.6
26Feb2019	13:09	12.4	4.4	7302.8	39.7
26Feb2019	13:10	12.0	4.4	7302.7	38.8
26Feb2019	13:11	11.6	4.4	7302.7	38.0
26Feb2019	13:12	11.2	4.3	7302.7	37.2
26Feb2019	13:13	10.8	4.3	7302.7	36.5
26Feb2019	13:14	10.5	4.3	7302.7	35.7
26Feb2019	13:15	10.2	4.2	7302.7	35.0
26Feb2019	13:16	9.9	4.2	7302.6	34.2
26Feb2019	13:17	9.6	4.2	7302.6	33.5
26Feb2019	13:18	9.4	4.1	7302.6	32.8
26Feb2019	13:19	9.1	4.1	7302.6	32.1
26Feb2019	13:20	8.9	4.1	7302.6	31.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	13:21	8.6	4.0	7302.6	30.7
26Feb2019	13:22	8.4	4.0	7302.6	30.1
26Feb2019	13:23	8.2	4.0	7302.5	29.4
26Feb2019	13:24	8.0	3.9	7302.5	28.8
26Feb2019	13:25	7.8	3.9	7302.5	28.2
26Feb2019	13:26	7.6	3.9	7302.5	27.6
26Feb2019	13:27	7.5	3.9	7302.5	27.1
26Feb2019	13:28	7.3	3.8	7302.5	26.6
26Feb2019	13:29	7.2	3.8	7302.5	26.1
26Feb2019	13:30	7.0	3.8	7302.4	25.6
26Feb2019	13:31	6.9	3.8	7302.4	25.1
26Feb2019	13:32	6.7	3.7	7302.4	24.6
26Feb2019	13:33	6.6	3.7	7302.4	24.2
26Feb2019	13:34	6.5	3.7	7302.4	23.7
26Feb2019	13:35	6.4	3.7	7302.4	23.3
26Feb2019	13:36	6.3	3.6	7302.4	22.9
26Feb2019	13:37	6.2	3.6	7302.4	22.4
26Feb2019	13:38	6.1	3.6	7302.4	22.0
26Feb2019	13:39	6.0	3.6	7302.3	21.6
26Feb2019	13:40	5.9	3.6	7302.3	21.2
26Feb2019	13:41	5.8	3.5	7302.3	20.8
26Feb2019	13:42	5.7	3.5	7302.3	20.4
26Feb2019	13:43	5.7	3.5	7302.3	20.1
26Feb2019	13:44	5.6	3.5	7302.3	19.7
26Feb2019	13:45	5.5	3.5	7302.3	19.3
26Feb2019	13:46	5.4	3.4	7302.3	19.0
26Feb2019	13:47	5.4	3.4	7302.3	18.6
26Feb2019	13:48	5.3	3.4	7302.3	18.3
26Feb2019	13:49	5.2	3.4	7302.2	18.0
26Feb2019	13:50	5.2	3.4	7302.2	17.7
26Feb2019	13:51	5.1	3.3	7302.2	17.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	13:52	5.0	3.3	7302.2	17.2
26Feb2019	13:53	5.0	3.3	7302.2	16.9
26Feb2019	13:54	4.9	3.3	7302.2	16.7
26Feb2019	13:55	4.9	3.3	7302.2	16.4
26Feb2019	13:56	4.8	3.3	7302.2	16.2
26Feb2019	13:57	4.8	3.2	7302.2	15.9
26Feb2019	13:58	4.7	3.2	7302.2	15.7
26Feb2019	13:59	4.7	3.2	7302.2	15.5
26Feb2019	14:00	4.6	3.2	7302.2	15.2
26Feb2019	14:01	4.6	3.2	7302.1	15.0
26Feb2019	14:02	4.5	3.2	7302.1	14.8
26Feb2019	14:03	4.5	3.2	7302.1	14.6
26Feb2019	14:04	4.4	3.1	7302.1	14.4
26Feb2019	14:05	4.4	3.1	7302.1	14.1
26Feb2019	14:06	4.3	3.1	7302.1	13.9
26Feb2019	14:07	4.3	3.1	7302.1	13.7
26Feb2019	14:08	4.2	3.1	7302.1	13.5
26Feb2019	14:09	4.2	3.1	7302.1	13.3
26Feb2019	14:10	4.2	3.1	7302.1	13.1
26Feb2019	14:11	4.1	3.1	7302.1	12.9
26Feb2019	14:12	4.1	3.0	7302.1	12.8
26Feb2019	14:13	4.0	3.0	7302.1	12.6
26Feb2019	14:14	4.0	3.0	7302.1	12.4
26Feb2019	14:15	4.0	3.0	7302.1	12.2
26Feb2019	14:16	3.9	3.0	7302.0	12.0
26Feb2019	14:17	3.9	3.0	7302.0	11.9
26Feb2019	14:18	3.9	3.0	7302.0	11.7
26Feb2019	14:19	3.8	3.0	7302.0	11.5
26Feb2019	14:20	3.8	3.0	7302.0	11.4
26Feb2019	14:21	3.8	2.9	7302.0	11.2
26Feb2019	14:22	3.8	2.9	7302.0	11.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	14:23	3.7	2.9	7302.0	10.9
26Feb2019	14:24	3.7	2.9	7302.0	10.7
26Feb2019	14:25	3.7	2.9	7302.0	10.6
26Feb2019	14:26	3.6	2.9	7302.0	10.5
26Feb2019	14:27	3.6	2.9	7302.0	10.4
26Feb2019	14:28	3.6	2.9	7302.0	10.2
26Feb2019	14:29	3.6	2.9	7302.0	10.1
26Feb2019	14:30	3.6	2.9	7302.0	10.0
26Feb2019	14:31	3.5	2.8	7302.0	9.9
26Feb2019	14:32	3.5	2.8	7302.0	9.8
26Feb2019	14:33	3.5	2.8	7302.0	9.7
26Feb2019	14:34	3.5	2.8	7302.0	9.6
26Feb2019	14:35	3.4	2.8	7302.0	9.5
26Feb2019	14:36	3.4	2.8	7301.9	9.4
26Feb2019	14:37	3.4	2.8	7301.9	9.3
26Feb2019	14:38	3.4	2.8	7301.9	9.2
26Feb2019	14:39	3.4	2.8	7301.9	9.1
26Feb2019	14:40	3.4	2.8	7301.9	9.0
26Feb2019	14:41	3.3	2.8	7301.9	8.9
26Feb2019	14:42	3.3	2.8	7301.9	8.8
26Feb2019	14:43	3.3	2.8	7301.9	8.7
26Feb2019	14:44	3.3	2.7	7301.9	8.6
26Feb2019	14:45	3.3	2.7	7301.9	8.5
26Feb2019	14:46	3.3	2.7	7301.9	8.4
26Feb2019	14:47	3.2	2.7	7301.9	8.4
26Feb2019	14:48	3.2	2.7	7301.9	8.3
26Feb2019	14:49	3.2	2.7	7301.9	8.2
26Feb2019	14:50	3.2	2.7	7301.9	8.1
26Feb2019	14:51	3.2	2.7	7301.9	8.0
26Feb2019	14:52	3.2	2.7	7301.9	7.9
26Feb2019	14:53	3.2	2.7	7301.9	7.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	14:54	3.2	2.7	7301.9	7.8
26Feb2019	14:55	3.1	2.7	7301.9	7.7
26Feb2019	14:56	3.1	2.7	7301.9	7.6
26Feb2019	14:57	3.1	2.7	7301.9	7.6
26Feb2019	14:58	3.1	2.6	7301.9	7.5
26Feb2019	14:59	3.1	2.6	7301.9	7.4
26Feb2019	15:00	3.1	2.6	7301.9	7.3
26Feb2019	15:01	3.1	2.6	7301.9	7.3
26Feb2019	15:02	3.1	2.6	7301.9	7.2
26Feb2019	15:03	3.0	2.6	7301.8	7.1
26Feb2019	15:04	3.0	2.6	7301.8	7.1
26Feb2019	15:05	3.0	2.6	7301.8	7.0
26Feb2019	15:06	3.0	2.6	7301.8	6.9
26Feb2019	15:07	3.0	2.6	7301.8	6.9
26Feb2019	15:08	3.0	2.6	7301.8	6.8
26Feb2019	15:09	3.0	2.6	7301.8	6.7
26Feb2019	15:10	3.0	2.6	7301.8	6.7
26Feb2019	15:11	2.9	2.6	7301.8	6.6
26Feb2019	15:12	2.9	2.6	7301.8	6.5
26Feb2019	15:13	2.9	2.6	7301.8	6.5
26Feb2019	15:14	2.9	2.6	7301.8	6.4
26Feb2019	15:15	2.9	2.6	7301.8	6.4
26Feb2019	15:16	2.9	2.6	7301.8	6.3
26Feb2019	15:17	2.9	2.5	7301.8	6.2
26Feb2019	15:18	2.9	2.5	7301.8	6.2
26Feb2019	15:19	2.9	2.5	7301.8	6.1
26Feb2019	15:20	2.9	2.5	7301.8	6.1
26Feb2019	15:21	2.8	2.5	7301.8	6.0
26Feb2019	15:22	2.8	2.5	7301.8	6.0
26Feb2019	15:23	2.8	2.5	7301.8	5.9
26Feb2019	15:24	2.8	2.5	7301.8	5.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	15:25	2.8	2.5	7301.8	5.8
26Feb2019	15:26	2.8	2.5	7301.8	5.8
26Feb2019	15:27	2.8	2.5	7301.8	5.7
26Feb2019	15:28	2.8	2.5	7301.8	5.7
26Feb2019	15:29	2.8	2.5	7301.8	5.6
26Feb2019	15:30	2.7	2.5	7301.8	5.6
26Feb2019	15:31	2.7	2.5	7301.8	5.5
26Feb2019	15:32	2.7	2.5	7301.8	5.5
26Feb2019	15:33	2.7	2.5	7301.8	5.4
26Feb2019	15:34	2.7	2.5	7301.8	5.4
26Feb2019	15:35	2.7	2.5	7301.8	5.3
26Feb2019	15:36	2.7	2.5	7301.8	5.3
26Feb2019	15:37	2.7	2.5	7301.8	5.2
26Feb2019	15:38	2.7	2.5	7301.8	5.2
26Feb2019	15:39	2.7	2.5	7301.8	5.2
26Feb2019	15:40	2.6	2.5	7301.8	5.1
26Feb2019	15:41	2.6	2.5	7301.8	5.1
26Feb2019	15:42	2.6	2.5	7301.8	5.0
26Feb2019	15:43	2.6	2.4	7301.8	5.0
26Feb2019	15:44	2.6	2.4	7301.7	5.0
26Feb2019	15:45	2.6	2.4	7301.7	4.9
26Feb2019	15:46	2.6	2.4	7301.7	4.9
26Feb2019	15:47	2.6	2.4	7301.7	4.9
26Feb2019	15:48	2.6	2.4	7301.7	4.9
26Feb2019	15:49	2.5	2.4	7301.7	4.8
26Feb2019	15:50	2.5	2.4	7301.7	4.8
26Feb2019	15:51	2.5	2.4	7301.7	4.8
26Feb2019	15:52	2.5	2.4	7301.7	4.7
26Feb2019	15:53	2.5	2.4	7301.7	4.7
26Feb2019	15:54	2.5	2.4	7301.7	4.7
26Feb2019	15:55	2.5	2.4	7301.7	4.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	15:56	2.5	2.4	7301.7	4.6
26Feb2019	15:57	2.5	2.4	7301.7	4.6
26Feb2019	15:58	2.5	2.4	7301.7	4.6
26Feb2019	15:59	2.4	2.4	7301.7	4.6
26Feb2019	16:00	2.4	2.4	7301.7	4.5
26Feb2019	16:01	2.4	2.4	7301.7	4.5
26Feb2019	16:02	2.4	2.4	7301.7	4.5
26Feb2019	16:03	2.4	2.4	7301.7	4.5
26Feb2019	16:04	2.4	2.4	7301.7	4.5
26Feb2019	16:05	2.4	2.4	7301.7	4.4
26Feb2019	16:06	2.4	2.4	7301.7	4.4
26Feb2019	16:07	2.4	2.4	7301.7	4.4
26Feb2019	16:08	2.4	2.4	7301.7	4.4
26Feb2019	16:09	2.3	2.4	7301.7	4.3
26Feb2019	16:10	2.3	2.4	7301.7	4.3
26Feb2019	16:11	2.3	2.4	7301.7	4.3
26Feb2019	16:12	2.3	2.4	7301.7	4.3
26Feb2019	16:13	2.3	2.4	7301.7	4.2
26Feb2019	16:14	2.3	2.4	7301.7	4.2
26Feb2019	16:15	2.3	2.4	7301.7	4.2
26Feb2019	16:16	2.3	2.4	7301.7	4.2
26Feb2019	16:17	2.3	2.3	7301.7	4.2
26Feb2019	16:18	2.3	2.3	7301.7	4.1
26Feb2019	16:19	2.2	2.3	7301.7	4.1
26Feb2019	16:20	2.2	2.3	7301.7	4.1
26Feb2019	16:21	2.2	2.3	7301.7	4.1
26Feb2019	16:22	2.2	2.3	7301.7	4.0
26Feb2019	16:23	2.2	2.3	7301.7	4.0
26Feb2019	16:24	2.2	2.3	7301.7	4.0
26Feb2019	16:25	2.2	2.3	7301.7	4.0
26Feb2019	16:26	2.2	2.3	7301.7	4.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	16:27	2.2	2.3	7301.7	3.9
26Feb2019	16:28	2.2	2.3	7301.7	3.9
26Feb2019	16:29	2.2	2.3	7301.7	3.9
26Feb2019	16:30	2.2	2.3	7301.7	3.9
26Feb2019	16:31	2.1	2.3	7301.7	3.9
26Feb2019	16:32	2.1	2.3	7301.7	3.8
26Feb2019	16:33	2.1	2.3	7301.7	3.8
26Feb2019	16:34	2.1	2.3	7301.7	3.8
26Feb2019	16:35	2.1	2.3	7301.7	3.8
26Feb2019	16:36	2.1	2.3	7301.7	3.8
26Feb2019	16:37	2.1	2.3	7301.7	3.7
26Feb2019	16:38	2.1	2.3	7301.7	3.7
26Feb2019	16:39	2.1	2.3	7301.7	3.7
26Feb2019	16:40	2.1	2.3	7301.7	3.7
26Feb2019	16:41	2.1	2.3	7301.7	3.7
26Feb2019	16:42	2.1	2.3	7301.7	3.7
26Feb2019	16:43	2.1	2.3	7301.7	3.6
26Feb2019	16:44	2.1	2.3	7301.7	3.6
26Feb2019	16:45	2.1	2.3	7301.7	3.6
26Feb2019	16:46	2.1	2.3	7301.7	3.6
26Feb2019	16:47	2.0	2.3	7301.7	3.6
26Feb2019	16:48	2.0	2.3	7301.6	3.6
26Feb2019	16:49	2.0	2.3	7301.6	3.5
26Feb2019	16:50	2.0	2.3	7301.6	3.5
26Feb2019	16:51	2.0	2.3	7301.6	3.5
26Feb2019	16:52	2.0	2.3	7301.6	3.5
26Feb2019	16:53	2.0	2.3	7301.6	3.5
26Feb2019	16:54	2.0	2.3	7301.6	3.4
26Feb2019	16:55	2.0	2.3	7301.6	3.4
26Feb2019	16:56	2.0	2.3	7301.6	3.4
26Feb2019	16:57	2.0	2.3	7301.6	3.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	16:58	2.0	2.3	7301.6	3.4
26Feb2019	16:59	2.0	2.3	7301.6	3.4
26Feb2019	17:00	2.0	2.3	7301.6	3.4
26Feb2019	17:01	2.0	2.2	7301.6	3.3
26Feb2019	17:02	2.0	2.2	7301.6	3.3
26Feb2019	17:03	2.0	2.2	7301.6	3.3
26Feb2019	17:04	2.0	2.2	7301.6	3.3
26Feb2019	17:05	2.0	2.2	7301.6	3.3
26Feb2019	17:06	2.0	2.2	7301.6	3.3
26Feb2019	17:07	2.0	2.2	7301.6	3.2
26Feb2019	17:08	1.9	2.2	7301.6	3.2
26Feb2019	17:09	1.9	2.2	7301.6	3.2
26Feb2019	17:10	1.9	2.2	7301.6	3.2
26Feb2019	17:11	1.9	2.2	7301.6	3.2
26Feb2019	17:12	1.9	2.2	7301.6	3.2
26Feb2019	17:13	1.9	2.2	7301.6	3.2
26Feb2019	17:14	1.9	2.2	7301.6	3.1
26Feb2019	17:15	1.9	2.2	7301.6	3.1
26Feb2019	17:16	1.9	2.2	7301.6	3.1
26Feb2019	17:17	1.9	2.2	7301.6	3.1
26Feb2019	17:18	1.9	2.2	7301.6	3.1
26Feb2019	17:19	1.9	2.2	7301.6	3.1
26Feb2019	17:20	1.9	2.2	7301.6	3.1
26Feb2019	17:21	1.9	2.2	7301.6	3.0
26Feb2019	17:22	1.9	2.2	7301.6	3.0
26Feb2019	17:23	1.9	2.2	7301.6	3.0
26Feb2019	17:24	1.9	2.2	7301.6	3.0
26Feb2019	17:25	1.9	2.2	7301.6	3.0
26Feb2019	17:26	1.9	2.2	7301.6	3.0
26Feb2019	17:27	1.9	2.2	7301.6	3.0
26Feb2019	17:28	1.9	2.2	7301.6	3.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	17:29	1.9	2.2	7301.6	2.9
26Feb2019	17:30	1.9	2.2	7301.6	2.9
26Feb2019	17:31	1.9	2.2	7301.6	2.9
26Feb2019	17:32	1.9	2.2	7301.6	2.9
26Feb2019	17:33	1.9	2.2	7301.6	2.9
26Feb2019	17:34	1.8	2.2	7301.6	2.9
26Feb2019	17:35	1.8	2.2	7301.6	2.9
26Feb2019	17:36	1.8	2.2	7301.6	2.9
26Feb2019	17:37	1.8	2.2	7301.6	2.8
26Feb2019	17:38	1.8	2.2	7301.6	2.8
26Feb2019	17:39	1.8	2.2	7301.6	2.8
26Feb2019	17:40	1.8	2.2	7301.6	2.8
26Feb2019	17:41	1.8	2.2	7301.6	2.8
26Feb2019	17:42	1.8	2.2	7301.6	2.8
26Feb2019	17:43	1.8	2.2	7301.6	2.8
26Feb2019	17:44	1.8	2.2	7301.6	2.8
26Feb2019	17:45	1.8	2.2	7301.6	2.8
26Feb2019	17:46	1.8	2.2	7301.6	2.7
26Feb2019	17:47	1.8	2.2	7301.6	2.7
26Feb2019	17:48	1.8	2.2	7301.6	2.7
26Feb2019	17:49	1.8	2.2	7301.6	2.7
26Feb2019	17:50	1.8	2.2	7301.6	2.7
26Feb2019	17:51	1.8	2.2	7301.6	2.7
26Feb2019	17:52	1.8	2.2	7301.6	2.7
26Feb2019	17:53	1.8	2.2	7301.6	2.7
26Feb2019	17:54	1.8	2.2	7301.6	2.7
26Feb2019	17:55	1.8	2.2	7301.6	2.7
26Feb2019	17:56	1.8	2.2	7301.6	2.6
26Feb2019	17:57	1.8	2.2	7301.6	2.6
26Feb2019	17:58	1.8	2.2	7301.6	2.6
26Feb2019	17:59	1.8	2.2	7301.6	2.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	18:00	1.8	2.2	7301.6	2.6
26Feb2019	18:01	1.7	2.2	7301.6	2.6
26Feb2019	18:02	1.7	2.2	7301.6	2.6
26Feb2019	18:03	1.7	2.2	7301.6	2.6
26Feb2019	18:04	1.7	2.2	7301.6	2.6
26Feb2019	18:05	1.7	2.2	7301.6	2.6
26Feb2019	18:06	1.7	2.2	7301.6	2.5
26Feb2019	18:07	1.7	2.2	7301.6	2.5
26Feb2019	18:08	1.7	2.2	7301.6	2.5
26Feb2019	18:09	1.7	2.2	7301.6	2.5
26Feb2019	18:10	1.7	2.2	7301.6	2.5
26Feb2019	18:11	1.7	2.1	7301.6	2.5
26Feb2019	18:12	1.7	2.1	7301.6	2.5
26Feb2019	18:13	1.7	2.1	7301.6	2.5
26Feb2019	18:14	1.7	2.1	7301.6	2.5
26Feb2019	18:15	1.7	2.1	7301.6	2.5
26Feb2019	18:16	1.7	2.1	7301.6	2.5
26Feb2019	18:17	1.7	2.1	7301.6	2.4
26Feb2019	18:18	1.7	2.1	7301.6	2.4
26Feb2019	18:19	1.7	2.1	7301.6	2.4
26Feb2019	18:20	1.7	2.1	7301.6	2.4
26Feb2019	18:21	1.7	2.1	7301.6	2.4
26Feb2019	18:22	1.7	2.1	7301.6	2.4
26Feb2019	18:23	1.7	2.1	7301.6	2.4
26Feb2019	18:24	1.7	2.1	7301.6	2.4
26Feb2019	18:25	1.7	2.1	7301.6	2.4
26Feb2019	18:26	1.7	2.1	7301.6	2.4
26Feb2019	18:27	1.7	2.1	7301.6	2.4
26Feb2019	18:28	1.6	2.1	7301.6	2.4
26Feb2019	18:29	1.6	2.1	7301.6	2.3
26Feb2019	18:30	1.6	2.1	7301.6	2.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	18:31	1.6	2.1	7301.6	2.3
26Feb2019	18:32	1.6	2.1	7301.6	2.3
26Feb2019	18:33	1.6	2.1	7301.6	2.3
26Feb2019	18:34	1.6	2.1	7301.6	2.3
26Feb2019	18:35	1.6	2.1	7301.6	2.3
26Feb2019	18:36	1.6	2.1	7301.6	2.3
26Feb2019	18:37	1.6	2.1	7301.6	2.3
26Feb2019	18:38	1.6	2.1	7301.6	2.3
26Feb2019	18:39	1.6	2.1	7301.6	2.3
26Feb2019	18:40	1.6	2.1	7301.6	2.3
26Feb2019	18:41	1.6	2.1	7301.6	2.3
26Feb2019	18:42	1.6	2.1	7301.6	2.2
26Feb2019	18:43	1.6	2.1	7301.6	2.2
26Feb2019	18:44	1.6	2.1	7301.6	2.2
26Feb2019	18:45	1.6	2.1	7301.6	2.2
26Feb2019	18:46	1.6	2.1	7301.6	2.2
26Feb2019	18:47	1.6	2.1	7301.6	2.2
26Feb2019	18:48	1.6	2.1	7301.6	2.2
26Feb2019	18:49	1.6	2.1	7301.6	2.2
26Feb2019	18:50	1.6	2.1	7301.6	2.2
26Feb2019	18:51	1.6	2.1	7301.6	2.2
26Feb2019	18:52	1.6	2.1	7301.6	2.2
26Feb2019	18:53	1.6	2.1	7301.6	2.2
26Feb2019	18:54	1.6	2.1	7301.6	2.2
26Feb2019	18:55	1.5	2.1	7301.5	2.2
26Feb2019	18:56	1.5	2.1	7301.5	2.1
26Feb2019	18:57	1.5	2.1	7301.5	2.1
26Feb2019	18:58	1.5	2.1	7301.5	2.1
26Feb2019	18:59	1.5	2.1	7301.5	2.1
26Feb2019	19:00	1.5	2.1	7301.5	2.1
26Feb2019	19:01	1.5	2.1	7301.5	2.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	19:02	1.5	2.1	7301.5	2.1
26Feb2019	19:03	1.5	2.1	7301.5	2.1
26Feb2019	19:04	1.5	2.1	7301.5	2.1
26Feb2019	19:05	1.5	2.1	7301.5	2.1
26Feb2019	19:06	1.5	2.1	7301.5	2.1
26Feb2019	19:07	1.5	2.1	7301.5	2.1
26Feb2019	19:08	1.5	2.1	7301.5	2.1
26Feb2019	19:09	1.5	2.1	7301.5	2.1
26Feb2019	19:10	1.5	2.1	7301.5	2.1
26Feb2019	19:11	1.5	2.1	7301.5	2.0
26Feb2019	19:12	1.5	2.1	7301.5	2.0
26Feb2019	19:13	1.5	2.1	7301.5	2.0
26Feb2019	19:14	1.5	2.1	7301.5	2.0
26Feb2019	19:15	1.5	2.1	7301.5	2.0
26Feb2019	19:16	1.5	2.1	7301.5	2.0
26Feb2019	19:17	1.5	2.1	7301.5	2.0
26Feb2019	19:18	1.5	2.1	7301.5	2.0
26Feb2019	19:19	1.5	2.1	7301.5	2.0
26Feb2019	19:20	1.5	2.1	7301.5	2.0
26Feb2019	19:21	1.5	2.1	7301.5	2.0
26Feb2019	19:22	1.4	2.1	7301.5	2.0
26Feb2019	19:23	1.4	2.1	7301.5	2.0
26Feb2019	19:24	1.4	2.1	7301.5	2.0
26Feb2019	19:25	1.4	2.1	7301.5	2.0
26Feb2019	19:26	1.4	2.1	7301.5	2.0
26Feb2019	19:27	1.4	2.1	7301.5	1.9
26Feb2019	19:28	1.4	2.1	7301.5	1.9
26Feb2019	19:29	1.4	2.1	7301.5	1.9
26Feb2019	19:30	1.4	2.1	7301.5	1.9
26Feb2019	19:31	1.4	2.1	7301.5	1.9
26Feb2019	19:32	1.4	2.1	7301.5	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	19:33	1.4	2.1	7301.5	1.9
26Feb2019	19:34	1.4	2.1	7301.5	1.9
26Feb2019	19:35	1.4	2.1	7301.5	1.9
26Feb2019	19:36	1.4	2.1	7301.5	1.9
26Feb2019	19:37	1.4	2.1	7301.5	1.9
26Feb2019	19:38	1.4	2.1	7301.5	1.9
26Feb2019	19:39	1.4	2.1	7301.5	1.9
26Feb2019	19:40	1.4	2.1	7301.5	1.9
26Feb2019	19:41	1.4	2.1	7301.5	1.9
26Feb2019	19:42	1.4	2.1	7301.5	1.9
26Feb2019	19:43	1.4	2.1	7301.5	1.9
26Feb2019	19:44	1.4	2.1	7301.5	1.8
26Feb2019	19:45	1.4	2.1	7301.5	1.8
26Feb2019	19:46	1.4	2.1	7301.5	1.8
26Feb2019	19:47	1.4	2.1	7301.5	1.8
26Feb2019	19:48	1.4	2.1	7301.5	1.8
26Feb2019	19:49	1.3	2.1	7301.5	1.8
26Feb2019	19:50	1.3	2.1	7301.5	1.8
26Feb2019	19:51	1.3	2.1	7301.5	1.8
26Feb2019	19:52	1.3	2.1	7301.5	1.8
26Feb2019	19:53	1.3	2.1	7301.5	1.8
26Feb2019	19:54	1.3	2.1	7301.5	1.8
26Feb2019	19:55	1.3	2.1	7301.5	1.8
26Feb2019	19:56	1.3	2.1	7301.5	1.8
26Feb2019	19:57	1.3	2.1	7301.5	1.8
26Feb2019	19:58	1.3	2.1	7301.5	1.8
26Feb2019	19:59	1.3	2.1	7301.5	1.8
26Feb2019	20:00	1.3	2.1	7301.5	1.8
26Feb2019	20:01	1.3	2.1	7301.5	1.8
26Feb2019	20:02	1.3	2.1	7301.5	1.8
26Feb2019	20:03	1.3	2.1	7301.5	1.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	20:04	1.3	2.1	7301.5	1.7
26Feb2019	20:05	1.3	2.1	7301.5	1.7
26Feb2019	20:06	1.3	2.1	7301.5	1.7
26Feb2019	20:07	1.3	2.1	7301.5	1.7
26Feb2019	20:08	1.3	2.1	7301.5	1.7
26Feb2019	20:09	1.3	2.1	7301.5	1.7
26Feb2019	20:10	1.3	2.1	7301.5	1.7
26Feb2019	20:11	1.3	2.1	7301.5	1.7
26Feb2019	20:12	1.3	2.1	7301.5	1.7
26Feb2019	20:13	1.3	2.1	7301.5	1.7
26Feb2019	20:14	1.3	2.1	7301.5	1.7
26Feb2019	20:15	1.3	2.1	7301.5	1.7
26Feb2019	20:16	1.3	2.1	7301.5	1.7
26Feb2019	20:17	1.2	2.1	7301.5	1.7
26Feb2019	20:18	1.2	2.1	7301.5	1.7
26Feb2019	20:19	1.2	2.1	7301.5	1.7
26Feb2019	20:20	1.2	2.0	7301.5	1.7
26Feb2019	20:21	1.2	2.0	7301.5	1.7
26Feb2019	20:22	1.2	2.0	7301.5	1.7
26Feb2019	20:23	1.2	2.0	7301.5	1.6
26Feb2019	20:24	1.2	2.0	7301.5	1.6
26Feb2019	20:25	1.2	2.0	7301.5	1.6
26Feb2019	20:26	1.2	2.0	7301.5	1.6
26Feb2019	20:27	1.2	2.0	7301.5	1.6
26Feb2019	20:28	1.2	2.0	7301.5	1.6
26Feb2019	20:29	1.2	2.0	7301.5	1.6
26Feb2019	20:30	1.2	2.0	7301.5	1.6
26Feb2019	20:31	1.2	2.0	7301.5	1.6
26Feb2019	20:32	1.2	2.0	7301.5	1.6
26Feb2019	20:33	1.2	2.0	7301.5	1.6
26Feb2019	20:34	1.2	2.0	7301.5	1.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	20:35	1.2	2.0	7301.5	1.6
26Feb2019	20:36	1.2	2.0	7301.5	1.6
26Feb2019	20:37	1.2	2.0	7301.5	1.6
26Feb2019	20:38	1.2	2.0	7301.5	1.6
26Feb2019	20:39	1.2	2.0	7301.5	1.6
26Feb2019	20:40	1.2	2.0	7301.5	1.6
26Feb2019	20:41	1.2	2.0	7301.5	1.6
26Feb2019	20:42	1.2	2.0	7301.5	1.6
26Feb2019	20:43	1.2	2.0	7301.5	1.6
26Feb2019	20:44	1.2	2.0	7301.5	1.6
26Feb2019	20:45	1.2	2.0	7301.5	1.5
26Feb2019	20:46	1.2	2.0	7301.5	1.5
26Feb2019	20:47	1.2	2.0	7301.5	1.5
26Feb2019	20:48	1.2	2.0	7301.5	1.5
26Feb2019	20:49	1.2	2.0	7301.5	1.5
26Feb2019	20:50	1.2	2.0	7301.5	1.5
26Feb2019	20:51	1.2	2.0	7301.5	1.5
26Feb2019	20:52	1.2	2.0	7301.5	1.5
26Feb2019	20:53	1.2	2.0	7301.5	1.5
26Feb2019	20:54	1.2	2.0	7301.5	1.5
26Feb2019	20:55	1.2	2.0	7301.5	1.5
26Feb2019	20:56	1.2	2.0	7301.5	1.5
26Feb2019	20:57	1.2	2.0	7301.5	1.5
26Feb2019	20:58	1.2	2.0	7301.5	1.5
26Feb2019	20:59	1.2	2.0	7301.5	1.5
26Feb2019	21:00	1.2	2.0	7301.5	1.5
26Feb2019	21:01	1.2	2.0	7301.5	1.5
26Feb2019	21:02	1.2	2.0	7301.5	1.5
26Feb2019	21:03	1.2	2.0	7301.5	1.5
26Feb2019	21:04	1.2	2.0	7301.5	1.5
26Feb2019	21:05	1.2	2.0	7301.5	1.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	21:06	1.1	2.0	7301.5	1.5
26Feb2019	21:07	1.1	2.0	7301.5	1.5
26Feb2019	21:08	1.1	2.0	7301.5	1.5
26Feb2019	21:09	1.1	2.0	7301.5	1.5
26Feb2019	21:10	1.1	2.0	7301.5	1.5
26Feb2019	21:11	1.1	2.0	7301.5	1.4
26Feb2019	21:12	1.1	2.0	7301.5	1.4
26Feb2019	21:13	1.1	2.0	7301.5	1.4
26Feb2019	21:14	1.1	2.0	7301.5	1.4
26Feb2019	21:15	1.1	2.0	7301.5	1.4
26Feb2019	21:16	1.1	2.0	7301.5	1.4
26Feb2019	21:17	1.1	2.0	7301.5	1.4
26Feb2019	21:18	1.1	2.0	7301.5	1.4
26Feb2019	21:19	1.1	2.0	7301.5	1.4
26Feb2019	21:20	1.1	2.0	7301.5	1.4
26Feb2019	21:21	1.1	2.0	7301.5	1.4
26Feb2019	21:22	1.1	2.0	7301.5	1.4
26Feb2019	21:23	1.1	2.0	7301.5	1.4
26Feb2019	21:24	1.1	2.0	7301.5	1.4
26Feb2019	21:25	1.1	2.0	7301.5	1.4
26Feb2019	21:26	1.1	2.0	7301.5	1.4
26Feb2019	21:27	1.1	2.0	7301.5	1.4
26Feb2019	21:28	1.1	2.0	7301.5	1.4
26Feb2019	21:29	1.1	2.0	7301.5	1.4
26Feb2019	21:30	1.1	2.0	7301.5	1.4
26Feb2019	21:31	1.1	2.0	7301.5	1.4
26Feb2019	21:32	1.1	2.0	7301.5	1.4
26Feb2019	21:33	1.1	2.0	7301.5	1.4
26Feb2019	21:34	1.1	2.0	7301.5	1.4
26Feb2019	21:35	1.1	2.0	7301.5	1.4
26Feb2019	21:36	1.1	2.0	7301.5	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	21:37	1.1	2.0	7301.5	1.4
26Feb2019	21:38	1.1	2.0	7301.5	1.4
26Feb2019	21:39	1.1	2.0	7301.5	1.4
26Feb2019	21:40	1.1	2.0	7301.5	1.4
26Feb2019	21:41	1.1	2.0	7301.5	1.4
26Feb2019	21:42	1.1	2.0	7301.5	1.4
26Feb2019	21:43	1.1	2.0	7301.5	1.4
26Feb2019	21:44	1.1	2.0	7301.5	1.4
26Feb2019	21:45	1.1	2.0	7301.5	1.4
26Feb2019	21:46	1.1	2.0	7301.5	1.4
26Feb2019	21:47	1.1	2.0	7301.5	1.4
26Feb2019	21:48	1.1	2.0	7301.5	1.4
26Feb2019	21:49	1.1	2.0	7301.5	1.4
26Feb2019	21:50	1.1	2.0	7301.5	1.4
26Feb2019	21:51	1.1	2.0	7301.5	1.4
26Feb2019	21:52	1.1	2.0	7301.5	1.4
26Feb2019	21:53	1.1	2.0	7301.5	1.4
26Feb2019	21:54	1.1	2.0	7301.5	1.4
26Feb2019	21:55	1.1	2.0	7301.5	1.4
26Feb2019	21:56	1.1	2.0	7301.5	1.4
26Feb2019	21:57	1.1	2.0	7301.5	1.4
26Feb2019	21:58	1.1	2.0	7301.5	1.4
26Feb2019	21:59	1.1	2.0	7301.5	1.4
26Feb2019	22:00	1.1	2.0	7301.5	1.4
26Feb2019	22:01	1.1	2.0	7301.5	1.4
26Feb2019	22:02	1.1	2.0	7301.5	1.4
26Feb2019	22:03	1.1	2.0	7301.5	1.4
26Feb2019	22:04	1.1	2.0	7301.5	1.4
26Feb2019	22:05	1.1	2.0	7301.5	1.4
26Feb2019	22:06	1.1	2.0	7301.5	1.4
26Feb2019	22:07	1.1	2.0	7301.5	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	22:08	1.1	2.0	7301.5	1.4
26Feb2019	22:09	1.1	2.0	7301.5	1.4
26Feb2019	22:10	1.1	2.0	7301.5	1.4
26Feb2019	22:11	1.1	2.0	7301.5	1.4
26Feb2019	22:12	1.1	2.0	7301.5	1.4
26Feb2019	22:13	1.1	2.0	7301.5	1.4
26Feb2019	22:14	1.1	2.0	7301.5	1.4
26Feb2019	22:15	1.1	2.0	7301.5	1.4
26Feb2019	22:16	1.1	2.0	7301.5	1.4
26Feb2019	22:17	1.1	2.0	7301.5	1.4
26Feb2019	22:18	1.1	2.0	7301.5	1.4
26Feb2019	22:19	1.1	2.0	7301.5	1.4
26Feb2019	22:20	1.1	2.0	7301.5	1.4
26Feb2019	22:21	1.1	2.0	7301.5	1.4
26Feb2019	22:22	1.1	2.0	7301.5	1.4
26Feb2019	22:23	1.1	2.0	7301.5	1.4
26Feb2019	22:24	1.1	2.0	7301.5	1.4
26Feb2019	22:25	1.1	2.0	7301.5	1.4
26Feb2019	22:26	1.1	2.0	7301.5	1.4
26Feb2019	22:27	1.1	2.0	7301.5	1.4
26Feb2019	22:28	1.1	2.0	7301.5	1.4
26Feb2019	22:29	1.1	2.0	7301.5	1.4
26Feb2019	22:30	1.1	2.0	7301.5	1.4
26Feb2019	22:31	1.1	2.0	7301.5	1.4
26Feb2019	22:32	1.1	2.0	7301.5	1.4
26Feb2019	22:33	1.1	2.0	7301.5	1.4
26Feb2019	22:34	1.1	2.0	7301.5	1.4
26Feb2019	22:35	1.1	2.0	7301.5	1.4
26Feb2019	22:36	1.1	2.0	7301.5	1.4
26Feb2019	22:37	1.1	2.0	7301.5	1.4
26Feb2019	22:38	1.1	2.0	7301.5	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	22:39	1.1	2.0	7301.5	1.4
26Feb2019	22:40	1.1	2.0	7301.5	1.4
26Feb2019	22:41	1.1	2.0	7301.5	1.4
26Feb2019	22:42	1.1	2.0	7301.5	1.4
26Feb2019	22:43	1.1	2.0	7301.5	1.4
26Feb2019	22:44	1.1	2.0	7301.5	1.4
26Feb2019	22:45	1.1	2.0	7301.5	1.4
26Feb2019	22:46	1.1	2.0	7301.5	1.4
26Feb2019	22:47	1.1	2.0	7301.5	1.4
26Feb2019	22:48	1.1	2.0	7301.5	1.4
26Feb2019	22:49	1.1	2.0	7301.5	1.4
26Feb2019	22:50	1.1	2.0	7301.5	1.4
26Feb2019	22:51	1.1	2.0	7301.5	1.4
26Feb2019	22:52	1.1	2.0	7301.5	1.4
26Feb2019	22:53	1.1	2.0	7301.5	1.4
26Feb2019	22:54	1.1	2.0	7301.5	1.4
26Feb2019	22:55	1.1	2.0	7301.5	1.4
26Feb2019	22:56	1.1	2.0	7301.5	1.4
26Feb2019	22:57	1.1	2.0	7301.5	1.4
26Feb2019	22:58	1.1	2.0	7301.5	1.4
26Feb2019	22:59	1.1	2.0	7301.5	1.4
26Feb2019	23:00	1.1	2.0	7301.5	1.4
26Feb2019	23:01	1.1	2.0	7301.5	1.4
26Feb2019	23:02	1.1	2.0	7301.5	1.4
26Feb2019	23:03	1.1	2.0	7301.5	1.4
26Feb2019	23:04	1.1	2.0	7301.5	1.4
26Feb2019	23:05	1.1	2.0	7301.5	1.4
26Feb2019	23:06	1.1	2.0	7301.5	1.4
26Feb2019	23:07	1.1	2.0	7301.5	1.4
26Feb2019	23:08	1.1	2.0	7301.5	1.4
26Feb2019	23:09	1.1	2.0	7301.5	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	23:10	1.1	2.0	7301.5	1.3
26Feb2019	23:11	1.1	2.0	7301.5	1.3
26Feb2019	23:12	1.1	2.0	7301.5	1.3
26Feb2019	23:13	1.1	2.0	7301.5	1.3
26Feb2019	23:14	1.0	2.0	7301.5	1.3
26Feb2019	23:15	1.0	2.0	7301.5	1.3
26Feb2019	23:16	1.0	2.0	7301.5	1.3
26Feb2019	23:17	1.0	2.0	7301.5	1.3
26Feb2019	23:18	1.0	2.0	7301.5	1.3
26Feb2019	23:19	1.0	2.0	7301.5	1.3
26Feb2019	23:20	1.0	2.0	7301.5	1.3
26Feb2019	23:21	1.0	2.0	7301.5	1.3
26Feb2019	23:22	1.0	2.0	7301.5	1.3
26Feb2019	23:23	1.0	2.0	7301.5	1.3
26Feb2019	23:24	1.0	2.0	7301.5	1.3
26Feb2019	23:25	1.0	2.0	7301.5	1.3
26Feb2019	23:26	1.0	2.0	7301.5	1.3
26Feb2019	23:27	1.0	2.0	7301.5	1.3
26Feb2019	23:28	1.0	2.0	7301.5	1.3
26Feb2019	23:29	1.0	2.0	7301.5	1.3
26Feb2019	23:30	1.0	2.0	7301.5	1.3
26Feb2019	23:31	1.0	2.0	7301.5	1.3
26Feb2019	23:32	1.0	2.0	7301.5	1.3
26Feb2019	23:33	1.0	2.0	7301.5	1.3
26Feb2019	23:34	1.0	2.0	7301.5	1.3
26Feb2019	23:35	1.0	2.0	7301.5	1.3
26Feb2019	23:36	1.0	2.0	7301.5	1.3
26Feb2019	23:37	1.0	2.0	7301.5	1.3
26Feb2019	23:38	1.0	2.0	7301.5	1.3
26Feb2019	23:39	1.0	2.0	7301.5	1.3
26Feb2019	23:40	1.0	2.0	7301.5	1.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
26Feb2019	23:41	1.0	2.0	7301.5	1.3
26Feb2019	23:42	1.0	2.0	7301.5	1.3
26Feb2019	23:43	1.0	2.0	7301.5	1.3
26Feb2019	23:44	1.0	2.0	7301.5	1.3
26Feb2019	23:45	1.0	2.0	7301.5	1.3
26Feb2019	23:46	1.0	2.0	7301.5	1.3
26Feb2019	23:47	1.0	2.0	7301.5	1.3
26Feb2019	23:48	1.0	2.0	7301.5	1.3
26Feb2019	23:49	1.0	2.0	7301.5	1.3
26Feb2019	23:50	1.0	2.0	7301.5	1.3
26Feb2019	23:51	1.0	2.0	7301.5	1.3
26Feb2019	23:52	1.0	2.0	7301.5	1.3
26Feb2019	23:53	1.0	2.0	7301.5	1.3
26Feb2019	23:54	1.0	2.0	7301.5	1.3
26Feb2019	23:55	1.0	2.0	7301.5	1.3
26Feb2019	23:56	1.0	2.0	7301.5	1.3
26Feb2019	23:57	1.0	2.0	7301.5	1.3
26Feb2019	23:58	1.0	2.0	7301.5	1.3
26Feb2019	23:59	1.0	2.0	7301.5	1.3
27Feb2019	00:00	1.0	2.0	7301.5	1.3
27Feb2019	00:01	1.0	2.0	7301.5	1.3
27Feb2019	00:02	1.0	2.0	7301.5	1.3
27Feb2019	00:03	1.0	2.0	7301.5	1.3
27Feb2019	00:04	1.0	2.0	7301.5	1.3
27Feb2019	00:05	1.0	2.0	7301.5	1.3
27Feb2019	00:06	1.0	2.0	7301.5	1.3
27Feb2019	00:07	1.0	2.0	7301.5	1.3
27Feb2019	00:08	1.0	2.0	7301.5	1.3
27Feb2019	00:09	1.0	1.9	7301.5	1.3
27Feb2019	00:10	0.9	1.9	7301.5	1.3
27Feb2019	00:11	0.9	1.9	7301.5	1.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	00:12	0.9	1.9	7301.5	1.3
27Feb2019	00:13	0.9	1.9	7301.5	1.3
27Feb2019	00:14	0.9	1.9	7301.4	1.3
27Feb2019	00:15	0.9	1.9	7301.4	1.3
27Feb2019	00:16	0.9	1.9	7301.4	1.3
27Feb2019	00:17	0.9	1.9	7301.4	1.3
27Feb2019	00:18	0.9	1.9	7301.4	1.3
27Feb2019	00:19	0.8	1.9	7301.4	1.3
27Feb2019	00:20	0.8	1.9	7301.4	1.3
27Feb2019	00:21	0.8	1.9	7301.4	1.3
27Feb2019	00:22	0.8	1.9	7301.4	1.3
27Feb2019	00:23	0.8	1.9	7301.4	1.3
27Feb2019	00:24	0.8	1.9	7301.4	1.3
27Feb2019	00:25	0.8	1.9	7301.4	1.3
27Feb2019	00:26	0.8	1.9	7301.4	1.3
27Feb2019	00:27	0.7	1.9	7301.4	1.3
27Feb2019	00:28	0.7	1.9	7301.4	1.3
27Feb2019	00:29	0.7	1.9	7301.4	1.3
27Feb2019	00:30	0.7	1.9	7301.4	1.3
27Feb2019	00:31	0.7	1.9	7301.4	1.3
27Feb2019	00:32	0.7	1.9	7301.4	1.3
27Feb2019	00:33	0.6	1.9	7301.4	1.3
27Feb2019	00:34	0.6	1.9	7301.4	1.3
27Feb2019	00:35	0.6	1.9	7301.4	1.3
27Feb2019	00:36	0.6	1.9	7301.4	1.3
27Feb2019	00:37	0.6	1.9	7301.4	1.3
27Feb2019	00:38	0.5	1.9	7301.4	1.3
27Feb2019	00:39	0.5	1.9	7301.4	1.3
27Feb2019	00:40	0.5	1.9	7301.4	1.3
27Feb2019	00:41	0.5	1.9	7301.4	1.3
27Feb2019	00:42	0.5	1.9	7301.4	1.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	00:43	0.5	1.9	7301.4	1.3
27Feb2019	00:44	0.4	1.9	7301.4	1.2
27Feb2019	00:45	0.4	1.9	7301.4	1.2
27Feb2019	00:46	0.4	1.9	7301.4	1.2
27Feb2019	00:47	0.4	1.9	7301.4	1.2
27Feb2019	00:48	0.4	1.9	7301.4	1.2
27Feb2019	00:49	0.4	1.9	7301.4	1.2
27Feb2019	00:50	0.4	1.9	7301.4	1.2
27Feb2019	00:51	0.3	1.9	7301.4	1.2
27Feb2019	00:52	0.3	1.9	7301.4	1.2
27Feb2019	00:53	0.3	1.9	7301.4	1.2
27Feb2019	00:54	0.3	1.9	7301.4	1.2
27Feb2019	00:55	0.3	1.9	7301.4	1.2
27Feb2019	00:56	0.3	1.9	7301.4	1.2
27Feb2019	00:57	0.3	1.9	7301.4	1.2
27Feb2019	00:58	0.3	1.9	7301.4	1.2
27Feb2019	00:59	0.3	1.9	7301.4	1.2
27Feb2019	01:00	0.3	1.9	7301.4	1.2
27Feb2019	01:01	0.2	1.9	7301.4	1.2
27Feb2019	01:02	0.2	1.9	7301.4	1.2
27Feb2019	01:03	0.2	1.9	7301.4	1.2
27Feb2019	01:04	0.2	1.9	7301.4	1.2
27Feb2019	01:05	0.2	1.9	7301.4	1.2
27Feb2019	01:06	0.2	1.9	7301.4	1.2
27Feb2019	01:07	0.2	1.9	7301.4	1.2
27Feb2019	01:08	0.2	1.9	7301.4	1.2
27Feb2019	01:09	0.2	1.9	7301.4	1.2
27Feb2019	01:10	0.2	1.9	7301.4	1.2
27Feb2019	01:11	0.2	1.9	7301.4	1.2
27Feb2019	01:12	0.2	1.9	7301.4	1.2
27Feb2019	01:13	0.2	1.9	7301.4	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	01:14	0.2	1.9	7301.4	1.2
27Feb2019	01:15	0.2	1.9	7301.4	1.2
27Feb2019	01:16	0.1	1.9	7301.4	1.2
27Feb2019	01:17	0.1	1.9	7301.4	1.2
27Feb2019	01:18	0.1	1.9	7301.4	1.2
27Feb2019	01:19	0.1	1.9	7301.4	1.2
27Feb2019	01:20	0.1	1.9	7301.4	1.2
27Feb2019	01:21	0.1	1.9	7301.4	1.2
27Feb2019	01:22	0.1	1.9	7301.4	1.1
27Feb2019	01:23	0.1	1.9	7301.4	1.1
27Feb2019	01:24	0.1	1.9	7301.4	1.1
27Feb2019	01:25	0.1	1.9	7301.4	1.1
27Feb2019	01:26	0.1	1.9	7301.4	1.1
27Feb2019	01:27	0.1	1.9	7301.4	1.1
27Feb2019	01:28	0.1	1.9	7301.4	1.1
27Feb2019	01:29	0.1	1.9	7301.4	1.1
27Feb2019	01:30	0.1	1.9	7301.4	1.1
27Feb2019	01:31	0.1	1.9	7301.4	1.1
27Feb2019	01:32	0.1	1.9	7301.4	1.1
27Feb2019	01:33	0.1	1.9	7301.4	1.1
27Feb2019	01:34	0.1	1.9	7301.4	1.1
27Feb2019	01:35	0.1	1.9	7301.4	1.1
27Feb2019	01:36	0.1	1.9	7301.4	1.1
27Feb2019	01:37	0.1	1.9	7301.4	1.1
27Feb2019	01:38	0.1	1.9	7301.4	1.1
27Feb2019	01:39	0.1	1.8	7301.4	1.1
27Feb2019	01:40	0.1	1.8	7301.4	1.1
27Feb2019	01:41	0.1	1.8	7301.4	1.1
27Feb2019	01:42	0.1	1.8	7301.4	1.1
27Feb2019	01:43	0.1	1.8	7301.4	1.1
27Feb2019	01:44	0.1	1.8	7301.4	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	01:45	0.1	1.8	7301.4	1.1
27Feb2019	01:46	0.1	1.8	7301.4	1.1
27Feb2019	01:47	0.1	1.8	7301.4	1.1
27Feb2019	01:48	0.1	1.8	7301.4	1.1
27Feb2019	01:49	0.0	1.8	7301.4	1.1
27Feb2019	01:50	0.0	1.8	7301.4	1.1
27Feb2019	01:51	0.0	1.8	7301.4	1.1
27Feb2019	01:52	0.0	1.8	7301.4	1.1
27Feb2019	01:53	0.0	1.8	7301.4	1.1
27Feb2019	01:54	0.0	1.8	7301.4	1.1
27Feb2019	01:55	0.0	1.8	7301.4	1.1
27Feb2019	01:56	0.0	1.8	7301.4	1.1
27Feb2019	01:57	0.0	1.8	7301.4	1.0
27Feb2019	01:58	0.0	1.8	7301.4	1.0
27Feb2019	01:59	0.0	1.8	7301.4	1.0
27Feb2019	02:00	0.0	1.8	7301.4	1.0
27Feb2019	02:01	0.0	1.8	7301.4	1.0
27Feb2019	02:02	0.0	1.8	7301.4	1.0
27Feb2019	02:03	0.0	1.8	7301.4	1.0
27Feb2019	02:04	0.0	1.8	7301.4	1.0
27Feb2019	02:05	0.0	1.8	7301.4	1.0
27Feb2019	02:06	0.0	1.8	7301.4	1.0
27Feb2019	02:07	0.0	1.8	7301.4	1.0
27Feb2019	02:08	0.0	1.8	7301.4	1.0
27Feb2019	02:09	0.0	1.8	7301.4	1.0
27Feb2019	02:10	0.0	1.8	7301.4	1.0
27Feb2019	02:11	0.0	1.8	7301.4	1.0
27Feb2019	02:12	0.0	1.8	7301.4	1.0
27Feb2019	02:13	0.0	1.8	7301.4	1.0
27Feb2019	02:14	0.0	1.8	7301.4	1.0
27Feb2019	02:15	0.0	1.8	7301.4	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	02:16	0.0	1.8	7301.4	1.0
27Feb2019	02:17	0.0	1.8	7301.4	1.0
27Feb2019	02:18	0.0	1.8	7301.4	1.0
27Feb2019	02:19	0.0	1.8	7301.4	1.0
27Feb2019	02:20	0.0	1.8	7301.3	1.0
27Feb2019	02:21	0.0	1.8	7301.3	1.0
27Feb2019	02:22	0.0	1.8	7301.3	1.0
27Feb2019	02:23	0.0	1.8	7301.3	1.0
27Feb2019	02:24	0.0	1.8	7301.3	1.0
27Feb2019	02:25	0.0	1.8	7301.3	1.0
27Feb2019	02:26	0.0	1.8	7301.3	1.0
27Feb2019	02:27	0.0	1.8	7301.3	1.0
27Feb2019	02:28	0.0	1.8	7301.3	1.0
27Feb2019	02:29	0.0	1.8	7301.3	1.0
27Feb2019	02:30	0.0	1.8	7301.3	1.0
27Feb2019	02:31	0.0	1.8	7301.3	1.0
27Feb2019	02:32	0.0	1.8	7301.3	1.0
27Feb2019	02:33	0.0	1.8	7301.3	1.0
27Feb2019	02:34	0.0	1.8	7301.3	0.9
27Feb2019	02:35	0.0	1.8	7301.3	0.9
27Feb2019	02:36	0.0	1.8	7301.3	0.9
27Feb2019	02:37	0.0	1.8	7301.3	0.9
27Feb2019	02:38	0.0	1.8	7301.3	0.9
27Feb2019	02:39	0.0	1.8	7301.3	0.9
27Feb2019	02:40	0.0	1.8	7301.3	0.9
27Feb2019	02:41	0.0	1.8	7301.3	0.9
27Feb2019	02:42	0.0	1.8	7301.3	0.9
27Feb2019	02:43	0.0	1.8	7301.3	0.9
27Feb2019	02:44	0.0	1.8	7301.3	0.9
27Feb2019	02:45	0.0	1.8	7301.3	0.9
27Feb2019	02:46	0.0	1.8	7301.3	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	02:47	0.0	1.8	7301.3	0.9
27Feb2019	02:48	0.0	1.8	7301.3	0.9
27Feb2019	02:49	0.0	1.8	7301.3	0.9
27Feb2019	02:50	0.0	1.8	7301.3	0.9
27Feb2019	02:51	0.0	1.8	7301.3	0.9
27Feb2019	02:52	0.0	1.8	7301.3	0.9
27Feb2019	02:53	0.0	1.8	7301.3	0.9
27Feb2019	02:54	0.0	1.7	7301.3	0.9
27Feb2019	02:55	0.0	1.7	7301.3	0.9
27Feb2019	02:56	0.0	1.7	7301.3	0.9
27Feb2019	02:57	0.0	1.7	7301.3	0.9
27Feb2019	02:58	0.0	1.7	7301.3	0.9
27Feb2019	02:59	0.0	1.7	7301.3	0.9
27Feb2019	03:00	0.0	1.7	7301.3	0.9
27Feb2019	03:01	0.0	1.7	7301.3	0.9
27Feb2019	03:02	0.0	1.7	7301.3	0.9
27Feb2019	03:03	0.0	1.7	7301.3	0.9
27Feb2019	03:04	0.0	1.7	7301.3	0.9
27Feb2019	03:05	0.0	1.7	7301.3	0.9
27Feb2019	03:06	0.0	1.7	7301.3	0.9
27Feb2019	03:07	0.0	1.7	7301.3	0.9
27Feb2019	03:08	0.0	1.7	7301.3	0.9
27Feb2019	03:09	0.0	1.7	7301.3	0.9
27Feb2019	03:10	0.0	1.7	7301.3	0.9
27Feb2019	03:11	0.0	1.7	7301.3	0.9
27Feb2019	03:12	0.0	1.7	7301.3	0.9
27Feb2019	03:13	0.0	1.7	7301.3	0.9
27Feb2019	03:14	0.0	1.7	7301.3	0.9
27Feb2019	03:15	0.0	1.7	7301.3	0.8
27Feb2019	03:16	0.0	1.7	7301.3	0.8
27Feb2019	03:17	0.0	1.7	7301.3	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	03:18	0.0	1.7	7301.3	0.8
27Feb2019	03:19	0.0	1.7	7301.3	0.8
27Feb2019	03:20	0.0	1.7	7301.3	0.8
27Feb2019	03:21	0.0	1.7	7301.3	0.8
27Feb2019	03:22	0.0	1.7	7301.3	0.8
27Feb2019	03:23	0.0	1.7	7301.3	0.8
27Feb2019	03:24	0.0	1.7	7301.3	0.8
27Feb2019	03:25	0.0	1.7	7301.3	0.8
27Feb2019	03:26	0.0	1.7	7301.3	0.8
27Feb2019	03:27	0.0	1.7	7301.3	0.8
27Feb2019	03:28	0.0	1.7	7301.3	0.8
27Feb2019	03:29	0.0	1.7	7301.3	0.8
27Feb2019	03:30	0.0	1.7	7301.3	0.8
27Feb2019	03:31	0.0	1.7	7301.3	0.8
27Feb2019	03:32	0.0	1.7	7301.3	0.8
27Feb2019	03:33	0.0	1.7	7301.3	0.8
27Feb2019	03:34	0.0	1.7	7301.3	0.8
27Feb2019	03:35	0.0	1.7	7301.3	0.8
27Feb2019	03:36	0.0	1.7	7301.3	0.8
27Feb2019	03:37	0.0	1.7	7301.3	0.8
27Feb2019	03:38	0.0	1.7	7301.3	0.8
27Feb2019	03:39	0.0	1.7	7301.3	0.8
27Feb2019	03:40	0.0	1.7	7301.3	0.8
27Feb2019	03:41	0.0	1.7	7301.3	0.8
27Feb2019	03:42	0.0	1.7	7301.3	0.8
27Feb2019	03:43	0.0	1.7	7301.3	0.8
27Feb2019	03:44	0.0	1.7	7301.3	0.8
27Feb2019	03:45	0.0	1.7	7301.3	0.8
27Feb2019	03:46	0.0	1.7	7301.3	0.8
27Feb2019	03:47	0.0	1.7	7301.3	0.8
27Feb2019	03:48	0.0	1.7	7301.3	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	03:49	0.0	1.7	7301.3	0.8
27Feb2019	03:50	0.0	1.7	7301.3	0.8
27Feb2019	03:51	0.0	1.7	7301.3	0.8
27Feb2019	03:52	0.0	1.7	7301.3	0.8
27Feb2019	03:53	0.0	1.7	7301.3	0.8
27Feb2019	03:54	0.0	1.7	7301.3	0.8
27Feb2019	03:55	0.0	1.7	7301.3	0.8
27Feb2019	03:56	0.0	1.7	7301.3	0.8
27Feb2019	03:57	0.0	1.7	7301.3	0.8
27Feb2019	03:58	0.0	1.7	7301.3	0.8
27Feb2019	03:59	0.0	1.7	7301.3	0.8
27Feb2019	04:00	0.0	1.7	7301.3	0.7
27Feb2019	04:01	0.0	1.7	7301.3	0.7
27Feb2019	04:02	0.0	1.7	7301.3	0.7
27Feb2019	04:03	0.0	1.7	7301.3	0.7
27Feb2019	04:04	0.0	1.7	7301.3	0.7
27Feb2019	04:05	0.0	1.7	7301.3	0.7
27Feb2019	04:06	0.0	1.7	7301.3	0.7
27Feb2019	04:07	0.0	1.7	7301.3	0.7
27Feb2019	04:08	0.0	1.7	7301.3	0.7
27Feb2019	04:09	0.0	1.7	7301.3	0.7
27Feb2019	04:10	0.0	1.7	7301.3	0.7
27Feb2019	04:11	0.0	1.7	7301.3	0.7
27Feb2019	04:12	0.0	1.7	7301.3	0.7
27Feb2019	04:13	0.0	1.7	7301.3	0.7
27Feb2019	04:14	0.0	1.7	7301.3	0.7
27Feb2019	04:15	0.0	1.7	7301.3	0.7
27Feb2019	04:16	0.0	1.7	7301.3	0.7
27Feb2019	04:17	0.0	1.7	7301.3	0.7
27Feb2019	04:18	0.0	1.7	7301.3	0.7
27Feb2019	04:19	0.0	1.7	7301.3	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	04:20	0.0	1.7	7301.3	0.7
27Feb2019	04:21	0.0	1.7	7301.3	0.7
27Feb2019	04:22	0.0	1.7	7301.3	0.7
27Feb2019	04:23	0.0	1.7	7301.3	0.7
27Feb2019	04:24	0.0	1.7	7301.3	0.7
27Feb2019	04:25	0.0	1.7	7301.3	0.7
27Feb2019	04:26	0.0	1.6	7301.3	0.7
27Feb2019	04:27	0.0	1.6	7301.3	0.7
27Feb2019	04:28	0.0	1.6	7301.3	0.7
27Feb2019	04:29	0.0	1.6	7301.3	0.7
27Feb2019	04:30	0.0	1.6	7301.3	0.7
27Feb2019	04:31	0.0	1.6	7301.3	0.7
27Feb2019	04:32	0.0	1.6	7301.3	0.7
27Feb2019	04:33	0.0	1.6	7301.3	0.7
27Feb2019	04:34	0.0	1.6	7301.3	0.7
27Feb2019	04:35	0.0	1.6	7301.3	0.7
27Feb2019	04:36	0.0	1.6	7301.2	0.7
27Feb2019	04:37	0.0	1.6	7301.2	0.7
27Feb2019	04:38	0.0	1.6	7301.2	0.7
27Feb2019	04:39	0.0	1.6	7301.2	0.7
27Feb2019	04:40	0.0	1.6	7301.2	0.7
27Feb2019	04:41	0.0	1.6	7301.2	0.7
27Feb2019	04:42	0.0	1.6	7301.2	0.7
27Feb2019	04:43	0.0	1.6	7301.2	0.7
27Feb2019	04:44	0.0	1.6	7301.2	0.7
27Feb2019	04:45	0.0	1.6	7301.2	0.7
27Feb2019	04:46	0.0	1.6	7301.2	0.7
27Feb2019	04:47	0.0	1.6	7301.2	0.7
27Feb2019	04:48	0.0	1.6	7301.2	0.7
27Feb2019	04:49	0.0	1.6	7301.2	0.7
27Feb2019	04:50	0.0	1.6	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	04:51	0.0	1.6	7301.2	0.7
27Feb2019	04:52	0.0	1.6	7301.2	0.7
27Feb2019	04:53	0.0	1.6	7301.2	0.7
27Feb2019	04:54	0.0	1.6	7301.2	0.7
27Feb2019	04:55	0.0	1.6	7301.2	0.7
27Feb2019	04:56	0.0	1.6	7301.2	0.7
27Feb2019	04:57	0.0	1.6	7301.2	0.7
27Feb2019	04:58	0.0	1.6	7301.2	0.7
27Feb2019	04:59	0.0	1.6	7301.2	0.7
27Feb2019	05:00	0.0	1.6	7301.2	0.7
27Feb2019	05:01	0.0	1.6	7301.2	0.7
27Feb2019	05:02	0.0	1.6	7301.2	0.7
27Feb2019	05:03	0.0	1.6	7301.2	0.7
27Feb2019	05:04	0.0	1.6	7301.2	0.7
27Feb2019	05:05	0.0	1.6	7301.2	0.7
27Feb2019	05:06	0.0	1.6	7301.2	0.7
27Feb2019	05:07	0.0	1.6	7301.2	0.7
27Feb2019	05:08	0.0	1.6	7301.2	0.7
27Feb2019	05:09	0.0	1.6	7301.2	0.7
27Feb2019	05:10	0.0	1.6	7301.2	0.7
27Feb2019	05:11	0.0	1.6	7301.2	0.7
27Feb2019	05:12	0.0	1.6	7301.2	0.7
27Feb2019	05:13	0.0	1.6	7301.2	0.7
27Feb2019	05:14	0.0	1.6	7301.2	0.7
27Feb2019	05:15	0.0	1.6	7301.2	0.7
27Feb2019	05:16	0.0	1.6	7301.2	0.7
27Feb2019	05:17	0.0	1.6	7301.2	0.7
27Feb2019	05:18	0.0	1.6	7301.2	0.7
27Feb2019	05:19	0.0	1.6	7301.2	0.7
27Feb2019	05:20	0.0	1.6	7301.2	0.7
27Feb2019	05:21	0.0	1.6	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	05:22	0.0	1.6	7301.2	0.7
27Feb2019	05:23	0.0	1.6	7301.2	0.7
27Feb2019	05:24	0.0	1.6	7301.2	0.7
27Feb2019	05:25	0.0	1.6	7301.2	0.7
27Feb2019	05:26	0.0	1.6	7301.2	0.7
27Feb2019	05:27	0.0	1.6	7301.2	0.7
27Feb2019	05:28	0.0	1.6	7301.2	0.7
27Feb2019	05:29	0.0	1.6	7301.2	0.7
27Feb2019	05:30	0.0	1.6	7301.2	0.7
27Feb2019	05:31	0.0	1.6	7301.2	0.7
27Feb2019	05:32	0.0	1.6	7301.2	0.7
27Feb2019	05:33	0.0	1.6	7301.2	0.7
27Feb2019	05:34	0.0	1.6	7301.2	0.7
27Feb2019	05:35	0.0	1.6	7301.2	0.7
27Feb2019	05:36	0.0	1.6	7301.2	0.7
27Feb2019	05:37	0.0	1.6	7301.2	0.7
27Feb2019	05:38	0.0	1.6	7301.2	0.7
27Feb2019	05:39	0.0	1.6	7301.2	0.7
27Feb2019	05:40	0.0	1.6	7301.2	0.7
27Feb2019	05:41	0.0	1.6	7301.2	0.7
27Feb2019	05:42	0.0	1.6	7301.2	0.7
27Feb2019	05:43	0.0	1.6	7301.2	0.7
27Feb2019	05:44	0.0	1.6	7301.2	0.7
27Feb2019	05:45	0.0	1.6	7301.2	0.7
27Feb2019	05:46	0.0	1.6	7301.2	0.7
27Feb2019	05:47	0.0	1.6	7301.2	0.7
27Feb2019	05:48	0.0	1.6	7301.2	0.7
27Feb2019	05:49	0.0	1.6	7301.2	0.7
27Feb2019	05:50	0.0	1.6	7301.2	0.7
27Feb2019	05:51	0.0	1.6	7301.2	0.7
27Feb2019	05:52	0.0	1.6	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	05:53	0.0	1.6	7301.2	0.7
27Feb2019	05:54	0.0	1.6	7301.2	0.7
27Feb2019	05:55	0.0	1.6	7301.2	0.7
27Feb2019	05:56	0.0	1.6	7301.2	0.7
27Feb2019	05:57	0.0	1.6	7301.2	0.7
27Feb2019	05:58	0.0	1.6	7301.2	0.7
27Feb2019	05:59	0.0	1.6	7301.2	0.7
27Feb2019	06:00	0.0	1.6	7301.2	0.7
27Feb2019	06:01	0.0	1.6	7301.2	0.7
27Feb2019	06:02	0.0	1.6	7301.2	0.7
27Feb2019	06:03	0.0	1.6	7301.2	0.7
27Feb2019	06:04	0.0	1.6	7301.2	0.7
27Feb2019	06:05	0.0	1.6	7301.2	0.7
27Feb2019	06:06	0.0	1.6	7301.2	0.7
27Feb2019	06:07	0.0	1.6	7301.2	0.7
27Feb2019	06:08	0.0	1.6	7301.2	0.7
27Feb2019	06:09	0.0	1.6	7301.2	0.7
27Feb2019	06:10	0.0	1.6	7301.2	0.7
27Feb2019	06:11	0.0	1.6	7301.2	0.7
27Feb2019	06:12	0.0	1.6	7301.2	0.7
27Feb2019	06:13	0.0	1.6	7301.2	0.7
27Feb2019	06:14	0.0	1.5	7301.2	0.7
27Feb2019	06:15	0.0	1.5	7301.2	0.7
27Feb2019	06:16	0.0	1.5	7301.2	0.7
27Feb2019	06:17	0.0	1.5	7301.2	0.7
27Feb2019	06:18	0.0	1.5	7301.2	0.7
27Feb2019	06:19	0.0	1.5	7301.2	0.7
27Feb2019	06:20	0.0	1.5	7301.2	0.7
27Feb2019	06:21	0.0	1.5	7301.2	0.7
27Feb2019	06:22	0.0	1.5	7301.2	0.7
27Feb2019	06:23	0.0	1.5	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	06:24	0.0	1.5	7301.2	0.7
27Feb2019	06:25	0.0	1.5	7301.2	0.7
27Feb2019	06:26	0.0	1.5	7301.2	0.7
27Feb2019	06:27	0.0	1.5	7301.2	0.7
27Feb2019	06:28	0.0	1.5	7301.2	0.7
27Feb2019	06:29	0.0	1.5	7301.2	0.7
27Feb2019	06:30	0.0	1.5	7301.2	0.7
27Feb2019	06:31	0.0	1.5	7301.2	0.7
27Feb2019	06:32	0.0	1.5	7301.2	0.7
27Feb2019	06:33	0.0	1.5	7301.2	0.7
27Feb2019	06:34	0.0	1.5	7301.2	0.7
27Feb2019	06:35	0.0	1.5	7301.2	0.7
27Feb2019	06:36	0.0	1.5	7301.2	0.7
27Feb2019	06:37	0.0	1.5	7301.2	0.7
27Feb2019	06:38	0.0	1.5	7301.2	0.7
27Feb2019	06:39	0.0	1.5	7301.2	0.7
27Feb2019	06:40	0.0	1.5	7301.2	0.7
27Feb2019	06:41	0.0	1.5	7301.2	0.7
27Feb2019	06:42	0.0	1.5	7301.2	0.7
27Feb2019	06:43	0.0	1.5	7301.2	0.7
27Feb2019	06:44	0.0	1.5	7301.2	0.7
27Feb2019	06:45	0.0	1.5	7301.2	0.7
27Feb2019	06:46	0.0	1.5	7301.2	0.7
27Feb2019	06:47	0.0	1.5	7301.2	0.7
27Feb2019	06:48	0.0	1.5	7301.2	0.7
27Feb2019	06:49	0.0	1.5	7301.2	0.7
27Feb2019	06:50	0.0	1.5	7301.2	0.7
27Feb2019	06:51	0.0	1.5	7301.2	0.7
27Feb2019	06:52	0.0	1.5	7301.2	0.7
27Feb2019	06:53	0.0	1.5	7301.2	0.7
27Feb2019	06:54	0.0	1.5	7301.2	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	06:55	0.0	1.5	7301.2	0.7
27Feb2019	06:56	0.0	1.5	7301.2	0.7
27Feb2019	06:57	0.0	1.5	7301.2	0.7
27Feb2019	06:58	0.0	1.5	7301.2	0.7
27Feb2019	06:59	0.0	1.5	7301.2	0.7
27Feb2019	07:00	0.0	1.5	7301.2	0.7
27Feb2019	07:01	0.0	1.5	7301.2	0.7
27Feb2019	07:02	0.0	1.5	7301.2	0.7
27Feb2019	07:03	0.0	1.5	7301.2	0.7
27Feb2019	07:04	0.0	1.5	7301.2	0.7
27Feb2019	07:05	0.0	1.5	7301.2	0.7
27Feb2019	07:06	0.0	1.5	7301.2	0.7
27Feb2019	07:07	0.0	1.5	7301.1	0.7
27Feb2019	07:08	0.0	1.5	7301.1	0.7
27Feb2019	07:09	0.0	1.5	7301.1	0.7
27Feb2019	07:10	0.0	1.5	7301.1	0.7
27Feb2019	07:11	0.0	1.5	7301.1	0.7
27Feb2019	07:12	0.0	1.5	7301.1	0.7
27Feb2019	07:13	0.0	1.5	7301.1	0.7
27Feb2019	07:14	0.0	1.5	7301.1	0.7
27Feb2019	07:15	0.0	1.5	7301.1	0.7
27Feb2019	07:16	0.0	1.5	7301.1	0.7
27Feb2019	07:17	0.0	1.5	7301.1	0.7
27Feb2019	07:18	0.0	1.5	7301.1	0.7
27Feb2019	07:19	0.0	1.5	7301.1	0.7
27Feb2019	07:20	0.0	1.5	7301.1	0.7
27Feb2019	07:21	0.0	1.5	7301.1	0.7
27Feb2019	07:22	0.0	1.5	7301.1	0.7
27Feb2019	07:23	0.0	1.5	7301.1	0.7
27Feb2019	07:24	0.0	1.5	7301.1	0.7
27Feb2019	07:25	0.0	1.5	7301.1	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	07:26	0.0	1.5	7301.1	0.7
27Feb2019	07:27	0.0	1.5	7301.1	0.7
27Feb2019	07:28	0.0	1.5	7301.1	0.7
27Feb2019	07:29	0.0	1.5	7301.1	0.7
27Feb2019	07:30	0.0	1.5	7301.1	0.7
27Feb2019	07:31	0.0	1.5	7301.1	0.7
27Feb2019	07:32	0.0	1.5	7301.1	0.7
27Feb2019	07:33	0.0	1.5	7301.1	0.7
27Feb2019	07:34	0.0	1.5	7301.1	0.7
27Feb2019	07:35	0.0	1.5	7301.1	0.7
27Feb2019	07:36	0.0	1.5	7301.1	0.7
27Feb2019	07:37	0.0	1.5	7301.1	0.7
27Feb2019	07:38	0.0	1.5	7301.1	0.7
27Feb2019	07:39	0.0	1.5	7301.1	0.7
27Feb2019	07:40	0.0	1.5	7301.1	0.7
27Feb2019	07:41	0.0	1.5	7301.1	0.7
27Feb2019	07:42	0.0	1.5	7301.1	0.7
27Feb2019	07:43	0.0	1.5	7301.1	0.7
27Feb2019	07:44	0.0	1.5	7301.1	0.7
27Feb2019	07:45	0.0	1.5	7301.1	0.6
27Feb2019	07:46	0.0	1.5	7301.1	0.6
27Feb2019	07:47	0.0	1.5	7301.1	0.6
27Feb2019	07:48	0.0	1.5	7301.1	0.6
27Feb2019	07:49	0.0	1.5	7301.1	0.6
27Feb2019	07:50	0.0	1.5	7301.1	0.6
27Feb2019	07:51	0.0	1.5	7301.1	0.6
27Feb2019	07:52	0.0	1.5	7301.1	0.6
27Feb2019	07:53	0.0	1.5	7301.1	0.6
27Feb2019	07:54	0.0	1.5	7301.1	0.6
27Feb2019	07:55	0.0	1.5	7301.1	0.6
27Feb2019	07:56	0.0	1.5	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	07:57	0.0	1.5	7301.1	0.6
27Feb2019	07:58	0.0	1.5	7301.1	0.6
27Feb2019	07:59	0.0	1.5	7301.1	0.6
27Feb2019	08:00	0.0	1.5	7301.1	0.6
27Feb2019	08:01	0.0	1.5	7301.1	0.6
27Feb2019	08:02	0.0	1.5	7301.1	0.6
27Feb2019	08:03	0.0	1.5	7301.1	0.6
27Feb2019	08:04	0.0	1.4	7301.1	0.6
27Feb2019	08:05	0.0	1.4	7301.1	0.6
27Feb2019	08:06	0.0	1.4	7301.1	0.6
27Feb2019	08:07	0.0	1.4	7301.1	0.6
27Feb2019	08:08	0.0	1.4	7301.1	0.6
27Feb2019	08:09	0.0	1.4	7301.1	0.6
27Feb2019	08:10	0.0	1.4	7301.1	0.6
27Feb2019	08:11	0.0	1.4	7301.1	0.6
27Feb2019	08:12	0.0	1.4	7301.1	0.6
27Feb2019	08:13	0.0	1.4	7301.1	0.6
27Feb2019	08:14	0.0	1.4	7301.1	0.6
27Feb2019	08:15	0.0	1.4	7301.1	0.6
27Feb2019	08:16	0.0	1.4	7301.1	0.6
27Feb2019	08:17	0.0	1.4	7301.1	0.6
27Feb2019	08:18	0.0	1.4	7301.1	0.6
27Feb2019	08:19	0.0	1.4	7301.1	0.6
27Feb2019	08:20	0.0	1.4	7301.1	0.6
27Feb2019	08:21	0.0	1.4	7301.1	0.6
27Feb2019	08:22	0.0	1.4	7301.1	0.6
27Feb2019	08:23	0.0	1.4	7301.1	0.6
27Feb2019	08:24	0.0	1.4	7301.1	0.6
27Feb2019	08:25	0.0	1.4	7301.1	0.6
27Feb2019	08:26	0.0	1.4	7301.1	0.6
27Feb2019	08:27	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	08:28	0.0	1.4	7301.1	0.6
27Feb2019	08:29	0.0	1.4	7301.1	0.6
27Feb2019	08:30	0.0	1.4	7301.1	0.6
27Feb2019	08:31	0.0	1.4	7301.1	0.6
27Feb2019	08:32	0.0	1.4	7301.1	0.6
27Feb2019	08:33	0.0	1.4	7301.1	0.6
27Feb2019	08:34	0.0	1.4	7301.1	0.6
27Feb2019	08:35	0.0	1.4	7301.1	0.6
27Feb2019	08:36	0.0	1.4	7301.1	0.6
27Feb2019	08:37	0.0	1.4	7301.1	0.6
27Feb2019	08:38	0.0	1.4	7301.1	0.6
27Feb2019	08:39	0.0	1.4	7301.1	0.6
27Feb2019	08:40	0.0	1.4	7301.1	0.6
27Feb2019	08:41	0.0	1.4	7301.1	0.6
27Feb2019	08:42	0.0	1.4	7301.1	0.6
27Feb2019	08:43	0.0	1.4	7301.1	0.6
27Feb2019	08:44	0.0	1.4	7301.1	0.6
27Feb2019	08:45	0.0	1.4	7301.1	0.6
27Feb2019	08:46	0.0	1.4	7301.1	0.6
27Feb2019	08:47	0.0	1.4	7301.1	0.6
27Feb2019	08:48	0.0	1.4	7301.1	0.6
27Feb2019	08:49	0.0	1.4	7301.1	0.6
27Feb2019	08:50	0.0	1.4	7301.1	0.6
27Feb2019	08:51	0.0	1.4	7301.1	0.6
27Feb2019	08:52	0.0	1.4	7301.1	0.6
27Feb2019	08:53	0.0	1.4	7301.1	0.6
27Feb2019	08:54	0.0	1.4	7301.1	0.6
27Feb2019	08:55	0.0	1.4	7301.1	0.6
27Feb2019	08:56	0.0	1.4	7301.1	0.6
27Feb2019	08:57	0.0	1.4	7301.1	0.6
27Feb2019	08:58	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	08:59	0.0	1.4	7301.1	0.6
27Feb2019	09:00	0.0	1.4	7301.1	0.6
27Feb2019	09:01	0.0	1.4	7301.1	0.6
27Feb2019	09:02	0.0	1.4	7301.1	0.6
27Feb2019	09:03	0.0	1.4	7301.1	0.6
27Feb2019	09:04	0.0	1.4	7301.1	0.6
27Feb2019	09:05	0.0	1.4	7301.1	0.6
27Feb2019	09:06	0.0	1.4	7301.1	0.6
27Feb2019	09:07	0.0	1.4	7301.1	0.6
27Feb2019	09:08	0.0	1.4	7301.1	0.6
27Feb2019	09:09	0.0	1.4	7301.1	0.6
27Feb2019	09:10	0.0	1.4	7301.1	0.6
27Feb2019	09:11	0.0	1.4	7301.1	0.6
27Feb2019	09:12	0.0	1.4	7301.1	0.6
27Feb2019	09:13	0.0	1.4	7301.1	0.6
27Feb2019	09:14	0.0	1.4	7301.1	0.6
27Feb2019	09:15	0.0	1.4	7301.1	0.6
27Feb2019	09:16	0.0	1.4	7301.1	0.6
27Feb2019	09:17	0.0	1.4	7301.1	0.6
27Feb2019	09:18	0.0	1.4	7301.1	0.6
27Feb2019	09:19	0.0	1.4	7301.1	0.6
27Feb2019	09:20	0.0	1.4	7301.1	0.6
27Feb2019	09:21	0.0	1.4	7301.1	0.6
27Feb2019	09:22	0.0	1.4	7301.1	0.6
27Feb2019	09:23	0.0	1.4	7301.1	0.6
27Feb2019	09:24	0.0	1.4	7301.1	0.6
27Feb2019	09:25	0.0	1.4	7301.1	0.6
27Feb2019	09:26	0.0	1.4	7301.1	0.6
27Feb2019	09:27	0.0	1.4	7301.1	0.6
27Feb2019	09:28	0.0	1.4	7301.1	0.6
27Feb2019	09:29	0.0	1.4	7301.1	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	09:30	0.0	1.4	7301.1	0.6
27Feb2019	09:31	0.0	1.4	7301.1	0.6
27Feb2019	09:32	0.0	1.4	7301.1	0.6
27Feb2019	09:33	0.0	1.4	7301.1	0.6
27Feb2019	09:34	0.0	1.4	7301.1	0.6
27Feb2019	09:35	0.0	1.4	7301.1	0.6
27Feb2019	09:36	0.0	1.4	7301.1	0.6
27Feb2019	09:37	0.0	1.4	7301.1	0.6
27Feb2019	09:38	0.0	1.4	7301.1	0.6
27Feb2019	09:39	0.0	1.4	7301.1	0.6
27Feb2019	09:40	0.0	1.4	7301.1	0.6
27Feb2019	09:41	0.0	1.4	7301.1	0.6
27Feb2019	09:42	0.0	1.4	7301.1	0.6
27Feb2019	09:43	0.0	1.4	7301.1	0.6
27Feb2019	09:44	0.0	1.4	7301.0	0.6
27Feb2019	09:45	0.0	1.4	7301.0	0.6
27Feb2019	09:46	0.0	1.4	7301.0	0.6
27Feb2019	09:47	0.0	1.4	7301.0	0.6
27Feb2019	09:48	0.0	1.4	7301.0	0.6
27Feb2019	09:49	0.0	1.4	7301.0	0.6
27Feb2019	09:50	0.0	1.4	7301.0	0.6
27Feb2019	09:51	0.0	1.4	7301.0	0.6
27Feb2019	09:52	0.0	1.4	7301.0	0.6
27Feb2019	09:53	0.0	1.4	7301.0	0.6
27Feb2019	09:54	0.0	1.4	7301.0	0.6
27Feb2019	09:55	0.0	1.4	7301.0	0.6
27Feb2019	09:56	0.0	1.4	7301.0	0.6
27Feb2019	09:57	0.0	1.4	7301.0	0.6
27Feb2019	09:58	0.0	1.3	7301.0	0.6
27Feb2019	09:59	0.0	1.3	7301.0	0.6
27Feb2019	10:00	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	10:01	0.0	1.3	7301.0	0.6
27Feb2019	10:02	0.0	1.3	7301.0	0.6
27Feb2019	10:03	0.0	1.3	7301.0	0.6
27Feb2019	10:04	0.0	1.3	7301.0	0.6
27Feb2019	10:05	0.0	1.3	7301.0	0.6
27Feb2019	10:06	0.0	1.3	7301.0	0.6
27Feb2019	10:07	0.0	1.3	7301.0	0.6
27Feb2019	10:08	0.0	1.3	7301.0	0.6
27Feb2019	10:09	0.0	1.3	7301.0	0.6
27Feb2019	10:10	0.0	1.3	7301.0	0.6
27Feb2019	10:11	0.0	1.3	7301.0	0.6
27Feb2019	10:12	0.0	1.3	7301.0	0.6
27Feb2019	10:13	0.0	1.3	7301.0	0.6
27Feb2019	10:14	0.0	1.3	7301.0	0.6
27Feb2019	10:15	0.0	1.3	7301.0	0.6
27Feb2019	10:16	0.0	1.3	7301.0	0.6
27Feb2019	10:17	0.0	1.3	7301.0	0.6
27Feb2019	10:18	0.0	1.3	7301.0	0.6
27Feb2019	10:19	0.0	1.3	7301.0	0.6
27Feb2019	10:20	0.0	1.3	7301.0	0.6
27Feb2019	10:21	0.0	1.3	7301.0	0.6
27Feb2019	10:22	0.0	1.3	7301.0	0.6
27Feb2019	10:23	0.0	1.3	7301.0	0.6
27Feb2019	10:24	0.0	1.3	7301.0	0.6
27Feb2019	10:25	0.0	1.3	7301.0	0.6
27Feb2019	10:26	0.0	1.3	7301.0	0.6
27Feb2019	10:27	0.0	1.3	7301.0	0.6
27Feb2019	10:28	0.0	1.3	7301.0	0.6
27Feb2019	10:29	0.0	1.3	7301.0	0.6
27Feb2019	10:30	0.0	1.3	7301.0	0.6
27Feb2019	10:31	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	10:32	0.0	1.3	7301.0	0.6
27Feb2019	10:33	0.0	1.3	7301.0	0.6
27Feb2019	10:34	0.0	1.3	7301.0	0.6
27Feb2019	10:35	0.0	1.3	7301.0	0.6
27Feb2019	10:36	0.0	1.3	7301.0	0.6
27Feb2019	10:37	0.0	1.3	7301.0	0.6
27Feb2019	10:38	0.0	1.3	7301.0	0.6
27Feb2019	10:39	0.0	1.3	7301.0	0.6
27Feb2019	10:40	0.0	1.3	7301.0	0.6
27Feb2019	10:41	0.0	1.3	7301.0	0.6
27Feb2019	10:42	0.0	1.3	7301.0	0.6
27Feb2019	10:43	0.0	1.3	7301.0	0.6
27Feb2019	10:44	0.0	1.3	7301.0	0.6
27Feb2019	10:45	0.0	1.3	7301.0	0.6
27Feb2019	10:46	0.0	1.3	7301.0	0.6
27Feb2019	10:47	0.0	1.3	7301.0	0.6
27Feb2019	10:48	0.0	1.3	7301.0	0.6
27Feb2019	10:49	0.0	1.3	7301.0	0.6
27Feb2019	10:50	0.0	1.3	7301.0	0.6
27Feb2019	10:51	0.0	1.3	7301.0	0.6
27Feb2019	10:52	0.0	1.3	7301.0	0.6
27Feb2019	10:53	0.0	1.3	7301.0	0.6
27Feb2019	10:54	0.0	1.3	7301.0	0.6
27Feb2019	10:55	0.0	1.3	7301.0	0.6
27Feb2019	10:56	0.0	1.3	7301.0	0.6
27Feb2019	10:57	0.0	1.3	7301.0	0.6
27Feb2019	10:58	0.0	1.3	7301.0	0.6
27Feb2019	10:59	0.0	1.3	7301.0	0.6
27Feb2019	11:00	0.0	1.3	7301.0	0.6
27Feb2019	11:01	0.0	1.3	7301.0	0.6
27Feb2019	11:02	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	11:03	0.0	1.3	7301.0	0.6
27Feb2019	11:04	0.0	1.3	7301.0	0.6
27Feb2019	11:05	0.0	1.3	7301.0	0.6
27Feb2019	11:06	0.0	1.3	7301.0	0.6
27Feb2019	11:07	0.0	1.3	7301.0	0.6
27Feb2019	11:08	0.0	1.3	7301.0	0.6
27Feb2019	11:09	0.0	1.3	7301.0	0.6
27Feb2019	11:10	0.0	1.3	7301.0	0.6
27Feb2019	11:11	0.0	1.3	7301.0	0.6
27Feb2019	11:12	0.0	1.3	7301.0	0.6
27Feb2019	11:13	0.0	1.3	7301.0	0.6
27Feb2019	11:14	0.0	1.3	7301.0	0.6
27Feb2019	11:15	0.0	1.3	7301.0	0.6
27Feb2019	11:16	0.0	1.3	7301.0	0.6
27Feb2019	11:17	0.0	1.3	7301.0	0.6
27Feb2019	11:18	0.0	1.3	7301.0	0.6
27Feb2019	11:19	0.0	1.3	7301.0	0.6
27Feb2019	11:20	0.0	1.3	7301.0	0.6
27Feb2019	11:21	0.0	1.3	7301.0	0.6
27Feb2019	11:22	0.0	1.3	7301.0	0.6
27Feb2019	11:23	0.0	1.3	7301.0	0.6
27Feb2019	11:24	0.0	1.3	7301.0	0.6
27Feb2019	11:25	0.0	1.3	7301.0	0.6
27Feb2019	11:26	0.0	1.3	7301.0	0.6
27Feb2019	11:27	0.0	1.3	7301.0	0.6
27Feb2019	11:28	0.0	1.3	7301.0	0.6
27Feb2019	11:29	0.0	1.3	7301.0	0.6
27Feb2019	11:30	0.0	1.3	7301.0	0.6
27Feb2019	11:31	0.0	1.3	7301.0	0.6
27Feb2019	11:32	0.0	1.3	7301.0	0.6
27Feb2019	11:33	0.0	1.3	7301.0	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
27Feb2019	11:34	0.0	1.3	7301.0	0.6
27Feb2019	11:35	0.0	1.3	7301.0	0.6
27Feb2019	11:36	0.0	1.3	7301.0	0.6
27Feb2019	11:37	0.0	1.3	7301.0	0.6
27Feb2019	11:38	0.0	1.3	7301.0	0.6
27Feb2019	11:39	0.0	1.3	7301.0	0.6
27Feb2019	11:40	0.0	1.3	7301.0	0.6
27Feb2019	11:41	0.0	1.3	7301.0	0.6
27Feb2019	11:42	0.0	1.3	7301.0	0.6
27Feb2019	11:43	0.0	1.3	7301.0	0.6
27Feb2019	11:44	0.0	1.3	7301.0	0.6
27Feb2019	11:45	0.0	1.3	7301.0	0.6
27Feb2019	11:46	0.0	1.3	7301.0	0.6
27Feb2019	11:47	0.0	1.3	7301.0	0.6
27Feb2019	11:48	0.0	1.3	7301.0	0.6
27Feb2019	11:49	0.0	1.3	7301.0	0.6
27Feb2019	11:50	0.0	1.3	7301.0	0.6
27Feb2019	11:51	0.0	1.3	7301.0	0.6
27Feb2019	11:52	0.0	1.3	7301.0	0.6
27Feb2019	11:53	0.0	1.3	7301.0	0.6
27Feb2019	11:54	0.0	1.3	7301.0	0.6
27Feb2019	11:55	0.0	1.2	7301.0	0.6
27Feb2019	11:56	0.0	1.2	7301.0	0.6
27Feb2019	11:57	0.0	1.2	7301.0	0.6
27Feb2019	11:58	0.0	1.2	7301.0	0.6
27Feb2019	11:59	0.0	1.2	7301.0	0.6
27Feb2019	12:00	0.0	1.2	7301.0	0.6

