# Base Flood Elevation, Ditch Profile, and Detention Evaluation

## Project Heartland

Grundy County, Illinois

September 2026

Kimley»Horn

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# Executive Summary

Kimley-Horn and Associates, Inc. (Kimley-Horn) has been contracted to perform a preliminary detention analysis and Base Flood Elevation (BFE) analysis for Project Heartland in Coal City, Illinois. The location of the proposed development is shown below and in **Appendix A** as **Figure 1**.

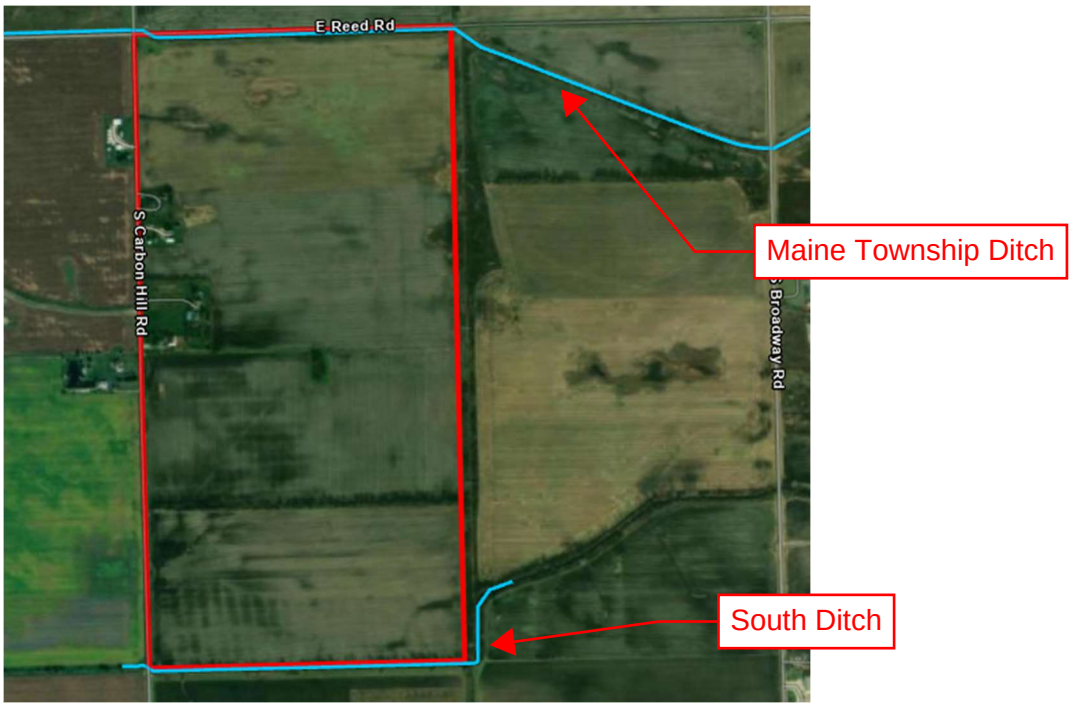



**Figure 1: Project Location**

The purpose of this hydrologic and hydraulic study is to provide the results of the onsite and offsite drainage analysis to estimate the BFEs for the ditch along the south property extent (herein referenced as South Ditch) and the detention requirements for the proposed project site. This report describes the methodology used to determine existing drainage patterns and perform the hydrologic and hydraulic analysis.

The U.S. Army Corps of Engineers HEC-HMS (Hydrologic Engineering Center Hydrologic Modeling System) v. 4.9 modeling program was used to complete the hydrologic analysis of the subject tract. HEC-RAS (Hydrologic Engineering Center River Analysis System) v. 4.6.1 was used to complete the one-dimensional hydraulic modeling of Maine Township Ditch and the South Ditch. HydroCAD was used to analyze onsite detention and release rate requirements.

Base Flood Elevations were determined for the entirety of the South Ditch through the project site and are presented in **Appendix E**. Detention and release rate requirements were analyzed to meet the Will County stormwater regulations and are presented in **Appendix E**.

# 1.0 Introduction

## 1.1 PURPOSE OF STUDY

The purpose of this hydrologic and hydraulic study is to provide the results of the on-site and off-site drainage analysis and to estimate the Base Flood Elevation (BFE) of the South Ditch and to determine onsite detention and release rate calculations. In addition, a proposed culvert sizing of the culverts under


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E. Reed Road and S. Carbon Hill Road was conducted to reduce flood and tailwater impacts on site. This report details the methodology used for this analysis.

### 1.2 LOCATION

The proposed development is in the Village of Coal City, Illinois. The site is located southwest of Coal City, Illinois and northwest of Central City, Illinois. The project site encompasses approximately 300 acres. The site is bounded to the north by E. Reed Road, to the east by private agricultural land, to the west by S. Carbon Hill Road, and to the south by Unnamed Tributary (South Ditch). The development falls under the jurisdiction of the Will County stormwater ordinance.

The site is located on FEMA Flood Insurance Rate Map (FIRM) Panels 17063C0145F and 17063C0210F as depicted in **Figure 2** in **Appendix A**. The majority of the site lies entirely within a FEMA Special Flood Hazard Area (SFHA) Zone X, “Area of Minimal Flood Hazard.” The Maine Township Ditch, and the northwestern corner of the site, lie within a FEMA SFHA Zone AE. Zone AE Base Flood represents areas determined to be subject to inundation in the 1% annual chance event which have had base flood elevations (BFEs) determined. The South Ditch does not currently have BFEs determined and will be analyzed as part of this report.

A vicinity map showing the limits and location of the subject tract is shown as **Figure 1** in **Appendix A**.

### 1.3 GENERAL SITE CHARACTERISTICS

The project site is primarily undeveloped agricultural land located adjacent to E. Reed Road and S. Carbon Hill Road. Maine Township Ditch runs through the project site from east to west along E. Reed Road and exits the site to the north under E. Reed Road through a 6-foot culvert. The flows are then directed west under S. Carbon Hill Road through another 6-foot culvert. Offsite flows are captured outside the east property limit and conveyed into either Maine Township Ditch or the South Ditch.

The South Ditch runs from east to west along the southern border of the project site. The ditch is a tree lined, triangular section with a depth of 6 feet within the project limits. Midway through the site, the flow passes through a 4-foot culvert. At Carbon Hill Road, the ditch is conveyed beneath the roadway through a 6-foot culvert and continues downstream to the west. South Ditch is not privately owned and is under the jurisdiction of Grundy County.

## 2.0 Survey Information

### 2.1 TOPOGRAPHIC INFORMATION

Site specific survey was provided for the site by the Client on February 5th, 2026. The survey included on-site topographic information and hard-shot channel data collected along the length of the Maine Township Ditch at approximately 300-foot intervals. These survey data were used to define ground elevations and channel geometry within the model.

Publicly available 1-meter LiDAR was used to supplement the site-specific survey data. Public LiDAR of the model area was obtained from the United States Geological Survey (USGS). The topography from this supplemental data was used to define the limits of the hydrologic model along high points throughout the terrain.


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# 3.0 South Ditch Base Flood Elevation Analysis

## 3.1 INTRODUCTION

A preliminary analysis of South Ditch was performed in HEC-RAS to determine water surface elevations (WSEs) for the 100-year flood event and to be used for compensatory storage calculations. Discharge data was collected from the United States Geological Survey (USGS) StreamStats software for analysis in the HEC-RAS model.

## 3.2 DISCHARGE DATA

Three discharges from StreamStats were applied to the HEC-RAS model. StreamStats data is provided in **Appendix B**. Discharge locations were selected to represent locations across the watershed where flow changes and to provide detailed flow data through the South Ditch along the border of the property. The regression equations used by StreamStats closely represent the similar conditions of Maine Township Ditch and provide values in-line with the regulatory model scaled to the conditions of the South Ditch. The total tributary area to the South Ditch at the proposed outfall location is 1.83 square miles (1,171 acres). A summary of the discharges and the associated cross sections are presented below in **Table 1**. A base flood elevation map with cross sections is provided in **Appendix B**.

**Table 1: USGS Discharges and Locations**

| Cross Section | USGS Flow (cfs) |
|---|---|
| 299 | 232 |
| 2862 | 221 |
| 3654 | 188 |

## 3.3 HEC-RAS ANALYSIS

In HEC-RAS version 6.4.1, a reach was defined to represent the South Ditch. Cross sections were added throughout the watershed model and project site to capture hydraulically relevant features and to represent the channel and overland geometry of the study area.

Two existing culverts were modeled in the reach along the south end of the project site. The first culvert is a 4-foot concrete pipe culvert that conveys flow under an agricultural crossing located approximately halfway through the project site along South Ditch. The second culvert is a 6-foot corrugated metal pipe culvert conveying flow under S. Carbon Hill Road at the western limit of the project site. Expansion and contraction ratios were increased, and ineffective areas were applied to two cross sections upstream and downstream of these crossings.

Manning's n values for the channel and overbank were determined from aerial and street-view imagery. A Manning's of 0.06 and 0.045 were used for the overbanks and channel respectively.

The USGS flows were applied in HEC-RAS as steady flow data at the cross sections mentioned above. A normal depth boundary condition was used at the downstream end of the study.

## 3.4 BASE FLOOD ELEVATION SUMMARY

Base flood elevations determined throughout the model are shown in **Table 2** below. Onsite cross sections are denoted with an asterisk. A base flood elevation map is provided in **Appendix B**.


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**Table 2: South Ditch Base Flood Elevation Summary Table**

| River Station | Profile | Q Total | WSE (ft) |
|---|---|---|---|
| 3654 | 100-Yr | 188 | 568.62 |
| 3493 | 100-Yr | 188 | 568.61 |
| 3200 | 100-Yr | 188 | 568.46 |
| 2956 | 100-Yr | 188 | 568.32 |
| 2861 | 100-Yr | 221 | 568.24 |
| 2701 | 100-Yr | 221 | 568.19 |
| 2289 | 100-Yr | 221 | 567.89 |
| 1955 | 100-Yr | 221 | 567.68 |
| 1767 | 100-Yr | 221 | 567.56 |
| 1757 | 100-Yr | 221 | 567.56 |
| 1747 | 100-Yr | 221 | 567.56 |
| 1721 | Culvert | Culvert | Culvert |
| 1694 | 100-Yr | 221 | 566.09 |
| 1684 | 100-Yr | 221 | 566.06 |
| 1673 | 100-Yr | 221 | 566.05 |
| 1496 | 100-Yr | 221 | 565.87 |
| 963 | 100-Yr | 221 | 565.81 |
| 491 | 100-Yr | 221 | 565.81 |
| 299 | 100-Yr | 232 | 565.81 |
| 289 | 100-Yr | 232 | 565.80 |
| 257 | 100-Yr | 232 | 565.80 |
| 226 | Culvert | Culvert | Culvert |
| 173 | 100-Yr | 232 | 564.84 |
| 158 | 100-Yr | 232 | 564.81 |
| 144 | 100-Yr | 232 | 564.80 |
| 32 | 100-Yr | 255 | 564.40 |

# 4.0 Maine Township Ditch Culvert Sizing

## 4.1 INTRODUCTION

A Letter of Map Revision (LOMR No. 18-05-6349P) was completed for Maine Township and Claypool Ditch in 2019, establishing the effective BFEs for the study area.

Detention release along the regulatory floodplain of Maine Township Ditch is controlled, in part, by the 100-year tailwater elevations. The FEMA FIS report shows water surface profiles for Maine Township Ditch throughout the project site. Due to the restrictive nature of the culverts at the downstream end of the site, under E. Reed Road and S. Carbon Hill Road, there is a significant drop in water surface elevations across the FEMA profile through these culverts.


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## 4.2 CULVERT ANALYSIS

The regulatory model for Maine Township Ditch was acquired from FEMA. The model was opened and run in HEC-RAS v. 6.4.1 to ensure compatibility across versions and verify version results against the regulatory model. See **Appendix E** for the Maine Township Ditch HEC-RAS output logs and profile summary tables.

The model includes the existing 6-foot culverts under E. Reed Road and S. Carbon Hill Road. A corrected effective model geometry was created by updating the effective geometry with more recent USGS lidar and site-specific survey. In addition to updated survey, six additional cross sections, 20426, 20601, 20873, 21180, 21485, and 21756, were added for defining hydraulic structures that are included in proposed development conditions. These additional cross sections provide the level of detail necessary to model the structures consistently in both the existing and proposed conditions analysis.

A proposed effective model was created by updating the corrected effective model with proposed 14-foot wide by 6-foot tall box culverts at the ditch crossing for E. Reed Road and S. Carbon Hill Road, and the proposed access drive crossings. The culverts are embedded six inches below the channel invert; therefore, the effective hydraulic opening of each culvert is 14-feet wide by 5.5 feet tall. A singular box or dual box culverts with equivalent capacity are proposed, depending on procurement timelines and costs. The proposed culverts reduce the 10-year tailwater elevation by up to 2.5 feet through the project site. Since the FEMA model utilized the same flow upstream and downstream of the culverts, the proposed culvert increase effects are within the adopted upstream and downstream flows. See **Appendix C** for the proposed Maine Township Ditch floodplain delineation. See **Appendix E** for the HEC-RAS profile summary table comparing the water surfaces between the effective, corrected effective, and proposed conditions models. A comparison of effective and proposed conditions water surface elevations for the 10-year and 100-year storm events is also presented in **Table 3**.

Along with reviews by local agencies, the proposed improvements to the Maine Township Ditch and the associated culverts will be submitted to the Illinois Department of Natural Resources (IDNR) in order to obtain a permit to construct the proposed improvements. A Letter of Map Revision from FEMA will be pursued in order to revise the effective floodplain information for the Maine Township Ditch.


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**Table 3: Maine Township Ditch Onsite Base Flood Elevation Summary Table**

| River Station | Corrected Effective 10-Year WSE (ft) | Proposed 10-Year WSE (ft) | Corrected Effective 100-Year WSE (ft) | Proposed 100-Year WSE (ft) |
|---|---|---|---|---|
| 22249 | 566.95 | 564.72 | 567.75 | 566.25 |
| 21969 | 566.92 | 564.38 | 567.73 | 566.05 |
| 21859 | 566.89 | 564.33 | 567.72 | 566.05 |
| 21850* | Culvert | Culvert | Culvert | Culvert |
| 21756 | 566.88 | 564.24 | 567.71 | 565.91 |
| 21485 | 566.86 | 564.11 | 567.71 | 565.86 |
| 21180 | 566.82 | 563.98 | 567.69 | 565.81 |
| 21074* | Culvert | Culvert | Culvert | Culvert |
| 20965 | 566.79 | 563.88 | 567.68 | 565.65 |
| 20873 | 566.79 | 563.86 | 567.68 | 565.64 |
| 20737* | Culvert | Culvert | Culvert | Culvert |
| 20601 | 566.77 | 563.77 | 567.67 | 565.49 |
| 20426 | 566.75 | 563.72 | 567.67 | 565.47 |
| 19996 | 566.69 | 563.46 | 567.64 | 565.28 |
| 19541 | 566.65 | 563.14 | 567.61 | 565.1 |
| 19470 | 566.64 | 563.03 | 567.60 | 565.03 |
| 19448 | 566.63 | 562.99 | 567.60 | 564.91 |
| 19417** | Culvert | Culvert | Culvert | Culvert |
| 19377 | 565.00 | 562.83 | 567.53 | 564.46 |
| 19348 | 565.00 | 562.62 | 567.53 | 564.29 |
| 19316 | 564.95 | 562.64 | 567.53 | 564.29 |
| 19283** | Culvert | Culvert | Culvert | Culvert |
| 19250 | 562.33 | 562.41 | 563.73 | 563.81 |
| 19228 | 562.34 | 562.33 | 563.75 | 563.75 |
| 19154 | 562.23 | 562.23 | 563.63 | 563.63 |

* Access Drive Culverts **Reed and Carbon Hill Culverts

# 5.0 Detention Analysis

## 5.1 INTRODUCTION

The Will County stormwater manual dictates the allowable release rates for the 2- and 100-year storm events for developments. An analysis of detention sizing and release rates was conducted in HydroCAD to determine the required storage volume and outlet sizing to meet the release rates.

The project site was broken into two subbasins with each subbasin having an associated detention pond and allowable release rate determined by the disturbed area for that subbasin. See **Appendix D** for detention drainage area maps.


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## 5.2 EXISTING DRAINAGE

An existing site analysis was conducted in HydroCAD to determine existing drainage patterns and site runoff. Will County ordinance requires that release rates of new development meet the 2-year and 100-year release rate requirements of 0.04 and 0.15 cfs/ac, respectively, of development unless the existing conditions release rate is lower.

In existing conditions, the site is comprised of entirely agricultural landcover. A band of increased elevation splits the site into north, west, and south draining sections. The north and west sections drain to Maine Township Ditch and the south section drains to the South Ditch. In the northwest corner of the project site there is a natural depression that holds water but drains to Maine Township Ditch through a 1-foot culvert or by overland flow. On the southwest side of the property, there is another natural depression that captures water but drains to the South Ditch through a 2-foot culvert.

The results of the existing condition analysis show that existing release rates are well above the 0.04 and 0.15 cfs/ac release rate required by the County. **Table 4** below summarizes the existing conditions release rates.

**Table 4: Existing Conditions Release Rates (100-year, 2-hour Storm Event)**

| Drainage Area | Release Rate (cfs) |
|---|---|
| North | 172.1 |
| West | 159.8 |
| South | 229.8 |

## 5.2 MODEL PARAMETERS

### Curve Number

Curve numbers for the proposed conditions were assigned based on the Will County stormwater manuals acceptance of the TR-55 methodology for determination of curve numbers. The weighted curve numbers used in the detention analysis for the site are presented below in **Table 5**. The dominant landcover types in proposed conditions are pervious open space, impervious, and gravel substation areas.

**Table 5: Subbasin Drainage Area and Curve Number**

| Subbasin | Drainage Area (ac) | Curve Number |
|---|---|---|
| 1 | 124.83 | 87 |
| 2 | 152.15 | 88 |

### Time of Concentration

Time of concentration was estimated based on the proposed land cover conditions to be 10 minutes. Time of concentration calculations used estimates for sheet flow, shallow concentrated flow, and channelized or pipe flow.

### Rainfall

Rainfall data for the project site was acquired from the Illinois State Water Survey (ISWS) Bulletin 75. These rainfall depths were applied to Huff distributions for Illinois in HydroCAD for the 2- and 100-year storm events. Rainfall depths at the project site for the 2- and 100-year storm events are provided in **Table 6** below.


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**Table 6: Precipitation**

| Storm Event | Rainfall (in) |
|---|---|
| 2-Year | 3.34 |
| 100-Year | 8.57 |

**Water Quality Volume**

Will County stormwater ordinance requires that impervious runoff from the 0.75" rainfall event is to be stored for water quality purposes. The runoff volume from the 0.75" event was calculated and added below the primary basin outlets for infiltration and to provide the necessary water quality storage volume. Water quality storage was modeled in HydroCAD using a single pond node for Pond 1 and a single pond node for Ponds 2 and 3. Because the ponds within the south pair are connected by an equalizer pipe at their invert elevations, water can flow freely between them, resulting in a common water surface elevation. Therefore, a single water quality high water level was calculated for Ponds 2 and 3.

## 5.3 RELEASE RATE ANALYSIS

Allowable release rates for the project site are determined by a ratio of cubic feet per second of release per acre of disturbed area. The Will County stormwater manual enforces 0.04 cfs/ac and 0.15 cfs/ac as the ratios for allowable release rates for the 2- and 100-year storm events respectively. There will be two points of release for the proposed development. The northern portion of the site drains to Maine Township Ditch through Basin 1, while the southern basin drains to South Ditch through Basin 3. Basins 2 and 3 are connected by an equalizer pipe and function as a single detention pond. Therefore, for detention design and release rate analysis, the southern basins were modeled as a single storage node with a shared outlet. In more detailed hydraulic modeling, an equalizer pipe will be sized with separate pond nodes.

**Table 7** includes the calculated allowable release rate for each basin in proposed conditions by design storm.

**Table 7: Allowable Release Rates**

| Design Storm | 2-Year | 100-Year |
|---|---|---|
| Basin | Calculated Allowable Release by Basin (cfs) | |
| 1 (North) | 4.99 | 18.72 |
| 2 (South) | 6.09 | 22.82 |

Basins and outlets were designed to meet the release rate requirements dictated by the manual through rate control and storage. Detention analyses were performed for both free outfall condition and tailwater conditions, with tailwater elevations based on the 100-year storm events within the Maine Township Ditch and South Ditch. Stage hydrographs for each ditch were developed using the modeled 100-year peak water surface elevations at the respective outfall locations.

The Maine Township Ditch stage hydrograph was obtained from the effective hydrology and unsteady HEC-RAS model. For the South Ditch, a stage hydrograph was developed using the modeled 100-year BFE at the outfall location and extending it into a 24-hour stage hydrograph to coincide with the onsite storm duration. This provides a conservative estimate of tailwater conditions.


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Typical outlet design consists of an orifice controlling the 2-year and 100-year storm events with an emergency overflow weir conveying larger storm events. The emergency weirs were evaluated with the outlet restrictors assumed to be blocked and using the critical 100-year, 2-hour duration storm event. Under these conditions, the weirs attenuate flows to existing release rates while preventing basin overtopping during extreme events.

A summary of outlet structures and release rates are provided in **Table 8, Table 9, and Table 10**. Full HydroCAD report output logs are provided in **Appendix E**.

**Table 8: Basin Outlet Structures and Release Rates (Free Outfall Condition)**

| Basin | 1 | 2 |
|---|---|---|
| Outlet 1 | 10" Orifice (2x) | 14" Orifice (2x) |
| Invert 1 | 561.27 | 560.2 |
| Outlet 2 | 10" Orifice (2x) | - |
| Invert 2 | 562.32 | - |
| 2-Year Release (cfs) | 4.17 | 4.8 |
| 100-Year Release (cfs) | 17.9 | 15.98 |
| 100-Year HWL (ft) | 565.14 | 563.19 |
| Top of Pond | 567 | 567 |

**Table 9: Basin Outlet Structures and Release Rates (Tailwater Condition)**

| Basin | 1 | 2 |
|---|---|---|
| Outlet 1 | 10" Orifice (2x) | 14" Orifice (2x) |
| Invert 1 | 561.27 | 560.2 |
| Outlet 2 | 10" Orifice (2x) | - |
| Invert 2 | 562.32 | - |
| 2-Year Release (cfs) | 4.52 | 5.81 |
| 100-Year Release (cfs) | 16.29 | 17.66 |
| 100-Year HWL (ft) | 565.61 | 563.73 |
| Top of Pond | 567 | 567 |

**Table 10: Emergency Overflow Weir Summary**

| Basin | 1 | 2 |
|---|---|---|
| Outlet 1 | 10’ Weir | 10’ Weir |
| Invert 1 | 566.0 | 563.6 |
| 100-Year Release (cfs) | 1.51 | 0 |
| 100-Year HWL (ft) | 566.13 | 563.73 |


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Comparing **Table 7** with **Table 8** and **Table 9**, the release rate requirement is met for all storm events across the basins. Stage storage tables are provided in the HydroCAD output logs in **Appendix E** with the total volume of each basin. A summary of basin volumes is presented below in **Table 11**.

**Table 11: Basin Storage Volumes**

| Basin | Used (ac-ft) | Storage Available Below 1-foot Freeboard (ac-ft) | Excess (ac-ft) |
|---|---|---|---|
| 1 (North) | 65.3 | 71.0 | 5.7 |
| 2 (South) | 90.2 | 145.3 | 55.1 |

The depressional storage fill volume is approximately 1.5 ac-ft. Basin 1 provides 5.7 ac-ft of excess storage below the required 1-foot freeboard elevation, which exceeds the required mitigation volume by 4.2 ac-ft.

# 6.0 Compensatory Storage

## 6.1 REQUIREMENTS

In accordance with Will County floodplain development requirements, any flood storage volume displaced by fill within the floodplain must be compensated through equivalent flood storage volume. Compensatory storage requirements for the development were determined from the flood elevations provided in the regulatory FEMA model for Maine Township Ditch and from the preliminary base flood elevation study conducted on the South Ditch. The 10-year flood elevations are contained within the channel throughout the study reach, therefore, no 0- to 10-year compensatory storage volume is required.

During coordination meetings with the Village of Coal City, it was determined that isolated low-lying areas located along the north portion of the site serve as depressional storage areas and are drained through existing culverts beneath Reed Road and Carbon Hill Road. The Village indicated that compensatory storage would be required for these depressional areas up to the inverts of the culverts on a one-to-one ratio. Floodplain storage above the culvert invert would continue to be evaluated based on Grundy County ordinances.

Compensatory storage requirements were determined by comparing the existing floodplain and depressional storage volumes to proposed conditions and calculating the net loss of storage resulting from the proposed development. Existing and proposed ground surfaces were evaluated relative to the applicable BFEs and culvert invert elevations to determine volumes.

## 6.2 SUMMARY

The regulatory FEMA model shows isolated flooding to be present on the north side of the project site. The low-lying areas where the floodplain is delineated are drained by culverts. The compensatory storage provided for these areas was the volume within the 100-year flood elevation that was below the draining culverts based on discussions with the Village of Coal City.

Compensatory storage will be provided within proposed onsite detention basins. The available compensatory storage volume exceeds the required storage volume, resulting in no net loss of floodplain storage. The proposed cut-to-fill ratio is 1.25:1, satisfying the compensatory storage requirements.


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The total compensatory storage volume required for the north portion of the site is 1.5 acre-feet. Compensatory storage will be provided in excess storage within the basins. A summary of the cut and fill computations are provided below in **Table 12**. Detailed calculations are provided in **Appendix F**.

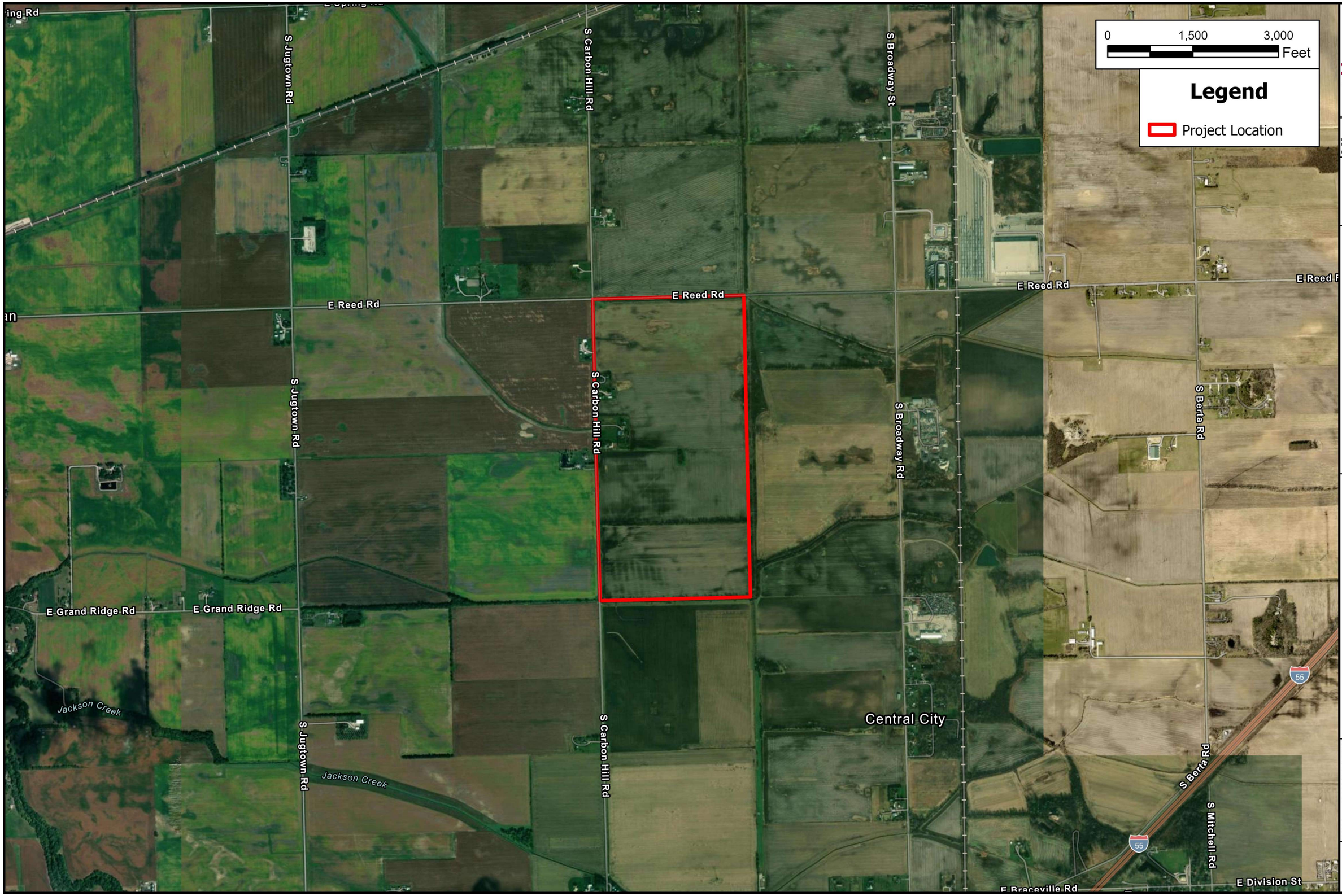
**Table 12: Compensatory Storage Summary**

| Storage Location | Storage (ac-ft) |
|---|---|
| South Floodplain Fill | 40.0 |
| South Total Floodplain Cut | 49.9 |
| South Required Comp Storage | 0.0 |
| North Required Comp Storage | 1.5 |
| Total Required Comp Storage | 1.5 |


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# Appendix A
# Vicinity Maps


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Kimley»Horn
500 E 96th St
Suite 300
Indianapolis, IN 46240
(317) 218-9560

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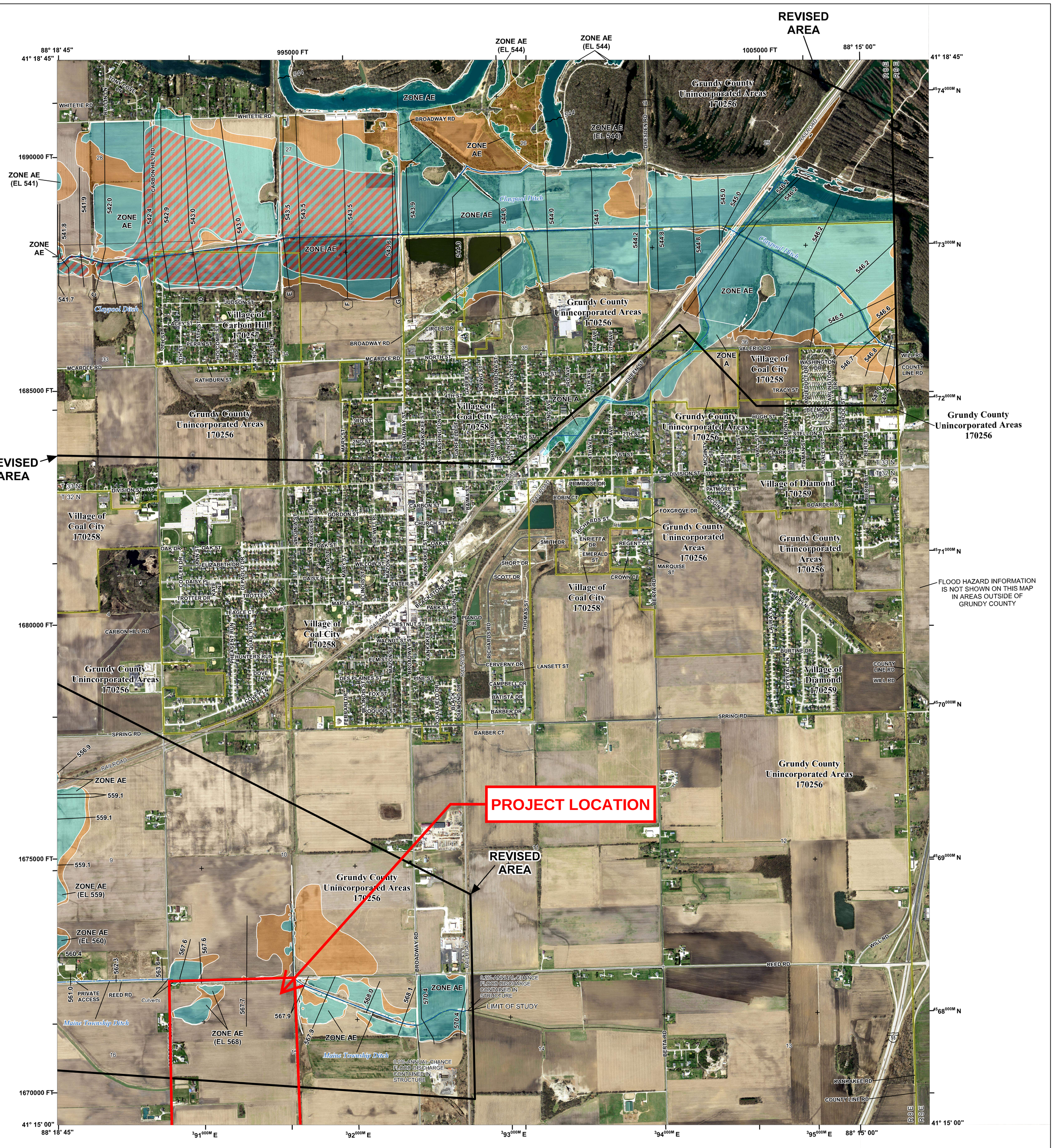
Coal City, IL

PROJECT HEARTLAND

VICINITY MAP

| | |
|---|---|
| DATE: | SEPTEMBER 2026 |
| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE




## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Dam, Jetty, or Weir
- Levee, Dike or Floodwall

**OTHER FEATURES**
- A 718.7 / 717.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 12 Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 512 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to 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.

Base map information shown on this FIRM was provided in digital format by the Cook County Board of Commissioners. This information was derived from digital orthoimagery at a spatial resolution of 0.5 foot from aerial photography dated 2015.

LIMIT OF MODERATE WAVE ACTION: Zone AE has been divided by a Limit of Moderate Wave Action (LiMWA). The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between Zone VE and the LiMWA (or between the shoreline and the LiMWA for areas where Zone VE is not identified) will be similar to, but less severe than, those in Zone VE.

Limit of Moderate Wave Action (LiMWA)

ILLINOIS
Illinois State Water Survey
PRAIRIE RESEARCH INSTITUTE

## SCALE

N

Map Projection:
State Plane Illinois East; FIPS 1201; North American Datum 1983 HARN; Transverse Mercator Projection; Vertical Datum: NAVD88

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 feet

0 125 250 500 meters

## PANEL LOCATOR




*PANEL NOT PRINTED




NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

**GRUNDY COUNTY, ILLINOIS**
and Incorporated Areas

PANEL 145 OF 350

FEMA

Panel Contains:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| CARBON HILL, VILLAGE OF | 170257 | 0145 | F |
| COAL CITY, VILLAGE OF | 170258 | 0145 | F |
| DIAMOND, VILLAGE OF | 170259 | 0145 | F |
| GRUNDY COUNTY | 170256 | 0145 | F |

REVISED TO REFLECT LOMR EFFECTIVE OCTOBER 18, 2019

VERSION NUMBER
2.5.3.0

MAP NUMBER
17063C0145F

MAP REVISED
AUGUST 2, 2012

# 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 flood plain management.

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

In the State of Illinois, any portion of a stream or watercourse that lies within the **floodway fringe** of a studied (AE) stream may have a state regulated floodway. The FIRM may not depict these state regulated floodways.

**Floodways** restricted by anthropogenic features such as bridges and culverts are drawn to reflect natural conditions and may not agree with the model computed widths listed in the Floodway Data table in the Flood Insurance Study report.

Multiple **topographic sources** may have been used in the delineation of Special Flood Hazard Areas. See Flood Insurance Study report for details on source resolution and geographic extent.

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 16. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

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

To obtain current elevation, description, and/or location 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 www.ngs.noaa.gov.

**Base map** information shown on this FIRM was provided in digital format by the United States Geological Survey. Digital orthoimagery with a spatial resolution of 0.5 meter ground sample distance were photogrammetrically compiled from aerial photography acquired during the leaf-off period of spring 2005.

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

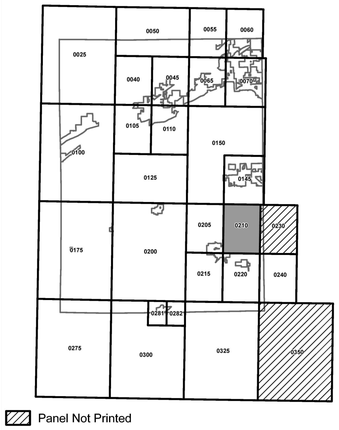
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

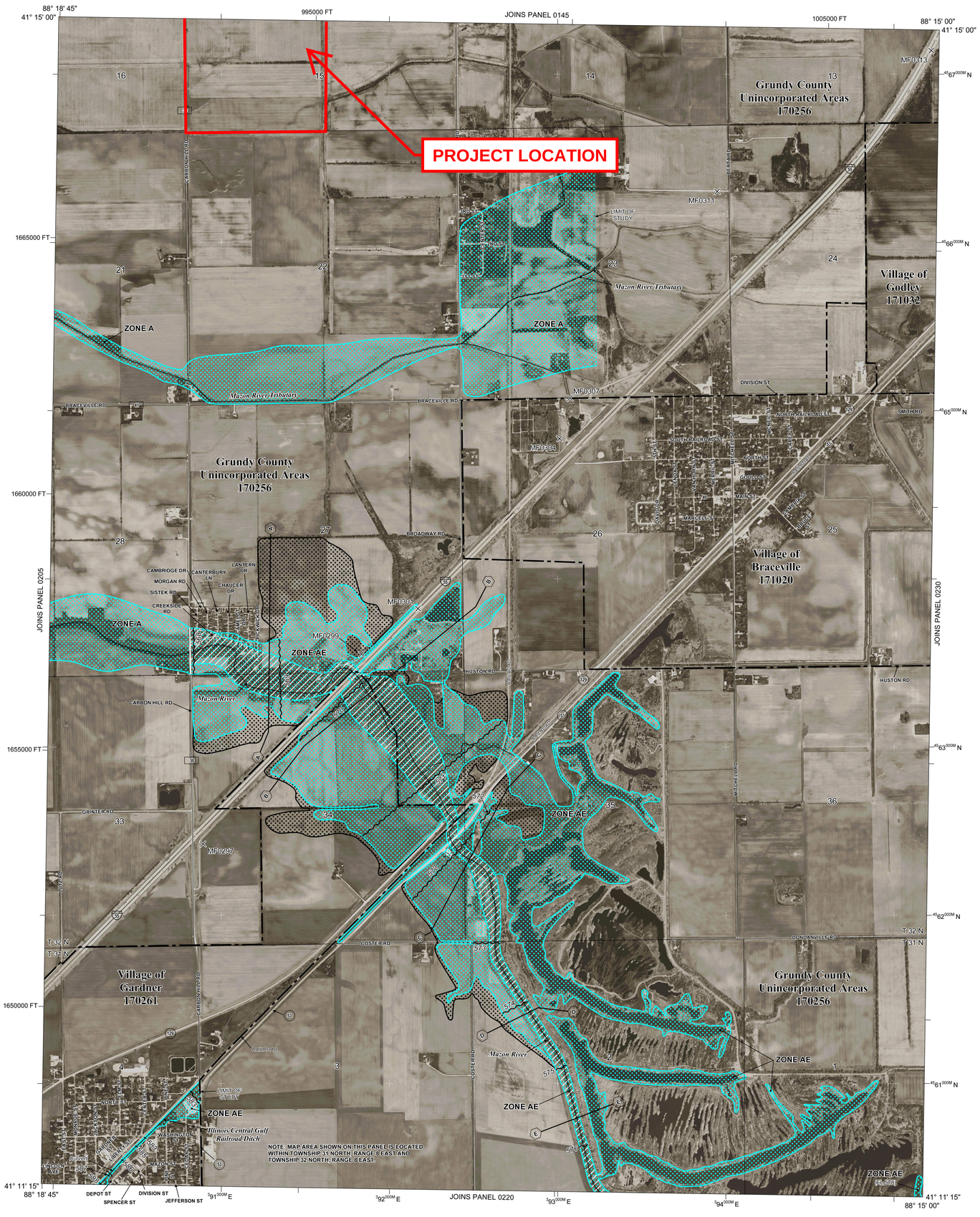
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

For information on available products associated with this FIRM visit the Map Service Center (MSC) website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

# PANEL INDEX




# 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 Areas 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.

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

*Referenced to the North American Vertical Datum of 1988

| | |
|---|---|
| A — A | Cross section line |
| 23 — 23 | Transect line |
| 45° 02' 08", 93° 02' 12" | Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) |
| 4689000M N | 1000-meter Universal Transverse Mercator grid values, zone 16 |
| 1565000 FT | 5000-foot grid tick: Illinois State Plane East Coordinate System, 3776 zone (FIPSZONE 1201) Transverse Mercator |
| DX5510 | Bench mark (see explanation in Notes to Users section of this FIRM panel) |
| M1.5 | River Mile |

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
AUGUST 2, 2012

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

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" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0210F

# FIRM

## FLOOD INSURANCE RATE MAP

## GRUNDY COUNTY, ILLINOIS AND INCORPORATED AREAS

**PANEL 210 OF 350**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| BRACEVILLE, VILLAGE OF | 171020 | 0210 | F |
| GARDNER, VILLAGE OF | 170261 | 0210 | F |
| GODLEY, VILLAGE OF | 171032 | 0210 | F |
| GRUNDY COUNTY | 170256 | 0210 | F |

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

**MAP NUMBER 17063C0210F**

**EFFECTIVE DATE AUGUST 2, 2012**

Federal Emergency Management Agency

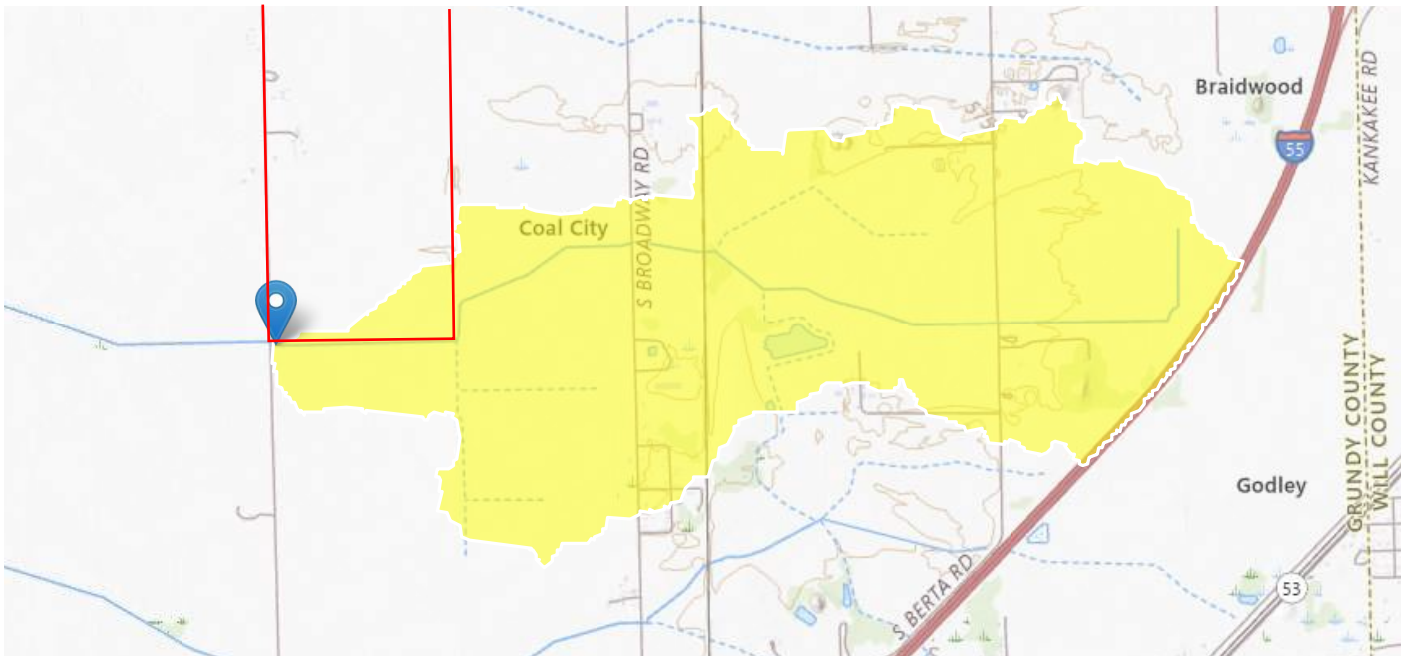
# Appendix B
# Base Flood Elevation Analysis


Kimley»Horn
Copyright © 2025 Kimley-Horn and Associates, Inc.

