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ENGINEERING REPORT

BR4 DRAINAGE IMPROVEMENTS – GEORGE FIELD PARK

Village of Scarsdale Engineering Department
Scarsdale, New York

H2M Project No.
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1.0 INTRODUCTION

1.01 Executive Summary

The Village of Scarsdale performed a Village-wide flood study that was completed in May 2022 which highlighted flood prone areas and potential improvements. One of the study locations within the report was the George Field Park bio-retention pond, as well as the downstream drainage infrastructure located within Rugby Lane and Cambridge Road. The Village has contracted H2M Architects + Engineers (H2M) to perform a detailed hydrologic and hydraulic evaluation of the existing bio-retention pond and outlet control structure, as well the downstream piping located on Rugby Lane and Cambridge Road, which will focus on system deficiencies or improvements that can increase the storage capacity within the pond and reduce the extents of flooding downstream.

H2M performed the drainage evaluation and storm sewer improvement recommendations in a total of three phases. The first phase consisted of compiling all relevant existing information related to the Village's storm sewer network as well as collecting new data on the existing network. As part of this phase, H2M gathered available data from the United States Department of Agriculture (USDA), National Oceanic and Atmospheric Administration (NOAA), the Westchester County Geohub, and compiled existing drainage maps & topographic surveys provided by the Village. The first phase of the project also included topographic survey and field visits where certain areas within the project area were visually inspected. The second phase of the drainage evaluation consisted of compiling the existing information gathered in phase one to build accurate models for existing condition hydrologic and hydraulic analysis. The existing condition hydrologic and hydraulic modeling and analysis were conducted utilizing the United States Soil Conservation Service (SCS) method to calculated peak runoff rates for various storm frequencies. The hydrology models were developed utilizing the Hydraflow Hydrographs Extension for Autodesk Civil 3D to develop peak flow rates. The hydraulic models were developed utilizing Autodesk Storm and Sanitary Analysis. The existing storm sewer system was evaluated for the 2-, 10-, and 25-year storm recurrence intervals for a 24-hour storm. The existing bio-retention pond was evaluated for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storm recurrence intervals for a 24-hour storm. The final and third phase of the drainage evaluation consisted of highlighting potential drainage improvements and alternatives in an effort to reduce the frequency and severity of flooding within the study area. The concepts evaluated include but are not limited to regrading portions of the existing pond to increasing the amount of storage volume, modifying the existing pond outlet control structure to reduce peak flow rates, separating the existing pond into two ponds with a secondary control structure, and re-routing the downstream storm piping to a new outlet location. As part of this phase, cost opinions were applied to the most beneficial concept improvements.

2.0 PRE-DESIGN & DATA COLLECTION

Phase 1 of the drainage evaluation called for the collection of relevant data that is intended to provide the information necessary to assess the existing storm sewer networks. Information was therefore gathered from several public sources including United States Department of Agriculture (USDA), National Oceanic Atmospheric Administration (NOAA), and the Westchester County Geo Hub. Record mapping of the existing storm sewer networks, as well as previously completed survey within the project area, were also obtained from the Village. Topographic survey on the trunkline located between George Field Park and Cooper Green was performed under this phase to supplement the available data that was gathered from the sources mentioned above.

2.01 Soil Data

The soil data and classification that was used throughout the drainage evaluation was taken from the USDA Natural Resources Conservation (NRCS) Web Soil Survey. The hydrologic soil groups within the study area were assigned based on soil types. These soil types were then used to develop a composite curve number (CN) value for each drainage area within the neighborhood. The project study area consists of Type B, Type C and Type D class soils. Type B soils have moderate infiltration rates when thoroughly wet, Type C soils have slow infiltration rates when thoroughly wet and Type D soils have very slow infiltrations rates when thoroughly wet. In some situations, soils can reflect more than one soil class. For example, if a soil has the classification of C/D, the first letter would apply to dry conditions and the second letter would apply to wet conditions. In each of these scenarios, the second letter was used as the soil classification to model the “wet conditions” scenario. The full Web Soil Survey report can be found in Appendix F.

2.02 Rainfall Data

In order to complete the existing and proposed modeling, the rainfall data to be used in the analysis had to be established. The design storms that were used to evaluate the existing storm sewer network were acquired from NOAA Atlas 14, Volume 10, Version 3 (revised 2019). The peak times are computed using the SCS 24-hour Type III distribution as recommended by the New York State Stormwater Management Design Manual (2015). Table 2.1 below shows the rainfall depth estimated during a 24-hour storm event for the different design storms.

1-year	2-year	5-year	10-year	25-year	50-year	100-year
2.10 in.	3.51 in.	4.53 in.	5.38 in.	6.55 in.	7.10 in.	8.34 in.

Table 2.1 – 24-hour Precipitation Depth Estimates

According to the New York State Stormwater Management Design Manual (2015), most channels and storm drains in New York are designed with enough capacity to safely pass the peak discharge from the 10-year design storm. The proposed piping improvements downstream of George Field Park that are laid out later in Section 4.0 of the report used this criterion as the basis for conceptual design.

2.03 Westchester County and Village of Scarsdale Data

2.03.1 Westchester County Geo Hub

The Westchester County Geo Hub provided several base map layers that were exported into a useable AutoCAD file and incorporated into the concept design figures and were used during the analysis phases. The following data was obtained from the Westchester County Geo Hub:

- Building Footprints
- Roadways
- Property Lines
- 2-foot Contours

2.03.2 Village of Scarsdale

The Village of Scarsdale provided H2M with various pieces of existing information that proved vital in an effort to build existing condition models.

The Village provided a drainage map that depicts the existing storm sewer network throughout the Village. These maps have no invert or grade information, but showed pipe sizes, connectivity, and structure locations that were used to develop the framework of the existing condition models.

The Village also provided various, previously completed topographic surveys throughout the project area. An as-built survey of George Field Park was provided which included 1-foot contours, water surface elevation, drainage structures and utilities. This information within this survey was used to build the existing condition hydrology model required to perform the existing condition analysis. The Village supplied multiple surveys to the north of George Field Park that were utilized to refine the contour data and to determine control points in the area.

Lastly, the Village of Scarsdale provided background information on the flood prone areas within the project area. The locations were discussed at the project kick-off meeting, and additional information was conveyed on the nature of each flood prone area which proved to be beneficial in understanding the deficiencies in the neighborhood.

2.04 Topographic Survey

Although the data obtained from the Village provided a great deal of existing information that was utilized to build the existing models, there remained gaps that had to be filled via topographic survey. A key element in analyzing the existing bio-retention pond is the size and slope of the piping downstream of the outlet control structure. The Village provided drainage maps did not have the information required to analyze the piping downstream of George Field Park. It was determined that a topographic survey would be performed on the trunkline between George Field Park and Cooper Green to determine the hydraulic capacity of the line.

3.0 EXISTING CONDITION EVALUATION

Task 2 of the project involved completing a hydrologic and hydraulic analysis within the project area. Upon completion of Task 1 and the mapping of the existing drainage systems, H2M utilized the topographic data from the Westchester County Geo Hub to determine general watershed boundaries for components of each of the drainage systems. Along with field reconnaissance, the topographic data was supplemented with other available mapping to refine the watershed boundaries which enabled the development of time of concentration and to determine land uses. This information was necessary for this evaluation as the United States Soil Conservation Service (SCS) TR-55 method was used to calculate peak runoff rates from various storm frequencies. Watershed areas and storm networks were analyzed for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year design storms using a SCS Type III 24-hour storm distribution. The existing watershed maps of the project area, as well as the existing condition model outputs, can be found in the appendix.

3.01 Watershed Hydrology Analysis

The following pieces of information were compiled to calculate runoff quantities for each of the drainage areas. The first is the curve number (CN) values which are developed by analyzing the existing land use or landscape description of the project area. The second value is the time of concentration (TC), which is defined as the time required for water falling on the most remote point of a drainage basin to reach the outlet where remoteness relates to time of travel rather than distance. The last piece of information is the rainfall design storms, which were obtained during Task 1 and are shown in Table 2.1. The design point, DP-1, is the outlet control structure that is located at the southern end of George Field Park.

3.01.1 Methodology

3.01.1.1 CN Value

As noted above, the CN values are important quantities to develop in order to perform a watershed analysis. The factors that determine the CN are the hydrologic soil group (HSG), cover type and hydrologic condition. Soils are classified into four HSG's (A, B, C and D) according to their minimum infiltration rate. The USDA Natural Resources Conservation (NRCS) Web Soil Survey was used to create soil maps for each of the Subbasin areas and was used to develop the soil classification necessary to calculate CN values. The soil maps were then imported into AutoCAD so various soil types and land uses could be traced and quantified. Table 3.1 below provides an overview of the soil type and land uses that are present throughout the Village, and which were used in the development of the CN value for each drainage area. CN calculations for each drainage area can be found in the Hydraflow Hydrology Reports, which are located in Appendix A.

Cover Type and Hydrologic Condition	**Curve Numbers for Hydrologic Soil Group**			
	A	**B**	**C**	**D**
Open Space				
Poor Condition	68	79	86	89
Fair Condition	49	69	79	84
Good Condition	39	61	74	80
Woods				
Poor Condition	45	66	77	83
Fair Condition	36	60	73	79
Good Condition	30	55	70	77
Impervious Areas	98	98	98	98

Table 3.1 – Runoff Curve Numbers

3.01.1.2 Time of Concentration

As the SCS Unit Hydrograph method was selected to perform the runoff calculations, the time of concentration was calculated as per the TR-55 manual for each drainage area. Flow paths were developed based off the 2-foot contours obtained from the Westchester County Geo Hub and were developed for each drainage area. To calculate the time of concentration, the flow path was classified as sheet flow (first 150 feet of flow path), shallow concentrated flow (surface flow after 150 feet) and channel flow. Most of the flow paths required a combination of the different classifications. Time of concentration calculations for each drainage area can be found in the Hydraflow Hydrograph Reports, which are located in Appendix A.

3.01.1.2 Rainfall Data

The existing condition models were run using the rainfall data and design storms as shown in Table 2.1. As noted above, the 2-year, 10-year, 25-year and 100-year design storms were used to analyze the peak runoff rates and runoff volume for each drainage area. Rainfall depths that were obtained from NOAA Atlas 14 as well as the NRCS Type III distribution were used in the modeling effort. All storms have been modeled over a 24-hour distribution.

3.01.2 Model Results

The hydrologic modeling for each drainage area was developed using Hydraflow Hydrographs Extension for Autodesk Civil 3D. Hydraflow Hydrographs Extension computes SCS runoff hydrographs by convoluting rainfall hyetograph through a unit hydrograph. The Hydraflow Hydrograph Reports for the existing bio-retention pond, as well as the existing condition watershed map, are located in Appendix A.

Table 3.2 below provides a summary of the total area, time of concentration and CN value for each of the drainage areas.

Drainage Area	Area (Acres)	Time of Concentration (Minutes)	CN Value
DA-1A	10.35	18.4	82
DA-1B	3.48	14.4	82
DA-2	16.58	25.7	82
DA-3A	95.41	60.5	81
DA-3B	30.09	15.8	81
DA-3C	0.44	5.0	81
DA-4	6.53	23.9	65
DA-5A	41.63	32.6	65
DA-5B	9.03	15.7	65

Table 3.2 – Hydrologic Model Inputs

Table 3.3 below summarizes the peak runoff flow rate at each design storm.

Design Point	1-Year (CFS)	2-Year (CFS)	5-Year (CFS)	10-Year (CFS)	25-Year (CFS)	50-Year (CFS)	100-Year (CFS)
DP-1 George Field Park Outlet Structure	35.76	49.96	119.96	203.72	325.17	380.07	508.17

Table 3.3 – Peak Runoff Flow Rates

Table 3.4 below summarizes the total runoff volume at each design storm.

Design Point	1-Year (CF)	2-Year (CF)	5-Year (CF)	10-Year (CF)	25-Year (CF)	50-Year (CF)	100-Year (CF)
DP-1 George Field Park Outlet Structure	408,962	1,118,109	1,721,953	2,262,048	3,039,665	3,415,345	4,279,781

Table 3.4 – Peak Runoff Volumes

3.01.2.1 Existing Pond Grading

George Field Pond was modeled based on existing contours with the lowest portion at an elevation of 209 and elevation of 219 with an overall total storage of 1,339,173 cf. However, Oxford Road, lying to the southern side of the pond, has an approximate elevation of 216 indicating that any runoff above 216 would overtop the roadway creating flooding conditions. If pond storage were considered to this elevation, the storage volume for the pond would only be 452,625 cf and the pond would overtop for the 5-year storm event or greater. The current grading of the pond does not appear to best optimize the ability of the pond to store runoff based on its overall available area. The overall grading of the pond is also somewhat inefficient with lower lying areas or “pocket ponding” areas that may hold some volume but do not have any ability to drain to the control structure and provide relief for larger storm events. If all or most of the pond was graded to drain to the control structure the pond could slowly release flow over time and keep the majority of the volume available for larger storm discharges.

3.01.2.2 Existing Pond Control Structure

The outlet control structure is a concrete drainage inlet with a 36-inch HDPE outlet for conveying stormwater to downstream pipe network. The structure has a small (approx. 23-inch by 26-inch) rectangular weir for lower storm events, 3.5-foot wide openings on three sides of the structure, and a 2-foot diameter circular grate on the top of the structure. The low flow structure provides minimal attenuation of small storm events, while the secondary 3.5-foot-wide weir structures allow significant flow to enter the discharge pipe beginning at an elevation of 212.77 which equates to a pond storage of less than 36,000 cf. The one-year storm elevation for the existing conditions is 213.48, meaning that moderate to substantial discharge from the pond to downstream pipe network is occurring, which likely worsens the pipe capacity issues in downstream areas. Additionally, because the 5-year storm overtops the structure and adjacent roadway, there is a significant jump in discharge between the 2- and 5-year storm events (49.96 cfs versus 119.86 cfs respectively). An improved design should consider both the gradual release and reduction of smaller storm event discharge, while also storing and reducing runoff for larger events.

3.02 Storm Network Hydraulic Analysis

In addition to hydrologic modeling, Task 2 involved performing a hydraulic analysis on the existing storm network within Rugby Lane and Cambridge Road which is located downstream of George Field Park. Autodesk Storm and Sanitary Analysis (SSA) models were prepared for the storm networks within the project area using the SCS TR-55 computation method. Given the nature of the drainage issue in this area, the hydrodynamic link routing method was used during the analysis. Hydrodynamic routing solves the complete St. Venant equations throughout the drainage network and includes modeling of backwater effects, flow reversal, surcharging, looped connections, pressure flow, tidal outfalls, and interconnected ponds. Storm networks were analyzed for the 2-, 10-, and 25-year design storms using a SCS Type III 24-hour storm distribution. Flooding has been quantified as any surcharge above the surface inlet grade elevation. Findings for the drainage area will be summarized in the sections below and deficiencies within the storm sewer network will be classified as: lack of infrastructure, insufficient infrastructure capacity, damaged infrastructure, or other. Existing condition hydraulic model outputs are located in Appendix B.

The storm network that was analyzed as part of the project included the trunkline between George Field Park and Cooper Green and the smaller networks that tied into the trunkline. As flooding has historically been reported within Rugby Lane and Cambridge Road, the outfall location of the analysis was chosen to be a manhole located downstream of these roads adjacent to the intersection of Mamaroneck Road and Post Road.

3.02.1 Methodology

The methodology that was implemented to estimate peak runoff rates and peak volumes was the same methodology that was used in hydrologic modeling as both models used the same SCS TR-55 calculation method. The major difference between the two models is that the hydrology model only required one hydrograph for each drainage area. For the hydraulic modeling, a new hydrograph had to be developed for each surface inlet within the drainage areas.

As mentioned above, a new hydrograph had to be developed for each surface inlet within the drainage areas. For the methodology used in developing the CN value, time of concentration, and rainfall data to generate peak runoff rates and volumes, refer to Section 3.01.1.

Information obtained in Task 1 was used to develop the existing condition storm networks that were to be analyzed. A combination of the Scarsdale provided storm system maps and the topographic survey performed were used to locate and model the storm structures and piping within the study area. Although the trunkline piping and structures were surveyed, the storm networks within Rugby Lane and Cambridge Road were not. Certain assumptions had to be made for the invert and slope of these pipes based on available topographic data, Scarsdale provided drainage maps, and the inverts obtained on the trunkline.

3.02.2 Model Results

All existing condition hydraulic modeling outputs can be found in Appendix B. The following sections will highlight the findings from the existing condition hydraulic modeling within the project area. The design point of the studied network is the first manhole downstream of Rugby Lane which is located at the intersection of Mamaroneck Road and Post Road. A deficiency classification (lack of infrastructure, insufficient infrastructure capacity, private property issues, issues beyond Village limits, or other) has also been assigned to the storm network.

3.02.2.1 Downstream of George Field Park

The storm network that was analyzed within the study area begins at the George Field Park bio-retention pond outlet control structure and ends at a manhole at the intersection of Mamaroneck Road and Post Road. The closed drainage systems consist of a trunkline that runs between George Field Park and Cooper Green with a smaller drainage network within Rugby Lane and Cambridge Road that ties into the trunkline. The topographic survey performed on the trunkline revealed that a significant portion of the piping is back pitched, with low points in the system located on private property. As such, it is no surprise that the existing modeling revealed that the back pitched piping between Oxford Road and Rugby Lane is surcharged under even the 2-year storm event. The structures along the back pitched section of the trunkline are also shown to surcharge under the same storm event. Additionally, the smaller drainage network within Rugby Lane and Cambridge Road contains multiple pipe segments that are surcharged under the 2-year design storm, and structures are shown to overtop under the 10-year design storm. The surcharging that occurs within the trunkline are located at low points on private property. When these manholes surcharge, large portions of private property become flooded and water slowly drains as water is released through the back pitched piping. The deficiency classification for the storm network within the study area is a mainly insufficient infrastructure, but there also appears to be a lack of infrastructure and private property issues.

4.0 PROPOSED IMPROVEMENTS & CONCEPTUAL DESIGN

Task 3 of the project includes the development of conceptual design improvements within the project area. Since the existing pond, as well as the piping downstream, revealed deficiencies, an improvement has been proposed for both the piping downstream of the pond and within the actual pond. The existing condition modeling completed under Task 2 served as the basis of design for the proposed conceptual improvements. The existing condition models were modified to ensure the design storms could be conveyed under the proposed condition scenarios. Each concept improvement illustrated in Section 4.01 includes a description of the proposed improvement as well as an associated cost opinion.

The concept solutions that are proposed to the downstream piping include adding surface inlets, upsizing storm sewer pipes and re-routing the system to a new outlet location. The concept solutions that are proposed within existing pond include regrading and the addition of retaining walls to optimize pond storage and replacement of the outlet control structure to better control design storm events. The concept improvement related to the downstream piping was designed to significantly reduce the frequency and severity of flooding that occurs during the 10-year design storm. It is important to note that the following improvements also greatly reduce the frequency and severity of flooding that occurs during the 25-year design storm. The concept improvements related to modifications to the existing pond was design to significantly reduce runoff rates for smaller storm events (1-yr, 2-yr) and reduce the frequency and flooding that occurs during larger design storms (i.e. 10-yr to 100-yr) along Oxford and Greendale Road.

4.01 Concept Design

Each concept improvement has a figure and detailed cost opinion associated with it. The concept figures can be found in Appendix C and D, while the cost opinions can be found in Appendix E. It is important to note that the proposed improvements shown on the concept drawings are at a schematic level. The layout of the storm infrastructure, as well as the modifications to the existing pond, will need to be finalized and analyzed in more detail as the project moves into a detailed design phase. Information regarding utility locations and additional survey would be required to develop these concepts in future detail design phases. Construction phasing should be considered as well.

Cost Opinions provided are estimates based on conceptual design. As detailed designs are advanced, cost estimates will need to be revised. Design services were not included in these estimates and no future escalations have been applied.

<table>
<tr><th colspan="2">Piping Improvements – Cambridge Road, Rugby Lane & Post Road</th></tr>
<tr><td colspan="2">Opinion of Probable Cost: $2,251,600 (see Appendix E)</td></tr>
<tr><td>Drainage Issue: Insufficient Infrastructure Capacity, Lack of Infrastructure and Private Property Issues</td><td>Concept Drawing Location: Appendix D, C-200</td></tr>
<tr><td colspan="2">Proposed Improvements:
- Install approximately 100’ of 15” piping, 310’ of 18” piping, 575’ of 24” piping and 660’ of 30” piping within Cambridge Road, Rugby Lane and Post Road.
- Install 4 new catch basins & remove and replace 7 catch basins in kind.
- Install 10 new manholes.
- Install a new connection back into the existing trunkline adjacent to Cooper Green at the diversion manhole, where the piping is properly pitched.
- Cap and abandon sections of existing piping that will no longer be utilized.
- Remove and replace the entire trunkline between George Field Park and Cooper Green at proper line and grade with approximately 1,560’ of 42” piping.
- Install area drains as needed to assist in draining the low point located on private property.</td></tr>
</table>

Flood Mitigation:
The existing system is discharging into the back pitched trunkline, leaving no additional capacity for Rugby Lane and Cambridge Road to drain. Re-routing the drainage network within Rugby Lane and Cambridge Road to a point further downstream on the trunkline will eliminate the surface flooding on the Village right-of-way as it will discharge to a section of piping with positive pitch. Low points located on private property are still likely to flood as the increased capacity of the proposed trunkline is still limited. Although not modeled or designed as part of this study, it is noted that the installation of area drains on private property and connection to Village drainage infrastructure may help reduce some of these issues. Due to site constraints, the trunkline will need to be installed with limited pitch, which restricts the flow capacity.
Downstream Impact: There are no adverse downstream impacts anticipated as a result of this proposed improvement. The existing drainage networks will still drain towards Cooper Green and the improvements simply aim to do that in a more efficient manner.

When assessing potential improvements for George Field Park, there were two primary considerations: reduction of peak runoff rates for design storm events and retention of runoff to prevent roadway overtopping and flooding in areas adjacent to the pond. The pond was first modeled under two different scenarios. In the first condition, the area was modeled as one large pond where the outlet control structure would be modified. In the second condition, the area was modeled by dividing the pond into two sections with a secondary control structure (weir wall) located under the existing footbridge within the park. Under this analysis, it was discovered that the secondary control structure provided minimal benefit to the pond design and if anything, slightly restricted flows causing higher pond elevations (i.e. greater chance for localized flooding). As such, all proposed options for the pond improvements were modeled as one pond.

Once the one pond approach was established, several outcomes were modeled and refined. The first option (minor improvements) involved as minimal of grading and flood wall improvements as possible to optimize the available storage. The second option (major improvements) involved providing as extensive of pond storage as feasible within the existing pond footprint, this option also involved flood walls to prevent overtopping the roadways along Oxford and Greendale Road. Finally, at the request of the Village, a third option (minor improvements w/ no regrading) was considered. Under this scenario, the existing pond area was modeled and the orifice control structure modified without any regrading to increase the storage volume of the pond. A summary of the impacts of each alternate is summarized below:

Design Storm	Existing Conditions		Proposed Pond Improvements (Minor)				
						Change in Peak Discharge	
	Pond El.	Discharge (cfs)	Pond El.	Discharge (cfs)	Change in El. (ft)	(cfs)	%
1	213.48	35.76	212.24	12.75	-1.24	-23.01	-64%
2	215.59	49.96	214.70	40.18	-0.89	-9.78	-20%
5	*216.40*[1]	119.96	216.34	52.94	-0.06	-67.02	-56%
10	*216.69*	203.72	217.56	58.54	0.87	-145.18	-71%
25	*217.02*	325.17	*218.17*	228.05	1.15	-97.12	-30%
50	*217.16*	380.07	*218.22*	314.91	1.06	-65.16	-17%
100	*217.44*	508.17	*218.33*	507.39	0.89	-0.78	-0.2%

Table 4.1 – George Field Pond Summary (Minor Improvements)

[1] Italicized text indicates roadway flooding/pond overtopping.

As identified in Table 4.1 above, the proposed minor improvements to the pond would allow for a reduction of all design storm events, with the most significant reduction to the 1-, 2-, 5-, and 10-year storm events. In reducing discharge from the pond via the control structure, downstream conditions for smaller design storms would be improved and the likelihood of potential surcharge within the downstream pipe network reduced. Due to the revised grading and additional flood walls, the pond capacity would be increased by approximately 241,500 cf, an 18% increase, and would contain the 1-, 2-, 5-, and 10-year design storms without overtopping. Additional information on the proposed improvements, cost and other considerations is contained later in this section.

Design Storm	Existing Conditions		Proposed Pond Improvements (Major)				
						Change in Peak Discharge	
	Pond El.	Discharge (cfs)	Pond El.	Discharge (cfs)	Change in El. (ft)	(cfs)	%
1	213.48	35.76	211.47	6.67	-2.01	-29.09	-81%
2	215.59	49.96	213.01	24.87	-2.58	-25.09	-50%
5	*216.40*	119.96	214.26	41.29	-2.14	-78.67	-65%
10	*216.69*	203.72	215.45	48.90	-1.24	-154.82	-76%
25	*217.02*	325.17	217.17	56.98	0.15	-268.19	-82%
50	*217.16*	380.07	217.98	60.27	0.82	-319.80	-84%
100	*217.44*	508.17	*218.31*	273.06	0.87	-235.11	-46%

Table 4.2 – George Field Pond Summary (Major Improvements)

As identified in Table 4.2, the proposed major improvements to the pond would allow for a reduction in peak discharge of the 1-, 2-, 5-, 10-, 25-, and 50-year storm events by 50% or greater and reduction of the 100-year storm by 46%. In reducing discharge from the pond via the control structure, downstream conditions would be improved and the likelihood of potential surcharge within the downstream pipe network greatly reduced. Due to the revised grading and additional flood walls, the pond capacity would be increased by approximately 1,011,100 cf, a 64% increase, and would contain the 1-, 2-, 5-,10-, 25- and 50-year design storms without overtopping. Additional information on the proposed improvements, cost, and other considerations is contained later in this section.

Design Storm	Existing Conditions		Proposed Pond Improvements (Minor w/ No regrading)				
						Change in Peak Discharge	
	Pond El.	Discharge (cfs)	Pond El.	Discharge (cfs)	Change in El. (ft)	(cfs)	%
1	213.48	35.76	213.95	25.31	0.47	-10.45	-29%
2	215.59	49.96	215.96	37.06	0.37	-12.90	-26%
5	*216.40*	119.96	217.27	50.82	0.87	-69.14	-58%
10	*216.69*	203.72	217.94	103.71	1.25	-100.01	-49%
25	*217.02*	325.17	*218.30*	250.55	1.28	-74.62	-23%
50	*217.16*	380.07	*218.41*	323.89	1.25	-56.18	-15%
100	*217.44*	508.17	*218.61*	489.51	1.17	-18.66	-4%

Table 4.3 – George Field Pond Summary (Minor w/ No regrading)

As identified in Table 4.3, the proposed minor improvements with no regrading would allow for a reduction in peak discharge of the 1-, 2-, 5-, and 10-year storm events by 25% or greater and reduction of the 25-, 50-, and 100-year storm by 4% to 23%. In reducing discharge from the pond via the control structure, downstream conditions would be improved for smaller storm events. Due to the new flood walls, the pond capacity would be decreased from 1,339,173 cf to 1,286,074, a 4% decrease, to contain smaller storm events (1-year to 10-year) from overtopping the roadway. Additional information on the proposed improvements, cost, and other considerations is contained later in this section.

It should be noted that with both pond improvements, design is ultimately limited by the downstream pipe network conditions. The capacity of the existing 36" outlet for the pond, which runs under Oxford Road, does not allow for enough flow to be conveyed downstream to fully store the remainder of the runoff volume for the 100-year storm event. Additionally, the modeling may be conservative, as it is assumed that runoff within each sub-watershed area eventually discharges to George Field Park. The model does not factor in depressions, smaller ponds, swales or other storage basins which may contain some of this runoff and prevent its discharge to the pond.

<table>
<tr><th colspan="2">Minor Pond Improvements – George Field Park</th></tr>
<tr><td colspan="2">Opinion of Probable Cost: $3,476,400 (see Appendix E)</td></tr>
<tr><td>Drainage Issue: Insufficient pond capacity and downstream conveyance, suboptimal outlet control structure design.</td><td>Concept Drawing Location: Appendix C, C-201</td></tr>
<tr><td colspan="2">Proposed Improvements:
- Install new outlet control structure to reduce discharge for small storm events and reduce risk of surcharge in downstream pipe network.
- Elevate section of Greendale Road to prevent local flooding, increase pond detention elevation, and raise elevations of drainage outlets to prevent surcharge and drainage issues upgrade.
- Revise grading in lower (southern) portion of pond area to improve pond capacity 18% (241,500 cf).
- Install two new retaining walls (700 LF±) along southern and eastern portions of pond to improve capacity and prevent pond overtopping for up to 10-year storm event.
Flood Mitigation:
As discussed, the existing pond is not optimized to best store runoff for design storms and as modeled would overtop the roadway on Oxford Road prior to the 10-year storm event. The proposed improvements will allow for the storage of the 10-year storm without overtopping the roadway.</td></tr>
<tr><td colspan="2">Downstream Impact:
The existing outlet control structure allowed for significant flows to continue downstream with little attenuation and storage within the pond. The proposed new outlet control structure would reduce smaller storm events and store more runoff volume within the pond which would alleviate some of the downstream pipe capacity issues the drainage system currently experiences. These improvements would lessen the chance of pipe surcharge.</td></tr>
</table>

<table>
<tr><th colspan="2">Major Pond Improvements – George Field Park</th></tr>
<tr><td colspan="2">Opinion of Probable Cost: $7,220,500 (see Appendix E)</td></tr>
<tr><td>Drainage Issue: Insufficient pond capacity and downstream conveyance, suboptimal outlet control structure design.</td><td>Concept Drawing Location: Appendix C, C-202</td></tr>
<tr><td colspan="2">Proposed Improvements:
- Install new outlet control structure to significantly reduce discharge from all storm events and reduce risk of surcharge in downstream pipe network.
- Elevate section of Greendale Road to prevent local flooding, increase pond detention elevation, and raise elevations of drainage outlets to prevent surcharge and drainage issues upgrade.
- Revise grading throughout pond area to improve pond capacity by 64% (1,011,160 cf).
- Install two new retaining walls (865 LF±) along southern and eastern portions of pond to improve capacity and prevent pond overtopping for up to 50-year storm event.
Flood Mitigation:
As discussed, the existing pond is not optimized to best store runoff for design storms and as modeled would overtop the roadway on Oxford Road prior to the 10-year storm event. The proposed improvements will allow for the storage of the 50-year storm without overtopping the roadway.</td></tr>
</table>

Downstream Impact:
The existing outlet control structure allowed for significant flows to continue downstream with little attenuation and storage within the pond. The proposed new outlet control structure would significantly reduce storm events and store more runoff volume within the pond which would alleviate some of the downstream pipe capacity issues the drainage system currently experiences. These improvements would lessen the chance of pipe surcharge.

Minor Pond Improvements w/ No Regrading – George Field Park	
Opinion of Probable Cost: $1,924,600 (see Appendix E)	
Drainage Issue: Insufficient pond capacity and downstream conveyance, suboptimal outlet control structure design.	**Concept Drawing Location:** Appendix C, C-203

Proposed Improvements:

- Install new outlet control structure to reduce discharge for small storm events and reduce risk of surcharge in downstream pipe network.
- Elevate section of Greendale Road to prevent local flooding, increase pond detention elevation, and raise elevations of drainage outlets to prevent surcharge and drainage issues upgrade.
- Install two new retaining walls (700 LF±) along southern and eastern portions of pond to prevent pond overtopping for up to 10-year storm event.

Flood Mitigation:
As discussed, the existing pond is not optimized to best store runoff for design storms and as modeled would overtop the roadway on Oxford Road prior to the 10-year storm event. The proposed improvements will allow for the storage of the 10-year storm without overtopping the roadway or needing to regrade the pond as indicated in the first alternative.

Downstream Impact:
The existing outlet control structure allowed for significant flows to continue downstream with little attenuation and storage within the pond. The proposed new outlet control structure would reduce smaller storm events and store more runoff volume within the pond which would alleviate some of the downstream pipe capacity issues the drainage system currently experiences. These improvements would lessen the chance of pipe surcharge.

Item	**Minor Pond Improvements**	**Major Pond Improvements**	**Minor Pond Improvements w/ No Regrading**
Cost Estimate	$3,476,400	$7,220,500	$1,912,200
Storm Event Flooding Occurs & Probability of Same	25-Year Storm (4% Chance in Any Given Year)	100-Year Storm (1% Chance in Any Given Year)	25-Year Storm (4% Chance in Any Given Year)
Small Storm (1 to 5-Year Storm Event) Attenuation	20%-64% Reduction (47% Avg.)	50%-81% Reduction (65% Avg.)	26%-58% Reduction (38% Avg.)
Moderate Storm (10 to 25-Year Storm Event) Attenuation	30%-71% Reduction (51% Avg.)	76%-82% Reduction (79% Avg.)	23%-49% Reduction (36% Avg.)
Moderate Storm (50 to 100-Year Storm Event) Attenuation	0.2%-17% Reduction (8% Avg.)	46%-84% Reduction (65% Avg.)	4%-15% Reduction (36% Avg.)
Change in Pond Storage Volume	+241,500 cf	+1,011,160 cf	-53,100 cf

Table 4.4 – Summary of George Field George Field Design Improvement Alternatives

As indicated in Table 4.4, costs for recommended improvements vary greatly based on the level of earthwork and regrading necessary to modify pond capacity. Each of the projects will require roadway and drainage modifications to elevate Greendale Road which will result in approximately $1.2 million in construction costs, a significant portion of all estimated work. It should be noted that the Minor Pond Improvements w/ no regrading option was first modeled without the use of flood walls and relied on modifications to the outlet control structure only. It was determined that without some means of increasing the pond volume or adding walls/regrading, the modifications would either allow more runoff, worsening downstream drainage conditions, or restrict more flow causing more frequent roadway overtopping. As such, the option included the use of flood walls to the maximum extent practical. The Major Pond Improvements option would result in the greatest benefit to both reducing local flooding and downstream infrastructure, however, all options allow for some level of flood and downstream relief.

5.0 BENEFIT COST ANALYSIS

At the request of the Village, H2M prepared a benefit cost analysis (BCA) to compare the proposed improvements discussed in Section 4 of this report. According to the Federal Emergency Management Agency (FEMA), BCA is a method that determines the future risk reduction benefits of a hazard mitigation project and compares those benefits to its costs. Generally speaking, a benefit cost ratio (BCR) above 1.0 is considered cost effective.

For this project, H2M utilized FEMA's benefit cost calculator to assess the proposed improvement alternatives. The project relied on data collected from the Village from previous storm events (heavy cleaning, sanitary backups, roadway cleanings and repairs, etc.) as well as data from similar drainage analysis. These results were then compared to projected impacts post-improvements and coupled with the overall project's construction costs.

Post-improvement impacts were based on calculated flood elevations, drainage surcharge areas, and future maintenance needs based on hydraulic and hydrologic modeling results. It should be noted that costs are based on available data and may vary depending on actual property damages and future storm events.

The BCA explored three (3) alternatives based on those proposed in Section 4: proposed piping improvements, proposed minor pond improvements with no regrading and a combination of the first two options. The other minor and major pond improvement options were not further explored as they resulted in additional cost with minimal additional benefit. Results of the BCA are summarized in Table 5.1 below:

Proposed Improvement Option	Benefit Cost Ratio
Piping Improvements – Cambridge Road, Rugby Lane & Post Road	0.52
Minor Pond Improvements w/ No Regrading – George Field Park	0.12
Combined Improvements	0.32

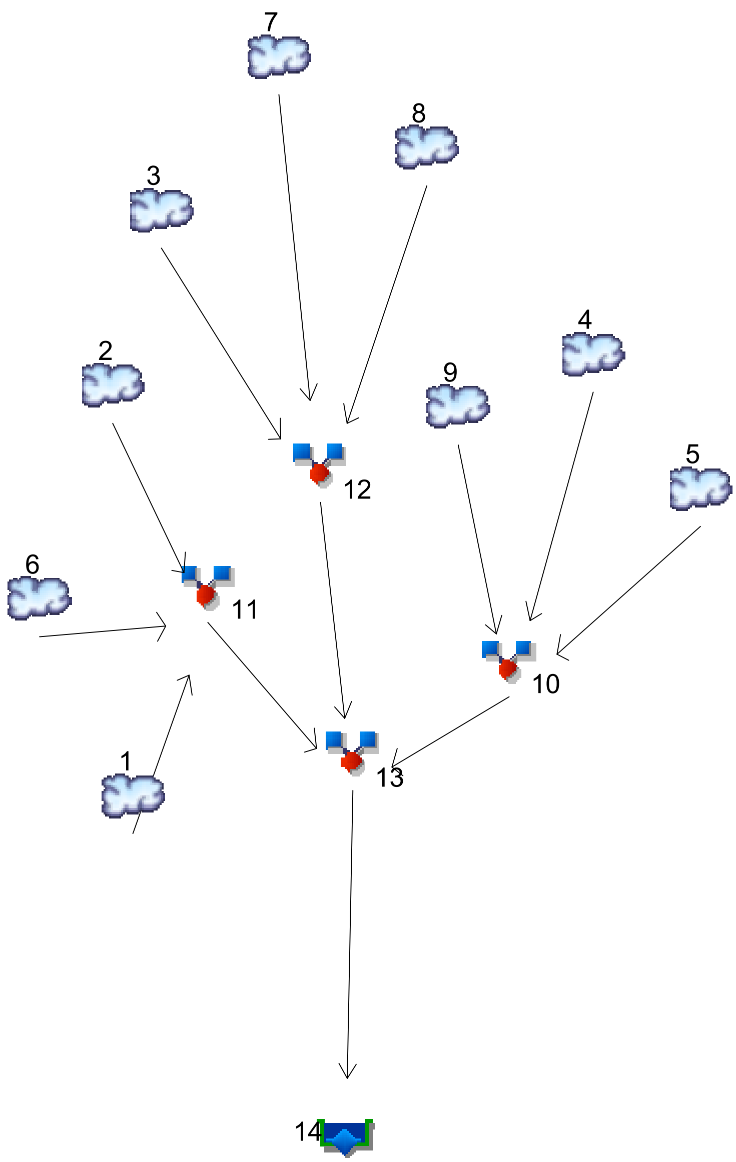
Table 5.1 – Summary of BCR for Design Improvement Alternatives

Based on the above, the preferred alternate per BCR would be the piping improvements. While the pond improvements will eliminate flooding for the 10-year storm, the benefit is only realized by a few homes and smaller roadway section. As such, the BCR is lower than that for the piping improvements. In the case of the combined improvements, the areas in which the improvements benefit overlap, resulting in a lower BCR. The proposed piping improvements yielded the highest BCR as it will improve drainage conditions and reduce impacts for the greatest number of residences.