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach E1.2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	16.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:07
Peak Discharge:	16.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:12
Inflow Volume:	1.05 (IN)	Discharge Volume:	1.05 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-E2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	03Jun2021, 16:54:42	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	24.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:16
Peak Discharge:	24.5 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:19
Inflow Volume:	0.55 (IN)	Discharge Volume:	0.55 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach E3.1

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	04Jun2021, 13:52:40	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	21.4 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:09
Peak Discharge:	21.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:12
Inflow Volume:	1.03 (IN)	Discharge Volume:	1.03 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-E3

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	DATA CHANGED, RECOMPUTE	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	36.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:13
Peak Discharge:	36.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:17
Inflow Volume:	0.69 (IN)	Discharge Volume:	0.69 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-E4

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	DATA CHANGED, RECOMPUTE	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	84.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:10
Peak Discharge:	84.5 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Inflow Volume:	0.85 (IN)	Discharge Volume:	0.85 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-E6

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	18.4 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:09
Peak Discharge:	18.4 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:13
Inflow Volume:	0.95 (IN)	Discharge Volume:	0.95 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-E7

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	DATA CHANGED, RECOMPUTE	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	117.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:11
Peak Discharge:	117.5 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:14
Inflow Volume:	0.91 (IN)	Discharge Volume:	0.91 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-F2

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	18May2021, 16:01:20	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	8.6 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:04
Peak Discharge:	8.6 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:08
Inflow Volume:	1.20 (IN)	Discharge Volume:	1.20 (IN)

Project: Winsome_EX_Basins Simulation Run: Prop Basins 100 yr
Reach: Reach-6 Kiowa Outfall

Start of Run:	26Feb2019, 00:00	Basin Model:	Proposed Basins
End of Run:	27Feb2019, 12:00	Meteorologic Model:	Prop Basins 100yr
Compute Time:	09Sep2021, 17:03:24	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	2026.1 (CFS)	Date/Time of Peak Inflow	26Feb2019, 12:44
Peak Discharge:	2026.1 (CFS)	Date/Time of Peak Discharge	26Feb2019, 12:45
Inflow Volume:	0.60 (IN)	Discharge Volume:	0.60 (IN)

APPENDIX C: HYDRAULICS

Channel Flows Summary				
<i>Channel Label</i>	<i>Q100 (cfs)</i>	<i>Velocity (fps)</i>	<i>Allowable Velocity (fps)</i>	<i>Channel Lining</i>
2	24.60	3.93	5.00	Sand/Clay
E4	117.70	6.69	10.00	Turf Reinforced Matting
E3	84.60	4.28	5.00	Sand/Clay
E1.2	21.40	2.37	5.00	Sand/Clay
E2	36.60	2.59	5.00	Sand/Clay
9	18.40	3.39	5.00	Sand/Clay
1	24.60	3.74	5.00	Sand/Clay
10	137.40	4.77	5.00	Sand/Clay
6	8.60	3.41	5.00	Sand/Clay
4	3.82	3.49	5.00	Sand/Clay
7	25.19	3.97	5.00	Sand/Clay
5	16.11	3.55	5.00	Sand/Clay
F2	8.40	2.24	5.00	Sand/Clay
8	7.00	2.30	5.00	Sand/Clay

Worksheet for Irregular Section - 2

CHANNEL 2

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.025 ft/ft
Discharge	24.60 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+00	7,410.00
0+39	7,405.57
0+57	7,401.34
0+62	7,401.35
0+74	7,404.35
1+00	7,404.83

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 7,410.00)	(1+00, 7,404.83)	0.040

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	9.4 in
Roughness Coefficient	0.040
Elevation	7,402.12 ft
Elevation Range	7,401.3 to 7,410.0 ft
Flow Area	6.3 ft ²
Wetted Perimeter	11.5 ft
Hydraulic Radius	6.6 in
Top Width	11.27 ft
Normal Depth	9.4 in
Critical Depth	9.0 in
Critical Slope	0.029 ft/ft
Velocity	3.93 ft/s
Velocity Head	0.24 ft
Specific Energy	1.02 ft
Froude Number	0.929

Worksheet for Irregular Section - 2

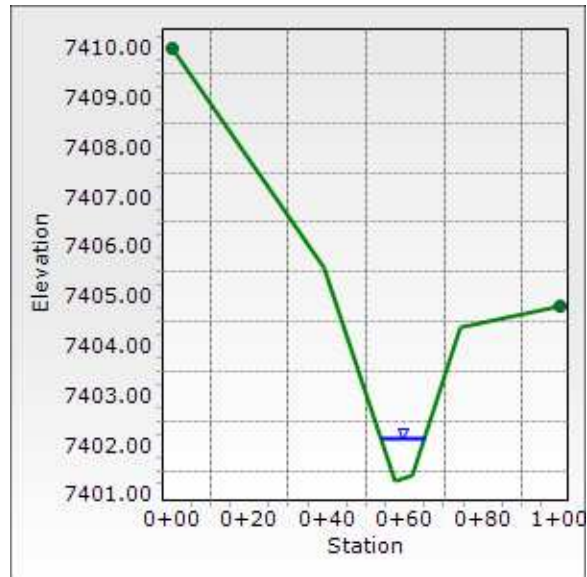
CHANNEL 2

Results	
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	9.4 in
Critical Depth	9.0 in
Channel Slope	0.025 ft/ft
Critical Slope	0.029 ft/ft

Cross Section for Irregular Section - 2

CHANNEL 2

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.025 ft/ft
Normal Depth	9.4 in
Discharge	24.60 cfs



Worksheet for Irregular Section - E4

CHANNEL E4

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.020 ft/ft
Discharge	117.70 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+37	7,336.30
0+94	7,334.18
1+47	7,324.49
1+55	7,324.47
2+03	7,335.07
2+40	7,337.25

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+37, 7,336.30)	(2+40, 7,337.25)	0.028

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	14.5 in
Roughness Coefficient	0.028
Elevation	7,325.67 ft
Elevation Range	7,324.5 to 7,337.3 ft
Flow Area	17.6 ft ²
Wetted Perimeter	20.9 ft
Hydraulic Radius	10.1 in
Top Width	20.62 ft
Normal Depth	14.5 in
Critical Depth	16.5 in
Critical Slope	0.012 ft/ft
Velocity	6.69 ft/s
Velocity Head	0.70 ft
Specific Energy	1.90 ft
Froude Number	1.278

Worksheet for Irregular Section - E4

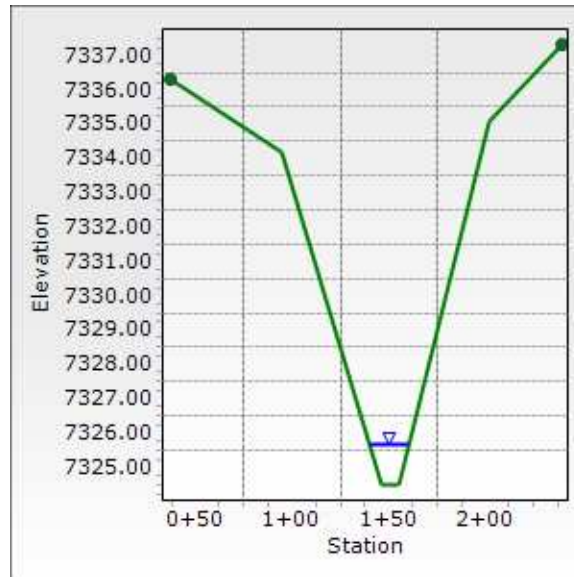
CHANNEL E4

Results	
Flow Type	Supercritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	14.5 in
Critical Depth	16.5 in
Channel Slope	0.020 ft/ft
Critical Slope	0.012 ft/ft

Cross Section for Irregular Section - E4

CHANNEL E4

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.020 ft/ft
Normal Depth	14.5 in
Discharge	117.70 cfs



Worksheet for Irregular Section - E3

CHANNEL E3

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.023 ft/ft
Discharge	84.60 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+05	7,349.91
0+25	7,348.99
0+49	7,348.00
0+68	7,345.99
0+77	7,342.29
0+95	7,340.96
1+24	7,344.37
1+38	7,346.51
1+59	7,350.70

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+05, 7,349.91)	(1+59, 7,350.70)	0.040

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Normal Depth	16.0 in
Roughness Coefficient	0.040
Elevation	7,342.29 ft
Elevation Range	7,341.0 to 7,350.7 ft
Flow Area	19.8 ft ²
Wetted Perimeter	29.9 ft
Hydraulic Radius	7.9 in
Top Width	29.75 ft
Normal Depth	16.0 in
Critical Depth	15.5 in
Critical Slope	0.027 ft/ft
Velocity	4.28 ft/s

Worksheet for Irregular Section - E3

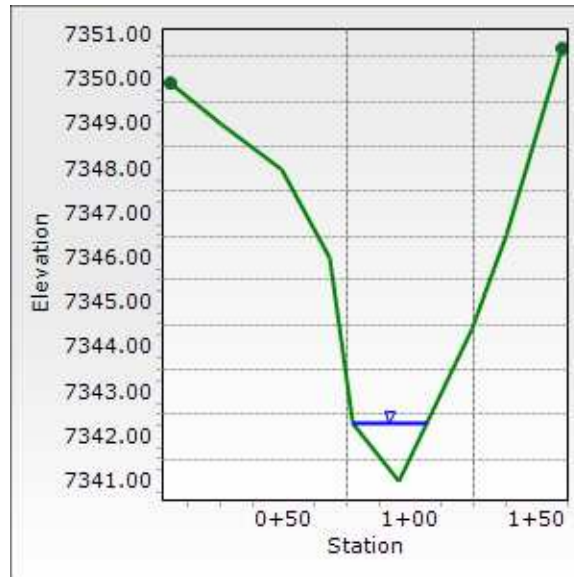
CHANNEL E3

Results	
Velocity Head	0.28 ft
Specific Energy	1.61 ft
Froude Number	0.925
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	16.0 in
Critical Depth	15.5 in
Channel Slope	0.023 ft/ft
Critical Slope	0.027 ft/ft

Cross Section for Irregular Section - E3

CHANNEL E3

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.023 ft/ft
Normal Depth	16.0 in
Discharge	84.60 cfs



Worksheet for Irregular Section - E1.2

CHANNEL E1.2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.025 ft/ft
Discharge	21.40 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+01	7,377.99
0+45	7,376.39
0+57	7,376.38
0+64	7,376.40
0+97	7,377.99

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+01, 7,377.99)	(0+97, 7,377.99)	0.040

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	4.1 in
Roughness Coefficient	0.040
Elevation	7,376.72 ft
Elevation Range	7,376.4 to 7,378.0 ft
Flow Area	9.0 ft ²
Wetted Perimeter	35.0 ft
Hydraulic Radius	3.1 in
Top Width	34.97 ft
Normal Depth	4.1 in
Critical Depth	3.7 in
Critical Slope	0.038 ft/ft
Velocity	2.37 ft/s
Velocity Head	0.09 ft
Specific Energy	0.43 ft
Froude Number	0.825
Flow Type	Subcritical

Worksheet for Irregular Section - E1.2

CHANNEL E1.2

GVF Input Data

Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

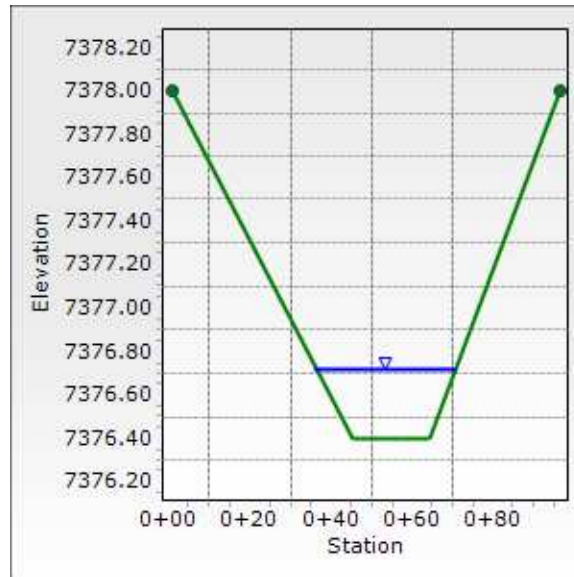
GVF Output Data

Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	4.1 in
Critical Depth	3.7 in
Channel Slope	0.025 ft/ft
Critical Slope	0.038 ft/ft

Cross Section for Irregular Section - E1.2

CHANNEL E1.2

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.025 ft/ft
Normal Depth	4.1 in
Discharge	21.40 cfs



Worksheet for Irregular Section - E2

CHANNEL E2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.030 ft/ft
Discharge	36.60 cfs

Section Definitions

Station (ft)	Elevation (ft)
0+39	7,385.99
1+32	7,380.81
1+75	7,380.67
2+43	7,383.38
2+76	7,384.91

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+39, 7,385.99)	(2+76, 7,384.91)	0.040

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	4.3 in
Roughness Coefficient	0.040
Elevation	7,381.02 ft
Elevation Range	7,380.7 to 7,386.0 ft
Flow Area	14.2 ft ²
Wetted Perimeter	55.5 ft
Hydraulic Radius	3.1 in
Top Width	55.51 ft
Normal Depth	4.3 in
Critical Depth	4.0 in
Critical Slope	0.038 ft/ft
Velocity	2.59 ft/s
Velocity Head	0.10 ft
Specific Energy	0.46 ft
Froude Number	0.903
Flow Type	Subcritical

Worksheet for Irregular Section - E2

CHANNEL E2

GVF Input Data

Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

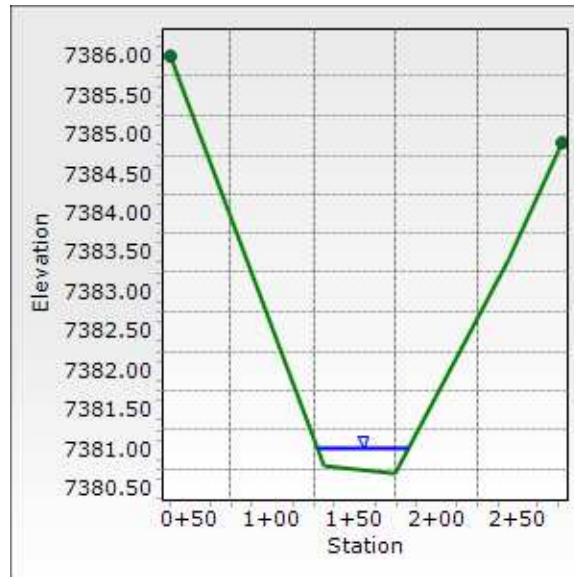
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Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	4.3 in
Critical Depth	4.0 in
Channel Slope	0.030 ft/ft
Critical Slope	0.038 ft/ft

Cross Section for Irregular Section - E2

CHANNEL E2

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.030 ft/ft
Normal Depth	4.3 in
Discharge	36.60 cfs

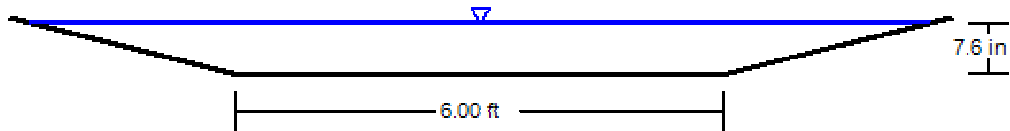


Worksheet for Trapezoidal Channel - 9

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.022 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Bottom Width	6.00 ft
Discharge	18.40 cfs
Results	
Normal Depth	7.6 in
Flow Area	5.4 ft ²
Wetted Perimeter	11.2 ft
Hydraulic Radius	5.8 in
Top Width	11.08 ft
Critical Depth	7.0 in
Critical Slope	0.031 ft/ft
Velocity	3.39 ft/s
Velocity Head	0.18 ft
Specific Energy	0.81 ft
Froude Number	0.854
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	7.6 in
Critical Depth	7.0 in
Channel Slope	0.022 ft/ft
Critical Slope	0.031 ft/ft

Cross Section for Trapezoidal Channel - 9

Project Description	
Friction Method	Manning
Solve For	Formula Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.022 ft/ft
Normal Depth	7.6 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Bottom Width	6.00 ft
Discharge	18.40 cfs



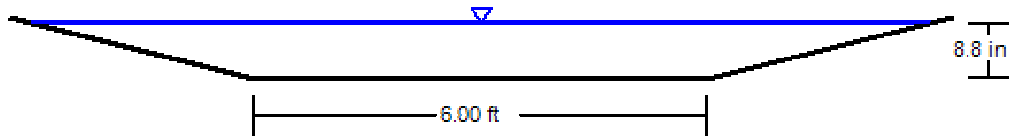
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H: 1

Worksheet for Trapezoidal Channel - 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.023 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Bottom Width	6.00 ft
Discharge	24.60 cfs
Results	
Normal Depth	8.8 in
Flow Area	6.6 ft ²
Wetted Perimeter	12.1 ft
Hydraulic Radius	6.5 in
Top Width	11.88 ft
Critical Depth	8.2 in
Critical Slope	0.030 ft/ft
Velocity	3.74 ft/s
Velocity Head	0.22 ft
Specific Energy	0.95 ft
Froude Number	0.887
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	8.8 in
Critical Depth	8.2 in
Channel Slope	0.023 ft/ft
Critical Slope	0.030 ft/ft

Cross Section for Trapezoidal Channel - 1

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.023 ft/ft
Normal Depth	8.8 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Bottom Width	6.00 ft
Discharge	24.60 cfs



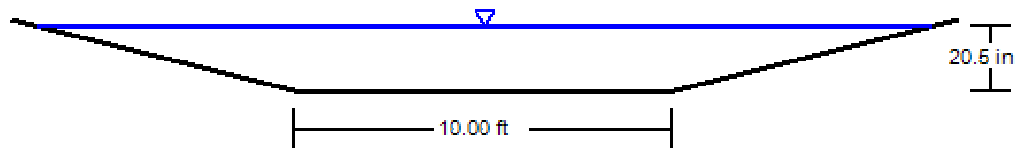
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Worksheet for Trapezoidal Channel - 10

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.013 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Bottom Width	10.00 ft
Discharge	137.40 cfs
Results	
Normal Depth	20.5 in
Flow Area	28.8 ft ²
Wetted Perimeter	24.1 ft
Hydraulic Radius	14.3 in
Top Width	23.68 ft
Critical Depth	17.7 in
Critical Slope	0.023 ft/ft
Velocity	4.77 ft/s
Velocity Head	0.35 ft
Specific Energy	2.06 ft
Froude Number	0.763
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	20.5 in
Critical Depth	17.7 in
Channel Slope	0.013 ft/ft
Critical Slope	0.023 ft/ft

Cross Section for Trapezoidal Channel - 10

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.013 ft/ft
Normal Depth	20.5 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Bottom Width	10.00 ft
Discharge	137.40 cfs



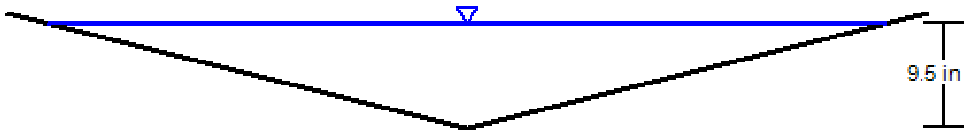
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H: 1

Worksheet for Triangular Channel - 6

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.030 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	8.60 cfs
Results	
Normal Depth	9.5 in
Flow Area	2.5 ft ²
Wetted Perimeter	6.6 ft
Hydraulic Radius	4.6 in
Top Width	6.36 ft
Critical Depth	9.3 in
Critical Slope	0.033 ft/ft
Velocity	3.41 ft/s
Velocity Head	0.18 ft
Specific Energy	0.97 ft
Froude Number	0.952
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	9.5 in
Critical Depth	9.3 in
Channel Slope	0.030 ft/ft
Critical Slope	0.033 ft/ft

Cross Section for Triangular Channel - 6

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.030 ft/ft
Normal Depth	9.5 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	8.60 cfs



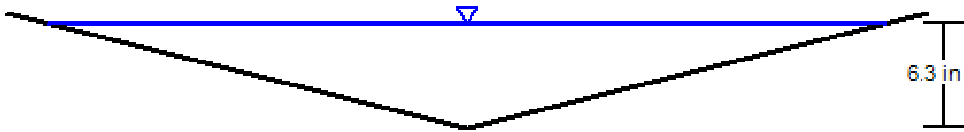
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H: 1

Worksheet for Triangular Channel - 4

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.055 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	3.82 cfs
Results	
Normal Depth	6.3 in
Flow Area	1.1 ft ²
Wetted Perimeter	4.3 ft
Hydraulic Radius	3.0 in
Top Width	4.18 ft
Critical Depth	6.8 in
Critical Slope	0.037 ft/ft
Velocity	3.49 ft/s
Velocity Head	0.19 ft
Specific Energy	0.71 ft
Froude Number	1.204
Flow Type	Supercritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	6.3 in
Critical Depth	6.8 in
Channel Slope	0.055 ft/ft
Critical Slope	0.037 ft/ft

Cross Section for Triangular Channel - 4

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.055 ft/ft
Normal Depth	6.3 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	3.82 cfs



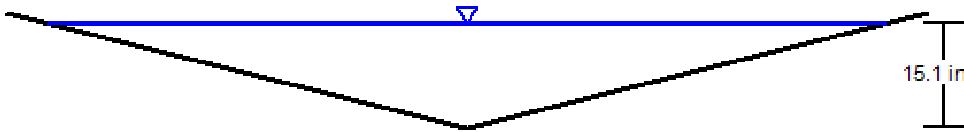
V: 1
H: 1

Worksheet for Triangular Channel - 7

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.022 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	25.19 cfs
Results	
Normal Depth	15.1 in
Flow Area	6.3 ft ²
Wetted Perimeter	10.4 ft
Hydraulic Radius	7.3 in
Top Width	10.08 ft
Critical Depth	14.4 in
Critical Slope	0.029 ft/ft
Velocity	3.97 ft/s
Velocity Head	0.24 ft
Specific Energy	1.50 ft
Froude Number	0.881
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	15.1 in
Critical Depth	14.4 in
Channel Slope	0.022 ft/ft
Critical Slope	0.029 ft/ft

Cross Section for Triangular Channel - 7

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.022 ft/ft
Normal Depth	15.1 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	25.19 cfs



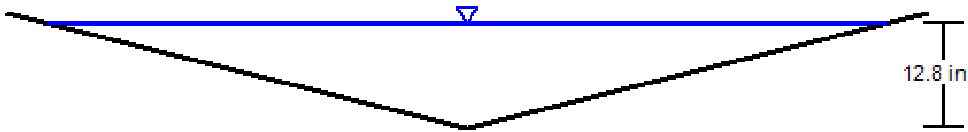
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Worksheet for Triangular Channel - 5

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.022 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	16.11 cfs
Results	
Normal Depth	12.8 in
Flow Area	4.5 ft ²
Wetted Perimeter	8.8 ft
Hydraulic Radius	6.2 in
Top Width	8.52 ft
Critical Depth	12.0 in
Critical Slope	0.031 ft/ft
Velocity	3.55 ft/s
Velocity Head	0.20 ft
Specific Energy	1.26 ft
Froude Number	0.857
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	12.8 in
Critical Depth	12.0 in
Channel Slope	0.022 ft/ft
Critical Slope	0.031 ft/ft

Cross Section for Triangular Channel - 5

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.022 ft/ft
Normal Depth	12.8 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	16.11 cfs



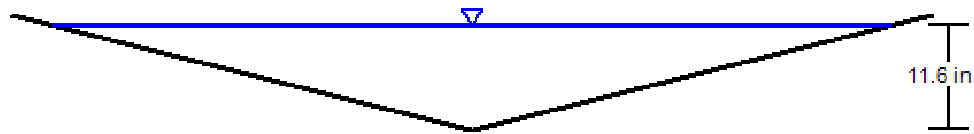
V: 1
H: 1


Worksheet for Triangular Channel - F2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.010 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	8.40 cfs
Results	
Normal Depth	11.6 in
Flow Area	3.7 ft ²
Wetted Perimeter	8.0 ft
Hydraulic Radius	5.6 in
Top Width	7.74 ft
Critical Depth	9.3 in
Critical Slope	0.033 ft/ft
Velocity	2.24 ft/s
Velocity Head	0.08 ft
Specific Energy	1.05 ft
Froude Number	0.569
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	11.6 in
Critical Depth	9.3 in
Channel Slope	0.010 ft/ft
Critical Slope	0.033 ft/ft

Cross Section for Triangular Channel - F2

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.010 ft/ft
Normal Depth	11.6 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	8.40 cfs



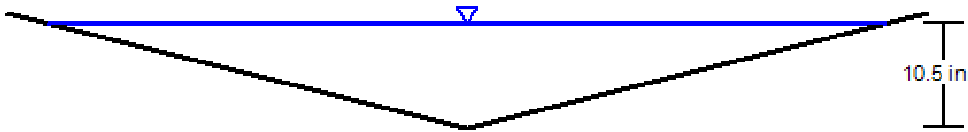
V: 1 
H: 1

Worksheet for Triangular Channel - 8

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.012 ft/ft
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	7.00 cfs
Results	
Normal Depth	10.5 in
Flow Area	3.0 ft ²
Wetted Perimeter	7.2 ft
Hydraulic Radius	5.1 in
Top Width	6.97 ft
Critical Depth	8.6 in
Critical Slope	0.034 ft/ft
Velocity	2.30 ft/s
Velocity Head	0.08 ft
Specific Energy	0.95 ft
Froude Number	0.615
Flow Type	Subcritical
GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0
GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	10.5 in
Critical Depth	8.6 in
Channel Slope	0.012 ft/ft
Critical Slope	0.034 ft/ft

Cross Section for Triangular Channel - 8

Project Description	
Friction Method	Manning
	Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.040
Channel Slope	0.012 ft/ft
Normal Depth	10.5 in
Left Side Slope	4.000 H:V
Right Side Slope	4.000 H:V
Discharge	7.00 cfs



V: 1
H: 1

possible for as much of the reach as possible to the maximum prudent values for the hydraulic parameters in the 100 year event. The designer should determine the return period where these parameters would be achieved and, with the owner and local jurisdiction, determine if the associated risks are acceptable.

On the other hand, if the recommendation to avoid floodplain filling is not followed and fill is proposed, this should only happen in floodplains where the maximum prudent values for the hydraulic parameters shown in Table 8-1 are not exceeded in the 100-year event.

Type B

Table 8-1. Maximum prudent values for natural channel hydraulic parameters

Design Parameter	Non-Cohesive Soils or Poor Vegetation	Cohesive Soils and Vegetation
Maximum flow velocity (average of section)	5 ft/s	7 ft/s
Maximum Froude number	0.6	0.8
Maximum tractive force (average of section)	0.60 lb/sf	1.0 lb/sf
Maximum depth outside bankfull channel	5 ft	5 ft

Stream Restoration Principle 8: Evaluate Hydraulics of Streams over a Range of Flows

Representative Design Tasks and Deliverables

1. Document hydraulic analyses of the project reach following the guidance of Section 7.0.
2. Describe how hydraulic performance of the project reach compares to maximum prudent values for the hydraulic parameters shown in Table 8-1 for several return periods (including 2-, 10-, and 100-year events at a minimum). Describe any locations in the reach where these parameters are exceeded and discuss efforts made to improve hydraulics.
3. Confirm that hydraulic parameters of Table 8-1 are satisfied in for the 100-year event in all locations where fill is proposed in the floodplain.



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Material and Performance Specification

ECP-2™ Polypropylene Turf Reinforcement Mat

Description:

The ECP-2™ is made with uniformly distributed 100% green polypropylene fiber and two medium weight polypropylene nets securely sewn together with UV stabilized thread. The tightly compressed blankets are wrapped and include a product label, code and installation guide. The blankets are palletized for easy transportation. The ECP-2™ is a permanent turf reinforcement mat and is suitable for 1:1 slopes and high-flow channels. The ECP-2™ meets Type 5.A, 5.B, and 5.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.18.

Matrix:	1		2			
Green or Tan Polypropylene Fiber						
Netting:	Type				Net Color	
Top: Medium weight 5# PMSF UV Stabilized Polypropylene					Black	
Middle: None						
Bottom: Medium weight 5# PMSF UV Stabilized Polypropylene						
Net Opening:	Top		Middle		Bottom	
0.5" x 0.5"					0.5" x 0.5"	
Thread:	Type		Color			
UV Stabilized Thread			Black			
Roll Sizes:	Standard		"A" Size		Mega	
Width:	8 ft	2.4 m	4 ft	1.2 m	16 ft	4.9 m
Length:	112.5 ft	34.3 m	225 ft	68.6 m	112.5 ft	34.3 m
Weight:*	75 lbs	34.0 kg	75 lbs	34.0 kg	150 lbs	68.0 kg
Area:	100 yd²	83.6 m²	100 yd²	83.6 m²	200 yd²	167.2 m²
#/Pallet:	9		6		9	

*Weight at time of manufacturing within specified tolerances.

Index Value Properties*:

Property	Test Method	Typical
Mass/Unit Area	ASTM D6566	12.00 oz/yd ² 406.9 g/m ²
Thickness	ASTM D6525	0.40 in 10.16 mm
Tensile Strength-MD	ASTM D6818	400 lb/ft 5.84 kN/m
Elongation-MD	ASTM D6818	31 %
Tensile Strength-TD	ASTM D6818	400 lb/ft 5.84 kN/m
Elongation-TD	ASTM D6818	19.0 %
Light Penetration	ASTM D6567	18 %
Density / Specific Gravity	ASTM D792	0.915 g/cm ³
Water Absorption	ASTM D1117	0 %
Resiliency	ASTM D6524	80 %
UV Resistance	ASTM D4355	82 % 1000 hours

*May differ depending upon raw material variations

Slope Performance Design Values*:

Property	Test Method		Value
C-Factors	ASTM D6459		0.01
Slope Length (L)	≤ 3:1	3:1-2:1	≥ 2:1
< 50 ft (15 m)	0.012	0.025	0.092
50 ft – 100 ft	0.036	0.065	0.115
>100 ft (30 m)	0.080	0.108	0.145

*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

Bench-Scale Testing* (NTPPEP***):

Test Method	Parameters	Results
	50mm (2in) / hr-30 min	SLR**=5.53
ECTC Method 2 Rainfall	100mm (4in) / hr-30 min	SLR**=5.38
	150mm (6in) / hr-30 min	SLR**=5.22

ECTC Method 3 Shear Resistance Shear at .50 in soil loss 2.72 lb/ft²

ECTC Method 4 Germination Top soil; Fescue; 21 day incubation 469 %

*Bench scale tests should not be used for design purposes.

**Soil Loss Ratio=Soil Loss Bare Soil/Soil Loss with RECP=1/C-Factor

***The preceding test data excerpts were reproduced with the permission of AASHTO, however, this does not constitute endorsement or approval of the product, material or device by AASHTO

Channel Performance Design Values*:

Property	Test Method	Value
Unvegetated Shear Stress	ASTM D 6460	2.60 lbs/ft ² 124.49 Pa
Unvegetated Velocity	ASTM D 6460	10.0 ft/s 3.05 m/s
Vegetated Shear Stress	ASTM D 6460	12.0 lbs/ft ² 574.56 Pa
Vegetated Velocity	ASTM D 6460	20.0 ft/s 6.10 m/s
Manning's N (Value Represents a Range)		0.028

*Large-Scale Results obtained by 3rd Party GAI Accredited Independent Laboratory

The values presented are for guidance purposes and do not constitute the practice of engineering. East Coast Erosion Blankets LLC (ECEB) ascertains that at the time of manufacture, all information presented herein is accurate and reliable and falls within the ECEB manufacturing product specification variances. If the product does not meet the stated values and ECEB is notified in writing prior to installation, the product will be replaced at no cost to the purchaser. ECEB will not be held liable for any type of damage or losses, directly or indirectly for failure of this product. Current revision supersedes all previous versions for this product.

Proposed Channel E4 RipRap Sizing at Bend								
Channel ID	100-yr WSEL [ft]	Channel Bottom [ft]	100-yr depth [ft]	100-yr Channel Velocities (ft/sec)	Channel Slope [ft/ft]	Tractive Force (100-yr) [psf]	Required Riprap D50 [inches] to Meet Criteria	Permissible Shear Stresses [psf] (US DOT Design of Roadside Channels Table 4.1)
E4	7330.7	7329.6	1	5.76	0.0200	1.37	12	5.0

Tractive Force (psf) = $62.4(\text{lb/cf}) \times \text{Depth}(\text{ft}) \times S(\text{ft/ft})$

Culvert Summary

<i>Culvert Label</i>	<i>Q100 (cfs)</i>	<i>Headwater Elevation</i>	<i>HW/D</i>	<i># of Barrels</i>	<i>Culvert Size (ft)</i>
E1.1	24.6	7414.46	1.1	2	2.5
E1.2*	37.8	7383.35	1.4	1	2
E1.5	16.6	7402.70	1.3	1	2
E2	36.6	7401.41	1.0	1	3
E3	84.6	7368.38	1.1	1	4
E4	117.6	7342.67	1.5	1	4
E5	18.4	7332.45	1.3	1	2
F2	8.6	7365.78	1.3	1	1.5
O1	78.3	7373.20	1.1	2	3
O2	123	7339.58	1.2	2	3.5

*In existing conditions culvert E1.2 will receive flows from Basins E1.1 and E1.2. Once Basin E1.2 is developed, flows will be directed to Culvert E1.2. Once Basin E1.1 is developed the flows from E1.1 will be directed to Culvert E1.5. Culvert E2 has been sized to carry the diveted flows from E1.1.

HY-8 Culvert Analysis Report

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 37.8 cfs

Maximum Flow: 100 cfs

Table 1 - Summary of Culvert Flows at Crossing: Crossing E1.2

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E1.2 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7380.60	0.00	0.00	0.00	1
7381.69	10.00	10.00	0.00	1
7382.28	20.00	20.00	0.00	1
7382.83	30.00	30.00	0.00	1
7383.35	37.80	37.80	0.00	1
7384.41	50.00	50.00	0.00	1
7384.71	60.00	52.83	7.09	10
7384.79	70.00	53.63	16.26	5
7384.86	80.00	54.27	25.59	4
7384.93	90.00	54.84	35.10	4
7384.98	100.00	55.34	44.47	3
7384.59	51.72	51.72	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E1.2

Total Rating Curve

Crossing: Crossing E1.2

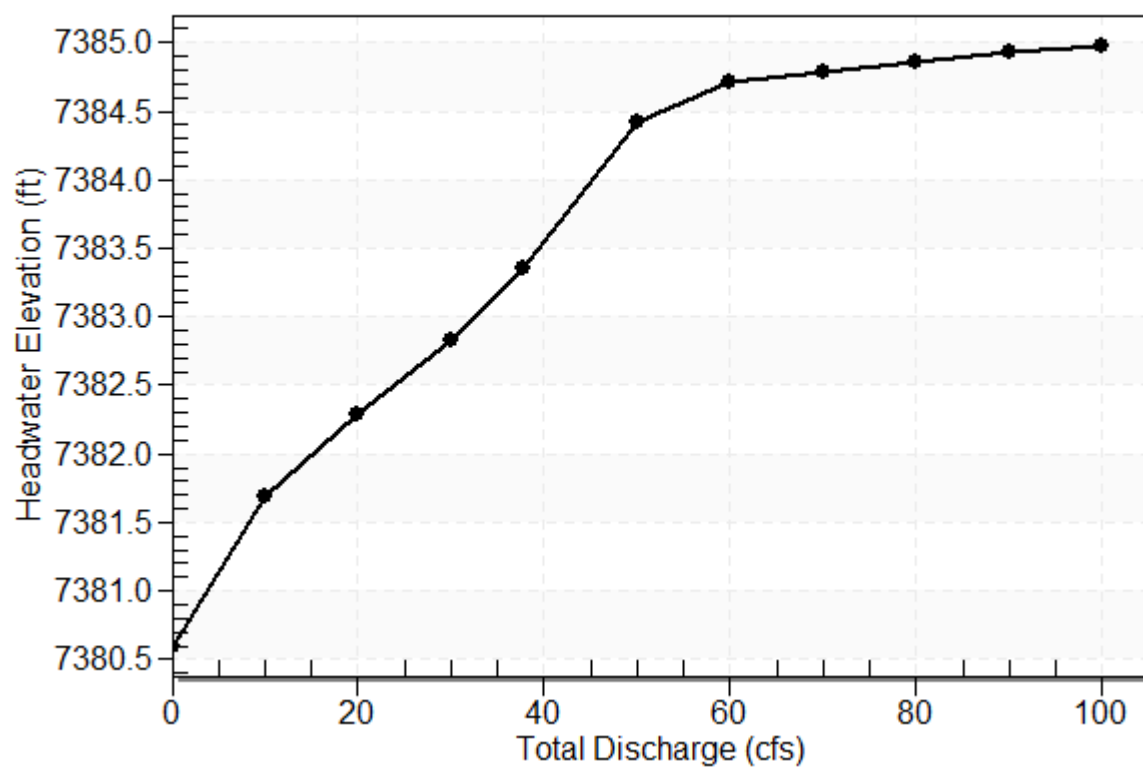


Table 2 - Culvert Summary Table: Culvert E1.2

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7380.60	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7381.69	1.088	0.0*	1-S2n	0.507	0.788	0.507	0.735	7.974	0.617
20.00	20.00	7382.28	1.682	0.0*	1-S2n	0.727	1.131	0.727	0.961	9.698	0.733
30.00	30.00	7382.83	2.234	0.0*	5-S2n	0.908	1.396	0.932	1.123	10.458	0.811
37.80	37.80	7383.35	2.752	0.359	5-S2n	1.039	1.564	1.039	1.227	11.463	0.860
50.00	50.00	7384.41	3.813	1.764	5-S2n	1.239	1.762	1.239	1.365	12.225	0.922
60.00	52.83	7384.71	4.107	2.136	5-S2n	1.287	1.795	1.316	1.464	12.049	0.965
70.00	53.63	7384.79	4.193	2.243	5-S2n	1.300	1.804	1.332	1.552	12.064	1.003
80.00	54.27	7384.86	4.263	2.331	5-S2n	1.311	1.811	1.345	1.633	12.083	1.037
90.00	54.84	7384.93	4.326	2.410	5-S2n	1.321	1.817	1.355	1.708	12.105	1.068
100.00	55.34	7384.98	4.383	2.480	5-S2n	1.330	1.822	1.364	1.778	12.129	1.097

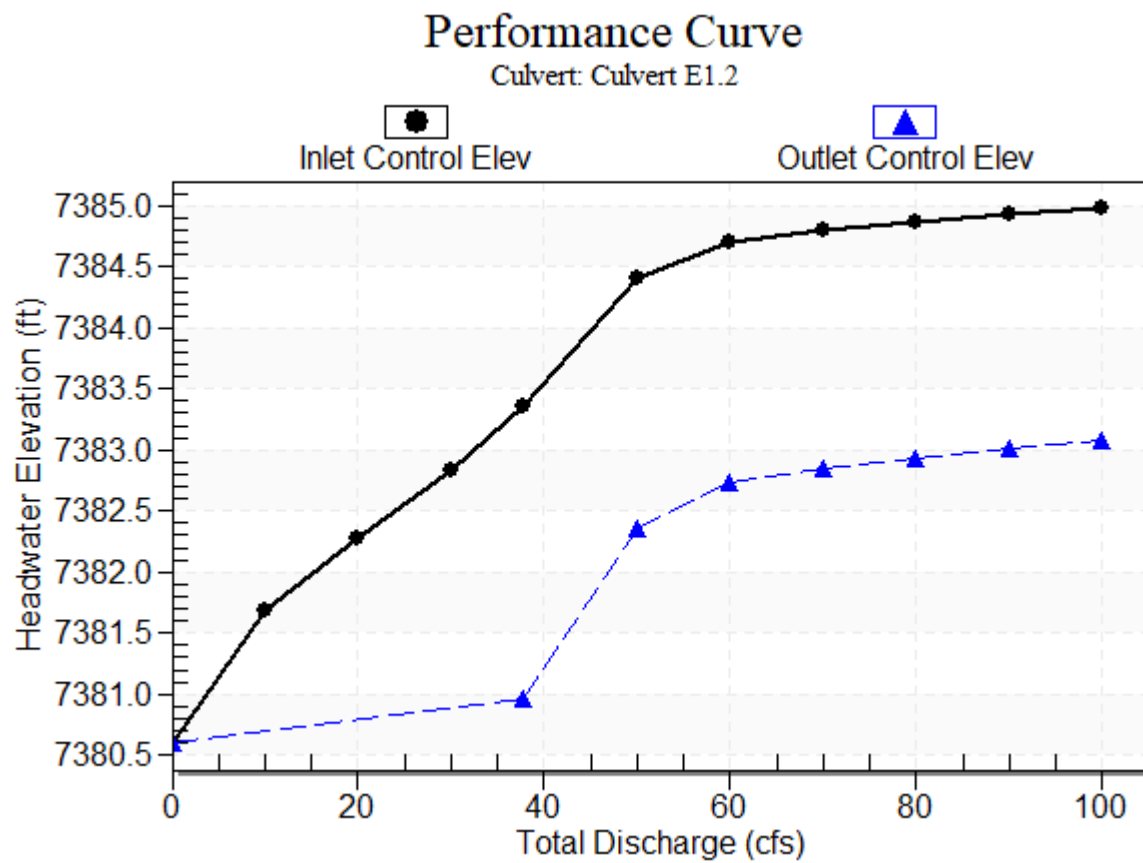
* Full Flow Headwater elevation is below inlet invert.

Straight Culvert

Inlet Elevation (invert): 7380.60 ft, Outlet Elevation (invert): 7377.44 ft

Culvert Length: 129.54 ft, Culvert Slope: 0.0244

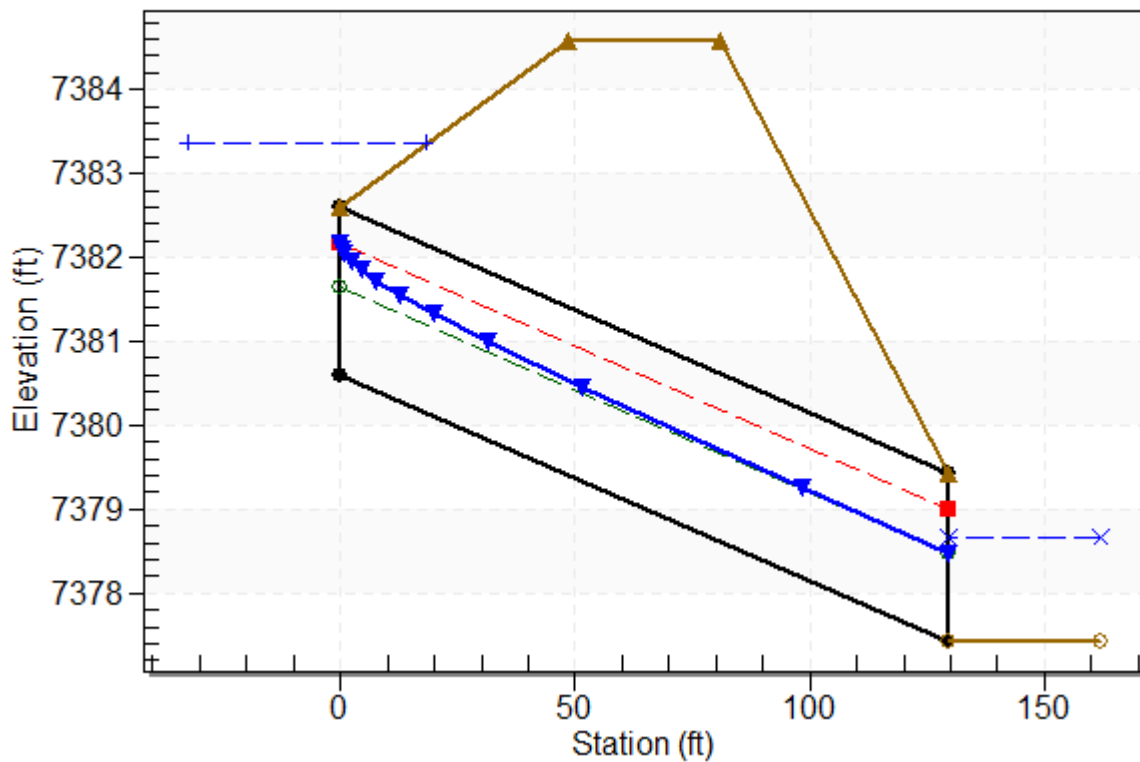
Culvert Performance Curve Plot: Culvert E1.2



Water Surface Profile Plot for Culvert: Culvert E1.2

Crossing - Crossing E1.2, Design Discharge - 37.8 cfs

Culvert - Culvert E1.2, Culvert Discharge - 37.8 cfs



Site Data - Culvert E1.2

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7380.60 ft

Outlet Station: 129.50 ft

Outlet Elevation: 7377.44 ft

Number of Barrels: 2

Culvert Data Summary - Culvert E1.2

Barrel Shape: Circular

Barrel Diameter: 2.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Crossing E1.2)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7377.44	0.00	0.00	0.00	0.00
10.00	7378.17	0.73	0.62	0.05	0.18
20.00	7378.40	0.96	0.73	0.06	0.18
30.00	7378.56	1.12	0.81	0.07	0.19
37.80	7378.66	1.23	0.86	0.08	0.19
50.00	7378.80	1.37	0.92	0.09	0.19
60.00	7378.90	1.46	0.97	0.09	0.20
70.00	7378.99	1.55	1.00	0.10	0.20
80.00	7379.07	1.63	1.04	0.10	0.20
90.00	7379.14	1.71	1.07	0.11	0.20
100.00	7379.21	1.78	1.10	0.11	0.20

Tailwater Channel Data - Crossing E1.2

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.50 ft

Side Slope (H:V): 28.00 (1:1)

Channel Slope: 0.0010

Channel Manning's n: 0.0400

Channel Invert Elevation: 7377.44 ft

Roadway Data for Crossing: Crossing E1.2

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 60.00 ft

Crest Elevation: 7384.59 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 36.6 cfs

Maximum Flow: 100 cfs

Table 4 - Summary of Culvert Flows at Crossing: Crossing E2

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E2 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7398.34	0.00	0.00	0.00	1
7399.70	10.00	10.00	0.00	1
7400.42	20.00	20.00	0.00	1
7401.02	30.00	30.00	0.00	1
7401.41	36.60	36.60	0.00	1
7402.32	50.00	50.00	0.00	1
7403.17	60.00	60.00	0.00	1
7403.62	70.00	64.57	5.38	8
7403.77	80.00	66.03	13.86	5
7403.89	90.00	67.22	22.75	5
7404.00	100.00	68.25	31.68	4
7403.44	62.81	62.81	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E2

Total Rating Curve

Crossing: Crossing E2

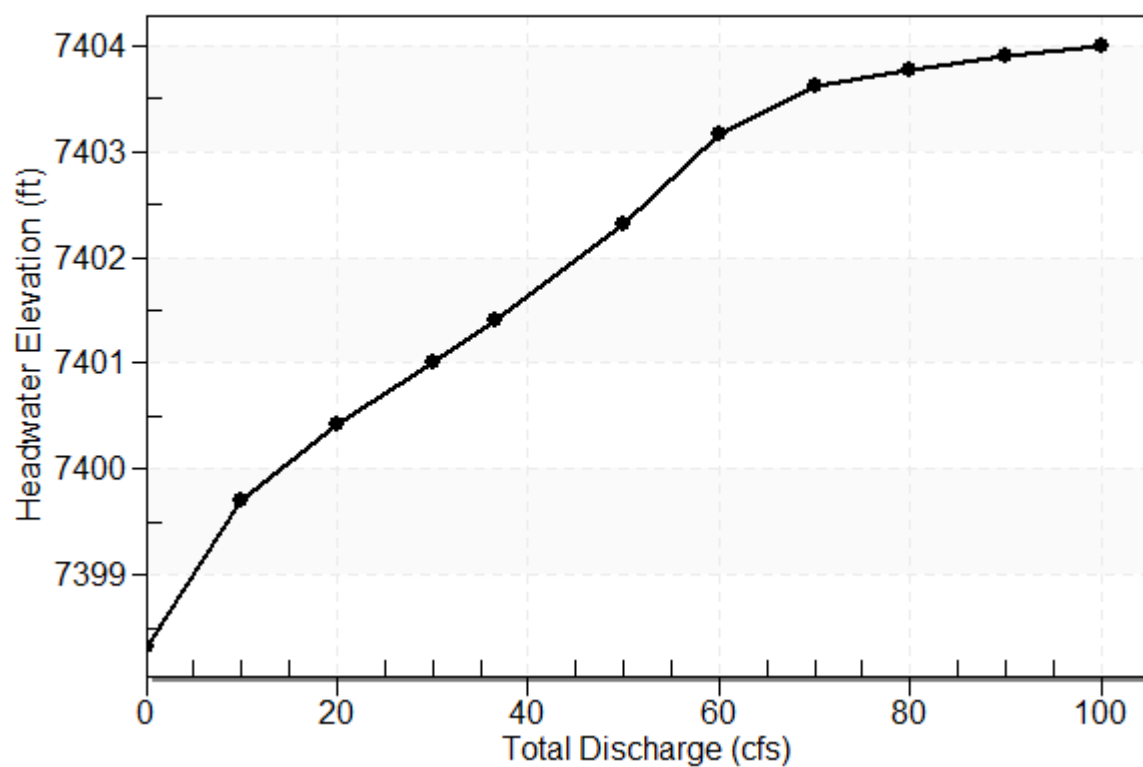


Table 5 - Culvert Summary Table: Culvert E2

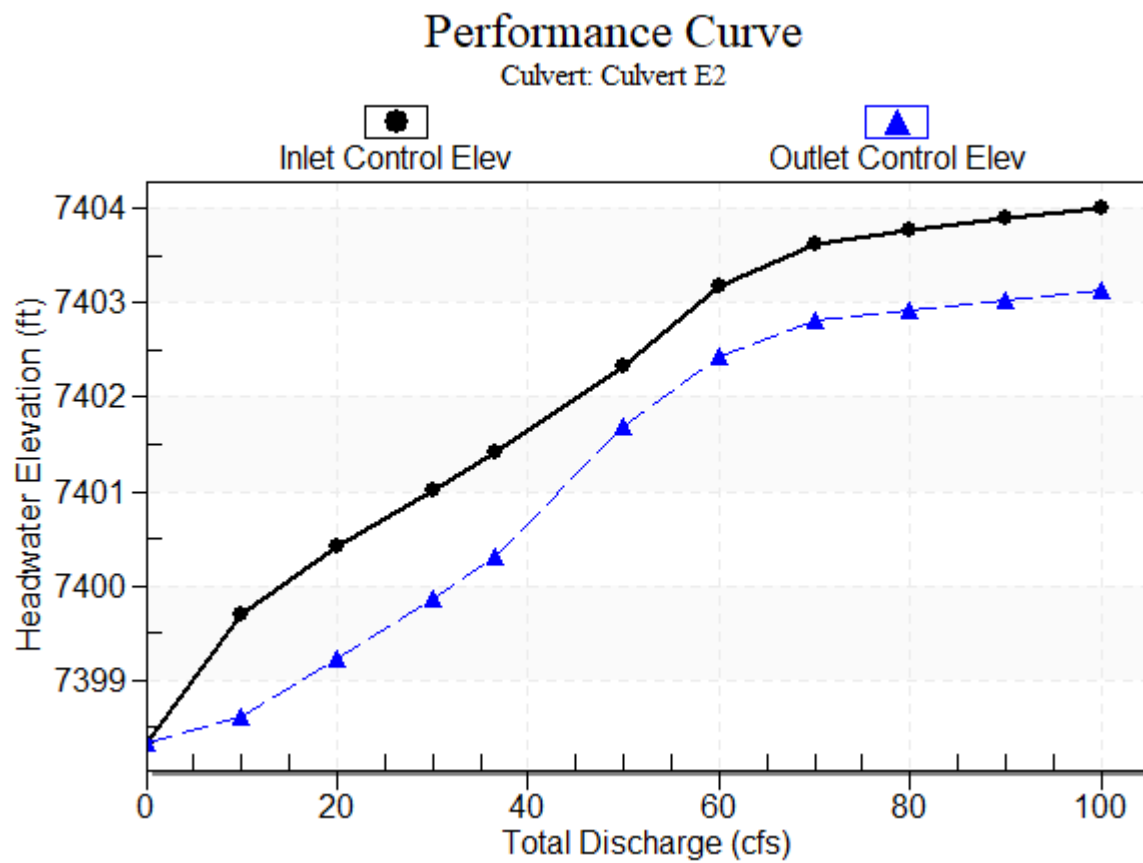
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7398.34	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7399.70	1.366	0.282	1-S2n	0.718	1.000	0.740	0.461	7.366	1.834
20.00	20.00	7400.42	2.081	0.894	1-S2n	1.026	1.435	1.083	0.683	8.701	2.302
30.00	30.00	7401.02	2.680	1.527	1-S2n	1.278	1.774	1.368	0.855	9.558	2.615
36.60	36.60	7401.41	3.070	1.979	5-S2n	1.430	1.967	1.540	0.953	10.018	2.779
50.00	50.00	7402.32	3.980	3.346	5-S2n	1.726	2.301	1.861	1.129	10.856	3.052
60.00	60.00	7403.17	4.831	4.094	5-S2n	1.948	2.501	2.090	1.244	11.411	3.220
70.00	64.57	7403.62	5.278	4.468	5-S2n	2.054	2.578	2.192	1.350	11.668	3.368
80.00	66.03	7403.77	5.429	4.592	5-S2n	2.089	2.601	2.225	1.448	11.745	3.500
90.00	67.22	7403.89	5.554	4.694	5-S2n	2.118	2.619	2.252	1.539	11.809	3.619
100.00	68.25	7404.00	5.666	4.784	5-S2n	2.143	2.633	2.276	1.625	11.864	3.729

Straight Culvert

Inlet Elevation (invert): 7398.34 ft, Outlet Elevation (invert): 7397.56 ft

Culvert Length: 55.01 ft, Culvert Slope: 0.0141

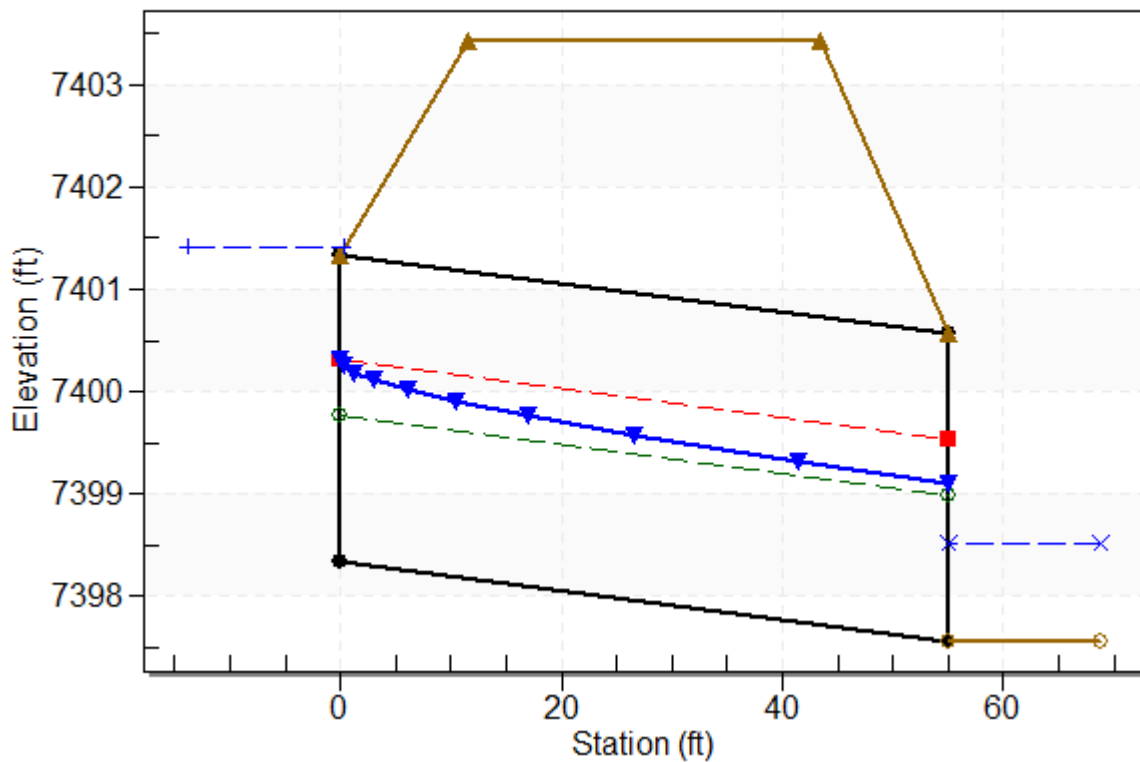
Culvert Performance Curve Plot: Culvert E2



Water Surface Profile Plot for Culvert: Culvert E2

Crossing - Crossing E2, Design Discharge - 36.6 cfs

Culvert - Culvert E2, Culvert Discharge - 36.6 cfs



Site Data - Culvert E2

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7398.34 ft

Outlet Station: 55.00 ft

Outlet Elevation: 7397.56 ft

Number of Barrels: 1

Culvert Data Summary - Culvert E2

Barrel Shape: Circular

Barrel Diameter: 3.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 6 - Downstream Channel Rating Curve (Crossing: Crossing E2)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7397.56	0.00	0.00	0.00	0.00
10.00	7398.02	0.46	1.83	0.24	0.51
20.00	7398.24	0.68	2.30	0.36	0.54
30.00	7398.41	0.85	2.61	0.45	0.56
36.60	7398.51	0.95	2.78	0.50	0.57
50.00	7398.69	1.13	3.05	0.59	0.58
60.00	7398.80	1.24	3.22	0.65	0.59
70.00	7398.91	1.35	3.37	0.71	0.59
80.00	7399.01	1.45	3.50	0.76	0.60
90.00	7399.10	1.54	3.62	0.81	0.60
100.00	7399.19	1.63	3.73	0.85	0.61

Tailwater Channel Data - Crossing E2

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 10.00 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0084

Channel Manning's n: 0.0400

Channel Invert Elevation: 7397.56 ft

Roadway Data for Crossing: Crossing E2

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 24.80 ft

Crest Elevation: 7403.44 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 84.6 cfs

Maximum Flow: 100 cfs

Table 7 - Summary of Culvert Flows at Crossing: Crossing E3

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E3 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7363.65	0.00	0.00	0.00	1
7364.91	10.00	10.00	0.00	1
7365.46	20.00	20.00	0.00	1
7365.94	30.00	30.00	0.00	1
7366.39	40.00	40.00	0.00	1
7366.80	50.00	50.00	0.00	1
7367.18	60.00	60.00	0.00	1
7367.56	70.00	70.00	0.00	1
7368.14	84.60	84.60	0.00	1
7368.38	90.00	90.00	0.00	1
7368.84	100.00	100.00	0.00	1
7372.18	153.11	153.11	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E3

Total Rating Curve

Crossing: Crossing E3

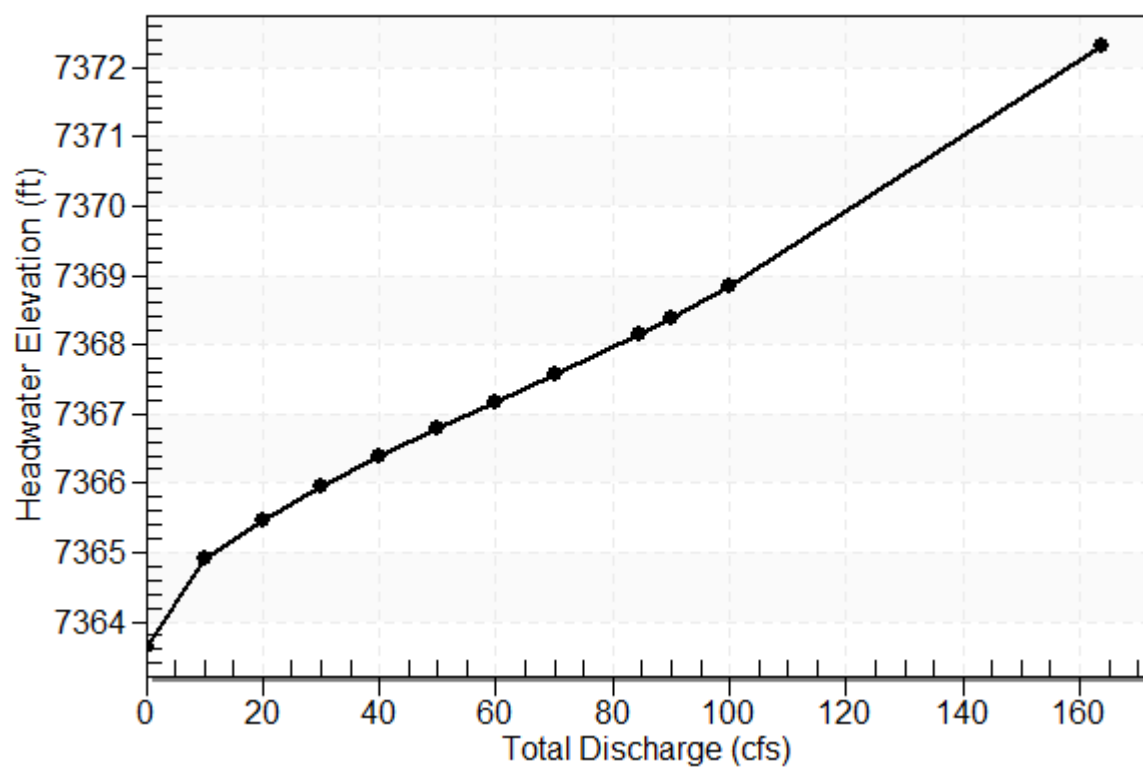


Table 8 - Culvert Summary Table: Culvert E3

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7363.65	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7364.91	1.250	0.0*	1-S2n	0.714	0.921	0.714	0.248	6.583	3.675
20.00	20.00	7365.46	1.802	0.439	1-S2n	1.007	1.316	1.024	0.371	7.872	4.695
30.00	30.00	7365.94	2.289	0.844	1-S2n	1.239	1.624	1.271	0.469	8.740	5.391
40.00	40.00	7366.39	2.739	1.243	1-S2n	1.442	1.887	1.487	0.552	9.403	5.931
50.00	50.00	7366.80	3.142	1.651	1-S2n	1.627	2.121	1.691	0.627	9.898	6.380
60.00	60.00	7367.18	3.522	2.076	1-S2n	1.800	2.334	1.877	0.694	10.362	6.764
70.00	70.00	7367.56	3.901	2.523	1-S2n	1.968	2.529	2.056	0.757	10.756	7.101
84.60	84.60	7368.14	4.487	3.218	5-S2n	2.205	2.787	2.305	0.840	11.285	7.534
90.00	90.00	7368.38	4.721	3.489	5-S2n	2.292	2.876	2.395	0.870	11.463	7.679
100.00	100.00	7368.84	5.185	4.496	5-S2n	2.454	3.030	2.560	0.921	11.773	7.932

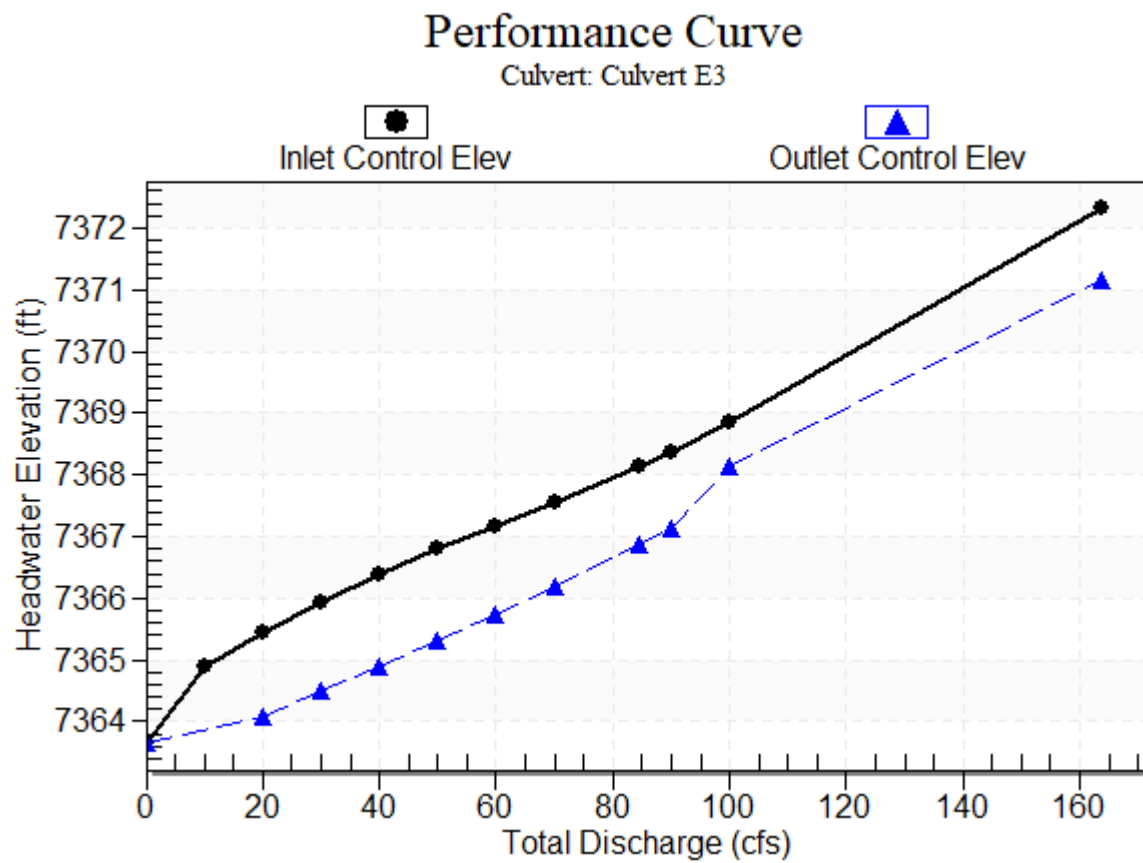
* Full Flow Headwater elevation is below inlet invert.

