

**STORMWATER MANAGEMENT  
PRELIMINARY PERMIT APPLICATION AND REPORT  
FOR  
THE PRESERVE AT WEST BRANCH  
CITY OF WEST CHICAGO  
DUPAGE COUNTY, ILLINOIS**



**REVISED OCTOBER 13, 2021  
JULY 20, 2021**

**JOB NO. 402.078**

**PROFESSIONAL ENGINEER'S CERTIFICATION**

STATE OF ILLINOIS }  
                                  } SS.  
COUNTY OF DUPAGE }

I, CHRISTOPHER R. MORGART, A LICENSED PROFESSIONAL ENGINEER OF ILLINOIS, HEREBY CERTIFY THAT THIS TECHNICAL SUBMISSION WAS PREPARED ON BEHALF OF CALATLANTIC HOMES BY CEMCON, LTD. UNDER MY PERSONAL DIRECTION.

DATED THIS 13th DAY OF October, AD, 2021

Private Information

ILLINOIS LICENSED PROFESSIONAL ENGINEER NO. 062-055788

MY LICENSE EXPIRES ON NOVEMBER 30, 2021

PROFESSIONAL DESIGN FIRM LICENSE NO. 184-002937, EXPIRATION DATE IS APRIL 30, 2023

NOTE: UNLESS THIS DOCUMENT BEARS THE ORIGINAL SIGNATURE AND IMPRESSED SEAL OF THE DESIGN PROFESSIONAL ENGINEER, IT IS NOT A VALID TECHNICAL SUBMISSION.



**PREPARED FOR:**

**THE PRESERVE AT WEST BRANCH  
926 SUNSET ROAD  
GENEVA, IL 60134**

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**PREPARED BY:**

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**EXHIBITS**

**TAB 1 PROJECT OVERVIEW**

- A. Stormwater Management Certification (To be provided with Final Engineering)
- B. Location Map
- C. FIRM Panel FM17043C0131J & DuPage County Flood Hazard Map
- D. DuPage County Soils Map
- E. National Wetlands Inventory Map
- F. Relevant Permits

**TAB 2 STORMWATER SUBMITTAL**

- A. Existing Conditions Watershed Exhibit
- B. Existing Conditions Supporting Documentation
- C. Existing Conditions PondPack Model & Output
- D. Proposed Conditions Watershed Exhibit
- E. Proposed Conditions Supporting Documentation
- F. Proposed Conditions PondPack Model & Output

**TAB 4 WETLAND ASSESSMENT**

- A. Wetland and Buffer Impact Submittal by V3 Companies of Illinois, Ltd.  
(To be provided with Final Engineering)

**ELECTRONIC COPIES OF THE HYDROLOGIC & HYDRAULIC MODELS**

**STORMWATER MANAGEMENT**  
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**DUPAGE COUNTY, ILLINOIS**

**1.0 PROJECT DESCRIPTION**

The Preserve at West Branch proposed by Pulte Home Company, LLC is a 110.5± acre, 269 single family home subdivision situated South of Smith Road and West of Klein Road in the City of West Chicago, DuPage County (refer to the project Location Map in Exhibit 1B). Site infrastructure improvements (see Engineering Plans) will include the construction of sanitary sewers, watermains, stormwater drainage and conveyance facilities, and stormwater management facilities which will be vegetatively stabilized for stormwater discharge control and best management practices.

The purpose of this Stormwater Management Analysis and Report is to summarize the hydrologic and hydraulic analyses performed for Existing and Proposed Conditions and to demonstrate that, when constructed, the development will comply with County, State, and Federal laws and regulations and provide a significant drainage improvement and regional benefit for the watershed.

**2.0 EXISTING “WITHOUT PROJECT” CONDITIONS**

**A. Watershed Description**

The project site was previously farmland with a large majority of the land cover being straight row crop farm. There is also a forested area on the north side of the site and along the parcel boundaries. Despite the three (3) directions of flow as run-off leaves the site, the entire site is

contained within one (1) watershed as delineated by DuPage County as available on their GIS viewer. All hydraulic points of release on the site are tributary to the nearby West Branch of the DuPage River (refer to the Existing Conditions Watershed Exhibit in Exhibit 2A).

Subareas 001A and 001B, totaling approximately 48.5 Ac., describe the portion of the site tributary to a small existing drained wetland along the southern property line of the project site. The majority of the storage available in the wetland prior to overtopping is within the existing golf course to the south, and there it is drained by a flared end section. Approximately 12.8 Ac. of the golf course is also tributary to this wetland, designated existing conditions Subarea 013. A downstream 10" storm sewer controls the release from the wetlands in frequent and light storm events, with much flow overtopping and running overland further south during medium to large events. Upstream of this wetland is a depression (exSWMF 001) with approximately 2 Ac.-ft. of storage prior to overtopping towards the wetland.

Existing conditions subareas 002 and 005, 14.1 Ac. and 3.3 Ac. respectively, describe the on-site land tributary to a large existing depression (exSWMF 002) on the eastern property line. Most of exSWMF 002 is on a formerly agricultural adjacent property, now owned by the forest preserve. The forest preserve has indicated that the depression is currently drained by drain tiles. This basin has a large amount of storage and can store the run-off from a 100-year 24-hour storm. Were this basin to overtop, it's flow would join run-off from subarea 004 (3.7 Ac.) which describes the R.O.W. of the proposed access road from the project site to Klein Road. This depression (exSWMF002) has been modelled with zero (0) release until the overtopping point as the forest preserve has indicated that it does not intend to maintain or replace the drain tile if it fails. Together this makes up the eastern release of the site, which is promptly carried towards the West Branch of the DuPage River across Klein Road.

The final point of release of the site is described by subarea 003, comprised of approximately 40.3 Ac. of farmland and forested area. Run-off drains unmanaged to an existing 24" storm sewer in the R.O.W. of Smith Road near the northeast corner of the site which then carries flow east following Smith Road.

## B. Methods

In accordance with the current DuPage County Countywide Stormwater & Floodplain Ordinance (Ordinance), a proposed site development which contains more than 25,000 sq-ft. of new impervious area requires stormwater management to protect downstream properties. The Ordinance requires that the proposed development attenuate flows to 0.1 cfs/acre of development area or below existing conditions peak flows, whichever is more restrictive.

To develop rainfall vs. run-off relationships for the development, the Soil Conservation Service (SCS) method was utilized with the PondPack V8i software and employed the following methodology and procedures in determining the respective hydrologic and hydraulic parameters.

- **Run-off Curve Numbers** - The TR-55 Tables 2-2a (*urban areas*) and 2-2c (*agr. Lands*), "DuPage County Soil Survey", and watershed land use data were utilized to calculate run-off curve numbers (CN) for input to the Pond Pack Model. A CN = 98 was used for all impervious surfaces and the area encompassed by the Stormwater Management Facility (SWMF), a CN = 85 and 88 were used for good condition and poor condition respectively row crops, a CN = 72 was used for woods - grass combinations, and a CN = 74 (all type C soils) was used for all other landscaped pervious surfaces. The CN documentation for the project site is provided in Exhibit 2B for Existing Conditions and Exhibit 2E for Proposed Conditions.
- **Time of Concentration** - The time of concentration ( $T_c$ ) was calculated using SCS TR-55 methodology. The  $T_c$  calculations were performed for flow paths representing the travel from the hydraulically most distant point of the watershed to the point of interest. The  $T_c$  documentation for the project site is provided in Exhibit 2B for Existing Conditions and Exhibit 2E for Proposed Conditions.
- **Precipitation Data / Rainfall Distribution** - Updated Bulletin 75 northeast rainfall values (2020 revision) with Huff rainfall distributions were selected in accordance with Appendix E criteria and the "Technical Guidance" to the Ordinance. Storage volumes were evaluated based on the 100-year frequency 24-hour duration event measuring 8.57 inches of precipitation and the Huff 3<sup>rd</sup> quartile rainfall distribution.
- **Stage vs. Storage and Stage vs. Discharge Relationships** - Stage vs. storage relationships for the SWMF were measured within AutoCAD at regular intervals

corresponding to the level of potential inundation, and the volume was calculated by the method of average area times the incremental interval. For off-site areas, CEMCON Ltd. surveyed the upstream reservoirs' outlet control structures and supplemented the plans with County topography to develop stage-storage and stage-discharge relationships. Stage vs. discharge relationships were developed in PondPack for all possible combinations of headwater and tailwater. PondPack was then run dynamically to evaluate the headwater and tailwater at each time step to determine the flow through each structure. Supporting Documentation is provided in Exhibit 2B for Existing Conditions and Exhibit 2E for Proposed Conditions.

### **C. Existing Conditions Summary**

The existing conditions model was run for the 2-year and 100-year 1-hour events through to the 24-hour events. The **100-year 1-hour event** was determined to be the critical duration event leaving the site, generating the highest peak flow. The numerical results are summarized along with the proposed results in Table 2 in Section 4.0 below. Refer to Exhibit 2C for the Existing Conditions PondPack Model and Output for key events. The full PondPack output can be found in the electronic media attached to the end of this report.

## **3.0 FLOODPLAIN, WETLANDS AND BUFFER ASSESSMENT**

During the project - planning phase, the subject site was evaluated for the presence of regulatory floodplains / floodways, wetland habitat, and buffers. This evaluation consisted of a detailed review of available topographic, wetland, and FEMA Maps. Following is an account of the sources referenced and procedures employed in conducting the assessment for the project.

### **A. Floodplain Evaluation**

The project site is ultimately tributary to the West Branch DuPage River, approximately 1,600 L.F. east of the proposed access point and intersection with Klein Road. The FEMA FIRM Panel 17043C0037J, revised August 1, 2019, does not indicate the presence of any on-site floodplain. Refer to Exhibit 1C for copies of the Floodplain Maps. The lack of regulatory floodplain shown on the FIRM panel is consistent with the analysis carried out for this report as the on-site watershed does not satisfy conditions for regulatory floodplain. Both depressions qualify as site-specific

floodplain per the DuPage County Stormwater Ordinance as they have just over 20 Ac. of tributary area. There is proposed fill in both of these depressions which will be compensated non-incrementally at a rate of 1:1 per 15.81.D.1 of the DuPage Stormwater Ordinance.

**B. Buffer Assessment**

The County Ordinance identifies riparian buffer environments as “vegetative areas along waterways within the limits of the regulatory floodplain”. The property as stated above does not contain regulatory floodplain; however, a wetland is located on the site. Therefore, buffers will be evaluated. See the Wetland and Buffer Impact Submittal prepared by V3 Companies of Illinois, Ltd (see Exhibit 4A - To be provided with Final Engineering).

**C. Wetlands Assessment**

According to the National Wetland Inventory GIS database, there are no wetlands on site (refer to Exhibit 1E for a copy of the National Wetlands Inventory Map however, wetlands have been found and delineated based on field observations. Of particular note is a wetland on the southern property line, to which impacts will be avoided in the proposed condition.

**4.0 PROPOSED “WITH PROJECT” CONDITIONS**

**A. Description**

St. Andrews will incorporate five (5) SWMFs (refer to Exhibit 2D for the Proposed Conditions Watershed Exhibit). These ponds and their associated restrictor structures have been designed to attenuate flows to the allowable release rate when evaluated over the full site.

Proposed SWMF 001 serves the southern portion of the watershed (Subarea 001), approximately 46.4 Ac. flow leaving this SWMF through the proposed restrictor is joined by the undetained flow from the back of the berm and the buffer area towards Wetlands 013.

Proposed ponds SWMF 002A and SWMF 002C are upstream of the existing eastern depression exSWMF002 and together attenuate flows from approximately 14.7 Ac. of on-site tributary area. The proposed ponds have been heavily over restricted in order to compensate for the unavoidable

undetained flow leaving Subarea 004B, that portion of the proposed access road for which flood waters cannot reasonably be routed to the proposed retention basins. SWMF 002A and 002B serve on-site subareas 002A, 002C, 004A, and the off-site Subarea 010.

Proposed SWMF 003A and 003B detain and attenuate flows to the north tributary to the existing storm sewer along Smith Road. They serve on-site Subarea 003A and Subarea 003B (~40.75 Ac.) and off-site Subarea 012. SWMF 003A releases towards SWMF 003B. The restrictor in SWMF 003A was designed in order to utilize as much of the available storage in SWMF 003A as possible. The restrictor in SWMF 003B was designed to meet allowable release rates.

## **B. Hydrologic Analysis**

In accordance with the Ordinance, all disturbed areas of a development must be managed such that peak run-off from the site for the 100-year event is limited to 0.10 cfs/acre. or less than existing conditions, whichever is more restrictive. Since Subarea 004B is undetained, the proposed facilities have been designed to over-restrict the tributary area so that the peak hydraulic sum of discharges from the site towards the West Branch DuPage River (WBDR) does not exceed 0.10 cfs/acre.

Table 1 below summarizes the allowable discharge plus bypass along with proposed and existing conditions peak discharges from the site, as a whole to the WBDR. Refer to Exhibit 2F for the Proposed Conditions PondPack Model and Output. The full PondPack output can be found in the electronic media attached to the end of this report.

**Table 1: Proposed Conditions Model – Total Peak Discharge (cfs) Summary**

<b>100YR Storm:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>12</b>	<b>18</b>	<b>24</b>
<b>Allowable Release Rate (cfs/Ac.):</b>	<b>0.10</b>						
<b>Developed Tributary Area (Ac.):</b>	<b>104.2</b>	<b>104.24</b>	<b>104.2</b>	<b>104.2</b>	<b>104.2</b>	<b>104.2</b>	<b>104.2</b>
<b>Allowable Release from Site (cfs):</b>	<b>10.42</b>						
Bypass Flow (Subarea 010) (cfs):	5.87	4.93	4.01	2.60	1.65	1.25	1.01
Bypass Flow (Subarea 012) (cfs):	5.89	4.99	4.07	2.66	1.70	1.30	1.05
<b>Total Allowable Release (cfs):</b>	<b>22.18</b>	<b>20.34</b>	<b>18.50</b>	<b>15.68</b>	<b>13.77</b>	<b>12.97</b>	<b>12.48</b>
Total Proposed Release South (cfs):	2.92	3.31	3.49	3.76	3.85	3.97	4
Total Proposed Release East (cfs):	11.96	11.02	9.34	6.76	5.02	4.3	3.84
Total Proposed Release North (cfs):	3.09	3.5	3.71	4.04	4.35	4.5	4.61
<b>Total Proposed Release from Site (cfs):</b>	<b>17.97</b>	<b>17.83</b>	<b>16.54</b>	<b>14.56</b>	<b>13.22</b>	<b>12.77</b>	<b>12.45</b>
Total Existing Release South (cfs):	92.29	86.33	75.13	59.91	50.83	43.15	34.87
Total Existing Release East (cfs):	167.6	159.5	141	99.33	62.68	47.39	38.16
Total Existing Release North (cfs):	135.9	126.8	109.2	74.62	47.75	36.48	29.44
<b>Total Existing Release from Site (cfs):</b>	<b>395.75</b>	<b>372.63</b>	<b>325.37</b>	<b>233.86</b>	<b>161.26</b>	<b>127.02</b>	<b>102.47</b>

As evidenced by the results, the proposed improvements significantly reduce peak flows leaving the site. For the 100-year 1-hour event, the critical event in existing conditions, the proposed peak discharge has been reduced by more than 95%. The critical event in proposed conditions are now the **100-year, 24-hour event**. Individual release rates for each existing basin and proposed basin in the model can be found under Exhibit 2F.

### **C. Site-Specific Floodplain Management**

There are two (2) depressions on-site with more than 20 Ac. of tributary area, and therefore qualify as site-specific floodplain.

The western depression (exSWMF001) has approximately 2 Ac.-ft. of storage and an existing BFE of approximately 795.6'. This entirety of this depression is proposed to be developed. Compensatory storage is provided in the proposed SWMF 001 well in excess of requirements.

The eastern depression (exSWMF002) will be modified in the proposed condition. All proposed fill is to be compensated in other portions of the same depression. Assuming zero (0) release prior to overtopping, it has an existing BFE of 790.3', well below its overtop elevation of 792.2'. In the proposed condition this BFE is reduced to 789.9' due to the additional storage provided in the proposed condition of this depression.

### **5.0 STORMWATER CONVEYANCE SYSTEMS**

The stormwater conveyance systems will be designed in accordance with the County standards and general engineering practice with the Final Engineering submittal. The storm sewer system will be designed to convey the 10-year critical duration storm and the overland swales will be designed for the 100-year critical duration storm event. Design of the storm sewer systems will be performed with the StormCAD modeling program utilizing gravity design methodology.

### **6.0 POST CONSTRUCTION BEST MANAGEMENT PRACTICES**

In accordance with the Post Construction Best Management Practices (PCBMP) portion of the ordinance as outlined below:

#### **15-64. Post Construction Best Management Practices Design Criteria.**

**15-64.A PCBMPs** shall provide volume and pollutant control using one of the following practices:

**15-64.A.1** Infiltration of 1.25 inches for all new impervious surfaces: or

**15-64.A.2** Native vegetated wetland bottom site of run-off storage basin; or

**15-64.A.3 PCBMPs** not constructed pursuant to Sections 15-64.A.1 or 15-64.A.2 shall be constructed in accordance with 15-64.C.

The site is expected to generate total suspended solids, metals and oils, and nutrients consisting of nitrogen and phosphorus. The SWMF will incorporate native vegetated wetland shelves and a deep open water pool to promote filtration, infiltration, and evapotranspiration. The proposed BMP plan is designed to capture, to the extent possible, all of the identified pollutants. The open water pool will allow sediment to settle out and promote evaporation. Wetland shelves have been incorporated around the fringe of the open pool to increase pollutant contact time with the native vegetation to filter the pollutants from the run-off. In addition, the native vegetation will promote nutrient intake and will help infiltrate the run-off with its deep roots and greater biomass of root material and also increase the pore volume within the soil. A mechanical BMP will be utilized for a portion of the access road to Klein Road that cannot be routed through a naturalized detention facility due to existing grades. The proposed PCBMP plan will provide an effective treatment train for the site run-off and thereby comply with the ordinance.

## **7.0 SOIL EROSION AND SEDIMENTATION CONTROL PLAN**

Soil erosion and sediment control measures will be proposed with Final Engineering to protect downstream properties and the Special Management Areas from adverse effects of soil erosion and sedimentation. The proposed erosion and sediment control features will include:

- Storm sewer inlets protected with sediment trapping / filter control devices during construction.
- Silt fencing installed along the site perimeter and a double row of silt fence along wetland, buffer and floodplain areas.
- Construction entrance(s) will be implemented to minimize the impact to adjacent roadways.
- Temporary triangular silt dikes within the drainage swales.
- Disturbed areas permanently seeded and protected from soil erosion after final grading is accomplished.
- A sediment basin dewatering system with perforated stand pipe and drain pipe connected to the proposed outlet, designed per the Ordinance to detain a run-off volume equivalent to the 2-year, 6-hour event for sedimentation purposes.

## **8.0 STORMWATER SYSTEMS MAINTENANCE PLAN**

The Applicant shall be responsible for the periodic monitoring and maintenance of all stormwater management and stormwater conveyance facilities until such time of final acceptance of the improvements by West Chicago at which time the HOA will assume maintenance of such systems which include but are not limited to: (a) storm sewers, storm drains, inlets, manholes, catch basins, and appurtenances; (b) swales and overland drainage ways; (c) all containment berms and all stormwater storage facilities; (d) all landscaping and vegetative cover around and within stormwater conveyance and stormwater storage facilities; and (e) all permanent erosion and sedimentation control devices. The Applicant / HOA shall undertake appropriate measures to monitor and maintain such facilities in accordance with the policies and procedures established under the Ordinance as amended from time-to-time, and / or the programs and procedures set forth by the owner as part of the routine maintenance program. The programs for monitoring and maintaining the stormwater management and / or water conveyance facilities / systems imposed under this plan shall include the following components and procedures:

- A.** Storm sewers, storm drains and other drainage appurtenances, including manholes and inlets, shall be kept clear of sediment and debris, retained at the elevations, lines and grades intended, and maintained in an operable condition capable of conveying storm water run-off.
- B.** Swales and overland drainage ways shall be maintained to the line and grade established on the Site Development Plan documents to convey stormwater run-off in a free and unobstructed manner. Landscape planting, earthen fill, or other obstructions that impede the flow of stormwater shall be removed, the area re-graded, and a vegetative cover shall be re-established to deter erosion.
- C.** The proper function of the stormwater management system is dependent upon maintaining both the structural integrity and the minimum elevation of the containment berms, and it is also essential that the volume of potential storage available within the SWMF be preserved. Substantial re-grading, placement of earthen fill, or other earthwork operations that would change the elevation, impair the structural integrity, or diminish the volume contained within the basin shall be prohibited. Containment berms shall be maintained at the minimum elevations noted on the Site Development Plan documents and in good structural condition.

- D. A vegetative cover around and within the SWMF is essential for the prevention of soil erosion and the deposition of sediments within the basin. The periodic replanting and replacement of vegetation shall be required, when necessary, to maintain the vegetative cover.
- E. Temporary sediment traps, siltation fences, or ditch checks, as well as those permanent facilities including catch basins and inlets shall be periodically cleaned of sediment and debris and / or replaced and restored to operable conditions.

## 9.0 **SUMMARY**

Pulte Home Company, LLC, proposes to develop a 110.5± acre parcel of land South of Smith Road and West of Klein Road in the City of West Chicago, DuPage County. The development will consist of 269 single family homes. Stormwater storage / management is required to control runoff from the site per the County Ordinance.

A hydrologic analysis was performed utilizing PondPack to verify compliance with the County Ordinance. The stormwater management systems proposed meet and exceed the requirements of DuPage County. Additionally, as demonstrated by the PondPack model results, the proposed development will significantly reduce flows downstream and provide a net watershed benefit.

**TAB 1**

**PROJECT OVERVIEW**

**TAB 1A**

**STORMWATER MANAGEMENT**

**CERTIFICATION**

**(TO BE PROVIDED WITH FINAL**

**ENGINEERING)**

**TAB 1B**

**LOCATION MAP**

# St. Andrews of West Chicago SEC. 22, T40N, R9E WEST CHICAGO QUADRANGLE



 <b>CEMCON, Ltd.</b>	<b>PROJECT / CLIENT:</b>	<b>DRAWN BY:</b>	<b>MJM</b>	<b>7-19-21</b>	
	Pulte Home Company, LLC 1900 E. Golf Road, Suite 300 Schaumburg, IL 60173 847-230-5400	<b>CHECKED BY:</b>			
		<b>APPROVED:</b>			
		<b>SCALE: N.T.S.</b>			

**TAB 1C**

**FIRM PANEL &**

**DUPAGE COUNTY FLOOD HAZARD MAP**

**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 basins of small size. The community may nevertheless be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevation (BFE)** and/or **Boundary Flood Elevation (BFE)** have been determined, users are encouraged to consult the Flood Profiles and Floodway Study and/or Summary of Stream Elevation Studies prepared under the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFE information on the FIRM represents updated information. Flood Profiles and Floodway Studies are available for purchase only and should not be used as the sole source of flood elevation information. Accuracy: Flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and flood plain management.

**Special Base Flood Elevation** shown on the map apply to the location of 500 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that Special Base Flood Elevation are also provided in the Summary of Stream Elevation Studies in the National Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stream Elevation Studies should be used for construction under Flood plain management purposes when they conflict with 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 hydrologic computations with input by 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** shall be a public use and shall have a state regulated floodway. The FIRM may not reflect these state regulated floodways.

**Floodways** identified by anthropogenic features such as bridges and culverts are drawn to reflect natural conditions and their fill signs are the color computed width listed in the Floodway Data table in the Flood Insurance Study report.

Multiple **topographic sources** may have been used in the determination 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 2.0 "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 (CGRS85 system). Differences in datum, vertical projection or UTM zones used in the production of FIRM data and other products may result in slight positional differences on maps having same jurisdiction boundaries. These differences do not affect the accuracy of the 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 correlation between the National Geodetic Vertical Datum of 1988 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov) or contact the National Geodetic Survey at the following address:

NGS Information Service, NOAA, NHD532  
 National Geodetic Survey (NOS) 1-800-551-4027  
 1315 East-West Highway  
 Silver Spring, Maryland 20910-3262  
 (301) 713-3242

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

**Base map** information shown on the FIRM was provided in digital form by the Cook County Board of Commissioners. Color digital orthorectified with a 6-foot pixel resolution were photogrammetrically compiled from aerial photography acquired during the last full period of spring 2012.

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 listed in the Flood Insurance Study report which contain authoritative hydraulic data may reflect stream channel elevations that differ from what is shown on this map.

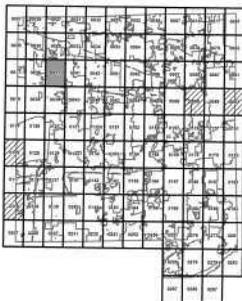
**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or dis-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the location of this panel, corporate map repository addresses, and a listing of Communities liable to the National Flood Insurance Program data for each community as well as a listing of the panels in which each community is located.

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

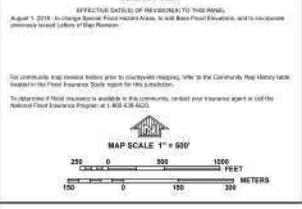
If you have questions about this map, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information Exchange (MIEX) at 1-877-234-2247 (1-877-234-2247) or visit the FEMA website at [www.fema.gov](http://www.fema.gov).

**PANEL INDEX**



**LEGEND**

- SPECIAL FLOOD HAZARD AREAS (SFHA) SUBJECT TO DRAINAGE 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 Areas are the areas of flooding that are subject to the 1% annual chance flood. The Special Flood Hazard Areas are: A, AE, AH, AO, AX, X, and V. See the Base Flood Elevation in the water-elevation section of the FIS report for details.
- ZONE A:** Base Flood Elevation determined.
  - ZONE AE:** Base Flood Elevation determined. Flood depths of 1 to 3 feet (unless shown that an existing facility, average depth assessment). For areas of actual base flooding, velocities also determined.
  - ZONE AO:** Special Flood Hazard areas formerly protected from the 1% annual chance flood by a flood control system that has substantially deteriorated. Zone AO indicates that the flood control system is being retained to provide protection from the 1% annual chance flood by a reduced flood protection system under construction. In Special Flood Hazard areas formerly protected from the 1% annual chance flood by a reduced flood protection system under construction, the Special Flood Hazard area boundary (SFHA boundary) will be updated to reflect the reduced flood protection system.
  - ZONE VE:** Floodway with velocity hazard (water action). Base Flood Elevation determined.
- FLOODWAY AREAS IN ZONE AE**
- The floodway is the channel of a watercourse and an adjacent floodplain area that must be kept free of encroachments so that the 1% annual chance flood can be conveyed without substantial increase 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:** Areas determined to be outside the 0.2% annual chance floodplain.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPA)**
- 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. 500-foot city boundary. Boundary defining Special Flood Hazard Areas of different Base Flood Elevation, Flood Depth or Flood Velocity. Base Flood Elevation and water elevation in feet. (E1, E2). Base Flood Elevation water elevation within area (elevation in feet).
- Referenced to the North American Vertical Datum of 1988:
- Symbol A: Cross section line.
  - Symbol B: Transverse line.
  - Symbol C: Geographic coordinates referenced to the North American Datum of 1983 (NAD 83).
  - Symbol D: 1000-foot unbroken Transverse Horizontal grid lines, one at 1000-foot and one at 500-foot from the State Plane North Coordinate System, 575-foot from (TPOZONE 100) Transverse Meridian.
  - Symbol E: Bench mark (see explanation in notes to data section of the CIM panel).
  - Symbol F: Base file.
- Map Reproduction: Not on Map Users. EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: DECEMBER 1, 1998. EFFECTIVE DATE OF MI EXEMPTION TO THIS AREA: August 1, 2019. In change from Flood Insurance Study report for this jurisdiction, map users should refer to the National Flood Insurance Program at 1-800-426-6223.



**NFIP** PANEL 0037J

**FIRM FLOOD INSURANCE RATE MAP DU PAGE COUNTY, ILLINOIS AND INCORPORATED AREAS**

PANEL 37 OF 287 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

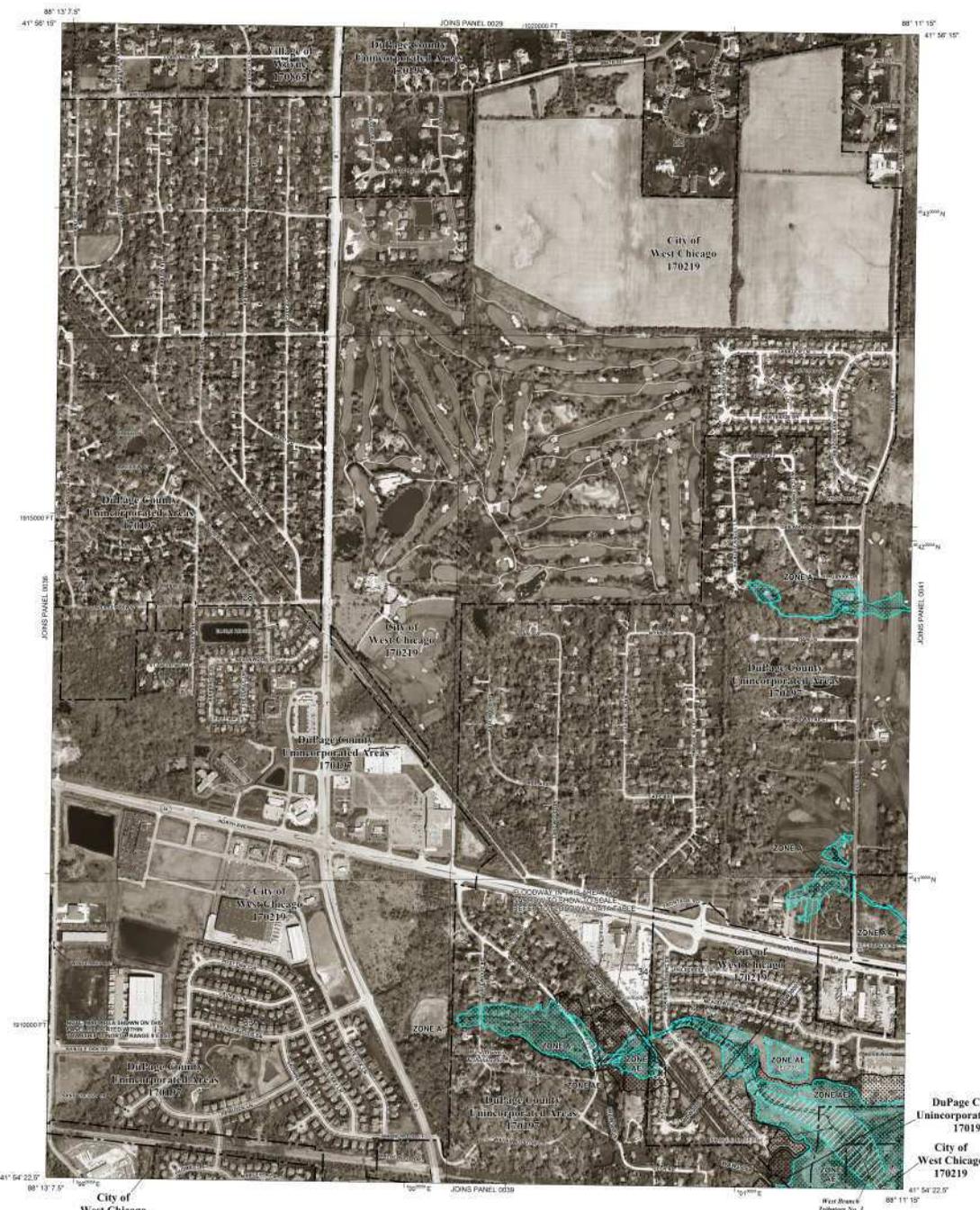
COMMUNITY	NUMBER	PANEL	STATUS
DU PAGE COUNTY	17037	0037 J	A
WILSON, VILLAGE OF	17038	0037 J	A
WILLY CHANGAL CITY OF	17039	0037 J	A

Map No. 1048 - This Map Number Series cannot be used until the Flood Insurance Study report for this jurisdiction is published. The Flood Insurance Study report will be available in electronic form to the public on the FEMA website at [www.fema.gov](http://www.fema.gov).

**MAP NUMBER 17043C0037J**

**MAP REVISED AUGUST 1, 2019**

Federal Emergency Management Agency

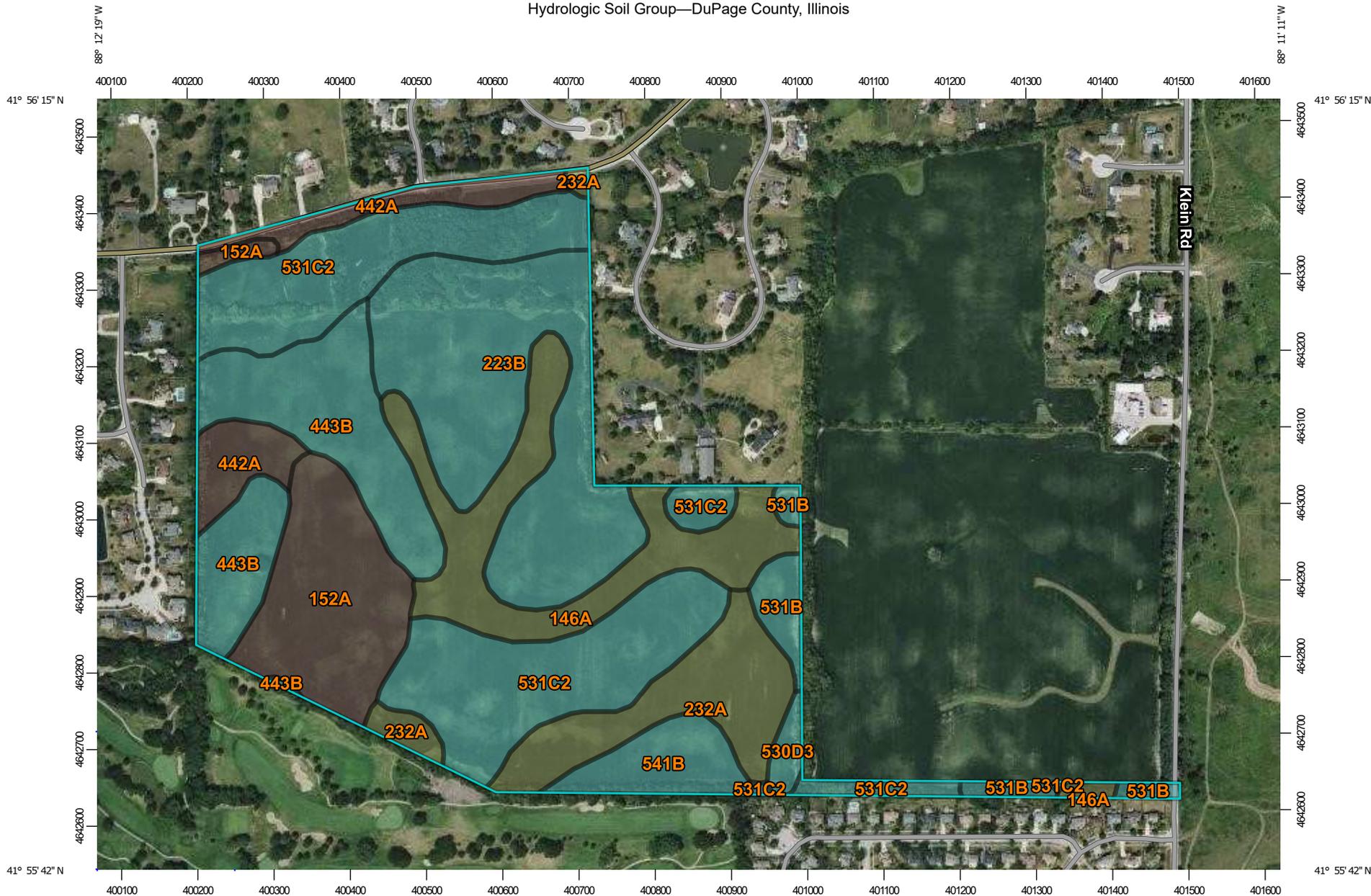


DuPage County Unincorporated Areas 170197  
 City of West Chicago 170219

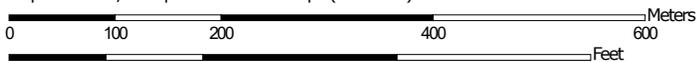
**TAB 1D**

**DUPAGE COUNTY SOILS MAP**

Hydrologic Soil Group—DuPage County, Illinois



Map Scale: 1:7,090 if printed on A landscape (11" x 8.5") sheet.