Appendix A

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023



Legend

Hyd.	Origin	Description
1	SCS Runoff	DA-1A
2	SCS Runoff	DA-2
3	SCS Runoff	DA-3A
4	SCS Runoff	DA-4
5	SCS Runoff	DA-5A
6	SCS Runoff	DA-1B
7	SCS Runoff	DA-3B
8	SCS Runoff	DA-3C
9	SCS Runoff	DA-5B
10	Combine	DA-4&5
11	Combine	DA-1&2
12	Combine	DA-3
13	Combine	George Field Park
14	Reservoir	George Field Pond

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	5.975	15.64	-------	23.30	29.85	38.97	43.26	52.96	DA-1A
2	SCS Runoff	------	8.303	21.75	-------	32.42	41.55	54.27	60.26	73.79	DA-2
3	SCS Runoff	------	28.66	78.17	-------	118.05	152.42	200.52	223.32	274.85	DA-3A
4	SCS Runoff	------	0.367	3.142	-------	6.143	9.008	13.31	15.44	20.40	DA-4
5	SCS Runoff	------	2.059	17.62	-------	34.39	50.40	74.46	86.35	114.15	DA-5A
6	SCS Runoff	------	2.185	5.715	-------	8.512	10.90	14.22	15.79	19.32	DA-1B
7	SCS Runoff	------	16.85	45.75	-------	68.88	88.79	116.57	129.70	159.32	DA-3B
8	SCS Runoff	------	0.339	0.916	-------	1.375	1.768	2.315	2.575	3.162	DA-3C
9	SCS Runoff	------	0.578	5.103	-------	10.06	14.75	21.81	25.29	33.39	DA-5B
10	Combine	4, 5, 9	2.816	24.29	-------	47.76	70.04	103.52	120.04	158.66	DA-4&5
11	Combine	1, 2, 6,	15.79	41.40	-------	61.68	79.01	103.22	114.65	140.42	DA-1&2
12	Combine	3, 7, 8,	33.92	92.34	-------	139.11	179.37	235.67	262.31	322.50	DA-3
13	Combine	10, 11, 12	48.08	151.11	-------	240.46	319.41	432.37	486.55	610.29	George Field Park
14	Reservoir	13	35.76	49.96	-------	119.96	203.72	325.17	380.07	508.17	George Field Pond

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.975	1	734	26,574	------	------	------	DA-1A
2	SCS Runoff	8.303	1	740	43,396	------	------	------	DA-2
3	SCS Runoff	28.66	1	765	231,649	------	------	------	DA-3A
4	SCS Runoff	0.367	1	754	3,871	------	------	------	DA-4
5	SCS Runoff	2.059	1	761	24,526	------	------	------	DA-5A
6	SCS Runoff	2.185	1	731	9,038	------	------	------	DA-1B
7	SCS Runoff	16.85	1	733	73,970	------	------	------	DA-3B
8	SCS Runoff	0.339	1	725	1,102	------	------	------	DA-3C
9	SCS Runoff	0.578	1	747	5,420	------	------	------	DA-5B
10	Combine	2.816	1	757	33,817	4, 5, 9	------	------	DA-4&5
11	Combine	15.79	1	736	79,008	1, 2, 6,	------	------	DA-1&2
12	Combine	33.92	1	757	306,721	3, 7, 8,	------	------	DA-3
13	Combine	48.08	1	742	419,545	10, 11, 12	------	------	George Field Park
14	Reservoir	35.76	1	777	408,962	13	213.48	67,714	George Field Pond

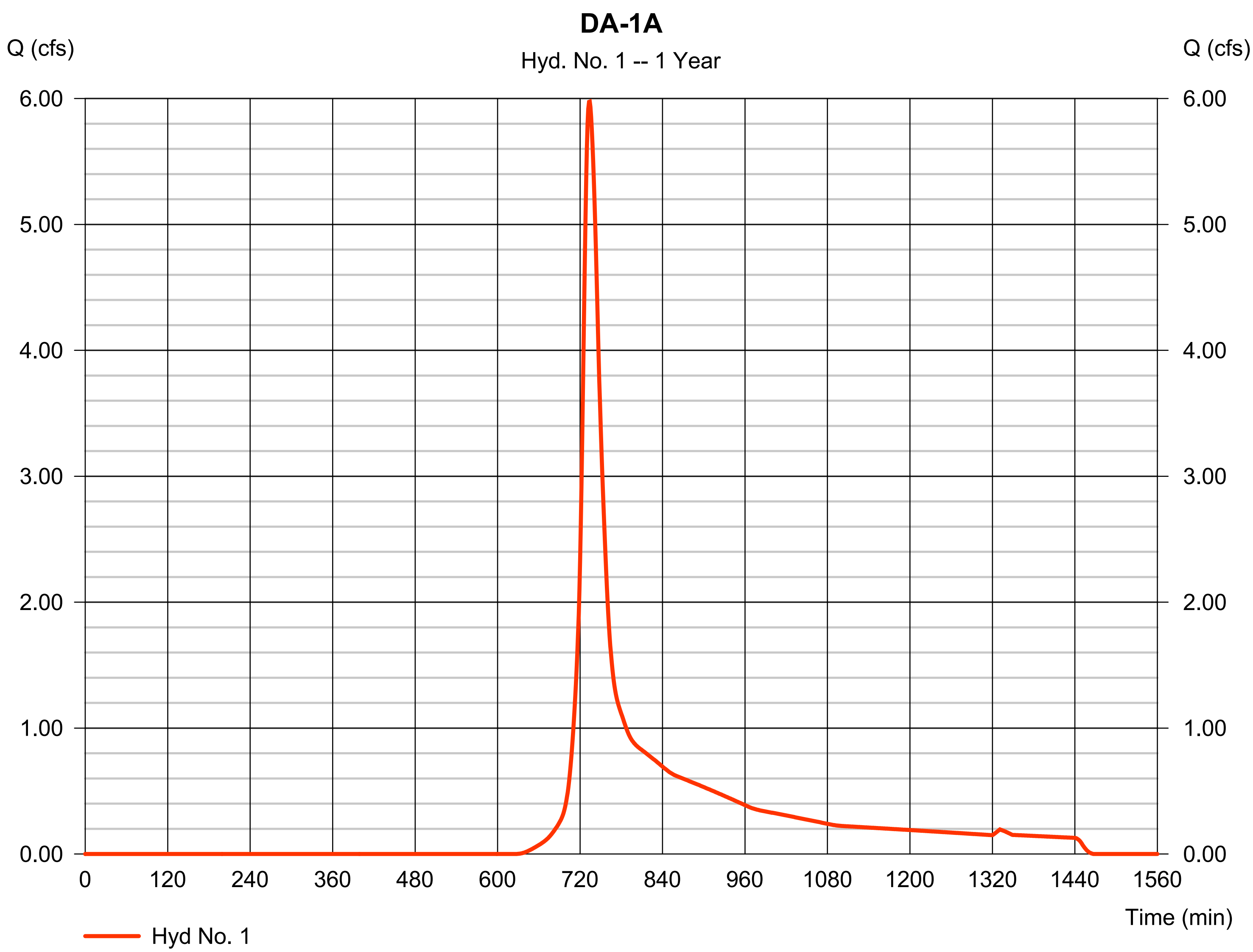
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 5.975 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 26,574 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



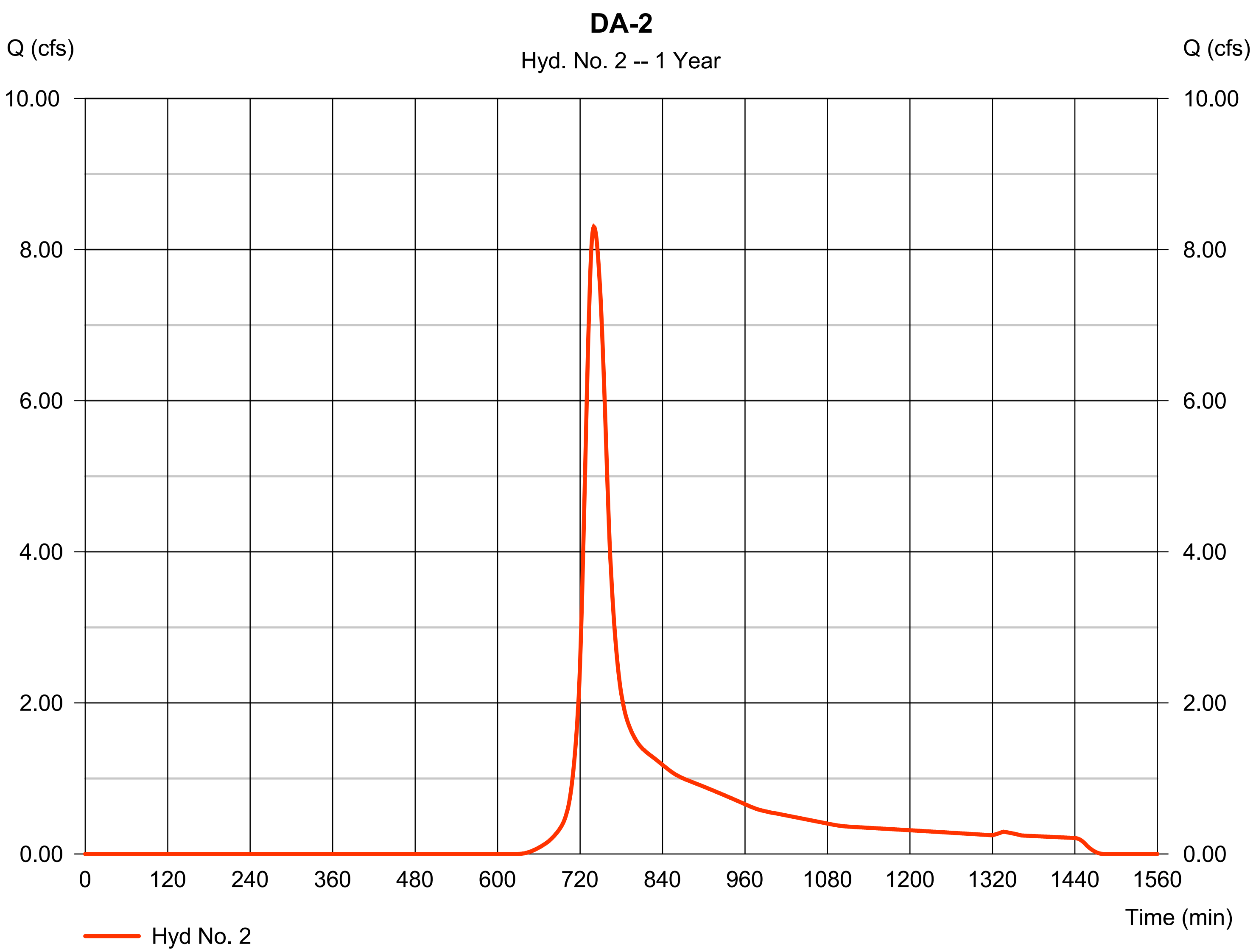
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 8.303 cfs
Storm frequency	= 1 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 43,396 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



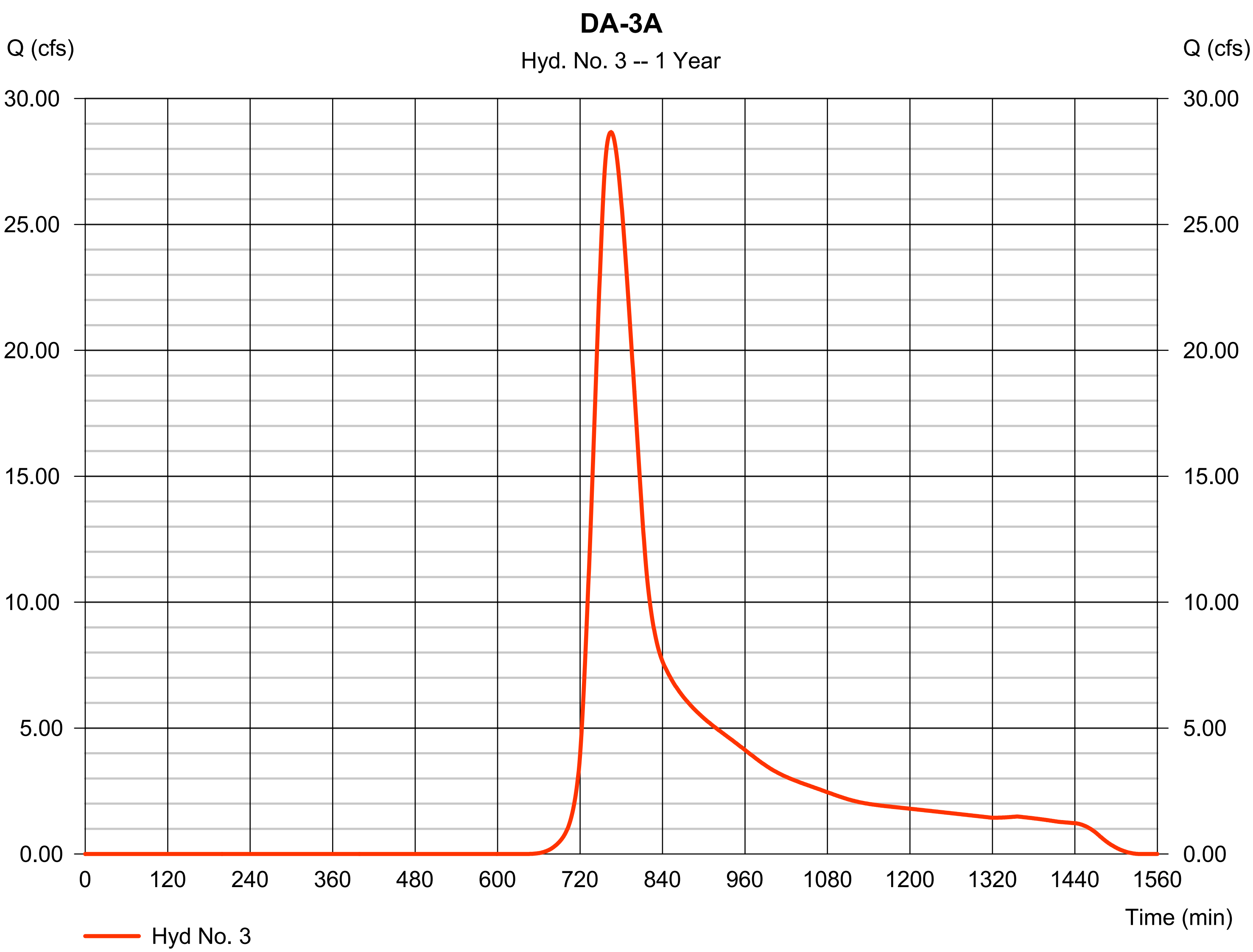
Hydrograph Report

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 28.66 cfs
Storm frequency	= 1 yrs	Time to peak	= 765 min
Time interval	= 1 min	Hyd. volume	= 231,649 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410

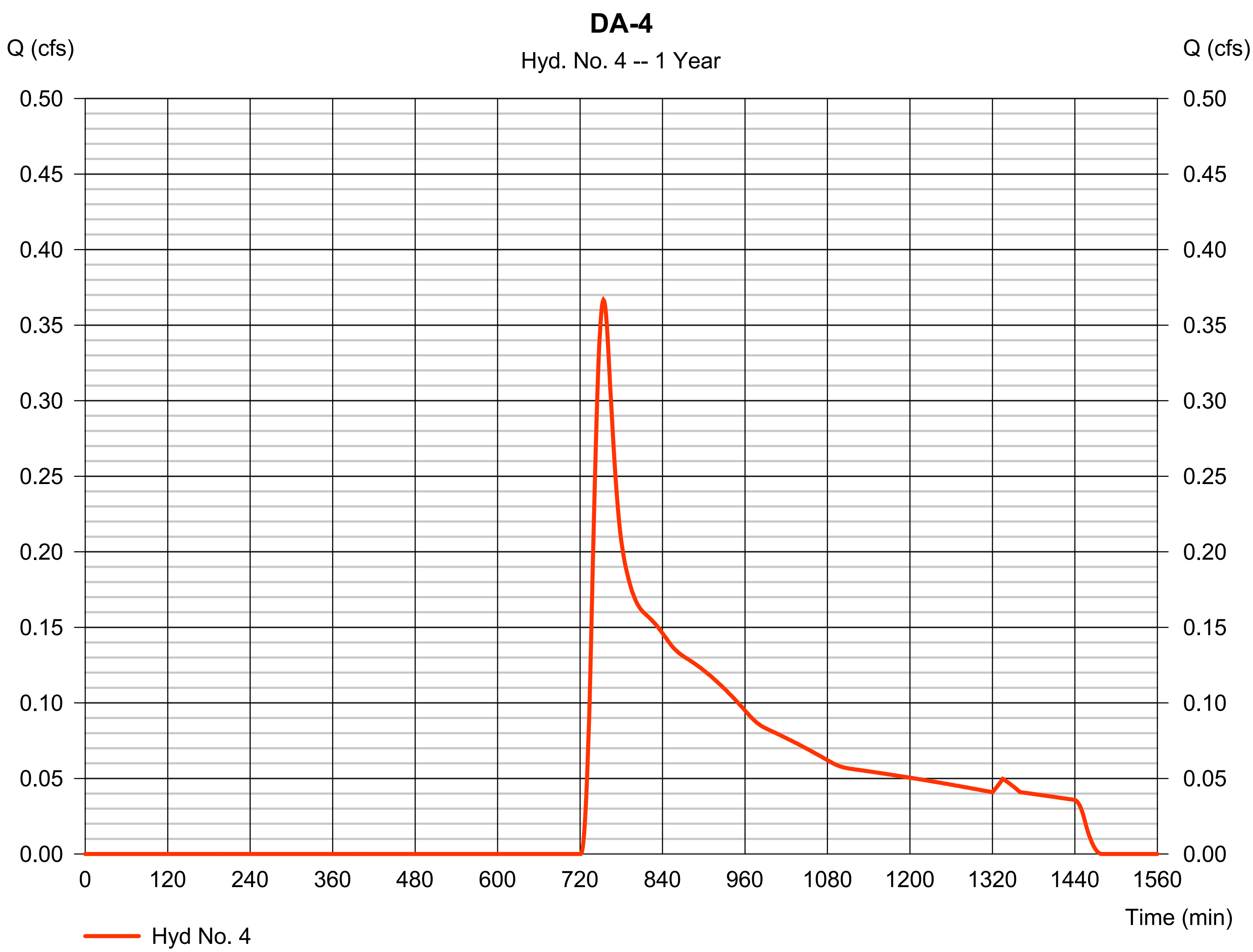


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 0.367 cfs
Storm frequency	= 1 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 3,871 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



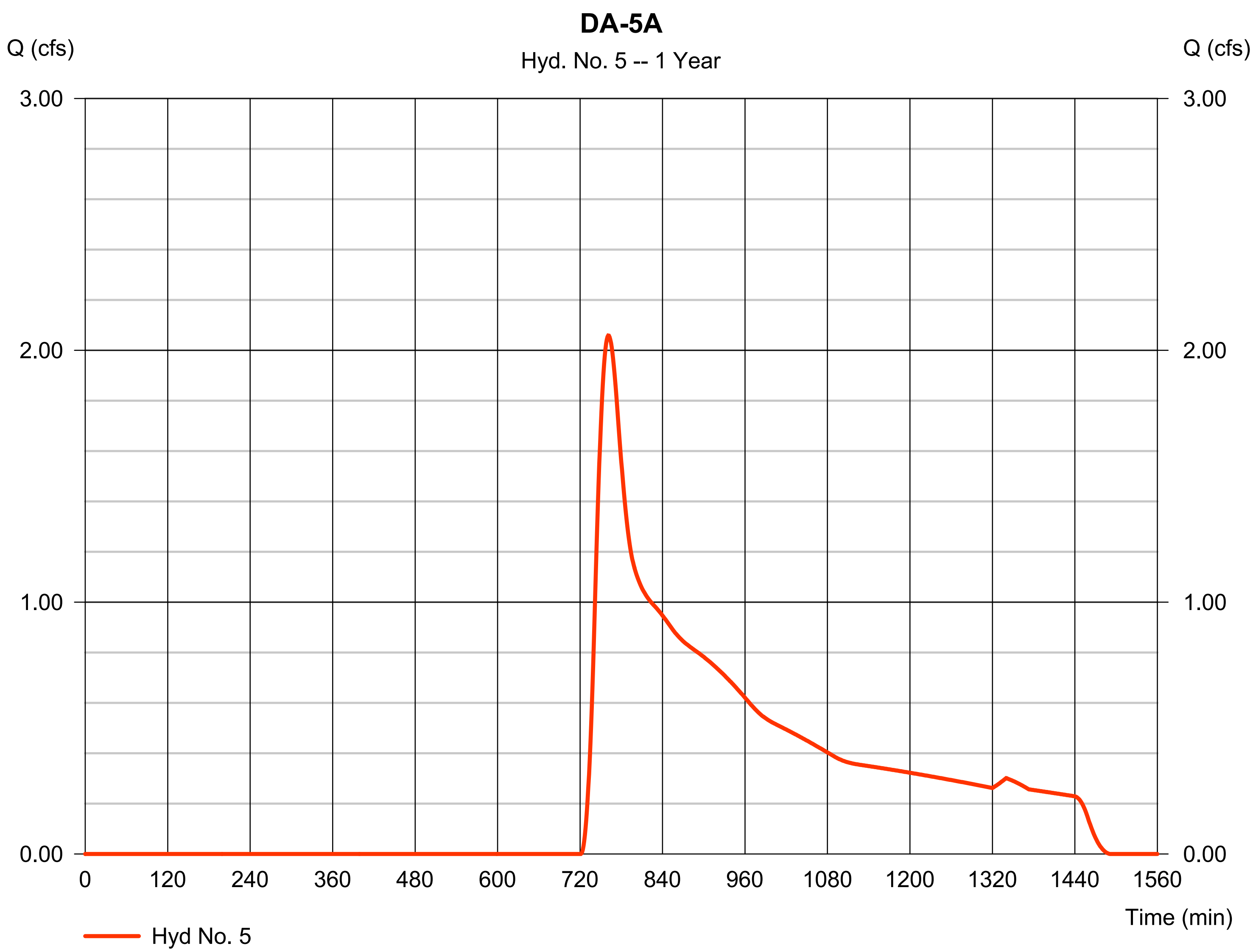
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 2.059 cfs
Storm frequency	= 1 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 24,526 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



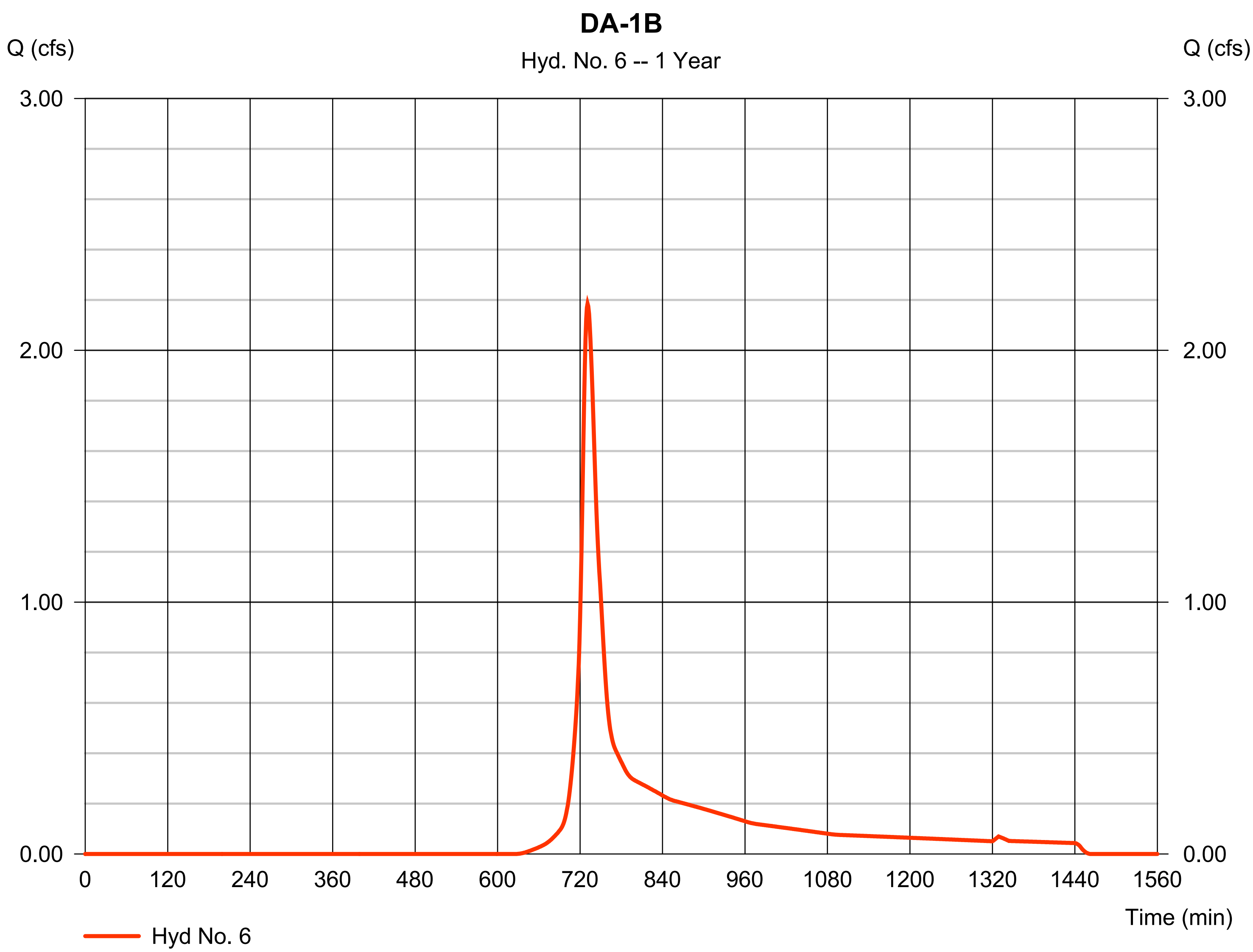
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 2.185 cfs
Storm frequency	= 1 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 9,038 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



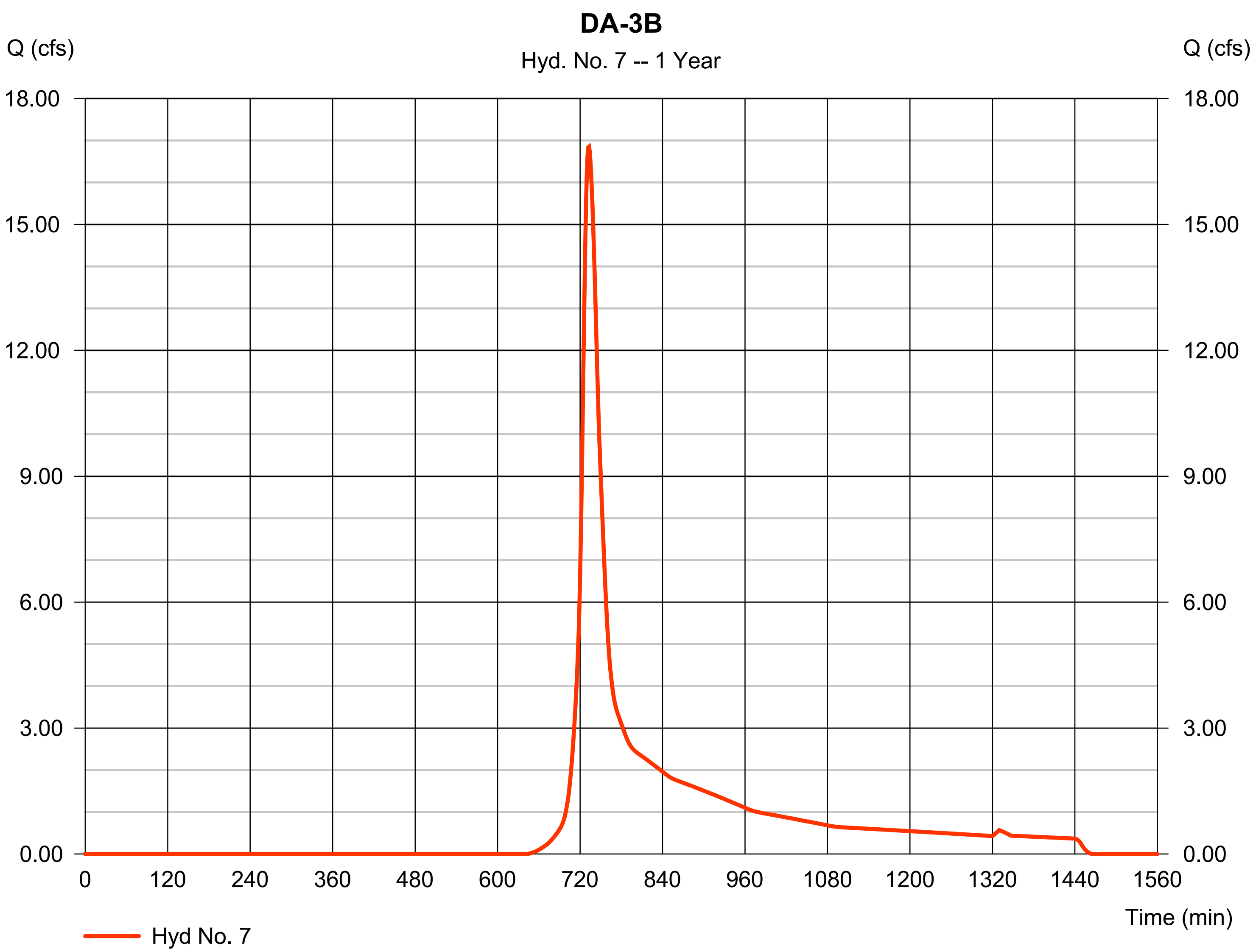
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 16.85 cfs
Storm frequency	= 1 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 73,970 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

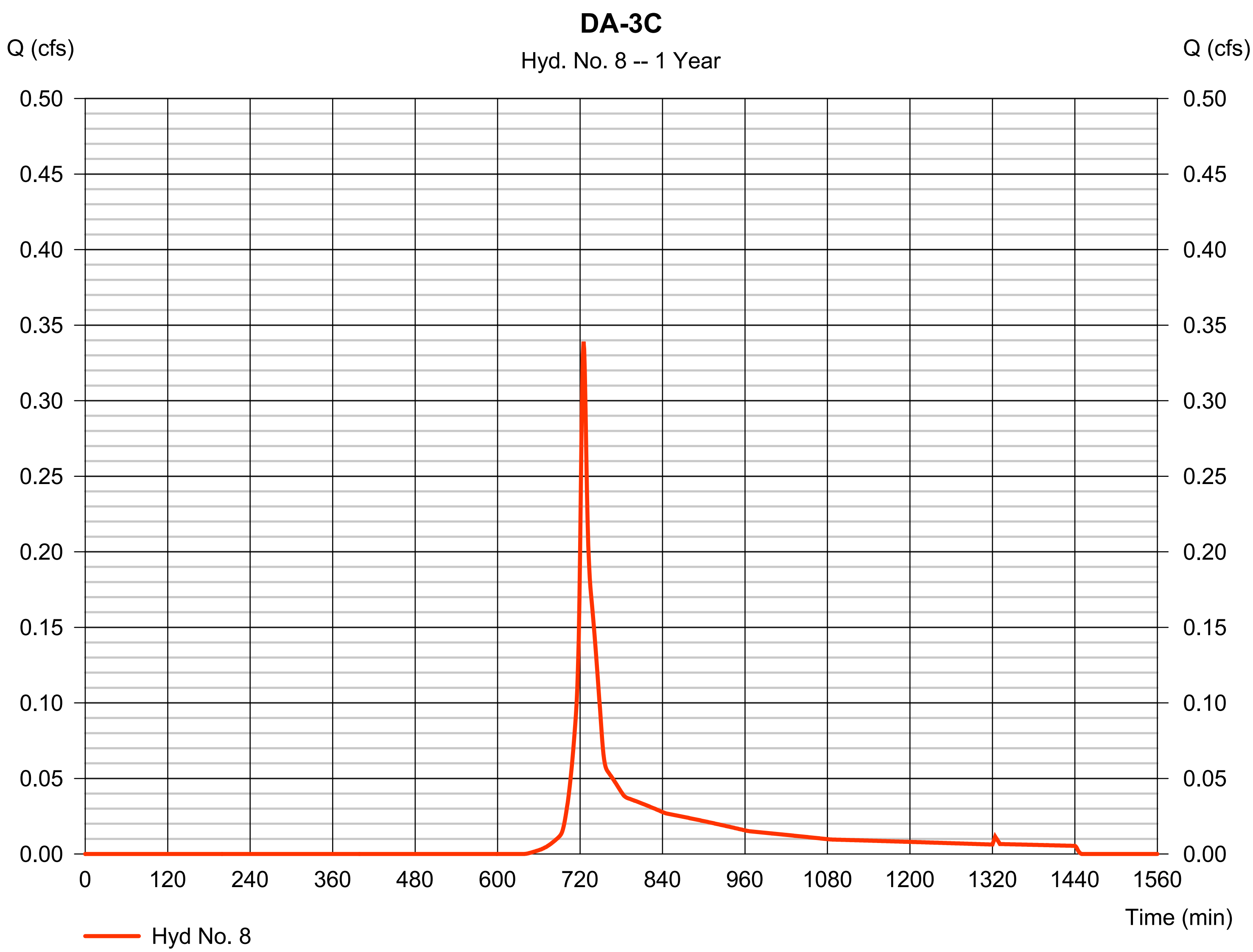


Hydrograph Report

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.339 cfs
Storm frequency	= 1 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 1,102 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



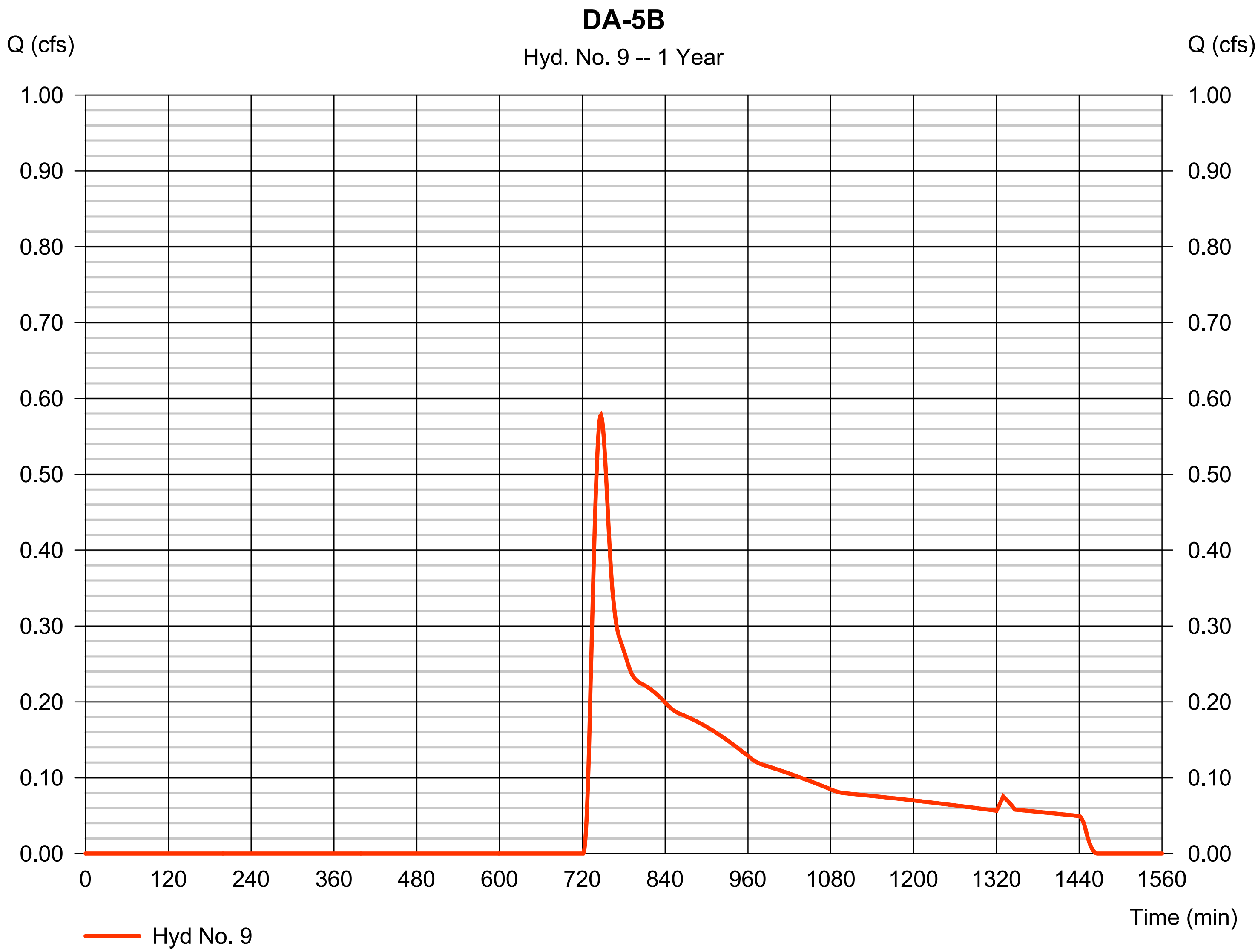
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.578 cfs
Storm frequency	= 1 yrs	Time to peak	= 747 min
Time interval	= 1 min	Hyd. volume	= 5,420 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



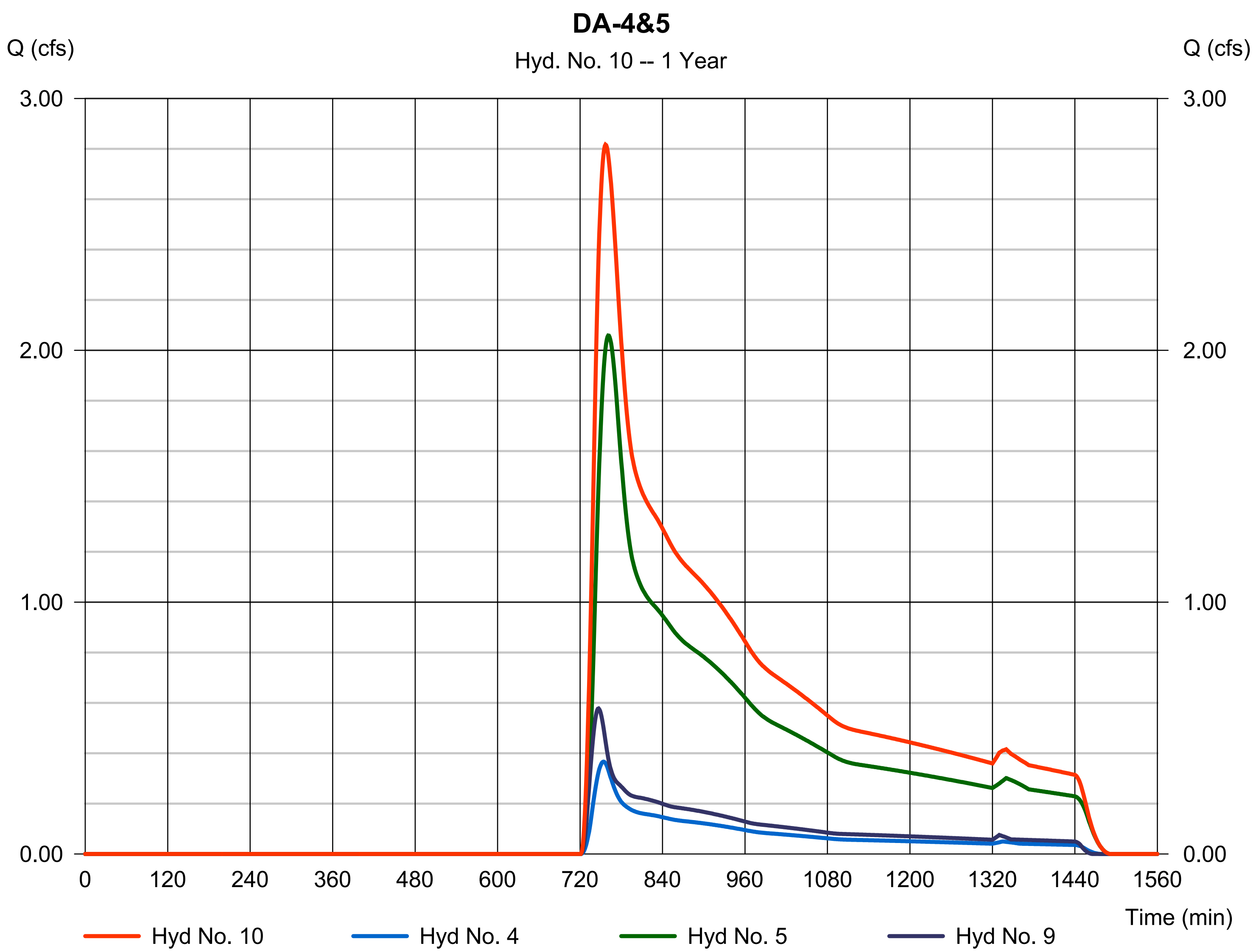
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 2.816 cfs
Storm frequency	= 1 yrs	Time to peak	= 757 min
Time interval	= 1 min	Hyd. volume	= 33,817 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