Straight Culvert

Inlet Elevation (invert): 7363.65 ft, Outlet Elevation (invert): 7362.70 ft

Culvert Length: 95.40 ft, Culvert Slope: 0.0100

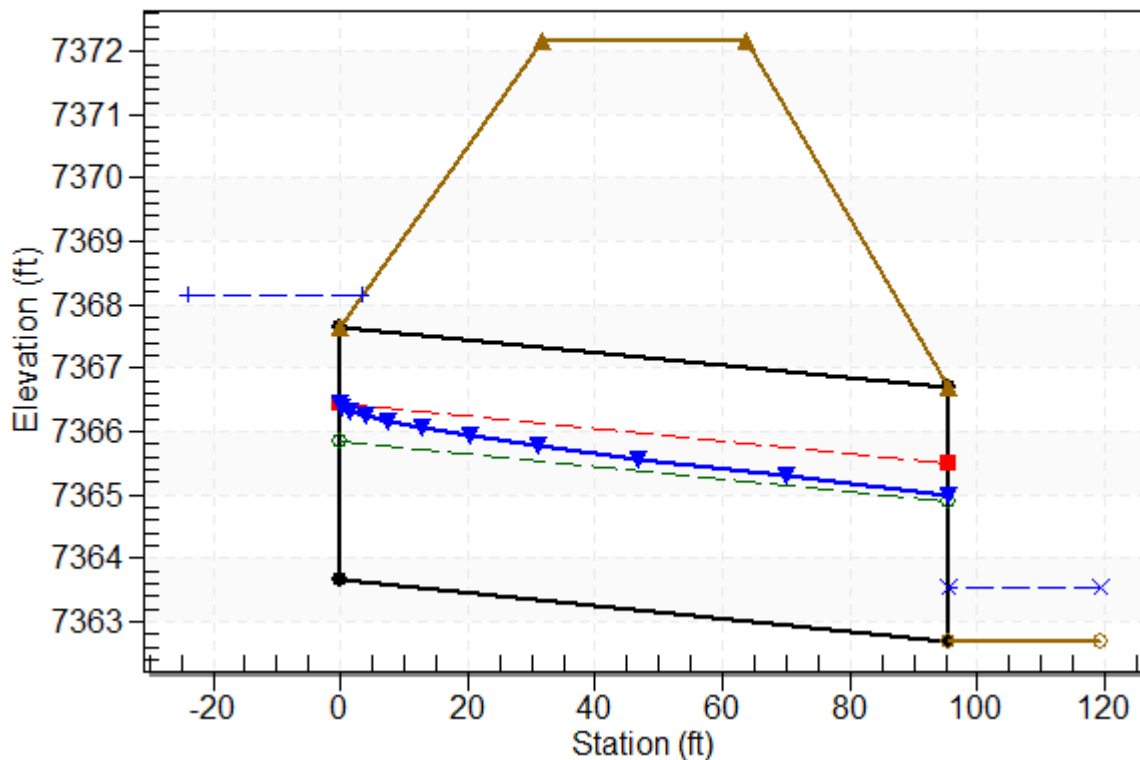
Culvert Performance Curve Plot: Culvert E3



Water Surface Profile Plot for Culvert: Culvert E3

Crossing - Crossing E3, Design Discharge - 84.6 cfs

Culvert - Culvert E3, Culvert Discharge - 84.6 cfs



Site Data - Culvert E3

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7363.65 ft

Outlet Station: 95.40 ft

Outlet Elevation: 7362.70 ft

Number of Barrels: 1

Culvert Data Summary - Culvert E3

Barrel Shape: Circular

Barrel Diameter: 4.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 9 - Downstream Channel Rating Curve (Crossing: Crossing E3)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7362.70	0.00	0.00	0.00	0.00
10.00	7362.95	0.25	3.68	0.62	1.36
20.00	7363.07	0.37	4.69	0.93	1.44
30.00	7363.17	0.47	5.39	1.17	1.49
40.00	7363.25	0.55	5.93	1.38	1.53
50.00	7363.33	0.63	6.38	1.56	1.56
60.00	7363.40	0.69	6.76	1.73	1.58
70.00	7363.46	0.76	7.10	1.89	1.60
84.60	7363.54	0.84	7.53	2.10	1.62
90.00	7363.57	0.87	7.68	2.17	1.63
100.00	7363.62	0.92	7.93	2.30	1.64

Tailwater Channel Data - Crossing E3

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 10.00 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0400

Channel Manning's n: 0.0300

Channel Invert Elevation: 7362.70 ft

Roadway Data for Crossing: Crossing E3

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 53.00 ft

Crest Elevation: 7372.18 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 117.6 cfs

Maximum Flow: 150 cfs

Table 10 - Summary of Culvert Flows at Crossing: Crossing E4

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E4 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7336.55	0.00	0.00	0.00	1
7338.10	15.00	15.00	0.00	1
7338.84	30.00	30.00	0.00	1
7339.49	45.00	45.00	0.00	1
7340.07	60.00	60.00	0.00	1
7340.65	75.00	75.00	0.00	1
7341.27	90.00	90.00	0.00	1
7341.98	105.00	105.00	0.00	1
7342.67	117.60	117.60	0.00	1
7343.12	135.00	125.05	9.68	11
7343.20	150.00	126.40	23.41	5
7343.01	123.33	123.33	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E4

Total Rating Curve

Crossing: Crossing E4

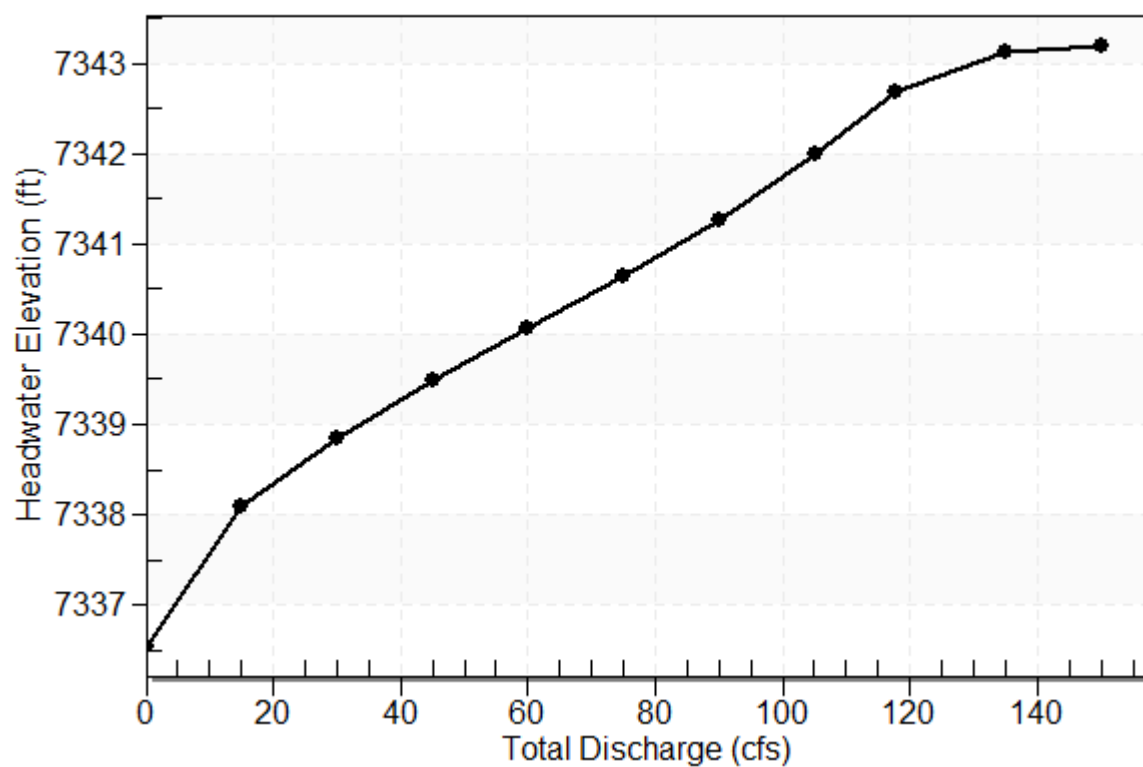


Table 11 - Culvert Summary Table: Culvert E4

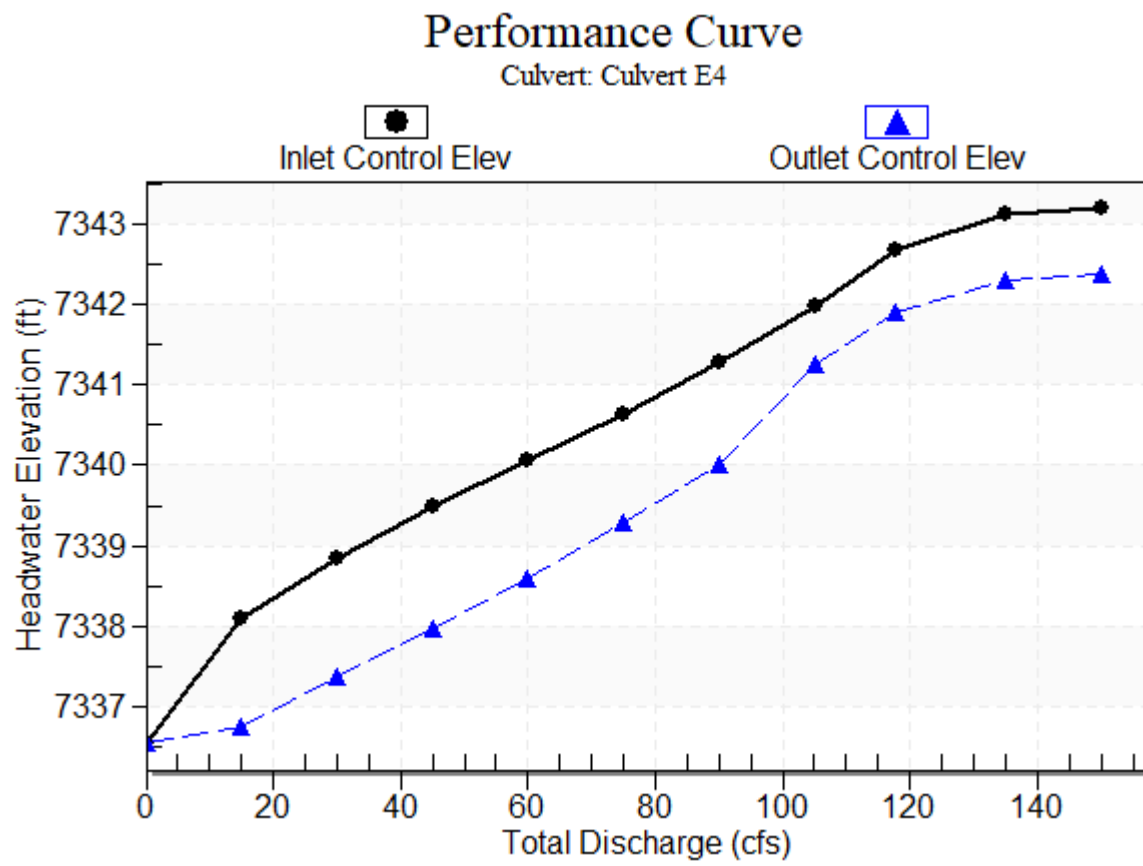
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7336.55	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
15.00	15.00	7338.10	1.547	0.193	1-S2n	0.871	1.134	0.881	0.312	7.298	2.707
30.00	30.00	7338.84	2.289	0.815	1-S2n	1.239	1.624	1.269	0.438	8.757	3.270
45.00	45.00	7339.49	2.945	1.417	1-S2n	1.536	2.007	1.592	0.531	9.649	3.641
60.00	60.00	7340.07	3.522	2.050	1-S2n	1.800	2.334	1.874	0.607	10.378	3.927
75.00	75.00	7340.65	4.096	2.732	5-S2n	2.049	2.621	2.139	0.672	10.969	4.162
90.00	90.00	7341.27	4.721	3.470	5-S2n	2.292	2.876	2.391	0.730	11.486	4.363
105.00	105.00	7341.98	5.434	4.715	5-S2n	2.536	3.102	2.638	0.782	11.943	4.540
117.60	117.60	7342.67	6.120	5.346	5-S2n	2.749	3.268	2.846	0.823	12.296	4.674
135.00	125.05	7343.12	6.566	5.742	5-S2n	2.882	3.357	2.969	0.875	12.501	4.843
150.00	126.40	7343.20	6.650	5.816	5-S2n	2.908	3.372	2.993	0.916	12.536	4.976

Straight Culvert

Inlet Elevation (invert): 7336.55 ft, Outlet Elevation (invert): 7335.56 ft

Culvert Length: 98.50 ft, Culvert Slope: 0.0100

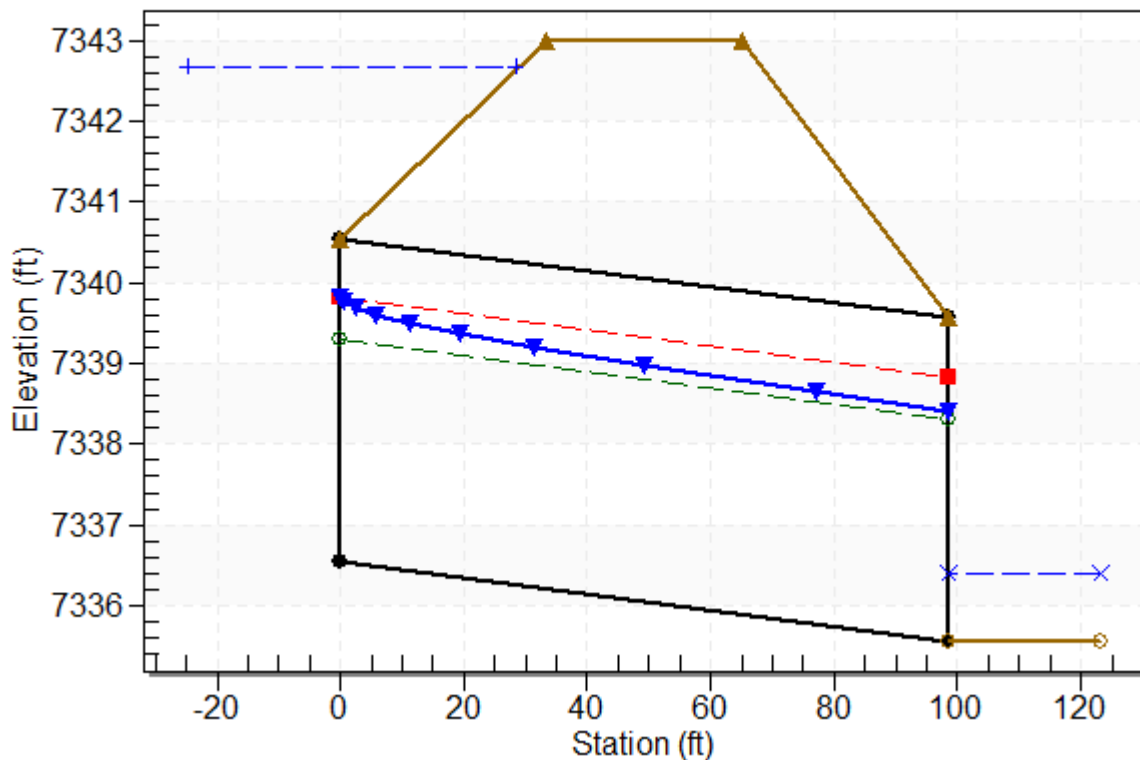
Culvert Performance Curve Plot: Culvert E4



Water Surface Profile Plot for Culvert: Culvert E4

Crossing - Crossing E4, Design Discharge - 117.6 cfs

Culvert - Culvert E4, Culvert Discharge - 117.6 cfs



Site Data - Culvert E4

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7336.55 ft

Outlet Station: 98.50 ft

Outlet Elevation: 7335.56 ft

Number of Barrels: 1

Culvert Data Summary - Culvert E4

Barrel Shape: Circular

Barrel Diameter: 4.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 12 - Downstream Channel Rating Curve (Crossing: Crossing E4)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7335.56	0.00	0.00	0.00	0.00
15.00	7335.88	0.31	2.71	0.39	1.02
30.00	7336.00	0.44	3.27	0.55	1.07
45.00	7336.10	0.53	3.64	0.66	1.10
60.00	7336.17	0.61	3.93	0.76	1.12
75.00	7336.24	0.67	4.16	0.84	1.14
90.00	7336.30	0.73	4.36	0.91	1.15
105.00	7336.35	0.78	4.54	0.98	1.17
117.60	7336.39	0.82	4.67	1.03	1.17
135.00	7336.44	0.87	4.84	1.09	1.19
150.00	7336.48	0.92	4.98	1.14	1.19

Tailwater Channel Data - Crossing E4

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 10.00 ft

Side Slope (H:V): 25.00 (1:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0280

Channel Invert Elevation: 7335.56 ft

Roadway Data for Crossing: Crossing E4

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 95.00 ft

Crest Elevation: 7343.01 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 18.4 cfs

Maximum Flow: 100 cfs

Table 13 - Summary of Culvert Flows at Crossing: Crossing E5

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E5 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7329.77	0.00	0.00	0.00	1
7331.45	10.00	10.00	0.00	1
7332.45	18.40	18.40	0.00	1
7334.70	30.00	30.00	0.00	1
7337.64	40.00	40.00	0.00	1
7338.08	50.00	41.24	8.53	13
7338.13	60.00	41.38	18.51	5
7338.17	70.00	41.49	28.37	4
7338.20	80.00	41.60	38.34	4
7338.24	90.00	41.69	48.12	3
7338.27	100.00	41.78	58.11	3
7338.00	41.03	41.03	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E5

Total Rating Curve

Crossing: Crossing E5

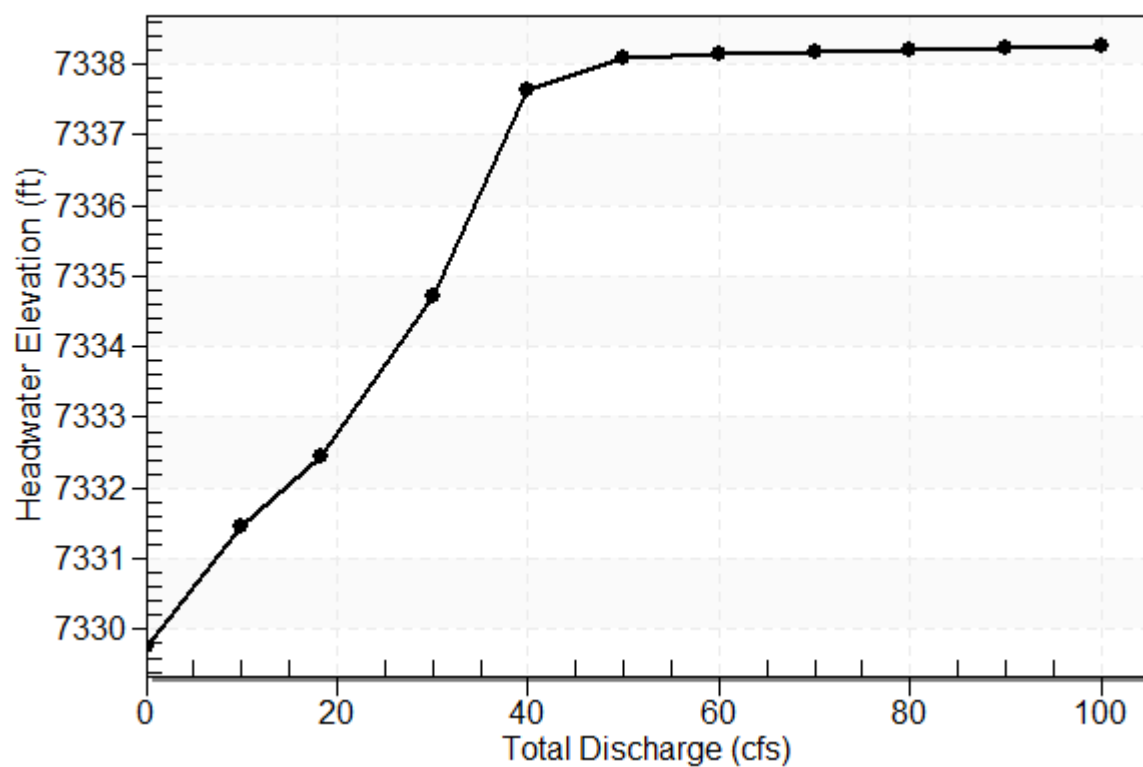


Table 14 - Culvert Summary Table: Culvert E5

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7329.77	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7331.45	1.681	0.0*	1-S2n	0.723	1.131	0.723	0.662	9.774	3.641
18.40	18.40	7332.45	2.679	0.713	5-S2n	1.016	1.544	1.044	0.869	11.089	4.258
30.00	30.00	7334.70	4.929	3.299	5-S2n	1.400	1.862	1.449	1.074	12.312	4.821
40.00	40.00	7337.64	7.873	6.394	6-FFc	2.000	2.000	2.000	1.214	12.732	5.184
50.00	41.24	7338.08	8.305	6.829	6-FFc	2.000	2.000	2.000	1.334	13.127	5.485
60.00	41.38	7338.13	8.355	6.879	6-FFc	2.000	2.000	2.000	1.440	13.172	5.742
70.00	41.49	7338.17	8.396	6.920	6-FFc	2.000	2.000	2.000	1.535	13.208	5.970
80.00	41.60	7338.20	8.433	6.957	6-FFc	2.000	2.000	2.000	1.622	13.241	6.174
90.00	41.69	7338.24	8.465	6.990	6-FFc	2.000	2.000	2.000	1.703	13.270	6.359
100.00	41.78	7338.27	8.497	7.022	6-FFc	2.000	2.000	2.000	1.778	13.298	6.530

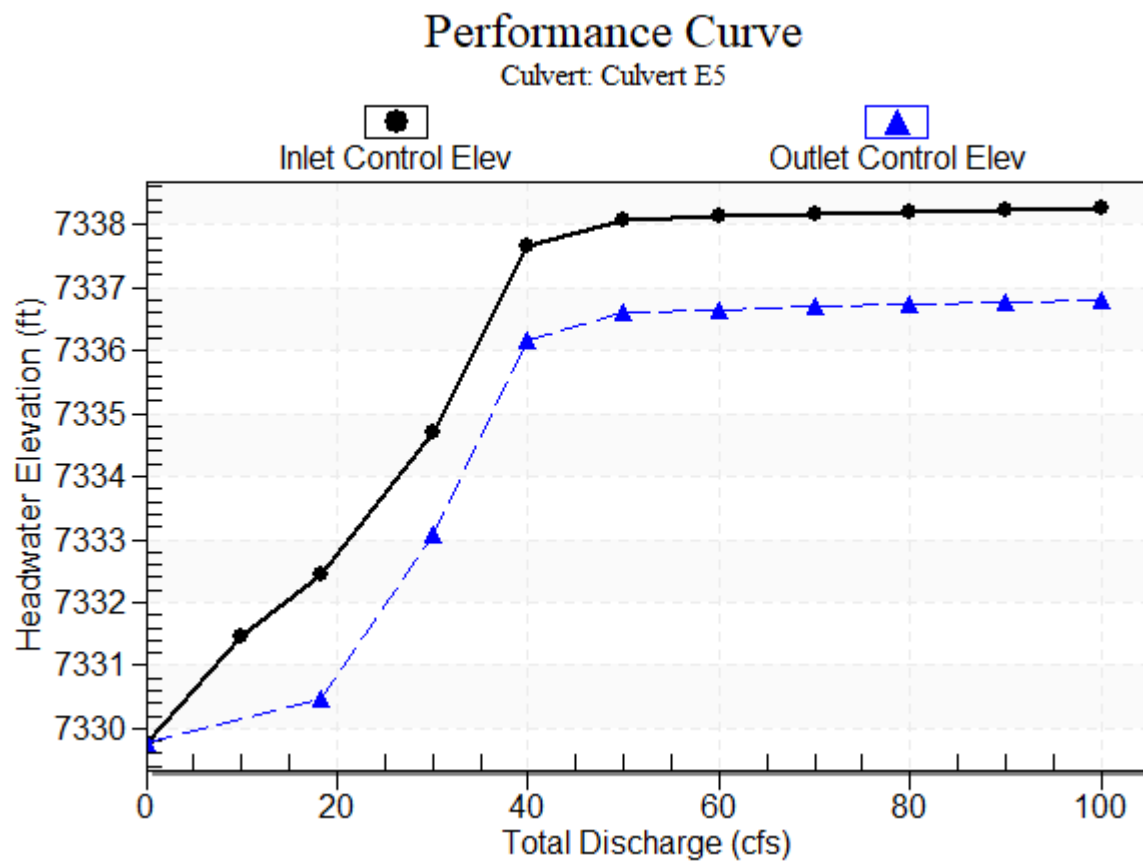
* Full Flow Headwater elevation is below inlet invert.

Straight Culvert

Inlet Elevation (invert): 7329.77 ft, Outlet Elevation (invert): 7327.25 ft

Culvert Length: 101.03 ft, Culvert Slope: 0.0250

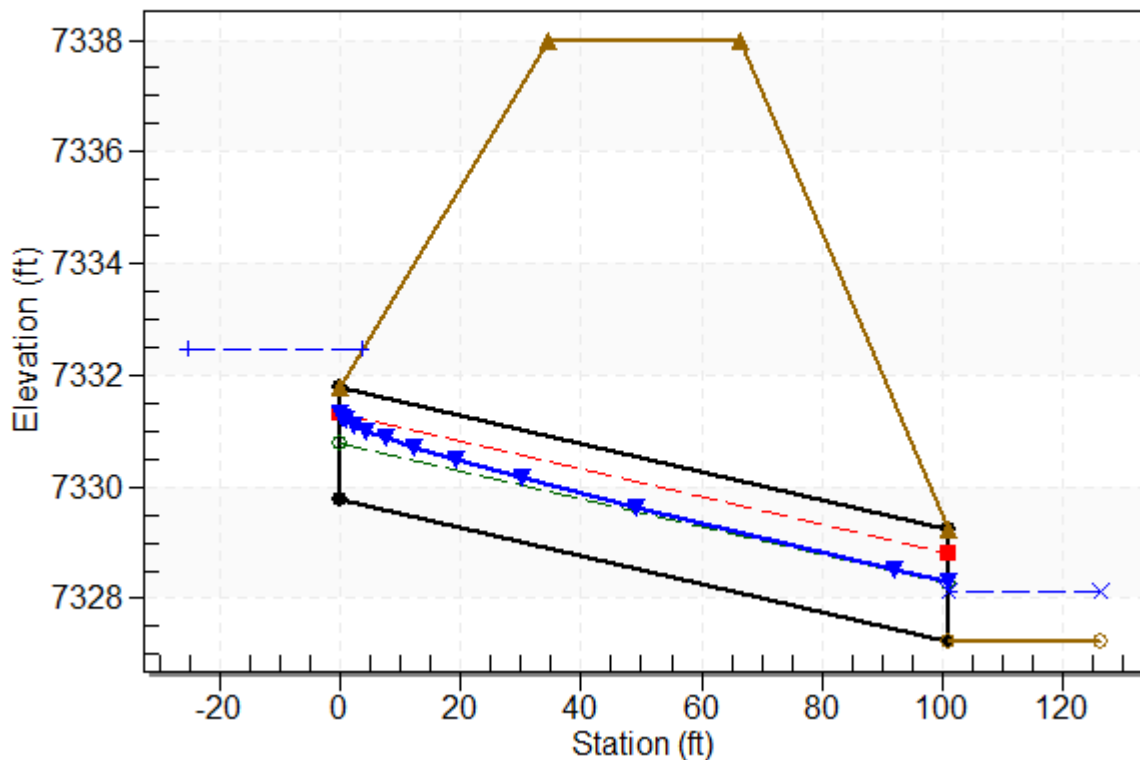
Culvert Performance Curve Plot: Culvert E5



Water Surface Profile Plot for Culvert: Culvert E5

Crossing - Crossing E5, Design Discharge - 18.4 cfs

Culvert - Culvert E5, Culvert Discharge - 18.4 cfs



Site Data - Culvert E5

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7329.77 ft

Outlet Station: 101.00 ft

Outlet Elevation: 7327.25 ft

Number of Barrels: 1

Culvert Data Summary - Culvert E5

Barrel Shape: Circular

Barrel Diameter: 2.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 15 - Downstream Channel Rating Curve (Crossing: Crossing E5)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7327.25	0.00	0.00	0.00	0.00
10.00	7327.91	0.66	3.64	1.37	1.01
18.40	7328.12	0.87	4.26	1.80	1.05
30.00	7328.32	1.07	4.82	2.22	1.08
40.00	7328.46	1.21	5.18	2.52	1.10
50.00	7328.58	1.33	5.48	2.76	1.12
60.00	7328.69	1.44	5.74	2.98	1.13
70.00	7328.78	1.53	5.97	3.18	1.14
80.00	7328.87	1.62	6.17	3.36	1.15
90.00	7328.95	1.70	6.36	3.53	1.16
100.00	7329.03	1.78	6.53	3.68	1.17

Tailwater Channel Data - Crossing E5

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 1.50 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0332

Channel Manning's n: 0.0400

Channel Invert Elevation: 7327.25 ft

Roadway Data for Crossing: Crossing E5

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 141.30 ft

Crest Elevation: 7338.00 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 78.3 cfs

Maximum Flow: 100 cfs

Table 16 - Summary of Culvert Flows at Crossing: Crossing O1

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert O1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7369.97	0.00	0.00	0.00	1
7370.92	10.00	10.00	0.00	1
7371.34	20.00	20.00	0.00	1
7371.71	30.00	30.00	0.00	1
7372.05	40.00	40.00	0.00	1
7372.36	50.00	50.00	0.00	1
7372.65	60.00	60.00	0.00	1
7372.94	70.00	70.00	0.00	1
7373.20	78.30	78.30	0.00	1
7373.59	90.00	90.00	0.00	1
7373.95	100.00	100.00	0.00	1
7377.50	167.13	167.13	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing O1

Total Rating Curve

Crossing: Crossing O1

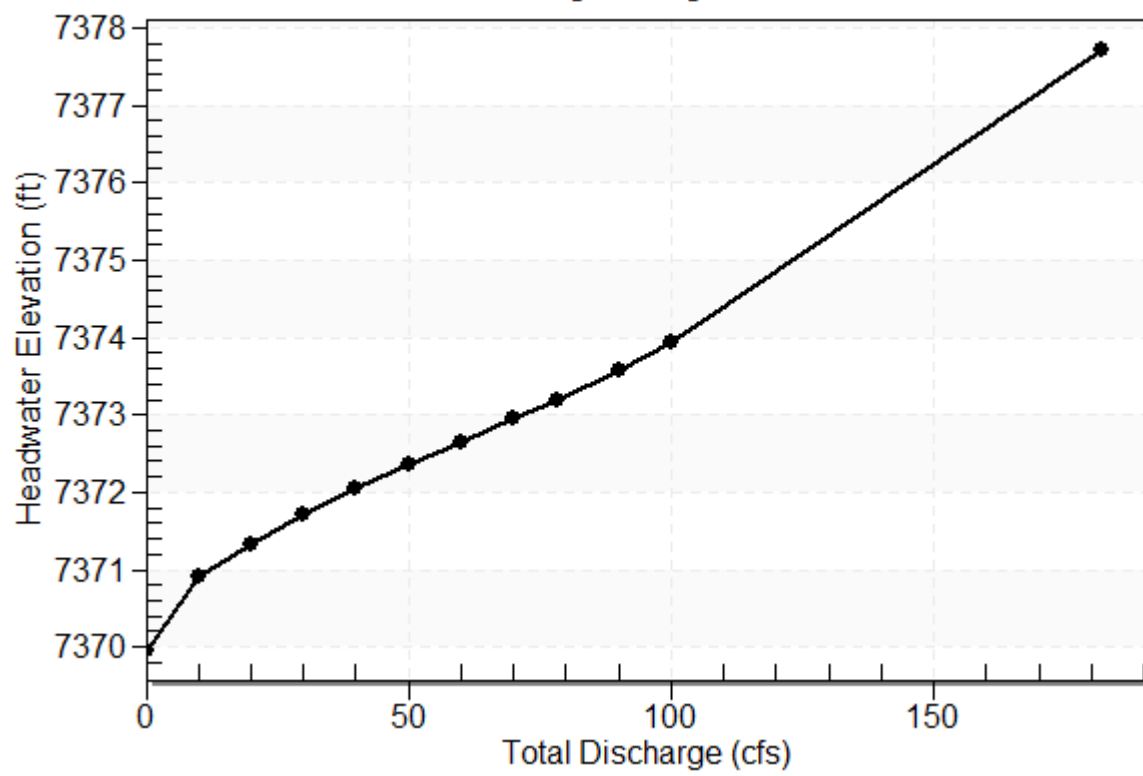


Table 17 - Culvert Summary Table: Culvert O1

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7369.97	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7370.92	0.950	0.0*	1-S2n	0.554	0.700	0.554	0.158	5.560	1.830
20.00	20.00	7371.34	1.370	0.095	1-S2n	0.784	1.000	0.784	0.239	6.800	2.397
30.00	30.00	7371.71	1.745	0.415	1-S2n	0.965	1.235	0.976	0.304	7.515	2.802
40.00	40.00	7372.05	2.088	0.735	1-S2n	1.125	1.435	1.142	0.361	8.097	3.128
50.00	50.00	7372.36	2.395	1.066	1-S2n	1.271	1.613	1.293	0.412	8.575	3.405
60.00	60.00	7372.65	2.686	1.416	1-S2n	1.409	1.774	1.436	0.459	8.972	3.647
70.00	70.00	7372.94	2.979	1.786	1-S2n	1.542	1.922	1.574	0.503	9.317	3.864
78.30	78.30	7373.20	3.233	2.111	5-S2n	1.650	2.037	1.685	0.538	9.575	4.029
90.00	90.00	7373.59	3.620	2.596	5-S2n	1.803	2.185	1.840	0.584	9.900	4.243
100.00	100.00	7373.95	3.986	3.386	5-S2n	1.935	2.301	1.971	0.621	10.154	4.412

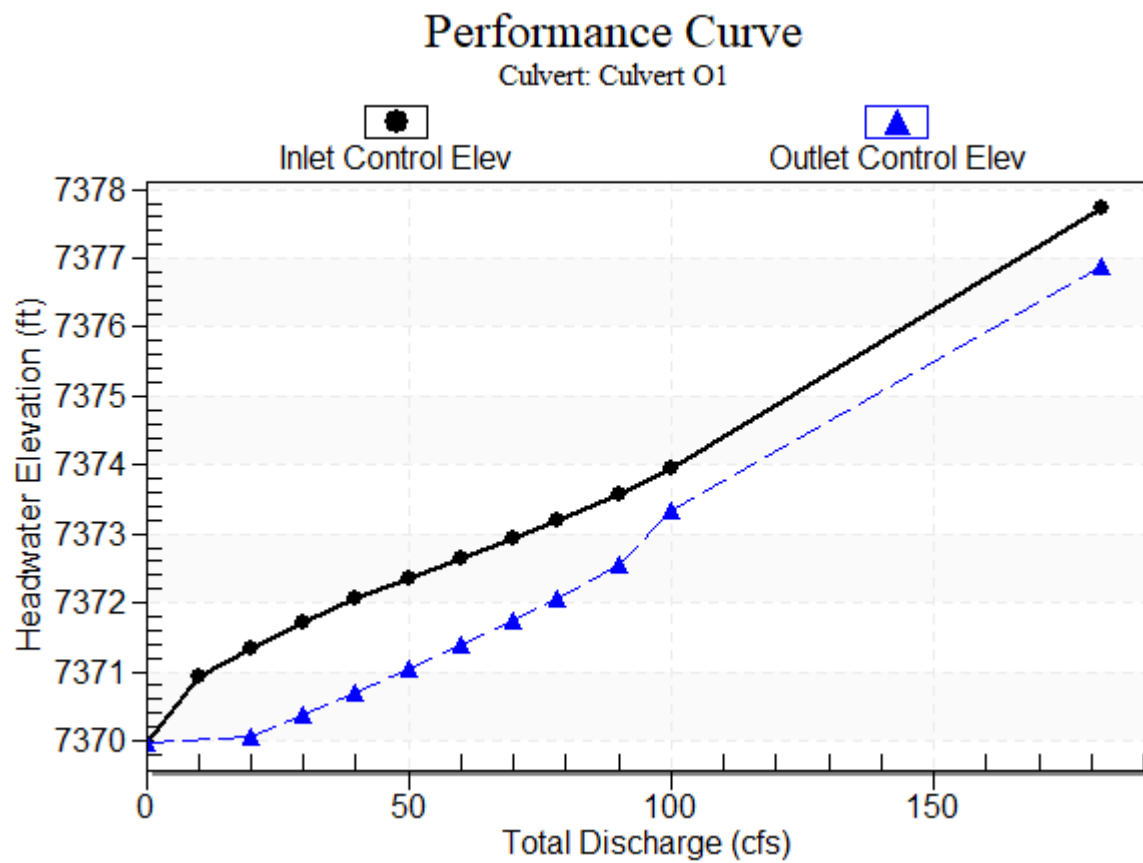
* Full Flow Headwater elevation is below inlet invert.

Straight Culvert

Inlet Elevation (invert): 7369.97 ft, Outlet Elevation (invert): 7368.99 ft

Culvert Length: 97.38 ft, Culvert Slope: 0.0100

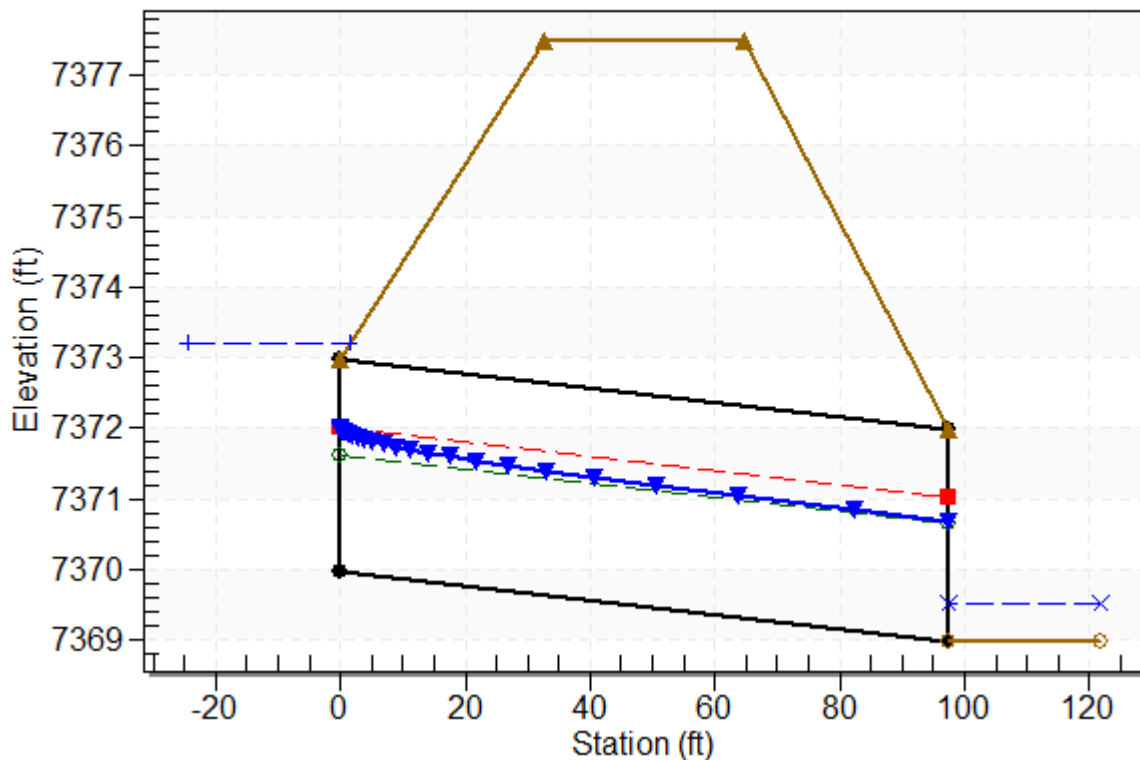
Culvert Performance Curve Plot: Culvert O1



Water Surface Profile Plot for Culvert: Culvert O1

Crossing - Crossing O1, Design Discharge - 78.3 cfs

Culvert - Culvert O1, Culvert Discharge - 78.3 cfs



Site Data - Culvert O1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7369.97 ft

Outlet Station: 97.38 ft

Outlet Elevation: 7368.99 ft

Number of Barrels: 2

Culvert Data Summary - Culvert O1

Barrel Shape: Circular

Barrel Diameter: 3.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 18 - Downstream Channel Rating Curve (Crossing: Crossing O1)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7368.99	0.00	0.00	0.00	0.00
10.00	7369.15	0.16	1.83	0.29	0.82
20.00	7369.23	0.24	2.40	0.44	0.88
30.00	7369.29	0.30	2.80	0.55	0.91
40.00	7369.35	0.36	3.13	0.66	0.94
50.00	7369.40	0.41	3.40	0.75	0.96
60.00	7369.45	0.46	3.65	0.84	0.97
70.00	7369.49	0.50	3.86	0.92	0.99
78.30	7369.53	0.54	4.03	0.98	1.00
90.00	7369.57	0.58	4.24	1.06	1.01
100.00	7369.61	0.62	4.41	1.13	1.02

Tailwater Channel Data - Crossing O1

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 34.00 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0292

Channel Manning's n: 0.0400

Channel Invert Elevation: 7368.99 ft

Roadway Data for Crossing: Crossing O1

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 34.00 ft

Crest Elevation: 7377.50 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 123 cfs

Maximum Flow: 123 cfs

Table 19 - Summary of Culvert Flows at Crossing: Crossing O2

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert O2 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7335.45	0.00	0.00	0.00	1
7336.46	12.30	12.30	0.00	1
7336.91	24.60	24.60	0.00	1
7337.28	36.90	36.90	0.00	1
7337.64	49.20	49.20	0.00	1
7337.96	61.50	61.50	0.00	1
7338.26	73.80	73.80	0.00	1
7338.54	86.10	86.10	0.00	1
7338.83	98.40	98.40	0.00	1
7339.12	110.70	110.70	0.00	1
7339.58	123.00	123.00	0.00	1
7342.90	218.93	218.93	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing O2

Total Rating Curve

Crossing: Crossing O2

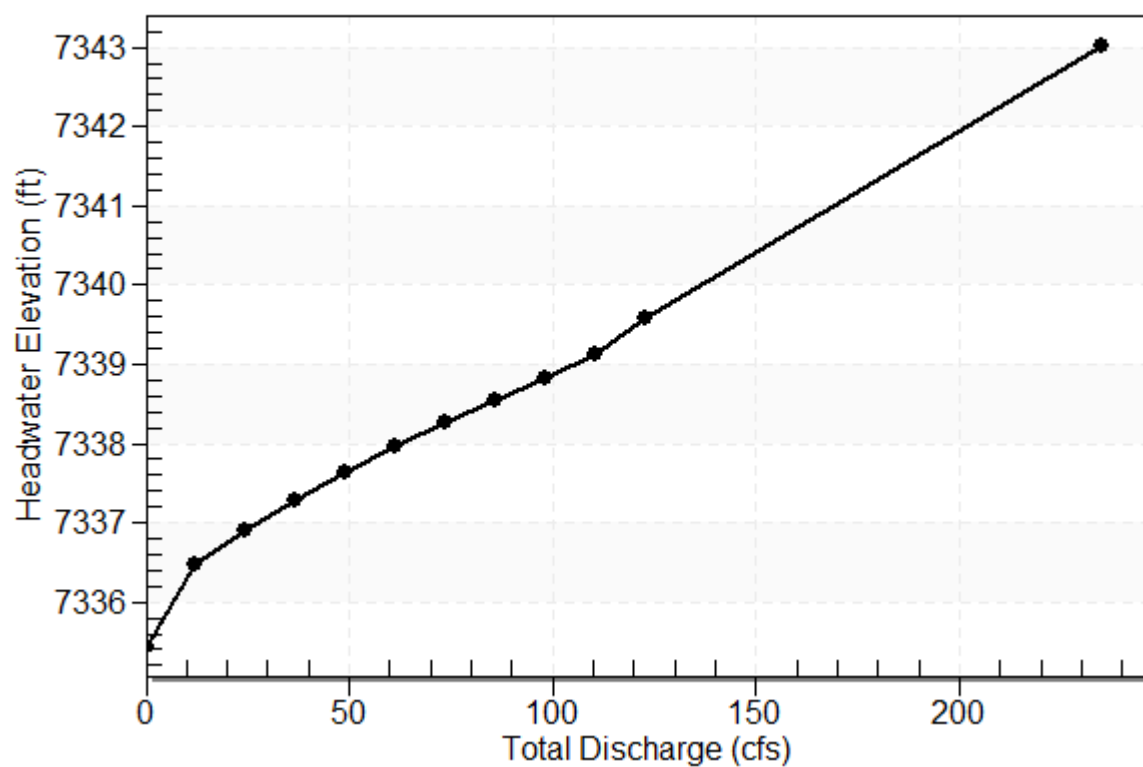


Table 20 - Culvert Summary Table: Culvert O2

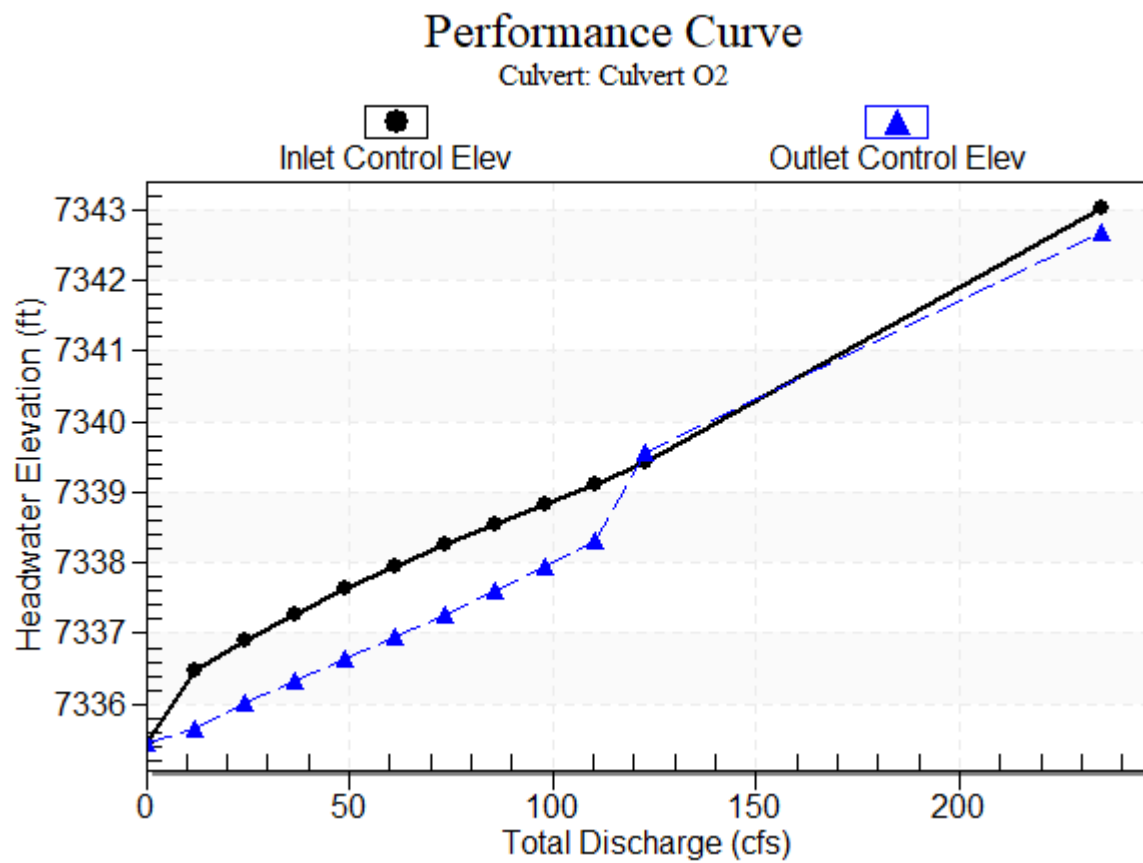
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7335.45	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
12.30	12.30	7336.46	1.014	0.199	1-S2n	0.694	0.745	0.694	0.192	4.542	2.071
24.60	24.60	7336.91	1.460	0.559	1-S2n	0.984	1.064	0.986	0.291	5.530	2.707
36.90	36.90	7337.28	1.826	0.876	1-S2n	1.214	1.313	1.214	0.370	6.219	3.158
49.20	49.20	7337.64	2.190	1.184	1-S2n	1.418	1.525	1.418	0.439	6.726	3.518
61.50	61.50	7337.96	2.512	1.496	1-S2n	1.607	1.714	1.607	0.501	7.134	3.823
73.80	73.80	7338.26	2.809	1.818	1-S2n	1.787	1.885	1.787	0.558	7.471	4.090
86.10	86.10	7338.54	3.094	2.154	1-S2n	1.962	2.044	1.962	0.611	7.754	4.329
98.40	98.40	7338.83	3.379	2.507	1-S2n	2.138	2.191	2.138	0.661	7.990	4.545
110.70	110.70	7339.12	3.672	2.877	5-S2n	2.318	2.329	2.318	0.709	8.183	4.744
123.00	123.00	7339.58	3.982	4.127	7-M2c	2.509	2.458	2.458	0.754	8.521	4.928

Straight Culvert

Inlet Elevation (invert): 7335.45 ft, Outlet Elevation (invert): 7334.89 ft

Culvert Length: 112.10 ft, Culvert Slope: 0.0050

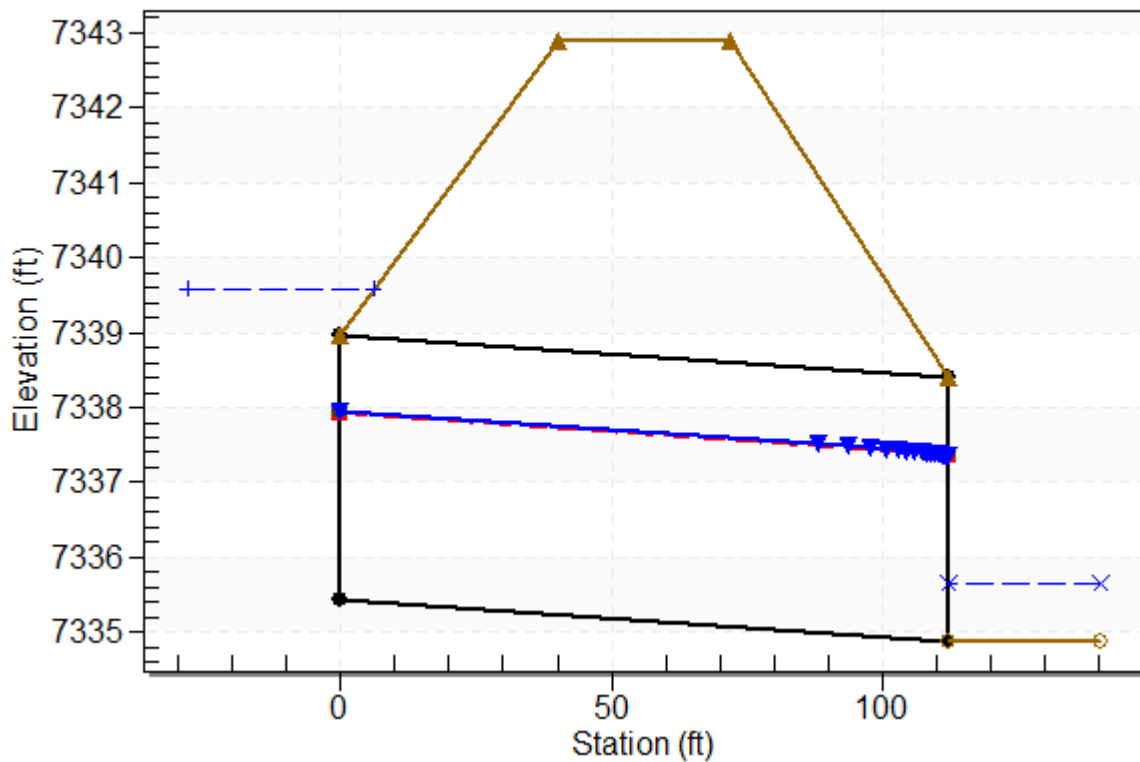
Culvert Performance Curve Plot: Culvert O2



Water Surface Profile Plot for Culvert: Culvert O2

Crossing - Crossing O2, Design Discharge - 123.0 cfs

Culvert - Culvert O2, Culvert Discharge - 123.0 cfs



Site Data - Culvert O2

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7335.45 ft

Outlet Station: 112.10 ft

Outlet Elevation: 7334.89 ft

Number of Barrels: 2

Culvert Data Summary - Culvert O2

Barrel Shape: Circular

Barrel Diameter: 3.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 21 - Downstream Channel Rating Curve (Crossing: Crossing O2)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7334.89	0.00	0.00	0.00	0.00
12.30	7335.08	0.19	2.07	0.35	0.84
24.60	7335.18	0.29	2.71	0.53	0.90
36.90	7335.26	0.37	3.16	0.67	0.94
49.20	7335.33	0.44	3.52	0.79	0.96
61.50	7335.39	0.50	3.82	0.91	0.98
73.80	7335.45	0.56	4.09	1.01	1.00
86.10	7335.50	0.61	4.33	1.11	1.01
98.40	7335.55	0.66	4.54	1.20	1.02
110.70	7335.60	0.71	4.74	1.28	1.03
123.00	7335.64	0.75	4.93	1.36	1.04

Tailwater Channel Data - Crossing O2

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 30.10 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0290

Channel Manning's n: 0.0400

Channel Invert Elevation: 7334.89 ft

Roadway Data for Crossing: Crossing O2

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 97.00 ft

Crest Elevation: 7342.90 ft

Roadway Surface: Paved

Roadway Top Width: 32.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 24.6 cfs

Maximum Flow: 100 cfs

Table 22 - Summary of Culvert Flows at Crossing: Crossing E1.1

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E1.1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7411.80	0.00	0.00	0.00	1
7413.29	10.00	10.00	0.00	1
7414.46	24.60	24.60	0.00	1
7414.94	30.00	30.00	0.00	1
7416.07	40.00	40.00	0.00	1
7417.56	50.00	50.00	0.00	1
7417.71	60.00	50.93	8.86	7
7417.78	70.00	51.34	18.56	5
7417.84	80.00	51.68	28.19	4
7417.89	90.00	51.98	37.96	4
7417.94	100.00	52.25	47.58	3
7417.60	50.26	50.26	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E1.1

Total Rating Curve

Crossing: Crossing E1.1

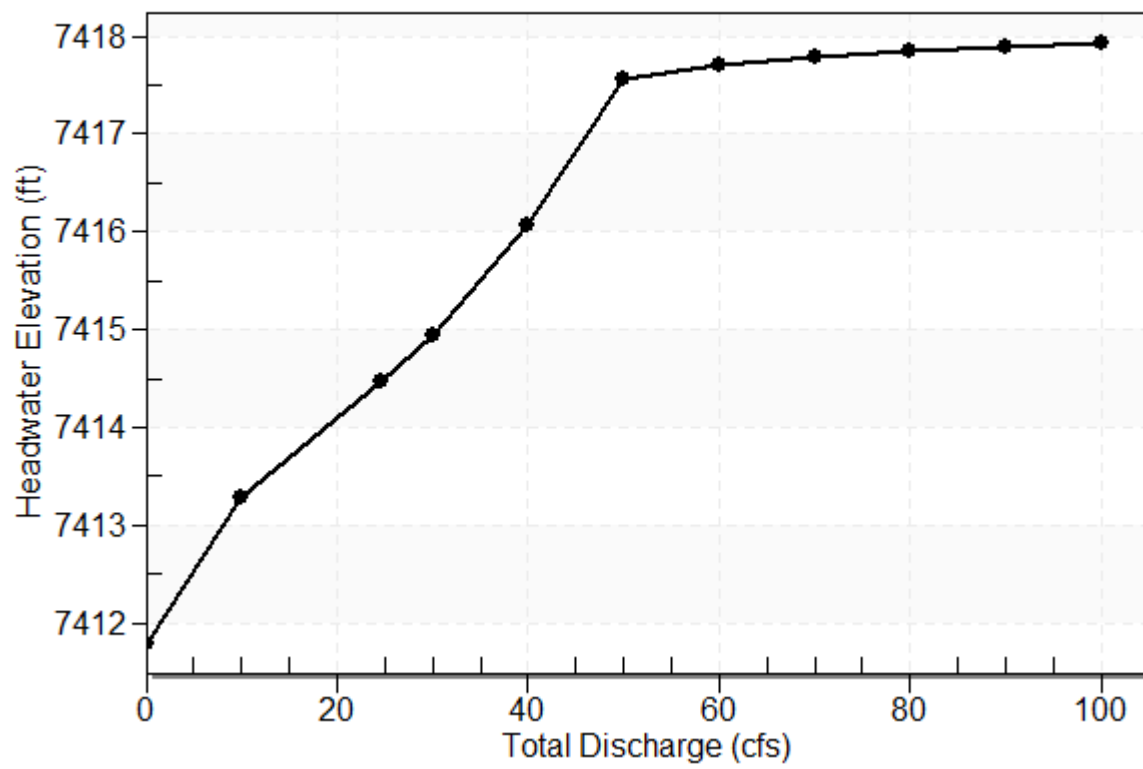


Table 23 - Culvert Summary Table: Culvert E1.1

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7411.80	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7413.29	1.489	0.0*	1-S2n	0.671	1.056	0.682	0.414	9.219	3.156
24.60	24.60	7414.46	2.664	0.0*	5-S2n	1.082	1.689	1.119	0.678	11.556	4.161
30.00	30.00	7414.94	3.142	0.628	5-S2n	1.212	1.867	1.258	0.754	12.127	4.412
40.00	40.00	7416.07	4.268	2.227	5-S2n	1.442	2.129	1.505	0.877	12.961	4.793
50.00	50.00	7417.56	5.756	3.793	5-S2n	1.677	2.300	1.746	0.985	13.655	5.108
60.00	50.93	7417.71	5.913	3.953	5-S2n	1.699	2.311	1.770	1.081	13.707	5.375
70.00	51.34	7417.78	5.983	4.025	5-S2n	1.710	2.316	1.782	1.169	13.720	5.609
80.00	51.68	7417.84	6.041	4.084	5-S2n	1.718	2.320	1.791	1.250	13.733	5.819
90.00	51.98	7417.89	6.093	4.137	5-S2n	1.725	2.323	1.799	1.325	13.747	6.009
100.00	52.25	7417.94	6.140	4.185	5-S2n	1.732	2.326	1.806	1.396	13.761	6.183

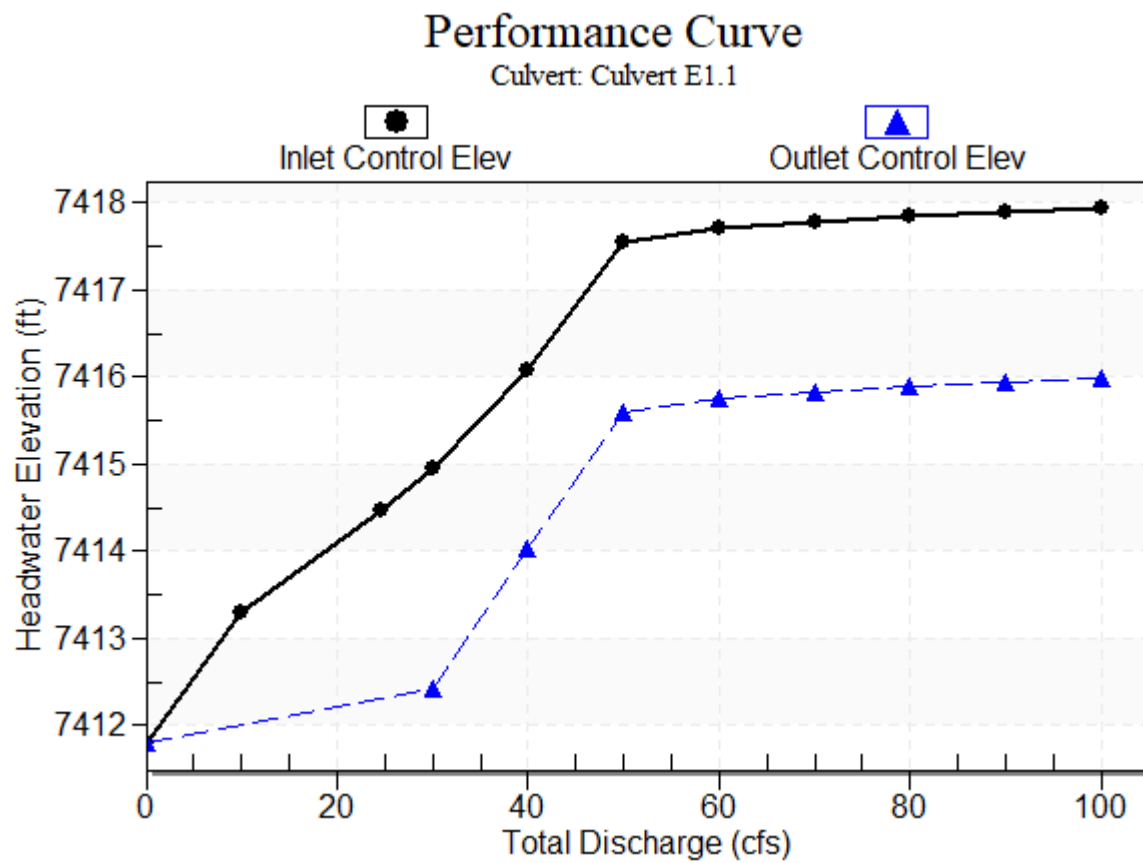
* Full Flow Headwater elevation is below inlet invert.

Straight Culvert

Inlet Elevation (invert): 7411.80 ft, Outlet Elevation (invert): 7409.08 ft

Culvert Length: 134.73 ft, Culvert Slope: 0.0202

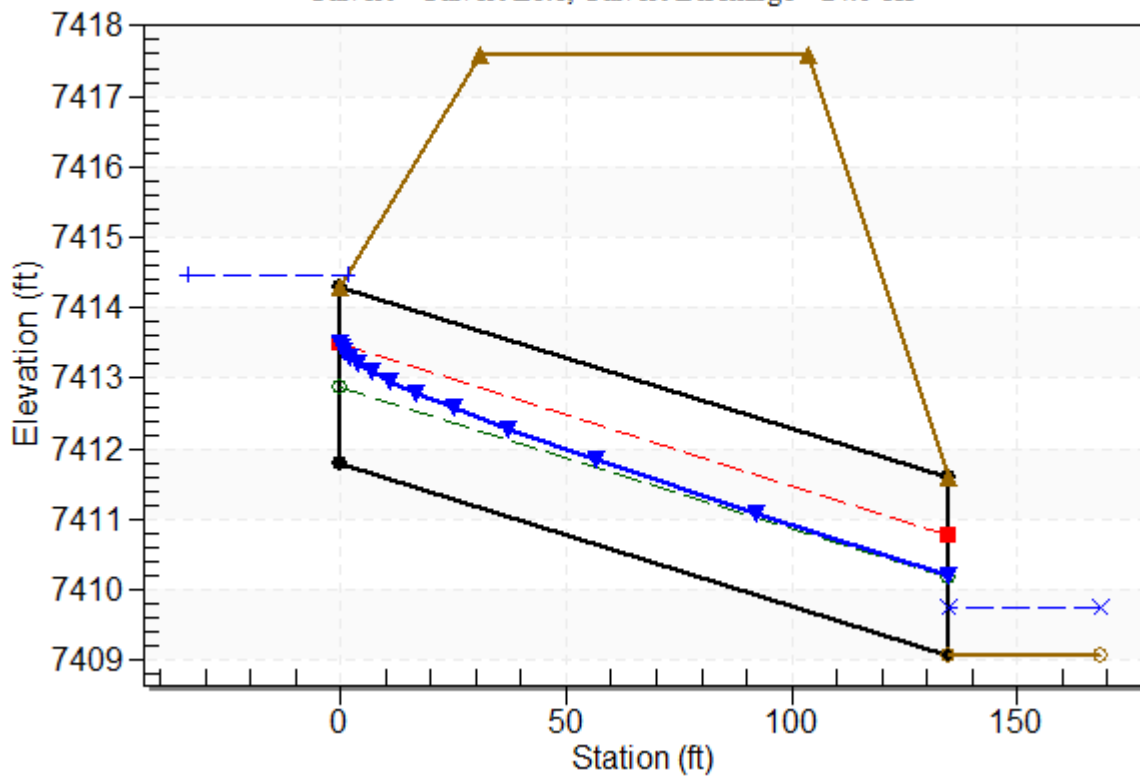
Culvert Performance Curve Plot: Culvert E1.1



Water Surface Profile Plot for Culvert: Culvert E1.1

Crossing - Crossing E1.1, Design Discharge - 24.6 cfs

Culvert - Culvert E1.1, Culvert Discharge - 24.6 cfs



Site Data - Culvert E1.1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7411.80 ft

Outlet Station: 134.70 ft

Outlet Elevation: 7409.08 ft

Number of Barrels: 1

Culvert Data Summary - Culvert E1.1

Barrel Shape: Circular

Barrel Diameter: 2.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 24 - Downstream Channel Rating Curve (Crossing: Crossing E1.1)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7409.08	0.00	0.00	0.00	0.00
10.00	7409.49	0.41	3.16	0.80	0.95
24.60	7409.76	0.68	4.16	1.30	1.02
30.00	7409.83	0.75	4.41	1.45	1.03
40.00	7409.96	0.88	4.79	1.69	1.06
50.00	7410.06	0.98	5.11	1.89	1.07
60.00	7410.16	1.08	5.37	2.08	1.09
70.00	7410.25	1.17	5.61	2.25	1.10
80.00	7410.33	1.25	5.82	2.40	1.11
90.00	7410.41	1.33	6.01	2.55	1.11
100.00	7410.48	1.40	6.18	2.68	1.12

Tailwater Channel Data - Crossing E1.1

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 6.00 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0308

Channel Manning's n: 0.0400

Channel Invert Elevation: 7409.08 ft

Roadway Data for Crossing: Crossing E1.1

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 80.00 ft

Crest Elevation: 7417.60 ft

Roadway Surface: Paved

Roadway Top Width: 73.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 8.6 cfs

Maximum Flow: 100 cfs

Table 25 - Summary of Culvert Flows at Crossing: Crossing F2

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert F2 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7363.83	0.00	0.00	0.00	1
7365.78	8.60	8.60	0.00	1
7368.30	20.00	15.02	4.97	8
7368.63	30.00	15.68	14.30	5
7368.90	40.00	16.20	23.76	4
7369.14	50.00	16.54	33.44	4
7369.36	60.00	16.75	43.24	4
7369.56	70.00	16.94	53.05	4
7369.75	80.00	17.13	62.87	4
7369.93	90.00	17.30	72.66	3
7370.10	100.00	17.48	82.51	3
7367.97	14.32	14.32	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing F2

Total Rating Curve

Crossing: Crossing F2

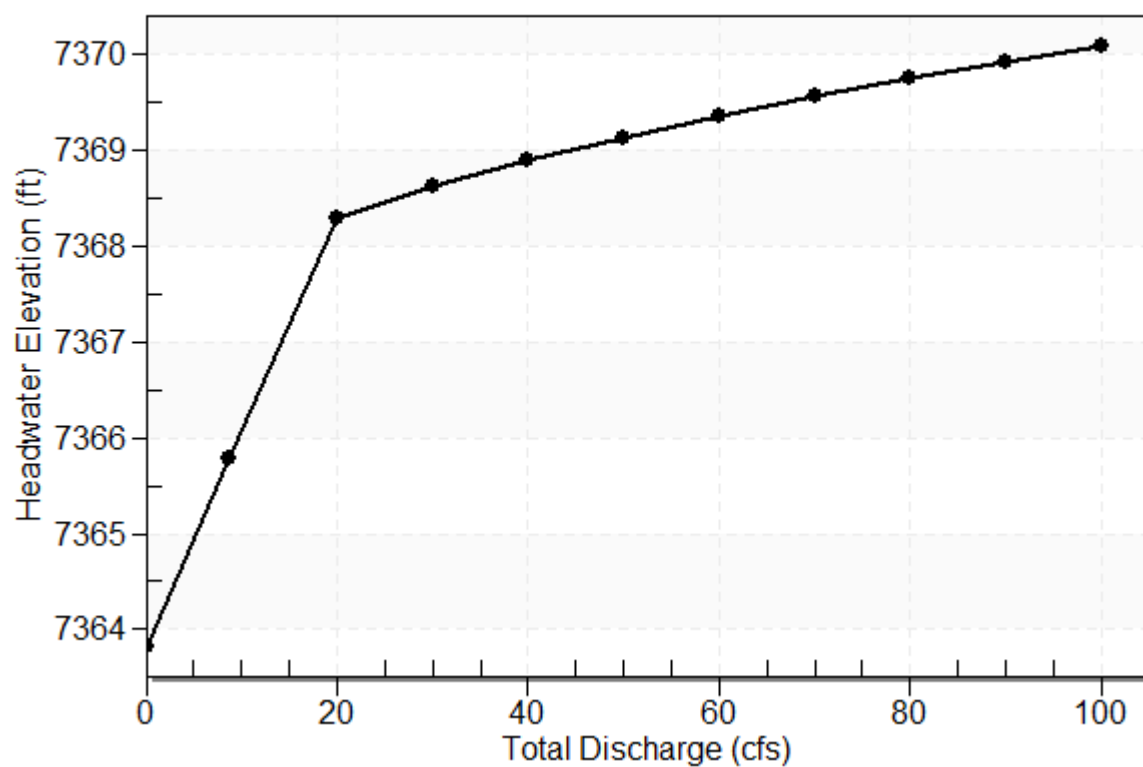


Table 26 - Culvert Summary Table: Culvert F2

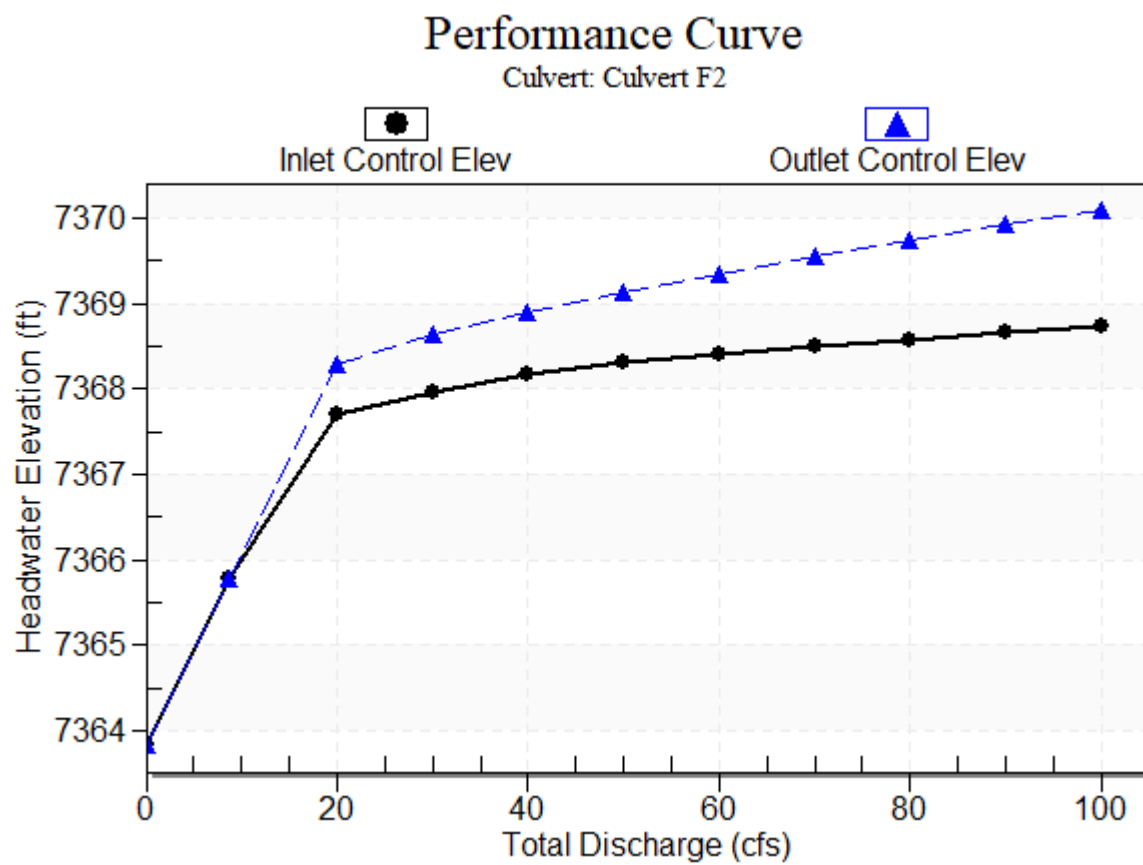
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7363.83	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
8.60	8.60	7365.78	1.945	1.948	7-M2c	1.290	1.135	1.135	0.794	5.993	3.407
20.00	15.02	7368.30	3.865	4.471	7-M2c	1.500	1.406	1.406	1.090	8.726	4.208
30.00	15.68	7368.63	4.129	4.802	7-M2c	1.500	1.419	1.419	1.269	9.065	4.656
40.00	16.20	7368.90	4.341	5.069	7-M2c	1.500	1.428	1.428	1.414	9.334	5.004
50.00	16.54	7369.14	4.482	5.308	4-FFf	1.500	1.433	1.500	1.537	9.359	5.291
60.00	16.75	7369.36	4.573	5.526	4-FFf	1.500	1.412	1.500	1.646	9.476	5.538
70.00	16.94	7369.56	4.662	5.728	4-FFf	1.500	1.392	1.500	1.744	9.586	5.755
80.00	17.13	7369.75	4.748	5.918	4-FFf	1.500	1.378	1.500	1.833	9.691	5.950
90.00	17.30	7369.93	4.832	6.098	4-FFf	1.500	1.367	1.500	1.916	9.792	6.128
100.00	17.48	7370.10	4.913	6.271	4-FFf	1.500	1.357	1.500	1.993	9.889	6.292

Straight Culvert

Inlet Elevation (invert): 7363.83 ft, Outlet Elevation (invert): 7363.25 ft

Culvert Length: 110.00 ft, Culvert Slope: 0.0053

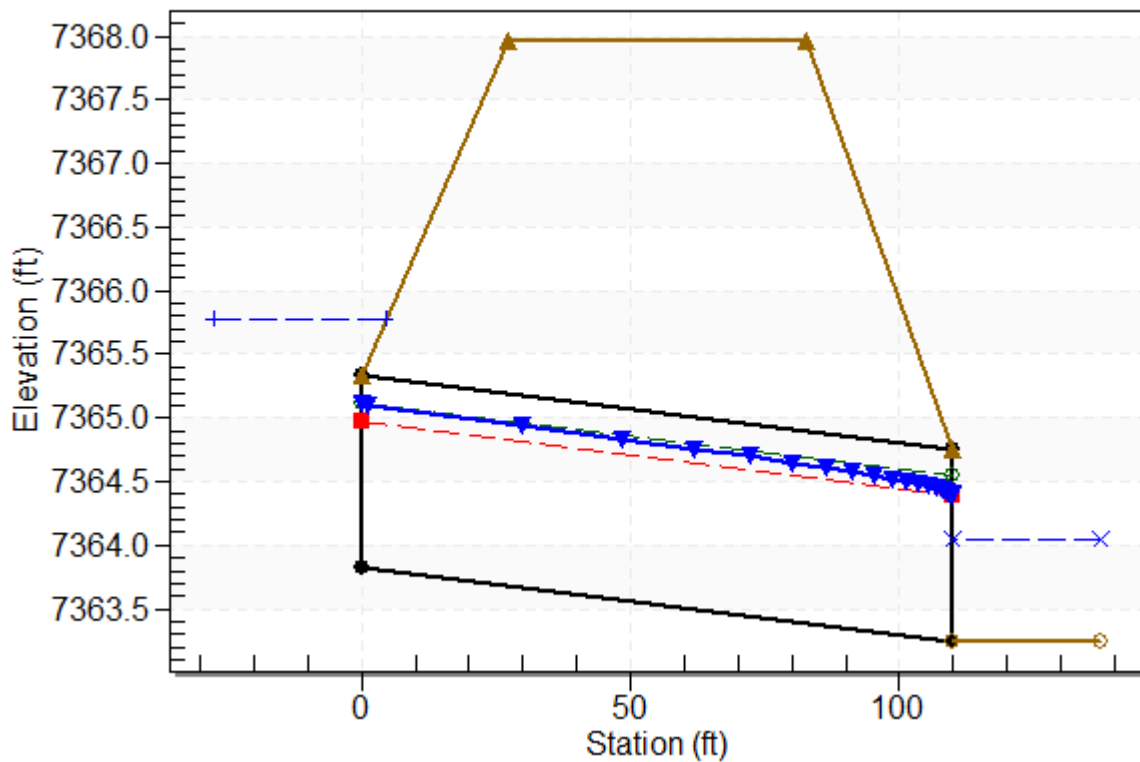
Culvert Performance Curve Plot: Culvert F2



Water Surface Profile Plot for Culvert: Culvert F2

Crossing - Crossing F2, Design Discharge - 8.6 cfs

Culvert - Culvert F2, Culvert Discharge - 8.6 cfs



Site Data - Culvert F2

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7363.83 ft

Outlet Station: 110.00 ft

Outlet Elevation: 7363.25 ft

Number of Barrels: 1

Culvert Data Summary - Culvert F2

Barrel Shape: Circular

Barrel Diameter: 1.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 27 - Downstream Channel Rating Curve (Crossing: Crossing F2)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7363.25	0.00	0.00	0.00	0.00
8.60	7364.04	0.79	3.41	1.49	0.95
20.00	7364.34	1.09	4.21	2.04	1.00
30.00	7364.52	1.27	4.66	2.38	1.03
40.00	7364.66	1.41	5.00	2.65	1.05
50.00	7364.79	1.54	5.29	2.88	1.06
60.00	7364.90	1.65	5.54	3.08	1.08
70.00	7364.99	1.74	5.76	3.26	1.09
80.00	7365.08	1.83	5.95	3.43	1.10
90.00	7365.17	1.92	6.13	3.59	1.10
100.00	7365.24	1.99	6.29	3.73	1.11

Tailwater Channel Data - Crossing F2

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0300

Channel Manning's n: 0.0400

Channel Invert Elevation: 7363.25 ft

Roadway Data for Crossing: Crossing F2

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 55.34 ft

Crest Elevation: 7367.97 ft

Roadway Surface: Paved

Roadway Top Width: 55.34 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 10 cfs

Maximum Flow: 100 cfs

Table 28 - Summary of Culvert Flows at Crossing: General Driveway-18in

Headwater Elevation (ft)	Total Discharge (cfs)	Driveway Culvert 18in Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7388.00	0.00	0.00	0.00	1
7390.26	10.00	10.00	0.00	1
7392.71	20.00	17.08	2.91	10
7393.05	30.00	17.78	12.20	5
7393.30	40.00	18.30	21.69	5
7393.52	50.00	18.73	31.22	4
7393.72	60.00	19.12	40.84	4
7393.90	70.00	19.48	50.50	4
7394.07	80.00	19.79	60.15	3
7394.23	90.00	20.09	69.87	3
7394.39	100.00	20.37	79.62	3
7392.50	16.61	16.61	0.00	Overtopping