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: DuPage County, Illinois  
 Survey Area Data: Version 16, May 29, 2020

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

Date(s) aerial images were photographed: Aug 15, 2020—Sep 19, 2020

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
146A	Elliott silt loam, 0 to 2 percent slopes	C/D	14.0	11.7%
152A	Drummer silty clay loam, 0 to 2 percent slopes	B/D	12.9	10.7%
223B	Varna silt loam, 2 to 4 percent slopes	C	23.6	19.7%
232A	Ashkum silty clay loam, 0 to 2 percent slopes	C/D	10.5	8.7%
442A	Mundelein silt loam, 0 to 2 percent slopes	B/D	6.0	5.0%
443B	Barrington silt loam, 2 to 4 percent slopes	C	15.6	13.0%
530D3	Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded	C	1.0	0.9%
531B	Markham silt loam, 2 to 4 percent slopes	C	3.3	2.7%
531C2	Markham silt loam, 4 to 6 percent slopes, eroded	C	28.8	24.0%
541B	Graymont silt loam, 2 to 5 percent slopes	C	4.3	3.6%
<b>Totals for Area of Interest</b>			<b>120.2</b>	<b>100.0%</b>

## 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

**TAB 1E**

**NATIONAL WETLANDS INVENTORY MAP**



July 19, 2021

**Wetlands**

- |                                                                                     |                                |                                                                                     |                                   |                                                                                       |          |
|-------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|  | Freshwater Pond                |  |                                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

**TAB 1F**

**RELEVANT PERMITS**



# Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271  
www.dnr.illinois.gov

JB Pritzker, Governor  
Colleen Callahan, Director

**Mailing address: State Historic Preservation Office, 1 Old State Capitol Plaza, Springfield, IL, 62701**

DuPage County  
West Chicago  
Sites: 11DU610-615, Section:22-Township:40N-Range:9E,  
Smith Road between Pramukh Swami Maharaj Rd. & Klein Rd.  
CEMCON-402.078, IEPA  
New construction, residential subdivision - St. Andrews

PLEASE REFER TO:

SHPO LOG #010031921

April 29, 2021

Cynthia L. Balek, Ph.D.  
Archaeology and Geomorphology Services  
2220 Mayfair Avenue  
Westchester, IL 60154

Dear Dr. Balek:

The Illinois State Historic Preservation Office is required by the Illinois State Agency Historic Resources Preservation Act (20 ILCS 3420, as amended, 17 IAC 4180) to review all state funded, permitted or licensed undertakings for their effect on cultural resources. Pursuant to this, we have received information regarding the referenced project for our comment.

Our staff has reviewed the specifications under the state law and assessed the impact of the project as submitted by your office. We have determined, based on the available information, that no significant historic, architectural or archaeological resources are located within the proposed project area.

According to the information you have provided concerning your proposed project, apparently there is no federal involvement in your project. However, please note that the state law is less restrictive than the federal cultural resource laws concerning archaeology. If your project will use federal loans or grants, need federal agency permits, use federal property, or involve assistance from a federal agency, then your project must be reviewed under the National Historic Preservation Act of 1966, as amended. Please notify us immediately if such is the case.

This clearance remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the IL Human Skeletal Remains Protection Act (20 ILCS 3440).

Please retain this letter in your files as evidence of compliance with the Illinois State Agency Historic Resources Preservation Act.

If further assistance is needed please contact Jeff Kruchten, Chief Archaeologist at 217/785-1279 or [Jeffery.kruchten@illinois.gov](mailto:Jeffery.kruchten@illinois.gov).

Sincerely,

PrivateInformation

Robert F. Appleman  
Deputy State Historic  
Preservation Officer



# Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271  
<http://dnr.state.il.us>

JB Pritzker, Governor

Colleen Callahan, Director

March 18, 2021

Ty Morris  
Pulte Home Company, LLC  
1900 East Golf Road, suite 300  
Schaumburg, IL 60173

**RE: St. Andrews of West Chicago**  
**Project Number(s): 2111646 [402.078]**  
**County: DuPage**

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.

Brian Willard  
Division of Ecosystems and Environment  
217-785-5500

**Applicant:** Pulte Home Company, LLC  
**Contact:** Ty Morris  
**Address:** 1900 East Golf Road, suite 300  
Schaumburg, IL 60173

**IDNR Project Number:** 2111646  
**Date:** 03/17/2021  
**Alternate Number:** 402.078

**Project:** St. Andrews of West Chicago  
**Address:** SE of Smith Road and Klein Road, West Chicago

**Description:** The proposed project consist of developing the existing agricultural Cropland into residential Homes.

### Natural Resource Review Results

#### Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

Yellow-Headed Blackbird (*Xanthocephalus xanthocephalus*)

**An IDNR staff member will evaluate this information and contact you to request additional information or to terminate consultation if adverse effects are unlikely.**

#### Location

The applicant is responsible for the accuracy of the location submitted for the project.

**County:** DuPage

**Township, Range, Section:**  
40N, 9E, 22



**IL Department of Natural Resources  
Contact**  
Brian Willard  
217-785-5500  
Division of Ecosystems & Environment

**Government Jurisdiction**  
IL Environmental Protection Agency  
Bureau of Water Quality  
1021 NGrand Ave East  
Springfield, Illinois 62794

#### **Disclaimer**

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

#### **Terms of Use**

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

### **Security**

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

### **Privacy**

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.

**TAB 2**

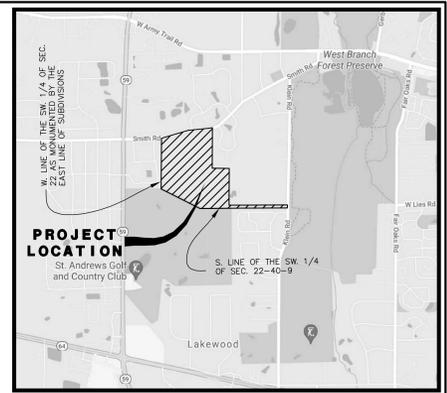
**STORMWATER SUBMITTAL**

**TAB 2A**

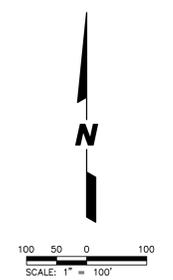
**EXISTING CONDITIONS**

**WATERSHED EXHIBIT**

# EXISTING WATERSHED EXHIBIT FOR **THE PRESERVE AT WEST BRANCH**

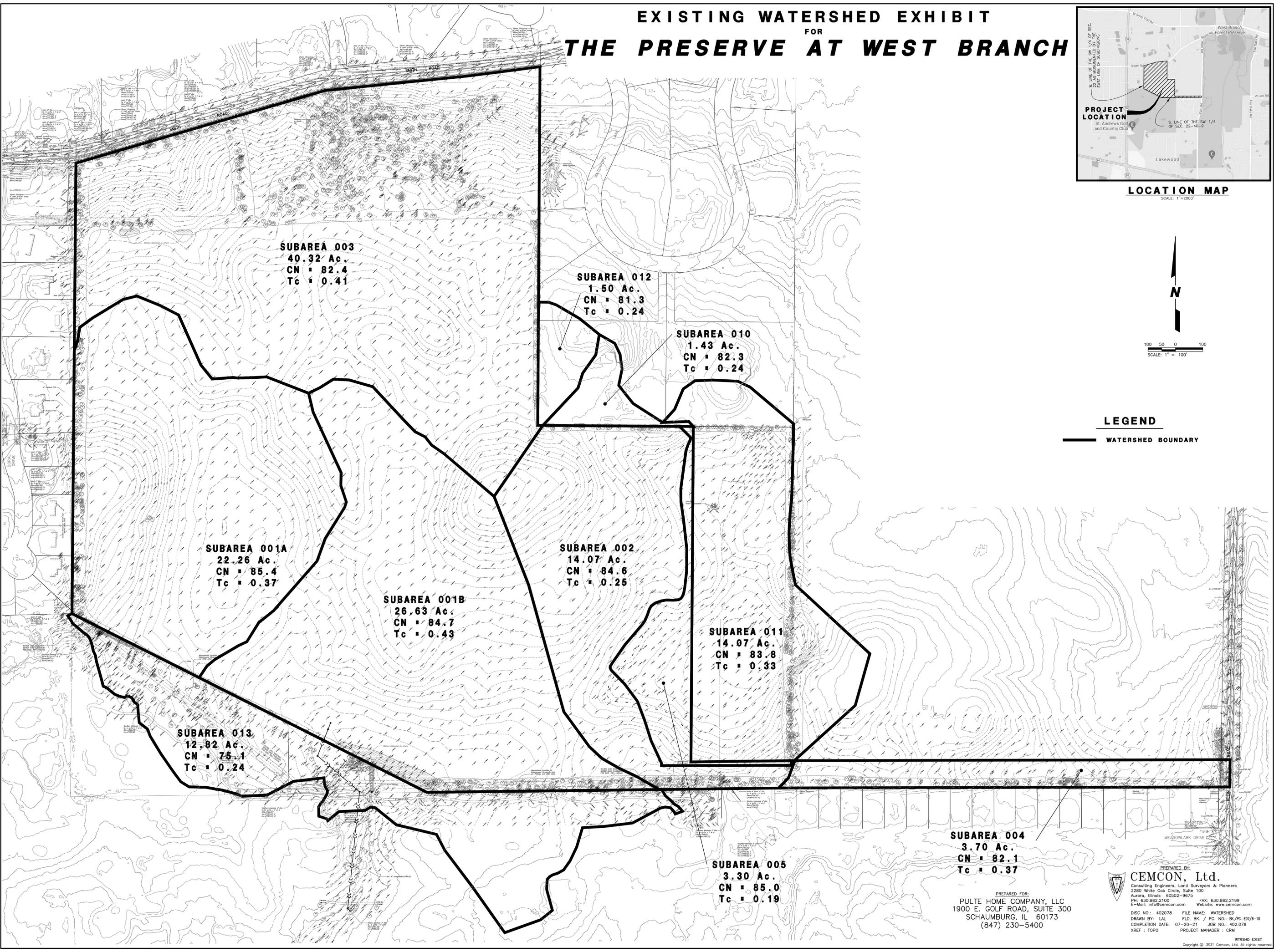


**LOCATION MAP**  
SCALE: 1" = 2000'



**LEGEND**

————— WATERSHED BOUNDARY



**SUBAREA 003**  
40.32 Ac.  
CN = 82.4  
Tc = 0.41

**SUBAREA 012**  
1.50 Ac.  
CN = 81.3  
Tc = 0.24

**SUBAREA 010**  
1.43 Ac.  
CN = 82.3  
Tc = 0.24

**SUBAREA 001A**  
22.26 Ac.  
CN = 85.4  
Tc = 0.37

**SUBAREA 002**  
14.07 Ac.  
CN = 84.6  
Tc = 0.25

**SUBAREA 001B**  
26.63 Ac.  
CN = 84.7  
Tc = 0.43

**SUBAREA 011**  
14.07 Ac.  
CN = 83.8  
Tc = 0.33

**SUBAREA 013**  
12.82 Ac.  
CN = 75.1  
Tc = 0.24

**SUBAREA 004**  
3.70 Ac.  
CN = 82.1  
Tc = 0.37

**SUBAREA 005**  
3.30 Ac.  
CN = 85.0  
Tc = 0.19

PREPARED FOR:  
**PULTE HOME COMPANY, LLC**  
1900 E. GOLF ROAD, SUITE 300  
SCHAUMBURG, IL 60173  
(847) 230-5400

PREPARED BY:  
**CEMCON, Ltd.**  
Consulting Engineers, Land Surveyors & Planners  
2280 White Oak Circle, Suite 100  
Aurora, Illinois 60502-9675  
PH: 630.862.2100 FAX: 630.862.2199  
E-Mail: info@cemcon.com Website: www.cemcon.com

DISC NO.: 402078 FILE NAME: WATERSHED  
DRAWN BY: LAL FLD. BK. / PG. NO.: BK/PG. E07/6-10  
COMPLETION DATE: 07-20-21 JOB NO.: 402.078  
XREF: TOPO PROJECT MANAGER: CRM

**TAB 2B**

**EXISTING CONDITIONS  
SUPPORTING DOCUMENTATION**

# Worksheet 2: Runoff Curve Number and Runoff

Project St.Andrews By JMH Date 7/7/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed

SUBAREA 001A

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Row Crops (Good Condition)	85			12.49	1061.65
C	Row Crops (Poor Condition)	88			8.45	743.6
C	Woods-Grass Combination (Good Condition)	72			1.32	95.04
Totals =					22.26	1900.290

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1900.290}{22.260} = \underline{85.368}$$

Use CN = 85.4

**2. Runoff**

Frequency .....	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall .....	in													
Runoff, Q .....	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

# Worksheet 2: Runoff Curve Number and Runoff

Project St.Andrews By JMH Date 7/7/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed

SUBAREA 001B

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Row Crops (Good Condition)	85			23.08	1961.8
C	Row Crops (Poor Condition)	88			2.34	205.92
C	Woods-Grass Combination (Good Condition)	72			1.21	87.12
Totals =					26.63	2254.840

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{2254.840}{26.630} = \underline{84.673}$$

Use CN = 84.7

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St.Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked JMH Date 7/7/2021

Circle one: Present      Developed

SUBAREA 002

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Row Crops (Good Condition)	85			13.66	1161.1
C	Woods-Grass Combination (Good Condition)	72			0.41	29.52
Totals =					14.07	1190.620

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1190.620}{14.070} = \underline{84.621}$$

Use CN = 84.6

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St. Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed

SUBAREA 002

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Row Crops (Good Condition)	85			25.73	2187.05
C	Row Crops (Poor Condition)	88			5.22	459.36
C	Woods-Grass Combination (Good Condition)	72			9.37	674.64
Totals =					40.32	3321.050

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3321.050}{40.320} = \underline{82.367}$$

Use CN = 82.4

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St. Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed

SUBAREA 002

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Row Crops (Good Condition)	85			2.88	244.8
C	Woods-Grass Combination (Good Condition)	72			0.82	59.04
Totals =					3.70	303.840

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{303.840}{3.700} = \underline{82.119}$$

Use CN = 82.1

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St.Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked JMH Date 7/7/2021

Circle one: Present      Developed

SUBAREA 002

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Row Crops (Good Condition)	85			3.29	279.65
C	Woods-Grass Combination (Good Condition)	72			0.01	0.72
Totals =					3.30	280.370

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{280.370}{3.300} = \underline{84.961}$$

Use CN = 85.0

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St. Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed      SUBAREA 010

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Impervious Areas	98			0.16	15.68
C	Open Space (good condition)	86			0.75	64.5
C	Woods-Grass Combination (Good Condition)	72			0.52	37.44
Totals =					1.43	117.620

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{117.620}{1.430} = \underline{82.252}$$

Use CN = 82.3

2. Runoff

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St. Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed

SUBAREA 011

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X_ acres mi2 %	
C	Impervious Areas	98			0.21	20.58
C	Open Space (Good Condition)	86			1.06	91.42415978
C	Row Crops (Good Condition)	85			11.19	951.15
C	Woods-Grass Combination (Good Condition)	72			1.61	115.92
Totals =					14.07	1179.074

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1179.074}{14.073} = 83.782$$

Use CN = 83.8

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St.Andrews By KNS Date 6/30/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present      Developed

SUBAREA 002

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Impervious Areas	98			0.14	13.72
C	Open Space (Good Condition)	86			0.74	63.64
C	Woods-Grass Combination (Good Condition)	72			0.62	44.64
Totals =					1.50	122.000

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{122.000}{1.500} = 81.333$$

Use CN = 81.3

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project St.Andrews By CMZ Date 7/2/2021  
 Location West Chicago Checked JMH Date 7/7/2021

Circle one: Present      Developed

SUBAREA 013

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Impervious Areas	98			0.28	27.44
C	Open Space (Fair Conidtion) (includes sand bunkers)	79			1.60	126.4
C	Open Space (Good Condition)	74			10.94	809.56
Totals =					12.82	963.400

1/ Use only one CN source per line.

$$\text{CN (weighted) = } \frac{\text{Total Product}}{\text{Total Area}} = \frac{963.400}{12.820} = \underline{75.148}$$

Use CN = 75.1

**2. Runoff**

Frequency .....	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall .....	in													
Runoff, Q .....	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Project Location WEST CHICAGO IL

By JMH Date 7/7/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 001A

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
RC		
0.17		
ft	100	
in	3.34	
ft/ft	0.012	
hr	0.217	+ = 0.217

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
unpaved		
700		
0.006		
1.26		
hr	0.155	+ = 0.155

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.371  
 min 22

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By JMH Date 7/7/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 001B

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	RC	
	0.17	
ft	100	
in	3.34	
ft/ft	0.015	
hr	0.198	+ = 0.198

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	680	
	0.006	
	1.26	
hr	0.150	+ = 0.150

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft	880	
hr	0.0815	+ = 0.081

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.430  
 min 26

Project Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 002

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	RC	
	0.17	
ft	100	
in	3.34	
ft/ft	0.017	
hr	0.189	+ = <span style="border: 1px solid black; padding: 2px;">0.189</span>

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	280	
	0.007	
	1.36	
hr	0.057	+ = <span style="border: 1px solid black; padding: 2px;">0.057</span>

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ = <span style="border: 1px solid black; padding: 2px;"></span>

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) 0.246 hr  
 min 15

Project Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 003

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	RC	
	0.17	
ft	100	
in	3.34	
ft/ft	0.014	
hr	0.204	+ = <span style="border: 1px solid black; padding: 2px;">0.204</span>

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1776	
	0.022	
	2.42	
hr	0.204	+ = <span style="border: 1px solid black; padding: 2px;">0.204</span>

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ = <span style="border: 1px solid black; padding: 2px;"></span>

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.408  
min 24

Project Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 004

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	RC	
	0.17	
ft	100	
in	3.34	
ft/ft	0.016	
hr	0.193	+ = 0.193

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	1325	
	0.016	
	2.06	
hr	0.179	+ = 0.179

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.372  
 min 22

Project Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 005

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	RC	
	0.17	
ft	100	
in	3.34	
ft/ft	0.024	
hr	0.164	+ = 0.164

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	289	
	0.037	
	3.14	
hr	0.026	+ = 0.026

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.190  
 min 11

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 010

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
1. Surface Description	Grass	
2. Manning's roughness coeff., n	0.24	
3. Flow length, L	ft 100	
4. Two-yr 24-hr rainfall, P <sub>2</sub>	in 3.34	
5. Land slope, s	ft/ft 0.02	
6. $T_c$	hr 0.233	+ = 0.233

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
7. Surface description	unpaved	
8. Flow length, L	95	
9. Watercourse slope, s	0.02	
10. Average velocity, V	2.30	
11. $T_t$	hr 0.011	+ = 0.011

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
12. Cross sectional flow area, a	ft <sup>2</sup>	
13. Wetted perimeter, pw	ft	
14. Hydraulic radius, r	ft	
15. Channel Slope, s	ft/ft	
16. Manning's roughness coeff., n		
17. V	ft/s 3	
18. Flow length, L	ft	
19. $T_t$	hr	+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.244  
 min 15

Project Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 011

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
RC		
0.17		
ft	100	
in	3.34	
ft/ft	0.01	
hr	0.233	+ = 0.233

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
unpaved		
470		
0.007		
1.36		
hr	0.096	+ = 0.096

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.329  
 min 20

Project Location WEST CHICAGO IL

By KNS Date 6/30/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 012

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	RC	
	0.17	
ft	100	
in	3.34	
ft/ft	0.01	
hr	0.233	+ = 0.233

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	49	
	0.012	
	1.78	
hr	0.008	+ = 0.008

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft		
hr		+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.241  
 min 14

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By CMZ Date 7/6/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 013

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
1. Surface Description	Short Grass	
2. Manning's roughness coeff., n	0.15	
3. Flow length, L (total L ≤ 300 ft)	ft 100	
4. Two-yr 24-hr rainfall, P <sub>2</sub>	in 3.34	
5. Land slope, s	ft/ft 0.065	
6. $T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$	hr 0.100	+ = 0.100

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
7. Surface description	unpaved	
8. Flow length, L	1000	
9. Watercourse slope, s	0.014	
10. Average velocity, V	1.93	
11. $T_t = \frac{L}{3600 V}$	hr 0.144	+ = 0.144

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r = a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
12. Cross sectional flow area, a	ft <sup>2</sup>	
13. Wetted perimeter, pw	ft	
14. Hydraulic radius, r = a/pw compute r	ft	
15. Channel Slope, s	ft/ft	
16. Manning's roughness coeff., n		
17. $V = 1.49 r^{2/3} s^{1/2} / n$	ft/s 3	
18. Flow length, L	ft	
19. $T_t = \frac{L}{3600 V}$	hr	+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.244  
 min 15

Job #: 402.078  
Project: St. Andrews

Date: June 29, 2021  
Revised:  
By: JMH

<b>SWMF ex001</b>				
<b>AREA BASED ON TOPOGRAPHIC SURVEY</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
793.8	1500	0.034	0.000	<b>0.000</b>
794.0	23890	0.548	0.058	<b>0.058</b>
794.5	74540	1.711	0.565	<b>0.623</b>
795.0	129210	2.966	1.169	<b>1.793</b>
795.1	137080	3.147	0.306	<b>2.098</b>
796.1	214010	4.913	4.030	<b>6.128</b>

Job #: 402.078  
Project: St. Andrews

Date: July 9, 2021  
Revised:  
By: JMH

<b>SWMF ex002</b>				
<b>AREA BASED ON TOPOGRAPHIC SURVEY</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
785.5	0	0.000	0.000	<b>0.000</b>
786.0	45480	1.044	0.261	<b>0.261</b>
787.0	124480	2.858	1.951	<b>2.212</b>
788.0	174720	4.011	3.434	<b>5.646</b>
789.0	225440	5.175	4.593	<b>10.239</b>
790.0	289380	6.643	5.909	<b>16.149</b>
791.0	393800	9.040	7.842	<b>23.991</b>
792.0	489800	11.244	10.142	<b>34.133</b>
793.0	584420	13.416	12.330	<b>46.463</b>

Job #: 402.078  
Project: St. Andrews

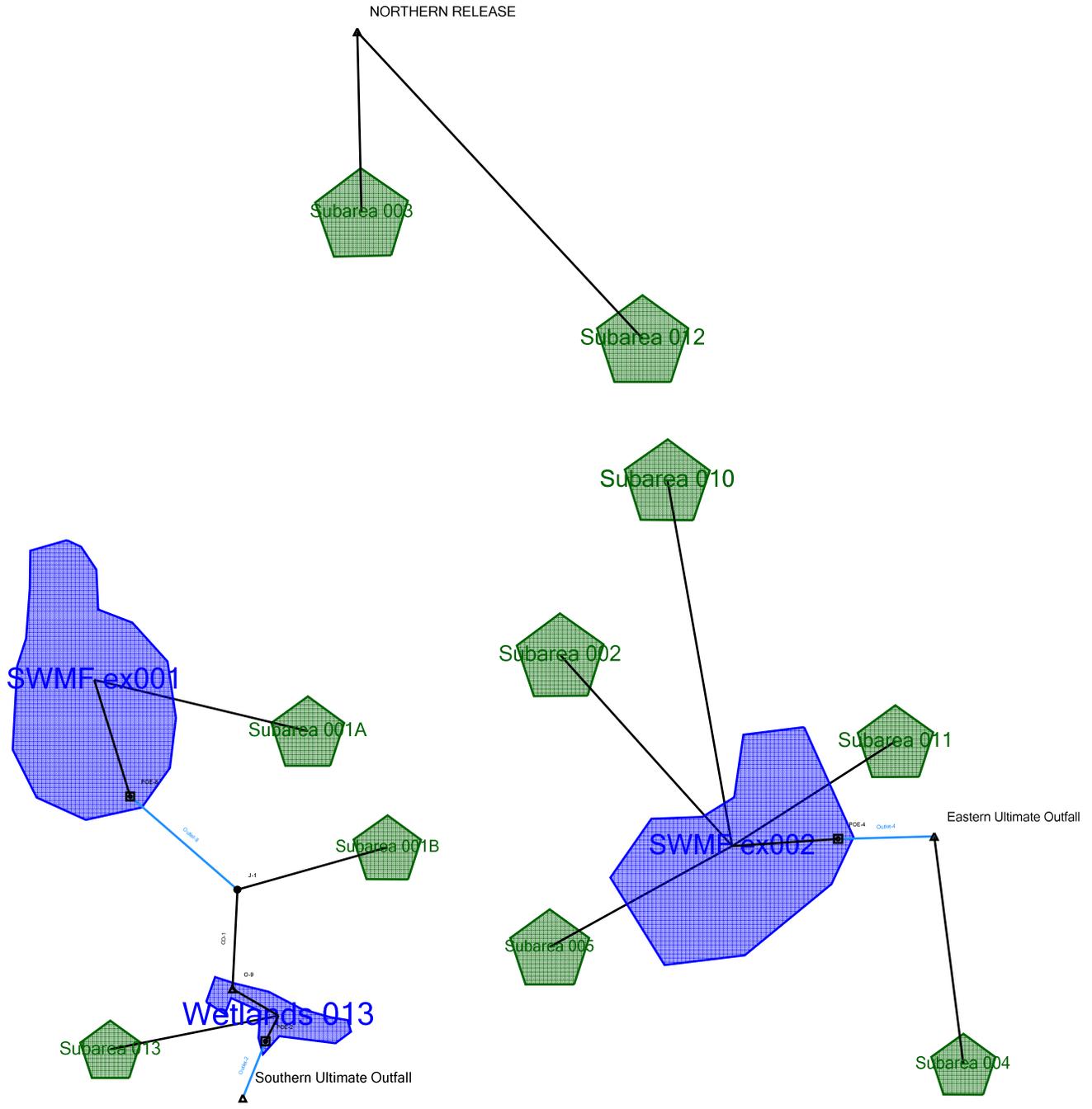
Date: July 7, 2021  
Revised:  
By: JMH

<b>WETLANDS 013</b>				
<b>AREA BASED ON TOPOGRAPHIC SURVEY</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
783.89	0	0.000	0.000	<b>0.000</b>
785.5	730	0.017	0.013	<b>0.013</b>
786.0	1000	0.023	0.010	<b>0.023</b>
787.0	4460	0.102	0.063	<b>0.086</b>
788.0	18580	0.427	0.264	<b>0.351</b>
788.2	36870	0.846	0.127	<b>0.478</b>
789.0	81560	1.872	1.088	<b>1.565</b>
790.0	153860	3.532	2.702	<b>4.268</b>

**TAB 2C**

**EXISTING CONDITIONS  
PONDPACK MODEL & OUTPUT**

# Scenario: 100Yr 24 Hr



## Scenario Calculation Summary

Scenario Summary	
ID	1
Label	100Yr 24 Hr
Notes	
Active Topology	Base Active Topology
Hydrology	Base Hydrology
Rainfall Runoff	100Yr 24Hr
Physical	Base Physical
Initial Condition	Base Initial Condition
Boundary Condition	Base Boundary Condition
Infiltration and Inflow	Base Infiltration and Inflow
Output	Base Output
User Data Extensions	Base User Data Extensions
PondPack Engine Calculation Options	480Hr

Output Summary			
Output Increment	0.100 hours	Duration	480.000 hours

Rainfall Summary			
Return Event Tag	100	Rainfall Type	Time-Depth Curve
Total Depth	8.6 in	Storm Event	100YR-24HR

### Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Eastern Ultimate Outfall	100Yr 24 Hr	100	None	1.978	16.000	2.60	(N/A)	(N/A)
J-1	100Yr 24 Hr	100	None	25.775	16.100	34.87	(N/A)	(N/A)
NORTHERN RELEASE	100Yr 24 Hr	100	None	22.464	16.000	29.44	(N/A)	(N/A)
SWMF ex001 (IN)	100Yr 24 Hr	100	None	12.637	16.000	16.10	(N/A)	(N/A)
SWMF ex001 (OUT)	100Yr 24 Hr	100	None	10.844	16.200	15.79	795.50	3.695
SWMF ex002 (IN)	100Yr 24 Hr	100	None	18.264	16.000	23.56	(N/A)	(N/A)
SWMF ex002 (OUT)	100Yr 24 Hr	100	None	0.000	0.000	0.00	790.27	18.264
Southern Ultimate Outfall	100Yr 24 Hr	100	None	31.727	16.200	42.94	(N/A)	(N/A)
Subarea 001A	100Yr 24 Hr	100	None	12.637	16.000	16.10	(N/A)	(N/A)

# Scenario Calculation Summary

## Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Subarea 001B	100Yr 24 Hr	100	None	14.931	16.000	19.14	(N/A)	(N/A)
Subarea 002	100Yr 24 Hr	100	None	7.875	16.000	10.12	(N/A)	(N/A)
Subarea 003	100Yr 24 Hr	100	None	21.675	16.000	28.39	(N/A)	(N/A)
Subarea 004	100Yr 24 Hr	100	None	1.978	16.000	2.60	(N/A)	(N/A)
Subarea 005	100Yr 24 Hr	100	None	1.860	16.000	2.38	(N/A)	(N/A)
Subarea 010	100Yr 24 Hr	100	None	0.767	16.000	1.01	(N/A)	(N/A)
Subarea 011	100Yr 24 Hr	100	None	7.761	16.000	10.04	(N/A)	(N/A)
Subarea 012	100Yr 24 Hr	100	None	0.790	16.000	1.05	(N/A)	(N/A)
Subarea 013	100Yr 24 Hr	100	None	5.952	16.000	8.34	(N/A)	(N/A)
Wetlands 013 (IN)	100Yr 24 Hr	100	None	31.727	16.100	43.12	(N/A)	(N/A)
Wetlands 013 (OUT)	100Yr 24 Hr	100	None	31.727	16.200	42.94	789.07	1.747

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
CO-1	Channel	Upstream	25.775	16.100	34.87	J-1	
CO-1	Channel	Link	25.775	16.200	34.87		
CO-1	Channel	Downstream	31.727	16.100	43.12	Wetlands 013	
Outlet-2	Pond Outlet	Upstream	31.727	16.100	43.12	Wetlands 013	Pond Inflow
Outlet-2	Pond Outlet	Outflow	31.727	16.200	42.94	Wetlands 013	Pond Outflow
Outlet-2	Pond Outlet	Link	31.727	16.200	42.94		
Outlet-2	Pond Outlet	Downstream	31.727	16.200	42.94	Southern Ultimate Outfall	
Outlet-4	Pond Outlet	Upstream	18.264	16.000	23.56	SWMF ex002	Pond Inflow
Outlet-4	Pond Outlet	Outflow	0.000	0.000	0.00	SWMF ex002	Pond Outflow
Outlet-4	Pond Outlet	Link	0.000	0.000	0.00		
Outlet-4	Pond Outlet	Downstream	1.978	16.000	2.60	Eastern Ultimate Outfall	
Outlet-8	Pond Outlet	Upstream	12.637	16.000	16.10	SWMF ex001	Pond Inflow

# Scenario Calculation Summary

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
Outlet-8	Pond Outlet	Outflow	10.844	16.200	15.79	SWMF ex001	Pond Outflow
Outlet-8	Pond Outlet	Link	10.844	16.200	15.79		
Outlet-8	Pond Outlet	Downstream	25.775	16.100	34.87	J-1	

## Messages

---

Message Id	6
Scenario	(N/A)
Element Type	(N/A)
Element Id	-2
Label	(N/A)
Time	(N/A)
Message	There are user notifications available. Double-click this message to load these messages.
Source	Project File

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## Scenario Calculation Summary

Scenario Summary	
ID	22
Label	100Yr 1Hr
Notes	
Active Topology	<I> Base Active Topology
Hydrology	<I> Base Hydrology
Rainfall Runoff	100Yr 1Hr
Physical	<I> Base Physical
Initial Condition	<I> Base Initial Condition
Boundary Condition	<I> Base Boundary Condition
Infiltration and Inflow	<I> Base Infiltration and Inflow
Output	<I> Base Output
User Data Extensions	<I> Base User Data Extensions
PondPack Engine Calculation Options	240Hr

Output Summary			
Output Increment	0.050 hours	Duration	240.000 hours

Rainfall Summary			
Return Event Tag	100	Rainfall Type	Time-Depth Curve
Total Depth	4.0 in	Storm Event	100YR- 1HR

### Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Eastern Ultimate Outfall	100Yr 1Hr	100	None	0.690	0.500	12.46	(N/A)	(N/A)
J-1	100Yr 1Hr	100	None	8.340	0.550	92.29	(N/A)	(N/A)
NORTHERN RELEASE	100Yr 1Hr	100	None	7.876	0.500	135.38	(N/A)	(N/A)
SWMF ex001 (IN)	100Yr 1Hr	100	None	4.674	0.500	85.60	(N/A)	(N/A)
SWMF ex001 (OUT)	100Yr 1Hr	100	None	2.881	1.200	19.37	795.54	3.855
SWMF ex002 (IN)	100Yr 1Hr	100	None	6.619	0.400	135.36	(N/A)	(N/A)
SWMF ex002 (OUT)	100Yr 1Hr	100	None	0.000	0.000	0.00	788.21	6.619
Southern Ultimate Outfall	100Yr 1Hr	100	None	10.152	0.850	93.41	(N/A)	(N/A)
Subarea 001A	100Yr 1Hr	100	None	4.674	0.500	85.60	(N/A)	(N/A)

# Scenario Calculation Summary

## Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Subarea 001B	100Yr 1Hr	100	None	5.459	0.550	92.21	(N/A)	(N/A)
Subarea 002	100Yr 1Hr	100	None	2.872	0.400	62.72	(N/A)	(N/A)
Subarea 003	100Yr 1Hr	100	None	7.604	0.500	130.46	(N/A)	(N/A)
Subarea 004	100Yr 1Hr	100	None	0.690	0.500	12.46	(N/A)	(N/A)
Subarea 005	100Yr 1Hr	100	None	0.683	0.350	16.45	(N/A)	(N/A)
Subarea 010	100Yr 1Hr	100	None	0.269	0.400	5.83	(N/A)	(N/A)
Subarea 011	100Yr 1Hr	100	None	2.795	0.450	53.72	(N/A)	(N/A)
Subarea 012	100Yr 1Hr	100	None	0.271	0.400	5.87	(N/A)	(N/A)
Subarea 013	100Yr 1Hr	100	None	1.813	0.400	37.49	(N/A)	(N/A)
Wetlands 013 (IN)	100Yr 1Hr	100	None	10.152	0.600	119.59	(N/A)	(N/A)
Wetlands 013 (OUT)	100Yr 1Hr	100	None	10.152	0.850	93.41	789.37	2.560