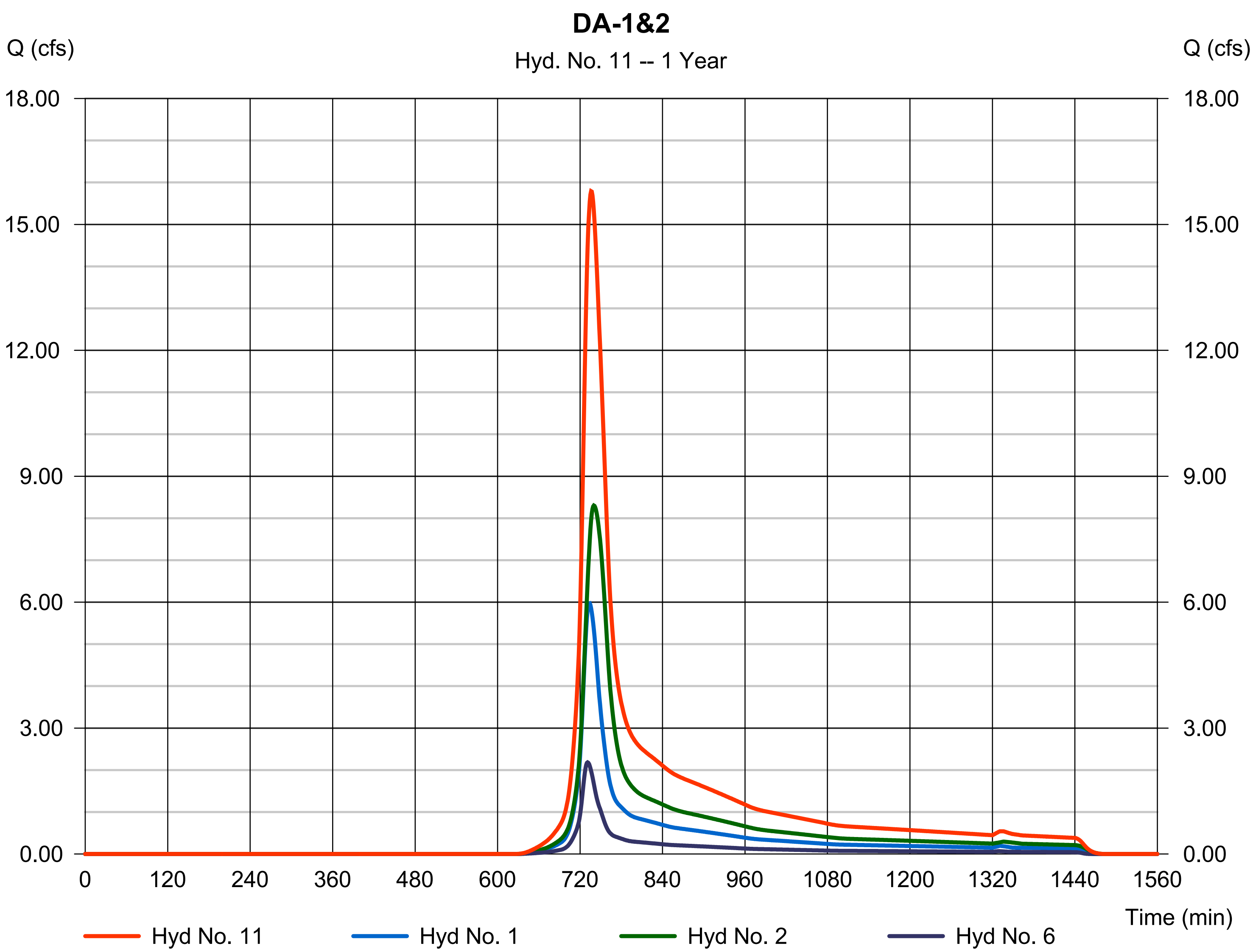
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 15.79 cfs
Storm frequency	= 1 yrs	Time to peak	= 736 min
Time interval	= 1 min	Hyd. volume	= 79,008 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



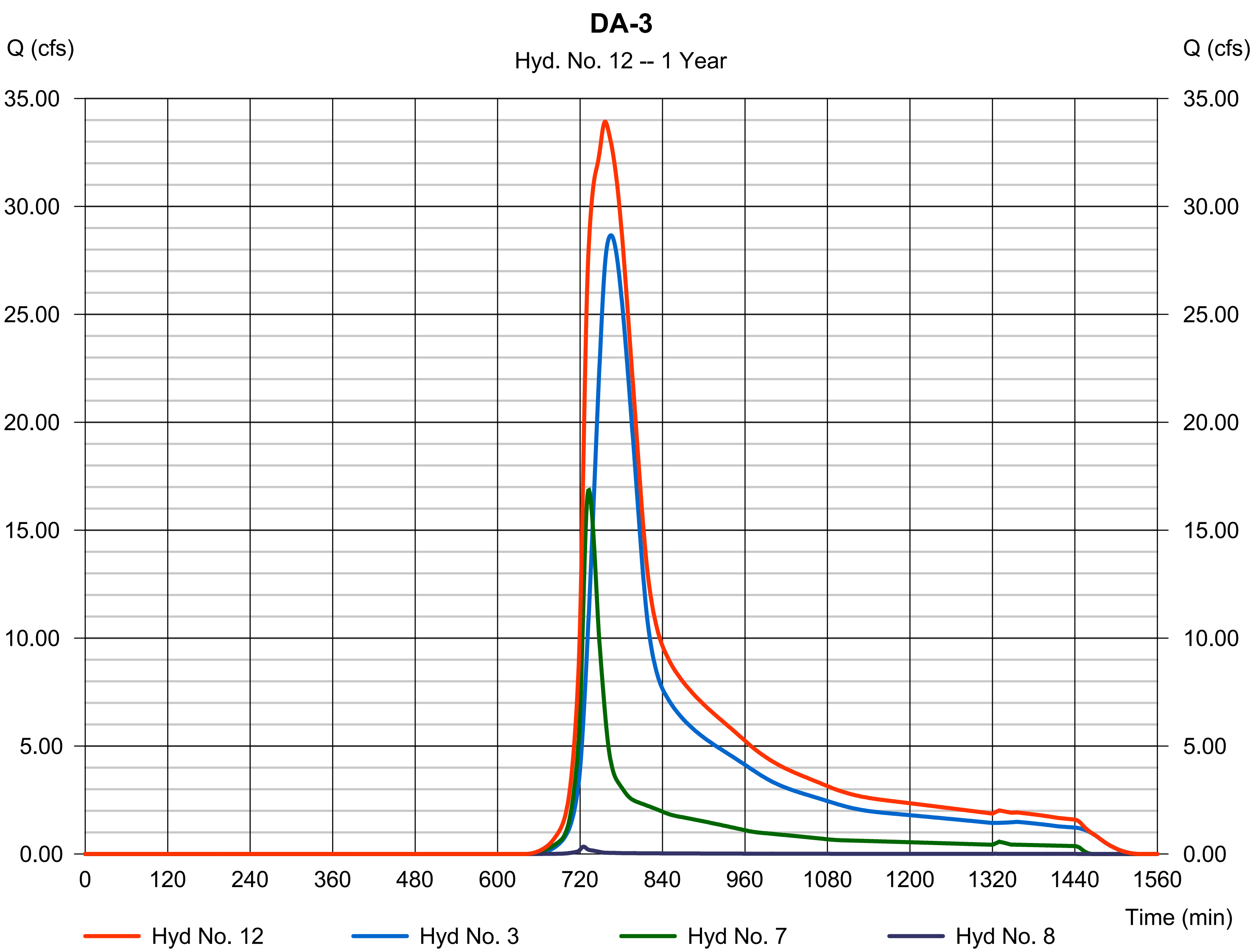
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 33.92 cfs
Storm frequency	= 1 yrs	Time to peak	= 757 min
Time interval	= 1 min	Hyd. volume	= 306,721 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



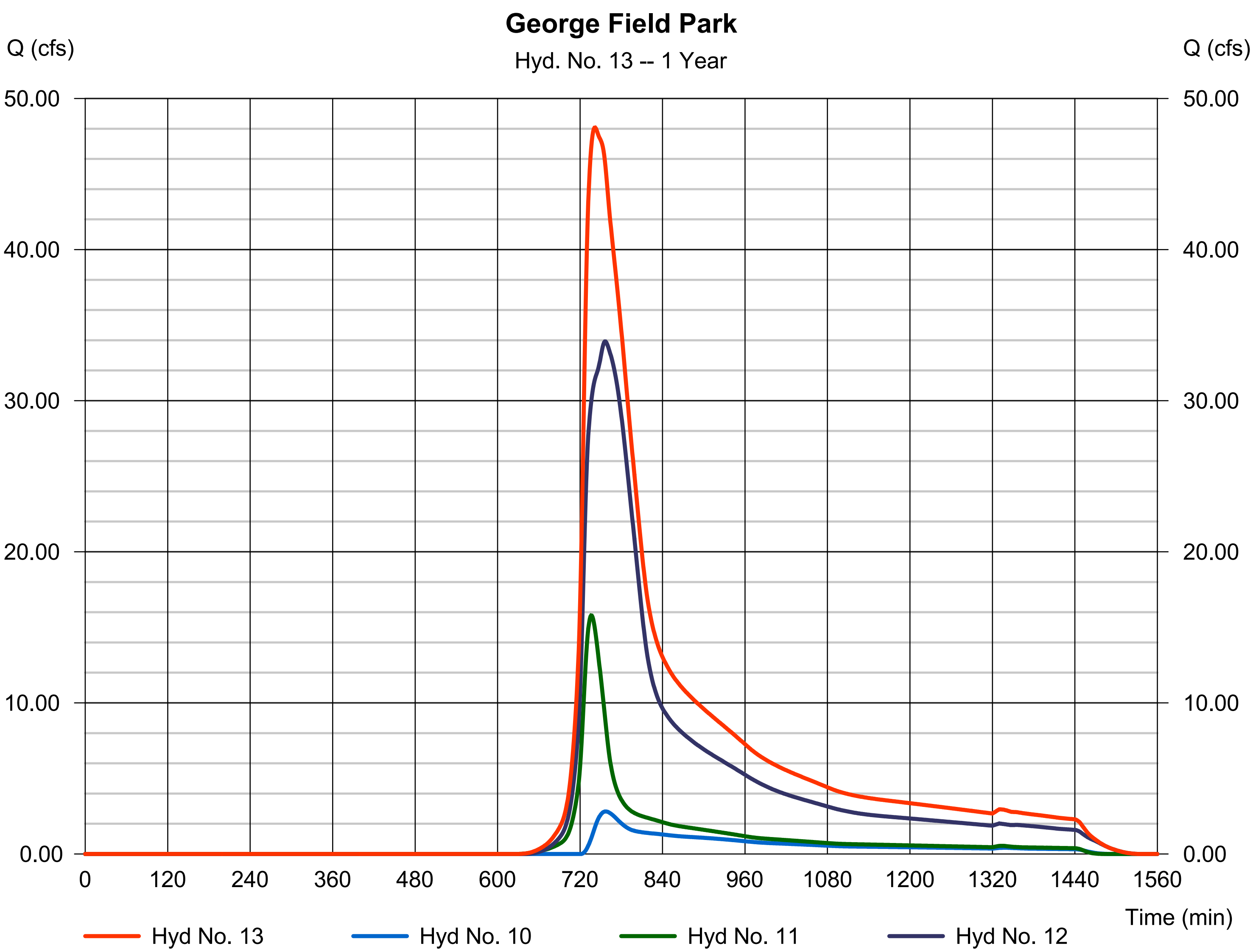
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 48.08 cfs
Storm frequency	= 1 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 419,545 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

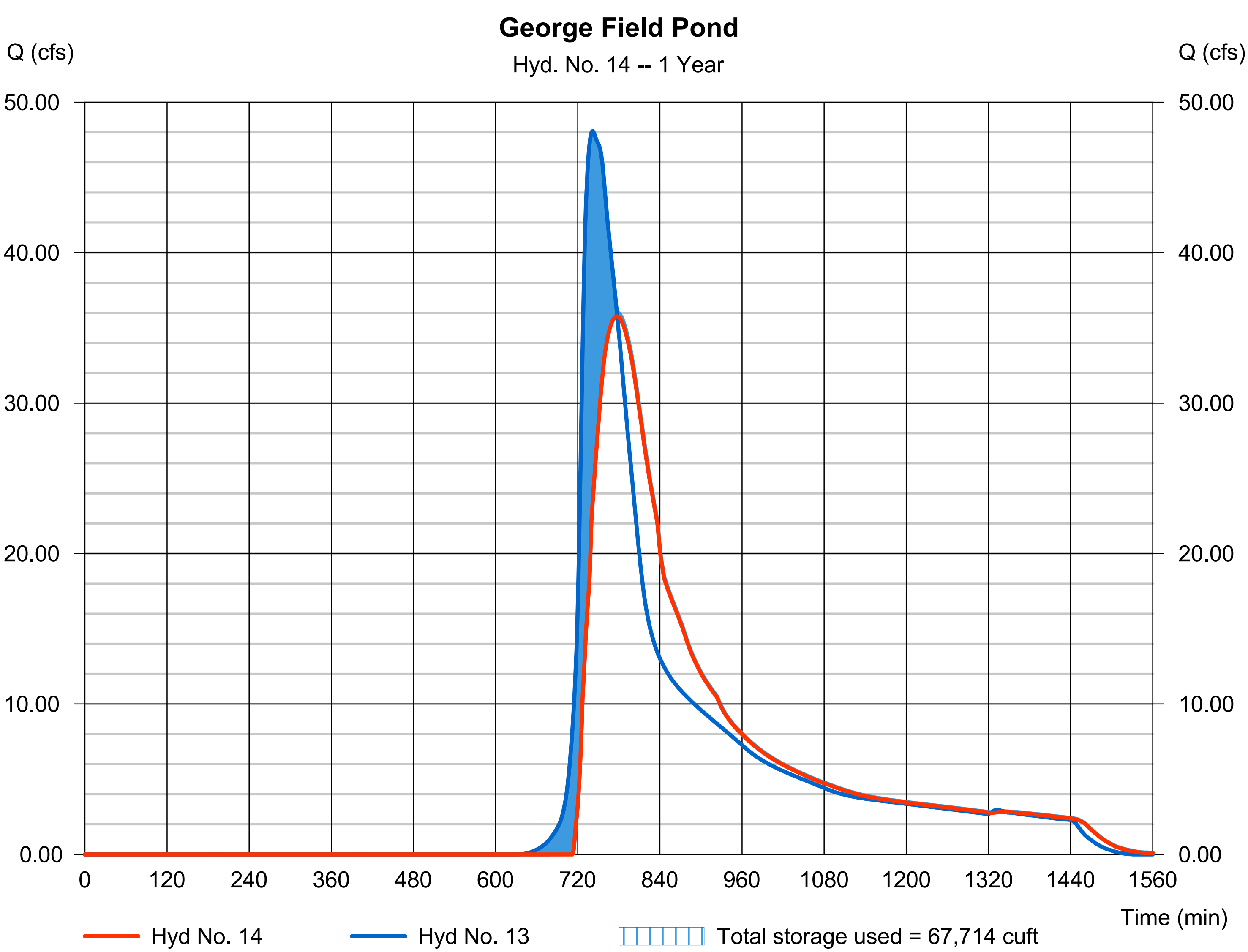
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 35.76 cfs
Storm frequency	= 1 yrs	Time to peak	= 777 min
Time interval	= 1 min	Hyd. volume	= 408,962 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 213.48 ft
Reservoir name	= George Field Park	Max. Storage	= 67,714 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Pond No. 1 - George Field Park

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 209.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	209.00	3,675	0	0
1.00	210.00	5,000	4,320	4,320
2.00	211.00	6,100	5,540	9,860
3.00	212.00	13,815	9,697	19,558
4.00	213.00	28,900	20,897	40,454
5.00	214.00	89,300	56,328	96,783
6.00	215.00	196,750	139,520	236,302
7.00	216.00	236,550	216,323	452,625
8.00	217.00	274,000	255,020	707,646
9.00	218.00	320,000	296,673	1,004,319
10.00	219.00	350,000	334,854	1,339,173

Culvert / Orifice Structures

		[A]	[B]	[C]	[PrfRsr]
Rise (in)	=	36.00	22.80	0.00	0.00
Span (in)	=	36.00	26.40	0.00	0.00
No. Barrels	=	1	1	0	0
Invert El. (ft)	=	210.30	210.54	0.00	0.00
Length (ft)	=	1570.00	0.00	0.00	0.00
Slope (%)	=	0.20	0.00	0.00	n/a
N-Value	=	.009	.013	.013	n/a
Orifice Coeff.	=	0.60	0.60	0.60	0.60
Multi-Stage	=	n/a	Yes	No	No

Weir Structures

		[A]	[B]	[C]	[D]
Crest Len (ft)	=	10.50	6.25	Inactive	100.00
Crest El. (ft)	=	212.77	215.93	0.00	216.00
Weir Coeff.	=	3.33	3.33	3.33	2.60
Weir Type	=	Rect	Rect	Rect	Broad
Multi-Stage	=	Yes	Yes	No	No

Exfil.(in/hr) = 0.200 (by Contour)

TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	209.00	0.00	0.00	---	---	0.00	0.00	---	0.00	0.000	---	0.000
0.10	432	209.10	0.00	0.00	---	---	0.00	0.00	---	0.00	0.002	---	0.002
0.20	864	209.20	0.00	0.00	---	---	0.00	0.00	---	0.00	0.005	---	0.005
0.30	1,296	209.30	0.00	0.00	---	---	0.00	0.00	---	0.00	0.007	---	0.007
0.40	1,728	209.40	0.00	0.00	---	---	0.00	0.00	---	0.00	0.009	---	0.009
0.50	2,160	209.50	0.00	0.00	---	---	0.00	0.00	---	0.00	0.012	---	0.012
0.60	2,592	209.60	0.00	0.00	---	---	0.00	0.00	---	0.00	0.014	---	0.014
0.70	3,024	209.70	0.00	0.00	---	---	0.00	0.00	---	0.00	0.016	---	0.016
0.80	3,456	209.80	0.00	0.00	---	---	0.00	0.00	---	0.00	0.019	---	0.019
0.90	3,888	209.90	0.00	0.00	---	---	0.00	0.00	---	0.00	0.021	---	0.021
1.00	4,320	210.00	0.00	0.00	---	---	0.00	0.00	---	0.00	0.023	---	0.023
1.10	4,874	210.10	0.00	0.00	---	---	0.00	0.00	---	0.00	0.024	---	0.024
1.20	5,428	210.20	0.00	0.00	---	---	0.00	0.00	---	0.00	0.024	---	0.024
1.30	5,982	210.30	0.00	0.00	---	---	0.00	0.00	---	0.00	0.025	---	0.025
1.40	6,536	210.40	0.00	0.00	---	---	0.00	0.00	---	0.00	0.025	---	0.025
1.50	7,090	210.50	0.00	0.00	---	---	0.00	0.00	---	0.00	0.026	---	0.026
1.60	7,644	210.60	0.11 ic	0.11 ic	---	---	0.00	0.00	---	0.00	0.026	---	0.136
1.70	8,198	210.70	0.50 ic	0.48 ic	---	---	0.00	0.00	---	0.00	0.027	---	0.506
1.80	8,752	210.80	1.04 ic	0.99 ic	---	---	0.00	0.00	---	0.00	0.027	---	1.020
1.90	9,306	210.90	1.53 ic	1.53 ic	---	---	0.00	0.00	---	0.00	0.028	---	1.557
2.00	9,860	211.00	2.05 ic	2.05 ic	---	---	0.00	0.00	---	0.00	0.028	---	2.078
2.10	10,830	211.10	2.77 ic	2.66 ic	---	---	0.00	0.00	---	0.00	0.032	---	2.689
2.20	11,800	211.20	3.33 ic	3.33 ic	---	---	0.00	0.00	---	0.00	0.035	---	3.369
2.30	12,770	211.30	4.10 ic	4.10 ic	---	---	0.00	0.00	---	0.00	0.039	---	4.139
2.40	13,739	211.40	4.99 ic	4.83 ic	---	---	0.00	0.00	---	0.00	0.043	---	4.871
2.50	14,709	211.50	5.74 ic	5.73 ic	---	---	0.00	0.00	---	0.00	0.046	---	5.774
2.60	15,679	211.60	6.58 ic	6.58 ic	---	---	0.00	0.00	---	0.00	0.050	---	6.633
2.70	16,649	211.70	7.48 ic	7.48 ic	---	---	0.00	0.00	---	0.00	0.053	---	7.535
2.80	17,618	211.80	8.43 ic	8.43 ic	---	---	0.00	0.00	---	0.00	0.057	---	8.489
2.90	18,588	211.90	9.43 ic	9.43 ic	---	---	0.00	0.00	---	0.00	0.060	---	9.495
3.00	19,558	212.00	10.48 ic	10.48 ic	---	---	0.00	0.00	---	0.00	0.064	---	10.55
3.10	21,647	212.10	11.58 ic	11.58 ic	---	---	0.00	0.00	---	0.00	0.071	---	11.65

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George Field Park

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.20	23,737	212.20	12.71 ic	12.71 ic	---	---	0.00	0.00	---	0.00	0.078	---	12.79
3.30	25,827	212.30	13.89 ic	13.89 ic	---	---	0.00	0.00	---	0.00	0.085	---	13.97
3.40	27,916	212.40	15.10 ic	15.10 ic	---	---	0.00	0.00	---	0.00	0.092	---	15.19
3.50	30,006	212.50	15.98 ic	15.98 ic	---	---	0.00	0.00	---	0.00	0.099	---	16.08
3.60	32,096	212.60	16.77 ic	16.77 ic	---	---	0.00	0.00	---	0.00	0.106	---	16.88
3.70	34,185	212.70	17.57 ic	17.53 ic	---	---	0.00	0.00	---	0.00	0.113	---	17.65
3.80	36,275	212.80	18.43 ic	18.14 ic	---	---	0.18	0.00	---	0.00	0.120	---	18.44
3.90	38,365	212.90	19.86 ic	18.22 ic	---	---	1.64	0.00	---	0.00	0.127	---	19.99
4.00	40,454	213.00	22.01 ic	18.16 ic	---	---	3.86	0.00	---	0.00	0.134	---	22.15
4.10	46,087	213.10	24.56 ic	17.91 ic	---	---	6.63	0.00	---	0.00	0.162	---	24.70
4.20	51,720	213.20	27.23 ic	17.37 ic	---	---	9.86	0.00	---	0.00	0.190	---	27.42
4.30	57,353	213.30	30.36 ic	16.79 ic	---	---	13.49	0.00	---	0.00	0.218	---	30.50
4.40	62,986	213.40	33.61 ic	15.92 ic	---	---	17.48 s	0.00	---	0.00	0.246	---	33.65
4.50	68,619	213.50	36.35 ic	15.26 ic	---	---	20.96 s	0.00	---	0.00	0.274	---	36.49
4.60	74,251	213.60	38.72 ic	14.66 ic	---	---	24.06 s	0.00	---	0.00	0.302	---	39.02
4.70	79,884	213.70	39.72 oc	13.49 ic	---	---	26.23 s	0.00	---	0.00	0.330	---	40.05
4.80	85,517	213.80	39.14 oc	11.92 ic	---	---	27.21 s	0.00	---	0.00	0.357	---	39.49
4.90	91,150	213.90	39.99 oc	11.13 ic	---	---	28.86 s	0.00	---	0.00	0.385	---	40.37
5.00	96,783	214.00	40.78 oc	10.43 ic	---	---	30.35 s	0.00	---	0.00	0.413	---	41.19
5.10	110,735	214.10	41.52 oc	9.81 ic	---	---	31.71 s	0.00	---	0.00	0.463	---	41.98
5.20	124,687	214.20	42.23 oc	9.25 ic	---	---	32.97 s	0.00	---	0.00	0.513	---	42.73
5.30	138,639	214.30	42.90 oc	8.75 ic	---	---	34.14 s	0.00	---	0.00	0.563	---	43.45
5.40	152,591	214.40	43.54 oc	8.29 ic	---	---	35.24 s	0.00	---	0.00	0.612	---	44.15
5.50	166,543	214.50	44.16 oc	7.88 ic	---	---	36.27 s	0.00	---	0.00	0.662	---	44.81
5.60	180,494	214.60	44.75 oc	7.51 ic	---	---	37.24 s	0.00	---	0.00	0.712	---	45.46
5.70	194,446	214.70	45.33 oc	7.16 ic	---	---	38.16 s	0.00	---	0.00	0.762	---	46.09
5.80	208,398	214.80	45.90 oc	6.85 ic	---	---	39.05 s	0.00	---	0.00	0.811	---	46.71
5.90	222,350	214.90	46.45 oc	6.56 ic	---	---	39.88 s	0.00	---	0.00	0.861	---	47.30
6.00	236,302	215.00	46.99 oc	6.30 ic	---	---	40.68 s	0.00	---	0.00	0.911	---	47.89
6.10	257,935	215.10	47.52 oc	6.05 ic	---	---	41.45 s	0.00	---	0.00	0.929	---	48.44
6.20	279,567	215.20	48.04 oc	5.83 ic	---	---	42.21 s	0.00	---	0.00	0.948	---	48.98
6.30	301,199	215.30	48.55 oc	5.61 ic	---	---	42.92 s	0.00	---	0.00	0.966	---	49.50
6.40	322,832	215.40	49.06 oc	5.42 ic	---	---	43.62 s	0.00	---	0.00	0.985	---	50.03
6.50	344,464	215.50	49.55 oc	5.24 ic	---	---	44.30 s	0.00	---	0.00	1.003	---	50.54
6.60	366,096	215.60	50.04 oc	5.06 ic	---	---	44.95 s	0.00	---	0.00	1.021	---	51.04
6.70	387,729	215.70	50.52 oc	4.90 ic	---	---	45.60 s	0.00	---	0.00	1.040	---	51.54
6.80	409,361	215.80	51.00 oc	4.75 ic	---	---	46.22 s	0.00	---	0.00	1.058	---	52.03
6.90	430,993	215.90	51.47 oc	4.61 ic	---	---	46.82 s	0.00	---	0.00	1.077	---	52.51
7.00	452,625	216.00	51.93 oc	4.44 ic	---	---	47.11 s	0.36 s	---	0.00	1.095	---	53.00
7.10	478,127	216.10	52.40 oc	4.25 ic	---	---	47.12 s	0.99 s	---	8.22	1.112	---	61.70
7.20	503,630	216.20	52.86 oc	4.07 ic	---	---	47.15 s	1.63 s	---	23.25	1.130	---	77.23
7.30	529,132	216.30	53.31 oc	3.90 ic	---	---	47.14 s	2.25 s	---	42.72	1.147	---	97.16
7.40	554,634	216.40	53.76 oc	3.75 ic	---	---	47.15 s	2.85 s	---	65.77	1.164	---	120.69
7.50	580,136	216.50	54.20 oc	3.60 ic	---	---	47.11 s	3.44 s	---	91.92	1.182	---	147.25
7.60	605,638	216.60	54.64 oc	3.47 ic	---	---	47.15 s	4.00 s	---	120.84	1.199	---	176.66
7.70	631,140	216.70	55.07 oc	3.34 ic	---	---	47.17 s	4.55 s	---	152.27	1.216	---	208.55
7.80	656,642	216.80	55.50 oc	3.23 ic	---	---	47.20 s	5.07 s	---	186.04	1.234	---	242.77
7.90	682,144	216.90	55.93 oc	3.11 ic	---	---	47.16 s	5.57 s	---	222.03	1.251	---	279.12
8.00	707,646	217.00	56.35 oc	3.01 ic	---	---	47.24 s	6.06 s	---	260.00	1.269	---	317.58
8.10	737,313	217.10	56.76 oc	2.91 ic	---	---	47.29 s	6.54 s	---	299.96	1.290	---	357.99
8.20	766,980	217.20	57.18 oc	2.82 ic	---	---	47.32 s	6.99 s	---	341.78	1.311	---	400.21
8.30	796,648	217.30	57.59 oc	2.73 ic	---	---	47.34 s	7.42 s	---	385.38	1.332	---	444.21
8.40	826,315	217.40	58.00 oc	2.66 ic	---	---	47.46 s	7.85 s	---	430.69	1.354	---	490.01
8.50	855,982	217.50	58.40 oc	2.58 ic	---	---	47.50 s	8.26 s	---	477.65	1.375	---	537.37
8.60	885,650	217.60	58.80 oc	2.51 ic	---	---	47.57 s	8.66 s	---	526.21	1.396	---	586.34
8.70	915,317	217.70	59.20 oc	2.44 ic	---	---	47.67 s	9.05 s	---	576.30	1.418	---	636.88
8.80	944,984	217.80	59.59 oc	2.37 ic	---	---	47.70 s	9.42 s	---	627.89	1.439	---	688.82
8.90	974,652	217.90	59.99 oc	2.31 ic	---	---	47.78 s	9.78 s	---	680.99	1.460	---	742.32
9.00	1,004,319	218.00	60.38 oc	2.26 ic	---	---	47.93 s	10.15 s	---	735.39	1.481	---	797.21
9.10	1,037,804	218.10	60.76 oc	2.20 ic	---	---	48.04 s	10.50 s	---	791.23	1.495	---	853.47
9.20	1,071,290	218.20	61.15 oc	2.14 ic	---	---	48.05 s	10.81 s	---	848.41	1.509	---	910.93
9.30	1,104,775	218.30	61.53 oc	2.10 ic	---	---	48.20 s	11.15 s	---	906.91	1.523	---	969.88
9.40	1,138,261	218.40	61.91 oc	2.04 ic	---	---	48.24 s	11.46 s	---	966.69	1.537	---	1029.97
9.50	1,171,746	218.50	62.28 oc	2.00 ic	---	---	48.46 s	11.79 s	---	1027.74	1.551	---	1091.55
9.60	1,205,232	218.60	62.66 oc	1.95 ic	---	---	48.41 s	12.06 s	---	1090.02	1.565	---	1154.02
9.70	1,238,717	218.70	63.03 oc	1.92 ic	---	---	48.70 s	12.40 s	---	1153.50	1.579	---	1218.10
9.80	1,272,203	218.80	63.40 oc	1.88 ic	---	---	48.76 s	12.68 s	---	1218.18	1.593	---	1283.09
9.90	1,305,688	218.90	63.77 oc	1.83 ic	---	---	48.74 s	12.93 s	---	1284.08	1.606	---	1349.19
10.00	1,339,173	219.00	64.13 oc	1.80 ic	---	---	48.91 s	13.22 s	---	1351.00	1.620	---	1416.55

...End

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	15.64	1	733	66,519	------	------	------	DA-1A
2	SCS Runoff	21.75	1	739	108,626	------	------	------	DA-2
3	SCS Runoff	78.17	1	761	594,545	------	------	------	DA-3A
4	SCS Runoff	3.142	1	742	17,949	------	------	------	DA-4
5	SCS Runoff	17.62	1	749	113,716	------	------	------	DA-5A
6	SCS Runoff	5.715	1	730	22,623	------	------	------	DA-1B
7	SCS Runoff	45.75	1	732	189,849	------	------	------	DA-3B
8	SCS Runoff	0.916	1	725	2,828	------	------	------	DA-3C
9	SCS Runoff	5.103	1	734	25,132	------	------	------	DA-5B
10	Combine	24.29	1	745	156,797	4, 5, 9	------	------	DA-4&5
11	Combine	41.40	1	735	197,768	1, 2, 6,	------	------	DA-1&2
12	Combine	92.34	1	755	787,221	3, 7, 8,	------	------	DA-3
13	Combine	151.11	1	740	1,141,785	10, 11, 12	------	------	George Field Park
14	Reservoir	49.96	1	808	1,118,109	13	215.59	363,530	George Field Pond

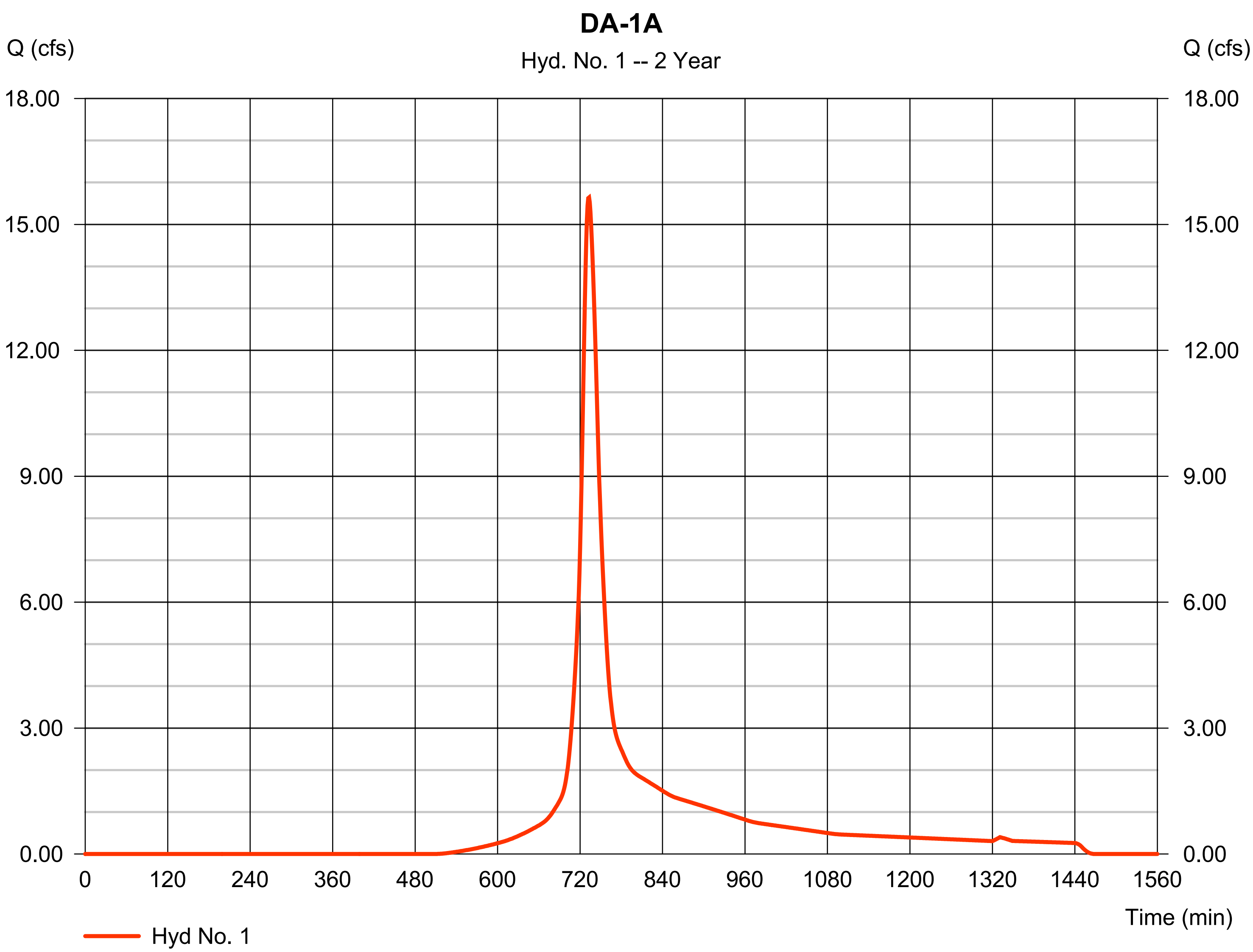
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 15.64 cfs
Storm frequency	= 2 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 66,519 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



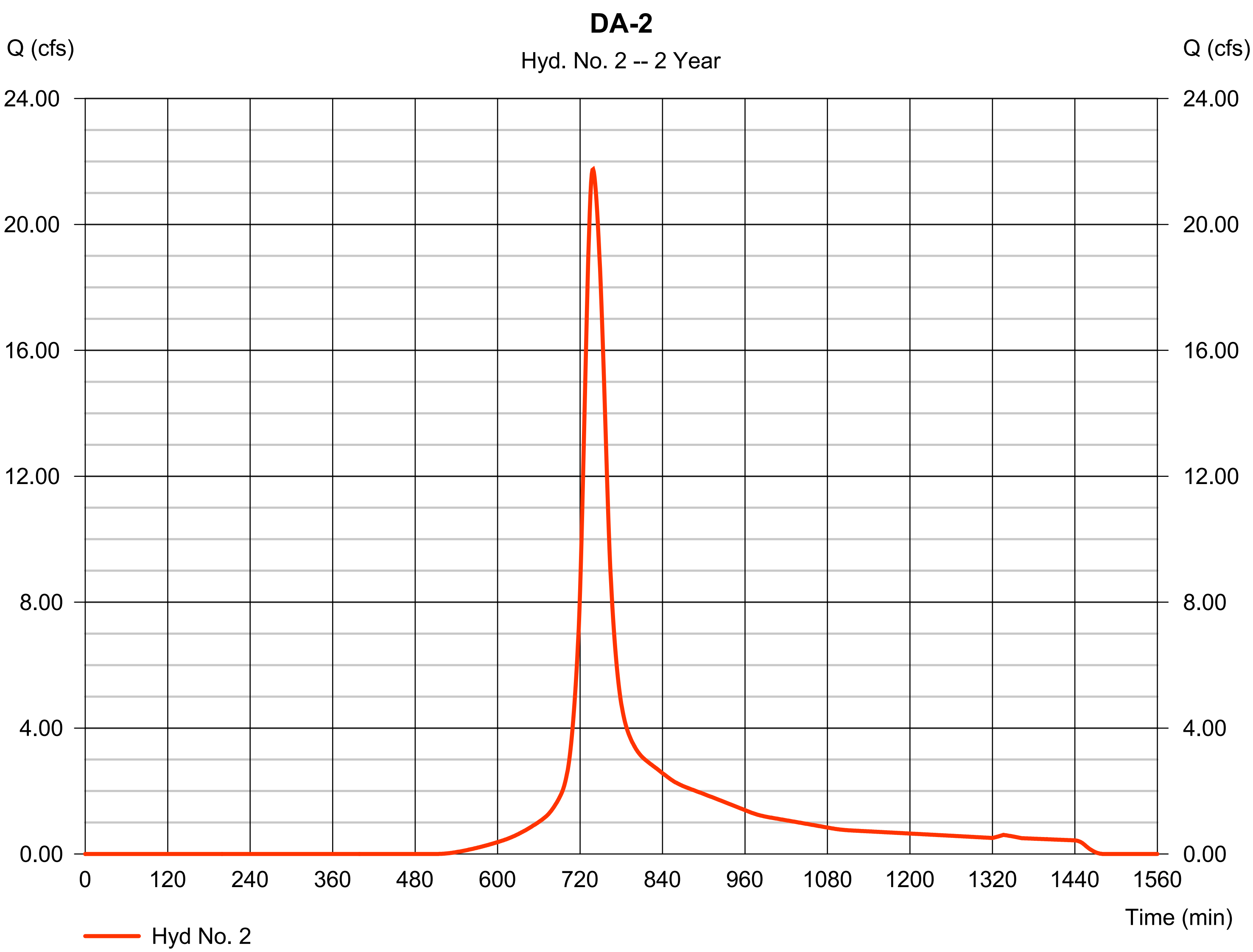
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 21.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 108,626 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