Rating Curve Plot for Crossing: General Driveway-18in

Total Rating Curve
Crossing: General Driveway-18in

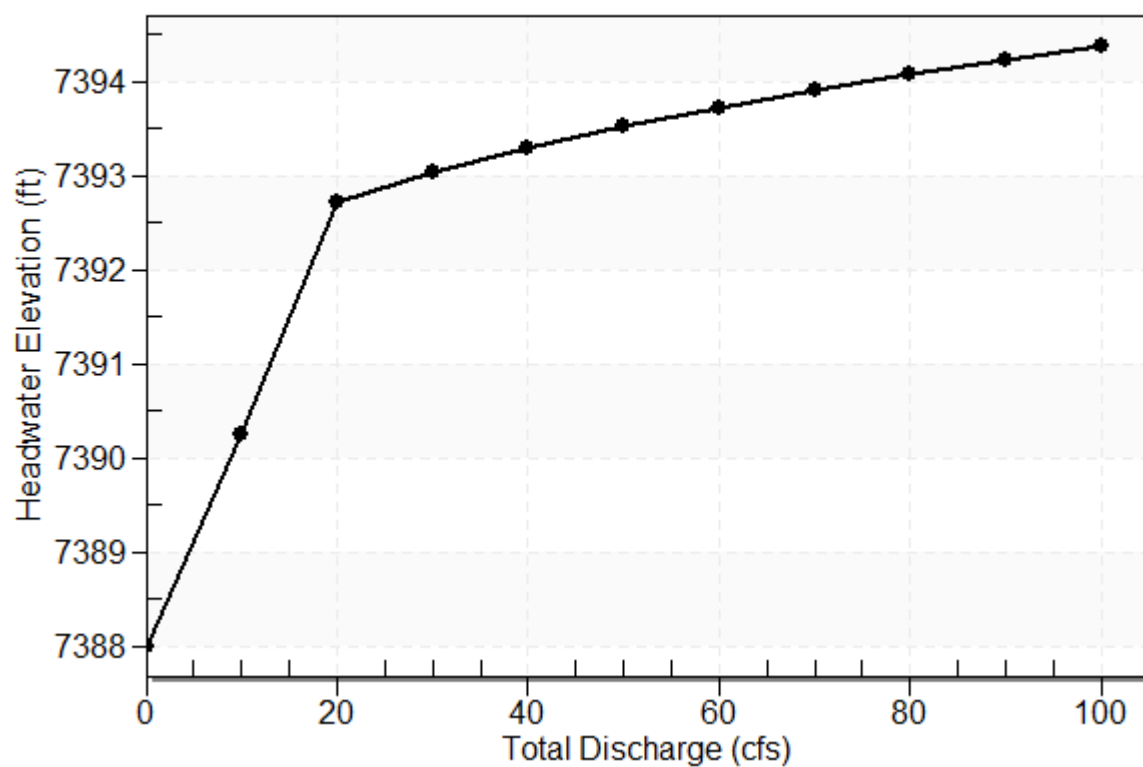


Table 29 - Culvert Summary Table: Driveway Culvert 18in

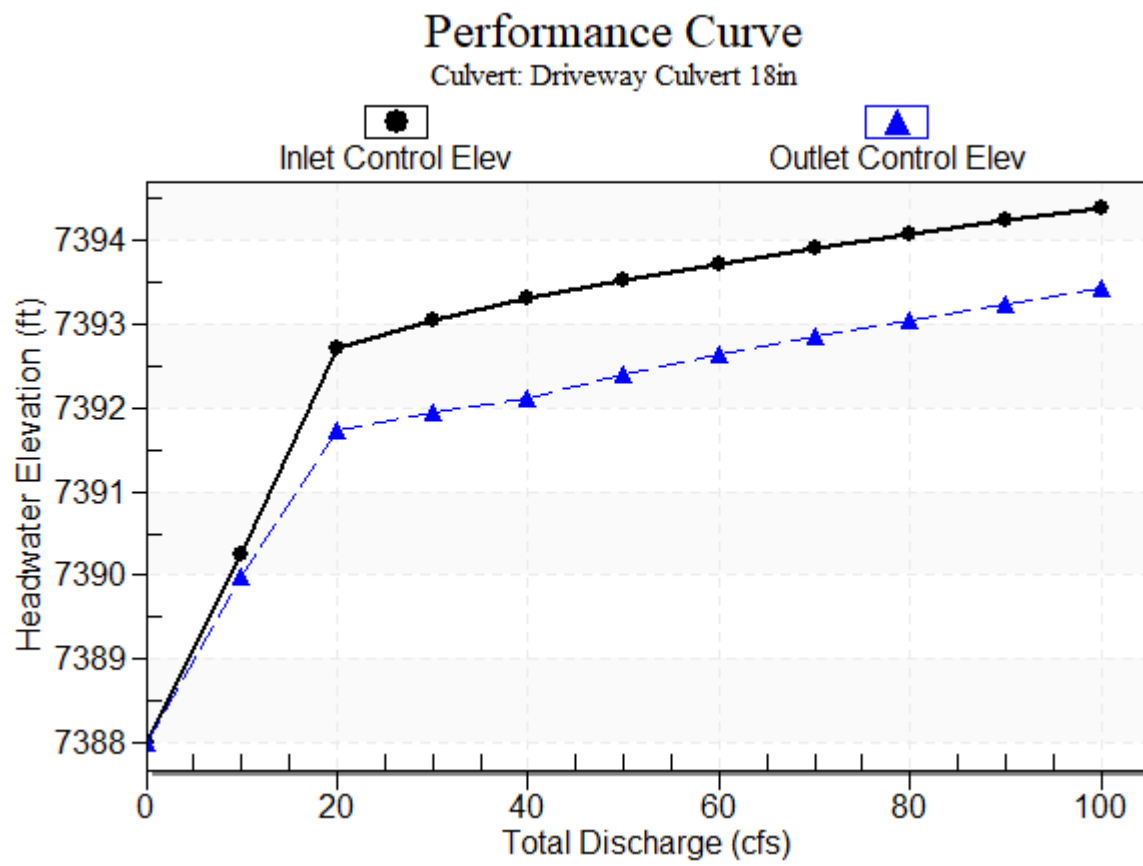
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7388.00	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7390.26	2.256	1.995	5-S2n	0.900	1.219	1.033	0.907	7.709	3.039
20.00	17.08	7392.71	4.713	3.730	7-M2c	1.500	1.382	1.382	1.176	10.031	3.614
30.00	17.78	7393.05	5.046	3.943	7-M2t	1.500	1.308	1.369	1.369	10.507	4.000
40.00	18.30	7393.30	5.300	4.124	4-FFf	1.500	1.492	1.500	1.525	10.354	4.298
50.00	18.73	7393.52	5.520	4.393	4-FFf	1.500	1.500	1.500	1.658	10.601	4.544
60.00	19.12	7393.72	5.720	4.633	4-FFf	1.500	1.500	1.500	1.776	10.821	4.756
70.00	19.48	7393.90	5.905	4.853	4-FFf	1.500	1.500	1.500	1.882	11.021	4.943
80.00	19.79	7394.07	6.071	5.051	4-FFf	1.500	1.500	1.500	1.978	11.197	5.111
90.00	20.09	7394.23	6.233	5.240	4-FFf	1.500	1.500	1.500	2.067	11.367	5.264
100.00	20.37	7394.39	6.388	5.419	4-FFf	1.500	1.500	1.500	2.151	11.526	5.404

Straight Culvert

Inlet Elevation (invert): 7388.00 ft, Outlet Elevation (invert): 7387.80 ft

Culvert Length: 10.00 ft, Culvert Slope: 0.0200

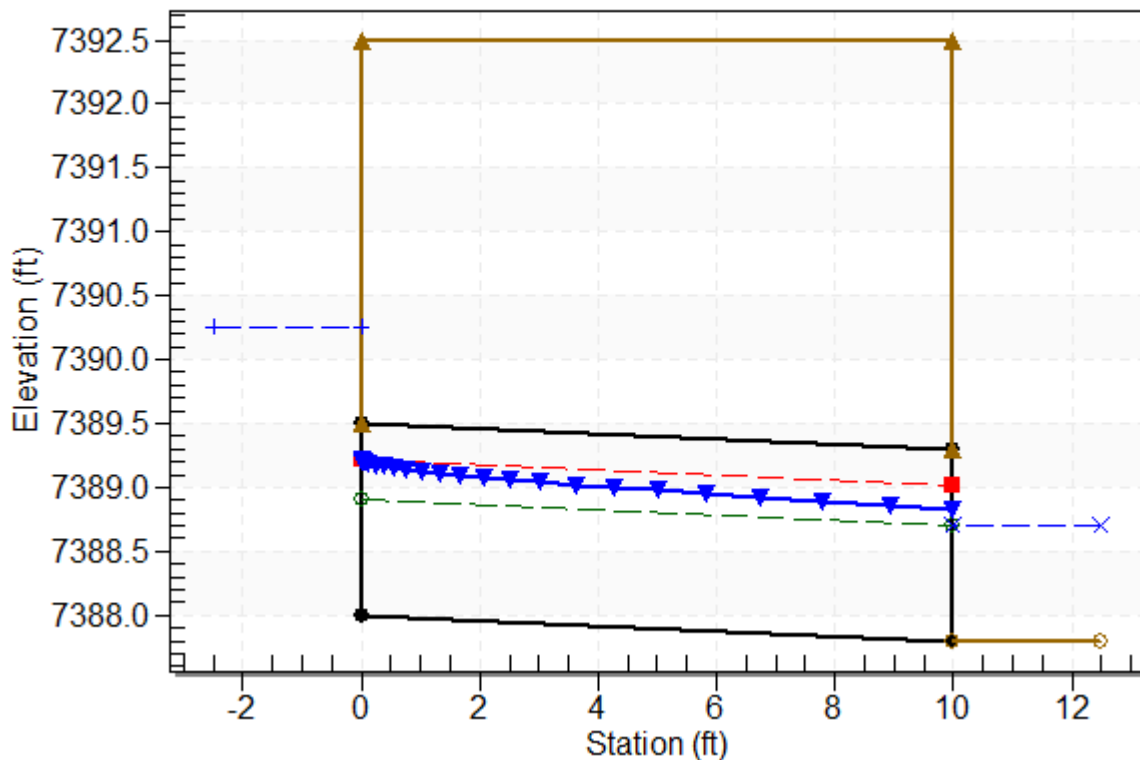
Culvert Performance Curve Plot: Driveway Culvert 18in



Water Surface Profile Plot for Culvert: Driveway Culvert 18in

Crossing - General Driveway-18in, Design Discharge - 10.0 cfs

Culvert - Driveway Culvert 18in, Culvert Discharge - 10.0 cfs



Site Data - Driveway Culvert 18in

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7388.00 ft

Outlet Station: 10.00 ft

Outlet Elevation: 7387.80 ft

Number of Barrels: 1

Culvert Data Summary - Driveway Culvert 18in

Barrel Shape: Circular

Barrel Diameter: 1.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 30 - Downstream Channel Rating Curve (Crossing: General Driveway-18in)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7387.80	0.00	0.00	0.00	0.00
10.00	7388.71	0.91	3.04	1.13	0.80
20.00	7388.98	1.18	3.61	1.47	0.83
30.00	7389.17	1.37	4.00	1.71	0.85
40.00	7389.33	1.53	4.30	1.90	0.87
50.00	7389.46	1.66	4.54	2.07	0.88
60.00	7389.58	1.78	4.76	2.22	0.89
70.00	7389.68	1.88	4.94	2.35	0.90
80.00	7389.78	1.98	5.11	2.47	0.91
90.00	7389.87	2.07	5.26	2.58	0.91
100.00	7389.95	2.15	5.40	2.68	0.92

Tailwater Channel Data - General Driveway-18in

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 4.00 (1:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0400

Channel Invert Elevation: 7387.80 ft

Roadway Data for Crossing: General Driveway-18in

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 10.00 ft

Crest Elevation: 7392.50 ft

Roadway Surface: Paved

Roadway Top Width: 10.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 20 cfs

Maximum Flow: 100 cfs

Table 31 - Summary of Culvert Flows at Crossing: General Driveway-24in

Headwater Elevation (ft)	Total Discharge (cfs)	Driveway Culvert 24in Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7388.00	0.00	0.00	0.00	1
7389.69	10.00	10.00	0.00	1
7390.92	20.00	20.00	0.00	1
7392.93	30.00	30.00	0.00	1
7393.41	40.00	31.91	8.05	5
7393.68	50.00	32.92	17.07	5
7393.91	60.00	33.75	26.20	4
7394.11	70.00	34.48	35.49	4
7394.30	80.00	35.10	44.87	4
7394.47	90.00	35.68	54.30	4
7394.63	100.00	36.19	63.77	3
7393.00	30.27	30.27	0.00	Overtopping

Rating Curve Plot for Crossing: General Driveway-24in

Total Rating Curve
Crossing: General Driveway-24in

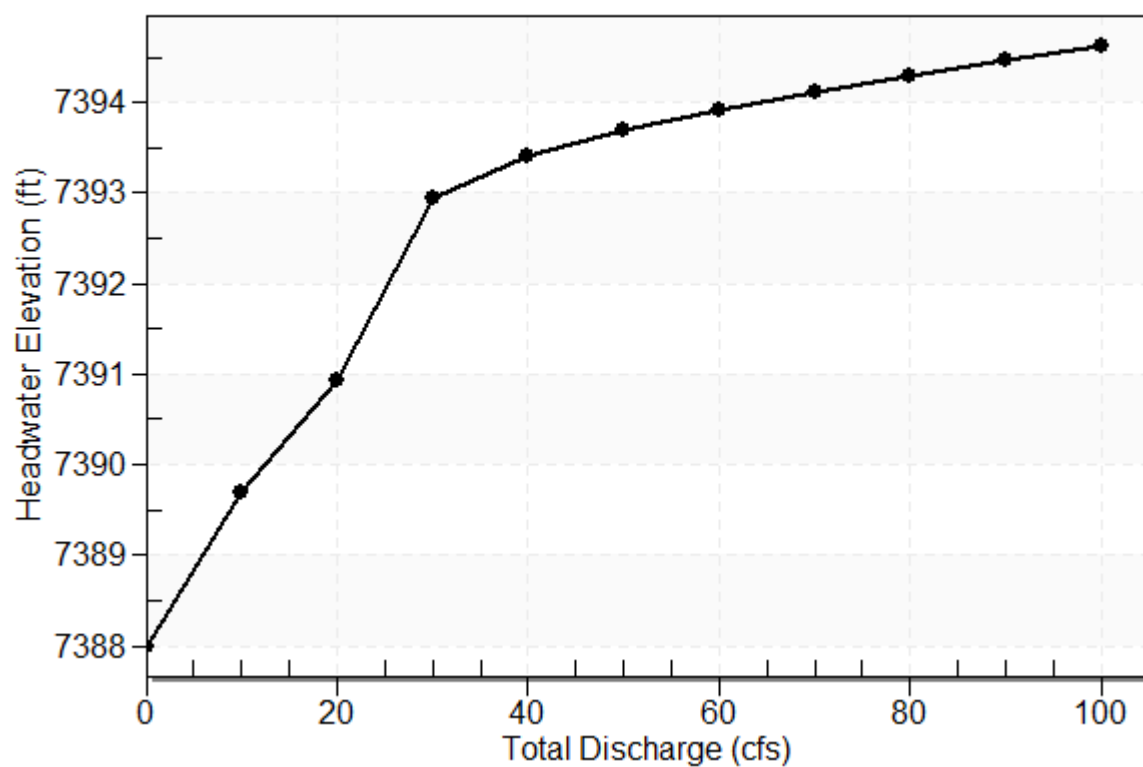


Table 32 - Culvert Summary Table: Driveway Culvert 24in

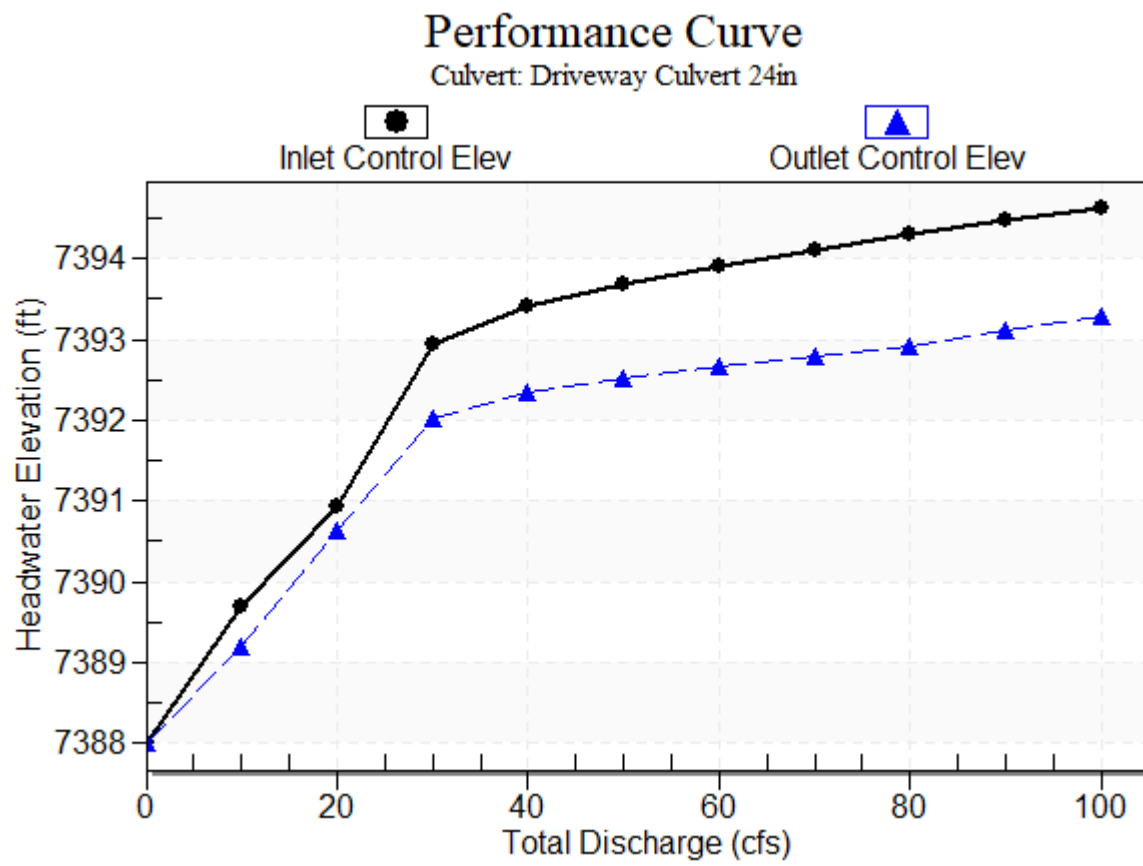
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7388.00	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7389.69	1.686	1.187	1-S2n	0.767	1.131	0.915	0.907	7.140	3.039
20.00	20.00	7390.92	2.924	2.625	5-S2n	1.144	1.606	1.370	1.176	8.719	3.614
30.00	30.00	7392.93	4.934	4.030	5-S2n	1.535	1.862	1.724	1.369	10.421	4.000
40.00	31.91	7393.41	5.415	4.345	5-S2n	1.631	1.889	1.786	1.525	10.776	4.298
50.00	32.92	7393.68	5.682	4.518	5-S2n	1.692	1.900	1.822	1.658	10.961	4.544
60.00	33.75	7393.91	5.907	4.665	5-S2n	1.758	1.909	1.858	1.776	11.095	4.756
70.00	34.48	7394.11	6.111	4.794	3-M2t	2.000	1.874	1.882	1.882	11.244	4.943
80.00	35.10	7394.30	6.298	4.926	7-M2t	2.000	1.840	1.978	1.978	11.195	5.111
90.00	35.68	7394.47	6.474	5.119	4-FFf	2.000	1.817	2.000	2.067	11.357	5.264
100.00	36.19	7394.63	6.632	5.297	4-FFf	2.000	1.778	2.000	2.151	11.520	5.404

Straight Culvert

Inlet Elevation (invert): 7388.00 ft, Outlet Elevation (invert): 7387.80 ft

Culvert Length: 10.00 ft, Culvert Slope: 0.0200

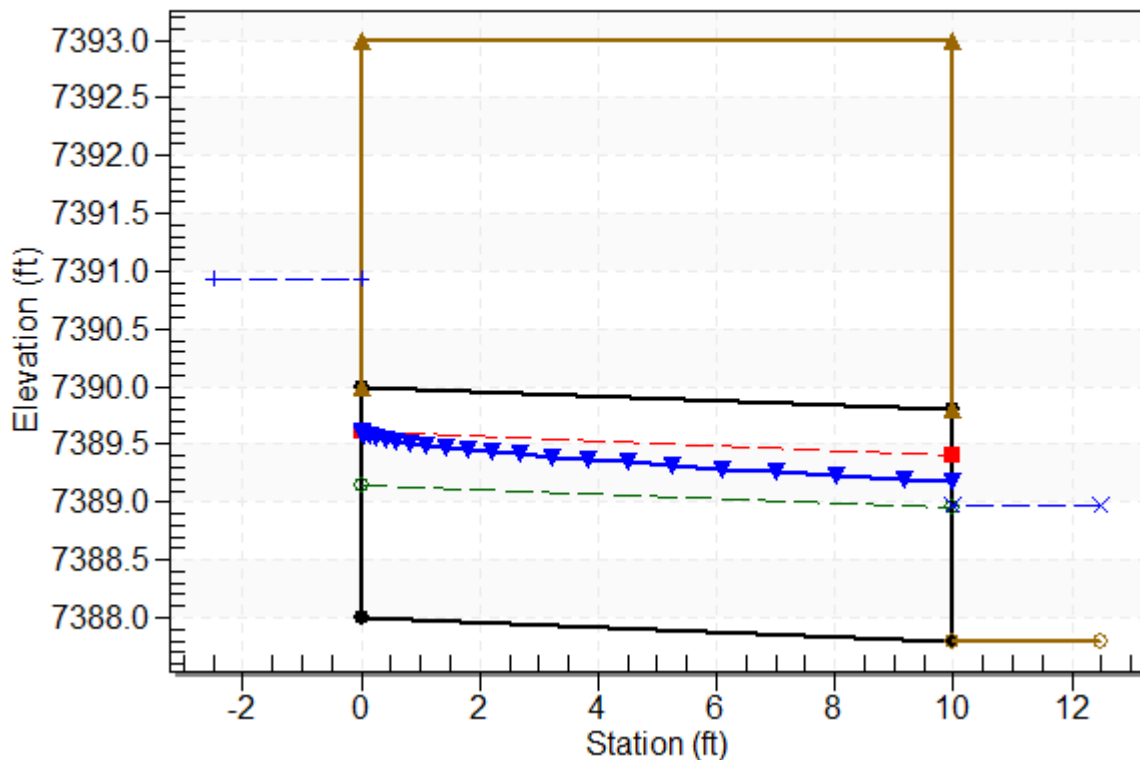
Culvert Performance Curve Plot: Driveway Culvert 24in



Water Surface Profile Plot for Culvert: Driveway Culvert 24in

Crossing - General Driveway-24in, Design Discharge - 20.0 cfs

Culvert - Driveway Culvert 24in, Culvert Discharge - 20.0 cfs



Site Data - Driveway Culvert 24in

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7388.00 ft

Outlet Station: 10.00 ft

Outlet Elevation: 7387.80 ft

Number of Barrels: 1

Culvert Data Summary - Driveway Culvert 24in

Barrel Shape: Circular

Barrel Diameter: 2.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 33 - Downstream Channel Rating Curve (Crossing: General Driveway-24in)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7387.80	0.00	0.00	0.00	0.00
10.00	7388.71	0.91	3.04	1.13	0.80
20.00	7388.98	1.18	3.61	1.47	0.83
30.00	7389.17	1.37	4.00	1.71	0.85
40.00	7389.33	1.53	4.30	1.90	0.87
50.00	7389.46	1.66	4.54	2.07	0.88
60.00	7389.58	1.78	4.76	2.22	0.89
70.00	7389.68	1.88	4.94	2.35	0.90
80.00	7389.78	1.98	5.11	2.47	0.91
90.00	7389.87	2.07	5.26	2.58	0.91
100.00	7389.95	2.15	5.40	2.68	0.92

Tailwater Channel Data - General Driveway-24in

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 4.00 (1:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0400

Channel Invert Elevation: 7387.80 ft

Roadway Data for Crossing: General Driveway-24in

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 10.00 ft

Crest Elevation: 7393.00 ft

Roadway Surface: Paved

Roadway Top Width: 10.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 30 cfs

Maximum Flow: 100 cfs

Table 34 - Summary of Culvert Flows at Crossing: General Driveway-30in

Headwater Elevation (ft)	Total Discharge (cfs)	Driveway Culvert 30in Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7388.00	0.00	0.00	0.00	1
7389.49	10.00	10.00	0.00	1
7390.30	20.00	20.00	0.00	1
7391.14	30.00	30.00	0.00	1
7392.27	40.00	40.00	0.00	1
7393.60	50.00	49.05	0.92	10
7393.94	60.00	51.10	8.87	5
7394.19	70.00	52.55	17.44	5
7394.41	80.00	53.76	26.20	4
7394.60	90.00	54.84	35.13	4
7394.78	100.00	55.83	44.15	4
7393.50	48.44	48.44	0.00	Overtopping

Rating Curve Plot for Crossing: General Driveway-30in

Total Rating Curve
Crossing: General Driveway-30in

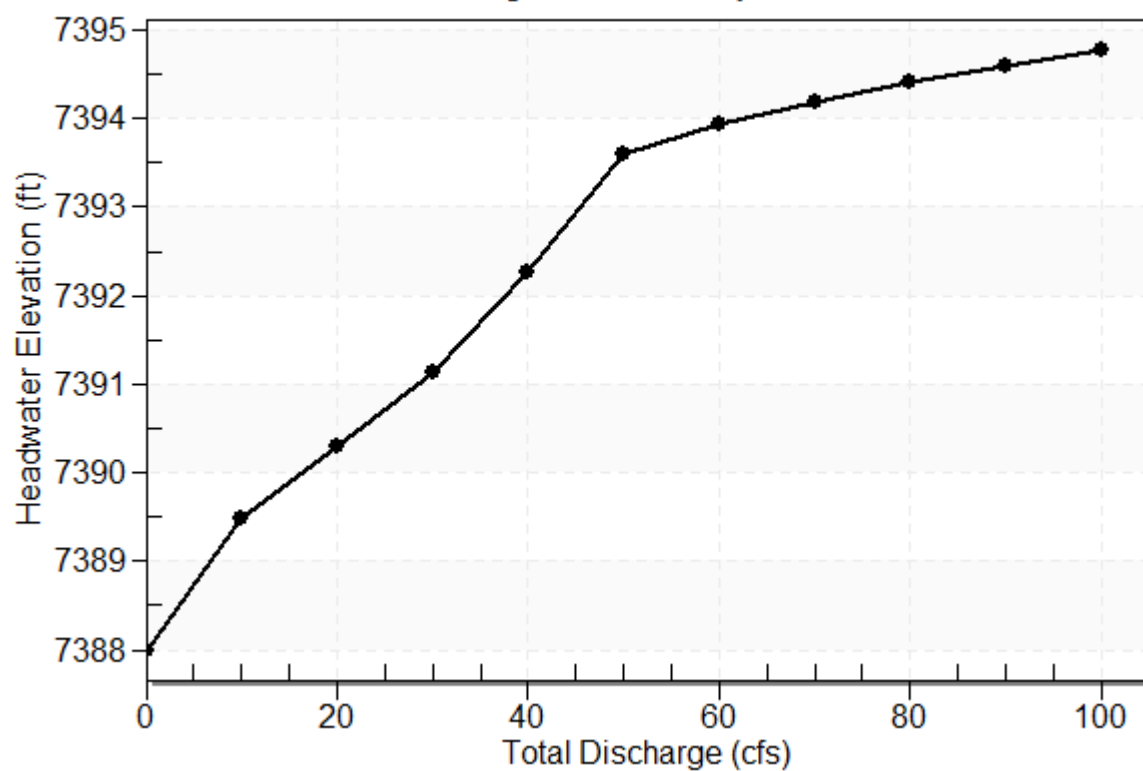


Table 35 - Culvert Summary Table: Driveway Culvert 30in

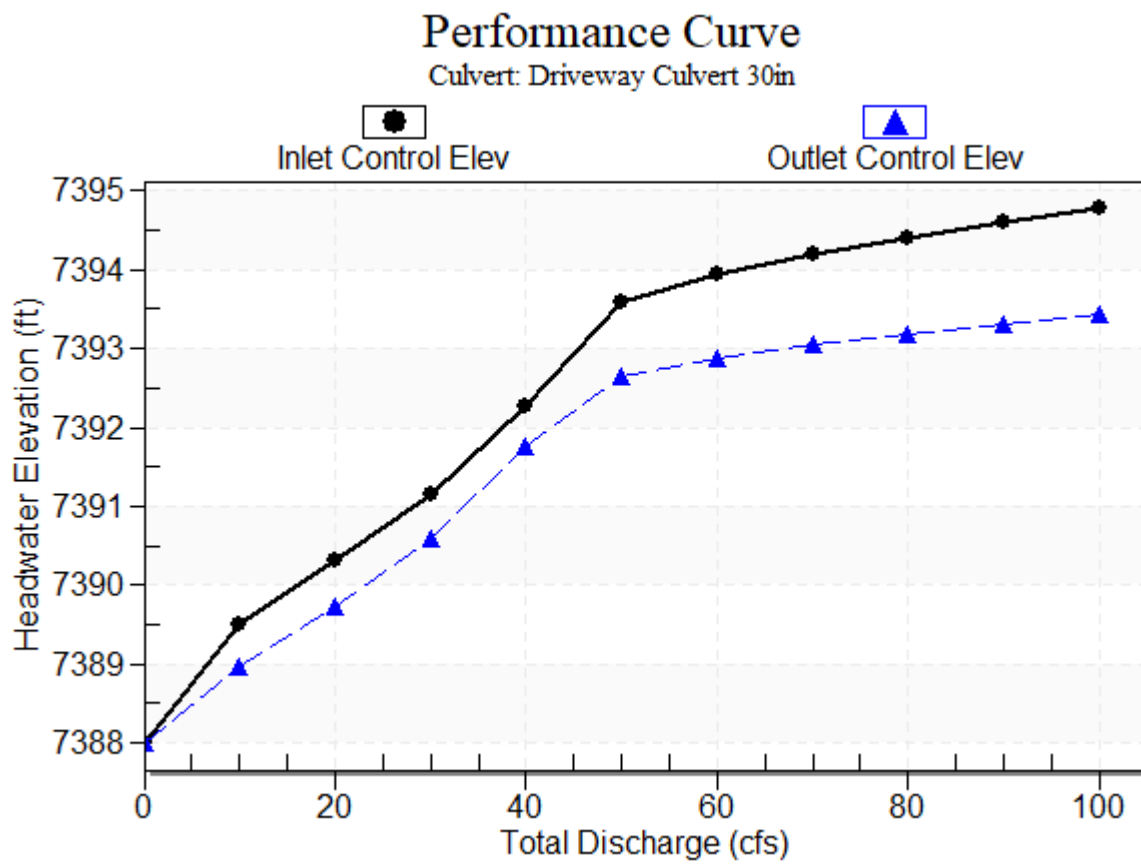
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7388.00	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7389.49	1.489	0.959	1-S2n	0.702	1.056	0.843	0.907	6.874	3.039
20.00	20.00	7390.30	2.301	1.728	1-S2n	1.011	1.518	1.253	1.176	8.121	3.614
30.00	30.00	7391.14	3.142	2.590	5-S2n	1.274	1.867	1.585	1.369	9.144	4.000
40.00	40.00	7392.27	4.268	3.756	5-S2n	1.524	2.129	1.866	1.525	10.180	4.298
50.00	49.05	7393.60	5.599	4.662	5-S2n	1.761	2.287	2.082	1.658	11.232	4.544
60.00	51.10	7393.94	5.942	4.885	5-S2n	1.819	2.313	2.126	1.776	11.488	4.756
70.00	52.55	7394.19	6.192	5.047	5-S2n	1.861	2.330	2.156	1.882	11.674	4.943
80.00	53.76	7394.41	6.407	5.186	5-S2n	1.899	2.342	2.182	1.978	11.829	5.111
90.00	54.84	7394.60	6.603	5.311	5-S2n	1.933	2.353	2.204	2.067	11.974	5.264
100.00	55.83	7394.78	6.785	5.428	5-S2n	1.966	2.361	2.224	2.151	12.103	5.404

Straight Culvert

Inlet Elevation (invert): 7388.00 ft, Outlet Elevation (invert): 7387.80 ft

Culvert Length: 10.00 ft, Culvert Slope: 0.0200

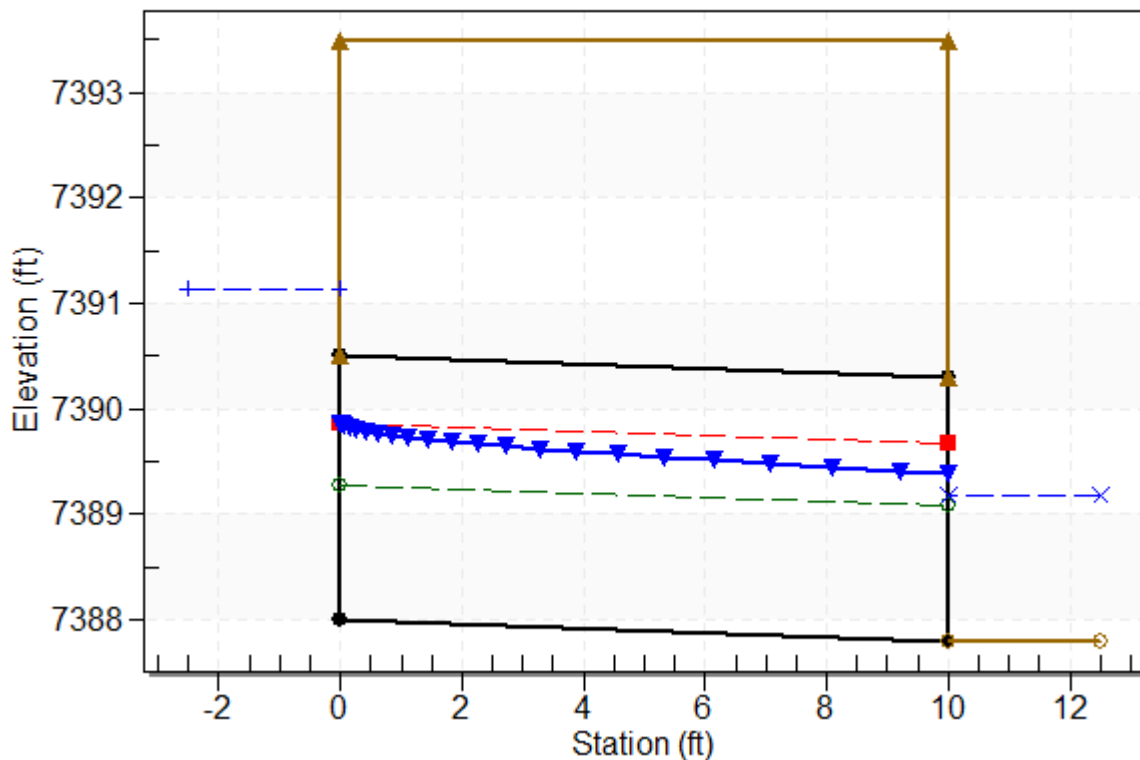
Culvert Performance Curve Plot: Driveway Culvert 30in



Water Surface Profile Plot for Culvert: Driveway Culvert 30in

Crossing - General Driveway-30in, Design Discharge - 30.0 cfs

Culvert - Driveway Culvert 30in, Culvert Discharge - 30.0 cfs



Site Data - Driveway Culvert 30in

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7388.00 ft

Outlet Station: 10.00 ft

Outlet Elevation: 7387.80 ft

Number of Barrels: 1

Culvert Data Summary - Driveway Culvert 30in

Barrel Shape: Circular

Barrel Diameter: 2.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 36 - Downstream Channel Rating Curve (Crossing: General Driveway-30in)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7387.80	0.00	0.00	0.00	0.00
10.00	7388.71	0.91	3.04	1.13	0.80
20.00	7388.98	1.18	3.61	1.47	0.83
30.00	7389.17	1.37	4.00	1.71	0.85
40.00	7389.33	1.53	4.30	1.90	0.87
50.00	7389.46	1.66	4.54	2.07	0.88
60.00	7389.58	1.78	4.76	2.22	0.89
70.00	7389.68	1.88	4.94	2.35	0.90
80.00	7389.78	1.98	5.11	2.47	0.91
90.00	7389.87	2.07	5.26	2.58	0.91
100.00	7389.95	2.15	5.40	2.68	0.92

Tailwater Channel Data - General Driveway-30in

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 4.00 (1:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0400

Channel Invert Elevation: 7387.80 ft

Roadway Data for Crossing: General Driveway-30in

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 10.00 ft

Crest Elevation: 7393.50 ft

Roadway Surface: Paved

Roadway Top Width: 10.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 50 cfs

Maximum Flow: 100 cfs

Table 37 - Summary of Culvert Flows at Crossing: General Driveway-36in

Headwater Elevation (ft)	Total Discharge (cfs)	Driveway Culvert 36in Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7388.00	0.00	0.00	0.00	1
7389.36	10.00	10.00	0.00	1
7390.07	20.00	20.00	0.00	1
7390.67	30.00	30.00	0.00	1
7391.27	40.00	40.00	0.00	1
7391.97	50.00	50.00	0.00	1
7392.82	60.00	60.00	0.00	1
7393.85	70.00	70.00	0.00	1
7394.33	80.00	74.20	5.79	6
7394.59	90.00	76.31	13.68	5
7394.81	100.00	78.06	21.90	4
7394.00	71.34	71.34	0.00	Overtopping

Rating Curve Plot for Crossing: General Driveway-36in

Total Rating Curve
Crossing: General Driveway-36in

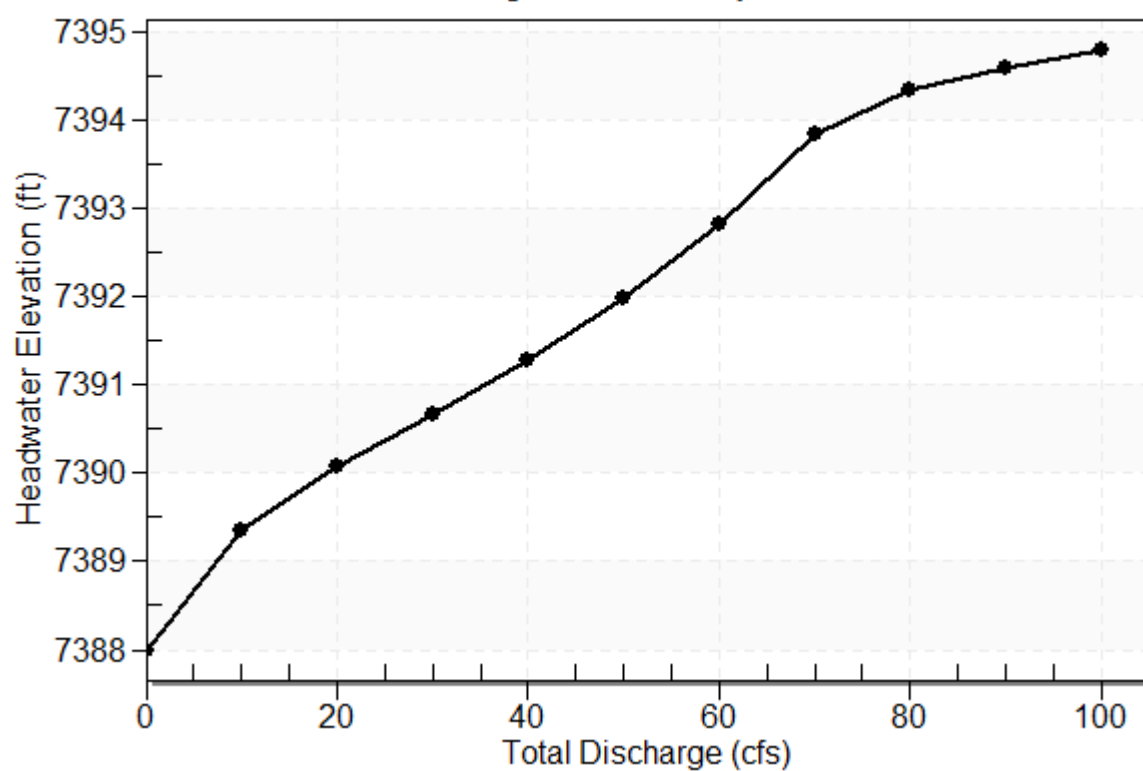


Table 38 - Culvert Summary Table: Driveway Culvert 36in

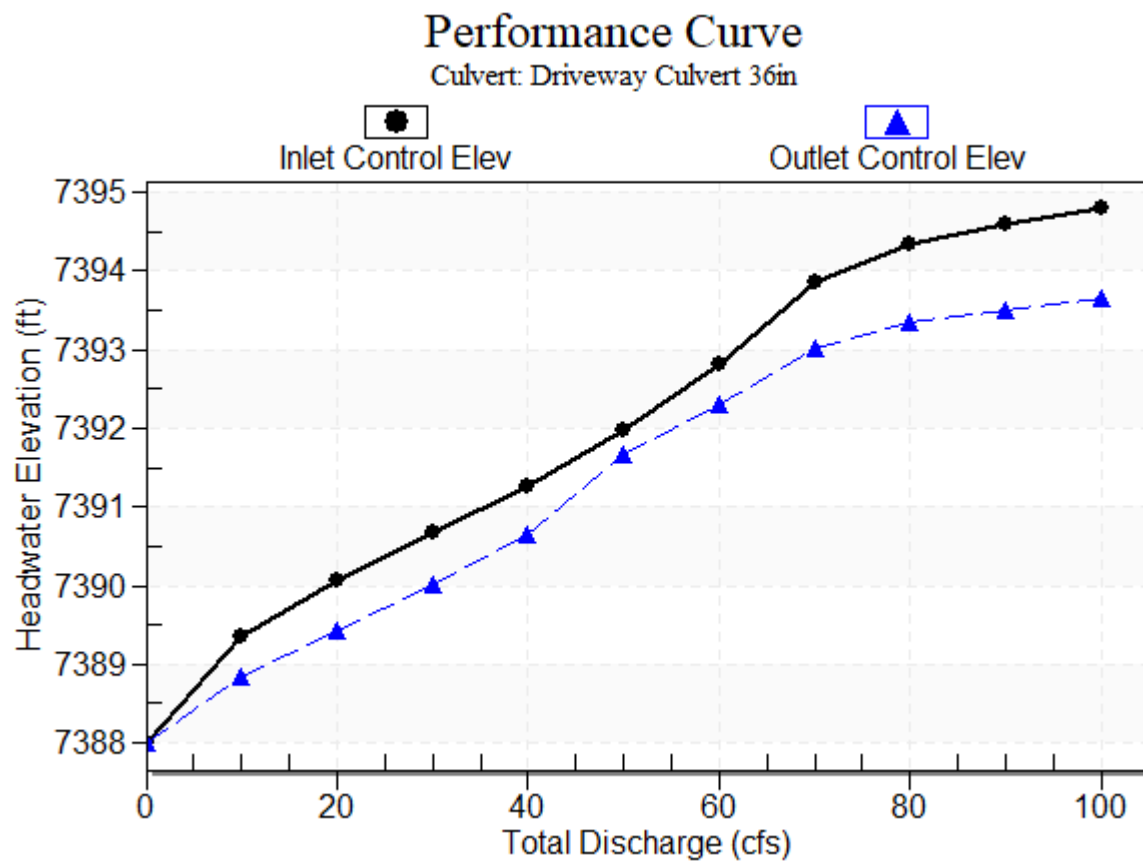
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7388.00	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7389.36	1.359	0.849	1-S2n	0.658	1.000	0.792	0.907	6.697	3.039
20.00	20.00	7390.07	2.073	1.430	1-S2n	0.937	1.435	1.172	1.176	7.820	3.614
30.00	30.00	7390.67	2.671	2.014	1-S2n	1.161	1.774	1.478	1.369	8.653	4.000
40.00	40.00	7391.27	3.272	2.641	5-S2n	1.362	2.059	1.743	1.525	9.388	4.298
50.00	50.00	7391.97	3.971	3.672	5-S2n	1.551	2.301	1.981	1.658	10.100	4.544
60.00	60.00	7392.82	4.823	4.309	5-S2n	1.735	2.501	2.193	1.776	10.837	4.756
70.00	70.00	7393.85	5.849	5.023	5-S2n	1.922	2.657	2.382	1.882	11.631	4.943
80.00	74.20	7394.33	6.333	5.345	5-S2n	2.002	2.710	2.454	1.978	11.989	5.111
90.00	76.31	7394.59	6.588	5.512	5-S2n	2.044	2.733	2.489	2.067	12.176	5.264
100.00	78.06	7394.81	6.805	5.653	5-S2n	2.078	2.751	2.517	2.151	12.332	5.404

Straight Culvert

Inlet Elevation (invert): 7388.00 ft, Outlet Elevation (invert): 7387.80 ft

Culvert Length: 10.00 ft, Culvert Slope: 0.0200

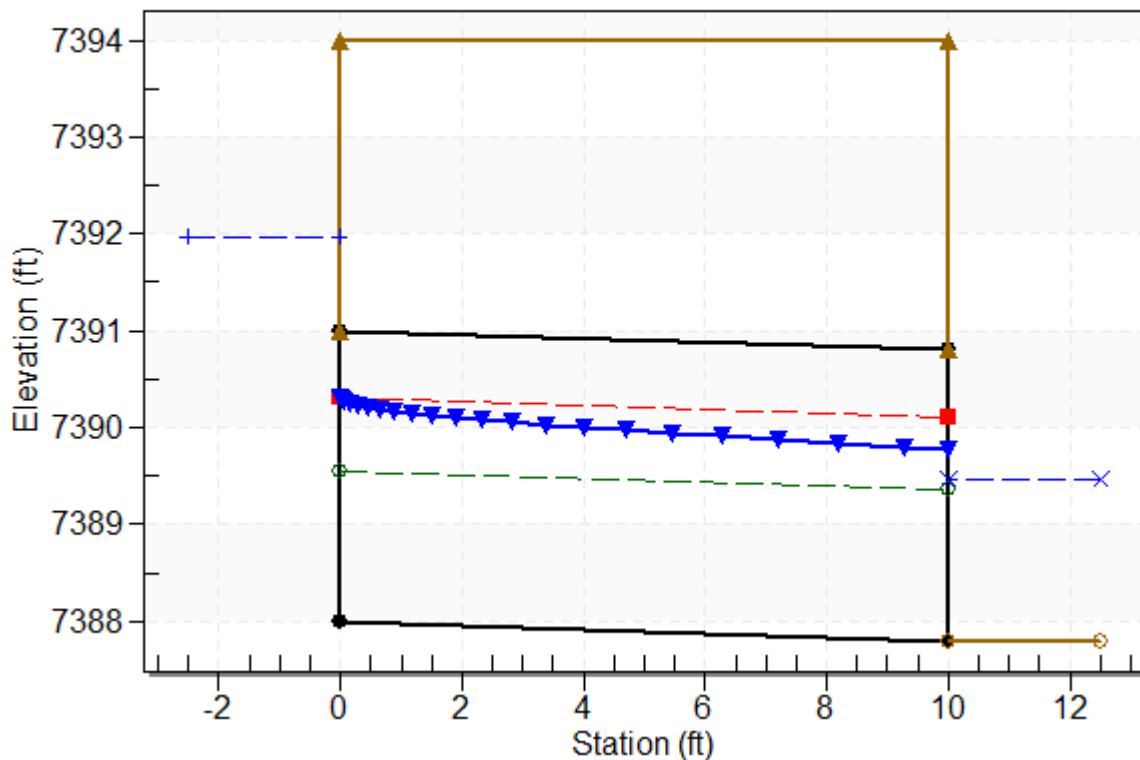
Culvert Performance Curve Plot: Driveway Culvert 36in



Water Surface Profile Plot for Culvert: Driveway Culvert 36in

Crossing - General Driveway-36in, Design Discharge - 50.0 cfs

Culvert - Driveway Culvert 36in, Culvert Discharge - 50.0 cfs



Site Data - Driveway Culvert 36in

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7388.00 ft

Outlet Station: 10.00 ft

Outlet Elevation: 7387.80 ft

Number of Barrels: 1

Culvert Data Summary - Driveway Culvert 36in

Barrel Shape: Circular

Barrel Diameter: 3.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 39 - Downstream Channel Rating Curve (Crossing: General Driveway-36in)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7387.80	0.00	0.00	0.00	0.00
10.00	7388.71	0.91	3.04	1.13	0.80
20.00	7388.98	1.18	3.61	1.47	0.83
30.00	7389.17	1.37	4.00	1.71	0.85
40.00	7389.33	1.53	4.30	1.90	0.87
50.00	7389.46	1.66	4.54	2.07	0.88
60.00	7389.58	1.78	4.76	2.22	0.89
70.00	7389.68	1.88	4.94	2.35	0.90
80.00	7389.78	1.98	5.11	2.47	0.91
90.00	7389.87	2.07	5.26	2.58	0.91
100.00	7389.95	2.15	5.40	2.68	0.92

Tailwater Channel Data - General Driveway-36in

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 4.00 (1:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0400

Channel Invert Elevation: 7387.80 ft

Roadway Data for Crossing: General Driveway-36in

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 10.00 ft

Crest Elevation: 7394.00 ft

Roadway Surface: Paved

Roadway Top Width: 10.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 70 cfs

Maximum Flow: 100 cfs

Table 40 - Summary of Culvert Flows at Crossing: General Driveway-42in

Headwater Elevation (ft)	Total Discharge (cfs)	Driveway Culvert 42in Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7388.00	0.00	0.00	0.00	1
7389.29	10.00	10.00	0.00	1
7389.90	20.00	20.00	0.00	1
7390.45	30.00	30.00	0.00	1
7390.93	40.00	40.00	0.00	1
7391.39	50.00	50.00	0.00	1
7391.88	60.00	60.00	0.00	1
7392.42	70.00	70.00	0.00	1
7393.05	80.00	80.00	0.00	1
7393.76	90.00	90.00	0.00	1
7394.55	100.00	99.71	0.28	7
7394.50	99.18	99.18	0.00	Overtopping

Rating Curve Plot for Crossing: General Driveway-42in

Total Rating Curve
Crossing: General Driveway-42in

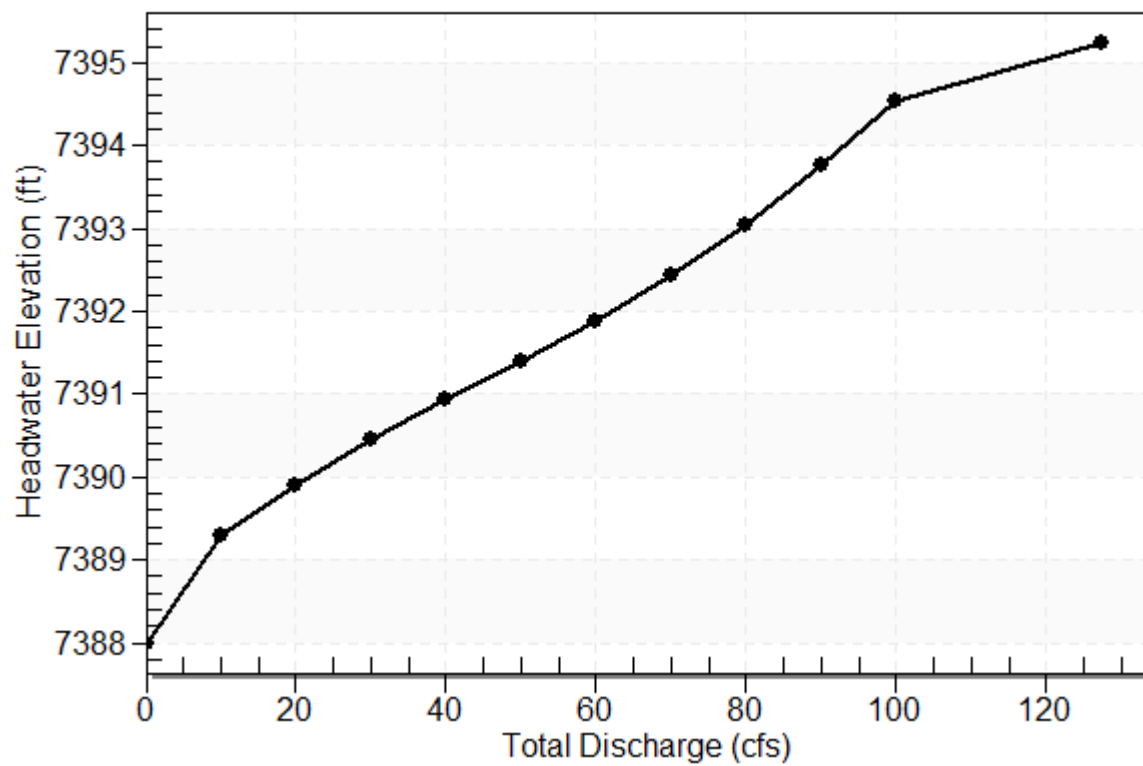


Table 41 - Culvert Summary Table: Driveway Culvert 42in

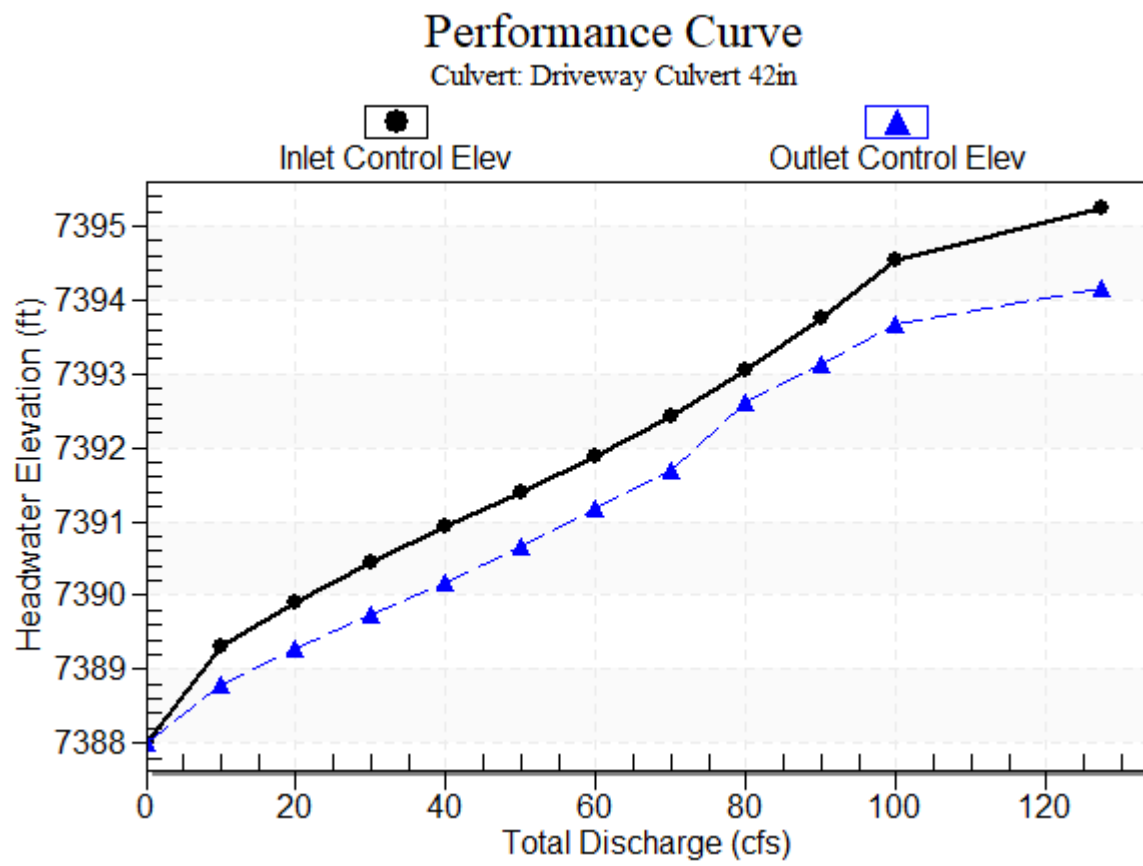
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7388.00	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7389.29	1.292	0.783	1-S2n	0.628	0.957	0.754	0.907	6.564	3.039
20.00	20.00	7389.90	1.896	1.274	1-S2n	0.885	1.369	1.111	1.176	7.620	3.614
30.00	30.00	7390.45	2.448	1.727	1-S2n	1.089	1.692	1.397	1.369	8.370	4.000
40.00	40.00	7390.93	2.927	2.185	1-S2n	1.268	1.967	1.646	1.525	8.996	4.298
50.00	50.00	7391.39	3.390	2.663	1-S2n	1.431	2.210	1.870	1.658	9.561	4.544
60.00	60.00	7391.88	3.878	3.168	5-S2n	1.584	2.427	2.075	1.776	10.097	4.756
70.00	70.00	7392.42	4.424	3.703	5-S2n	1.731	2.622	2.265	1.882	10.628	4.943
80.00	80.00	7393.05	5.047	4.620	5-S2n	1.875	2.794	2.441	1.978	11.167	5.111
90.00	90.00	7393.76	5.761	5.139	5-S2n	2.017	2.943	2.603	2.067	11.729	5.264
100.00	99.71	7394.55	6.545	5.682	5-S2n	2.156	3.065	2.747	2.151	12.309	5.404

Straight Culvert

Inlet Elevation (invert): 7388.00 ft, Outlet Elevation (invert): 7387.80 ft

Culvert Length: 10.00 ft, Culvert Slope: 0.0200

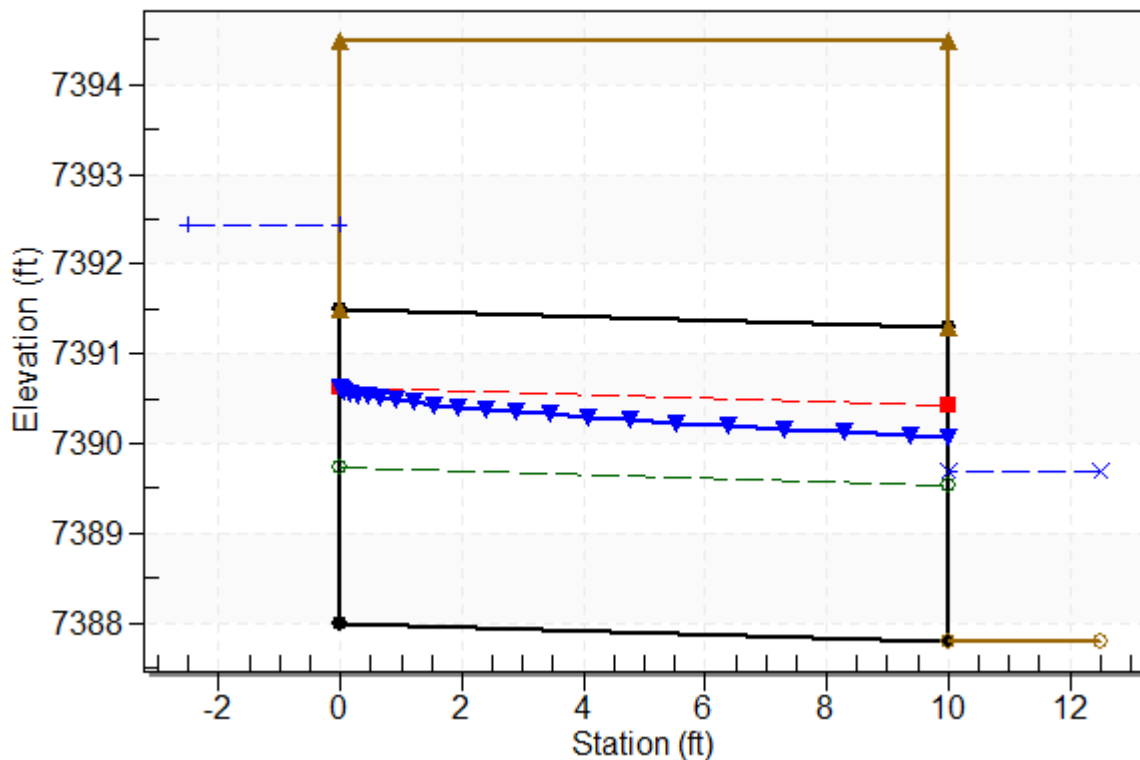
Culvert Performance Curve Plot: Driveway Culvert 42in



Water Surface Profile Plot for Culvert: Driveway Culvert 42in

Crossing - General Driveway-42in, Design Discharge - 70.0 cfs

Culvert - Driveway Culvert 42in, Culvert Discharge - 70.0 cfs



Site Data - Driveway Culvert 42in

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7388.00 ft

Outlet Station: 10.00 ft

Outlet Elevation: 7387.80 ft

Number of Barrels: 1

Culvert Data Summary - Driveway Culvert 42in

Barrel Shape: Circular

Barrel Diameter: 3.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 42 - Downstream Channel Rating Curve (Crossing: General Driveway-42in)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7387.80	0.00	0.00	0.00	0.00
10.00	7388.71	0.91	3.04	1.13	0.80
20.00	7388.98	1.18	3.61	1.47	0.83
30.00	7389.17	1.37	4.00	1.71	0.85
40.00	7389.33	1.53	4.30	1.90	0.87
50.00	7389.46	1.66	4.54	2.07	0.88
60.00	7389.58	1.78	4.76	2.22	0.89
70.00	7389.68	1.88	4.94	2.35	0.90
80.00	7389.78	1.98	5.11	2.47	0.91
90.00	7389.87	2.07	5.26	2.58	0.91
100.00	7389.95	2.15	5.40	2.68	0.92

Tailwater Channel Data - General Driveway-42in

Tailwater Channel Option: Triangular Channel

Side Slope (H:V): 4.00 (1:1)

Channel Slope: 0.0200

Channel Manning's n: 0.0400

Channel Invert Elevation: 7387.80 ft

Roadway Data for Crossing: General Driveway-42in

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 10.00 ft

Crest Elevation: 7394.50 ft

Roadway Surface: Paved

Roadway Top Width: 10.00 ft

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 94.9 cfs

Maximum Flow: 105 cfs

Table 43 - Summary of Culvert Flows at Crossing: Pond Outfall

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7296.50	0.00	0.00	0.00	1
7297.84	10.50	10.50	0.00	1
7298.48	21.00	21.00	0.00	1
7299.05	31.50	31.50	0.00	1
7299.54	42.00	42.00	0.00	1
7300.01	52.50	52.03	0.26	29
7300.10	63.00	53.88	8.92	6
7300.16	73.50	55.10	18.31	5
7300.21	84.00	56.11	27.76	4
7300.25	94.90	57.05	37.79	4
7300.29	105.00	57.83	46.98	3
7300.00	51.84	51.84	0.00	Overtopping

Rating Curve Plot for Crossing: Pond Outfall

Total Rating Curve

Crossing: Pond Outfall

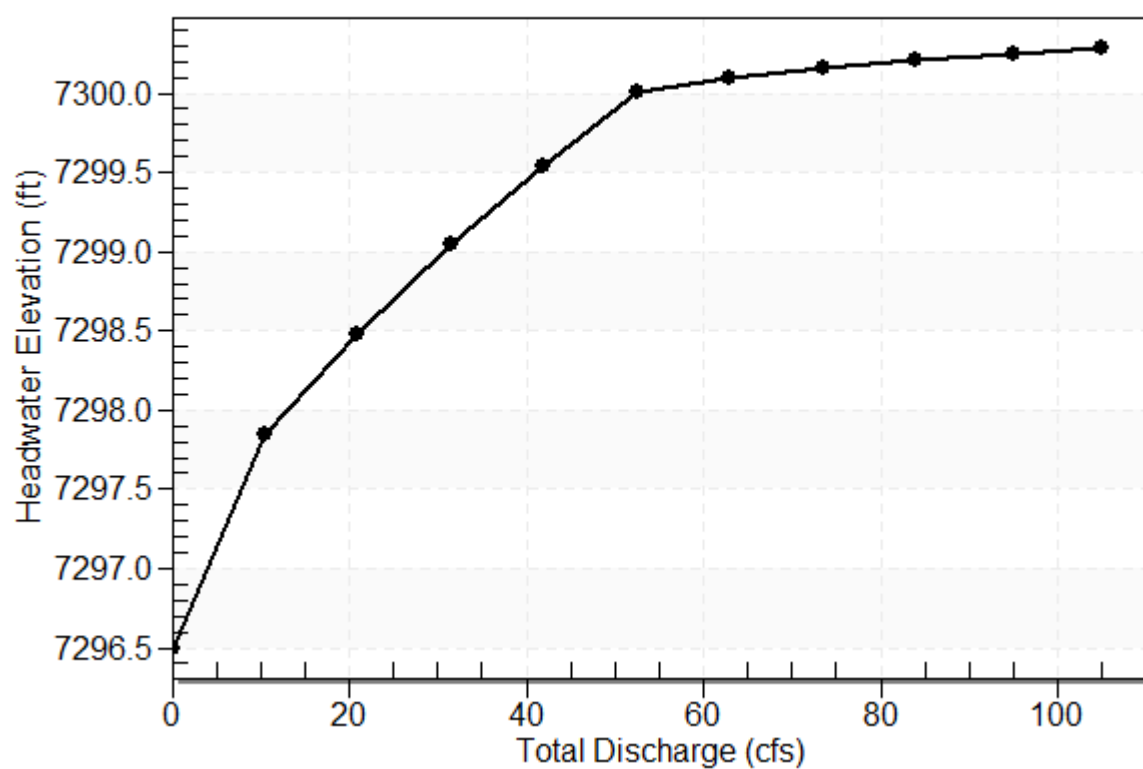


Table 44 - Culvert Summary Table: Culvert 1

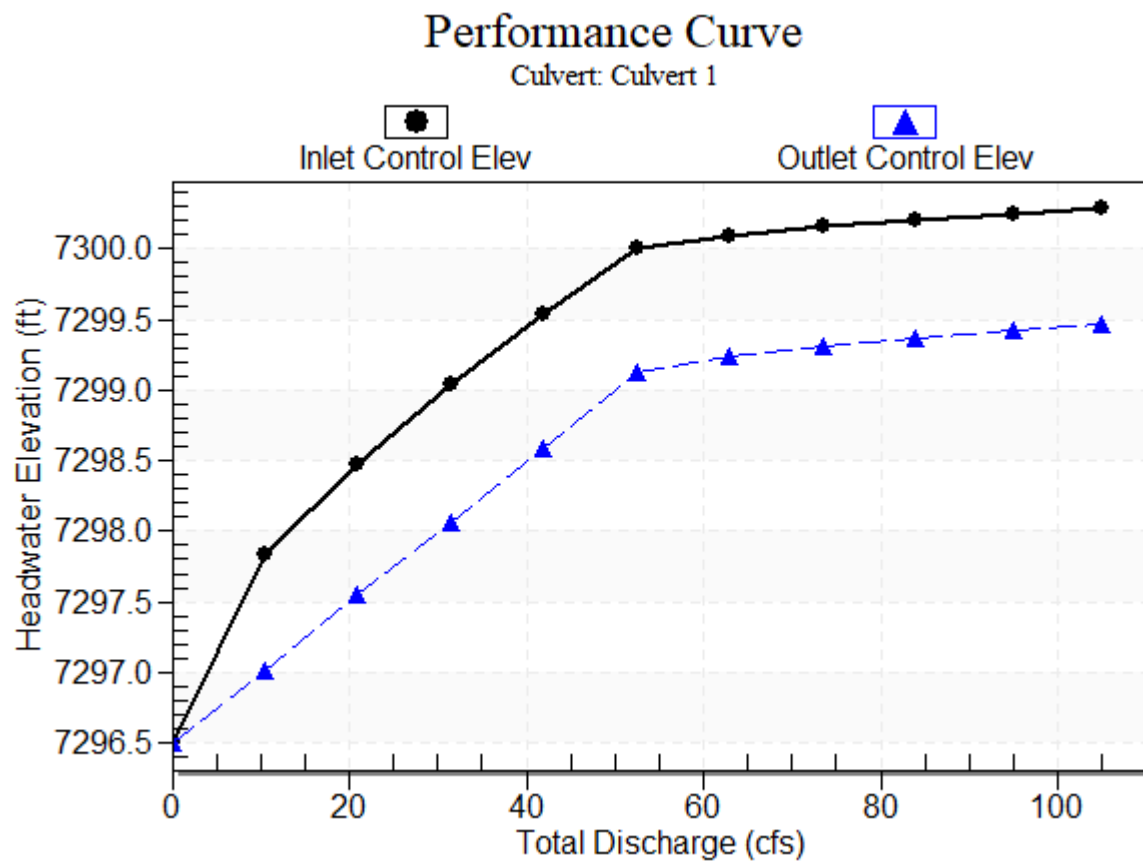
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7296.50	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.50	10.50	7297.84	1.340	0.516	1-S2n	0.838	0.981	0.844	0.360	5.875	4.865
21.00	21.00	7298.48	1.980	1.047	1-S2n	1.196	1.404	1.211	0.558	7.107	6.275
31.50	31.50	7299.05	2.546	1.556	1-S2n	1.490	1.736	1.513	0.725	7.904	7.245
42.00	42.00	7299.54	3.043	2.088	1-S2n	1.757	2.018	1.785	0.875	8.515	8.002
52.50	52.03	7300.01	3.509	2.631	5-S2n	2.002	2.256	2.031	1.014	8.989	8.625
63.00	53.88	7300.10	3.597	2.736	5-S2n	2.047	2.297	2.075	1.146	9.068	9.159
73.50	55.10	7300.16	3.656	2.805	5-S2n	2.077	2.323	2.105	1.273	9.119	9.625
84.00	56.11	7300.21	3.706	2.863	5-S2n	2.101	2.345	2.129	1.394	9.160	10.040
94.90	57.05	7300.25	3.752	2.917	5-S2n	2.124	2.365	2.151	1.517	9.197	10.427
105.00	57.83	7300.29	3.791	2.963	5-S2n	2.144	2.382	2.170	1.627	9.229	10.753

Straight Culvert

Inlet Elevation (invert): 7296.50 ft, Outlet Elevation (invert): 7296.00 ft

Culvert Length: 73.00 ft, Culvert Slope: 0.0068

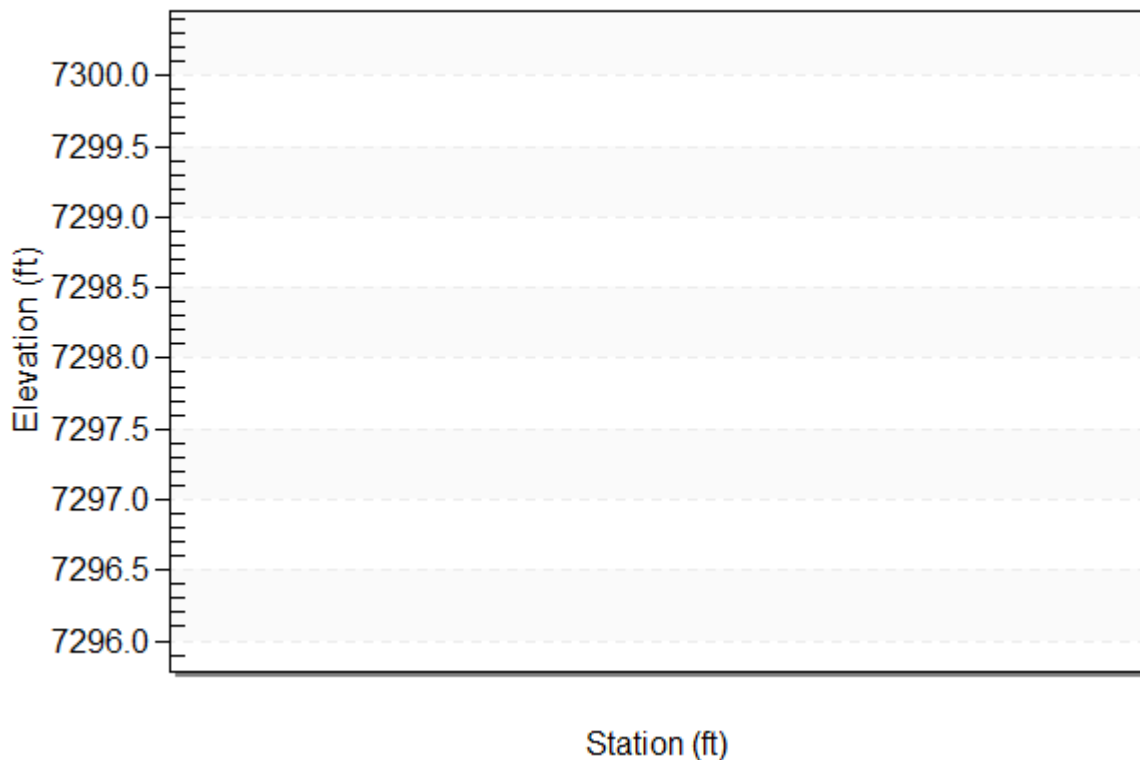
Culvert Performance Curve Plot: Culvert 1



Water Surface Profile Plot for Culvert: Culvert 1

Crossing - Pond Outfall, Design Discharge - 94.9 cfs

Culvert - Culvert 1, Culvert Discharge - 57.0 cfs



Site Data - Culvert 1

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7296.50 ft

Outlet Station: 73.00 ft

Outlet Elevation: 7296.00 ft

Number of Barrels: 1

Culvert Data Summary - Culvert 1

Barrel Shape: Circular

Barrel Diameter: 3.50 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0130

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 45 - Downstream Channel Rating Curve (Crossing: Pond Outfall)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7296.00	0.00	0.00	0.00	0.00
10.50	7296.36	0.36	4.86	1.75	1.43
21.00	7296.56	0.56	6.28	2.71	1.48
31.50	7296.72	0.72	7.25	3.53	1.50
42.00	7296.87	0.87	8.00	4.26	1.51
52.50	7297.01	1.01	8.63	4.94	1.51
63.00	7297.15	1.15	9.16	5.58	1.51
73.50	7297.27	1.27	9.63	6.19	1.50
84.00	7297.39	1.39	10.04	6.79	1.50
94.90	7297.52	1.52	10.43	7.38	1.49
105.00	7297.63	1.63	10.75	7.92	1.49

Tailwater Channel Data - Pond Outfall

Tailwater Channel Option: Rectangular Channel

Bottom Width: 6.00 ft

Channel Slope: 0.0780

Channel Manning's n: 0.0400

Channel Invert Elevation: 7296.00 ft

Roadway Data for Crossing: Pond Outfall

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 100.00 ft

Crest Elevation: 7300.00 ft

Roadway Surface: Paved

Roadway Top Width: 100.00 ft

HY-8 Culvert Analysis Report

Crossing Discharge Data

Discharge Selection Method: Specify Minimum, Design, and Maximum Flow

Minimum Flow: 0 cfs

Design Flow: 16.6 cfs

Maximum Flow: 100 cfs

Table 1 - Summary of Culvert Flows at Crossing: Crossing E1.5

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert E1.5 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
7400.21	0.00	0.00	0.00	1
7401.91	10.00	10.00	0.00	1
7402.70	16.60	16.60	0.00	1
7405.40	30.00	30.00	0.00	1
7406.45	40.00	33.80	6.04	7
7406.52	50.00	34.07	15.78	5
7406.59	60.00	34.26	25.57	4
7406.64	70.00	34.45	35.48	4
7406.69	80.00	34.60	45.20	3
7406.73	90.00	34.74	55.14	3
7406.78	100.00	34.87	65.08	3
7406.36	33.49	33.49	0.00	Overtopping

Rating Curve Plot for Crossing: Crossing E1.5

Total Rating Curve

Crossing: Crossing E1.5

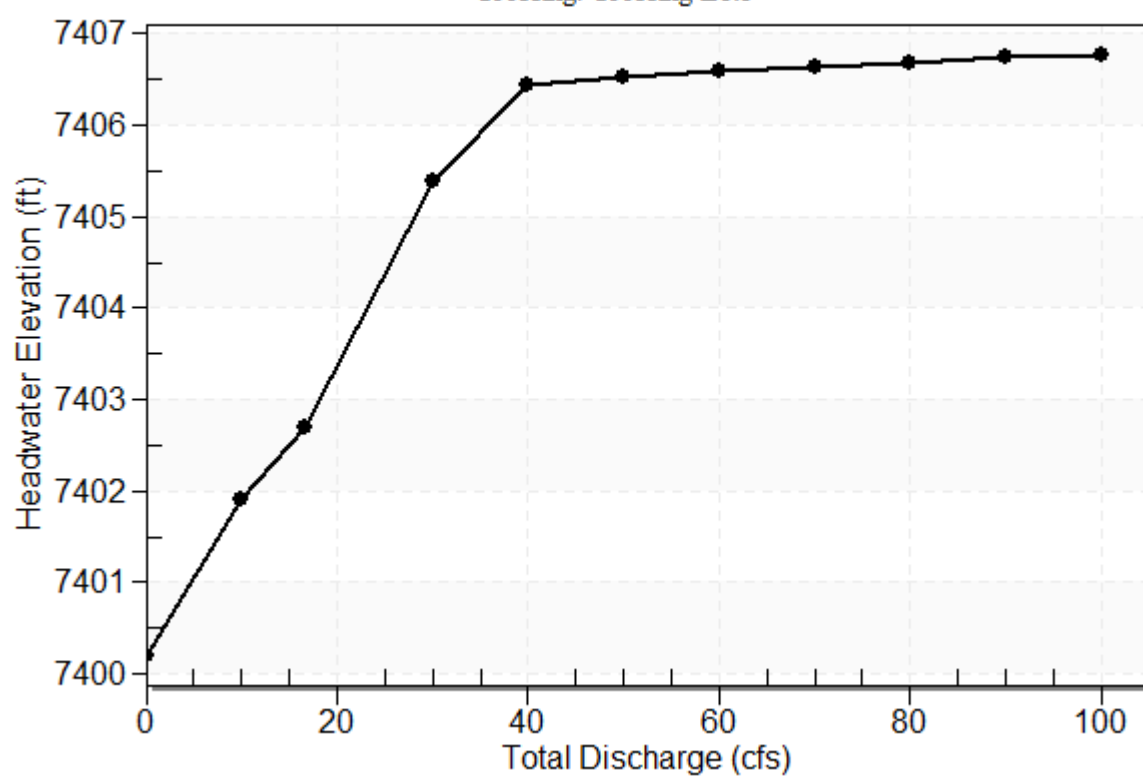


Table 2 - Culvert Summary Table: Culvert E1.5

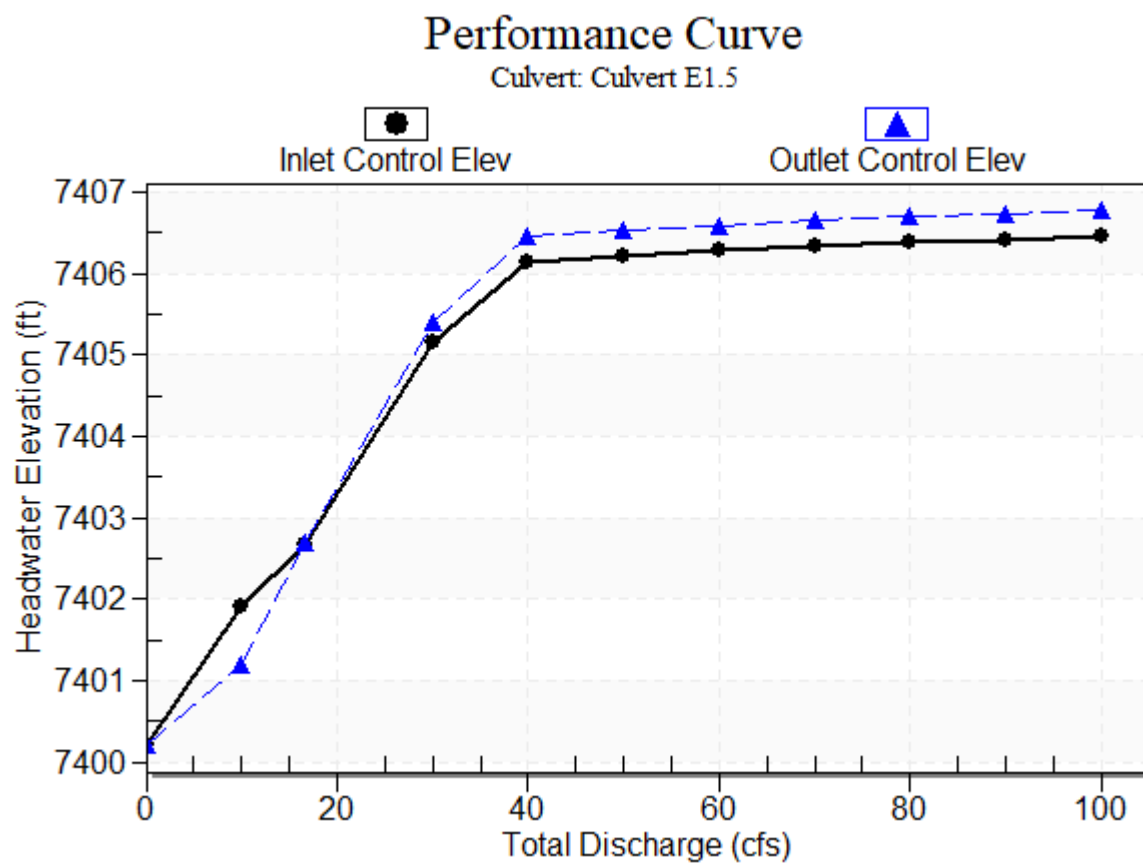
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
0.00	0.00	7400.21	0.000	0.000	0-NF	0.000	0.000	0.000	0.000	0.000	0.000
10.00	10.00	7401.91	1.701	0.990	1-S2n	1.089	1.131	1.089	0.414	5.720	3.156
16.60	16.60	7402.70	2.453	2.488	7-M2c	1.567	1.469	1.469	0.548	6.713	3.696
30.00	30.00	7405.40	4.949	5.188	7-M2c	2.000	1.862	1.862	0.754	9.845	4.412
40.00	33.80	7406.45	5.936	6.238	7-M2c	2.000	1.909	1.909	0.877	10.936	4.793
50.00	34.07	7406.52	6.007	6.314	7-M2c	2.000	1.910	1.910	0.985	11.021	5.108
60.00	34.26	7406.59	6.063	6.377	7-M2c	2.000	1.894	1.894	1.081	11.133	5.375
70.00	34.45	7406.64	6.118	6.431	7-M2c	2.000	1.876	1.876	1.169	11.253	5.609
80.00	34.60	7406.69	6.163	6.479	7-M2c	2.000	1.866	1.866	1.250	11.340	5.819
90.00	34.74	7406.73	6.206	6.525	7-M2c	2.000	1.858	1.858	1.325	11.418	6.009
100.00	34.87	7406.78	6.246	6.568	7-M2c	2.000	1.851	1.851	1.396	11.488	6.183

Straight Culvert

Inlet Elevation (invert): 7400.21 ft, Outlet Elevation (invert): 7399.65 ft

Culvert Length: 113.10 ft, Culvert Slope: 0.0050

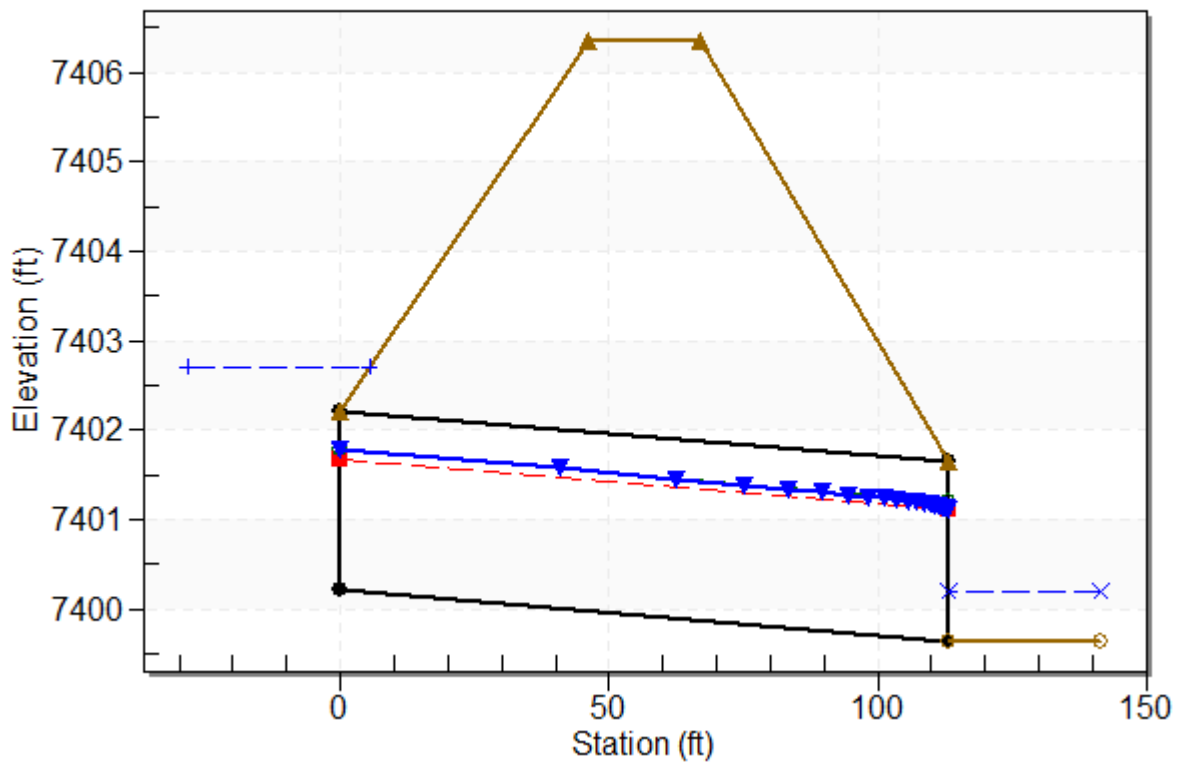
Culvert Performance Curve Plot: Culvert E1.5



Water Surface Profile Plot for Culvert: Culvert E1.5

Crossing - Crossing E1.5, Design Discharge - 16.6 cfs

Culvert - Culvert E1.5, Culvert Discharge - 16.6 cfs



Site Data - Culvert E1.5

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 7400.21 ft

Outlet Station: 113.10 ft

Outlet Elevation: 7399.65 ft

Number of Barrels: 1

Culvert Data Summary - Culvert E1.5

Barrel Shape: Circular

Barrel Diameter: 2.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge with Headwall

Inlet Depression: None

Table 3 - Downstream Channel Rating Curve (Crossing: Crossing E1.5)

Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
0.00	7399.65	0.00	0.00	0.00	0.00
10.00	7400.06	0.41	3.16	0.80	0.95
16.60	7400.19	0.55	3.70	1.05	0.99
30.00	7400.40	0.75	4.41	1.45	1.03
40.00	7400.52	0.88	4.79	1.69	1.06
50.00	7400.63	0.98	5.11	1.89	1.07
60.00	7400.73	1.08	5.37	2.08	1.09
70.00	7400.81	1.17	5.61	2.25	1.10
80.00	7400.89	1.25	5.82	2.40	1.11
90.00	7400.97	1.33	6.01	2.55	1.11
100.00	7401.04	1.40	6.18	2.68	1.12

Tailwater Channel Data - Crossing E1.5

Tailwater Channel Option: Trapezoidal Channel

Bottom Width: 6.00 ft

Side Slope (H:V): 4.00 (4:1)

Channel Slope: 0.0308

Channel Manning's n: 0.0400

Channel Invert Elevation: 7399.65 ft

Roadway Data for Crossing: Crossing E1.5

Roadway Profile Shape: Constant Roadway Elevation

Crest Length: 80.00 ft

Crest Elevation: 7406.36 ft

Roadway Surface: Paved

Roadway Top Width: 20.77 ft

DRIVEWAY CULVERT SIZING CALCULATIONS				
Lot Number	100 yr. Flow (cfs)	Culvert Size (in.)	Anticipated Driveway Location	Notes
1	<10	18	West side of lot	Cross roadside ditch
2	N/A	N/A	N/A	NA
3	<10	18	West side of lot	Cross roadside ditch
4	<10	18	West side of lot	Cross roadside ditch
5	<10	18	North side of lot	Cross roadside ditch
6	<10	18	West side of lot	Cross Channel F2
7	<10	18	West side of lot	Cross Channel F2
8	<10	18	South side of lot	Cross roadsie ditch
9	40	36	West side of lot	Cross Channel F2 & Natural drainageway
10	40	36	West side of lot	Cross natural drainageway
11	40	36	West side of lot	Cross natural drainageway
12	40	36	West side of lot	Cross natural drainageway
13	52	Dual 30	West side of lot	Cross natural drainageway
14	<10	18	East side of lot	Cross roadside ditch
15	<10	18	East side of lot	Cross roadside ditch
16	<10	18	East side of lot	Cross roadside ditch
17	<10	18	South side of lot	Cross roadside ditch
18	<10	18	South side of lot	Cross roadside ditch
19	N/A	N/A	N/A	N/A
20	<10	18	West side of lot	Cross roadside ditch
21	<10	18	West side of lot	Cross roadside ditch
22	<10	18	West side of lot	Cross roadside ditch
23	<10	18	West side of lot	Cross roadside ditch
24	<10	18	South side of lot	Cross roadside ditch
25	<10	18	South side of lot	Cross roadside ditch
26	<10	18	South side of lot	Cross roadside ditch
27	N/A	N/A	N/A	N/A
28	N/A	N/A	N/A	N/A
29	N/A	N/A	N/A	N/A
30	45	36	North side of lot	Cross natural drainageway
31	25	30	North side of lot	Cross roadside ditch
32	15	24	North side of lot	Cross roadside ditch
33	<10	18	North side of lot	Cross Channel 8
34	<10	18	North side of lot	Cross Channel 8
35	25	30	North side of lot	Cross Channel 7
36	<10	18	North side of lot	Cross Channel 7
37	<10	18	East side of lot	Cross Channel 6
38	<10	18	East side of lot	Cross Channel 6
39	<10	18	East side of lot	Cross roadside ditch
40	<10	18	South side of lot	Cross roadside ditch
41	<10	18	South side of lot	Cross roadside ditch
42	<10	18	South side of lot	Cross roadside ditch

DRIVEWAY CULVERT SIZING CALCULATIONS				
Lot Number	100 yr. Flow (cfs)	Culvert Size (in.)	Anticipated Driveway Location	Notes
43	<10	18	South side of lot	Cross roadside ditch
44	<10	18	South side of lot	Cross roadside ditch
45	<10	18	South side of lot	Cross roadside ditch
46	<10	18	South side of lot	Cross roadside ditch
47	15	24	North side of lot	Cross roadside ditch
48	15	24	North side of lot	Cross roadside ditch
49	<10	18	North side of lot	Cross roadside ditch
50	15	24	North side of lot	Cross Channel 5
51	15	24	North side of lot	Cross Channel E2
52	45	36	East side of lot	Cross Channel E2
53	40	36	East side of lot	Cross Channel E2
54	<10	18	South side of lot	Cross roadside ditch
55	<10	18	South side of lot	Cross roadside ditch
56	<10	18	South side of lot	Cross roadside ditch
57	<10	18	South side of lot	Cross roadside ditch
58	<10	18	North side of lot	Cross roadside ditch
59	<10	18	North side of lot	Cross roadside ditch
60	<10	18	North side of lot	Cross roadside ditch
61	<10	18	North side of lot	Cross Channel 4
62	15	24	East side of lot	Cross roadside ditch

Generic Driveway Culvert Sizing Table *

Culvert Diameter (in)	Allowable Flow (cfs)
18	10
24	20
30	30
36	50
42	70

*See Generic Driveway Culvert Sizing calculations for HW/D and culvert slope assumptions for each culvert size.