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
CO-1	Channel	Upstream	8.340	0.550	92.29	J-1	
CO-1	Channel	Link	8.340	0.650	92.29		
CO-1	Channel	Downstream	10.152	0.600	119.59	Wetlands 013	
Outlet-2	Pond Outlet	Upstream	10.152	0.600	119.59	Wetlands 013	Pond Inflow
Outlet-2	Pond Outlet	Outflow	10.152	0.850	93.41	Wetlands 013	Pond Outflow
Outlet-2	Pond Outlet	Link	10.152	0.850	93.41		
Outlet-2	Pond Outlet	Downstream	10.152	0.850	93.41	Southern Ultimate Outfall	
Outlet-4	Pond Outlet	Upstream	6.619	0.400	135.36	SWMF ex002	Pond Inflow
Outlet-4	Pond Outlet	Outflow	0.000	0.000	0.00	SWMF ex002	Pond Outflow
Outlet-4	Pond Outlet	Link	0.000	0.000	0.00		
Outlet-4	Pond Outlet	Downstream	0.690	0.500	12.46	Eastern Ultimate Outfall	
Outlet-8	Pond Outlet	Upstream	4.674	0.500	85.60	SWMF ex001	Pond Inflow

# Scenario Calculation Summary

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
Outlet-8	Pond Outlet	Outflow	2.881	1.200	19.37	SWMF ex001	Pond Outflow
Outlet-8	Pond Outlet	Link	2.881	1.200	19.37		
Outlet-8	Pond Outlet	Downstream	8.340	0.550	92.29	J-1	

## Messages

---

Message Id	6
Scenario	(N/A)
Element Type	(N/A)
Element Id	-2
Label	(N/A)
Time	(N/A)
Message	There are user notifications available. Double-click this message to load these messages.
Source	Project File

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---

Time-Depth Curve: 100YR- 1HR

---

Label	100YR- 1HR
Start Time	0.000 hours
Increment	0.042 hours
End Time	1.000 hours
Return Event	100 years

---

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.042 hours**  
**Time on left represents time for first value in each row.**

Time (hours)	Depth (in)				
0.000	0.0	0.3	0.7	1.1	1.5
0.208	1.9	2.2	2.5	2.7	2.9
0.417	3.0	3.1	3.2	3.3	3.4
0.625	3.5	3.6	3.7	3.7	3.8
0.833	3.8	3.9	3.9	4.0	4.0

---

Time-Depth Curve: 100YR-24HR

---

Label	100YR-24HR
Start Time	0.000 hours
Increment	1.000 hours
End Time	24.000 hours
Return Event	100 years

---

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.000 hours**  
**Time on left represents time for first value in each row.**

Time (hours)	Depth (in)				
0.000	0.0	0.2	0.4	0.6	0.8
5.000	1.0	1.2	1.4	1.7	2.0
10.000	2.3	2.7	3.1	3.8	4.5
15.000	5.2	6.0	6.7	7.3	7.7
20.000	8.0	8.2	8.3	8.4	8.6

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.370 hours
Area (User Defined)	22.260 acres
<hr/>	
Computational Time Increment	0.049 hours
Time to Peak (Computed)	0.493 hours
Flow (Peak, Computed)	86.12 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.500 hours
Flow (Peak Interpolated Output)	85.60 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	85.400
Area (User Defined)	22.260 acres
Maximum Retention (Pervious)	1.7 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	4.675 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	4.674 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.370 hours
Computational Time Increment	0.049 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	68.17 ft <sup>3</sup> /s
Unit peak time, Tp	0.247 hours
Unit receding limb, Tr	0.987 hours
Total unit time, Tb	1.233 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.430 hours
Area (User Defined)	26.630 acres
<hr/>	
Computational Time Increment	0.057 hours
Time to Peak (Computed)	0.516 hours
Flow (Peak, Computed)	93.28 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.550 hours
Flow (Peak Interpolated Output)	92.21 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	84.700
Area (User Defined)	26.630 acres
Maximum Retention (Pervious)	1.8 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	5.455 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	5.459 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.430 hours
Computational Time Increment	0.057 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	70.17 ft <sup>3</sup> /s
Unit peak time, Tp	0.287 hours
Unit receding limb, Tr	1.147 hours
Total unit time, Tb	1.433 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.250 hours
Area (User Defined)	14.070 acres
<hr/>	
Computational Time Increment	0.033 hours
Time to Peak (Computed)	0.400 hours
Flow (Peak, Computed)	62.72 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.400 hours
Flow (Peak Interpolated Output)	62.72 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	84.600
Area (User Defined)	14.070 acres
Maximum Retention (Pervious)	1.8 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	2.872 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.872 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.250 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	63.77 ft <sup>3</sup> /s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.667 hours
Total unit time, Tb	0.833 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.410 hours
Area (User Defined)	40.320 acres
<hr/>	
Computational Time Increment	0.055 hours
Time to Peak (Computed)	0.547 hours
Flow (Peak, Computed)	130.49 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.500 hours
Flow (Peak Interpolated Output)	130.46 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.400
Area (User Defined)	40.320 acres
Maximum Retention (Pervious)	2.1 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.3 in
Runoff Volume (Pervious)	7.600 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.604 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.410 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	111.43 ft <sup>3</sup> /s
Unit peak time, Tp	0.273 hours
Unit receding limb, Tr	1.093 hours
Total unit time, Tb	1.367 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.370 hours
Area (User Defined)	3.700 acres
<hr/>	
Computational Time Increment	0.049 hours
Time to Peak (Computed)	0.493 hours
Flow (Peak, Computed)	12.51 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.500 hours
Flow (Peak Interpolated Output)	12.46 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.100
Area (User Defined)	3.700 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.2 in
Runoff Volume (Pervious)	0.690 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.690 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.370 hours
Computational Time Increment	0.049 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.33 ft <sup>3</sup> /s
Unit peak time, Tp	0.247 hours
Unit receding limb, Tr	0.987 hours
Total unit time, Tb	1.233 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.190 hours
Area (User Defined)	3.300 acres
<hr/>	
Computational Time Increment	0.025 hours
Time to Peak (Computed)	0.355 hours
Flow (Peak, Computed)	16.45 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.350 hours
Flow (Peak Interpolated Output)	16.45 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	85.000
Area (User Defined)	3.300 acres
Maximum Retention (Pervious)	1.8 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	0.683 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.683 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.190 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	19.68 ft <sup>3</sup> /s
Unit peak time, Tp	0.127 hours
Unit receding limb, Tr	0.507 hours
Total unit time, Tb	0.633 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	1.430 acres
<hr/>	
Computational Time Increment	0.032 hours
Time to Peak (Computed)	0.384 hours
Flow (Peak, Computed)	5.89 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.400 hours
Flow (Peak Interpolated Output)	5.83 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.300
Area (User Defined)	1.430 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.3 in
Runoff Volume (Pervious)	0.269 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.269 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.75 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.330 hours
Area (User Defined)	14.070 acres
<hr/>	
Computational Time Increment	0.044 hours
Time to Peak (Computed)	0.440 hours
Flow (Peak, Computed)	53.91 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.450 hours
Flow (Peak Interpolated Output)	53.72 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	83.800
Area (User Defined)	14.070 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	2.791 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	2.795 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.330 hours
Computational Time Increment	0.044 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.31 ft <sup>3</sup> /s
Unit peak time, Tp	0.220 hours
Unit receding limb, Tr	0.880 hours
Total unit time, Tb	1.100 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	1.500 acres
<hr/>	
Computational Time Increment	0.032 hours
Time to Peak (Computed)	0.384 hours
Flow (Peak, Computed)	5.91 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.400 hours
Flow (Peak Interpolated Output)	5.87 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	81.300
Area (User Defined)	1.500 acres
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.2 in
Runoff Volume (Pervious)	0.271 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.271 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	7.08 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

Storm Event	100YR- 1HR
Return Event	100 years
Duration	240.000 hours
Depth	4.0 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	12.820 acres
<hr/>	
Computational Time Increment	0.032 hours
Time to Peak (Computed)	0.416 hours
Flow (Peak, Computed)	37.70 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	0.400 hours
Flow (Peak Interpolated Output)	37.49 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	75.100
Area (User Defined)	12.820 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	1.812 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.813 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	60.52 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

**Elevation-Volume**

Pond Elevation (ft)		Pond Volume (ac-ft)	
	793.80		0.000
	794.00		0.058
	794.50		0.623
	795.00		1.793
	795.10		2.098
	796.10		6.128

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
785.50	0.000
786.00	0.261
787.00	2.212
788.00	5.646
789.00	10.239
790.00	16.149
791.00	23.991
792.00	34.133
793.00	46.463

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
783.89	0.000
785.50	0.013
786.00	0.023
787.00	0.086
788.00	0.351
788.20	0.478
789.00	1.565
790.00	4.268

---

Requested Pond Water Surface Elevations

---

Minimum (Headwater)	793.80 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	796.10 ft

---

**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	795.00 (N/A)	796.10 (N/A)

**Structure ID: Weir - 1**  
**Structure Type: Irregular Weir**

Station (ft)	Elevation (ft)
0.00	796.10
56.20	795.00
94.10	796.10

Lowest Elevation 795.00 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

---

Structure ID: TW  
 Structure Type: TW Setup, DS Channel

---

Tailwater Type Free Outfall

---

**Convergence Tolerances**

---

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

---

---

Requested Pond Water Surface Elevations

---

Minimum (Headwater)	785.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	793.00 ft

---

**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	792.20 (N/A)	793.00 (N/A)

**Structure ID: Weir - 1**  
**Structure Type: Irregular Weir**

Station (ft)	Elevation (ft)
0.00	793.00
51.90	792.20
72.20	793.00

Lowest Elevation 792.20 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

---

Structure ID: TW  
 Structure Type: TW Setup, DS Channel

---

Tailwater Type Free Outfall

---

**Convergence Tolerances**

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

---

**Requested Pond Water Surface Elevations**

Minimum (Headwater)	783.89 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	790.00 ft

**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward	TW	783.89	790.00
Irregular Weir	Weir - 1	Forward	TW	788.30	790.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	10.00 in
Length	45.00 ft
Length (Computed Barrel)	45.00 ft
Slope (Computed)	0.006 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.040
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	0.000
T2 ratio (HW/D)	1.194
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.  
 Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	783.89 ft	T1 Flow	1.74 ft <sup>3</sup> /s
T2 Elevation	784.88 ft	T2 Flow	1.99 ft <sup>3</sup> /s

**Structure ID: Weir - 1**  
**Structure Type: Irregular Weir**

Station (ft)	Elevation (ft)
0.00	790.00
6.50	789.00
11.10	788.30
52.50	789.00
87.40	790.00

Lowest Elevation 788.30 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

---

Structure ID: TW  
 Structure Type: TW Setup, DS Channel

---

Tailwater Type Free Outfall

---

Convergence Tolerances

---

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

---

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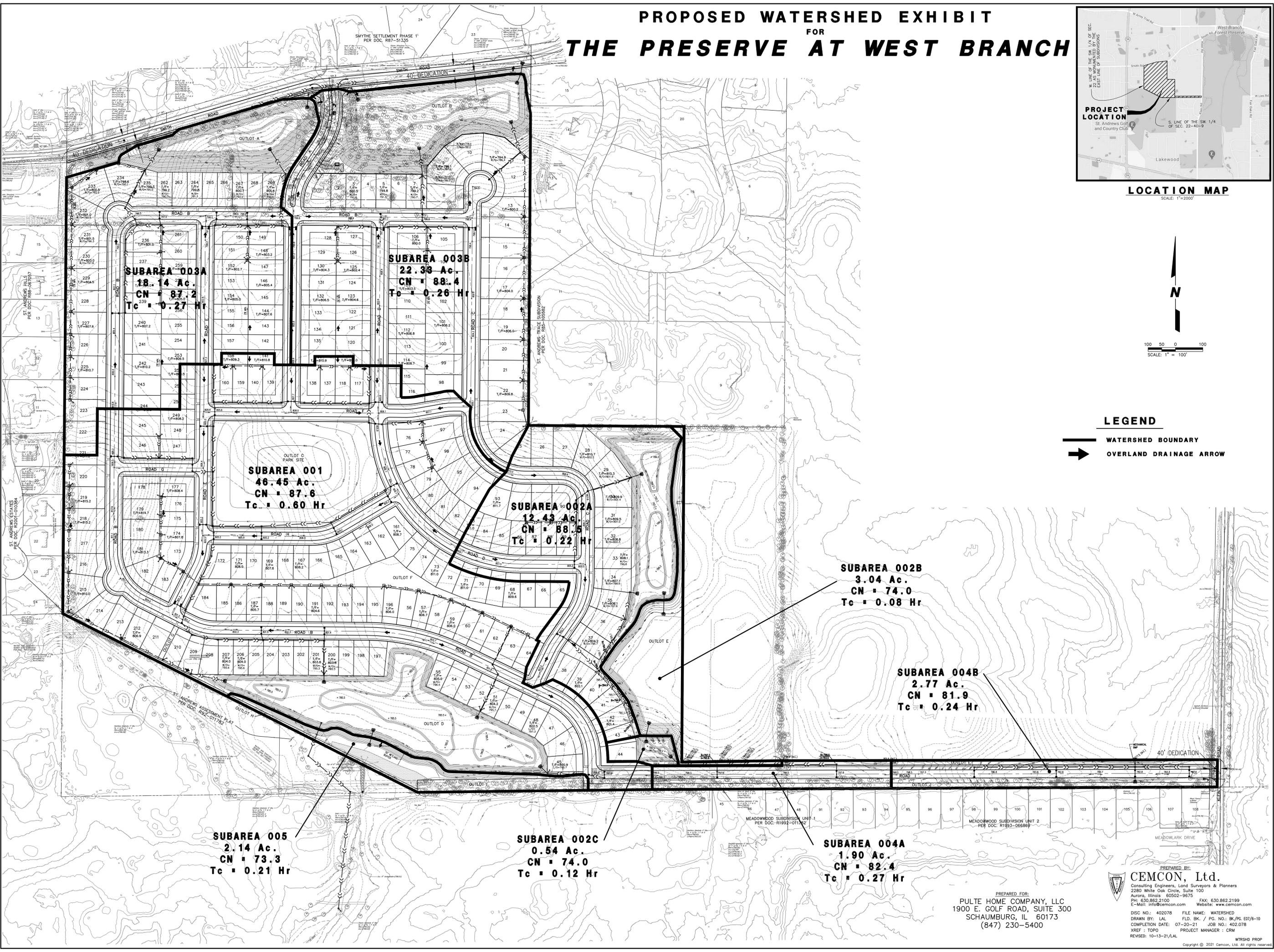
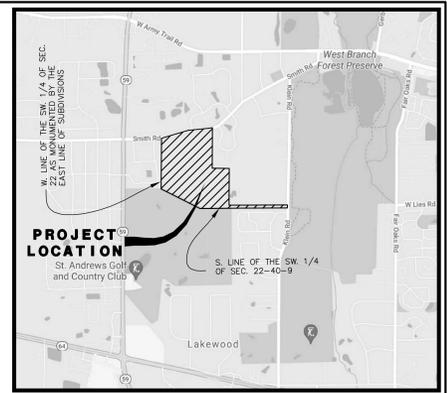
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**TAB 2D**

**PROPOSED CONDITIONS**

**WATERSHED EXHIBIT**

# PROPOSED WATERSHED EXHIBIT FOR THE PRESERVE AT WEST BRANCH



**SUBAREA 003A**  
18.14 Ac.  
CN = 87.2  
Tc = 0.27 Hr

**SUBAREA 003B**  
22.38 Ac.  
CN = 88.4  
Tc = 0.26 Hr

**SUBAREA 001**  
46.45 Ac.  
CN = 87.6  
Tc = 0.60 Hr

**SUBAREA 002A**  
12.43 Ac.  
CN = 88.5  
Tc = 0.22 Hr

**SUBAREA 002B**  
3.04 Ac.  
CN = 74.0  
Tc = 0.08 Hr

**SUBAREA 004B**  
2.77 Ac.  
CN = 81.9  
Tc = 0.24 Hr

**SUBAREA 005**  
2.14 Ac.  
CN = 73.3  
Tc = 0.21 Hr

**SUBAREA 002C**  
0.54 Ac.  
CN = 74.0  
Tc = 0.12 Hr

**SUBAREA 004A**  
1.90 Ac.  
CN = 82.4  
Tc = 0.27 Hr

**LEGEND**

— WATERSHED BOUNDARY

➔ OVERLAND DRAINAGE ARROW

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DISC NO.: 402078 FILE NAME: WATERSHED  
DRAWN BY: LAL FLD. BK. / PG. NO.: BK/PG. 07/6-10  
COMPLETION DATE: 07-20-21 JOB NO.: 402.078  
XREF: TOPO PROJECT MANAGER: CRM  
REVISED: 10-13-21/LAL

PREPARED FOR:  
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**TAB 2E**

**PROPOSED CONDITIONS  
SUPPORTING DOCUMENTATION**

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By KNS Date 7/1/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present Developed SUBAREA 001

1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			6.29	465.46
C	Impervious Area	98			9.61	941.78
C	Residential Districts (1/4 acre ave. lot size)	83			30.45	2527.35
Totals =					46.35	3934.590

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{3934.590}{46.350} = 84.889$$

Use CN = 84.9

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By KNS  
 Location West Chicago Checked JMH Date 7/1/2021  
 Date 7/19/2021

Circle one: Present Developed SUBAREA 002A

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area X_ acres mi2 %	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			0.99	73.26
C	Impervious Areas	98			2.63	257.74
C	Residential Districts (1/4 acre ave. lot size)	83			8.64	717.12
Totals =					12.26	974.860

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{974.860}{12.260} = 79.515$$

Use CN = 79.5

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By KNS Date 7/1/2021  
 Location West Chicago Checked JMH Date 7/19/2021

Circle one: Present      Developed      SUBAREA 002B

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			3.04	224.96
Totals =					3.04	224.960

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{224.960}{3.040} = \underline{74.000}$$

Use CN = 74.0

**2. Runoff**

Frequency .....	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr></table>	Storm #1	Storm #2	Storm #3
Storm #1	Storm #2	Storm #3			
Rainfall .....	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>			
Runoff, Q .....	in	<table border="1" style="width: 100%;"><tr><td> </td><td> </td><td> </td></tr></table>			

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

# Worksheet 2: Runoff Curve Number and Runoff

Project Location West Chicago By JMH Date 7/19/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present Developed SUBAREA 002A

## 1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4	X_ acres mi2 %	
C	Open Space (Good Condition)	74			0.11	8.14
C	Impervious Areas	98			0.23	22.54
C	Residential Districts (1/4 acre ave. lot size)	83			0.20	16.6
Totals =					0.54	39.140

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{39.140}{0.540} = 72.481$$

Use CN = 72.5

## 2. Runoff

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By KNS Date 7/1/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present Developed SUBAREA 003A

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area X_ acres mi2 %	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			1.51	111.74
C	Impervious Areas	98			1.88	184.24
C	Residential Districts (1/4 acre ave. lot size)	83			14.61	1212.63
Totals =					18.00	1396.870

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1396.870}{18.000} = 77.604$$

Use CN = 77.6

**2. Runoff**

Frequency .....	yr	<table border="1" style="width: 100%;"><tr><td>Storm #1</td><td>Storm #2</td><td>Storm #3</td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></table>	Storm #1	Storm #2	Storm #3									
Storm #1	Storm #2	Storm #3												
Rainfall .....	in													
Runoff, Q .....	in													

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By KNS Date 7/1/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present Developed SUBAREA 003B

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			1.56	115.44
C	Impervious Areas	98			4.39	430.22
C	Residential Districts (1/4 acre ave. lot size)	83			16.80	1394.4
Totals =					22.75	1824.620

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{1824.620}{22.750} = 80.203$$

Use CN = 80.2

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By CMZ  
 Location West Chicago Checked JMH Date 7/2/2021  
 Date 7/19/2021

Circle one: Present Developed SUBAREA 004A

## 1. Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			0.78	57.72
C	Impervious Space	98			0.70	68.6
C	Woods-Grass Combination (Good Condition)	72			0.42	30.24
Totals =					1.90	156.560

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{156.560}{1.900} = \underline{82.400}$$

Use CN = 82.4

## 2. Runoff

Frequency .....	yr	Storm #1	Storm #2	Storm #3
Rainfall .....	in			
Runoff, Q .....	in			

(Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By CMZ  
 Location West Chicago Checked JMH Date 7/2/2021  
 Date 7/19/2021

Circle one: Present Developed SUBAREA 004B

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			1.30	96.2
C	Impervious Space	98			0.96	94.08
C	Woods-Grass Combination (Good Condition)	72			0.51	36.72
Totals =					2.77	227.000

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{227.000}{2.770} = 81.949$$

Use CN = 81.9

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

# Worksheet 2: Runoff Curve Number and Runoff

Project \_\_\_\_\_ By CMZ Date 7/2/2021  
 Location West Chicago Checked \_\_\_\_\_ Date \_\_\_\_\_

Circle one: Present Developed SUBAREA 005

**1. Runoff curve number (CN)**

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN <sup>1/</sup>			Area _X_ acres _mi2 _%	Product of CN x Area
		Table 2-2	Fig. 2-3	Fig. 2-4		
C	Open Space (Good Condition)	74			1.44	106.56
C	Woods-Grass Combination (Good Condition)	72			0.70	50.15195041
Totals =					2.14	156.712

1/ Use only one CN source per line.

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}} = \frac{156.712}{2.137} = 73.348$$

Use CN = 73.3

**2. Runoff**

Frequency ..... yr  
 Rainfall ..... in  
 Runoff, Q ..... in  
 (Use P and CN with table 2-1, fig. 2-1, or eqs. 2-3 and 2-4.)

Storm #1	Storm #2	Storm #3

Project Location WEST CHICAGO IL

By ARF Date 2/20/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 001

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID			
	Short Grass		
	0.15		
ft	100		
in	3.34		
ft/ft	0.02		
hr	0.160	+	
			= <span style="border: 1px solid black; padding: 2px;">0.160</span>

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
	paved	unpaved	
	2361	302	
	0.006	0.02	
	1.61	+	2.30
hr	0.407	+	0.036
			= <span style="border: 1px solid black; padding: 2px;">0.444</span>

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/s	3		
ft			
hr		+	
			= <span style="border: 1px solid black; padding: 2px;"></span>

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) 0.604 hr  
 min 36

Project Location WEST CHICAGO IL

By ARF Date 2/20/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 002A

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
1. Surface Description	Short Grass	
2. Manning's roughness coeff., n	0.15	
3. Flow length, L (total L ≤ 300 ft)	ft 100	
4. Two-yr 24-hr rainfall, P <sub>2</sub>	in 3.34	
5. Land slope, s	ft/ft 0.02	
6. $T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$	hr 0.160	+ = 0.160

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
7. Surface description	paved	unpaved
8. Flow length, L	571	150
9. Watercourse slope, s	0.037	0.02
10. Average velocity, V	3.97	+ 2.30
11. $T_t = \frac{L}{3600 V}$	hr 0.040	+ 0.018 = 0.058

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
12. Cross sectional flow area, a	ft <sup>2</sup>	
13. Wetted perimeter, pw	ft	
14. Hydraulic radius, r= a/pw compute r	ft	
15. Channel Slope, s	ft/ft	
16. Manning's roughness coeff., n		
17. $V = 1.49 r^{2/3} s^{1/2} / n$	ft/s 3	
18. Flow length, L	ft	
19. $T_t = \frac{L}{3600 V}$	hr	+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.218  
 min 13

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By JMH Date 7/19/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 002B

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
1. Surface Description	Short Grass	
2. Manning's roughness coeff., n	0.15	
3. Flow length, L (total L ≤ 300 ft)	ft 50	
4. Two-yr 24-hr rainfall, P <sub>2</sub>	in 3.34	
5. Land slope, s	ft/ft 0.25	
6. $T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$	hr 0.033	+ = <span style="border: 1px solid black; padding: 2px;">0.033</span>

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
7. Surface description	unpaved	
8. Flow length, L		
9. Watercourse slope, s		
10. Average velocity, V		
11. $T_t = \frac{L}{3600 V}$	hr	+ = <span style="border: 1px solid black; padding: 2px;"> </span>

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
12. Cross sectional flow area, a	ft <sup>2</sup>	
13. Wetted perimeter, pw	ft	
14. Hydraulic radius, r= a/pw compute r	ft	
15. Channel Slope, s	ft/ft	
16. Manning's roughness coeff., n		
17. $V = 1.49 r^{2/3} s^{1/2} / n$	ft/s 3	
18. Flow length, L	ft	
19. $T_t = \frac{L}{3600 V}$	hr	+ = <span style="border: 1px solid black; padding: 2px;"> </span>
20. Watershed or subarea T <sub>c</sub> or T <sub>t</sub> (add T <sub>t</sub> in steps 6, 11, and 19)	hr	<span style="border: 1px solid black; padding: 2px;">0.033</span>

min 2

\*PondPack minimum of 0.083Hr applied to this subarea

Project Location WEST CHICAGO IL

By JMH Date 7/19/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 002C

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID			
	Short Grass	Short Grass	
	0.15	0.15	
ft	65	12	
in	3.34	3.34	
ft/ft	0.02	0.25	
hr	0.113	+	0.011
		=	0.124

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
	unpaved		
hr		+	
		=	

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/s	3		
ft			
hr		+	
		=	

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19)      hr      0.124  
 min      7

Project Location WEST CHICAGO IL

By ARF Date 2/20/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 003A

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
1. Surface Description	Short Grass	
2. Manning's roughness coeff., n	0.15	
3. Flow length, L (total L ≤ 300 ft)	ft 100	
4. Two-yr 24-hr rainfall, P <sub>2</sub>	in 3.34	
5. Land slope, s	ft/ft 0.02	
6. $T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$	hr 0.160	+ = 0.160

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
7. Surface description (paved or unpaved)	paved	unpaved
8. Flow length, L	1015	265
9. Watercourse slope, s	0.032	0.02
10. Average velocity, V (figure 3-1)	3.70	+ 2.30
11. $T_t = \frac{L}{3600 V}$	hr 0.076	+ 0.032 = 0.108

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
12. Cross sectional flow area, a	ft <sup>2</sup>	
13. Wetted perimeter, pw	ft	
14. Hydraulic radius, r= a/pw compute r	ft	
15. Channel Slope, s	ft/ft	
16. Manning's roughness coeff., n		
17. $V = 1.49 r^{2/3} s^{1/2} / n$	ft/s 3	
18. Flow length, L	ft	
19. $T_t = \frac{L}{3600 V}$	hr	+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.268  
 min 16

Project Location WEST CHICAGO IL

By ARF Date 2/20/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 003B

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID			
1. Surface Description	Short Grass		
2. Manning's roughness coeff., n	0.15		
3. Flow length, L (total L ≤ 300 ft)	ft 100		
4. Two-yr 24-hr rainfall, P <sub>2</sub>	in 3.34		
5. Land slope, s	ft/ft 0.02		
6. $T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$	hr 0.160	+	= <span style="border: 1px solid black; padding: 2px;">0.160</span>

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
7. Surface description (paved or unpaved)	paved	unpaved	
8. Flow length, L	1055	215	
9. Watercourse slope, s	0.039	0.02	
10. Average velocity, V (figure 3-1)	4.08	+	2.30
11. $T_t = \frac{L}{3600 V}$	hr 0.072	+	= <span style="border: 1px solid black; padding: 2px;">0.098</span>

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
12. Cross sectional flow area, a	ft <sup>2</sup>		
13. Wetted perimeter, pw	ft		
14. Hydraulic radius, r= a/pw compute r	ft		
15. Channel Slope, s	ft/ft		
16. Manning's roughness coeff., n			
17. $V = 1.49 r^{2/3} s^{1/2} / n$	ft/s 3		
18. Flow length, L	ft		
19. $T_t = \frac{L}{3600 V}$	hr	+	= <span style="border: 1px solid black; padding: 2px;"></span>

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) 0.258 hr  
 min 15

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By CMZ Date 7/6/2021  
 Checked JMH Date 7/19/2021

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 004A

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Woods, LU	Asphalt
	0.4	0.011
ft	50	50
in	3.34	3.34
ft/ft	0.02	0.02
hr	0.201	0.011

= 0.213

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	paved	
hr		

=  

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft	600	
hr	0.0556	

= 0.056

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.268  
min 16

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By CMZ Date 7/6/2021  
 Checked JMH Date 7/19/2021

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 004B

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID		
	Short Grass	
	0.15	
ft	100	
in	3.34	
ft/ft	0.03	
hr	0.136	+ = 0.136

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
	unpaved	
	70	
	0.033	
	2.96	+ =
hr	0.007	+ = 0.007

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID		
ft <sup>2</sup>		
ft		
ft		
ft/ft		
ft/s	3	
ft	1020	
hr	0.0944	+ = 0.094

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.237  
 min 14

Project \_\_\_\_\_  
 Location WEST CHICAGO IL

By CMZ Date 7/6/2021  
 Checked \_\_\_\_\_ Date \_\_\_\_\_

Check one:  Present  Developed  
 Check one:  Tc  Tt

SUBAREA 005

NOTES: Space for as many as two segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to Tc only)

1. Surface Description (Table 3-1)
2. Manning's roughness coeff., n (Table 3-1)
3. Flow length, L (total L ≤ 300 ft)
4. Two-yr 24-hr rainfall, P<sub>2</sub>
5. Land slope, s
6. 
$$T_c = \frac{0.007 (nL)^{0.8}}{P_2^{0.5} s^{0.4}}$$

Segment ID			
	Short Grass		
	0.15		
	ft	100	
	in	3.34	
	ft/ft	0.028	
	hr	0.140	+ = 0.140

Shallow Concentrated Flow

7. Surface description (paved or unpaved)
8. Flow length, L
9. Watercourse slope, s
10. Average velocity, V (figure 3-1)
11. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
	Unpaved		
	500		
	0.014		
	hr	1.93	+ =
	hr	0.072	+ = 0.072

Channel Flow

12. Cross sectional flow area, a
13. Wetted perimeter, pw
14. Hydraulic radius, r= a/pw compute r
15. Channel Slope, s
16. Manning's roughness coeff., n
17.  $V = 1.49 r^{2/3} s^{1/2} / n$
18. Flow length, L
19. 
$$T_t = \frac{L}{3600 V}$$

Segment ID			
	ft <sup>2</sup>		
	ft		
	ft		
	ft/ft		
	ft/s	3	
	ft		
	hr		+ =

20. Watershed or subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) hr 0.212  
 min 13

Job #: 402078  
Project: ST. ANDREWS

Date:  
Revised:  
By:

June 30, 2021

JMH

Prelim Plan Rev 0

SOUTH BASIN

<b>SWMF 001 STAGE/ STORAGE RELATIONSHIP</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
788.5	176840	4.060	0.000	<b>0.000</b>
789.0	182320	4.185	2.061	<b>2.061</b>
790.0	193400	4.440	4.313	<b>6.374</b>
791.0	204700	4.699	4.570	<b>10.944</b>
792.0	216140	4.962	4.831	<b>15.774</b>
793.0	227780	5.229	5.096	<b>20.870</b>
793.5	233770	5.367	2.649	<b>23.519</b>
794.0	239640	5.501	2.717	<b>26.236</b>

Job #: 402078  
Project: ST. ANDREWS

Date: July 13, 2021  
Revised:  
By: JMH

Prelim Plan Rev 0

EAST BASIN

<b>SWMF 002A STAGE/ STORAGE RELATIONSHIP</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
792.2	67010	1.538	0.000	<b>0.000</b>
793.0	72310	1.660	1.279	<b>1.279</b>
794.0	79190	1.818	1.739	<b>3.018</b>
795.0	86830	1.993	1.906	<b>4.924</b>
795.8	92850	2.132	1.650	<b>6.574</b>
796.5	102000	2.342	1.566	<b>8.140</b>

Job #: 402078  
Project: ST. ANDREWS

Date: July 19, 2021  
Revised:  
By: JMH

Prelim Plan Rev 0

EAST SECONDARY BASIN

<b>SWMF 002C STAGE/ STORAGE RELATIONSHIP</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
792.2	6180	0.142	0.000	<b>0.000</b>
793.0	7270	0.167	0.124	<b>0.124</b>
794.0	8730	0.200	0.184	<b>0.307</b>
795.0	10310	0.237	0.219	<b>0.526</b>
795.7	11480	0.264	0.175	<b>0.701</b>
796.7	13330	0.306	0.285	<b>0.986</b>

Job #: 402078  
Project: ST. ANDREWS

Date:  
Revised:  
By:

June 30, 2021

JMH

Prelim Plan Rev 0

NORTH BASINS

<b>SWMF 003A STAGE/ STORAGE RELATIONSHIP</b>				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
769.0	36830	0.846	0.000	<b>0.000</b>
770.0	41700	0.957	0.901	<b>0.901</b>
771.0	46800	1.074	1.016	<b>1.917</b>
772.0	52090	1.196	1.135	<b>3.052</b>
773.0	57500	1.320	1.258	<b>4.310</b>
774.0	63040	1.447	1.384	<b>5.694</b>
775.0	69330	1.592	1.519	<b>7.213</b>

<b>SWMF 003B STAGE/ STORAGE RELATIONSHIP</b>				
ELEV.	AREA (S.F.)	AREA (AC.)	INCREM. VOLUME (AC.-Ft.)	CUMULATIVE VOLUME (Ac-Ft)
764.0	91620	2.103	0.000	<b>0.000</b>
765.0	97790	2.245	2.174	<b>2.174</b>
766.0	104090	2.390	2.317	<b>4.491</b>
767.0	110510	2.537	2.463	<b>6.955</b>
768.0	117010	2.686	2.612	<b>9.566</b>
769.0	123640	2.838	2.762	<b>12.329</b>
770.0	130620	2.999	2.919	<b>15.247</b>