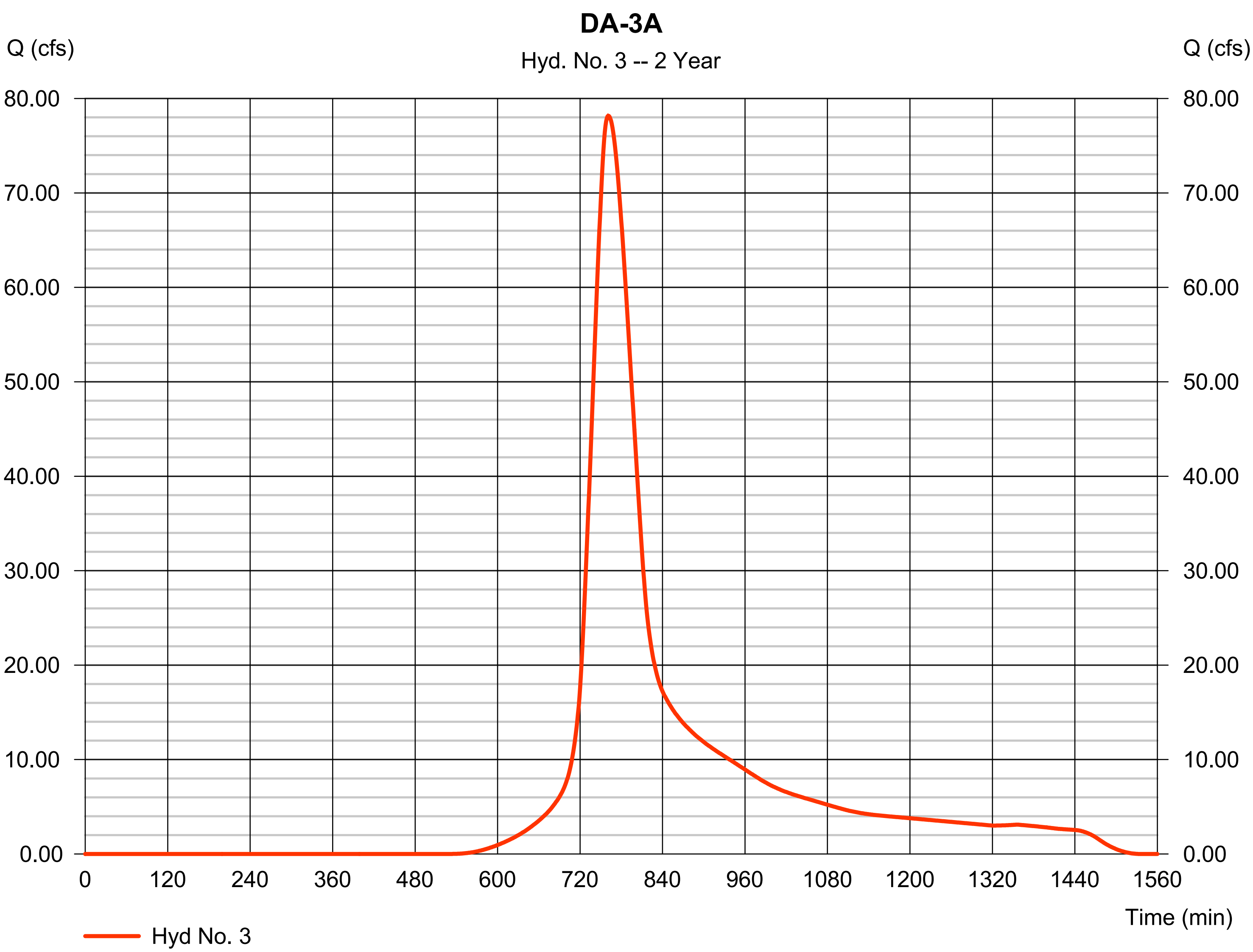
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 78.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 594,545 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



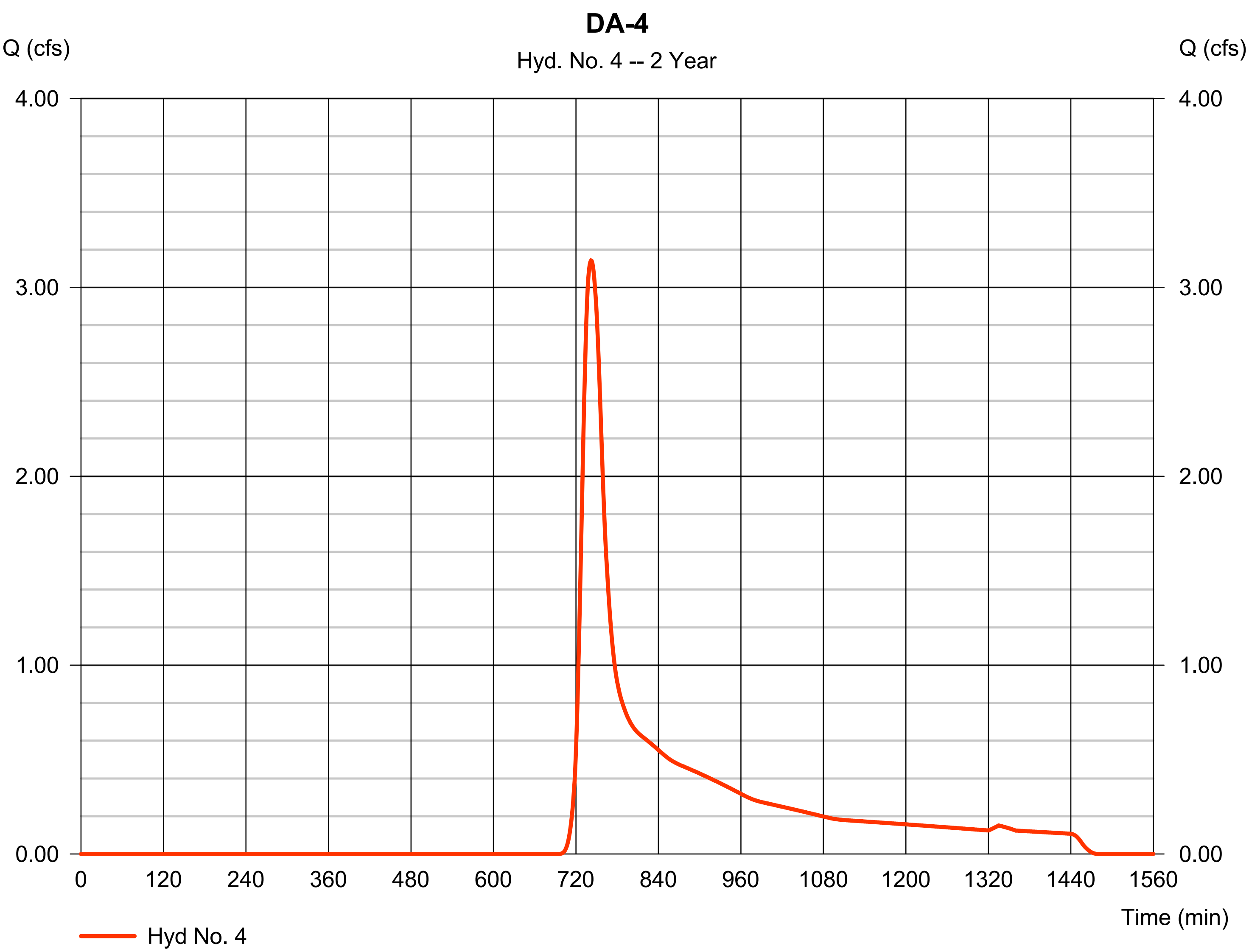
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 3.142 cfs
Storm frequency	= 2 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 17,949 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



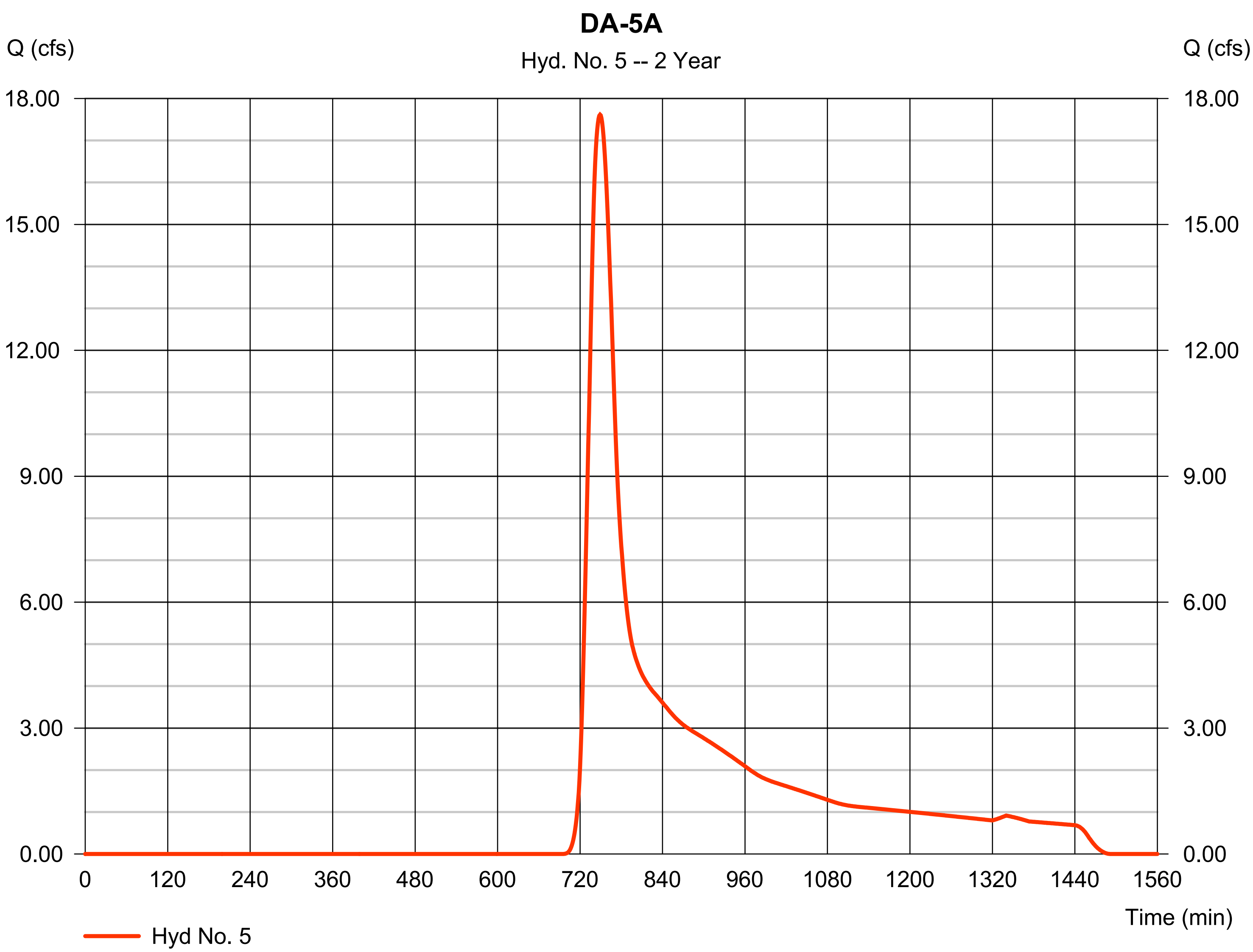
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 17.62 cfs
Storm frequency	= 2 yrs	Time to peak	= 749 min
Time interval	= 1 min	Hyd. volume	= 113,716 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



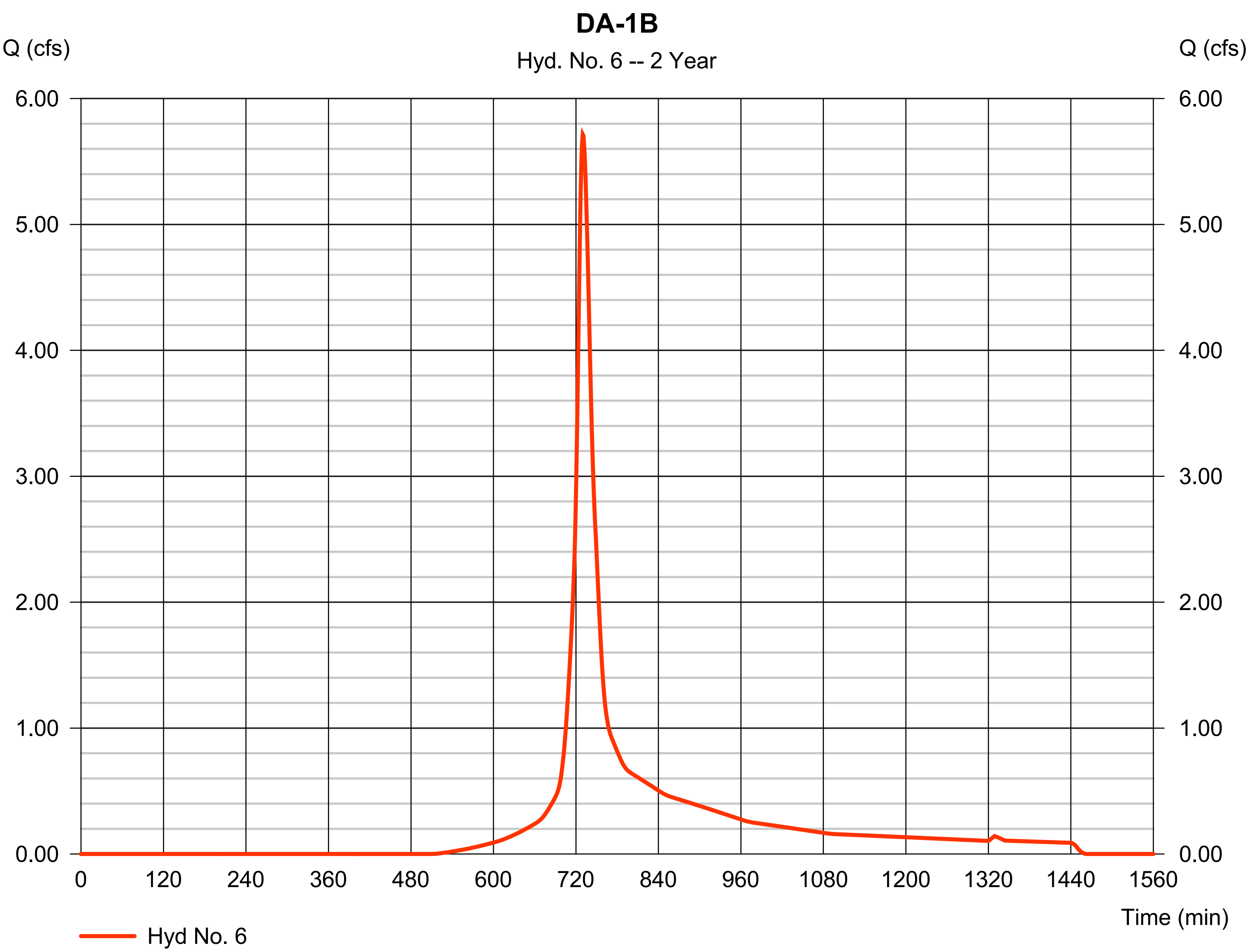
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.715 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 22,623 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



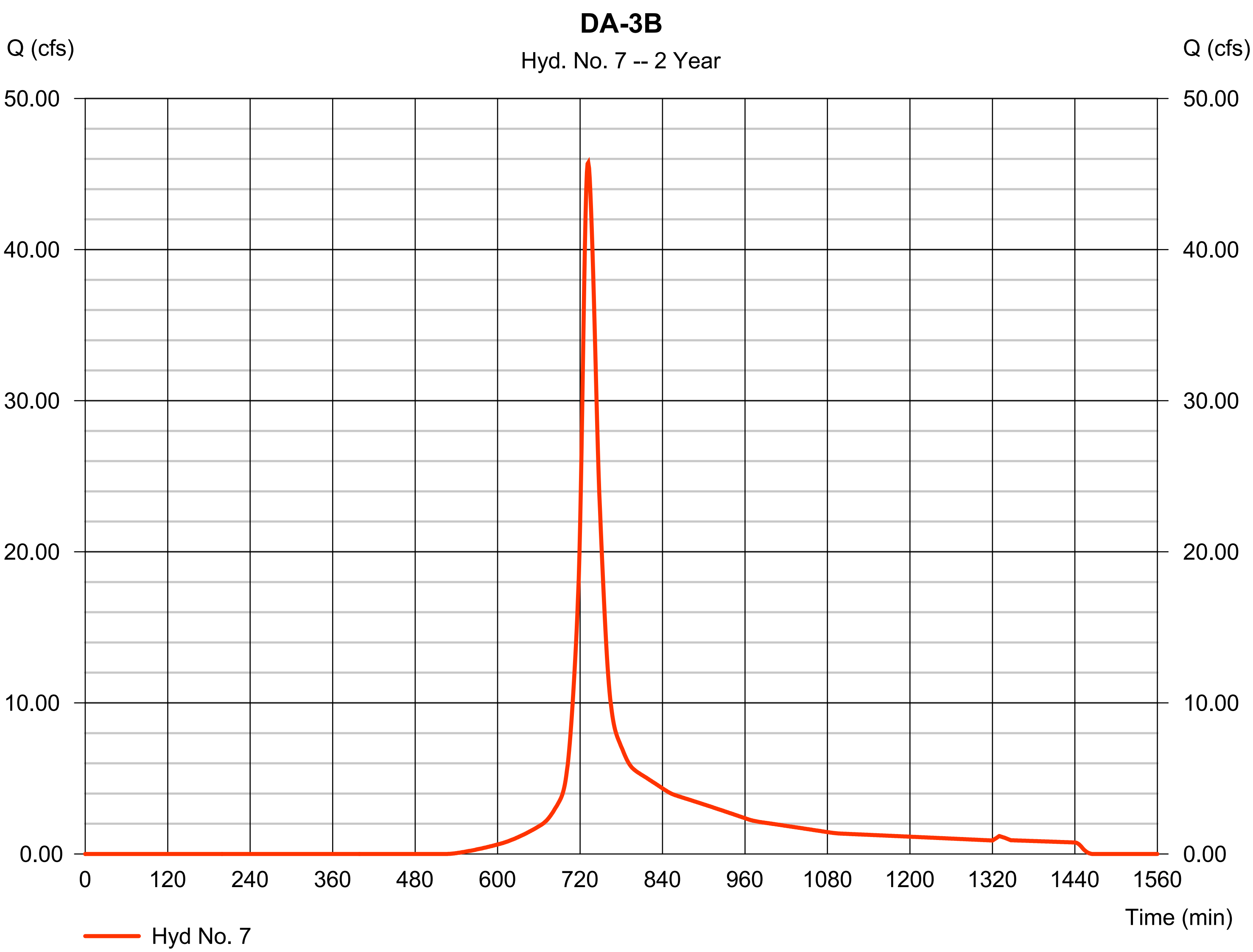
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 45.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 189,849 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



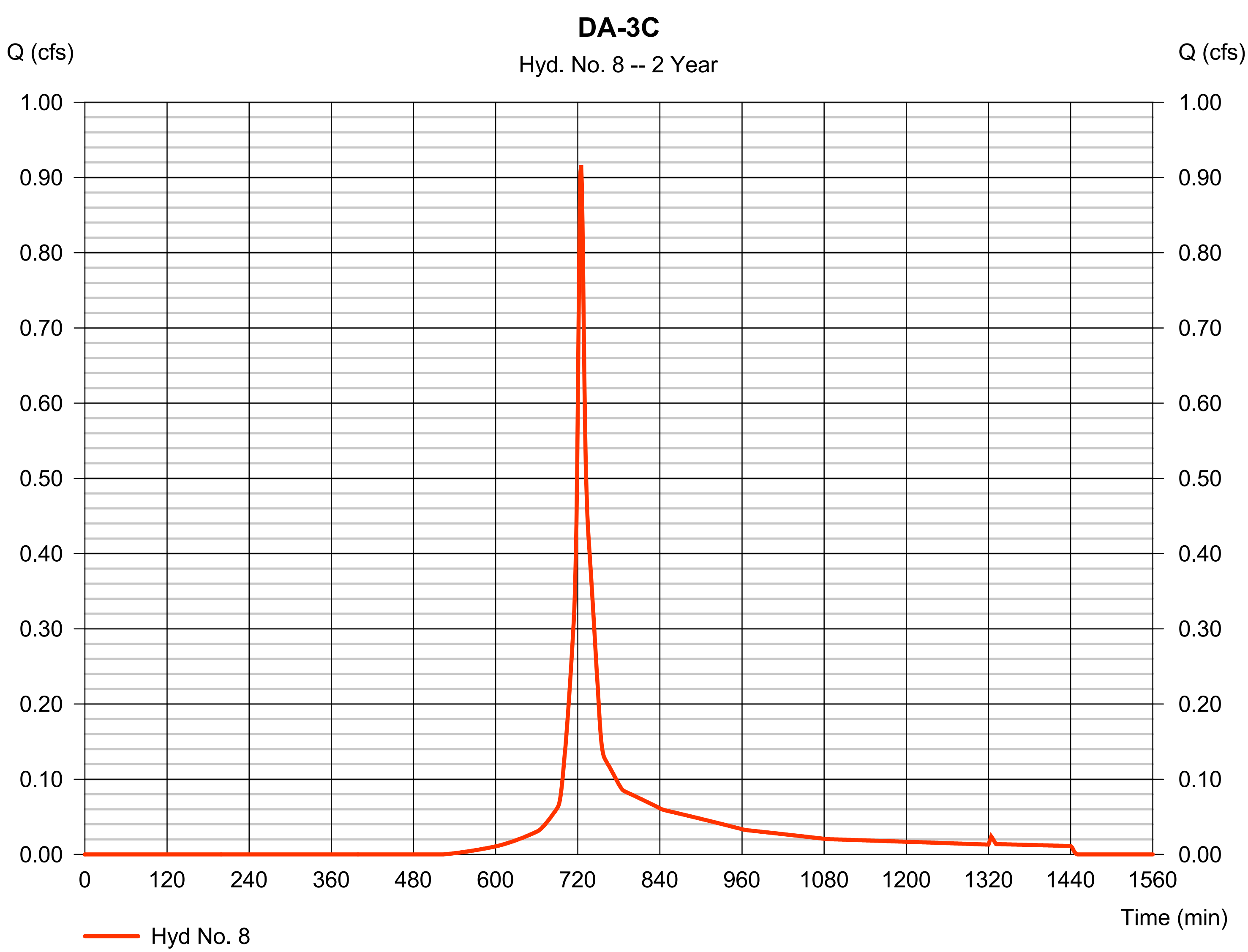
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.916 cfs
Storm frequency	= 2 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 2,828 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



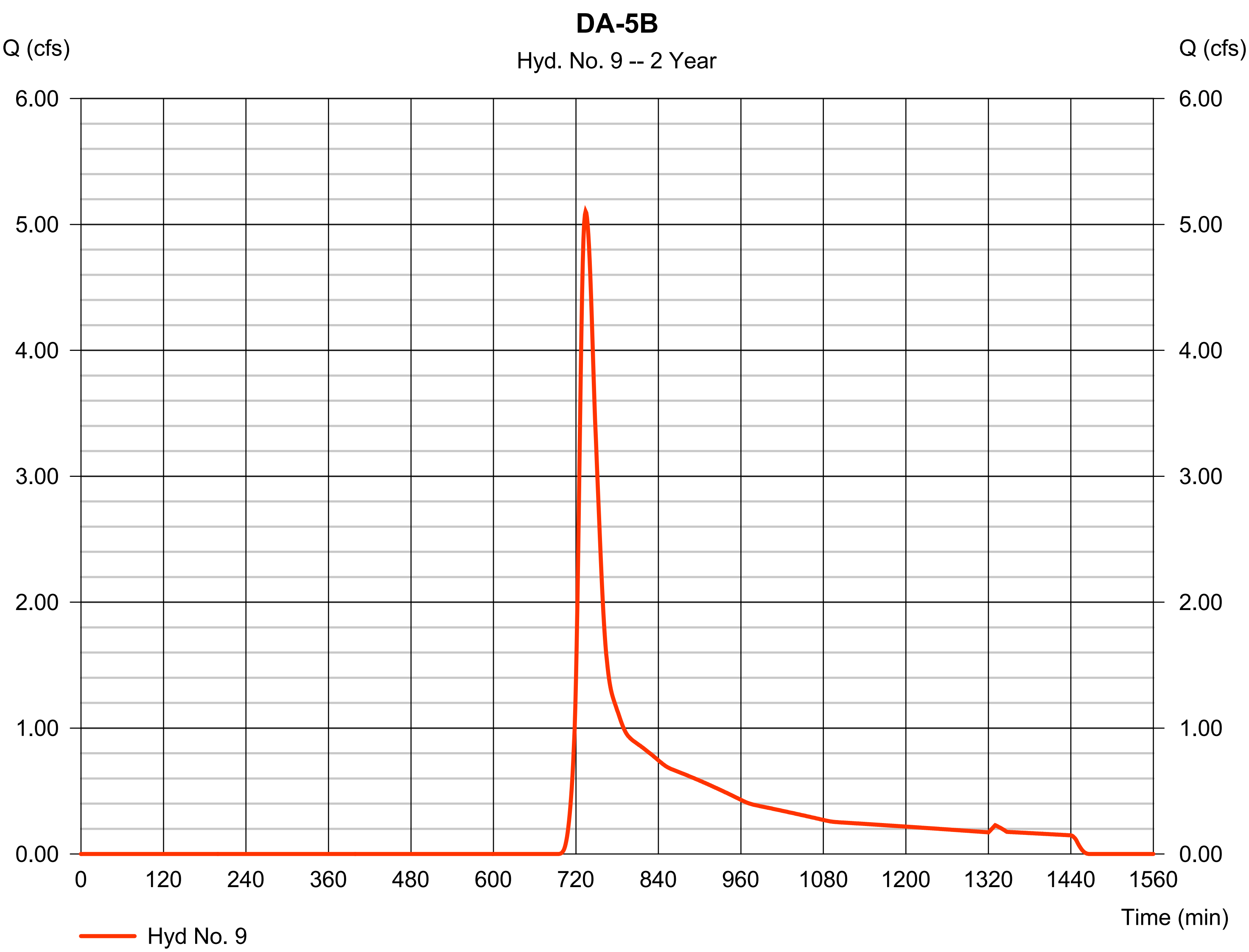
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.103 cfs
Storm frequency	= 2 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 25,132 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

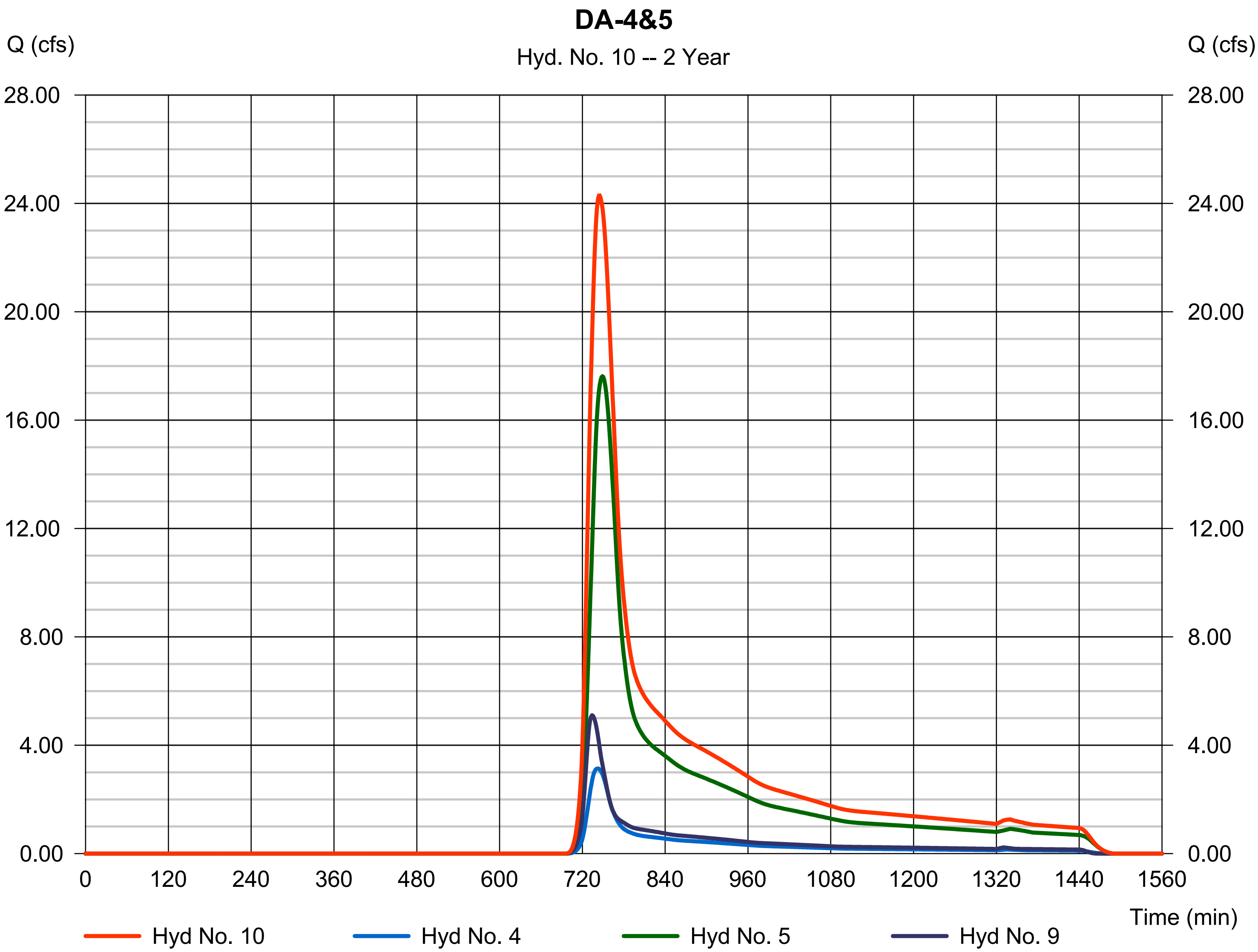


Hydrograph Report

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 24.29 cfs
Storm frequency	= 2 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 156,797 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac

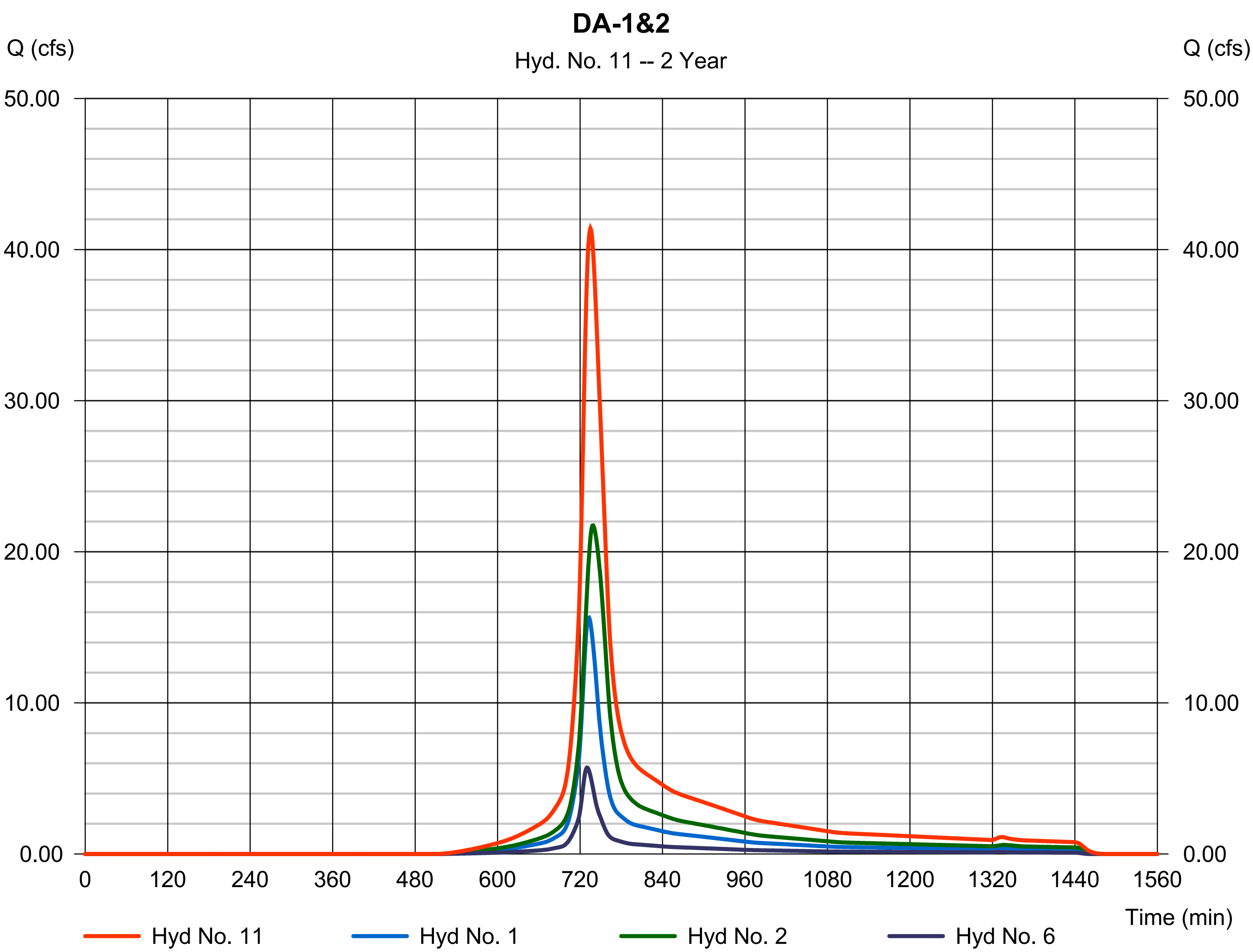


Hydrograph Report

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 41.40 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 197,768 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac

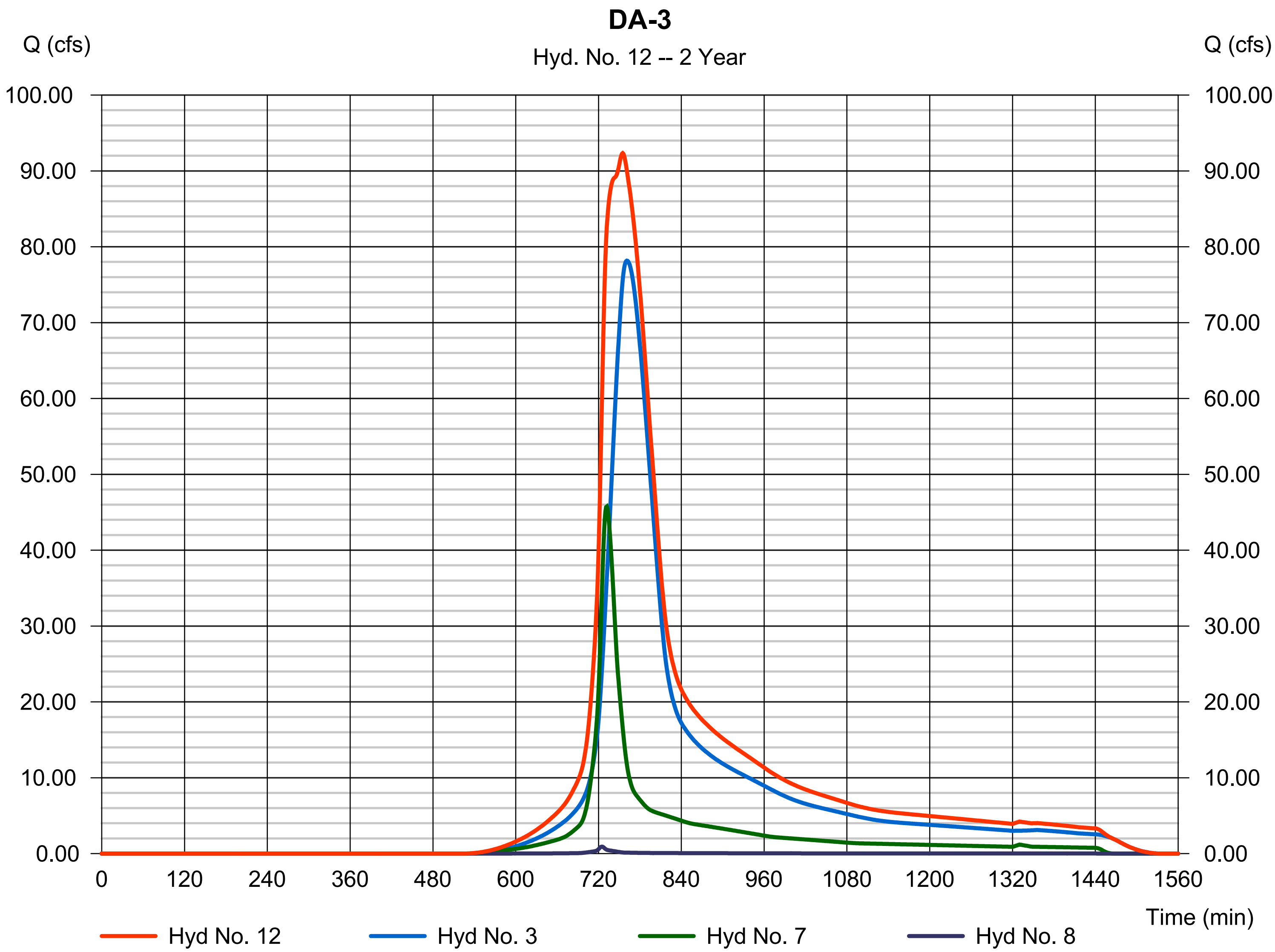


Hydrograph Report

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 92.34 cfs
Storm frequency	= 2 yrs	Time to peak	= 755 min
Time interval	= 1 min	Hyd. volume	= 787,221 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