**ONSITE DOWNSTREAM STREAMSTATS REPORT**

# StreamStats Report

**Region ID:** IL
**Clicked Point (Latitude, Longitude):** 41.24392, -88.30317
**Time:** 2026-04-30 15:26:11 -0500




## StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

## Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 1.83 | square miles |
| FLC16DVLMH | Fraction of drainage area that is in low to high developed land-use classes 22-24 from NLCD 2016 | 0.03 | decimal fraction |
| FSSURGDC78 | Fraction of land area that is in very poorly drained and unknown likely water drainage classes 7 and 8 from SSURGO | 0.0974 | decimal fraction |
| RELRELF | Basin relief divided by basin perimeter | 8.29 | feet per mi |

## Peak-Flow Statistics

### Peak-Flow Statistics Parameters [IL Peakflow Region 2 ICT-23-014]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 1.83 | square miles | 0.07031 | 1352 |
| FLC16DVLMH | Frac_Lo_Med_Hi_Developed_from_NLCD2016 | 0.03 | decimal fraction | 0.002045 | 0.9692 |
| FSSURGDC78 | Fraction_SSURGO_Drainage_Classes_7_and_8 | 0.0974 | decimal fraction | 0 | 0.2506 |
| RELRELF | Relative Relief | 8.29 | feet per mi | 0.8122 | 35.97 |

### Peak-Flow Statistics Flow Report [IL Peakflow Region 2 ICT-23-014]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

| Statistic | Value | Unit | PIL | PIU | ASEp |
|---|---|---|---|---|---|
| 50-percent AEP flood | 60.6 | ft^3/s | 28.6 | 129 | 46.9 |
| 20-percent AEP flood | 102 | ft^3/s | 47.4 | 219 | 47.9 |
| 10-percent AEP flood | 132 | ft^3/s | 59.7 | 292 | 49.9 |
| 4-percent AEP flood | 171 | ft^3/s | 74.2 | 394 | 52.8 |
| 2-percent AEP flood | 201 | ft^3/s | 84 | 481 | 55.6 |
| 1-percent AEP flood | 232 | ft^3/s | 93.8 | 574 | 58 |
| 0.5-percent AEP flood | 262 | ft^3/s | 102 | 671 | 60.5 |
| 0.2-percent AEP flood | 302 | ft^3/s | 114 | 803 | 63.4 |

*Peak-Flow Statistics Citations*

**Over, T.M., Marti, M.K., O'Shea, P.S., Sharpe, J.B.2023, Estimating peak-flow quantiles for selected annual exceedance probabilities in Illinois (Report No. FHWA-ICT-23-014). Illinois Center for Transportation. ( https://doi.org/10.36501/0197-9191/23-019)**

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.32.0
SSHydro Services Version: 1.2.1
SSDelineate Services Version: 1.1.0
NSS Services Version: 2.2.1

GageStats Services Version: 1.2.1

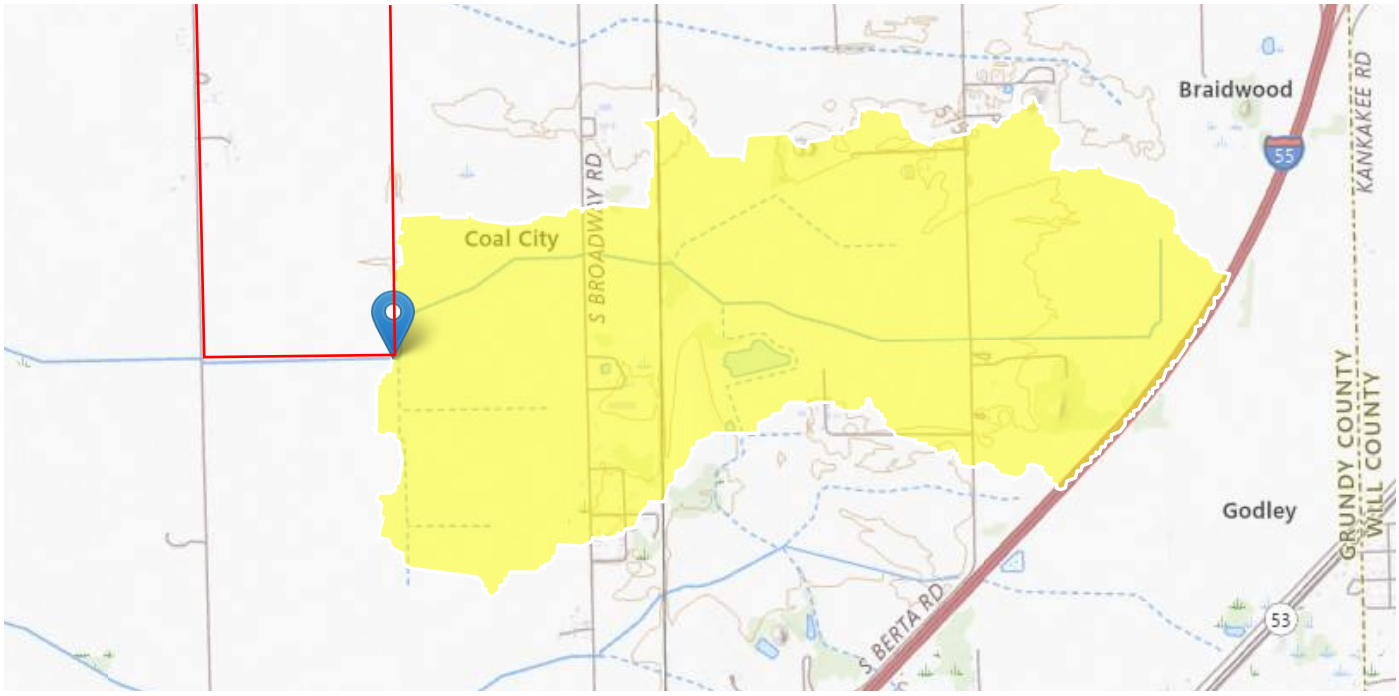
Pourpoint Services Version: 1.2.0

Batch Processor Version: 1.6.1

**ONSITE UPSTREAM STREAMSTATS REPORT**

# StreamStats Report

**Region ID:** IL
**Clicked Point (Latitude, Longitude):** 41.24411, -88.29377
**Time:** 2026-04-30 15:27:48 -0500




## StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

## Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 1.7 | square miles |
| FLC16DVLMH | Fraction of drainage area that is in low to high developed land-use classes 22-24 from NLCD 2016 | 0.04 | decimal fraction |

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| FSSURGDC78 | Fraction of land area that is in very poorly drained and unknown likely water drainage classes 7 and 8 from SSURGO | 0.1047 | decimal fraction |
| RELRELF | Basin relief divided by basin perimeter | 8.73 | feet per mi |

## Peak-Flow Statistics

### Peak-Flow Statistics Parameters [IL Peakflow Region 2 ICT-23-014]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 1.7 | square miles | 0.07031 | 1352 |
| FLC16DVLMH | Frac_Lo_Med_Hi_Developed_from_NLCD2016 | 0.04 | decimal fraction | 0.002045 | 0.9692 |
| FSSURGDC78 | Fraction_SSURGO_Drainage_Classes_7_and_8 | 0.1047 | decimal fraction | 0 | 0.2506 |
| RELRELF | Relative Relief | 8.73 | feet per mi | 0.8122 | 35.97 |

### Peak-Flow Statistics Flow Report [IL Peakflow Region 2 ICT-23-014]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

| Statistic | Value | Unit | PIL | PIU | ASEp |
|---|---|---|---|---|---|
| 50-percent AEP flood | 57.8 | ft^3/s | 27.3 | 122 | 46.9 |
| 20-percent AEP flood | 97 | ft^3/s | 45.2 | 208 | 47.9 |
| 10-percent AEP flood | 126 | ft^3/s | 57 | 278 | 49.9 |
| 4-percent AEP flood | 163 | ft^3/s | 70.8 | 375 | 52.8 |
| 2-percent AEP flood | 192 | ft^3/s | 80.4 | 459 | 55.6 |
| 1-percent AEP flood | 221 | ft^3/s | 89.5 | 546 | 58 |
| 0.5-percent AEP flood | 250 | ft^3/s | 97.8 | 639 | 60.5 |
| 0.2-percent AEP flood | 290 | ft^3/s | 109 | 770 | 63.4 |

*Peak-Flow Statistics Citations*

**Over, T.M., Marti, M.K., O'Shea, P.S., Sharpe, J.B.2023, Estimating peak-flow quantiles for selected annual exceedance probabilities in Illinois (Report No. FHWA-ICT-23-014). Illinois Center for Transportation. ( https://doi.org/10.36501/0197-9191/23-019)**

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or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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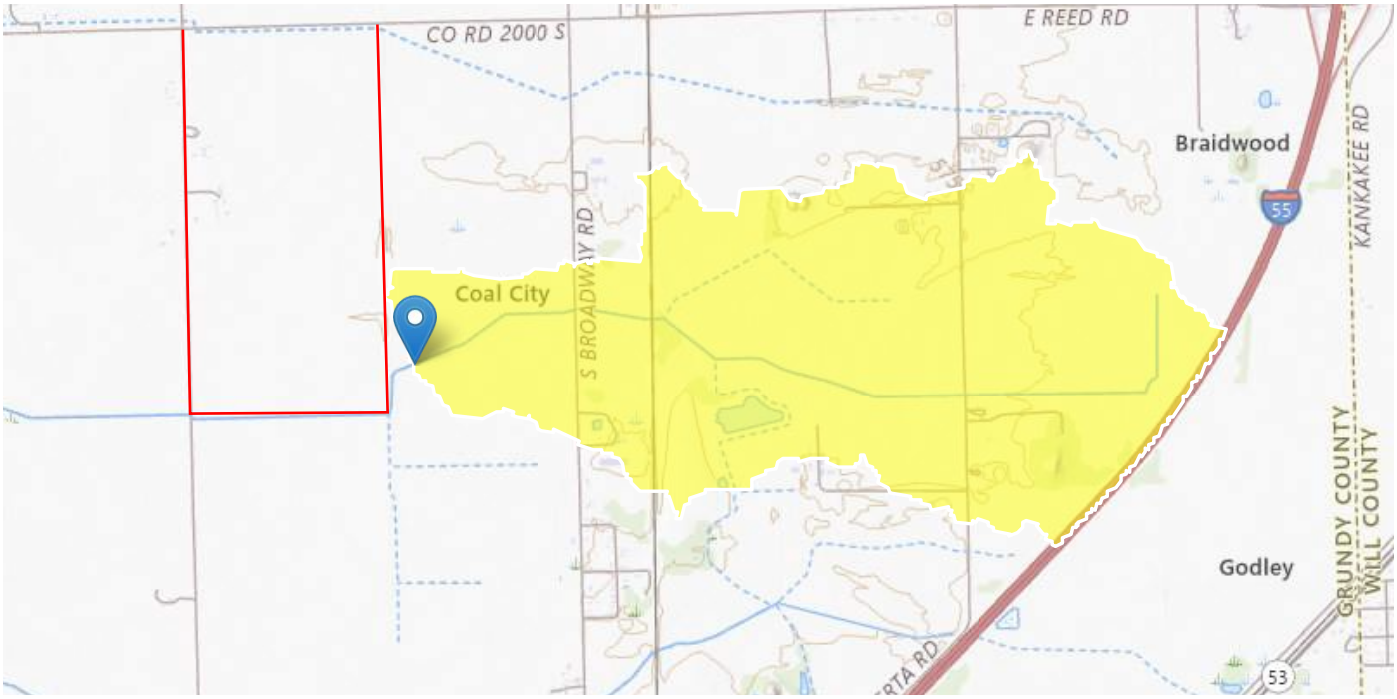
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.32.0
SSHydro Services Version: 1.2.1
SSDelineate Services Version: 1.1.0
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.1

**OFFSITE UPSTREAM STREAMSTATS REPORT**

# StreamStats Report

**Region ID:** IL
**Clicked Point (Latitude, Longitude):** 41.24600, -88.29236
**Time:** 2026-04-30 15:28:36 -0500




## StreamStats Update

Starting with version 4.30.0, the StreamStats application uses services that were redeveloped with open-source software components. Users may observe minor variations in computed results when compared to those from previous versions. These differences are expected and do not reflect errors in the underlying data or analytical methods. Users are advised to consider these potential variations when interpreting or comparing results generated across different versions of StreamStats. Please email streamstats@usgs.gov with any questions or concerns. A full list of changes can be found at **https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release (https://www.usgs.gov/streamstats/news/streamstats-data-updates-open-source-code-release)** .

Collapse All

## Basin Characteristics

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| DRNAREA | Area that drains to a point on a stream | 1.33 | square miles |
| FLC16DVLMH | Fraction of drainage area that is in low to high developed land-use classes 22-24 from NLCD 2016 | 0.03 | decimal fraction |

| Parameter Code | Parameter Description | Value | Unit |
|---|---|---|---|
| FSSURGDC78 | Fraction of land area that is in very poorly drained and unknown likely water drainage classes 7 and 8 from SSURGO | 0.1039 | decimal fraction |
| RELRELF | Basin relief divided by basin perimeter | 9.34 | feet per mi |

## Peak-Flow Statistics

### Peak-Flow Statistics Parameters [IL Peakflow Region 2 ICT-23-014]

| Parameter Code | Parameter Name | Value | Units | Min Limit | Max Limit |
|---|---|---|---|---|---|
| DRNAREA | Drainage Area | 1.33 | square miles | 0.07031 | 1352 |
| FLC16DVLMH | Frac_Lo_Med_Hi_Developed_from_NLCD2016 | 0.03 | decimal fraction | 0.002045 | 0.9692 |
| FSSURGDC78 | Fraction_SSURGO_Drainage_Classes_7_and_8 | 0.1039 | decimal fraction | 0 | 0.2506 |
| RELRELF | Relative Relief | 9.34 | feet per mi | 0.8122 | 35.97 |

### Peak-Flow Statistics Flow Report [IL Peakflow Region 2 ICT-23-014]

PIL: Lower 90% Prediction Interval, PIU: Upper 90% Prediction Interval, ASEp: Average Standard Error of Prediction, SE: Standard Error, PC: Percent Correct, RMSE: Root Mean Squared Error, PseudoR^2: Pseudo R Squared (other -- see report)

| Statistic | Value | Unit | PIL | PIU | ASEp |
|---|---|---|---|---|---|
| 50-percent AEP flood | 47.9 | ft^3/s | 22.5 | 102 | 46.9 |
| 20-percent AEP flood | 81.4 | ft^3/s | 37.8 | 175 | 47.9 |
| 10-percent AEP flood | 106 | ft^3/s | 47.8 | 235 | 49.9 |
| 4-percent AEP flood | 138 | ft^3/s | 59.8 | 319 | 52.8 |
| 2-percent AEP flood | 163 | ft^3/s | 68 | 391 | 55.6 |
| 1-percent AEP flood | 188 | ft^3/s | 75.8 | 466 | 58 |
| 0.5-percent AEP flood | 213 | ft^3/s | 83 | 547 | 60.5 |
| 0.2-percent AEP flood | 246 | ft^3/s | 92.2 | 656 | 63.4 |

*Peak-Flow Statistics Citations*

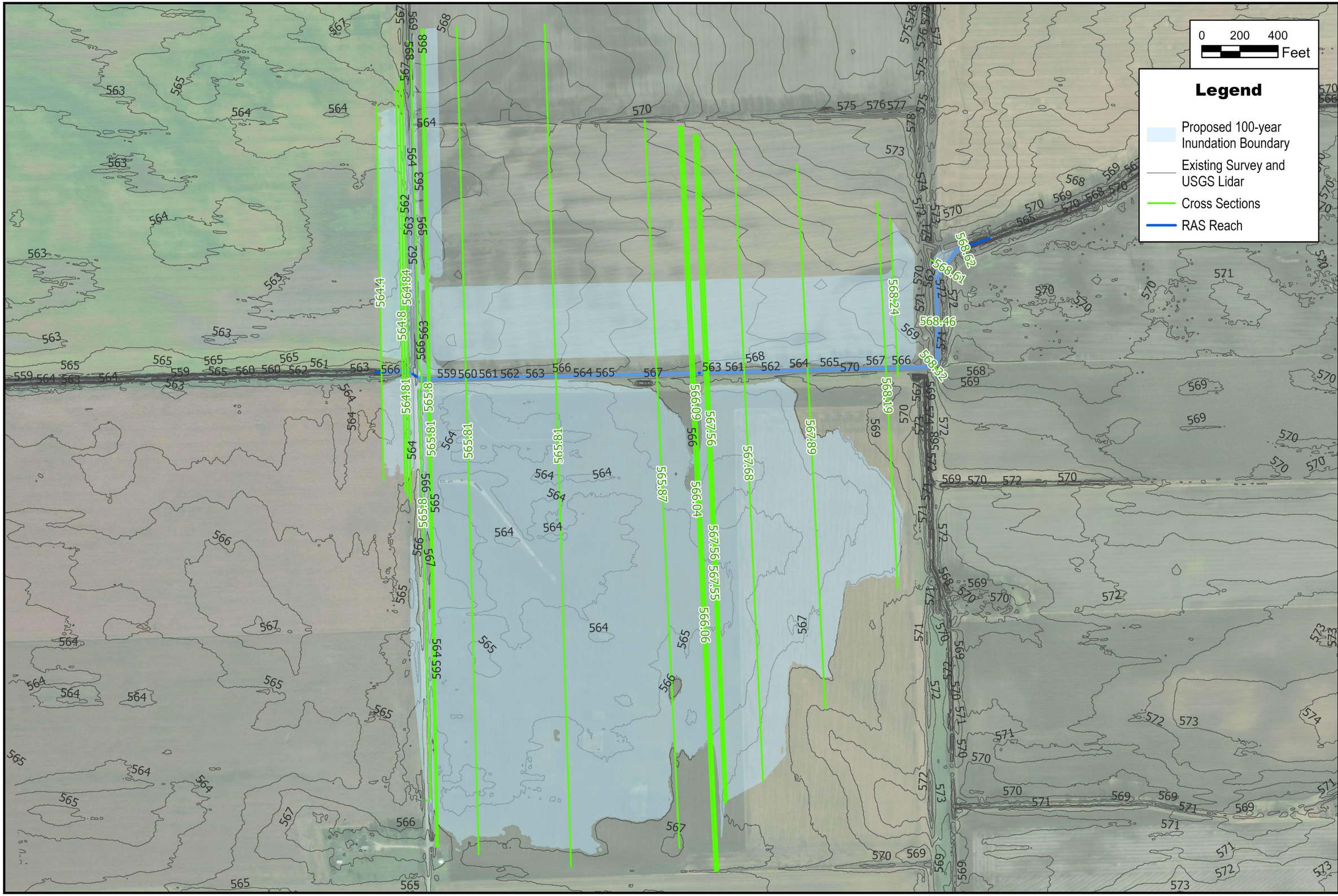
**Over, T.M., Marti, M.K., O'Shea, P.S., Sharpe, J.B.2023, Estimating peak-flow quantiles for selected annual exceedance probabilities in Illinois (Report No. FHWA-ICT-23-014). Illinois Center for Transportation. ( https://doi.org/10.36501/0197-9191/23-019)**

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Application Version: 4.32.0
SSHydro Services Version: 1.2.1
SSDelineate Services Version: 1.1.0
NSS Services Version: 2.2.1
GageStats Services Version: 1.2.1
Pourpoint Services Version: 1.2.0
Batch Processor Version: 1.6.1




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PROJECT HEARTLAND

SOUTH DITCH
BASE FLOOD ELEVATION MAP

| | |
|---|---|
| DATE: | SEPTEMBER 2026 |
| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE
4

# Appendix C
# Maine Township Ditch Culvert Sizing


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0 750 1,500 Feet

## Legend

- Existing Survey and USGS Lidar
- Existing 100-Year Inundation Boundary
- RAS Reach
- Cross Sections
- Culverts
- Effective FEMA Boundaries

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# MAINE TOWNSHIP DITCH
# EXISTING
# BASE FLOOD ELEVATION MAP

| | |
|---|---|
| DATE: | SEPTEMBER 2026 |
| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE
5

0 750 1,500 Feet

## Legend

- Proposed 1-ft Contours
- Proposed 100-year Inundation Boundary
- RAS Reach
- Cross Section
- Culverts
- Effective FEMA Boundaries

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# MAINE TOWNSHIP DITCH
# PROPOSED
# BASE FLOOD ELEVATION MAP

| | |
|---|---|
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| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE
6

0 250 500 Feet

## Legend

- Proposed 1-ft Contours
- Proposed 100-year Inundation Boundary
- RAS Reach
- Cross Section
- Culverts
- Effective FEMA Boundaries

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PROJECT HEARTLAND

# MAINE TOWNSHIP DITCH
# PROPOSED ONSITE
# BASE FLOOD ELEVATION MAP

| | | | |
|---|---|---|---|
| DATE: | SEPTEMBER 2026 | | |
| DESIGN: | EB | | |
| DRAWN: | EB | | |
| CHECKED: | JSG | | |
| KH NO.: | 170405001 | | |

FIGURE

7

# Appendix D
# Detention Analysis


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Map Scale: 1:9,560 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N 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

Local Roads

**Background**

Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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: Grundy County, Illinois
Survey Area Data: Version 20, Aug 31, 2025

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

Date(s) aerial images were photographed: Jun 30, 2023—Sep 2, 2023

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 |
|---|---|---|---|---|
| 42A | Papineau sandy loam, 0 to 2 percent slopes | C/D | 68.4 | 21.3% |
| 98B | Ade loamy fine sand, 1 to 6 percent slopes | A | 86.3 | 26.9% |
| 125A | Selma loam, 0 to 2 percent slopes | B/D | 57.3 | 17.8% |
| 151A | Ridgeville fine sandy loam, 0 to 2 percent slopes | A/D | 18.7 | 5.8% |
| 201A | Gilford fine sandy loam, 0 to 2 percent slopes | A/D | 60.7 | 18.9% |
| 594A | Reddick clay loam, 0 to 2 percent slopes | C/D | 29.9 | 9.3% |
| **Totals for Area of Interest** | | | **321.3** | **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.

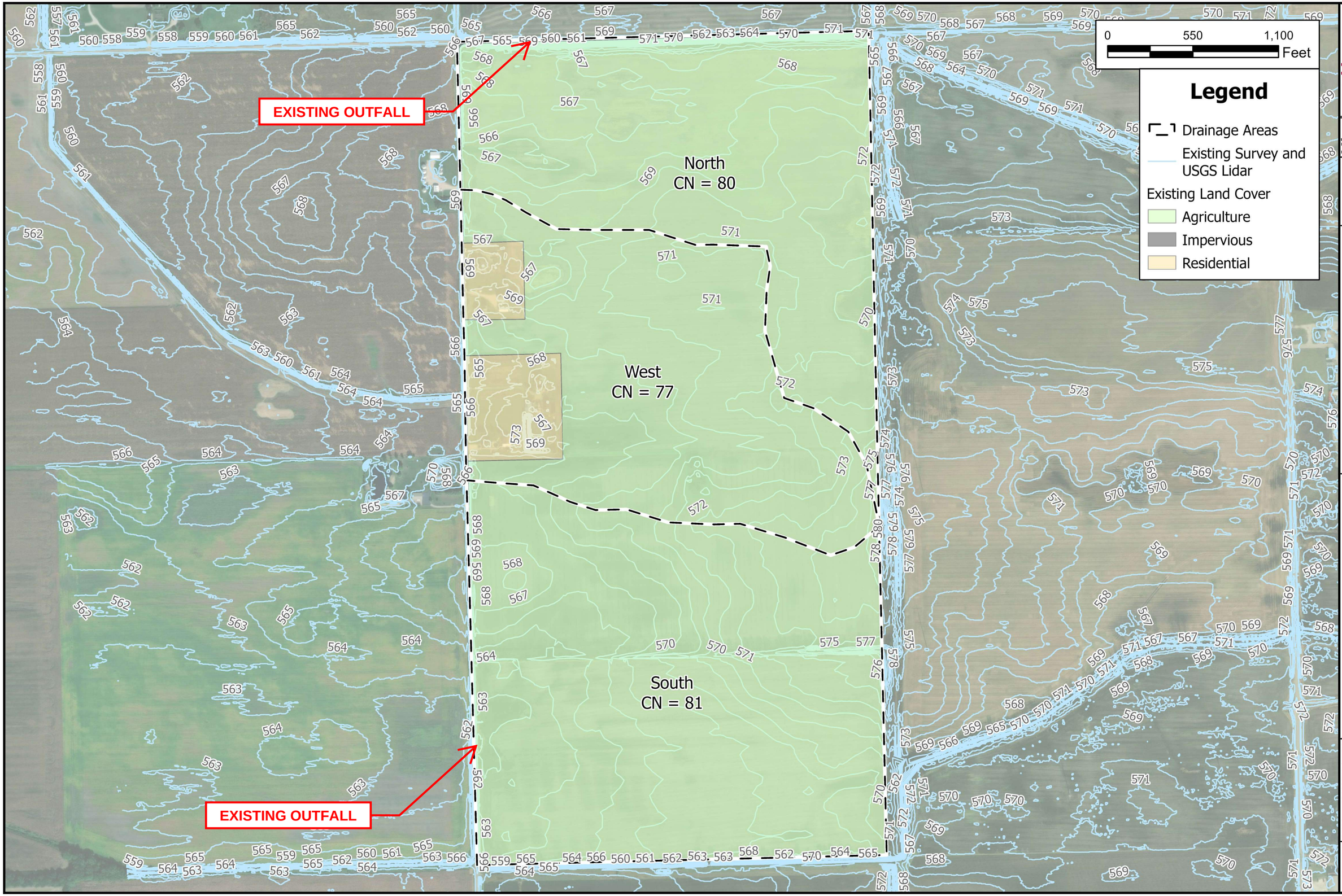
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher




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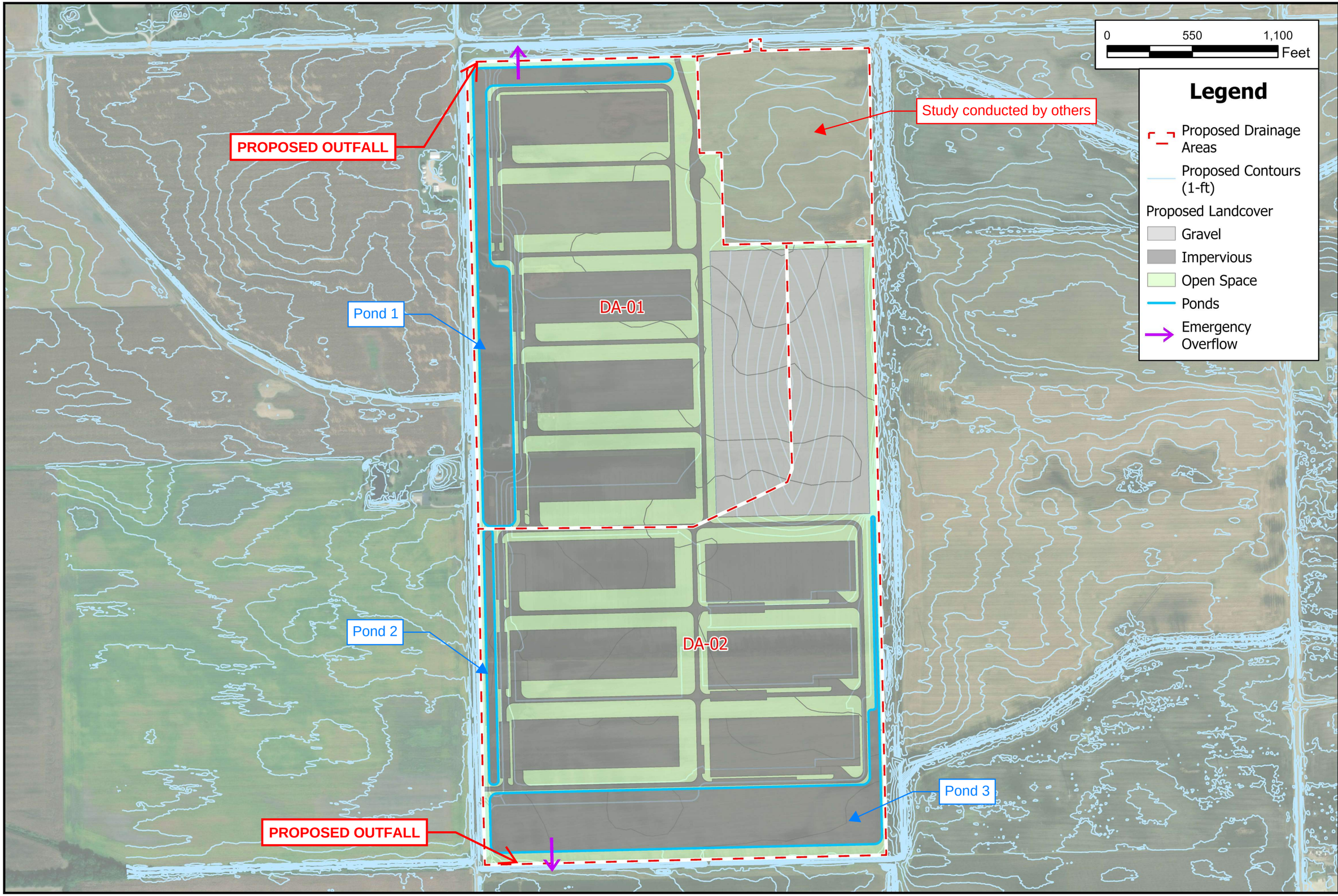
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PROJECT HEARTLAND

DRAINAGE AREA MAP - EXISTING

| | |
|---|---|
| DATE: | SEPTEMBER 2026 |
| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE




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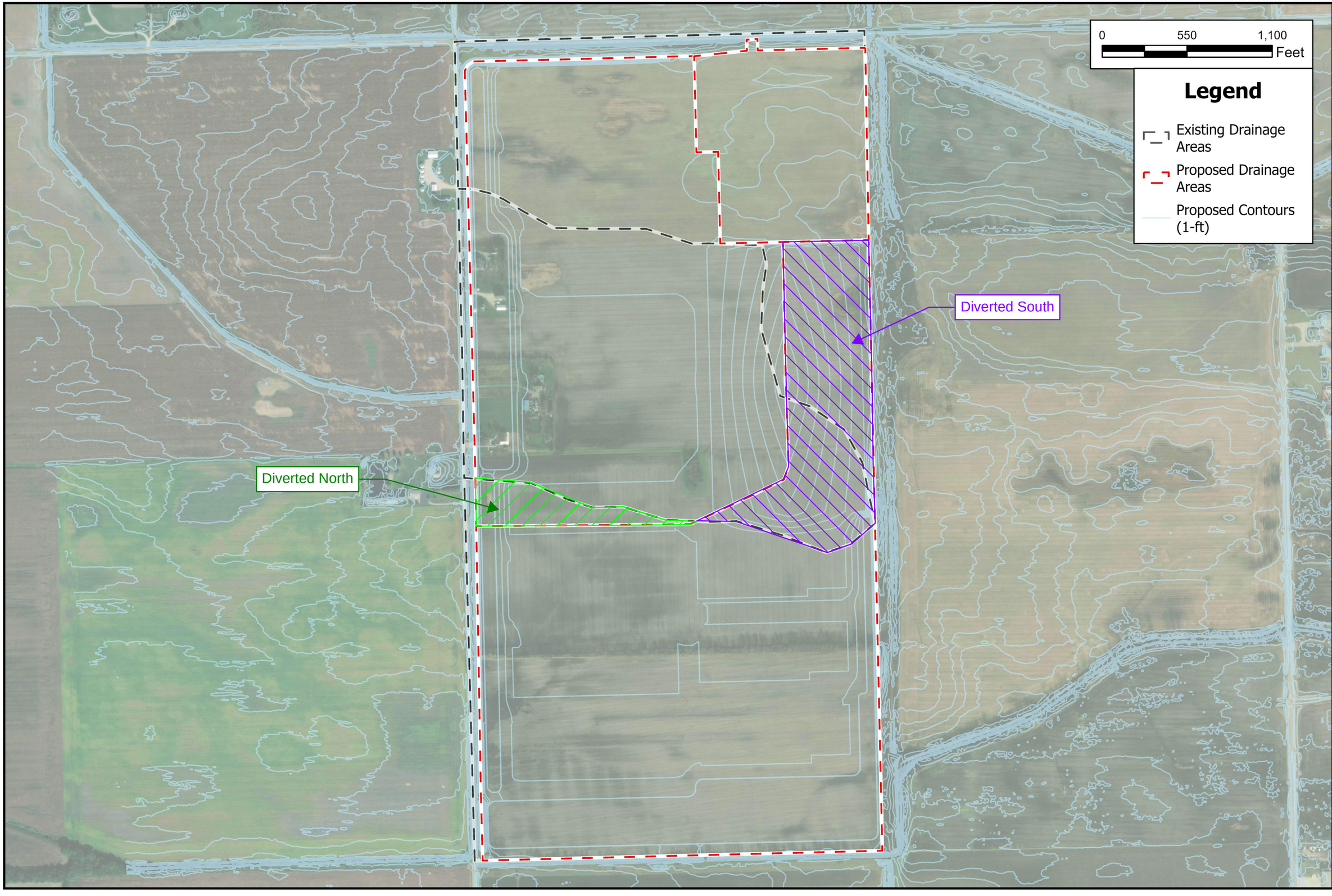
Coal City, IL

PROJECT HEARTLAND

DRAINAGE AREA MAP - PROPOSED

| | |
|---|---|
| DATE: | SEPTEMBER 2026 |
| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE




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Coal City, IL

PROJECT HEARTLAND

DRAINAGE DIVERSION MAP

| | |
|---|---|
| DATE: | SEPTEMBER 2026 |
| DESIGN: | EB |
| DRAWN: | EB |
| CHECKED: | JSG |
| KH NO.: | 170405001 |

FIGURE

# Appendix E
# Output Logs


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# SOUTH DITCH 100-YEAR PROFILE SUMMARY TABLE

HEC-RAS River: River 1 Reach: Reach 1 Profile: 100-Yr

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 3654 | 100-Yr | Prop_r9 | 188.00 | 563.19 | 568.62 | | 568.67 | 0.000523 | 1.79 | 104.86 | 32.88 | 0.18 |
| Reach 1 | 3654 | 100-Yr | Exis_r8 | 188.00 | 563.19 | 568.80 | | 568.84 | 0.000446 | 1.70 | 110.65 | 34.22 | 0.16 |
| Reach 1 | 3493 | 100-Yr | Prop_r9 | 188.00 | 561.93 | 568.61 | | 568.62 | 0.000130 | 0.88 | 214.89 | 70.27 | 0.09 |
| Reach 1 | 3493 | 100-Yr | Exis_r8 | 188.00 | 561.93 | 568.79 | | 568.80 | 0.000108 | 0.83 | 227.47 | 72.23 | 0.08 |
| Reach 1 | 3200 | 100-Yr | Prop_r9 | 188.00 | 563.09 | 568.46 | | 568.54 | 0.000863 | 2.30 | 81.92 | 24.03 | 0.22 |
| Reach 1 | 3200 | 100-Yr | Exis_r8 | 188.00 | 563.09 | 568.65 | | 568.73 | 0.000726 | 2.17 | 86.73 | 24.61 | 0.20 |
| Reach 1 | 2956 | 100-Yr | Prop_r9 | 188.00 | 562.72 | 568.32 | | 568.37 | 0.000518 | 1.78 | 105.59 | 32.05 | 0.17 |
| Reach 1 | 2956 | 100-Yr | Exis_r8 | 188.00 | 562.72 | 568.54 | | 568.58 | 0.000435 | 1.67 | 112.82 | 33.12 | 0.16 |
| Reach 1 | 2861 | 100-Yr | Prop_r9 | 221.00 | 562.34 | 568.24 | 565.02 | 568.31 | 0.000705 | 2.15 | 103.06 | 538.33 | 0.20 |
| Reach 1 | 2861 | 100-Yr | Exis_r8 | 221.00 | 562.34 | 568.46 | 565.04 | 568.50 | 0.000455 | 1.72 | 228.14 | 356.58 | 0.16 |
| Reach 1 | 2701 | 100-Yr | Prop_r9 | 221.00 | 562.19 | 568.19 | 564.95 | 568.27 | 0.000666 | 2.23 | 99.34 | 980.56 | 0.20 |
| Reach 1 | 2701 | 100-Yr | Exis_r8 | 221.00 | 562.19 | 568.41 | 564.96 | 568.47 | 0.000484 | 1.99 | 157.21 | 897.18 | 0.17 |
| Reach 1 | 2289 | 100-Yr | Prop_r9 | 221.00 | 561.75 | 567.89 | 564.62 | 567.97 | 0.000765 | 2.27 | 97.53 | 1708.24 | 0.21 |
| Reach 1 | 2289 | 100-Yr | Exis_r8 | 221.00 | 561.75 | 568.17 | 564.61 | 568.24 | 0.000600 | 2.10 | 105.22 | 2075.51 | 0.19 |
| Reach 1 | 1955 | 100-Yr | Prop_r9 | 221.00 | 560.88 | 567.68 | 564.06 | 567.74 | 0.000589 | 2.08 | 106.17 | 2545.80 | 0.18 |
| Reach 1 | 1955 | 100-Yr | Exis_r8 | 221.00 | 560.88 | 568.01 | 564.04 | 568.07 | 0.000459 | 1.92 | 115.14 | 3041.65 | 0.16 |
| Reach 1 | 1767 | 100-Yr | Prop_r9 | 221.00 | 560.84 | 567.56 | 563.92 | 567.63 | 0.000588 | 2.12 | 104.59 | 2661.86 | 0.19 |
| Reach 1 | 1767 | 100-Yr | Exis_r8 | 221.00 | 560.84 | 567.92 | 563.92 | 567.98 | 0.000443 | 1.95 | 114.89 | 3279.74 | 0.16 |
| Reach 1 | 1757 | 100-Yr | Prop_r9 | 221.00 | 560.78 | 567.56 | 563.94 | 567.63 | 0.000602 | 2.11 | 104.85 | 2680.86 | 0.19 |
| Reach 1 | 1757 | 100-Yr | Exis_r8 | 221.00 | 560.78 | 567.92 | 563.94 | 567.98 | 0.000450 | 1.93 | 115.09 | 3296.72 | 0.16 |
| Reach 1 | 1747 | 100-Yr | Prop_r9 | 221.00 | 560.66 | 567.55 | 563.89 | 567.62 | 0.000548 | 2.05 | 108.52 | 2691.14 | 0.18 |
| Reach 1 | 1747 | 100-Yr | Exis_r8 | 221.00 | 560.66 | 567.92 | 563.89 | 567.97 | 0.000413 | 1.88 | 119.26 | 3324.28 | 0.16 |
| Reach 1 | 1721 | | | Culvert | | | | | | | | | |
| Reach 1 | 1694 | 100-Yr | Prop_r9 | 221.00 | 560.62 | 566.09 | 563.80 | 566.20 | 0.001381 | 2.64 | 83.57 | 1754.70 | 0.28 |
| Reach 1 | 1694 | 100-Yr | Exis_r8 | 221.00 | 560.62 | 566.10 | 563.81 | 566.20 | 0.001371 | 2.64 | 83.83 | 1373.38 | 0.28 |
| Reach 1 | 1684 | 100-Yr | Prop_r9 | 221.00 | 560.63 | 566.06 | 563.79 | 566.18 | 0.001471 | 2.73 | 81.05 | 1737.58 | 0.29 |
| Reach 1 | 1684 | 100-Yr | Exis_r8 | 221.00 | 560.63 | 566.07 | 563.78 | 566.19 | 0.001456 | 2.72 | 81.40 | 1357.96 | 0.28 |
| Reach 1 | 1673 | 100-Yr | Prop_r9 | 221.00 | 560.66 | 566.04 | 563.75 | 566.16 | 0.001483 | 2.76 | 80.21 | 1752.82 | 0.29 |
| Reach 1 | 1673 | 100-Yr | Exis_r8 | 221.00 | 560.66 | 566.06 | 563.75 | 566.17 | 0.001466 | 2.74 | 80.55 | 1402.71 | 0.28 |
| Reach 1 | 1496 | 100-Yr | Prop_r9 | 221.00 | 560.16 | 565.87 | 563.05 | 565.96 | 0.000814 | 2.43 | 92.60 | 2091.67 | 0.22 |
| Reach 1 | 1496 | 100-Yr | Exis_r8 | 221.00 | 560.16 | 565.88 | 563.04 | 565.98 | 0.000811 | 2.43 | 92.97 | 1726.36 | 0.22 |
| Reach 1 | 963 | 100-Yr | Prop_r9 | 221.00 | 559.47 | 565.81 | 562.47 | 565.81 | 0.000110 | 0.97 | 484.97 | 2878.48 | 0.08 |
| Reach 1 | 963 | 100-Yr | Exis_r8 | 221.00 | 559.47 | 565.82 | 562.48 | 565.83 | 0.000107 | 0.96 | 489.70 | 4154.10 | 0.08 |
| Reach 1 | 491 | 100-Yr | Prop_r9 | 221.00 | 559.09 | 565.81 | 561.81 | 565.81 | 0.000003 | 0.18 | 1943.71 | 2834.55 | 0.01 |
| Reach 1 | 491 | 100-Yr | Exis_r8 | 221.00 | 559.09 | 565.81 | 561.81 | 565.81 | 0.000017 | 0.42 | 1238.98 | 3955.21 | 0.03 |
| Reach 1 | 299 | 100-Yr | Prop_r9 | 232.00 | 558.69 | 565.81 | 561.49 | 565.81 | 0.000002 | 0.14 | 3197.80 | 4018.29 | 0.01 |
| Reach 1 | 299 | 100-Yr | Exis_r8 | 232.00 | 558.69 | 565.81 | 561.48 | 565.81 | 0.000017 | 0.42 | 1409.24 | 3677.95 | 0.03 |
| Reach 1 | 289 | 100-Yr | Prop_r9 | 232.00 | 558.62 | 565.80 | 561.45 | 565.81 | 0.000023 | 0.47 | 1142.40 | 2168.97 | 0.04 |
| Reach 1 | 289 | 100-Yr | Exis_r8 | 232.00 | 558.62 | 565.80 | 561.46 | 565.81 | 0.000019 | 0.43 | 1356.21 | 3478.38 | 0.03 |
| Reach 1 | 257 | 100-Yr | Prop_r9 | 232.00 | 558.62 | 565.80 | 561.47 | 565.81 | 0.000008 | 0.25 | 1844.19 | 3776.93 | 0.02 |
| Reach 1 | 257 | 100-Yr | Exis_r8 | 232.00 | 558.62 | 565.80 | 561.47 | 565.81 | 0.000008 | 0.25 | 1837.86 | 3776.93 | 0.02 |
| Reach 1 | 226 | | | Culvert | | | | | | | | | |
| Reach 1 | 173 | 100-Yr | Prop_r9 | 232.00 | 558.36 | 564.84 | 561.24 | 564.89 | 0.000450 | 1.83 | 128.41 | 1839.43 | 0.16 |
| Reach 1 | 173 | 100-Yr | Exis_r8 | 232.00 | 558.36 | 564.84 | 561.24 | 564.89 | 0.000450 | 1.83 | 128.41 | 1839.43 | 0.16 |
| Reach 1 | 158 | 100-Yr | Prop_r9 | 232.00 | 559.03 | 564.81 | 561.65 | 564.88 | 0.000532 | 2.12 | 113.27 | 1847.06 | 0.18 |
| Reach 1 | 158 | 100-Yr | Exis_r8 | 232.00 | 559.03 | 564.81 | 561.65 | 564.88 | 0.000532 | 2.12 | 113.27 | 1847.06 | 0.18 |
| Reach 1 | 144 | 100-Yr | Prop_r9 | 232.00 | 558.82 | 564.80 | 561.40 | 564.87 | 0.000519 | 2.11 | 114.76 | 1866.21 | 0.18 |
| Reach 1 | 144 | 100-Yr | Exis_r8 | 232.00 | 558.82 | 564.80 | 561.40 | 564.87 | 0.000519 | 2.11 | 114.76 | 1866.21 | 0.18 |
| Reach 1 | 32 | 100-Yr | Prop_r9 | 255.00 | 560.84 | 564.40 | 563.39 | 564.67 | 0.005001 | 4.18 | 61.05 | 1578.03 | 0.49 |
| Reach 1 | 32 | 100-Yr | Exis_r8 | 255.00 | 560.84 | 564.40 | 563.39 | 564.67 | 0.005001 | 4.18 | 61.05 | 1578.03 | 0.49 |

# SOUTH DITCH 10-YEAR PROFILE SUMMARY TABLE

HEC-RAS River: River 1 Reach: Reach 1 Profile: 10-Yr

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 3654 | 10-Yr | Prop_r9 | 106.00 | 563.19 | 567.99 | | 568.01 | 0.000303 | 1.25 | 84.93 | 29.93 | 0.13 |
| Reach 1 | 3654 | 10-Yr | Exis_r8 | 106.00 | 563.19 | 568.01 | | 568.03 | 0.000296 | 1.24 | 85.59 | 30.02 | 0.13 |
| Reach 1 | 3493 | 10-Yr | Prop_r9 | 106.00 | 561.93 | 567.98 | | 567.98 | 0.000074 | 0.61 | 172.80 | 62.58 | 0.07 |
| Reach 1 | 3493 | 10-Yr | Exis_r8 | 106.00 | 561.93 | 568.00 | | 568.01 | 0.000072 | 0.61 | 174.20 | 62.83 | 0.06 |
| Reach 1 | 3200 | 10-Yr | Prop_r9 | 106.00 | 563.09 | 567.90 | | 567.94 | 0.000447 | 1.54 | 69.03 | 22.37 | 0.15 |
| Reach 1 | 3200 | 10-Yr | Exis_r8 | 106.00 | 563.09 | 567.92 | | 567.96 | 0.000437 | 1.52 | 69.56 | 22.44 | 0.15 |
| Reach 1 | 2956 | 10-Yr | Prop_r9 | 106.00 | 562.72 | 567.83 | | 567.85 | 0.000248 | 1.17 | 90.57 | 29.69 | 0.12 |
| Reach 1 | 2956 | 10-Yr | Exis_r8 | 106.00 | 562.72 | 567.86 | | 567.88 | 0.000242 | 1.16 | 91.33 | 29.82 | 0.12 |
| Reach 1 | 2861 | 10-Yr | Prop_r9 | 126.00 | 562.34 | 567.80 | 564.36 | 567.83 | 0.000327 | 1.39 | 90.34 | 502.44 | 0.14 |
| Reach 1 | 2861 | 10-Yr | Exis_r8 | 126.00 | 562.34 | 567.79 | 564.37 | 567.82 | 0.000330 | 1.40 | 90.50 | 48.49 | 0.14 |
| Reach 1 | 2701 | 10-Yr | Prop_r9 | 126.00 | 562.19 | 567.77 | 564.29 | 567.81 | 0.000305 | 1.42 | 88.80 | 569.32 | 0.13 |
| Reach 1 | 2701 | 10-Yr | Exis_r8 | 126.00 | 562.19 | 567.77 | 564.29 | 567.80 | 0.000307 | 1.42 | 88.79 | 169.22 | 0.13 |
| Reach 1 | 2289 | 10-Yr | Prop_r9 | 126.00 | 561.75 | 567.65 | 563.92 | 567.68 | 0.000298 | 1.38 | 91.25 | 1616.32 | 0.13 |
| Reach 1 | 2289 | 10-Yr | Exis_r8 | 126.00 | 561.75 | 567.65 | 563.92 | 567.68 | 0.000298 | 1.38 | 91.17 | 1628.71 | 0.13 |
| Reach 1 | 1955 | 10-Yr | Prop_r9 | 126.00 | 560.88 | 567.57 | 563.32 | 567.60 | 0.000207 | 1.22 | 103.41 | 2535.10 | 0.11 |
| Reach 1 | 1955 | 10-Yr | Exis_r8 | 126.00 | 560.88 | 567.57 | 563.32 | 567.59 | 0.000209 | 1.22 | 103.17 | 2939.11 | 0.11 |
| Reach 1 | 1767 | 10-Yr | Prop_r9 | 126.00 | 560.84 | 567.54 | 563.17 | 567.56 | 0.000196 | 1.22 | 103.83 | 2656.30 | 0.11 |
| Reach 1 | 1767 | 10-Yr | Exis_r8 | 126.00 | 560.84 | 567.53 | 563.18 | 567.56 | 0.000196 | 1.22 | 103.72 | 3174.63 | 0.11 |
| Reach 1 | 1757 | 10-Yr | Prop_r9 | 126.00 | 560.78 | 567.53 | 563.20 | 567.56 | 0.000200 | 1.21 | 104.20 | 2676.53 | 0.11 |
| Reach 1 | 1757 | 10-Yr | Exis_r8 | 126.00 | 560.78 | 567.53 | 563.18 | 567.55 | 0.000200 | 1.21 | 104.08 | 3195.34 | 0.11 |
| Reach 1 | 1747 | 10-Yr | Prop_r9 | 126.00 | 560.66 | 567.53 | 563.15 | 567.55 | 0.000181 | 1.17 | 107.89 | 2689.36 | 0.10 |
| Reach 1 | 1747 | 10-Yr | Exis_r8 | 126.00 | 560.66 | 567.53 | 563.15 | 567.55 | 0.000183 | 1.17 | 107.56 | 3228.25 | 0.10 |
| Reach 1 | 1721 | | | Culvert | | | | | | | | | |
| Reach 1 | 1694 | 10-Yr | Prop_r9 | 126.00 | 560.62 | 565.05 | 563.10 | 565.13 | 0.001309 | 2.26 | 55.86 | 787.18 | 0.26 |
| Reach 1 | 1694 | 10-Yr | Exis_r8 | 126.00 | 560.62 | 565.04 | 563.12 | 565.12 | 0.001323 | 2.26 | 55.66 | 400.37 | 0.26 |
| Reach 1 | 1684 | 10-Yr | Prop_r9 | 126.00 | 560.63 | 565.03 | 563.07 | 565.12 | 0.001369 | 2.32 | 54.39 | 802.79 | 0.27 |
| Reach 1 | 1684 | 10-Yr | Exis_r8 | 126.00 | 560.63 | 565.03 | 563.08 | 565.11 | 0.001378 | 2.32 | 54.26 | 395.56 | 0.27 |
| Reach 1 | 1673 | 10-Yr | Prop_r9 | 126.00 | 560.66 | 565.02 | 563.06 | 565.10 | 0.001326 | 2.31 | 54.47 | 809.11 | 0.26 |
| Reach 1 | 1673 | 10-Yr | Exis_r8 | 126.00 | 560.66 | 565.01 | 563.06 | 565.10 | 0.001336 | 2.32 | 54.32 | 425.67 | 0.26 |
| Reach 1 | 1496 | 10-Yr | Prop_r9 | 126.00 | 560.16 | 564.86 | 562.38 | 564.92 | 0.000752 | 1.91 | 66.09 | 960.87 | 0.20 |
| Reach 1 | 1496 | 10-Yr | Exis_r8 | 126.00 | 560.16 | 564.86 | 562.38 | 564.91 | 0.000759 | 1.91 | 65.90 | 573.84 | 0.20 |
| Reach 1 | 963 | 10-Yr | Prop_r9 | 126.00 | 559.47 | 564.62 | 561.73 | 564.65 | 0.000348 | 1.40 | 174.99 | 1882.67 | 0.14 |
| Reach 1 | 963 | 10-Yr | Exis_r8 | 126.00 | 559.47 | 564.61 | 561.72 | 564.63 | 0.000360 | 1.41 | 171.95 | 1886.44 | 0.14 |
| Reach 1 | 491 | 10-Yr | Prop_r9 | 126.00 | 559.09 | 564.56 | 561.13 | 564.57 | 0.000089 | 0.79 | 409.72 | 1810.98 | 0.07 |
| Reach 1 | 491 | 10-Yr | Exis_r8 | 126.00 | 559.09 | 564.55 | 561.14 | 564.55 | 0.000086 | 0.78 | 439.73 | 2809.40 | 0.07 |
| Reach 1 | 299 | 10-Yr | Prop_r9 | 132.00 | 558.69 | 564.53 | 560.82 | 564.54 | 0.000159 | 1.07 | 247.89 | 1464.13 | 0.10 |
| Reach 1 | 299 | 10-Yr | Exis_r8 | 132.00 | 558.69 | 564.53 | 560.81 | 564.54 | 0.000094 | 0.82 | 398.70 | 2031.62 | 0.07 |
| Reach 1 | 289 | 10-Yr | Prop_r9 | 132.00 | 558.62 | 564.52 | 560.79 | 564.54 | 0.000193 | 1.13 | 214.78 | 487.07 | 0.11 |
| Reach 1 | 289 | 10-Yr | Exis_r8 | 132.00 | 558.62 | 564.53 | 560.79 | 564.54 | 0.000116 | 0.88 | 354.34 | 1758.76 | 0.08 |
| Reach 1 | 257 | 10-Yr | Prop_r9 | 132.00 | 558.62 | 564.53 | 560.78 | 564.53 | 0.000027 | 0.40 | 754.18 | 2966.76 | 0.04 |
| Reach 1 | 257 | 10-Yr | Exis_r8 | 132.00 | 558.62 | 564.53 | 560.78 | 564.53 | 0.000026 | 0.41 | 753.57 | 2964.59 | 0.04 |
| Reach 1 | 226 | | | Culvert | | | | | | | | | |
| Reach 1 | 173 | 10-Yr | Prop_r9 | 132.00 | 558.36 | 563.93 | 560.65 | 563.96 | 0.000299 | 1.35 | 98.00 | 830.25 | 0.13 |
| Reach 1 | 173 | 10-Yr | Exis_r8 | 132.00 | 558.36 | 563.93 | 560.65 | 563.96 | 0.000299 | 1.35 | 98.00 | 830.25 | 0.13 |
| Reach 1 | 158 | 10-Yr | Prop_r9 | 132.00 | 559.03 | 563.91 | 561.11 | 563.95 | 0.000383 | 1.54 | 86.09 | 793.65 | 0.15 |
| Reach 1 | 158 | 10-Yr | Exis_r8 | 132.00 | 559.03 | 563.91 | 561.11 | 563.95 | 0.000383 | 1.54 | 86.09 | 793.65 | 0.15 |
| Reach 1 | 144 | 10-Yr | Prop_r9 | 132.00 | 558.82 | 563.91 | 560.82 | 563.95 | 0.000364 | 1.52 | 87.66 | 883.43 | 0.14 |
| Reach 1 | 144 | 10-Yr | Exis_r8 | 132.00 | 558.82 | 563.91 | 560.82 | 563.95 | 0.000364 | 1.52 | 87.66 | 883.43 | 0.14 |
| Reach 1 | 32 | 10-Yr | Prop_r9 | 145.00 | 560.84 | 563.59 | 562.72 | 563.79 | 0.005004 | 3.59 | 40.35 | 1019.54 | 0.48 |
| Reach 1 | 32 | 10-Yr | Exis_r8 | 145.00 | 560.84 | 563.59 | 562.72 | 563.79 | 0.005004 | 3.59 | 40.35 | 1019.54 | 0.48 |