Job #: 402078  
Project: ST. ANDREWS

Date: July 19, 2021  
Revised:  
By: JMH

Prelim Plan Rev 0

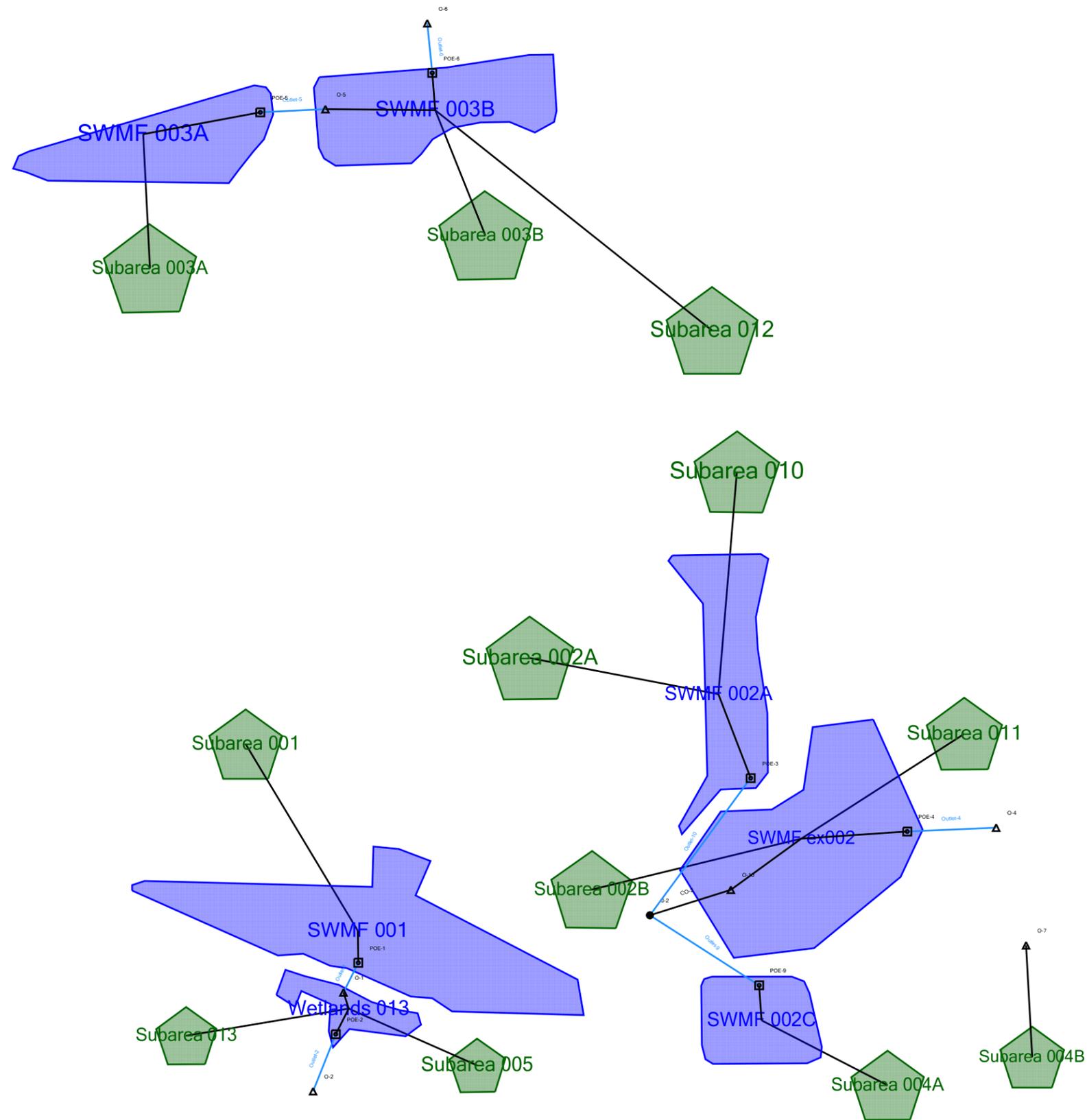
EAST EXISTING DEPRESSION MODIFIED STORAGE

<b>STORMWATER MANAGEMENT FACILITY ex02</b>				
<b>BASED ON CEMCON TOPO AND PROPOSED GRADES</b>				
<b>ELEV.</b>	<b>AREA (S.F.)</b>	<b>AREA (AC.)</b>	<b>INCREM. VOLUME (AC.-Ft.)</b>	<b>CUMULATIVE VOLUME (Ac-Ft)</b>
785.5	0	0.000	0.000	<b>0.000</b>
786.0	45480	1.044	0.261	<b>0.261</b>
787.0	124480	2.858	1.951	<b>2.212</b>
788.0	174720	4.011	3.434	<b>5.646</b>
789.0	247020	5.671	4.841	<b>10.487</b>
790.0	293980	6.749	6.210	<b>16.697</b>
791.0	375530	8.621	7.685	<b>24.382</b>
792.0	441650	10.139	9.380	<b>33.762</b>
793.0	504110	11.573	10.856	<b>44.618</b>

**TAB 2F**

**PROPOSED CONDITIONS  
PONDPACK MODEL & OUTPUT**

Scenario: 100Yr 18Hr



# Scenario Calculation Summary

Scenario Summary	
ID	1
Label	100Yr 24 Hr
Notes	
Active Topology	Base Active Topology
Hydrology	Base Hydrology
Rainfall Runoff	100Yr 24Hr
Physical	Base Physical
Initial Condition	Base Initial Condition
Boundary Condition	Base Boundary Condition
Infiltration and Inflow	Base Infiltration and Inflow
Output	Base Output
User Data Extensions	Base User Data Extensions
PondPack Engine Calculation Options	120Hr

Output Summary			
Output Increment	0.010 hours	Duration	120.000 hours

Rainfall Summary			
Return Event Tag	100	Rainfall Type	Time-Depth Curve
Total Depth	8.6 in	Storm Event	100YR-24HR

ICPM Output Summary			
Target Convergence	0.00 ft <sup>3</sup> /s	ICPM Time Step	0.001 hours
Maximum Iterations	35		

## Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Eastern Outfall 1	100Yr 24 Hr	100	None	0.000	0.000	0.00	(N/A)	(N/A)
Eastern Outfall 2	100Yr 24 Hr	100	None	1.475	16.000	1.95	(N/A)	(N/A)
J-2	100Yr 24 Hr	100	None	9.435	21.200	1.89	(N/A)	(N/A)
Manhole Storage (IN)	100Yr 24 Hr	100	None	26.858	24.110	3.91	(N/A)	(N/A)
Manhole Storage (OUT)	100Yr 24 Hr	100	None	26.858	24.430	3.91	788.92	0.018
O-14	100Yr 24 Hr	100	None	6.348	16.100	9.49	(N/A)	(N/A)
O-15	100Yr 24 Hr	100	None	26.858	24.430	3.91	(N/A)	(N/A)
SWMF 001 (IN)	100Yr 24 Hr	100	None	27.397	16.000	34.08	(N/A)	(N/A)
SWMF 001 (OUT)	100Yr 24 Hr	100	None	26.094	24.250	4.00	793.36	22.769
SWMF 002A (IN)	100Yr 24 Hr	100	None	8.211	15.990	10.21	(N/A)	(N/A)
SWMF 002A (OUT)	100Yr 24 Hr	100	None	8.169	24.100	1.30	795.84	6.662
SWMF 002C (IN)	100Yr 24 Hr	100	None	1.266	16.000	1.69	(N/A)	(N/A)
SWMF 002C (OUT)	100Yr 24 Hr	100	None	1.266	20.110	0.60	795.66	0.690
SWMF 003A (IN)	100Yr 24 Hr	100	None	10.626	15.990	13.30	(N/A)	(N/A)
SWMF 003A (OUT)	100Yr 24 Hr	100	None	10.626	18.380	5.16	773.87	5.513

# Scenario Calculation Summary

## Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
SWMF 003B (IN)	100Yr 24 Hr	100	None	24.766	16.010	22.21	(N/A)	(N/A)
SWMF 003B (OUT)	100Yr 24 Hr	100	None	24.763	24.390	4.61	769.87	14.853
SWMF ex002 (IN)	100Yr 24 Hr	100	None	18.573	16.010	13.62	(N/A)	(N/A)
SWMF ex002 (OUT)	100Yr 24 Hr	100	None	0.000	0.000	0.00	790.24	18.573
Smith Road Storm Sewer	100Yr 24 Hr	100	None	24.763	24.390	4.61	(N/A)	(N/A)
Storage 013B (IN)	100Yr 24 Hr	100	None	6.907	16.110	9.54	(N/A)	(N/A)
Storage 013B (OUT)	100Yr 24 Hr	100	None	6.906	16.120	9.54	788.74	0.023
Storage 013B (Reverse)	100Yr 24 Hr	100	None	0.000	3.640	0.00	(N/A)	(N/A)
Subarea 001	100Yr 24 Hr	100	None	27.397	16.000	34.08	(N/A)	(N/A)
Subarea 002A	100Yr 24 Hr	100	None	7.444	15.990	9.20	(N/A)	(N/A)
Subarea 002B	100Yr 24 Hr	100	None	1.378	16.000	1.96	(N/A)	(N/A)
Subarea 002C	100Yr 24 Hr	100	None	0.245	16.000	0.35	(N/A)	(N/A)
Subarea 003A	100Yr 24 Hr	100	None	10.626	15.990	13.30	(N/A)	(N/A)
Subarea 003B	100Yr 24 Hr	100	None	13.350	15.980	16.51	(N/A)	(N/A)
Subarea 004A	100Yr 24 Hr	100	None	1.021	16.020	1.34	(N/A)	(N/A)
Subarea 004B	100Yr 24 Hr	100	None	1.475	16.000	1.95	(N/A)	(N/A)
Subarea 005	100Yr 24 Hr	100	None	0.955	16.010	1.36	(N/A)	(N/A)
Subarea 010	100Yr 24 Hr	100	None	0.767	16.000	1.01	(N/A)	(N/A)
Subarea 011	100Yr 24 Hr	100	None	7.761	16.010	10.04	(N/A)	(N/A)
Subarea 012	100Yr 24 Hr	100	None	0.790	16.000	1.05	(N/A)	(N/A)
Subarea 013	100Yr 24 Hr	100	None	5.952	16.030	8.34	(N/A)	(N/A)
Wetlands 013 (IN)	100Yr 24 Hr	100	None	6.906	16.010	9.70	(N/A)	(N/A)
Wetlands 013 (OUT)	100Yr 24 Hr	100	None	6.907	16.110	9.54	788.79	1.159

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
CO-2	Channel	Upstream	9.435	21.200	1.89	J-2	
CO-2	Channel	Link	9.435	21.300	1.89		
CO-2	Channel	Downstream	18.573	16.010	13.62	SWMF ex002	
Downstream Sewer	Pond Outlet	Upstream	26.858	24.110	3.91	Manhole Storage	Pond Inflow
Downstream Sewer	Pond Outlet	Outflow	26.858	24.430	3.91	Manhole Storage	Pond Outflow
Downstream Sewer	Pond Outlet	Link	26.858	24.430	3.91		
Downstream Sewer	Pond Outlet	Downstream	26.858	24.430	3.91	O-15	
SWMF 001 Outlet	Pond Outlet	Upstream	27.397	16.000	34.08	SWMF 001	Pond Inflow
SWMF 001 Outlet	Pond Outlet	Outflow	26.094	24.250	4.00	SWMF 001	Pond Outflow
SWMF 001 Outlet	Pond Outlet	Link	26.093	24.250	4.00		

# Scenario Calculation Summary

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
SWMF 001 Outlet	Pond Outlet	Downstream	26.858	24.110	3.91	Manhole Storage	
SWMF 002A Outlet	Pond Outlet	Upstream	8.211	15.990	10.21	SWMF 002A	Pond Inflow
SWMF 002A Outlet	Pond Outlet	Outflow	8.169	24.100	1.30	SWMF 002A	Pond Outflow
SWMF 002A Outlet	Pond Outlet	Link	8.169	24.100	1.30		
SWMF 002A Outlet	Pond Outlet	Downstream	9.435	21.200	1.89	J-2	
SWMF 002C Outlet	Pond Outlet	Upstream	1.266	16.000	1.69	SWMF 002C	Pond Inflow
SWMF 002C Outlet	Pond Outlet	Outflow	1.266	20.110	0.60	SWMF 002C	Pond Outflow
SWMF 002C Outlet	Pond Outlet	Link	1.266	20.110	0.60		
SWMF 002C Outlet	Pond Outlet	Downstream	9.435	21.200	1.89	J-2	
SWMF 003A Outlet	Pond Outlet	Upstream	10.626	15.990	13.30	SWMF 003A	Pond Inflow
SWMF 003A Outlet	Pond Outlet	Outflow	10.626	18.380	5.16	SWMF 003A	Pond Outflow
SWMF 003A Outlet	Pond Outlet	Link	10.626	18.380	5.16		
SWMF 003A Outlet	Pond Outlet	Downstream	24.766	16.010	22.21	SWMF 003B	
SWMF 003B Outlet	Pond Outlet	Upstream	24.766	16.010	22.21	SWMF 003B	Pond Inflow
SWMF 003B Outlet	Pond Outlet	Outflow	24.763	24.390	4.61	SWMF 003B	Pond Outflow
SWMF 003B Outlet	Pond Outlet	Link	24.763	24.390	4.61		
SWMF 003B Outlet	Pond Outlet	Downstream	24.763	24.390	4.61	Smith Road Storm Sewer	
SWMF ex002 Outlet	Pond Outlet	Upstream	18.573	16.010	13.62	SWMF ex002	Pond Inflow
SWMF ex002 Outlet	Pond Outlet	Outflow	0.000	0.000	0.00	SWMF ex002	Pond Outflow
SWMF ex002 Outlet	Pond Outlet	Link	0.000	0.000	0.00		
SWMF ex002 Outlet	Pond Outlet	Downstream	0.000	0.000	0.00	Eastern Outfall 1	
Storage 013B Outlet	Pond Outlet	Upstream	6.907	16.110	9.54	Storage 013B	Pond Inflow
Storage 013B Outlet	Pond Outlet	Outflow	6.906	16.120	9.54	Storage 013B	Pond Outflow
Storage 013B Outlet	Negative Flow	Outflow	0.000	3.640	0.00	Storage 013B	Pond Outflow
Storage 013B Outlet	Pond Outlet	Link	2.287	16.100	0.32		
Storage 013B Outlet	Pond Outlet	Downstream	26.858	24.110	3.91	Manhole Storage	
Storage 013B Overflow	Pond Outlet	Upstream	6.907	16.110	9.54	Storage 013B	Pond Inflow
Storage 013B Overflow	Pond Outlet	Outflow	6.906	16.120	9.54	Storage 013B	Pond Outflow
Storage 013B Overflow	Negative Flow	Outflow	0.000	3.640	0.00	Storage 013B	Pond Outflow

# Scenario Calculation Summary

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
Storage 013B Overflow	Pond Outlet	Link	6.348	16.100	9.49		
Storage 013B Overflow	Pond Outlet	Downstream	6.348	16.100	9.49	O-14	
Wetlands 013 Outlet	Pond Outlet	Upstream	6.906	16.010	9.70	Wetlands 013	Pond Inflow
Wetlands 013 Outlet	Pond Outlet	Outflow	6.907	16.110	9.54	Wetlands 013	Pond Outflow
Wetlands 013 Outlet	Pond Outlet	Link	6.906	16.110	9.54		
Wetlands 013 Outlet	Pond Outlet	Downstream	6.907	16.110	9.54	Storage 013B	

## Messages

Message Id	6
Scenario	(N/A)
Element Type	(N/A)
Element Id	-2
Label	(N/A)
Time	(N/A)
Message	There are user notifications available. Double-click this message to load these messages.
Source	Project File

# Scenario Calculation Summary

Scenario Summary	
ID	17
Label	100Yr 18Hr
Notes	
Active Topology	<I> Base Active Topology
Hydrology	<I> Base Hydrology
Rainfall Runoff	100Yr 18Hr
Physical	<I> Base Physical
Initial Condition	<I> Base Initial Condition
Boundary Condition	<I> Base Boundary Condition
Infiltration and Inflow	<I> Base Infiltration and Inflow
Output	<I> Base Output
User Data Extensions	<I> Base User Data Extensions
PondPack Engine Calculation Options	<I> 120Hr

Output Summary			
Output Increment	0.010 hours	Duration	120.000 hours

Rainfall Summary			
Return Event Tag	100	Rainfall Type	Time-Depth Curve
Total Depth	8.1 in	Storm Event	100YR-18HR

ICPM Output Summary			
Target Convergence	0.00 ft <sup>3</sup> /s	ICPM Time Step	0.001 hours
Maximum Iterations	35		

## Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Eastern Outfall 1	100Yr 18Hr	100	None	0.000	0.000	0.00	(N/A)	(N/A)
Eastern Outfall 2	100Yr 18Hr	100	None	1.363	12.000	2.41	(N/A)	(N/A)
J-2	100Yr 18Hr	100	None	8.795	16.800	1.89	(N/A)	(N/A)
Manhole Storage (IN)	100Yr 18Hr	100	None	25.525	13.920	3.90	(N/A)	(N/A)
Manhole Storage (OUT)	100Yr 18Hr	100	None	25.524	18.540	3.89	788.84	0.016
O-14	100Yr 18Hr	100	None	5.789	12.100	11.88	(N/A)	(N/A)
O-15	100Yr 18Hr	100	None	25.524	18.540	3.89	(N/A)	(N/A)
SWMF 001 (IN)	100Yr 18Hr	100	None	25.468	12.080	42.41	(N/A)	(N/A)
SWMF 001 (OUT)	100Yr 18Hr	100	None	24.782	18.310	3.97	793.22	22.039
SWMF 002A (IN)	100Yr 18Hr	100	None	7.635	12.000	12.72	(N/A)	(N/A)
SWMF 002A (OUT)	100Yr 18Hr	100	None	7.627	18.140	1.29	795.76	6.492
SWMF 002C (IN)	100Yr 18Hr	100	None	1.168	12.010	2.09	(N/A)	(N/A)
SWMF 002C (OUT)	100Yr 18Hr	100	None	1.168	15.260	0.61	795.75	0.714
SWMF 003A (IN)	100Yr 18Hr	100	None	9.874	11.990	16.57	(N/A)	(N/A)
SWMF 003A (OUT)	100Yr 18Hr	100	None	9.874	14.700	5.33	774.08	5.816

# Scenario Calculation Summary

## Executive Summary (Nodes)

Label	Scenario	Return Event (years)	Truncation	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
SWMF 003B (IN)	100Yr 18Hr	100	None	23.023	12.030	26.56	(N/A)	(N/A)
SWMF 003B (OUT)	100Yr 18Hr	100	None	23.022	20.360	4.50	769.57	13.998
SWMF ex002 (IN)	100Yr 18Hr	100	None	17.243	12.010	16.47	(N/A)	(N/A)
SWMF ex002 (OUT)	100Yr 18Hr	100	None	0.000	0.000	0.00	790.07	17.243
Smith Road Storm Sewer Storage 013B (IN)	100Yr 18Hr	100	None	23.022	20.360	4.50	(N/A)	(N/A)
Storage 013B (OUT)	100Yr 18Hr	100	None	6.330	12.100	11.81	(N/A)	(N/A)
Storage 013B (Reverse)	100Yr 18Hr	100	None	6.330	12.110	11.81	788.79	0.024
Storage 013B (Reverse)	100Yr 18Hr	100	None	0.000	2.920	0.00	(N/A)	(N/A)
Subarea 001	100Yr 18Hr	100	None	25.468	12.080	42.41	(N/A)	(N/A)
Subarea 002A	100Yr 18Hr	100	None	6.926	12.000	11.47	(N/A)	(N/A)
Subarea 002B	100Yr 18Hr	100	None	1.261	12.000	2.41	(N/A)	(N/A)
Subarea 002C	100Yr 18Hr	100	None	0.224	12.000	0.43	(N/A)	(N/A)
Subarea 003A	100Yr 18Hr	100	None	9.874	11.990	16.57	(N/A)	(N/A)
Subarea 003B	100Yr 18Hr	100	None	12.420	11.990	20.58	(N/A)	(N/A)
Subarea 004A	100Yr 18Hr	100	None	0.944	12.020	1.66	(N/A)	(N/A)
Subarea 004B	100Yr 18Hr	100	None	1.363	12.000	2.41	(N/A)	(N/A)
Subarea 005	100Yr 18Hr	100	None	0.873	12.010	1.67	(N/A)	(N/A)
Subarea 010	100Yr 18Hr	100	None	0.709	12.000	1.25	(N/A)	(N/A)
Subarea 011	100Yr 18Hr	100	None	7.187	12.010	12.47	(N/A)	(N/A)
Subarea 012	100Yr 18Hr	100	None	0.729	12.000	1.30	(N/A)	(N/A)
Subarea 013	100Yr 18Hr	100	None	5.457	12.030	10.26	(N/A)	(N/A)
Wetlands 013 (IN)	100Yr 18Hr	100	None	6.330	12.030	11.93	(N/A)	(N/A)
Wetlands 013 (OUT)	100Yr 18Hr	100	None	6.330	12.100	11.81	788.82	1.198

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
CO-2	Channel	Upstream	8.795	16.800	1.89	J-2	
CO-2	Channel	Link	8.795	16.900	1.89		
CO-2	Channel	Downstream	17.243	12.010	16.47	SWMF ex002	
Downstream Sewer	Pond Outlet	Upstream	25.525	13.920	3.90	Manhole Storage	Pond Inflow
Downstream Sewer	Pond Outlet	Outflow	25.524	18.540	3.89	Manhole Storage	Pond Outflow
Downstream Sewer	Pond Outlet	Link	25.524	18.540	3.89		
Downstream Sewer	Pond Outlet	Downstream	25.524	18.540	3.89	O-15	
SWMF 001 Outlet	Pond Outlet	Upstream	25.468	12.080	42.41	SWMF 001	Pond Inflow
SWMF 001 Outlet	Pond Outlet	Outflow	24.782	18.310	3.97	SWMF 001	Pond Outflow
SWMF 001 Outlet	Pond Outlet	Link	24.782	18.310	3.97		

# Scenario Calculation Summary

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
SWMF 001 Outlet	Pond Outlet	Downstream	25.525	13.920	3.90	Manhole Storage	
SWMF 002A Outlet	Pond Outlet	Upstream	7.635	12.000	12.72	SWMF 002A	Pond Inflow
SWMF 002A Outlet	Pond Outlet	Outflow	7.627	18.140	1.29	SWMF 002A	Pond Outflow
SWMF 002A Outlet	Pond Outlet	Link	7.627	18.140	1.29		
SWMF 002A Outlet	Pond Outlet	Downstream	8.795	16.800	1.89	J-2	
SWMF 002C Outlet	Pond Outlet	Upstream	1.168	12.010	2.09	SWMF 002C	Pond Inflow
SWMF 002C Outlet	Pond Outlet	Outflow	1.168	15.260	0.61	SWMF 002C	Pond Outflow
SWMF 002C Outlet	Pond Outlet	Link	1.168	15.260	0.61		
SWMF 002C Outlet	Pond Outlet	Downstream	8.795	16.800	1.89	J-2	
SWMF 003A Outlet	Pond Outlet	Upstream	9.874	11.990	16.57	SWMF 003A	Pond Inflow
SWMF 003A Outlet	Pond Outlet	Outflow	9.874	14.700	5.33	SWMF 003A	Pond Outflow
SWMF 003A Outlet	Pond Outlet	Link	9.874	14.700	5.33		
SWMF 003A Outlet	Pond Outlet	Downstream	23.023	12.030	26.56	SWMF 003B	
SWMF 003B Outlet	Pond Outlet	Upstream	23.023	12.030	26.56	SWMF 003B	Pond Inflow
SWMF 003B Outlet	Pond Outlet	Outflow	23.022	20.360	4.50	SWMF 003B	Pond Outflow
SWMF 003B Outlet	Pond Outlet	Link	23.022	20.360	4.50		
SWMF 003B Outlet	Pond Outlet	Downstream	23.022	20.360	4.50	Smith Road Storm Sewer	
SWMF ex002 Outlet	Pond Outlet	Upstream	17.243	12.010	16.47	SWMF ex002	Pond Inflow
SWMF ex002 Outlet	Pond Outlet	Outflow	0.000	0.000	0.00	SWMF ex002	Pond Outflow
SWMF ex002 Outlet	Pond Outlet	Link	0.000	0.000	0.00		
SWMF ex002 Outlet	Pond Outlet	Downstream	0.000	0.000	0.00	Eastern Outfall 1	
Storage 013B Outlet	Pond Outlet	Upstream	6.330	12.100	11.81	Storage 013B	Pond Inflow
Storage 013B Outlet	Pond Outlet	Outflow	6.330	12.110	11.81	Storage 013B	Pond Outflow
Storage 013B Outlet	Negative Flow	Outflow	0.000	2.920	0.00	Storage 013B	Pond Outflow
Storage 013B Outlet	Pond Outlet	Link	2.153	12.100	0.32		
Storage 013B Outlet	Pond Outlet	Downstream	25.525	13.920	3.90	Manhole Storage	
Storage 013B Overflow	Pond Outlet	Upstream	6.330	12.100	11.81	Storage 013B	Pond Inflow
Storage 013B Overflow	Pond Outlet	Outflow	6.330	12.110	11.81	Storage 013B	Pond Outflow
Storage 013B Overflow	Negative Flow	Outflow	0.000	2.920	0.00	Storage 013B	Pond Outflow

# Scenario Calculation Summary

## Executive Summary (Links)

Label	Type	Location	Hydrograph Volume (ac-ft)	Peak Time (hours)	Peak Flow (ft <sup>3</sup> /s)	End Point	Node Flow Direction
Storage 013B Overflow	Pond Outlet	Link	5.789	12.100	11.88		
Storage 013B Overflow	Pond Outlet	Downstream	5.789	12.100	11.88	O-14	
Wetlands 013 Outlet	Pond Outlet	Upstream	6.330	12.030	11.93	Wetlands 013	Pond Inflow
Wetlands 013 Outlet	Pond Outlet	Outflow	6.330	12.100	11.81	Wetlands 013	Pond Outflow
Wetlands 013 Outlet	Pond Outlet	Link	6.330	12.100	11.81		
Wetlands 013 Outlet	Pond Outlet	Downstream	6.330	12.100	11.81	Storage 013B	

## Messages

Message Id	6
Scenario	(N/A)
Element Type	(N/A)
Element Id	-2
Label	(N/A)
Time	(N/A)
Message	There are user notifications available. Double-click this message to load these messages.
Source	Project File

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Time-Depth Curve: 100YR-18HR

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Label	100YR-18HR
Start Time	0.000 hours
Increment	0.750 hours
End Time	18.000 hours
Return Event	100 years

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**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.750 hours**  
**Time on left represents time for first value in each row.**

Time (hours)	Depth (in)				
0.000	0.0	0.2	0.3	0.5	0.7
3.750	0.9	1.2	1.4	1.6	1.8
7.500	2.1	2.5	2.9	3.5	4.2
11.250	4.9	5.6	6.3	6.8	7.2
15.000	7.5	7.7	7.8	7.9	8.1

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Time-Depth Curve: 100YR-24HR

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Label	100YR-24HR
Start Time	0.000 hours
Increment	1.000 hours
End Time	24.000 hours
Return Event	100 years

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**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 1.000 hours**  
**Time on left represents time for first value in each row.**

Time (hours)	Depth (in)				
0.000	0.0	0.2	0.4	0.6	0.8
5.000	1.0	1.2	1.4	1.7	2.0
10.000	2.3	2.7	3.1	3.8	4.5
15.000	5.2	6.0	6.7	7.3	7.7
20.000	8.0	8.2	8.3	8.4	8.6

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.600 hours
Area (User Defined)	46.450 acres
<hr/>	
Computational Time Increment	0.080 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	34.08 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	34.08 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	87.600
Area (User Defined)	46.450 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.1 in
Runoff Volume (Pervious)	27.397 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	27.397 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.600 hours
Computational Time Increment	0.080 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	87.72 ft <sup>3</sup> /s
Unit peak time, Tp	0.400 hours
Unit receding limb, Tr	1.600 hours
Total unit time, Tb	2.000 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.220 hours
Area (User Defined)	12.430 acres
Computational Time Increment	0.029 hours
Time to Peak (Computed)	15.987 hours
Flow (Peak, Computed)	9.20 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	15.990 hours
Flow (Peak Interpolated Output)	9.20 ft <sup>3</sup> /s
<b>Drainage Area</b>	
SCS CN (Composite)	88.500
Area (User Defined)	12.430 acres
Maximum Retention (Pervious)	1.3 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<b>Cumulative Runoff</b>	
Cumulative Runoff Depth (Pervious)	7.2 in
Runoff Volume (Pervious)	7.444 ac-ft
<b>Hydrograph Volume (Area under Hydrograph curve)</b>	
Volume	7.444 ac-ft
<b>SCS Unit Hydrograph Parameters</b>	
Time of Concentration (Composite)	0.220 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	64.02 ft <sup>3</sup> /s
Unit peak time, Tp	0.147 hours
Unit receding limb, Tr	0.587 hours
Total unit time, Tb	0.733 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.110 hours
Area (User Defined)	3.040 acres
<hr/>	
Computational Time Increment	0.015 hours
Time to Peak (Computed)	16.001 hours
Flow (Peak, Computed)	1.96 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	1.96 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	3.040 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	1.378 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.378 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.110 hours
Computational Time Increment	0.015 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	31.31 ft <sup>3</sup> /s
Unit peak time, Tp	0.073 hours
Unit receding limb, Tr	0.293 hours
Total unit time, Tb	0.367 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.120 hours
Area (User Defined)	0.540 acres
<hr/>	
Computational Time Increment	0.016 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	0.35 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	0.35 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	0.540 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	0.245 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.245 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.120 hours
Computational Time Increment	0.016 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	5.10 ft <sup>3</sup> /s
Unit peak time, Tp	0.080 hours
Unit receding limb, Tr	0.320 hours
Total unit time, Tb	0.400 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.270 hours
Area (User Defined)	18.140 acres
Computational Time Increment	0.036 hours
Time to Peak (Computed)	15.984 hours
Flow (Peak, Computed)	13.31 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	15.990 hours
Flow (Peak Interpolated Output)	13.30 ft <sup>3</sup> /s
<b>Drainage Area</b>	
SCS CN (Composite)	87.200
Area (User Defined)	18.140 acres
Maximum Retention (Pervious)	1.5 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<b>Cumulative Runoff</b>	
Cumulative Runoff Depth (Pervious)	7.0 in
Runoff Volume (Pervious)	10.626 ac-ft
<b>Hydrograph Volume (Area under Hydrograph curve)</b>	
Volume	10.626 ac-ft
<b>SCS Unit Hydrograph Parameters</b>	
Time of Concentration (Composite)	0.270 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	76.12 ft <sup>3</sup> /s
Unit peak time, Tp	0.180 hours
Unit receding limb, Tr	0.720 hours
Total unit time, Tb	0.900 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.260 hours
Area (User Defined)	22.330 acres
<hr/>	
Computational Time Increment	0.035 hours
Time to Peak (Computed)	15.981 hours
Flow (Peak, Computed)	16.51 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	15.980 hours
Flow (Peak Interpolated Output)	16.51 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	88.400
Area (User Defined)	22.330 acres
Maximum Retention (Pervious)	1.3 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.2 in
Runoff Volume (Pervious)	13.350 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	13.350 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.260 hours
Computational Time Increment	0.035 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	97.31 ft <sup>3</sup> /s
Unit peak time, Tp	0.173 hours
Unit receding limb, Tr	0.693 hours
Total unit time, Tb	0.867 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.270 hours
Area (User Defined)	1.900 acres
<hr/>	
Computational Time Increment	0.036 hours
Time to Peak (Computed)	16.020 hours
Flow (Peak, Computed)	1.34 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.020 hours
Flow (Peak Interpolated Output)	1.34 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.400
Area (User Defined)	1.900 acres
Maximum Retention (Pervious)	2.1 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.5 in
Runoff Volume (Pervious)	1.021 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.021 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.270 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	7.97 ft <sup>3</sup> /s
Unit peak time, Tp	0.180 hours
Unit receding limb, Tr	0.720 hours
Total unit time, Tb	0.900 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	2.770 acres
Computational Time Increment	0.032 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	1.95 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	1.95 ft <sup>3</sup> /s
<b>Drainage Area</b>	
SCS CN (Composite)	81.900
Area (User Defined)	2.770 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<b>Cumulative Runoff</b>	
Cumulative Runoff Depth (Pervious)	6.4 in
Runoff Volume (Pervious)	1.475 ac-ft
<b>Hydrograph Volume (Area under Hydrograph curve)</b>	
Volume	1.475 ac-ft
<b>SCS Unit Hydrograph Parameters</b>	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	13.08 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.210 hours
Area (User Defined)	2.140 acres
<hr/>	
Computational Time Increment	0.028 hours
Time to Peak (Computed)	16.016 hours
Flow (Peak, Computed)	1.36 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.010 hours
Flow (Peak Interpolated Output)	1.36 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	73.300
Area (User Defined)	2.140 acres
Maximum Retention (Pervious)	3.6 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	0.955 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.955 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.210 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	11.55 ft <sup>3</sup> /s
Unit peak time, Tp	0.140 hours
Unit receding limb, Tr	0.560 hours
Total unit time, Tb	0.700 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	1.430 acres
<hr/>	
Computational Time Increment	0.032 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	1.01 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	1.01 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.300
Area (User Defined)	1.430 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.4 in
Runoff Volume (Pervious)	0.767 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.767 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	6.75 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.330 hours
Area (User Defined)	14.070 acres
<hr/>	
Computational Time Increment	0.044 hours
Time to Peak (Computed)	16.016 hours
Flow (Peak, Computed)	10.05 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.010 hours
Flow (Peak Interpolated Output)	10.04 ft <sup>3</sup> /s
<hr/>	
Drainage Area	
SCS CN (Composite)	83.800
Area (User Defined)	14.070 acres
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.6 in
Runoff Volume (Pervious)	7.761 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.761 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.330 hours
Computational Time Increment	0.044 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	48.31 ft <sup>3</sup> /s
Unit peak time, Tp	0.220 hours
Unit receding limb, Tr	0.880 hours
Total unit time, Tb	1.100 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	1.500 acres
Computational Time Increment	0.032 hours
Time to Peak (Computed)	16.000 hours
Flow (Peak, Computed)	1.05 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.000 hours
Flow (Peak Interpolated Output)	1.05 ft <sup>3</sup> /s
<b>Drainage Area</b>	
SCS CN (Composite)	81.300
Area (User Defined)	1.500 acres
Maximum Retention (Pervious)	2.3 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<b>Cumulative Runoff</b>	
Cumulative Runoff Depth (Pervious)	6.3 in
Runoff Volume (Pervious)	0.790 ac-ft
<b>Hydrograph Volume (Area under Hydrograph curve)</b>	
Volume	0.790 ac-ft
<b>SCS Unit Hydrograph Parameters</b>	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	7.08 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

Storm Event	100YR-24HR
Return Event	100 years
Duration	120.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.240 hours
Area (User Defined)	12.820 acres
Computational Time Increment	0.032 hours
Time to Peak (Computed)	16.032 hours
Flow (Peak, Computed)	8.34 ft <sup>3</sup> /s
Output Increment	0.010 hours
Time to Flow (Peak Interpolated Output)	16.030 hours
Flow (Peak Interpolated Output)	8.34 ft <sup>3</sup> /s
<b>Drainage Area</b>	
SCS CN (Composite)	75.100
Area (User Defined)	12.820 acres
Maximum Retention (Pervious)	3.3 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<b>Cumulative Runoff</b>	
Cumulative Runoff Depth (Pervious)	5.6 in
Runoff Volume (Pervious)	5.952 ac-ft
<b>Hydrograph Volume (Area under Hydrograph curve)</b>	
Volume	5.952 ac-ft
<b>SCS Unit Hydrograph Parameters</b>	
Time of Concentration (Composite)	0.240 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	60.52 ft <sup>3</sup> /s
Unit peak time, Tp	0.160 hours
Unit receding limb, Tr	0.640 hours
Total unit time, Tb	0.800 hours

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
783.10	0.000
788.20	0.002
789.00	0.020

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
783.40	0.000
787.40	0.003
788.00	0.006
788.30	0.012
789.00	0.029
790.00	0.132

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
788.50	0.000
789.00	2.061
790.00	6.374
791.00	10.944
792.00	15.774
793.00	20.870
793.50	23.519
794.00	26.236