Riprap Summary					
<i>Culvert</i>	<i>Length (ft)</i>	<i>Width (ft)</i>	<i>Size (in)</i>	<i>Type</i>	<i>Thickness (in)</i>
E1.1	13.0	7.0	12	M	24
E1.5	11.0	6.0	9	L	18
E1.2	7.0	6.0	9	L	18
E2	18.0	8.0	9	L	18
E3	29.0	20.0	18	H	36
E4	42.0	15.0	18	H	36
E5	10.0	4.0	9	L	18
F2	5.0	3.0	9	L	18
O1	11.0	28.0	18	H	36
O2	15.0	32.0	18	H	36
Pond Outfall	33.0	13.0	12	M	24

Rip-Rap Calculation

Culvert E1.2

Applicable Equations:

$L_p = (1/2 \tan \theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits),	D:	2.00	ft
Rectangular conduit	H:	2.00	
HGL Elevation		7378.67	ft
Invert Elevation		7377.44	ft
Tailwater depth (ft),	Y_t :	1.23	ft
Expansion angle of the culvert flow	θ :	0.08	radians
Design discharge (cfs)*	Q:	18.90	cfs
Froude Number	F_r	0.96	Subcritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	3.34	
	For Figure 9-36 $Q/WH^{3/2}$	3.34	
	For Figure 9-35 Y_t/D	0.62	
	For Figure 9-38 $Q/D^{1.5}$	6.68	
	For Figure 9-38 Y_t/D	0.62	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\theta))$		6.5	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	3.78	ft ²
2. Length of Protection	L_p :	6.98	ft
	$L_p < 3D$?	No	
	L_{pmin} :	6.98	ft
3. Width of downstream riprap protection	W:	3.00	ft
4. Rip Rap Type (Figure 9-38)	-	L	
5. Rip Rap Size (Figure 8-34)	D_{50} :	9	inches

Rip Rap Summary

Length	L_p	7.00	ft
Width (Note: 2 - 2 ft diameter barrel culverts)	W	6.00	ft
Size	D_{50}	9	inches
Type	-	L	-
Thickness	T	18	inches

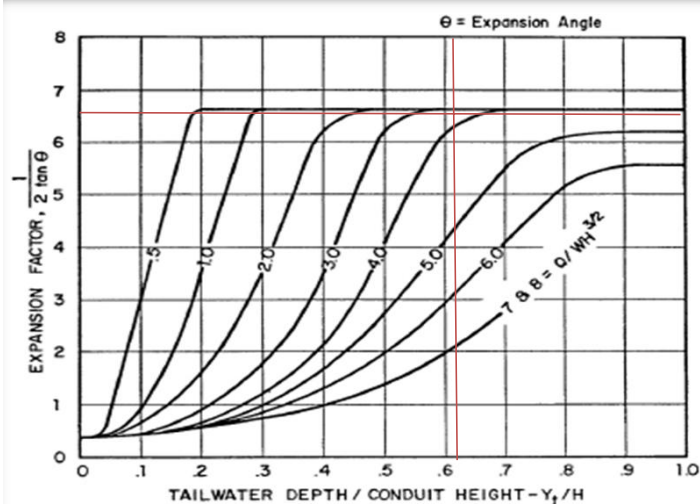


Figure 9-36. Expansion factor for rectangular conduits

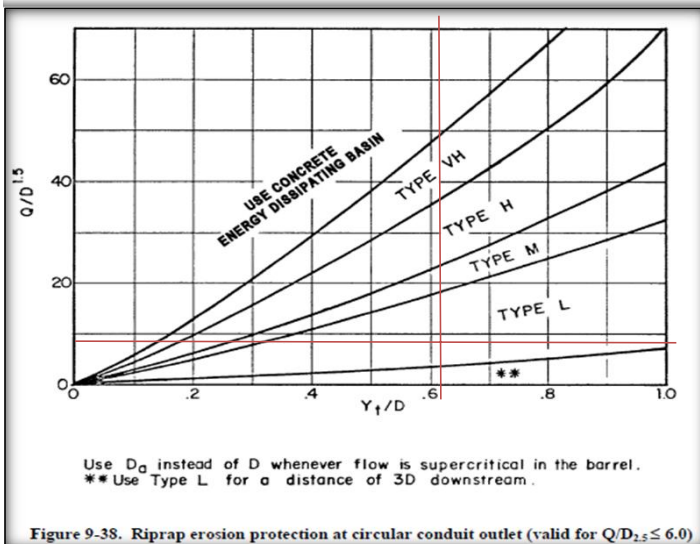


Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D^3 \leq 6.0$)

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50}^* (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
TYPE L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
TYPE M	70 - 100	21	12
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
TYPE H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert E2

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits),	D:	3.00	ft
Rectangular conduit	H:	0.00	
HGL Elevation		7398.51	ft
Invert Elevation		7397.56	ft
Tailwater depth (ft),	Y_t :	0.95	ft
Expansion angle of the culvert flow	Θ :	0.13	radians
Design discharge (cfs)*	Q:	36.60	cfs
Froude Number	F_r	0.94	Subcritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	2.35	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.32	
	For Figure 9-38 $Q/D^{1.5}$	7.04	
	For Figure 9-38 Y_t/D	0.32	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		3.8	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	7.32	ft ²
2. Length of Protection	L_p :	17.88	ft
	$L_p < 3D$?	No	
	L_{pmin} :	17.88	ft
3. Width of downstream riprap protection	W:	8.00	ft
4. Rip Rap Type (Figure 9-38)	-	L	
5. Rip Rap Size (Figure 8-34)	D_{50} :	9	inches

Rip Rap Summary

Length	L_p	18.00	ft
Width	W	8.00	ft
Size	D_{50}	9	inches
Type	-	L	-
Thickness	T	18	inches

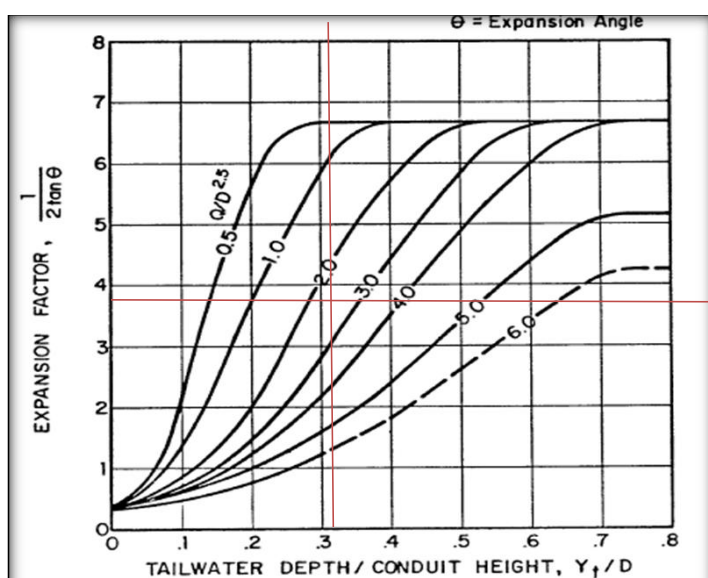


Figure 9-35. Expansion factor for circular conduits

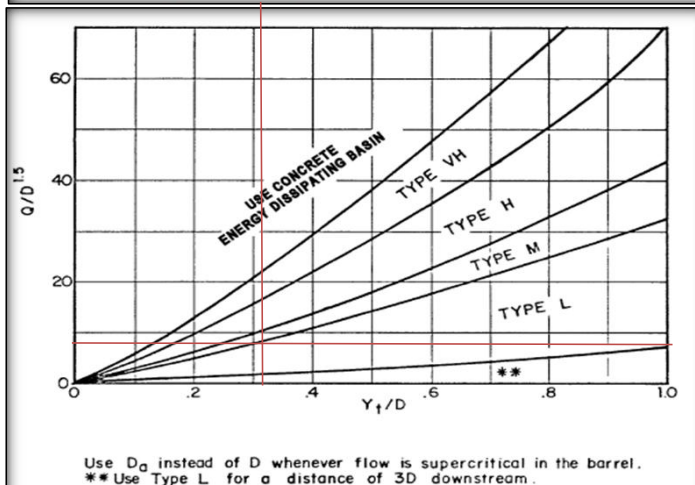


Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D_{1.5} \leq 6.0$)

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
TYPE L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
TYPE M	70 - 100	21	12
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
TYPE H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert E3

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

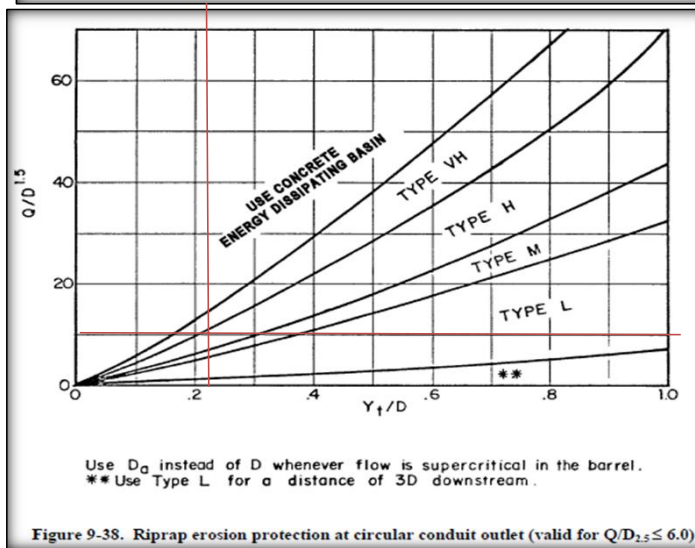
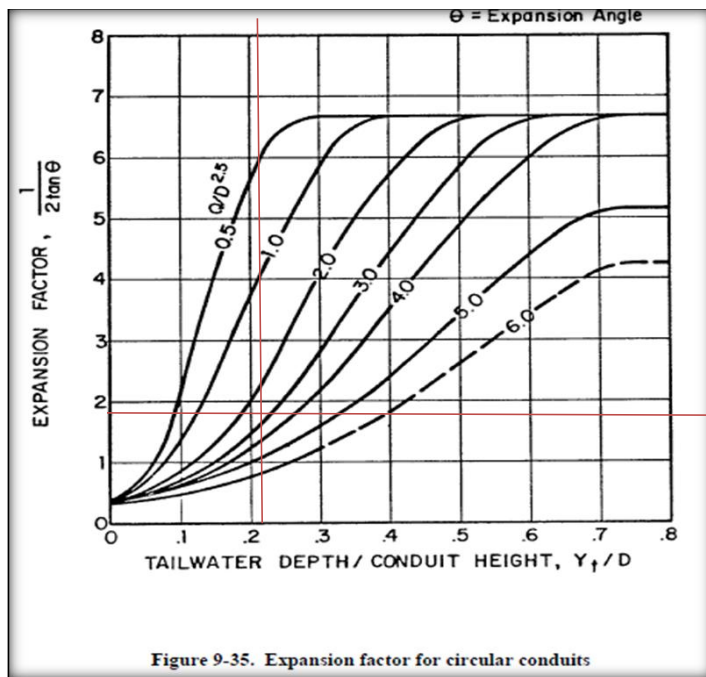
Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D:	4.00	ft
HGL Elevation		7363.54	ft
Invert Elevation		7362.70	ft
Tailwater depth (ft),	Y_t :	0.84	ft
Expansion angle of the culvert flow	Θ :	0.27	radians
Design discharge (cfs)*	Q:	84.60	cfs
Froude Number	F_r	1.30	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	2.64	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.21	
	For Figure 9-38 $Q/D^{1.5}$	10.58	
	For Figure 9-38 Y_t/D	0.21	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		1.8	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	16.92	ft ²
2. Length of Protection	L_p :	29.10	ft
	$L_p < 3D$?	No	
	L_{pmin} :	29.10	ft
3. Width of downstream riprap protection	W:	20.00	ft
4. Rip Rap Type (Figure 9-38)	-	H	
5. Rip Rap Size (Figure 8-34)	D_{50} :	18	inches

Rip Rap Summary

Length	L_p	29.00	ft
Width	W	20.00	ft
Size	D_{50}	18	inches
Type	-	H	-
Thickness	T	36	inches



RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
TYPE L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
TYPE M	70 - 100	21	12
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
TYPE H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert E4

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D:	4.00	ft
HGL Elevation		7336.38	ft
Invert Elevation		7335.56	ft
Tailwater depth (ft),	Y_t :	1.60	ft
Expansion angle of the culvert flow	Θ :	0.13	radians
Design discharge (cfs)*	Q:	117.60	cfs
Froude Number	F_r	1.30	Supercritical

Unitless Variables for Tables:

For Figure 9-35 $Q/D^{2.5}$	3.68
For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!
For Figure 9-35 Y_t/D	0.40
For Figure 9-38 $Q/D^{1.5}$	14.70
For Figure 9-38 Y_t/D	0.40

Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		3.95	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	23.52	ft ²
2. Length of Protection	L_p :	42.27	ft
	$L_p < 3D$?	No	
	L_{pmin} :	42.27	ft
3. Width of downstream riprap protection	W:	15.00	ft
4. Rip Rap Type (Figure 9-38)	-	H	
5. Rip Rap Size (Figure 8-34)	D_{50} :	18	inches

Rip Rap Summary

Length	L_p	42.00	ft
Width	W	15.00	ft
Size	D_{50}	18	inches
Type	-	H	-
Thickness	T	36	inches

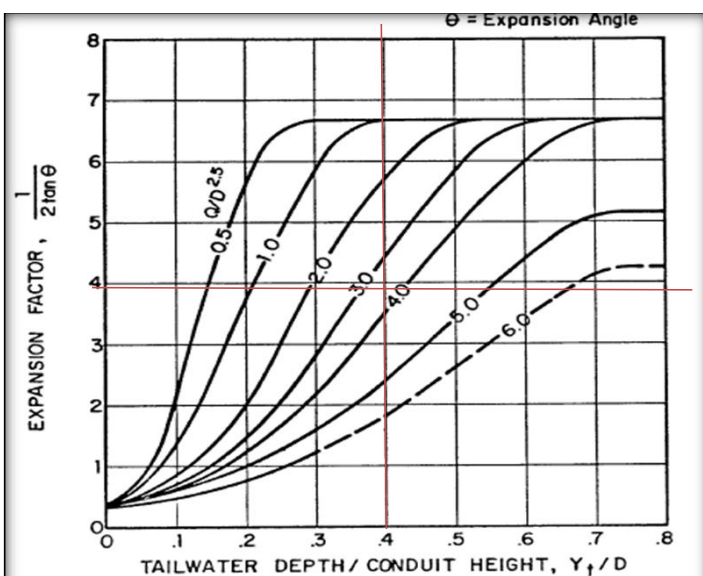
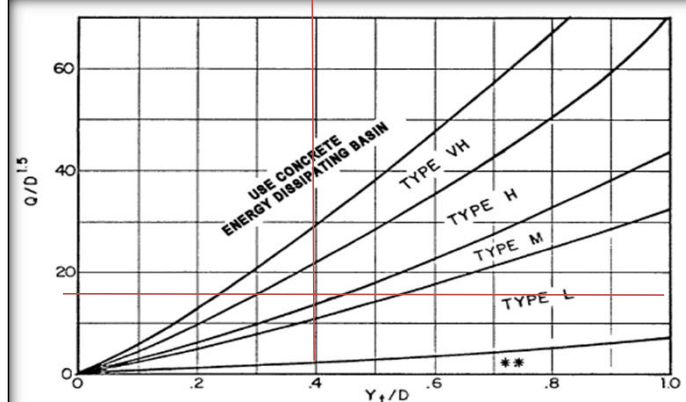


Figure 9-35. Expansion factor for circular conduits



Use D_o instead of D whenever flow is supercritical in the barrel.
 ** Use Type L for a distance of $3D$ downstream.

Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D_{2.5} \leq 6.0$)

Riprap Designation	% Smaller Than Given Size By Weight	Intermediate Rock Dimension (inches)	d_{50}^* (inches)
Type VL	70 - 100	12	6**
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
Type L	70 - 100	15	9**
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
Type M	70 - 100	21	12**
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
Type H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	
Type VH	70 - 100	41	24
	50 - 70	33	
	35 - 50	24	
	2 - 10	9	

* d_{50} = Mean Particle Size

Rip-Rap Calculation

Culvert E5

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits),	D:	2.00	ft
Rectangular conduit	H:	0.00	
HGL Elevation		7328.12	ft
Invert Elevation		7327.25	ft
Tailwater depth (ft),	Y_t :	0.87	ft
Expansion angle of the culvert flow	Θ :	0.11	radians
Design discharge (cfs)*	Q:	18.40	cfs
Froude Number	F_r	1.11	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	3.25	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.43	
	For Figure 9-38 $Q/D^{1.5}$	6.51	
	For Figure 9-38 Y_t/D	0.43	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		4.6	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	3.68	ft ²
2. Length of Protection	L_p :	10.26	ft
	$L_p < 3D$?	No	
	L_{pmin} :	10.26	ft
3. Width of downstream riprap protection	W:	4.00	ft
4. Rip Rap Type (Figure 9-38)	-	L	
5. Rip Rap Size (Figure 8-34)	D_{50} :	9	inches

Rip Rap Summary

Length	L_p	10.00	ft
Width	W	4.00	ft
Size	D_{50}	9	inches
Type	-	L	-
Thickness	T	18	inches

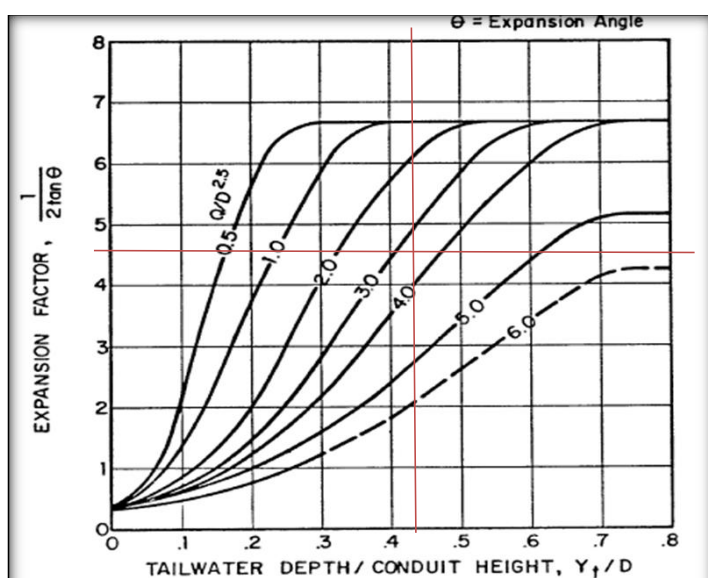


Figure 9-35. Expansion factor for circular conduits

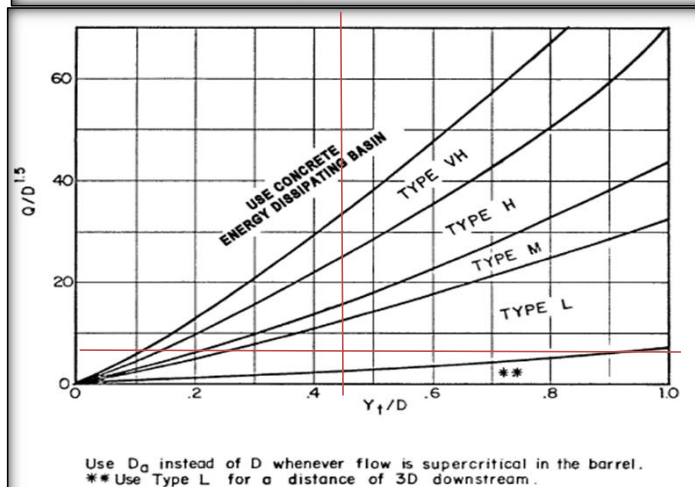


Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D_{2.5} \leq 6.0$)

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50}^* (INCHES)
TYPE VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	6
TYPE L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	9
TYPE M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	12
TYPE H	70 - 100 50 - 70 35 - 50 2 - 10	30 24 18 6	18

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert 01

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits),	D:	3.00	ft
Rectangular conduit	H:	3.00	
HGL Elevation		7369.53	ft
Invert Elevation		7368.99	ft
Tailwater depth (ft),	Y_t :	0.54	ft
Expansion angle of the culvert flow	Θ :	0.46	radians
Design discharge (cfs)*	Q:	39.00	cfs
Froude Number	F_r	1.32	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	2.50	
	For Figure 9-36 $Q/WH^{3/2}$	2.50	
	For Figure 9-35 Y_t/D	0.18	
	For Figure 9-38 $Q/D^{1.5}$	7.51	
	For Figure 9-38 Y_t/D	0.18	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		1	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	7.80	ft ²
2. Length of Protection	L_p :	11.44	ft
	$L_p < 3D$?	No	
	L_{pmin} :	11.44	ft
3. Width of downstream riprap protection	W:	14.00	ft
4. Rip Rap Type (Figure 9-38)	-	H	
5. Rip Rap Size (Figure 8-34)	D_{50} :	18	inches

Rip Rap Summary

Length	L_p	11.00	ft
Width (Note: 2- 3' barrels)	W	28.00	ft
Size	D_{50}	18	inches
Type	-	H	-
Thickness	T	36	inches

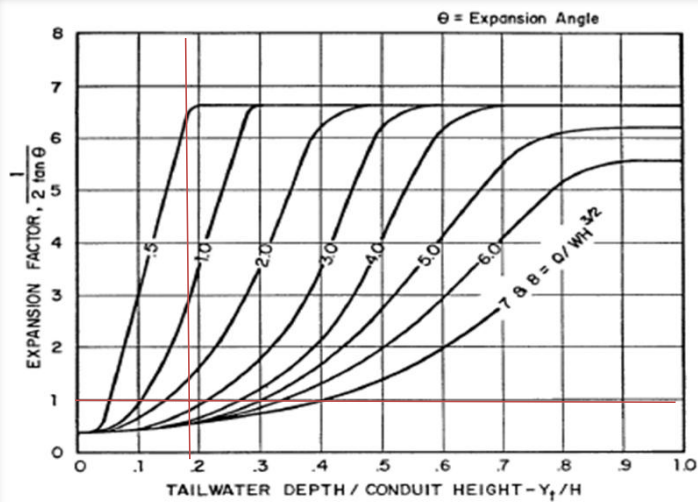
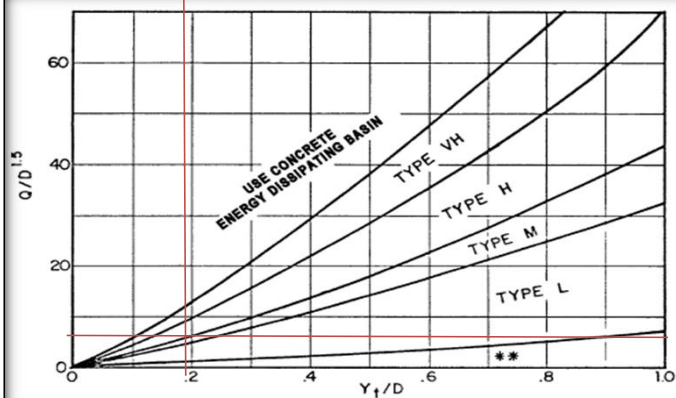


Figure 9-36. Expansion factor for rectangular conduits



Use D_o instead of D whenever flow is supercritical in the barrel.
 ** Use Type L for a distance of $3D$ downstream.

Figure 9-38. Riprap erosion protection at circular conduit outlet (valid for $Q/D_{2.5} \leq 6.0$)

RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
TYPE L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
TYPE M	70 - 100	21	12
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
TYPE H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert O2

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

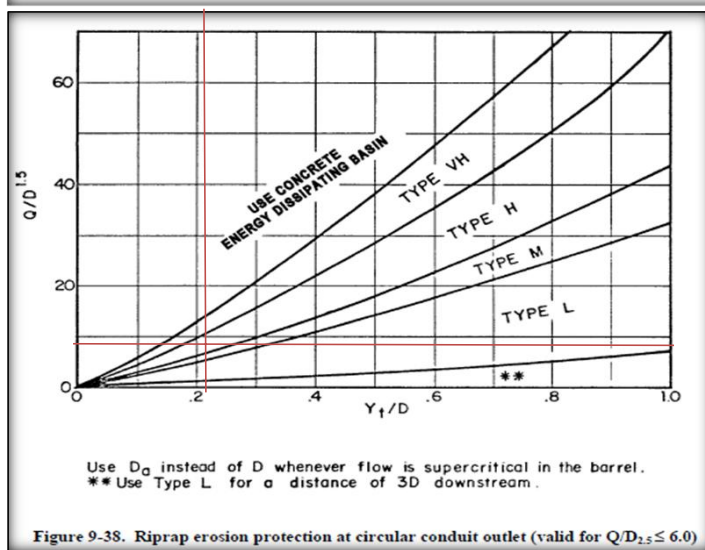
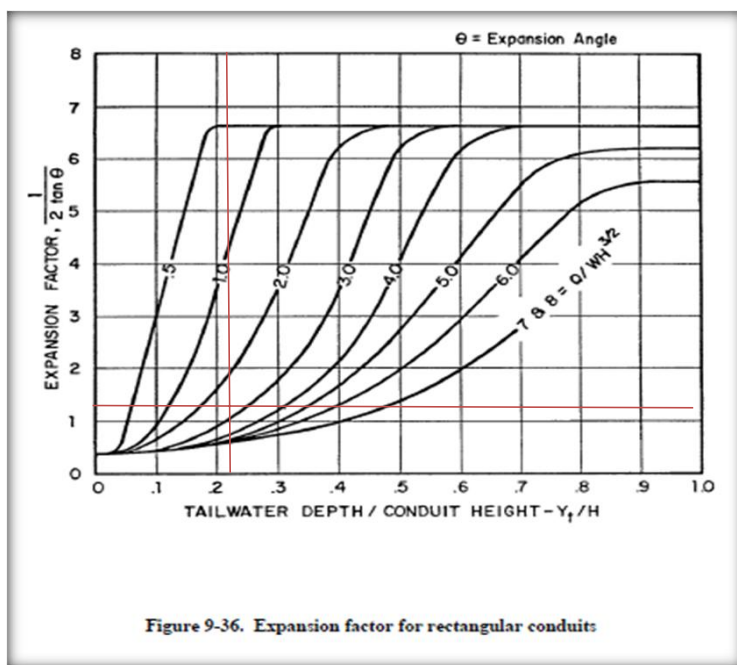
Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D: H:	3.50 3.50	ft
HGL Elevation		7335.64	ft
Invert Elevation		7334.89	ft
Tailwater depth (ft),	Y_t :	0.75	ft
Expansion angle of the culvert flow	Θ :	0.39	radians
Design discharge (cfs)*	Q:	61.50	cfs
Froude Number	F_r	1.30	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	2.68	
	For Figure 9-36 $Q/WH^{3/2}$	2.68	
	For Figure 9-35 Y_t/D	0.21	
	For Figure 9-38 $Q/D^{1.5}$	9.39	
	For Figure 9-38 Y_t/D	0.21	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		1.2	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	12.30	ft ²
2. Length of Protection	L_p :	15.48	ft
	$L_p < 3D$?	No	
	L_{pmin} :	15.48	ft
3. Width of downstream riprap protection	W:	16.00	ft
4. Rip Rap Type (Figure 9-38)	-	H	
5. Rip Rap Size (Figure 8-34)	D_{50} :	18	inches

Rip Rap Summary

Length	L_p	15.00	ft
Width (Note: 2 - 3.5' barrels)	W	32.00	ft
Size	D_{50}	18	inches
Type	-	H	-
Thickness	T	36	inches



RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	6
TYPE L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	9
TYPE M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	12
TYPE H	70 - 100 50 - 70 35 - 50 2 - 10	30 24 18 6	18

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert E1.1

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

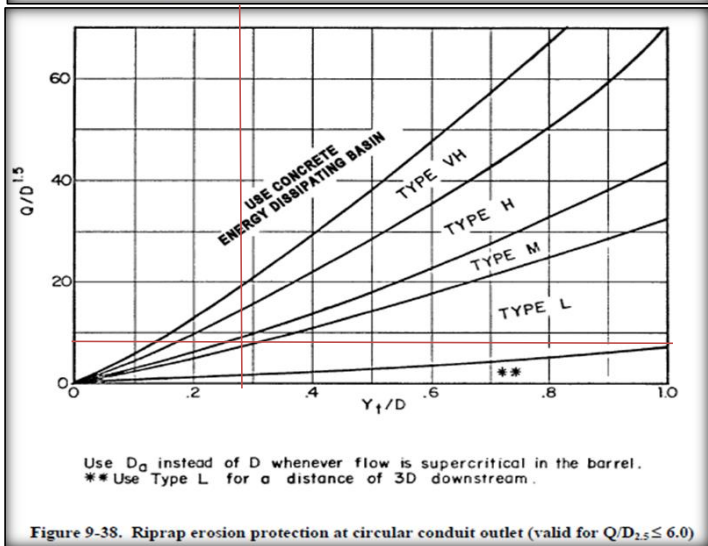
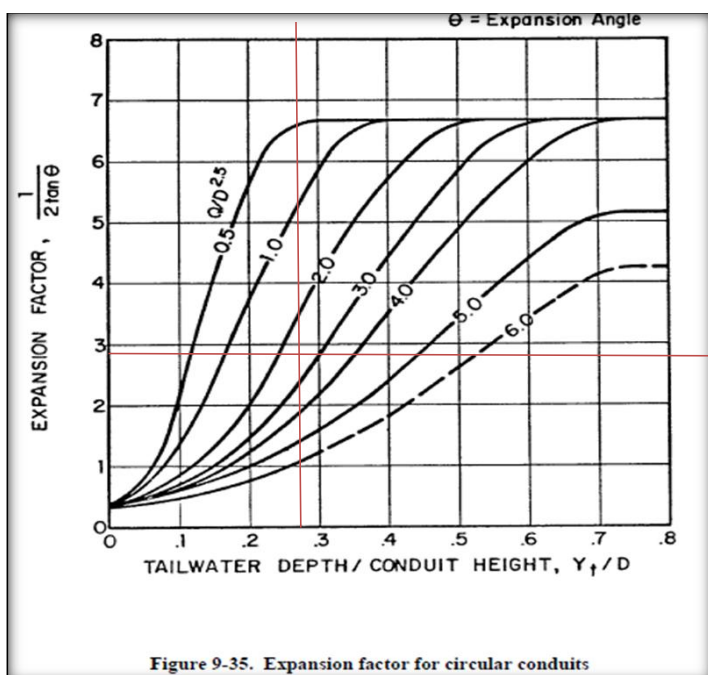
Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D:	2.50	ft
HGL Elevation		7409.76	ft
Invert Elevation		7409.08	ft
Tailwater depth (ft),	Y_t :	0.68	ft
Expansion angle of the culvert flow	Θ :	0.18	radians
Design discharge (cfs)*	Q:	24.60	cfs
Froude Number	F_r	1.07	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	2.49	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.27	
	For Figure 9-38 $Q/D^{1.5}$	6.22	
	For Figure 9-38 Y_t/D	0.27	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		2.8	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	4.92	ft ²
2. Length of Protection	L_p :	13.26	ft
	$L_p < 3D$?	No	
	L_{pmin} :	13.26	ft
3. Width of downstream riprap protection	W:	7.00	ft
4. Rip Rap Type (Figure 9-38)	-	M	
5. Rip Rap Size (Figure 8-34)	D_{50} :	12	inches

Rip Rap Summary

Length	L_p	13.00	ft
Width	W	7.00	ft
Size	D_{50}	12	inches
Type	-	M	-
Thickness	T	24	inches



RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	6
TYPE L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	9
TYPE M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	12
TYPE H	70 - 100 50 - 70 35 - 50 2 - 10	30 24 18 6	18

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert E1.5

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

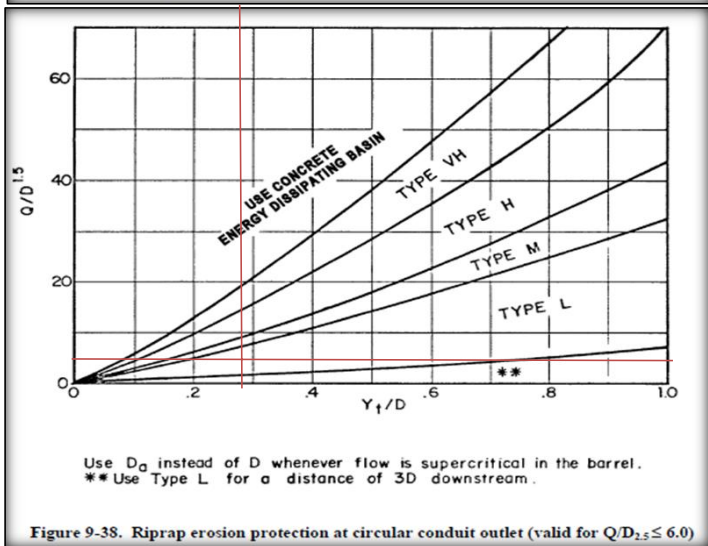
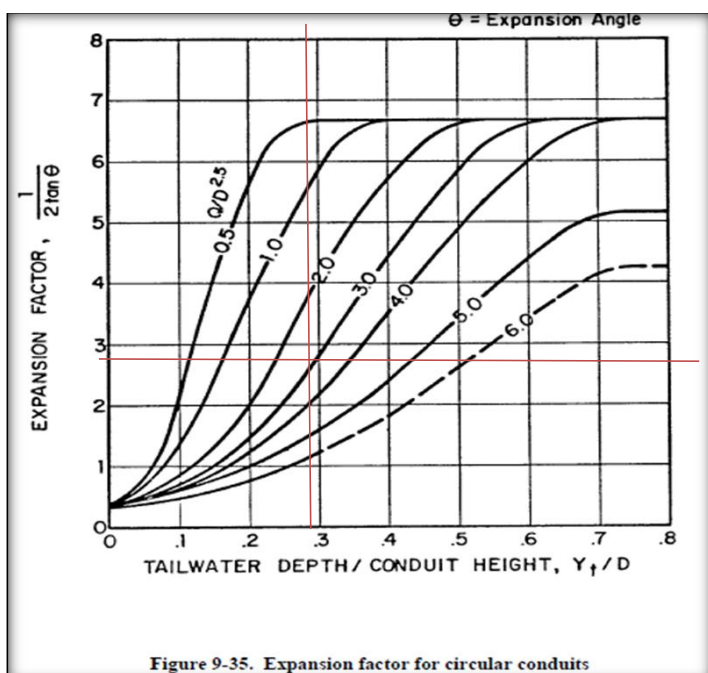
Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D:	2.00	ft
HGL Elevation		7400.20	ft
Invert Elevation		7399.65	ft
Tailwater depth (ft),	Y_t :	0.55	ft
Expansion angle of the culvert flow	Θ :	0.18	radians
Design discharge (cfs)*	Q:	16.60	cfs
Froude Number	F_r	1.26	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	2.93	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.28	
	For Figure 9-38 $Q/D^{1.5}$	5.87	
	For Figure 9-38 Y_t/D	0.28	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		2.8	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	3.32	ft ²
2. Length of Protection	L_p :	11.30	ft
	$L_p < 3D$?	No	
	L_{pmin} :	11.30	ft
3. Width of downstream riprap protection	W:	6.00	ft
4. Rip Rap Type (Figure 9-38)	-	L	
5. Rip Rap Size (Figure 8-34)	D_{50} :	9	inches

Rip Rap Summary

Length	L_p	11.00	ft
Width	W	6.00	ft
Size	D_{50}	9	inches
Type	-	L	-
Thickness	T	18	inches



RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	6
TYPE L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	9
TYPE M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	12
TYPE H	70 - 100 50 - 70 35 - 50 2 - 10	30 24 18 6	18

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Culvert F2

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

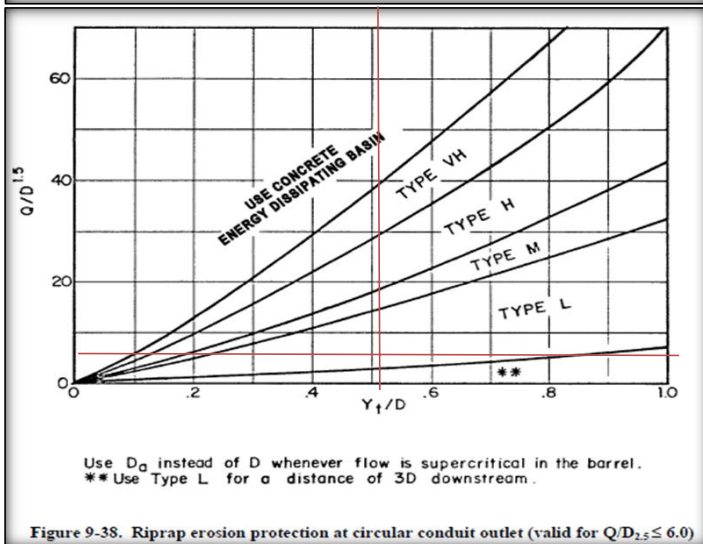
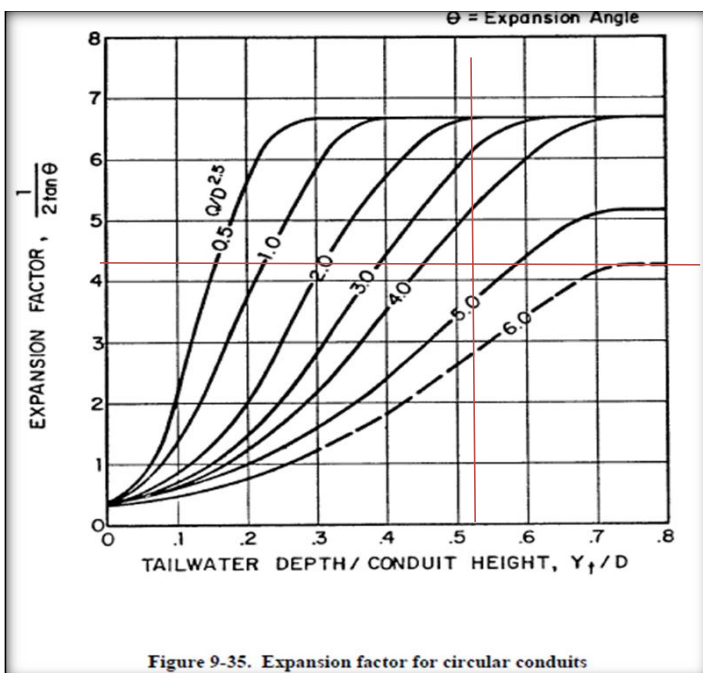
Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D:	1.50	ft
HGL Elevation	H:	7364.04	ft
Invert Elevation		7363.25	ft
Tailwater depth (ft),	Y_t :	0.79	ft
Expansion angle of the culvert flow	Θ :	0.12	radians
Design discharge (cfs)*	Q:	8.60	cfs
Froude Number	F_r	0.96	Subcritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	3.12	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.53	
	For Figure 9-38 $Q/D^{1.5}$	4.68	
	For Figure 9-38 Y_t/D	0.53	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		4.3	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	1.72	ft ²
2. Length of Protection	L_p :	2.91	ft
	$L_p < 3D$?	Yes	
	L_{pmin} :	4.50	ft
3. Width of downstream riprap protection	W:	3.00	ft
4. Rip Rap Type (Figure 9-38)	-	L	
5. Rip Rap Size (Figure 8-34)	D_{50} :	9	inches

Rip Rap Summary

Length	L_p	5.00	ft
Width	W	3.00	ft
Size	D_{50}	9	inches
Type	-	L	-
Thickness	T	18	inches



RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D_{50} * (INCHES)
TYPE VL	70 - 100 50 - 70 35 - 50 2 - 10	12 9 6 2	6
TYPE L	70 - 100 50 - 70 35 - 50 2 - 10	15 12 9 3	9
TYPE M	70 - 100 50 - 70 35 - 50 2 - 10	21 18 12 4	12
TYPE H	70 - 100 50 - 70 35 - 50 2 - 10	30 24 18 6	18

* D_{50} = MEAN ROCK SIZE

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

Rip-Rap Calculation

Pond Outfall

Applicable Equations:

$L_p = (1/2 \tan \Theta)(A_t/Y_t - D)$	Equation 9-11 per USDCM
$A_t = Q/V$	Equation 9-12 per USDCM
$\Theta = \tan^{-1}(1/(2 * \text{ExpansionFactor}))$	Equation 9-13 per USDCM
$W = 2(L_p \tan \Theta) + D$	Equation 9-14 per USDCM
$T = 2D_{50}$	Equation 9-15 per USDCM

Assumptions

Maximum Major Event Velocity is 7fps for FES outletting into trickle channels

Input parameters:

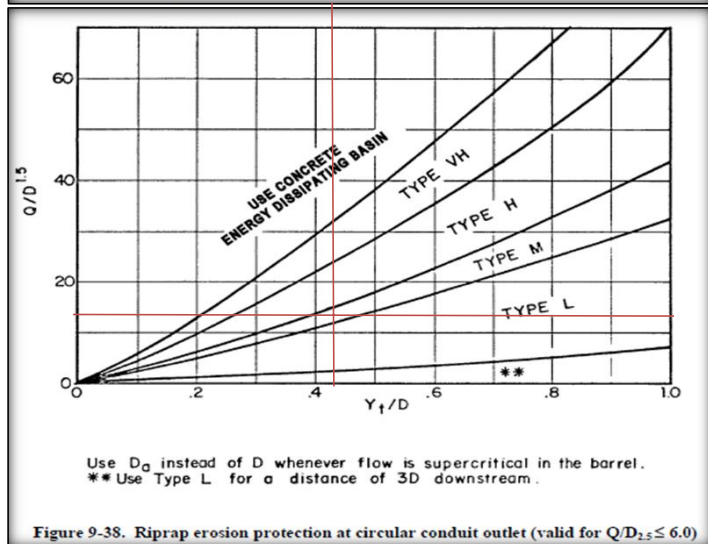
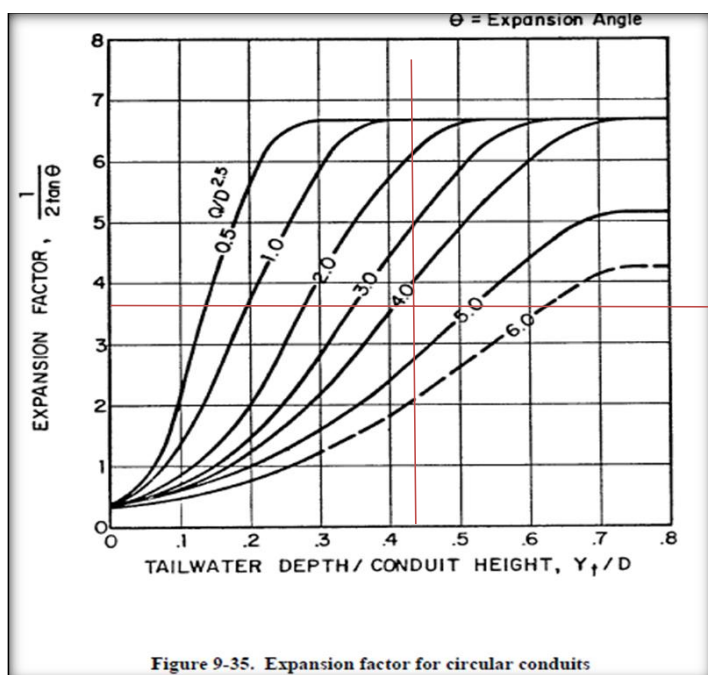
Description	Variable	Input	Unit
Width of the conduit (use diameter for circular conduits), Rectangular conduit	D:	3.50	ft
HGL Elevation		7297.51	ft
Invert Elevation		7296.00	ft
Tailwater depth (ft),	Y_t :	1.51	ft
Expansion angle of the culvert flow	Θ :	0.14	radians
Design discharge (cfs)*	Q:	94.90	cfs
Froude Number	F_r	1.41	Supercritical
Unitless Variables for Tables:			
	For Figure 9-35 $Q/D^{2.5}$	4.14	
	For Figure 9-36 $Q/WH^{3/2}$	#DIV/0!	
	For Figure 9-35 Y_t/D	0.43	
	For Figure 9-38 $Q/D^{1.5}$	14.49	
	For Figure 9-38 Y_t/D	0.43	
Allowable non-eroding velocity in the downstream channel (ft/sec)	V:	5	ft/sec
Expansion Factor (Figure 9-35), $1/(2 \tan(\Theta))$		3.6	

Solve for:

Description	Variable	Output	Unit
1. Required area of flow at allowable velocity (ft ²)	A_t :	18.98	ft ²
2. Length of Protection	L_p :	32.65	ft
	$L_p < 3D$?	No	
	L_{pmin} :	32.65	ft
3. Width of downstream riprap protection	W:	13.00	ft
4. Rip Rap Type (Figure 9-38)	-	M	
5. Rip Rap Size (Figure 8-34)	D_{50} :	12	inches

Rip Rap Summary

Length	L_p	33.00	ft
Width	W	13.00	ft
Size	D_{50}	12	inches
Type	-	M	-
Thickness	T	24	inches

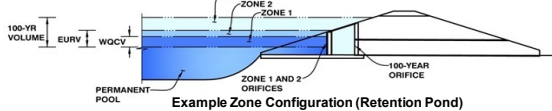


RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	D ₅₀ * (INCHES)
TYPE VL	70 - 100	12	6
	50 - 70	9	
	35 - 50	6	
	2 - 10	2	
TYPE L	70 - 100	15	9
	50 - 70	12	
	35 - 50	9	
	2 - 10	3	
TYPE M	70 - 100	21	12
	50 - 70	18	
	35 - 50	12	
	2 - 10	4	
TYPE H	70 - 100	30	18
	50 - 70	24	
	35 - 50	18	
	2 - 10	6	
*D ₅₀ = MEAN ROCK SIZE			

Figure 8-34. Riprap and soil riprap placement and gradation (part 1 of 3)

MHFD-Detention, Version 4.03 (May 2020)

Basin ID: Pond 5 (Actual area draining to Pond)



Selected BMP Type =	EDB
Watershed Area =	155.65 acres
Watershed Length =	6,210 ft
Watershed Length to Centroid =	2,295 ft
Watershed Slope =	0.026 ft/ft
Watershed Imperviousness =	12.30% percent
Percentage Hydrologic Soil Group A =	0.0% percent
Percentage Hydrologic Soil Group B =	98.1% percent
Percentage Hydrologic Soil Groups C/D =	1.9% percent
Target WQCV Drain Time =	40.0 hours
Location for 1-hr Rainfall Depths = User Input	

Optional User Overrides

Water Quality Capture Volume (WQCV) =	1.033	acre-feet
Excess Urban Runoff Volume (EURV) =	1.825	acre-feet
2-yr Runoff Volume (P1 = 1.19 in.) =	2.396	acre-feet
5-yr Runoff Volume (P1 = 1.5 in.) =	4.987	acre-feet
10-yr Runoff Volume (P1 = 1.75 in.) =	7.554	acre-feet
25-yr Runoff Volume (P1 = 2 in.) =	11.985	acre-feet
50-yr Runoff Volume (P1 = 2.25 in.) =	15.055	acre-feet
100-yr Runoff Volume (P1 = 2.5 in.) =	19.430	acre-feet
500-yr Runoff Volume (P1 = 3.14 in.) =	27.465	acre-feet
Approximate 2-yr Detention Volume =	1.195	acre-feet
Approximate 5-yr Detention Volume =	1.860	acre-feet
Approximate 10-yr Detention Volume =	3.510	acre-feet
Approximate 25-yr Detention Volume =	4.723	acre-feet
Approximate 50-yr Detention Volume =	4.964	acre-feet
Approximate 100-yr Detention Volume =	6.342	acre-feet

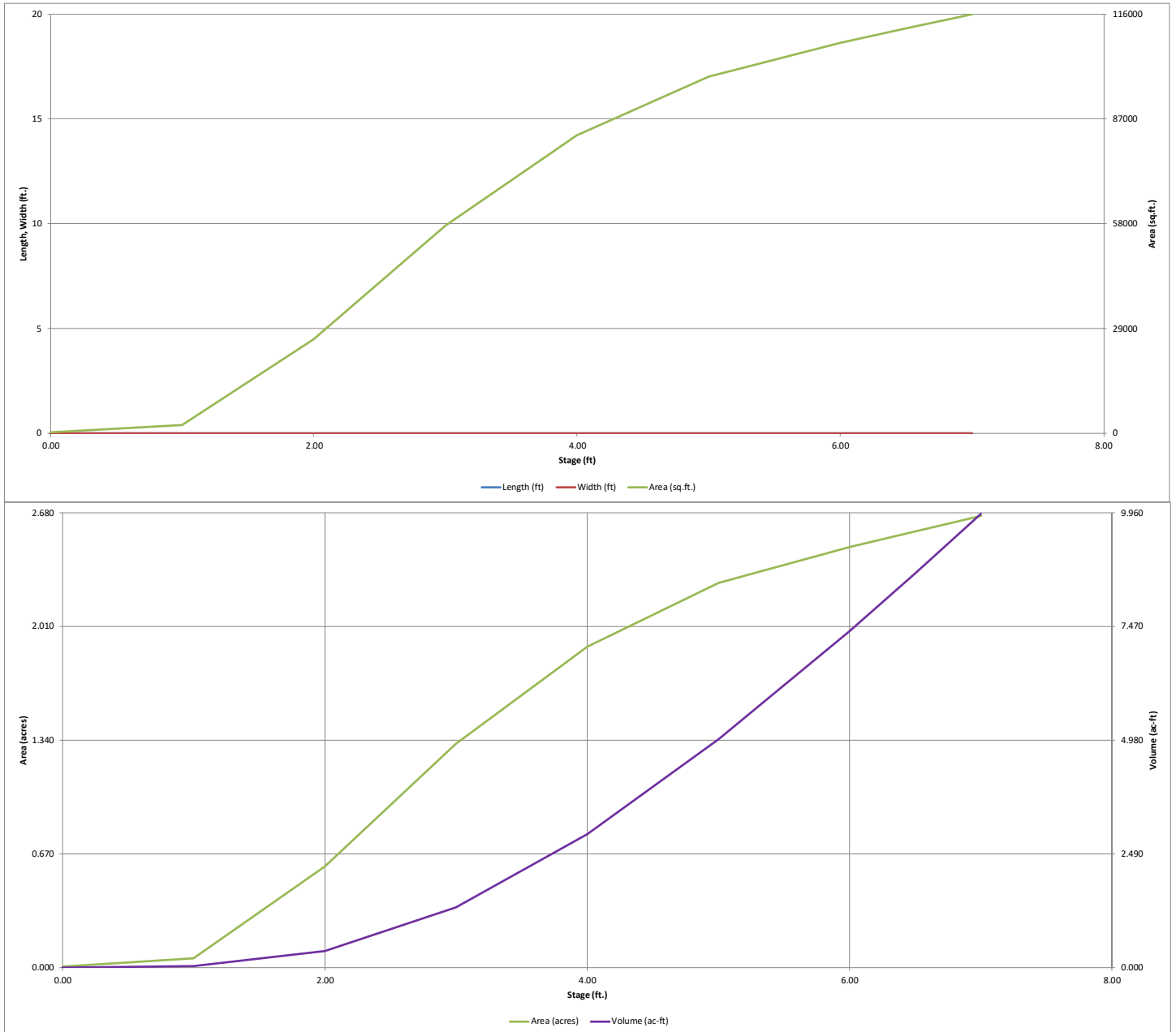
Zone 1 Volume (WQCV) =	1.033	acre-feet
Zone 2 Volume (EURV - Zone 1) =	0.793	acre-feet
Zone 3 Volume (100-year - Zones 1 & 2) =	4.516	acre-feet
Total Detention Basin Volume =	6.342	acre-feet
Initial Surcharge Volume (ISV) =	user	ft ³
Initial Surcharge Depth (ISD) =	user	ft
Total Available Detention Depth (H_{total}) =	user	ft
Depth of Trickle Channel (H_{TrC}) =	user	ft
Slope of Trickle Channel (S_{TrC}) =	user	ft/ft
Slopes of Main Basin Sides (S_{main}) =	user	H:V
Basin Length-to-Width Ratio ($R_{L/W}$) =	user	

Initial Surcharge Area (A_{SV})	=	user	ft ²
Surcharge Volume Length (L_{SV})	=	user	ft
Surcharge Volume Width (W_{SV})	=	user	ft
Depth of Basin Floor (H_{FLOOR})	=	user	ft
Length of Basin Floor (L_{FLOOR})	=	user	ft
Width of Basin Floor (W_{FLOOR})	=	user	ft
Area of Basin Floor (A_{FLOOR})	=	user	ft ²
Volume of Basin Floor (V_{FLOOR})	=	user	ft ³
Depth of Main Basin (H_{MAIN})	=	user	ft
Length of Main Basin (L_{MAIN})	=	user	ft
Width of Main Basin (W_{MAIN})	=	user	ft
Area of Main Basin (A_{MAIN})	=	user	ft ²
Volume of Main Basin (V_{MAIN})	=	user	ft ³
Calculated Total Basin Volume (V_{TOTAL})	=	user	acre-feet

[illegible]

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)

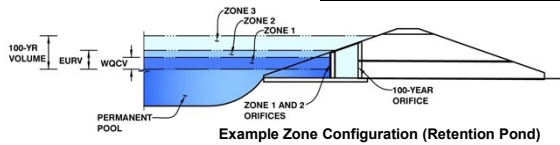


DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-DETENTION, Version 4.03 (May 2020)

Project: Winsome Filing No. 2

Basin ID: Pond 5 (Actual area draining to Pond)



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.78	1.033	Orifice Plate
Zone 2 (EURV)	3.37	0.793	Orifice Plate
Zone 3 (100-year)	5.58	4.516	Weir&Pipe (Restrict)
Total (all zones)		6.342	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = ft (distance below the filtration media surface)
Underdrain Orifice Diameter = inches

Calculated Parameters for Underdrain
Underdrain Orifice Area = ft²
Underdrain Orifice Centroid = feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice = 0.00 ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = 3.37 ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = N/A inches
Orifice Plate: Orifice Area per Row = N/A inches

Calculated Parameters for Plate
WQ Orifice Area per Row = N/A ft²
Elliptical Half-Width = N/A feet
Elliptical Slot Centroid = N/A feet
Elliptical Slot Area = N/A ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.15	2.30					
Orifice Area (sq. inches)	3.14	3.14	10.00					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Invert of Vertical Orifice = Not Selected Not Selected ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = N/A N/A ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = N/A N/A inches

Calculated Parameters for Vertical Orifice
Vertical Orifice Area = Not Selected Not Selected ft²
Vertical Orifice Centroid = N/A N/A feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe))

Overflow Weir Front Edge Height, H_o = Zone 3 Weir Not Selected ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = 3.40 N/A feet
Overflow Weir Grate Slope = 4.00 N/A H:V
Horiz. Length of Weir Sides = 6.00 N/A feet
Overflow Grate Open Area % = 70% N/A %, grate open area/total area
Debris Clogging % = 50% N/A %

Calculated Parameters for Overflow Weir
Height of Grate Upper Edge, H_u = Zone 3 Weir Not Selected feet
Overflow Weir Slope Length = 4.90 N/A feet
Grate Open Area / 100-yr Orifice Area = 6.18 N/A
Overflow Grate Open Area w/o Debris = 6.94 N/A ft²
Overflow Grate Open Area w/ Debris = 56.28 N/A ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Depth to Invert of Outlet Pipe = Zone 3 Restrictor Not Selected ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter = 1.50 N/A inches
Restrictor Plate Height Above Pipe Invert = 42.00 N/A inches
 33.00 inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate
Outlet Orifice Area = Zone 3 Restrictor Not Selected ft²
Outlet Orifice Centroid = 8.11 N/A feet
Half-Central Angle of Restrictor Plate on Pipe = 1.51 N/A radians
 2.18 radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = 6.10 ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = 65.00 feet
Spillway End Slopes = 4.00 H:V
Freeboard above Max Water Surface = 1.01 feet

Calculated Parameters for Spillway
Spillway Design Flow Depth = 0.89 feet
Stage at Top of Freeboard = 8.00 feet
Basin Area at Top of Freeboard = 2.66 acres
Basin Volume at Top of Freeboard = 9.94 acre-ft

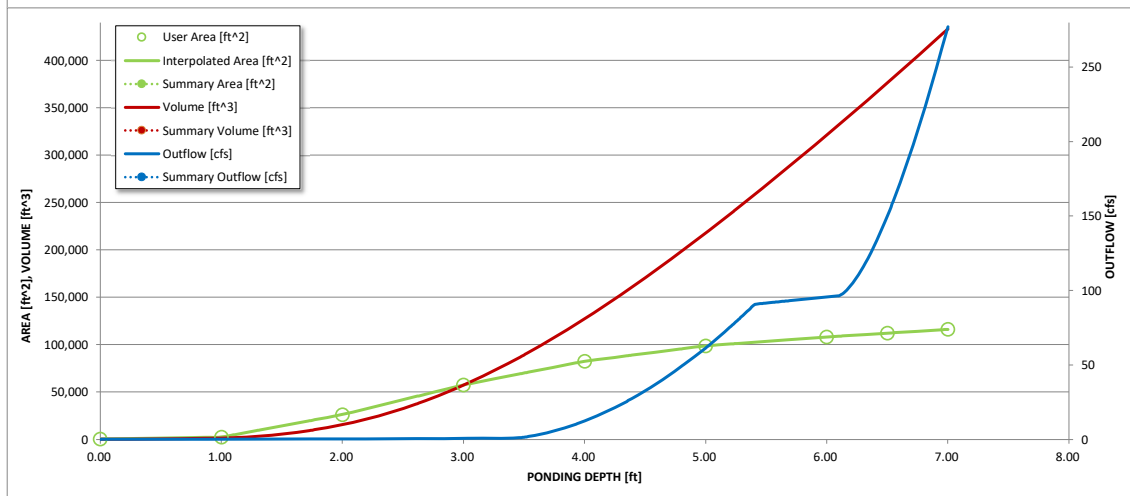
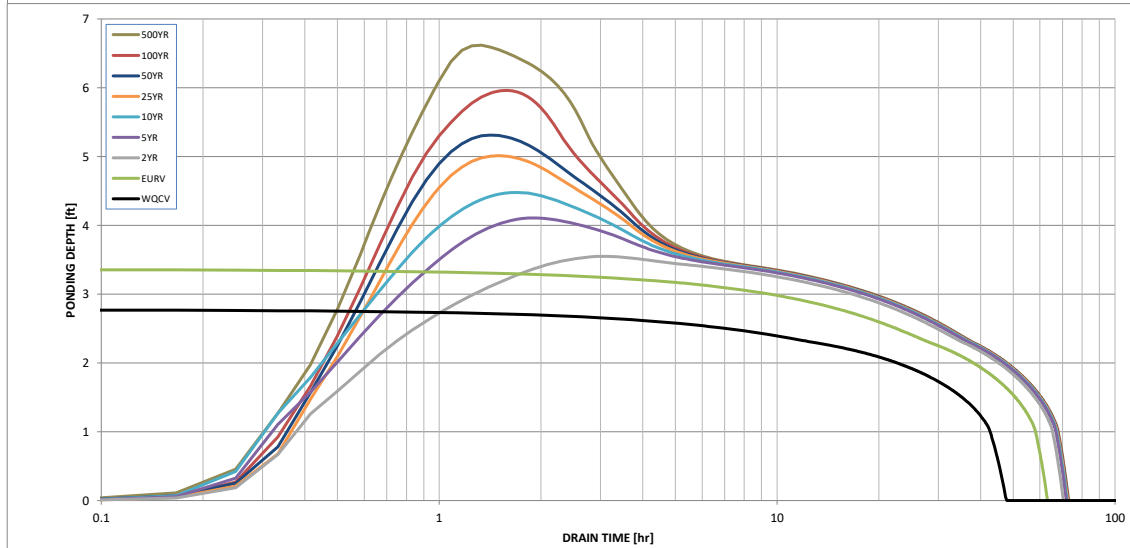
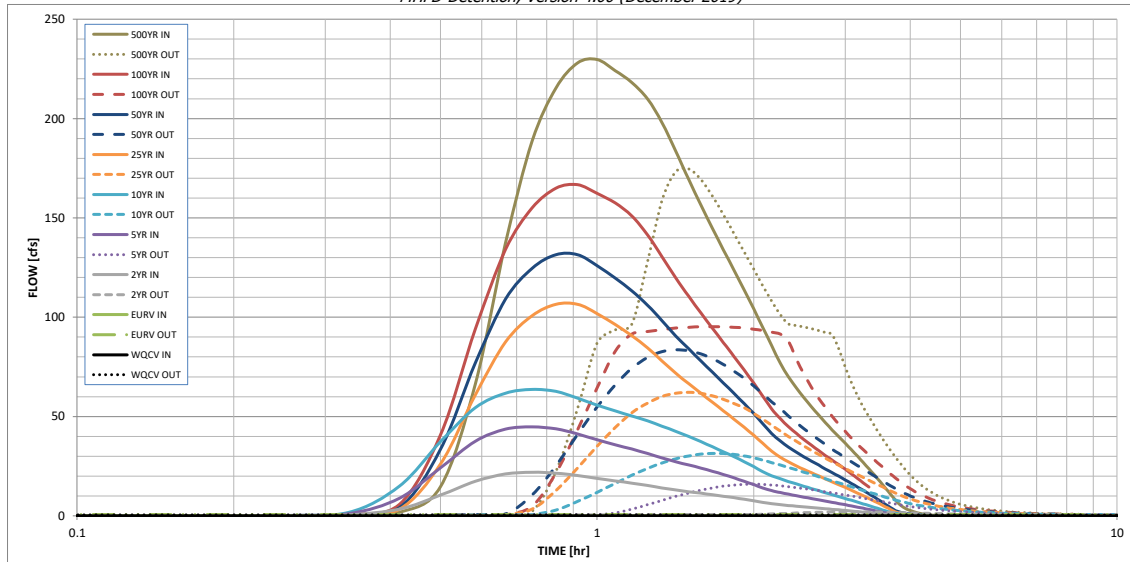
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
One-Hour Rainfall Depth (in)	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
CUHP Runoff Volume (acre-ft)	1.033	1.825	2.396	4.987	7.554	11.985	15.055	19.430	27.465
Inflow Hydrograph Volume (acre-ft)	N/A	N/A	2.396	4.987	7.554	11.985	15.055	19.430	27.465
CUHP Predevelopment Peak Q (cfs)	N/A	N/A	12.0	33.5	52.0	95.8	120.4	154.8	217.2
OPTIONAL Override Predevelopment Peak Q (cfs)	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre)	N/A	N/A	0.08	0.22	0.33	0.62	0.77	0.99	1.40
Peak Inflow Q (cfs)	N/A	N/A	21.9	44.8	63.7	106.6	131.5	166.7	229.7
Peak Outflow Q (cfs)	0.5	0.7	2.0	15.9	31.4	62.2	83.6	95.3	174.7
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	0.5	0.6	0.6	0.7	0.6	0.8
Structure Controlling Flow	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Spillway
Max Velocity through Grate 1 (fps)	N/A	N/A	0.02	0.3	0.5	1.1	1.5	1.7	1.8
Max Velocity through Grate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	43	56	62	58	54	47	43	37	30
Time to Drain 99% of Inflow Volume (hours)	45	60	66	65	63	60	59	56	52
Maximum Ponding Depth (ft)	2.78	3.36	3.55	4.11	4.48	5.01	5.31	5.96	6.62
Area at Maximum Ponding Depth (acres)	1.16	1.53	1.63	1.93	2.07	2.27	2.33	2.47	2.59
Maximum Volume Stored (acre-ft)	1.040	1.825	2.109	3.110	3.849	5.020	5.710	7.271	8.917

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.00 (December 2019)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

DETENTION BASIN OUTLET STRUCTURE DESIGN

Outflow Hydrograph Workbook Filename: _____

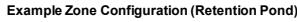
Inflow Hydrographs

The user can override the calculated inflow hydrographs from this workbook with inflow hydrographs developed in a separate program.