# NORTH DITCH 100-YEAR PROFILE SUMMARY TABLE

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 100 yr

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 30210 | 100 yr | REV 1218 FW | 200.52 | 568.13 | 572.73 | | 572.88 | 0.000932 | 3.05 | 65.73 | 23.25 | 0.32 |
| Reach 1 | 30210 | 100 yr | Prop_Eff_R1 | 200.52 | 568.13 | 572.76 | | 572.90 | 0.000909 | 3.02 | 66.32 | 23.35 | 0.32 |
| Reach 1 | 30210 | 100 yr | Corr_Eff_R2 | 200.52 | 568.13 | 572.77 | | 572.91 | 0.000905 | 3.02 | 66.45 | 23.37 | 0.32 |
| Reach 1 | 30131 | 100 yr | REV 1218 FW | 200.52 | 568.14 | 572.69 | | 572.81 | 0.000693 | 2.69 | 74.61 | 26.05 | 0.28 |
| Reach 1 | 30131 | 100 yr | Prop_Eff_R1 | 200.52 | 568.14 | 572.72 | | 572.83 | 0.000676 | 2.66 | 75.30 | 26.16 | 0.28 |
| Reach 1 | 30131 | 100 yr | Corr_Eff_R2 | 200.52 | 568.14 | 572.73 | | 572.84 | 0.000672 | 2.66 | 75.45 | 26.18 | 0.28 |
| Reach 1 | 29125 | 100 yr | REV 1218 FW | 200.52 | 567.58 | 572.05 | | 572.14 | 0.000621 | 2.50 | 88.85 | 41.87 | 0.26 |
| Reach 1 | 29125 | 100 yr | Prop_Eff_R1 | 200.52 | 567.58 | 572.11 | | 572.19 | 0.000584 | 2.44 | 91.15 | 42.43 | 0.26 |
| Reach 1 | 29125 | 100 yr | Corr_Eff_R2 | 200.52 | 567.58 | 572.12 | | 572.20 | 0.000575 | 2.43 | 91.70 | 42.56 | 0.25 |
| Reach 1 | 28133 | 100 yr | REV 1218 FW | 200.52 | 566.29 | 571.71 | | 571.75 | 0.000258 | 1.74 | 129.72 | 49.61 | 0.17 |
| Reach 1 | 28133 | 100 yr | Prop_Eff_R1 | 200.52 | 566.29 | 571.79 | | 571.82 | 0.000239 | 1.69 | 133.70 | 50.36 | 0.16 |
| Reach 1 | 28133 | 100 yr | Corr_Eff_R2 | 200.52 | 566.29 | 571.80 | | 571.84 | 0.000235 | 1.68 | 134.63 | 50.53 | 0.16 |
| Reach 1 | 27709 | 100 yr | REV 1218 FW | 200.52 | 566.27 | 571.62 | | 571.65 | 0.000178 | 1.51 | 150.32 | 55.58 | 0.14 |
| Reach 1 | 27709 | 100 yr | Prop_Eff_R1 | 200.52 | 566.27 | 571.71 | | 571.74 | 0.000164 | 1.46 | 155.15 | 56.48 | 0.14 |
| Reach 1 | 27709 | 100 yr | Corr_Eff_R2 | 200.52 | 566.27 | 571.73 | | 571.76 | 0.000161 | 1.45 | 156.26 | 56.68 | 0.14 |
| Reach 1 | 27191 | 100 yr | REV 1218 FW | 200.52 | 565.53 | 571.55 | | 571.57 | 0.000132 | 1.27 | 187.10 | 76.51 | 0.12 |
| Reach 1 | 27191 | 100 yr | Prop_Eff_R1 | 200.52 | 565.53 | 571.64 | | 571.66 | 0.000123 | 1.25 | 194.29 | 80.66 | 0.12 |
| Reach 1 | 27191 | 100 yr | Corr_Eff_R2 | 200.52 | 565.53 | 571.66 | | 571.68 | 0.000121 | 1.24 | 195.99 | 81.51 | 0.12 |
| Reach 1 | 26095 | 100 yr | REV 1218 FW | 200.52 | 564.03 | 571.56 | | 571.56 | 0.000002 | 0.22 | 2115.28 | 1278.43 | 0.02 |
| Reach 1 | 26095 | 100 yr | Prop_Eff_R1 | 200.52 | 564.03 | 571.65 | | 571.65 | 0.000002 | 0.21 | 2232.48 | 1286.80 | 0.02 |
| Reach 1 | 26095 | 100 yr | Corr_Eff_R2 | 200.52 | 564.03 | 571.67 | | 571.67 | 0.000002 | 0.20 | 2259.52 | 1288.93 | 0.02 |
| Reach 1 | 26020 | 100 yr | REV 1218 FW | 200.52 | 563.28 | 571.56 | 565.96 | 571.56 | 0.000004 | 0.32 | 1574.91 | 1063.37 | 0.02 |
| Reach 1 | 26020 | 100 yr | Prop_Eff_R1 | 200.52 | 563.28 | 571.65 | 565.96 | 571.65 | 0.000004 | 0.30 | 1672.35 | 1068.25 | 0.02 |
| Reach 1 | 26020 | 100 yr | Corr_Eff_R2 | 200.52 | 563.28 | 571.67 | 565.96 | 571.67 | 0.000004 | 0.29 | 1694.79 | 1069.37 | 0.02 |
| Reach 1 | 25982 | | | Culvert | | | | | | | | | |
| Reach 1 | 25918 | 100 yr | REV 1218 FW | 200.52 | 562.95 | 570.27 | | 570.28 | 0.000023 | 0.66 | 525.25 | 525.94 | 0.06 |
| Reach 1 | 25918 | 100 yr | Prop_Eff_R1 | 200.52 | 562.95 | 570.45 | | 570.45 | 0.000017 | 0.59 | 618.90 | 539.20 | 0.05 |
| Reach 1 | 25918 | 100 yr | Corr_Eff_R2 | 200.52 | 562.95 | 570.48 | | 570.49 | 0.000016 | 0.58 | 638.68 | 541.43 | 0.05 |
| Reach 1 | 25849 | 100 yr | REV 1218 FW | 200.52 | 562.48 | 570.27 | | 570.28 | 0.000011 | 0.45 | 907.26 | 720.47 | 0.04 |
| Reach 1 | 25849 | 100 yr | Prop_Eff_R1 | 200.52 | 562.48 | 570.45 | | 570.45 | 0.000008 | 0.41 | 1036.28 | 749.91 | 0.03 |
| Reach 1 | 25849 | 100 yr | Corr_Eff_R2 | 200.52 | 562.48 | 570.49 | | 570.49 | 0.000008 | 0.40 | 1063.78 | 754.73 | 0.03 |
| Reach 1 | 25601 | 100 yr | REV 1218 FW | 200.52 | 562.25 | 570.25 | | 570.27 | 0.000060 | 1.06 | 349.63 | 796.91 | 0.09 |
| Reach 1 | 25601 | 100 yr | Prop_Eff_R1 | 200.52 | 562.25 | 570.43 | | 570.44 | 0.000042 | 0.91 | 515.39 | 1038.85 | 0.07 |
| Reach 1 | 25601 | 100 yr | Corr_Eff_R2 | 200.52 | 562.25 | 570.47 | | 570.48 | 0.000039 | 0.87 | 555.33 | 1070.70 | 0.07 |
| Reach 1 | 24971 | 100 yr | REV 1218 FW | 200.52 | 563.11 | 570.26 | | 570.26 | 0.000002 | 0.19 | 2548.00 | 1454.13 | 0.02 |
| Reach 1 | 24971 | 100 yr | Prop_Eff_R1 | 200.52 | 563.11 | 570.42 | 565.10 | 570.42 | 0.000009 | 0.45 | 757.26 | 1461.65 | 0.04 |
| Reach 1 | 24971 | 100 yr | Corr_Eff_R2 | 200.52 | 563.11 | 570.46 | 565.10 | 570.46 | 0.000009 | 0.44 | 767.89 | 1463.12 | 0.03 |
| Reach 1 | 24874 | 100 yr | REV 1218 FW | 200.52 | 562.91 | 570.26 | | 570.26 | 0.000003 | 0.26 | 2085.64 | 1389.10 | 0.02 |
| Reach 1 | 24874 | 100 yr | Prop_Eff_R1 | 200.52 | 562.91 | 570.41 | 564.79 | 570.42 | 0.000024 | 0.79 | 308.20 | 1397.16 | 0.06 |
| Reach 1 | 24874 | 100 yr | Corr_Eff_R2 | 200.52 | 562.91 | 570.45 | 564.79 | 570.46 | 0.000023 | 0.78 | 311.26 | 1399.05 | 0.06 |
| Reach 1 | 24854 | 100 yr | REV 1218 FW | 200.52 | 562.85 | 570.25 | 564.81 | 570.26 | 0.000016 | 0.57 | 656.79 | 1135.89 | 0.05 |
| Reach 1 | 24854 | 100 yr | Prop_Eff_R1 | 200.52 | 562.85 | 570.41 | 564.82 | 570.42 | 0.000021 | 0.65 | 306.63 | 1190.35 | 0.05 |
| Reach 1 | 24854 | 100 yr | Corr_Eff_R2 | 200.52 | 562.85 | 570.45 | 564.82 | 570.46 | 0.000020 | 0.65 | 309.16 | 1200.69 | 0.05 |
| Reach 1 | 24825 | | | Culvert | | | | | | | | | |
| Reach 1 | 24792 | 100 yr | REV 1218 FW | 200.52 | 560.56 | 568.15 | | 568.15 | 0.000027 | 0.72 | 307.55 | 131.39 | 0.06 |
| Reach 1 | 24792 | 100 yr | Prop_Eff_R1 | 200.52 | 560.56 | 567.50 | | 567.51 | 0.000049 | 0.87 | 235.32 | 81.30 | 0.08 |
| Reach 1 | 24792 | 100 yr | Corr_Eff_R2 | 200.52 | 560.56 | 568.05 | | 568.06 | 0.000030 | 0.74 | 295.88 | 125.63 | 0.06 |
| Reach 1 | 24776 | 100 yr | REV 1218 FW | 200.52 | 560.89 | 568.15 | | 568.15 | 0.000027 | 0.75 | 477.80 | 523.89 | 0.06 |
| Reach 1 | 24776 | 100 yr | Prop_Eff_R1 | 200.52 | 560.89 | 567.49 | | 567.51 | 0.000062 | 1.02 | 222.48 | 259.48 | 0.09 |
| Reach 1 | 24776 | 100 yr | Corr_Eff_R2 | 200.52 | 560.89 | 568.05 | | 568.06 | 0.000031 | 0.79 | 430.25 | 513.99 | 0.07 |
| Reach 1 | 24692 | 100 yr | REV 1218 FW | 200.52 | 561.64 | 568.13 | | 568.15 | 0.000084 | 1.15 | 303.59 | 576.77 | 0.10 |
| Reach 1 | 24692 | 100 yr | Prop_Eff_R1 | 200.52 | 561.64 | 567.46 | | 567.50 | 0.000184 | 1.55 | 129.46 | 39.15 | 0.15 |
| Reach 1 | 24692 | 100 yr | Corr_Eff_R2 | 200.52 | 561.64 | 568.03 | | 568.05 | 0.000101 | 1.24 | 247.32 | 566.01 | 0.11 |
| Reach 1 | 24496 | 100 yr | REV 1218 FW | 200.52 | 561.09 | 568.11 | | 568.13 | 0.000097 | 1.27 | 201.47 | 506.17 | 0.11 |
| Reach 1 | 24496 | 100 yr | Prop_Eff_R1 | 200.52 | 561.09 | 567.43 | | 567.47 | 0.000164 | 1.54 | 129.93 | 35.61 | 0.14 |
| Reach 1 | 24496 | 100 yr | Corr_Eff_R2 | 200.52 | 561.09 | 568.01 | | 568.03 | 0.000108 | 1.33 | 155.30 | 352.60 | 0.12 |
| Reach 1 | 23695 | 100 yr | REV 1218 FW | 200.52 | 560.72 | 568.02 | | 568.05 | 0.000104 | 1.39 | 165.86 | 560.40 | 0.12 |
| Reach 1 | 23695 | 100 yr | Prop_Eff_R1 | 200.52 | 560.72 | 567.28 | | 567.33 | 0.000183 | 1.66 | 120.95 | 31.47 | 0.15 |
| Reach 1 | 23695 | 100 yr | Corr_Eff_R2 | 200.52 | 560.72 | 567.91 | | 567.94 | 0.000112 | 1.43 | 143.28 | 68.46 | 0.12 |
| Reach 1 | 22995 | | | Lat Struct | | | | | | | | | |
| Reach 1 | 22776 | 100 yr | REV 1218 FW | 200.52 | 560.51 | 567.94 | | 567.97 | 0.000076 | 1.17 | 212.84 | 272.73 | 0.10 |
| Reach 1 | 22776 | 100 yr | Prop_Eff_R1 | 200.52 | 560.51 | 567.15 | | 567.18 | 0.000135 | 1.46 | 137.76 | 35.30 | 0.13 |
| Reach 1 | 22776 | 100 yr | Corr_Eff_R2 | 200.52 | 560.51 | 567.83 | | 567.85 | 0.000084 | 1.22 | 186.40 | 194.81 | 0.10 |
| Reach 1 | 22249 | 100 yr | REV 1218 FW | 200.52 | 560.36 | 567.86 | | 567.89 | 0.000105 | 1.33 | 151.52 | 48.91 | 0.11 |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 100 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 22249 | 100 yr | Prop_Eff_R1 | 200.52 | 560.36 | 567.00 | | 567.04 | 0.000189 | 1.65 | 121.31 | 32.80 | 0.15 |
| Reach 1 | 22249 | 100 yr | Corr_Eff_R2 | 200.52 | 560.36 | 567.74 | | 567.77 | 0.000113 | 1.37 | 146.78 | 35.97 | 0.12 |
| | | | | | | | | | | | | | |
| Reach 1 | 22000 | | | Lat Struct | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 21969 | 100 yr | REV 1218 FW | 200.52 | 560.69 | 567.85 | | 567.86 | 0.000052 | 0.86 | 389.52 | 292.25 | 0.08 |
| Reach 1 | 21969 | 100 yr | Prop_Eff_R1 | 200.52 | 560.97 | 566.89 | 563.78 | 566.96 | 0.000371 | 2.20 | 91.08 | 161.24 | 0.21 |
| Reach 1 | 21969 | 100 yr | Corr_Eff_R2 | 200.52 | 560.97 | 567.72 | | 567.74 | 0.000077 | 1.08 | 355.89 | 385.50 | 0.10 |
| | | | | | | | | | | | | | |
| Reach 1 | 21756 | 100 yr | Prop_Eff_R1 | 200.52 | 562.91 | 566.76 | 565.02 | 566.85 | 0.000732 | 2.42 | 82.93 | 291.97 | 0.28 |
| Reach 1 | 21756 | 100 yr | Corr_Eff_R2 | 200.52 | 560.59 | 567.71 | | 567.72 | 0.000055 | 0.96 | 587.11 | 1111.64 | 0.08 |
| | | | | | | | | | | | | | |
| Reach 1 | 21485 | 100 yr | Prop_Eff_R1 | 200.52 | 562.44 | 566.57 | 564.62 | 566.66 | 0.000634 | 2.36 | 85.03 | 337.67 | 0.27 |
| Reach 1 | 21485 | 100 yr | Corr_Eff_R2 | 200.52 | 560.44 | 567.71 | | 567.71 | 0.000026 | 0.65 | 916.09 | 1307.28 | 0.06 |
| | | | | | | | | | | | | | |
| Reach 1 | 21180 | 100 yr | Prop_Eff_R1 | 200.52 | 561.84 | 566.39 | 564.10 | 566.47 | 0.000505 | 2.23 | 89.84 | 214.49 | 0.24 |
| Reach 1 | 21180 | 100 yr | Corr_Eff_R2 | 200.52 | 560.09 | 567.69 | | 567.70 | 0.000054 | 0.89 | 643.99 | 1229.03 | 0.08 |
| | | | | | | | | | | | | | |
| Reach 1 | 20965 | 100 yr | REV 1218 FW | 200.52 | 559.61 | 567.75 | | 567.78 | 0.000129 | 1.48 | 135.06 | 30.69 | 0.12 |
| Reach 1 | 20965 | 100 yr | Prop_Eff_R1 | 200.52 | 561.44 | 566.11 | | 566.18 | 0.000453 | 2.15 | 93.20 | 33.95 | 0.23 |
| Reach 1 | 20965 | 100 yr | Corr_Eff_R2 | 200.52 | 560.04 | 567.68 | | 567.69 | 0.000039 | 0.78 | 809.27 | 1416.34 | 0.07 |
| | | | | | | | | | | | | | |
| Reach 1 | 20873 | 100 yr | Prop_Eff_R1 | 200.52 | 561.31 | 566.07 | 563.56 | 566.14 | 0.000408 | 2.07 | 96.93 | 34.59 | 0.22 |
| Reach 1 | 20873 | 100 yr | Corr_Eff_R2 | 200.52 | 559.93 | 567.68 | | 567.68 | 0.000026 | 0.65 | 962.29 | 1429.98 | 0.06 |
| | | | | | | | | | | | | | |
| Reach 1 | 20601 | 100 yr | Prop_Eff_R1 | 200.52 | 560.88 | 565.83 | | 565.89 | 0.000347 | 1.95 | 102.96 | 35.65 | 0.20 |
| Reach 1 | 20601 | 100 yr | Corr_Eff_R2 | 200.52 | 559.93 | 567.67 | | 567.68 | 0.000022 | 0.60 | 1013.91 | 1333.40 | 0.05 |
| | | | | | | | | | | | | | |
| Reach 1 | 20426 | 100 yr | Prop_Eff_R1 | 200.52 | 560.62 | 565.79 | | 565.84 | 0.000285 | 1.81 | 110.84 | 36.96 | 0.18 |
| Reach 1 | 20426 | 100 yr | Corr_Eff_R2 | 200.52 | 560.00 | 567.67 | | 567.67 | 0.000020 | 0.55 | 1118.46 | 1456.26 | 0.05 |
| | | | | | | | | | | | | | |
| Reach 1 | 19996 | 100 yr | REV 1218 FW | 379.56 | 558.90 | 567.62 | | 567.66 | 0.000129 | 1.69 | 400.54 | 805.66 | 0.13 |
| Reach 1 | 19996 | 100 yr | Prop_Eff_R1 | 379.56 | 559.88 | 565.48 | 563.00 | 565.62 | 0.000698 | 2.97 | 127.76 | 534.03 | 0.29 |
| Reach 1 | 19996 | 100 yr | Corr_Eff_R2 | 379.56 | 559.54 | 567.64 | | 567.65 | 0.000094 | 1.28 | 771.58 | 1087.18 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 19541 | 100 yr | REV 1218 FW | 379.56 | 558.64 | 567.60 | | 567.61 | 0.000044 | 1.09 | 886.56 | 741.35 | 0.08 |
| Reach 1 | 19541 | 100 yr | Prop_Eff_R1 | 379.56 | 559.09 | 565.26 | 562.22 | 565.36 | 0.000446 | 2.51 | 151.44 | 130.14 | 0.24 |
| Reach 1 | 19541 | 100 yr | Corr_Eff_R2 | 379.56 | 559.25 | 567.61 | | 567.62 | 0.000052 | 1.01 | 1009.59 | 1157.33 | 0.08 |
| | | | | | | | | | | | | | |
| Reach 1 | 19470 | 100 yr | REV 1218 FW | 379.56 | 558.61 | 567.59 | | 567.61 | 0.000069 | 1.28 | 671.15 | 514.21 | 0.10 |
| Reach 1 | 19470 | 100 yr | Prop_Eff_R1 | 379.56 | 559.09 | 565.22 | | 565.32 | 0.000486 | 2.58 | 147.14 | 43.02 | 0.25 |
| Reach 1 | 19470 | 100 yr | Corr_Eff_R2 | 379.56 | 559.02 | 567.60 | | 567.61 | 0.000092 | 1.26 | 659.82 | 556.33 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 19448 | 100 yr | REV 1218 FW | 379.56 | 558.91 | 567.59 | 563.09 | 567.61 | 0.000085 | 1.26 | 663.11 | 549.58 | 0.10 |
| Reach 1 | 19448 | 100 yr | Prop_Eff_R1 | 379.56 | 558.92 | 565.03 | 562.13 | 565.29 | 0.001343 | 4.06 | 93.53 | 23.62 | 0.36 |
| Reach 1 | 19448 | 100 yr | Corr_Eff_R2 | 379.56 | 558.98 | 567.60 | 563.55 | 567.61 | 0.000106 | 1.31 | 635.28 | 542.48 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 19417 | | | Culvert | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 19377 | 100 yr | REV 1218 FW | 379.56 | 558.41 | 567.53 | | 567.54 | 0.000078 | 1.26 | 671.71 | 477.74 | 0.09 |
| Reach 1 | 19377 | 100 yr | Prop_Eff_R1 | 379.56 | 558.41 | 564.54 | | 564.81 | 0.001374 | 4.20 | 90.45 | 21.37 | 0.36 |
| Reach 1 | 19377 | 100 yr | Corr_Eff_R2 | 379.56 | 558.41 | 567.53 | | 567.55 | 0.000078 | 1.26 | 673.98 | 478.57 | 0.09 |
| | | | | | | | | | | | | | |
| Reach 1 | 19348 | 100 yr | REV 1218 FW | 379.56 | 558.26 | 567.53 | | 567.54 | 0.000061 | 1.24 | 671.18 | 467.08 | 0.09 |
| Reach 1 | 19348 | 100 yr | Prop_Eff_R1 | 379.56 | 558.26 | 564.50 | | 564.77 | 0.001308 | 4.15 | 91.50 | 25.53 | 0.39 |
| Reach 1 | 19348 | 100 yr | Corr_Eff_R2 | 379.56 | 558.26 | 567.53 | | 567.55 | 0.000061 | 1.23 | 673.26 | 467.82 | 0.09 |
| | | | | | | | | | | | | | |
| Reach 1 | 19316 | 100 yr | REV 1218 FW | 379.56 | 558.45 | 567.52 | 562.77 | 567.54 | 0.000079 | 1.36 | 637.91 | 459.03 | 0.10 |
| Reach 1 | 19316 | 100 yr | Prop_Eff_R1 | 379.56 | 558.36 | 564.42 | 561.53 | 564.72 | 0.001610 | 4.42 | 85.91 | 20.78 | 0.38 |
| Reach 1 | 19316 | 100 yr | Corr_Eff_R2 | 379.56 | 558.45 | 567.53 | 562.77 | 567.54 | 0.000079 | 1.35 | 639.85 | 461.47 | 0.10 |
| | | | | | | | | | | | | | |
| Reach 1 | 19283 | | | Culvert | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 19250 | 100 yr | REV 1218 FW | 379.56 | 558.24 | 563.70 | | 564.04 | 0.001820 | 4.67 | 81.25 | 24.66 | 0.45 |
| Reach 1 | 19250 | 100 yr | Prop_Eff_R1 | 379.56 | 558.33 | 563.74 | | 564.02 | 0.001575 | 4.30 | 88.31 | 24.74 | 0.40 |
| Reach 1 | 19250 | 100 yr | Corr_Eff_R2 | 379.56 | 558.24 | 563.73 | | 564.07 | 0.001776 | 4.63 | 82.00 | 24.77 | 0.45 |
| | | | | | | | | | | | | | |
| Reach 1 | 19228 | 100 yr | REV 1218 FW | 379.56 | 558.40 | 563.75 | | 563.98 | 0.001142 | 3.85 | 98.64 | 28.90 | 0.37 |
| Reach 1 | 19228 | 100 yr | Prop_Eff_R1 | 379.56 | 558.40 | 563.75 | | 563.98 | 0.001142 | 3.85 | 98.64 | 28.90 | 0.37 |
| Reach 1 | 19228 | 100 yr | Corr_Eff_R2 | 379.56 | 558.40 | 563.75 | | 563.98 | 0.001136 | 3.84 | 98.82 | 28.93 | 0.37 |
| | | | | | | | | | | | | | |
| Reach 1 | 19154 | 100 yr | REV 1218 FW | 379.56 | 557.60 | 563.63 | | 563.88 | 0.001287 | 4.05 | 93.61 | 27.39 | 0.39 |
| Reach 1 | 19154 | 100 yr | Prop_Eff_R1 | 379.56 | 557.60 | 563.63 | | 563.88 | 0.001287 | 4.05 | 93.61 | 27.39 | 0.39 |
| Reach 1 | 19154 | 100 yr | Corr_Eff_R2 | 379.56 | 557.60 | 563.63 | | 563.88 | 0.001287 | 4.05 | 93.61 | 27.39 | 0.39 |
| | | | | | | | | | | | | | |
| Reach 1 | 18156 | 100 yr | REV 1218 FW | 379.56 | 556.27 | 562.26 | | 562.55 | 0.001377 | 4.31 | 88.07 | 23.74 | 0.39 |
| Reach 1 | 18156 | 100 yr | Prop_Eff_R1 | 379.56 | 556.27 | 562.26 | | 562.55 | 0.001377 | 4.31 | 88.07 | 23.74 | 0.39 |
| Reach 1 | 18156 | 100 yr | Corr_Eff_R2 | 379.56 | 556.27 | 562.26 | | 562.55 | 0.001377 | 4.31 | 88.07 | 23.74 | 0.39 |
| | | | | | | | | | | | | | |
| Reach 1 | 17180 | 100 yr | REV 1218 FW | 379.56 | 554.65 | 561.01 | | 561.25 | 0.001268 | 3.88 | 97.76 | 30.41 | 0.38 |
| Reach 1 | 17180 | 100 yr | Prop_Eff_R1 | 379.56 | 554.65 | 561.01 | | 561.25 | 0.001268 | 3.88 | 97.76 | 30.41 | 0.38 |
| Reach 1 | 17180 | 100 yr | Corr_Eff_R2 | 379.56 | 554.65 | 561.01 | | 561.25 | 0.001268 | 3.88 | 97.76 | 30.41 | 0.38 |
| | | | | | | | | | | | | | |
| Reach 1 | 16643 | 100 yr | REV 1218 FW | 379.56 | 554.28 | 560.62 | | 560.76 | 0.000617 | 2.94 | 129.08 | 36.37 | 0.28 |
| Reach 1 | 16643 | 100 yr | Prop_Eff_R1 | 379.56 | 554.28 | 560.62 | | 560.76 | 0.000617 | 2.94 | 129.08 | 36.37 | 0.28 |
| Reach 1 | 16643 | 100 yr | Corr_Eff_R2 | 379.56 | 554.28 | 560.62 | | 560.76 | 0.000617 | 2.94 | 129.08 | 36.37 | 0.28 |
| | | | | | | | | | | | | | |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 100 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 16139 | 100 yr | REV 1218 FW | 546.39 | 553.61 | 560.38 | | 560.45 | 0.000514 | 2.74 | 636.89 | 1416.38 | 0.25 |
| Reach 1 | 16139 | 100 yr | Prop_Eff_R1 | 546.39 | 553.61 | 560.38 | | 560.45 | 0.000514 | 2.74 | 636.89 | 1416.38 | 0.25 |
| Reach 1 | 16139 | 100 yr | Corr_Eff_R2 | 546.39 | 553.61 | 560.38 | | 560.45 | 0.000514 | 2.74 | 636.89 | 1416.38 | 0.25 |
| | | | | | | | | | | | | | |
| Reach 1 | 15148 | 100 yr | REV 1218 FW | 546.39 | 552.75 | 559.39 | | 559.47 | 0.000628 | 2.61 | 445.47 | 734.23 | 0.27 |
| Reach 1 | 15148 | 100 yr | Prop_Eff_R1 | 546.39 | 552.75 | 559.39 | | 559.47 | 0.000628 | 2.61 | 445.47 | 734.23 | 0.27 |
| Reach 1 | 15148 | 100 yr | Corr_Eff_R2 | 546.39 | 552.75 | 559.39 | | 559.47 | 0.000628 | 2.61 | 445.47 | 734.23 | 0.27 |
| | | | | | | | | | | | | | |
| Reach 1 | 14153 | 100 yr | REV 1218 FW | 546.39 | 552.09 | 559.11 | | 559.12 | 0.000088 | 1.20 | 1234.49 | 1199.76 | 0.11 |
| Reach 1 | 14153 | 100 yr | Prop_Eff_R1 | 546.39 | 552.09 | 559.11 | | 559.12 | 0.000088 | 1.20 | 1234.56 | 1199.78 | 0.11 |
| Reach 1 | 14153 | 100 yr | Corr_Eff_R2 | 546.39 | 552.09 | 559.11 | | 559.12 | 0.000088 | 1.20 | 1234.56 | 1199.78 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 13160 | 100 yr | REV 1218 FW | 546.39 | 550.87 | 559.08 | | 559.08 | 0.000019 | 0.59 | 3174.97 | 3494.47 | 0.05 |
| Reach 1 | 13160 | 100 yr | Prop_Eff_R1 | 546.39 | 550.87 | 559.08 | | 559.08 | 0.000019 | 0.59 | 3175.18 | 3494.48 | 0.05 |
| Reach 1 | 13160 | 100 yr | Corr_Eff_R2 | 546.39 | 550.87 | 559.08 | | 559.08 | 0.000019 | 0.59 | 3175.18 | 3494.48 | 0.05 |
| | | | | | | | | | | | | | |
| Reach 1 | 12721 | 100 yr | REV 1218 FW | 546.39 | 550.92 | 559.08 | | 559.08 | 0.000004 | 0.27 | 5533.07 | 3683.77 | 0.02 |
| Reach 1 | 12721 | 100 yr | Prop_Eff_R1 | 546.39 | 550.92 | 559.08 | | 559.08 | 0.000004 | 0.27 | 5533.30 | 3683.77 | 0.02 |
| Reach 1 | 12721 | 100 yr | Corr_Eff_R2 | 546.39 | 550.92 | 559.08 | | 559.08 | 0.000004 | 0.27 | 5533.30 | 3683.77 | 0.02 |
| | | | | | | | | | | | | | |
| Reach 1 | 12641 | 100 yr | REV 1218 FW | 546.39 | 550.46 | 559.08 | 554.72 | 559.08 | 0.000006 | 0.37 | 4721.85 | 3709.37 | 0.03 |
| Reach 1 | 12641 | 100 yr | Prop_Eff_R1 | 546.39 | 550.46 | 559.08 | 554.72 | 559.08 | 0.000006 | 0.37 | 4722.08 | 3709.38 | 0.03 |
| Reach 1 | 12641 | 100 yr | Corr_Eff_R2 | 546.39 | 550.46 | 559.08 | 554.72 | 559.08 | 0.000006 | 0.37 | 4722.08 | 3709.38 | 0.03 |
| | | | | | | | | | | | | | |
| Reach 1 | 12590 | | | Culvert | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 12546 | 100 yr | REV 1218 FW | 546.39 | 550.53 | 556.75 | | 556.90 | 0.001125 | 3.83 | 296.23 | 317.84 | 0.36 |
| Reach 1 | 12546 | 100 yr | Prop_Eff_R1 | 546.39 | 550.53 | 556.75 | | 556.90 | 0.001124 | 3.83 | 296.35 | 317.86 | 0.36 |
| Reach 1 | 12546 | 100 yr | Corr_Eff_R2 | 546.39 | 550.53 | 556.75 | | 556.90 | 0.001124 | 3.83 | 296.35 | 317.86 | 0.36 |
| | | | | | | | | | | | | | |
| Reach 1 | 12487 | 100 yr | REV 1218 FW | 546.39 | 550.48 | 556.83 | | 556.84 | 0.000131 | 1.43 | 1161.29 | 1416.85 | 0.13 |
| Reach 1 | 12487 | 100 yr | Prop_Eff_R1 | 546.39 | 550.48 | 556.83 | | 556.84 | 0.000131 | 1.43 | 1161.64 | 1417.02 | 0.13 |
| Reach 1 | 12487 | 100 yr | Corr_Eff_R2 | 546.39 | 550.48 | 556.83 | | 556.84 | 0.000131 | 1.43 | 1161.64 | 1417.02 | 0.13 |
| | | | | | | | | | | | | | |
| Reach 1 | 11833 | 100 yr | REV 1218 FW | 546.39 | 548.99 | 556.58 | | 556.68 | 0.000535 | 2.91 | 459.99 | 972.66 | 0.26 |
| Reach 1 | 11833 | 100 yr | Prop_Eff_R1 | 546.39 | 548.99 | 556.58 | | 556.68 | 0.000534 | 2.91 | 460.64 | 973.34 | 0.26 |
| Reach 1 | 11833 | 100 yr | Corr_Eff_R2 | 546.39 | 548.99 | 556.58 | | 556.68 | 0.000534 | 2.91 | 460.64 | 973.34 | 0.26 |
| | | | | | | | | | | | | | |
| Reach 1 | 11178 | 100 yr | REV 1218 FW | 546.39 | 548.65 | 555.79 | 553.42 | 556.13 | 0.001407 | 4.64 | 117.67 | 29.55 | 0.41 |
| Reach 1 | 11178 | 100 yr | Prop_Eff_R1 | 546.39 | 548.65 | 555.79 | 553.42 | 556.13 | 0.001405 | 4.64 | 117.71 | 29.56 | 0.41 |
| Reach 1 | 11178 | 100 yr | Corr_Eff_R2 | 546.39 | 548.65 | 555.80 | 553.42 | 556.13 | 0.001405 | 4.64 | 117.72 | 29.56 | 0.41 |
| | | | | | | | | | | | | | |
| Reach 1 | 11110 | 100 yr | REV 1218 FW | 546.39 | 548.31 | 555.77 | | 556.02 | 0.000976 | 4.02 | 141.14 | 98.45 | 0.35 |
| Reach 1 | 11110 | 100 yr | Prop_Eff_R1 | 546.39 | 548.31 | 555.78 | | 556.03 | 0.000975 | 4.02 | 141.29 | 98.87 | 0.35 |
| Reach 1 | 11110 | 100 yr | Corr_Eff_R2 | 546.39 | 548.31 | 555.78 | | 556.03 | 0.000975 | 4.02 | 141.30 | 98.92 | 0.35 |
| | | | | | | | | | | | | | |
| Reach 1 | 11072 | 100 yr | REV 1218 FW | 546.39 | 548.57 | 555.79 | 552.94 | 555.97 | 0.000745 | 3.46 | 157.71 | 39.57 | 0.31 |
| Reach 1 | 11072 | 100 yr | Prop_Eff_R1 | 546.39 | 548.57 | 555.79 | 552.94 | 555.97 | 0.000744 | 3.46 | 157.77 | 39.58 | 0.31 |
| Reach 1 | 11072 | 100 yr | Corr_Eff_R2 | 546.39 | 548.57 | 555.79 | 552.94 | 555.97 | 0.000744 | 3.46 | 157.78 | 39.58 | 0.31 |
| | | | | | | | | | | | | | |
| Reach 1 | 11053 | | | Bridge | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 11035 | 100 yr | REV 1218 FW | 546.39 | 548.96 | 555.62 | | 555.88 | 0.001126 | 4.06 | 134.58 | 35.73 | 0.37 |
| Reach 1 | 11035 | 100 yr | Prop_Eff_R1 | 546.39 | 548.96 | 555.62 | | 555.88 | 0.001125 | 4.06 | 134.64 | 35.74 | 0.37 |
| Reach 1 | 11035 | 100 yr | Corr_Eff_R2 | 546.39 | 548.96 | 555.62 | | 555.88 | 0.001125 | 4.06 | 134.64 | 35.74 | 0.37 |
| | | | | | | | | | | | | | |
| Reach 1 | 11010 | 100 yr | REV 1218 FW | 546.39 | 548.45 | 555.52 | | 555.84 | 0.001410 | 4.50 | 121.33 | 32.74 | 0.41 |
| Reach 1 | 11010 | 100 yr | Prop_Eff_R1 | 546.39 | 548.45 | 555.53 | | 555.84 | 0.001409 | 4.50 | 121.39 | 32.74 | 0.41 |
| Reach 1 | 11010 | 100 yr | Corr_Eff_R2 | 546.39 | 548.45 | 555.53 | | 555.84 | 0.001409 | 4.50 | 121.39 | 32.74 | 0.41 |
| | | | | | | | | | | | | | |
| Reach 1 | 10938 | 100 yr | REV 1218 FW | 546.39 | 548.30 | 555.45 | | 555.74 | 0.001089 | 4.32 | 126.55 | 28.55 | 0.36 |
| Reach 1 | 10938 | 100 yr | Prop_Eff_R1 | 546.39 | 548.30 | 555.45 | | 555.74 | 0.001088 | 4.32 | 126.60 | 28.55 | 0.36 |
| Reach 1 | 10938 | 100 yr | Corr_Eff_R2 | 546.39 | 548.30 | 555.45 | | 555.74 | 0.001088 | 4.32 | 126.60 | 28.55 | 0.36 |
| | | | | | | | | | | | | | |
| Reach 1 | 9945 | 100 yr | REV 1218 FW | 546.39 | 547.60 | 555.07 | | 555.13 | 0.000326 | 2.42 | 521.89 | 542.39 | 0.20 |
| Reach 1 | 9945 | 100 yr | Prop_Eff_R1 | 546.39 | 547.60 | 555.08 | | 555.14 | 0.000322 | 2.40 | 525.64 | 544.50 | 0.20 |
| Reach 1 | 9945 | 100 yr | Corr_Eff_R2 | 546.39 | 547.60 | 555.08 | | 555.14 | 0.000322 | 2.40 | 525.64 | 544.50 | 0.20 |
| | | | | | | | | | | | | | |
| Reach 1 | 8949 | 100 yr | REV 1218 FW | 546.39 | 546.82 | 554.40 | | 554.63 | 0.000801 | 3.81 | 143.25 | 31.28 | 0.31 |
| Reach 1 | 8949 | 100 yr | Prop_Eff_R1 | 546.39 | 546.82 | 554.41 | | 554.64 | 0.000795 | 3.80 | 143.65 | 31.32 | 0.31 |
| Reach 1 | 8949 | 100 yr | Corr_Eff_R2 | 546.39 | 546.82 | 554.41 | | 554.64 | 0.000795 | 3.80 | 143.65 | 31.32 | 0.31 |
| | | | | | | | | | | | | | |
| Reach 1 | 7957 | 100 yr | REV 1218 FW | 546.39 | 545.94 | 553.39 | | 553.68 | 0.001140 | 4.35 | 125.72 | 29.11 | 0.37 |
| Reach 1 | 7957 | 100 yr | Prop_Eff_R1 | 546.39 | 545.94 | 553.41 | | 553.70 | 0.001122 | 4.32 | 126.45 | 29.19 | 0.37 |
| Reach 1 | 7957 | 100 yr | Corr_Eff_R2 | 546.39 | 545.94 | 553.41 | | 553.70 | 0.001122 | 4.32 | 126.45 | 29.19 | 0.37 |
| | | | | | | | | | | | | | |
| Reach 1 | 7419 | 100 yr | REV 1218 FW | 546.39 | 544.98 | 552.31 | | 552.81 | 0.002311 | 5.69 | 95.96 | 24.42 | 0.51 |
| Reach 1 | 7419 | 100 yr | Prop_Eff_R1 | 546.39 | 544.98 | 552.37 | | 552.86 | 0.002221 | 5.61 | 97.42 | 24.60 | 0.50 |
| Reach 1 | 7419 | 100 yr | Corr_Eff_R2 | 546.39 | 544.98 | 552.37 | | 552.86 | 0.002221 | 5.61 | 97.42 | 24.60 | 0.50 |
| | | | | | | | | | | | | | |
| Reach 1 | 6750 | 100 yr | REV 1218 FW | 546.39 | 543.83 | 551.63 | | 551.86 | 0.000827 | 3.86 | 141.52 | 31.05 | 0.32 |
| Reach 1 | 6750 | 100 yr | Prop_Eff_R1 | 546.39 | 543.83 | 551.73 | | 551.95 | 0.000781 | 3.78 | 144.60 | 31.37 | 0.31 |
| Reach 1 | 6750 | 100 yr | Corr_Eff_R2 | 546.39 | 543.83 | 551.73 | | 551.95 | 0.000781 | 3.78 | 144.60 | 31.37 | 0.31 |
| | | | | | | | | | | | | | |
| Reach 1 | 6591 | 100 yr | REV 1218 FW | 546.39 | 543.86 | 551.49 | | 551.73 | 0.000865 | 3.93 | 138.86 | 30.59 | 0.33 |
| Reach 1 | 6591 | 100 yr | Prop_Eff_R1 | 546.39 | 543.86 | 551.60 | | 551.83 | 0.000812 | 3.84 | 142.20 | 30.93 | 0.32 |
| Reach 1 | 6591 | 100 yr | Corr_Eff_R2 | 546.39 | 543.86 | 551.60 | | 551.83 | 0.000812 | 3.84 | 142.20 | 30.93 | 0.32 |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 100 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 5921 | 100 yr | REV 1218 FW | 546.39 | 542.86 | 550.81 | | 551.09 | 0.001050 | 4.22 | 129.34 | 29.26 | 0.35 |
| Reach 1 | 5921 | 100 yr | Prop_Eff_R1 | 546.39 | 542.86 | 550.98 | | 551.24 | 0.000950 | 4.07 | 134.30 | 29.80 | 0.34 |
| Reach 1 | 5921 | 100 yr | Corr_Eff_R2 | 546.39 | 542.86 | 550.98 | | 551.24 | 0.000950 | 4.07 | 134.30 | 29.80 | 0.34 |
| Reach 1 | 5719 | 100 yr | REV 1218 FW | 546.39 | 542.29 | 550.75 | | 550.91 | 0.000506 | 3.18 | 171.57 | 34.77 | 0.25 |
| Reach 1 | 5719 | 100 yr | Prop_Eff_R1 | 546.39 | 542.29 | 550.93 | | 551.07 | 0.000460 | 3.07 | 177.70 | 35.36 | 0.24 |
| Reach 1 | 5719 | 100 yr | Corr_Eff_R2 | 546.39 | 542.29 | 550.93 | | 551.07 | 0.000460 | 3.07 | 177.70 | 35.36 | 0.24 |
| Reach 1 | 5644 | 100 yr | REV 1218 FW | 626.25 | 542.55 | 550.64 | | 550.86 | 0.000762 | 3.76 | 166.69 | 36.63 | 0.31 |
| Reach 1 | 5644 | 100 yr | Prop_Eff_R1 | 626.25 | 542.55 | 550.82 | | 551.03 | 0.000684 | 3.61 | 173.57 | 37.36 | 0.30 |
| Reach 1 | 5644 | 100 yr | Corr_Eff_R2 | 626.25 | 542.55 | 550.82 | | 551.03 | 0.000684 | 3.61 | 173.57 | 37.36 | 0.30 |
| Reach 1 | 5611 | 100 yr | REV 1218 FW | 626.25 | 541.43 | 550.76 | 545.57 | 550.79 | 0.000106 | 1.55 | 406.09 | 85.57 | 0.12 |
| Reach 1 | 5611 | 100 yr | Prop_Eff_R1 | 626.25 | 541.43 | 550.93 | 545.57 | 550.97 | 0.000095 | 1.49 | 421.45 | 88.15 | 0.12 |
| Reach 1 | 5611 | 100 yr | Corr_Eff_R2 | 626.25 | 541.43 | 550.93 | 545.57 | 550.97 | 0.000095 | 1.49 | 421.45 | 88.15 | 0.12 |
| Reach 1 | 5578 | | | Culvert | | | | | | | | | |
| Reach 1 | 5554 | 100 yr | REV 1218 FW | 626.25 | 542.40 | 550.39 | | 550.43 | 0.000102 | 1.50 | 416.56 | 83.90 | 0.12 |
| Reach 1 | 5554 | 100 yr | Prop_Eff_R1 | 626.25 | 542.40 | 550.58 | | 550.61 | 0.000092 | 1.45 | 432.81 | 86.06 | 0.11 |
| Reach 1 | 5554 | 100 yr | Corr_Eff_R2 | 626.25 | 542.40 | 550.58 | | 550.61 | 0.000092 | 1.45 | 432.81 | 86.06 | 0.11 |
| Reach 1 | 5506 | 100 yr | REV 1218 FW | 626.25 | 541.49 | 550.15 | | 550.39 | 0.000790 | 3.94 | 158.88 | 32.27 | 0.31 |
| Reach 1 | 5506 | 100 yr | Prop_Eff_R1 | 626.25 | 541.49 | 550.36 | | 550.59 | 0.000706 | 3.78 | 165.76 | 32.93 | 0.30 |
| Reach 1 | 5506 | 100 yr | Corr_Eff_R2 | 626.25 | 541.49 | 550.36 | | 550.59 | 0.000706 | 3.78 | 165.76 | 32.93 | 0.30 |
| Reach 1 | 5426 | 100 yr | REV 1218 FW | 626.25 | 541.71 | 549.99 | | 550.31 | 0.001200 | 4.52 | 138.65 | 31.91 | 0.38 |
| Reach 1 | 5426 | 100 yr | Prop_Eff_R1 | 626.25 | 541.71 | 550.23 | | 550.51 | 0.001041 | 4.28 | 146.21 | 32.75 | 0.36 |
| Reach 1 | 5426 | 100 yr | Corr_Eff_R2 | 626.25 | 541.71 | 550.23 | | 550.51 | 0.001041 | 4.28 | 146.21 | 32.75 | 0.36 |
| Reach 1 | 5256 | 100 yr | REV 1218 FW | 626.25 | 541.54 | 549.83 | | 550.11 | 0.001001 | 4.24 | 147.59 | 32.58 | 0.35 |
| Reach 1 | 5256 | 100 yr | Prop_Eff_R1 | 626.25 | 541.54 | 550.09 | | 550.34 | 0.000862 | 4.01 | 156.10 | 33.48 | 0.33 |
| Reach 1 | 5256 | 100 yr | Corr_Eff_R2 | 626.25 | 541.54 | 550.09 | | 550.34 | 0.000862 | 4.01 | 156.10 | 33.48 | 0.33 |
| Reach 1 | 4561 | 100 yr | REV 1218 FW | 626.25 | 540.99 | 549.06 | | 549.37 | 0.001128 | 4.50 | 139.09 | 30.07 | 0.37 |
| Reach 1 | 4561 | 100 yr | Prop_Eff_R1 | 626.25 | 540.99 | 549.46 | | 549.73 | 0.000897 | 4.13 | 151.57 | 31.34 | 0.33 |
| Reach 1 | 4561 | 100 yr | Corr_Eff_R2 | 626.25 | 540.99 | 549.46 | | 549.73 | 0.000897 | 4.13 | 151.57 | 31.34 | 0.33 |
| Reach 1 | 4197 | 100 yr | REV 1218 FW | 626.25 | 540.33 | 548.83 | | 549.02 | 0.000689 | 3.52 | 177.94 | 40.89 | 0.30 |
| Reach 1 | 4197 | 100 yr | Prop_Eff_R1 | 626.25 | 540.33 | 549.29 | | 549.45 | 0.000521 | 3.17 | 197.64 | 43.09 | 0.26 |
| Reach 1 | 4197 | 100 yr | Corr_Eff_R2 | 626.25 | 540.33 | 549.29 | | 549.45 | 0.000521 | 3.17 | 197.64 | 43.09 | 0.26 |
| Reach 1 | 3473 | 100 yr | REV 1218 FW | 820.57 | 540.26 | 547.48 | | 548.08 | 0.002237 | 6.24 | 131.59 | 29.70 | 0.52 |
| Reach 1 | 3473 | 100 yr | Prop_Eff_R1 | 962.00 | 540.26 | 547.86 | | 548.56 | 0.002447 | 6.72 | 143.23 | 30.85 | 0.55 |
| Reach 1 | 3473 | 100 yr | Corr_Eff_R2 | 962.00 | 540.26 | 547.86 | | 548.56 | 0.002446 | 6.72 | 143.24 | 30.85 | 0.55 |
| Reach 1 | 3004 | 100 yr | REV 1218 FW | 820.57 | 539.68 | 546.59 | | 547.08 | 0.001933 | 5.65 | 152.40 | 56.73 | 0.49 |
| Reach 1 | 3004 | 100 yr | Prop_Eff_R1 | 962.00 | 539.68 | 546.92 | | 547.48 | 0.002041 | 6.04 | 172.68 | 64.27 | 0.51 |
| Reach 1 | 3004 | 100 yr | Corr_Eff_R2 | 962.00 | 539.68 | 546.92 | | 547.48 | 0.002041 | 6.04 | 172.70 | 64.27 | 0.51 |
| Reach 1 | 2921 | 100 yr | REV 1218 FW | 820.57 | 539.70 | 546.16 | 544.81 | 546.87 | 0.002674 | 6.87 | 143.78 | 93.34 | 0.58 |
| Reach 1 | 2921 | 100 yr | Prop_Eff_R1 | 962.00 | 539.70 | 546.65 | 545.25 | 547.29 | 0.002255 | 6.77 | 194.76 | 114.45 | 0.54 |
| Reach 1 | 2921 | 100 yr | Corr_Eff_R2 | 962.00 | 539.70 | 546.65 | 545.25 | 547.29 | 0.002254 | 6.77 | 194.82 | 114.46 | 0.54 |
| Reach 1 | 2891 | 100 yr | REV 1218 FW | 820.57 | 539.61 | 546.41 | 543.59 | 546.69 | 0.001049 | 4.26 | 192.73 | 46.33 | 0.37 |
| Reach 1 | 2891 | 100 yr | Prop_Eff_R1 | 962.00 | 539.61 | 546.82 | 543.94 | 547.14 | 0.001137 | 4.53 | 212.59 | 49.65 | 0.39 |
| Reach 1 | 2891 | 100 yr | Corr_Eff_R2 | 962.00 | 539.61 | 546.82 | 543.94 | 547.14 | 0.001136 | 4.52 | 212.60 | 49.65 | 0.39 |
| Reach 1 | 2875 | | | Bridge | | | | | | | | | |
| Reach 1 | 2854 | 100 yr | REV 1218 FW | 820.57 | 539.42 | 546.30 | | 546.64 | 0.001409 | 4.68 | 175.41 | 45.80 | 0.42 |
| Reach 1 | 2854 | 100 yr | Prop_Eff_R1 | 962.00 | 539.42 | 546.70 | | 547.08 | 0.001464 | 4.94 | 194.54 | 48.10 | 0.43 |
| Reach 1 | 2854 | 100 yr | Corr_Eff_R2 | 962.00 | 539.42 | 546.70 | | 547.08 | 0.001464 | 4.94 | 194.54 | 48.10 | 0.43 |
| Reach 1 | 2828 | 100 yr | REV 1218 FW | 820.57 | 539.17 | 546.01 | | 546.57 | 0.002232 | 5.98 | 138.51 | 68.63 | 0.52 |
| Reach 1 | 2828 | 100 yr | Prop_Eff_R1 | 962.00 | 539.17 | 546.43 | | 547.02 | 0.002134 | 6.22 | 175.26 | 106.10 | 0.52 |
| Reach 1 | 2828 | 100 yr | Corr_Eff_R2 | 962.00 | 539.17 | 546.43 | | 547.02 | 0.002134 | 6.22 | 175.26 | 106.10 | 0.52 |
| Reach 1 | 2746 | 100 yr | REV 1218 FW | 820.57 | 539.43 | 545.65 | | 546.35 | 0.002817 | 6.74 | 126.15 | 48.88 | 0.59 |
| Reach 1 | 2746 | 100 yr | Prop_Eff_R1 | 962.00 | 539.43 | 546.02 | 544.59 | 546.80 | 0.002906 | 7.15 | 145.63 | 70.47 | 0.60 |
| Reach 1 | 2746 | 100 yr | Corr_Eff_R2 | 962.00 | 539.43 | 546.02 | 544.59 | 546.80 | 0.002906 | 7.15 | 145.63 | 70.47 | 0.60 |
| Reach 1 | 2206 | 100 yr | REV 1218 FW | 820.57 | 537.77 | 544.19 | | 544.80 | 0.002811 | 6.25 | 131.27 | 41.12 | 0.59 |
| Reach 1 | 2206 | 100 yr | Prop_Eff_R1 | 962.00 | 537.77 | 544.60 | | 545.26 | 0.002679 | 6.52 | 155.18 | 71.79 | 0.58 |
| Reach 1 | 2206 | 100 yr | Corr_Eff_R2 | 962.00 | 537.77 | 544.60 | | 545.26 | 0.002679 | 6.52 | 155.18 | 71.79 | 0.58 |
| Reach 1 | 1444 | 100 yr | REV 1218 FW | 820.57 | 535.48 | 542.65 | | 543.09 | 0.001743 | 5.33 | 154.06 | 38.43 | 0.47 |
| Reach 1 | 1444 | 100 yr | Prop_Eff_R1 | 962.00 | 535.48 | 542.97 | | 543.49 | 0.001945 | 5.78 | 166.50 | 39.88 | 0.50 |
| Reach 1 | 1444 | 100 yr | Corr_Eff_R2 | 962.00 | 535.48 | 542.97 | | 543.49 | 0.001945 | 5.78 | 166.50 | 39.88 | 0.50 |
| Reach 1 | 775 | 100 yr | REV 1218 FW | 820.57 | 534.54 | 541.68 | | 542.05 | 0.001351 | 4.94 | 181.31 | 69.30 | 0.42 |
| Reach 1 | 775 | 100 yr | Prop_Eff_R1 | 962.00 | 534.54 | 541.78 | | 542.26 | 0.001693 | 5.62 | 188.92 | 72.19 | 0.47 |
| Reach 1 | 775 | 100 yr | Corr_Eff_R2 | 962.00 | 534.54 | 541.78 | | 542.26 | 0.001693 | 5.62 | 188.92 | 72.19 | 0.47 |
| Reach 1 | 476 | 100 yr | REV 1218 FW | 820.57 | 534.77 | 541.34 | | 541.65 | 0.001197 | 4.56 | 212.14 | 93.79 | 0.39 |
| Reach 1 | 476 | 100 yr | Prop_Eff_R1 | 962.00 | 534.77 | 541.31 | | 541.74 | 0.001684 | 5.39 | 209.50 | 92.69 | 0.47 |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 100 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 476 | 100 yr | Corr_Eff_R2 | 962.00 | 534.77 | 541.31 | | 541.74 | 0.001684 | 5.39 | 209.50 | 92.69 | 0.47 |
| | | | | | | | | | | | | | |
| Reach 1 | 181 | 100 yr | REV 1218 FW | 820.57 | 531.76 | 541.30 | | 541.44 | 0.000297 | 3.00 | 338.04 | 127.40 | 0.21 |
| Reach 1 | 181 | 100 yr | Prop_Eff_R1 | 962.00 | 531.76 | 541.26 | | 541.44 | 0.000419 | 3.55 | 332.57 | 118.02 | 0.25 |
| Reach 1 | 181 | 100 yr | Corr_Eff_R2 | 962.00 | 531.76 | 541.26 | | 541.44 | 0.000419 | 3.55 | 332.57 | 118.02 | 0.25 |