**Elevation-Volume**

Pond Elevation (ft)		Pond Volume (ac-ft)	
	792.20		0.000
	793.00		1.279
	794.00		3.018
	795.00		4.924
	795.80		6.574
	796.50		8.140

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
792.20	0.000
793.00	0.124
794.00	0.307
795.00	0.526
795.70	0.701
796.70	0.986

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
769.00	0.000
770.00	0.901
771.00	1.917
772.00	3.052
773.00	4.310
774.00	5.694
775.00	7.213

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
764.00	0.000
765.00	2.174
766.00	4.491
767.00	6.955
768.00	9.566
769.00	12.329
770.00	15.247

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
785.50	0.000
786.00	0.261
787.00	2.212
788.00	5.646
789.00	10.487
790.00	16.697
791.00	24.382
792.00	33.762
793.00	44.618

**Elevation-Volume**

Pond Elevation (ft)	Pond Volume (ac-ft)
783.89	0.000
785.50	0.013
786.00	0.023
787.00	0.086
788.00	0.351
788.20	0.478
789.00	1.408
790.00	3.125

Requested Pond Water Surface Elevations	
Minimum (Headwater)	783.10 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	789.00 ft

**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular Tailwater Settings	Culvert - 1 Tailwater	Forward	TW	783.10 (N/A)	789.00 (N/A)

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	10.00 in
Length	351.00 ft
Length (Computed Barrel)	351.01 ft
Slope (Computed)	0.007 ft/ft
Outlet Control Data	
Manning's n	0.010
Ke	0.200
Kb	0.024
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.092
T2 ratio (HW/D)	1.194
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	784.01 ft	T1 Flow	1.74 ft <sup>3</sup> /s
T2 Elevation	784.09 ft	T2 Flow	1.99 ft <sup>3</sup> /s

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.10 ft (ft <sup>3</sup> /s)	Tailwater= 783.20 ft (ft <sup>3</sup> /s)	Tailwater= 783.30 ft (ft <sup>3</sup> /s)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)
783.40	0.00	0.00	0.00	0.00
783.50	0.01	0.01	0.01	0.01
783.60	0.04	0.04	0.04	0.04
783.70	0.06	0.06	0.06	0.06
783.80	0.08	0.08	0.08	0.08
783.90	0.09	0.09	0.09	0.09
784.00	0.10	0.10	0.10	0.10
784.10	0.11	0.11	0.11	0.11
784.20	0.12	0.12	0.12	0.12
784.30	0.12	0.12	0.12	0.12
784.40	0.13	0.13	0.13	0.13
784.50	0.14	0.14	0.14	0.14
784.60	0.14	0.14	0.14	0.14
784.70	0.15	0.15	0.15	0.15
784.80	0.16	0.16	0.16	0.16
784.90	0.16	0.16	0.16	0.16
785.00	0.17	0.17	0.17	0.17
785.10	0.17	0.17	0.17	0.17
785.20	0.18	0.18	0.18	0.18
785.30	0.18	0.18	0.18	0.18
785.40	0.19	0.19	0.19	0.19
785.50	0.19	0.19	0.19	0.19
785.60	0.20	0.20	0.20	0.20
785.70	0.20	0.20	0.20	0.20
785.80	0.21	0.21	0.21	0.21
785.90	0.21	0.21	0.21	0.21
786.00	0.22	0.22	0.22	0.22
786.10	0.22	0.22	0.22	0.22
786.20	0.23	0.23	0.23	0.23
786.30	0.23	0.23	0.23	0.23
786.40	0.23	0.23	0.23	0.23
786.50	0.24	0.24	0.24	0.24
786.60	0.24	0.24	0.24	0.24
786.70	0.25	0.25	0.25	0.25
786.80	0.25	0.25	0.25	0.25
786.90	0.25	0.25	0.25	0.25
787.00	0.26	0.26	0.26	0.26
787.10	0.26	0.26	0.26	0.26
787.20	0.26	0.26	0.26	0.26
787.30	0.27	0.27	0.27	0.27
787.40	0.27	0.27	0.27	0.27
787.50	0.28	0.28	0.28	0.28
787.60	0.28	0.28	0.28	0.28
787.70	0.28	0.28	0.28	0.28
787.80	0.29	0.29	0.29	0.29
787.90	0.29	0.29	0.29	0.29
788.00	0.29	0.29	0.29	0.29
788.10	0.30	0.30	0.30	0.30
788.20	0.30	0.30	0.30	0.30
788.30	0.30	0.30	0.30	0.30
788.40	0.30	0.30	0.30	0.30
788.50	0.31	0.31	0.31	0.31
788.60	0.31	0.31	0.31	0.31
788.70	0.31	0.31	0.31	0.31

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.10 ft (ft <sup>3</sup> /s)	Tailwater= 783.20 ft (ft <sup>3</sup> /s)	Tailwater= 783.30 ft (ft <sup>3</sup> /s)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)
788.80	0.32	0.32	0.32	0.32
788.90	0.32	0.32	0.32	0.32
789.00	0.32	0.32	0.32	0.32
789.10	0.33	0.33	0.33	0.33
789.20	0.33	0.33	0.33	0.33
789.30	0.33	0.33	0.33	0.33
789.40	0.33	0.33	0.33	0.33
789.50	0.34	0.34	0.34	0.34
789.60	0.34	0.34	0.34	0.34
789.70	0.34	0.34	0.34	0.34
789.80	0.35	0.35	0.35	0.35
789.90	0.35	0.35	0.35	0.35
790.00	0.35	0.35	0.35	0.35
Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)	Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)
-0.01	-0.04	-0.06	-0.08	-0.09
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
0.26	0.26	0.25	0.25	0.25
0.26	0.26	0.26	0.25	0.25

**Elevation-Flow-Tailwater Table**

Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)	Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)
0.27	0.26	0.26	0.26	0.25
0.27	0.27	0.26	0.26	0.26
0.28	0.27	0.27	0.26	0.26
0.28	0.28	0.27	0.27	0.26
0.28	0.28	0.28	0.27	0.27
0.29	0.28	0.28	0.28	0.27
0.29	0.29	0.28	0.28	0.28
0.29	0.29	0.29	0.28	0.28
0.30	0.29	0.29	0.29	0.28
0.30	0.30	0.29	0.29	0.29
0.30	0.30	0.30	0.29	0.29
0.30	0.30	0.30	0.30	0.29
0.31	0.30	0.30	0.30	0.30
0.31	0.31	0.30	0.30	0.30
0.31	0.31	0.31	0.30	0.30
0.32	0.31	0.31	0.31	0.30
0.32	0.32	0.31	0.31	0.31
0.32	0.32	0.32	0.31	0.31
0.33	0.32	0.32	0.32	0.31
0.33	0.33	0.32	0.32	0.32
0.33	0.33	0.33	0.32	0.32
0.33	0.33	0.33	0.33	0.32
0.34	0.33	0.33	0.33	0.33
0.34	0.34	0.33	0.33	0.33
0.34	0.34	0.34	0.33	0.33
0.35	0.34	0.34	0.34	0.33
0.35	0.35	0.34	0.34	0.34
0.35	0.35	0.35	0.34	0.34
Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)	Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)
-0.10	-0.11	-0.12	-0.12	-0.13
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16

**Elevation-Flow-Tailwater Table**

Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)	Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
0.26	0.26	0.25	0.25	0.25
0.26	0.26	0.26	0.25	0.25
0.27	0.26	0.26	0.26	0.25
0.27	0.27	0.26	0.26	0.26
0.28	0.27	0.27	0.26	0.26
0.28	0.28	0.27	0.27	0.26
0.28	0.28	0.28	0.27	0.27
0.29	0.28	0.28	0.28	0.27
0.29	0.29	0.28	0.28	0.28
0.29	0.29	0.29	0.28	0.28
0.30	0.29	0.29	0.29	0.28
0.30	0.30	0.29	0.29	0.29
0.30	0.30	0.30	0.29	0.29
0.30	0.30	0.30	0.30	0.29
0.31	0.30	0.30	0.30	0.30
0.31	0.31	0.30	0.30	0.30
0.31	0.31	0.31	0.30	0.30
0.32	0.31	0.31	0.31	0.30
0.32	0.32	0.31	0.31	0.31
0.32	0.32	0.32	0.31	0.31
0.33	0.32	0.32	0.32	0.31
0.33	0.33	0.32	0.32	0.32
0.33	0.33	0.33	0.32	0.32
0.33	0.33	0.33	0.33	0.32
0.34	0.33	0.33	0.33	0.33
Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)	Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)
-0.14	-0.14	-0.15	-0.16	-0.16
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12

**Elevation-Flow-Tailwater Table**

Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)	Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
0.26	0.26	0.25	0.25	0.25
0.26	0.26	0.26	0.25	0.25
0.27	0.26	0.26	0.26	0.25
0.27	0.27	0.26	0.26	0.26
0.28	0.27	0.27	0.26	0.26
0.28	0.28	0.27	0.27	0.26
0.28	0.28	0.28	0.27	0.27
0.29	0.28	0.28	0.28	0.27
0.29	0.29	0.28	0.28	0.28
0.29	0.29	0.29	0.28	0.28
0.30	0.29	0.29	0.29	0.28
0.30	0.30	0.29	0.29	0.29
0.30	0.30	0.30	0.29	0.29
0.30	0.30	0.30	0.30	0.29
0.31	0.30	0.30	0.30	0.30
0.31	0.31	0.30	0.30	0.30

**Elevation-Flow-Tailwater Table**

Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)	Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)
0.31	0.31	0.31	0.30	0.30
0.32	0.31	0.31	0.31	0.30
0.32	0.32	0.31	0.31	0.31
0.32	0.32	0.32	0.31	0.31
Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)	Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)
-0.17	-0.17	-0.18	-0.18	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23

**Elevation-Flow-Tailwater Table**

Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)	Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
0.26	0.26	0.25	0.25	0.25
0.26	0.26	0.26	0.25	0.25
0.27	0.26	0.26	0.26	0.25
0.27	0.27	0.26	0.26	0.26
0.28	0.27	0.27	0.26	0.26
0.28	0.28	0.27	0.27	0.26
0.28	0.28	0.28	0.27	0.27
0.29	0.28	0.28	0.28	0.27
0.29	0.29	0.28	0.28	0.28
0.29	0.29	0.29	0.28	0.28
0.30	0.29	0.29	0.29	0.28
0.30	0.30	0.29	0.29	0.29
0.30	0.30	0.30	0.29	0.29
0.30	0.30	0.30	0.30	0.29
0.31	0.30	0.30	0.30	0.30
Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)	Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12

**Elevation-Flow-Tailwater Table**

Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)	Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
0.26	0.26	0.25	0.25	0.25
0.26	0.26	0.26	0.25	0.25
0.27	0.26	0.26	0.26	0.25
0.27	0.27	0.26	0.26	0.26
0.28	0.27	0.27	0.26	0.26
0.28	0.28	0.27	0.27	0.26
0.28	0.28	0.28	0.27	0.27
0.29	0.28	0.28	0.28	0.27
0.29	0.29	0.28	0.28	0.28
0.29	0.29	0.29	0.28	0.28
Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)	Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)
-0.22	-0.22	-0.23	-0.23	-0.23
-0.22	-0.22	-0.23	-0.23	-0.23
-0.21	-0.22	-0.22	-0.23	-0.23
-0.21	-0.21	-0.22	-0.22	-0.23
-0.20	-0.21	-0.21	-0.22	-0.22
-0.20	-0.20	-0.21	-0.21	-0.22
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16

**Elevation-Flow-Tailwater Table**

Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)	Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
0.26	0.26	0.25	0.25	0.25
0.26	0.26	0.26	0.25	0.25
0.27	0.26	0.26	0.26	0.25
0.27	0.27	0.26	0.26	0.26
0.28	0.27	0.27	0.26	0.26
Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)	Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)
-0.24	-0.24	-0.25	-0.25	-0.25
-0.24	-0.24	-0.25	-0.25	-0.25
-0.23	-0.24	-0.24	-0.25	-0.25

**Elevation-Flow-Tailwater Table**

Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)	Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)
-0.23	-0.23	-0.24	-0.24	-0.25
-0.23	-0.23	-0.23	-0.24	-0.24
-0.22	-0.23	-0.23	-0.23	-0.24
-0.22	-0.22	-0.23	-0.23	-0.23
-0.21	-0.22	-0.22	-0.23	-0.23
-0.21	-0.21	-0.22	-0.22	-0.23
-0.20	-0.21	-0.21	-0.22	-0.22
-0.20	-0.20	-0.21	-0.21	-0.22
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20

**Elevation-Flow-Tailwater Table**

Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)	Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
0.24	0.24	0.23	0.23	0.23
0.25	0.24	0.24	0.23	0.23
0.25	0.25	0.24	0.24	0.23
0.25	0.25	0.25	0.24	0.24
0.26	0.25	0.25	0.25	0.24
Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)	Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)
-0.26	-0.26	-0.26	-0.27	-0.27
-0.26	-0.26	-0.26	-0.27	-0.27
-0.25	-0.26	-0.26	-0.26	-0.27
-0.25	-0.25	-0.26	-0.26	-0.26
-0.25	-0.25	-0.25	-0.26	-0.26
-0.24	-0.25	-0.25	-0.25	-0.26
-0.24	-0.24	-0.25	-0.25	-0.25
-0.23	-0.24	-0.24	-0.25	-0.25
-0.23	-0.23	-0.24	-0.24	-0.25
-0.23	-0.23	-0.23	-0.24	-0.24
-0.22	-0.23	-0.23	-0.23	-0.24
-0.22	-0.22	-0.23	-0.23	-0.23
-0.21	-0.22	-0.22	-0.23	-0.23
-0.21	-0.21	-0.22	-0.22	-0.23
-0.20	-0.21	-0.21	-0.22	-0.22
-0.20	-0.20	-0.21	-0.21	-0.22
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04

**Elevation-Flow-Tailwater Table**

Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)	Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
0.22	0.22	0.21	0.21	0.20
0.23	0.22	0.22	0.21	0.21
0.23	0.23	0.22	0.22	0.21
0.23	0.23	0.23	0.22	0.22
0.24	0.23	0.23	0.23	0.22
Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)	Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)
-0.28	-0.28	-0.28	-0.29	-0.29
-0.28	-0.28	-0.28	-0.29	-0.29
-0.27	-0.28	-0.28	-0.28	-0.29
-0.27	-0.27	-0.28	-0.28	-0.28
-0.26	-0.27	-0.27	-0.28	-0.28
-0.26	-0.26	-0.27	-0.27	-0.28
-0.26	-0.26	-0.26	-0.27	-0.27
-0.25	-0.26	-0.26	-0.26	-0.27
-0.25	-0.25	-0.26	-0.26	-0.26
-0.25	-0.25	-0.25	-0.26	-0.26
-0.24	-0.25	-0.25	-0.25	-0.26
-0.24	-0.24	-0.25	-0.25	-0.25
-0.23	-0.24	-0.24	-0.25	-0.25
-0.23	-0.23	-0.24	-0.24	-0.25
-0.23	-0.23	-0.23	-0.24	-0.24
-0.22	-0.23	-0.23	-0.23	-0.24
-0.22	-0.22	-0.23	-0.23	-0.23
-0.21	-0.22	-0.22	-0.23	-0.23
-0.21	-0.21	-0.22	-0.22	-0.23
-0.20	-0.21	-0.21	-0.22	-0.22
-0.20	-0.20	-0.21	-0.21	-0.22
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19

**Elevation-Flow-Tailwater Table**

Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)	Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17
0.19	0.19	0.18	0.18	0.17
0.20	0.19	0.19	0.18	0.18
0.20	0.20	0.19	0.19	0.18
0.21	0.20	0.20	0.19	0.19
0.21	0.21	0.20	0.20	0.19
0.22	0.21	0.21	0.20	0.20
Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)	Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)
-0.29	-0.30	-0.30	-0.30	-0.30
-0.29	-0.30	-0.30	-0.30	-0.30
-0.29	-0.29	-0.30	-0.30	-0.30
-0.29	-0.29	-0.29	-0.30	-0.30
-0.28	-0.29	-0.29	-0.29	-0.30
-0.28	-0.28	-0.29	-0.29	-0.29
-0.28	-0.28	-0.28	-0.29	-0.29
-0.27	-0.28	-0.28	-0.28	-0.29
-0.27	-0.27	-0.28	-0.28	-0.28
-0.26	-0.27	-0.27	-0.28	-0.28
-0.26	-0.26	-0.27	-0.27	-0.28
-0.26	-0.26	-0.26	-0.27	-0.27

**Elevation-Flow-Tailwater Table**

Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)	Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)
-0.25	-0.26	-0.26	-0.26	-0.27
-0.25	-0.25	-0.26	-0.26	-0.26
-0.25	-0.25	-0.25	-0.26	-0.26
-0.24	-0.25	-0.25	-0.25	-0.26
-0.24	-0.24	-0.25	-0.25	-0.25
-0.23	-0.24	-0.24	-0.25	-0.25
-0.23	-0.23	-0.24	-0.24	-0.25
-0.23	-0.23	-0.23	-0.24	-0.24
-0.22	-0.23	-0.23	-0.23	-0.24
-0.22	-0.22	-0.23	-0.23	-0.23
-0.21	-0.22	-0.22	-0.23	-0.23
-0.21	-0.21	-0.22	-0.22	-0.23
-0.20	-0.21	-0.21	-0.22	-0.22
-0.20	-0.20	-0.21	-0.21	-0.22
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14
0.17	0.17	0.16	0.16	0.15
0.18	0.17	0.17	0.16	0.16
0.18	0.18	0.17	0.17	0.16
0.19	0.18	0.18	0.17	0.17

**Elevation-Flow-Tailwater Table**

Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)	Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)
0.19	0.19	0.18	0.18	0.17
Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)	Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)
-0.31	-0.31	-0.31	-0.32	-0.32
-0.31	-0.31	-0.31	-0.32	-0.32
-0.30	-0.31	-0.31	-0.31	-0.32
-0.30	-0.30	-0.31	-0.31	-0.31
-0.30	-0.30	-0.30	-0.31	-0.31
-0.30	-0.30	-0.30	-0.30	-0.31
-0.29	-0.30	-0.30	-0.30	-0.30
-0.29	-0.29	-0.30	-0.30	-0.30
-0.29	-0.29	-0.29	-0.30	-0.30
-0.28	-0.29	-0.29	-0.29	-0.30
-0.28	-0.28	-0.29	-0.29	-0.29
-0.28	-0.28	-0.28	-0.29	-0.29
-0.27	-0.28	-0.28	-0.28	-0.29
-0.27	-0.27	-0.28	-0.28	-0.28
-0.26	-0.27	-0.27	-0.28	-0.28
-0.26	-0.26	-0.27	-0.27	-0.28
-0.26	-0.26	-0.26	-0.27	-0.27
-0.25	-0.26	-0.26	-0.26	-0.27
-0.25	-0.25	-0.26	-0.26	-0.26
-0.25	-0.25	-0.25	-0.26	-0.26
-0.24	-0.25	-0.25	-0.25	-0.26
-0.24	-0.24	-0.25	-0.25	-0.25
-0.23	-0.24	-0.24	-0.25	-0.25
-0.23	-0.23	-0.24	-0.24	-0.25
-0.23	-0.23	-0.23	-0.24	-0.24
-0.22	-0.23	-0.23	-0.23	-0.24
-0.22	-0.22	-0.23	-0.23	-0.23
-0.21	-0.22	-0.22	-0.23	-0.23
-0.21	-0.21	-0.22	-0.22	-0.23
-0.20	-0.21	-0.21	-0.22	-0.22
-0.20	-0.20	-0.21	-0.21	-0.22
-0.19	-0.20	-0.20	-0.21	-0.21
-0.19	-0.19	-0.20	-0.20	-0.21
-0.18	-0.19	-0.19	-0.20	-0.20
-0.18	-0.18	-0.19	-0.19	-0.20
-0.17	-0.18	-0.18	-0.19	-0.19
-0.17	-0.17	-0.18	-0.18	-0.19
-0.16	-0.17	-0.17	-0.18	-0.18
-0.16	-0.16	-0.17	-0.17	-0.18
-0.15	-0.16	-0.16	-0.17	-0.17
-0.14	-0.15	-0.16	-0.16	-0.17
-0.14	-0.14	-0.15	-0.16	-0.16
-0.13	-0.14	-0.14	-0.15	-0.16
-0.12	-0.13	-0.14	-0.14	-0.15
-0.12	-0.12	-0.13	-0.14	-0.14
-0.11	-0.12	-0.12	-0.13	-0.14
-0.10	-0.11	-0.12	-0.12	-0.13
-0.09	-0.10	-0.11	-0.12	-0.12
-0.08	-0.09	-0.10	-0.11	-0.12
-0.06	-0.08	-0.09	-0.10	-0.11
-0.04	-0.06	-0.08	-0.09	-0.10

**Elevation-Flow-Tailwater Table**

Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)	Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)
0.00	-0.04	-0.06	-0.08	-0.09
0.04	0.00	-0.04	-0.06	-0.08
0.06	0.04	0.00	-0.04	-0.06
0.08	0.06	0.04	0.00	-0.04
0.09	0.08	0.06	0.04	0.00
0.10	0.09	0.08	0.06	0.04
0.11	0.10	0.09	0.08	0.06
0.12	0.11	0.10	0.09	0.08
0.12	0.12	0.11	0.10	0.09
0.13	0.12	0.12	0.11	0.10
0.14	0.13	0.12	0.12	0.11
0.14	0.14	0.13	0.12	0.12
0.15	0.14	0.14	0.13	0.12
0.16	0.15	0.14	0.14	0.13
0.16	0.16	0.15	0.14	0.14
0.17	0.16	0.16	0.15	0.14

Tailwater= 789.00 ft (ft <sup>3</sup> /s)
-0.32
-0.32
-0.32
-0.32
-0.31
-0.31
-0.31
-0.30
-0.30
-0.30
-0.30
-0.29
-0.29
-0.29
-0.28
-0.28
-0.28
-0.27
-0.27
-0.26
-0.26
-0.26
-0.25
-0.25
-0.25
-0.24
-0.24
-0.23
-0.23
-0.23
-0.22
-0.22
-0.21
-0.21
-0.20
-0.20

### Elevation-Flow-Tailwater Table

Tailwater= 789.00 ft  
(ft<sup>3</sup>/s)

-0.19
-0.19
-0.18
-0.18
-0.17
-0.17
-0.16
-0.16
-0.15
-0.14
-0.14
-0.13
-0.12
-0.12
-0.11
-0.10
-0.09
-0.08
-0.06
-0.04
0.00
0.04
0.06
0.08
0.09
0.10
0.11
0.12
0.12
0.13
0.14

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Requested Pond Water Surface Elevations

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Minimum (Headwater)	783.40 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	790.00 ft

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**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	788.30 (N/A)	790.00 (N/A)

**Structure ID: Weir - 1**  
**Structure Type: Irregular Weir**

Station (ft)	Elevation (ft)
0.00	790.00
6.50	789.00
11.10	788.30
52.50	789.00
87.40	790.00

Lowest Elevation 788.30 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

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Structure ID: TW  
 Structure Type: TW Setup, DS Channel

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Tailwater Type Free Outfall

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Convergence Tolerances

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Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

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**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.10 ft (ft <sup>3</sup> /s)	Tailwater= 783.20 ft (ft <sup>3</sup> /s)	Tailwater= 783.30 ft (ft <sup>3</sup> /s)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)
788.50	0.00	0.00	0.00	0.00
788.60	0.60	0.60	0.60	0.60
788.70	0.83	0.83	0.83	0.83
788.80	1.07	1.07	1.07	1.07
788.90	1.27	1.27	1.27	1.27
789.00	1.40	1.40	1.40	1.40
789.10	1.52	1.52	1.52	1.52
789.20	1.64	1.64	1.64	1.64
789.30	1.74	1.74	1.74	1.74
789.40	1.84	1.84	1.84	1.84
789.50	1.94	1.94	1.94	1.94
789.60	2.03	2.03	2.03	2.03
789.70	2.12	2.12	2.12	2.12
789.80	2.20	2.20	2.20	2.20
789.90	2.28	2.28	2.28	2.28
790.00	2.36	2.36	2.36	2.36
790.10	2.43	2.43	2.43	2.43
790.20	2.51	2.51	2.51	2.51
790.30	2.58	2.58	2.58	2.58
790.40	2.65	2.65	2.65	2.65
790.50	2.71	2.71	2.71	2.71
790.60	2.78	2.78	2.78	2.78
790.70	2.84	2.84	2.84	2.84
790.80	2.90	2.90	2.90	2.90
790.90	2.97	2.97	2.97	2.97
791.00	3.03	3.03	3.03	3.03
791.10	3.09	3.09	3.09	3.09
791.20	3.14	3.14	3.14	3.14
791.30	3.20	3.20	3.20	3.20
791.40	3.26	3.26	3.26	3.26
791.50	3.31	3.31	3.31	3.31
791.60	3.36	3.36	3.36	3.36
791.70	3.42	3.42	3.42	3.42
791.80	3.47	3.47	3.47	3.47
791.90	3.52	3.52	3.52	3.52
792.00	3.57	3.57	3.57	3.57
792.10	3.62	3.62	3.62	3.62
792.20	3.67	3.67	3.67	3.67
792.30	3.72	3.72	3.72	3.72
792.40	3.77	3.77	3.77	3.77
792.50	3.81	3.81	3.81	3.81
792.60	3.86	3.86	3.86	3.86
792.70	3.91	3.91	3.91	3.91
792.80	3.95	3.95	3.95	3.95
792.90	4.00	4.00	4.00	4.00
793.00	4.04	4.04	4.04	4.04
793.10	4.09	4.09	4.09	4.09
793.20	4.13	4.13	4.13	4.13
793.30	4.18	4.18	4.18	4.18
793.40	4.22	4.22	4.22	4.22
793.50	4.26	4.26	4.26	4.26
793.60	4.30	4.30	4.30	4.30
793.70	4.34	4.34	4.34	4.34
793.80	4.39	4.39	4.39	4.39

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.10 ft (ft <sup>3</sup> /s)	Tailwater= 783.20 ft (ft <sup>3</sup> /s)	Tailwater= 783.30 ft (ft <sup>3</sup> /s)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)
793.90	4.43	4.43	4.43	4.43
794.00	4.47	4.47	4.47	4.47
Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)	Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22

**Elevation-Flow-Tailwater Table**

Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)	Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)	Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04

**Elevation-Flow-Tailwater Table**

Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)	Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)	Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86

**Elevation-Flow-Tailwater Table**

Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)	Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)	Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67

**Elevation-Flow-Tailwater Table**

Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)	Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)	Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47

**Elevation-Flow-Tailwater Table**

Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)	Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)	Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26

**Elevation-Flow-Tailwater Table**

Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)	Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)	Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03

**Elevation-Flow-Tailwater Table**

Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)	Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)	Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78

**Elevation-Flow-Tailwater Table**

Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)	Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)	Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.60
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51

**Elevation-Flow-Tailwater Table**

Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)	Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)	Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.60	0.60	0.60	0.60	0.55
0.83	0.83	0.83	0.83	0.83
1.07	1.07	1.07	1.07	1.07
1.27	1.27	1.27	1.27	1.27
1.40	1.40	1.40	1.40	1.40
1.52	1.52	1.52	1.52	1.52
1.64	1.64	1.64	1.64	1.64
1.74	1.74	1.74	1.74	1.74
1.84	1.84	1.84	1.84	1.84
1.94	1.94	1.94	1.94	1.94
2.03	2.03	2.03	2.03	2.03
2.12	2.12	2.12	2.12	2.12
2.20	2.20	2.20	2.20	2.20

**Elevation-Flow-Tailwater Table**

Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)	Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)
2.28	2.28	2.28	2.28	2.28
2.36	2.36	2.36	2.36	2.36
2.43	2.43	2.43	2.43	2.43
2.51	2.51	2.51	2.51	2.51
2.58	2.58	2.58	2.58	2.58
2.65	2.65	2.65	2.65	2.65
2.71	2.71	2.71	2.71	2.71
2.78	2.78	2.78	2.78	2.78
2.84	2.84	2.84	2.84	2.84
2.90	2.90	2.90	2.90	2.90
2.97	2.97	2.97	2.97	2.97
3.03	3.03	3.03	3.03	3.03
3.09	3.09	3.09	3.09	3.09
3.14	3.14	3.14	3.14	3.14
3.20	3.20	3.20	3.20	3.20
3.26	3.26	3.26	3.26	3.26
3.31	3.31	3.31	3.31	3.31
3.36	3.36	3.36	3.36	3.36
3.42	3.42	3.42	3.42	3.42
3.47	3.47	3.47	3.47	3.47
3.52	3.52	3.52	3.52	3.52
3.57	3.57	3.57	3.57	3.57
3.62	3.62	3.62	3.62	3.62
3.67	3.67	3.67	3.67	3.67
3.72	3.72	3.72	3.72	3.72
3.77	3.77	3.77	3.77	3.77
3.81	3.81	3.81	3.81	3.81
3.86	3.86	3.86	3.86	3.86
3.91	3.91	3.91	3.91	3.91
3.95	3.95	3.95	3.95	3.95
4.00	4.00	4.00	4.00	4.00
4.04	4.04	4.04	4.04	4.04
4.09	4.09	4.09	4.09	4.09
4.13	4.13	4.13	4.13	4.13
4.18	4.18	4.18	4.18	4.18
4.22	4.22	4.22	4.22	4.22
4.26	4.26	4.26	4.26	4.26
4.30	4.30	4.30	4.30	4.30
4.34	4.34	4.34	4.34	4.34
4.39	4.39	4.39	4.39	4.39
4.43	4.43	4.43	4.43	4.43
4.47	4.47	4.47	4.47	4.47
Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)	Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.34	0.00	-0.42	-0.83	-1.04
0.68	0.42	0.00	-0.58	-0.85
1.02	0.83	0.58	0.00	-0.60
1.20	1.04	0.85	0.60	0.00
1.34	1.20	1.04	0.85	0.60
1.47	1.34	1.20	1.04	0.85
1.59	1.47	1.34	1.20	1.04
1.70	1.59	1.47	1.34	1.20
1.80	1.70	1.59	1.47	1.34

**Elevation-Flow-Tailwater Table**

Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)	Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)
1.90	1.80	1.70	1.59	1.47
1.99	1.90	1.80	1.70	1.59
2.08	1.99	1.90	1.80	1.70
2.16	2.08	1.99	1.90	1.80
2.24	2.16	2.08	1.99	1.90
2.32	2.24	2.16	2.08	1.99
2.40	2.32	2.24	2.16	2.08
2.47	2.40	2.32	2.24	2.16
2.54	2.47	2.40	2.32	2.24
2.61	2.54	2.47	2.40	2.32
2.68	2.61	2.54	2.47	2.40
2.75	2.68	2.61	2.54	2.47
2.81	2.75	2.68	2.61	2.54
2.88	2.81	2.75	2.68	2.61
2.94	2.88	2.81	2.75	2.68
3.00	2.94	2.88	2.81	2.75
3.06	3.00	2.94	2.88	2.81
3.12	3.06	3.00	2.94	2.88
3.17	3.12	3.06	3.00	2.94
3.23	3.17	3.12	3.06	3.00
3.29	3.23	3.17	3.12	3.06
3.34	3.29	3.23	3.17	3.12
3.39	3.34	3.29	3.23	3.17
3.45	3.39	3.34	3.29	3.23
3.50	3.45	3.39	3.34	3.29
3.55	3.50	3.45	3.39	3.34
3.60	3.55	3.50	3.45	3.39
3.65	3.60	3.55	3.50	3.45
3.70	3.65	3.60	3.55	3.50
3.75	3.70	3.65	3.60	3.55
3.79	3.75	3.70	3.65	3.60
3.84	3.79	3.75	3.70	3.65
3.89	3.84	3.79	3.75	3.70
3.93	3.89	3.84	3.79	3.75
3.98	3.93	3.89	3.84	3.79
4.02	3.98	3.93	3.89	3.84
4.07	4.02	3.98	3.93	3.89
4.11	4.07	4.02	3.98	3.93
4.16	4.11	4.07	4.02	3.98
4.20	4.16	4.11	4.07	4.02
4.24	4.20	4.16	4.11	4.07
4.28	4.24	4.20	4.16	4.11
4.32	4.28	4.24	4.20	4.16
4.37	4.32	4.28	4.24	4.20
4.41	4.37	4.32	4.28	4.24
4.45	4.41	4.37	4.32	4.28
Tailwater= 789.00 ft (ft <sup>3</sup> /s)				
0.00				
-1.20				
-1.04				
-0.85				
-0.60				
0.00				

### Elevation-Flow-Tailwater Table

Tailwater= 789.00 ft  
(ft<sup>3</sup>/s)

0.60
0.85
1.04
1.20
1.34
1.47
1.59
1.70
1.80
1.90
1.99
2.08
2.16
2.24
2.32
2.40
2.47
2.54
2.61
2.68
2.75
2.81
2.88
2.94
3.00
3.06
3.12
3.17
3.23
3.29
3.34
3.39
3.45
3.50
3.55
3.60
3.65
3.70
3.75
3.79
3.84
3.89
3.93
3.98
4.02
4.07
4.11
4.16
4.20
4.24

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Requested Pond Water Surface Elevations

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Minimum (Headwater)	792.20 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	796.50 ft

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**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular Tailwater Settings	Orifice - 1 Tailwater	Forward	TW	792.21 (N/A)	796.50 (N/A)

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Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	791.70 ft
Orifice Diameter	5.00 in
Orifice Coefficient	0.600

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Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

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Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

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Requested Pond Water Surface Elevations	
Minimum (Headwater)	792.20 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	796.70 ft

**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular Tailwater Settings	Orifice - 1 Tailwater	Forward	TW	792.21 (N/A)	796.70 (N/A)

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	792.00 ft
Orifice Diameter	3.50 in
Orifice Coefficient	0.600
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 764.00 ft (ft <sup>3</sup> /s)	Tailwater= 764.10 ft (ft <sup>3</sup> /s)	Tailwater= 764.20 ft (ft <sup>3</sup> /s)	Tailwater= 764.30 ft (ft <sup>3</sup> /s)
769.00	0.00	0.00	0.00	0.00
769.10	0.65	0.65	0.65	0.65
769.20	0.90	0.90	0.90	0.90
769.30	1.18	1.18	1.18	1.18
769.40	1.51	1.51	1.51	1.51
769.50	1.68	1.68	1.68	1.68
769.60	1.84	1.84	1.84	1.84
769.70	1.99	1.99	1.99	1.99
769.80	2.12	2.12	2.12	2.12
769.90	2.25	2.25	2.25	2.25
770.00	2.37	2.37	2.37	2.37
770.10	2.49	2.49	2.49	2.49
770.20	2.60	2.60	2.60	2.60
770.30	2.71	2.71	2.71	2.71
770.40	2.81	2.81	2.81	2.81
770.50	2.91	2.91	2.91	2.91
770.60	3.00	3.00	3.00	3.00
770.70	3.09	3.09	3.09	3.09
770.80	3.18	3.18	3.18	3.18
770.90	3.27	3.27	3.27	3.27
771.00	3.35	3.35	3.35	3.35
771.10	3.44	3.44	3.44	3.44
771.20	3.52	3.52	3.52	3.52
771.30	3.60	3.60	3.60	3.60
771.40	3.67	3.67	3.67	3.67
771.50	3.75	3.75	3.75	3.75
771.60	3.82	3.82	3.82	3.82
771.70	3.90	3.90	3.90	3.90
771.80	3.97	3.97	3.97	3.97
771.90	4.04	4.04	4.04	4.04
772.00	4.11	4.11	4.11	4.11
772.10	4.17	4.17	4.17	4.17
772.20	4.24	4.24	4.24	4.24
772.30	4.31	4.31	4.31	4.31
772.40	4.37	4.37	4.37	4.37
772.50	4.43	4.43	4.43	4.43
772.60	4.50	4.50	4.50	4.50
772.70	4.56	4.56	4.56	4.56
772.80	4.62	4.62	4.62	4.62
772.90	4.68	4.68	4.68	4.68
773.00	4.74	4.74	4.74	4.74
773.10	4.80	4.80	4.80	4.80
773.20	4.86	4.86	4.86	4.86
773.30	4.92	4.92	4.92	4.92
773.40	4.97	4.97	4.97	4.97
773.50	5.03	5.03	5.03	5.03
773.60	5.08	5.08	5.08	5.08
773.70	5.14	5.14	5.14	5.14
773.80	5.19	5.19	5.19	5.19
773.90	5.25	5.25	5.25	5.25
774.00	5.30	5.30	5.30	5.30
774.10	5.35	5.35	5.35	5.35
774.20	5.40	5.40	5.40	5.40
774.30	5.46	5.46	5.46	5.46