Time Interval	SOURCE	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP
	TIME	WQCV [cfs]	EURV [cfs]	2 Year [cfs]	5 Year [cfs]	10 Year [cfs]	25 Year [cfs]	50 Year [cfs]	100 Year [cfs]	500 Year [cfs]
5.00 min	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04
	0:15:00	0.00	0.00	0.10	0.17	0.21	0.14	0.19	0.17	0.30
	0:20:00	0.00	0.00	0.50	1.18	1.81	0.55	0.67	0.82	1.83
	0:25:00	0.00	0.00	3.42	8.83	14.94	3.34	4.24	5.88	14.71
	0:30:00	0.00	0.00	10.42	24.25	37.31	26.06	33.44	40.73	66.41
	0:35:00	0.00	0.00	17.41	37.62	54.43	60.95	77.03	94.06	137.19
	0:40:00	0.00	0.00	21.05	43.63	61.74	87.48	109.00	134.10	188.57
	0:45:00	0.00	0.00	21.94	44.78	63.70	100.74	124.59	154.95	215.35
	0:50:00	0.00	0.00	21.50	43.78	62.64	106.52	131.46	164.91	227.92
	0:55:00	0.00	0.00	20.30	41.27	59.27	106.56	131.52	166.70	229.73
	1:00:00	0.00	0.00	18.85	38.31	55.69	101.81	125.91	162.35	224.17
	1:05:00	0.00	0.00	17.63	35.80	52.84	96.30	119.64	157.49	218.17
	1:10:00	0.00	0.00	16.50	33.60	50.29	90.73	113.27	150.98	209.98
	1:15:00	0.00	0.00	15.30	31.39	47.81	84.56	106.08	141.47	197.96
	1:20:00	0.00	0.00	14.08	29.15	45.17	78.02	98.22	130.51	183.70
	1:25:00	0.00	0.00	13.03	27.22	42.56	71.80	90.57	119.79	169.36
	1:30:00	0.00	0.00	12.17	25.61	39.95	66.54	84.04	110.49	156.50
	1:35:00	0.00	0.00	11.38	24.07	37.34	61.70	77.99	102.10	144.74
	1:40:00	0.00	0.00	10.62	22.48	34.76	57.20	72.32	94.44	133.92
	1:45:00	0.00	0.00	9.87	20.80	32.23	52.88	66.89	87.21	123.67
	1:50:00	0.00	0.00	9.12	19.10	29.75	48.72	61.67	80.24	113.82
	1:55:00	0.00	0.00	8.36	17.40	27.29	44.61	56.53	73.44	104.24
	2:00:00	0.00	0.00	7.59	15.72	24.77	40.58	51.48	66.83	94.92
	2:05:00	0.00	0.00	6.81	14.05	22.23	36.54	46.42	60.27	85.67
	2:10:00	0.00	0.00	6.12	12.68	20.20	32.56	41.41	53.85	76.86
	2:15:00	0.00	0.00	5.62	11.70	18.66	29.55	37.67	48.93	70.03
	2:20:00	0.00	0.00	5.22	10.88	17.32	27.18	34.66	44.97	64.40
	2:25:00	0.00	0.00	4.87	10.13	16.07	25.16	32.08	41.51	59.42
	2:30:00	0.00	0.00	4.53	9.42	14.89	23.34	29.72	38.39	54.90
	2:35:00	0.00	0.00	4.20	8.73	13.77	21.68	27.58	35.53	50.76
	2:40:00	0.00	0.00	3.89	8.07	12.68	20.10	25.54	32.86	46.87
	2:45:00	0.00	0.00	3.58	7.42	11.64	18.58	23.59	30.35	43.23
	2:50:00	0.00	0.00	3.29	6.79	10.64	17.13	21.73	28.02	39.85
	2:55:00	0.00	0.00	3.00	6.17	9.67	15.70	19.91	25.73	36.54
	3:00:00	0.00	0.00	2.71	5.57	8.75	14.28	18.12	23.46	33.30
	3:05:00	0.00	0.00	2.42	4.97	7.84	12.88	16.35	21.19	30.07
	3:10:00	0.00	0.00	2.14	4.38	6.93	11.49	14.58	18.93	26.85
	3:15:00	0.00	0.00	1.86	3.80	6.04	10.10	12.83	16.68	23.64
	3:20:00	0.00	0.00	1.58	3.22	5.15	8.71	11.08	14.43	20.44
	3:25:00	0.00	0.00	1.30	2.65	4.27	7.33	9.33	12.18	17.25
	3:30:00	0.00	0.00	1.03	2.07	3.40	5.95	7.60	9.95	14.07
	3:35:00	0.00	0.00	0.76	1.51	2.54	4.58	5.87	7.72	10.91
	3:40:00	0.00	0.00	0.49	0.97	1.74	3.23	4.17	5.53	7.87
	3:45:00	0.00	0.00	0.30	0.63	1.27	2.00	2.66	3.60	5.33
	3:50:00	0.00	0.00	0.22	0.48	1.01	1.32	1.81	2.44	3.75
	3:55:00	0.00	0.00	0.17	0.38	0.82	0.89	1.27	1.68	2.68
	4:00:00	0.00	0.00	0.14	0.31	0.66	0.62	0.91	1.14	1.88
	4:05:00	0.00	0.00	0.11	0.25	0.53	0.43	0.65	0.76	1.30
	4:10:00	0.00	0.00	0.09	0.20	0.42	0.31	0.47	0.48	0.87
	4:15:00	0.00	0.00	0.07	0.15	0.32	0.21	0.33	0.29	0.56
	4:20:00	0.00	0.00	0.06	0.12	0.24	0.15	0.24	0.18	0.37
	4:25:00	0.00	0.00	0.05	0.09	0.17	0.11	0.18	0.14	0.27
	4:30:00	0.00	0.00	0.04	0.07	0.12	0.09	0.13	0.11	0.21
	4:35:00	0.00	0.00	0.03	0.05	0.09	0.07	0.10	0.09	0.17
	4:40:00	0.00	0.00	0.02	0.03	0.07	0.05	0.08	0.07	0.13
	4:45:00	0.00	0.00	0.02	0.02	0.05	0.04	0.06	0.05	0.10
	4:50:00	0.00	0.00	0.01	0.01	0.03	0.03	0.04	0.04	0.07
	4:55:00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.02	0.04
	5:00:00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.03
	5:05:00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01
	5:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

MHFD-Detention, Version 4.03 (May 2020)

Basin ID: Pond 5 (Manually entered WQCV and EURV volumes)



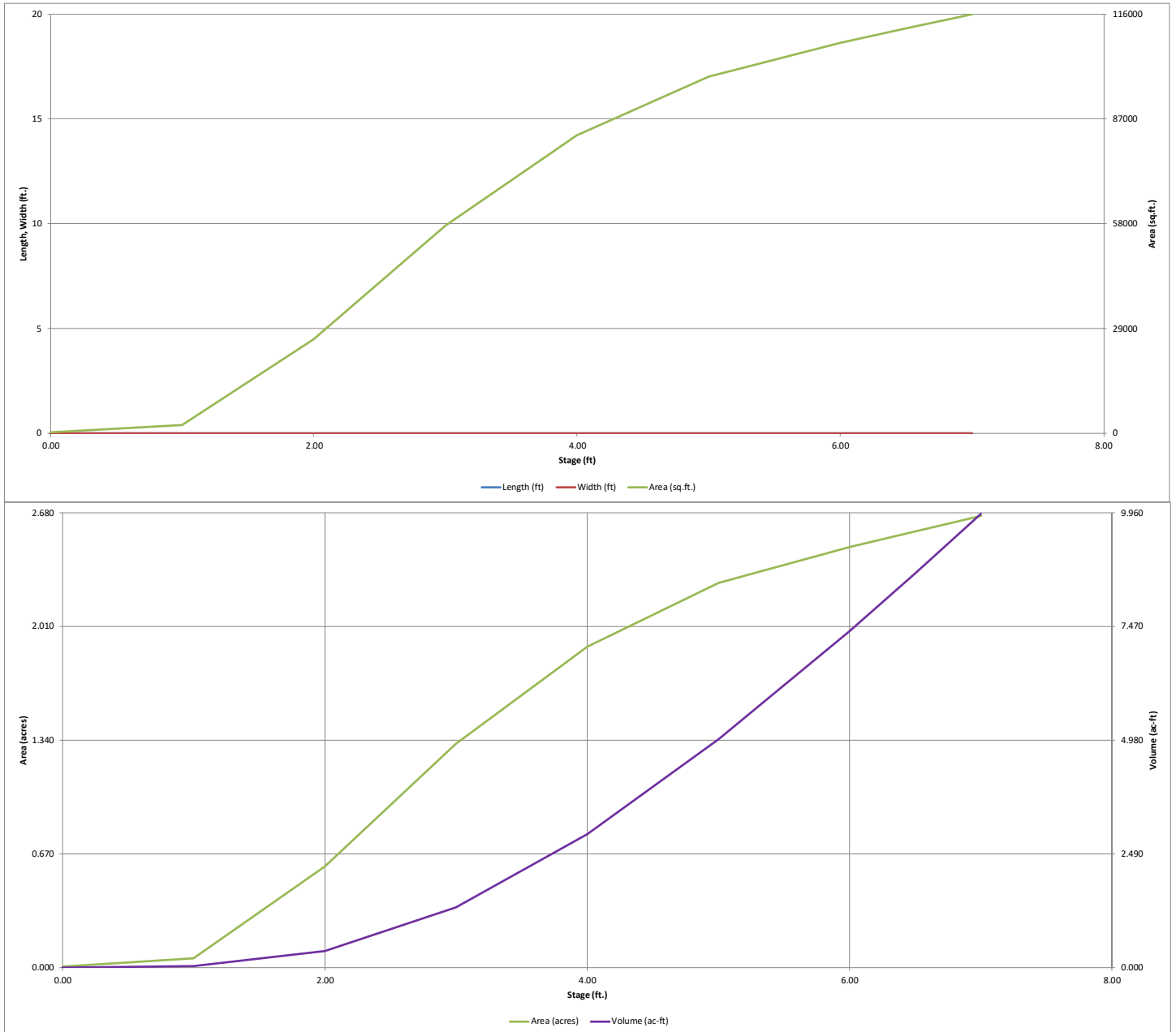
1.033	acre-feet
1.825	acre-feet
1.19	inches
1.50	inches
1.75	inches
2.00	inches
2.25	inches
2.52	inches
	inches

Initial Surcharge Area (A_{ISV})	user	ft ²
Surcharge Volume Length (L_{SV})	user	ft
Surcharge Volume Width (W_{SV})	user	ft
Depth of Basin Floor (H_{BLOOR})	user	ft
Length of Basin Floor (L_{BLOOR})	user	ft
Width of Basin Floor (W_{BLOOR})	user	ft
Area of Basin Floor (A_{BLOOR})	user	ft ²
Volume of Basin Floor (V_{BLOOR})	user	ft ³
Depth of Main Basin (H_{MAIN})	user	ft
Length of Main Basin (L_{MAIN})	user	ft
Width of Main Basin (W_{MAIN})	user	ft
Area of Main Basin (A_{MAIN})	user	ft ²
Volume of Main Basin (V_{MAIN})	user	ft ³
Calculated Total Basin Volume (V_{TOTAL})	user	acre-feet

9/9/2021, 2:55 PM

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.03 (May 2020)

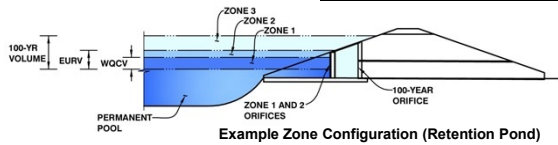


DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.03 (May 2020)

Project: Winsome Filing No. 2

Basin ID: Pond 5 (Manually entered WQCV and EURV volumes)



Example Zone Configuration (Retention Pond)

	Estimated Stage (ft)	Estimated Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.78	1.033	Orifice Plate
Zone 2 (EURV)	3.36	0.792	Orifice Plate
Zone 3 (100-year)	5.51	4.339	Weir&Pipe (Restrict)
Total (all zones)		6.164	

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = ft (distance below the filtration media surface)
Underdrain Orifice Diameter = inches

Calculated Parameters for Underdrain
Underdrain Orifice Area = ft²
Underdrain Orifice Centroid = feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice = 0.00 ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = 3.36 ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = N/A inches
Orifice Plate: Orifice Area per Row = N/A inches

Calculated Parameters for Plate
WQ Orifice Area per Row = N/A ft²
Elliptical Half-Width = N/A feet
Elliptical Slot Centroid = N/A feet
Elliptical Slot Area = N/A ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.12	2.24					
Orifice Area (sq. inches)	3.14	3.14	10.00					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Invert of Vertical Orifice = Not Selected Not Selected ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = N/A N/A ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = N/A N/A inches

Calculated Parameters for Vertical Orifice
Vertical Orifice Area = Not Selected Not Selected ft²
Vertical Orifice Centroid = N/A N/A feet

User Input: Overflow Weir (Dropbox with Flat or Sloped Grate and Outlet Pipe OR Rectangular/Trapezoidal Weir (and No Outlet Pipe))

Overflow Weir Front Edge Height, H_o = 3.38 N/A ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = 10.00 N/A feet
Overflow Weir Grate Slope = 4.00 N/A H:V
Horiz. Length of Weir Sides = 6.00 N/A feet
Overflow Grate Open Area % = 70% N/A %, grate open area/total area
Debris Clogging % = 50% N/A %

Calculated Parameters for Overflow Weir
Height of Grate Upper Edge, H_u = 4.88 N/A feet
Overflow Weir Slope Length = 6.18 N/A feet
Grate Open Area / 100-yr Orifice Area = 5.34 N/A
Overflow Grate Open Area w/o Debris = 43.29 N/A ft²
Overflow Grate Open Area w/ Debris = 21.65 N/A ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Depth to Invert of Outlet Pipe = Zone 3 Restrictor Not Selected ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter = 42.00 N/A inches
Restrictor Plate Height Above Pipe Invert = 33.00 inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate
Outlet Orifice Area = Zone 3 Restrictor Not Selected ft²
Outlet Orifice Centroid = 8.11 N/A feet
Half-Central Angle of Restrictor Plate on Pipe = 2.18 N/A radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = 6.10 ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = 65.00 feet
Spillway End Slopes = 4.00 H:V
Freeboard above Max Water Surface = 1.01 feet

Calculated Parameters for Spillway
Spillway Design Flow Depth = 0.89 feet
Stage at Top of Freeboard = 8.00 feet
Basin Area at Top of Freeboard = 2.66 acres
Basin Volume at Top of Freeboard = 9.94 acre-ft

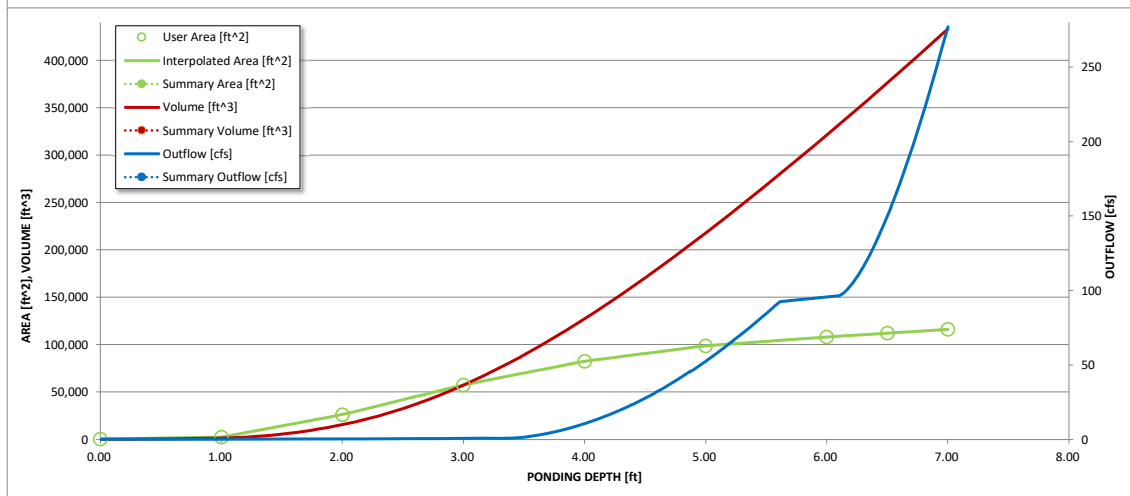
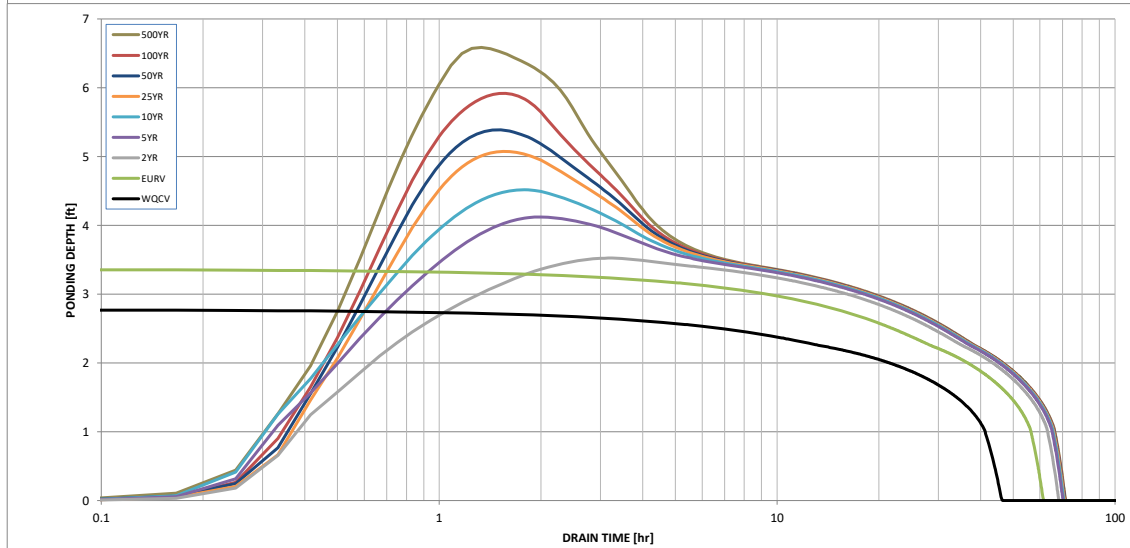
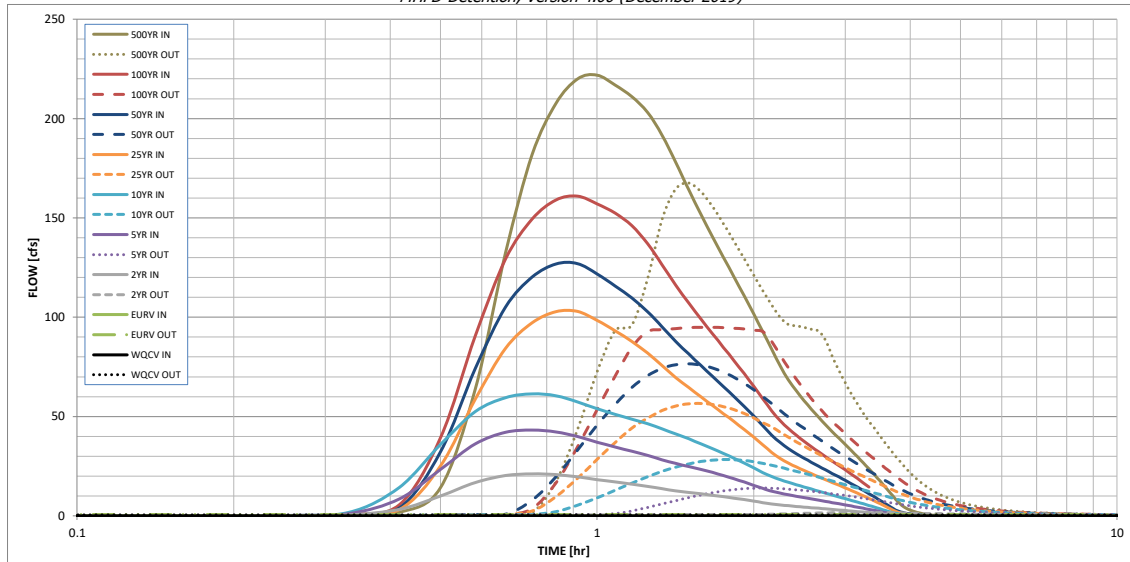
Routed Hydrograph Results

The user can override the default CUHP hydrographs and runoff volumes by entering new values in the Inflow Hydrographs table (Columns W through AF).

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period	N/A	N/A	1.19	1.50	1.75	2.00	2.25	2.52	3.14
One-Hour Rainfall Depth (in)	N/A	N/A	2.329	4.848	7.343	11.651	14.636	18.889	26.699
CUHP Runoff Volume (acre-ft)	1.033	1.825	2.329	4.848	7.343	11.651	14.636	18.889	26.699
Inflow Hydrograph Volume (acre-ft)	N/A	N/A	2.329	4.848	7.343	11.651	14.636	18.889	26.699
CUHP Predevelopment Peak Q (cfs)	N/A	N/A	11.5	32.3	50.1	92.4	116.2	149.4	209.6
OPTIONAL Override Predevelopment Peak Q (cfs)	N/A	N/A							
Predevelopment Unit Peak Flow, q (cfs/acre)	N/A	N/A	0.08	0.21	0.33	0.61	0.77	0.99	1.39
Peak Inflow Q (cfs)	N/A	N/A	21.2	43.2	61.4	102.9	127.0	161.0	221.9
Peak Outflow Q (cfs)	0.6	0.7	1.7	14.0	28.3	56.6	76.6	94.9	167.5
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	0.4	0.6	0.6	0.7	0.6	0.8
Structure Controlling Flow	Plate	Plate	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Overflow Weir 1	Outlet Plate 1	Spillway
Max Velocity through Gate 1 (fps)	N/A	N/A	0.02	0.3	0.6	1.3	1.8	2.2	2.3
Max Velocity through Gate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	41	54	60	57	53	47	42	37	31
Time to Drain 99% of Inflow Volume (hours)	44	58	64	63	62	59	58	55	51
Maximum Ponding Depth (ft)	2.78	3.36	3.52	4.12	4.52	5.07	5.39	5.92	6.58
Area at Maximum Ponding Depth (acres)	1.16	1.53	1.62	1.94	2.08	2.28	2.35	2.46	2.59
Maximum Volume Stored (acre-ft)	1.040	1.825	2.077	3.149	3.932	5.157	5.874	7.148	8.839

DETENTION BASIN OUTLET STRUCTURE DESIGN

MHFD-Detention, Version 4.00 (December 2019)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

DETENTION BASIN OUTLET STRUCTURE DESIGN

Outflow Hydrograph Workbook Filename: _____

Inflow Hydrographs

The user can override the calculated inflow hydrographs from this workbook with inflow hydrographs developed in a separate program.

Time Interval	SOURCE	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP	CUHP
	TIME	WQCV [cfs]	EURV [cfs]	2 Year [cfs]	5 Year [cfs]	10 Year [cfs]	25 Year [cfs]	50 Year [cfs]	100 Year [cfs]	500 Year [cfs]
5.00 min	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:05:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.04
	0:15:00	0.00	0.00	0.10	0.16	0.20	0.14	0.19	0.17	0.29
	0:20:00	0.00	0.00	0.49	1.13	1.74	0.53	0.64	0.79	1.76
	0:25:00	0.00	0.00	3.30	8.51	14.40	3.22	4.09	5.67	14.18
	0:30:00	0.00	0.00	10.04	23.37	35.96	25.12	32.23	39.26	64.00
	0:35:00	0.00	0.00	16.78	36.26	52.47	58.75	74.25	90.66	132.23
	0:40:00	0.00	0.00	20.29	42.06	59.52	84.32	105.06	129.25	181.76
	0:45:00	0.00	0.00	21.16	43.19	61.45	97.12	120.12	149.38	207.63
	0:50:00	0.00	0.00	20.76	42.27	60.50	102.76	126.81	159.08	219.90
	0:55:00	0.00	0.00	19.63	39.92	57.34	102.91	127.02	160.98	221.91
	1:00:00	0.00	0.00	18.25	37.09	53.90	98.48	121.80	157.02	216.82
	1:05:00	0.00	0.00	17.06	34.66	51.15	93.16	115.74	152.34	211.03
	1:10:00	0.00	0.00	15.98	32.56	48.72	87.83	109.65	146.11	203.21
	1:15:00	0.00	0.00	14.83	30.44	46.35	81.93	102.77	137.02	191.74
	1:20:00	0.00	0.00	13.66	28.27	43.78	75.67	95.25	126.53	178.07
	1:25:00	0.00	0.00	12.63	26.39	41.26	69.62	87.81	116.13	164.17
	1:30:00	0.00	0.00	11.81	24.85	38.76	64.54	81.51	107.17	151.79
	1:35:00	0.00	0.00	11.05	23.37	36.26	59.89	75.69	99.10	140.50
	1:40:00	0.00	0.00	10.32	21.85	33.79	55.57	70.26	91.74	130.10
	1:45:00	0.00	0.00	9.61	20.25	31.37	51.44	65.06	84.82	120.28
	1:50:00	0.00	0.00	8.90	18.63	29.00	47.45	60.06	78.14	110.85
	1:55:00	0.00	0.00	8.17	17.00	26.65	43.53	55.15	71.64	101.68
	2:00:00	0.00	0.00	7.43	15.39	24.24	39.67	50.32	65.30	92.75
	2:05:00	0.00	0.00	6.68	13.79	21.79	35.81	45.48	59.04	83.91
	2:10:00	0.00	0.00	6.00	12.42	19.75	31.98	40.66	52.86	75.38
	2:15:00	0.00	0.00	5.48	11.42	18.20	28.92	36.84	47.88	68.50
	2:20:00	0.00	0.00	5.09	10.62	16.89	26.56	33.87	43.95	62.93
	2:25:00	0.00	0.00	4.75	9.89	15.69	24.58	31.33	40.57	58.07
	2:30:00	0.00	0.00	4.42	9.20	14.55	22.81	29.05	37.54	53.69
	2:35:00	0.00	0.00	4.11	8.55	13.47	21.20	26.97	34.77	49.67
	2:40:00	0.00	0.00	3.81	7.91	12.43	19.68	25.01	32.18	45.91
	2:45:00	0.00	0.00	3.51	7.29	11.43	18.22	23.13	29.76	42.40
	2:50:00	0.00	0.00	3.23	6.68	10.46	16.82	21.34	27.51	39.13
	2:55:00	0.00	0.00	2.95	6.09	9.54	15.45	19.59	25.31	35.96
	3:00:00	0.00	0.00	2.68	5.51	8.65	14.10	17.88	23.14	32.85
	3:05:00	0.00	0.00	2.41	4.94	7.77	12.76	16.19	20.98	29.76
	3:10:00	0.00	0.00	2.13	4.37	6.91	11.42	14.50	18.82	26.69
	3:15:00	0.00	0.00	1.87	3.82	6.06	10.10	12.82	16.66	23.62
	3:20:00	0.00	0.00	1.60	3.26	5.21	8.77	11.15	14.51	20.56
	3:25:00	0.00	0.00	1.33	2.72	4.36	7.45	9.48	12.37	17.51
	3:30:00	0.00	0.00	1.07	2.17	3.53	6.13	7.82	10.23	14.47
	3:35:00	0.00	0.00	0.81	1.63	2.70	4.82	6.17	8.10	11.44
	3:40:00	0.00	0.00	0.56	1.10	1.91	3.52	4.53	5.98	8.46
	3:45:00	0.00	0.00	0.35	0.71	1.36	2.28	2.97	3.97	5.76
	3:50:00	0.00	0.00	0.23	0.51	1.05	1.46	1.98	2.66	4.01
	3:55:00	0.00	0.00	0.18	0.40	0.84	0.98	1.38	1.83	2.86
	4:00:00	0.00	0.00	0.14	0.32	0.68	0.68	0.98	1.25	2.03
	4:05:00	0.00	0.00	0.12	0.26	0.55	0.46	0.69	0.84	1.41
	4:10:00	0.00	0.00	0.09	0.21	0.43	0.33	0.50	0.54	0.95
	4:15:00	0.00	0.00	0.07	0.16	0.33	0.23	0.36	0.33	0.62
	4:20:00	0.00	0.00	0.06	0.12	0.25	0.16	0.25	0.20	0.39
	4:25:00	0.00	0.00	0.05	0.09	0.18	0.12	0.19	0.15	0.29
	4:30:00	0.00	0.00	0.04	0.07	0.13	0.09	0.14	0.11	0.22
	4:35:00	0.00	0.00	0.03	0.05	0.10	0.07	0.11	0.09	0.17
	4:40:00	0.00	0.00	0.02	0.04	0.08	0.05	0.08	0.07	0.13
	4:45:00	0.00	0.00	0.02	0.02	0.05	0.04	0.06	0.05	0.10
	4:50:00	0.00	0.00	0.01	0.02	0.04	0.03	0.04	0.04	0.07
	4:55:00	0.00	0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.05
	5:00:00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.02	0.03
	5:05:00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
	5:10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	5:15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:20:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:25:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:30:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:35:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:40:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:45:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:50:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5:55:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6:00:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Emergency Overflow Weir Calculation

Q (cfs) = 160.9 (100-yr peak inflow)
C_{BCW} = 3
Z = 4
H = 0.9

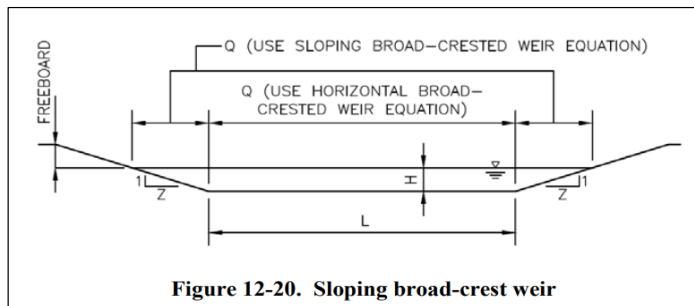
*orange cells require input

L (ft) = 59.94 Rounded to 65

$$Q = C_{BCW} L H^{1.5} + 2 \left[\left(\frac{2}{5} \right) C_{BCW} Z H^{2.5} \right]$$

rearrange to solve for length:

$$L = \frac{Q - \left(\frac{4}{5} \right) C_{BCW} Z H^{2.5}}{C_{BCW} H^{1.5}}$$



Horizontal Broad Crested Weir Equation (from USDCM Eqn. 12-8)

$$Q = C_{BCW} L H^{1.5} \quad \text{Equation 12-8}$$

Where:

Q = discharge (cfs)

C_{BCW} = broad-crested weir coefficient (This ranges from 2.6 to 3.0. A value of 3.0 is often used in practice.) See Hydraulic Engineering Circular No. 22 for additional information.

L = broad-crested weir length (ft)

H = head above weir crest (ft)

Sloping Broad Crested Weir Equation (from USDCM Eqn. 12-9)

$$Q = \left(\frac{2}{5} \right) C_{BCW} Z H^{2.5} \quad \text{Equation 12-9}$$

Where:

Q = discharge (cfs)

C_{BCW} = broad-crested weir coefficient (This ranges from 2.6 to 3.0. A value of 3.0 is often used in practice.) See Hydraulic Engineering Circular No. 22 for additional information.

Z = side slope (horizontal: vertical)

H = head above weir crest (ft)

Note that in order to calculate the total flow over the weir depicted in Figure 12-20, the results from Equation 12-8 must be added to two times the results from Equation 12-9.

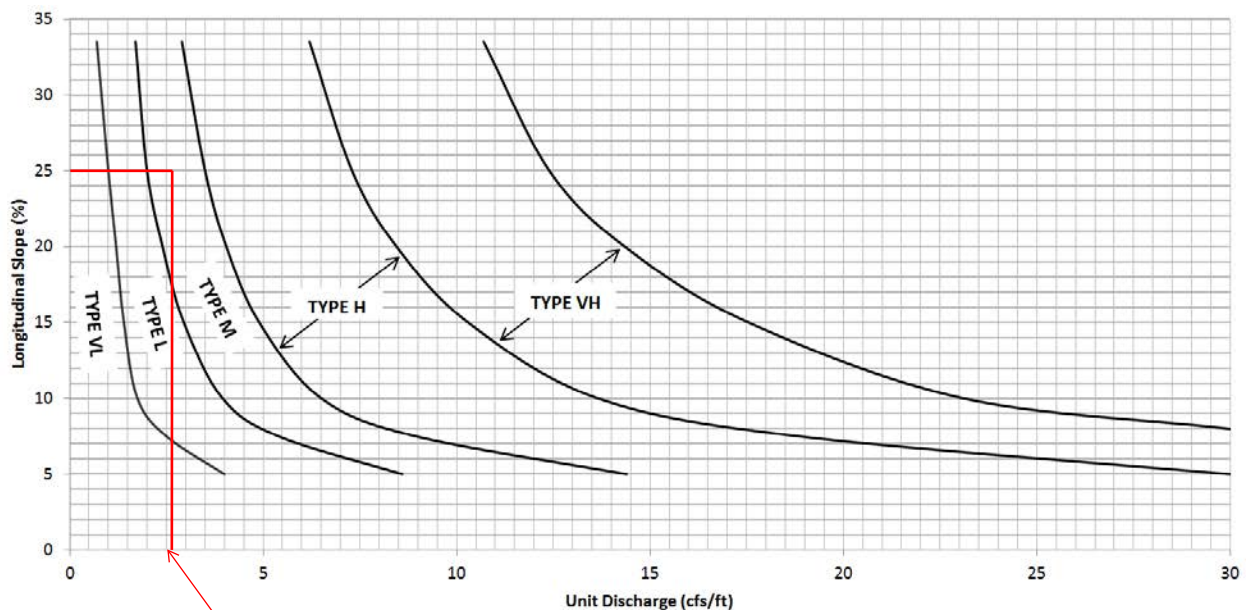
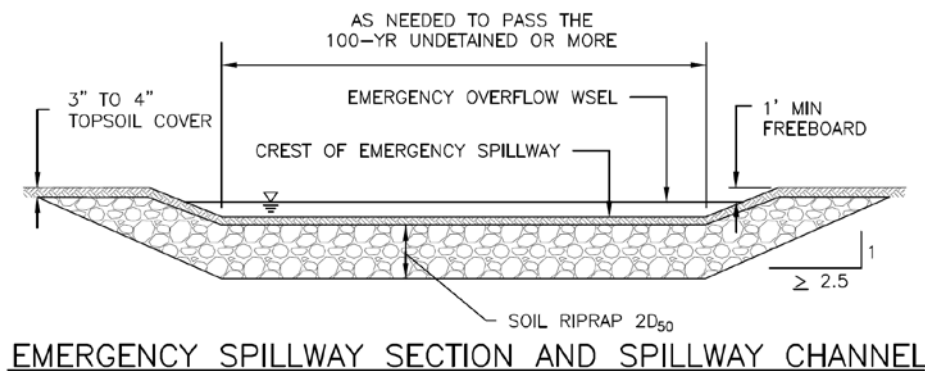
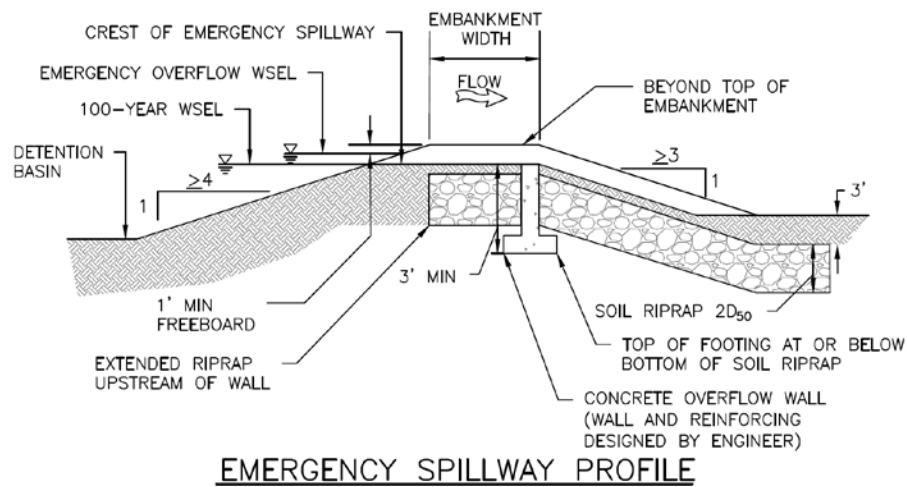


Figure 12-21. Embankment protection details and rock sizing chart (adapted from Arapahoe County)

$$160.9 \text{ cfs}/65 \text{ ft} = 2.47$$

Rock Chute Design Data

(Version WI-July-2010, Based on Design of Rock Chutes by Robinson, Rice, Kadavy, ASAE, 1998)

Project: Winsome, Channel 10
 Designer: BAH
 Date: June 4, 2021

County: El Paso
 Checked by: _____
 Date: _____

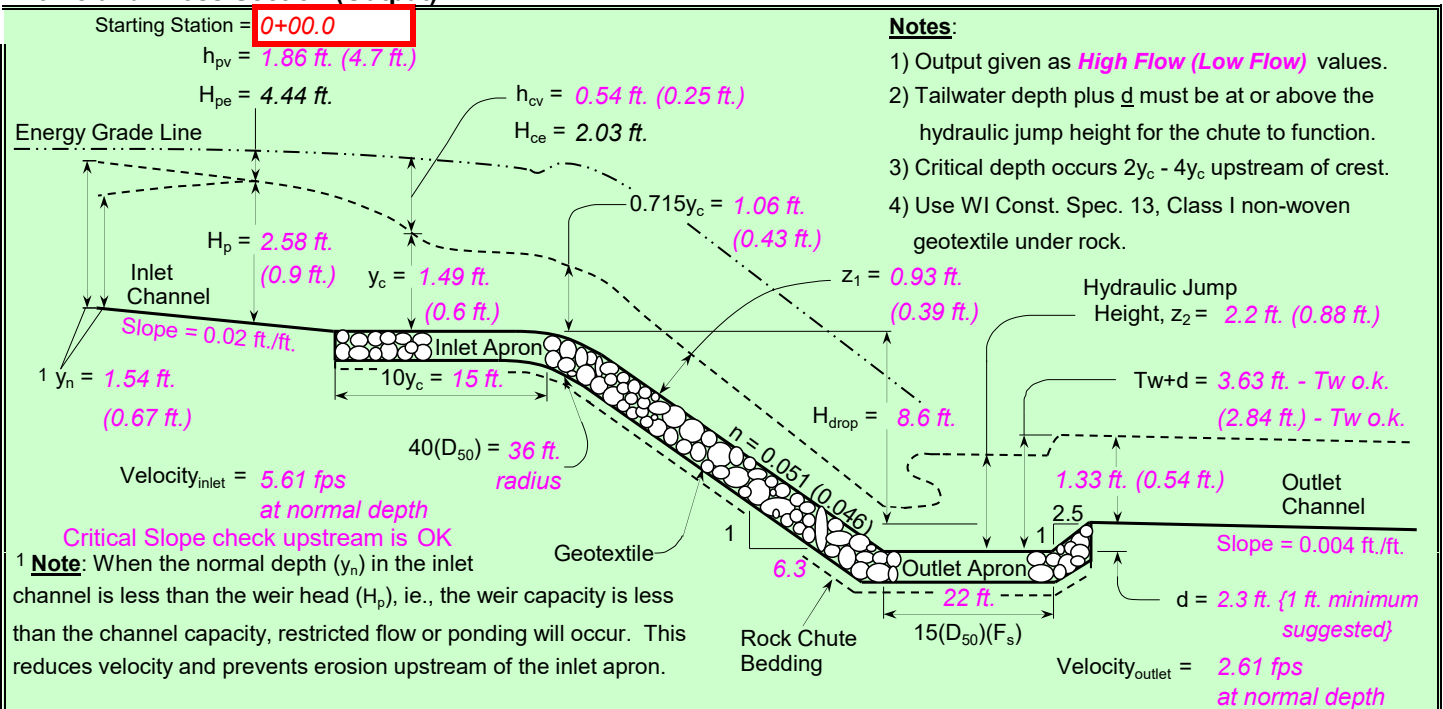
Input Geometry:

Upstream Channel	Chute	Downstream Channel
Bw = 10.0 ft.	Bw = 10.0 ft.	Bw = 35.0 ft.
Side slopes = 4.0 (m:1)	Factor of safety = 1.60 (F_s)	Side slopes = 4.0 (m:1)
Velocity n-value = 0.040	Side slopes = 4.0 (m:1) → 2.0:1 max.	Velocity n-value = 0.040
Bed slope = 0.0200 ft./ft.	Bed slope (6.3:1) = 0.160 ft./ft. → 3.0:1 max.	Bed slope = 0.0040 ft./ft.
Note: n value = a) velocity n from waterway program or b) computed mannings n for channel	Freeboard = 0.5 ft. → Outlet apron depth, d = 2.3 ft.	Base flow = 0.0 cfs

Design Storm Data (Table 2, FOTG, WI-NRCS Grade Stabilization Structure No. 410):

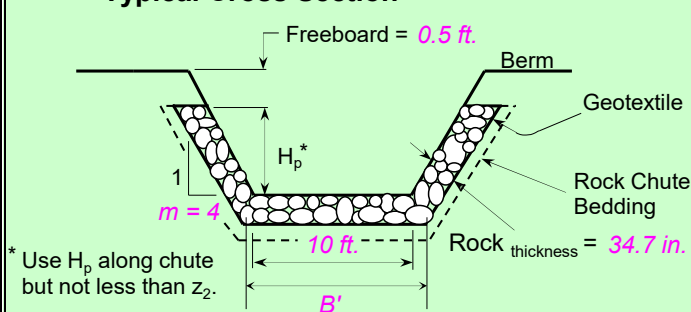
Apron elev. --- Inlet = 7309.3 ft. ----- Outlet = 298.4 ft. --- ($H_{drop} = 8.6$ ft.)	Note: The total required capacity is routed through the chute (principal spillway) or in combination with an auxiliary spillway.
Q_{high} = Runoff from design storm capacity from Table 2, FOTG Standard 410	Input tailwater (T_w): 0.16 1.60
Q_5 = Runoff from a 5-year, 24-hour storm.	
$Q_{high} = 140.0$ cfs High flow storm through chute	→ T_w (ft.) = Program
$Q_5 = 30.0$ cfs Low flow storm through chute	→ T_w (ft.) = Program

Profile and Cross Section (Output):



Profile Along Centerline of Chute

Typical Cross Section



$F_s = 1.60$	Factor of safety (multiplier)
$z_1 = 0.93$ ft.	Normal depth in chute
n-value = 0.051	Manning's roughness coefficient
$D_{50}(F_s) = 17.4$ in.	Minimum Design D_{50} *
$2(D_{50})(F_s) = 34.7$ in.	Rock chute thickness
$T_w + d = 3.63$ ft.	Tailwater above outlet apron
$z_2 = 2.2$ ft.	Hydraulic jump height
*** The outlet will	function adequately

High Flow Storm Information

Rock Chute Design Calculations

(Version WI-July-2010, Based on Design of Rock Chutes by Robinson, Rice, Kadavy, ASAE, 1998)

Project: Winsome, Channel 10
Designer: BAH
Date: 6/4/2021

County: El Paso
Checked by: _____
Date: _____

I. Calculate the normal depth in the inlet channel

<u>High Flow</u>		<u>Low Flow</u>	
$y_n =$	1.54 ft.	$y_n =$	0.67 ft. (Normal depth)
Area =	25.0 ft ²	Area =	8.5 ft ² (Flow area in channel)
$Q_{high} =$	140.0 cfs	$Q_{low} =$	30.0 cfs (Capacity in channel)
Scupstreamchannel = 0.023 ft/ft			

II. Calculate the critical depth in the chute

<u>High Flow</u>		<u>Low Flow</u>	
$y_c =$	1.49 ft.	$y_c =$	0.60 ft. (Critical depth in chute)
Area =	23.7 ft ²	Area =	7.5 ft ² (Flow area in channel)
$Q_{high} =$	140.0 cfs	$Q_{low} =$	30.0 cfs (Capacity in channel)
$H_{ce} =$	2.03 ft.	$H_{ce} =$	0.85 ft. (Total minimum specific energy head)
$h_{cv} =$	0.54 ft.	$h_{cv} =$	0.25 ft. (Velocity head corresponding to y_c)
$10y_c =$	14.87 ft.	---	---
$0.715y_c =$	1.06 ft.	$0.715y_c =$	0.43 ft. (Depth of flow over the weir crest or brink)

III. Calculate the tailwater depth in the outlet channel

<u>High Flow</u>		<u>Low Flow</u>	
$T_w =$	1.33 ft.	$T_w =$	0.54 ft. (Tailwater depth)
Area =	53.6 ft ²	Area =	20.0 ft ² (Flow area in channel)
$Q_{high} =$	140.0 cfs	$Q_{low} =$	30.0 cfs (Capacity in channel)
$H_2 =$	0.00 ft.	$H_2 =$	0.00 ft. (Downstream head above weir crest, $H_2 = 0$, if $H_2 < 0.715y_c$)

IV. Calculate the head for a trapezoidal shaped broadcrested weir

$C_d =$ **2.80** (Coefficient of discharge for broadcrested weirs)

<u>High Flow</u>		<u>Low Flow</u>	
$H_p =$	2.67 ft.	$H_p =$	2.58 ft. (Weir head)
Area =	55.2 ft ²	Area =	52.6 ft ² (Flow area in channel)
$V_o =$	0.00 fps	$V_o =$	7.46 fps (Approach velocity)
$h_{pv} =$	0.00 ft.	$h_{pv} =$	0.86 ft. (Velocity head corresponding to H_p)
$Q_{high} =$	392.0 cfs	$Q_{low} =$	491.6 cfs (Capacity in channel)

Trial and error procedure solving simultaneously for velocity and head

<u>Low Flow</u>		<u>Low Flow</u>	
$H_p =$	0.97 ft.	$H_p =$	0.90 ft. (Weir head)
Area =	13.5 ft ²	Area =	12.2 ft ² (Flow area in channel)
$V_o =$	0.00 fps	$V_o =$	6.86 fps (Approach velocity)
$h_{pv} =$	0.00 ft.	$h_{pv} =$	0.73 ft. (Velocity head corresponding to H_p)
$Q_{low} =$	84.0 cfs	$Q_{low} =$	126.2 cfs (Capacity in channel)

Trial and error procedure solving simultaneously for velocity and head

Rock Chute Design Calculations

(Version WI-July-2010, Based on Design of Rock Chutes by Robinson, Rice, Kadavy, ASAE, 1998)

Project: Winsome, Channel 10
Designer: BAH
Date: 6/4/2021

County: El Paso
Checked by: _____
Date: _____

V. Calculate the rock chute parameters (w/o a factor of safety applied)

<u>High Flow</u>	<u>Low Flow</u>
$q_t = 0.96$ cms/m	$q_t = 0.25$ cms/m (Equivalent unit discharge)
$D_{50} \text{ (mm)} = 275.50 \rightarrow (10.85 \text{ in.})$	$D_{50} = 134.22$ mm (Median <u>angular</u> rock size)
$n = 0.051$	$n = 0.046$ (Manning's roughness coefficient)
$z_1 = 0.93$ ft.	$z_1 = 0.39$ ft. (Normal depth in the chute)
$A_1 = 12.7$ ft ²	$A_1 = 4.4$ ft ² (Area associated with normal depth)
Velocity = 11.01 fps	Velocity = 6.75 fps (Velocity in chute slope)
$z_{\text{mean}} = 0.73$ ft.	$z_{\text{mean}} = 0.34$ ft. (Mean depth)
$F_1 = 2.27$	$F_1 = 2.04$ (Froude number)
$L_{\text{rock apron}} = 13.56$ ft.	---- (Length of rock outlet apron = $15 \cdot D_{50}$)

VI. Calculate the height of hydraulic jump height (conjugate depth)

<u>High Flow</u>	<u>Low Flow</u>
$z_2 = 2.20$ ft.	$z_2 = 0.88$ ft. (Hydraulic jump height)
$Q_{\text{high}} = 140.0$ cfs	$Q_{\text{high}} = 30.0$ cfs (Capacity in channel)
$A_2 = 41.5$ ft ²	$A_2 = 11.9$ ft ² (Flow area in channel)

VII. Calculate the energy lost through the jump (absorbed by the rock)

<u>High Flow</u>	<u>Low Flow</u>
$E_1 = 2.81$ ft.	$E_1 = 1.09$ ft. (Total energy <u>before</u> the jump)
$E_2 = 2.38$ ft.	$E_2 = 0.98$ ft. (Total energy <u>after</u> the jump)
$R_E = 15.29$ %	$R_E = 10.62$ % (Relative loss of energy)

Calculate Quantities for Rock Chute

<u>-----Rock Riprap Volume-----</u>	
<u>Area Calculations</u>	<u>Length @ Rock CL</u>
$h = 2.58$	Inlet = 14.88
$x_1 = 12.37$	Outlet = 22.41
$L = 10.64$	Slope = 68.99
$A_s = 31.91$	2.5:1 Lip = 5.88
$x_2 = 12.00$	Total = 112.16 ft.
$A_b = 68.22$	<u>Rock Volume</u>
$A_b + 2 \cdot A_s = 132.04$ ft²	548.52 yd³

<u>-----Bedding Volume-----</u>	
<u>Area Calculations</u>	<u>Bedding Thickness</u>
$h = 5.58$	$t_1, t_2 = 6.00$ in.
$x_1 = 2.06$	
$L = 23.01$	
$A_s = 11.50$	<u>Length @ Bed CL</u>
$x_2 = 2.00$	Total = 112.14 ft.
$A_b = 6.43$	<u>Bedding Volume</u>
$A_b + 2 \cdot A_s = 29.44$ ft²	122.26 yd³

<u>-----Geotextile Quantity-----</u>	
<u>Width</u>	<u>Length @ Bot. Rock</u>
$2 \cdot \text{Slope} = 46.01$	Total = 112.14 ft.
Bottom = 10.74	<u>Geotextile Area</u>
Total = 56.75 ft.	707.14 yd²

- Note:** 1) The radius is not considered when calculating quantities of riprap, bedding, or geotextile.
 2) The geotextile quantity does not include overlapping (18-in. min.) or anchoring material (18-in. min. along sides, 24-in. min. on ends).

Rock Chute Design Data

(Version WI-July-2010, Based on Design of Rock Chutes by Robinson, Rice, Kadavy, ASAE, 1998)

Project: Winsome, Channel 9
 Designer: BAH
 Date: December 22, 2020

County: El Paso
 Checked by: _____
 Date: _____

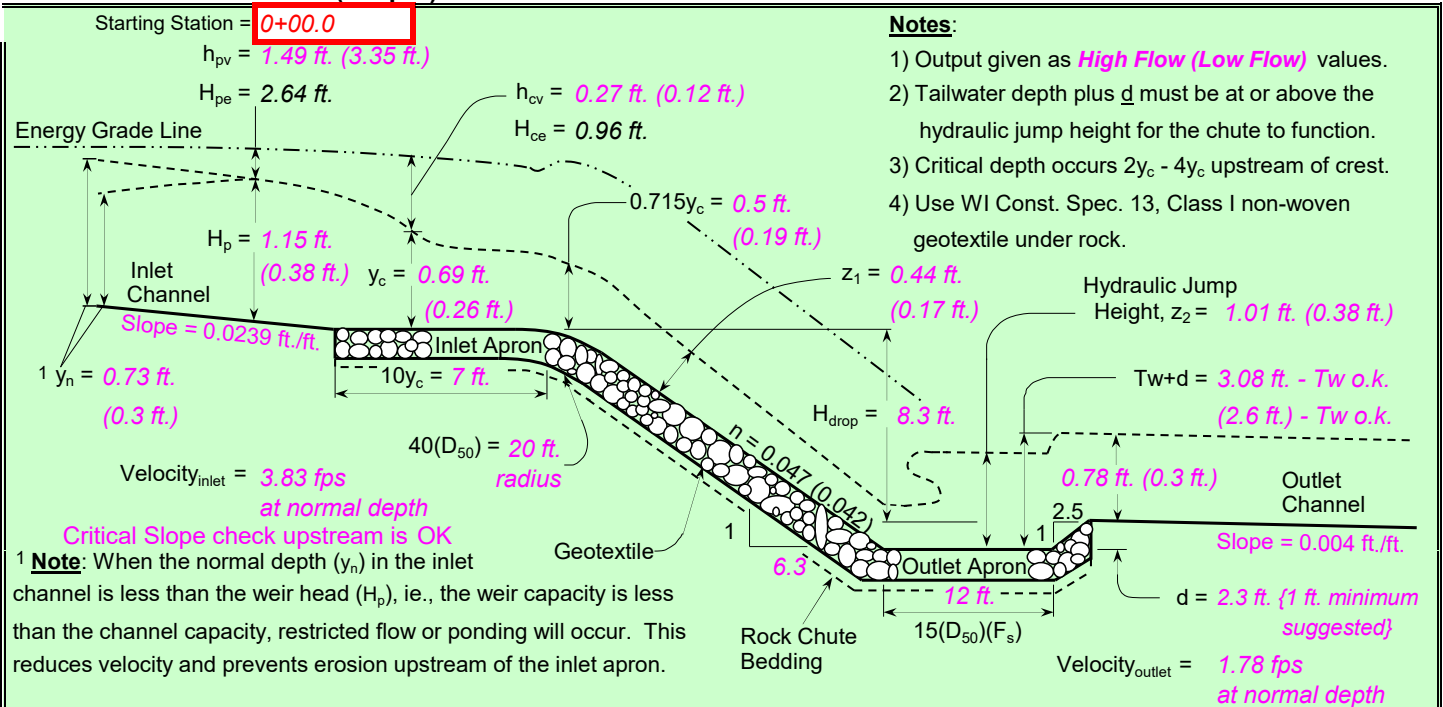
Input Geometry:

Upstream Channel	Chute	Downstream Channel
Bw = 6.0 ft.	Bw = 6.0 ft.	Bw = 15.0 ft.
Side slopes = 4.0 (m:1)	Factor of safety = 1.65 (F_s)	Side slopes = 4.0 (m:1)
Velocity n-value = 0.040	Side slopes = 4.0 (m:1) → 2.0:1 max.	Velocity n-value = 0.040
Bed slope = 0.0239 ft./ft.	Bed slope (6.3:1) = 0.160 ft./ft. → 3.0:1 max.	Bed slope = 0.0040 ft./ft.
Note: n value = a) velocity n from waterway program or b) computed manning's n for channel	Freeboard = 0.5 ft. → Outlet apron depth, d = 2.3 ft.	Base flow = 0.0 cfs

Design Storm Data (Table 2, FOTG, WI-NRCS Grade Stabilization Structure No. 410):

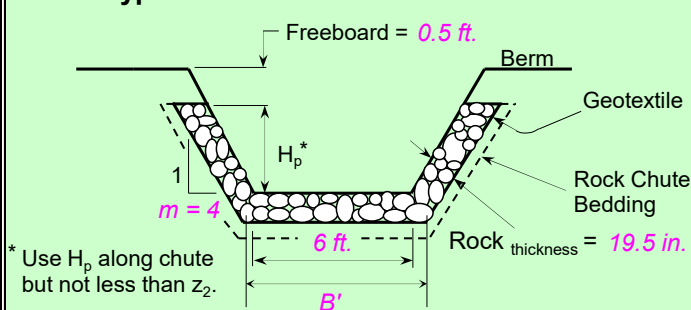
Apron elev. --- Inlet = 7309.0 ft. ----- Outlet = 7298.4 ft. --- (H_{drop} = 8.3 ft.)	Note: The total required capacity is routed through the chute (principal spillway) or in combination with an auxiliary spillway.
Q_{high} = Runoff from design storm capacity from Table 2, FOTG Standard 410	Input tailwater (Tw): 0.16 1.65
Q_5 = Runoff from a 5-year, 24-hour storm.	
Q_{high} = 25.0 cfs High flow storm through chute	Tw (ft.) = Program
Q_5 = 5.0 cfs Low flow storm through chute	Tw (ft.) = Program

Profile and Cross Section (Output):



Profile Along Centerline of Chute

Typical Cross Section



$F_s = 1.65$	Equivalent unit discharge
$z_1 = 0.44$ ft.	Factor of safety (multiplier)
n-value = 0.047	Normal depth in chute
$D_{50}(F_s) = 9.8$ in.	Manning's roughness coefficient
$2(D_{50})(F_s) = 19.5$ in.	Minimum Design D50*
$Tw + d = 3.08$ ft.	Rock chute thickness
$z_2 = 1.01$ ft.	Tailwater above outlet apron
*** The outlet will function adequately	Hydraulic jump height

High Flow Storm Information

Rock Chute Design Calculations

(Version WI-July-2010, Based on Design of Rock Chutes by Robinson, Rice, Kadavy, ASAE, 1998)

Project: Winsome, Channel 9
Designer: BAH
Date: #####

County: El Paso
Checked by: _____
Date: _____

I. Calculate the normal depth in the inlet channel

<u>High Flow</u>			<u>Low Flow</u>		
$y_n =$	0.73	ft.	$y_n =$	0.30	ft. (Normal depth)
Area =	6.5	ft ²	Area =	2.2	ft ² (Flow area in channel)
$Q_{high} =$	25.0	cfs	$Q_{low} =$	5.0	cfs (Capacity in channel)
Scupstreamchannel =	0.029	ft/ft			

II. Calculate the critical depth in the chute

<u>High Flow</u>			<u>Low Flow</u>		
$y_c =$	0.69	ft.	$y_c =$	0.26	ft. (Critical depth in chute)
Area =	6.1	ft ²	Area =	1.8	ft ² (Flow area in channel)
$Q_{high} =$	25.0	cfs	$Q_{low} =$	5.0	cfs (Capacity in channel)
$H_{ce} =$	0.96	ft.	$H_{ce} =$	0.38	ft. (Total minimum specific energy head)
$h_{cv} =$	0.27	ft.	$h_{cv} =$	0.12	ft. (Velocity head corresponding to y_c)
$10y_c =$	6.92	ft.	---	---	(Required inlet apron length)
$0.715y_c =$	0.50	ft.	$0.715y_c =$	0.19	ft. (Depth of flow over the weir crest or brink)

III. Calculate the tailwater depth in the outlet channel

<u>High Flow</u>			<u>Low Flow</u>		
$T_w =$	0.78	ft.	$T_w =$	0.30	ft. (Tailwater depth)
Area =	14.0	ft ²	Area =	4.9	ft ² (Flow area in channel)
$Q_{high} =$	25.0	cfs	$Q_{low} =$	5.0	cfs (Capacity in channel)
$H_2 =$	0.00	ft.	$H_2 =$	0.00	ft. (Downstream head above weir crest, $H_2 = 0$, if $H_2 < 0.715y_c$)

IV. Calculate the head for a trapezoidal shaped broadcrested weir

$C_d =$ **2.80** (Coefficient of discharge for broadcrested weirs)

<u>High Flow</u>			<u>Low Flow</u>		
$H_p =$	1.20	ft.	$H_p =$	1.15	ft. (Weir head)
Area =	12.9	ft ²	Area =	12.1	ft ² (Flow area in channel)
$V_o =$	0.00	fps	$V_o =$	5.77	fps (Approach velocity)
$h_{pv} =$	0.00	ft.	$h_{pv} =$	0.52	ft. (Velocity head corresponding to H_p)
$Q_{high} =$	70.0	cfs	$Q_{high} =$	92.7	cfs (Capacity in channel)
<i>Trial and error procedure solving simultaneously for velocity and head</i>					
$H_p =$	0.41	ft.	$H_p =$	0.38	ft. (Weir head)
Area =	3.2	ft ²	Area =	2.8	ft ² (Flow area in channel)
$V_o =$	0.00	fps	$V_o =$	4.92	fps (Approach velocity)
$h_{pv} =$	0.00	ft.	$h_{pv} =$	0.38	ft. (Velocity head corresponding to H_p)
$Q_{low} =$	14.0	cfs	$Q_{low} =$	22.0	cfs (Capacity in channel)
<i>Trial and error procedure solving simultaneously for velocity and head</i>					

Rock Chute Design Calculations

(Version WI-July-2010, Based on Design of Rock Chutes by Robinson, Rice, Kadavy, ASAE, 1998)

Project: Winsome, Channel 9
 Designer: BAH
 Date: #####

County: El Paso
 Checked by: _____
 Date: _____

V. Calculate the rock chute parameters (w/o a factor of safety applied)

<u>High Flow</u>	<u>Low Flow</u>
$q_t = 0.30$ cms/m	$q_t = 0.07$ cms/m (Equivalent unit discharge)
$D_{50} \text{ (mm)} = 150.23 \rightarrow (5.91 \text{ in.})$	$D_{50} = 69.43$ mm (Median <u>angular</u> rock size)
$n = 0.047$	$n = 0.042$ (Manning's roughness coefficient)
$z_1 = 0.44$ ft.	$z_1 = 0.17$ ft. (Normal depth in the chute)
$A_1 = 3.4$ ft ²	$A_1 = 1.2$ ft ² (Area associated with normal depth)
Velocity = 7.28 fps	Velocity = 4.35 fps (Velocity in chute slope)
$z_{\text{mean}} = 0.36$ ft.	$z_{\text{mean}} = 0.16$ ft. (Mean depth)
$F_1 = 2.14$	$F_1 = 1.94$ (Froude number)
$L_{\text{rock apron}} = 7.39$ ft.	---- (Length of rock outlet apron = $15 \cdot D_{50}$)

VI. Calculate the height of hydraulic jump height (conjugate depth)

<u>High Flow</u>	<u>Low Flow</u>
$z_2 = 1.01$ ft.	$z_2 = 0.38$ ft. (Hydraulic jump height)
$Q_{\text{high}} = 25.0$ cfs	$Q_{\text{high}} = 5.0$ cfs (Capacity in channel)
$A_2 = 10.2$ ft ²	$A_2 = 2.8$ ft ² (Flow area in channel)

VII. Calculate the energy lost through the jump (absorbed by the rock)

<u>High Flow</u>	<u>Low Flow</u>
$E_1 = 1.27$ ft.	$E_1 = 0.47$ ft. (Total energy <u>before</u> the jump)
$E_2 = 1.11$ ft.	$E_2 = 0.42$ ft. (Total energy <u>after</u> the jump)
$R_E = 12.68$ %	$R_E = 8.69$ % (Relative loss of energy)

Calculate Quantities for Rock Chute

<u>-----Rock Riprap Volume-----</u>	
<u>Area Calculations</u>	<u>Length @ Rock CL</u>
$h = 1.15$	Inlet = 9.92
$x_1 = 8.25$	Outlet = 12.27
$L = 4.74$	Slope = 67.09
$A_s = 9.48$	2.5:1 Lip = 5.99
$x_2 = 8.00$	Total = 95.27 ft.
$A_b = 28.98$	<u>Rock Volume</u>
$A_b + 2 \cdot A_s = 47.95$ ft²	169.20 yd ³

<u>-----Bedding Volume-----</u>	
<u>Area Calculations</u>	<u>Bedding Thickness</u>
$h = 3.15$	$t_1, t_2 = 6.00$ in.
$x_1 = 2.06$	
$L = 12.99$	
$A_s = 6.49$	<u>Length @ Bed CL</u>
$x_2 = 2.00$	Total = 95.25 ft.
$A_b = 4.31$	<u>Bedding Volume</u>
$A_b + 2 \cdot A_s = 17.30$ ft²	61.02 yd ³

<u>-----Geotextile Quantity-----</u>	
<u>Width</u>	<u>Length @ Bot. Rock</u>
$2 \cdot \text{Slope} = 25.98$	Total = 95.26 ft.
Bottom = 6.49	<u>Geotextile Area</u>
Total = 32.47 ft.	343.64 yd ²

- Note:** 1) The radius is not considered when calculating quantities of riprap, bedding, or geotextile.
 2) The geotextile quantity does not include overlapping (18-in. min.) or anchoring material (18-in. min. along sides, 24-in. min. on ends).

Design Procedure Form: Runoff Reduction

UD-BMP (Version 3.07, March 2018)

Sheet 1 of 1

Designer: BAH
Company: Kimley-Horn
Date: August 30, 2021
Project: Winsome Filing 2
Location: El Paso County

SITE INFORMATION (User Input in Blue Cells)

WQCV Rainfall Depth 0.60 inches
 Depth of Average Runoff Producing Storm, d_s = 0.43 inches (for Watersheds Outside of the Denver Region, Figure 3-1 in USDCM Vol. 3)

Area Type	UIA:RPA	UIA:RPA	UIA:RPA									
Area ID	NW (Basin F1)	NE (Basin F1)	SE (Basin F1)									
Downstream Design Point ID												
Downstream BMP Type	None	None	None									
DCIA (ft ²)	--	--	--									
UIA (ft ²)	11,333	19,318	5,731									
RPA (ft ²)	22,173	44,036	14,008									
SPA (ft ²)	--	--	--									
HSG A (%)	0%	0%	0%									
HSG B (%)	100%	100%	100%									
HSG C/D (%)	0%	0%	0%									
Average Slope of RPA (ft/ft)	0.005	0.042	0.045									
UIA:RPA Interface Width (ft)	660.00	1219.00	411.00									

CALCULATED RUNOFF RESULTS

Area ID	NW (Basin F1)	NE (Basin F1)	SE (Basin F1)									
UIA:RPA Area (ft ²)	33,506	63,354	19,739									
L / W Ratio	0.08	0.06	0.12									
UIA / Area	0.3382	0.3049	0.2903									
Runoff (in)	0.00	0.00	0.00									
Runoff (ft ³)	0	0	0									
Runoff Reduction (ft ³)	472	805	239									

CALCULATED WQCV RESULTS

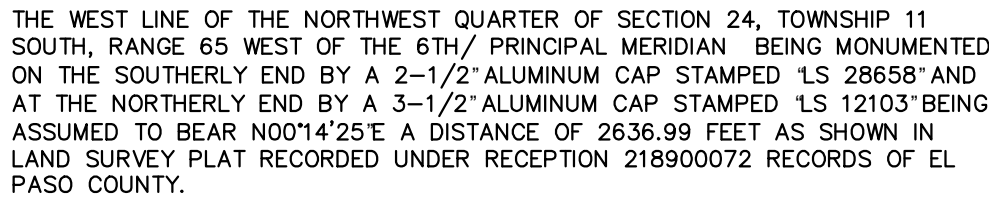
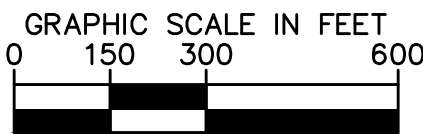
Area ID	NW (Basin F1)	NE (Basin F1)	SE (Basin F1)									
WQCV (ft ³)	472	805	239									
WQCV Reduction (ft ³)	472	805	239									
WQCV Reduction (%)	100%	100%	100%									
Untreated WQCV (ft ³)	0	0	0									

CALCULATED DESIGN POINT RESULTS (sums results from all columns with the same Downstream Design Point ID)

Downstream Design Point ID												
DCIA (ft ²)												
UIA (ft ²)												
RPA (ft ²)												
SPA (ft ²)												
Total Area (ft ²)												
Total Impervious Area (ft ²)												
WQCV (ft ³)												
WQCV Reduction (ft ³)												
WQCV Reduction (%)												
Untreated WQCV (ft ³)												

CALCULATED SITE RESULTS (sums results from all columns in worksheet)

Total Area (ft ²)	
Total Impervious Area (ft ²)	
WQCV (ft ³)	
WQCV Reduction (ft ³)	
WQCV Reduction (%)	
Untreated WQCV (ft ³)	

[illegible]

APPENDIX D: REFERENCES



OCT 08 REC'D

Federal Emergency Management Agency

Washington, D.C. 20472

September 30, 2019

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IN REPLY REFER TO:

Case No.: 19-08-0185R

The Honorable Mark Waller
President, El Paso County
Board of Commissioners
200 South Cascade Avenue, Suite 100
Colorado Springs, CO 80903

Community Name: El Paso County, CO
Community No.: 080059

104

Dear Mr. Waller:

We are providing our comments with the enclosed Conditional Letter of Map Revision (CLOMR) on a proposed project within your community that, if constructed as proposed, could revise the effective Flood Insurance Study (FIS) report and Flood Insurance Rate Map (FIRM) for your community.

If you have any questions regarding the floodplain management regulations for your community, the National Flood Insurance Program (NFIP) in general, or technical questions regarding this CLOMR, please contact the Director, Mitigation Division of the Federal Emergency Management Agency (FEMA) Regional Office in Denver, at (303) 235-4830, or the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP). Additional information about the NFIP is available on our website at <https://www.fema.gov/national-flood-insurance-program>.

Sincerely,

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

List of Enclosures:

Conditional Letter of Map Revision Comment Document

cc: Mr. Keith Curtis, P.E., CFM
Floodplain Administrator
Pikes Peak Regional Building Department

Mr. Joe DesJardin, P.E.
Director of Projects
PT McCune, LLC

Mr. Lance VanDemark, P.E., MSCE
Vice President – Civil Engineering
The Vertex Companies, Inc.



Federal Emergency Management Agency

Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION COMMENT DOCUMENT

COMMUNITY INFORMATION		PROPOSED PROJECT DESCRIPTION	BASIS OF CONDITIONAL REQUEST
COMMUNITY	El Paso County Colorado (Unincorporated Areas)	CULVERT DETENTION BASIN FILL	BASE MAP CHANGES HYDROLOGIC ANALYSIS HYDRAULIC ANALYSIS UPDATED TOPOGRAPHIC DATA
	COMMUNITY NO.: 080059		
IDENTIFIER	McCune Ranch Subdivision	APPROXIMATE LATITUDE AND LONGITUDE: 39.077, -104.621 SOURCE: USGS QUADRANGLE DATUM: NAD 83	
AFFECTED MAP PANELS			
TYPE: FIRM*	NO.: 08041C0310G DATE: December 7, 2018	* FIRM - Flood Insurance Rate Map	
TYPE: FIRM	NO.: 08041C0350G DATE: December 7, 2018		

FLOODING SOURCE AND REACH DESCRIPTION

West Kiowa Creek – from approximately 5,000 feet upstream of Meridian Road North to approximately 1,640 feet downstream of Hodgen Road

PROPOSED PROJECT DESCRIPTION

Flooding Source	Proposed Project	Location of Proposed Project
West Kiowa Creek	2 New Triple 10'x10' Box Culverts	At approximately 6,220 feet upstream and 10,380 feet upstream of Meridian Road North
	6 New Detention Basins	Located throughout the proposed subdivision centered approximately 2,690 feet northwest of the intersection of Meridian Road and Forest Green Drive
	Fill Placement	At the proposed box culverts approximately 6,220 feet upstream and 10,380 feet upstream of Meridian Road North

SUMMARY OF IMPACTS TO FLOOD HAZARD DATA

Flooding Source	Effective Flooding	Proposed Flooding	Increases	Decreases
West Kiowa Creek	No BFEs*	BFEs	Yes	None
	Zone A	Zone AE	Yes	Yes
	Zone A	Zone A	None	Yes

* BFEs - Base (1-percent-annual-chance) Flood Elevations

COMMENT

This document provides the Federal Emergency Management Agency's (FEMA's) comment regarding a request for a CLOMR for the project described above. This document is not a final determination; it only provides our comment on the proposed project in relation to the flood hazard information shown on the effective National Flood Insurance Program (NFIP) map. We reviewed the submitted data and the data used to prepare the effective flood hazard information for your community and determined that the proposed project meets the minimum floodplain management criteria of the NFIP. Your community is responsible for approving all floodplain development and for ensuring that all permits required by Federal or State/Commonwealth law have been received. State/Commonwealth, county, and community officials, based on their knowledge of local conditions and in the interest of safety, may set higher standards for construction in the Special Flood Hazard Area (SFHA), the area subject to inundation by the base flood. If the State/Commonwealth, county, or community has adopted more restrictive or comprehensive floodplain management criteria, these criteria take precedence over the minimum NFIP criteria.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional information about the NFIP is available on the FEMA website at <https://www.fema.gov/national-flood-insurance-program>.

Patrick "Rick" F. Sacbabit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency
Washington, D.C. 20472

CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

To determine the changes in flood hazards that will be caused by the proposed project, we compared the hydraulic modeling reflecting the proposed project (referred to as the proposed conditions model) to the hydraulic modeling reflecting the existing conditions.

The table below shows the changes in the base flood water-surface elevations (WSELs).

Base Flood WSEL Comparison Table			
Flooding Source: West Kiowa Creek		Base Flood WSEL Change (feet)	Location of maximum change
Proposed vs. Existing	Maximum increase	4.9	Approximately 6,260 feet upstream of Meridian Road North
	Maximum decrease	0.4	Approximately 11,160 feet upstream of Meridian Road North

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the altered or relocated watercourse, including any related appurtenances such as bridges, culverts, and other drainage structures, rests with your community. We may request that your community submit a description and schedule of maintenance activities necessary to ensure this requirement.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional information about the NFIP is available on the FEMA website at <https://www.fema.gov/national-flood-insurance-program>.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency
Washington, D.C. 20472

**CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)**

COMMUNITY INFORMATION (CONTINUED)

DATA REQUIRED FOR FOLLOW-UP LOMR

Upon completion of the project, your community must submit the data listed below and request that we make a final determination on revising the effective FIRM and FIS report. If the project is built as proposed and the data below are received, a revision to the FIRM and FIS report would be warranted.

- Detailed application and certification forms must be used for requesting final revisions to the maps. Therefore, when the map revision request for the area covered by this letter is submitted, Form 1, entitled "Overview and Concurrence Form," must be included. A copy of this form may be accessed at <https://www.fema.gov/media-library/assets/documents/1343>.
- The detailed application and certification forms listed below may be required if as-built conditions differ from the proposed plans. If required, please submit new forms, which may be accessed at <https://www.fema.gov/media-library/assets/documents/1343>, or annotated copies of the previously submitted forms showing the revised information.

Form 2, entitled "Riverine Hydrology and Hydraulics Form." Hydraulic analyses for as-built conditions of the base flood must be submitted with Form 2.

Form 3, entitled "Riverine Structures Form."

- A certified topographic work map showing the revised and effective base floodplain boundaries. Please ensure that the revised information ties in with the current effective information at the downstream and upstream ends of the revised reach.
- An annotated copy of the FIRM, at the scale of the effective FIRM, that shows the revised base floodplain boundary delineations shown on the submitted work map and how they tie-in to the base floodplain boundary delineations shown on the current effective FIRM at the downstream and upstream ends of the revised reach.
- As-built plans, certified by a registered Professional Engineer, of all proposed project elements.
- Documentation of the individual legal notices sent to property owners who will be affected by any widening or shifting of the base floodplain and/or any BFE establishment along West Kiowa Creek.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional information about the NFIP is available on the FEMA website at <https://www.fema.gov/national-flood-insurance-program>.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency
Washington, D.C. 20472

**CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)**

COMMUNITY INFORMATION (CONTINUED)

DATA REQUIRED FOR FOLLOW-UP LOMR (continued)

- An officially adopted maintenance and operation plan for the six new detention basins within the subdivision. This plan, which may be in the form of a written statement from the community Chief Executive Officer, an ordinance, or other legislation, must describe the nature of the maintenance activities, the frequency with which they will be performed, and the title of the local community official who will be responsible for ensuring that the maintenance activities are accomplished.
- FEMA's fee schedule for reviewing and processing requests for conditional and final modifications to published flood information and maps may be accessed at <https://www.fema.gov/forms-documents-and-software/flood-map-related-fees>. The fee at the time of the map revision submittal must be received before we can begin processing the request. Payment of this fee can be made through a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card (Visa or MasterCard only). Please either forward the payment, along with the revision application, to the following address:

LOMC Clearinghouse
Attention: LOMR Manager
3601 Eisenhower Avenue, Suite 500
Alexandria, Virginia 22304-6426

or submit the LOMR using the Online LOMC portal at: <https://hazards.fema.gov/femaportal/onlinelomc/signin>

After receiving appropriate documentation to show that the project has been completed, FEMA will initiate a revision to the FIRM and FIS report. Because the flood hazard information (i.e., base flood elevations, base flood depths, SFHAs, zone designations, and/or regulatory floodways) will change as a result of the project, a 90-day appeal period will be initiated for the revision, during which community officials and interested persons may appeal the revised flood hazard information based on scientific or technical data.

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional information about the NFIP is available on the FEMA website at <https://www.fema.gov/national-flood-insurance-program>.

Patrick "Rick" F. Sacbbit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration



Federal Emergency Management Agency
Washington, D.C. 20472

**CONDITIONAL LETTER OF MAP REVISION
COMMENT DOCUMENT (CONTINUED)**

COMMUNITY INFORMATION (CONTINUED)

COMMUNITY REMINDERS

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Ms. Jeanine P. Petterson
Director, Mitigation Division
Federal Emergency Management Agency, Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO 80225-0267
(303) 235-4830

This comment is based on the flood data presently available. If you have any questions about this document, please contact the FEMA Map Information eXchange (FMIX) toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional Information about the NFIP is available on the FEMA website at <https://www.fema.gov/national-flood-insurance-program>.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

**McCune Ranch Subdivision
aka Winsome Subdivision**
17480 Meridian Road North
Colorado Springs, Colorado 80924

**REQUEST FOR CONDITIONAL LETTER OF MAP REVISION
FOR WEST KIOWA CREEK
COLORADO SPRINGS, COLORADO**

JULY 1, 2019


PREPARED FOR:

PT McCune, LLC
Joseph W DesJardin
1864 Woodmoor Drive, Suite 100
Monument, Colorado 80132


PREPARED BY:

The Vertex Companies, Inc.
2420 W. 26th Avenue, Suite 100-D
Denver, Colorado 80211
PHONE: 303-623-9116

VERTEX Project: 49388
FEMA Case No: 19-08-0185R



Jason Priddy
Project Engineer



Lance VanDemark, P.E.
Project Manager

Request for Conditional Letter of Map Revision - Case No: 19-08-0185R
McCune Ranch Subdivision
Colorado Springs, Colorado

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Request for Conditional Letter of Map Revision - Case No: 19-08-0185R
McCune Ranch Subdivision
Colorado Springs, Colorado

APPENDICES

- A. REPRESENTATIVE PHOTOGRAPHS
- B. WORKING MAPS AND OTHER REQUIRED DOCUMENTS
- C. STUDIED EXISTING CONDITION 100 YEAR FLOODPLAIN MAP
- D. STUDIED PROPOSED CONDITION 100 YEAR FLOODPLAIN MAP
- E. ANNOTATED FIRMETTE MAPS
- F. HYDRAULIC ANALYSIS
 - i. STUDIED 100 YEAR FLOODPLAIN DATA
 - ii. STUDIED EXISTING CONDITION 100 YEAR FLOODPLAIN CROSS SECTIONS
 - iii. STUDIED EXISTING CONDITION 100 YEAR FLOODPLAIN PROFILE
 - iv. STUDIED PROPOSED CONDITION 100 YEAR FLOODPLAIN CROSS SECTIONS
 - v. STUDIED PROPOSED CONDITION 100 YEAR FLOODPLAIN PROFILE
 - vi. PROPOSED BRIDGE DETAILS, DRAWINGS, AND SPECIFICATIONS
- G. PROJECT DRAINAGE REPORT
- H. ENVIRONMENTAL ANALYSIS
 - i. ENDANGERED SPECIES "NO-TAKE" LETTER
 - ii. US FISH AND WILDLIFE "NO CONCERN" LETTER
 - iii. MCCUNE RANCH - NATURAL FEATURES AND WETLAND REPORT

Request for Conditional Letter of Map Revision for West Kiowa Creek McCune Ranch Subdivision Colorado Springs, Colorado

Page 1

1.0 INTRODUCTION

The purpose of this submittal is to request a Conditional Letter of Map Revision (CLOMR) for a flooding source in El Paso County, Colorado known as West Kiowa Creek. This request is requisite for a 760-acre property, known as the proposed McCune Ranch Subdivision (aka Winsome Subddidision). West Kiowa Creek, which flows across the property from west to east, is currently mapped as an approximate Zone A. Stormwater is directed from the contributing basins across the property along an approximate 1.25-mile flow path. The proposed development will affect FIRM map number 08041C0350G and 08041C0310G, effective December 7, 2018. Basin hydrology and hydraulics have been modeled and are included in this study to identify the Special Flood Hazard Area (SFHA). The basis of this request is to identify the floodplain boundary for the residential subdivision proposed for the site, and to assess the extent of flood risk relative to two proposed bridges.

2.0 GENERAL LOCATION AND DESCRIPTION

The following report provides detailed drainage and floodplain information for existing and proposed conditions of the McCune Ranch Subdivision project. The intent of this report is to show the extent of flood risk through the proposed site, and the boundaries of the SFHA, as well as other storm events per FEMA requirements. The information given in this report is intended to provide data resulting from a detailed analysis of stormwater drainage and define the 100-year floodplain. Because the subject reach is currently an approximate Zone A, Base Flood Elevations (BFE's) will be defined. A floodway has not been delineated. This development is in a rural area and will consist of large-lot single family residential parcels, a small commercial area, preserved open space, as well as the roads and required utility infrastructure.



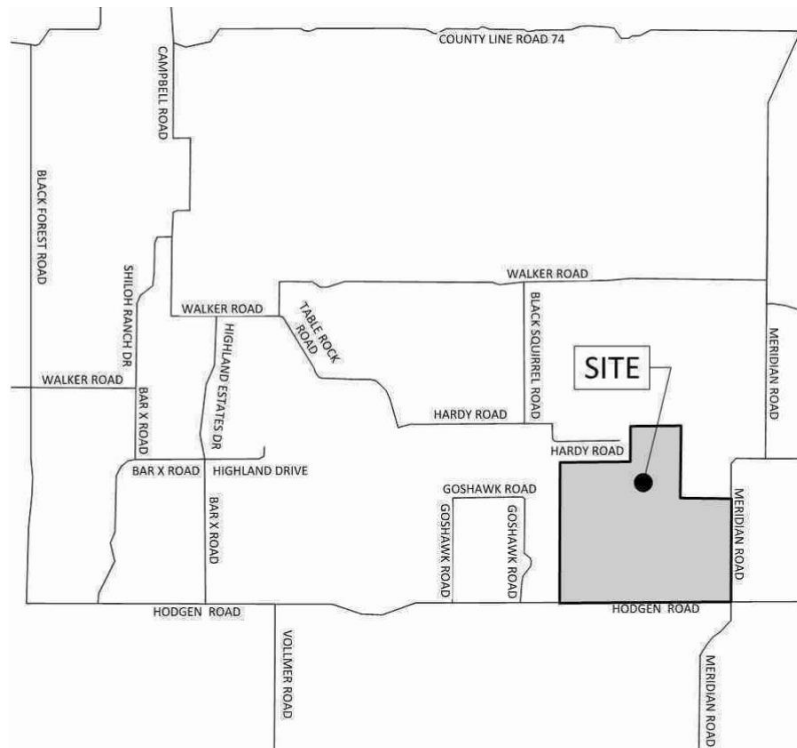
Request for Conditional Letter of Map Revision for West Kiowa Creek McCune Ranch Subdivision Colorado Springs, Colorado

Page 2

GENERAL LOCATION

The site is located at 17480 Meridian Road North or, more generally, at the northwest corner of Hodgen Road and Meridian Road North in unincorporated El Paso County. The subject property is undeveloped and situated in the West Half of Section 19, Township 11 South, Range 64 West of the 6th P.M., County of El Paso, State of Colorado.

The site is bounded to the south by Hodgen Road, to the east by Meridian Road North, and to the north and west by several parcels zoned primarily as Agricultural and Residential use with some Forest Land. On the east side of Median Road is Forest Green Subdivision, a low-density single-family development. On the south side of Hodgen Road is Bison Meadows Subdivision which is also a low-density single family residential subdivision. The remainder of properties surrounding the site have not yet been formally platted. The site has not been included in any previous drainage study.



VERTX®

**Request for Conditional Letter of Map Revision for West Kiowa Creek
McCune Ranch Subdivision
Colorado Springs, Colorado**

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DESCRIPTION OF PROPERTY

The existing site contains 766 acres of agricultural grazing land and dry farm land. Ground cover consists mainly of native grasses and shrubs and contains several stands of evergreen trees along its southern and northern boundary. Existing wetlands are present along West Kiowa Creek and its tributaries, wetland boundaries are located roughly 50 feet to either side of the thalweg of West Kiowa Creek and the drainageway way to the south of the creek on the property. There are no existing irrigation canals or ditches on the project site nor are there any major geologic features. The property generally slopes in a northeasterly direction with slopes ranging between 1-16%. Soils consist of Alamosa loam, Brussett loam, Cruckton sandy loam, Elbeth sandy loam, Holderness loam, Kettle gravelly loamy sands, Peyton sandy loam, Peyton-Pring complex, Pring course sandy loam, Tomah-Crowford loamy sands and Tomah-Crowfoot complex. Most of the site has soils classified in Hydrologic Soil Group B; however, the property also contains a mixture of soils from Hydrologic Soils Groups C and D located in the areas in and adjacent to West Kiowa Creek and its tributaries.

PROPOSED DEVELOPMENT

The development of this property will consist of 143 2.5 to 5-acre single family residential lots and the requisite public roads and stormwater infrastructure to serve them. Anticipated construction activities include earthwork and paving associated with the public roads, as well as the installation of culverts and detention ponds to convey and treat stormwater on the site. The primary access for the site will be from Hodgen Road and Meridian Road. A site plan for the project is included in the appendix.



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3.0 PROPOSED DESIGN CONDITIONS

REGULATIONS

The hydrologic calculations in this report comply with the City of Colorado Springs/El Paso County Drainage Criteria Manuals, and FEMA drainage criteria. There are no previous drainage studies that cover this property.

EXISTING DRAINAGE

Historically, the runoff from the property flows into West Kiowa Creek, which bisects the site flowing from the southwest corner of the property to the northeast corner. There are 10 on-site sub-basins and 6 off-site sub-basin that contribute flows to West Kiowa Creek. The 10 on-site sub-basins correspond to the largest defined natural drainage channels that occur on site, while the 6 off-site basins are defined by the entire West Kiowa Creek watershed that is upstream from the subject property.

PROPOSED DRAINAGE

All existing drainage patterns will be maintained throughout the site to the extent possible. The path of the main thalweg is not altered, however 2 new box culverts are proposed at road crossings within the development. To calculate the design flows at points across the project, the existing basins were subdivided into 35 on-site sub-basins and 8 off-site sub-basins in the proposed condition. Stormwater detention ponds have been designed to control flow such that all flow off the site will be at or below historic averages.

PROPOSED BRIDGES

The project includes two triple box culverts at points where roads cross the floodplain. The culverts are sized at (3) 10' wide x 10' high totaling approximately 30' wide x 10' high of flow



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area. In the 100-year storm there is no overtopping of the road. This condition meets local requirements for this road category. The length of both box culverts is sized to accommodate 2 lanes of traffic and road shoulder. Details of the proposed culverts is included in the appendix.

The culverts will have flared end sections with a concrete apron that funnels the entering water in and spreads the exiting flow out. A rip-rap bed will be used at the culvert exit points to address potential erosion. The culverts will be installed at grade with 0.5% slope and allow the passage of aquatic life.

HYDROLOGICAL AND HYDRAULIC CRITERIA

Topographic mapping was developed from LiDAR and field mapping conducted in 2011, and obtained from the licensed GIS data service of El Paso County. El Paso County GIS Services projects the contours in the Colorado Central Zone in State Plane (Feet) units using the NAD83 horizontal datum. The vertical datum is NAVD.

Since this project contains sub-basins over 100 acres, times of concentration and peak runoff values were calculated using the SCS TR-55 Hydrograph method as required by the City of Colorado Springs/El Paso County Drainage Criteria Manuals. The model utilizes the SCS Type II 24-hr rainfall distribution and rain gauge data for the county.

Hydraulic modeling of the floodplain was performed using HEC-RAS version 5.0. Manning's n-values of 0.03 for in channel areas and 0.035 for overbank areas were used in the model based on site observation and referencing within Ven Te Chow's Open Channel Hydraulics. Contraction and expansion coefficients are 0.1 and 0.3 respectively, for all cross sections except for the two box culverts where 0.3 and 0.5 are used at the appropriate sections.