# NORTH DITCH 10-YEAR PROFILE SUMMARY TABLE

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 10 yr

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 30210 | 10 yr | REV 1218 FW | 122.55 | 568.13 | 571.82 | | 571.93 | 0.000927 | 2.67 | 45.91 | 19.91 | 0.31 |
| Reach 1 | 30210 | 10 yr | Prop_Eff_R1 | 122.55 | 568.13 | 571.82 | | 571.93 | 0.000928 | 2.67 | 45.89 | 19.91 | 0.31 |
| Reach 1 | 30210 | 10 yr | Corr_Eff_R2 | 122.55 | 568.13 | 571.82 | | 571.93 | 0.000927 | 2.67 | 45.92 | 19.91 | 0.31 |
| Reach 1 | 30131 | 10 yr | REV 1218 FW | 122.55 | 568.14 | 571.77 | | 571.86 | 0.000687 | 2.35 | 52.25 | 22.40 | 0.27 |
| Reach 1 | 30131 | 10 yr | Prop_Eff_R1 | 122.55 | 568.14 | 571.77 | | 571.86 | 0.000688 | 2.35 | 52.24 | 22.39 | 0.27 |
| Reach 1 | 30131 | 10 yr | Corr_Eff_R2 | 122.55 | 568.14 | 571.77 | | 571.86 | 0.000687 | 2.34 | 52.26 | 22.40 | 0.27 |
| Reach 1 | 29125 | 10 yr | REV 1218 FW | 122.55 | 567.58 | 570.94 | | 571.05 | 0.000961 | 2.64 | 48.76 | 29.87 | 0.32 |
| Reach 1 | 29125 | 10 yr | Prop_Eff_R1 | 122.55 | 567.58 | 570.94 | | 571.04 | 0.000964 | 2.64 | 48.68 | 29.84 | 0.32 |
| Reach 1 | 29125 | 10 yr | Corr_Eff_R2 | 122.55 | 567.58 | 570.94 | | 571.05 | 0.000958 | 2.63 | 48.82 | 29.90 | 0.32 |
| Reach 1 | 28133 | 10 yr | REV 1218 FW | 122.55 | 566.29 | 570.34 | | 570.39 | 0.000455 | 1.96 | 70.82 | 36.81 | 0.22 |
| Reach 1 | 28133 | 10 yr | Prop_Eff_R1 | 122.55 | 566.29 | 570.34 | | 570.39 | 0.000459 | 1.96 | 70.56 | 36.75 | 0.22 |
| Reach 1 | 28133 | 10 yr | Corr_Eff_R2 | 122.55 | 566.29 | 570.35 | | 570.40 | 0.000451 | 1.95 | 71.02 | 36.87 | 0.22 |
| Reach 1 | 27709 | 10 yr | REV 1218 FW | 122.55 | 566.27 | 570.19 | | 570.23 | 0.000323 | 1.70 | 81.01 | 41.21 | 0.19 |
| Reach 1 | 27709 | 10 yr | Prop_Eff_R1 | 122.55 | 566.27 | 570.18 | | 570.22 | 0.000326 | 1.71 | 80.66 | 41.12 | 0.19 |
| Reach 1 | 27709 | 10 yr | Corr_Eff_R2 | 122.55 | 566.27 | 570.20 | | 570.24 | 0.000320 | 1.70 | 81.29 | 41.28 | 0.19 |
| Reach 1 | 27191 | 10 yr | REV 1218 FW | 122.55 | 565.53 | 570.04 | | 570.07 | 0.000276 | 1.55 | 93.91 | 51.40 | 0.17 |
| Reach 1 | 27191 | 10 yr | Prop_Eff_R1 | 122.55 | 565.53 | 570.03 | | 570.06 | 0.000280 | 1.56 | 93.36 | 51.27 | 0.17 |
| Reach 1 | 27191 | 10 yr | Corr_Eff_R2 | 122.55 | 565.53 | 570.05 | | 570.08 | 0.000272 | 1.54 | 94.33 | 51.50 | 0.17 |
| Reach 1 | 26095 | 10 yr | REV 1218 FW | 122.55 | 564.03 | 570.04 | | 570.04 | 0.000008 | 0.38 | 381.74 | 894.90 | 0.03 |
| Reach 1 | 26095 | 10 yr | Prop_Eff_R1 | 122.55 | 564.03 | 570.03 | | 570.03 | 0.000008 | 0.39 | 372.22 | 873.81 | 0.03 |
| Reach 1 | 26095 | 10 yr | Corr_Eff_R2 | 122.55 | 564.03 | 570.05 | | 570.05 | 0.000008 | 0.38 | 389.21 | 903.21 | 0.03 |
| Reach 1 | 26020 | 10 yr | REV 1218 FW | 122.55 | 563.28 | 570.03 | 565.46 | 570.04 | 0.000036 | 0.74 | 198.27 | 416.19 | 0.07 |
| Reach 1 | 26020 | 10 yr | Prop_Eff_R1 | 122.55 | 563.28 | 570.02 | 565.45 | 570.03 | 0.000036 | 0.74 | 193.91 | 343.92 | 0.07 |
| Reach 1 | 26020 | 10 yr | Corr_Eff_R2 | 122.55 | 563.28 | 570.04 | 565.45 | 570.05 | 0.000035 | 0.73 | 201.79 | 426.35 | 0.07 |
| Reach 1 | 25982 | | | Culvert | | | | | | | | | |
| Reach 1 | 25918 | 10 yr | REV 1218 FW | 122.55 | 562.95 | 568.89 | | 568.90 | 0.000038 | 0.70 | 189.25 | 94.10 | 0.07 |
| Reach 1 | 25918 | 10 yr | Prop_Eff_R1 | 122.55 | 562.95 | 568.85 | | 568.85 | 0.000040 | 0.71 | 185.13 | 93.39 | 0.07 |
| Reach 1 | 25918 | 10 yr | Corr_Eff_R2 | 122.55 | 562.95 | 568.92 | | 568.93 | 0.000037 | 0.69 | 192.10 | 94.63 | 0.07 |
| Reach 1 | 25849 | 10 yr | REV 1218 FW | 122.55 | 562.48 | 568.89 | | 568.89 | 0.000035 | 0.71 | 344.96 | 298.22 | 0.06 |
| Reach 1 | 25849 | 10 yr | Prop_Eff_R1 | 122.55 | 562.48 | 568.85 | | 568.85 | 0.000038 | 0.73 | 331.78 | 295.66 | 0.07 |
| Reach 1 | 25849 | 10 yr | Corr_Eff_R2 | 122.55 | 562.48 | 568.92 | | 568.92 | 0.000033 | 0.69 | 354.05 | 299.97 | 0.06 |
| Reach 1 | 25601 | 10 yr | REV 1218 FW | 122.55 | 562.25 | 568.87 | | 568.88 | 0.000068 | 1.01 | 121.74 | 31.96 | 0.09 |
| Reach 1 | 25601 | 10 yr | Prop_Eff_R1 | 122.55 | 562.25 | 568.82 | | 568.84 | 0.000070 | 1.02 | 120.31 | 31.78 | 0.09 |
| Reach 1 | 25601 | 10 yr | Corr_Eff_R2 | 122.55 | 562.25 | 568.90 | | 568.91 | 0.000066 | 1.00 | 122.73 | 32.08 | 0.09 |
| Reach 1 | 24971 | 10 yr | REV 1218 FW | 122.55 | 563.11 | 568.86 | | 568.86 | 0.000009 | 0.37 | 873.91 | 998.49 | 0.03 |
| Reach 1 | 24971 | 10 yr | Prop_Eff_R1 | 122.55 | 563.11 | 568.78 | 564.64 | 568.79 | 0.000031 | 0.67 | 306.19 | 988.52 | 0.06 |
| Reach 1 | 24971 | 10 yr | Corr_Eff_R2 | 122.55 | 563.11 | 568.86 | 564.64 | 568.87 | 0.000027 | 0.63 | 327.34 | 999.40 | 0.06 |
| Reach 1 | 24874 | 10 yr | REV 1218 FW | 122.55 | 562.91 | 568.85 | | 568.86 | 0.000009 | 0.39 | 766.63 | 741.12 | 0.03 |
| Reach 1 | 24874 | 10 yr | Prop_Eff_R1 | 122.55 | 562.91 | 568.77 | 564.37 | 568.78 | 0.000035 | 0.76 | 177.99 | 735.77 | 0.07 |
| Reach 1 | 24874 | 10 yr | Corr_Eff_R2 | 122.55 | 562.91 | 568.85 | 564.37 | 568.86 | 0.000033 | 0.75 | 184.18 | 741.18 | 0.07 |
| Reach 1 | 24854 | 10 yr | REV 1218 FW | 122.55 | 562.85 | 568.85 | 564.45 | 568.85 | 0.000028 | 0.60 | 205.50 | 82.99 | 0.06 |
| Reach 1 | 24854 | 10 yr | Prop_Eff_R1 | 122.55 | 562.85 | 568.78 | 564.46 | 568.78 | 0.000030 | 0.62 | 198.97 | 73.73 | 0.06 |
| Reach 1 | 24854 | 10 yr | Corr_Eff_R2 | 122.55 | 562.85 | 568.86 | 564.46 | 568.86 | 0.000028 | 0.60 | 203.97 | 83.21 | 0.06 |
| Reach 1 | 24825 | | | Culvert | | | | | | | | | |
| Reach 1 | 24792 | 10 yr | REV 1218 FW | 122.55 | 560.56 | 567.08 | | 567.08 | 0.000027 | 0.60 | 204.95 | 65.65 | 0.06 |
| Reach 1 | 24792 | 10 yr | Prop_Eff_R1 | 122.55 | 560.56 | 566.28 | | 566.29 | 0.000056 | 0.78 | 157.49 | 55.21 | 0.08 |
| Reach 1 | 24792 | 10 yr | Corr_Eff_R2 | 122.55 | 560.56 | 567.15 | | 567.15 | 0.000025 | 0.59 | 209.58 | 67.43 | 0.06 |
| Reach 1 | 24776 | 10 yr | REV 1218 FW | 122.55 | 560.89 | 567.08 | | 567.08 | 0.000034 | 0.71 | 174.74 | 59.16 | 0.07 |
| Reach 1 | 24776 | 10 yr | Prop_Eff_R1 | 122.55 | 560.89 | 566.27 | | 566.29 | 0.000064 | 0.90 | 136.77 | 43.14 | 0.09 |
| Reach 1 | 24776 | 10 yr | Corr_Eff_R2 | 122.55 | 560.89 | 567.14 | | 567.15 | 0.000032 | 0.69 | 179.24 | 75.11 | 0.06 |
| Reach 1 | 24692 | 10 yr | REV 1218 FW | 122.55 | 561.64 | 567.06 | | 567.08 | 0.000096 | 1.07 | 114.14 | 36.87 | 0.11 |
| Reach 1 | 24692 | 10 yr | Prop_Eff_R1 | 122.55 | 561.64 | 566.24 | | 566.28 | 0.000207 | 1.43 | 85.96 | 32.27 | 0.15 |
| Reach 1 | 24692 | 10 yr | Corr_Eff_R2 | 122.55 | 561.64 | 567.13 | | 567.14 | 0.000091 | 1.05 | 116.67 | 37.26 | 0.10 |
| Reach 1 | 24496 | 10 yr | REV 1218 FW | 122.55 | 561.09 | 567.04 | | 567.06 | 0.000082 | 1.05 | 116.53 | 33.81 | 0.10 |
| Reach 1 | 24496 | 10 yr | Prop_Eff_R1 | 122.55 | 561.09 | 566.21 | | 566.24 | 0.000165 | 1.36 | 90.00 | 29.93 | 0.14 |
| Reach 1 | 24496 | 10 yr | Corr_Eff_R2 | 122.55 | 561.09 | 567.11 | | 567.13 | 0.000078 | 1.03 | 118.87 | 34.13 | 0.10 |
| Reach 1 | 23695 | 10 yr | REV 1218 FW | 122.55 | 560.72 | 566.97 | | 566.99 | 0.000084 | 1.10 | 111.40 | 30.28 | 0.10 |
| Reach 1 | 23695 | 10 yr | Prop_Eff_R1 | 122.55 | 560.72 | 566.07 | | 566.10 | 0.000173 | 1.43 | 85.65 | 26.78 | 0.14 |
| Reach 1 | 23695 | 10 yr | Corr_Eff_R2 | 122.55 | 560.72 | 567.05 | | 567.06 | 0.000079 | 1.08 | 113.61 | 30.56 | 0.10 |
| Reach 1 | 22995 | | | Lat Struct | | | | | | | | | |
| Reach 1 | 22776 | 10 yr | REV 1218 FW | 122.55 | 560.51 | 566.91 | | 566.93 | 0.000059 | 0.95 | 129.63 | 34.32 | 0.09 |
| Reach 1 | 22776 | 10 yr | Prop_Eff_R1 | 122.55 | 560.51 | 565.94 | | 565.97 | 0.000126 | 1.25 | 98.31 | 30.21 | 0.12 |
| Reach 1 | 22776 | 10 yr | Corr_Eff_R2 | 122.55 | 560.51 | 566.99 | | 567.00 | 0.000056 | 0.93 | 132.25 | 34.64 | 0.08 |
| Reach 1 | 22249 | 10 yr | REV 1218 FW | 122.55 | 560.36 | 566.85 | | 566.87 | 0.000079 | 1.05 | 116.53 | 32.17 | 0.10 |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 10 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 22249 | 10 yr | Prop_Eff_R1 | 122.55 | 560.36 | 565.80 | | 565.83 | 0.000182 | 1.44 | 85.16 | 27.69 | 0.14 |
| Reach 1 | 22249 | 10 yr | Corr_Eff_R2 | 122.55 | 560.36 | 566.93 | | 566.95 | 0.000074 | 1.03 | 119.09 | 32.51 | 0.09 |
| | | | | | | | | | | | | | |
| Reach 1 | 22000 | | | Lat Struct | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 21969 | 10 yr | REV 1218 FW | 122.55 | 560.69 | 566.83 | | 566.85 | 0.000068 | 0.98 | 175.53 | 163.77 | 0.09 |
| Reach 1 | 21969 | 10 yr | Prop_Eff_R1 | 122.55 | 560.97 | 565.70 | 563.23 | 565.76 | 0.000373 | 1.95 | 62.85 | 21.63 | 0.20 |
| Reach 1 | 21969 | 10 yr | Corr_Eff_R2 | 122.55 | 560.97 | 566.90 | | 566.92 | 0.000101 | 1.15 | 162.71 | 162.13 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 21756 | 10 yr | Prop_Eff_R1 | 122.55 | 562.91 | 565.60 | 564.55 | 565.71 | 0.001382 | 2.70 | 45.41 | 200.14 | 0.37 |
| Reach 1 | 21756 | 10 yr | Corr_Eff_R2 | 122.55 | 560.59 | 566.88 | | 566.90 | 0.000089 | 1.13 | 128.44 | 115.75 | 0.10 |
| | | | | | | | | | | | | | |
| Reach 1 | 21485 | 10 yr | Prop_Eff_R1 | 122.55 | 562.44 | 565.20 | 564.14 | 565.32 | 0.001448 | 2.83 | 43.37 | 194.69 | 0.38 |
| Reach 1 | 21485 | 10 yr | Corr_Eff_R2 | 122.55 | 560.44 | 566.86 | | 566.88 | 0.000075 | 1.05 | 181.30 | 350.43 | 0.09 |
| | | | | | | | | | | | | | |
| Reach 1 | 21180 | 10 yr | Prop_Eff_R1 | 122.55 | 561.84 | 564.68 | 563.58 | 564.82 | 0.001519 | 2.96 | 41.34 | 188.38 | 0.39 |
| Reach 1 | 21180 | 10 yr | Corr_Eff_R2 | 122.55 | 560.09 | 566.82 | | 566.85 | 0.000119 | 1.23 | 109.64 | 109.02 | 0.12 |
| | | | | | | | | | | | | | |
| Reach 1 | 20965 | 10 yr | REV 1218 FW | 122.55 | 559.61 | 566.74 | | 566.77 | 0.000092 | 1.16 | 106.03 | 27.26 | 0.10 |
| Reach 1 | 20965 | 10 yr | Prop_Eff_R1 | 122.55 | 561.44 | 564.48 | | 564.59 | 0.001143 | 2.67 | 45.82 | 24.20 | 0.34 |
| Reach 1 | 20965 | 10 yr | Corr_Eff_R2 | 122.55 | 560.04 | 566.79 | | 566.82 | 0.000123 | 1.27 | 113.97 | 261.75 | 0.12 |
| | | | | | | | | | | | | | |
| Reach 1 | 20873 | 10 yr | Prop_Eff_R1 | 122.55 | 561.31 | 564.39 | 563.05 | 564.50 | 0.001058 | 2.60 | 47.15 | 24.53 | 0.33 |
| Reach 1 | 20873 | 10 yr | Corr_Eff_R2 | 122.55 | 559.93 | 566.79 | | 566.81 | 0.000087 | 1.11 | 161.84 | 335.53 | 0.10 |
| | | | | | | | | | | | | | |
| Reach 1 | 20601 | 10 yr | Prop_Eff_R1 | 122.55 | 560.88 | 564.22 | | 564.30 | 0.000758 | 2.30 | 53.37 | 26.01 | 0.28 |
| Reach 1 | 20601 | 10 yr | Corr_Eff_R2 | 122.55 | 559.93 | 566.77 | | 566.79 | 0.000068 | 1.00 | 209.17 | 409.29 | 0.09 |
| | | | | | | | | | | | | | |
| Reach 1 | 20426 | 10 yr | Prop_Eff_R1 | 122.55 | 560.62 | 564.12 | | 564.19 | 0.000616 | 2.13 | 57.66 | 27.01 | 0.26 |
| Reach 1 | 20426 | 10 yr | Corr_Eff_R2 | 122.55 | 560.00 | 566.75 | | 566.77 | 0.000100 | 1.15 | 158.39 | 358.49 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 19996 | 10 yr | REV 1218 FW | 202.17 | 558.90 | 566.66 | | 566.68 | 0.000080 | 1.23 | 164.53 | 35.86 | 0.10 |
| Reach 1 | 19996 | 10 yr | Prop_Eff_R1 | 202.17 | 559.88 | 563.64 | 562.16 | 563.79 | 0.001209 | 3.11 | 65.08 | 515.64 | 0.36 |
| Reach 1 | 19996 | 10 yr | Corr_Eff_R2 | 202.17 | 559.54 | 566.69 | | 566.72 | 0.000135 | 1.43 | 201.94 | 241.69 | 0.13 |
| | | | | | | | | | | | | | |
| Reach 1 | 19541 | 10 yr | REV 1218 FW | 202.17 | 558.64 | 566.64 | | 566.65 | 0.000056 | 1.09 | 323.35 | 418.63 | 0.09 |
| Reach 1 | 19541 | 10 yr | Prop_Eff_R1 | 202.17 | 559.09 | 563.23 | 561.38 | 563.34 | 0.000796 | 2.65 | 76.19 | 111.58 | 0.30 |
| Reach 1 | 19541 | 10 yr | Corr_Eff_R2 | 202.17 | 559.25 | 566.65 | | 566.67 | 0.000089 | 1.22 | 280.26 | 400.92 | 0.10 |
| | | | | | | | | | | | | | |
| Reach 1 | 19470 | 10 yr | REV 1218 FW | 202.17 | 558.61 | 566.63 | | 566.65 | 0.000080 | 1.25 | 270.90 | 318.01 | 0.10 |
| Reach 1 | 19470 | 10 yr | Prop_Eff_R1 | 202.17 | 559.09 | 563.15 | | 563.28 | 0.000952 | 2.83 | 71.46 | 30.20 | 0.32 |
| Reach 1 | 19470 | 10 yr | Corr_Eff_R2 | 202.17 | 559.02 | 566.64 | | 566.66 | 0.000118 | 1.37 | 250.59 | 317.00 | 0.12 |
| | | | | | | | | | | | | | |
| Reach 1 | 19448 | 10 yr | REV 1218 FW | 202.17 | 558.91 | 566.62 | 562.05 | 566.64 | 0.000125 | 1.34 | 247.90 | 306.84 | 0.12 |
| Reach 1 | 19448 | 10 yr | Prop_Eff_R1 | 202.17 | 558.92 | 563.01 | 560.98 | 563.24 | 0.001670 | 3.81 | 53.07 | 16.44 | 0.37 |
| Reach 1 | 19448 | 10 yr | Corr_Eff_R2 | 202.17 | 558.98 | 566.63 | 562.52 | 566.66 | 0.000145 | 1.47 | 236.51 | 302.00 | 0.13 |
| | | | | | | | | | | | | | |
| Reach 1 | 19417 | | | Culvert | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 19377 | 10 yr | REV 1218 FW | 202.17 | 558.41 | 564.99 | | 565.07 | 0.000475 | 2.33 | 86.80 | 23.21 | 0.21 |
| Reach 1 | 19377 | 10 yr | Prop_Eff_R1 | 202.17 | 558.41 | 562.78 | | 562.97 | 0.001285 | 3.53 | 57.34 | 16.32 | 0.33 |
| Reach 1 | 19377 | 10 yr | Corr_Eff_R2 | 202.17 | 558.41 | 565.00 | | 565.08 | 0.000471 | 2.32 | 87.10 | 23.71 | 0.21 |
| | | | | | | | | | | | | | |
| Reach 1 | 19348 | 10 yr | REV 1218 FW | 202.17 | 558.26 | 564.99 | | 565.05 | 0.000260 | 1.93 | 104.49 | 27.24 | 0.17 |
| Reach 1 | 19348 | 10 yr | Prop_Eff_R1 | 202.17 | 558.26 | 562.67 | | 562.92 | 0.001804 | 3.99 | 50.65 | 19.20 | 0.43 |
| Reach 1 | 19348 | 10 yr | Corr_Eff_R2 | 202.17 | 558.26 | 565.00 | | 565.06 | 0.000259 | 1.93 | 104.69 | 27.26 | 0.17 |
| | | | | | | | | | | | | | |
| Reach 1 | 19316 | 10 yr | REV 1218 FW | 202.17 | 558.45 | 564.94 | 561.66 | 565.04 | 0.000458 | 2.44 | 82.77 | 22.30 | 0.22 |
| Reach 1 | 19316 | 10 yr | Prop_Eff_R1 | 202.17 | 558.36 | 562.64 | 560.42 | 562.86 | 0.001583 | 3.77 | 53.59 | 15.60 | 0.36 |
| Reach 1 | 19316 | 10 yr | Corr_Eff_R2 | 202.17 | 558.45 | 564.95 | 561.66 | 565.04 | 0.000458 | 2.44 | 82.78 | 22.30 | 0.22 |
| | | | | | | | | | | | | | |
| Reach 1 | 19283 | | | Culvert | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 19250 | 10 yr | REV 1218 FW | 202.17 | 558.24 | 562.31 | | 562.56 | 0.001884 | 4.02 | 50.25 | 19.76 | 0.44 |
| Reach 1 | 19250 | 10 yr | Prop_Eff_R1 | 202.17 | 558.33 | 562.34 | | 562.54 | 0.001437 | 3.53 | 57.27 | 19.83 | 0.37 |
| Reach 1 | 19250 | 10 yr | Corr_Eff_R2 | 202.17 | 558.24 | 562.33 | | 562.58 | 0.001841 | 3.99 | 50.69 | 19.84 | 0.44 |
| | | | | | | | | | | | | | |
| Reach 1 | 19228 | 10 yr | REV 1218 FW | 202.17 | 558.40 | 562.33 | | 562.50 | 0.001177 | 3.29 | 61.51 | 23.59 | 0.36 |
| Reach 1 | 19228 | 10 yr | Prop_Eff_R1 | 202.17 | 558.40 | 562.33 | | 562.50 | 0.001177 | 3.29 | 61.51 | 23.59 | 0.36 |
| Reach 1 | 19228 | 10 yr | Corr_Eff_R2 | 202.17 | 558.40 | 562.34 | | 562.50 | 0.001172 | 3.28 | 61.60 | 23.60 | 0.36 |
| | | | | | | | | | | | | | |
| Reach 1 | 19154 | 10 yr | REV 1218 FW | 202.17 | 557.60 | 562.23 | | 562.41 | 0.001263 | 3.43 | 58.96 | 22.00 | 0.37 |
| Reach 1 | 19154 | 10 yr | Prop_Eff_R1 | 202.17 | 557.60 | 562.23 | | 562.41 | 0.001263 | 3.43 | 58.96 | 22.00 | 0.37 |
| Reach 1 | 19154 | 10 yr | Corr_Eff_R2 | 202.17 | 557.60 | 562.23 | | 562.41 | 0.001263 | 3.43 | 58.96 | 22.00 | 0.37 |
| | | | | | | | | | | | | | |
| Reach 1 | 18156 | 10 yr | REV 1218 FW | 202.17 | 556.27 | 561.17 | | 561.32 | 0.000933 | 3.17 | 63.79 | 20.55 | 0.32 |
| Reach 1 | 18156 | 10 yr | Prop_Eff_R1 | 202.17 | 556.27 | 561.17 | | 561.32 | 0.000933 | 3.17 | 63.79 | 20.55 | 0.32 |
| Reach 1 | 18156 | 10 yr | Corr_Eff_R2 | 202.17 | 556.27 | 561.17 | | 561.32 | 0.000933 | 3.17 | 63.79 | 20.55 | 0.32 |
| | | | | | | | | | | | | | |
| Reach 1 | 17180 | 10 yr | REV 1218 FW | 202.17 | 554.65 | 560.53 | | 560.62 | 0.000547 | 2.42 | 83.58 | 28.12 | 0.25 |
| Reach 1 | 17180 | 10 yr | Prop_Eff_R1 | 202.17 | 554.65 | 560.53 | | 560.62 | 0.000547 | 2.42 | 83.58 | 28.12 | 0.25 |
| Reach 1 | 17180 | 10 yr | Corr_Eff_R2 | 202.17 | 554.65 | 560.53 | | 560.62 | 0.000547 | 2.42 | 83.58 | 28.12 | 0.25 |
| | | | | | | | | | | | | | |
| Reach 1 | 16643 | 10 yr | REV 1218 FW | 202.17 | 554.28 | 560.39 | | 560.43 | 0.000210 | 1.67 | 120.74 | 35.24 | 0.16 |
| Reach 1 | 16643 | 10 yr | Prop_Eff_R1 | 202.17 | 554.28 | 560.39 | | 560.43 | 0.000210 | 1.67 | 120.74 | 35.24 | 0.16 |
| Reach 1 | 16643 | 10 yr | Corr_Eff_R2 | 202.17 | 554.28 | 560.39 | | 560.43 | 0.000210 | 1.67 | 120.74 | 35.24 | 0.16 |
| | | | | | | | | | | | | | |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 10 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 16139 | 10 yr | REV 1218 FW | 355.37 | 553.61 | 560.10 | 557.37 | 560.23 | 0.000637 | 2.97 | 255.34 | 1285.93 | 0.27 |
| Reach 1 | 16139 | 10 yr | Prop_Eff_R1 | 355.37 | 553.61 | 560.10 | 557.37 | 560.23 | 0.000637 | 2.97 | 255.34 | 1285.93 | 0.27 |
| Reach 1 | 16139 | 10 yr | Corr_Eff_R2 | 355.37 | 553.61 | 560.10 | 557.37 | 560.23 | 0.000637 | 2.97 | 255.34 | 1285.93 | 0.27 |
| | | | | | | | | | | | | | |
| Reach 1 | 15148 | 10 yr | REV 1218 FW | 355.37 | 552.75 | 559.16 | | 559.23 | 0.000503 | 2.23 | 292.97 | 615.25 | 0.24 |
| Reach 1 | 15148 | 10 yr | Prop_Eff_R1 | 355.37 | 552.75 | 559.16 | | 559.23 | 0.000503 | 2.23 | 292.97 | 615.25 | 0.24 |
| Reach 1 | 15148 | 10 yr | Corr_Eff_R2 | 355.37 | 552.75 | 559.16 | | 559.23 | 0.000503 | 2.23 | 292.97 | 615.25 | 0.24 |
| | | | | | | | | | | | | | |
| Reach 1 | 14153 | 10 yr | REV 1218 FW | 355.37 | 552.09 | 558.12 | 555.54 | 558.25 | 0.000633 | 2.89 | 218.29 | 862.28 | 0.28 |
| Reach 1 | 14153 | 10 yr | Prop_Eff_R1 | 355.37 | 552.09 | 558.12 | 555.54 | 558.25 | 0.000633 | 2.89 | 218.29 | 862.28 | 0.28 |
| Reach 1 | 14153 | 10 yr | Corr_Eff_R2 | 355.37 | 552.09 | 558.12 | 555.54 | 558.25 | 0.000633 | 2.89 | 218.29 | 862.28 | 0.28 |
| | | | | | | | | | | | | | |
| Reach 1 | 13160 | 10 yr | REV 1218 FW | 355.37 | 550.87 | 557.41 | | 557.57 | 0.000728 | 3.19 | 111.34 | 30.60 | 0.29 |
| Reach 1 | 13160 | 10 yr | Prop_Eff_R1 | 355.37 | 550.87 | 557.41 | | 557.57 | 0.000728 | 3.19 | 111.34 | 30.60 | 0.29 |
| Reach 1 | 13160 | 10 yr | Corr_Eff_R2 | 355.37 | 550.87 | 557.41 | | 557.57 | 0.000728 | 3.19 | 111.34 | 30.60 | 0.29 |
| | | | | | | | | | | | | | |
| Reach 1 | 12721 | 10 yr | REV 1218 FW | 355.37 | 550.92 | 557.36 | | 557.38 | 0.000105 | 1.11 | 739.51 | 1196.47 | 0.11 |
| Reach 1 | 12721 | 10 yr | Prop_Eff_R1 | 355.37 | 550.92 | 557.36 | | 557.38 | 0.000105 | 1.11 | 739.58 | 1196.55 | 0.11 |
| Reach 1 | 12721 | 10 yr | Corr_Eff_R2 | 355.37 | 550.92 | 557.36 | | 557.38 | 0.000105 | 1.11 | 739.58 | 1196.55 | 0.11 |
| | | | | | | | | | | | | | |
| Reach 1 | 12641 | 10 yr | REV 1218 FW | 355.37 | 550.46 | 557.33 | 553.94 | 557.36 | 0.000192 | 1.78 | 446.58 | 747.46 | 0.15 |
| Reach 1 | 12641 | 10 yr | Prop_Eff_R1 | 355.37 | 550.46 | 557.33 | 553.94 | 557.36 | 0.000192 | 1.78 | 446.68 | 747.79 | 0.15 |
| Reach 1 | 12641 | 10 yr | Corr_Eff_R2 | 355.37 | 550.46 | 557.33 | 553.94 | 557.36 | 0.000192 | 1.78 | 446.68 | 747.79 | 0.15 |
| | | | | | | | | | | | | | |
| Reach 1 | 12590 | | | Culvert | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 12546 | 10 yr | REV 1218 FW | 355.37 | 550.53 | 556.04 | 554.72 | 556.41 | 0.002323 | 4.94 | 85.09 | 267.05 | 0.51 |
| Reach 1 | 12546 | 10 yr | Prop_Eff_R1 | 355.37 | 550.53 | 556.04 | 554.72 | 556.41 | 0.002322 | 4.94 | 85.18 | 267.09 | 0.51 |
| Reach 1 | 12546 | 10 yr | Corr_Eff_R2 | 355.37 | 550.53 | 556.04 | 554.72 | 556.41 | 0.002322 | 4.94 | 85.18 | 267.09 | 0.51 |
| | | | | | | | | | | | | | |
| Reach 1 | 12487 | 10 yr | REV 1218 FW | 355.37 | 550.48 | 556.19 | | 556.27 | 0.000517 | 2.61 | 359.46 | 1062.81 | 0.25 |
| Reach 1 | 12487 | 10 yr | Prop_Eff_R1 | 355.37 | 550.48 | 556.19 | | 556.27 | 0.000517 | 2.60 | 359.72 | 1062.98 | 0.25 |
| Reach 1 | 12487 | 10 yr | Corr_Eff_R2 | 355.37 | 550.48 | 556.19 | | 556.27 | 0.000517 | 2.60 | 359.72 | 1062.98 | 0.25 |
| | | | | | | | | | | | | | |
| Reach 1 | 11833 | 10 yr | REV 1218 FW | 355.37 | 548.99 | 555.65 | | 555.83 | 0.000880 | 3.38 | 105.22 | 30.68 | 0.32 |
| Reach 1 | 11833 | 10 yr | Prop_Eff_R1 | 355.37 | 548.99 | 555.65 | | 555.83 | 0.000879 | 3.38 | 105.24 | 30.68 | 0.32 |
| Reach 1 | 11833 | 10 yr | Corr_Eff_R2 | 355.37 | 548.99 | 555.65 | | 555.83 | 0.000879 | 3.38 | 105.24 | 30.68 | 0.32 |
| | | | | | | | | | | | | | |
| Reach 1 | 11178 | 10 yr | REV 1218 FW | 355.37 | 548.65 | 554.97 | | 555.19 | 0.001070 | 3.76 | 94.50 | 26.60 | 0.35 |
| Reach 1 | 11178 | 10 yr | Prop_Eff_R1 | 355.37 | 548.65 | 554.97 | | 555.19 | 0.001069 | 3.76 | 94.52 | 26.60 | 0.35 |
| Reach 1 | 11178 | 10 yr | Corr_Eff_R2 | 355.37 | 548.65 | 554.97 | | 555.19 | 0.001069 | 3.76 | 94.52 | 26.60 | 0.35 |
| | | | | | | | | | | | | | |
| Reach 1 | 11110 | 10 yr | REV 1218 FW | 355.37 | 548.31 | 554.95 | | 555.11 | 0.000728 | 3.23 | 110.13 | 29.36 | 0.29 |
| Reach 1 | 11110 | 10 yr | Prop_Eff_R1 | 355.37 | 548.31 | 554.95 | | 555.11 | 0.000728 | 3.23 | 110.15 | 29.36 | 0.29 |
| Reach 1 | 11110 | 10 yr | Corr_Eff_R2 | 355.37 | 548.31 | 554.95 | | 555.11 | 0.000728 | 3.23 | 110.15 | 29.36 | 0.29 |
| | | | | | | | | | | | | | |
| Reach 1 | 11072 | 10 yr | REV 1218 FW | 355.37 | 548.57 | 554.95 | 552.18 | 555.08 | 0.000581 | 2.82 | 126.18 | 35.96 | 0.27 |
| Reach 1 | 11072 | 10 yr | Prop_Eff_R1 | 355.37 | 548.57 | 554.95 | 552.18 | 555.08 | 0.000581 | 2.82 | 126.21 | 35.96 | 0.26 |
| Reach 1 | 11072 | 10 yr | Corr_Eff_R2 | 355.37 | 548.57 | 554.95 | 552.18 | 555.08 | 0.000581 | 2.82 | 126.21 | 35.96 | 0.26 |
| | | | | | | | | | | | | | |
| Reach 1 | 11053 | | | Bridge | | | | | | | | | |
| | | | | | | | | | | | | | |
| Reach 1 | 11035 | 10 yr | REV 1218 FW | 355.37 | 548.96 | 554.83 | | 555.00 | 0.000849 | 3.29 | 108.09 | 31.80 | 0.31 |
| Reach 1 | 11035 | 10 yr | Prop_Eff_R1 | 355.37 | 548.96 | 554.84 | | 555.00 | 0.000849 | 3.29 | 108.11 | 31.80 | 0.31 |
| Reach 1 | 11035 | 10 yr | Corr_Eff_R2 | 355.37 | 548.96 | 554.84 | | 555.00 | 0.000849 | 3.29 | 108.11 | 31.80 | 0.31 |
| | | | | | | | | | | | | | |
| Reach 1 | 11010 | 10 yr | REV 1218 FW | 355.37 | 548.45 | 554.77 | | 554.98 | 0.001057 | 3.63 | 97.92 | 29.45 | 0.35 |
| Reach 1 | 11010 | 10 yr | Prop_Eff_R1 | 355.37 | 548.45 | 554.77 | | 554.98 | 0.001057 | 3.63 | 97.94 | 29.45 | 0.35 |
| Reach 1 | 11010 | 10 yr | Corr_Eff_R2 | 355.37 | 548.45 | 554.77 | | 554.98 | 0.001057 | 3.63 | 97.94 | 29.45 | 0.35 |
| | | | | | | | | | | | | | |
| Reach 1 | 10938 | 10 yr | REV 1218 FW | 355.37 | 548.30 | 554.73 | | 554.90 | 0.000728 | 3.33 | 106.72 | 26.40 | 0.29 |
| Reach 1 | 10938 | 10 yr | Prop_Eff_R1 | 355.37 | 548.30 | 554.73 | | 554.90 | 0.000728 | 3.33 | 106.74 | 26.41 | 0.29 |
| Reach 1 | 10938 | 10 yr | Corr_Eff_R2 | 355.37 | 548.30 | 554.73 | | 554.90 | 0.000728 | 3.33 | 106.74 | 26.41 | 0.29 |
| | | | | | | | | | | | | | |
| Reach 1 | 9945 | 10 yr | REV 1218 FW | 355.37 | 547.60 | 553.91 | | 554.10 | 0.000890 | 3.50 | 101.97 | 37.64 | 0.32 |
| Reach 1 | 9945 | 10 yr | Prop_Eff_R1 | 355.37 | 547.60 | 553.92 | | 554.11 | 0.000889 | 3.50 | 102.02 | 37.84 | 0.32 |
| Reach 1 | 9945 | 10 yr | Corr_Eff_R2 | 355.37 | 547.60 | 553.92 | | 554.11 | 0.000889 | 3.50 | 102.02 | 37.84 | 0.32 |
| | | | | | | | | | | | | | |
| Reach 1 | 8949 | 10 yr | REV 1218 FW | 355.37 | 546.82 | 553.09 | | 553.27 | 0.000779 | 3.38 | 105.10 | 27.12 | 0.30 |
| Reach 1 | 8949 | 10 yr | Prop_Eff_R1 | 355.37 | 546.82 | 553.10 | | 553.27 | 0.000778 | 3.38 | 105.17 | 27.13 | 0.30 |
| Reach 1 | 8949 | 10 yr | Corr_Eff_R2 | 355.37 | 546.82 | 553.10 | | 553.27 | 0.000778 | 3.38 | 105.17 | 27.13 | 0.30 |
| | | | | | | | | | | | | | |
| Reach 1 | 7957 | 10 yr | REV 1218 FW | 355.37 | 545.94 | 552.10 | | 552.34 | 0.001145 | 3.91 | 90.96 | 24.93 | 0.36 |
| Reach 1 | 7957 | 10 yr | Prop_Eff_R1 | 355.37 | 545.94 | 552.11 | | 552.34 | 0.001140 | 3.90 | 91.11 | 24.95 | 0.36 |
| Reach 1 | 7957 | 10 yr | Corr_Eff_R2 | 355.37 | 545.94 | 552.11 | | 552.34 | 0.001140 | 3.90 | 91.11 | 24.95 | 0.36 |
| | | | | | | | | | | | | | |
| Reach 1 | 7419 | 10 yr | REV 1218 FW | 355.37 | 544.98 | 550.97 | | 551.42 | 0.002647 | 5.38 | 66.02 | 20.28 | 0.53 |
| Reach 1 | 7419 | 10 yr | Prop_Eff_R1 | 355.37 | 544.98 | 550.99 | | 551.43 | 0.002607 | 5.35 | 66.40 | 20.34 | 0.52 |
| Reach 1 | 7419 | 10 yr | Corr_Eff_R2 | 355.37 | 544.98 | 550.99 | | 551.43 | 0.002607 | 5.35 | 66.40 | 20.34 | 0.52 |
| | | | | | | | | | | | | | |
| Reach 1 | 6750 | 10 yr | REV 1218 FW | 355.37 | 543.83 | 550.20 | | 550.39 | 0.000883 | 3.54 | 100.27 | 26.46 | 0.32 |
| Reach 1 | 6750 | 10 yr | Prop_Eff_R1 | 355.37 | 543.83 | 550.24 | | 550.43 | 0.000859 | 3.51 | 101.33 | 26.59 | 0.32 |
| Reach 1 | 6750 | 10 yr | Corr_Eff_R2 | 355.37 | 543.83 | 550.24 | | 550.43 | 0.000859 | 3.51 | 101.33 | 26.59 | 0.32 |
| | | | | | | | | | | | | | |
| Reach 1 | 6591 | 10 yr | REV 1218 FW | 355.37 | 543.86 | 550.04 | | 550.25 | 0.000934 | 3.63 | 97.98 | 26.02 | 0.33 |
| Reach 1 | 6591 | 10 yr | Prop_Eff_R1 | 355.37 | 543.86 | 550.09 | | 550.29 | 0.000904 | 3.58 | 99.15 | 26.17 | 0.32 |
| Reach 1 | 6591 | 10 yr | Corr_Eff_R2 | 355.37 | 543.86 | 550.09 | | 550.29 | 0.000904 | 3.58 | 99.16 | 26.17 | 0.32 |

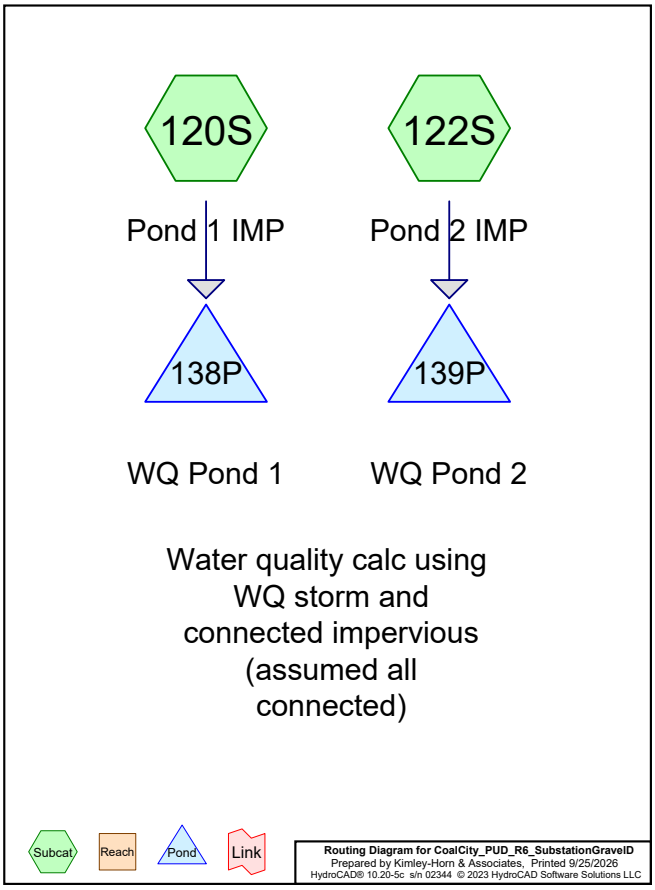
HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 10 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 5921 | 10 yr | REV 1218 FW | 355.37 | 542.86 | 549.28 | | 549.53 | 0.001232 | 4.03 | 88.25 | 24.30 | 0.37 |
| Reach 1 | 5921 | 10 yr | Prop_Eff_R1 | 355.37 | 542.86 | 549.36 | | 549.60 | 0.001158 | 3.93 | 90.31 | 24.57 | 0.36 |
| Reach 1 | 5921 | 10 yr | Corr_Eff_R2 | 355.37 | 542.86 | 549.36 | | 549.60 | 0.001158 | 3.93 | 90.32 | 24.57 | 0.36 |
| Reach 1 | 5719 | 10 yr | REV 1218 FW | 355.37 | 542.29 | 549.20 | | 549.33 | 0.000536 | 2.92 | 121.76 | 29.53 | 0.25 |
| Reach 1 | 5719 | 10 yr | Prop_Eff_R1 | 355.37 | 542.29 | 549.29 | | 549.42 | 0.000506 | 2.86 | 124.41 | 29.83 | 0.25 |
| Reach 1 | 5719 | 10 yr | Corr_Eff_R2 | 355.37 | 542.29 | 549.29 | | 549.42 | 0.000506 | 2.86 | 124.42 | 29.84 | 0.25 |
| Reach 1 | 5644 | 10 yr | REV 1218 FW | 409.19 | 542.55 | 549.08 | | 549.28 | 0.000891 | 3.58 | 114.32 | 30.51 | 0.33 |
| Reach 1 | 5644 | 10 yr | Prop_Eff_R1 | 409.19 | 542.55 | 549.17 | | 549.36 | 0.000832 | 3.49 | 117.31 | 30.89 | 0.32 |
| Reach 1 | 5644 | 10 yr | Corr_Eff_R2 | 409.19 | 542.55 | 549.17 | | 549.36 | 0.000832 | 3.49 | 117.32 | 30.90 | 0.32 |
| Reach 1 | 5611 | 10 yr | REV 1218 FW | 409.19 | 541.43 | 549.18 | 545.01 | 549.22 | 0.000130 | 1.45 | 281.62 | 73.56 | 0.13 |
| Reach 1 | 5611 | 10 yr | Prop_Eff_R1 | 409.19 | 541.43 | 549.28 | 545.01 | 549.31 | 0.000122 | 1.42 | 288.46 | 74.41 | 0.13 |
| Reach 1 | 5611 | 10 yr | Corr_Eff_R2 | 409.19 | 541.43 | 549.28 | 545.01 | 549.31 | 0.000122 | 1.42 | 288.47 | 74.41 | 0.13 |
| Reach 1 | 5578 | | | Culvert | | | | | | | | | |
| Reach 1 | 5554 | 10 yr | REV 1218 FW | 409.19 | 542.40 | 548.97 | | 549.00 | 0.000098 | 1.33 | 306.99 | 72.09 | 0.11 |
| Reach 1 | 5554 | 10 yr | Prop_Eff_R1 | 409.19 | 542.40 | 549.07 | | 549.09 | 0.000092 | 1.30 | 314.03 | 72.59 | 0.11 |
| Reach 1 | 5554 | 10 yr | Corr_Eff_R2 | 409.19 | 542.40 | 549.07 | | 549.09 | 0.000092 | 1.30 | 314.04 | 72.59 | 0.11 |
| Reach 1 | 5506 | 10 yr | REV 1218 FW | 409.19 | 541.49 | 548.78 | | 548.97 | 0.000755 | 3.48 | 117.63 | 28.00 | 0.30 |
| Reach 1 | 5506 | 10 yr | Prop_Eff_R1 | 409.19 | 541.49 | 548.89 | | 549.07 | 0.000705 | 3.39 | 120.64 | 28.33 | 0.29 |
| Reach 1 | 5506 | 10 yr | Corr_Eff_R2 | 409.19 | 541.49 | 548.89 | | 549.07 | 0.000705 | 3.39 | 120.65 | 28.33 | 0.29 |
| Reach 1 | 5426 | 10 yr | REV 1218 FW | 409.19 | 541.71 | 548.62 | | 548.89 | 0.001286 | 4.17 | 98.17 | 26.91 | 0.38 |
| Reach 1 | 5426 | 10 yr | Prop_Eff_R1 | 409.19 | 541.71 | 548.74 | | 548.99 | 0.001178 | 4.03 | 101.47 | 27.35 | 0.37 |
| Reach 1 | 5426 | 10 yr | Corr_Eff_R2 | 409.19 | 541.71 | 548.74 | | 548.99 | 0.001178 | 4.03 | 101.47 | 27.36 | 0.37 |
| Reach 1 | 5256 | 10 yr | REV 1218 FW | 409.19 | 541.54 | 548.45 | | 548.68 | 0.001039 | 3.87 | 105.81 | 27.70 | 0.35 |
| Reach 1 | 5256 | 10 yr | Prop_Eff_R1 | 409.19 | 541.54 | 548.58 | | 548.80 | 0.000944 | 3.73 | 109.66 | 28.19 | 0.33 |
| Reach 1 | 5256 | 10 yr | Corr_Eff_R2 | 409.19 | 541.54 | 548.58 | | 548.80 | 0.000944 | 3.73 | 109.67 | 28.19 | 0.33 |
| Reach 1 | 4561 | 10 yr | REV 1218 FW | 409.19 | 540.99 | 547.65 | | 547.91 | 0.001166 | 4.09 | 99.95 | 25.67 | 0.37 |
| Reach 1 | 4561 | 10 yr | Prop_Eff_R1 | 409.19 | 540.99 | 547.90 | | 548.13 | 0.000986 | 3.85 | 106.40 | 26.45 | 0.34 |
| Reach 1 | 4561 | 10 yr | Corr_Eff_R2 | 409.19 | 540.99 | 547.90 | | 548.13 | 0.000986 | 3.85 | 106.40 | 26.45 | 0.34 |
| Reach 1 | 4197 | 10 yr | REV 1218 FW | 409.19 | 540.33 | 547.37 | | 547.54 | 0.000781 | 3.32 | 123.40 | 34.07 | 0.31 |
| Reach 1 | 4197 | 10 yr | Prop_Eff_R1 | 409.19 | 540.33 | 547.68 | | 547.82 | 0.000627 | 3.05 | 134.03 | 35.51 | 0.28 |
| Reach 1 | 4197 | 10 yr | Corr_Eff_R2 | 409.19 | 540.33 | 547.68 | | 547.82 | 0.000627 | 3.05 | 134.03 | 35.51 | 0.28 |
| Reach 1 | 3473 | 10 yr | REV 1218 FW | 502.22 | 540.26 | 546.20 | | 546.62 | 0.001969 | 5.23 | 95.99 | 25.85 | 0.48 |
| Reach 1 | 3473 | 10 yr | Prop_Eff_R1 | 567.00 | 540.26 | 546.51 | | 546.97 | 0.002012 | 5.44 | 104.14 | 26.78 | 0.49 |
| Reach 1 | 3473 | 10 yr | Corr_Eff_R2 | 567.00 | 540.26 | 546.51 | | 546.97 | 0.002012 | 5.44 | 104.15 | 26.78 | 0.49 |
| Reach 1 | 3004 | 10 yr | REV 1218 FW | 502.22 | 539.68 | 545.29 | | 545.67 | 0.002029 | 5.00 | 100.36 | 30.87 | 0.49 |
| Reach 1 | 3004 | 10 yr | Prop_Eff_R1 | 567.00 | 539.68 | 545.60 | | 546.01 | 0.002007 | 5.14 | 110.28 | 32.29 | 0.49 |
| Reach 1 | 3004 | 10 yr | Corr_Eff_R2 | 567.00 | 539.68 | 545.60 | | 546.01 | 0.002006 | 5.14 | 110.30 | 32.29 | 0.49 |
| Reach 1 | 2921 | 10 yr | REV 1218 FW | 502.22 | 539.70 | 544.84 | | 545.44 | 0.003262 | 6.24 | 80.55 | 24.69 | 0.61 |
| Reach 1 | 2921 | 10 yr | Prop_Eff_R1 | 567.00 | 539.70 | 545.13 | | 545.78 | 0.003253 | 6.45 | 88.01 | 27.85 | 0.61 |
| Reach 1 | 2921 | 10 yr | Corr_Eff_R2 | 567.00 | 539.70 | 545.13 | | 545.78 | 0.003250 | 6.45 | 88.04 | 27.88 | 0.61 |
| Reach 1 | 2891 | 10 yr | REV 1218 FW | 502.22 | 539.61 | 545.06 | 542.67 | 545.28 | 0.000954 | 3.68 | 136.30 | 37.78 | 0.34 |
| Reach 1 | 2891 | 10 yr | Prop_Eff_R1 | 567.00 | 539.61 | 545.37 | 542.87 | 545.60 | 0.000981 | 3.82 | 148.34 | 39.76 | 0.35 |
| Reach 1 | 2891 | 10 yr | Corr_Eff_R2 | 567.00 | 539.61 | 545.38 | 542.87 | 545.60 | 0.000980 | 3.82 | 148.37 | 39.76 | 0.35 |
| Reach 1 | 2875 | | | Bridge | | | | | | | | | |
| Reach 1 | 2854 | 10 yr | REV 1218 FW | 502.22 | 539.42 | 544.94 | | 545.22 | 0.001524 | 4.23 | 118.66 | 38.16 | 0.42 |
| Reach 1 | 2854 | 10 yr | Prop_Eff_R1 | 567.00 | 539.42 | 545.26 | | 545.55 | 0.001487 | 4.33 | 130.91 | 39.93 | 0.42 |
| Reach 1 | 2854 | 10 yr | Corr_Eff_R2 | 567.00 | 539.42 | 545.26 | | 545.55 | 0.001487 | 4.33 | 130.91 | 39.93 | 0.42 |
| Reach 1 | 2828 | 10 yr | REV 1218 FW | 502.22 | 539.17 | 544.75 | | 545.16 | 0.002134 | 5.17 | 97.15 | 29.11 | 0.50 |
| Reach 1 | 2828 | 10 yr | Prop_Eff_R1 | 567.00 | 539.17 | 545.04 | | 545.49 | 0.002153 | 5.35 | 105.92 | 30.28 | 0.50 |
| Reach 1 | 2828 | 10 yr | Corr_Eff_R2 | 567.00 | 539.17 | 545.04 | | 545.49 | 0.002153 | 5.35 | 105.92 | 30.28 | 0.50 |
| Reach 1 | 2746 | 10 yr | REV 1218 FW | 502.22 | 539.43 | 544.45 | | 544.96 | 0.002616 | 5.72 | 87.76 | 26.01 | 0.55 |
| Reach 1 | 2746 | 10 yr | Prop_Eff_R1 | 567.00 | 539.43 | 544.73 | | 545.28 | 0.002677 | 5.96 | 95.10 | 26.90 | 0.56 |
| Reach 1 | 2746 | 10 yr | Corr_Eff_R2 | 567.00 | 539.43 | 544.73 | | 545.28 | 0.002677 | 5.96 | 95.10 | 26.90 | 0.56 |
| Reach 1 | 2206 | 10 yr | REV 1218 FW | 502.22 | 537.77 | 542.93 | | 543.44 | 0.003045 | 5.69 | 88.28 | 30.79 | 0.59 |
| Reach 1 | 2206 | 10 yr | Prop_Eff_R1 | 567.00 | 537.77 | 543.22 | | 543.75 | 0.002988 | 5.83 | 97.33 | 32.28 | 0.59 |
| Reach 1 | 2206 | 10 yr | Corr_Eff_R2 | 567.00 | 537.77 | 543.22 | | 543.75 | 0.002988 | 5.83 | 97.33 | 32.28 | 0.59 |
| Reach 1 | 1444 | 10 yr | REV 1218 FW | 502.22 | 535.48 | 541.39 | | 541.72 | 0.001641 | 4.59 | 109.38 | 32.71 | 0.44 |
| Reach 1 | 1444 | 10 yr | Prop_Eff_R1 | 567.00 | 535.48 | 541.66 | | 542.01 | 0.001700 | 4.80 | 118.11 | 33.90 | 0.45 |
| Reach 1 | 1444 | 10 yr | Corr_Eff_R2 | 567.00 | 535.48 | 541.66 | | 542.01 | 0.001700 | 4.80 | 118.11 | 33.90 | 0.45 |
| Reach 1 | 775 | 10 yr | REV 1218 FW | 502.22 | 534.54 | 540.23 | | 540.56 | 0.001824 | 4.63 | 108.47 | 35.20 | 0.46 |
| Reach 1 | 775 | 10 yr | Prop_Eff_R1 | 567.00 | 534.54 | 540.38 | | 540.77 | 0.002046 | 4.98 | 113.78 | 36.04 | 0.49 |
| Reach 1 | 775 | 10 yr | Corr_Eff_R2 | 567.00 | 534.54 | 540.38 | | 540.77 | 0.002046 | 4.98 | 113.78 | 36.04 | 0.49 |
| Reach 1 | 476 | 10 yr | REV 1218 FW | 502.22 | 534.77 | 539.65 | | 540.00 | 0.001916 | 4.74 | 105.91 | 34.24 | 0.48 |
| Reach 1 | 476 | 10 yr | Prop_Eff_R1 | 567.00 | 534.77 | 539.63 | | 540.09 | 0.002482 | 5.39 | 105.29 | 34.16 | 0.54 |