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 764.00 ft (ft <sup>3</sup> /s)	Tailwater= 764.10 ft (ft <sup>3</sup> /s)	Tailwater= 764.20 ft (ft <sup>3</sup> /s)	Tailwater= 764.30 ft (ft <sup>3</sup> /s)
774.40	5.51	5.51	5.51	5.51
774.50	5.56	5.56	5.56	5.56
774.60	5.61	5.61	5.61	5.61
774.70	5.66	5.66	5.66	5.66
774.80	5.71	5.71	5.71	5.71
774.90	5.76	5.76	5.76	5.76
775.00	5.81	5.81	5.81	5.81
Tailwater= 764.40 ft (ft <sup>3</sup> /s)	Tailwater= 764.50 ft (ft <sup>3</sup> /s)	Tailwater= 764.60 ft (ft <sup>3</sup> /s)	Tailwater= 764.70 ft (ft <sup>3</sup> /s)	Tailwater= 764.80 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97

**Elevation-Flow-Tailwater Table**

Tailwater= 764.40 ft (ft <sup>3</sup> /s)	Tailwater= 764.50 ft (ft <sup>3</sup> /s)	Tailwater= 764.60 ft (ft <sup>3</sup> /s)	Tailwater= 764.70 ft (ft <sup>3</sup> /s)	Tailwater= 764.80 ft (ft <sup>3</sup> /s)
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 764.90 ft (ft <sup>3</sup> /s)	Tailwater= 765.00 ft (ft <sup>3</sup> /s)	Tailwater= 765.10 ft (ft <sup>3</sup> /s)	Tailwater= 765.20 ft (ft <sup>3</sup> /s)	Tailwater= 765.30 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43

**Elevation-Flow-Tailwater Table**

Tailwater= 764.90 ft (ft <sup>3</sup> /s)	Tailwater= 765.00 ft (ft <sup>3</sup> /s)	Tailwater= 765.10 ft (ft <sup>3</sup> /s)	Tailwater= 765.20 ft (ft <sup>3</sup> /s)	Tailwater= 765.30 ft (ft <sup>3</sup> /s)
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 765.40 ft (ft <sup>3</sup> /s)	Tailwater= 765.50 ft (ft <sup>3</sup> /s)	Tailwater= 765.60 ft (ft <sup>3</sup> /s)	Tailwater= 765.70 ft (ft <sup>3</sup> /s)	Tailwater= 765.80 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82

**Elevation-Flow-Tailwater Table**

Tailwater= 765.40 ft (ft <sup>3</sup> /s)	Tailwater= 765.50 ft (ft <sup>3</sup> /s)	Tailwater= 765.60 ft (ft <sup>3</sup> /s)	Tailwater= 765.70 ft (ft <sup>3</sup> /s)	Tailwater= 765.80 ft (ft <sup>3</sup> /s)
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 765.90 ft (ft <sup>3</sup> /s)	Tailwater= 766.00 ft (ft <sup>3</sup> /s)	Tailwater= 766.10 ft (ft <sup>3</sup> /s)	Tailwater= 766.20 ft (ft <sup>3</sup> /s)	Tailwater= 766.30 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09

**Elevation-Flow-Tailwater Table**

Tailwater= 765.90 ft (ft <sup>3</sup> /s)	Tailwater= 766.00 ft (ft <sup>3</sup> /s)	Tailwater= 766.10 ft (ft <sup>3</sup> /s)	Tailwater= 766.20 ft (ft <sup>3</sup> /s)	Tailwater= 766.30 ft (ft <sup>3</sup> /s)
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 766.40 ft (ft <sup>3</sup> /s)	Tailwater= 766.50 ft (ft <sup>3</sup> /s)	Tailwater= 766.60 ft (ft <sup>3</sup> /s)	Tailwater= 766.70 ft (ft <sup>3</sup> /s)	Tailwater= 766.80 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12

**Elevation-Flow-Tailwater Table**

Tailwater= 766.40 ft (ft <sup>3</sup> /s)	Tailwater= 766.50 ft (ft <sup>3</sup> /s)	Tailwater= 766.60 ft (ft <sup>3</sup> /s)	Tailwater= 766.70 ft (ft <sup>3</sup> /s)	Tailwater= 766.80 ft (ft <sup>3</sup> /s)
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 766.90 ft (ft <sup>3</sup> /s)	Tailwater= 767.00 ft (ft <sup>3</sup> /s)	Tailwater= 767.10 ft (ft <sup>3</sup> /s)	Tailwater= 767.20 ft (ft <sup>3</sup> /s)	Tailwater= 767.30 ft (ft <sup>3</sup> /s)

**Elevation-Flow-Tailwater Table**

Tailwater= 766.90 ft (ft <sup>3</sup> /s)	Tailwater= 767.00 ft (ft <sup>3</sup> /s)	Tailwater= 767.10 ft (ft <sup>3</sup> /s)	Tailwater= 767.20 ft (ft <sup>3</sup> /s)	Tailwater= 767.30 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46

**Elevation-Flow-Tailwater Table**

Tailwater= 766.90 ft (ft <sup>3</sup> /s)	Tailwater= 767.00 ft (ft <sup>3</sup> /s)	Tailwater= 767.10 ft (ft <sup>3</sup> /s)	Tailwater= 767.20 ft (ft <sup>3</sup> /s)	Tailwater= 767.30 ft (ft <sup>3</sup> /s)
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 767.40 ft (ft <sup>3</sup> /s)	Tailwater= 767.50 ft (ft <sup>3</sup> /s)	Tailwater= 767.60 ft (ft <sup>3</sup> /s)	Tailwater= 767.70 ft (ft <sup>3</sup> /s)	Tailwater= 767.80 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97

**Elevation-Flow-Tailwater Table**

Tailwater= 767.40 ft (ft <sup>3</sup> /s)	Tailwater= 767.50 ft (ft <sup>3</sup> /s)	Tailwater= 767.60 ft (ft <sup>3</sup> /s)	Tailwater= 767.70 ft (ft <sup>3</sup> /s)	Tailwater= 767.80 ft (ft <sup>3</sup> /s)
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 767.90 ft (ft <sup>3</sup> /s)	Tailwater= 768.00 ft (ft <sup>3</sup> /s)	Tailwater= 768.10 ft (ft <sup>3</sup> /s)	Tailwater= 768.20 ft (ft <sup>3</sup> /s)	Tailwater= 768.30 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43

**Elevation-Flow-Tailwater Table**

Tailwater= 767.90 ft (ft <sup>3</sup> /s)	Tailwater= 768.00 ft (ft <sup>3</sup> /s)	Tailwater= 768.10 ft (ft <sup>3</sup> /s)	Tailwater= 768.20 ft (ft <sup>3</sup> /s)	Tailwater= 768.30 ft (ft <sup>3</sup> /s)
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 768.40 ft (ft <sup>3</sup> /s)	Tailwater= 768.50 ft (ft <sup>3</sup> /s)	Tailwater= 768.60 ft (ft <sup>3</sup> /s)	Tailwater= 768.70 ft (ft <sup>3</sup> /s)	Tailwater= 768.80 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.65	0.65	0.65	0.65	0.65
0.90	0.90	0.90	0.90	0.90
1.18	1.18	1.18	1.18	1.18
1.51	1.51	1.51	1.51	1.51
1.68	1.68	1.68	1.68	1.68
1.84	1.84	1.84	1.84	1.84
1.99	1.99	1.99	1.99	1.99
2.12	2.12	2.12	2.12	2.12
2.25	2.25	2.25	2.25	2.25
2.37	2.37	2.37	2.37	2.37
2.49	2.49	2.49	2.49	2.49
2.60	2.60	2.60	2.60	2.60
2.71	2.71	2.71	2.71	2.71
2.81	2.81	2.81	2.81	2.81
2.91	2.91	2.91	2.91	2.91
3.00	3.00	3.00	3.00	3.00
3.09	3.09	3.09	3.09	3.09
3.18	3.18	3.18	3.18	3.18
3.27	3.27	3.27	3.27	3.27
3.35	3.35	3.35	3.35	3.35
3.44	3.44	3.44	3.44	3.44
3.52	3.52	3.52	3.52	3.52
3.60	3.60	3.60	3.60	3.60
3.67	3.67	3.67	3.67	3.67
3.75	3.75	3.75	3.75	3.75
3.82	3.82	3.82	3.82	3.82

**Elevation-Flow-Tailwater Table**

Tailwater= 768.40 ft (ft <sup>3</sup> /s)	Tailwater= 768.50 ft (ft <sup>3</sup> /s)	Tailwater= 768.60 ft (ft <sup>3</sup> /s)	Tailwater= 768.70 ft (ft <sup>3</sup> /s)	Tailwater= 768.80 ft (ft <sup>3</sup> /s)
3.90	3.90	3.90	3.90	3.90
3.97	3.97	3.97	3.97	3.97
4.04	4.04	4.04	4.04	4.04
4.11	4.11	4.11	4.11	4.11
4.17	4.17	4.17	4.17	4.17
4.24	4.24	4.24	4.24	4.24
4.31	4.31	4.31	4.31	4.31
4.37	4.37	4.37	4.37	4.37
4.43	4.43	4.43	4.43	4.43
4.50	4.50	4.50	4.50	4.50
4.56	4.56	4.56	4.56	4.56
4.62	4.62	4.62	4.62	4.62
4.68	4.68	4.68	4.68	4.68
4.74	4.74	4.74	4.74	4.74
4.80	4.80	4.80	4.80	4.80
4.86	4.86	4.86	4.86	4.86
4.92	4.92	4.92	4.92	4.92
4.97	4.97	4.97	4.97	4.97
5.03	5.03	5.03	5.03	5.03
5.08	5.08	5.08	5.08	5.08
5.14	5.14	5.14	5.14	5.14
5.19	5.19	5.19	5.19	5.19
5.25	5.25	5.25	5.25	5.25
5.30	5.30	5.30	5.30	5.30
5.35	5.35	5.35	5.35	5.35
5.40	5.40	5.40	5.40	5.40
5.46	5.46	5.46	5.46	5.46
5.51	5.51	5.51	5.51	5.51
5.56	5.56	5.56	5.56	5.56
5.61	5.61	5.61	5.61	5.61
5.66	5.66	5.66	5.66	5.66
5.71	5.71	5.71	5.71	5.71
5.76	5.76	5.76	5.76	5.76
5.81	5.81	5.81	5.81	5.81
Tailwater= 768.90 ft (ft <sup>3</sup> /s)	Tailwater= 769.00 ft (ft <sup>3</sup> /s)	Tailwater= 769.10 ft (ft <sup>3</sup> /s)	Tailwater= 769.20 ft (ft <sup>3</sup> /s)	Tailwater= 769.30 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
0.61	0.38	0.00	-0.44	-0.88
0.90	0.76	0.44	0.00	-0.54
1.18	1.14	0.88	0.54	0.00
1.51	1.50	1.30	1.06	0.75
1.68	1.68	1.50	1.30	1.06
1.84	1.84	1.68	1.50	1.30
1.99	1.98	1.84	1.68	1.50
2.12	2.12	1.98	1.84	1.68
2.25	2.25	2.12	1.98	1.84
2.37	2.37	2.25	2.12	1.98
2.49	2.48	2.37	2.25	2.12
2.60	2.60	2.48	2.37	2.25
2.71	2.70	2.60	2.48	2.37
2.81	2.80	2.70	2.60	2.48
2.91	2.90	2.80	2.70	2.60
3.00	3.00	2.90	2.80	2.70
3.09	3.09	3.00	2.90	2.80

**Elevation-Flow-Tailwater Table**

Tailwater= 768.90 ft (ft <sup>3</sup> /s)	Tailwater= 769.00 ft (ft <sup>3</sup> /s)	Tailwater= 769.10 ft (ft <sup>3</sup> /s)	Tailwater= 769.20 ft (ft <sup>3</sup> /s)	Tailwater= 769.30 ft (ft <sup>3</sup> /s)
3.18	3.18	3.09	3.00	2.90
3.27	3.27	3.18	3.09	3.00
3.35	3.35	3.27	3.18	3.09
3.44	3.43	3.35	3.27	3.18
3.52	3.51	3.43	3.35	3.27
3.60	3.59	3.51	3.43	3.35
3.67	3.67	3.59	3.51	3.43
3.75	3.75	3.67	3.59	3.51
3.82	3.82	3.75	3.67	3.59
3.90	3.89	3.82	3.75	3.67
3.97	3.96	3.89	3.82	3.75
4.04	4.03	3.96	3.89	3.82
4.11	4.10	4.03	3.96	3.89
4.17	4.17	4.10	4.03	3.96
4.24	4.24	4.17	4.10	4.03
4.31	4.30	4.24	4.17	4.10
4.37	4.37	4.30	4.24	4.17
4.43	4.43	4.37	4.30	4.24
4.50	4.50	4.43	4.37	4.30
4.56	4.56	4.50	4.43	4.37
4.62	4.62	4.56	4.50	4.43
4.68	4.68	4.62	4.56	4.50
4.74	4.74	4.68	4.62	4.56
4.80	4.80	4.74	4.68	4.62
4.86	4.86	4.80	4.74	4.68
4.92	4.91	4.86	4.80	4.74
4.97	4.97	4.91	4.86	4.80
5.03	5.03	4.97	4.91	4.86
5.08	5.08	5.03	4.97	4.91
5.14	5.14	5.08	5.03	4.97
5.19	5.19	5.14	5.08	5.03
5.25	5.24	5.19	5.14	5.08
5.30	5.30	5.24	5.19	5.14
5.35	5.35	5.30	5.24	5.19
5.40	5.40	5.35	5.30	5.24
5.46	5.45	5.40	5.35	5.30
5.51	5.51	5.45	5.40	5.35
5.56	5.56	5.51	5.45	5.40
5.61	5.61	5.56	5.51	5.45
5.66	5.66	5.61	5.56	5.51
5.71	5.71	5.66	5.61	5.56
5.76	5.75	5.71	5.66	5.61
5.81	5.80	5.75	5.71	5.66
Tailwater= 769.40 ft (ft <sup>3</sup> /s)	Tailwater= 769.50 ft (ft <sup>3</sup> /s)	Tailwater= 769.60 ft (ft <sup>3</sup> /s)	Tailwater= 769.70 ft (ft <sup>3</sup> /s)	Tailwater= 769.80 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	0.00	0.00
-1.30	-1.50	-1.68	-1.84	-1.98
-1.06	-1.30	-1.50	-1.68	-1.84
-0.75	-1.06	-1.30	-1.50	-1.68
0.00	-0.75	-1.06	-1.30	-1.50
0.75	0.00	-0.75	-1.06	-1.30
1.06	0.75	0.00	-0.75	-1.06
1.30	1.06	0.75	0.00	-0.75
1.50	1.30	1.06	0.75	0.00

**Elevation-Flow-Tailwater Table**

Tailwater= 769.40 ft (ft <sup>3</sup> /s)	Tailwater= 769.50 ft (ft <sup>3</sup> /s)	Tailwater= 769.60 ft (ft <sup>3</sup> /s)	Tailwater= 769.70 ft (ft <sup>3</sup> /s)	Tailwater= 769.80 ft (ft <sup>3</sup> /s)
1.68	1.50	1.30	1.06	0.75
1.84	1.68	1.50	1.30	1.06
1.98	1.84	1.68	1.50	1.30
2.12	1.98	1.84	1.68	1.50
2.25	2.12	1.98	1.84	1.68
2.37	2.25	2.12	1.98	1.84
2.48	2.37	2.25	2.12	1.98
2.60	2.48	2.37	2.25	2.12
2.70	2.60	2.48	2.37	2.25
2.80	2.70	2.60	2.48	2.37
2.90	2.80	2.70	2.60	2.48
3.00	2.90	2.80	2.70	2.60
3.09	3.00	2.90	2.80	2.70
3.18	3.09	3.00	2.90	2.80
3.27	3.18	3.09	3.00	2.90
3.35	3.27	3.18	3.09	3.00
3.43	3.35	3.27	3.18	3.09
3.51	3.43	3.35	3.27	3.18
3.59	3.51	3.43	3.35	3.27
3.67	3.59	3.51	3.43	3.35
3.75	3.67	3.59	3.51	3.43
3.82	3.75	3.67	3.59	3.51
3.89	3.82	3.75	3.67	3.59
3.96	3.89	3.82	3.75	3.67
4.03	3.96	3.89	3.82	3.75
4.10	4.03	3.96	3.89	3.82
4.17	4.10	4.03	3.96	3.89
4.24	4.17	4.10	4.03	3.96
4.30	4.24	4.17	4.10	4.03
4.37	4.30	4.24	4.17	4.10
4.43	4.37	4.30	4.24	4.17
4.50	4.43	4.37	4.30	4.24
4.56	4.50	4.43	4.37	4.30
4.62	4.56	4.50	4.43	4.37
4.68	4.62	4.56	4.50	4.43
4.74	4.68	4.62	4.56	4.50
4.80	4.74	4.68	4.62	4.56
4.86	4.80	4.74	4.68	4.62
4.91	4.86	4.80	4.74	4.68
4.97	4.91	4.86	4.80	4.74
5.03	4.97	4.91	4.86	4.80
5.08	5.03	4.97	4.91	4.86
5.14	5.08	5.03	4.97	4.91
5.19	5.14	5.08	5.03	4.97
5.24	5.19	5.14	5.08	5.03
5.30	5.24	5.19	5.14	5.08
5.35	5.30	5.24	5.19	5.14
5.40	5.35	5.30	5.24	5.19
5.45	5.40	5.35	5.30	5.24
5.51	5.45	5.40	5.35	5.30
5.56	5.51	5.45	5.40	5.35
5.61	5.56	5.51	5.45	5.40
Tailwater= 769.90 ft (ft <sup>3</sup> /s)	Tailwater= 770.00 ft (ft <sup>3</sup> /s)			

**Elevation-Flow-Tailwater Table**

Tailwater= 769.90 ft (ft <sup>3</sup> /s)	Tailwater= 770.00 ft (ft <sup>3</sup> /s)
0.00	0.00
-2.12	-2.25
-1.98	-2.12
-1.84	-1.98
-1.68	-1.84
-1.50	-1.68
-1.30	-1.50
-1.06	-1.30
-0.75	-1.06
0.00	-0.75
0.75	0.00
1.06	0.75
1.30	1.06
1.50	1.30
1.68	1.50
1.84	1.68
1.98	1.84
2.12	1.98
2.25	2.12
2.37	2.25
2.48	2.37
2.60	2.48
2.70	2.60
2.80	2.70
2.90	2.80
3.00	2.90
3.09	3.00
3.18	3.09
3.27	3.18
3.35	3.27
3.43	3.35
3.51	3.43
3.59	3.51
3.67	3.59
3.75	3.67
3.82	3.75
3.89	3.82
3.96	3.89
4.03	3.96
4.10	4.03
4.17	4.10
4.24	4.17
4.30	4.24
4.37	4.30
4.43	4.37
4.50	4.43
4.56	4.50
4.62	4.56
4.68	4.62
4.74	4.68
4.80	4.74
4.86	4.80
4.91	4.86
4.97	4.91

**Elevation-Flow-Tailwater Table**

Tailwater= 769.90 ft (ft <sup>3</sup> /s)		Tailwater= 770.00 ft (ft <sup>3</sup> /s)	
	5.03		4.97
	5.08		5.03
	5.14		5.08
	5.19		5.14
	5.24		5.19
	5.30		5.24
	5.35		5.30

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Requested Pond Water Surface Elevations

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Minimum (Headwater)	764.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	770.00 ft

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**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular Tailwater Settings	Orifice - 1 Tailwater	Forward	TW	764.01 (N/A)	770.00 (N/A)

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	763.60 ft
Orifice Diameter	8.50 in
Orifice Coefficient	0.600
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

Requested Pond Water Surface Elevations	
Minimum (Headwater)	786.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	793.00 ft

**Outlet Connectivity**

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	792.20 (N/A)	793.00 (N/A)

**Structure ID: Weir - 1**  
**Structure Type: Irregular Weir**

Station (ft)	Elevation (ft)
0.00	793.00
51.90	792.20
72.20	793.00

Lowest Elevation 792.20 ft  
 Weir Coefficient 3.00 (ft<sup>0.5</sup>)/s

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Structure ID: TW  
 Structure Type: TW Setup, DS Channel

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Tailwater Type Free Outfall

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**Convergence Tolerances**

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

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**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)	Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)
783.89	0.00	0.00	0.00	0.00
783.90	0.00	0.00	0.00	0.00
783.99	0.03	0.03	0.03	0.03
784.00	0.04	0.04	0.04	0.04
784.09	0.12	0.12	0.12	0.12
784.10	0.13	0.13	0.13	0.13
784.19	0.27	0.27	0.27	0.27
784.20	0.28	0.28	0.28	0.28
784.29	0.46	0.46	0.46	0.46
784.30	0.48	0.48	0.48	0.48
784.39	0.69	0.69	0.69	0.69
784.40	0.72	0.72	0.72	0.72
784.49	0.97	0.97	0.97	0.97
784.50	1.00	1.00	1.00	1.00
784.59	1.28	1.28	1.28	1.28
784.60	1.31	1.31	1.31	1.31
784.69	1.62	1.62	1.62	1.62
784.70	1.65	1.65	1.65	1.65
784.79	1.98	1.98	1.98	1.98
784.80	2.02	2.02	2.02	2.02
784.89	2.36	2.36	2.36	2.36
784.90	2.39	2.39	2.39	2.39
784.99	2.73	2.73	2.73	2.73
785.00	2.76	2.76	2.76	2.76
785.09	3.05	3.05	3.05	3.05
785.10	3.09	3.09	3.09	3.09
785.19	3.33	3.33	3.33	3.33
785.20	3.35	3.35	3.35	3.35
785.29	3.52	3.52	3.52	3.52
785.30	3.54	3.54	3.54	3.54
785.39	3.68	3.68	3.68	3.68
785.40	3.70	3.70	3.70	3.70
785.49	3.86	3.86	3.86	3.86
785.50	3.87	3.87	3.87	3.87
785.59	4.02	4.02	4.02	4.02
785.60	4.04	4.04	4.04	4.04
785.69	4.20	4.20	4.20	4.20
785.70	4.21	4.21	4.21	4.21
785.79	4.36	4.36	4.36	4.36
785.80	4.38	4.38	4.38	4.38
785.89	4.52	4.52	4.52	4.52
785.90	4.54	4.54	4.54	4.54
785.99	4.67	4.67	4.67	4.67
786.00	4.69	4.69	4.69	4.69
786.09	4.83	4.83	4.83	4.83
786.10	4.84	4.84	4.84	4.84
786.19	4.97	4.97	4.97	4.97
786.20	4.99	4.99	4.99	4.99
786.29	5.12	5.12	5.12	5.12
786.30	5.13	5.13	5.13	5.13
786.39	5.25	5.25	5.25	5.25
786.40	5.27	5.27	5.27	5.27
786.49	5.39	5.39	5.39	5.39
786.50	5.41	5.41	5.41	5.41

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)	Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)
786.59	5.53	5.53	5.53	5.53
786.60	5.54	5.54	5.54	5.54
786.69	5.67	5.67	5.67	5.67
786.70	5.68	5.68	5.68	5.68
786.79	5.80	5.80	5.80	5.80
786.80	5.81	5.81	5.81	5.81
786.89	5.93	5.93	5.93	5.93
786.90	5.94	5.94	5.94	5.94
786.99	6.05	6.05	6.05	6.05
787.00	6.07	6.07	6.07	6.07
787.09	6.18	6.18	6.18	6.18
787.10	6.19	6.19	6.19	6.19
787.19	6.29	6.29	6.29	6.29
787.20	6.31	6.31	6.31	6.31
787.29	6.41	6.41	6.41	6.41
787.30	6.43	6.43	6.43	6.43
787.39	6.53	6.53	6.53	6.53
787.40	6.54	6.54	6.54	6.54
787.49	6.65	6.65	6.65	6.65
787.50	6.66	6.66	6.66	6.66
787.59	6.76	6.76	6.76	6.76
787.60	6.77	6.77	6.77	6.77
787.69	6.87	6.87	6.87	6.87
787.70	6.88	6.88	6.88	6.88
787.79	6.98	6.98	6.98	6.98
787.80	6.99	6.99	6.99	6.99
787.89	7.09	7.09	7.09	7.09
787.90	7.10	7.10	7.10	7.10
787.99	7.19	7.19	7.19	7.19
788.00	7.20	7.20	7.20	7.20
788.09	7.30	7.30	7.30	7.30
788.10	7.31	7.31	7.31	7.31
788.19	7.70	7.70	7.70	7.70
788.20	7.80	7.80	7.80	7.80
788.29	9.44	9.44	9.44	9.44
788.30	9.72	9.72	9.72	9.72
788.39	13.20	13.20	13.20	13.20
788.40	13.70	13.70	13.70	13.70
788.49	19.79	19.79	19.79	19.79
788.50	20.58	20.58	20.58	20.58
788.59	28.71	28.71	28.71	28.71
788.60	29.73	29.73	29.73	29.73
788.69	39.95	39.95	39.95	39.95
788.70	41.21	41.21	41.21	41.21
788.79	53.60	53.60	53.60	53.60
788.80	55.10	55.10	55.10	55.10
788.89	69.74	69.74	69.74	69.74
788.90	71.49	71.49	71.49	71.49
788.99	88.46	88.46	88.46	88.46
789.00	90.47	90.47	90.47	90.47
789.09	111.92	111.92	111.92	111.92
789.10	114.41	114.41	114.41	114.41
789.19	137.80	137.80	137.80	137.80
789.20	140.50	140.50	140.50	140.50

**Elevation-Flow-Tailwater Table**

Headwater Elevation (ft)	Tailwater= 783.40 ft (ft <sup>3</sup> /s)	Tailwater= 783.50 ft (ft <sup>3</sup> /s)	Tailwater= 783.60 ft (ft <sup>3</sup> /s)	Tailwater= 783.70 ft (ft <sup>3</sup> /s)
789.29	165.71	165.71	165.71	165.71
789.30	168.61	168.61	168.61	168.61
789.39	195.57	195.57	195.57	195.57
789.40	198.66	198.66	198.66	198.66
789.49	227.30	227.30	227.30	227.30
789.50	230.58	230.58	230.58	230.58
789.59	260.83	260.83	260.83	260.83
789.60	264.28	264.28	264.28	264.28
789.69	296.11	296.11	296.11	296.11
789.70	299.73	299.73	299.73	299.73
789.79	333.09	333.09	333.09	333.09
789.80	336.88	336.88	336.88	336.88
789.89	371.74	371.74	371.74	371.74
789.90	375.69	375.69	375.69	375.69
789.99	412.01	412.01	412.01	412.01
790.00	416.12	416.12	416.12	416.12
Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.89 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)	Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)
0.00	0.00	0.00	-0.03	-0.12
0.00	0.00	0.00	-0.03	-0.12
0.03	0.03	0.03	-0.02	-0.12
0.04	0.04	0.04	0.00	-0.12
0.12	0.12	0.12	0.12	-0.07
0.13	0.13	0.13	0.13	0.00
0.27	0.27	0.27	0.27	0.27
0.28	0.28	0.28	0.28	0.28
0.46	0.46	0.46	0.46	0.46
0.48	0.48	0.48	0.48	0.48
0.69	0.69	0.69	0.69	0.69
0.72	0.72	0.72	0.72	0.72
0.97	0.97	0.97	0.97	0.97
1.00	1.00	1.00	1.00	1.00
1.28	1.28	1.28	1.28	1.28
1.31	1.31	1.31	1.31	1.31
1.62	1.62	1.62	1.62	1.62
1.65	1.65	1.65	1.65	1.65
1.98	1.98	1.98	1.98	1.98
2.02	2.02	2.02	2.02	2.02
2.36	2.36	2.36	2.36	2.36
2.39	2.39	2.39	2.39	2.39
2.73	2.73	2.73	2.73	2.73
2.76	2.76	2.76	2.76	2.76
3.05	3.05	3.05	3.05	3.05
3.09	3.09	3.09	3.09	3.09
3.33	3.33	3.33	3.33	3.33
3.35	3.35	3.35	3.35	3.35
3.52	3.52	3.52	3.52	3.52
3.54	3.54	3.54	3.54	3.54
3.68	3.68	3.68	3.68	3.68
3.70	3.70	3.70	3.70	3.70
3.86	3.86	3.86	3.86	3.86
3.87	3.87	3.87	3.87	3.87
4.02	4.02	4.02	4.02	4.02
4.04	4.04	4.04	4.04	4.04

**Elevation-Flow-Tailwater Table**

Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.89 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)	Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)
4.20	4.20	4.20	4.20	4.20
4.21	4.21	4.21	4.21	4.21
4.36	4.36	4.36	4.36	4.36
4.38	4.38	4.38	4.38	4.38
4.52	4.52	4.52	4.52	4.52
4.54	4.54	4.54	4.54	4.54
4.67	4.67	4.67	4.67	4.67
4.69	4.69	4.69	4.69	4.69
4.83	4.83	4.83	4.83	4.83
4.84	4.84	4.84	4.84	4.84
4.97	4.97	4.97	4.97	4.97
4.99	4.99	4.99	4.99	4.99
5.12	5.12	5.12	5.12	5.12
5.13	5.13	5.13	5.13	5.13
5.25	5.25	5.25	5.25	5.25
5.27	5.27	5.27	5.27	5.27
5.39	5.39	5.39	5.39	5.39
5.41	5.41	5.41	5.41	5.41
5.53	5.53	5.53	5.53	5.53
5.54	5.54	5.54	5.54	5.54
5.67	5.67	5.67	5.67	5.67
5.68	5.68	5.68	5.68	5.68
5.80	5.80	5.80	5.80	5.80
5.81	5.81	5.81	5.81	5.81
5.93	5.93	5.93	5.93	5.93
5.94	5.94	5.94	5.94	5.94
6.05	6.05	6.05	6.05	6.05
6.07	6.07	6.07	6.07	6.07
6.18	6.18	6.18	6.18	6.18
6.19	6.19	6.19	6.19	6.19
6.29	6.29	6.29	6.29	6.29
6.31	6.31	6.31	6.31	6.31
6.41	6.41	6.41	6.41	6.41
6.43	6.43	6.43	6.43	6.43
6.53	6.53	6.53	6.53	6.53
6.54	6.54	6.54	6.54	6.54
6.65	6.65	6.65	6.65	6.65
6.66	6.66	6.66	6.66	6.66
6.76	6.76	6.76	6.76	6.76
6.77	6.77	6.77	6.77	6.77
6.87	6.87	6.87	6.87	6.87
6.88	6.88	6.88	6.88	6.88
6.98	6.98	6.98	6.98	6.98
6.99	6.99	6.99	6.99	6.99
7.09	7.09	7.09	7.09	7.09
7.10	7.10	7.10	7.10	7.10
7.19	7.19	7.19	7.19	7.19
7.20	7.20	7.20	7.20	7.20
7.30	7.30	7.30	7.30	7.30
7.31	7.31	7.31	7.31	7.31
7.70	7.70	7.70	7.70	7.70
7.80	7.80	7.80	7.80	7.80
9.44	9.44	9.44	9.44	9.44
9.72	9.72	9.72	9.72	9.72

**Elevation-Flow-Tailwater Table**

Tailwater= 783.80 ft (ft <sup>3</sup> /s)	Tailwater= 783.89 ft (ft <sup>3</sup> /s)	Tailwater= 783.90 ft (ft <sup>3</sup> /s)	Tailwater= 784.00 ft (ft <sup>3</sup> /s)	Tailwater= 784.10 ft (ft <sup>3</sup> /s)
13.20	13.20	13.20	13.20	13.20
13.70	13.70	13.70	13.70	13.70
19.79	19.79	19.79	19.79	19.79
20.58	20.58	20.58	20.58	20.58
28.71	28.71	28.71	28.71	28.71
29.73	29.73	29.73	29.73	29.73
39.95	39.95	39.95	39.95	39.95
41.21	41.21	41.21	41.21	41.21
53.60	53.60	53.60	53.60	53.60
55.10	55.10	55.10	55.10	55.10
69.74	69.74	69.74	69.74	69.74
71.49	71.49	71.49	71.49	71.49
88.46	88.46	88.46	88.46	88.46
90.47	90.47	90.47	90.47	90.47
111.92	111.92	111.92	111.92	111.92
114.41	114.41	114.41	114.41	114.41
137.80	137.80	137.80	137.80	137.80
140.50	140.50	140.50	140.50	140.50
165.71	165.71	165.71	165.71	165.71
168.61	168.61	168.61	168.61	168.61
195.57	195.57	195.57	195.57	195.57
198.66	198.66	198.66	198.66	198.66
227.30	227.30	227.30	227.30	227.30
230.58	230.58	230.58	230.58	230.58
260.83	260.83	260.83	260.83	260.83
264.28	264.28	264.28	264.28	264.28
296.11	296.11	296.11	296.11	296.11
299.73	299.73	299.73	299.73	299.73
333.09	333.09	333.09	333.09	333.09
336.88	336.88	336.88	336.88	336.88
371.74	371.74	371.74	371.74	371.74
375.69	375.69	375.69	375.69	375.69
412.01	412.01	412.01	412.01	412.01
416.12	416.12	416.12	416.12	416.12
Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)	Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)
-0.26	-0.44	-0.66	-0.91	-1.17
-0.26	-0.44	-0.66	-0.91	-1.17
-0.26	-0.44	-0.66	-0.91	-1.17
-0.26	-0.44	-0.66	-0.91	-1.17
-0.26	-0.44	-0.66	-0.91	-1.17
-0.26	-0.44	-0.66	-0.91	-1.17
-0.12	-0.44	-0.66	-0.91	-1.17
0.00	-0.43	-0.66	-0.91	-1.17
0.46	-0.18	-0.63	-0.91	-1.17
0.48	0.00	-0.61	-0.91	-1.17
0.69	0.67	-0.24	-0.82	-1.16
0.72	0.71	0.00	-0.79	-1.16
0.97	0.97	0.87	-0.29	-0.99
1.00	1.00	0.92	0.00	-0.96
1.28	1.28	1.28	1.04	-0.33
1.31	1.31	1.31	1.10	0.00
1.62	1.62	1.62	1.54	1.15
1.65	1.65	1.66	1.58	1.21