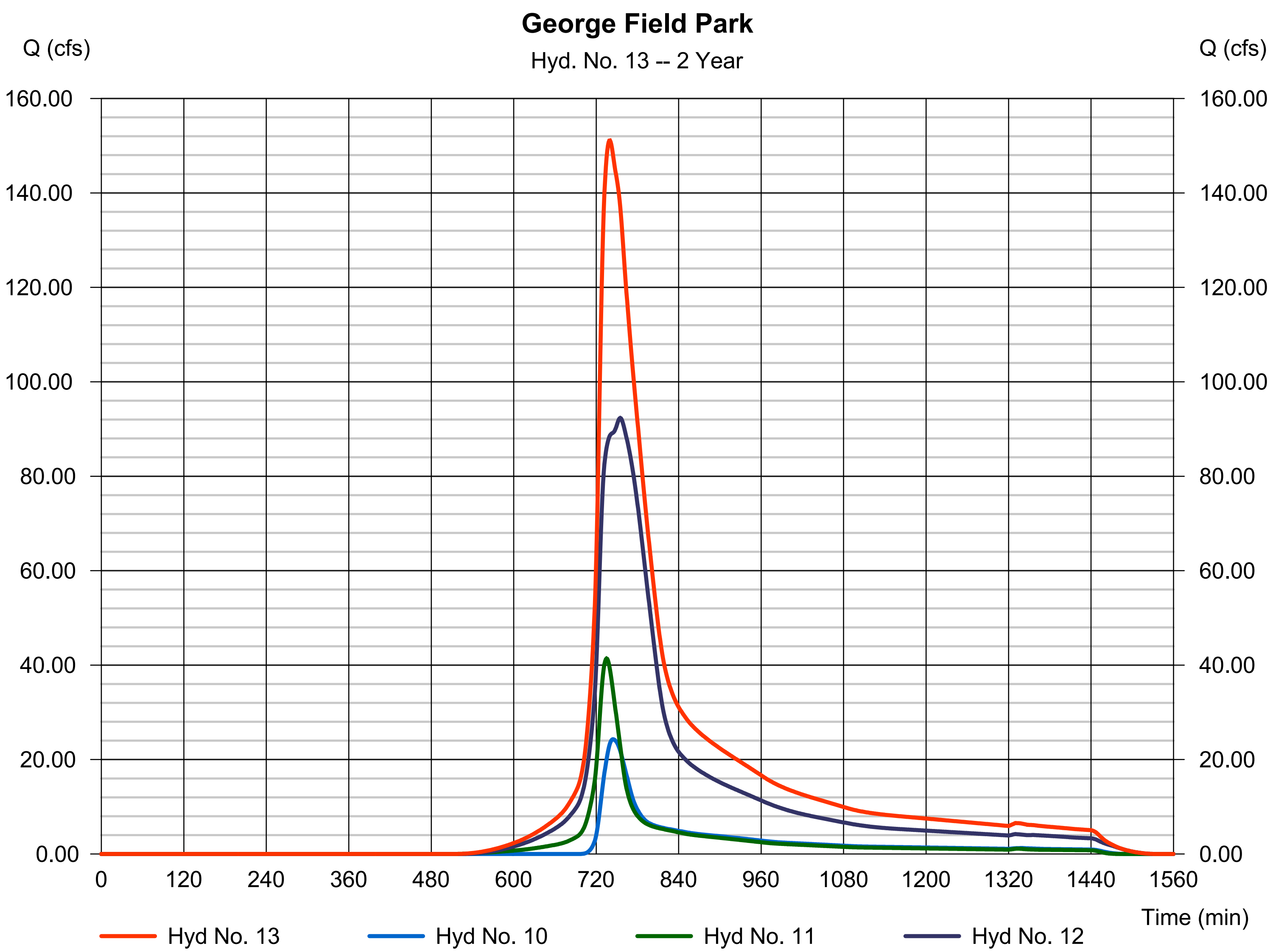
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 151.11 cfs
Storm frequency	= 2 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 1,141,785 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

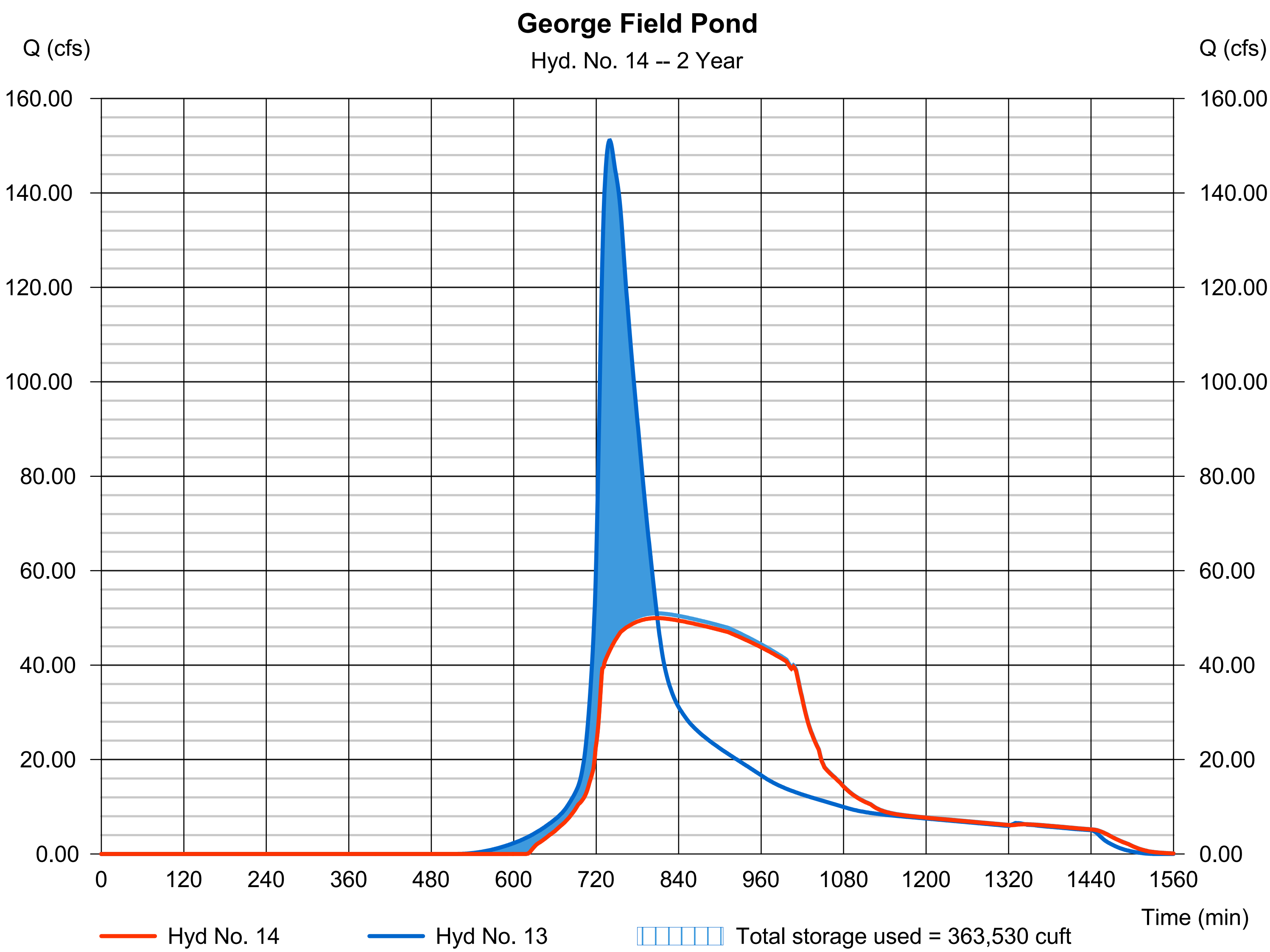
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 49.96 cfs
Storm frequency	= 2 yrs	Time to peak	= 808 min
Time interval	= 1 min	Hyd. volume	= 1,118,109 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 215.59 ft
Reservoir name	= George Field Park	Max. Storage	= 363,530 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	23.30	1	732	98,891	------	------	------	DA-1A
2	SCS Runoff	32.42	1	738	161,489	------	------	------	DA-2
3	SCS Runoff	118.05	1	760	891,484	------	------	------	DA-3A
4	SCS Runoff	6.143	1	739	31,981	------	------	------	DA-4
5	SCS Runoff	34.39	1	746	202,611	------	------	------	DA-5A
6	SCS Runoff	8.512	1	730	33,632	------	------	------	DA-1B
7	SCS Runoff	68.88	1	731	284,667	------	------	------	DA-3B
8	SCS Runoff	1.375	1	725	4,240	------	------	------	DA-3C
9	SCS Runoff	10.06	1	733	44,778	------	------	------	DA-5B
10	Combine	47.76	1	742	279,370	4, 5, 9	------	------	DA-4&5
11	Combine	61.68	1	735	294,012	1, 2, 6,	------	------	DA-1&2
12	Combine	139.11	1	755	1,180,391	3, 7, 8,	------	------	DA-3
13	Combine	240.46	1	739	1,753,773	10, 11, 12	------	------	George Field Park
14	Reservoir	119.96	1	786	1,721,953	13	216.40	555,054	George Field Pond

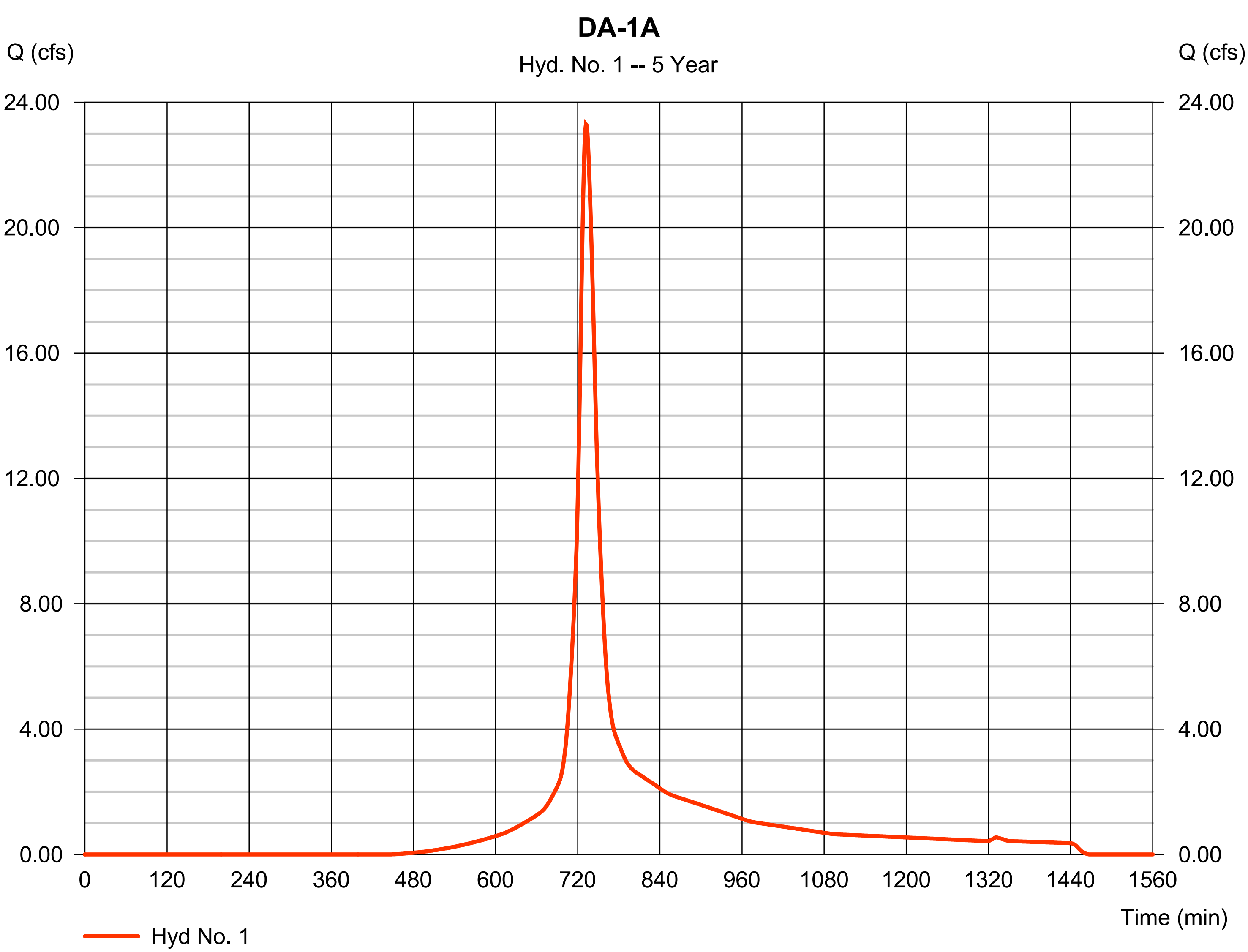
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 23.30 cfs
Storm frequency	= 5 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 98,891 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



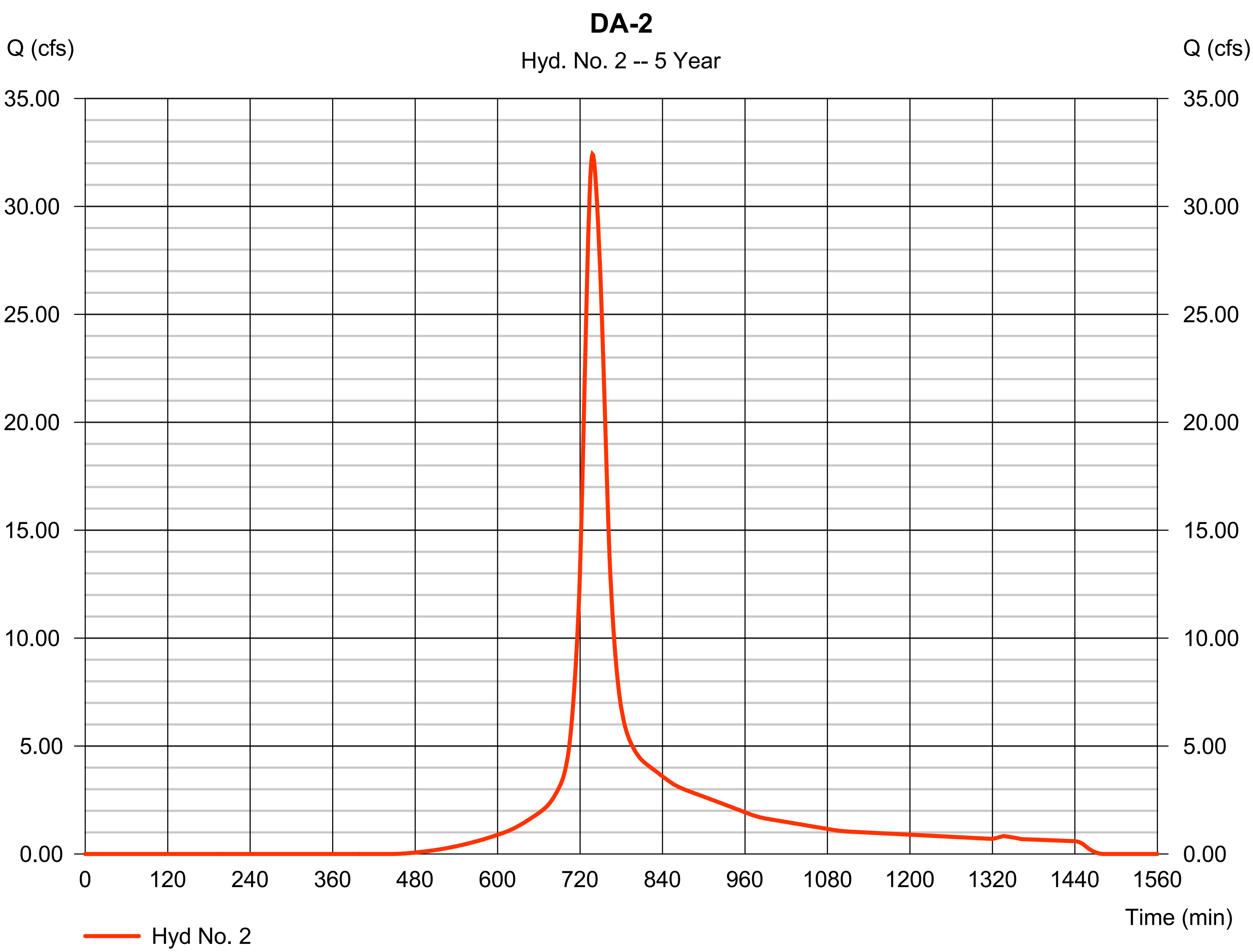
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 32.42 cfs
Storm frequency	= 5 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 161,489 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

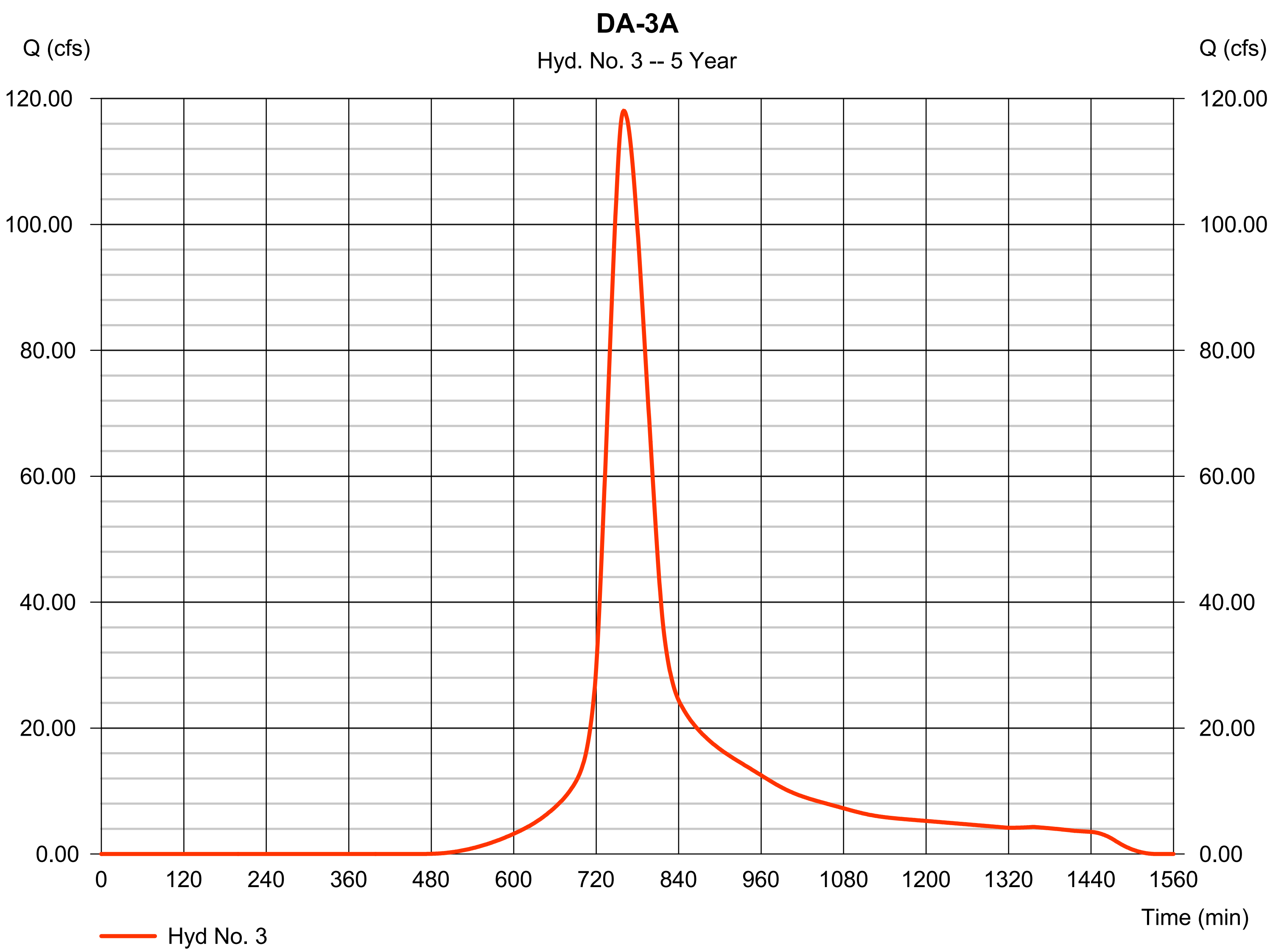
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 118.05 cfs
Storm frequency	= 5 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 891,484 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



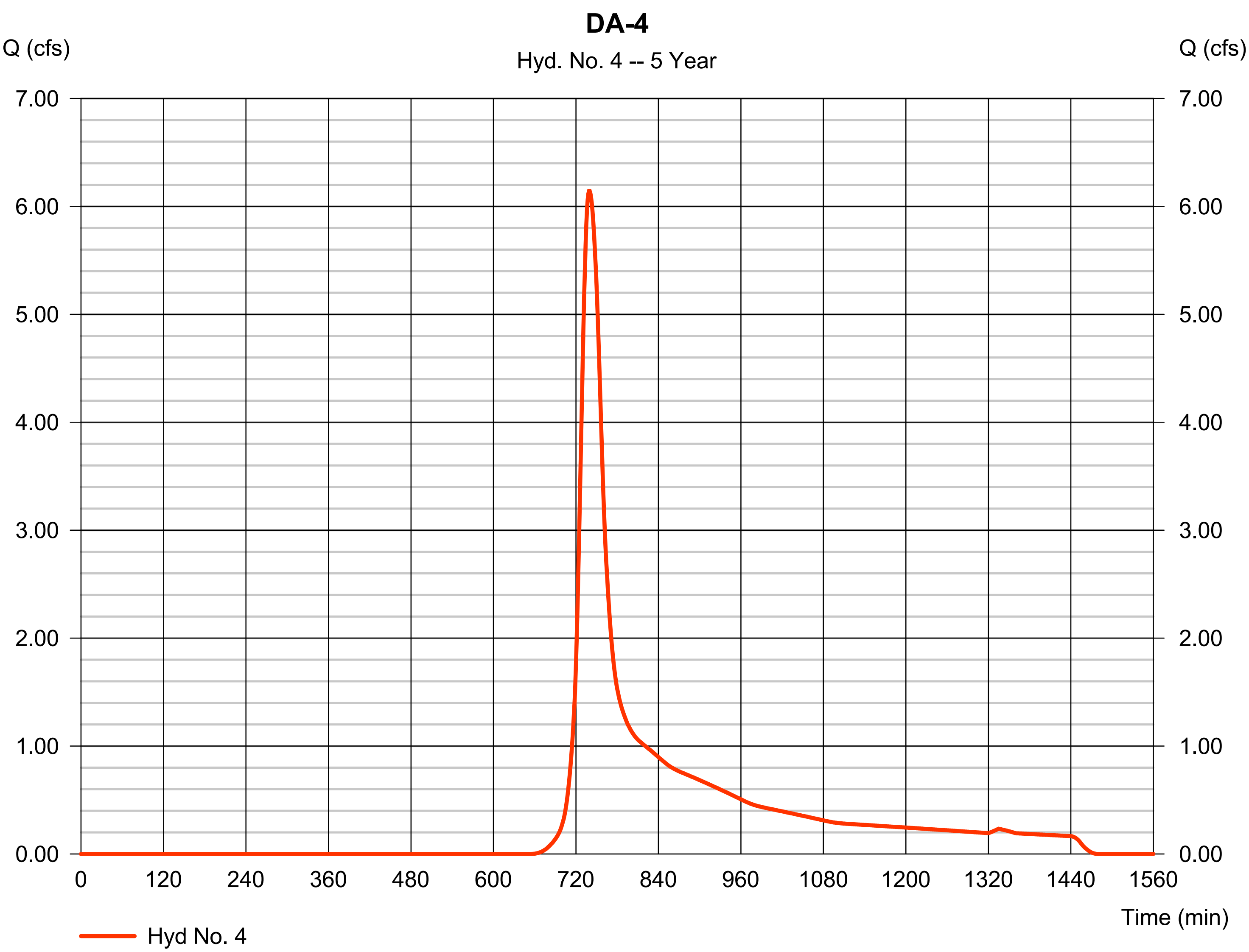
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.143 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 31,981 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



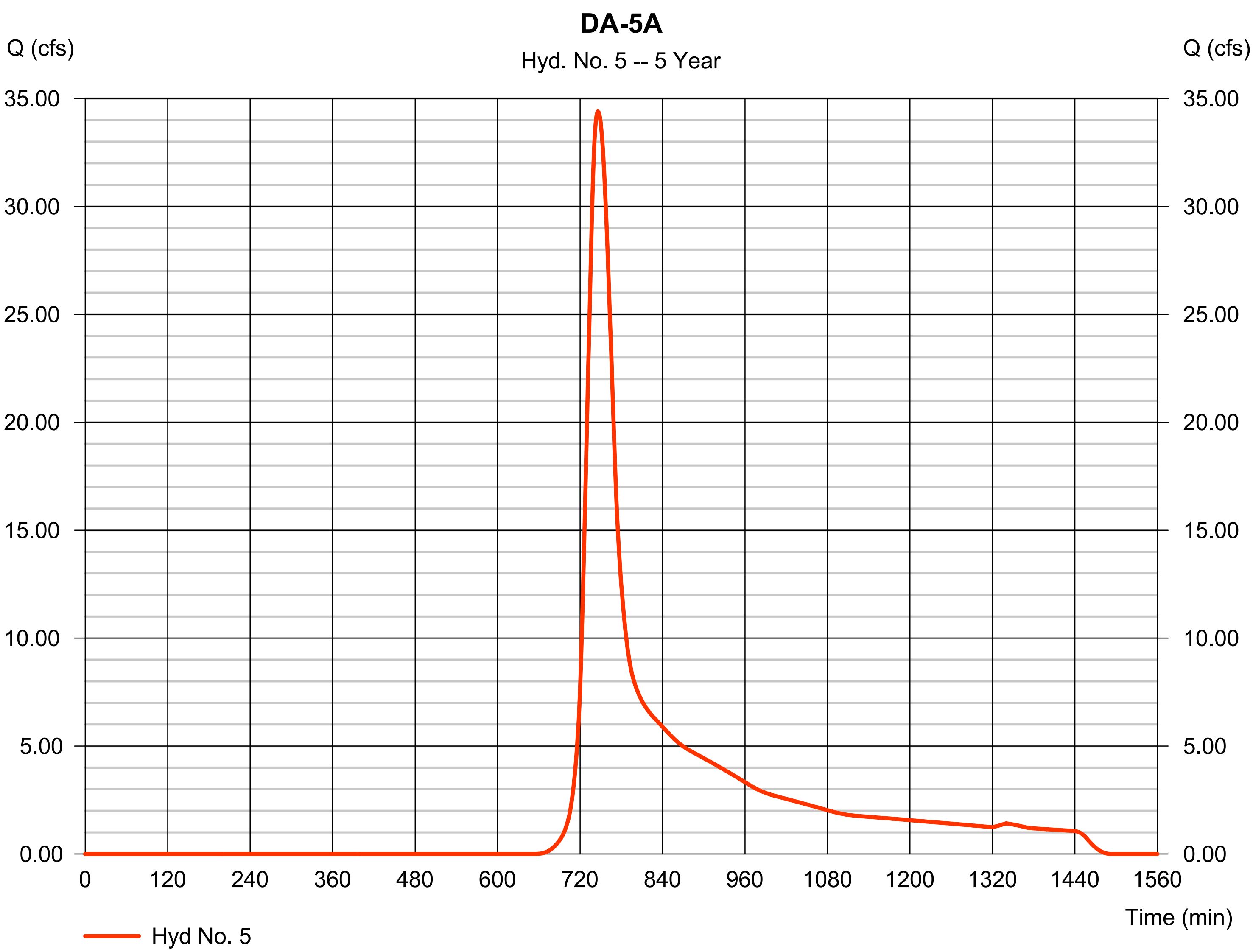
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 34.39 cfs
Storm frequency	= 5 yrs	Time to peak	= 746 min
Time interval	= 1 min	Hyd. volume	= 202,611 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



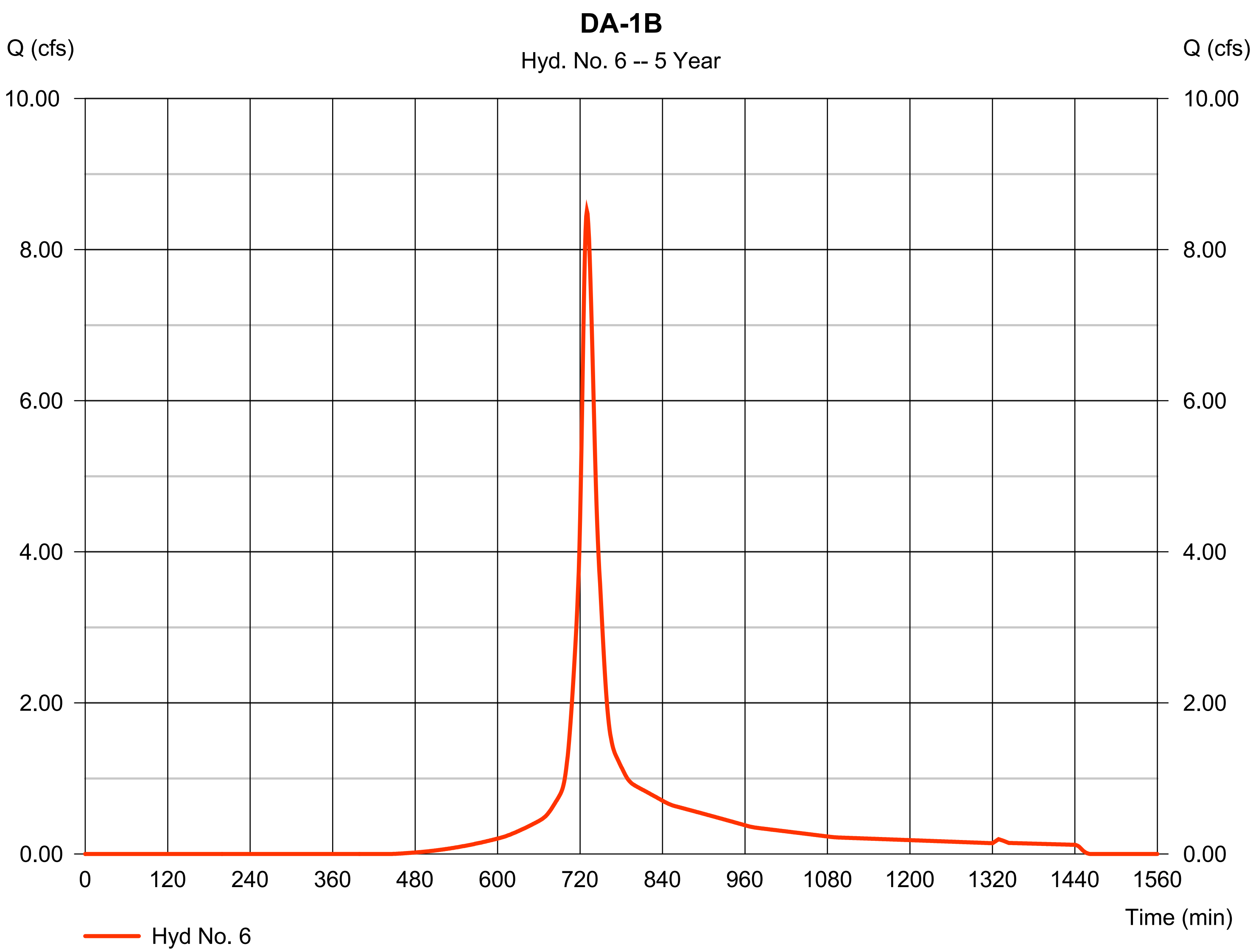
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 8.512 cfs
Storm frequency	= 5 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 33,632 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



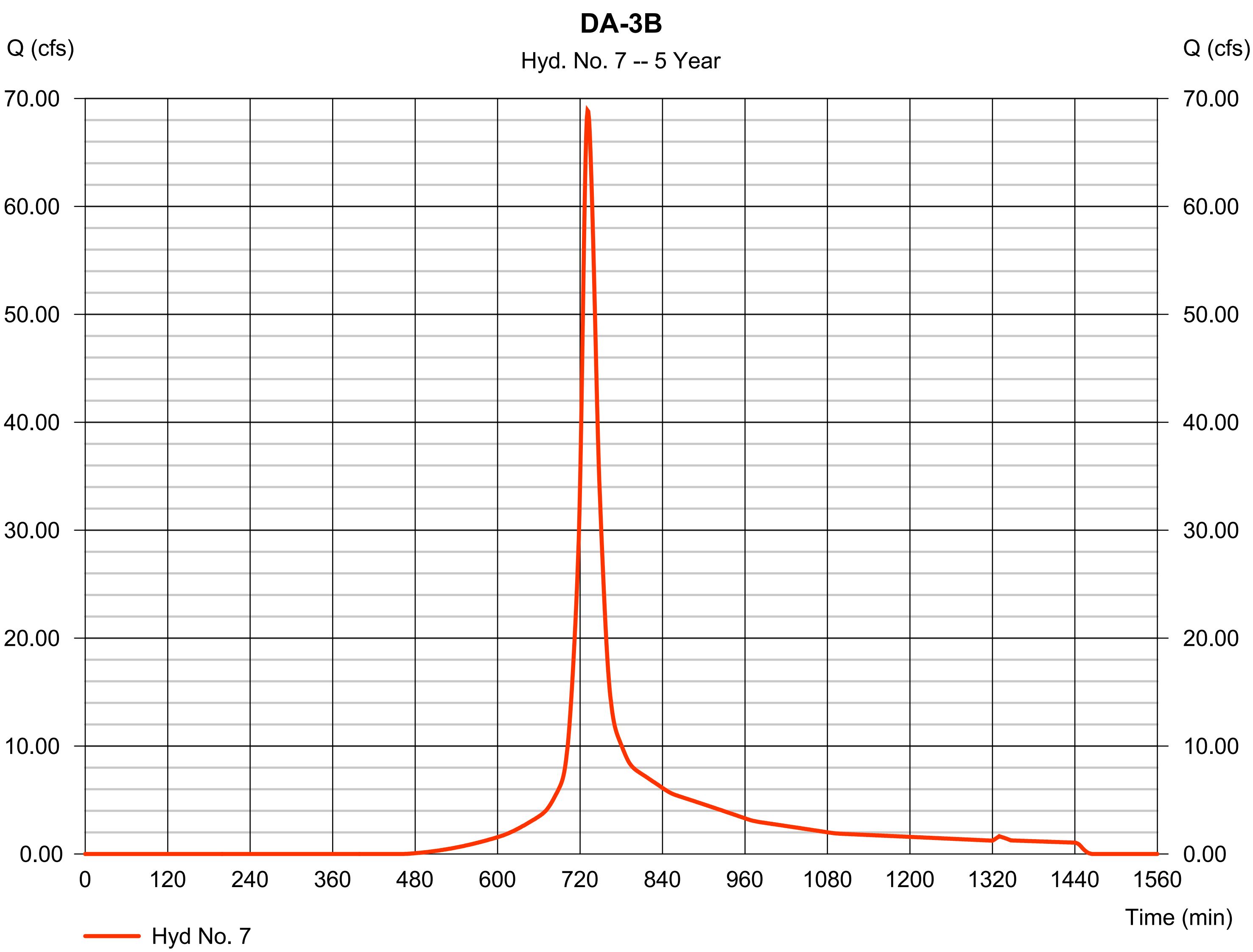
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 68.88 cfs
Storm frequency	= 5 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 284,667 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



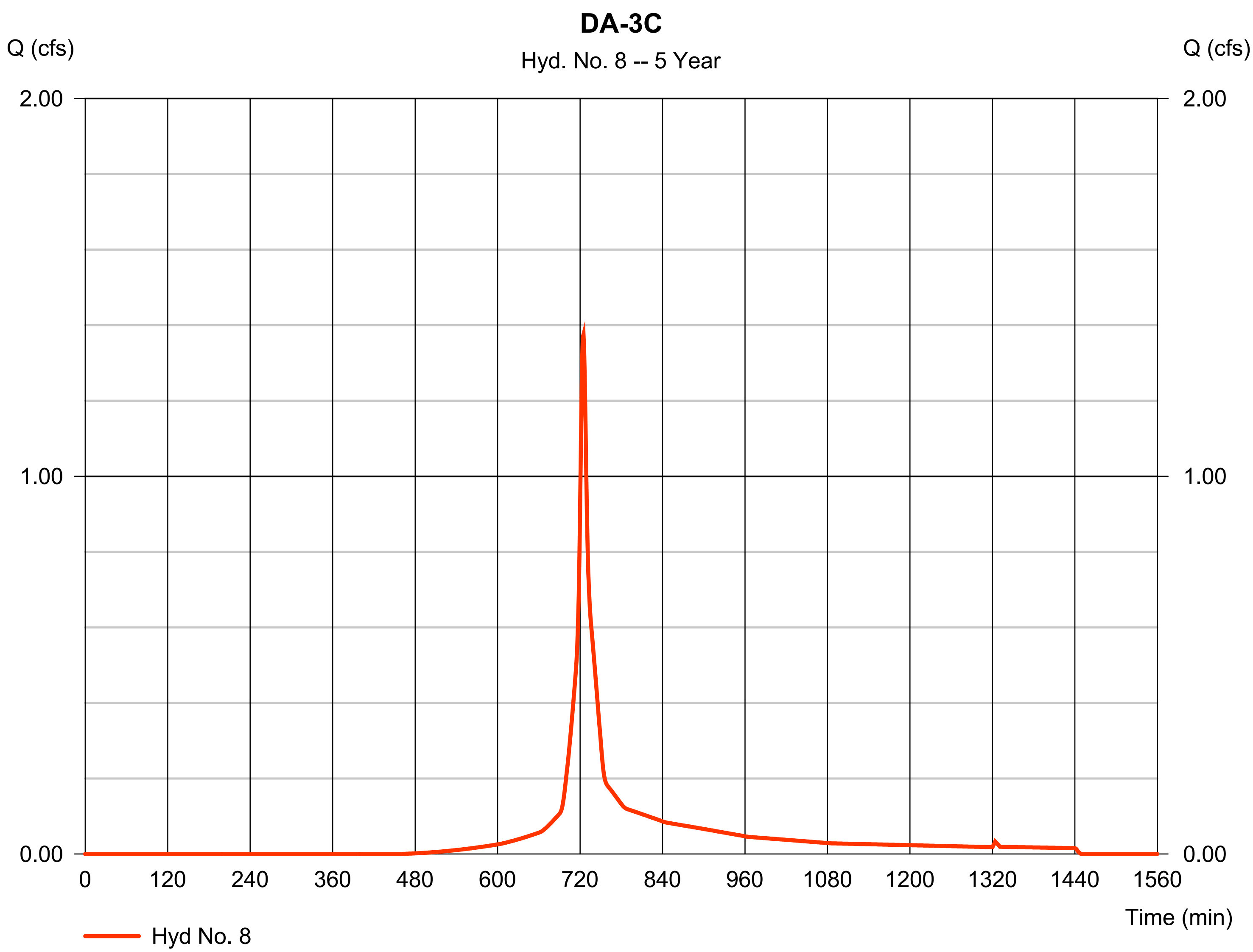
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.375 cfs
Storm frequency	= 5 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 4,240 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