HEC-RAS River: Maine_Township Reach: Reach 1 Profile: 10 yr (Continued)

| Reach | River Sta | Profile | Plan | Q Total | Min Ch El | W.S. Elev | Crit W.S. | E.G. Elev | E.G. Slope | Vel Chnl | Flow Area | Top Width | Froude # Chl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | (cfs) | (ft) | (ft) | (ft) | (ft) | (ft/ft) | (ft/s) | (sq ft) | (ft) | |
| Reach 1 | 476 | 10 yr | Corr_Eff_R2 | 567.00 | 534.77 | 539.63 | | 540.09 | 0.002482 | 5.39 | 105.29 | 34.16 | 0.54 |
| | | | | | | | | | | | | | |
| Reach 1 | 181 | 10 yr | REV 1218 FW | 502.22 | 531.76 | 539.65 | | 539.75 | 0.000292 | 2.56 | 208.03 | 54.13 | 0.20 |
| Reach 1 | 181 | 10 yr | Prop_Eff_R1 | 567.00 | 531.76 | 539.63 | | 539.76 | 0.000377 | 2.90 | 206.95 | 53.88 | 0.23 |
| Reach 1 | 181 | 10 yr | Corr_Eff_R2 | 567.00 | 531.76 | 539.63 | | 539.76 | 0.000377 | 2.90 | 206.95 | 53.88 | 0.23 |

# WATER QUALITY HYDROCAD REPORT






**Rainfall Events Listing (selected events)**

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.75" Event | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 0.75 | 2 |



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment120S: Pond 1 IMP** Runoff Area=82.030 ac 100.00% Impervious Runoff Depth=0.55"
Tc=10.0 min CN=98 Runoff=5.00 cfs 3.765 af

**Subcatchment122S: Pond 2 IMP** Runoff Area=105.390 ac 100.00% Impervious Runoff Depth=0.55"
Tc=10.0 min CN=98 Runoff=6.43 cfs 4.837 af

**Pond 138P: WQ Pond 1** Peak Elev=561.27' Storage=3.765 af Inflow=5.00 cfs 3.765 af
Outflow=0.00 cfs 0.000 af

**Pond 139P: WQ Pond 2** Peak Elev=560.20' Storage=4.837 af Inflow=6.43 cfs 4.837 af
Outflow=0.00 cfs 0.000 af

**Total Runoff Area = 187.420 ac Runoff Volume = 8.601 af Average Runoff Depth = 0.55"**
**0.00% Pervious = 0.000 ac 100.00% Impervious = 187.420 ac**



**Summary for Subcatchment 120S: Pond 1 IMP**

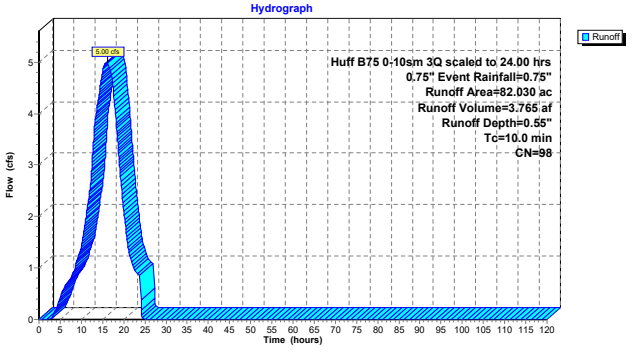
Runoff = 5.00 cfs @ 16.11 hrs, Volume= 3.765 af, Depth= 0.55"
Routed to Pond 138P : WQ Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 0.75" Event Rainfall=0.75"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 82.030 | 98 | Impervious |
| | 82.030 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, Est. |

**Subcatchment 120S: Pond 1 IMP**



## Summary for Subcatchment 122S: Pond 2 IMP

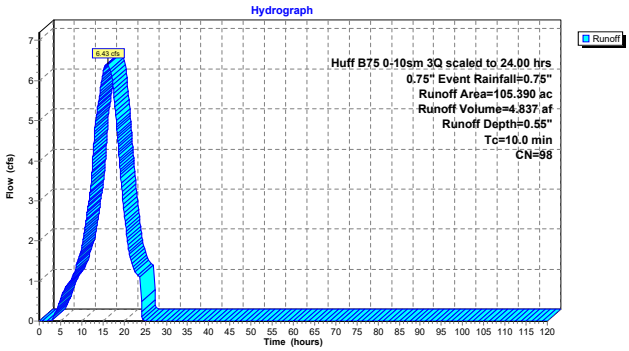
Runoff = 6.43 cfs @ 16.11 hrs, Volume= 4.837 af, Depth= 0.55"
Routed to Pond 139P : WQ Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 0.75" Event Rainfall=0.75"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 105.390 | 98 | |
| | 105.390 | | 100.00% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 122S: Pond 2 IMP






## Summary for Pond 138P: WQ Pond 1

Inflow Area = 82.030 ac,100.00% Impervious, Inflow Depth = 0.55" for 0.75" Event event
Inflow = 5.00 cfs @ 16.11 hrs, Volume= 3.765 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

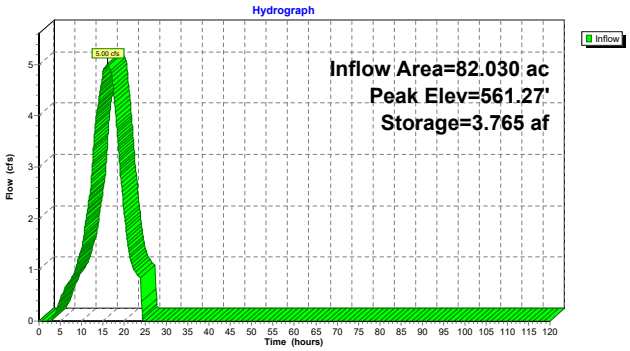
Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 561.27' @ 24.60 hrs Surf.Area= 14.190 ac Storage= 3.765 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

### Pond 138P: WQ Pond 1






## Summary for Pond 139P: WQ Pond 2

Inflow Area = 105.390 ac,100.00% Impervious, Inflow Depth = 0.55" for 0.75" Event event
Inflow = 6.43 cfs @ 16.11 hrs, Volume= 4.837 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 560.20' @ 24.60 hrs Surf.Area= 24.210 ac Storage= 4.837 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

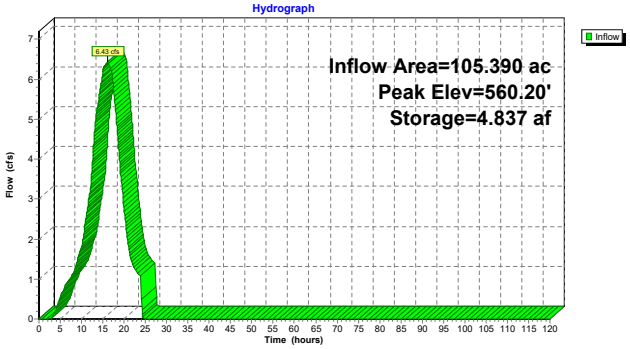
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

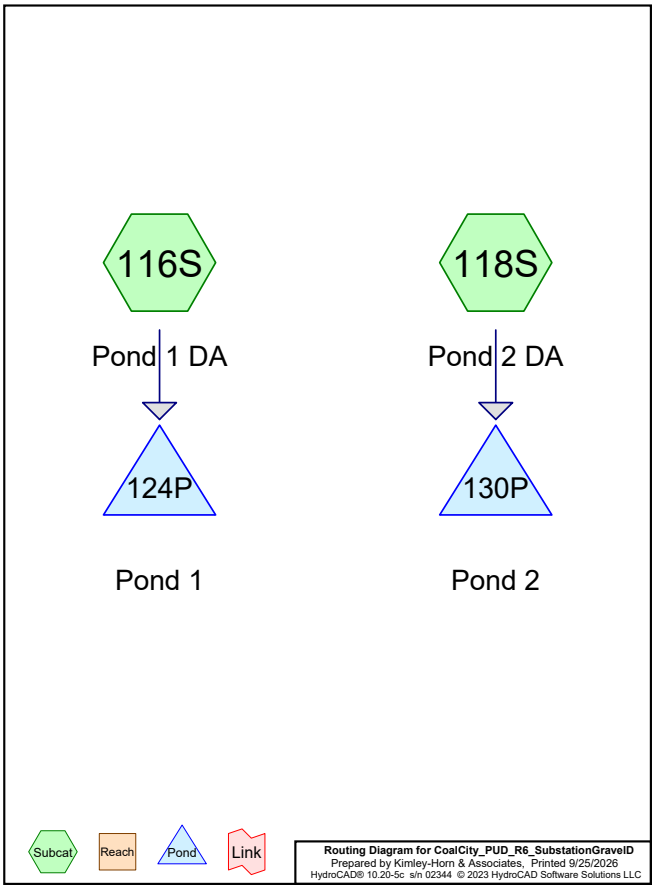
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |



### Pond 139P: WQ Pond 2



# DETENTION FREE OUTFALL HYDROCAD REPORT






### Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 2-Year | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 3.34 | 2 |
| 2 | 100-Year | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 8.57 | 2 |



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=2.04"
Tc=10.0 min CN=87 Runoff=30.24 cfs 21.213 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=2.12"
Tc=10.0 min CN=88 Runoff=37.86 cfs 26.922 af

**Pond 124P: Pond 1** Peak Elev=562.32' Storage=18.688 af Inflow=30.24 cfs 21.213 af
Outflow=4.17 cfs 14.335 af

**Pond 130P: Pond 2** Peak Elev=561.00' Storage=24.307 af Inflow=37.86 cfs 26.922 af
Outflow=4.80 cfs 16.129 af

**Total Runoff Area = 276.980 ac Runoff Volume = 48.134 af Average Runoff Depth = 2.09"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



### Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

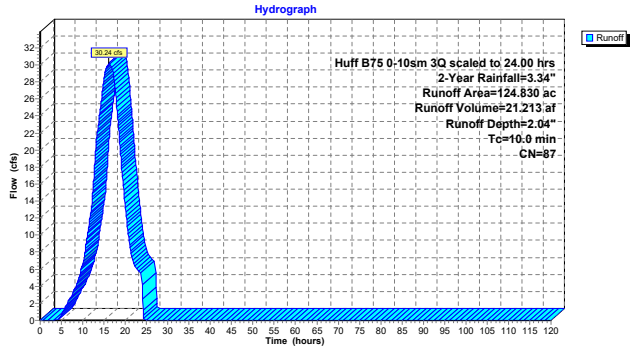
Runoff = 30.24 cfs @ 16.16 hrs, Volume= 21.213 af, Depth= 2.04"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 2-Year Rainfall=3.34"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, Max Allowed for Metropolitan Water Reclamation |

### Subcatchment 116S: Pond 1 DA



## Summary for Subcatchment 118S: Pond 2 DA

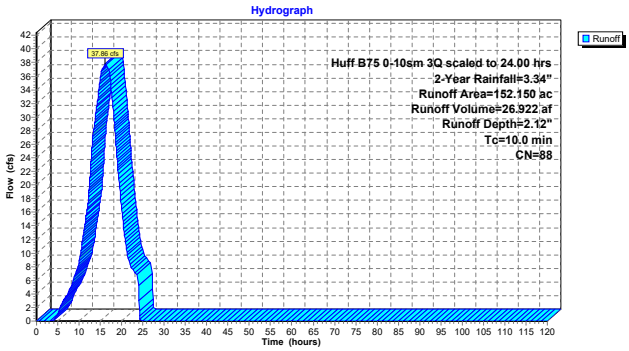
Runoff = 37.86 cfs @ 16.15 hrs, Volume= 26.922 af, Depth= 2.12"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 2-Year Rainfall=3.34"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 2.04" for 2-Year event
Inflow = 30.24 cfs @ 16.16 hrs, Volume= 21.213 af
Outflow = 4.17 cfs @ 24.13 hrs, Volume= 14.335 af, Atten= 86%, Lag= 477.8 min
Primary = 4.17 cfs @ 24.13 hrs, Volume= 14.335 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 562.32' @ 24.13 hrs Surf.Area= 14.190 ac Storage= 18.688 af

Plug-Flow detention time= 1,978.1 min calculated for 14.329 af (68% of inflow)
Center-of-Mass det. time= 1,866.8 min ( 2,817.8 - 951.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

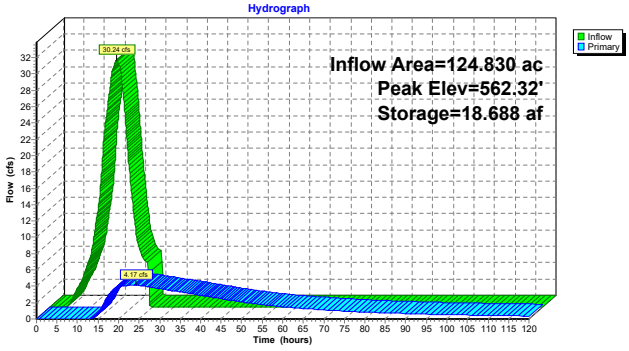
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 561.27' | **10.0" Vert. 2-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Primary | 562.32' | **10.0" Vert. 100-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=4.17 cfs @ 24.13 hrs HW=562.32' (Free Discharge)
↑**1=2-yr Outlet** (Orifice Controls 4.17 cfs @ 3.82 fps)
└**2=100-yr Outlet** ( Controls 0.00 cfs)



### Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 2.12" for 2-Year event
Inflow = 37.86 cfs @ 16.15 hrs, Volume= 26.922 af
Outflow = 4.80 cfs @ 24.13 hrs, Volume= 16.129 af, Atten= 87%, Lag= 479.1 min
Primary = 4.80 cfs @ 24.13 hrs, Volume= 16.129 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 561.00' @ 24.13 hrs Surf.Area= 24.210 ac Storage= 24.307 af

Plug-Flow detention time= 2,177.9 min calculated for 16.123 af (60% of inflow)
Center-of-Mass det. time= 2,039.8 min ( 2,984.1 - 944.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

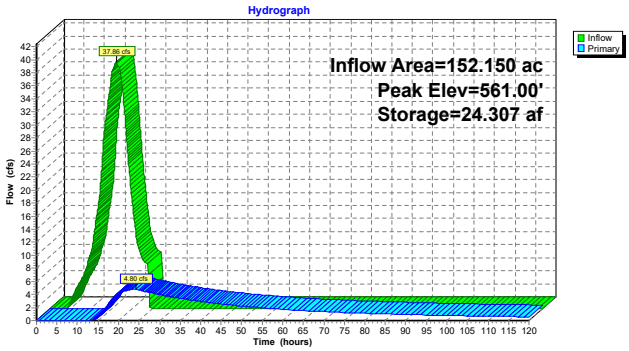
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 560.20' | **14.0" Vert. Orifice/Grate X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=4.80 cfs @ 24.13 hrs HW=561.00' (Free Discharge)
↑**1=Orifice/Grate** (Orifice Controls 4.80 cfs @ 3.05 fps)

## Pond 130P: Pond 2






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=7.01"
Tc=10.0 min CN=87 Runoff=91.73 cfs 72.875 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=7.13"
Tc=10.0 min CN=88 Runoff=112.60 cfs 90.353 af

**Pond 124P: Pond 1** Peak Elev=565.14' Storage=58.743 af Inflow=91.73 cfs 72.875 af
Outflow=17.90 cfs 63.641 af

**Pond 130P: Pond 2** Peak Elev=563.19' Storage=77.302 af Inflow=112.60 cfs 90.353 af
Outflow=15.98 cfs 74.459 af

**Total Runoff Area = 276.980 ac Runoff Volume = 163.228 af Average Runoff Depth = 7.07"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



### Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

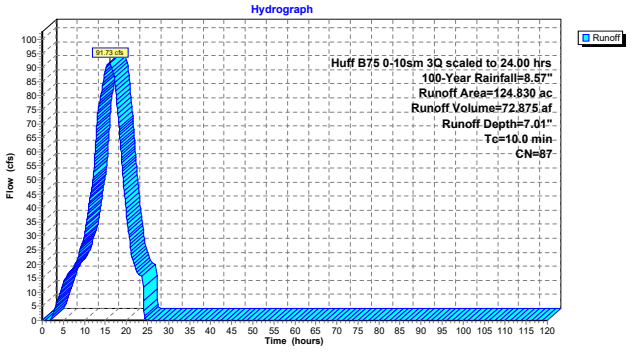
Runoff = 91.73 cfs @ 16.08 hrs, Volume= 72.875 af, Depth= 7.01"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






### Summary for Subcatchment 118S: Pond 2 DA

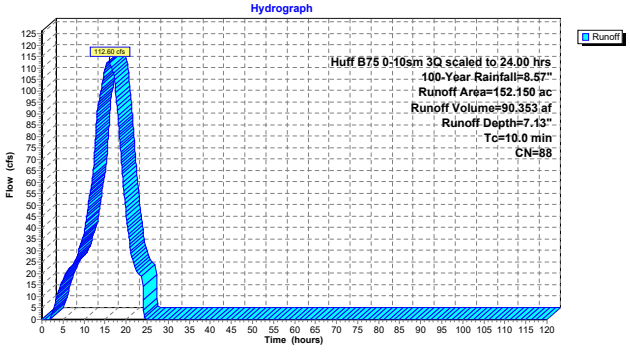
Runoff = 112.60 cfs @ 16.07 hrs, Volume= 90.353 af, Depth= 7.13"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA



## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 7.01" for 100-Year event
Inflow = 91.73 cfs @ 16.08 hrs, Volume= 72.875 af
Outflow = 17.90 cfs @ 22.32 hrs, Volume= 63.641 af, Atten= 80%, Lag= 374.7 min
Primary = 17.90 cfs @ 22.32 hrs, Volume= 63.641 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 565.14' @ 22.32 hrs Surf.Area= 14.190 ac Storage= 58.743 af

Plug-Flow detention time= 1,801.5 min calculated for 63.615 af (87% of inflow)
Center-of-Mass det. time= 1,746.7 min ( 2,636.5 - 889.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

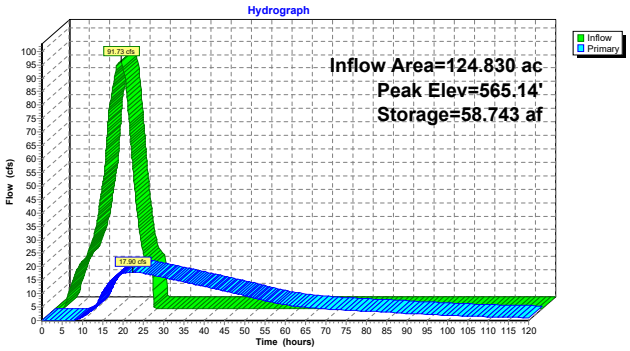
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 561.27' | **10.0" Vert. 2-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Primary | 562.32' | **10.0" Vert. 100-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=17.90 cfs @ 22.32 hrs HW=565.14' (Free Discharge)
↑**1=2-yr Outlet** (Orifice Controls 9.76 cfs @ 8.95 fps)
└**2=100-yr Outlet** (Orifice Controls 8.14 cfs @ 7.46 fps)



## Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 7.13" for 100-Year event
Inflow = 112.60 cfs @ 16.07 hrs, Volume= 90.353 af
Outflow = 15.98 cfs @ 24.10 hrs, Volume= 74.459 af, Atten= 86%, Lag= 481.8 min
Primary = 15.98 cfs @ 24.10 hrs, Volume= 74.459 af

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.19' @ 24.10 hrs Surf.Area= 24.210 ac Storage= 77.302 af

Plug-Flow detention time= 2,179.6 min calculated for 74.459 af (82% of inflow)
Center-of-Mass det. time= 2,103.9 min ( 2,988.9 - 884.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

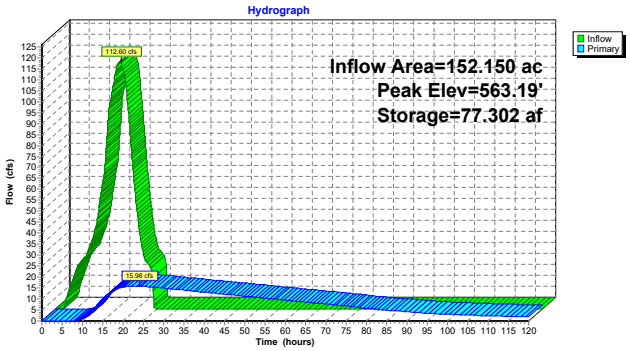
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 560.20' | **14.0" Vert. Orifice/Grate X 2.00** C= 0.600<br>Limited to weir flow at low heads |

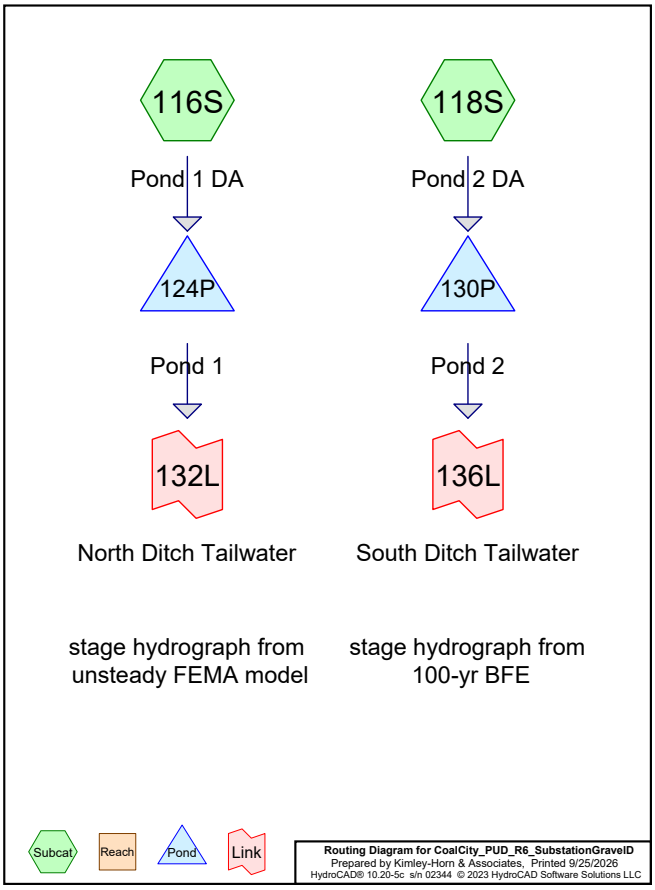
**Primary OutFlow** Max=15.98 cfs @ 24.10 hrs HW=563.19' (Free Discharge)
↑**1=Orifice/Grate** (Orifice Controls 15.98 cfs @ 7.47 fps)



## Pond 130P: Pond 2



# DETENTION TAILWATER HYDROCAD REPORT






**Rainfall Events Listing (selected events)**

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 2-Year | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 3.34 | 2 |
| 2 | 100-Year | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 8.57 | 2 |



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=2.04"
Tc=10.0 min CN=87 Runoff=30.24 cfs 21.213 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=2.12"
Tc=10.0 min CN=88 Runoff=37.86 cfs 26.922 af

**Pond 124P: Pond 1** Peak Elev=562.49' Storage=21.213 af Inflow=30.24 cfs 21.213 af
Outflow=4.52 cfs 13.842 af

**Pond 130P: Pond 2** Peak Elev=561.11' Storage=26.879 af Inflow=37.86 cfs 26.922 af
Outflow=5.81 cfs 15.849 af

**Link 132L: North Ditch Tailwater** Inflow=4.52 cfs 13.840 af
Primary=4.52 cfs 13.840 af

**Link 136L: South Ditch Tailwater** Inflow=5.81 cfs 15.847 af
Primary=5.81 cfs 15.847 af

**Total Runoff Area = 276.980 ac Runoff Volume = 48.134 af Average Runoff Depth = 2.09"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



**Summary for Subcatchment 116S: Pond 1 DA**

r6 DAs

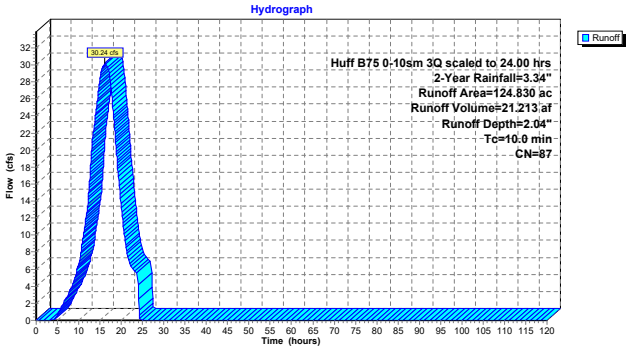
Runoff = 30.24 cfs @ 16.16 hrs, Volume= 21.213 af, Depth= 2.04"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 2-Year Rainfall=3.34"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

**Subcatchment 116S: Pond 1 DA**



## Summary for Subcatchment 118S: Pond 2 DA

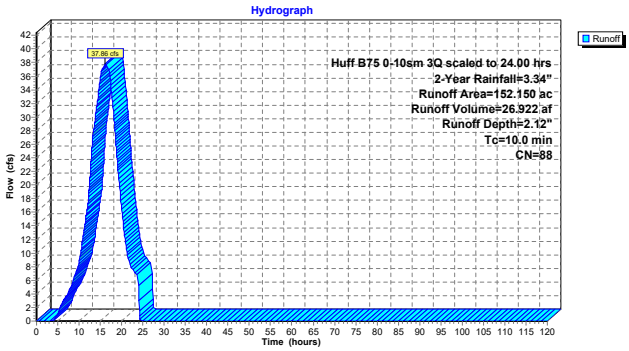
Runoff = 37.86 cfs @ 16.15 hrs, Volume= 26.922 af, Depth= 2.12"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 2-Year Rainfall=3.34"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 2.04" for 2-Year event
Inflow = 30.24 cfs @ 16.16 hrs, Volume= 21.213 af
Outflow = 4.52 cfs @ 35.36 hrs, Volume= 13.842 af, Atten= 85%, Lag= 1,151.8 min
Primary = 4.52 cfs @ 35.36 hrs, Volume= 13.842 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 562.49' @ 24.60 hrs Surf.Area= 14.190 ac Storage= 21.213 af

Plug-Flow detention time= 2,731.5 min calculated for 13.837 af (65% of inflow)
Center-of-Mass det. time= 2,612.8 min ( 3,563.8 - 951.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

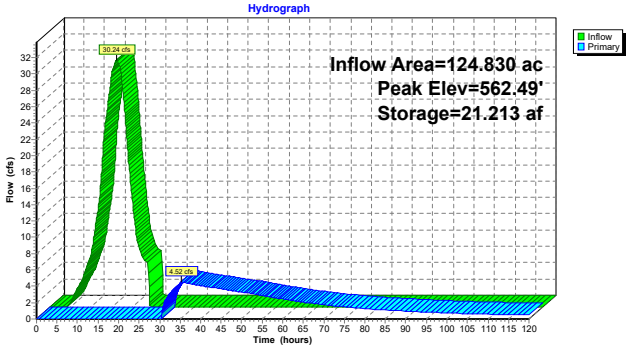
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 561.27' | **10.0" Vert. 2-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Primary | 562.32' | **10.0" Vert. 100-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=4.52 cfs @ 35.36 hrs HW=562.41' TW=561.67' (Dynamic Tailwater)
↑**1=2-yr Outlet** (Orifice Controls 4.46 cfs @ 4.09 fps)
↑**2=100-yr Outlet** (Orifice Controls 0.06 cfs @ 1.00 fps)



### Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 2.12" for 2-Year event
Inflow = 37.86 cfs @ 16.15 hrs, Volume= 26.922 af
Outflow = 5.81 cfs @ 24.10 hrs, Volume= 15.849 af, Atten= 85%, Lag= 477.1 min
Primary = 5.81 cfs @ 24.10 hrs, Volume= 15.849 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 561.11' @ 24.12 hrs Surf.Area= 24.210 ac Storage= 26.879 af

Plug-Flow detention time= 2,467.1 min calculated for 15.843 af (59% of inflow)
Center-of-Mass det. time= 2,325.6 min ( 3,269.8 - 944.2 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

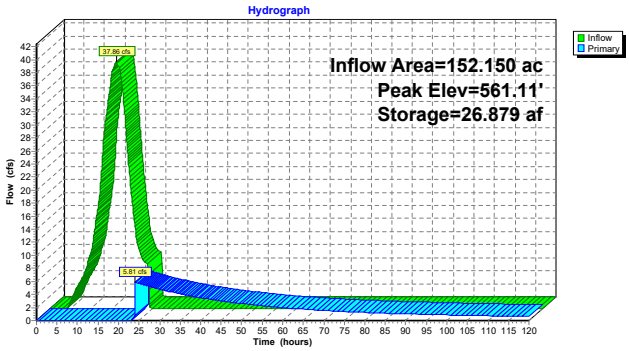
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 560.20' | **14.0" Vert. Orifice/Grate X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=5.81 cfs @ 24.10 hrs HW=561.11' TW=0.00' (Dynamic Tailwater)
↑**1=Orifice/Grate** (Orifice Controls 5.81 cfs @ 3.25 fps)

## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

[80] Warning: Exceeded Pond 124P by 3.68' @ 14.00 hrs (17.78 cfs 21.199 af)

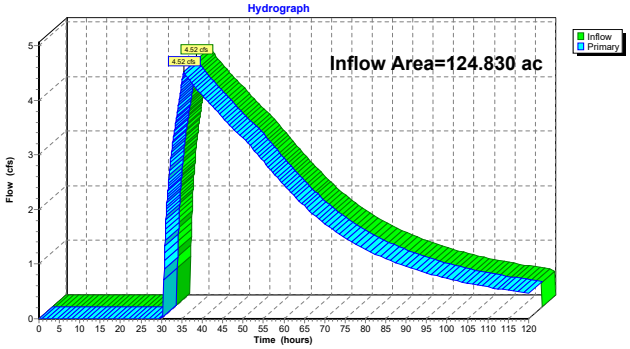
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth > 1.33" for 2-Year event
Inflow = 4.52 cfs @ 35.36 hrs, Volume= 13.840 af
Primary = 4.52 cfs @ 35.41 hrs, Volume= 13.840 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 565.10 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 5.48' @ 14.00 hrs (23.06 cfs 34.460 af)

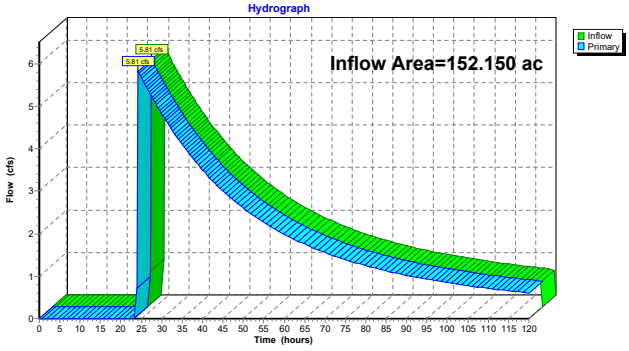
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth > 1.25" for 2-Year event
Inflow = 5.81 cfs @ 24.10 hrs, Volume= 15.847 af
Primary = 5.81 cfs @ 24.15 hrs, Volume= 15.847 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.80 | 565.80 | 565.80 | 565.80 |
| 565.80 | 565.80 | 565.80 | 565.80 | 565.80 | 565.80 | 565.80 | | |

## Link 136L: South Ditch Tailwater






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

| | | |
|---|---|---|
| **Subcatchment116S: Pond 1 DA** | Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=7.01" Tc=10.0 min CN=87 Runoff=91.73 cfs 72.875 af | |
| **Subcatchment118S: Pond 2 DA** | Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=7.13" Tc=10.0 min CN=88 Runoff=112.60 cfs 90.353 af | |
| **Pond 124P: Pond 1** | Peak Elev=565.61' Storage=65.346 af Inflow=91.73 cfs 72.875 af Outflow=16.29 cfs 63.137 af | |
| **Pond 130P: Pond 2** | Peak Elev=563.73' Storage=90.233 af Inflow=112.60 cfs 90.353 af Outflow=17.66 cfs 72.914 af | |
| **Link 132L: North Ditch Tailwater** | Inflow=16.29 cfs 63.132 af Primary=16.29 cfs 63.132 af | |
| **Link 136L: South Ditch Tailwater** | Inflow=17.66 cfs 72.904 af Primary=17.66 cfs 72.904 af | |

**Total Runoff Area = 276.980 ac Runoff Volume = 163.228 af Average Runoff Depth = 7.07"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

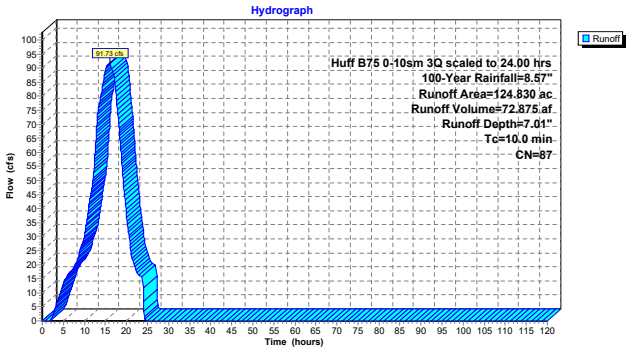
Runoff = 91.73 cfs @ 16.08 hrs, Volume= 72.875 af, Depth= 7.01"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

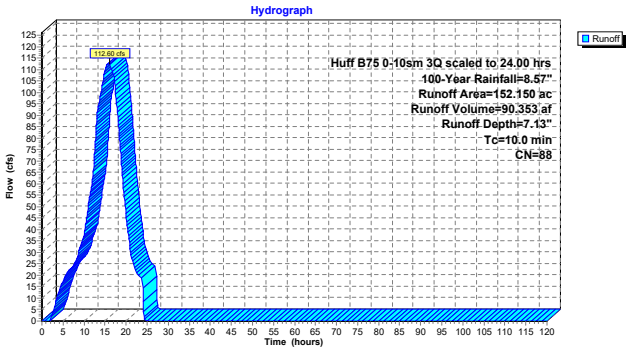
Runoff = 112.60 cfs @ 16.07 hrs, Volume= 90.353 af, Depth= 7.13"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 7.01" for 100-Year event
Inflow = 91.73 cfs @ 16.08 hrs, Volume= 72.875 af
Outflow = 16.29 cfs @ 30.04 hrs, Volume= 63.137 af, Atten= 82%, Lag= 837.9 min
Primary = 16.29 cfs @ 30.04 hrs, Volume= 63.137 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 565.61' @ 23.63 hrs Surf.Area= 14.190 ac Storage= 65.346 af

Plug-Flow detention time= 2,090.9 min calculated for 63.110 af (87% of inflow)
Center-of-Mass det. time= 2,033.5 min ( 2,923.3 - 889.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

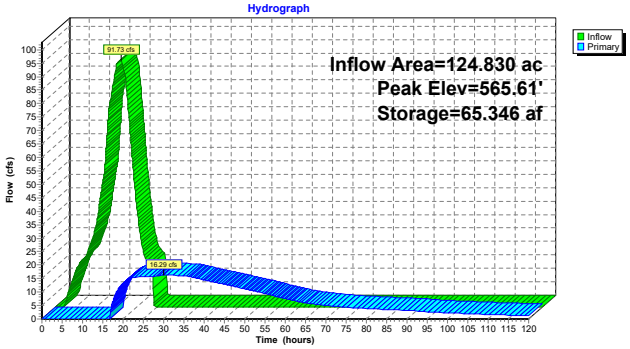
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 561.27' | **10.0" Vert. 2-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |
| #2 | Primary | 562.32' | **10.0" Vert. 100-yr Outlet X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=16.30 cfs @ 30.04 hrs HW=565.06' TW=562.57' (Dynamic Tailwater)
↑**1=2-yr Outlet** (Orifice Controls 8.29 cfs @ 7.60 fps)
└**2=100-yr Outlet** (Orifice Controls 8.01 cfs @ 7.34 fps)



## Pond 124P: Pond 1



## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 7.13" for 100-Year event
Inflow = 112.60 cfs @ 16.07 hrs, Volume= 90.353 af
Outflow = 17.66 cfs @ 24.10 hrs, Volume= 72.914 af, Atten= 84%, Lag= 481.6 min
Primary = 17.66 cfs @ 24.10 hrs, Volume= 72.914 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.73' @ 24.12 hrs Surf.Area= 24.210 ac Storage= 90.233 af

Plug-Flow detention time= 2,666.2 min calculated for 72.914 af (81% of inflow)
Center-of-Mass det. time= 2,584.4 min ( 3,469.4 - 884.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

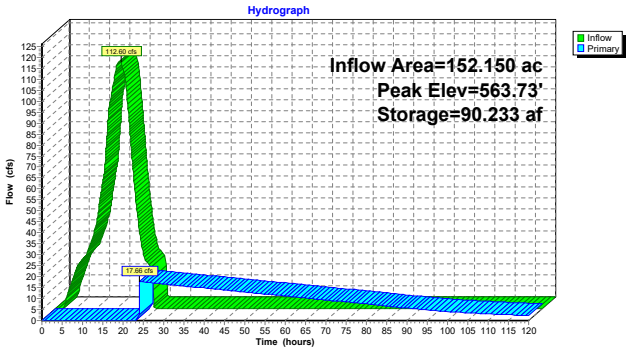
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 560.20' | **14.0" Vert. Orifice/Grate X 2.00** C= 0.600<br>Limited to weir flow at low heads |

**Primary OutFlow** Max=17.66 cfs @ 24.10 hrs HW=563.73' TW=0.00' (Dynamic Tailwater)
↑**1=Orifice/Grate** (Orifice Controls 17.66 cfs @ 8.26 fps)



## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

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[80] Warning: Exceeded Pond 124P by 2.18' @ 14.00 hrs (15.50 cfs 9.125 af)

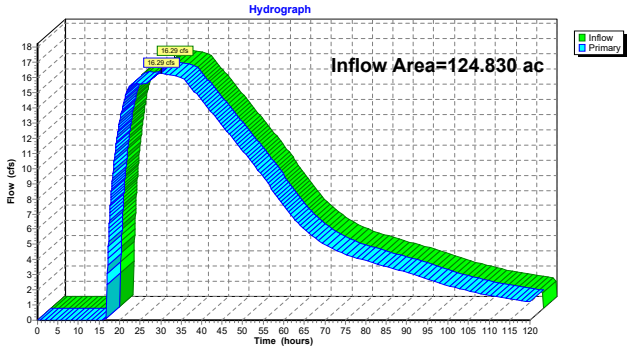
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth > 6.07" for 100-Year event
Inflow = 16.29 cfs @ 30.04 hrs, Volume= 63.132 af
Primary = 16.29 cfs @ 30.09 hrs, Volume= 63.132 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 565.10 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 4.38' @ 14.00 hrs (21.54 cfs 29.853 af)

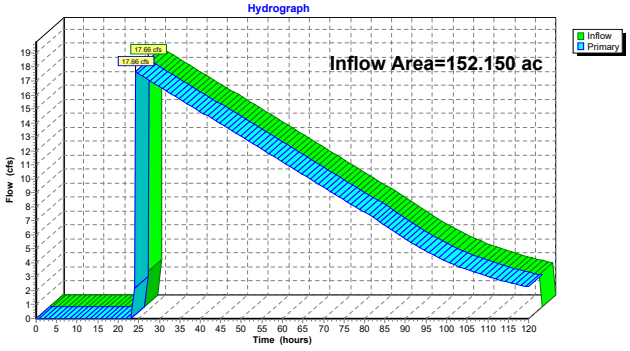
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth > 5.75" for 100-Year event
Inflow = 17.66 cfs @ 24.10 hrs, Volume= 72.904 af
Primary = 17.66 cfs @ 24.15 hrs, Volume= 72.904 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.80 | 565.80 | 565.80 | 565.80 |
| 565.80 | 565.80 | 565.80 | 565.80 | 565.80 | 565.80 | 565.80 | | |

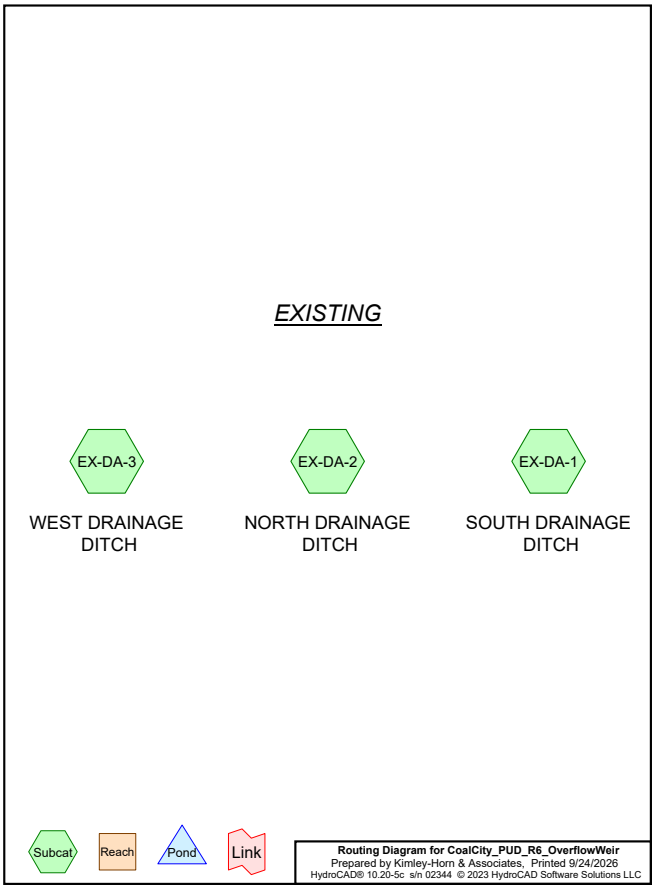
## Link 136L: South Ditch Tailwater



| South Ditch Stage Hydrograph | |
|---|---|
| Time (hr) | Elevation (ft) |
| 0:00 | 560 |
| 1:00 | 560.42 |
| 2:00 | 560.84 |
| 3:00 | 561.25 |
| 4:00 | 561.67 |
| 5:00 | 562.09 |
| 6:00 | 562.51 |
| 7:00 | 562.92 |
| 8:00 | 563.34 |
| 9:00 | 563.76 |
| 10:00 | 564.18 |
| 11:00 | 564.6 |
| 12:00 | 565.01 |
| 13:00 | 565.43 |
| 14:00 | 565.8 |
| 15:00 | 565.8 |
| 16:00 | 565.8 |
| 17:00 | 565.8 |
| 18:00 | 565.8 |
| 19:00 | 565.8 |
| 20:00 | 565.8 |
| 21:00 | 565.8 |
| 22:00 | 565.8 |
| 23:00 | 565.8 |
| 0:00 | 565.8 |

| Maine Township Ditch Stage Hydrograph | |
|---|---|
| Time (hr) | Elevation |
| 0:00 | 560.6 |
| 1:00 | 560.51 |
| 2:00 | 560.5 |
| 3:00 | 560.56 |
| 4:00 | 560.82 |
| 5:00 | 561.26 |
| 6:00 | 561.89 |
| 7:00 | 562.34 |
| 8:00 | 562.7 |
| 9:00 | 563.09 |
| 10:00 | 563.4 |
| 11:00 | 563.69 |
| 12:00 | 564.05 |
| 13:00 | 564.51 |
| 14:00 | 565.1 |
| 15:00 | 564.77 |
| 16:00 | 564.59 |
| 17:00 | 564.4 |
| 18:00 | 564.25 |
| 19:00 | 564.08 |
| 20:00 | 563.86 |
| 21:00 | 563.66 |
| 22:00 | 563.46 |
| 23:00 | 563.41 |
| 0:00 | 563.38 |
| 1:00 | 563.33 |
| 2:00 | 563.24 |
| 3:00 | 563.1 |
| 4:00 | 562.95 |
| 2:00 | 562.78 |
| 3:00 | 562.58 |
| 4:00 | 562.4 |
| 5:00 | 562.23 |
| 6:00 | 562.08 |
| 7:00 | 561.93 |
| 8:00 | 561.74 |
| 9:00 | 561.55 |
| 10:00 | 561.48 |
| 11:00 | 561.45 |
| 12:00 | 561.43 |
| 13:00 | 561.42 |
| 14:00 | 561.41 |
| 15:00 | 561.39 |
| 16:00 | 561.38 |
| 17:00 | 561.37 |
| 18:00 | 561.36 |
| 19:00 | 561.35 |
| 20:00 | 561.35 |
| 21:00 | 561.34 |
| 22:00 | 561.33 |
| 23:00 | 561.32 |
| 0:00 | 561.31 |
| 1:00 | 561.31 |
| 2:00 | 561.3 |
| 3:00 | 561.29 |
| 4:00 | 561.28 |
| 2:00 | 561.28 |
| 3:00 | 561.27 |
| 4:00 | 561.26 |
| 5:00 | 561.26 |
| 6:00 | 561.25 |
| 7:00 | 561.25 |
| 8:00 | 561.24 |
| 9:00 | 561.23 |
| 10:00 | 561.23 |
| 11:00 | 561.22 |
| 12:00 | 561.21 |
| 13:00 | 561.21 |
| 14:00 | 561.2 |
| 15:00 | 561.2 |
| 16:00 | 561.19 |
| 17:00 | 561.18 |
| 18:00 | 561.18 |