**Elevation-Flow-Tailwater Table**

Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)	Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)
1.98	1.98	1.98	1.94	1.70
2.02	2.02	2.02	1.98	1.75
2.36	2.35	2.35	2.33	2.13
2.39	2.40	2.39	2.36	2.17
2.73	2.73	2.72	2.68	2.50
2.76	2.76	2.76	2.72	2.53
3.05	3.05	3.05	3.01	2.80
3.09	3.09	3.08	3.04	2.82
3.33	3.33	3.33	3.28	3.00
3.35	3.35	3.36	3.31	3.02
3.52	3.52	3.52	3.47	3.24
3.54	3.54	3.54	3.49	3.27
3.68	3.68	3.68	3.65	3.47
3.70	3.70	3.70	3.67	3.49
3.86	3.86	3.86	3.84	3.68
3.87	3.87	3.87	3.85	3.70
4.02	4.02	4.02	4.01	3.88
4.04	4.04	4.04	4.03	3.90
4.20	4.20	4.20	4.19	4.07
4.21	4.21	4.21	4.21	4.09
4.36	4.36	4.36	4.36	4.26
4.38	4.38	4.38	4.37	4.27
4.52	4.52	4.52	4.52	4.43
4.54	4.54	4.54	4.54	4.45
4.67	4.67	4.67	4.67	4.60
4.69	4.69	4.69	4.69	4.62
4.83	4.83	4.83	4.83	4.76
4.84	4.84	4.84	4.84	4.78
4.97	4.97	4.97	4.97	4.92
4.99	4.99	4.99	4.99	4.93
5.12	5.12	5.12	5.12	5.07
5.13	5.13	5.13	5.13	5.09
5.25	5.25	5.25	5.25	5.22
5.27	5.27	5.27	5.27	5.24
5.39	5.39	5.39	5.39	5.36
5.41	5.41	5.41	5.41	5.38
5.53	5.53	5.53	5.53	5.50
5.54	5.54	5.54	5.54	5.52
5.67	5.67	5.67	5.67	5.64
5.68	5.68	5.68	5.68	5.65
5.80	5.80	5.80	5.80	5.77
5.81	5.81	5.81	5.81	5.79
5.93	5.93	5.93	5.93	5.90
5.94	5.94	5.94	5.94	5.92
6.05	6.05	6.05	6.05	6.03
6.07	6.07	6.07	6.07	6.05
6.18	6.18	6.18	6.18	6.16
6.19	6.19	6.19	6.19	6.17
6.29	6.29	6.29	6.29	6.28
6.31	6.31	6.31	6.31	6.29
6.41	6.41	6.41	6.41	6.40
6.43	6.43	6.43	6.43	6.41
6.53	6.53	6.53	6.53	6.52
6.54	6.54	6.54	6.54	6.53

**Elevation-Flow-Tailwater Table**

Tailwater= 784.20 ft (ft <sup>3</sup> /s)	Tailwater= 784.30 ft (ft <sup>3</sup> /s)	Tailwater= 784.40 ft (ft <sup>3</sup> /s)	Tailwater= 784.50 ft (ft <sup>3</sup> /s)	Tailwater= 784.60 ft (ft <sup>3</sup> /s)
6.65	6.65	6.65	6.65	6.63
6.66	6.66	6.66	6.66	6.64
6.76	6.76	6.76	6.76	6.75
6.77	6.77	6.77	6.77	6.76
6.87	6.87	6.87	6.87	6.86
6.88	6.88	6.88	6.88	6.87
6.98	6.98	6.98	6.98	6.97
6.99	6.99	6.99	6.99	6.98
7.09	7.09	7.09	7.09	7.08
7.10	7.10	7.10	7.10	7.09
7.19	7.19	7.19	7.19	7.18
7.20	7.20	7.20	7.20	7.19
7.30	7.30	7.30	7.30	7.29
7.31	7.31	7.31	7.31	7.30
7.70	7.70	7.70	7.70	7.69
7.80	7.80	7.80	7.80	7.79
9.44	9.44	9.44	9.44	9.44
9.72	9.72	9.72	9.72	9.72
13.20	13.20	13.20	13.20	13.19
13.70	13.70	13.70	13.70	13.69
19.79	19.79	19.79	19.79	19.78
20.58	20.58	20.58	20.58	20.57
28.71	28.71	28.71	28.71	28.70
29.73	29.73	29.73	29.73	29.72
39.95	39.95	39.95	39.95	39.95
41.21	41.21	41.21	41.21	41.20
53.60	53.60	53.60	53.60	53.59
55.10	55.10	55.10	55.10	55.10
69.74	69.74	69.74	69.74	69.73
71.49	71.49	71.49	71.49	71.49
88.46	88.46	88.46	88.46	88.45
90.47	90.47	90.47	90.47	90.47
111.92	111.92	111.92	111.92	111.92
114.41	114.41	114.41	114.41	114.41
137.80	137.80	137.80	137.80	137.79
140.50	140.50	140.50	140.50	140.49
165.71	165.71	165.71	165.71	165.71
168.61	168.61	168.61	168.61	168.61
195.57	195.57	195.57	195.57	195.57
198.66	198.66	198.66	198.66	198.66
227.30	227.30	227.30	227.30	227.30
230.58	230.58	230.58	230.58	230.57
260.83	260.83	260.83	260.83	260.83
264.28	264.28	264.28	264.28	264.28
296.11	296.11	296.11	296.11	296.11
299.73	299.73	299.73	299.73	299.73
333.09	333.09	333.09	333.09	333.09
336.88	336.88	336.88	336.88	336.88
371.74	371.74	371.74	371.74	371.73
375.69	375.69	375.69	375.69	375.69
412.01	412.01	412.01	412.01	412.01
416.12	416.12	416.12	416.12	416.12
Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)	Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)

**Elevation-Flow-Tailwater Table**

Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)	Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.45	-1.70	-1.96	-2.21	-2.44
-1.39	-1.70	-1.96	-2.21	-2.44
-1.37	-1.69	-1.96	-2.21	-2.44
-1.13	-1.57	-1.90	-2.19	-2.44
-1.08	-1.54	-1.89	-2.18	-2.44
-0.38	-1.23	-1.69	-2.05	-2.35
0.00	-1.18	-1.66	-2.03	-2.34
1.18	-0.38	-1.28	-1.76	-2.14
1.25	0.00	-1.22	-1.72	-2.11
1.72	1.17	-0.38	-1.30	-1.79
1.77	1.24	0.00	-1.24	-1.75
2.11	1.70	1.17	-0.38	-1.30
2.15	1.74	1.23	0.00	-1.24
2.44	2.10	1.70	1.17	-0.38
2.47	2.14	1.74	1.23	0.00
2.73	2.44	2.10	1.70	1.17
2.76	2.47	2.13	1.75	1.24
3.00	2.73	2.44	2.10	1.70
3.02	2.76	2.47	2.14	1.74
3.24	3.00	2.73	2.44	2.10
3.26	3.02	2.76	2.47	2.13
3.47	3.24	3.00	2.73	2.44
3.49	3.27	3.02	2.76	2.47
3.68	3.47	3.24	3.00	2.73
3.70	3.49	3.26	3.02	2.76
3.88	3.68	3.47	3.24	3.00
3.90	3.70	3.49	3.26	3.02
4.08	3.88	3.68	3.47	3.24
4.09	3.90	3.70	3.49	3.26
4.25	4.07	3.88	3.68	3.47
4.27	4.09	3.90	3.70	3.49
4.43	4.26	4.07	3.88	3.68
4.45	4.27	4.09	3.90	3.70
4.60	4.43	4.26	4.07	3.88
4.62	4.45	4.28	4.09	3.90
4.76	4.60	4.43	4.26	4.07
4.78	4.62	4.45	4.28	4.09
4.92	4.76	4.60	4.43	4.26
4.94	4.78	4.62	4.45	4.28
5.07	4.92	4.76	4.60	4.43
5.09	4.94	4.78	4.62	4.45
5.22	5.07	4.92	4.76	4.60
5.23	5.09	4.94	4.78	4.62

**Elevation-Flow-Tailwater Table**

Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)	Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)
5.36	5.22	5.07	4.92	4.76
5.38	5.23	5.09	4.93	4.78
5.51	5.36	5.22	5.07	4.92
5.52	5.38	5.24	5.09	4.93
5.64	5.51	5.36	5.22	5.07
5.65	5.52	5.38	5.23	5.09
5.77	5.64	5.50	5.36	5.22
5.79	5.65	5.52	5.38	5.23
5.90	5.77	5.64	5.50	5.36
5.92	5.79	5.65	5.52	5.38
6.03	5.90	5.77	5.64	5.50
6.05	5.92	5.79	5.66	5.52
6.16	6.03	5.90	5.77	5.64
6.17	6.04	5.92	5.79	5.65
6.28	6.16	6.03	5.90	5.77
6.29	6.17	6.04	5.92	5.79
6.40	6.28	6.16	6.03	5.90
6.41	6.29	6.17	6.04	5.92
6.52	6.40	6.28	6.16	6.03
6.53	6.41	6.29	6.17	6.04
6.63	6.52	6.40	6.28	6.16
6.64	6.53	6.41	6.29	6.17
6.75	6.63	6.52	6.40	6.28
6.76	6.64	6.53	6.41	6.29
6.86	6.75	6.63	6.52	6.40
6.87	6.76	6.64	6.53	6.41
6.97	6.86	6.75	6.63	6.52
6.98	6.87	6.76	6.64	6.53
7.08	6.97	6.86	6.75	6.63
7.09	6.98	6.87	6.76	6.65
7.18	7.08	6.97	6.86	6.75
7.19	7.09	6.98	6.87	6.76
7.59	7.48	7.38	7.27	7.16
7.69	7.59	7.48	7.37	7.26
9.34	9.23	9.13	9.02	8.91
9.61	9.51	9.40	9.30	9.19
13.09	12.99	12.88	12.78	12.67
13.59	13.49	13.39	13.28	13.18
19.68	19.58	19.48	19.37	19.27
20.47	20.37	20.27	20.17	20.06
28.61	28.51	28.41	28.30	28.20
29.63	29.53	29.42	29.32	29.22
39.85	39.75	39.65	39.55	39.45
41.11	41.01	40.91	40.81	40.71
53.50	53.40	53.30	53.20	53.10
55.00	54.90	54.80	54.70	54.60
69.64	69.54	69.44	69.35	69.25
71.39	71.29	71.20	71.10	71.00
88.36	88.26	88.17	88.07	87.97
90.38	90.28	90.19	90.09	89.99
111.82	111.73	111.64	111.54	111.44
114.32	114.22	114.13	114.03	113.94
137.70	137.61	137.52	137.42	137.32
140.40	140.31	140.22	140.12	140.03

**Elevation-Flow-Tailwater Table**

Tailwater= 784.70 ft (ft <sup>3</sup> /s)	Tailwater= 784.80 ft (ft <sup>3</sup> /s)	Tailwater= 784.90 ft (ft <sup>3</sup> /s)	Tailwater= 785.00 ft (ft <sup>3</sup> /s)	Tailwater= 785.10 ft (ft <sup>3</sup> /s)
165.62	165.53	165.43	165.34	165.25
168.52	168.43	168.33	168.24	168.15
195.48	195.39	195.30	195.21	195.11
198.57	198.48	198.39	198.30	198.20
227.21	227.12	227.03	226.94	226.85
230.48	230.39	230.30	230.21	230.12
260.74	260.65	260.56	260.47	260.38
264.19	264.10	264.01	263.92	263.83
296.02	295.93	295.85	295.76	295.67
299.64	299.56	299.47	299.38	299.29
333.00	332.92	332.83	332.74	332.65
336.80	336.71	336.62	336.53	336.44
371.65	371.56	371.48	371.39	371.30
375.60	375.52	375.43	375.34	375.25
411.92	411.84	411.75	411.66	411.58
416.04	415.95	415.87	415.78	415.69
Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)	Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.66	-2.88	-3.10	-3.31	-3.50
-2.62	-2.86	-3.09	-3.30	-3.50
-2.61	-2.85	-3.09	-3.30	-3.50
-2.46	-2.74	-2.99	-3.23	-3.45
-2.43	-2.72	-2.98	-3.21	-3.44
-2.17	-2.50	-2.79	-3.05	-3.29
-2.13	-2.47	-2.76	-3.02	-3.27
-1.79	-2.17	-2.50	-2.79	-3.05
-1.75	-2.13	-2.47	-2.76	-3.02
-1.30	-1.79	-2.17	-2.50	-2.79
-1.24	-1.75	-2.13	-2.47	-2.76
-0.38	-1.30	-1.79	-2.17	-2.50
0.00	-1.24	-1.75	-2.13	-2.47
1.16	-0.38	-1.30	-1.79	-2.17
1.23	0.00	-1.24	-1.75	-2.13
1.70	1.16	-0.38	-1.30	-1.79
1.74	1.24	0.00	-1.24	-1.75
2.10	1.70	1.17	-0.38	-1.30
2.14	1.75	1.23	0.00	-1.24
2.44	2.10	1.70	1.17	-0.38
2.47	2.13	1.74	1.24	0.00

**Elevation-Flow-Tailwater Table**

Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)	Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)
2.73	2.44	2.10	1.70	1.17
2.76	2.47	2.14	1.74	1.23
3.00	2.73	2.44	2.10	1.70
3.02	2.76	2.47	2.13	1.74
3.24	3.00	2.73	2.44	2.10
3.27	3.02	2.76	2.47	2.14
3.47	3.24	3.00	2.73	2.44
3.49	3.26	3.02	2.76	2.47
3.68	3.47	3.24	3.00	2.73
3.70	3.49	3.26	3.02	2.76
3.88	3.68	3.47	3.24	3.00
3.90	3.70	3.49	3.27	3.02
4.07	3.88	3.68	3.47	3.24
4.09	3.90	3.70	3.49	3.26
4.26	4.07	3.88	3.68	3.47
4.27	4.09	3.90	3.70	3.49
4.43	4.26	4.07	3.88	3.68
4.45	4.28	4.09	3.90	3.70
4.60	4.43	4.26	4.07	3.88
4.62	4.45	4.27	4.09	3.90
4.76	4.60	4.43	4.26	4.07
4.78	4.62	4.45	4.28	4.09
4.92	4.76	4.60	4.43	4.26
4.94	4.78	4.62	4.45	4.27
5.07	4.92	4.76	4.60	4.43
5.09	4.93	4.78	4.62	4.45
5.22	5.07	4.92	4.76	4.60
5.23	5.09	4.94	4.78	4.62
5.36	5.22	5.07	4.92	4.76
5.38	5.23	5.09	4.94	4.78
5.50	5.36	5.22	5.07	4.92
5.52	5.38	5.24	5.09	4.94
5.64	5.50	5.36	5.22	5.07
5.65	5.52	5.38	5.23	5.09
5.77	5.64	5.50	5.36	5.22
5.79	5.65	5.52	5.38	5.23
5.90	5.77	5.64	5.50	5.36
5.92	5.79	5.65	5.52	5.38
6.03	5.90	5.77	5.64	5.50
6.05	5.92	5.79	5.65	5.52
6.16	6.03	5.90	5.77	5.64
6.17	6.05	5.92	5.79	5.65
6.28	6.16	6.03	5.90	5.77
6.29	6.17	6.05	5.92	5.79
6.40	6.28	6.16	6.03	5.90
6.41	6.29	6.17	6.04	5.92
6.52	6.40	6.28	6.16	6.03
6.53	6.41	6.29	6.17	6.05
6.63	6.52	6.40	6.28	6.16
6.64	6.53	6.41	6.29	6.17
7.05	6.93	6.82	6.70	6.58
7.15	7.03	6.92	6.80	6.68
8.80	8.69	8.58	8.46	8.34
9.08	8.97	8.85	8.74	8.62

**Elevation-Flow-Tailwater Table**

Tailwater= 785.20 ft (ft <sup>3</sup> /s)	Tailwater= 785.30 ft (ft <sup>3</sup> /s)	Tailwater= 785.40 ft (ft <sup>3</sup> /s)	Tailwater= 785.50 ft (ft <sup>3</sup> /s)	Tailwater= 785.60 ft (ft <sup>3</sup> /s)
12.56	12.45	12.34	12.23	12.11
13.07	12.96	12.85	12.73	12.62
19.16	19.05	18.94	18.83	18.72
19.95	19.85	19.74	19.62	19.51
28.09	27.99	27.88	27.77	27.66
29.11	29.01	28.90	28.79	28.68
39.35	39.24	39.13	39.03	38.92
40.60	40.50	40.39	40.28	40.17
53.00	52.90	52.79	52.69	52.58
54.50	54.40	54.29	54.19	54.08
69.15	69.04	68.94	68.83	68.73
70.90	70.80	70.69	70.59	70.48
87.87	87.77	87.67	87.57	87.46
89.89	89.79	89.69	89.59	89.48
111.34	111.25	111.14	111.04	110.94
113.84	113.74	113.64	113.54	113.43
137.23	137.13	137.03	136.93	136.83
139.93	139.83	139.73	139.63	139.53
165.15	165.05	164.95	164.86	164.75
168.05	167.95	167.86	167.76	167.65
195.02	194.92	194.83	194.73	194.63
198.11	198.01	197.92	197.82	197.72
226.75	226.66	226.56	226.47	226.37
230.03	229.93	229.84	229.74	229.64
260.29	260.20	260.10	260.01	259.91
263.74	263.65	263.55	263.46	263.36
295.57	295.48	295.39	295.29	295.20
299.20	299.10	299.01	298.92	298.82
332.56	332.47	332.38	332.28	332.19
336.35	336.26	336.17	336.07	335.98
371.21	371.12	371.03	370.94	370.84
375.16	375.07	374.98	374.89	374.80
411.49	411.40	411.31	411.21	411.12
415.60	415.51	415.42	415.33	415.24
Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)	Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38
-3.68	-3.87	-4.04	-4.21	-4.38

**Elevation-Flow-Tailwater Table**

Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)	Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)
-3.65	-3.84	-4.03	-4.20	-4.37
-3.64	-3.84	-4.02	-4.20	-4.37
-3.51	-3.72	-3.92	-4.11	-4.29
-3.49	-3.70	-3.90	-4.09	-4.27
-3.29	-3.51	-3.72	-3.92	-4.11
-3.27	-3.49	-3.70	-3.90	-4.09
-3.05	-3.29	-3.51	-3.72	-3.92
-3.02	-3.27	-3.49	-3.70	-3.90
-2.79	-3.05	-3.29	-3.51	-3.72
-2.76	-3.02	-3.27	-3.49	-3.70
-2.50	-2.79	-3.05	-3.29	-3.51
-2.47	-2.76	-3.02	-3.27	-3.49
-2.17	-2.50	-2.79	-3.05	-3.29
-2.13	-2.47	-2.76	-3.02	-3.27
-1.79	-2.17	-2.50	-2.79	-3.05
-1.75	-2.13	-2.47	-2.76	-3.02
-1.30	-1.79	-2.17	-2.50	-2.79
-1.24	-1.75	-2.13	-2.47	-2.76
-0.38	-1.30	-1.79	-2.17	-2.50
0.00	-1.24	-1.75	-2.13	-2.47
1.18	-0.38	-1.30	-1.79	-2.17
1.24	0.00	-1.24	-1.75	-2.13
1.70	1.16	-0.38	-1.30	-1.79
1.74	1.23	0.00	-1.24	-1.75
2.10	1.70	1.17	-0.38	-1.30
2.14	1.75	1.23	0.00	-1.24
2.44	2.10	1.70	1.17	-0.38
2.47	2.14	1.74	1.23	0.00
2.73	2.43	2.10	1.70	1.17
2.76	2.47	2.14	1.75	1.23
3.00	2.73	2.44	2.10	1.70
3.02	2.76	2.47	2.14	1.74
3.24	3.00	2.73	2.44	2.10
3.26	3.02	2.76	2.47	2.14
3.47	3.24	3.00	2.73	2.44
3.49	3.26	3.02	2.76	2.47
3.68	3.47	3.24	2.99	2.73
3.70	3.49	3.27	3.02	2.76
3.88	3.68	3.47	3.24	3.00
3.90	3.70	3.49	3.26	3.02
4.07	3.88	3.68	3.47	3.24
4.09	3.90	3.70	3.49	3.26
4.26	4.07	3.88	3.68	3.47
4.27	4.09	3.90	3.70	3.49
4.43	4.26	4.07	3.88	3.68
4.45	4.27	4.09	3.90	3.70
4.60	4.43	4.25	4.07	3.88
4.62	4.45	4.27	4.09	3.90
4.76	4.60	4.43	4.26	4.07
4.78	4.62	4.45	4.27	4.09
4.92	4.76	4.60	4.43	4.26
4.93	4.78	4.62	4.45	4.27
5.07	4.92	4.76	4.60	4.43
5.09	4.94	4.78	4.62	4.45

**Elevation-Flow-Tailwater Table**

Tailwater= 785.70 ft (ft <sup>3</sup> /s)	Tailwater= 785.80 ft (ft <sup>3</sup> /s)	Tailwater= 785.90 ft (ft <sup>3</sup> /s)	Tailwater= 786.00 ft (ft <sup>3</sup> /s)	Tailwater= 786.10 ft (ft <sup>3</sup> /s)
5.22	5.07	4.92	4.76	4.60
5.23	5.09	4.94	4.78	4.62
5.36	5.22	5.07	4.92	4.76
5.38	5.23	5.09	4.94	4.78
5.50	5.36	5.22	5.07	4.92
5.52	5.38	5.23	5.09	4.94
5.64	5.51	5.36	5.22	5.07
5.65	5.52	5.38	5.24	5.09
5.77	5.64	5.50	5.36	5.22
5.79	5.65	5.52	5.38	5.23
5.91	5.77	5.64	5.50	5.36
5.92	5.79	5.65	5.52	5.38
6.03	5.91	5.77	5.64	5.50
6.04	5.92	5.79	5.66	5.52
6.46	6.33	6.20	6.07	5.94
6.56	6.43	6.31	6.18	6.04
8.22	8.10	7.98	7.85	7.72
8.50	8.38	8.25	8.13	8.00
11.99	11.87	11.75	11.63	11.50
12.50	12.38	12.26	12.13	12.01
18.60	18.49	18.37	18.24	18.12
19.39	19.28	19.16	19.04	18.91
27.54	27.43	27.31	27.19	27.07
28.56	28.45	28.33	28.21	28.09
38.81	38.69	38.58	38.46	38.34
40.06	39.95	39.83	39.72	39.59
52.47	52.35	52.24	52.12	52.01
53.97	53.86	53.74	53.63	53.51
68.62	68.51	68.40	68.28	68.17
70.37	70.26	70.15	70.04	69.92
87.36	87.25	87.14	87.02	86.91
89.37	89.27	89.16	89.05	88.93
110.83	110.73	110.62	110.51	110.40
113.33	113.22	113.11	113.00	112.89
136.72	136.62	136.51	136.40	136.29
139.42	139.32	139.21	139.10	139.00
164.65	164.55	164.44	164.34	164.23
167.55	167.45	167.35	167.24	167.13
194.53	194.42	194.32	194.21	194.11
197.62	197.52	197.41	197.31	197.20
226.27	226.17	226.06	225.96	225.85
229.54	229.44	229.34	229.23	229.13
259.81	259.71	259.61	259.51	259.40
263.26	263.16	263.06	262.96	262.85
295.10	295.00	294.90	294.80	294.70
298.72	298.62	298.53	298.42	298.32
332.09	331.99	331.90	331.80	331.70
335.88	335.79	335.69	335.59	335.49
370.75	370.65	370.55	370.46	370.36
374.70	374.61	374.51	374.41	374.31
411.03	410.93	410.84	410.74	410.64
415.15	415.05	414.96	414.86	414.76
Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)	Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)

**Elevation-Flow-Tailwater Table**

Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)	Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.54	-4.68	-4.84	-4.99	-5.14
-4.52	-4.68	-4.84	-4.99	-5.14
-4.46	-4.63	-4.80	-4.95	-5.10
-4.45	-4.62	-4.78	-4.94	-5.09
-4.29	-4.46	-4.63	-4.80	-4.95
-4.27	-4.45	-4.62	-4.78	-4.94
-4.11	-4.29	-4.46	-4.63	-4.80
-4.09	-4.27	-4.45	-4.62	-4.78
-3.92	-4.11	-4.29	-4.46	-4.63
-3.90	-4.09	-4.27	-4.45	-4.62
-3.72	-3.92	-4.11	-4.29	-4.46
-3.70	-3.90	-4.09	-4.27	-4.45
-3.51	-3.72	-3.92	-4.11	-4.29
-3.49	-3.70	-3.90	-4.09	-4.27
-3.29	-3.51	-3.72	-3.92	-4.11
-3.27	-3.49	-3.70	-3.90	-4.09
-3.05	-3.29	-3.51	-3.72	-3.92
-3.02	-3.27	-3.49	-3.70	-3.90
-2.79	-3.05	-3.29	-3.51	-3.72
-2.76	-3.02	-3.27	-3.49	-3.70
-2.50	-2.79	-3.05	-3.29	-3.51
-2.47	-2.76	-3.02	-3.27	-3.49
-2.17	-2.50	-2.79	-3.05	-3.29
-2.13	-2.47	-2.76	-3.02	-3.27
-1.79	-2.17	-2.50	-2.79	-3.05
-1.75	-2.13	-2.47	-2.76	-3.02
-1.30	-1.79	-2.17	-2.50	-2.79
-1.24	-1.75	-2.13	-2.47	-2.76
-0.38	-1.30	-1.79	-2.17	-2.50
0.00	-1.24	-1.75	-2.13	-2.47
1.17	-0.38	-1.30	-1.79	-2.17
1.23	0.00	-1.24	-1.75	-2.13
1.70	1.17	-0.38	-1.30	-1.79
1.75	1.23	0.00	-1.24	-1.75
2.10	1.70	1.17	-0.38	-1.30
2.14	1.74	1.23	0.00	-1.24

**Elevation-Flow-Tailwater Table**

Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)	Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)
2.44	2.10	1.70	1.17	-0.38
2.47	2.14	1.75	1.24	0.00
2.73	2.44	2.10	1.70	1.16
2.76	2.47	2.13	1.75	1.23
3.00	2.73	2.44	2.10	1.70
3.02	2.76	2.47	2.14	1.75
3.24	3.00	2.73	2.44	2.10
3.26	3.02	2.76	2.47	2.14
3.47	3.24	3.00	2.73	2.44
3.49	3.27	3.02	2.76	2.47
3.68	3.47	3.24	3.00	2.73
3.70	3.49	3.26	3.02	2.76
3.88	3.68	3.47	3.24	2.99
3.90	3.70	3.49	3.26	3.02
4.07	3.88	3.68	3.47	3.24
4.09	3.90	3.70	3.49	3.26
4.26	4.07	3.88	3.68	3.47
4.27	4.09	3.90	3.70	3.49
4.43	4.26	4.07	3.88	3.68
4.45	4.27	4.09	3.90	3.70
4.60	4.43	4.26	4.07	3.88
4.62	4.45	4.27	4.09	3.90
4.76	4.60	4.43	4.26	4.07
4.78	4.62	4.45	4.28	4.09
4.92	4.76	4.60	4.43	4.26
4.94	4.78	4.62	4.45	4.27
5.07	4.92	4.76	4.60	4.43
5.09	4.94	4.78	4.62	4.45
5.22	5.07	4.92	4.76	4.60
5.23	5.09	4.94	4.78	4.62
5.36	5.22	5.07	4.92	4.76
5.38	5.24	5.09	4.94	4.78
5.80	5.66	5.52	5.37	5.22
5.91	5.77	5.63	5.48	5.33
7.58	7.45	7.31	7.16	7.02
7.86	7.73	7.59	7.44	7.30
11.37	11.23	11.10	10.96	10.81
11.87	11.74	11.61	11.47	11.32
17.99	17.86	17.73	17.59	17.45
18.78	18.65	18.52	18.38	18.24
26.94	26.82	26.68	26.55	26.41
27.96	27.84	27.71	27.58	27.44
38.22	38.09	37.96	37.83	37.70
39.47	39.35	39.22	39.09	38.96
51.89	51.76	51.64	51.51	51.38
53.39	53.27	53.14	53.02	52.89
68.05	67.93	67.81	67.68	67.55
69.81	69.69	69.56	69.44	69.31
86.80	86.68	86.56	86.43	86.31
88.81	88.70	88.58	88.46	88.33
110.28	110.17	110.05	109.93	109.81
112.78	112.66	112.54	112.42	112.30
136.18	136.07	135.95	135.83	135.71
138.88	138.77	138.66	138.54	138.42

**Elevation-Flow-Tailwater Table**

Tailwater= 786.20 ft (ft <sup>3</sup> /s)	Tailwater= 786.30 ft (ft <sup>3</sup> /s)	Tailwater= 786.40 ft (ft <sup>3</sup> /s)	Tailwater= 786.50 ft (ft <sup>3</sup> /s)	Tailwater= 786.60 ft (ft <sup>3</sup> /s)
164.12	164.01	163.89	163.78	163.66
167.02	166.91	166.80	166.68	166.56
194.00	193.89	193.78	193.66	193.55
197.09	196.98	196.87	196.76	196.64
225.75	225.64	225.53	225.42	225.30
229.02	228.91	228.80	228.69	228.58
259.30	259.19	259.08	258.97	258.86
262.75	262.64	262.54	262.43	262.31
294.60	294.49	294.38	294.28	294.16
298.22	298.12	298.01	297.90	297.79
331.59	331.49	331.39	331.28	331.17
335.39	335.28	335.18	335.07	334.96
370.25	370.15	370.05	369.94	369.84
374.21	374.11	374.01	373.90	373.79
410.54	410.44	410.34	410.24	410.13
414.66	414.56	414.46	414.35	414.25
Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)	Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.29	-5.43	-5.56	-5.70	-5.82
-5.25	-5.39	-5.53	-5.67	-5.80
-5.23	-5.38	-5.52	-5.65	-5.79
-5.10	-5.25	-5.39	-5.53	-5.67
-5.09	-5.23	-5.38	-5.52	-5.65
-4.95	-5.10	-5.25	-5.39	-5.53
-4.94	-5.09	-5.23	-5.38	-5.52
-4.80	-4.95	-5.10	-5.25	-5.39
-4.78	-4.94	-5.09	-5.23	-5.38
-4.63	-4.80	-4.95	-5.10	-5.25
-4.62	-4.78	-4.94	-5.09	-5.23
-4.46	-4.63	-4.80	-4.95	-5.10
-4.45	-4.62	-4.78	-4.94	-5.09
-4.29	-4.46	-4.63	-4.80	-4.95
-4.27	-4.45	-4.62	-4.78	-4.94
-4.11	-4.29	-4.46	-4.63	-4.80
-4.09	-4.27	-4.45	-4.62	-4.78

**Elevation-Flow-Tailwater Table**

Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)	Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)
-3.92	-4.11	-4.29	-4.46	-4.63
-3.90	-4.09	-4.27	-4.45	-4.62
-3.72	-3.92	-4.11	-4.29	-4.46
-3.70	-3.90	-4.09	-4.27	-4.45
-3.51	-3.72	-3.92	-4.11	-4.29
-3.49	-3.70	-3.90	-4.09	-4.27
-3.29	-3.51	-3.72	-3.92	-4.11
-3.27	-3.49	-3.70	-3.90	-4.09
-3.05	-3.29	-3.51	-3.72	-3.92
-3.02	-3.27	-3.49	-3.70	-3.90
-2.79	-3.05	-3.29	-3.51	-3.72
-2.76	-3.02	-3.27	-3.49	-3.70
-2.50	-2.79	-3.05	-3.29	-3.51
-2.47	-2.76	-3.02	-3.27	-3.49
-2.17	-2.50	-2.79	-3.05	-3.29
-2.13	-2.47	-2.76	-3.02	-3.27
-1.79	-2.17	-2.50	-2.79	-3.05
-1.75	-2.13	-2.47	-2.76	-3.02
-1.30	-1.79	-2.17	-2.50	-2.79
-1.24	-1.75	-2.13	-2.47	-2.76
-0.38	-1.30	-1.79	-2.17	-2.50
0.00	-1.24	-1.75	-2.13	-2.47
1.17	-0.38	-1.30	-1.79	-2.17
1.23	0.00	-1.24	-1.75	-2.13
1.70	1.17	-0.38	-1.30	-1.79
1.75	1.23	0.00	-1.24	-1.75
2.10	1.70	1.16	-0.38	-1.30
2.14	1.74	1.23	0.00	-1.24
2.44	2.10	1.70	1.17	-0.38
2.47	2.13	1.74	1.23	0.00
2.73	2.44	2.10	1.70	1.17
2.76	2.47	2.13	1.74	1.23
3.00	2.73	2.43	2.10	1.70
3.02	2.76	2.47	2.14	1.75
3.24	3.00	2.73	2.44	2.10
3.26	3.02	2.76	2.47	2.14
3.47	3.24	3.00	2.73	2.44
3.49	3.26	3.02	2.76	2.47
3.68	3.47	3.24	3.00	2.73
3.70	3.49	3.27	3.02	2.76
3.88	3.68	3.47	3.24	3.00
3.90	3.70	3.49	3.27	3.02
4.07	3.88	3.68	3.47	3.24
4.09	3.90	3.70	3.49	3.26
4.26	4.07	3.88	3.68	3.47
4.28	4.09	3.90	3.70	3.49
4.43	4.26	4.07	3.88	3.68
4.45	4.27	4.09	3.90	3.70
4.60	4.43	4.25	4.07	3.88
4.62	4.45	4.27	4.09	3.90
5.06	4.90	4.73	4.56	4.37
5.17	5.01	4.84	4.66	4.48
6.86	6.71	6.54	6.38	6.20
7.14	6.99	6.83	6.66	6.48

**Elevation-Flow-Tailwater Table**

Tailwater= 786.70 ft (ft <sup>3</sup> /s)	Tailwater= 786.80 ft (ft <sup>3</sup> /s)	Tailwater= 786.90 ft (ft <sup>3</sup> /s)	Tailwater= 787.00 ft (ft <sup>3</sup> /s)	Tailwater= 787.10 ft (ft <sup>3</sup> /s)
10.67	10.51	10.36	10.20	10.02
11.18	11.02	10.87	10.70	10.54
17.31	17.16	17.01	16.85	16.69
18.10	17.95	17.80	17.64	17.48
26.27	26.13	25.98	25.83	25.67
27.30	27.15	27.01	26.85	26.70
37.56	37.42	37.28	37.13	36.98
38.82	38.68	38.54	38.39	38.24
51.25	51.11	50.97	50.83	50.68
52.75	52.62	52.48	52.33	52.18
67.43	67.29	67.15	67.01	66.87
69.18	69.05	68.91	68.77	68.63
86.18	86.05	85.92	85.78	85.64
88.20	88.07	87.94	87.80	87.66
109.68	109.55	109.42	109.29	109.15
112.18	112.05	111.92	111.79	111.65
135.59	135.47	135.34	135.21	135.07
138.29	138.17	138.04	137.91	137.78
163.54	163.42	163.29	163.16	163.03
166.44	166.32	166.19	166.07	165.94
193.43	193.31	193.19	193.06	192.94
196.52	196.40	196.28	196.16	196.03
225.19	225.07	224.95	224.83	224.70
228.46	228.35	228.23	228.10	227.98
258.75	258.63	258.51	258.39	258.27
262.20	262.08	261.97	261.85	261.73
294.05	293.94	293.82	293.71	293.58
297.68	297.56	297.45	297.33	297.21
331.06	330.95	330.83	330.72	330.60
334.85	334.74	334.63	334.51	334.40
369.73	369.62	369.51	369.39	369.28
373.69	373.58	373.46	373.35	373.24
410.02	409.92	409.81	409.69	409.58
414.14	414.03	413.92	413.81	413.70
Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)	Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43