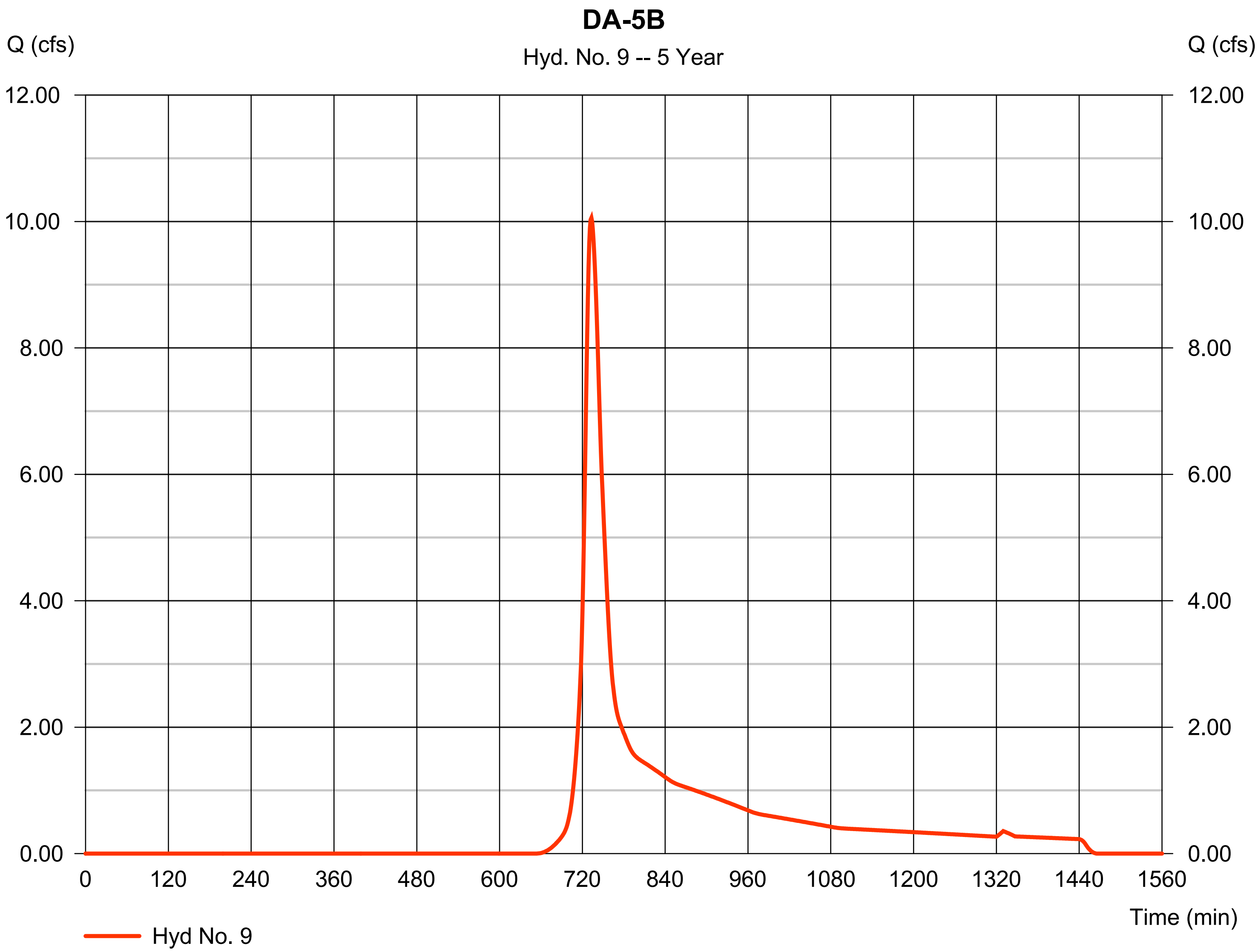
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.06 cfs
Storm frequency	= 5 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 44,778 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



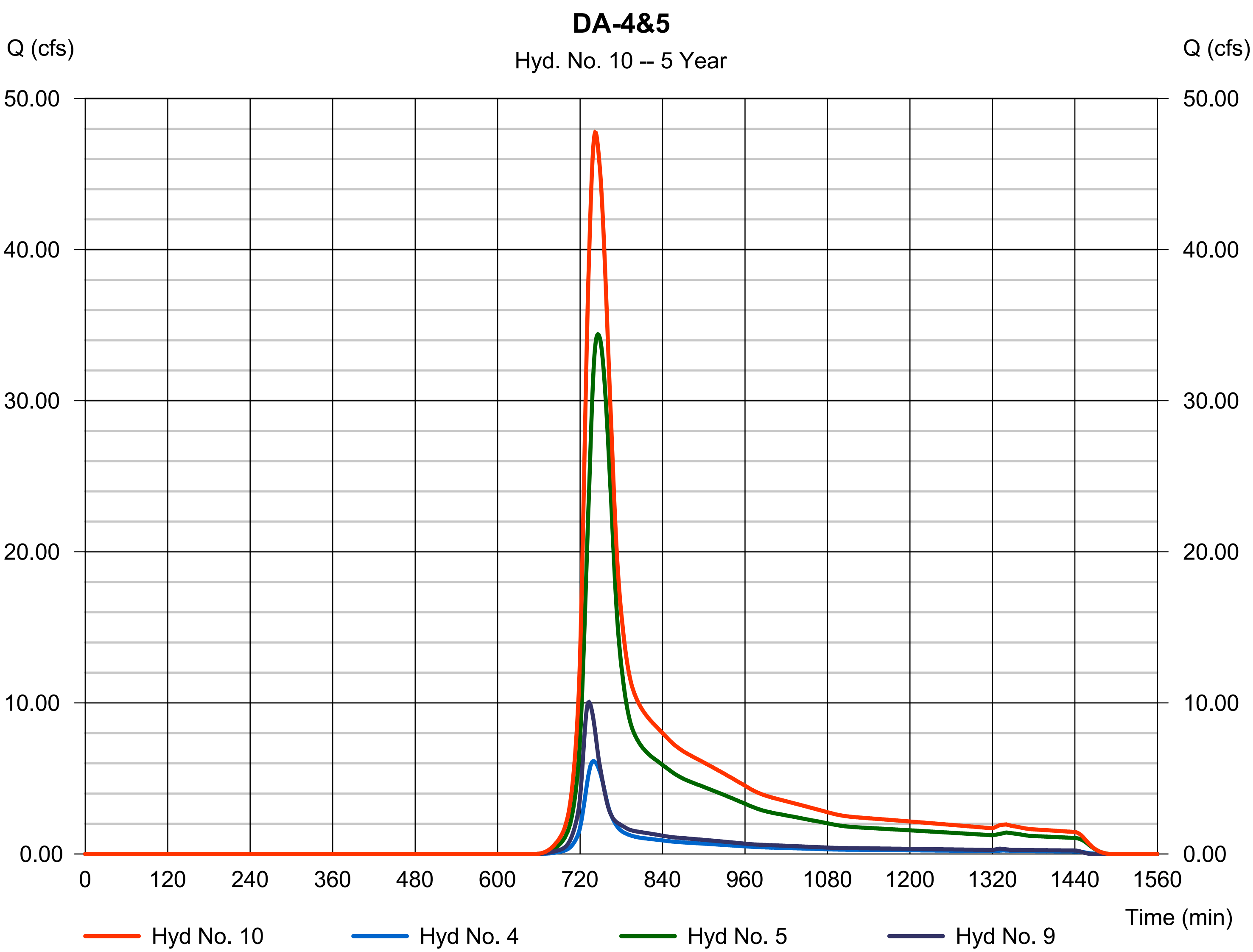
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 47.76 cfs
Storm frequency	= 5 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 279,370 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



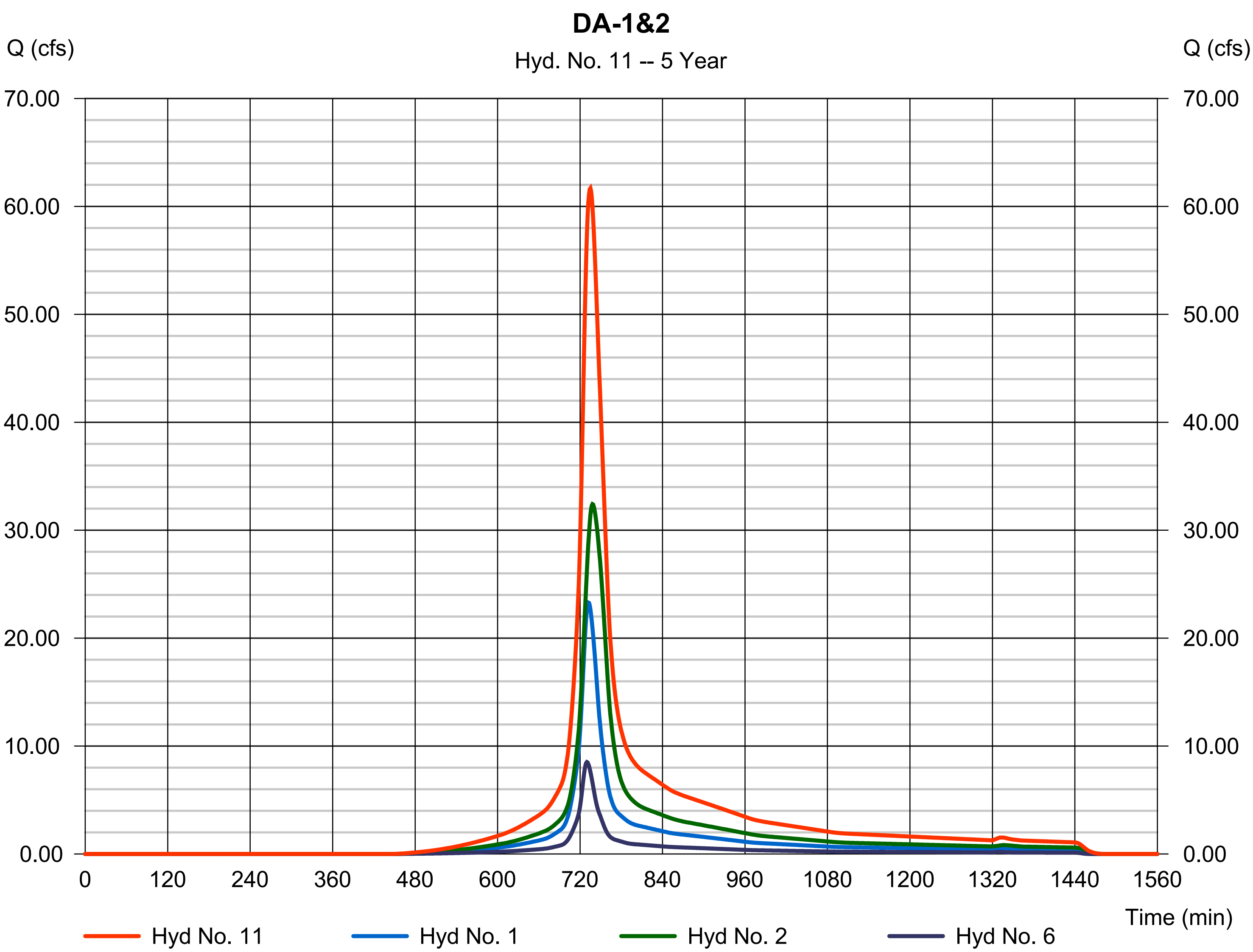
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 61.68 cfs
Storm frequency	= 5 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 294,012 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



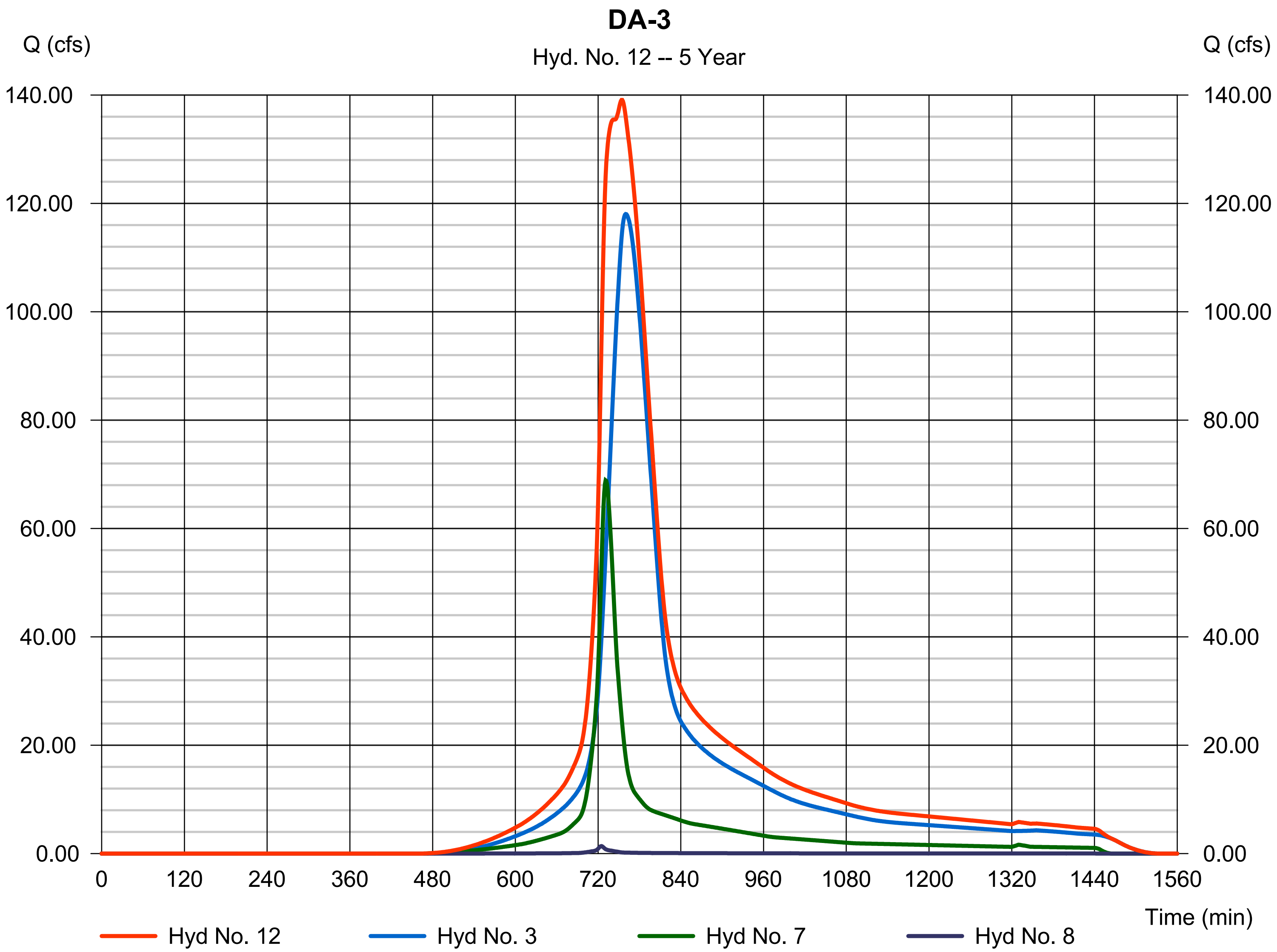
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 139.11 cfs
Storm frequency	= 5 yrs	Time to peak	= 755 min
Time interval	= 1 min	Hyd. volume	= 1,180,391 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



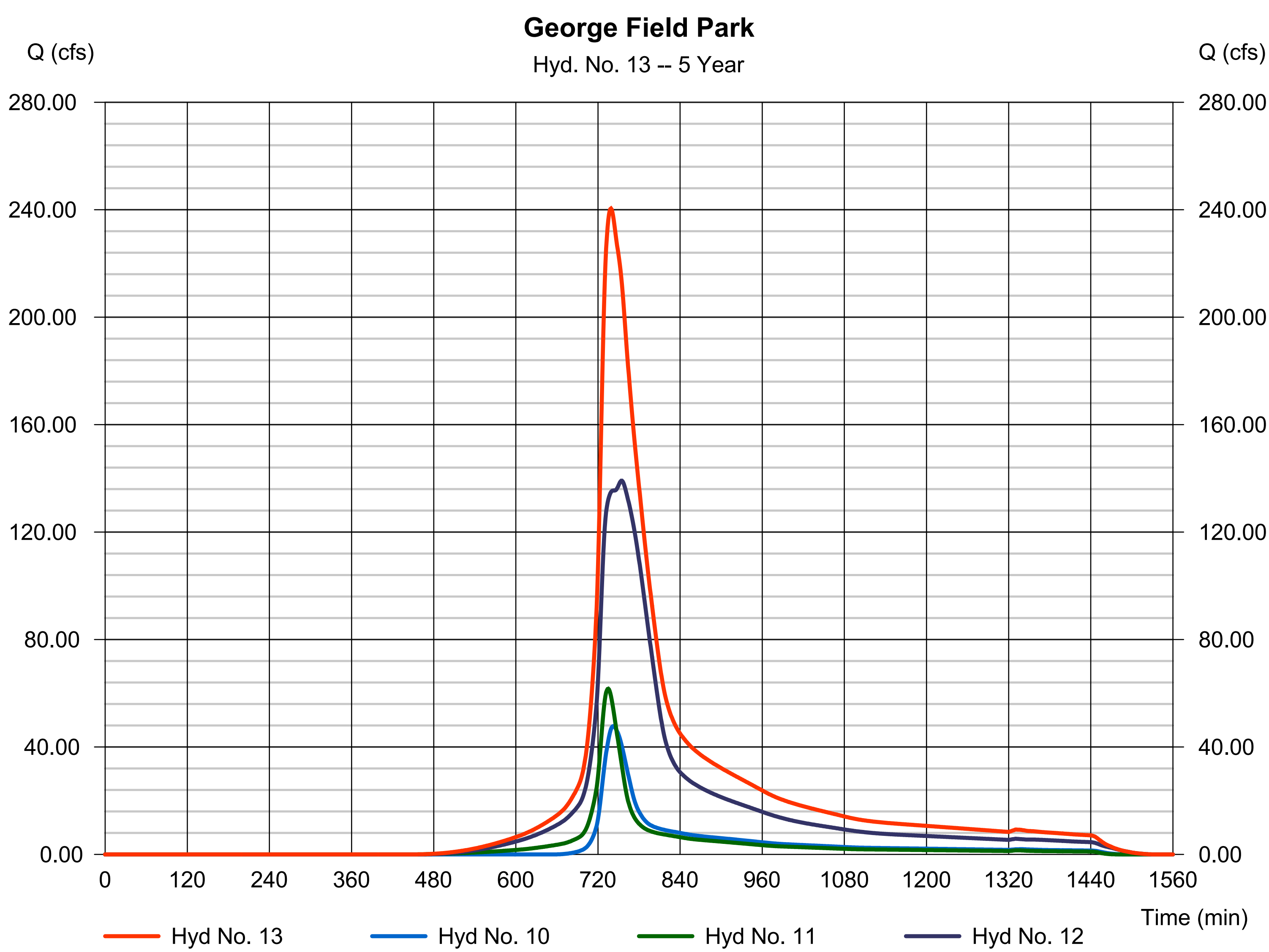
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 240.46 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 1,753,773 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

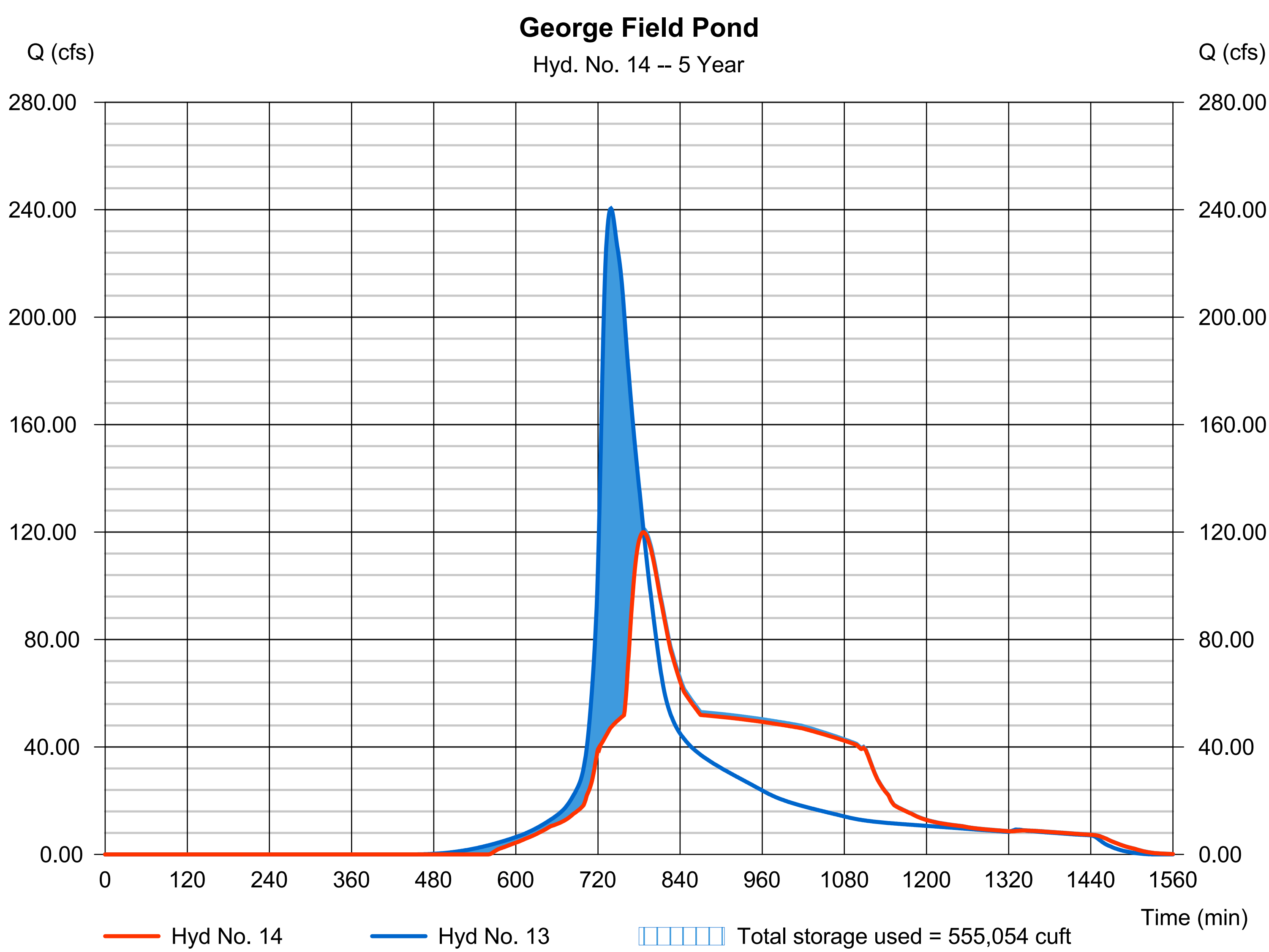
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 119.96 cfs
Storm frequency	= 5 yrs	Time to peak	= 786 min
Time interval	= 1 min	Hyd. volume	= 1,721,953 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 216.40 ft
Reservoir name	= George Field Park	Max. Storage	= 555,054 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	29.85	1	732	127,072	------	------	------	DA-1A
2	SCS Runoff	41.55	1	738	207,508	------	------	------	DA-2
3	SCS Runoff	152.42	1	760	1,151,029	------	------	------	DA-3A
4	SCS Runoff	9.008	1	739	45,306	------	------	------	DA-4
5	SCS Runoff	50.40	1	745	287,030	------	------	------	DA-5A
6	SCS Runoff	10.90	1	730	43,217	------	------	------	DA-1B
7	SCS Runoff	88.79	1	731	367,545	------	------	------	DA-3B
8	SCS Runoff	1.768	1	725	5,474	------	------	------	DA-3C
9	SCS Runoff	14.75	1	732	63,435	------	------	------	DA-5B
10	Combine	70.04	1	742	395,772	4, 5, 9	------	------	DA-4&5
11	Combine	79.01	1	735	377,796	1, 2, 6,	------	------	DA-1&2
12	Combine	179.37	1	754	1,524,048	3, 7, 8,	------	------	DA-3
13	Combine	319.41	1	738	2,297,616	10, 11, 12	------	------	George Field Park
14	Reservoir	203.72	1	772	2,262,048	13	216.69	628,248	George Field Pond

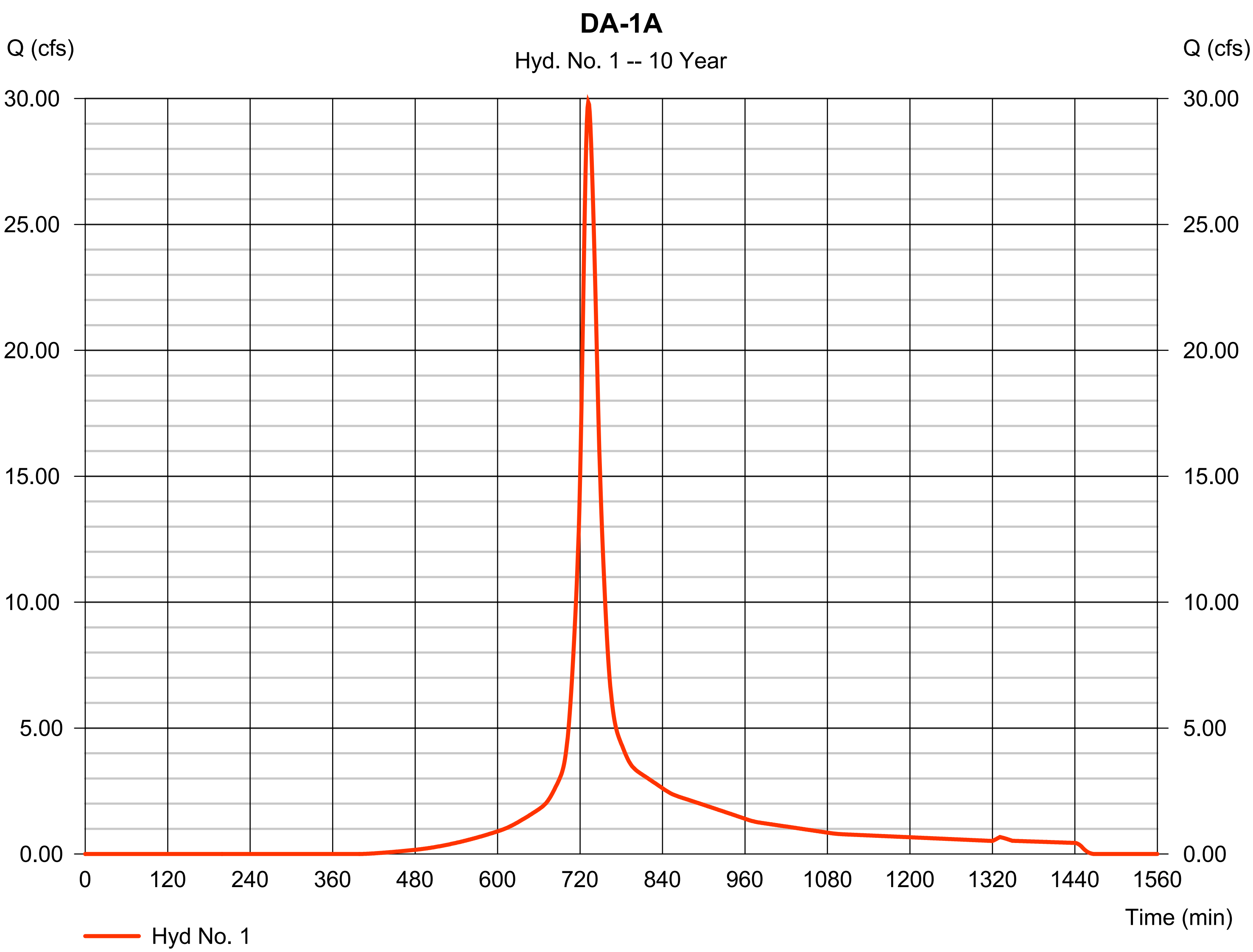
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 29.85 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 127,072 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

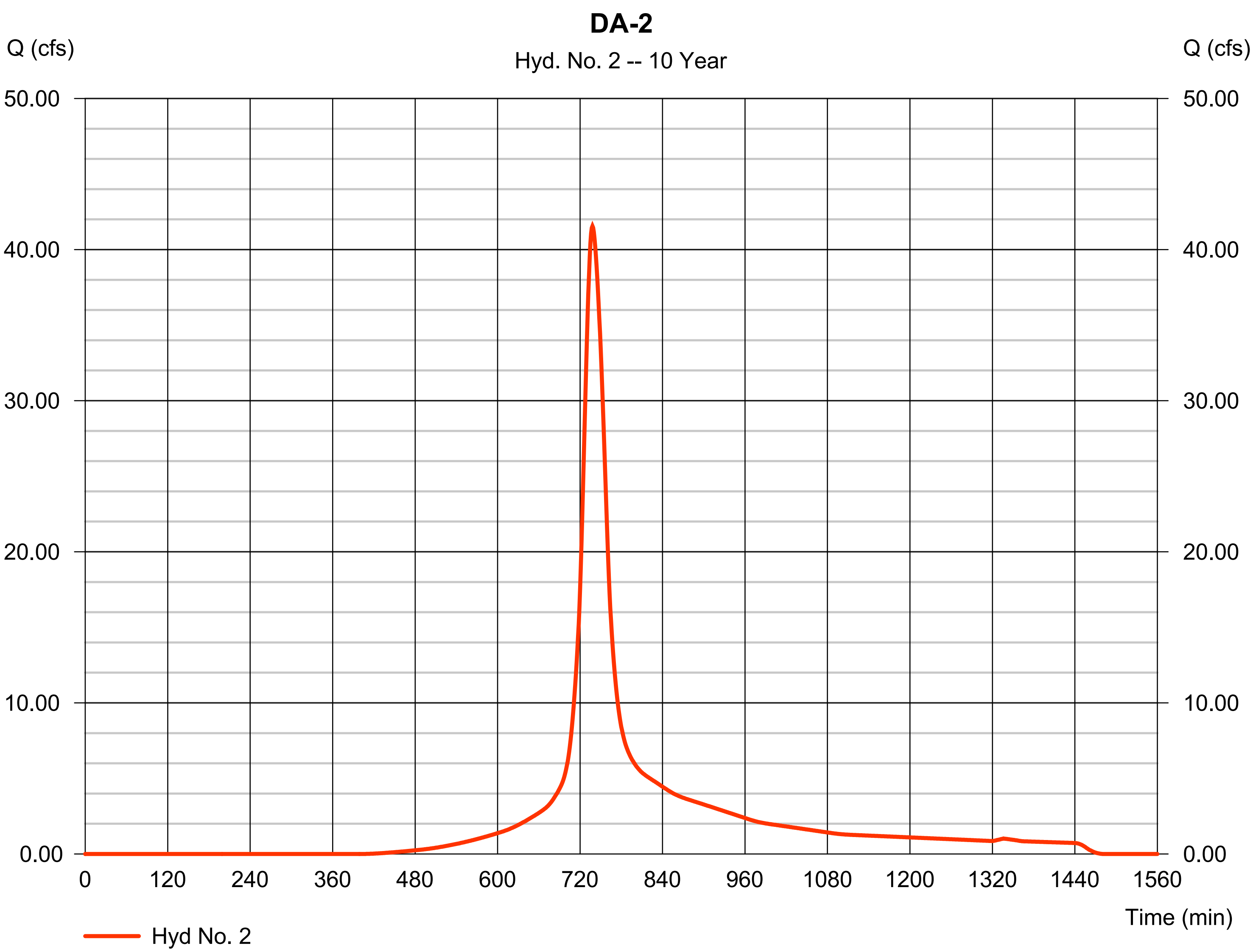


Hydrograph Report

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 41.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 207,508 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

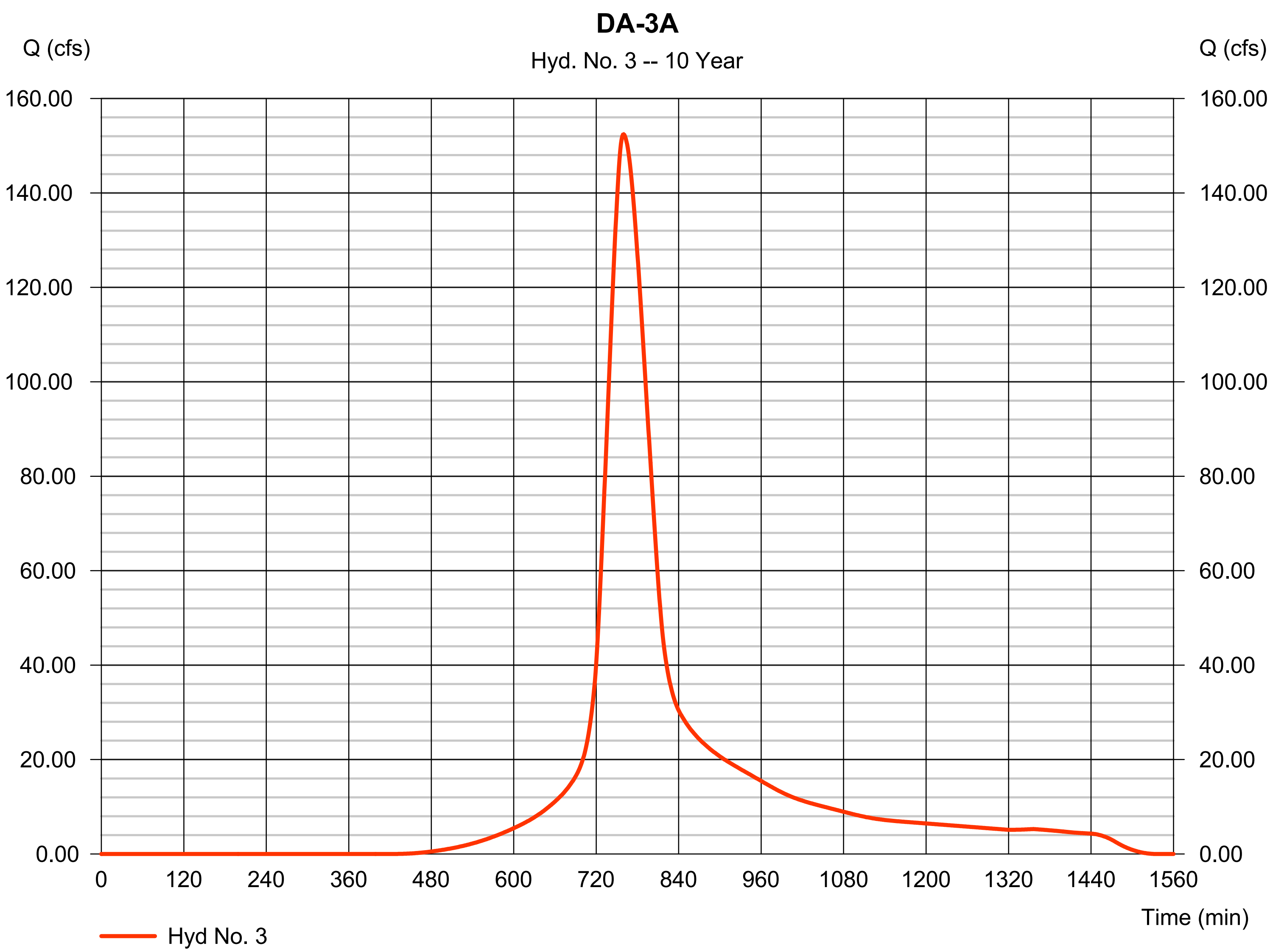
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 152.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 1,151,029 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410

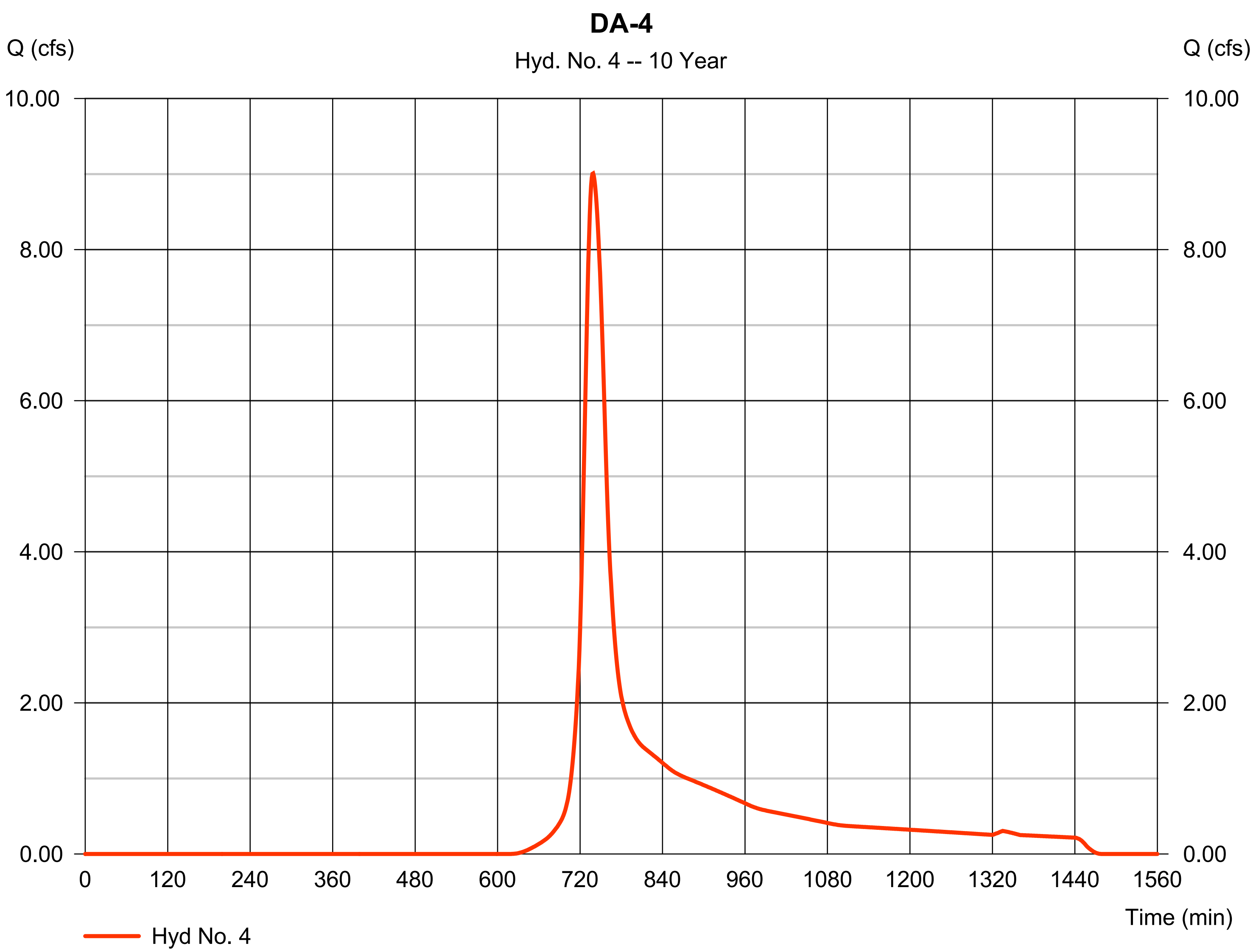


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 9.008 cfs
Storm frequency	= 10 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 45,306 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