# EXISTING HYDROCAD REPORT






## Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 100-Year | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 8.57 | 2 |
| 2 | 100-Year, 30-min | Huff B75 0-10sm | 1Q | Scale | 0.50 | 1 | 3.17 | 2 |
| 3 | 100-Year, 1-hr | Huff B75 0-10sm | 1Q | Scale | 1.00 | 1 | 4.03 | 2 |
| 4 | 100-Year, 2-hr | Huff B75 0-10sm | 1Q | Scale | 2.00 | 1 | 4.97 | 2 |
| 5 | 100-Year, 3-hr | Huff B75 0-10sm | 1Q | Scale | 3.00 | 1 | 5.49 | 2 |
| 6 | 100-Year, 6-hr | Huff B75 0-10sm | 1Q | Scale | 6.00 | 1 | 6.43 | 2 |
| 7 | 100-Year, 12-hr | Huff B75 0-10sm | 2Q | Scale | 12.00 | 1 | 7.46 | 2 |
| 8 | 100-Year, 18-hr | Huff B75 0-10sm | 2Q | Scale | 18.00 | 1 | 8.06 | 2 |



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=6.28"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=91.74 cfs 69.961 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=6.16"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=64.04 cfs 48.251 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=5.80"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=61.34 cfs 45.049 af

**Total Runoff Area = 320.828 ac Runoff Volume = 163.261 af Average Runoff Depth = 6.11"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

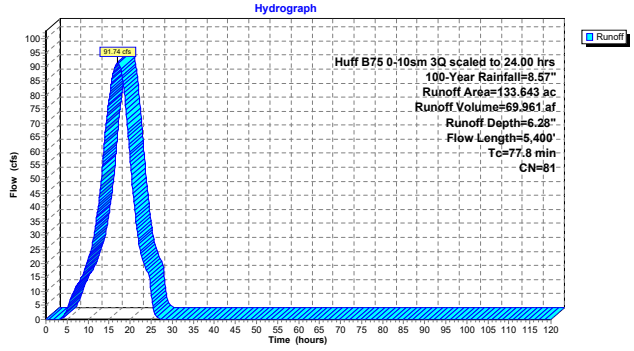
Runoff = 91.74 cfs @ 17.03 hrs, Volume= 69.961 af, Depth= 6.28"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

## Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

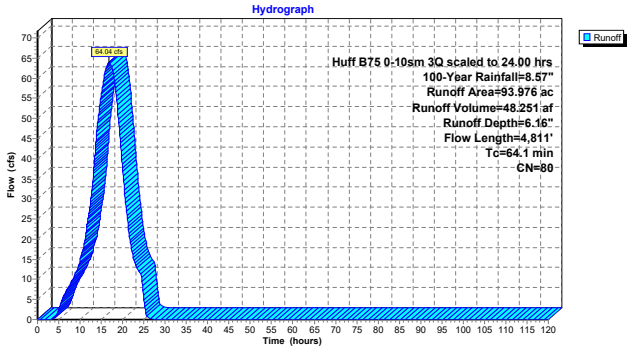
Runoff = 64.04 cfs @ 16.75 hrs, Volume= 48.251 af, Depth= 6.16"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

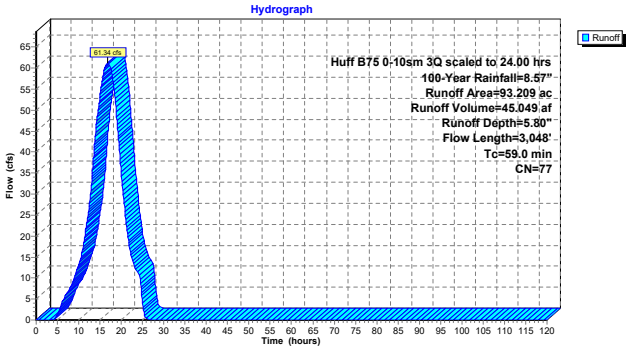
Runoff = 61.34 cfs @ 16.85 hrs, Volume= 45.049 af, Depth= 5.80"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=1.45"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=162.08 cfs 16.098 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=1.38"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=128.71 cfs 10.799 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=1.19"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=119.24 cfs 9.246 af

**Total Runoff Area = 320.828 ac Runoff Volume = 36.143 af Average Runoff Depth = 1.35"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

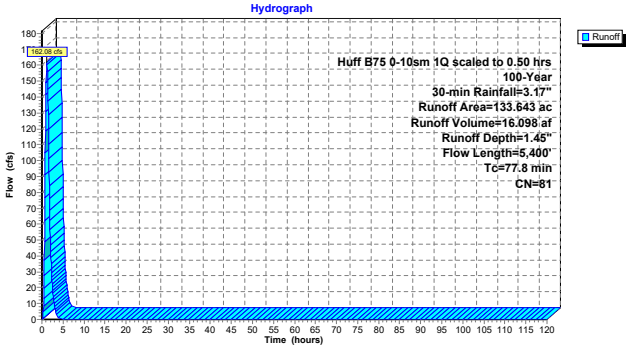
Runoff = 162.08 cfs @ 1.16 hrs, Volume= 16.098 af, Depth= 1.45"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 0.50 hrs 100-Year, 30-min Rainfall=3.17"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

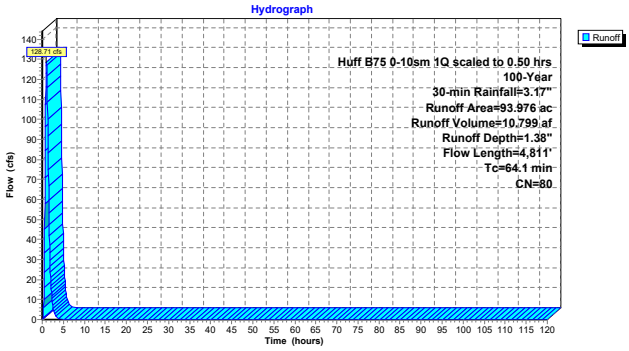
Runoff = 128.71 cfs @ 1.02 hrs, Volume= 10.799 af, Depth= 1.38"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 0.50 hrs 100-Year, 30-min Rainfall=3.17"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

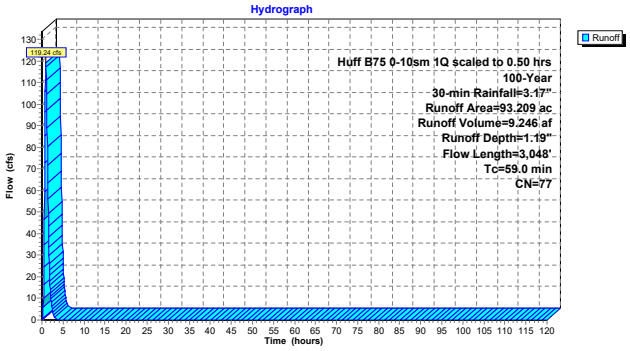
Runoff = 119.24 cfs @ 0.97 hrs, Volume= 9.246 af, Depth= 1.19"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 0.50 hrs 100-Year, 30-min Rainfall=3.17"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=2.15"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=215.82 cfs 23.908 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=2.07"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=167.95 cfs 16.183 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=1.84"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=155.81 cfs 14.257 af

**Total Runoff Area = 320.828 ac Runoff Volume = 54.348 af Average Runoff Depth = 2.03"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

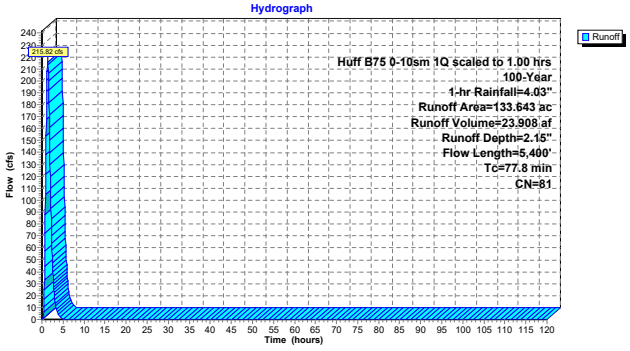
Runoff = 215.82 cfs @ 1.40 hrs, Volume= 23.908 af, Depth= 2.15"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 1.00 hrs 100-Year, 1-hr Rainfall=4.03"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

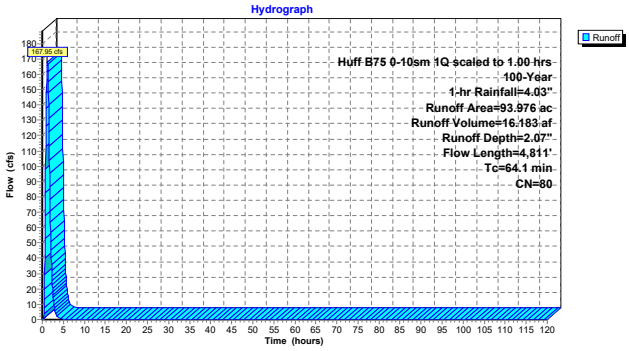
Runoff = 167.95 cfs @ 1.22 hrs, Volume= 16.183 af, Depth= 2.07"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 1.00 hrs 100-Year, 1-hr Rainfall=4.03"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

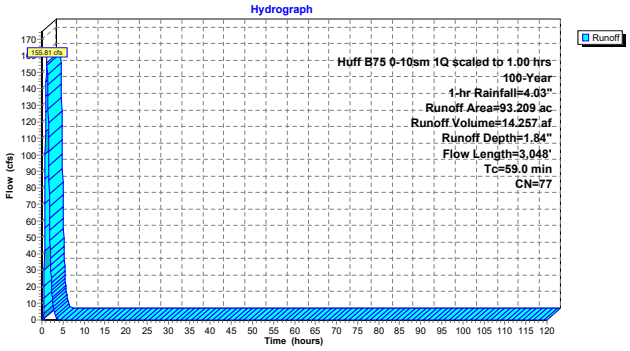
Runoff = 155.81 cfs @ 1.17 hrs, Volume= 14.257 af, Depth= 1.84"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 1.00 hrs 100-Year, 1-hr Rainfall=4.03"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=2.96"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=229.82 cfs 32.952 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=2.87"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=172.14 cfs 22.450 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=2.60"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=159.76 cfs 20.179 af

**Total Runoff Area = 320.828 ac Runoff Volume = 75.581 af Average Runoff Depth = 2.83"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

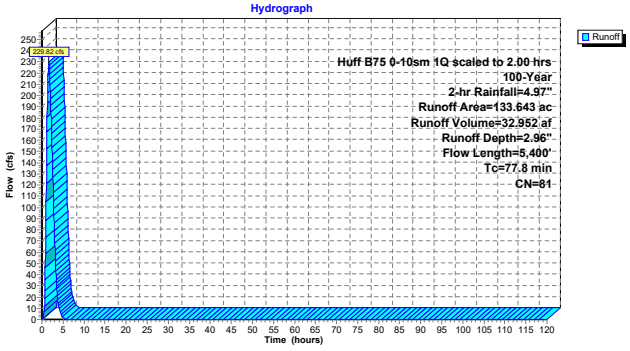
Runoff = 229.82 cfs @ 1.65 hrs, Volume= 32.952 af, Depth= 2.96"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 2.00 hrs 100-Year, 2-hr Rainfall=4.97"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

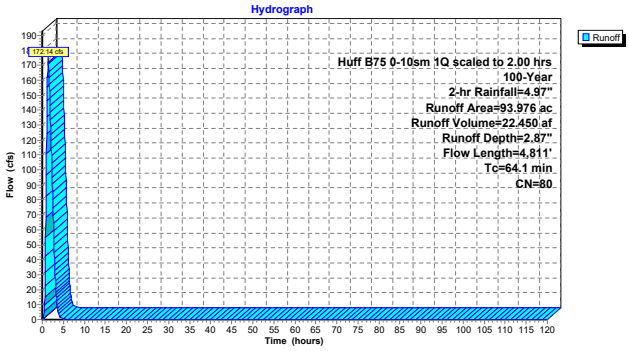
Runoff = 172.14 cfs @ 1.43 hrs, Volume= 22.450 af, Depth= 2.87"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 2.00 hrs 100-Year, 2-hr Rainfall=4.97"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

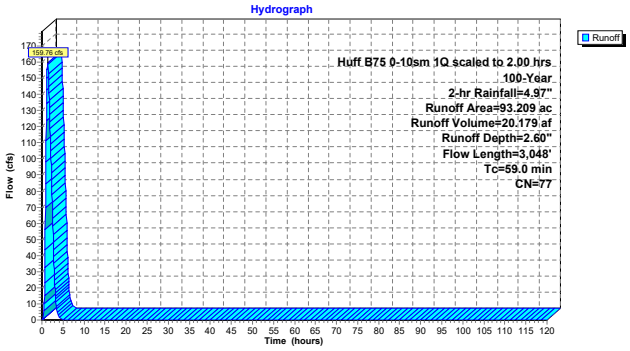
Runoff = 159.76 cfs @ 1.37 hrs, Volume= 20.179 af, Depth= 2.60"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 2.00 hrs 100-Year, 2-hr Rainfall=4.97"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=3.42"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=219.28 cfs 38.112 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=3.32"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=163.83 cfs 26.035 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=3.04"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=152.06 cfs 23.597 af

**Total Runoff Area = 320.828 ac Runoff Volume = 87.743 af Average Runoff Depth = 3.28"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

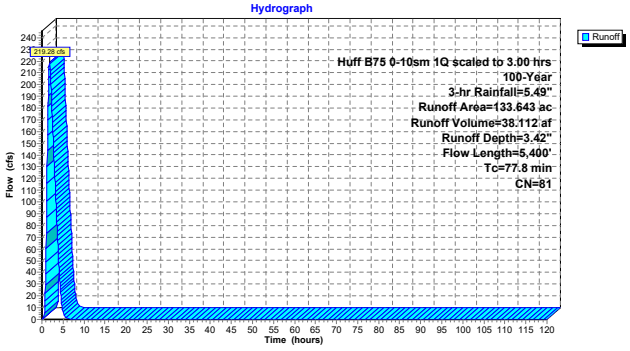
Runoff = 219.28 cfs @ 1.81 hrs, Volume= 38.112 af, Depth= 3.42"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 3.00 hrs 100-Year, 3-hr Rainfall=5.49"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

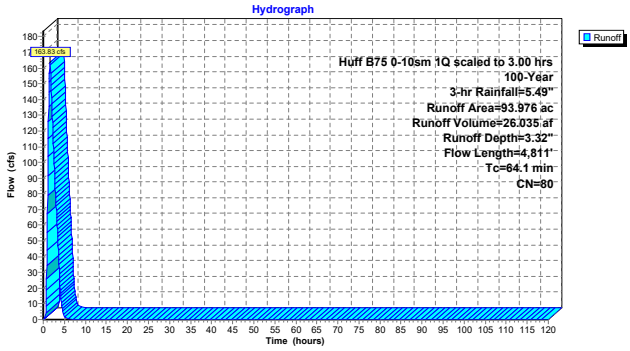
Runoff = 163.83 cfs @ 1.61 hrs, Volume= 26.035 af, Depth= 3.32"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 3.00 hrs 100-Year, 3-hr Rainfall=5.49"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

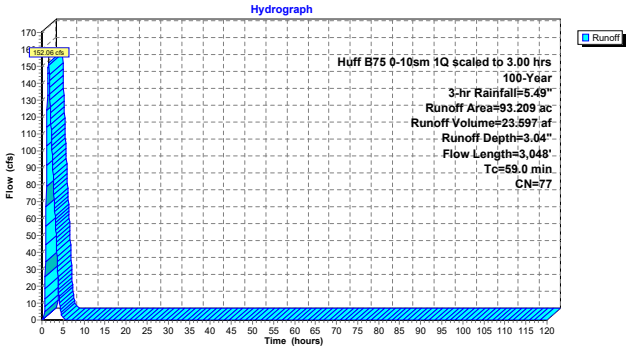
Runoff = 152.06 cfs @ 1.55 hrs, Volume= 23.597 af, Depth= 3.04"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 3.00 hrs 100-Year, 3-hr Rainfall=5.49"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=4.28"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=187.38 cfs 47.639 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=4.17"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=135.96 cfs 32.668 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=3.86"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=125.97 cfs 29.961 af

**Total Runoff Area = 320.828 ac Runoff Volume = 110.267 af Average Runoff Depth = 4.12"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

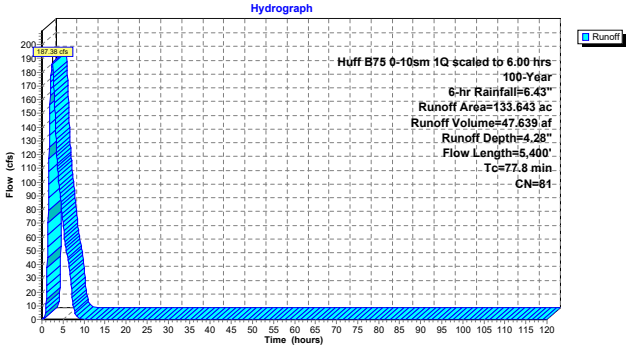
Runoff = 187.38 cfs @ 2.42 hrs, Volume= 47.639 af, Depth= 4.28"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 6.00 hrs 100-Year, 6-hr Rainfall=6.43"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

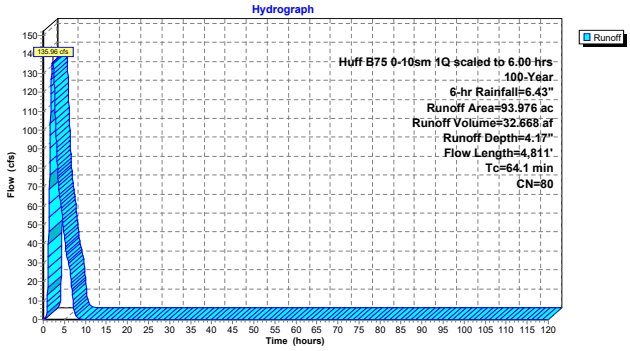
Runoff = 135.96 cfs @ 2.24 hrs, Volume= 32.668 af, Depth= 4.17"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 6.00 hrs 100-Year, 6-hr Rainfall=6.43"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

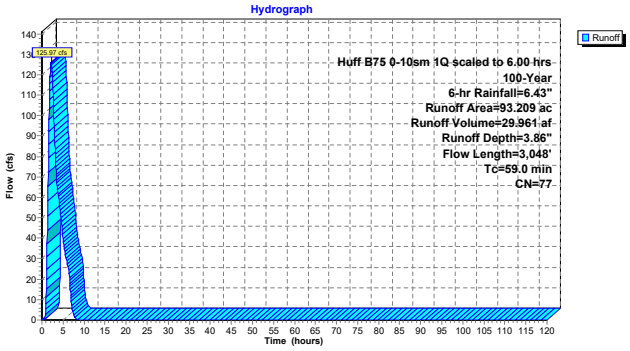
Runoff = 125.97 cfs @ 2.21 hrs, Volume= 29.961 af, Depth= 3.86"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 6.00 hrs 100-Year, 6-hr Rainfall=6.43"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=5.23"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=139.09 cfs 58.296 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=5.12"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=97.68 cfs 40.102 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=4.78"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=91.74 cfs 37.139 af

**Total Runoff Area = 320.828 ac Runoff Volume = 135.537 af Average Runoff Depth = 5.07"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

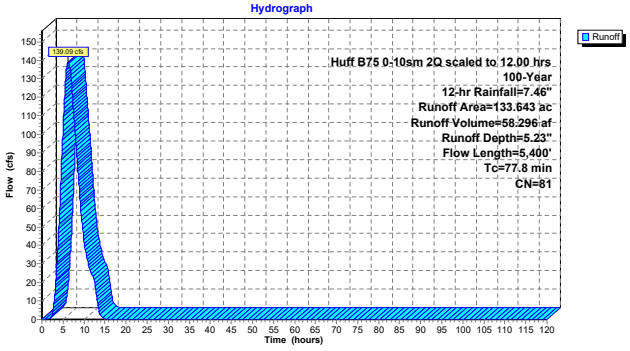
Runoff = 139.09 cfs @ 6.29 hrs, Volume= 58.296 af, Depth= 5.23"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 12.00 hrs 100-Year, 12-hr Rainfall=7.46"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

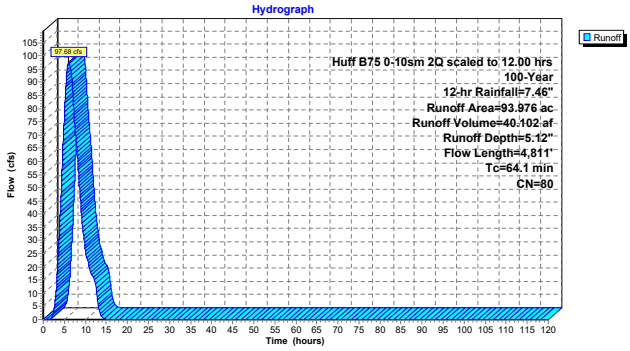
Runoff = 97.68 cfs @ 6.05 hrs, Volume= 40.102 af, Depth= 5.12"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 12.00 hrs 100-Year, 12-hr Rainfall=7.46"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

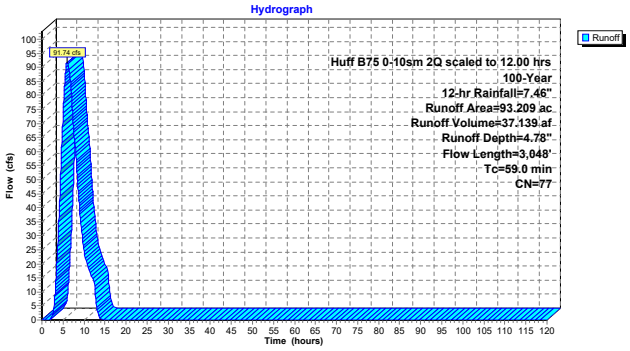
Runoff = 91.74 cfs @ 6.00 hrs, Volume= 37.139 af, Depth= 4.78"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 12.00 hrs 100-Year, 12-hr Rainfall=7.46"

| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**SubcatchmentEX-DA-1: SOUTH** Runoff Area=133.643 ac 0.34% Impervious Runoff Depth=5.80"
Flow Length=5,400' Tc=77.8 min CN=81 Runoff=105.72 cfs 64.582 af

**SubcatchmentEX-DA-2: NORTH** Runoff Area=93.976 ac 0.00% Impervious Runoff Depth=5.68"
Flow Length=4,811' Tc=64.1 min CN=80 Runoff=73.88 cfs 44.492 af

**SubcatchmentEX-DA-3: WEST DRAINAGE** Runoff Area=93.209 ac 1.79% Impervious Runoff Depth=5.33"
Flow Length=3,048' Tc=59.0 min CN=77 Runoff=69.59 cfs 41.396 af

**Total Runoff Area = 320.828 ac Runoff Volume = 150.470 af Average Runoff Depth = 5.63"**
**99.34% Pervious = 318.708 ac 0.66% Impervious = 2.120 ac**



## Summary for Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH

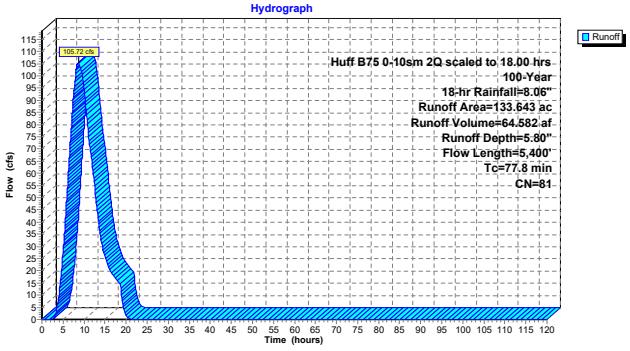
Runoff = 105.72 cfs @ 8.71 hrs, Volume= 64.582 af, Depth= 5.80"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 18.00 hrs 100-Year, 18-hr Rainfall=8.06"

| Area (ac) | CN | Description |
|---|---|---|
| 0.448 | 98 | Paved parking, HSG D |
| 27.855 | 64 | Row crops, SR + CR, Good, HSG A |
| 105.340 | 85 | Row crops, SR + CR, Good, HSG D |
| 133.643 | 81 | Weighted Average |
| 133.195 | | 99.66% Pervious Area |
| 0.448 | | 0.34% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 21.1 | 300 | 0.0040 | 0.24 | | **Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.34" |
| 56.7 | 5,100 | 0.0100 | 1.50 | | **Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps |
| 77.8 | 5,400 | Total | | | |

### Subcatchment EX-DA-1: SOUTH DRAINAGE DITCH



## Summary for Subcatchment EX-DA-2: NORTH DRAINAGE DITCH

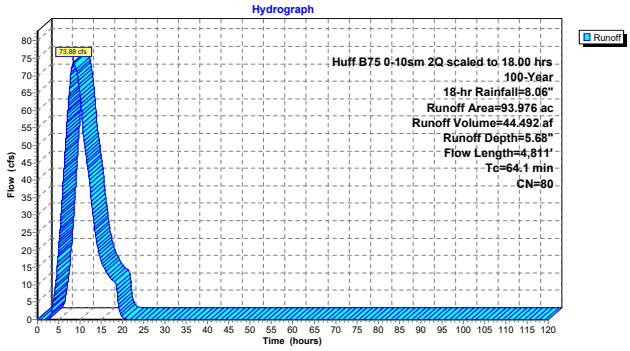
Runoff = 73.88 cfs @ 8.47 hrs, Volume= 44.492 af, Depth= 5.68"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 18.00 hrs 100-Year, 18-hr Rainfall=8.06"

| Area (ac) | CN | Description |
|---|---|---|
| 23.655 | 64 | Row crops, SR + CR, Good, HSG A |
| 70.321 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.976 | 80 | Weighted Average |
| 93.976 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 15.3 | 100 | 0.0080 | 0.11 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 48.8 | 4,711 | 0.0100 | 1.61 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 64.1 | 4,811 | Total | | | |

### Subcatchment EX-DA-2: NORTH DRAINAGE DITCH






## Summary for Subcatchment EX-DA-3: WEST DRAINAGE DITCH

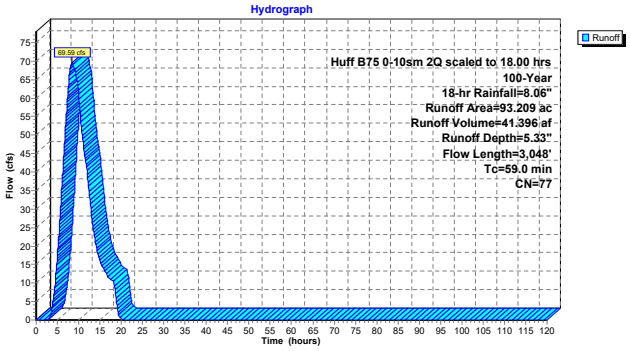
Runoff = 69.59 cfs @ 8.45 hrs, Volume= 41.396 af, Depth= 5.33"
Routed to nonexistent node 1L

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 18.00 hrs 100-Year, 18-hr Rainfall=8.06"

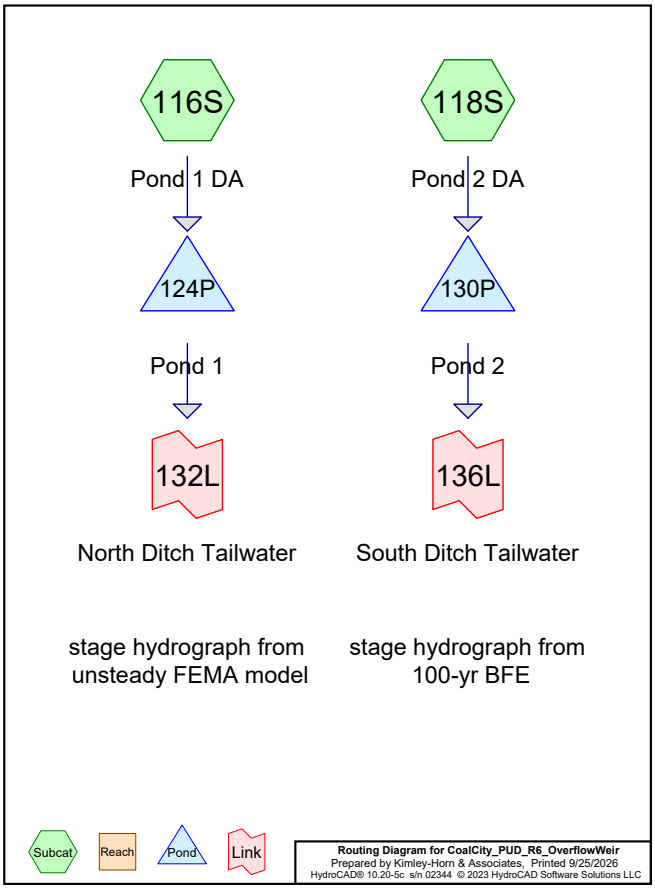
| Area (ac) | CN | Description |
|---|---|---|
| 13.930 | 82 | 2 acre lots, 12% imp, HSG D |
| 34.741 | 64 | Row crops, SR + CR, Good, HSG A |
| 44.538 | 85 | Row crops, SR + CR, Good, HSG D |
| 93.209 | 77 | Weighted Average |
| 91.537 | | 98.21% Pervious Area |
| 1.672 | | 1.79% Impervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 11.9 | 100 | 0.0150 | 0.14 | | **Sheet Flow,** Cultivated: Residue>20% n= 0.170 P2= 3.34" |
| 47.1 | 2,948 | 0.0042 | 1.04 | | **Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps |
| 59.0 | 3,048 | Total | | | |

### Subcatchment EX-DA-3: WEST DRAINAGE DITCH



# EMERGENCY OVERFLOW WEIR HYDROCAD REPORT






**Rainfall Events Listing (selected events)**

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 100-Year | Huff B75 0-10sm | 3Q | Scale | 24.00 | 1 | 8.57 | 2 |
| 2 | 100-Year, 30-min | Huff B75 0-10sm | 1Q | Scale | 0.50 | 1 | 3.17 | 2 |
| 3 | 100-Year, 1-hr | Huff B75 0-10sm | 1Q | Scale | 1.00 | 1 | 4.03 | 2 |
| 4 | 100-Year, 2-hr | Huff B75 0-10sm | 1Q | Scale | 2.00 | 1 | 4.97 | 2 |
| 5 | 100-Year, 3-hr | Huff B75 0-10sm | 1Q | Scale | 3.00 | 1 | 5.49 | 2 |
| 6 | 100-Year, 6-hr | Huff B75 0-10sm | 1Q | Scale | 6.00 | 1 | 6.43 | 2 |
| 7 | 100-Year, 12-hr | Huff B75 0-10sm | 2Q | Scale | 12.00 | 1 | 7.46 | 2 |
| 8 | 100-Year, 18-hr | Huff B75 0-10sm | 2Q | Scale | 18.00 | 1 | 8.06 | 2 |



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=7.01"
Tc=10.0 min CN=87 Runoff=91.73 cfs 72.875 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=7.13"
Tc=10.0 min CN=88 Runoff=112.60 cfs 90.353 af

**Pond 124P: Pond 1** Peak Elev=566.13' Storage=72.780 af Inflow=91.73 cfs 72.875 af
Outflow=1.51 cfs 1.825 af

**Pond 130P: Pond 2** Peak Elev=563.73' Storage=90.353 af Inflow=112.60 cfs 90.353 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=1.51 cfs 1.825 af
Primary=1.51 cfs 1.825 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 163.228 af Average Runoff Depth = 7.07"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



**Summary for Subcatchment 116S: Pond 1 DA**

r6 DAs

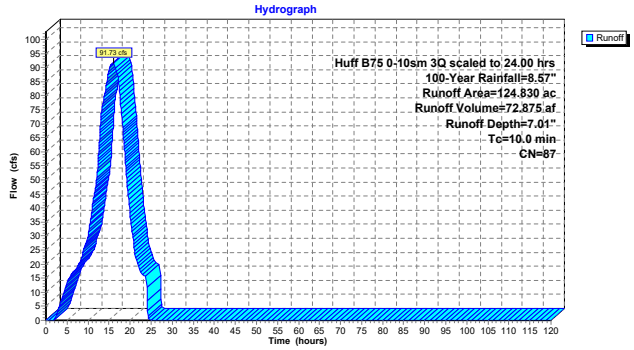
Runoff = 91.73 cfs @ 16.08 hrs, Volume= 72.875 af, Depth= 7.01"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | Direct Entry, Max Allowed for Metropolitan Water Reclamation |

**Subcatchment 116S: Pond 1 DA**



## Summary for Subcatchment 118S: Pond 2 DA

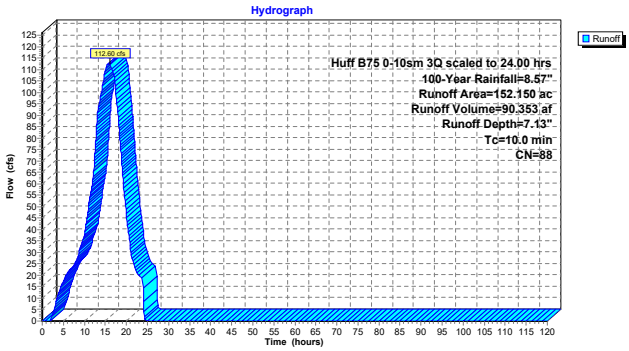
Runoff = 112.60 cfs @ 16.07 hrs, Volume= 90.353 af, Depth= 7.13"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 3Q scaled to 24.00 hrs 100-Year Rainfall=8.57"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 7.01" for 100-Year event
Inflow = 91.73 cfs @ 16.08 hrs, Volume= 72.875 af
Outflow = 1.51 cfs @ 24.28 hrs, Volume= 1.825 af, Atten= 98%, Lag= 492.0 min
Primary = 1.51 cfs @ 24.28 hrs, Volume= 1.825 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 566.13' @ 24.28 hrs Surf.Area= 14.190 ac Storage= 72.780 af

Plug-Flow detention time= 2,237.5 min calculated for 1.824 af (3% of inflow)
Center-of-Mass det. time= 1,599.9 min ( 2,489.7 - 889.8 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

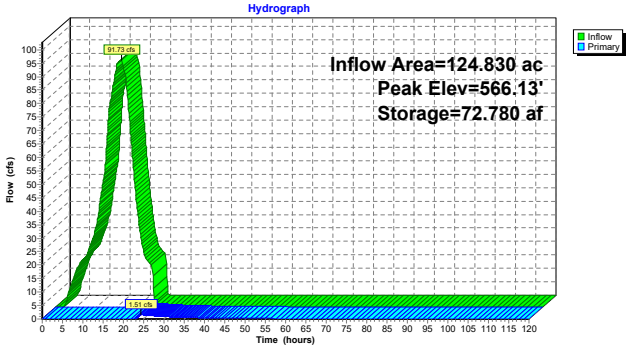
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=1.51 cfs @ 24.28 hrs HW=566.13' TW=563.37' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.51 cfs @ 1.17 fps)



### Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 7.13" for 100-Year event
Inflow = 112.60 cfs @ 16.07 hrs, Volume= 90.353 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.73' @ 24.60 hrs Surf.Area= 24.210 ac Storage= 90.353 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

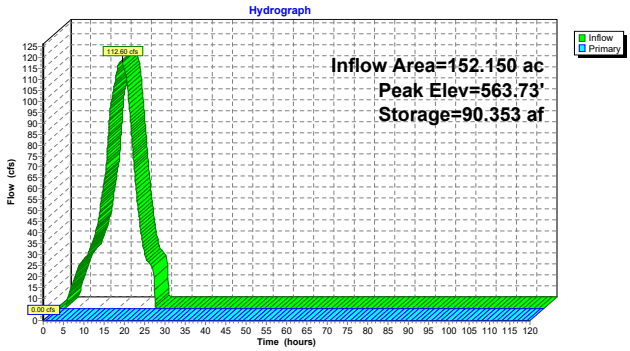
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

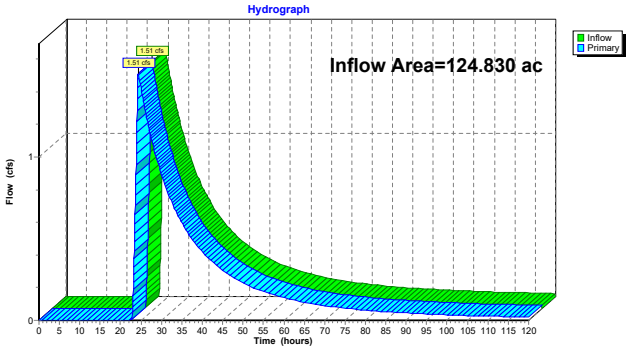
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth > 0.18" for 100-Year event
Inflow = 1.51 cfs @ 24.28 hrs, Volume= 1.825 af
Primary = 1.51 cfs @ 24.33 hrs, Volume= 1.825 af, Atten= 0%, Lag= 3.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 4.43' @ 14.00 hrs (44.56 cfs 41.339 af)

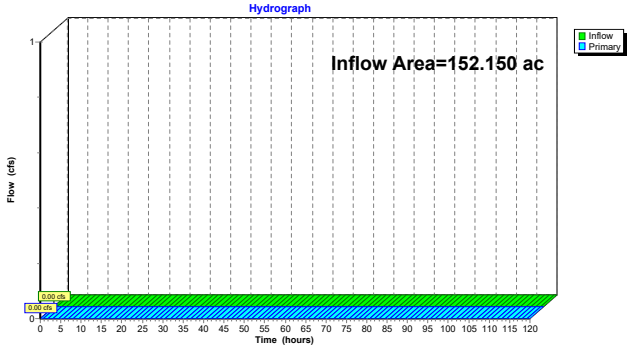
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

## Link 136L: South Ditch Tailwater






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=1.89"
Tc=10.0 min CN=87 Runoff=759.15 cfs 19.644 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=1.97"
Tc=10.0 min CN=88 Runoff=971.13 cfs 24.979 af

**Pond 124P: Pond 1** Peak Elev=562.38' Storage=19.644 af Inflow=759.15 cfs 19.644 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=561.03' Storage=24.979 af Inflow=971.13 cfs 24.979 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 44.622 af Average Runoff Depth = 1.93"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

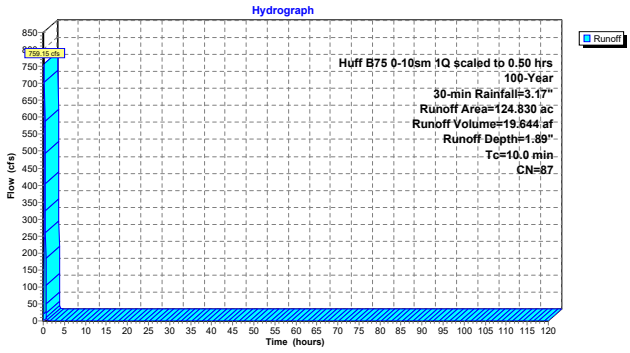
Runoff = 759.15 cfs @ 0.26 hrs, Volume= 19.644 af, Depth= 1.89"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 0.50 hrs 100-Year, 30-min Rainfall=3.17"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

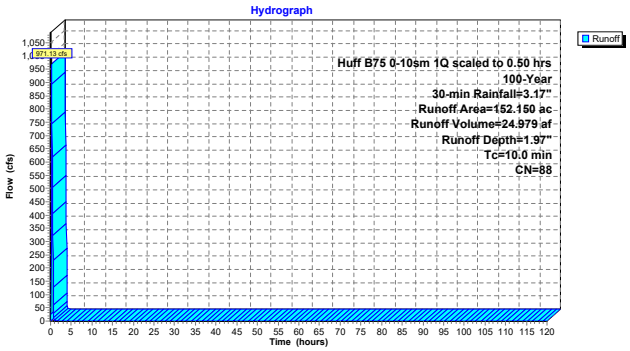
Runoff = 971.13 cfs @ 0.26 hrs, Volume= 24.979 af, Depth= 1.97"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 0.50 hrs 100-Year, 30-min Rainfall=3.17"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 1.89" for 100-Year, 30-min event
Inflow = 759.15 cfs @ 0.26 hrs, Volume= 19.644 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 562.38' @ 1.10 hrs Surf.Area= 14.190 ac Storage= 19.644 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)**Listed below |

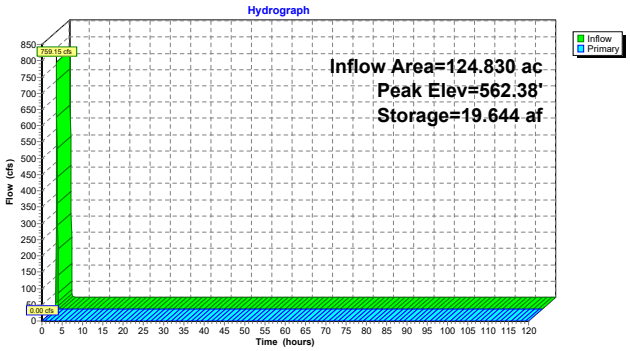
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 124P: Pond 1



## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 1.97" for 100-Year, 30-min event
Inflow = 971.13 cfs @ 0.26 hrs, Volume= 24.979 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 561.03' @ 1.10 hrs Surf.Area= 24.210 ac Storage= 24.979 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)**Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)**Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

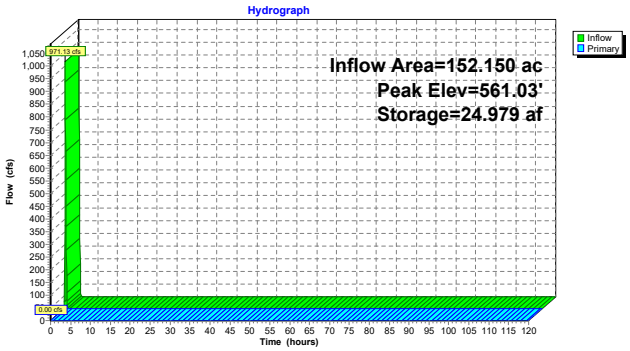
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

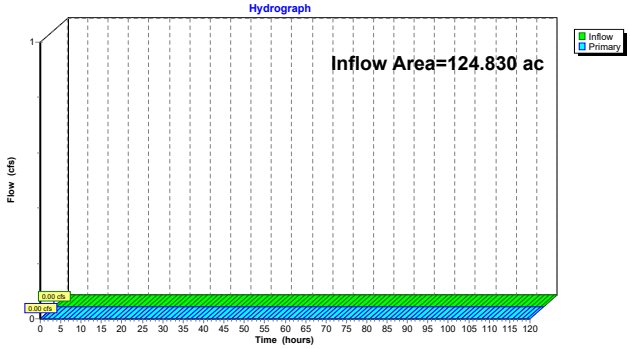
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 30-min event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 4.82' @ 14.00 hrs (44.56 cfs 41.339 af)

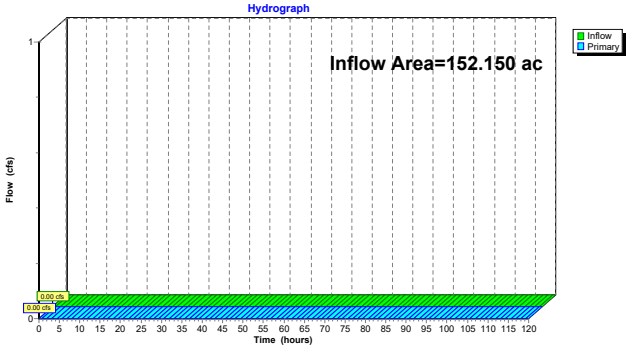
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 30-min event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

## Link 136L: South Ditch Tailwater



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=2.66"
Tc=10.0 min CN=87 Runoff=703.48 cfs 27.714 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=2.76"
Tc=10.0 min CN=88 Runoff=891.59 cfs 34.953 af

**Pond 124P: Pond 1** Peak Elev=562.95' Storage=27.714 af Inflow=703.48 cfs 27.714 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=561.44' Storage=34.953 af Inflow=891.59 cfs 34.953 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 62.668 af Average Runoff Depth = 2.72"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

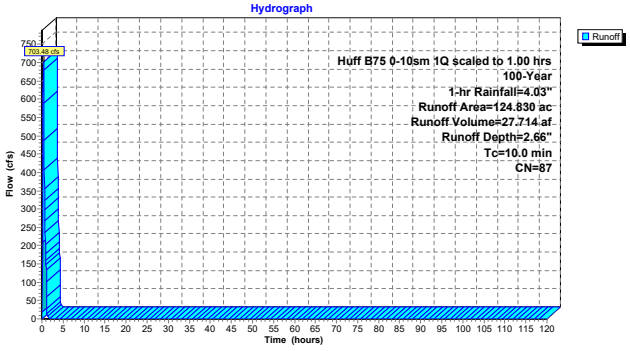
Runoff = 703.48 cfs @ 0.36 hrs, Volume= 27.714 af, Depth= 2.66"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 1.00 hrs 100-Year, 1-hr Rainfall=4.03"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

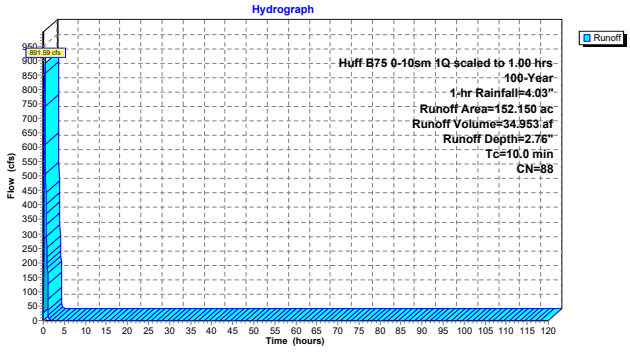
Runoff = 891.59 cfs @ 0.36 hrs, Volume= 34.953 af, Depth= 2.76"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 1.00 hrs 100-Year, 1-hr Rainfall=4.03"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 2.66" for 100-Year, 1-hr event
Inflow = 703.48 cfs @ 0.36 hrs, Volume= 27.714 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 562.95' @ 1.60 hrs Surf.Area= 14.190 ac Storage= 27.714 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

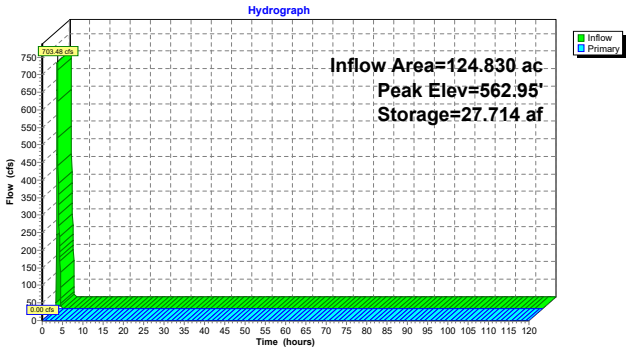
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 2.76" for 100-Year, 1-hr event
Inflow = 891.59 cfs @ 0.36 hrs, Volume= 34.953 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 561.44' @ 1.60 hrs Surf.Area= 24.210 ac Storage= 34.953 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)**Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)**Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

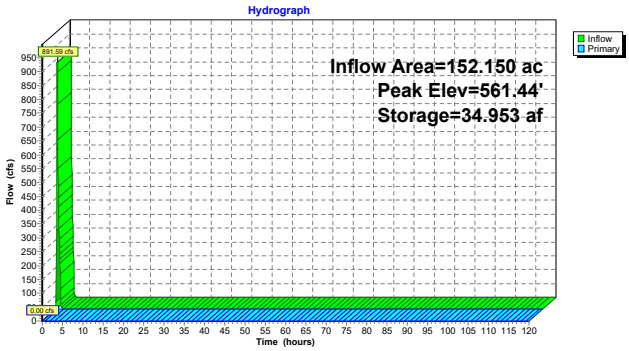
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

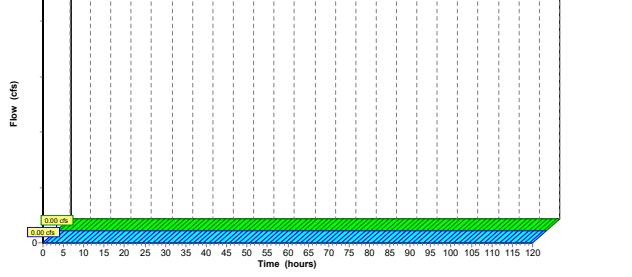
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 1-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater



## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 4.41' @ 14.00 hrs (44.56 cfs 41.339 af)

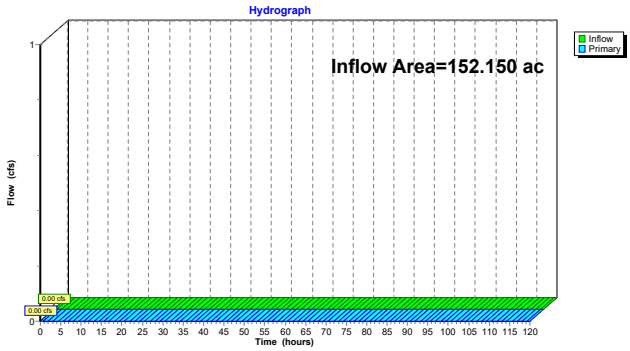
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 1-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

### Link 136L: South Ditch Tailwater






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=3.54"
Tc=10.0 min CN=87 Runoff=531.11 cfs 36.815 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=3.64"
Tc=10.0 min CN=88 Runoff=668.40 cfs 46.158 af