**Elevation-Flow-Tailwater Table**

Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)	Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)
-5.95	-6.08	-6.19	-6.32	-6.43
-5.95	-6.08	-6.19	-6.32	-6.43
-5.93	-6.06	-6.18	-6.30	-6.42
-5.92	-6.04	-6.17	-6.29	-6.41
-5.80	-5.93	-6.06	-6.18	-6.30
-5.79	-5.92	-6.04	-6.17	-6.29
-5.67	-5.80	-5.93	-6.06	-6.18
-5.65	-5.79	-5.92	-6.04	-6.17
-5.53	-5.67	-5.80	-5.93	-6.06
-5.52	-5.65	-5.79	-5.92	-6.04
-5.39	-5.53	-5.67	-5.80	-5.93
-5.38	-5.52	-5.65	-5.79	-5.92
-5.25	-5.39	-5.53	-5.67	-5.80
-5.23	-5.38	-5.52	-5.65	-5.79
-5.10	-5.25	-5.39	-5.53	-5.67
-5.09	-5.23	-5.38	-5.52	-5.65
-4.95	-5.10	-5.25	-5.39	-5.53
-4.94	-5.09	-5.23	-5.38	-5.52
-4.80	-4.95	-5.10	-5.25	-5.39
-4.78	-4.94	-5.09	-5.23	-5.38
-4.63	-4.80	-4.95	-5.10	-5.25
-4.62	-4.78	-4.94	-5.09	-5.23
-4.46	-4.63	-4.80	-4.95	-5.10
-4.45	-4.62	-4.78	-4.94	-5.09
-4.29	-4.46	-4.63	-4.80	-4.95
-4.27	-4.45	-4.62	-4.78	-4.94
-4.11	-4.29	-4.46	-4.63	-4.80
-4.09	-4.27	-4.45	-4.62	-4.78
-3.92	-4.11	-4.29	-4.46	-4.63
-3.90	-4.09	-4.27	-4.45	-4.62
-3.72	-3.92	-4.11	-4.29	-4.46
-3.70	-3.90	-4.09	-4.27	-4.45
-3.51	-3.72	-3.92	-4.11	-4.29
-3.49	-3.70	-3.90	-4.09	-4.27
-3.29	-3.51	-3.72	-3.92	-4.11
-3.27	-3.49	-3.70	-3.90	-4.09
-3.05	-3.29	-3.51	-3.72	-3.92
-3.02	-3.27	-3.49	-3.70	-3.90
-2.79	-3.05	-3.29	-3.51	-3.72
-2.76	-3.02	-3.27	-3.49	-3.70
-2.50	-2.79	-3.05	-3.29	-3.51
-2.47	-2.76	-3.02	-3.27	-3.49
-2.17	-2.50	-2.79	-3.05	-3.29
-2.13	-2.47	-2.76	-3.02	-3.27
-1.79	-2.17	-2.50	-2.79	-3.05
-1.75	-2.13	-2.47	-2.76	-3.02
-1.30	-1.79	-2.17	-2.50	-2.79
-1.24	-1.75	-2.13	-2.47	-2.76
-0.38	-1.30	-1.79	-2.17	-2.50
0.00	-1.24	-1.75	-2.13	-2.47
1.17	-0.38	-1.30	-1.79	-2.17
1.24	0.00	-1.24	-1.75	-2.13
1.70	1.17	-0.38	-1.30	-1.79
1.74	1.23	0.00	-1.24	-1.75

**Elevation-Flow-Tailwater Table**

Tailwater= 787.20 ft (ft <sup>3</sup> /s)	Tailwater= 787.30 ft (ft <sup>3</sup> /s)	Tailwater= 787.40 ft (ft <sup>3</sup> /s)	Tailwater= 787.50 ft (ft <sup>3</sup> /s)	Tailwater= 787.60 ft (ft <sup>3</sup> /s)
2.10	1.70	1.18	-0.38	-1.30
2.14	1.75	1.24	0.00	-1.24
2.44	2.10	1.70	1.17	-0.38
2.46	2.14	1.75	1.23	0.00
2.73	2.44	2.10	1.70	1.17
2.76	2.47	2.14	1.74	1.23
3.00	2.73	2.44	2.10	1.70
3.02	2.76	2.47	2.13	1.75
3.24	3.00	2.73	2.44	2.10
3.27	3.02	2.76	2.47	2.14
3.47	3.24	3.00	2.73	2.44
3.49	3.26	3.02	2.76	2.47
3.68	3.47	3.24	3.00	2.73
3.70	3.49	3.27	3.02	2.76
4.18	3.98	3.77	3.54	3.30
4.29	4.09	3.88	3.65	3.41
6.02	5.82	5.62	5.41	5.18
6.30	6.11	5.91	5.70	5.48
9.85	9.67	9.48	9.27	9.06
10.36	10.18	9.99	9.79	9.58
16.52	16.34	16.16	15.97	15.77
17.32	17.14	16.96	16.77	16.57
25.51	25.34	25.17	24.98	24.79
26.54	26.37	26.19	26.01	25.82
36.82	36.66	36.49	36.31	36.13
38.08	37.92	37.75	37.58	37.40
50.53	50.37	50.21	50.04	49.87
52.03	51.88	51.72	51.55	51.37
66.72	66.57	66.41	66.25	66.08
68.48	68.33	68.17	68.01	67.84
85.50	85.35	85.20	85.04	84.88
87.52	87.37	87.22	87.07	86.90
109.01	108.87	108.72	108.57	108.41
111.51	111.37	111.22	111.07	110.91
134.94	134.80	134.65	134.51	134.35
137.64	137.50	137.36	137.21	137.06
162.90	162.76	162.62	162.48	162.33
165.81	165.67	165.53	165.38	165.24
192.81	192.67	192.53	192.40	192.25
195.90	195.77	195.63	195.49	195.35
224.57	224.45	224.31	224.18	224.04
227.85	227.72	227.59	227.45	227.31
258.15	258.02	257.89	257.75	257.62
261.60	261.47	261.34	261.21	261.07
293.46	293.34	293.21	293.08	292.95
297.09	296.96	296.84	296.71	296.57
330.48	330.36	330.23	330.11	329.97
334.27	334.15	334.03	333.90	333.77
369.16	369.04	368.92	368.79	368.66
373.12	373.00	372.88	372.75	372.62
409.47	409.35	409.23	409.10	408.98
413.58	413.47	413.35	413.22	413.10
Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)	Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)



**Elevation-Flow-Tailwater Table**

Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)	Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)
-4.11	-4.29	-4.46	-4.63	-4.80
-4.09	-4.27	-4.45	-4.62	-4.78
-3.92	-4.11	-4.29	-4.46	-4.63
-3.90	-4.09	-4.27	-4.45	-4.62
-3.72	-3.92	-4.11	-4.29	-4.46
-3.70	-3.90	-4.09	-4.27	-4.45
-3.51	-3.72	-3.92	-4.11	-4.29
-3.49	-3.70	-3.90	-4.09	-4.27
-3.29	-3.51	-3.72	-3.92	-4.11
-3.27	-3.49	-3.70	-3.90	-4.09
-3.05	-3.29	-3.51	-3.72	-3.92
-3.02	-3.27	-3.49	-3.70	-3.90
-2.79	-3.05	-3.29	-3.51	-3.72
-2.76	-3.02	-3.27	-3.49	-3.70
-2.50	-2.79	-3.05	-3.29	-3.51
-2.47	-2.76	-3.02	-3.27	-3.49
-2.17	-2.50	-2.79	-3.05	-3.29
-2.13	-2.47	-2.76	-3.02	-3.27
-1.79	-2.17	-2.50	-2.79	-3.05
-1.75	-2.13	-2.47	-2.76	-3.02
-1.30	-1.79	-2.17	-2.50	-2.79
-1.24	-1.75	-2.13	-2.47	-2.76
-0.38	-1.30	-1.79	-2.17	-2.50
0.00	-1.24	-1.75	-2.13	-2.47
1.17	-0.38	-1.30	-1.79	-2.17
1.24	0.00	-1.24	-1.75	-2.13
1.70	1.18	-0.38	-1.30	-1.79
1.74	1.23	0.00	-1.24	-1.75
2.10	1.70	1.17	-0.38	-1.30
2.14	1.75	1.24	0.00	-1.24
2.44	2.10	1.70	1.17	-0.38
2.47	2.13	1.75	1.23	0.00
3.03	2.74	2.40	2.00	1.47
3.15	2.86	2.53	2.14	1.62
4.94	4.67	4.38	4.04	3.65
5.23	4.97	4.68	4.35	3.95
8.83	8.59	8.32	8.03	7.70
9.35	9.11	8.85	8.56	8.23
15.55	15.33	15.08	14.82	14.52
16.36	16.13	15.89	15.62	15.33
24.59	24.38	24.15	23.91	23.64
25.62	25.41	25.19	24.94	24.68
35.94	35.74	35.53	35.30	35.05
37.20	37.00	36.79	36.57	36.33
49.68	49.49	49.29	49.07	48.85
51.19	51.00	50.80	50.59	50.36
65.91	65.73	65.53	65.33	65.12
67.67	67.49	67.30	67.10	66.88
84.71	84.54	84.35	84.16	83.96
86.74	86.56	86.38	86.19	85.99
108.25	108.08	107.90	107.72	107.53
110.75	110.58	110.41	110.22	110.04
134.20	134.03	133.87	133.69	133.51
136.91	136.74	136.57	136.40	136.22

**Elevation-Flow-Tailwater Table**

Tailwater= 787.70 ft (ft <sup>3</sup> /s)	Tailwater= 787.80 ft (ft <sup>3</sup> /s)	Tailwater= 787.90 ft (ft <sup>3</sup> /s)	Tailwater= 788.00 ft (ft <sup>3</sup> /s)	Tailwater= 788.10 ft (ft <sup>3</sup> /s)
162.18	162.02	161.86	161.69	161.51
165.08	164.93	164.77	164.60	164.42
192.10	191.95	191.79	191.63	191.46
195.20	195.05	194.89	194.73	194.56
223.89	223.74	223.59	223.43	223.27
227.17	227.02	226.87	226.71	226.55
257.48	257.33	257.19	257.03	256.88
260.93	260.79	260.64	260.49	260.33
292.81	292.67	292.53	292.38	292.23
296.44	296.30	296.16	296.01	295.86
329.84	329.70	329.57	329.42	329.27
333.64	333.50	333.36	333.22	333.07
368.53	368.40	368.26	368.12	367.98
372.49	372.36	372.22	372.08	371.94
408.85	408.72	408.59	408.45	408.31
412.97	412.84	412.71	412.57	412.43
Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)	Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.50	-9.42	-13.40	-20.29	-29.44
-7.49	-9.41	-13.40	-20.28	-29.44
-7.48	-9.40	-13.39	-20.27	-29.42
-7.38	-9.31	-13.29	-20.18	-29.33
-7.37	-9.30	-13.28	-20.16	-29.32
-7.27	-9.20	-13.19	-20.07	-29.23
-7.26	-9.19	-13.18	-20.06	-29.22
-7.16	-9.09	-13.08	-19.96	-29.12
-7.15	-9.08	-13.07	-19.95	-29.11
-7.05	-8.98	-12.97	-19.86	-29.02
-7.03	-8.97	-12.96	-19.85	-29.01
-6.93	-8.86	-12.86	-19.75	-28.91
-6.92	-8.85	-12.85	-19.74	-28.90
-6.81	-8.75	-12.74	-19.64	-28.80
-6.80	-8.74	-12.73	-19.62	-28.79
-6.69	-8.63	-12.63	-19.52	-28.69
-6.68	-8.62	-12.62	-19.51	-28.68

**Elevation-Flow-Tailwater Table**

Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)	Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)
-6.57	-8.51	-12.51	-19.41	-28.57
-6.56	-8.50	-12.50	-19.40	-28.56
-6.45	-8.39	-12.39	-19.29	-28.46
-6.43	-8.38	-12.38	-19.28	-28.45
-6.32	-8.27	-12.27	-19.17	-28.34
-6.31	-8.25	-12.26	-19.16	-28.33
-6.19	-8.14	-12.15	-19.05	-28.22
-6.18	-8.13	-12.13	-19.04	-28.21
-6.06	-8.01	-12.02	-18.92	-28.10
-6.04	-8.00	-12.01	-18.91	-28.09
-5.92	-7.88	-11.89	-18.80	-27.98
-5.91	-7.86	-11.88	-18.78	-27.96
-5.78	-7.74	-11.76	-18.67	-27.85
-5.77	-7.73	-11.74	-18.65	-27.84
-5.64	-7.60	-11.62	-18.53	-27.72
-5.62	-7.59	-11.61	-18.52	-27.71
-5.49	-7.46	-11.48	-18.40	-27.59
-5.48	-7.44	-11.47	-18.38	-27.57
-5.34	-7.31	-11.34	-18.26	-27.45
-5.33	-7.30	-11.32	-18.25	-27.44
-5.19	-7.16	-11.19	-18.11	-27.31
-5.17	-7.14	-11.18	-18.10	-27.30
-5.02	-7.00	-11.04	-17.97	-27.17
-5.01	-6.99	-11.02	-17.95	-27.15
-4.85	-6.84	-10.88	-17.82	-27.02
-4.84	-6.83	-10.87	-17.80	-27.01
-4.68	-6.67	-10.72	-17.66	-26.87
-4.66	-6.66	-10.70	-17.64	-26.85
-4.50	-6.50	-10.55	-17.50	-26.71
-4.48	-6.48	-10.54	-17.48	-26.70
-4.31	-6.32	-10.38	-17.33	-26.55
-4.29	-6.30	-10.36	-17.32	-26.54
-4.11	-6.13	-10.20	-17.16	-26.38
-4.09	-6.11	-10.18	-17.14	-26.37
-3.90	-5.93	-10.01	-16.98	-26.21
-3.88	-5.91	-9.99	-16.96	-26.19
-3.68	-5.72	-9.81	-16.79	-26.03
-3.66	-5.70	-9.79	-16.77	-26.01
-3.44	-5.50	-9.60	-16.59	-25.84
-3.41	-5.48	-9.58	-16.57	-25.82
-3.18	-5.26	-9.38	-16.38	-25.64
-3.15	-5.23	-9.35	-16.36	-25.62
-2.89	-5.00	-9.13	-16.15	-25.43
-2.86	-4.97	-9.11	-16.13	-25.41
-2.56	-4.71	-8.87	-15.91	-25.21
-2.52	-4.68	-8.85	-15.89	-25.19
-2.18	-4.38	-8.59	-15.65	-24.97
-2.14	-4.34	-8.56	-15.63	-24.94
-1.69	-4.00	-8.26	-15.36	-24.71
-1.63	-3.96	-8.22	-15.33	-24.68
-0.62	-3.51	-7.88	-15.04	-24.42
0.00	-3.45	-7.83	-15.00	-24.39
3.10	-1.44	-7.05	-14.47	-23.90
3.44	0.00	-6.85	-14.35	-23.79

**Elevation-Flow-Tailwater Table**

Tailwater= 788.20 ft (ft <sup>3</sup> /s)	Tailwater= 788.30 ft (ft <sup>3</sup> /s)	Tailwater= 788.40 ft (ft <sup>3</sup> /s)	Tailwater= 788.50 ft (ft <sup>3</sup> /s)	Tailwater= 788.60 ft (ft <sup>3</sup> /s)
7.29	6.22	-2.87	-12.07	-22.17
7.83	6.84	0.00	-11.68	-21.87
14.19	13.52	10.76	-4.89	-18.04
15.00	14.35	11.67	0.00	-17.45
23.35	22.75	20.76	16.22	-7.30
24.39	23.80	21.87	17.45	0.00
34.79	34.24	32.73	29.16	22.58
36.06	35.51	34.03	30.54	24.16
48.61	48.08	46.66	44.00	38.76
50.12	49.60	48.18	45.60	40.46
64.89	64.39	63.01	60.98	56.63
66.66	66.16	64.78	62.78	58.54
83.74	83.26	81.91	79.97	76.74
85.77	85.30	83.95	82.01	78.88
107.33	106.86	105.54	103.65	100.62
109.83	109.37	108.05	106.16	103.13
133.31	132.86	131.55	129.70	126.75
136.03	135.57	134.27	132.42	129.47
161.33	160.89	159.59	157.77	154.88
164.24	163.80	162.51	160.69	157.80
191.29	190.85	189.57	187.77	184.92
194.39	193.95	192.67	190.87	188.03
223.10	222.67	221.40	219.63	216.81
226.38	225.95	224.69	222.91	220.10
256.71	256.29	255.03	253.27	250.48
260.17	259.75	258.49	256.73	253.95
292.07	291.65	290.40	288.65	285.89
295.70	295.28	294.03	292.29	289.53
329.12	328.71	327.47	325.73	322.99
332.92	332.51	331.27	329.53	326.79
367.83	367.43	366.19	364.46	361.74
371.79	371.39	370.15	368.43	365.70
408.17	407.76	406.53	404.82	402.11
412.29	411.89	410.66	408.94	406.23
Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)	Tailwater= 789.00 ft (ft <sup>3</sup> /s)	Tailwater= 789.10 ft (ft <sup>3</sup> /s)
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14

**Elevation-Flow-Tailwater Table**

Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)	Tailwater= 789.00 ft (ft <sup>3</sup> /s)	Tailwater= 789.10 ft (ft <sup>3</sup> /s)
-40.93	-54.82	-71.21	-90.20	-114.14
-40.93	-54.82	-71.21	-90.20	-114.14
-40.92	-54.81	-71.21	-90.20	-114.14
-40.91	-54.80	-71.20	-90.19	-114.13
-40.82	-54.71	-71.11	-90.10	-114.04
-40.81	-54.70	-71.10	-90.09	-114.03
-40.72	-54.61	-71.01	-90.00	-113.95
-40.71	-54.60	-71.00	-89.99	-113.94
-40.61	-54.51	-70.91	-89.90	-113.85
-40.60	-54.50	-70.90	-89.89	-113.84
-40.51	-54.41	-70.81	-89.80	-113.75
-40.50	-54.40	-70.80	-89.79	-113.74
-40.40	-54.30	-70.71	-89.70	-113.65
-40.39	-54.29	-70.69	-89.69	-113.64
-40.30	-54.20	-70.60	-89.60	-113.55
-40.28	-54.19	-70.59	-89.59	-113.54
-40.18	-54.09	-70.49	-89.49	-113.44
-40.17	-54.08	-70.48	-89.48	-113.43
-40.07	-53.98	-70.39	-89.39	-113.34
-40.06	-53.97	-70.37	-89.37	-113.33
-39.96	-53.87	-70.28	-89.28	-113.23
-39.95	-53.86	-70.26	-89.27	-113.22
-39.85	-53.75	-70.16	-89.17	-113.12
-39.83	-53.74	-70.15	-89.16	-113.11
-39.73	-53.64	-70.05	-89.06	-113.01
-39.71	-53.63	-70.04	-89.04	-113.00
-39.61	-53.52	-69.94	-88.94	-112.90
-39.59	-53.51	-69.92	-88.93	-112.89
-39.48	-53.40	-69.82	-88.83	-112.79
-39.47	-53.39	-69.81	-88.82	-112.78
-39.36	-53.28	-69.70	-88.71	-112.67
-39.35	-53.27	-69.69	-88.70	-112.66
-39.23	-53.16	-69.58	-88.59	-112.56
-39.22	-53.14	-69.56	-88.58	-112.54
-39.10	-53.03	-69.45	-88.47	-112.44
-39.09	-53.02	-69.44	-88.46	-112.42
-38.97	-52.90	-69.33	-88.34	-112.31
-38.96	-52.89	-69.31	-88.33	-112.30
-38.83	-52.77	-69.19	-88.22	-112.19
-38.82	-52.75	-69.18	-88.20	-112.18
-38.69	-52.63	-69.06	-88.09	-112.06
-38.68	-52.62	-69.05	-88.07	-112.05
-38.55	-52.49	-68.93	-87.96	-111.93
-38.54	-52.48	-68.91	-87.94	-111.92
-38.41	-52.35	-68.79	-87.82	-111.80
-38.39	-52.33	-68.77	-87.80	-111.79
-38.25	-52.20	-68.64	-87.68	-111.66
-38.24	-52.19	-68.63	-87.67	-111.65
-38.10	-52.05	-68.50	-87.54	-111.52
-38.08	-52.03	-68.48	-87.52	-111.51
-37.94	-51.89	-68.35	-87.39	-111.38
-37.92	-51.88	-68.33	-87.37	-111.37
-37.77	-51.73	-68.19	-87.24	-111.23
-37.75	-51.71	-68.17	-87.22	-111.22

**Elevation-Flow-Tailwater Table**

Tailwater= 788.70 ft (ft <sup>3</sup> /s)	Tailwater= 788.80 ft (ft <sup>3</sup> /s)	Tailwater= 788.90 ft (ft <sup>3</sup> /s)	Tailwater= 789.00 ft (ft <sup>3</sup> /s)	Tailwater= 789.10 ft (ft <sup>3</sup> /s)
-37.59	-51.56	-68.03	-87.08	-111.08
-37.58	-51.55	-68.01	-87.06	-111.07
-37.41	-51.39	-67.86	-86.92	-110.93
-37.40	-51.37	-67.84	-86.90	-110.91
-37.23	-51.21	-67.69	-86.75	-110.77
-37.20	-51.19	-67.67	-86.74	-110.75
-37.03	-51.02	-67.50	-86.58	-110.60
-37.00	-51.00	-67.49	-86.56	-110.58
-36.81	-50.82	-67.32	-86.40	-110.42
-36.79	-50.80	-67.30	-86.38	-110.41
-36.59	-50.61	-67.12	-86.21	-110.24
-36.57	-50.59	-67.10	-86.19	-110.22
-36.35	-50.39	-66.91	-86.01	-110.05
-36.33	-50.36	-66.88	-85.99	-110.03
-36.09	-50.14	-66.68	-85.80	-109.86
-36.06	-50.12	-66.66	-85.78	-109.83
-35.62	-49.70	-66.26	-85.39	-109.46
-35.51	-49.60	-66.16	-85.30	-109.37
-34.21	-48.35	-64.95	-84.11	-108.20
-34.03	-48.18	-64.78	-83.95	-108.05
-31.00	-45.98	-63.01	-82.23	-106.37
-30.54	-45.60	-62.78	-82.01	-106.16
-25.00	-41.09	-59.07	-79.34	-103.58
-24.17	-40.46	-58.53	-78.88	-103.14
-10.09	-32.94	-52.44	-73.65	-98.14
0.00	-31.82	-51.60	-72.94	-97.48
29.84	-13.28	-41.85	-65.05	-90.25
31.82	0.00	-40.42	-63.98	-89.31
49.57	38.02	-16.85	-51.75	-79.22
51.60	40.42	0.00	-49.98	-77.88
70.71	61.60	47.11	-20.82	-62.79
72.95	63.98	49.97	0.00	-60.61
94.93	86.71	75.12	57.25	-25.21
97.48	89.31	77.88	60.60	0.00
121.25	113.51	103.14	89.06	67.72
124.00	116.28	106.01	92.13	71.54
149.52	142.07	132.40	119.96	103.36
152.45	145.02	135.41	123.08	106.75
179.66	172.42	163.20	151.69	137.16
182.77	175.55	166.36	154.93	140.55
211.61	204.53	195.62	184.71	171.38
214.91	207.84	198.95	188.09	174.85
245.35	238.38	229.69	219.20	206.64
248.82	241.86	233.19	222.74	210.24
280.80	273.93	265.41	255.23	243.21
284.44	277.57	269.07	258.92	246.95
317.93	311.13	302.75	292.81	281.20
321.74	314.94	306.58	296.66	285.07
356.71	349.98	341.70	331.95	320.64
360.68	353.95	345.69	335.95	324.67
397.11	390.42	382.24	372.64	361.57
401.24	394.55	386.38	376.79	365.75
Tailwater= 789.20 ft (ft <sup>3</sup> /s)	Tailwater= 789.30 ft (ft <sup>3</sup> /s)	Tailwater= 789.40 ft (ft <sup>3</sup> /s)	Tailwater= 789.50 ft (ft <sup>3</sup> /s)	Tailwater= 789.60 ft (ft <sup>3</sup> /s)



**Elevation-Flow-Tailwater Table**

Tailwater= 789.20 ft (ft <sup>3</sup> /s)	Tailwater= 789.30 ft (ft <sup>3</sup> /s)	Tailwater= 789.40 ft (ft <sup>3</sup> /s)	Tailwater= 789.50 ft (ft <sup>3</sup> /s)	Tailwater= 789.60 ft (ft <sup>3</sup> /s)
-138.43	-166.57	-196.65	-228.59	-262.33
-138.42	-166.56	-196.64	-228.58	-262.31
-138.31	-166.45	-196.53	-228.48	-262.21
-138.29	-166.44	-196.52	-228.46	-262.20
-138.18	-166.33	-196.42	-228.36	-262.10
-138.17	-166.32	-196.40	-228.35	-262.09
-138.06	-166.21	-196.29	-228.24	-261.98
-138.04	-166.19	-196.28	-228.23	-261.97
-137.93	-166.08	-196.17	-228.12	-261.86
-137.91	-166.07	-196.16	-228.10	-261.85
-137.79	-165.95	-196.04	-227.99	-261.74
-137.78	-165.94	-196.03	-227.98	-261.72
-137.66	-165.82	-195.91	-227.87	-261.61
-137.64	-165.80	-195.90	-227.85	-261.60
-137.52	-165.68	-195.78	-227.73	-261.49
-137.51	-165.67	-195.77	-227.72	-261.47
-137.37	-165.54	-195.64	-227.60	-261.36
-137.36	-165.53	-195.63	-227.59	-261.34
-137.23	-165.40	-195.50	-227.47	-261.22
-137.21	-165.38	-195.49	-227.45	-261.21
-137.08	-165.25	-195.36	-227.33	-261.09
-137.06	-165.24	-195.35	-227.31	-261.07
-136.92	-165.10	-195.21	-227.18	-260.95
-136.90	-165.09	-195.20	-227.17	-260.93
-136.76	-164.95	-195.06	-227.04	-260.80
-136.74	-164.93	-195.05	-227.02	-260.79
-136.59	-164.78	-194.91	-226.89	-260.66
-136.58	-164.77	-194.89	-226.87	-260.64
-136.42	-164.61	-194.75	-226.73	-260.51
-136.40	-164.60	-194.73	-226.71	-260.49
-136.24	-164.44	-194.58	-226.57	-260.35
-136.22	-164.42	-194.56	-226.55	-260.33
-136.05	-164.26	-194.40	-226.40	-260.19
-136.03	-164.24	-194.39	-226.38	-260.17
-135.67	-163.89	-194.04	-226.04	-259.84
-135.57	-163.80	-193.95	-225.95	-259.75
-134.42	-162.66	-192.83	-224.84	-258.64
-134.27	-162.51	-192.67	-224.69	-258.49
-132.63	-160.89	-191.08	-223.11	-256.93
-132.42	-160.69	-190.88	-222.91	-256.73
-129.90	-158.22	-188.44	-220.51	-254.36
-129.47	-157.80	-188.03	-220.10	-253.95
-124.63	-153.07	-183.38	-215.51	-249.41
-124.00	-152.45	-182.77	-214.91	-248.81
-117.16	-145.86	-176.36	-208.63	-242.63
-116.28	-145.03	-175.55	-207.84	-241.86
-107.17	-136.48	-167.38	-199.92	-234.13
-106.00	-135.41	-166.36	-198.95	-233.19
-93.74	-124.46	-156.19	-189.28	-223.87
-92.14	-123.08	-154.93	-188.09	-222.74
-74.13	-108.64	-142.15	-176.30	-211.60
-71.55	-106.76	-140.55	-174.85	-210.24
-29.73	-85.77	-123.91	-160.25	-196.84
0.00	-82.78	-121.75	-158.43	-195.21

**Elevation-Flow-Tailwater Table**

Tailwater= 789.20 ft (ft <sup>3</sup> /s)	Tailwater= 789.30 ft (ft <sup>3</sup> /s)	Tailwater= 789.40 ft (ft <sup>3</sup> /s)	Tailwater= 789.50 ft (ft <sup>3</sup> /s)	Tailwater= 789.60 ft (ft <sup>3</sup> /s)
78.48	-34.36	-97.69	-139.52	-178.76
82.77	0.00	-94.26	-137.07	-176.71
118.03	89.48	-39.10	-109.86	-155.45
121.75	94.25	0.00	-106.00	-152.71
154.77	133.02	100.73	-43.95	-122.29
158.43	137.08	105.99	0.00	-117.98
191.50	172.79	148.31	112.22	-48.89
195.20	176.71	152.71	117.98	0.00
229.02	212.04	191.15	163.91	123.93
232.83	215.99	195.35	168.64	130.19
267.66	251.83	233.03	209.83	179.79
271.60	255.85	237.21	214.31	184.87
307.61	292.58	275.10	254.35	228.84
311.68	296.71	279.34	258.78	233.61
348.92	334.49	317.95	298.82	276.02
353.13	338.75	322.29	303.29	280.71
Tailwater= 789.70 ft (ft <sup>3</sup> /s)	Tailwater= 789.80 ft (ft <sup>3</sup> /s)	Tailwater= 789.90 ft (ft <sup>3</sup> /s)	Tailwater= 790.00 ft (ft <sup>3</sup> /s)	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.48	-336.63	-375.44	-415.88	
-299.47	-336.62	-375.43	-415.87	
-299.39	-336.54	-375.35	-415.79	
-299.38	-336.53	-375.34	-415.78	
-299.30	-336.45	-375.26	-415.70	
-299.29	-336.44	-375.25	-415.69	
-299.21	-336.36	-375.17	-415.61	
-299.20	-336.35	-375.16	-415.60	
-299.11	-336.27	-375.08	-415.52	
-299.10	-336.26	-375.07	-415.51	
-299.02	-336.18	-374.99	-415.43	
-299.01	-336.17	-374.98	-415.42	
-298.92	-336.08	-374.90	-415.34	
-298.92	-336.07	-374.89	-415.33	
-298.83	-335.99	-374.81	-415.25	
-298.82	-335.98	-374.80	-415.24	

**Elevation-Flow-Tailwater Table**

Tailwater= 789.70 ft (ft <sup>3</sup> /s)	Tailwater= 789.80 ft (ft <sup>3</sup> /s)	Tailwater= 789.90 ft (ft <sup>3</sup> /s)	Tailwater= 790.00 ft (ft <sup>3</sup> /s)
-298.73	-335.89	-374.71	-415.16
-298.72	-335.88	-374.70	-415.15
-298.64	-335.80	-374.62	-415.06
-298.63	-335.79	-374.61	-415.05
-298.54	-335.70	-374.52	-414.96
-298.53	-335.69	-374.51	-414.96
-298.44	-335.60	-374.42	-414.87
-298.42	-335.59	-374.41	-414.86
-298.33	-335.50	-374.32	-414.77
-298.32	-335.49	-374.31	-414.76
-298.23	-335.40	-374.22	-414.67
-298.22	-335.39	-374.21	-414.66
-298.12	-335.29	-374.12	-414.57
-298.11	-335.28	-374.11	-414.56
-298.02	-335.19	-374.02	-414.47
-298.01	-335.18	-374.00	-414.46
-297.91	-335.08	-373.91	-414.37
-297.90	-335.07	-373.90	-414.35
-297.80	-334.97	-373.80	-414.26
-297.79	-334.96	-373.79	-414.25
-297.69	-334.86	-373.70	-414.15
-297.68	-334.85	-373.69	-414.14
-297.57	-334.75	-373.59	-414.05
-297.56	-334.74	-373.58	-414.03
-297.46	-334.64	-373.48	-413.94
-297.45	-334.63	-373.46	-413.92
-297.34	-334.52	-373.36	-413.82
-297.33	-334.51	-373.35	-413.81
-297.22	-334.41	-373.25	-413.71
-297.21	-334.39	-373.24	-413.70
-297.10	-334.29	-373.13	-413.60
-297.09	-334.27	-373.12	-413.58
-296.98	-334.16	-373.01	-413.48
-296.96	-334.15	-373.00	-413.47
-296.85	-334.04	-372.89	-413.36
-296.84	-334.03	-372.88	-413.35
-296.72	-333.91	-372.76	-413.24
-296.71	-333.90	-372.75	-413.22
-296.59	-333.78	-372.64	-413.11
-296.57	-333.77	-372.62	-413.10
-296.45	-333.65	-372.51	-412.99
-296.44	-333.64	-372.49	-412.97
-296.31	-333.51	-372.37	-412.85
-296.30	-333.50	-372.36	-412.84
-296.17	-333.37	-372.24	-412.72
-296.15	-333.36	-372.22	-412.71
-296.02	-333.23	-372.10	-412.59
-296.01	-333.22	-372.09	-412.57
-295.87	-333.09	-371.95	-412.45
-295.86	-333.07	-371.94	-412.43
-295.72	-332.93	-371.81	-412.30
-295.70	-332.92	-371.79	-412.29
-295.37	-332.60	-371.47	-411.98
-295.28	-332.51	-371.39	-411.89

**Elevation-Flow-Tailwater Table**

Tailwater= 789.70 ft (ft <sup>3</sup> /s)	Tailwater= 789.80 ft (ft <sup>3</sup> /s)	Tailwater= 789.90 ft (ft <sup>3</sup> /s)	Tailwater= 790.00 ft (ft <sup>3</sup> /s)
-294.18	-331.42	-370.30	-410.80
-294.03	-331.27	-370.15	-410.66
-292.48	-329.72	-368.62	-409.13
-292.28	-329.53	-368.42	-408.94
-289.93	-327.19	-366.10	-406.63
-289.52	-326.79	-365.70	-406.23
-285.02	-322.32	-361.26	-401.81
-284.44	-321.74	-360.68	-401.24
-278.33	-315.70	-354.69	-395.29
-277.57	-314.94	-353.95	-394.55
-269.99	-307.48	-346.58	-387.26
-269.07	-306.58	-345.69	-386.38
-260.01	-297.72	-336.99	-377.82
-258.92	-296.66	-335.95	-376.79
-248.23	-286.31	-325.87	-366.92
-246.95	-285.08	-324.67	-365.75
-234.35	-273.04	-313.06	-354.47
-232.83	-271.60	-311.68	-353.13
-217.82	-257.55	-298.30	-340.27
-215.99	-255.86	-296.71	-338.75
-197.64	-239.23	-281.20	-324.04
-195.34	-237.21	-279.34	-322.29
-171.69	-216.84	-261.03	-305.32
-168.64	-214.31	-258.79	-303.29
-134.96	-188.22	-236.38	-283.16
-130.20	-184.87	-233.60	-280.71
-53.93	-147.87	-205.05	-256.25
0.00	-142.64	-201.39	-253.23
135.86	-59.07	-161.00	-222.17
142.63	0.00	-155.31	-218.19
195.96	148.00	-64.29	-174.36
201.39	155.30	0.00	-168.19
248.18	212.41	160.35	-69.61
253.23	218.19	168.18	0.00

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**TAB 4**

**WETLAND ASSESSMENT**

**TAB 4A**

**WETLAND AND BUFFER IMPACT SUBMITTAL  
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29	PrivateInformation	(5 ILCS 140/7) sec. 7 (1) (b): Information provided would disclose private information. Signatures have been blacked out (redacted). Page 12 of the Illinois Attorney General's "Frequently Asked Questions By Public Bodies" packet states private information is exempt from disclosure.	1

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