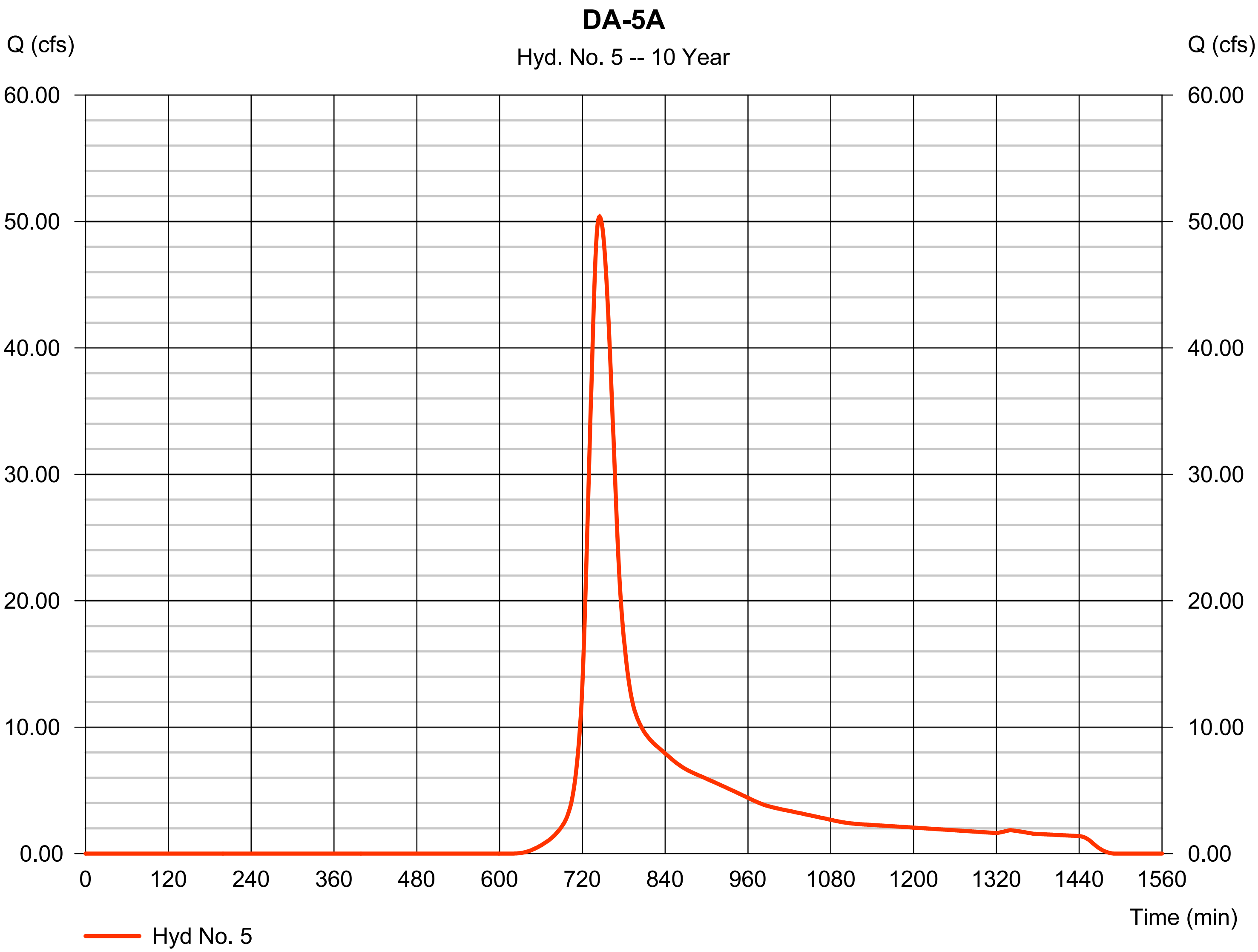
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 50.40 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 287,030 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



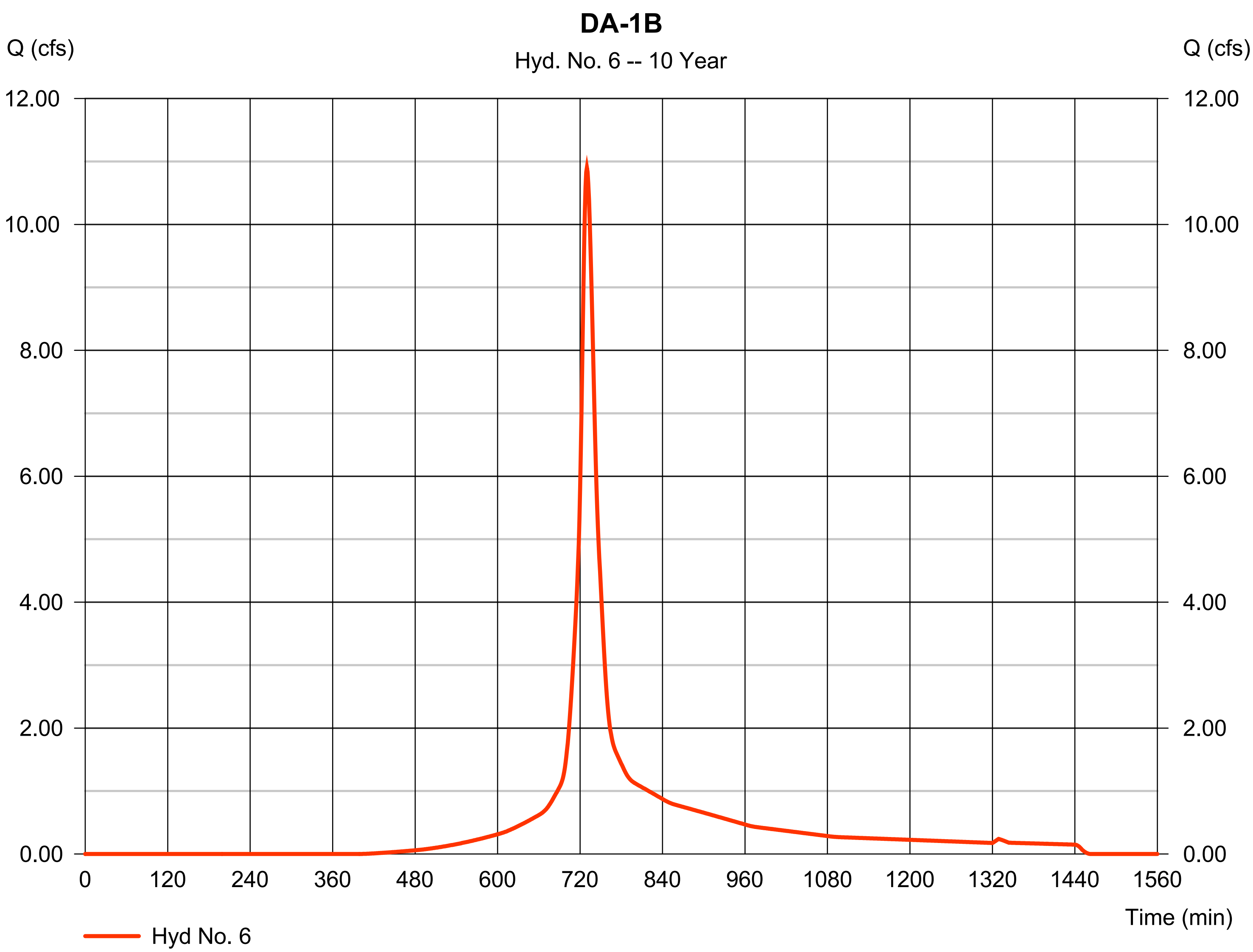
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.90 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 43,217 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



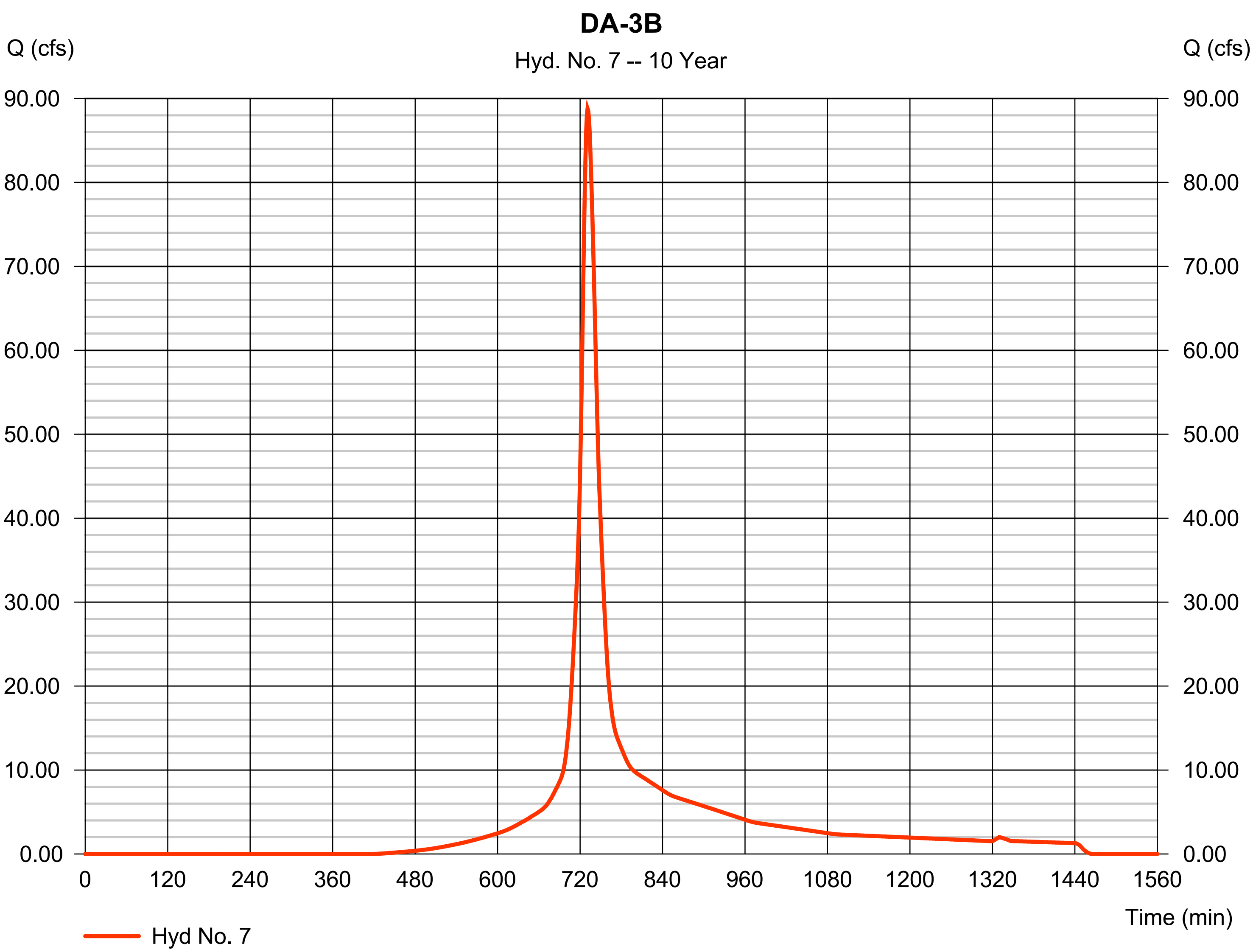
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 88.79 cfs
Storm frequency	= 10 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 367,545 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



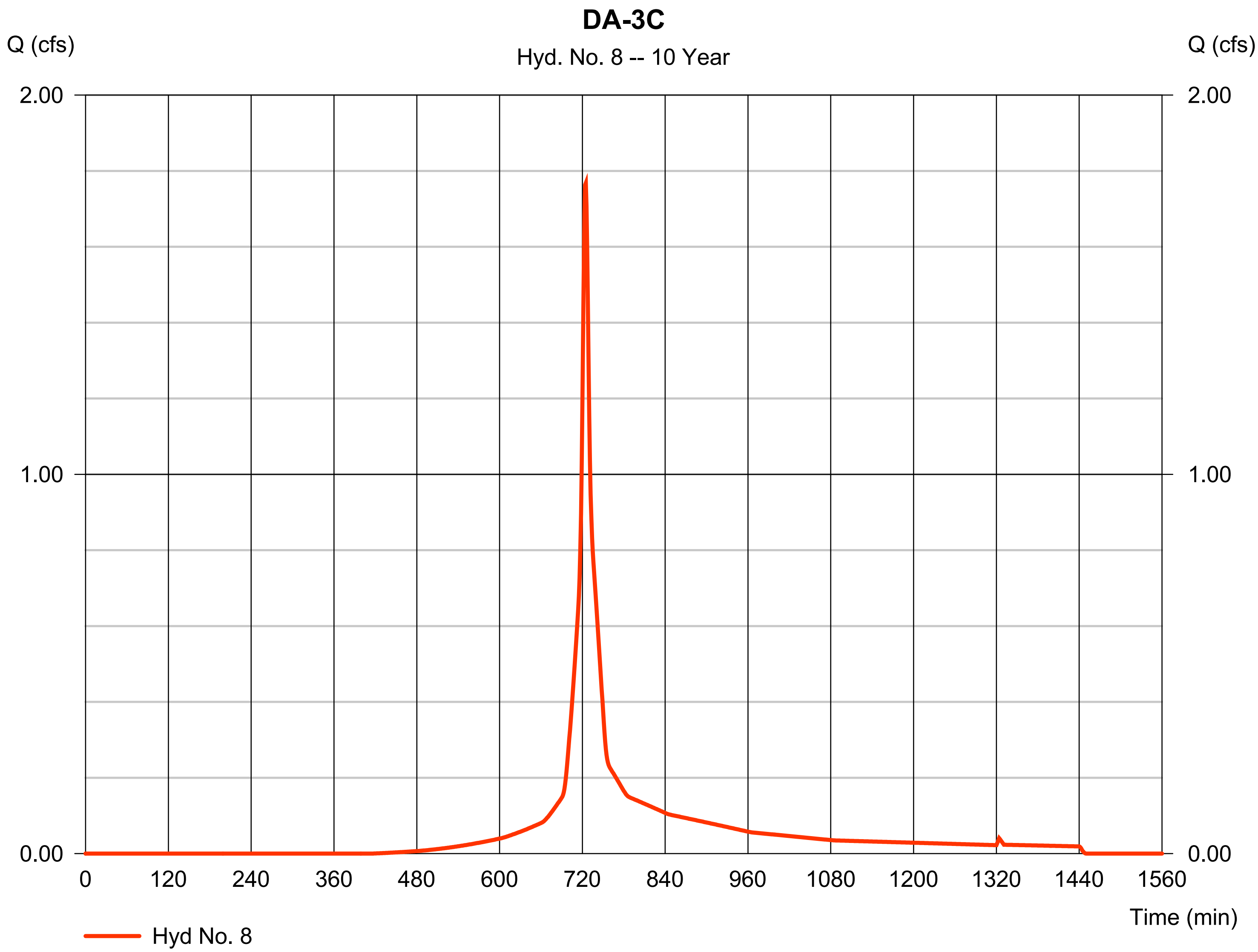
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.768 cfs
Storm frequency	= 10 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 5,474 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

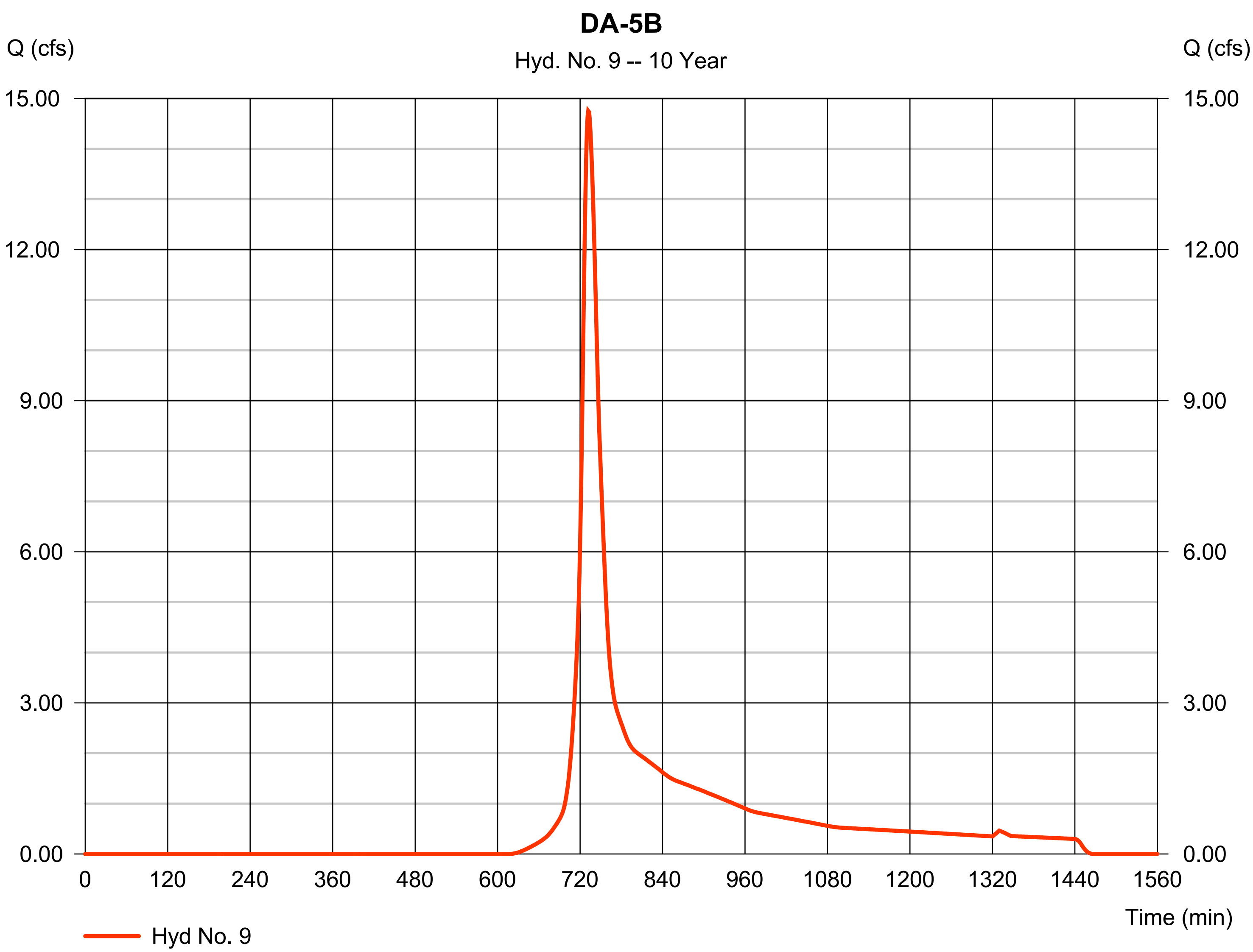


Hydrograph Report

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.75 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 63,435 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



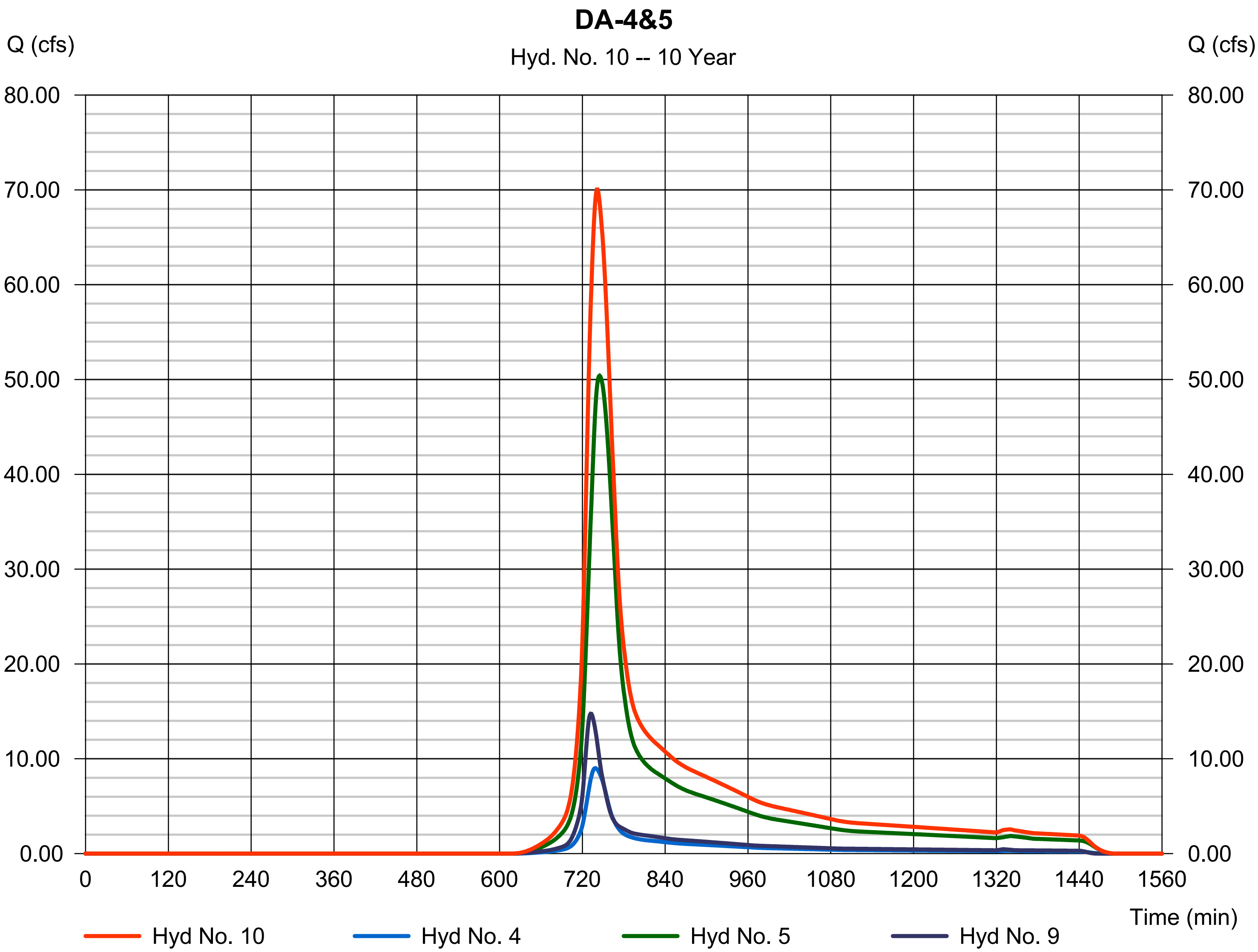
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 70.04 cfs
Storm frequency	= 10 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 395,772 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



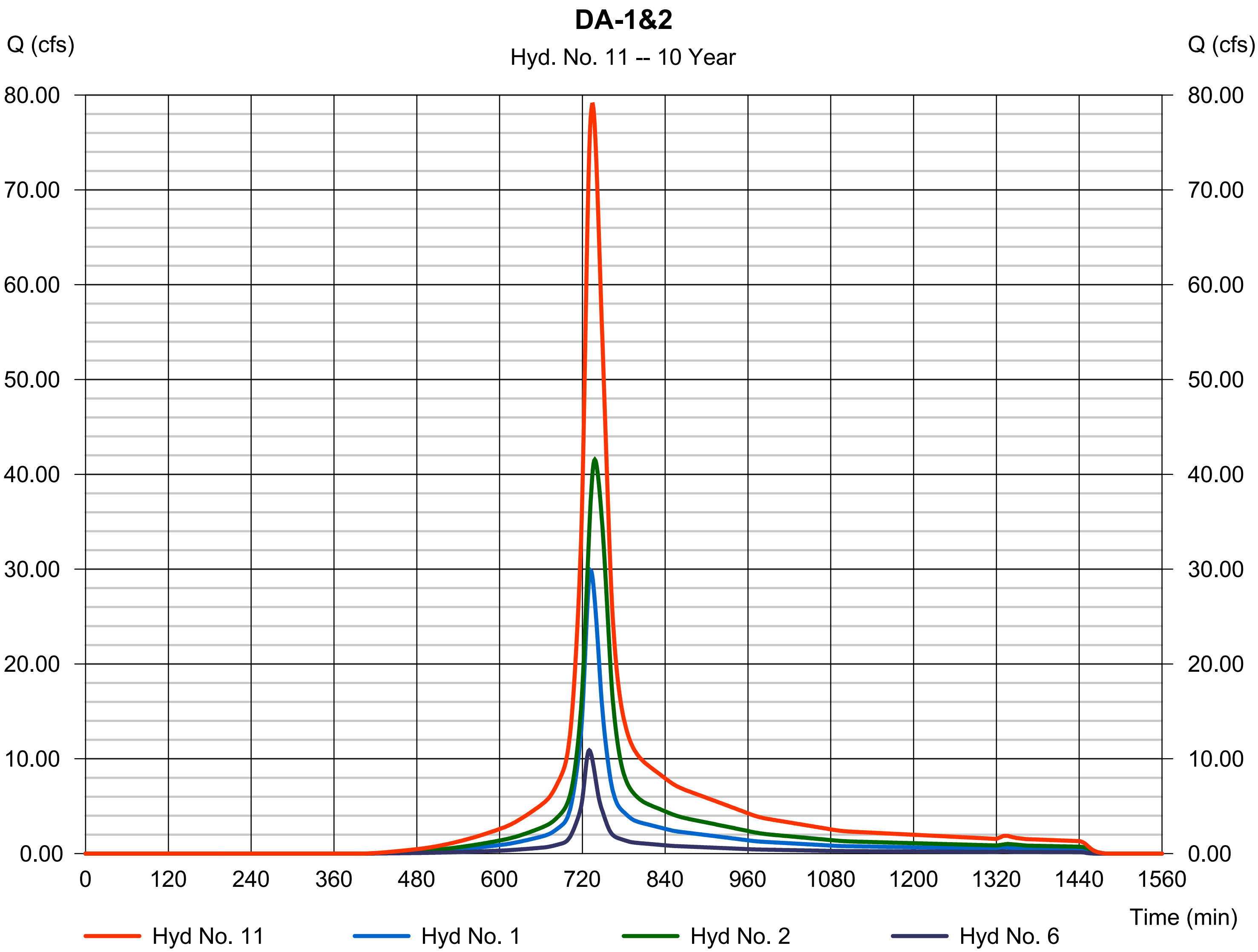
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 79.01 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 377,796 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



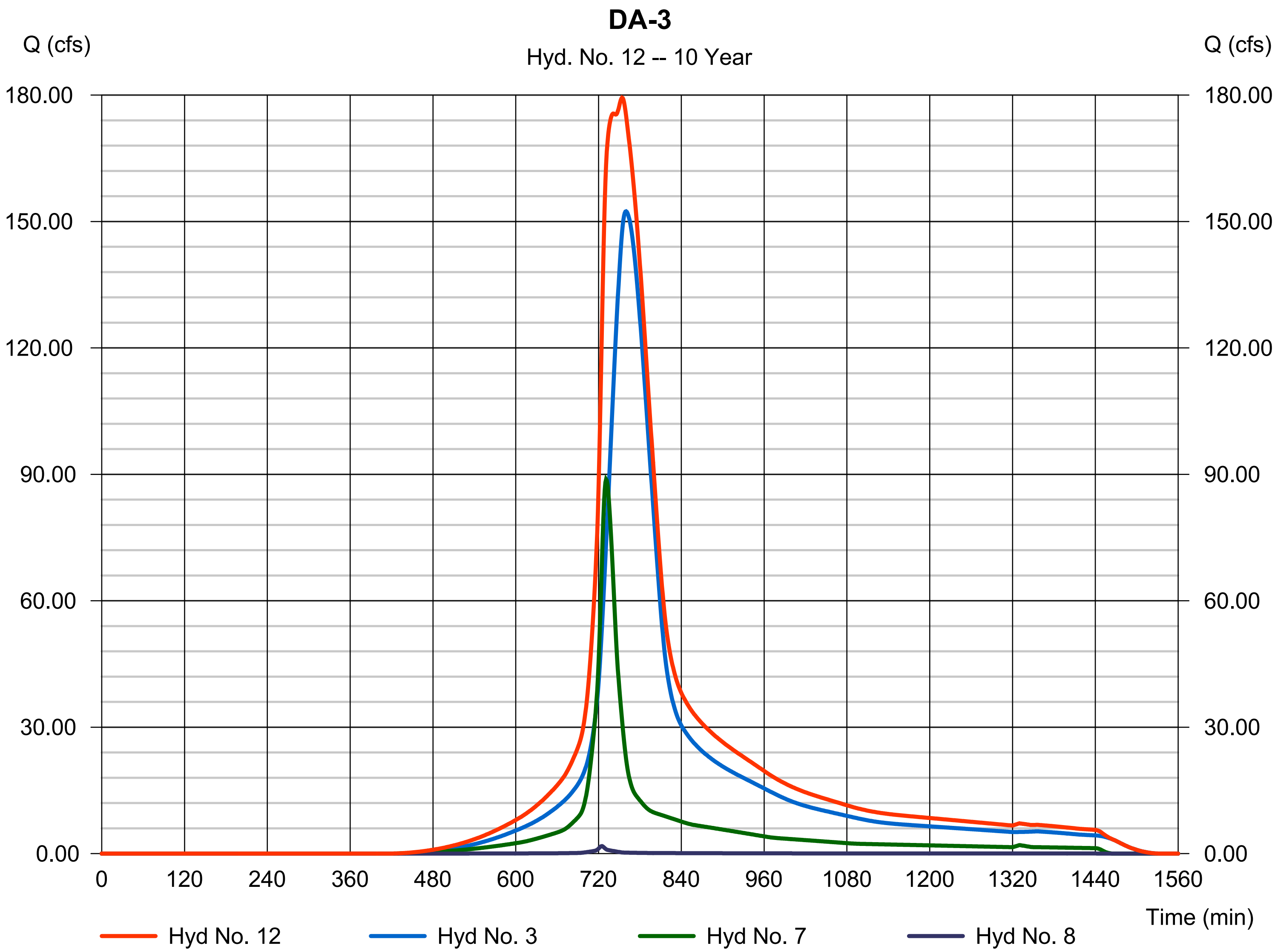
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 179.37 cfs
Storm frequency	= 10 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 1,524,048 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



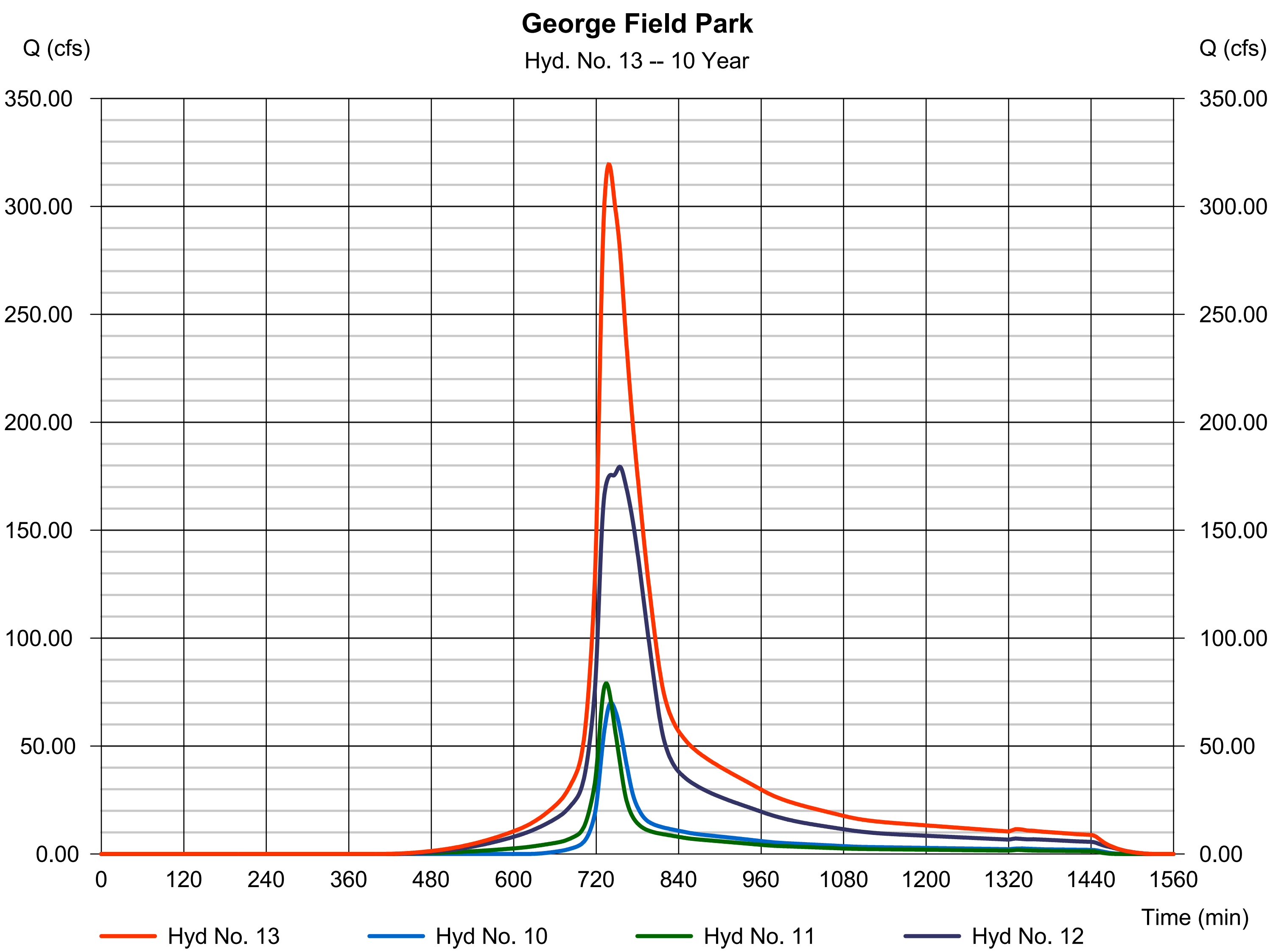
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 319.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 2,297,616 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

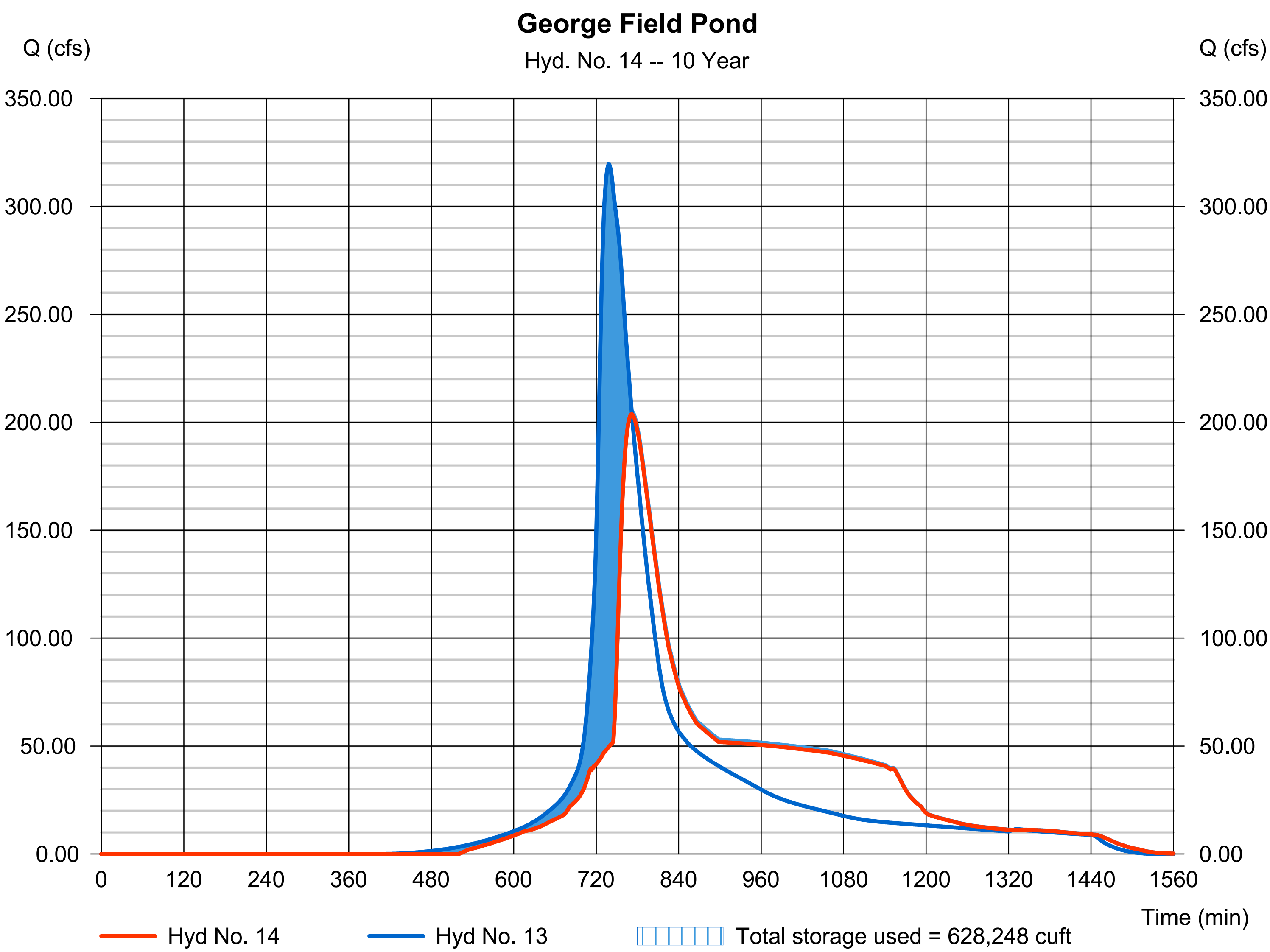
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 203.72 cfs
Storm frequency	= 10 yrs	Time to peak	= 772 min
Time interval	= 1 min	Hyd. volume	= 2,262,048 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 216.69 ft
Reservoir name	= George Field Park	Max. Storage	= 628,248 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	38.97	1	732	166,997	------	------	------	DA-1A
2	SCS Runoff	54.27	1	738	272,706	------	------	------	DA-2
3	SCS Runoff	200.52	1	759	1,519,784	------	------	------	DA-3A
4	SCS Runoff	13.31	1	738	65,395	------	------	------	DA-4
5	SCS Runoff	74.46	1	744	414,301	------	------	------	DA-5A
6	SCS Runoff	14.22	1	730	56,795	------	------	------	DA-1B
7	SCS Runoff	116.57	1	731	485,294	------	------	------	DA-3B
8	SCS Runoff	2.315	1	725	7,228	------	------	------	DA-3C
9	SCS Runoff	21.81	1	732	91,562	------	------	------	DA-5B
10	Combine	103.52	1	741	571,258	4, 5, 9	------	------	DA-4&5
11	Combine	103.22	1	734	496,498	1, 2, 6,	------	------	DA-1&2
12	Combine	235.67	1	754	2,012,304	3, 7, 8,	------	------	DA-3
13	Combine	432.37	1	738	3,080,063	10, 11, 12	------	------	George Field Park
14	Reservoir	325.17	1	762	3,039,665	13	217.02	714,149	George Field Pond

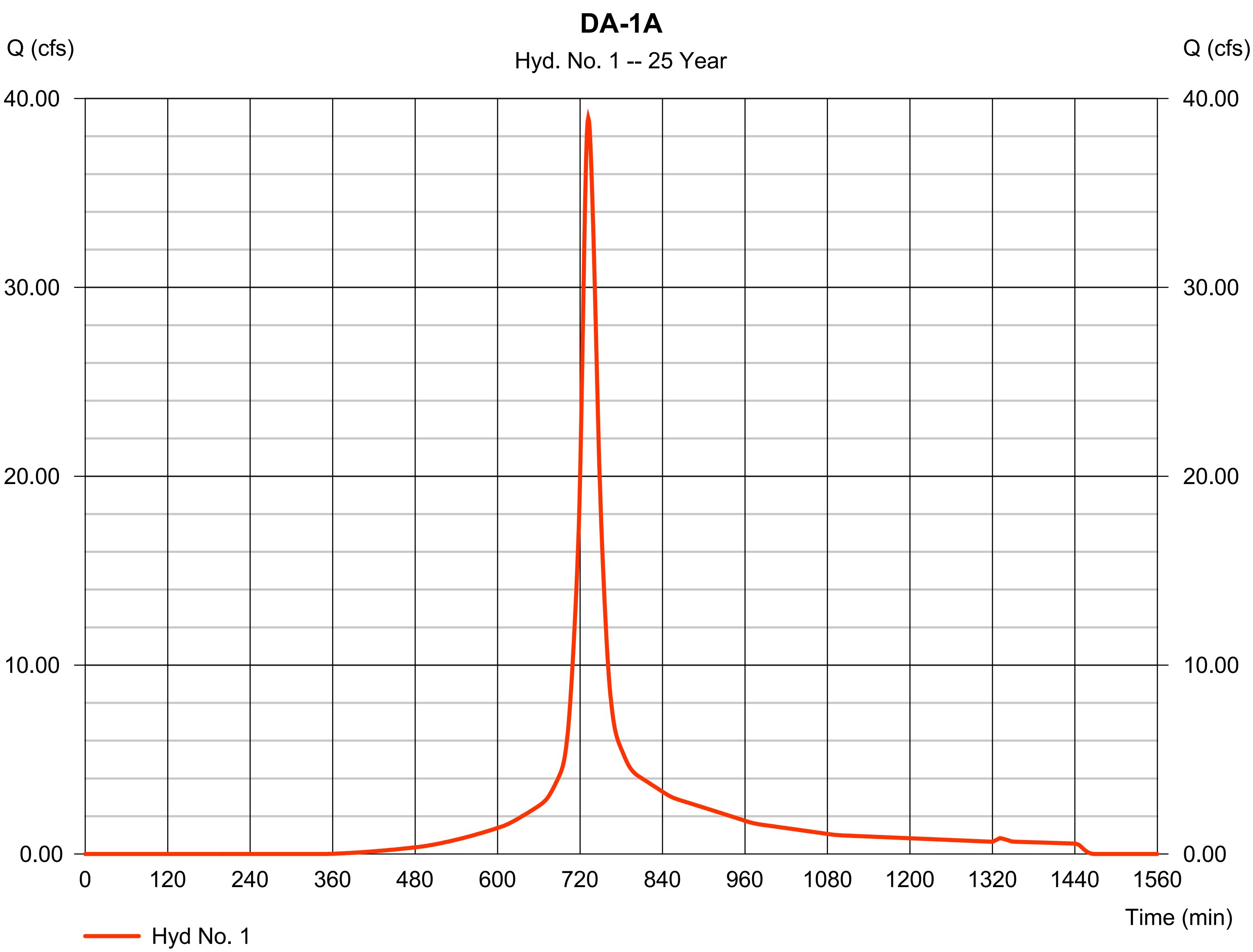
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 38.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 166,997 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