**Pond 124P: Pond 1** Peak Elev=563.59' Storage=36.815 af Inflow=531.11 cfs 36.815 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=561.91' Storage=46.158 af Inflow=668.40 cfs 46.158 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 82.973 af Average Runoff Depth = 3.59"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

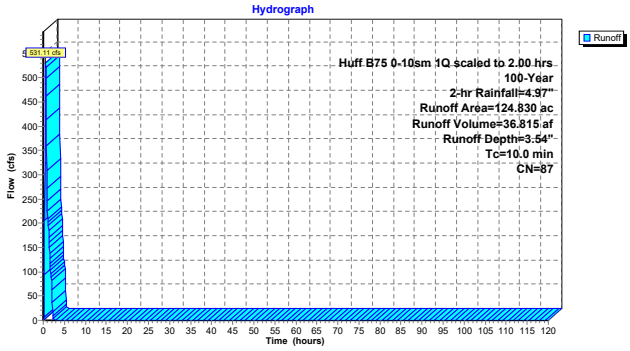
Runoff = 531.11 cfs @ 0.55 hrs, Volume= 36.815 af, Depth= 3.54"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 2.00 hrs 100-Year, 2-hr Rainfall=4.97"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

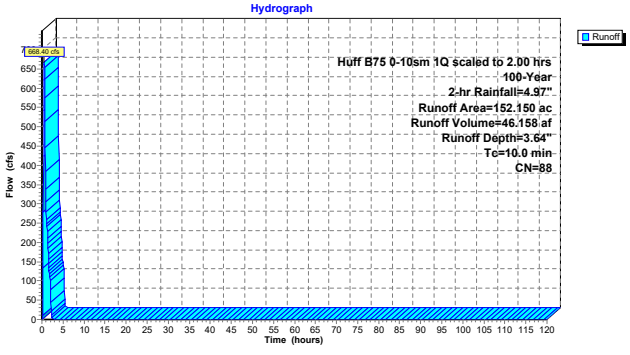
Runoff = 668.40 cfs @ 0.54 hrs, Volume= 46.158 af, Depth= 3.64"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 2.00 hrs 100-Year, 2-hr Rainfall=4.97"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA



## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 3.54" for 100-Year, 2-hr event
Inflow = 531.11 cfs @ 0.55 hrs, Volume= 36.815 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.59' @ 2.60 hrs Surf.Area= 14.190 ac Storage= 36.815 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)**Listed below |

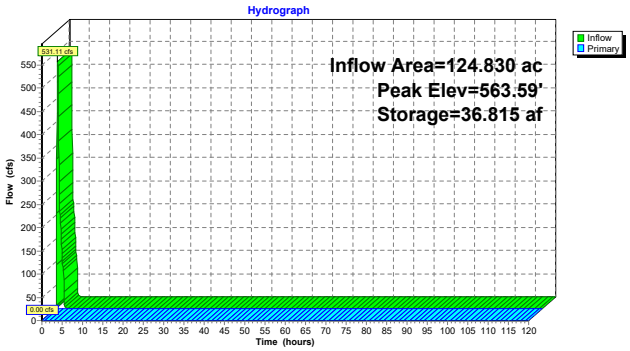
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 3.64" for 100-Year, 2-hr event
Inflow = 668.40 cfs @ 0.54 hrs, Volume= 46.158 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 561.91' @ 2.60 hrs Surf.Area= 24.210 ac Storage= 46.158 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)**Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)**Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

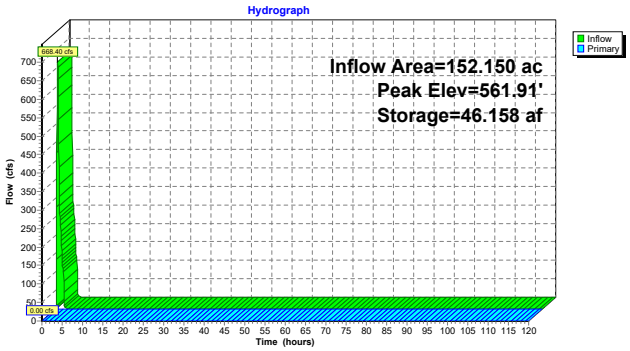
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 130P: Pond 2



## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

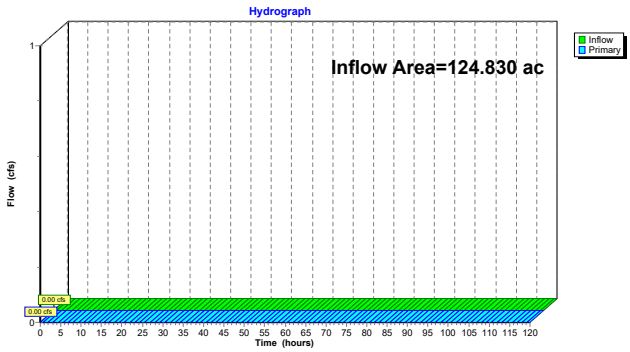
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 2-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

### Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 3.94' @ 14.00 hrs (44.56 cfs 41.339 af)

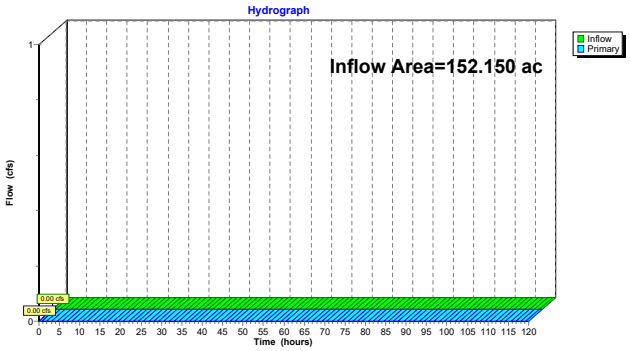
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 2-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

### Link 136L: South Ditch Tailwater






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=4.03"
Tc=10.0 min CN=87 Runoff=417.81 cfs 41.931 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=4.14"
Tc=10.0 min CN=88 Runoff=524.74 cfs 52.444 af

**Pond 124P: Pond 1** Peak Elev=563.95' Storage=41.931 af Inflow=417.81 cfs 41.931 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=562.17' Storage=52.444 af Inflow=524.74 cfs 52.444 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 94.375 af Average Runoff Depth = 4.09"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

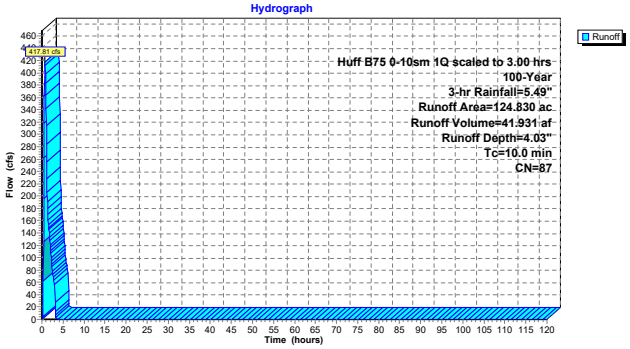
Runoff = 417.81 cfs @ 0.71 hrs, Volume= 41.931 af, Depth= 4.03"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 3.00 hrs 100-Year, 3-hr Rainfall=5.49"

| Area (ac) | CN | Description |
|---|---|---|
| * 124.830 | 87 | |
| 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA



## Summary for Subcatchment 118S: Pond 2 DA

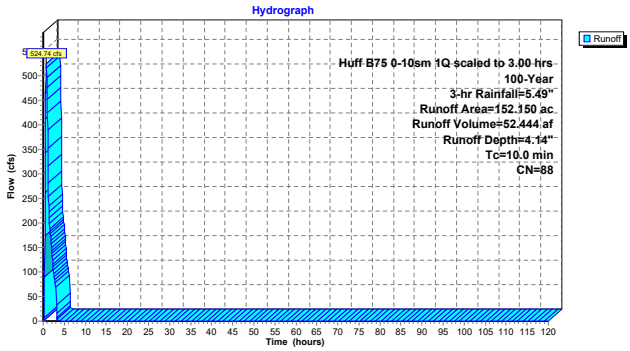
Runoff = 524.74 cfs @ 0.70 hrs, Volume= 52.444 af, Depth= 4.14"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 3.00 hrs 100-Year, 3-hr Rainfall=5.49"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 4.03" for 100-Year, 3-hr event
Inflow = 417.81 cfs @ 0.71 hrs, Volume= 41.931 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.95' @ 3.60 hrs Surf.Area= 14.190 ac Storage= 41.931 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

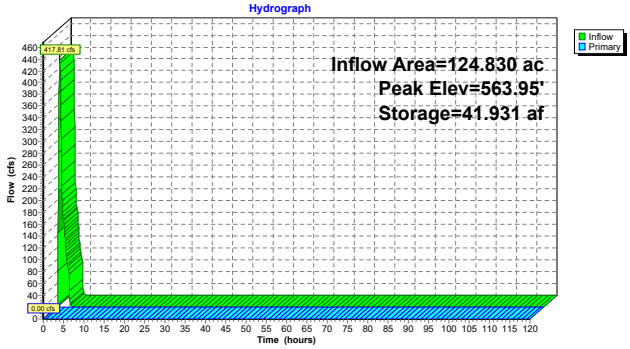
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



### Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 4.14" for 100-Year, 3-hr event
Inflow = 524.74 cfs @ 0.70 hrs, Volume= 52.444 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 562.17' @ 3.60 hrs Surf.Area= 24.210 ac Storage= 52.444 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

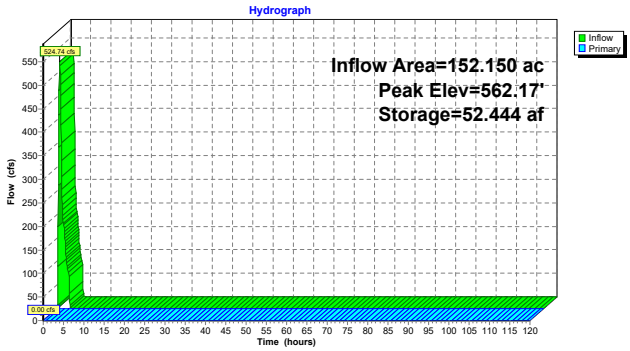
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

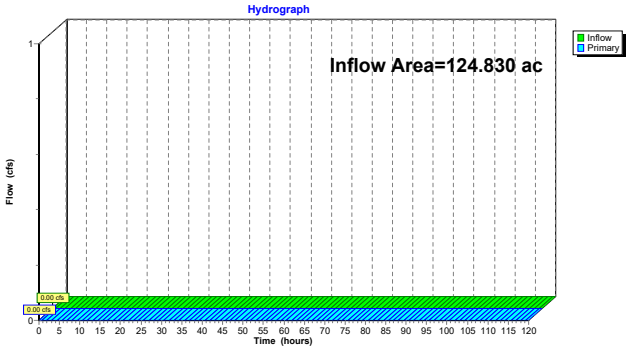
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 3-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 3.68' @ 14.00 hrs (44.56 cfs 41.339 af)

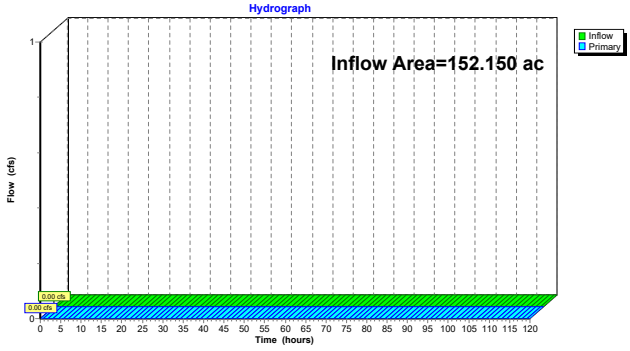
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 3-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

## Link 136L: South Ditch Tailwater






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=4.93"
Tc=10.0 min CN=87 Runoff=263.14 cfs 51.281 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=5.04"
Tc=10.0 min CN=88 Runoff=329.33 cfs 63.914 af

**Pond 124P: Pond 1** Peak Elev=564.61' Storage=51.281 af Inflow=263.14 cfs 51.281 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=562.64' Storage=63.914 af Inflow=329.33 cfs 63.914 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 115.195 af Average Runoff Depth = 4.99"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

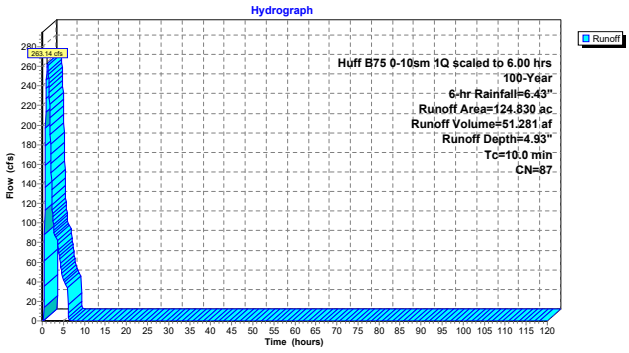
Runoff = 263.14 cfs @ 1.20 hrs, Volume= 51.281 af, Depth= 4.93"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 6.00 hrs 100-Year, 6-hr Rainfall=6.43"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

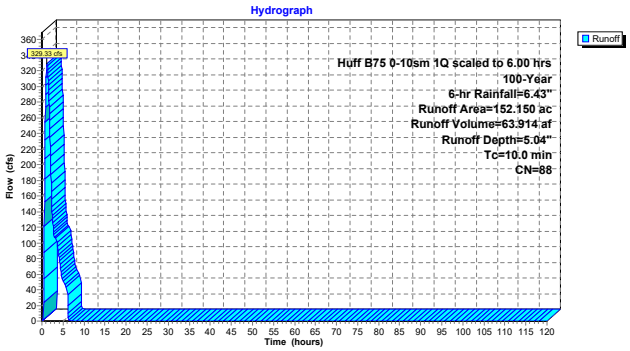
Runoff = 329.33 cfs @ 1.18 hrs, Volume= 63.914 af, Depth= 5.04"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 1Q scaled to 6.00 hrs 100-Year, 6-hr Rainfall=6.43"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 4.93" for 100-Year, 6-hr event
Inflow = 263.14 cfs @ 1.20 hrs, Volume= 51.281 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 564.61' @ 6.60 hrs Surf.Area= 14.190 ac Storage= 51.281 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

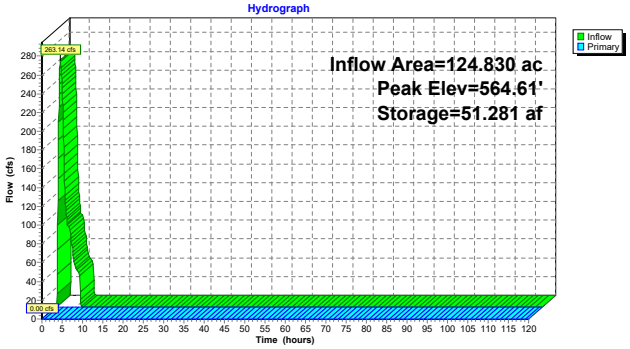
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 124P: Pond 1



## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 5.04" for 100-Year, 6-hr event
Inflow = 329.33 cfs @ 1.18 hrs, Volume= 63.914 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 562.64' @ 6.60 hrs Surf.Area= 24.210 ac Storage= 63.914 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

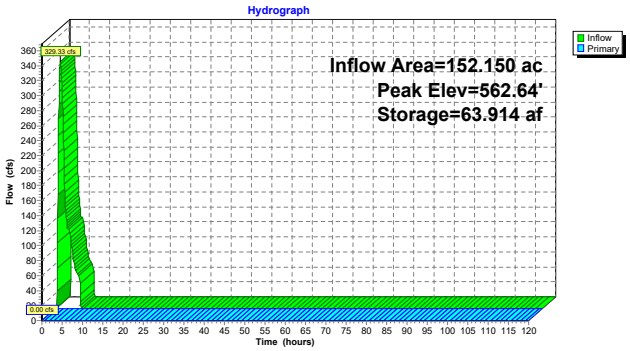
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

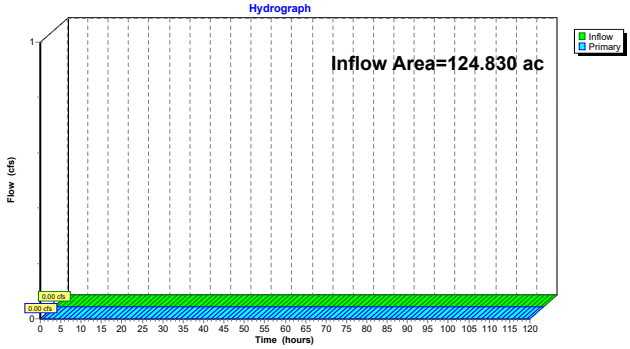
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 6-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 3.21' @ 14.00 hrs (44.56 cfs 41.339 af)

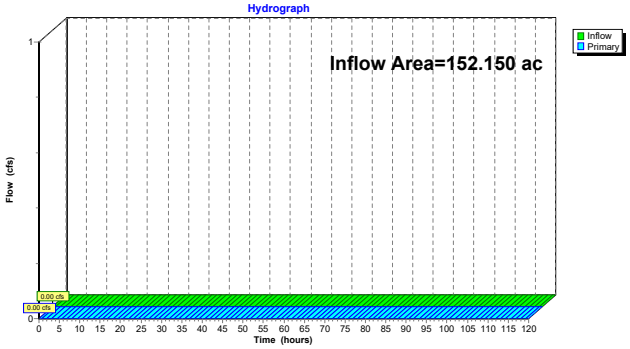
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 6-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

## Link 136L: South Ditch Tailwater



Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=5.92"
Tc=10.0 min CN=87 Runoff=154.34 cfs 61.633 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=6.04"
Tc=10.0 min CN=88 Runoff=190.66 cfs 76.596 af

**Pond 124P: Pond 1** Peak Elev=565.34' Storage=61.633 af Inflow=154.34 cfs 61.633 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=563.16' Storage=76.596 af Inflow=190.66 cfs 76.596 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 138.229 af Average Runoff Depth = 5.99"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

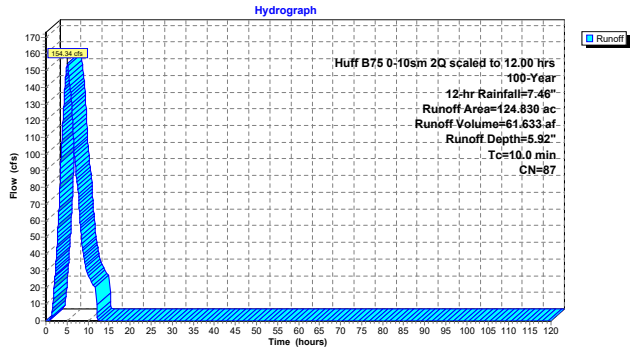
Runoff = 154.34 cfs @ 5.12 hrs, Volume= 61.633 af, Depth= 5.92"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 12.00 hrs 100-Year, 12-hr Rainfall=7.46"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

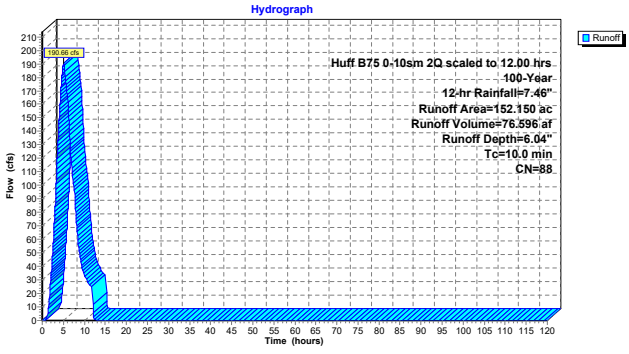
Runoff = 190.66 cfs @ 5.12 hrs, Volume= 76.596 af, Depth= 6.04"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 12.00 hrs 100-Year, 12-hr Rainfall=7.46"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA






## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 5.92" for 100-Year, 12-hr event
Inflow = 154.34 cfs @ 5.12 hrs, Volume= 61.633 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 565.34' @ 12.60 hrs Surf.Area= 14.190 ac Storage= 61.633 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

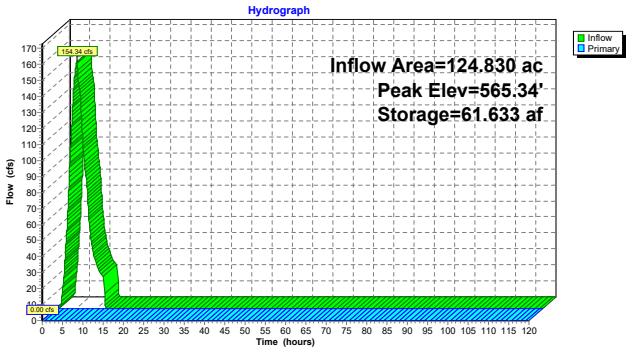
| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)** Listed below |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑—**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 6.04" for 100-Year, 12-hr event
Inflow = 190.66 cfs @ 5.12 hrs, Volume= 76.596 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.16' @ 12.60 hrs Surf.Area= 24.210 ac Storage= 76.596 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)** Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)** Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

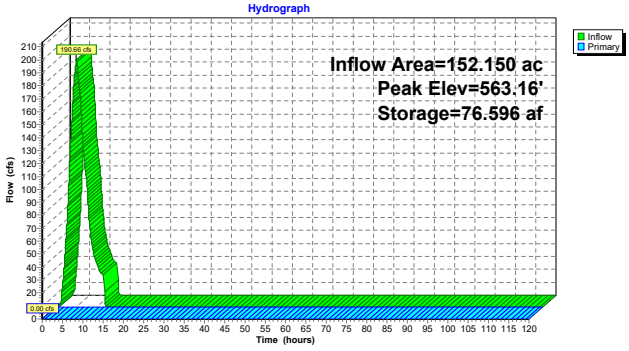
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 130P: Pond 2






## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

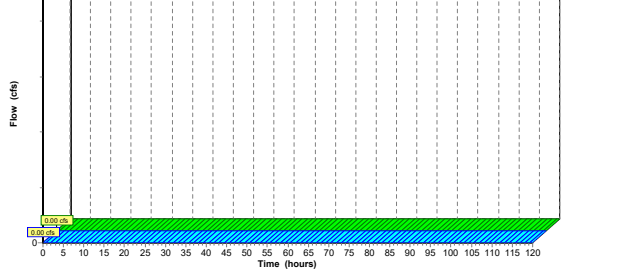
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 12-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

## Link 132L: North Ditch Tailwater



## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 2.69' @ 14.00 hrs (44.56 cfs 41.339 af)

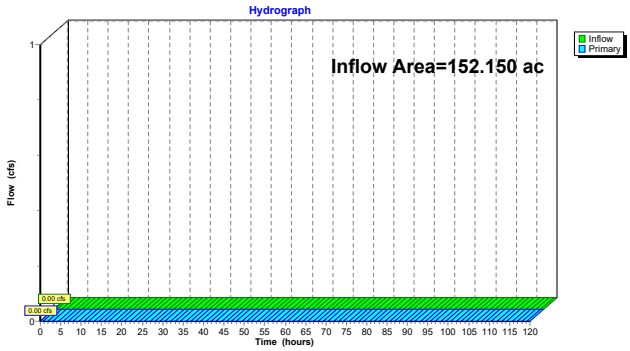
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 12-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

### Link 136L: South Ditch Tailwater






Time span=0.00-120.00 hrs, dt=0.05 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Sim-Route method - Pond routing by Sim-Route method

**Subcatchment116S: Pond 1 DA** Runoff Area=124.830 ac 0.00% Impervious Runoff Depth=6.51"
Tc=10.0 min CN=87 Runoff=112.70 cfs 67.701 af

**Subcatchment118S: Pond 2 DA** Runoff Area=152.150 ac 0.00% Impervious Runoff Depth=6.63"
Tc=10.0 min CN=88 Runoff=139.01 cfs 84.023 af

**Pond 124P: Pond 1** Peak Elev=565.77' Storage=67.701 af Inflow=112.70 cfs 67.701 af
Outflow=0.00 cfs 0.000 af

**Pond 130P: Pond 2** Peak Elev=563.47' Storage=84.023 af Inflow=139.01 cfs 84.023 af
Outflow=0.00 cfs 0.000 af

**Link 132L: North Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Link 136L: South Ditch Tailwater** Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

**Total Runoff Area = 276.980 ac Runoff Volume = 151.724 af Average Runoff Depth = 6.57"**
**100.00% Pervious = 276.980 ac 0.00% Impervious = 0.000 ac**



## Summary for Subcatchment 116S: Pond 1 DA

r6 DAs

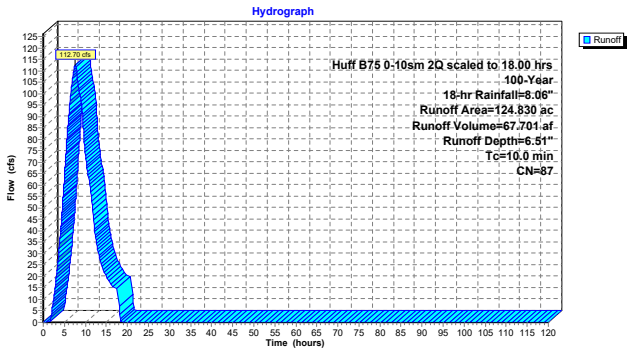
Runoff = 112.70 cfs @ 7.62 hrs, Volume= 67.701 af, Depth= 6.51"
Routed to Pond 124P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 18.00 hrs 100-Year, 18-hr Rainfall=8.06"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 124.830 | 87 | |
| | 124.830 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Max Allowed for Metropolitan Water Reclamation** |

### Subcatchment 116S: Pond 1 DA






## Summary for Subcatchment 118S: Pond 2 DA

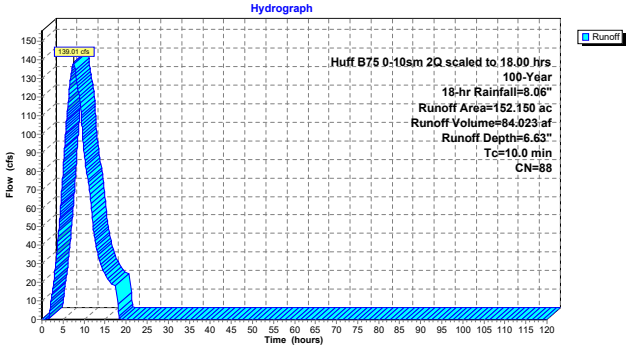
Runoff = 139.01 cfs @ 7.61 hrs, Volume= 84.023 af, Depth= 6.63"
Routed to Pond 130P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Huff B75 0-10sm 2Q scaled to 18.00 hrs 100-Year, 18-hr Rainfall=8.06"

| | Area (ac) | CN | Description |
|---|---|---|---|
| * | 152.150 | 88 | |
| | 152.150 | | 100.00% Pervious Area |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 10.0 | | | | | **Direct Entry, Est.** |

### Subcatchment 118S: Pond 2 DA



## Summary for Pond 124P: Pond 1

Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 6.51" for 100-Year, 18-hr event
Inflow = 112.70 cfs @ 7.62 hrs, Volume= 67.701 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 132L : North Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 565.77' @ 18.60 hrs Surf.Area= 14.190 ac Storage= 67.701 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 561.00' | 85.140 af | **Pond 1 Storage (Prismatic)**Listed below |

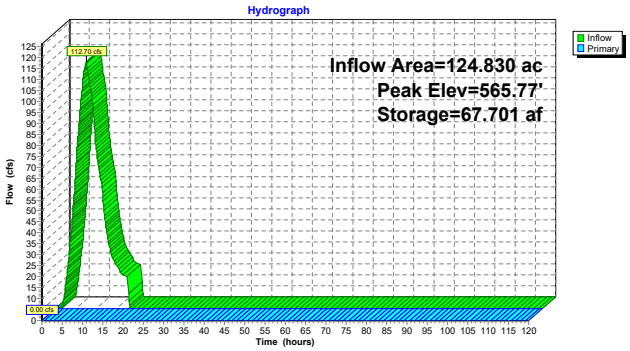
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 561.00 | 14.190 | 0.000 | 0.000 |
| 562.00 | 14.190 | 14.190 | 14.190 |
| 563.00 | 14.190 | 14.190 | 28.380 |
| 564.00 | 14.190 | 14.190 | 42.570 |
| 565.00 | 14.190 | 14.190 | 56.760 |
| 566.00 | 14.190 | 14.190 | 70.950 |
| 567.00 | 14.190 | 14.190 | 85.140 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 566.00' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=561.00' TW=560.60' (Dynamic Tailwater)
↑—**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 124P: Pond 1






## Summary for Pond 130P: Pond 2

Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 6.63" for 100-Year, 18-hr event
Inflow = 139.01 cfs @ 7.61 hrs, Volume= 84.023 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 136L : South Ditch Tailwater

Routing by Sim-Route method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
Peak Elev= 563.47' @ 18.60 hrs Surf.Area= 24.210 ac Storage= 84.023 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 560.00' | 154.140 af | **Pond 3 storage (Prismatic)**Listed below |
| #2 | 560.00' | 15.330 af | **Pond 2 Storage (Prismatic)**Listed below |
| | | 169.470 af | Total Available Storage |

| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 22.020 | 0.000 | 0.000 |
| 561.00 | 22.020 | 22.020 | 22.020 |
| 562.00 | 22.020 | 22.020 | 44.040 |
| 563.00 | 22.020 | 22.020 | 66.060 |
| 564.00 | 22.020 | 22.020 | 88.080 |
| 565.00 | 22.020 | 22.020 | 110.100 |
| 566.00 | 22.020 | 22.020 | 132.120 |
| 567.00 | 22.020 | 22.020 | 154.140 |

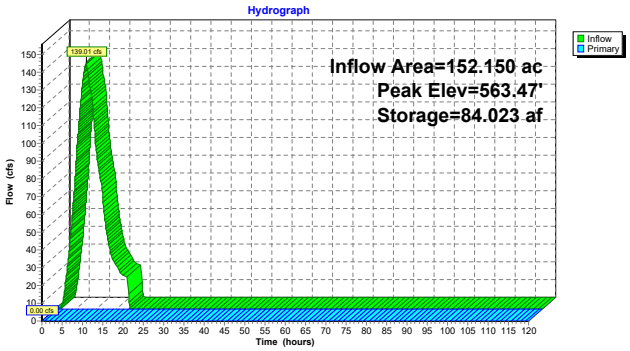
| Elevation (feet) | Surf.Area (acres) | Inc.Store (acre-feet) | Cum.Store (acre-feet) |
|---|---|---|---|
| 560.00 | 2.190 | 0.000 | 0.000 |
| 561.00 | 2.190 | 2.190 | 2.190 |
| 562.00 | 2.190 | 2.190 | 4.380 |
| 563.00 | 2.190 | 2.190 | 6.570 |
| 564.00 | 2.190 | 2.190 | 8.760 |
| 565.00 | 2.190 | 2.190 | 10.950 |
| 566.00 | 2.190 | 2.190 | 13.140 |
| 567.00 | 2.190 | 2.190 | 15.330 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Primary | 564.60' | **10.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) |

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=560.00' TW=560.00' (Dynamic Tailwater)
↑—**1=Sharp-Crested Rectangular Weir** ( Controls 0.00 cfs)



## Pond 130P: Pond 2



## Summary for Link 132L: North Ditch Tailwater

From LOMR

100-yr: 567.5
500-yr: 567.6

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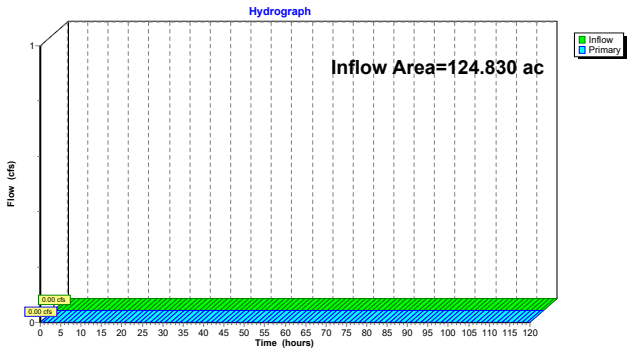
Inflow Area = 124.830 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 18-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

73 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.60 | 560.51 | 560.50 | 560.56 | 560.82 | 561.26 | 561.89 | 562.34 | 562.70 |
| 563.09 | 563.40 | 563.69 | 564.05 | 564.51 | 564.78 | 564.77 | 564.59 | 564.40 |
| 564.25 | 564.08 | 563.86 | 563.66 | 563.46 | 563.41 | 563.38 | 563.33 | 563.24 |
| 563.10 | 562.95 | 562.78 | 562.58 | 562.40 | 562.23 | 562.08 | 561.93 | 561.74 |
| 561.55 | 561.48 | 561.45 | 561.43 | 561.42 | 561.41 | 561.39 | 561.38 | 561.37 |
| 561.36 | 561.35 | 561.35 | 561.34 | 561.33 | 561.32 | 561.31 | 561.31 | 561.30 |
| 561.29 | 561.28 | 561.28 | 561.27 | 561.26 | 561.26 | 561.25 | 561.25 | 561.24 |
| 561.23 | 561.23 | 561.22 | 561.21 | 561.21 | 561.20 | 561.20 | 561.19 | 561.18 |
| 561.18 | | | | | | | | |

### Link 132L: North Ditch Tailwater






## Summary for Link 136L: South Ditch Tailwater

[80] Warning: Exceeded Pond 130P by 2.69' @ 14.00 hrs (44.56 cfs 41.339 af)

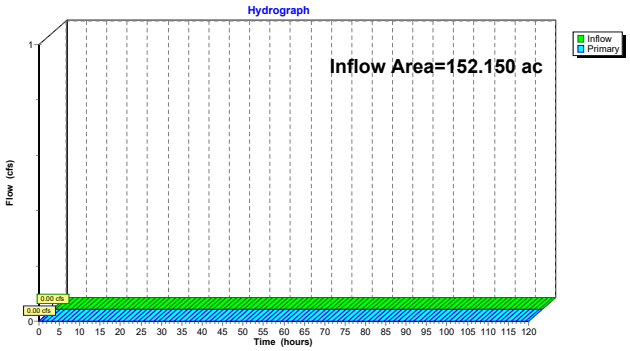
Inflow Area = 152.150 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-Year, 18-hr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

25 Point manual elevation table, To= 0.00 hrs, dt= 1.00 hrs, feet =

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 560.00 | 560.42 | 560.84 | 561.25 | 561.67 | 562.09 | 562.51 | 562.92 | 563.34 |
| 563.76 | 564.18 | 564.60 | 565.01 | 565.43 | 565.85 | 565.85 | 565.85 | 565.85 |
| 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | 565.85 | | |

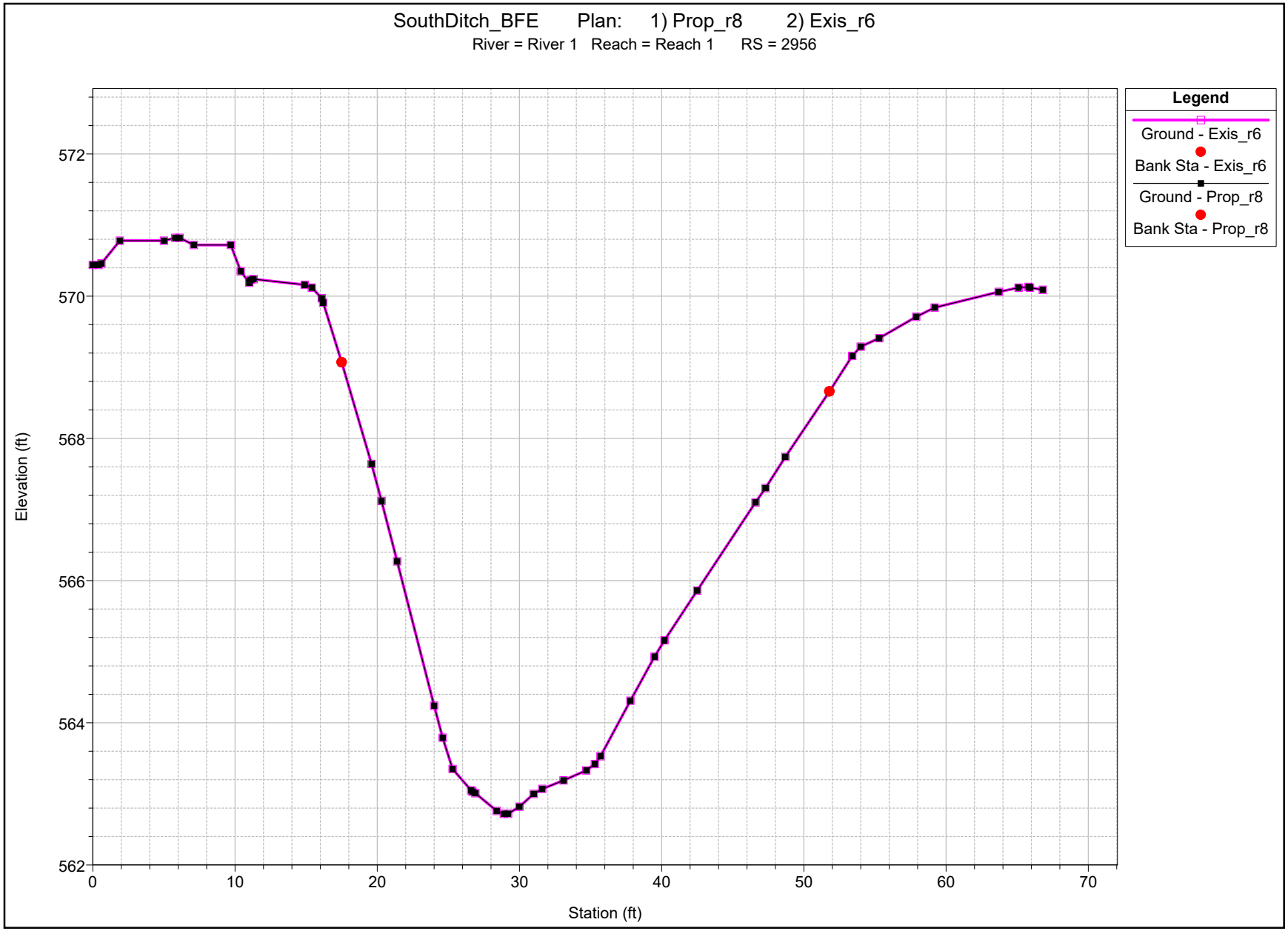
### Link 136L: South Ditch Tailwater



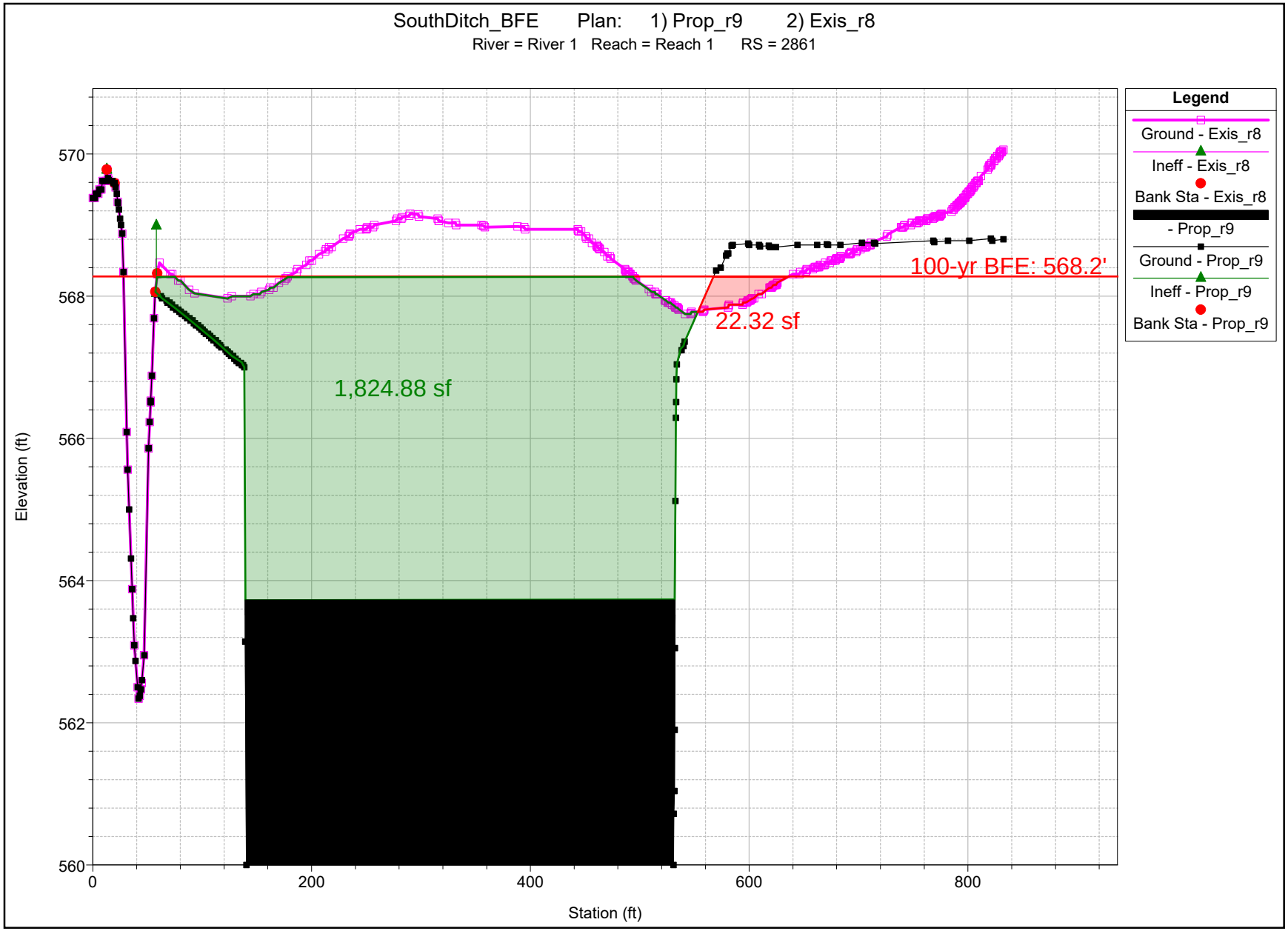
# Appendix F
# Compensatory Storage


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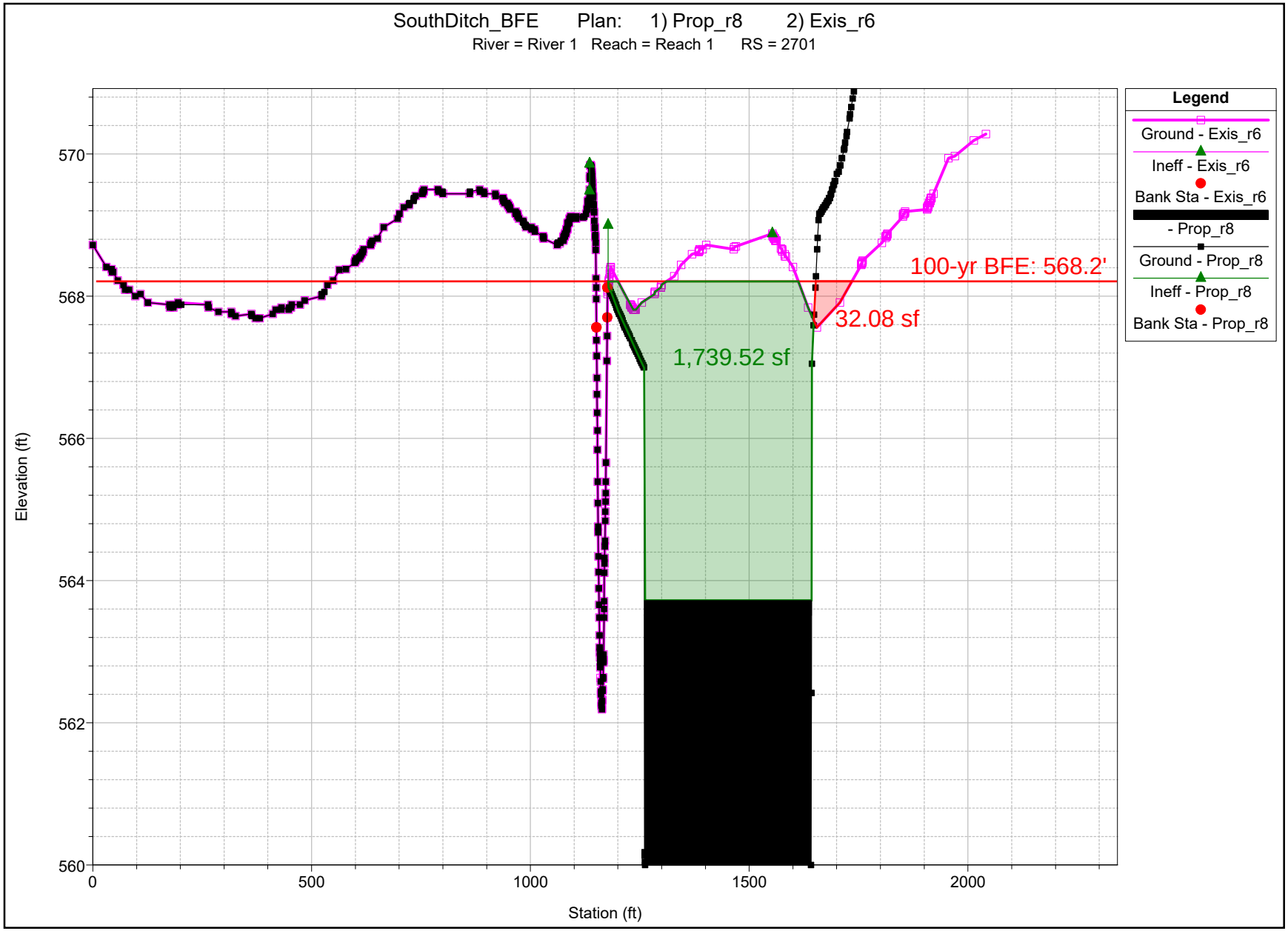
# SOUTH DITCH COMPENSATORY STORAGE CROSS SECTIONS