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4.0 HYDRAULIC MODEL RESULTS

A HEC-RAS section analysis was performed to identify the floodplain width for the different storm events. Pertinent model information is included in the appendix. The following tables summarize the results:

COMPARATIVE EXISTING AND PROPOSED SECTION DATA						
CROSS SECTION	EC 100-YEAR WSEL	PC 100-YEAR WSEL	WSEL IMPACT	EC TOP WIDTH	PC TOP WIDTH	TOP WIDTH IMPACT
72+34	7337.98	7338.11	0.13	62.28	63.12	0.84
69+69	7335.41	7335.52	0.11	63.13	64.11	0.98
67+63	7333.50	7333.63	0.13	63.51	64.92	1.41
65+42	7331.02	7331.14	0.12	72.18	74.22	2.04
63+02	7328.83	7328.85	0.02	76.66	76.90	0.24
61+34	7327.64	7327.28	-0.36	135.78	131.11	-4.67
58+12	7325.32	7326.47	1.15	129.67	201.82	72.15
54+80	7323.11	7326.65	3.54	177.66	349.50	171.84
53+75	7322.89	7326.35	3.46	136.48	278.31	141.83
53+10	CULVERT					
52+56	7321.54	7321.50	-0.04	111.61	110.20	-1.41
51+58	7318.63	7318.71	0.08	102.69	103.09	0.40
48+10	7316.70	7316.81	0.11	178.97	179.90	0.93
47+01	7316.60	7316.71	0.11	145.65	146.50	0.85
44+67	7315.62	7315.70	0.08	112.95	114.47	1.52
43+12	7314.33	7314.40	0.07	115.02	115.43	0.41
40+58	7310.97	7311.05	0.08	98.36	99.53	1.17
37+56	7308.35	7308.45	0.10	84.42	86.18	1.76
36+71	7307.43	7307.52	0.09	95.71	96.89	1.18
33+13	7304.27	7304.40	0.13	98.47	102.90	4.43
30+53	7300.93	7301.03	0.10	68.96	69.79	0.83
29+16	7299.69	7299.80	0.11	66.66	67.41	0.75
25+59	7297.05	7297.13	0.08	117.36	118.75	1.39
23+56	7294.53	7294.61	0.08	88.27	88.75	0.48
21+15	7292.39	7292.45	0.06	99.33	99.93	0.60

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McCune Ranch Subdivision
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18+26	7289.01	7289.14	0.13	84.94	86.77	1.83
16+18	7288.55	7289.44	0.89	266.32	299.59	33.27
15+15	7286.83	7289.46	2.63	166.37	425.09	258.72
13+21	7285.19	7289.40	4.21	154.03	291.86	137.83
12+24	7284.44	7289.09	4.65	157.81	255.05	97.24
11+60	CULVERT					
11+05	7284.18	7283.36	-0.82	145.88	124.12	-21.76
10+07	7282.77	7282.73	-0.04	89.32	88.93	-0.39
8+93	7281.41	7281.40	-0.01	243.26	243.18	-0.08
6+78	7278.50	7278.47	-0.03	265.74	265.53	-0.21
4+40	7276.47	7276.45	-0.02	146.63	146.38	-0.25

5.0 SEDIMENT TRANSPORT

After visual observation and examining historical records, there are no indications that sediment or debris transport will impact base flood elevations (BFE). The stream appears to be in a stable state with no evidence that the structure has been recently influenced by sediment deposition, degrading of the bank or stream bed, or vegetative cover in the flow path. Further, the proposed stormwater detention ponds will help address potential sediment before it reaches the floodplain area. As a result, sediment transport is not included in this analysis.

6.0 SCOUR ANALYSIS

The potential for scour of the floodway, and the associated impacts on water surface elevations, were considered as a part of this analysis. The two box culverts have been designed with characteristics to help address this in major storm events. At the exit point of the culvert, a combination of flared wing walls, a concrete apron, and a rip-rap bed are proposed to reduce the velocity of the water and the impacts of scour.

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McCune Ranch Subdivision
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7.0 ESA COMPLIANCE

An environmental features study dated October 1, 2018 has been prepared by Ecosystem Services for this project and is included in the appendix. Ecos has also provided a letter of “No Take” addressing ESA requirements. Further, a letter of “No Concern” from the US Fish and Wildlife Department has also been obtained and is included.

8.0 OPERATION AND MAINTAINANCE REQUIREMENTS

Metropolitan districts are being created for the neighborhood that will have the responsibility of maintaining drainage facilities and the floodplain area.

9.0 PROPOSED CONDITION BFE INCREASE

The Base (1-percent-annual-chance) Flood Elevation (BFE) increases to greater than 1.0 foot within the current, effective approximate Zone A immediately upstream of each of the two bridges. Fulfillment of the requirements set forth in 44 CFR 65.12 are described below:

- a) Certification that no structures are affected by the increased BFE: Please see stamped certification on the next page.
- b) Documentation of individual legal notice to all affected property owners, explaining the impact of the proposed action on their property: The only affected property owner is the applicant of this LOMR request, thus the applicant is apprised of the impact of the proposed development, de facto.
- c) An evaluation of alternatives that would not result in an increase in BFE has been conducted. To access over half of the project area, the floodplain of this site must be crossed. Other bridge configurations are being considered, but due to the significant



**Request for Conditional Letter of Map Revision for West Kiowa Creek
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expense associated with a bridge of this size, box culverts are currently being specified. Further, alternative road alignments and ingress/egress locations were considered but deemed infeasible for the project.

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Certification that no structures will be affected by the rises in Base Flood Elevations (BFEs) as a result of the proposed project subject to this request. There are no existing structures currently within the boundary of the project.



Lance P. VanDemark PE, MSCE

VICE PRESIDENT – CIVIL ENGINEERING

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A. REPRESENTATIVE PHOTOGRAPHS





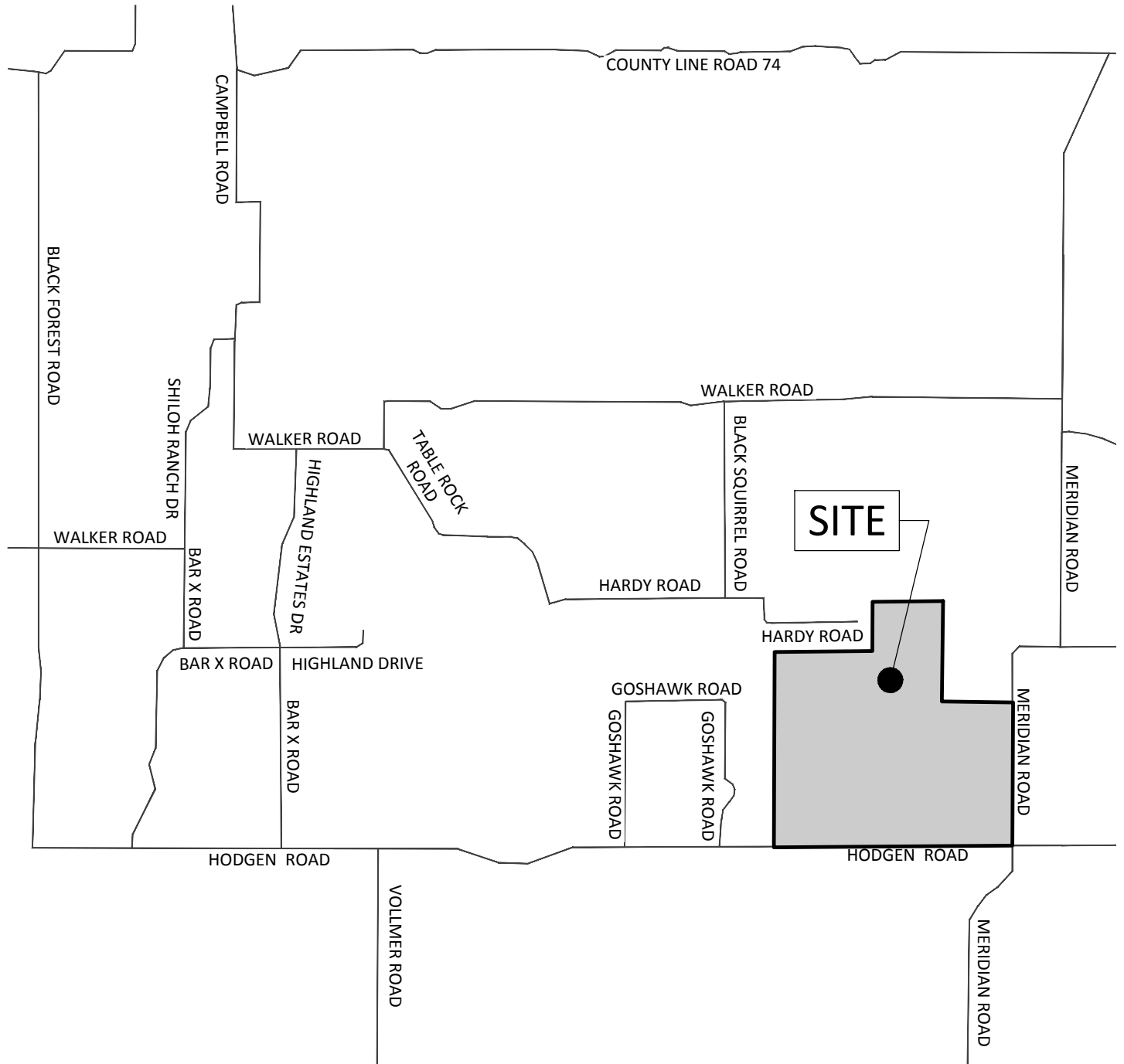






B. WORKING MAPS AND OTHER REQUIRED DOCUMENTS

VICINITY MAP



VICINITY MAP

MCCUNE RANCH SUBDIVISION

17480 MERIDIAN ROAD
ELBERT, COLORADO

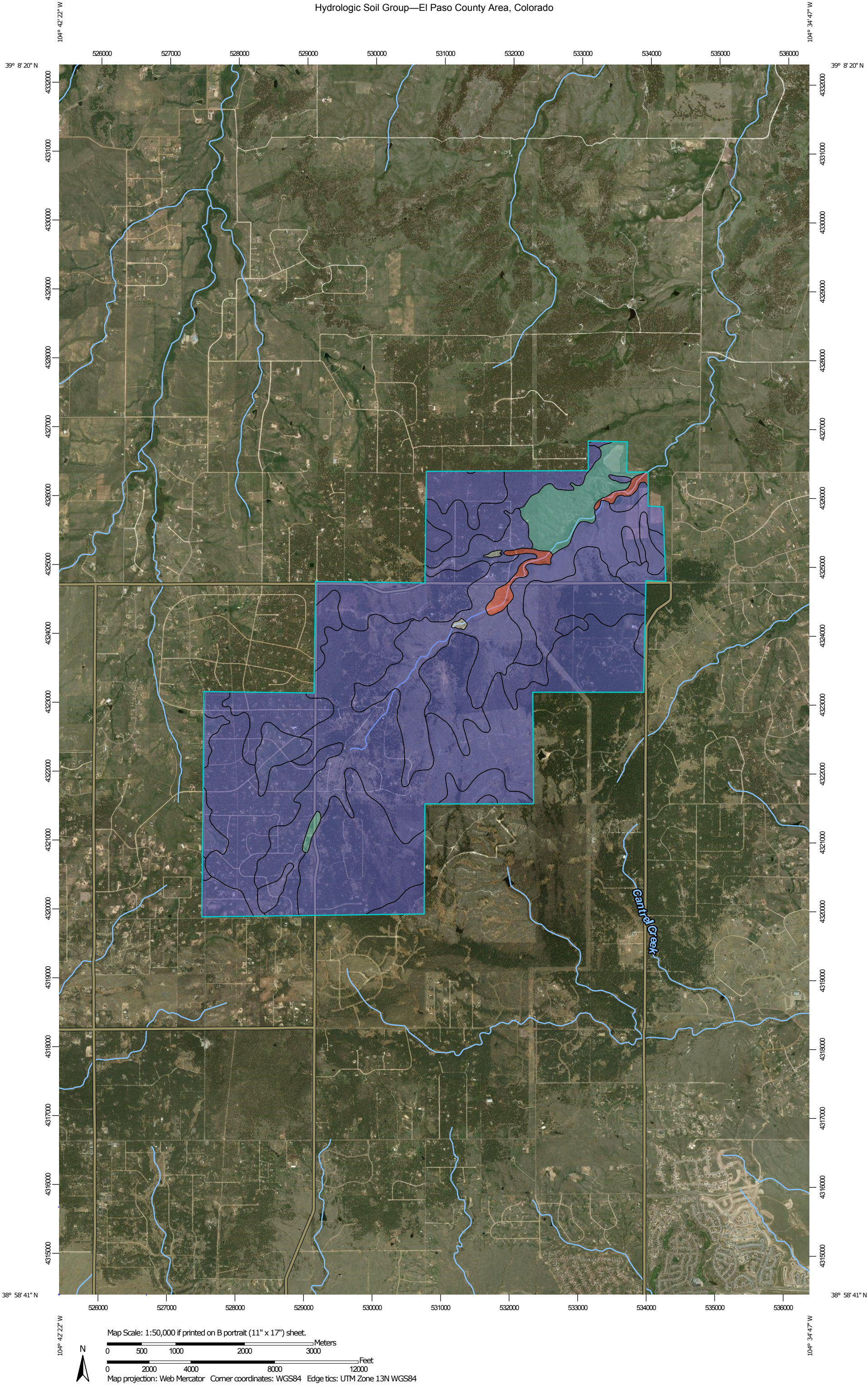
File No.:	
Date:	10/04/2018
Drawn:	JCP
Checked:	LPV
Job No.:	49388

FIGURE

1

VERTEX[®]


Hydrologic Soil Group—El Paso County Area, Colorado



Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.
0 500 1000 2000 3000 Meters
0 2000 4000 8000 12000 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points





 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: El Paso County Area, Colorado

Survey Area Data: Version 15, Oct 10, 2017

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

Date(s) aerial images were photographed: May 22, 2016—Mar 9, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Alamosa loam, 1 to 3 percent slopes	D	80.6	1.2%
15	Brussett loam, 3 to 5 percent slopes	B	6.0	0.1%
21	Cruckton sandy loam, 1 to 9 percent slopes	B	4.7	0.1%
25	Elbeth sandy loam, 3 to 8 percent slopes	B	2,081.3	31.8%
26	Elbeth sandy loam, 8 to 15 percent slopes	B	2,075.9	31.7%
34	Holderness loam, 1 to 5 percent slopes	C	15.5	0.2%
36	Holderness loam, 8 to 15 percent slopes	C	278.7	4.3%
40	Kettle gravelly loamy sand, 3 to 8 percent slopes	B	400.4	6.1%
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	B	265.1	4.0%
67	Peyton sandy loam, 5 to 9 percent slopes	B	36.3	0.6%
68	Peyton-Pring complex, 3 to 8 percent slopes	B	38.1	0.6%
71	Pring coarse sandy loam, 3 to 8 percent slopes	B	26.0	0.4%
92	Tomah-Crowfoot loamy sands, 3 to 8 percent slopes	B	661.6	10.1%
93	Tomah-Crowfoot complex, 8 to 15 percent slopes	B	574.4	8.8%
111	Water		10.0	0.2%
Totals for Area of Interest			6,554.4	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

C. STUDIED EXISTING CONDITION 100 YEAR FLOODPLAIN MAP

FEMA CLOMR SUBMITTAL

CASE #: 19-08-0185R

A PARCEL OF PROPERTY LOCATED IN SECTIONS 13 & 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AND IN THE WEST HALF OF THE WEST HALF OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO

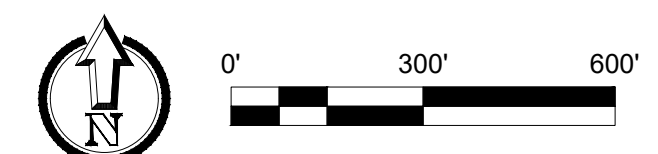


WEST KIOWA CREEK EXISTING CONDITIONS 100-YEAR FLOOD DATA			
CROSS SECTION	100-YEAR EC WSEL	100-YEAR EC TOP WIDTH INCLUDING INEFFECTIVE FLOW	100-YEAR EC TOP WIDTH EXCLUDING INEFFECTIVE FLOW
72+34	7337.98	62.28	62.28
69+69	7335.41	63.13	63.13
67+63	7333.50	63.51	63.51
65+42	7331.02	72.18	72.18
63+02	7328.83	76.66	76.66
61+34	7327.64	135.78	135.78
58+12	7325.32	129.67	129.67
54+80	7323.11	177.66	139.36
53+75	7322.89	136.48	136.48
53+10			
52+56	7321.54	111.61	111.61
51+58	7318.63	102.69	102.69
48+10	7316.70	178.97	178.97
47+01	7316.60	145.65	145.65
44+67	7315.62	112.95	112.95
43+12	7314.33	115.02	115.02
40+58	7310.97	98.36	98.36
37+56	7308.35	84.42	84.42
36+71	7307.43	95.71	95.71
33+13	7304.27	98.47	98.47
30+53	7300.93	68.96	68.96
29+16	7299.69	66.66	66.66
25+59	7297.05	117.36	117.36
23+56	7294.53	88.27	88.27
21+15	7292.39	99.33	99.33
18+26	7289.01	84.94	84.94
16+18	7288.55	266.32	266.32
15+15	7286.83	166.37	82.16
13+21	7285.19	154.03	154.03
12+24	7284.44	157.81	157.81
11+60			
11+05	7284.18	145.88	145.88
10+07	7282.77	89.32	89.32
8+93	7281.41	243.26	243.26
6+78	7278.50	265.74	265.74
4+40	7276.47	146.63	146.63
SKEW ANGLE APPLIED IN HEC-RAS OF 55° @ 51+58 AND 45° @ 10+07. DASHED LINE AT THESE CROSS SECTIONS REPRESENTS ADJUSTED ANGLE.			

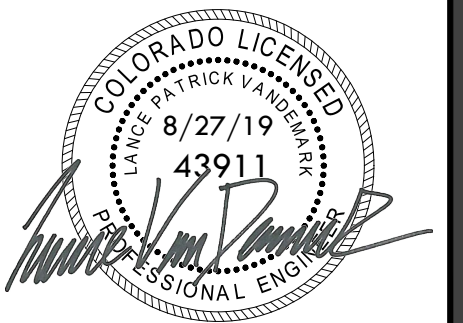
BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH,
RANGE 65 WEST OF THE 6TH P.M.

A 3.5" ALUMINUM CAP STAMPED "LS 12103"

ELEVATION IS 7429.30 NAVD88



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NO.	REVISIONS
1	REVISED PER REVIEW COMMENTS 3/26/19
2	REVISED PER REVIEW COMMENTS 4/2/19
3	REVISED PER REVIEW COMMENTS 6/5/19
4	REVISED PER REVIEW COMMENTS 7/1/19
5	
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10	

DATE: 11/16/18	2
DRAWN BY: JCP	
CHECKED BY: LPV	
JOB #: 49388	

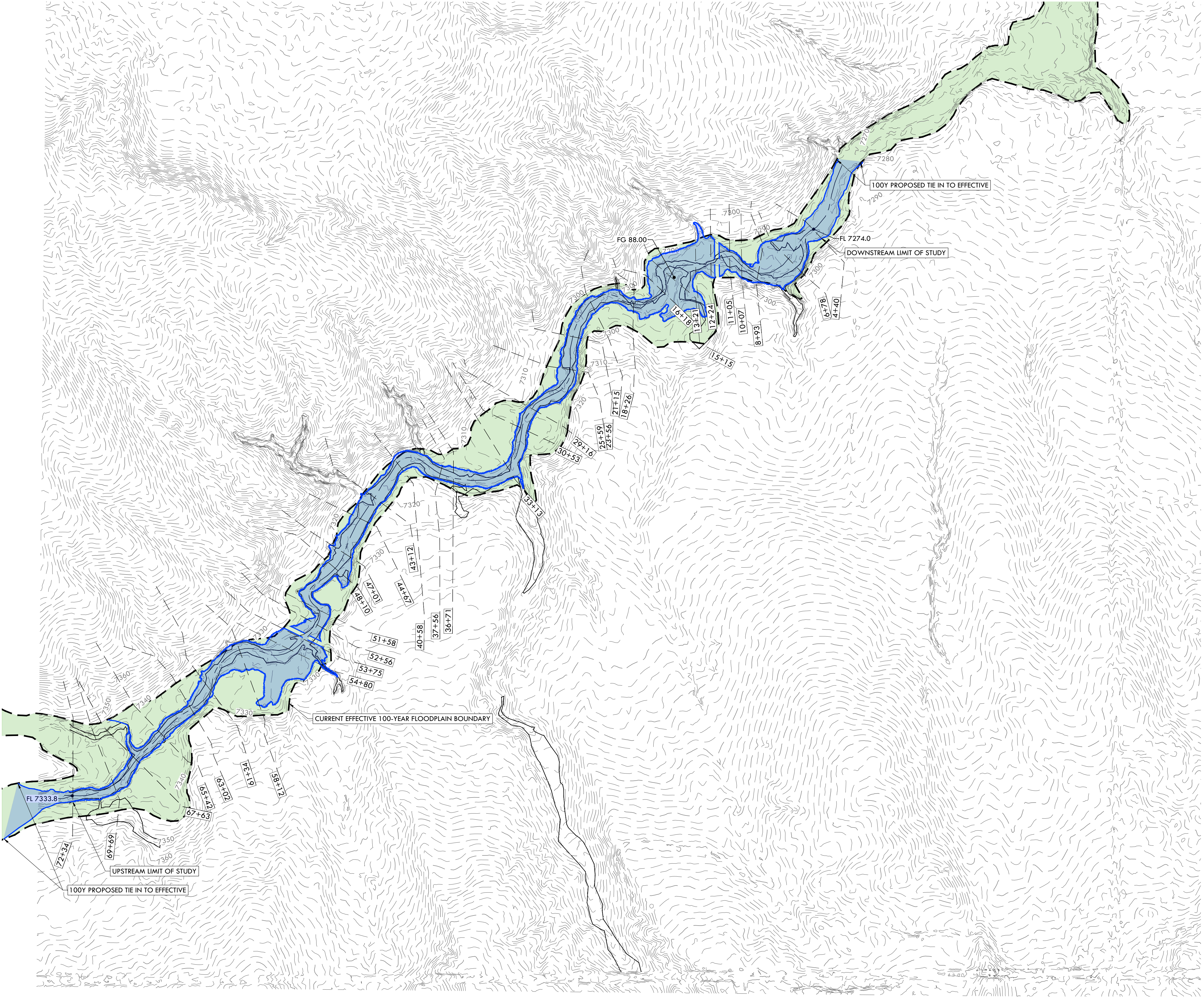
D. STUDIED PROPOSED CONDITION 100 YEAR FLOODPLAIN MAP

P:\Shared Projects\49388-49399\49388-McCune Ranch\06-Engineering\Vertex Drawings\FEMA CLOMR\49388-FloodPlains.dwg
Tuesday, August 27, 2019 2:31:03 PM
Copyright 2019 The Vertex Companies, Inc.

FEMA CLOMR SUBMITTAL
MCCUNE RANCH SUBDIVISION

A PARCEL OF PROPERTY LOCATED IN SECTIONS 13 & 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AND IN THE WEST HALF
OF THE WEST HALF OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO

CASE #: 19-08-0185R



E. ANNOTATED FIRMETTE MAPS

NOTES TO USERS

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

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

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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

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

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NINGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations** and **floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

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

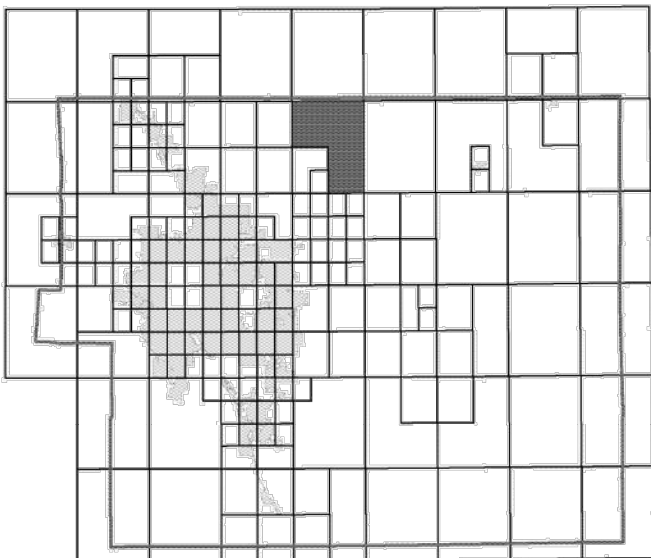
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

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

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

El Paso County Vertical Datum Offset Table	
Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

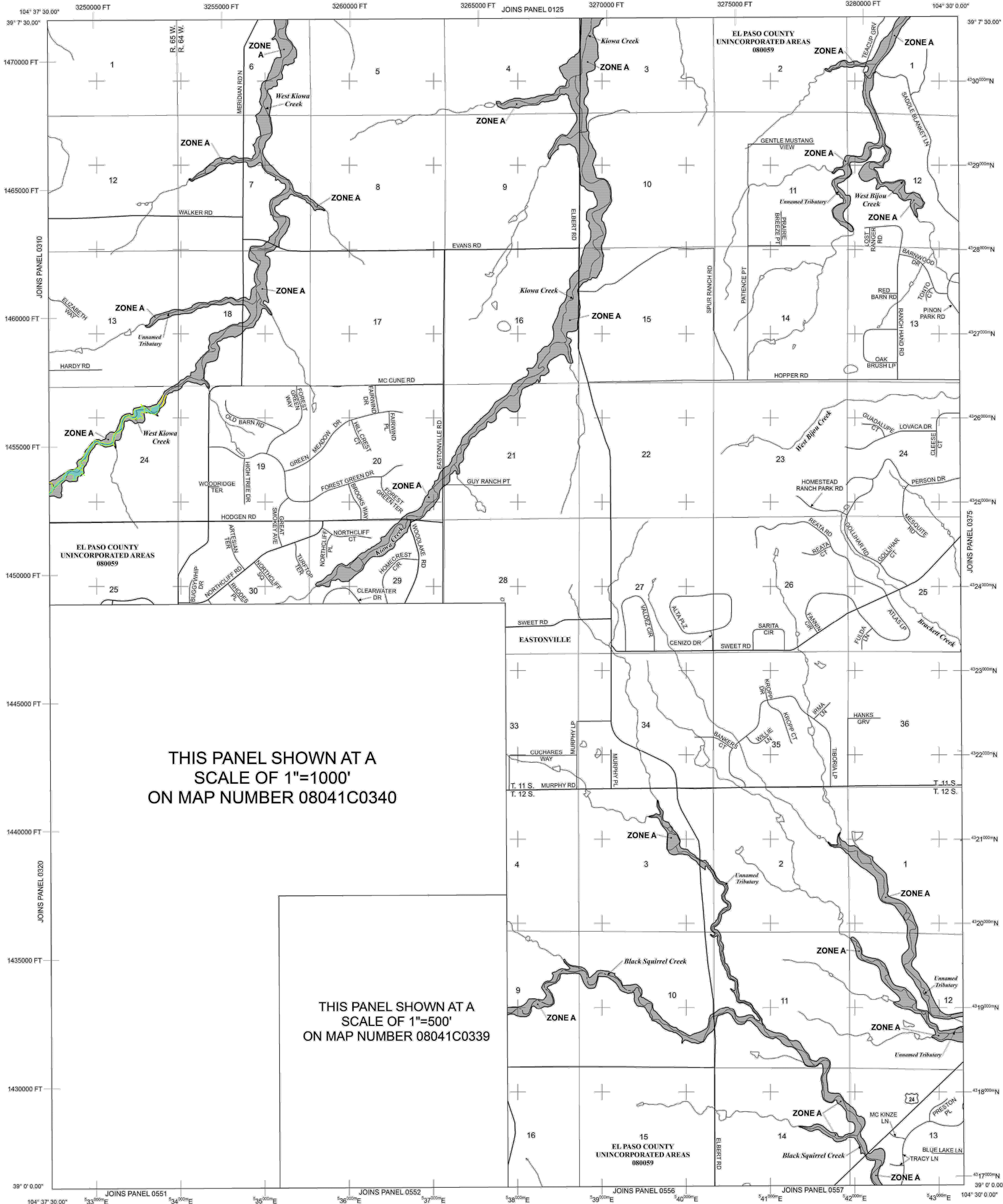
Panel Location Map



This Digital Flood Insurance Rate Map (DFIRM) was produced through a Cooperating Technical Partner (CTP) agreement between the State of Colorado Water Conservation Board (CWCB) and the Federal Emergency Management Agency (FEMA).



Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTES TO USERS

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

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

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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

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

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 13. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the **North American Vertical Datum of 1988 (NAVD88)**. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NIMS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

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

Base Map information shown on this FIRM was provided in digital format by El Paso County, Colorado Springs Utilities, City of Fountain, Bureau of Land Management, National Oceanic and Atmospheric Administration, United States Geological Survey, and Anderson Consulting Engineers, Inc. These data are current as of 2006.

This map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

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

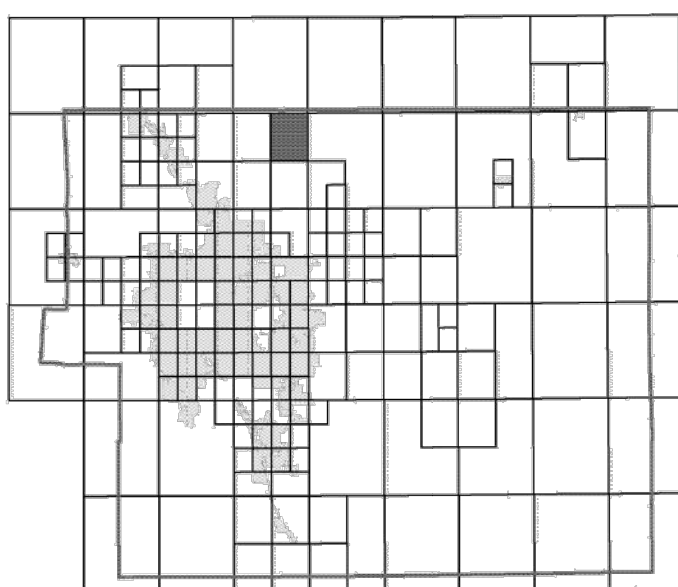
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

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

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El Paso County Vertical Datum Offset Table	
Flooding Source	Vertical Datum Offset (ft)
REFER TO SECTION 3.3 OF THE EL PASO COUNTY FLOOD INSURANCE STUDY FOR STREAM BY STREAM VERTICAL DATUM CONVERSION INFORMATION	

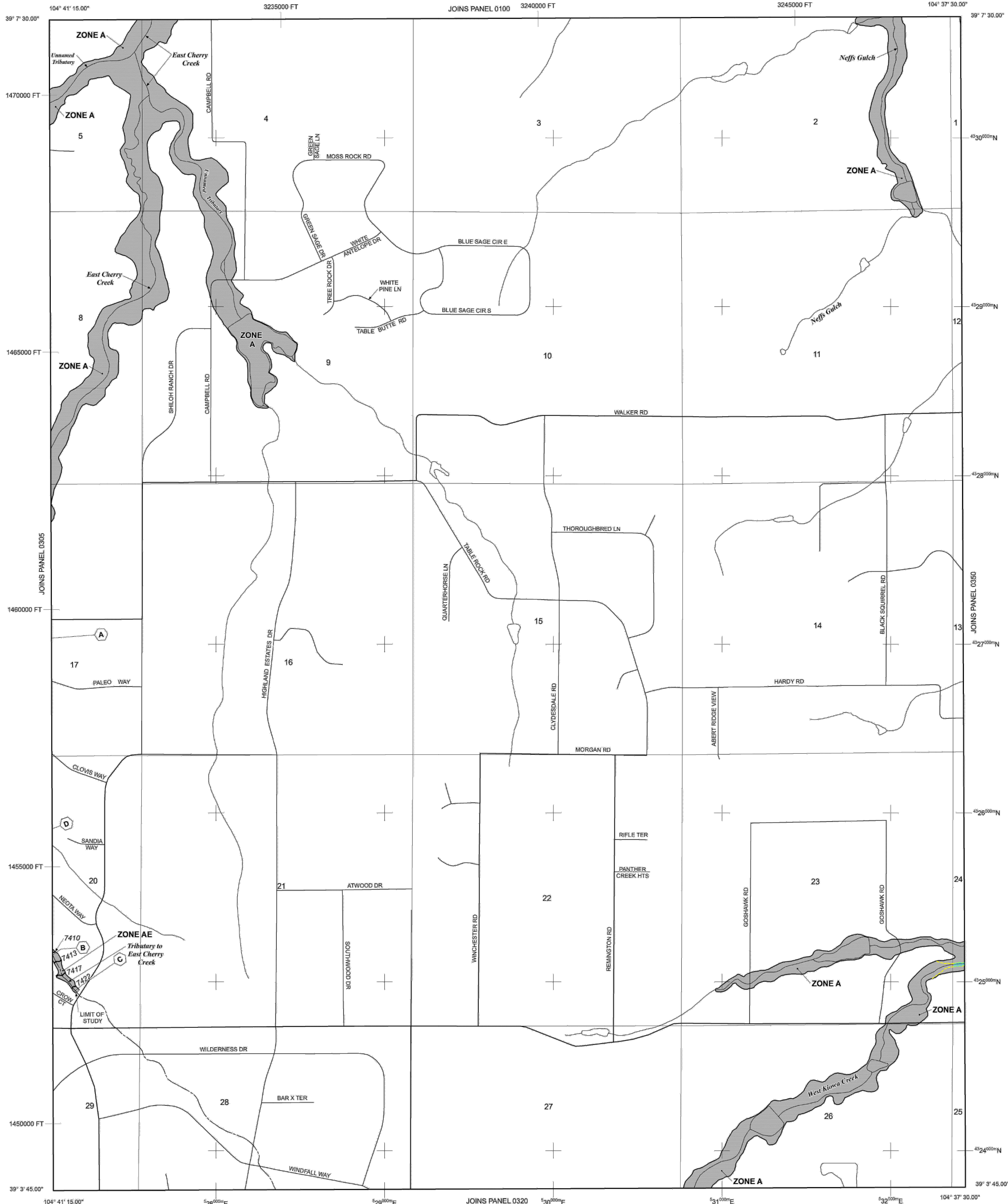
Panel Location Map



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Additional Flood Hazard information and resources are available from local communities and the Colorado Water Conservation Board.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 11 SOUTH, RANGE 65 WEST.

LEGEND

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

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

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

OTHER AREAS

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet* (EL 987)
- Base Flood Elevation value where uniform within zone; elevation in feet*
- * Referenced to the North American Vertical Datum of 1988 (NAVD 88)
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 5000-foot grid ticks: Colorado State Plane coordinate system, central zone (FIPSZONE 0502), Lambert Conformal Conic Projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile

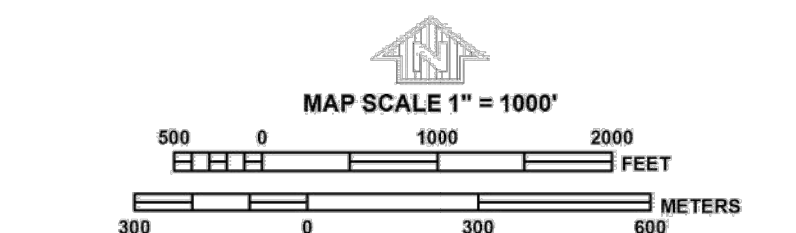
MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MARCH 17, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
DECEMBER 7, 2016 - to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, and to incorporate previously issued Letters of Map Revision.

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

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



PANEL 0310G

FIRM
FLOOD INSURANCE RATE MAP
EL PASO COUNTY,
COLORADO
AND INCORPORATED AREAS

PANEL 310 OF 1300

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
EL PASO COUNTY 080309 0310 0

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



MAP NUMBER
08041C0310G

MAP REVISED
DECEMBER 7, 2018
Federal Emergency Management Agency

F. HYDRAULIC ANALYSIS

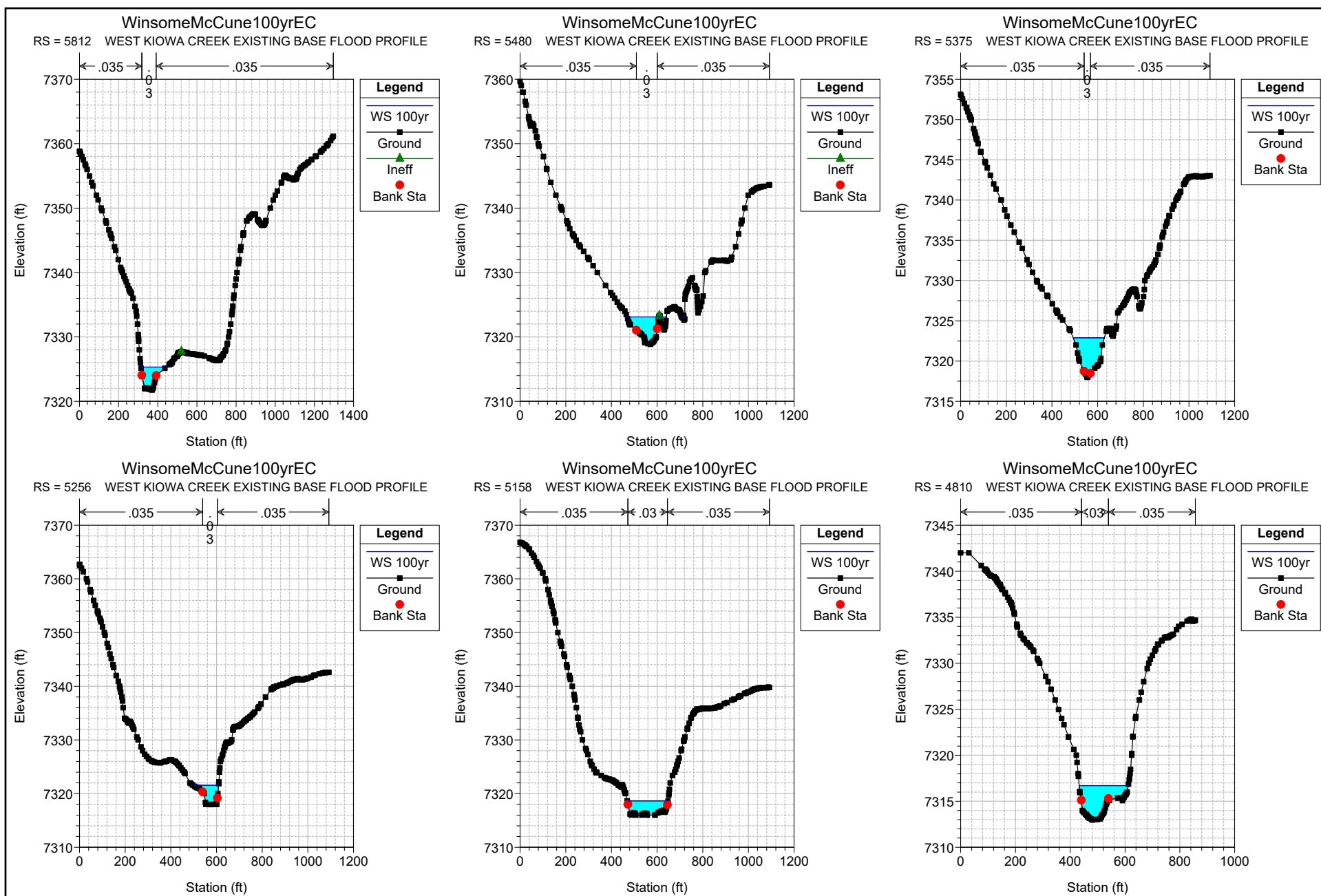
i. STUDIED 100 YEAR FLOODPLAIN DATA

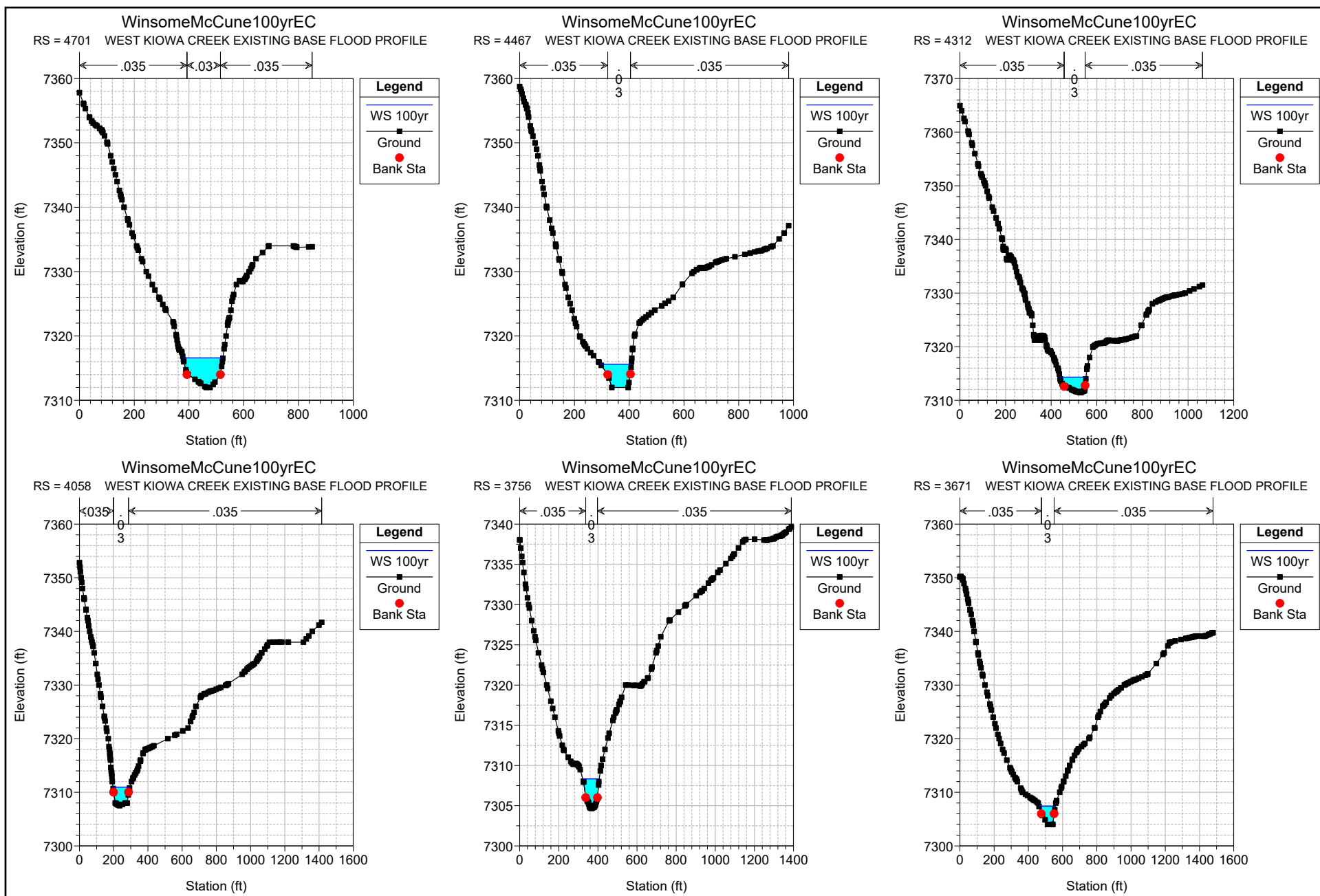
WEST KIOWA CREEK EXISTING CONDITIONS 100-YEAR FLOOD DATA			
CROSS SECTION	100-YEAR EC WSEL	100-YEAR EC TOP WIDTH INCLUDING INEFFECTIVE FLOW	100-YEAR EC TOP WIDTH EXCLUDING INEFFECTIVE FLOW
72+34	7337.98	62.28	62.28
69+69	7335.41	63.13	63.13
67+63	7333.50	63.51	63.51
65+42	7331.02	72.18	72.18
63+02	7328.83	76.66	76.66
61+34	7327.64	135.78	135.78
58+12	7325.32	129.67	129.67
54+80	7323.11	177.66	139.36
53+75	7322.89	136.48	136.48
53+10			
52+56	7321.54	111.61	111.61
51+58	7318.63	102.69	102.69
48+10	7316.70	178.97	178.97
47+01	7316.60	145.65	145.65
44+67	7315.62	112.95	112.95
43+12	7314.33	115.02	115.02
40+58	7310.97	98.36	98.36
37+56	7308.35	84.42	84.42
36+71	7307.43	95.71	95.71
33+13	7304.27	98.47	98.47
30+53	7300.93	68.96	68.96
29+16	7299.69	66.66	66.66
25+59	7297.05	117.36	117.36
23+56	7294.53	88.27	88.27
21+15	7292.39	99.33	99.33
18+26	7289.01	84.94	84.94
16+18	7288.55	266.32	266.32
15+15	7286.83	166.37	82.16
13+21	7285.19	154.03	154.03
12+24	7284.44	157.81	157.81
11+60			
11+05	7284.18	145.88	145.88
10+07	7282.77	89.32	89.32
8+93	7281.41	243.26	243.26
6+78	7278.50	265.74	265.74
4+40	7276.47	146.63	146.63
SKEW ANGLE APPLIED IN HEC-RAS OF 55° @ 51+58 AND 45° @ 10+07. DASHED LINE AT THESE CROSS SECTIONS REPRESENTS ADJUSTED ANGLE.			

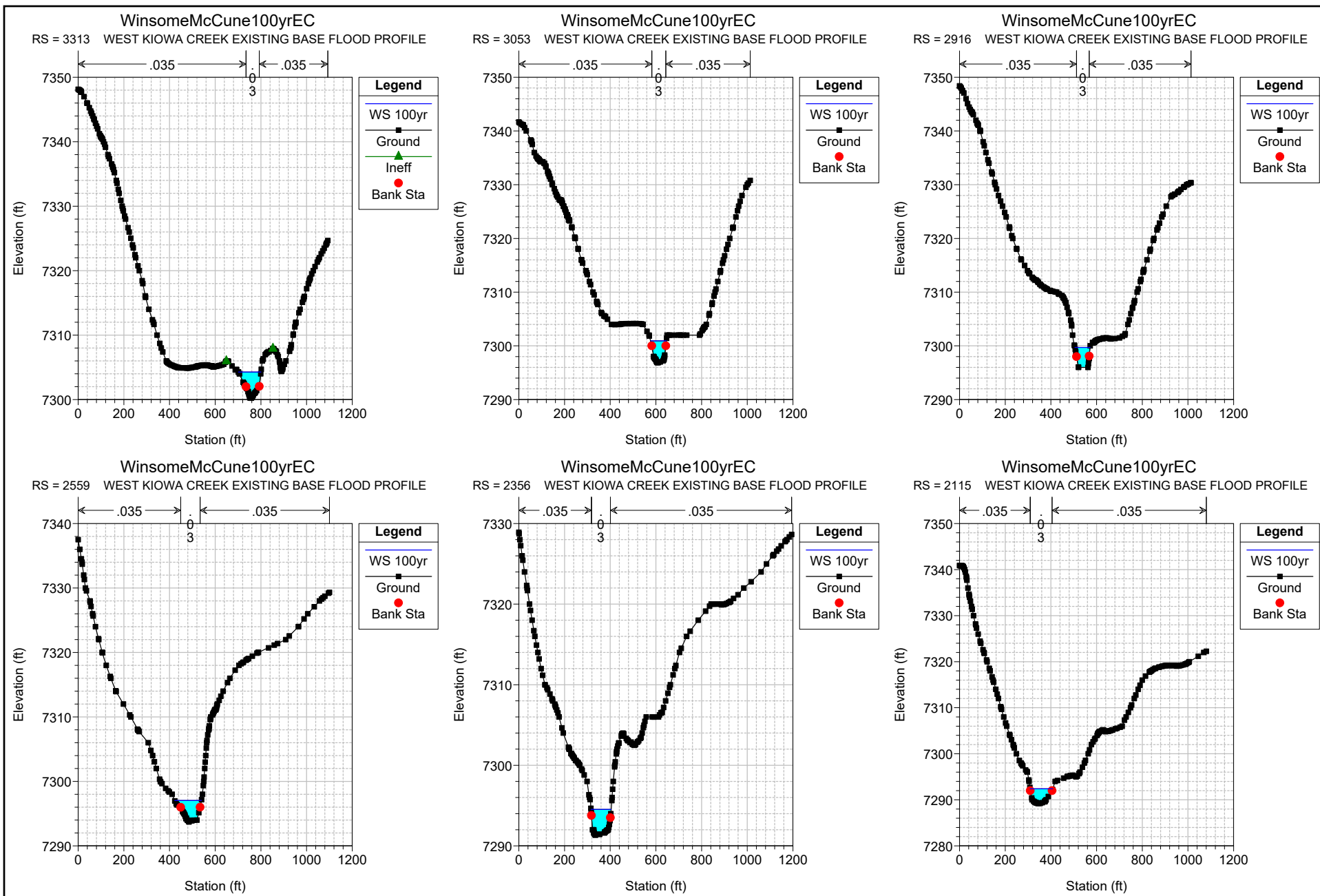
WEST KIOWA CREEK PROPOSED CONDITIONS 100-YEAR FLOOD DATA			
CROSS SECTION	100-YEAR PC WSEL	100-YEAR PC TOP WIDTH INCLUDING INEFFECTIVE FLOW	100-YEAR PC TOP WIDTH EXCLUDING INEFFECTIVE FLOW
72+34	7338.11	63.12	63.12
69+69	7335.52	64.11	64.11
67+63	7333.63	64.92	64.92
65+42	7331.14	74.22	74.22
63+02	7328.85	76.90	76.90
61+34	7327.28	131.11	131.11
58+12	7326.47	201.82	169.96
54+80	7326.65	349.50	322.44
53+75	7326.35	278.31	62.88
53+10	CULVERT		
52+56	7321.50	110.20	66.00
51+58	7318.71	103.09	103.09
48+10	7316.81	179.90	179.90
47+01	7316.71	146.50	146.50
44+67	7315.70	114.47	114.47
43+12	7314.40	115.43	115.43
40+58	7311.05	99.53	99.53
37+56	7308.45	86.18	86.18
36+71	7307.52	96.89	96.89
33+13	7304.40	102.90	102.90
30+53	7301.03	69.79	69.79
29+16	7299.80	67.41	67.41
25+59	7297.13	118.75	118.75
23+56	7294.61	88.75	88.75
21+15	7292.45	99.93	99.93
18+26	7289.14	86.77	86.77
16+18	7289.44	299.59	299.59
15+15	7289.46	425.09	425.09
13+21	7289.40	291.86	189.05
12+24	7289.09	255.05	62.76
11+60	CULVERT		
11+05	7283.36	124.12	60.69
10+07	7282.73	88.93	88.93
8+93	7281.40	243.18	243.18
6+78	7278.47	265.53	265.53
4+40	7276.45	146.38	146.38
SKEW ANGLE APPLIED IN HEC-RAS OF 55° @ 51+58 AND 45° @ 10+07. DASHED LINE AT THESE CROSS SECTIONS REPRESENTS ADJUSTED ANGLE.			

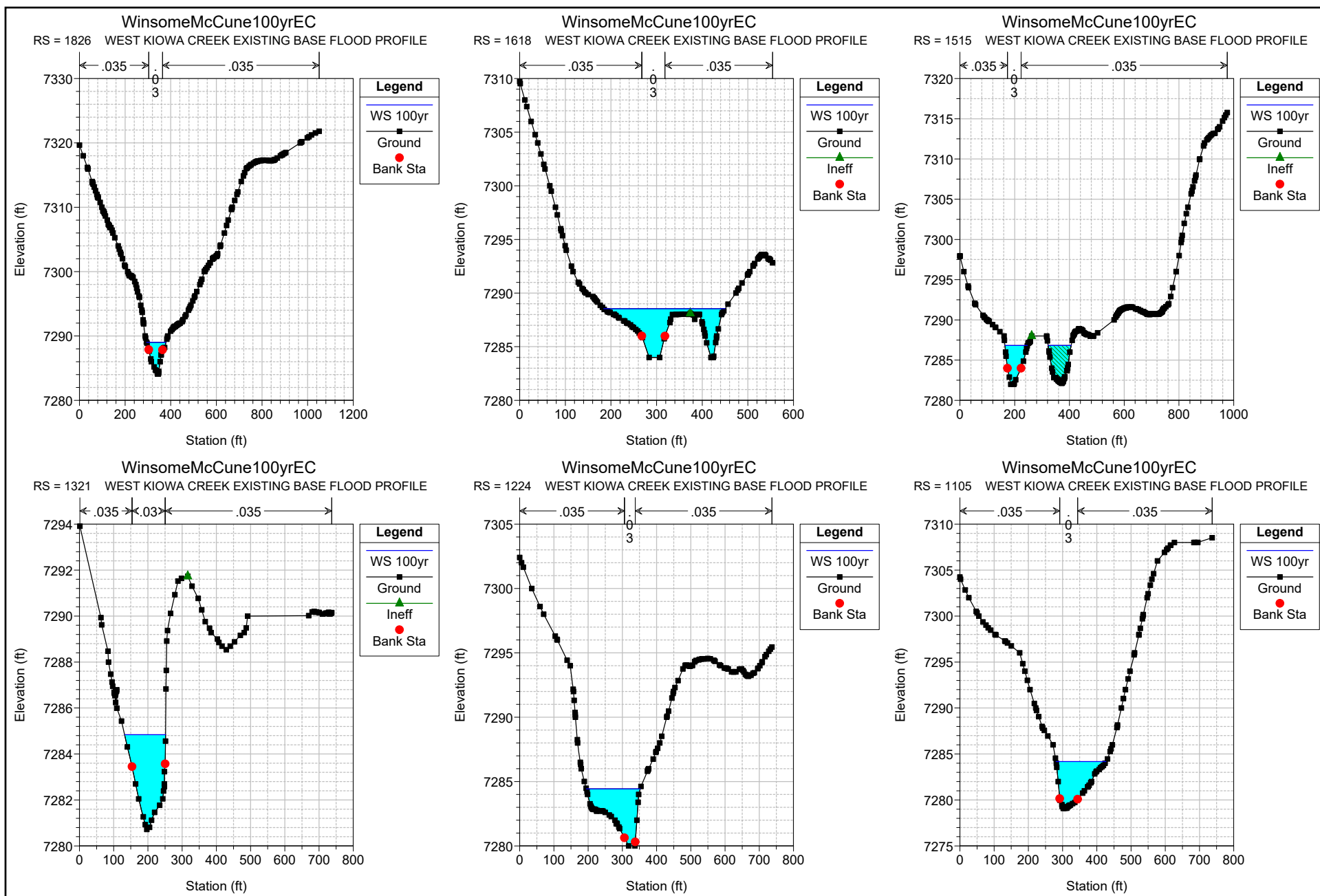
F. HYDRAULIC ANALYSIS

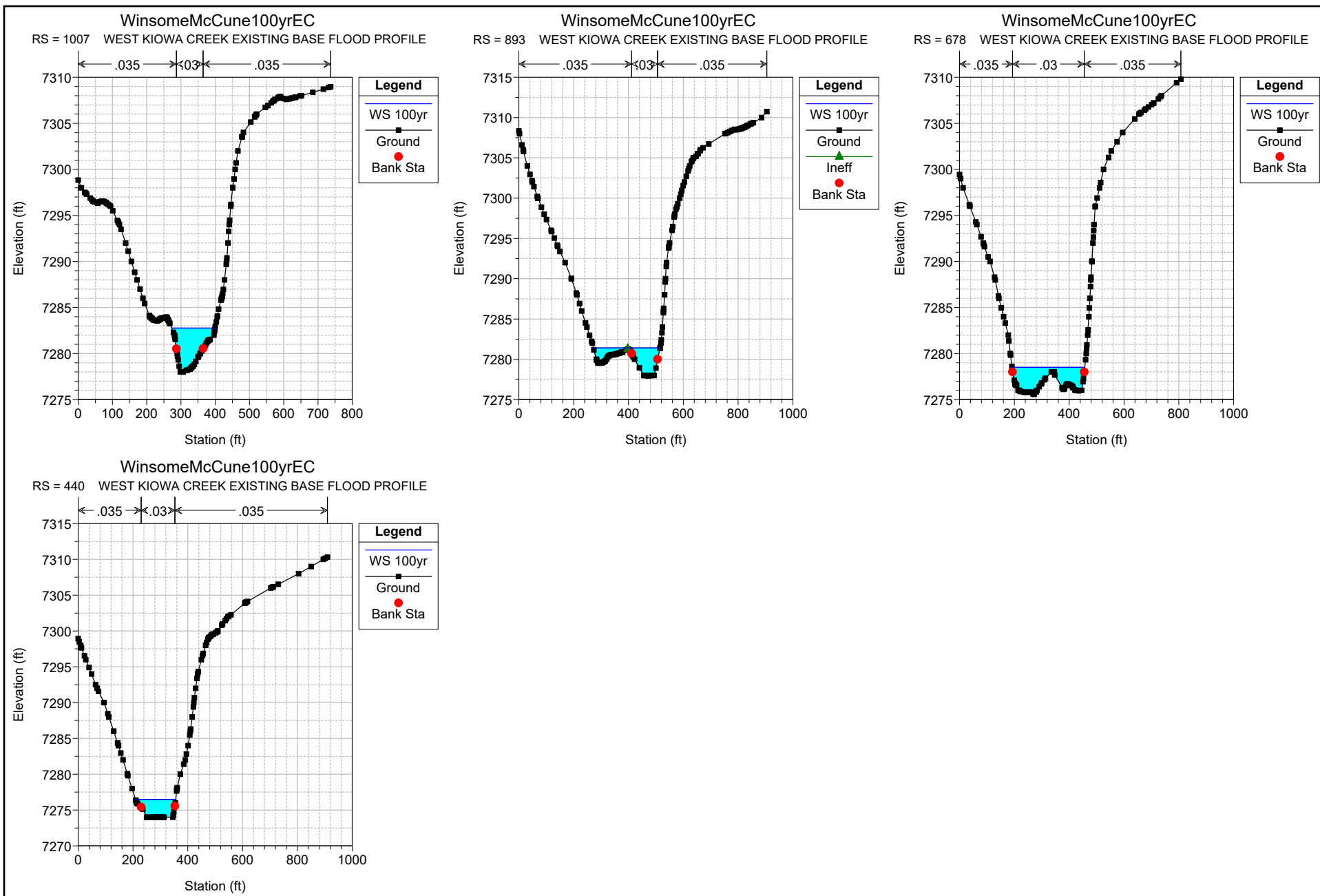
ii. STUDIED EXISTING CONDITION 100 YEAR FLOODPLAIN CROSS SECTIONS









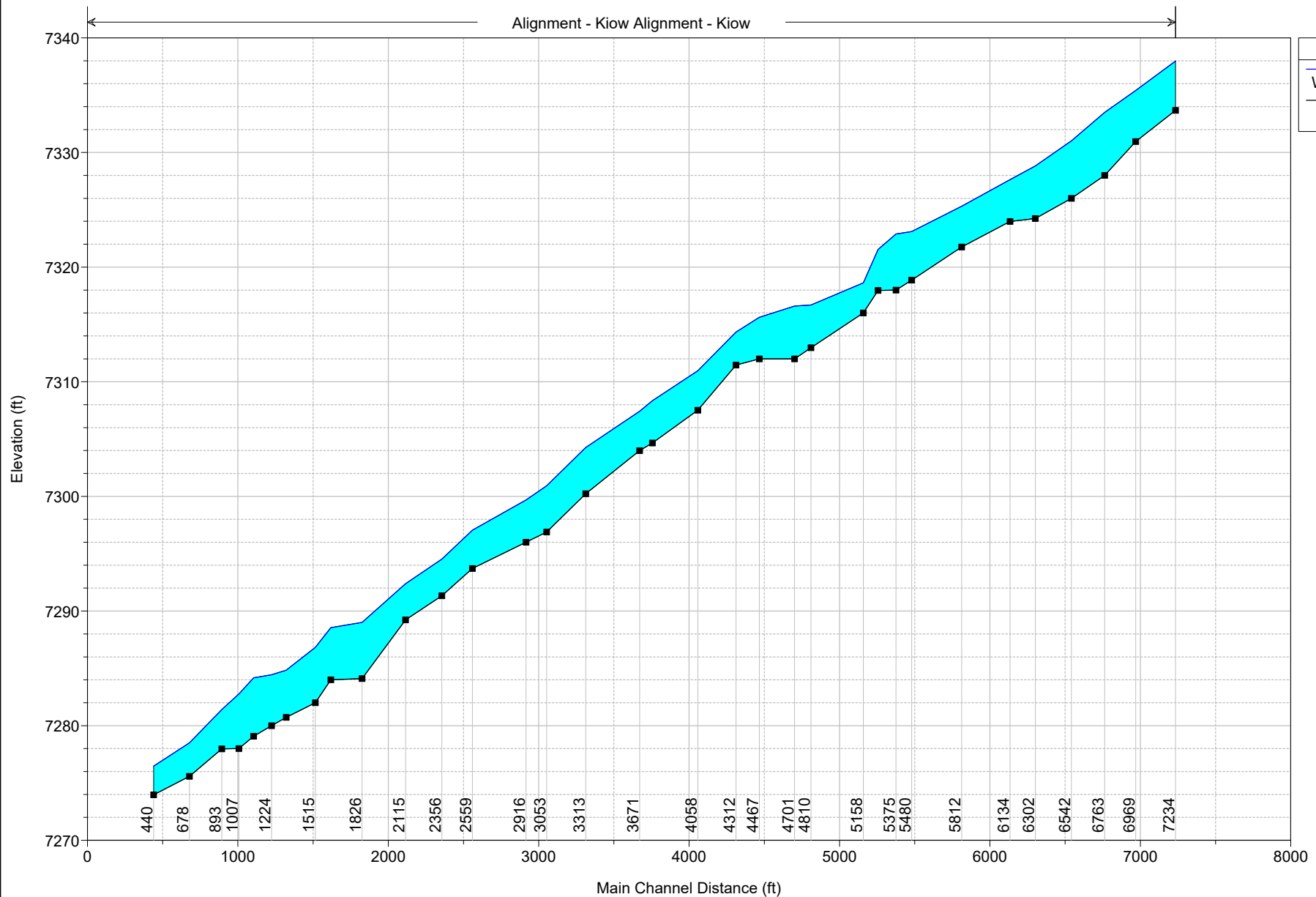


F. HYDRAULIC ANALYSIS

iii. STUDIED EXISTING CONDITION 100 YEAR FLOODPLAIN PROFILE

WinsomeMcCune100yrEC
WEST KIOWA CREEK EXISTING BASE FLOOD PROFILE

Alignment - Kiow Alignment - Kiow

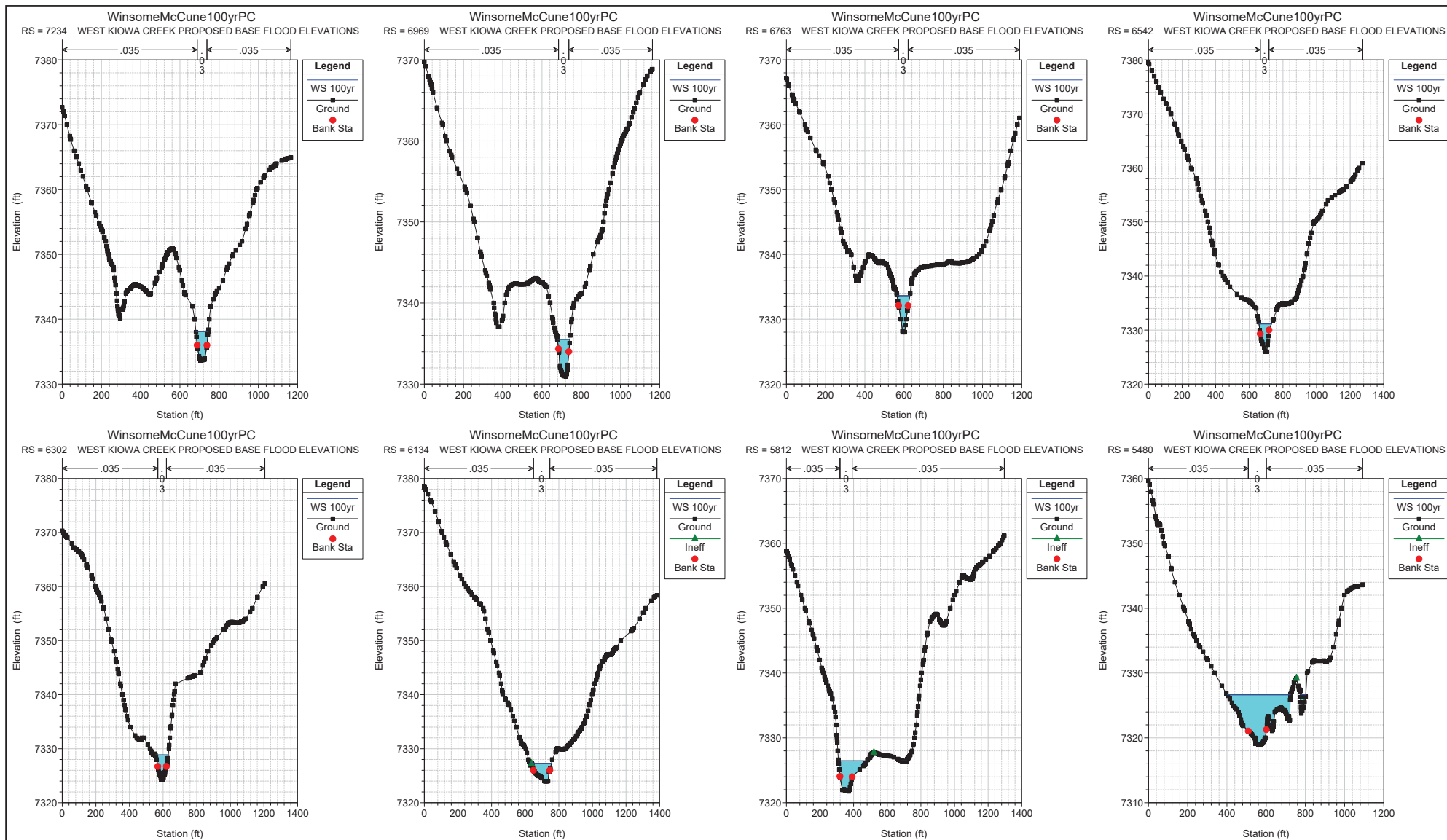


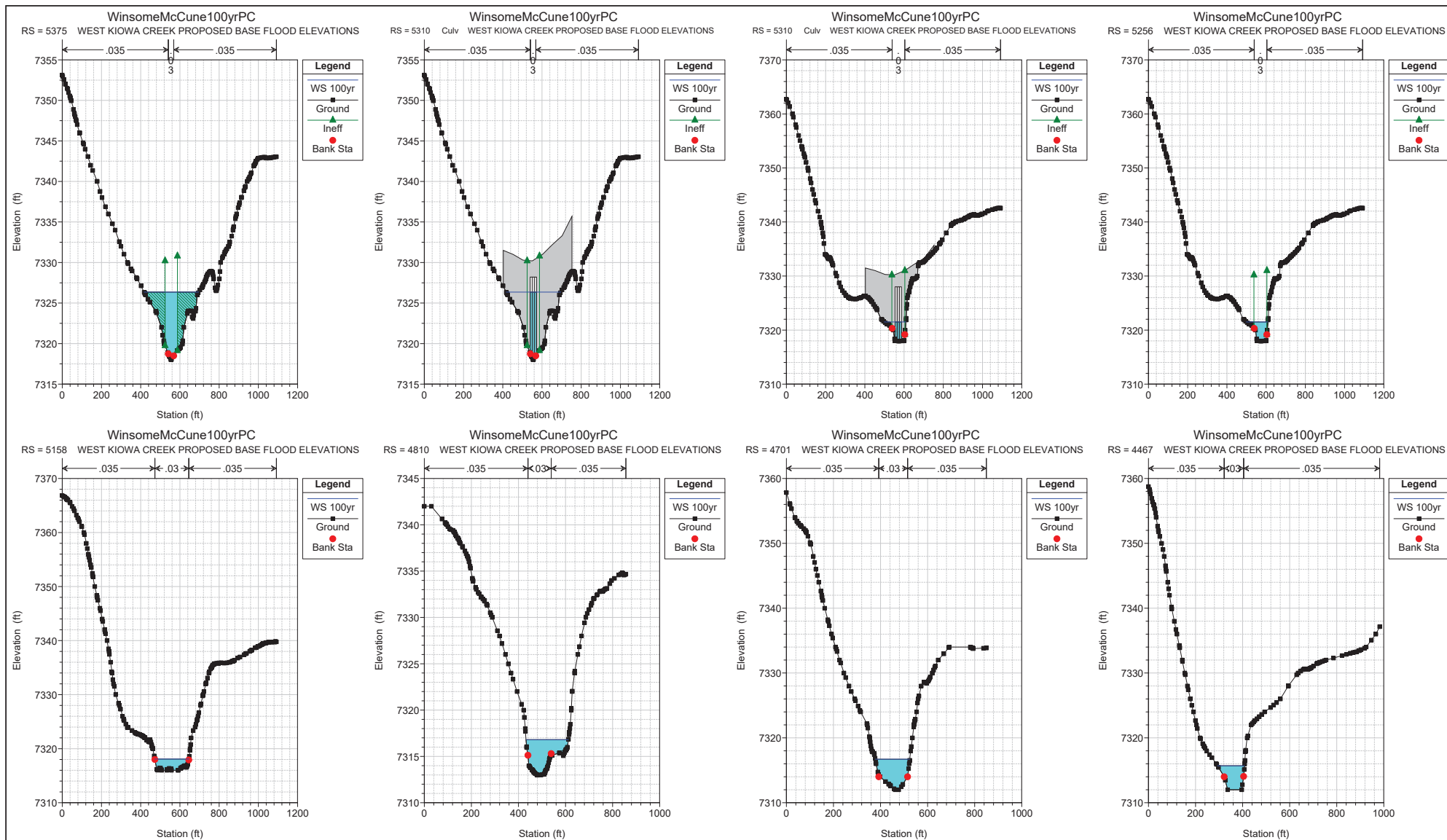
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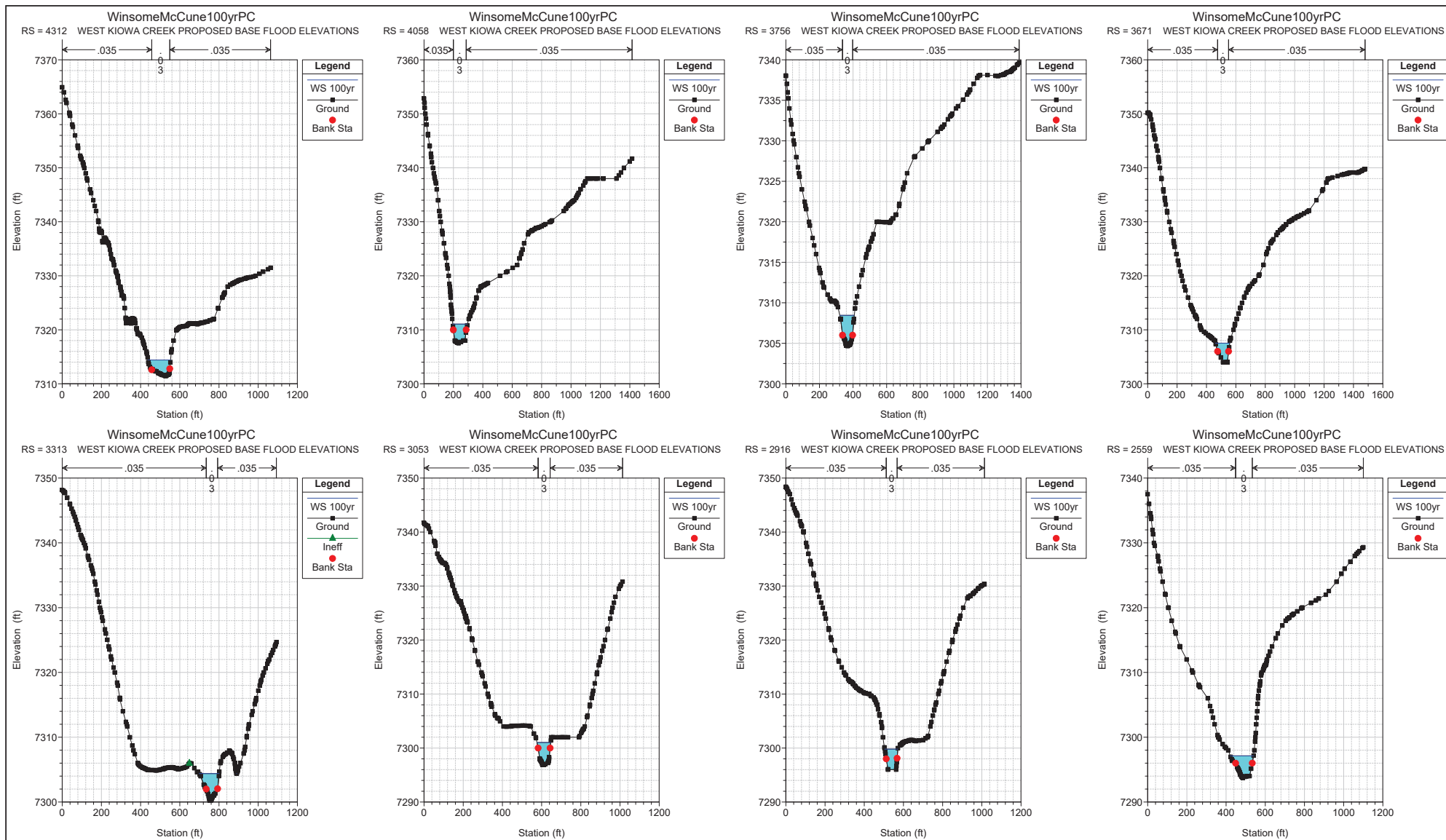
- WS 100yr
- Ground

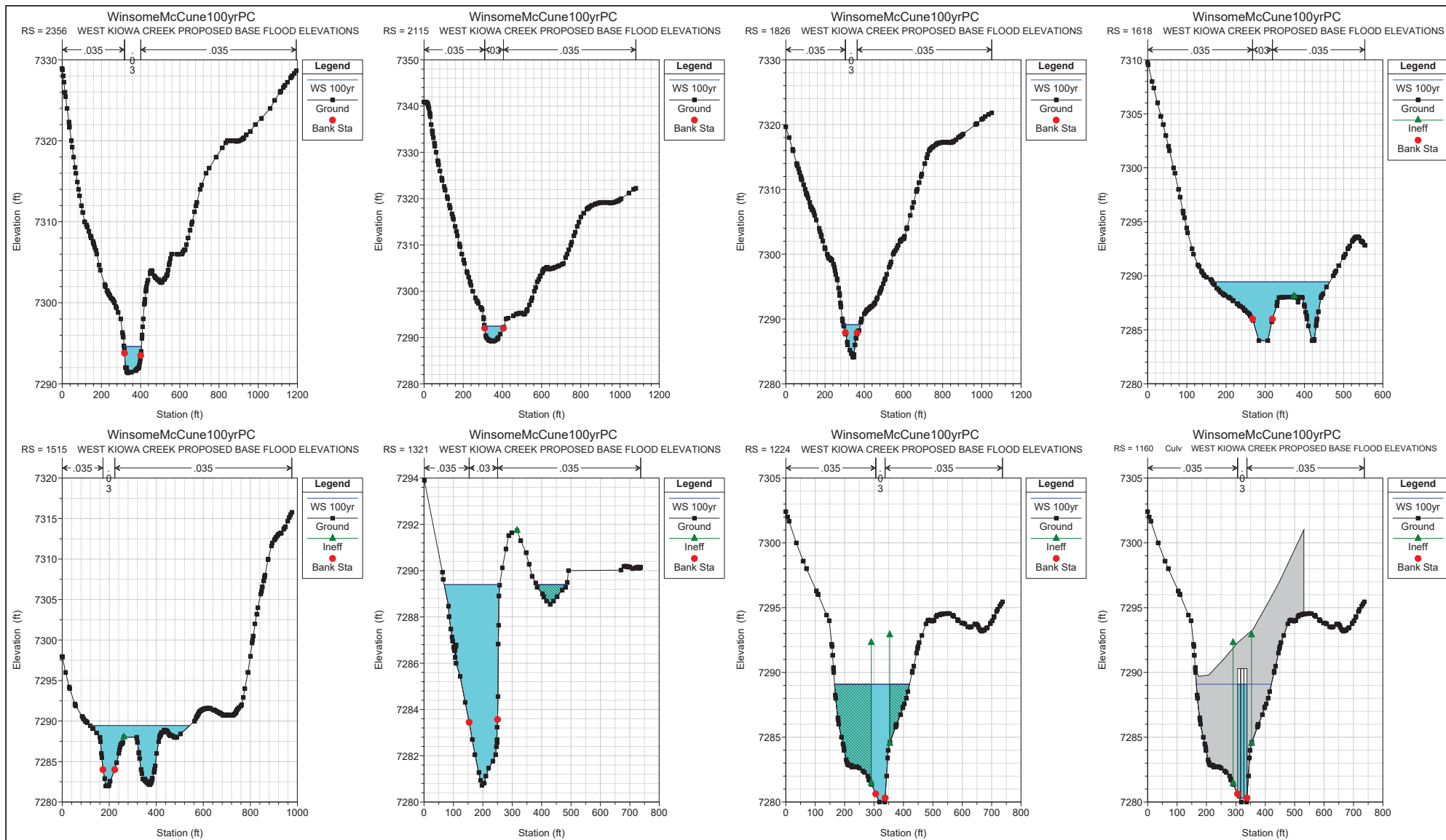
F. HYDRAULIC ANALYSIS

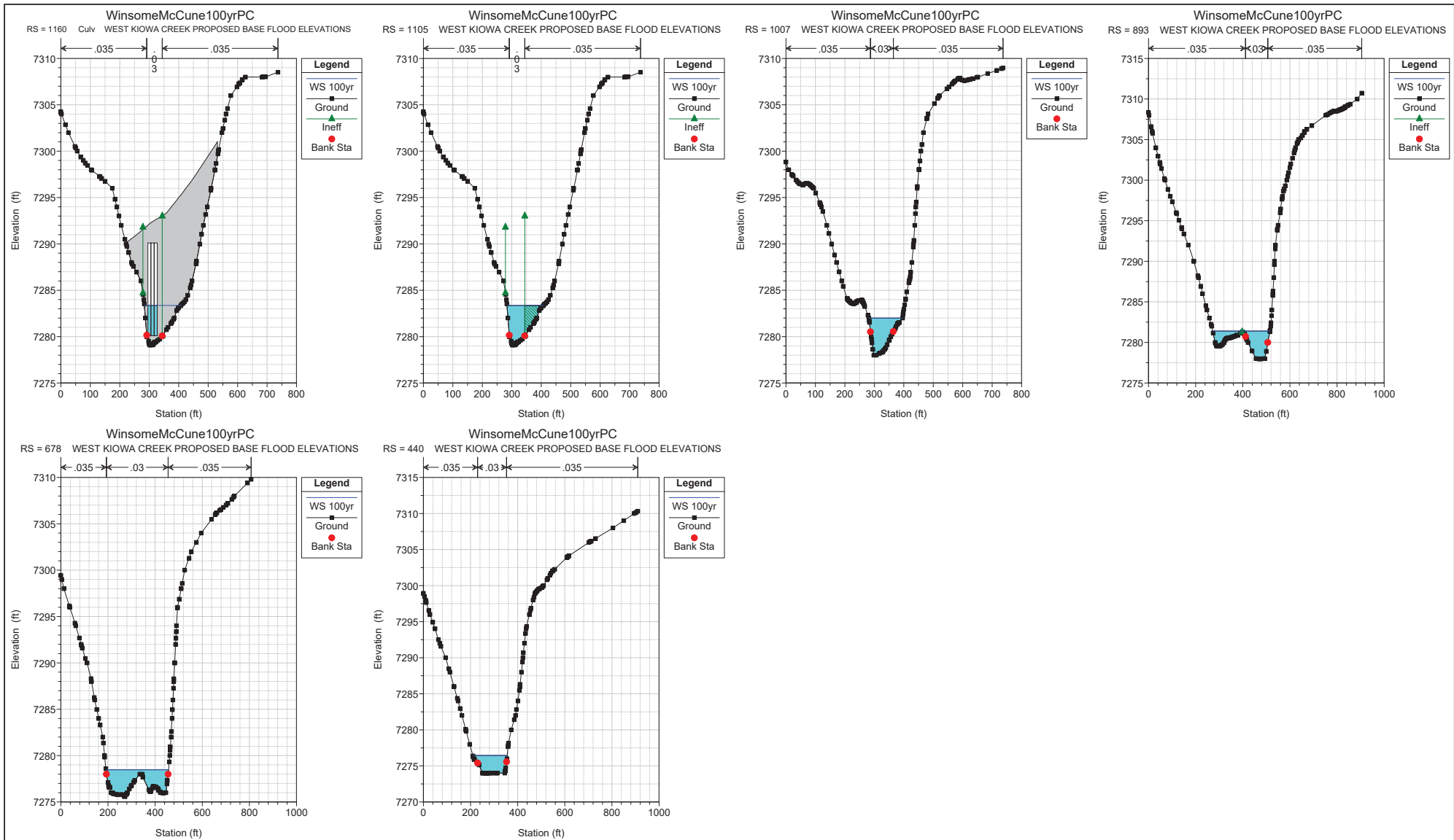
iv. STUDIED PROPOSED CONDITION 100 YEAR FLOODPLAIN CROSS SECTIONS





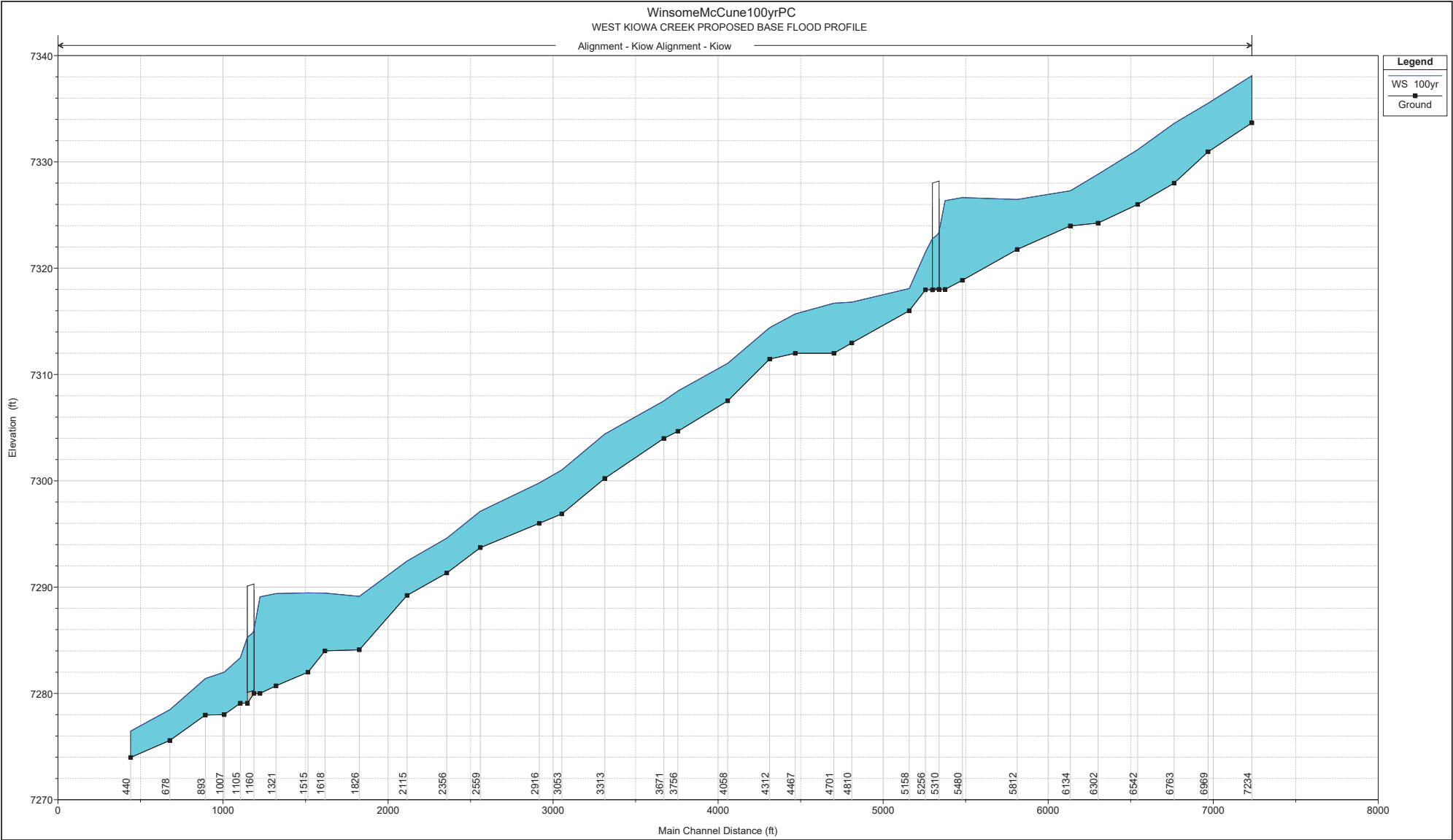






F. HYDRAULIC ANALYSIS

v. STUDIED PROPOSED CONDITION 100 YEAR FLOODPLAIN PROFILE



F. HYDRAULIC ANALYSIS

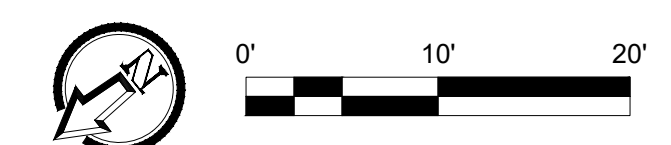
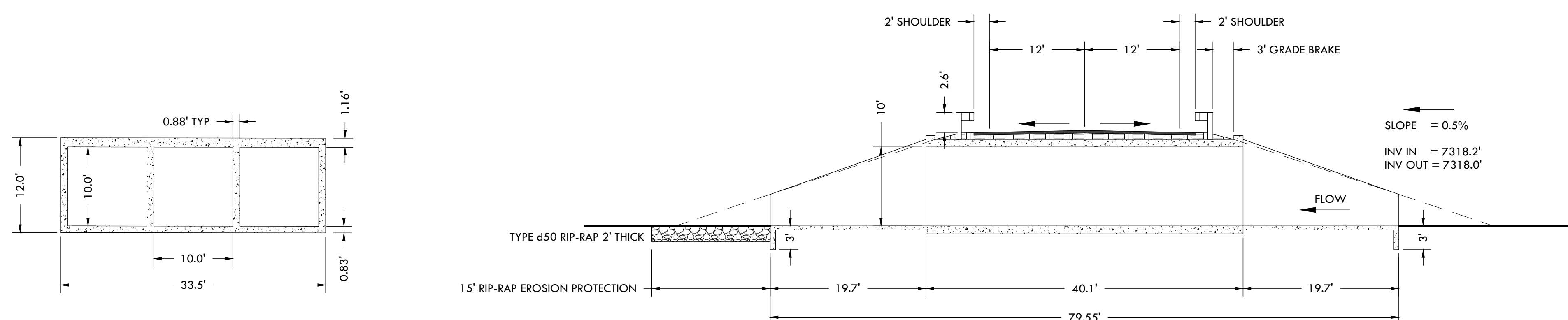
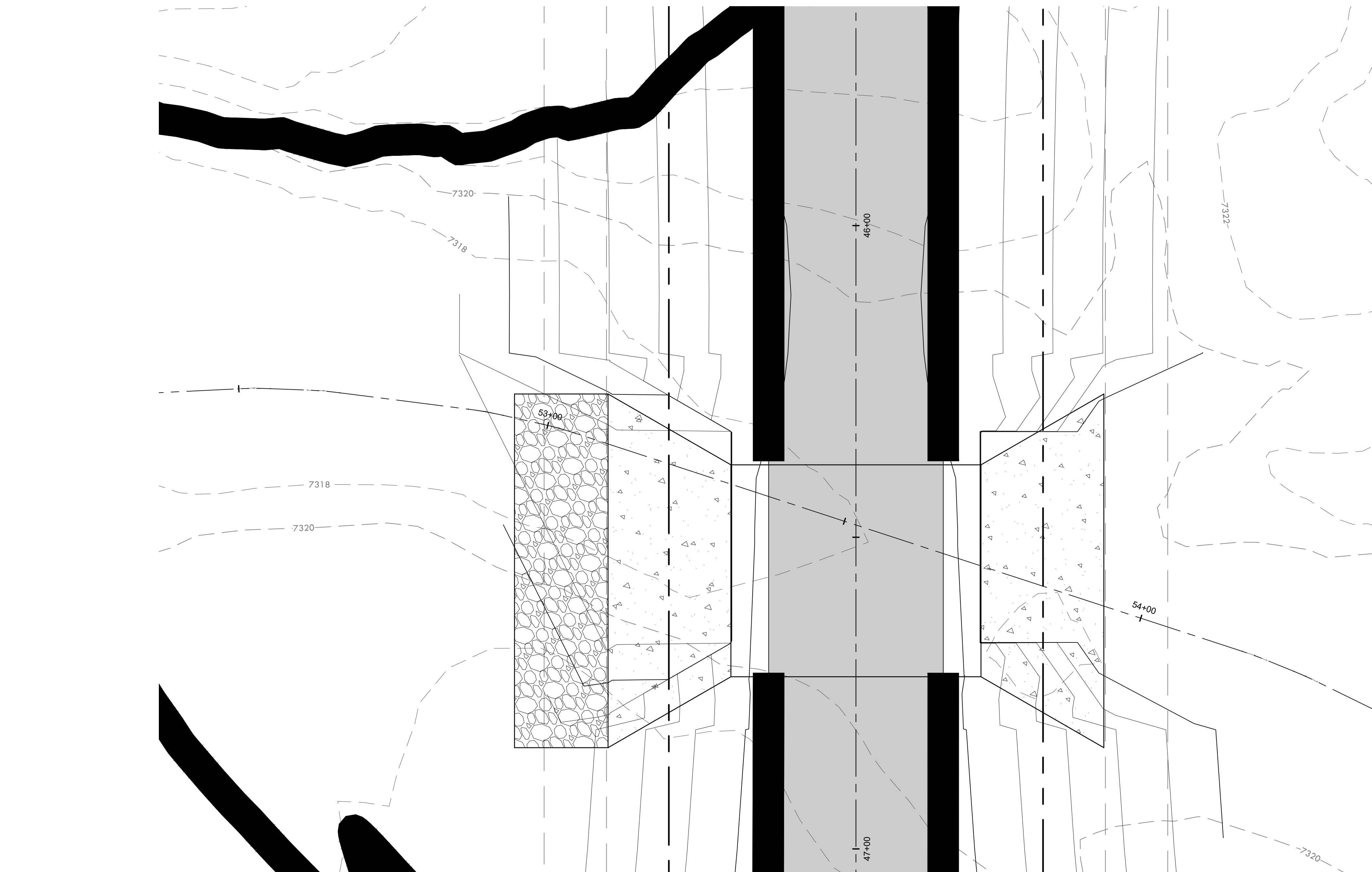
vi. PROPOSED BRIDGE DETAILS, DRAWINGS, AND SPECIFICATIONS

CASE #: 19-08-0185R

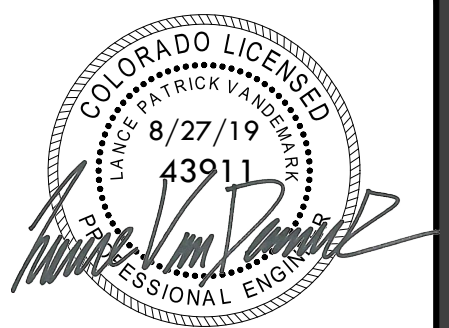
BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH,
RANGE 65 WEST OF THE 6TH P.M.