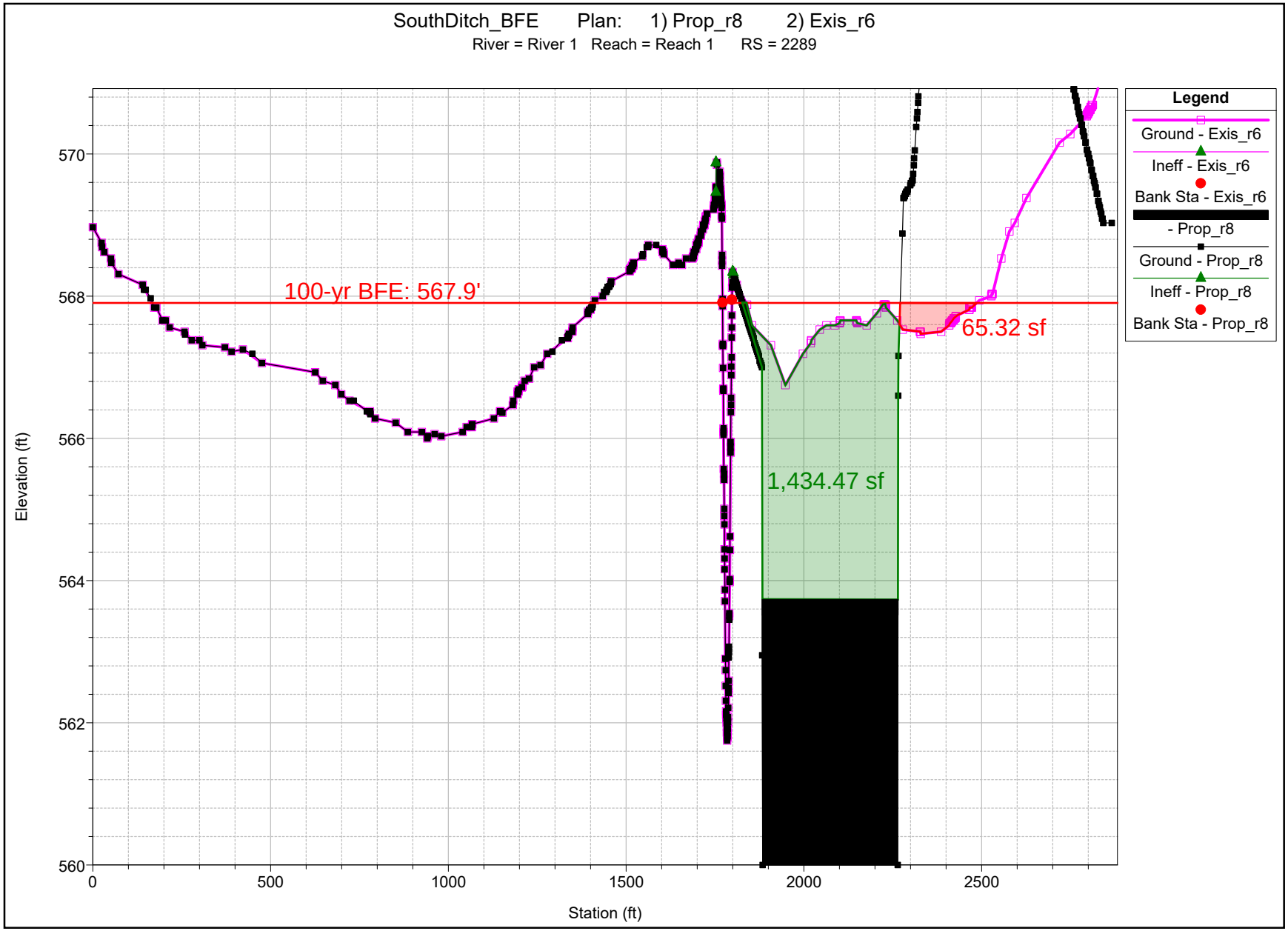

1 in Horiz. = 10 ft 1 in Vert. = 2 ft



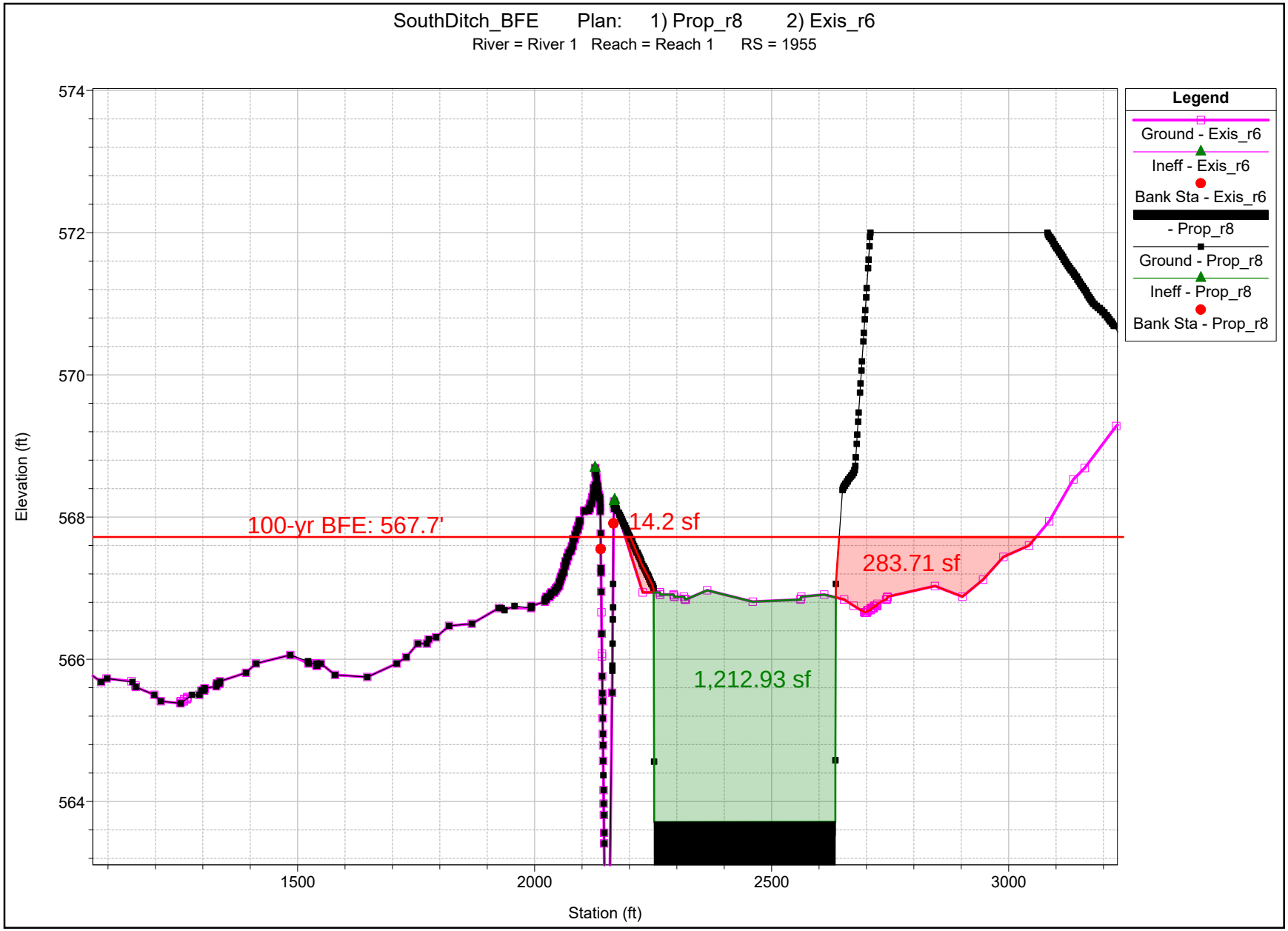

1 in Horiz. = 130 ft 1 in Vert. = 2 ft



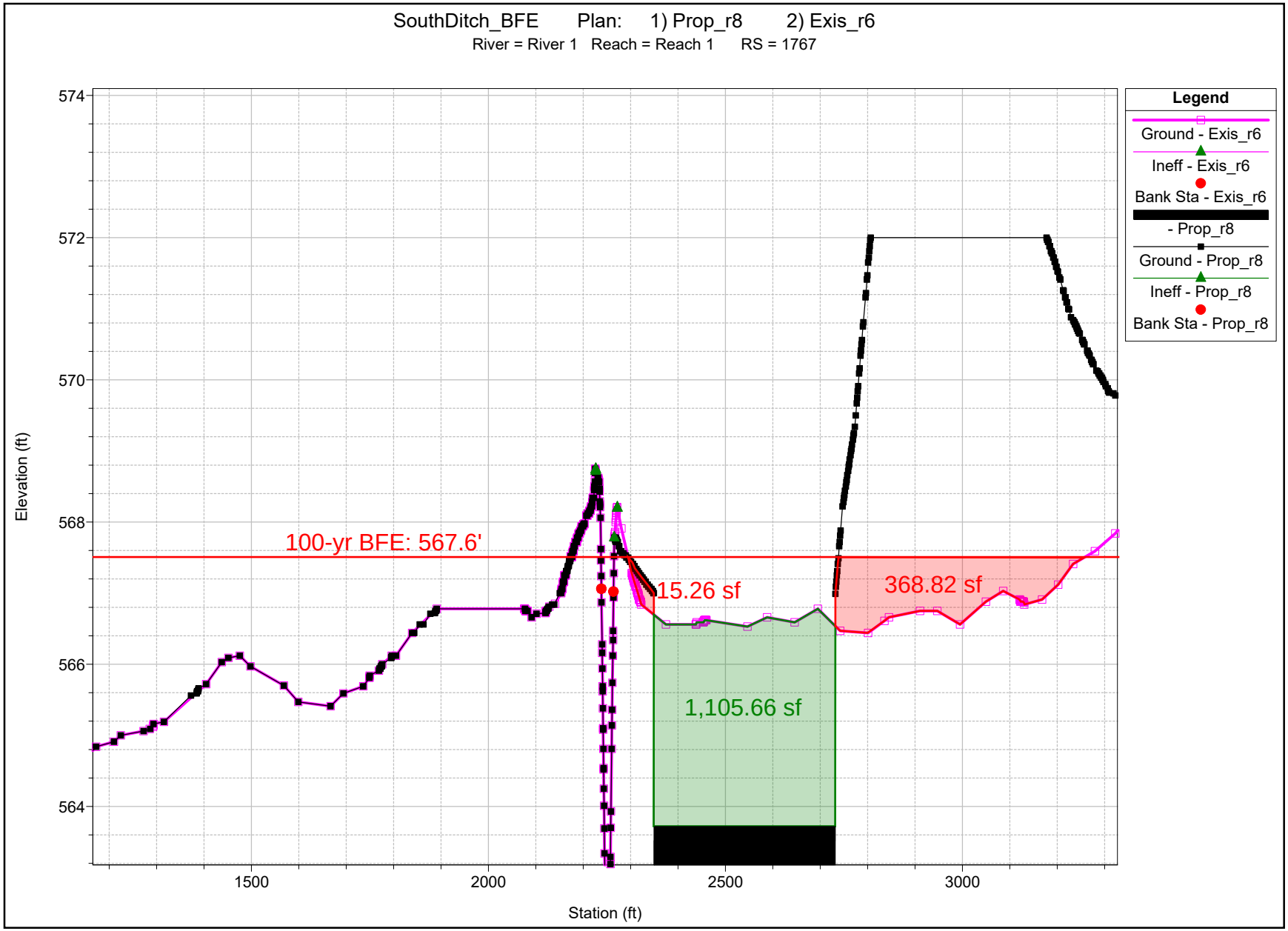

1 in Horiz. = 325 ft 1 in Vert. = 2 ft



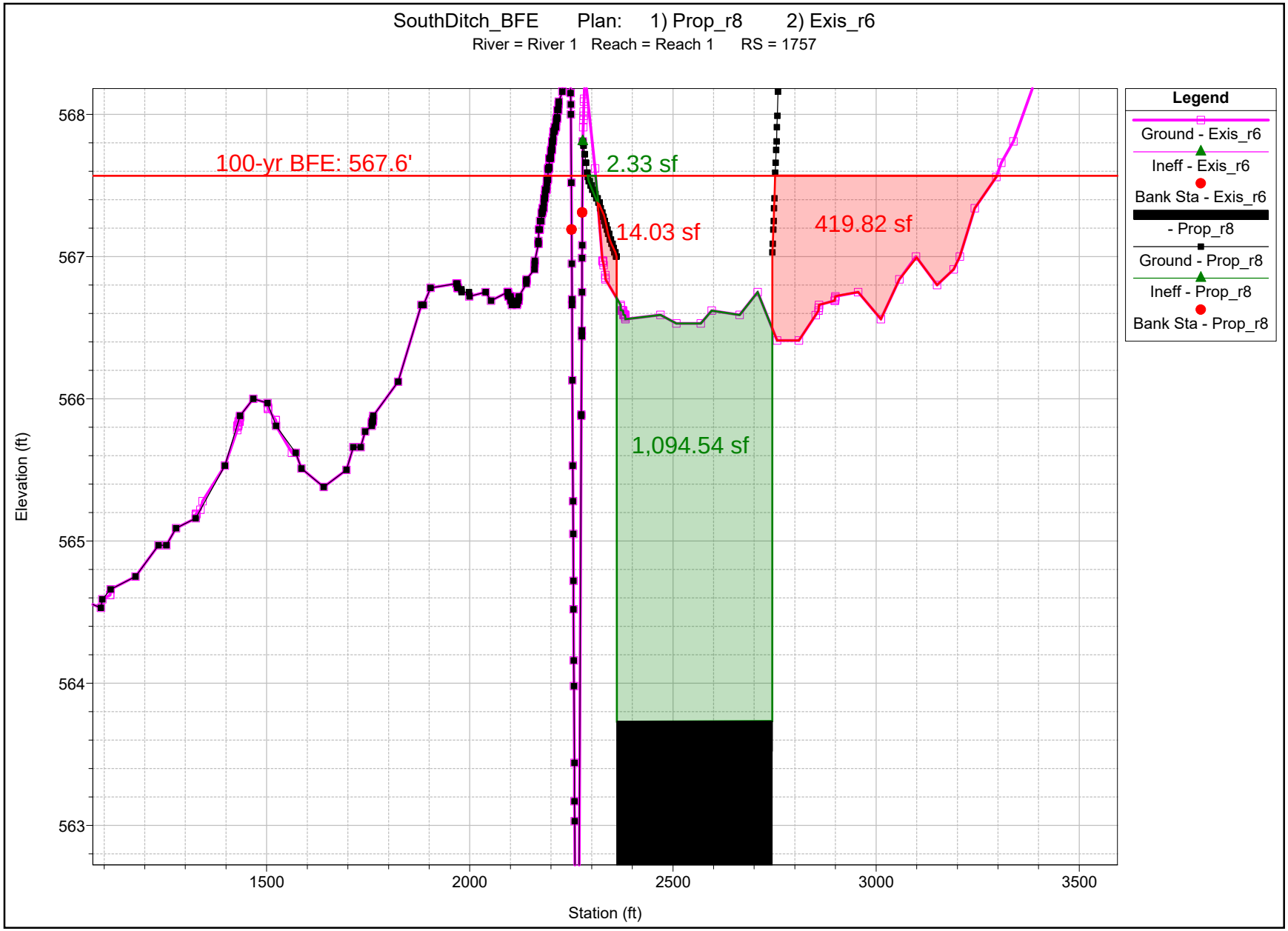

1 in Horiz. = 400 ft 1 in Vert. = 2 ft



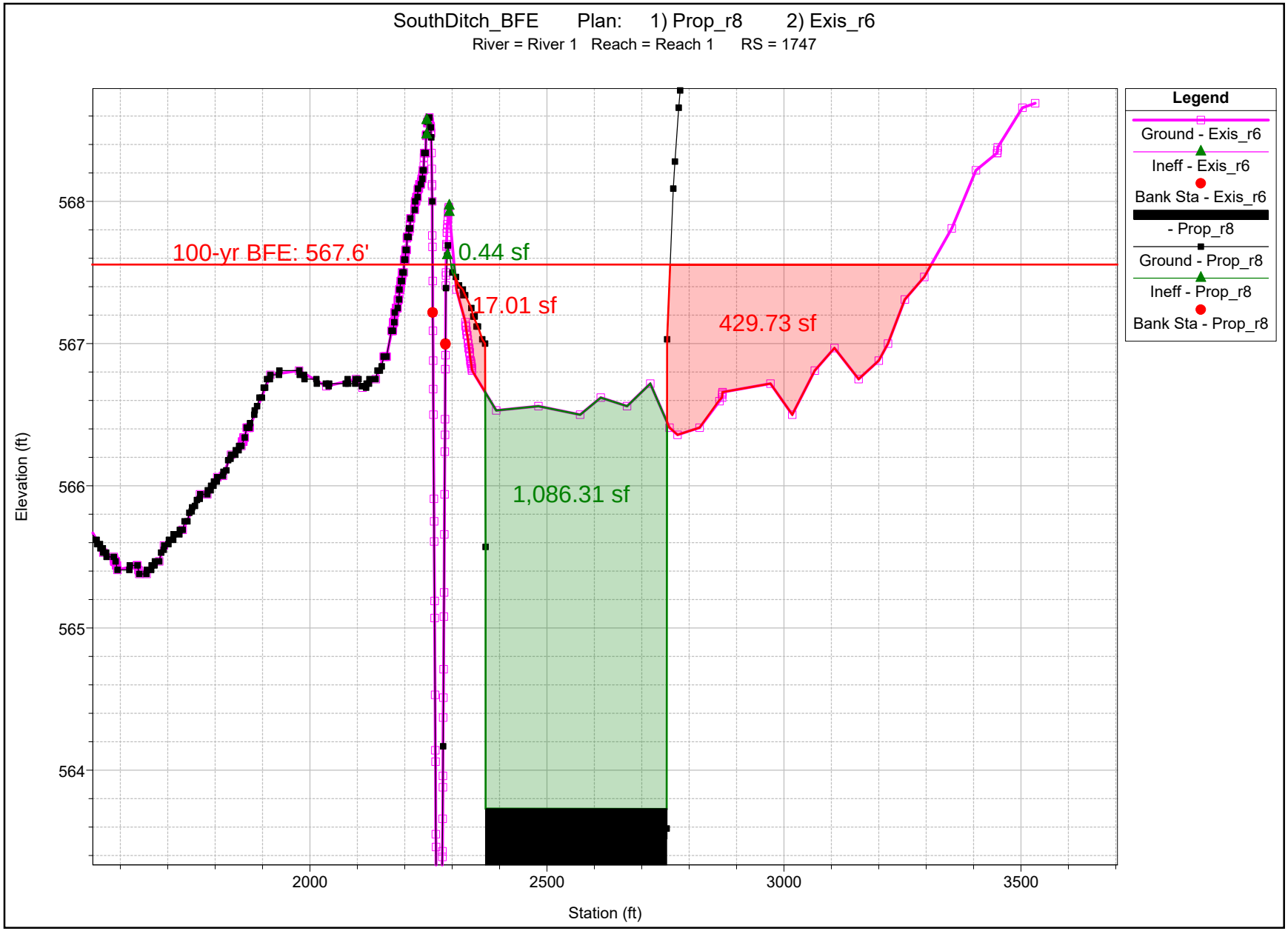

1 in Horiz. = 300 ft 1 in Vert. = 2 ft



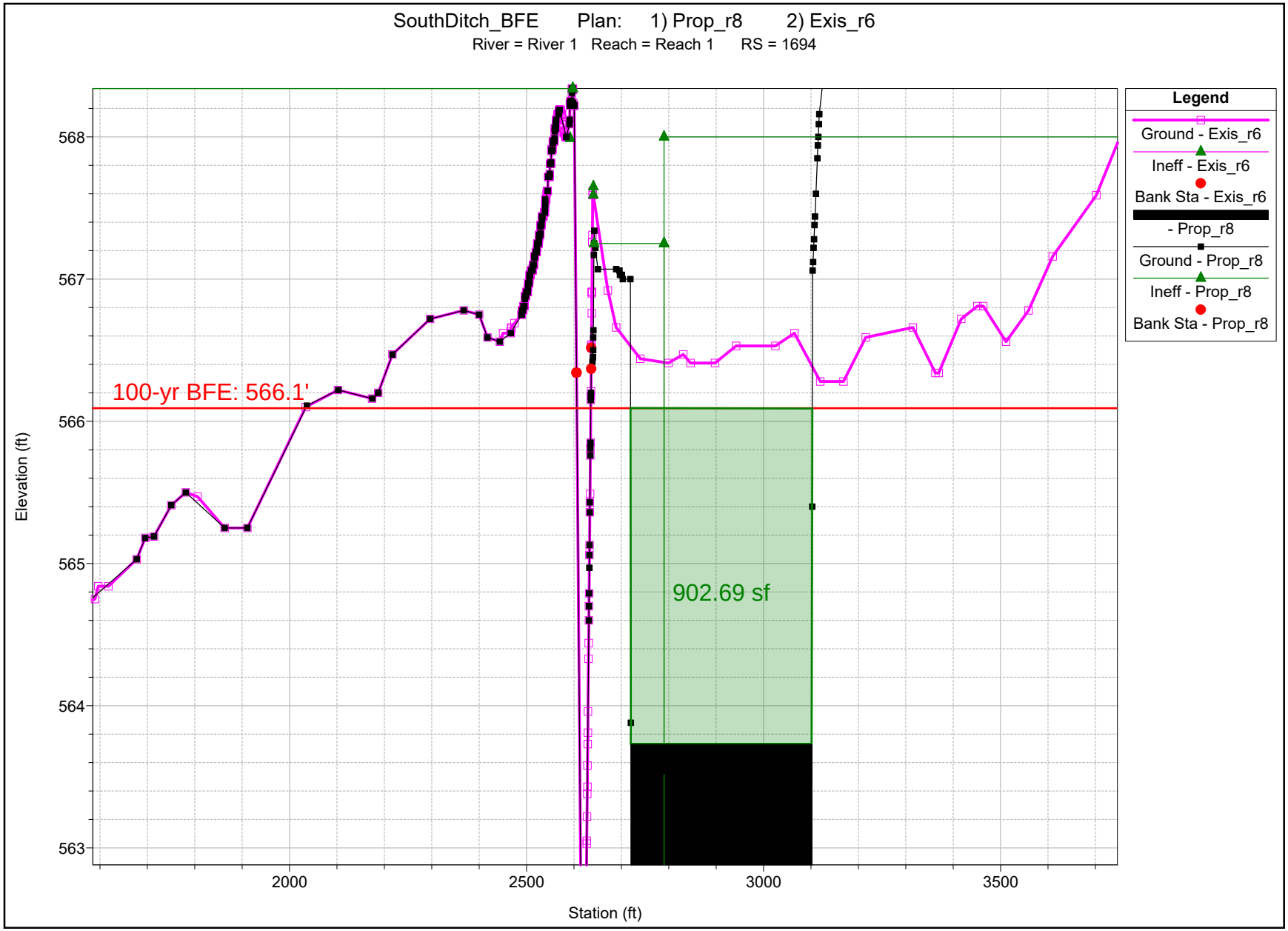

1 in Horiz. = 300 ft 1 in Vert. = 2 ft



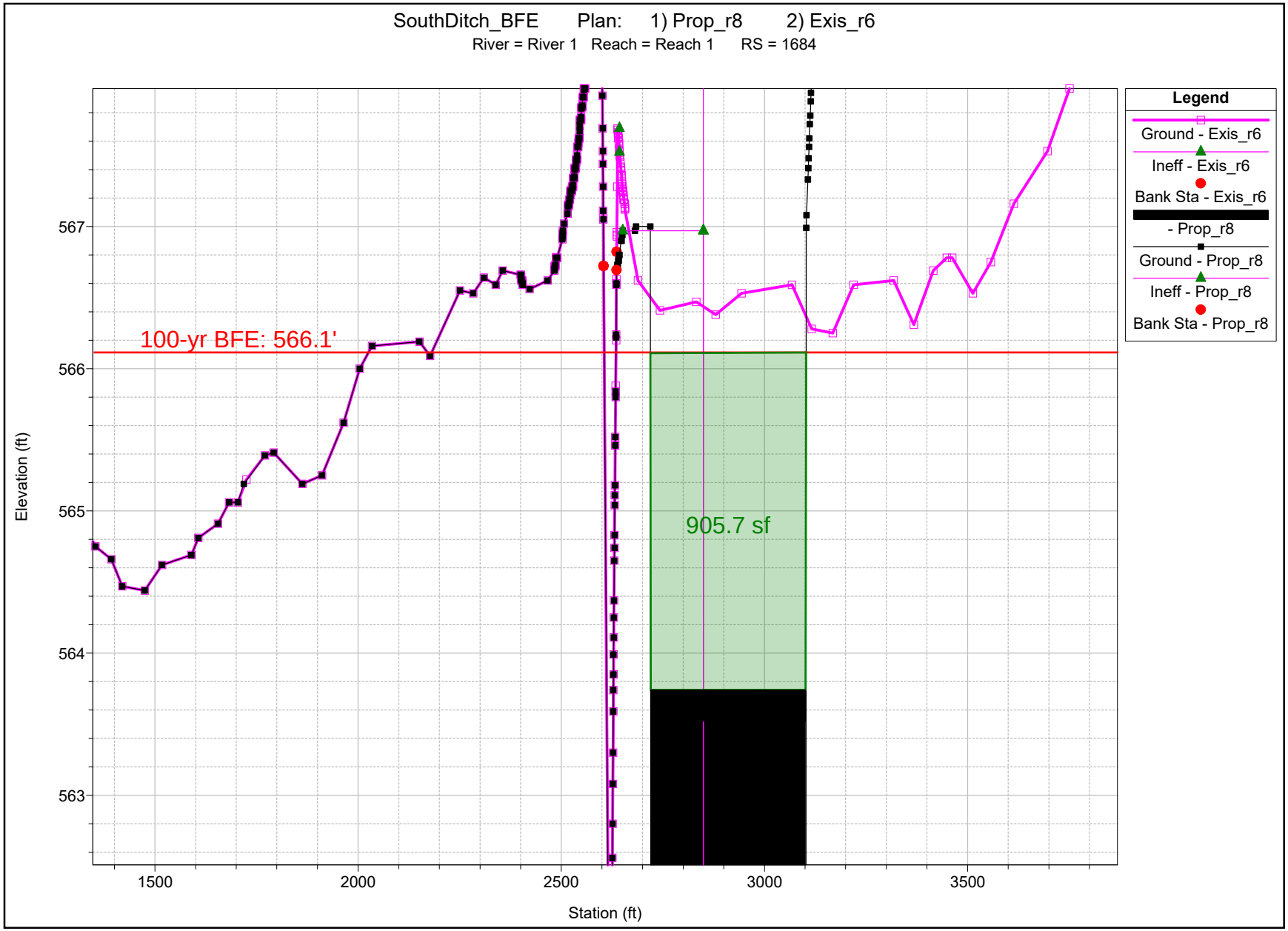

1 in Horiz. = 350 ft 1 in Vert. = 1 ft



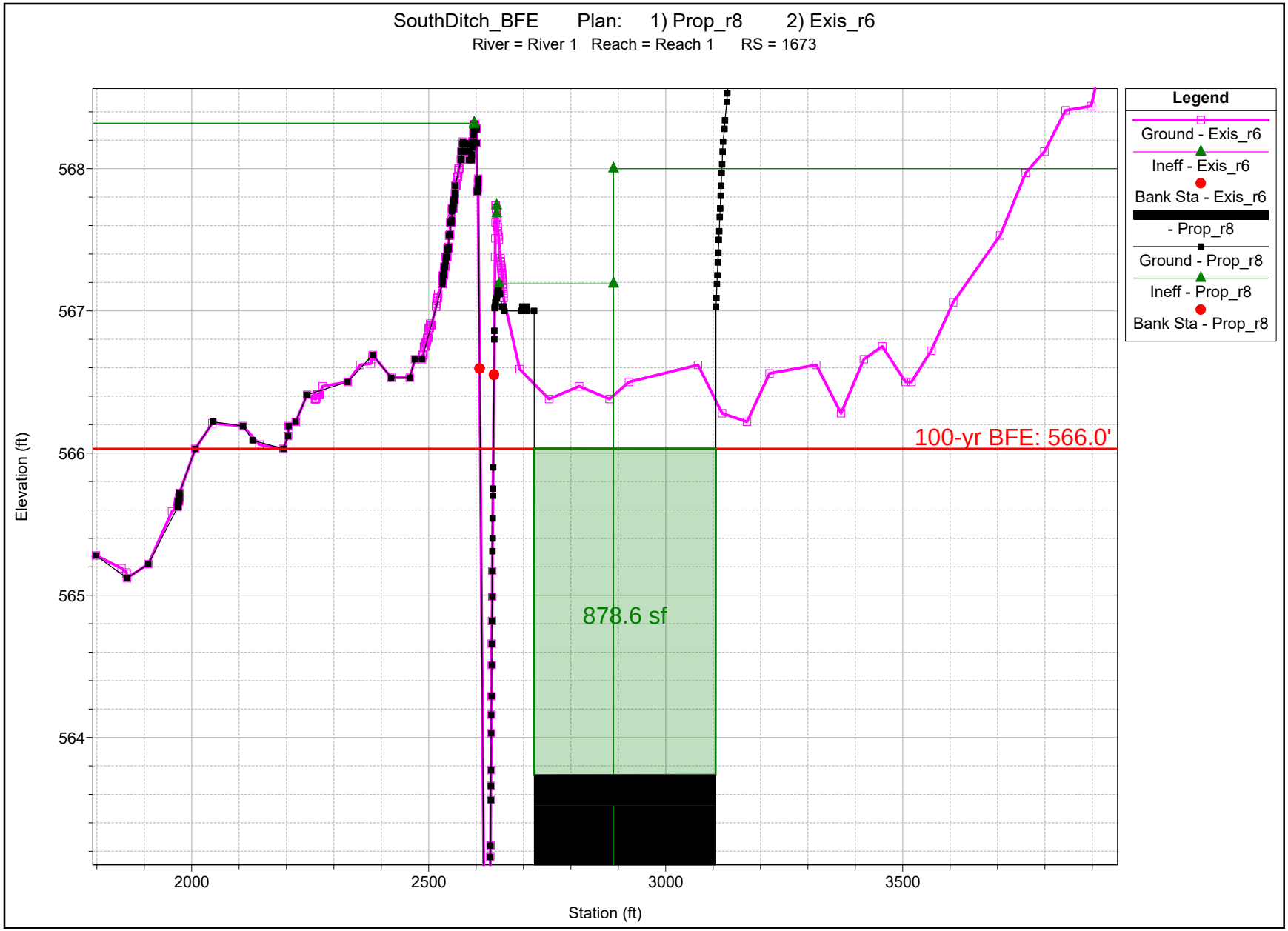

1 in Horiz. = 300 ft 1 in Vert. = 1 ft




1 in Horiz. = 300 ft 1 in Vert. = 1 ft



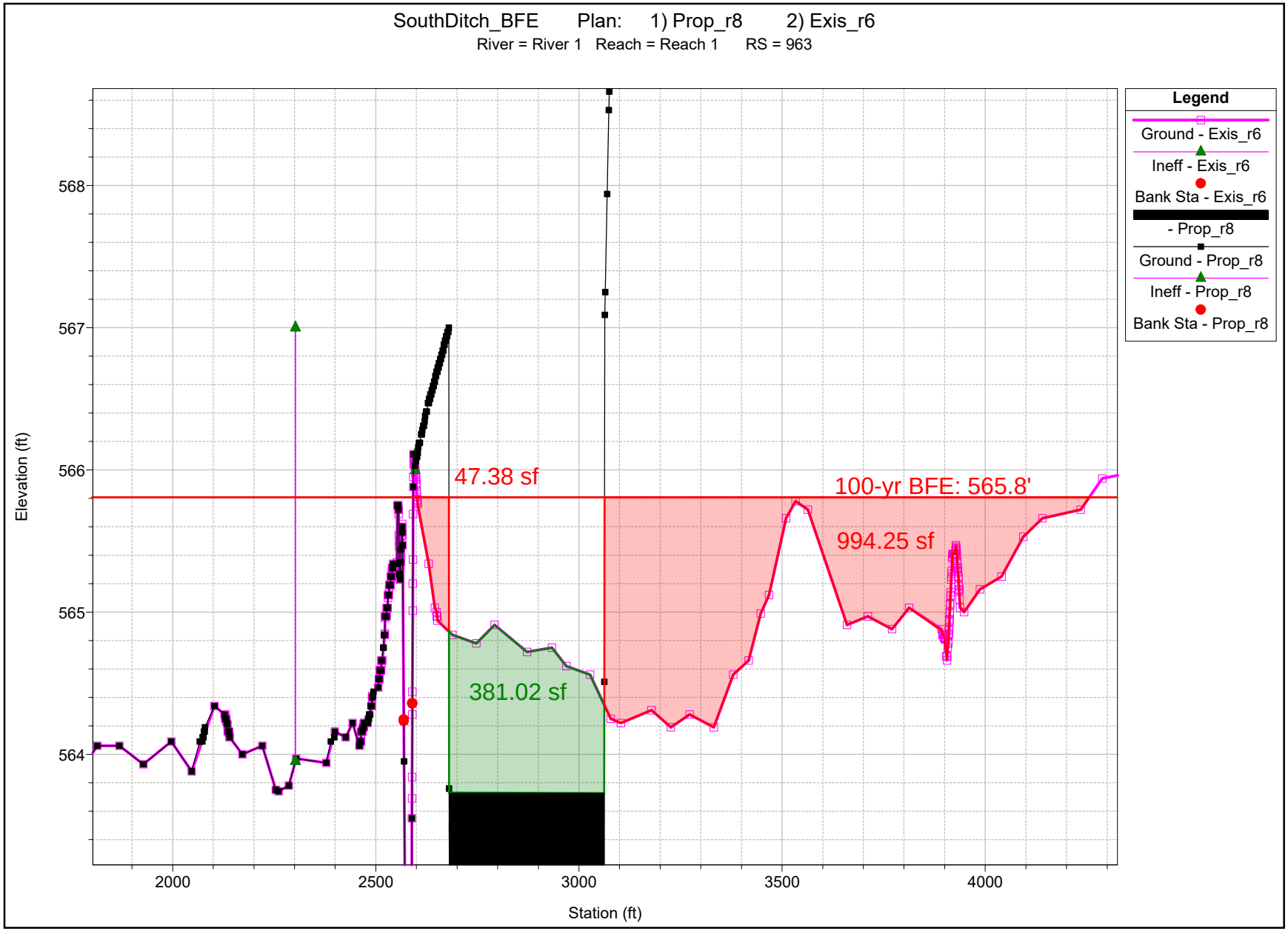

1 in Horiz. = 350 ft 1 in Vert. = 1 ft



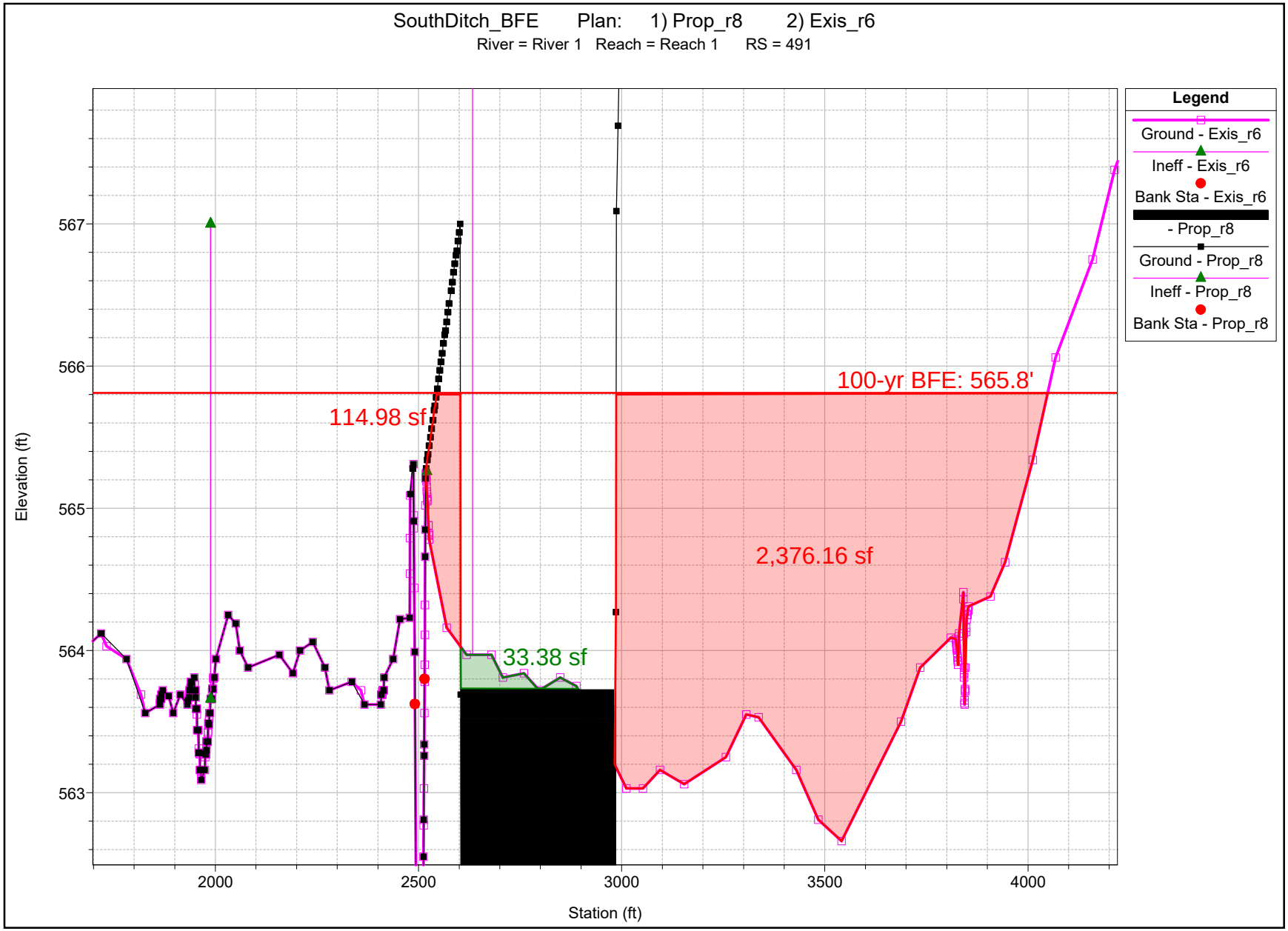

1 in Horiz. = 300 ft 1 in Vert. = 1 ft



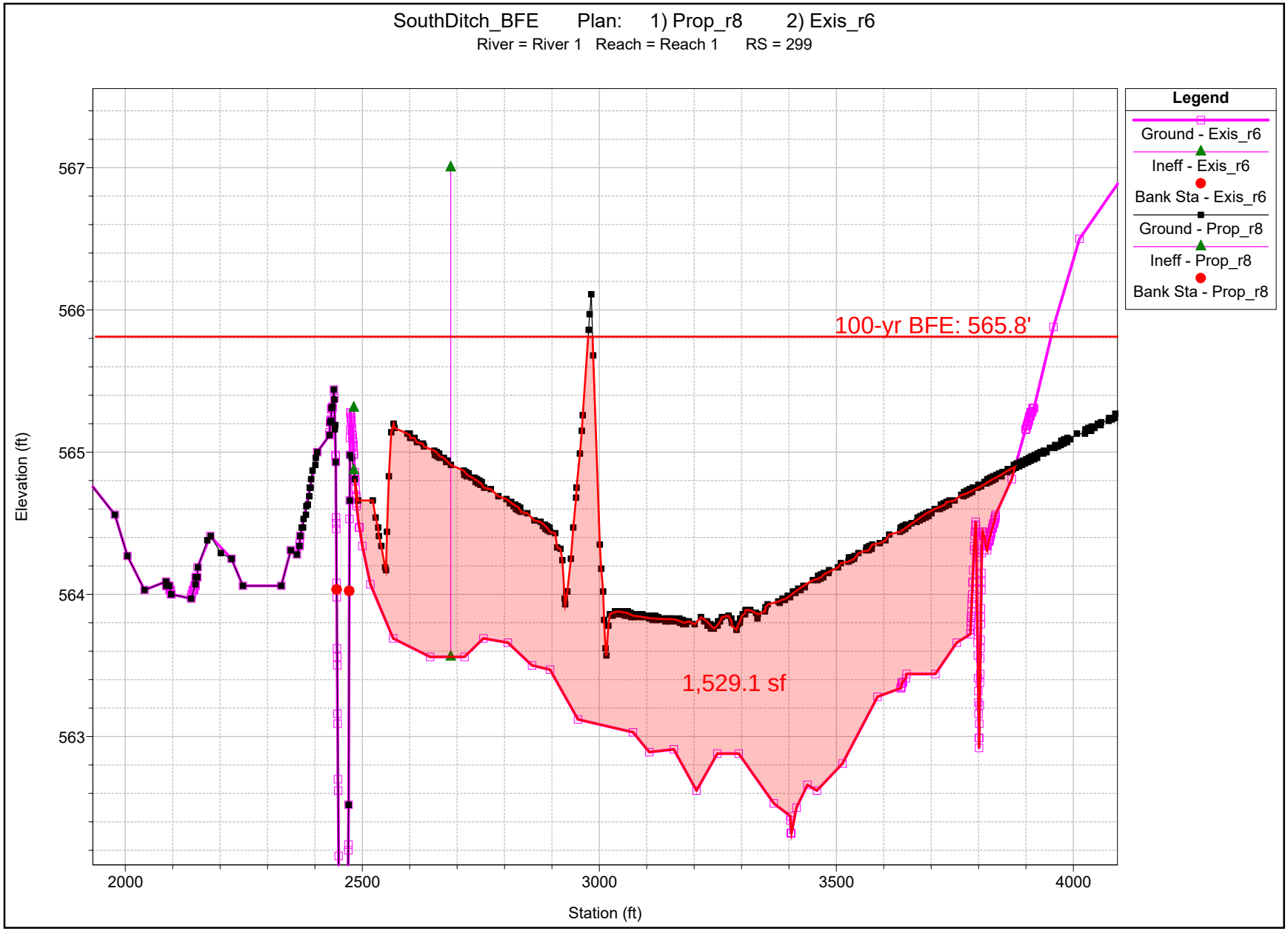

1 in Horiz. = 350 ft 1 in Vert. = 1 ft



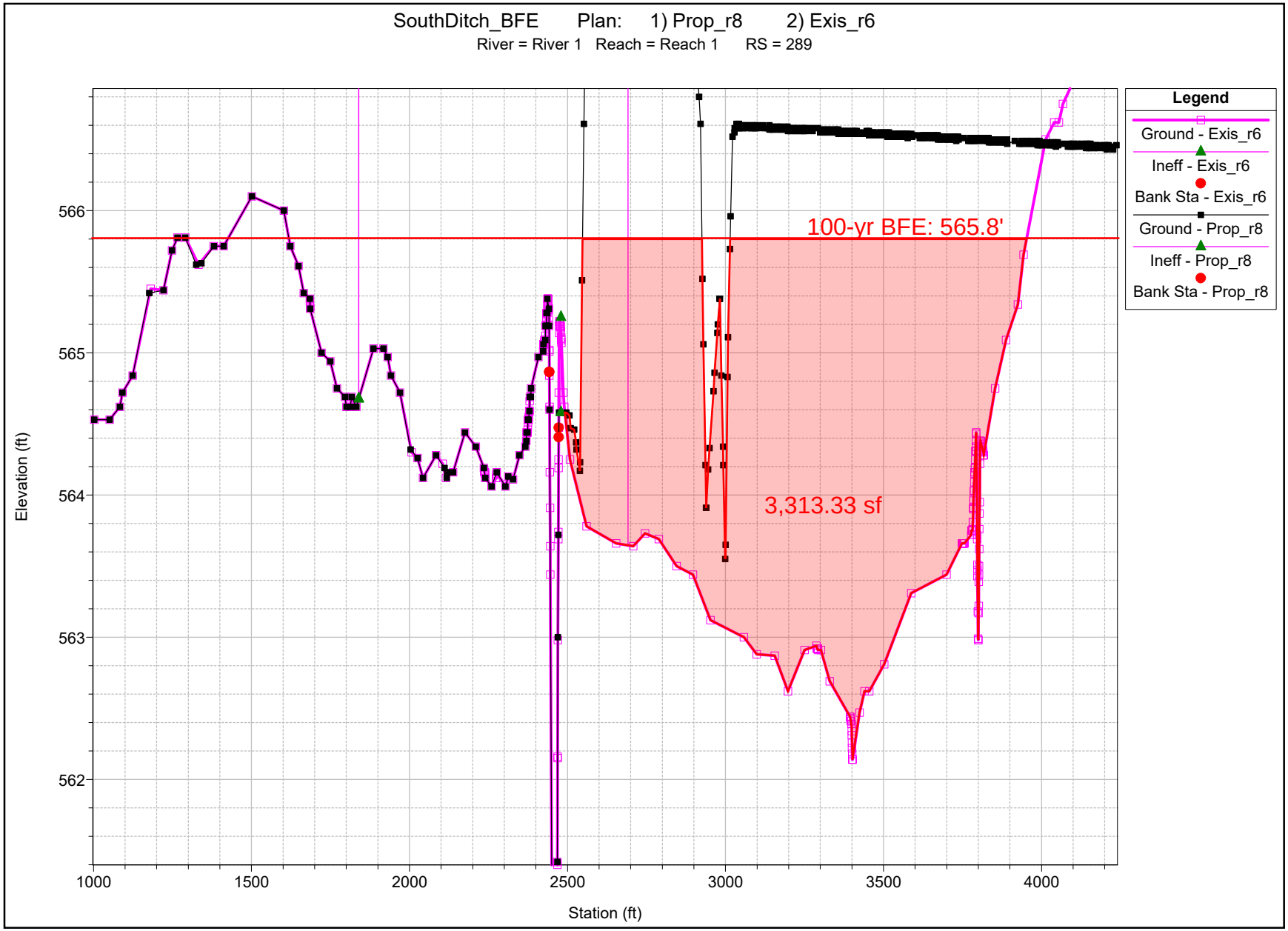

1 in Horiz. = 350 ft 1 in Vert. = 1 ft

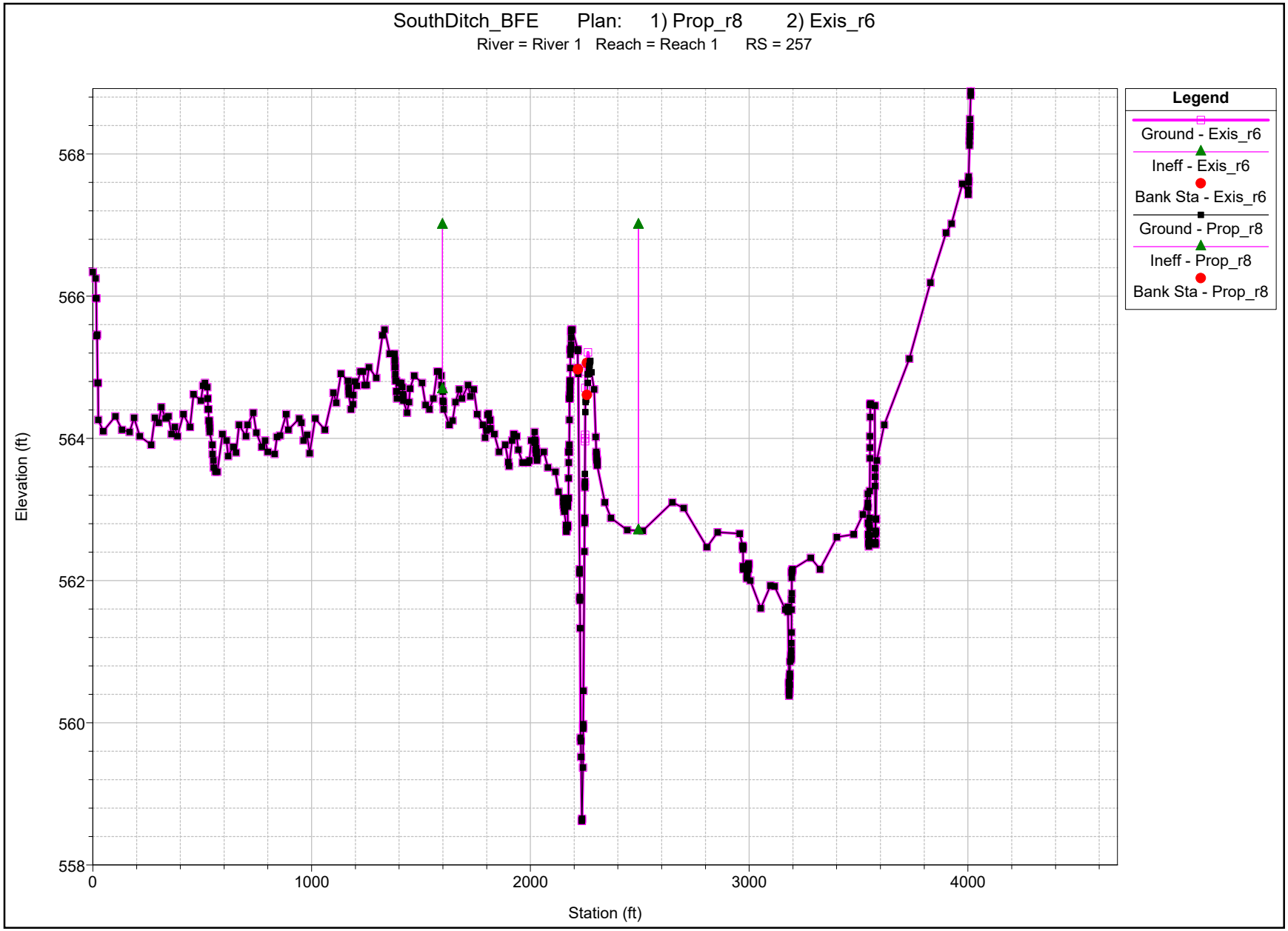



1 in Horiz. = 350 ft 1 in Vert. = 1 ft




1 in Horiz. = 300 ft 1 in Vert. = 1 ft


SouthDitch_BFE Plan: 1) Prop_r8 2) Exis_r6
River = River 1 Reach = Reach 1 RS = 289
100-yr BFE: 565.8'
3,313.33 sf
Legend
Ground - Exis_r6
Ineff - Exis_r6
Bank Sta - Exis_r6
Ground - Prop_r8
Ineff - Prop_r8
Bank Sta - Prop_r8
Elevation (ft)
566
565
564
563
562
1000
1500
2000
2500
3000
3500
4000
Station (ft)
1 in Horiz. = 450 ft 1 in Vert. = 1 ft




1 in Horiz. = 650 ft 1 in Vert. = 2 ft

# SOUTH DITCH COMPENSATORY STORAGE CALCULATIONS

| Coal City Earthwork Summary (CF) | | | |
|---|---|---|---|
| Location | 100-Year | | |
| | Cut (-) | Fill (+) | |
| South | 2172409.4 | 1742804.8 | |
| Total (CF) | 2172409.4 | 1742804.8 | |
| Balance (CF) | -429604.6 | | |
| South Floodplain Fill | | 1742804.8 | CF |
| Required Cut (1:1) | | 1742804.8 | CF |
| South Total Floodplain Cut | | 2172409.4 | CF |
| South Required Comp Storage | | -9.9 | AF |
| North Required Comp Storage | | 1.5 | AF |
| Total Required Comp Storage | | -8.4 | AF |

*north comp storage volume was measured from closed contours below outlet

| Coal City South Earthwork - Cut Below 100-Year WSEL | | | | | | |
|---|---|---|---|---|---|---|
| **Location** | **Cross Section** | **Area Cut (SF)** | **Average (SF)** | **Distance (FT)** | **Cut (CF)** | |
| 1 | 257 | 0.0 | | | | |
| | | | 0.0 | 32.1 | 0.0 | |
| | 289 | 0.0 | | | | |
| | | | 0.0 | 10.5 | 0.0 | |
| | 299 | 0.0 | | | | |
| | | | 16.7 | 191.1 | 3189.5 | |
| | 491 | 33.4 | | | | |
| | | | 207.2 | 472.5 | 97902.0 | |
| | 963 | 381.0 | | | | |
| | | | 599.9 | 533.0 | 319770.7 | |
| | 1496 | 818.9 | | | | |
| | | | 848.7 | 177.3 | 150480.7 | |
| | 1673 | 878.6 | | | | |
| | | | 892.2 | 10.6 | 9456.8 | |
| | 1684 | 905.7 | | | | |
| | | | 904.2 | 10.1 | 9132.4 | |
| | 1694 | 902.7 | | | | |
| | | | 994.5 | 53.1 | 52808.0 | |
| | 1747 | 1086.3 | | | | |
| | | | 1090.4 | 10.2 | 11122.3 | |
| | 1757 | 1094.5 | | | | |
| | | | 1100.1 | 10.1 | 11111.0 | |
| | 1767 | 1105.7 | | | | |
| | | | 1159.3 | 187.8 | 217715.6 | |
| | 1955 | 1212.9 | | | | |
| | | | 1323.7 | 333.5 | 441454.0 | |
| | 2289 | 1434.5 | | | | |
| | | | 1587.0 | 411.9 | 653683.2 | |
| | 2701 | 1739.5 | | | | |
| | | | 1782.2 | 60.8 | 108357.8 | |
| | 2861 | 1824.9 | | | | |
| | | | 912.4 | 94.5 | 86225.6 | |
| | 2956 | 0.0 | | | | |
| | | | | | 2172409.4 | Total Cut (CF) |

| Coal City South Earthwork - Fill Below 100-Year WSEL | | | | | | |
|---|---|---|---|---|---|---|
| **Location** | **Cross Section** | **Area Fill (SF)** | **Average (SF)** | **Distance (FT)** | **Fill (CF)** | |
| 1 | 257 | 0.0 | | | | |
| | | | 1656.7 | 32.1 | 53178.9 | |
| | 289 | 3313.3 | | | | |
| | | | 2421.2 | 10.5 | 25422.8 | |
| | 299 | 1529.1 | | | | |
| | | | 2010.1 | 191.1 | 384133.9 | |
| | 491 | 2491.1 | | | | |
| | | | 1766.4 | 472.5 | 834616.9 | |
| | 963 | 1041.6 | | | | |
| | | | 520.8 | 533.0 | 277594.4 | |
| | 1496 | 0.0 | | | | |
| | | | 0.0 | 177.3 | 0.0 | |
| | 1673 | 0.0 | | | | |
| | | | 0.0 | 10.6 | 0.0 | |
| | 1684 | 0.0 | | | | |
| | | | 0.0 | 10.1 | 0.0 | |
| | 1694 | 0.0 | | | | |
| | | | 223.4 | 53.1 | 11860.9 | |
| | 1747 | 446.7 | | | | |
| | | | 440.3 | 10.2 | 4491.0 | |
| | 1757 | 433.9 | | | | |
| | | | 409.0 | 10.1 | 4130.5 | |
| | 1767 | 384.1 | | | | |
| | | | 341.0 | 187.8 | 64038.9 | |
| | 1955 | 297.9 | | | | |
| | | | 181.6 | 333.5 | 60568.6 | |
| | 2289 | 65.3 | | | | |
| | | | 48.7 | 411.9 | 20059.5 | |
| | 2701 | 32.1 | | | | |
| | | | 27.2 | 60.8 | 1653.8 | |
| | 2861 | 22.3 | | | | |
| | | | 11.2 | 94.5 | 1054.6 | |
| | 2956 | 0.0 | | | | |
| | | | | | 1742804.8 | Total Fill (CF) |