A 3.5" ALUMINUM CAP STAMPED "LS 12103"

ELEVATION IS 7429.30 NAVD88



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FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
1	REVISED PER REVIEW COMMENTS 3/26/19
2	REVISED PER REVIEW COMMENTS 4/2/19
3	REVISED PER REVIEW COMMENTS 6/5/19
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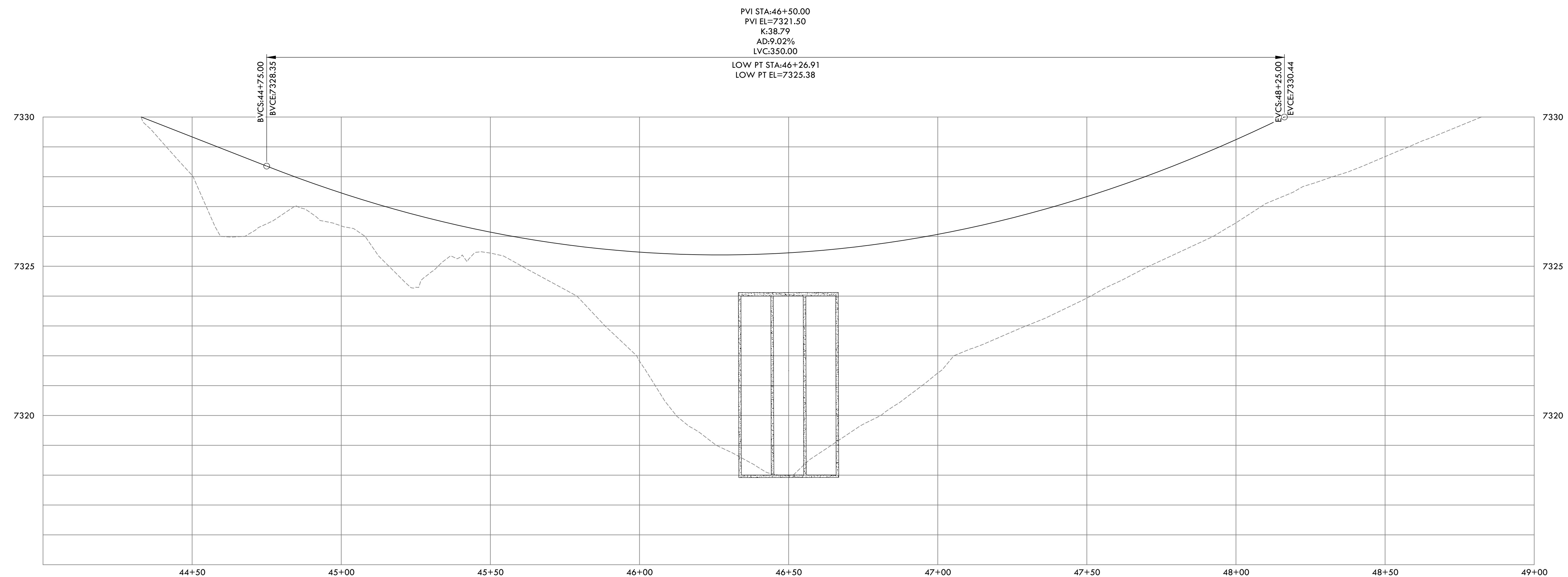
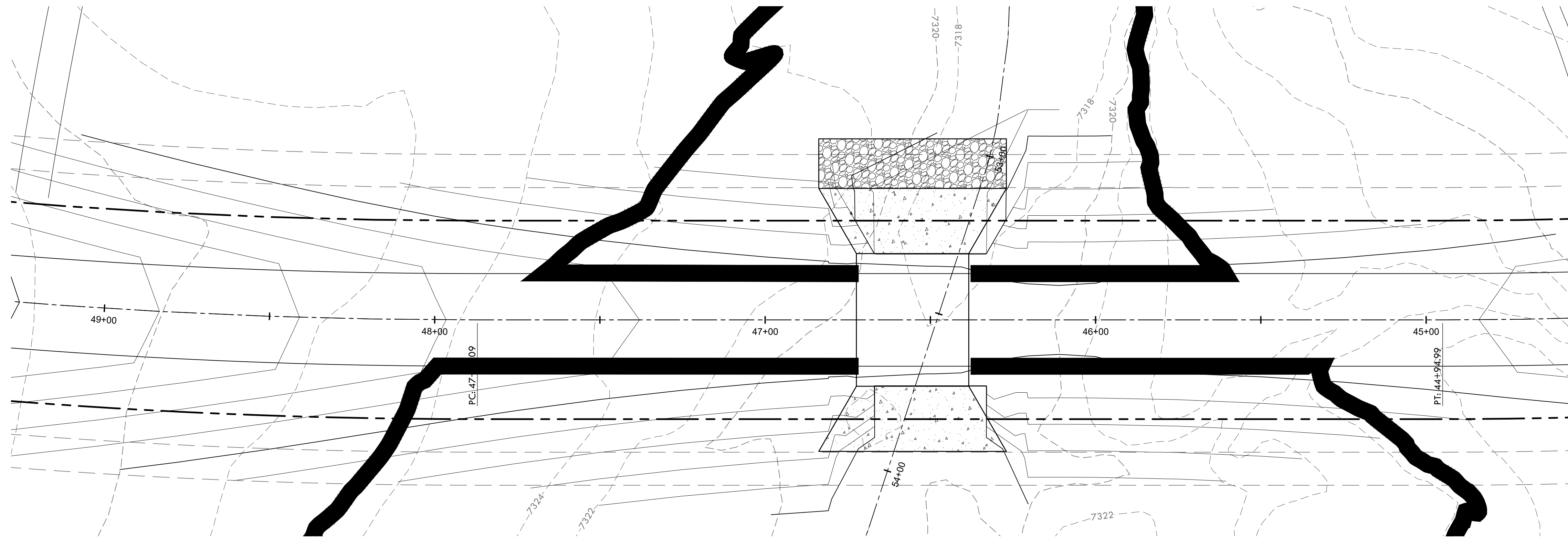
DATE: 11/12/18
DRAWN BY: JCP
CHECKED BY: LPV
JOB #: 49388

CASE #: 19-08-0185R

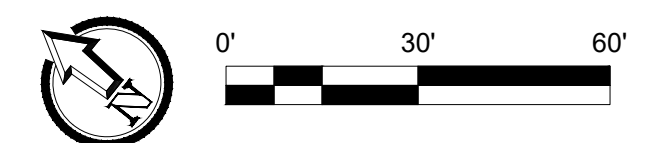
BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH,
RANGE 65 WEST OF THE 6TH P.M.

A 3.5" ALUMINUM CAP STAMPED "LS 12103"

ELEVATION IS 7429.30 NAVD88



ALAMAR WAY PROFILE



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Tuesday, August 27, 2019 2:33:11 PM
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ROAD PLAN AND PROFILE @ BOX CULVERT 1

1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
1	REVISED PER REVIEW COMMENTS 3/26/19
2	REVISED PER REVIEW COMMENTS 4/2/19
3	REVISED PER REVIEW COMMENTS 6/5/19
4	
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DRAWN BY: JCP	
CHECKED BY: LPV	
JOB #: 49388	

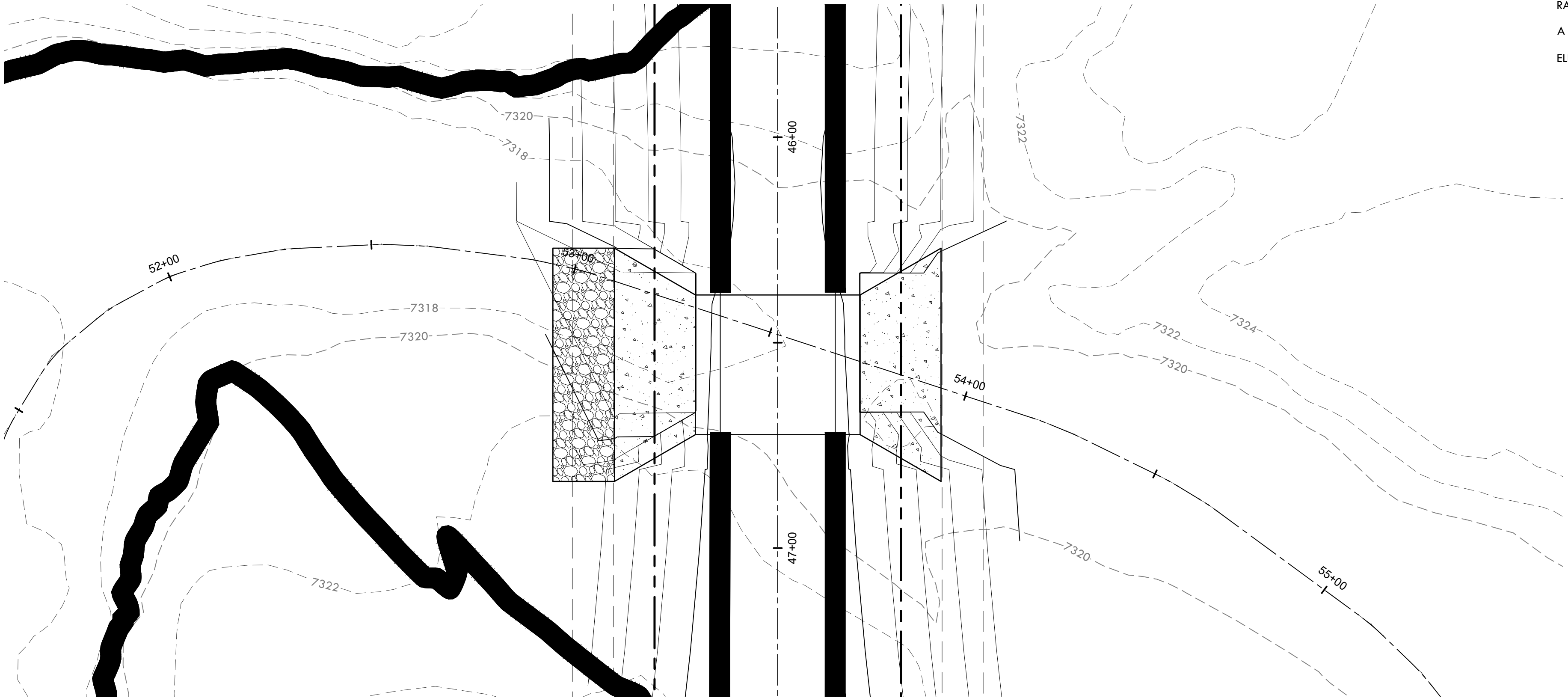
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Tuesday, August 27, 2019 2:33:33 PM
Copyright © 2019 The Vertex Companies, Inc.

CD DRAWINGS

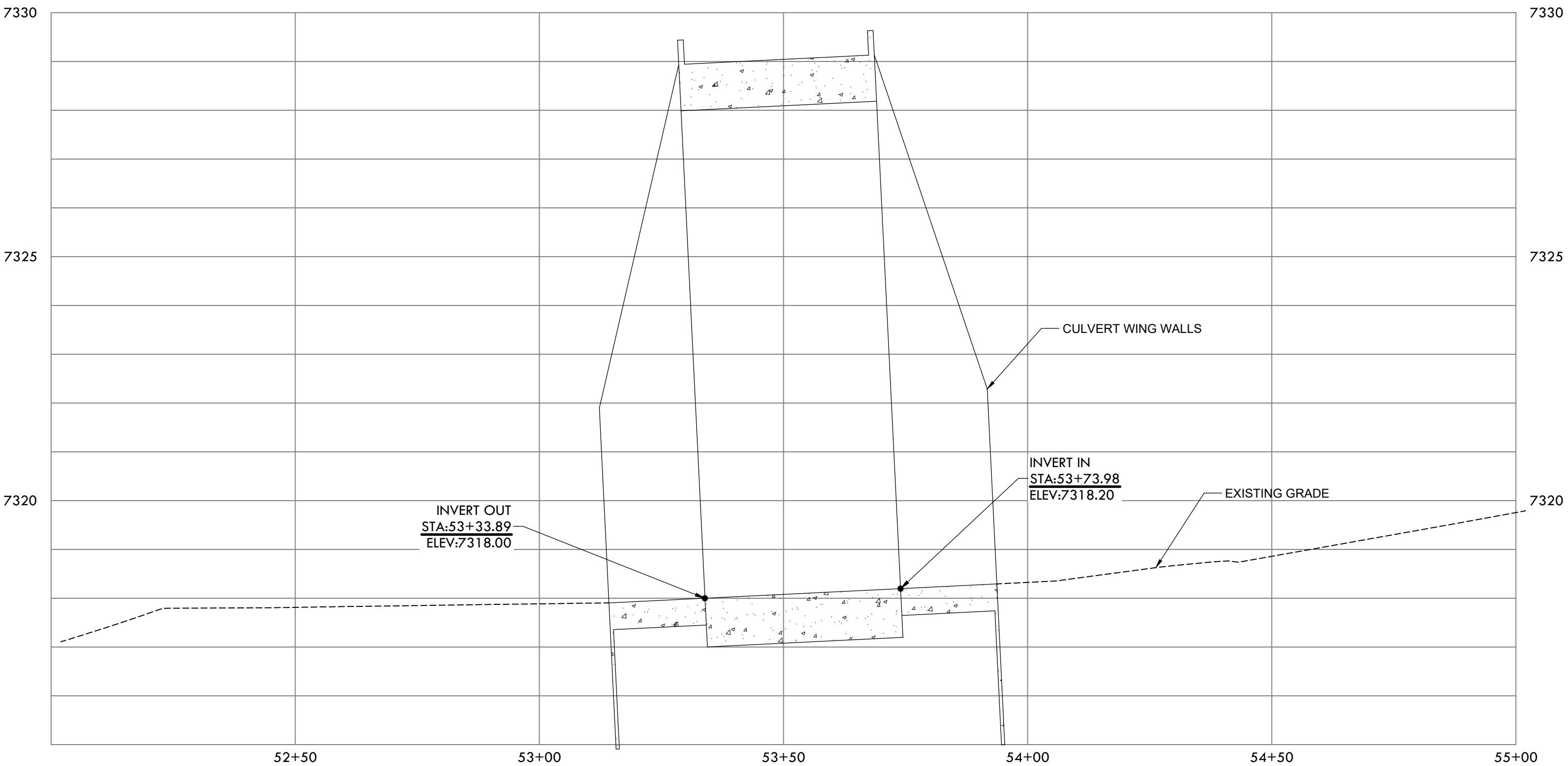
WINSOME SUBDIVISION

A PARCEL OF PROPERTY LOCATED IN SECTIONS 13 & 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AND IN THE WEST HALF OF THE WEST HALF OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO

CASE #: 19-08-0185R

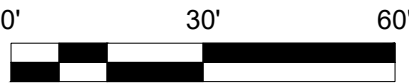


BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M.
A 3.5" ALUMINUM CAP STAMPED "LS 12103"
ELEVATION IS 7429.30 NAVD88



FLOODPLAIN ALIGNMENT PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'



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BOX CULVERT 1 FLOODPLAIN PROFILE

SITE: 1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
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2	REVISED PER REVIEW COMMENTS 4/2/19
3	REVISED PER REVIEW COMMENTS 6/5/19
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5	
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7	
8	
9	
10	

DATE: 3/19/19

DRAWN BY: JCP

CHECKED BY: LPV

JOB: 49388

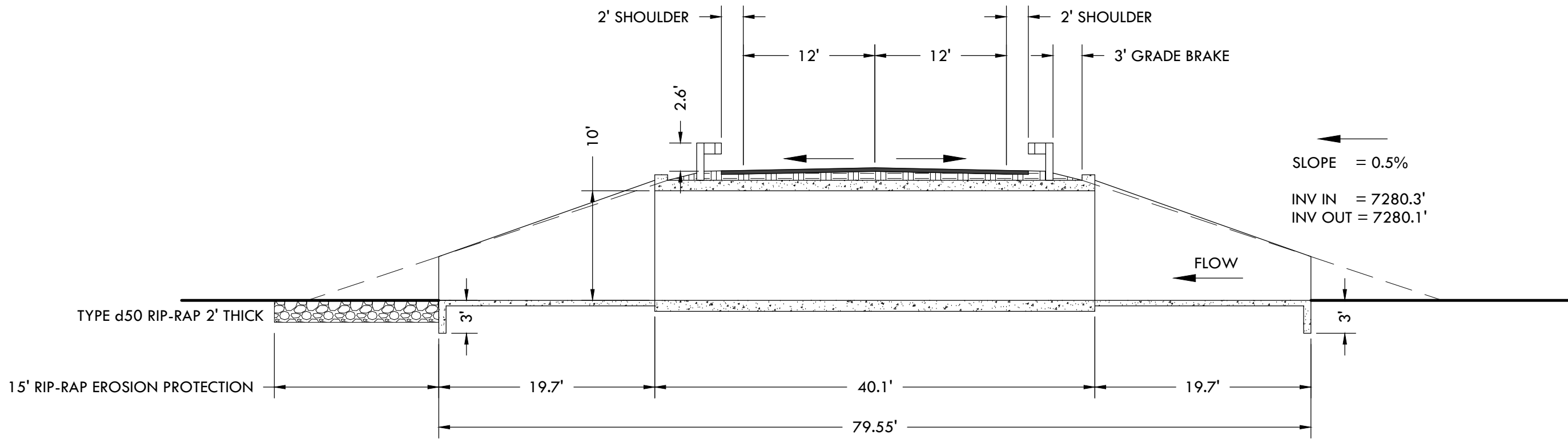
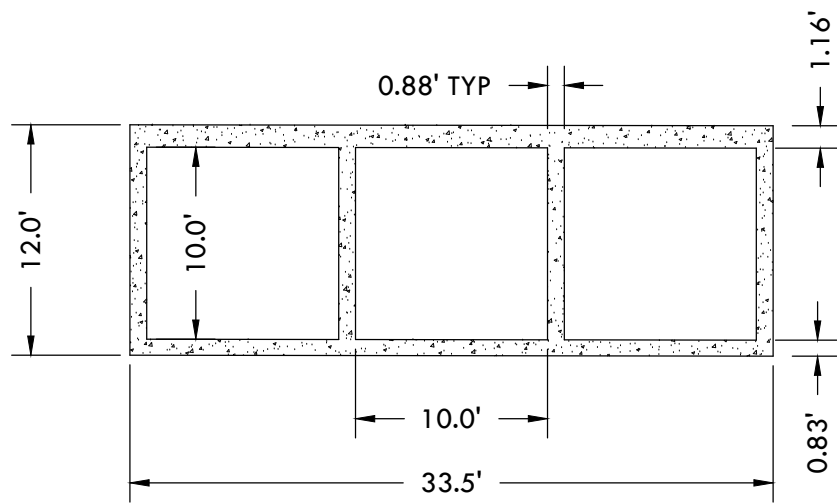
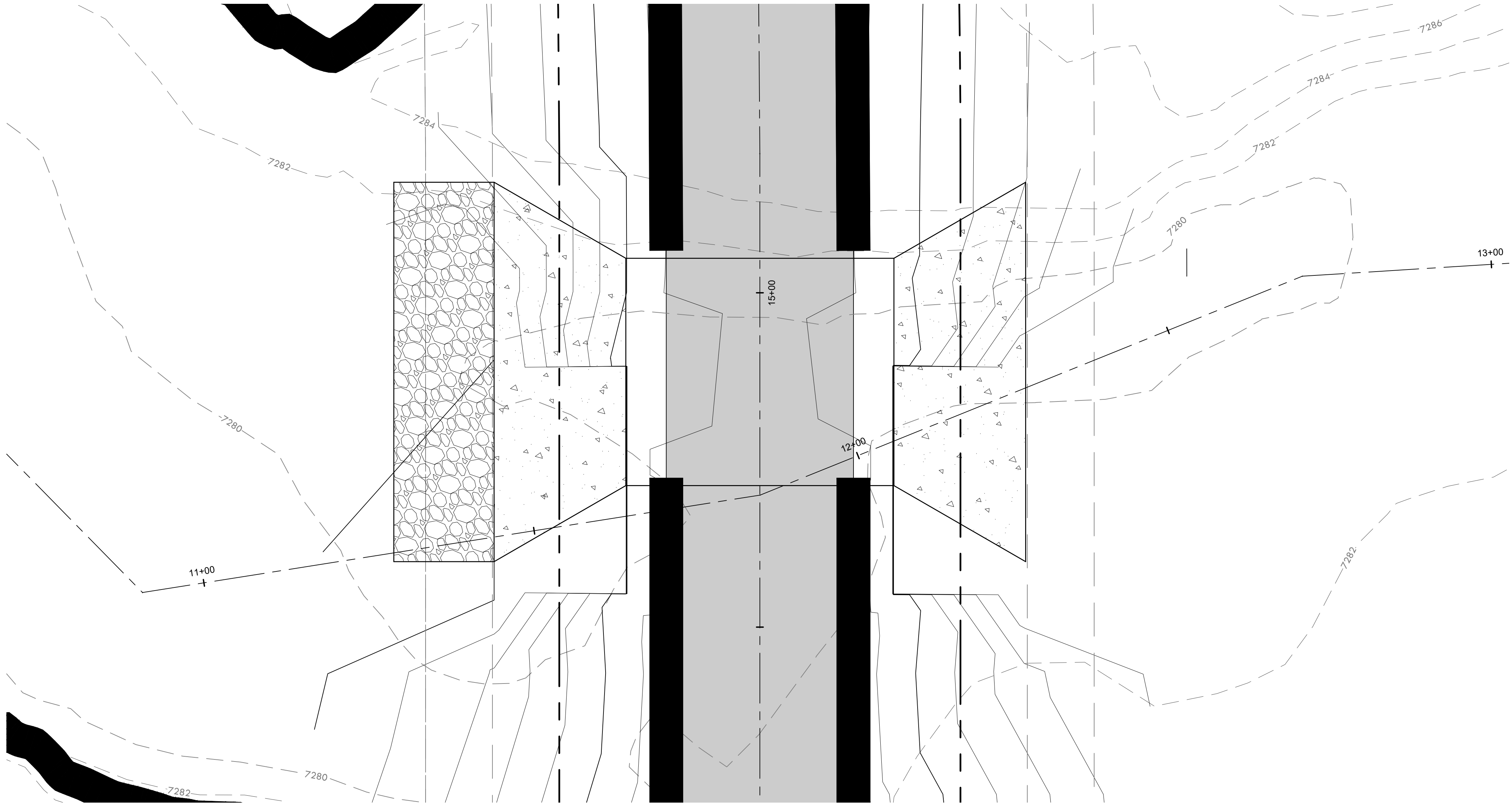
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CD DRAWINGS
WINSOME SUBDIVISION

CASE #: 19-08-0185R

A PARCEL OF PROPERTY LOCATED IN SECTIONS 13 & 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AND IN THE WEST HALF
OF THE WEST HALF OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO

BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH,
RANGE 65 WEST OF THE 6TH P.M.
A 3.5" ALUMINUM CAP STAMPED "LS 12103"
ELEVATION IS 7429.30 NAVD88



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BOX CULVERT 2 (DOWNSTREAM) DETAIL
SITE: 1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132
FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
1	REVISED PER REVIEW COMMENTS 3/26/19
2	REVISED PER REVIEW COMMENTS 4/2/19
3	REVISED PER REVIEW COMMENTS 6/5/19
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DATE: 11/12/18	4
DRAWN BY: JCP	
CHECKED BY: LPV	
JOB#49388	

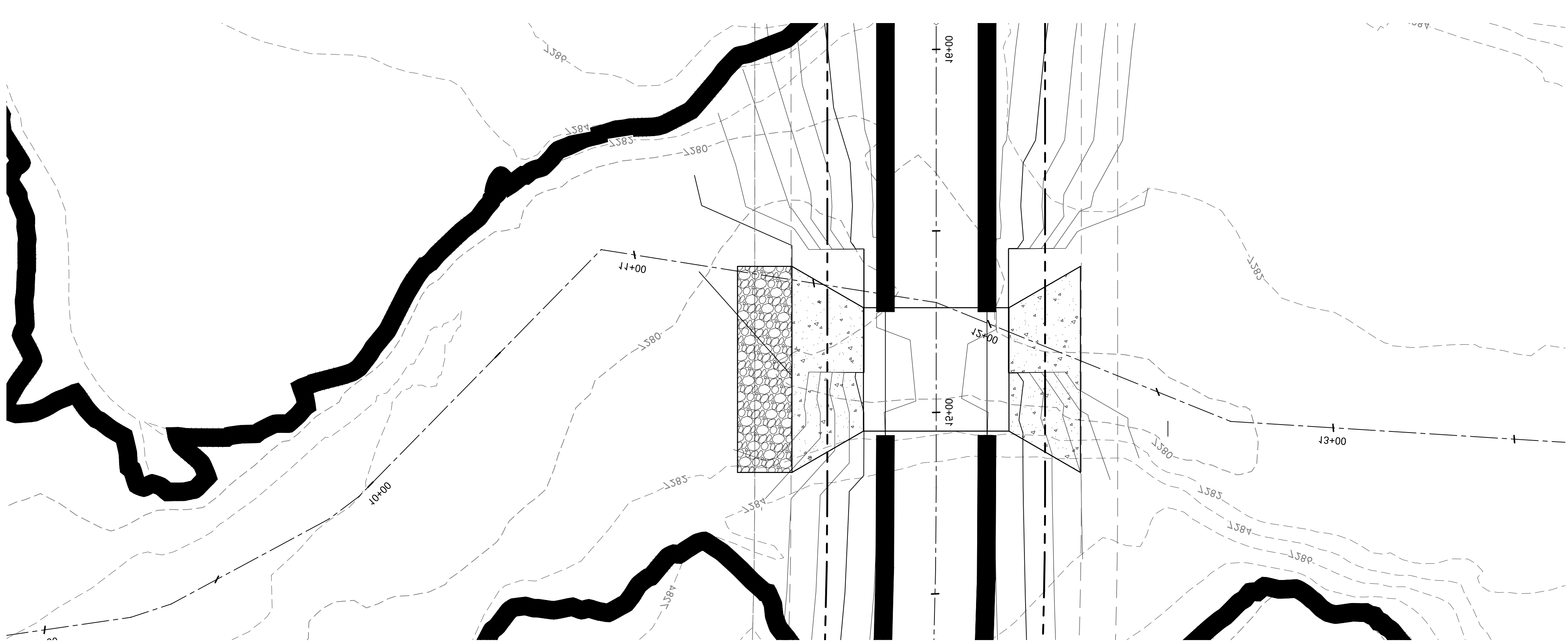
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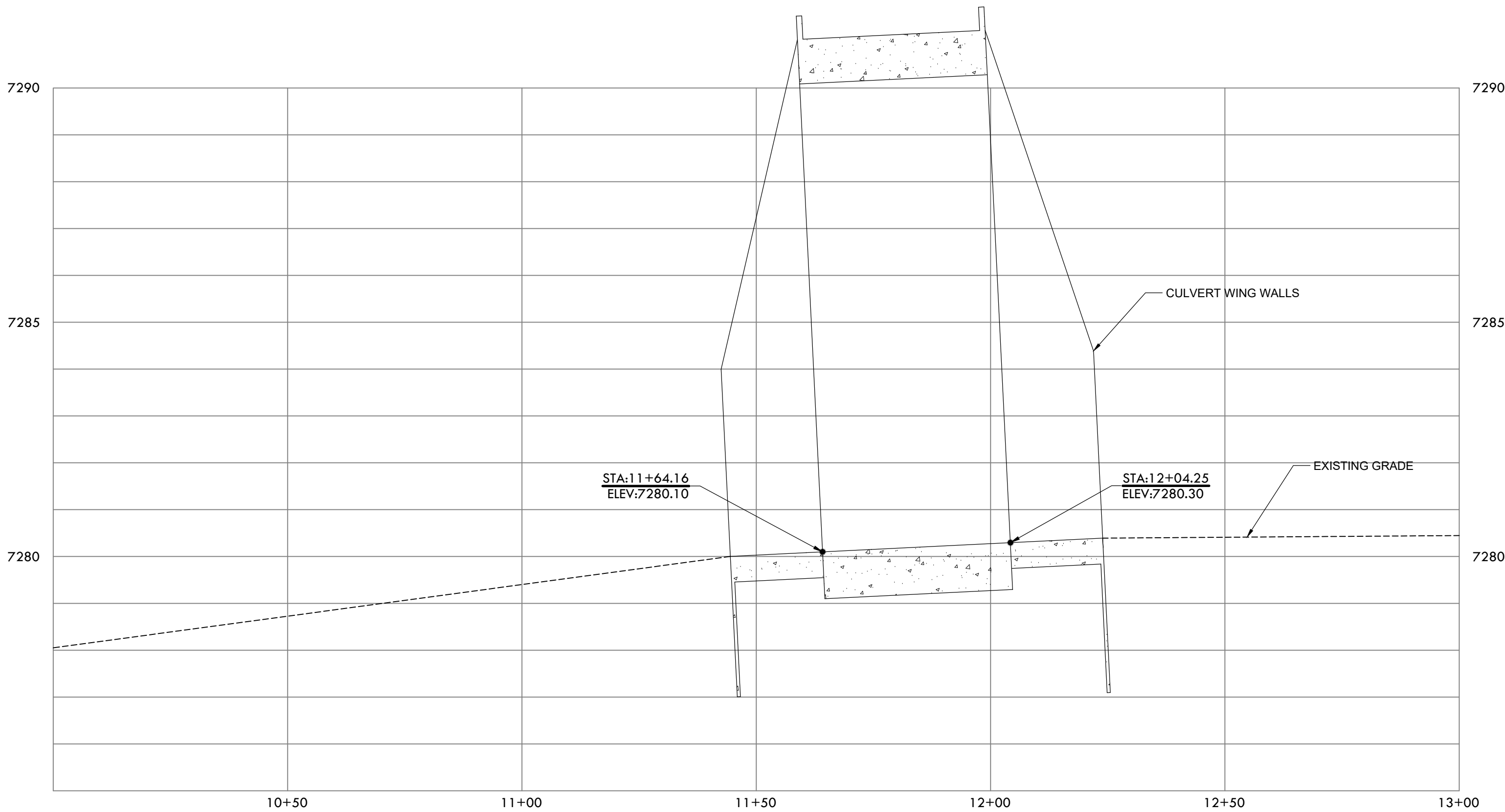
WINSOME SUBDIVISION

A PARCEL OF PROPERTY LOCATED IN SECTIONS 13 & 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AND IN THE WEST HALF OF THE WEST HALF OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO

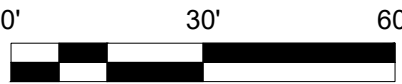
CASE #: 19-08-0185R



BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M.
A 3.5" ALUMINUM CAP STAMPED "LS 12103"
ELEVATION IS 7429.30 NAVD88



FLOODPLAIN ALIGNMENT PROFILE
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'



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BOX CULVERT 2 FLOODPLAIN PROFILE

SITE: 1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
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2	REVISED PER REVIEW COMMENTS 4/2/19
3	REVISED PER REVIEW COMMENTS 6/5/19
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DATE: 3/19/19

DRAWN BY: JCP

CHECKED BY: LPV

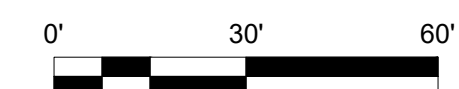
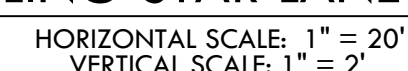
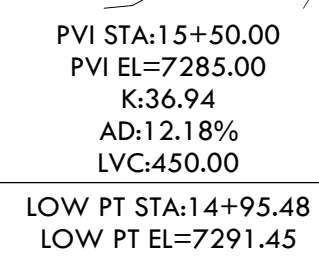
JOB #: 49388

CASE #: 19-08-0185R

BENCHMARK: NORTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH,
RANGE 65 WEST OF THE 6TH P.M.

A 3.5" ALUMINUM CAP STAMPED "LS 12103"

ELEVATION IS 7429.30 NAVD88



DATE: 3/19/19	6
DRAWN BY: JCP	
CHECKED BY: LPV	
JOB #: 49388	

FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132



G. PROJECT DRAINAGE REPORT

H. ENVIRONMENTAL ANALYSIS

i. ENDANGERED SPECIES "NO-TAKE" LETTER



Proposal 2018-10-1

April 5, 2019

Joe Desjardin
ProTerra Properties, LLC
Director of Development
2475 Waynoka Place
Colorado Springs, Colorado 80915

RE: Winsome Ecological Report - Case #19-08-0185R, FEMA ESA Compliance

Dear Mr. Desjardin:

The U.S. Fish and Wildlife Service (USFWS) has completed their review of the Ecosystem Services, LLC (ecos) "Biological Assessment" presented in our *Natural Features and Wetland Report for the Winsome Property in El Paso County, Colorado* dated January 4, 2019 (Ecological Report) and concurs with our finding that this project will result in "no take" of threatened and endangered species regulated under the Endangered Species Act. To acknowledge their concurrence the USFWS placed a "stamp" on the cover of the Ecological Report indicating they have "No Concerns" which was signed by the USFWS and dated 4-2-2019. USFWS also wrote notes next to the stamp describing that the concurrence was based on the following facts:

- 1) the marginal Preble's meadow jumping mouse (PMJM) habitat onsite that is not connected to good habitat;
- 2) conservation measures will be implemented by the Project to protect riparian habitat; and
- 3) the Project committed to survey for Ute ladies-tresses orchid at wetland impact areas despite the presence of marginal habitat for this species.

Based on the findings of the Ecological Report as supported by the USFWS concurrence, ecos can confidently state that the Winsome Project presents no potential for take of threatened and endangered species listed under the Endangered Species Act.

Sincerely,

Ecosystem Services, LLC

A handwritten signature in black ink that reads "Grant E. Gurnée".

Grant E. Gurnée, P.W.S.
Restoration Ecologist - Wildlife Biologist

H. ENVIRONMENTAL ANALYSIS

ii. US FISH AND WILDLIFE “NO CONCERN” LETTER



Informal Consultation Request

January 10, 2019

Mr. Drue DeBerry
Acting Colorado Field Supervisor
U.S. Fish and Wildlife Service
Colorado Ecological Services Field Office
134 Union Blvd., Suite 670
Lakewood, Colorado 80228

2019-TA-0422

U.S. FISH AND WILDLIFE SERVICE	
<input checked="" type="checkbox"/> NO CONCERNS	
<input type="checkbox"/> CONCUR NOT LIKELY TO ADVERSELY AFFECT	
<input type="checkbox"/> NO COMMENT	
<i>Leslie E. Howard</i> Drue DeBerry Colorado and Nebraska Field Supervisor	4-2-2019 DATE

- marginal Pinyon habitat, not connected to good habitat
- Conservation measures will protect riparian areas
- will survey for WLT0; marginal habitat

RE: Request for Technical Assistance Regarding the Likelihood of Take of Federally-listed Threatened and Endangered Species resulting from the proposed development of the Winsome Project in El Paso County, Colorado

Dear Mr. DeBerry:

Ecosystem Services, LLC (ecos) has prepared the enclosed habitat evaluation on behalf of PT McCune, LLC to describe the physical/ecological characteristics of the Winsome Property (Site) and evaluate the potential effects of the proposed development project (Project) on the Federally-listed threatened and endangered (T&E) species protected under the Endangered Species Act (ESA).

The El Paso County Environmental Division has completed its review of the Winsome project (Project) and has requested the following: "Documentation from the U.S. Fish and Wildlife Service (USFWS) shall be provided to the Planning and Community Development Department prior to project commencement where the project will result in ground disturbing activity in habitat occupied or potentially occupied by threatened or endangered species and/or where development will occur within 300 feet of the centerline of a stream or within 300 feet of the 100 year floodplain, whichever is greater."

At this time there is no Federal action and no Federal agency is making a formal effects determination under Section 7 (a)(2) of the ESA. Therefore, ecos is requesting technical assistance from USFWS regarding PT McCune, LLC's (i.e., the non-federal party) responsibilities under the ESA, and specifically the likelihood of the Project (described herein) resulting in take of listed species. If the USFWS concurs with the findings presented herein we request that you issue an informal letter of concurrence for use in the El Paso County Project review process.

1.0 PROJECT DESCRIPTION and SITE LOCATION

The Site is situated in the northeastern corner of the Black Forest approximately 12.5 miles east of Monument and 7.3 miles east of Highway 83, in El Paso County, Colorado. The Site is located in the northwest corner of Hodgen and Meridian Roads. The Site is specifically located within Section 24, the south $\frac{1}{4}$ of Section 13, and the west $\frac{1}{2}$ of Section 19, Township 11 South, Range 65 West in El Paso County, Colorado (refer to Figure 1).

The Applicant proposes to form a metropolitan district within El Paso County and develop the 766.66-acre Site as a residential community consisting of 5-acre and 2.5 acre single-family detached rural-residential lots and one 7.9-acre commercial lot, including trails, utilities, and streets and cul-de-sacs that provide access to each lot; and preserve 148.6 acres of open space along West Kiowa Creek (refer to Figure 2).

2.0 METHODOLOGY

2.1 Office Assessment

Ecos performed an office assessment in which available databases, resources, literature and field guides on local flora and fauna were reviewed to gather background information on the environmental setting of the Site. We consulted several organizations, agencies, and their databases, including:

- Colorado Department of Agriculture (CDA) Noxious Weed List;
- Colorado Natural Heritage Program (CNHP);
- Colorado Oil and Gas Conservation Commission (COGCC) GIS Online;
- Colorado Parks and Wildlife (CPW);
- El Paso County Black Forest Preservation Plan Update;
- Google Earth current and historic aerial imagery;
- CNHP Survey of Critical Biological Resources, El Paso County, Colorado;
- CNHP Survey of Critical Wetlands and Riparian Areas in El Paso and Pueblo Counties, Colorado;
- U.S. Fish and Wildlife Service (USFWS) Region 6;
- USFWS National Wetland Inventory (NWI); and
- U.S. Geological Survey (USGS).

2.2 Onsite Assessments

Following the collection and review of existing data and background information, ecos conducted a field assessment of the Site on September 5, 2018 to identify any potential impacts to natural resources associated with the Project. Field reconnaissance concentrated on identification of wetland habitat, waters of the U.S. and on the presence of habitat suitable to support threatened and endangered wildlife. Ecos conducted a follow-up field assessment on September 20, 2018 to gather additional data. Wetland habitat and waters of the U.S. boundaries, wildlife habitat, and vegetation communities were sketched on topographic and aerial base maps and located using a hand-held Global Positioning System as deemed necessary. Representative photographs were taken to assist in describing and documenting Site conditions and potential ecological impacts.

H. ENVIRONMENTAL ANALYSIS

iii. MC CUNE RANCH - NATURAL FEATURES AND WETLAND REPORT

Winsome Subdivision
17480 Meridian Road North
Colorado Springs, Colorado 80924

Preliminary Drainage Report

MAY 15, 2019

PREPARED FOR:

PT McCune, LLC
Joseph W DesJardin
1864 Woodmoor Drive
Suite 100
Monument, Colorado 80132

PREPARED BY:

The Vertex Companies, Inc.
2420 W. 26th Avenue, Suite 100-D
Denver, Colorado 80211
PHONE: 303-623-9116

VERTEX Project: 49388
PCD File No. SP-18-006
FEMA Case No: 19-08-0185R



Jason Priddy
Project Engineer

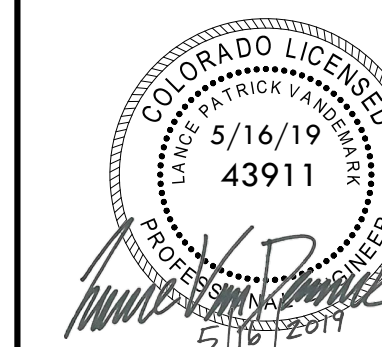


Lance VanDemark, P.E.
Project Manager




10.0 DRAINAGE PLANS



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BASIN	BASIN AREA (ACRES)	CURVE NUMBER	Q ₁
A	915.4	61.8	58.0
Ba	3836.7	60.3	144.0
Bb	100.6	69.8	12.0
Ca	162.7	60.0	12.0
Cb	70.0	68.7	88.0
Da	161.3	60.0	12.0
Db	49.9	60.0	34.0
Dc	249.7	67.7	27.0
Ea	37.9	60.0	34.0
Eb	74.6	67.2	85.0
F	44.5	69.0	56.0
G	107.6	74.5	19.0
H	121.8	71.8	19.0
I	37.5	79.0	88.0
J	10.1	69.5	19.0
K	17.8	76.0	45.0
	5998.1		

 PROPERTY BOUNDARY LINE
 EXISTING CONTOUR
 DRAINAGE BASIN BOUNDARY
 DRAINAGE BASIN FLOW PATH

EXISTING DRAINAGE PLAN - OVERALL

SITE: 17480 MERIDIAN ROAD
ELBERT, COLORADO 80106

FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
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2	3/8/19 PRELIMINARY RESUBMITTA
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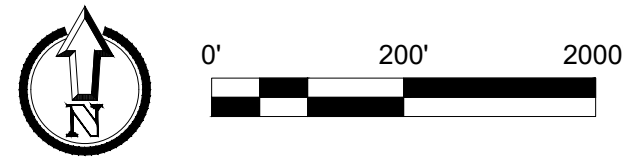
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C1.1

JOB #: 49388

PCD FILE NO SP-18-006

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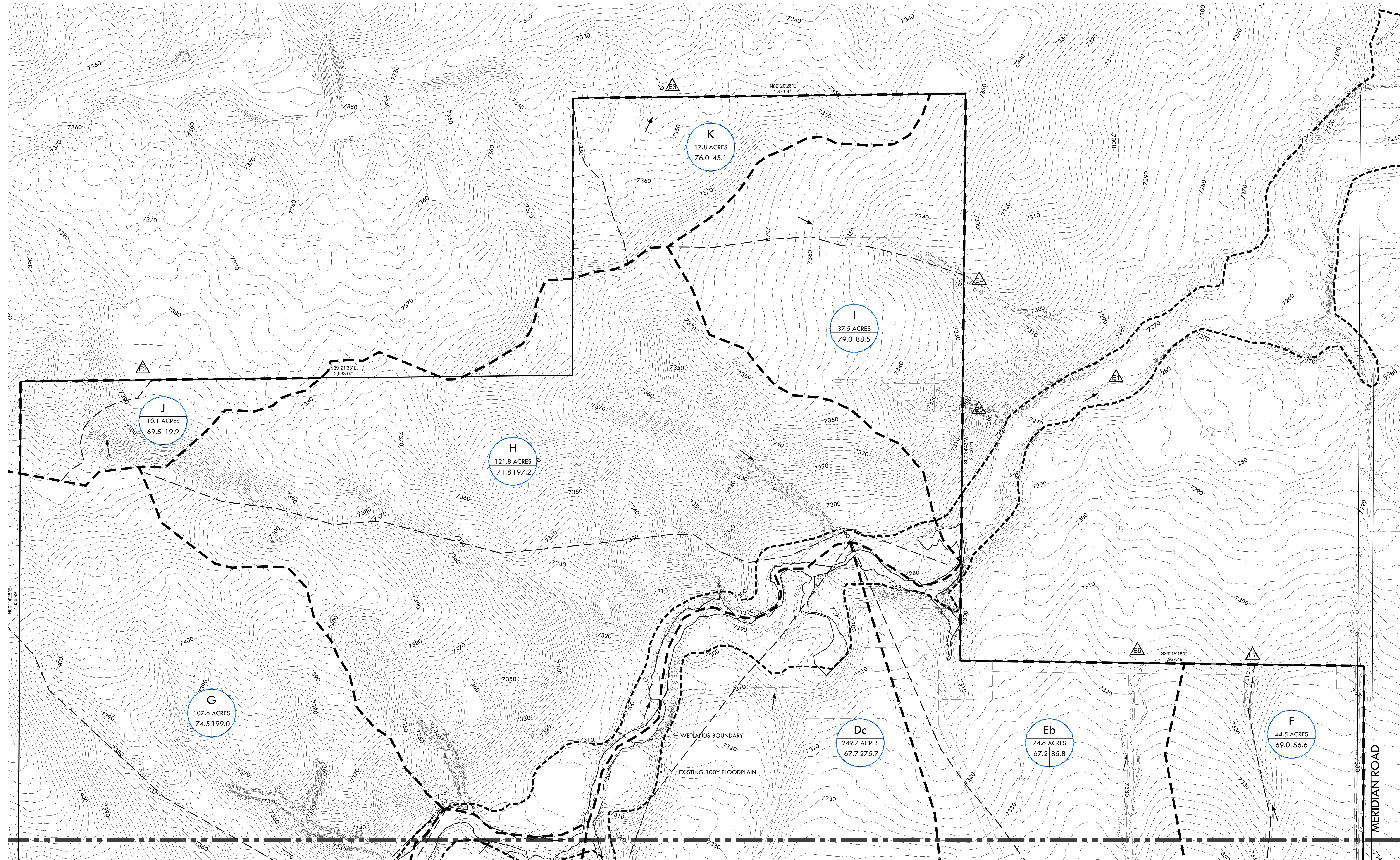
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A PARCEL OF PROPERTY LOCATED IN SECTIONS 13 & 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AND IN THE WEST HALF OF THE WEST HALF OF SECTION 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M., COUNTY OF EL PASO, STATE OF COLORADO



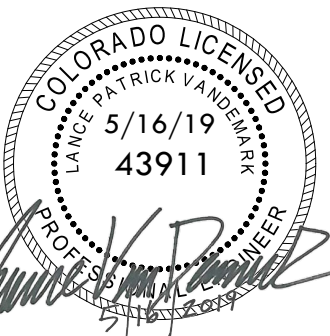
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- △ E3 OFFSITE FLOW Q5=12.9CFS Q100=45.1CFS
- △ E4 + △ E5 OFFSITE FLOW Q5=26.4CFS Q100=88.5CFS
- △ E6 OFFSITE FLOW Q5=9.4CFS Q100=85.8CFS
- △ E7 OFFSITE FLOW Q5=6.6CFS Q100=56.6CFS

NOTES:
1. EXISTING FLOODPLAIN AS SHOWN BASED ON FIRM MAP #08041C0350G PANEL 350 REVISED 12/7/2018, GENERATED BY GRAPHICAL OVERLAY.



MATCH LINE - SEE SHEET C1.3 - EXISTING DRAINAGE PLAN - SOUTH

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EXISTING DRAINAGE PLAN - NORTH
SITE: 17480 MERIDIAN ROAD
ELBERT, COLORADO 80106
FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
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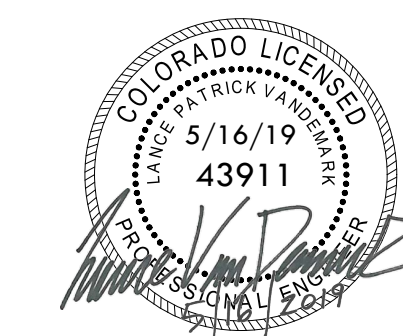
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CHECKED BY: LPV
JOB #: 49388

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PCD FILE NO SP-18-006



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3	4/11/19 PRELIMINARY RESUBMITTA
4	5/10/19 PRELIMINARY RESUBMITTA
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DATE: 1/11/19	C1.3
DRAWN BY: JCP	
CHECKED BY: LPV	
JOB #: 49388	

WETLANDS BOUNDARY

EXISTING 100Y FLOODPLAIN

HODGEN ROAD

MERIDIAN ROAD

A
915.4 ACRES
61.8 585.9

Bb
100.6 ACRES
69.8 127.7

Cb
70.0 ACRES
68.7 88.0

Dc
249.7 ACRES
67.7 275.7

Eb
74.6 ACRES
67.2 85.8

F
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69.0 56.6

Ba
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Ca
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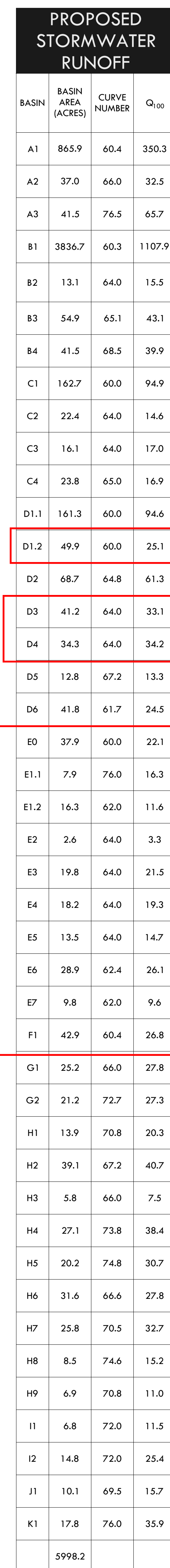
Da
161.3 ACRES
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Db
49.9 ACRES
60.0 34.1

Ea
37.9 ACRES
60.0 34.8






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Thursday, May 16, 2019 1:31:33 PM
Copyright: 2019 The Vertex Companies, Inc.

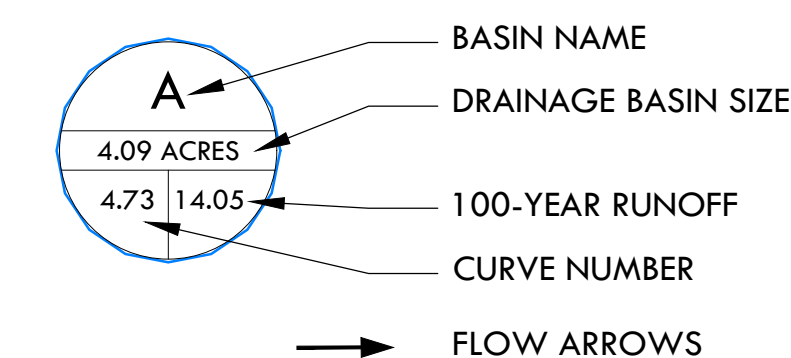
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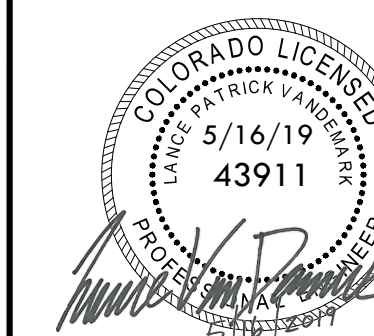
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3	7.1 AC-FT	126.8 CFS
4	1.5 AC-FT	30.6 CFS
5	9.7 AC-FT	120.0 CFS
6	4.0 AC-FT	18.0 CFS

LEGEND

	PROPERTY BOUNDARY LINE
	PROPOSED CONTOUR
	EXISTING CONTOUR
	DRAINAGE BASIN BOUNDARY
	DRAINAGE BASIN FLOW PATH



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PROPOSED DRAINAGE PLAN - OVERALL

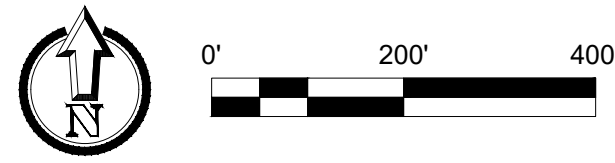
SITE: 17480 MERIDIAN ROAD
ELBERT, COLORADO 80106

FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
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2	3/8/19 PRELIMINARY RESUBMITTA
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JOB #: 49388

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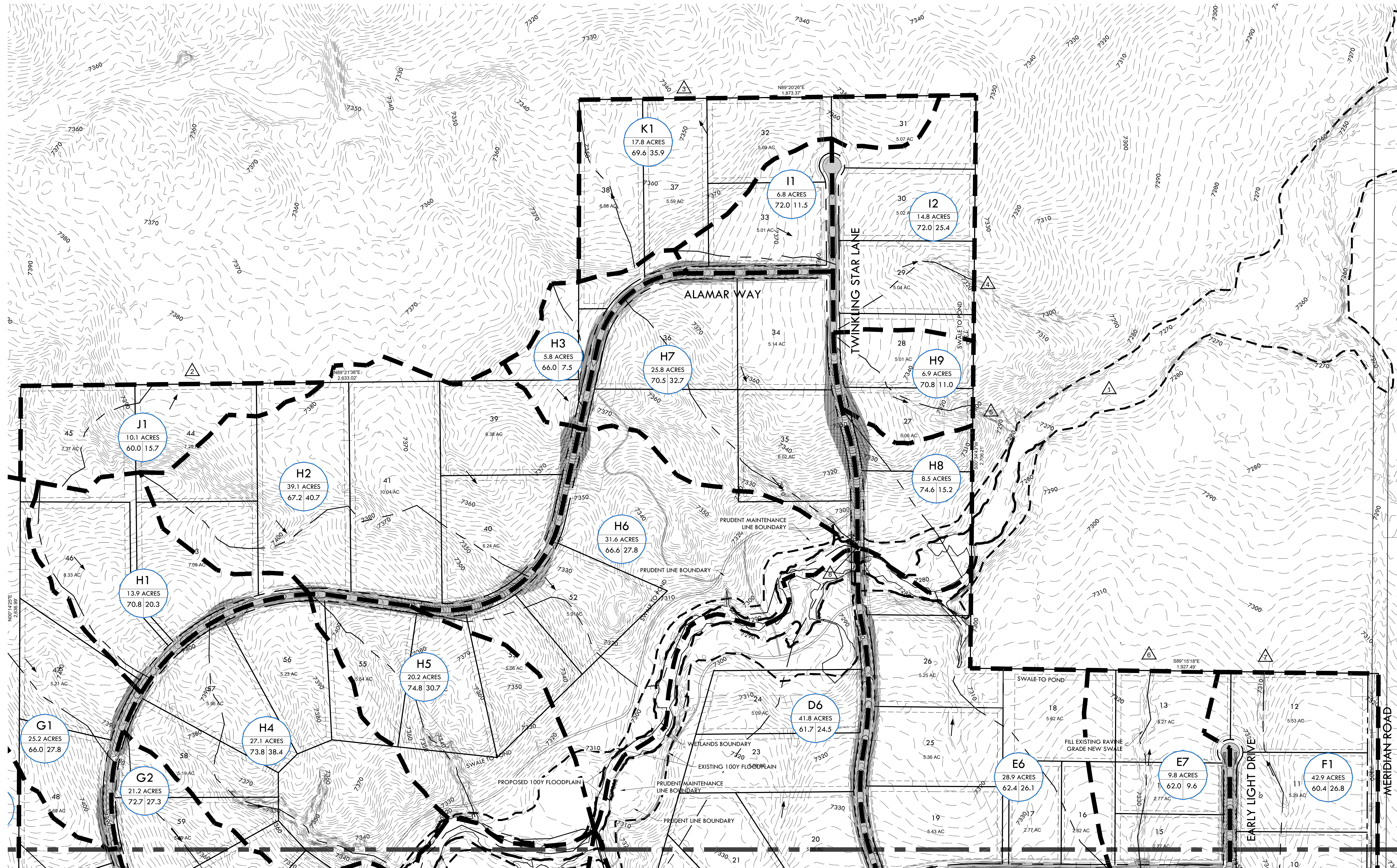
PRELIMINARY PLAN SET WINSOME SUBDIVISION

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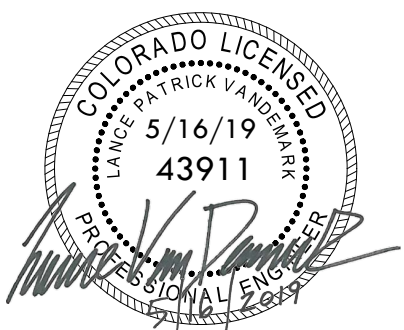
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NOTES:
1. EXISTING FLOODPLAIN AS SHOWN BASED ON FIRM MAP #08041C0350G PANEL 350 REVISED 12/7/2018, GENERATED BY GRAPHICAL OVERLAY.



MATCH LINE - SEE SHEET C2.3 - PROPOSED DRAINAGE PLAN - SOUTH

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PROPOSED DRAINAGE PLAN - NORTH
SITE: 17480 MERIDIAN ROAD
ELBERT, COLORADO 80106
FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 100
MONUMENT, COLORADO 80132

NO.	REVISIONS
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DATE: 1/11/19
DRAWN BY: JCP
CHECKED BY: LPV
JOB #: 49388
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PCD FILE NO SP-18-006



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PROPOSED DRAINAGE PLAN - SOUTH

SITE: 17480 MERIDIAN ROAD
ELBERT, COLORADO 80106

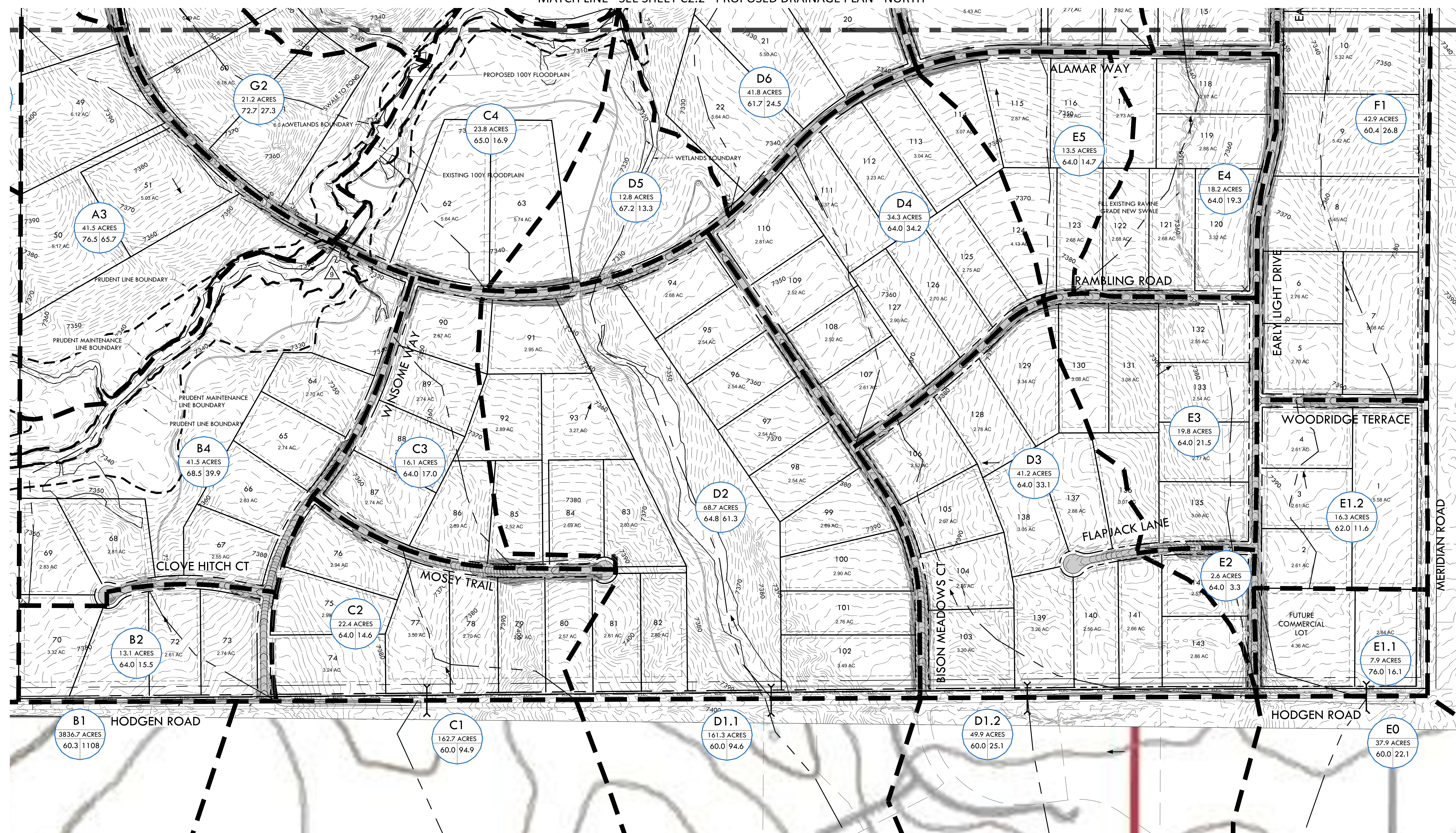
FOR: PT MCCUNE, LLC
1864 WOODMORE DR, SUITE 101
MONUMENT, COLORADO 80132

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4	5/10/19 PRELIMINARY RESUBMITTA
5	5/16/19 PRELIMINARY RESUBMITTA
6	
7	
8	
9	
10	

DATE: 1/11/19	C2.3
DRAWN BY: JCP	
CHECKED BY: LPV	
JOB #: 49388	

\\Fs:\Shared\Projects\49000-49999\49300-McCune Ranch\06-Engineering\Vertex Drawings\PD\49388-PD-Drainage_Proposed - ZOOM.dwg
Thursday, May 16, 2019 1:32:39 PM
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MATCH LINE - SEE SHEET C2.2 - PROPOSED DRAINAGE PLAN - NORTH



P1	OUTFALL Q5=1.5CFS Q100=31.9CFS
P2	OUTFALL Q5=0.9CFS Q100=35.1CFS
P3	OUTFALL Q5=1.4CFS Q100=126.8CFS
P4	OUTFALL Q5=1.3CFS Q100=30.6CFS
P5	OUTFALL Q5=1.9CFS Q100=120.0CFS
P6	OUTFALL Q5=0.7CFS Q100=18.0CFS

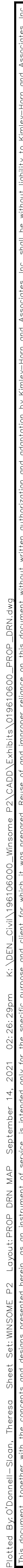
9 BOX CULVERT 1 Q100=2062.2CFS

NOTES:

1. EXISTING FLOODPLAIN AS SHOWN BASED ON FIRM MAP #08041C03500
PANEL 350 REVISED 12/7/2018, GENERATED BY GRAPHICAL OVERLAY.

PCD FILE NO. SP-18-006

APPENDIX E: DRAINAGE MAPS



GRAPHIC SCALE IN FEET

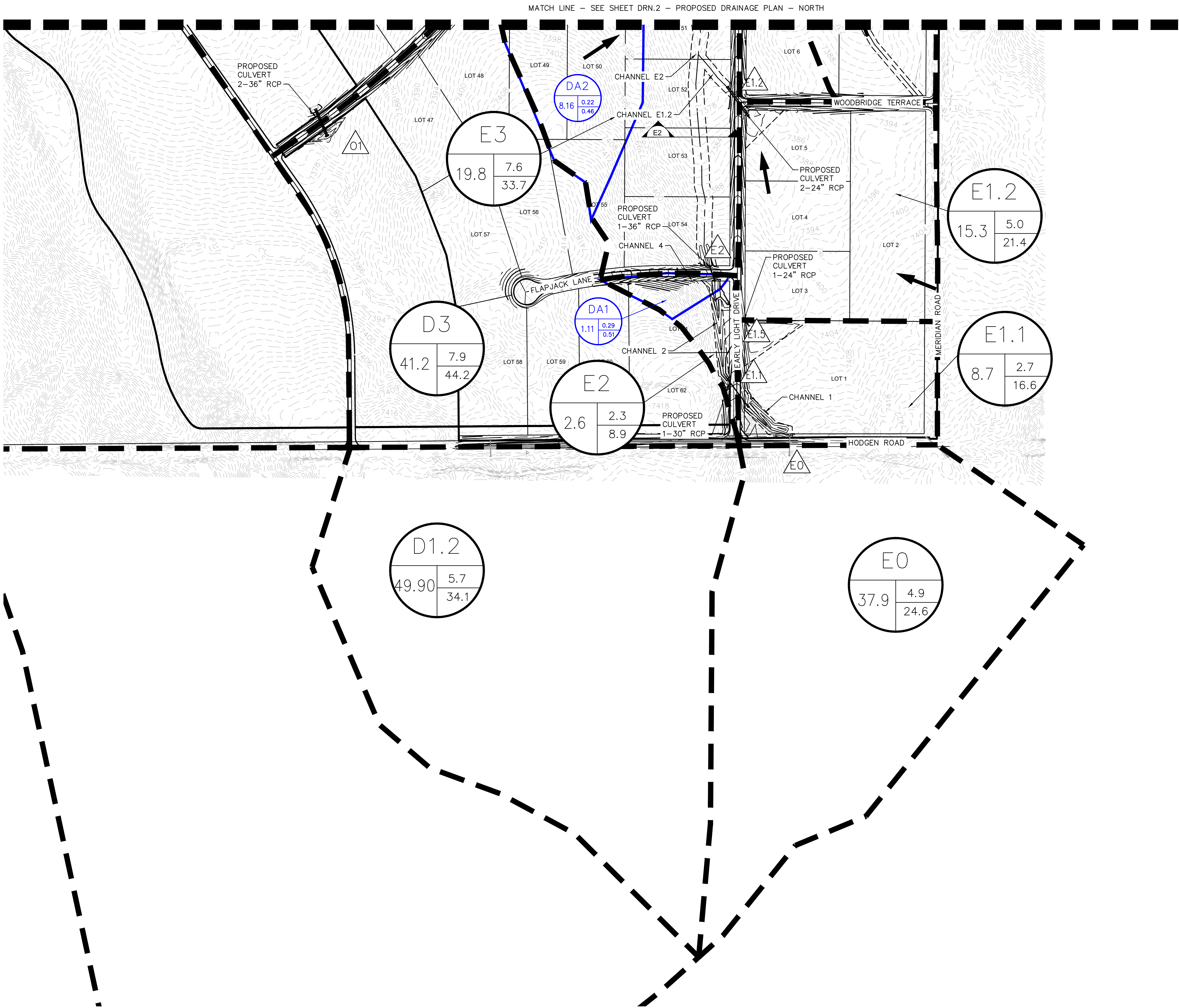
A horizontal scale bar with tick marks at 0, 100, 200, and 400 feet. The bar is divided into alternating black and white segments: a white segment from 0 to 100, a black segment from 100 to 200, and a white segment from 200 to 400.

CHANNEL CROSS SECTION

*In existing conditions culvert E1.2 will receive flows from Basins E1.1 and E1.2. Once Basin E1.2 is developed, flows from will be directed to Culvert E1.2. Flows from Basin E1.1 will be conveyed through Culvert E1.5.

POND 5 SUMMARY TABLE					
Design Storm	WSEL (ft)	Required Volume (ac-ft)	Provided Volume (ac-ft)	Q_IN (cfs)	Q_OUT (cfs)
WQCV	7300.78	1.03	1.04	-	-
EURV	7301.36	1.83	1.83	-	-
100-yr	7303.92	6.34	7.15	161	94.9

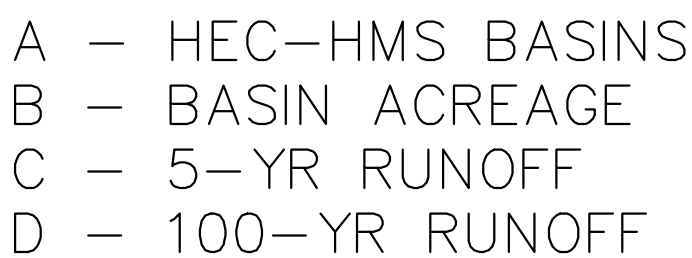
Plotted By: O'Donnell-Stoan, Theresa - Sheet Set: WINSOME P2 - Layout: PROP DRN - SOUTH - September 14, 2021 02:26:32pm - K:\DEN-Civil\196106000-Winsome P2\CADD\Exhibits\0196106000_PROP_DRN.dwg
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DRAINAGE SUB-BASIN AREAS



EXISTING CONTOURS

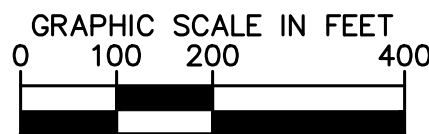
PROPOSED CONTOURS

FLOW ARROW



*In existing conditions culvert E1.2 will receive flows from Basins E1.1 and E1.2. Once Basin E1.2 is developed, flows from will be directed to Culvert E1.2. Flows from Basin E1.1 will be conveyed through Culvert E1.5.

*RATIONAL METHOD
DRAINAGE BASINS
REFLECT FLOWS
GOING TO ROADSIDE
DITCHES.



Kimley»»Horn
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PHONE: 719-453-0180
WWW.KIMLEY-HORN.COM

KHA PROJECT 019610600 DATE 01/08/2021 SCALE AS SHOWN DESIGNED BY KHTAM DRAWN BY KHTAM CHECKED BY TJC	LICENSED PROFESSIONAL KEVIN KOFFORD CO LICENSE NUMBER 57234 DATE: ---
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PROPOSED
DRAINAGE MAP -
NORTH

WINSOME FILING NO. 2
PREPARED FOR
WINSOME LLC

SHEET NUMBER
DRN.2