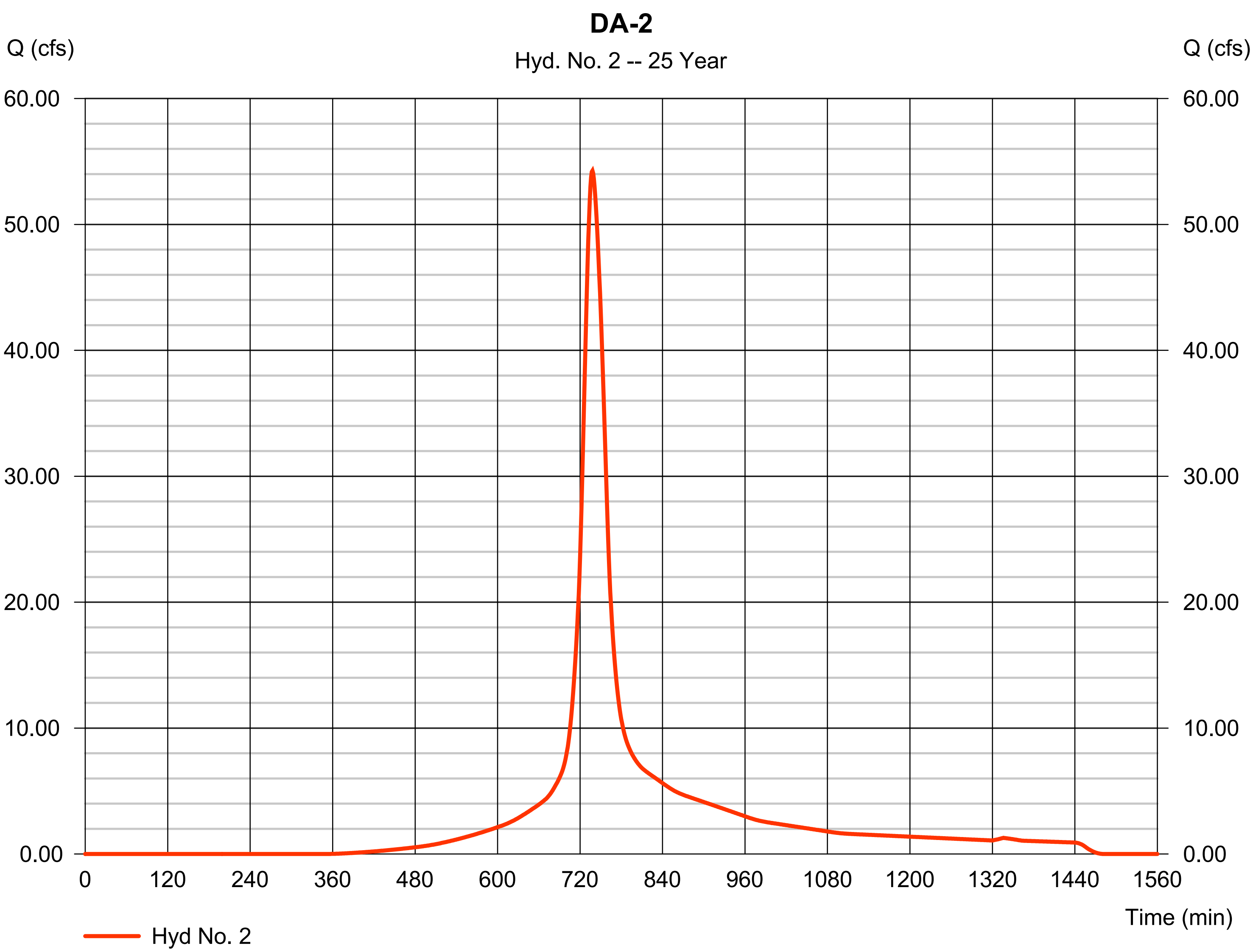


Hydrograph Report

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 54.27 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 272,706 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

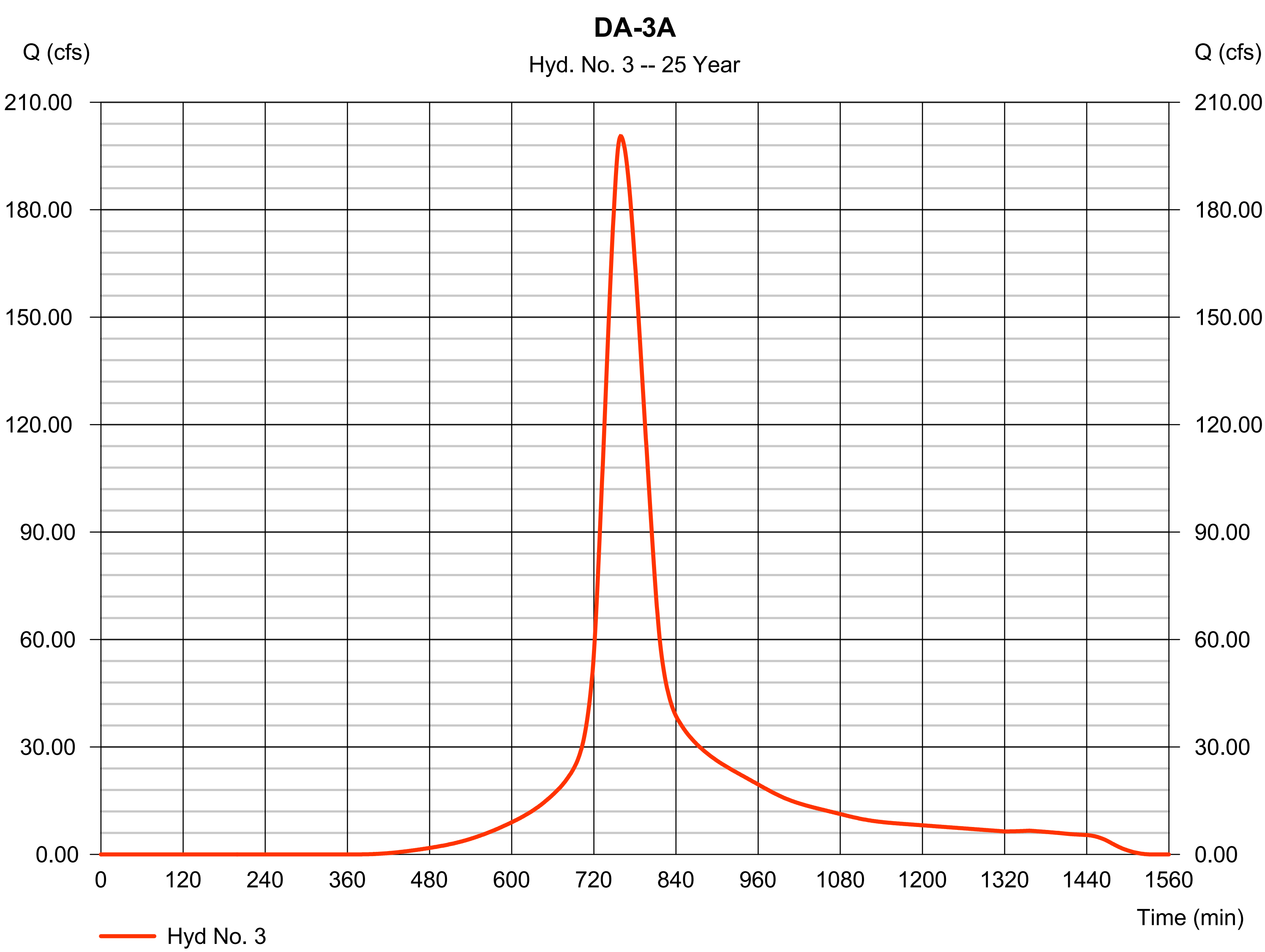
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 200.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,519,784 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



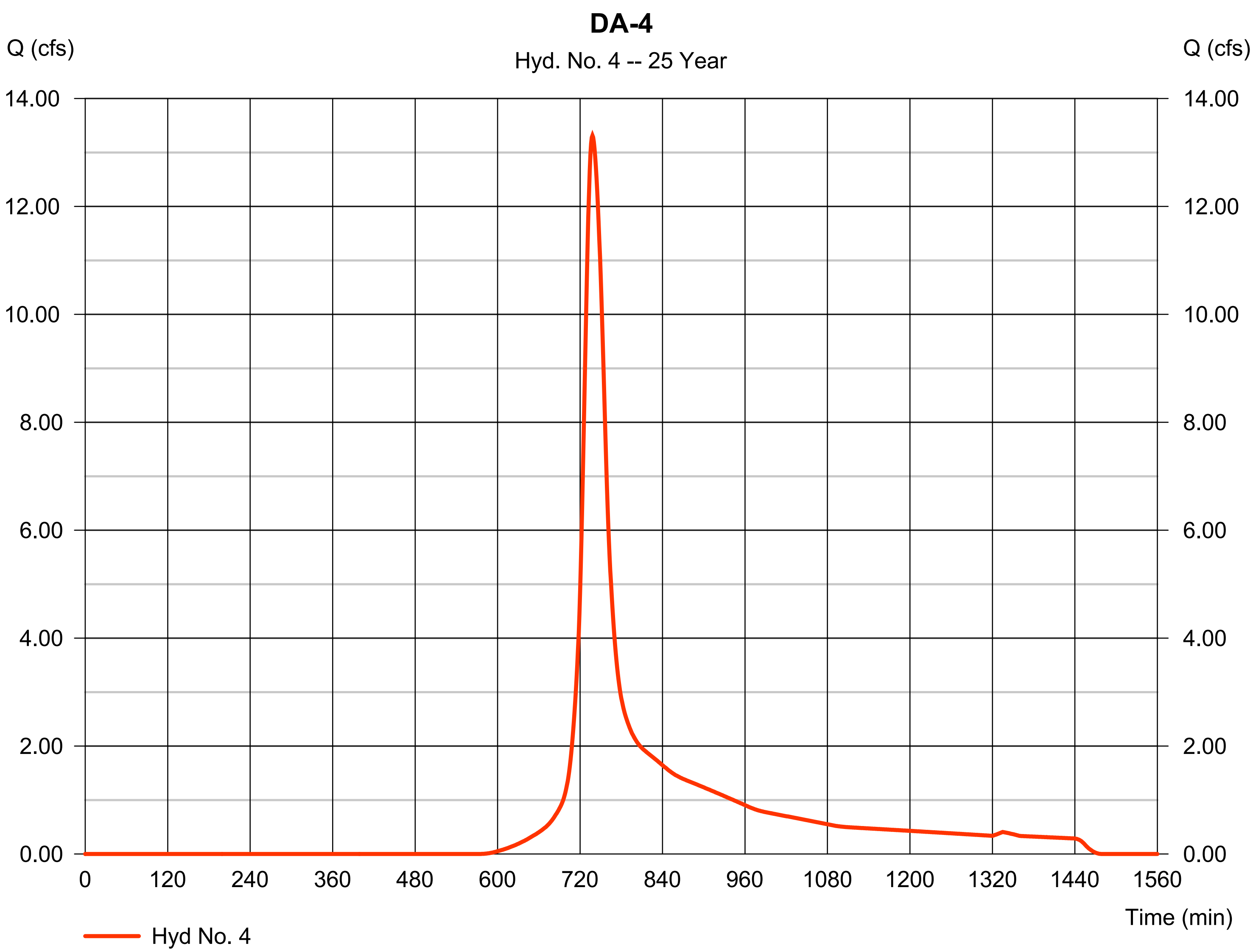
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 13.31 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 65,395 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



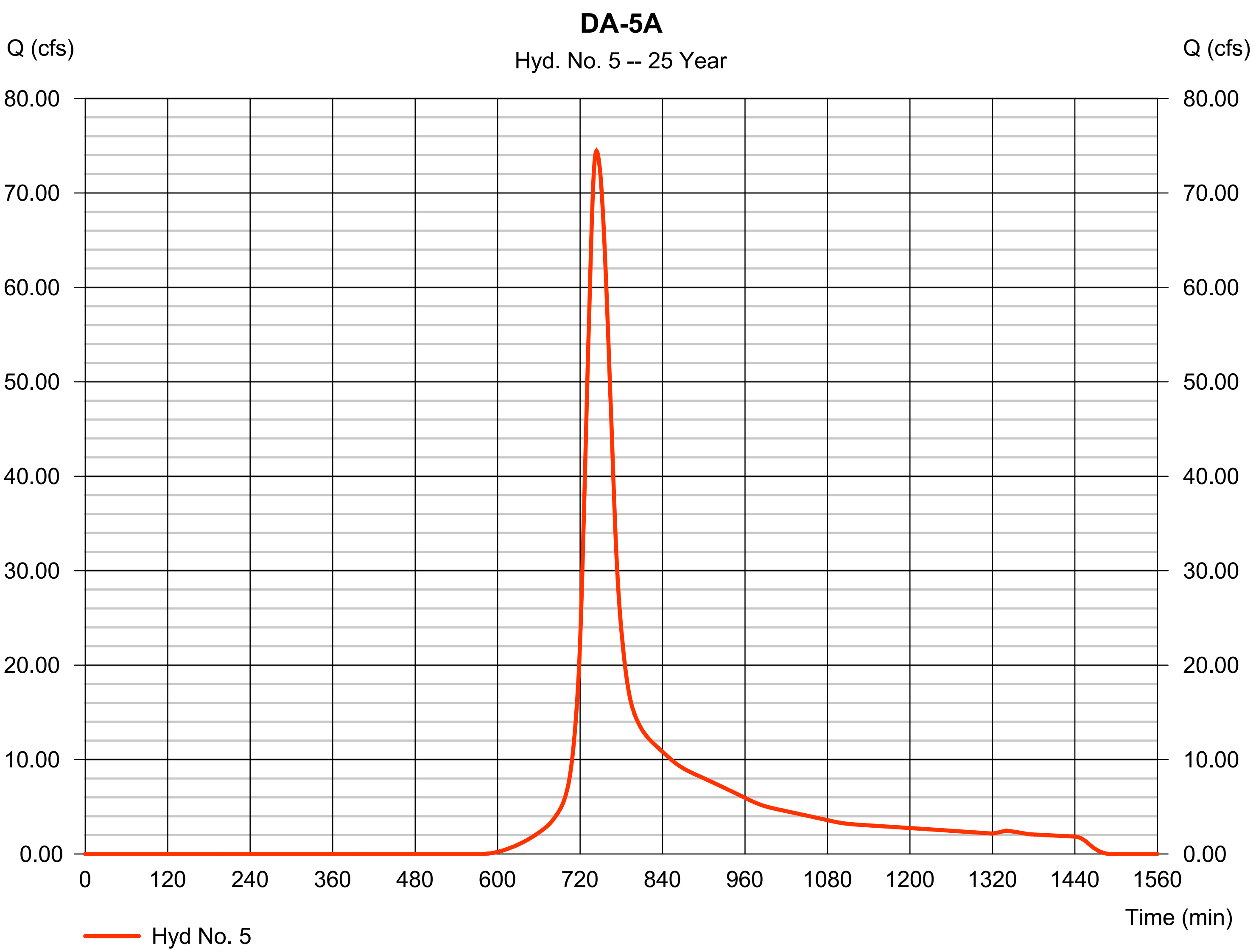
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 74.46 cfs
Storm frequency	= 25 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 414,301 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



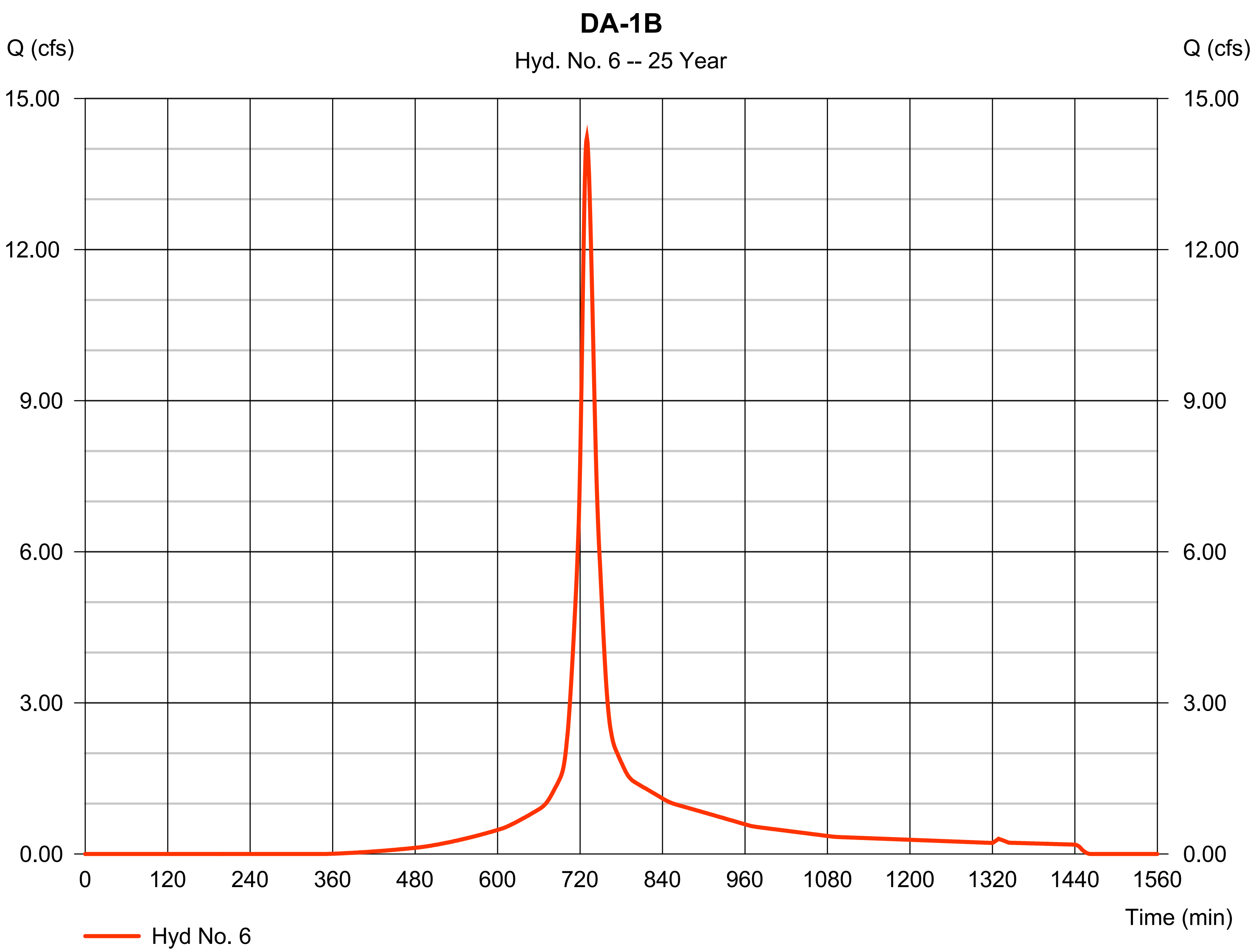
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 56,795 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



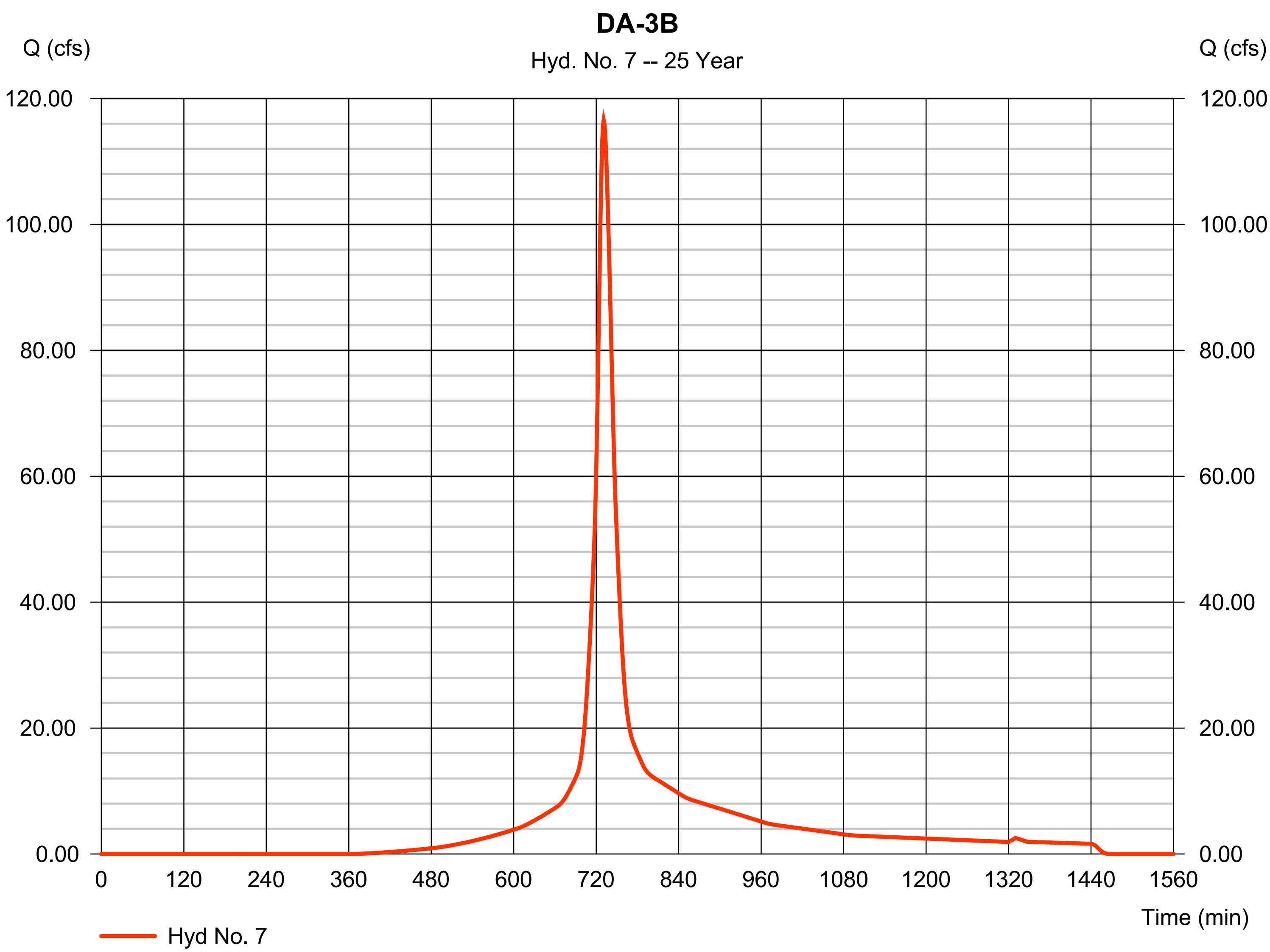
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 116.57 cfs
Storm frequency	= 25 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 485,294 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



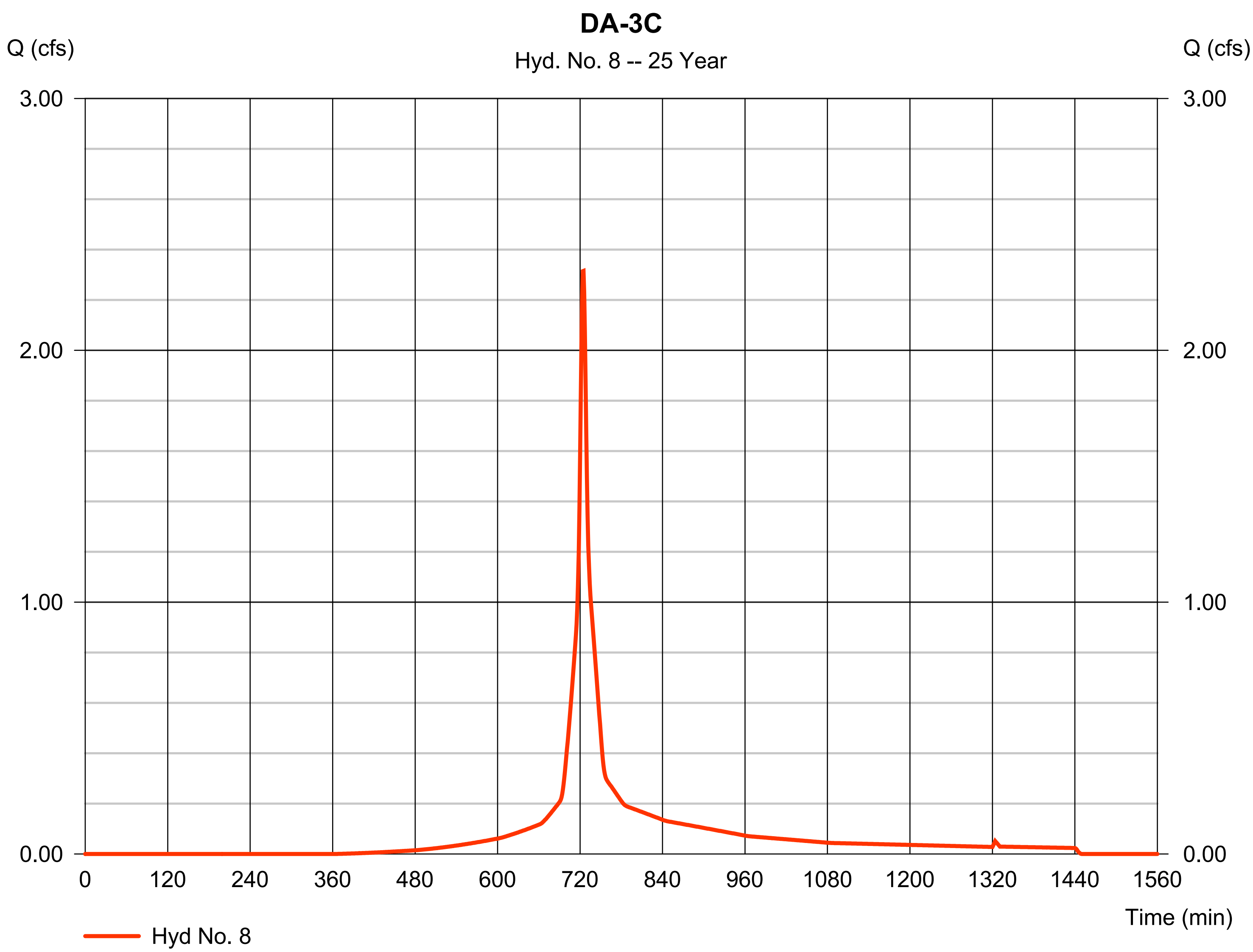
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.315 cfs
Storm frequency	= 25 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 7,228 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

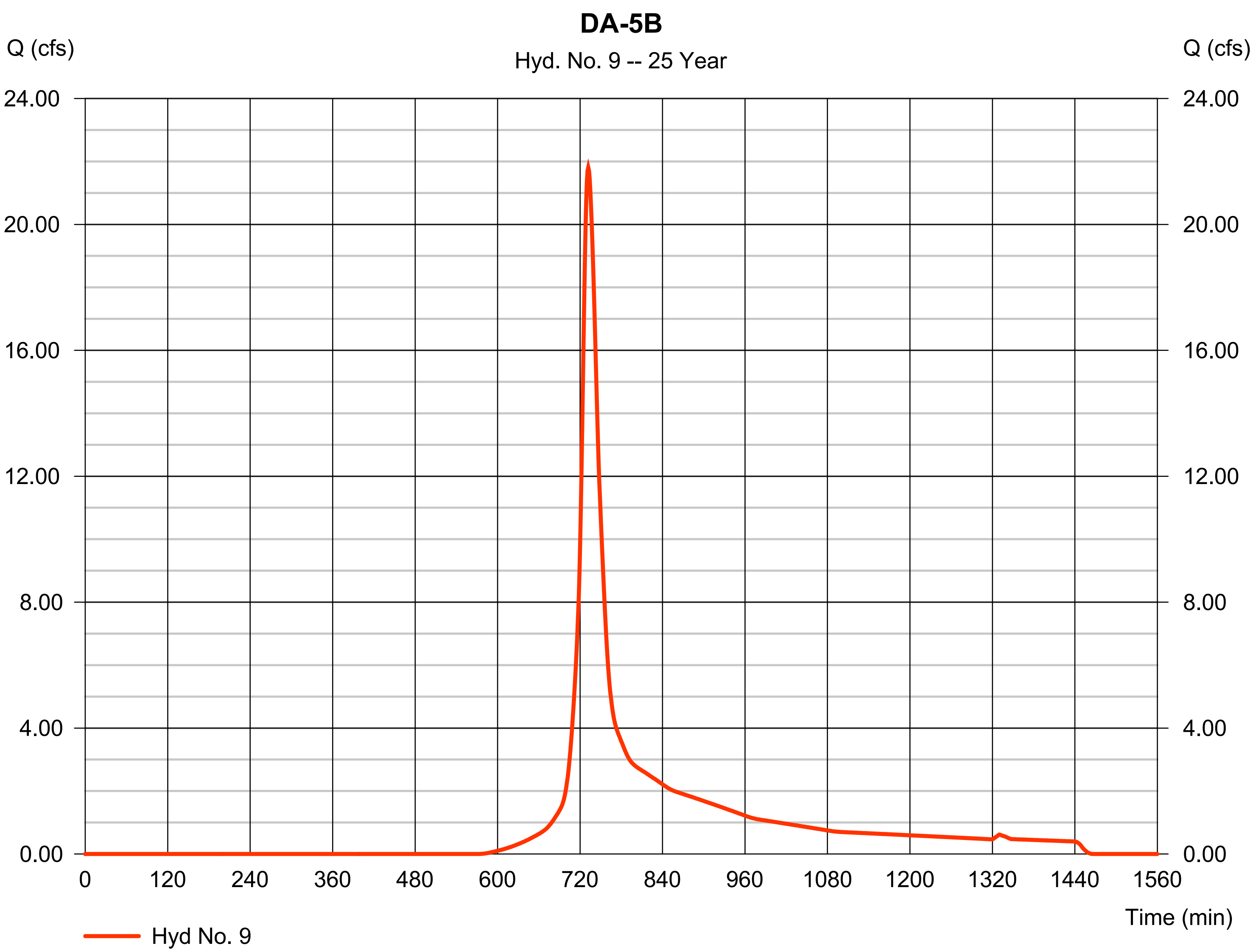


Hydrograph Report

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 21.81 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 91,562 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

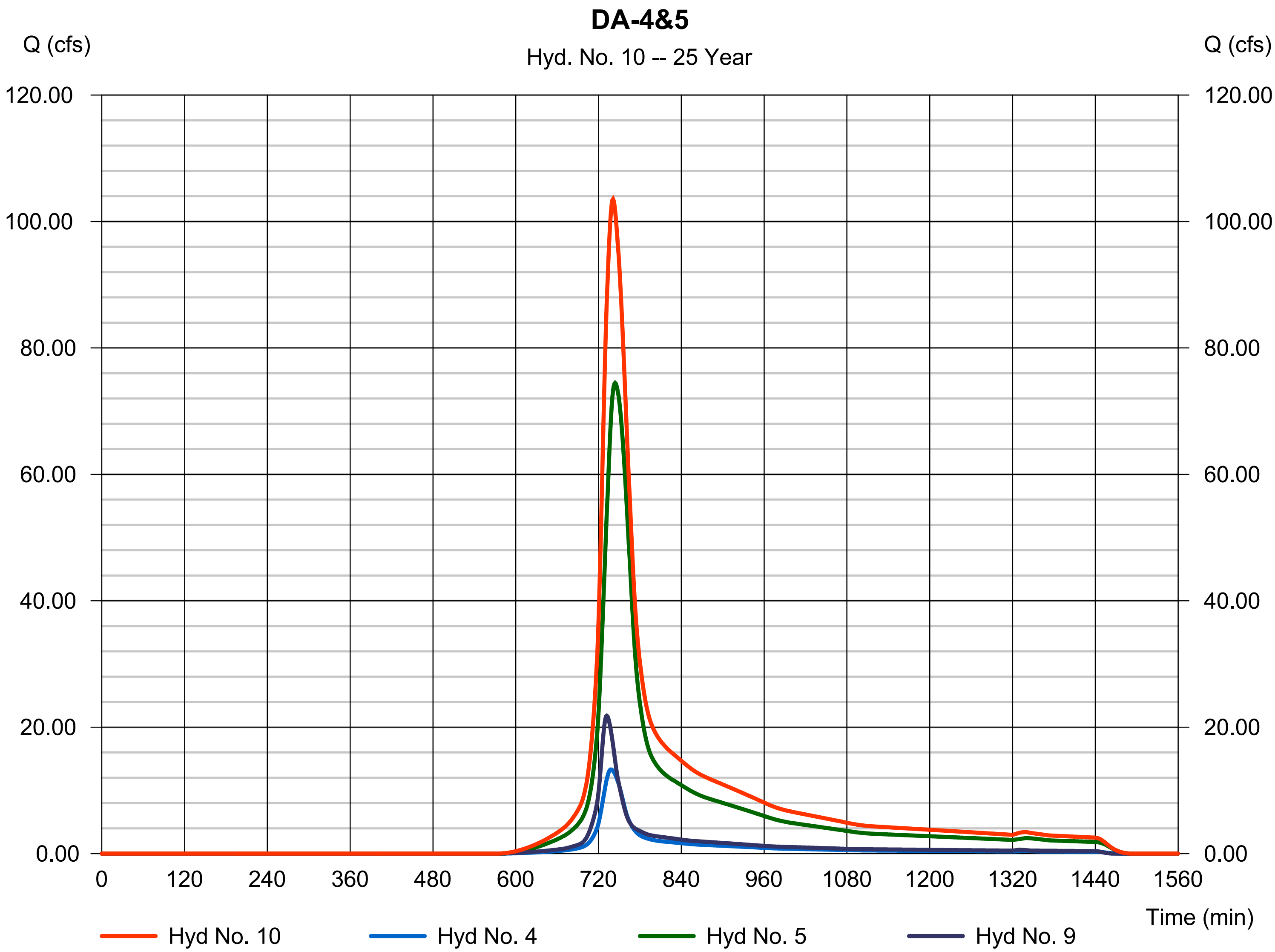


Hydrograph Report

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 103.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 571,258 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac

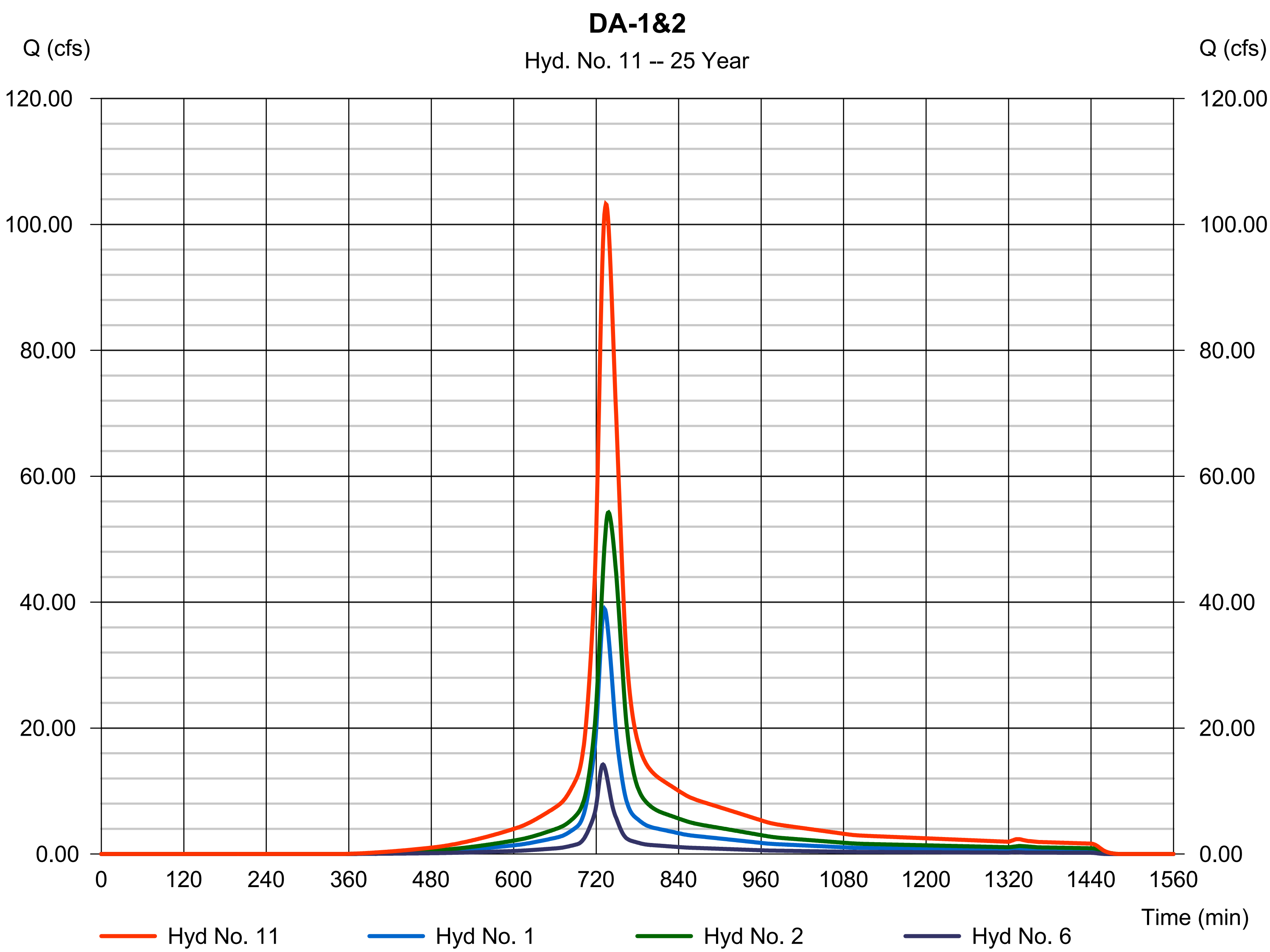


Hydrograph Report

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 103.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 496,498 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



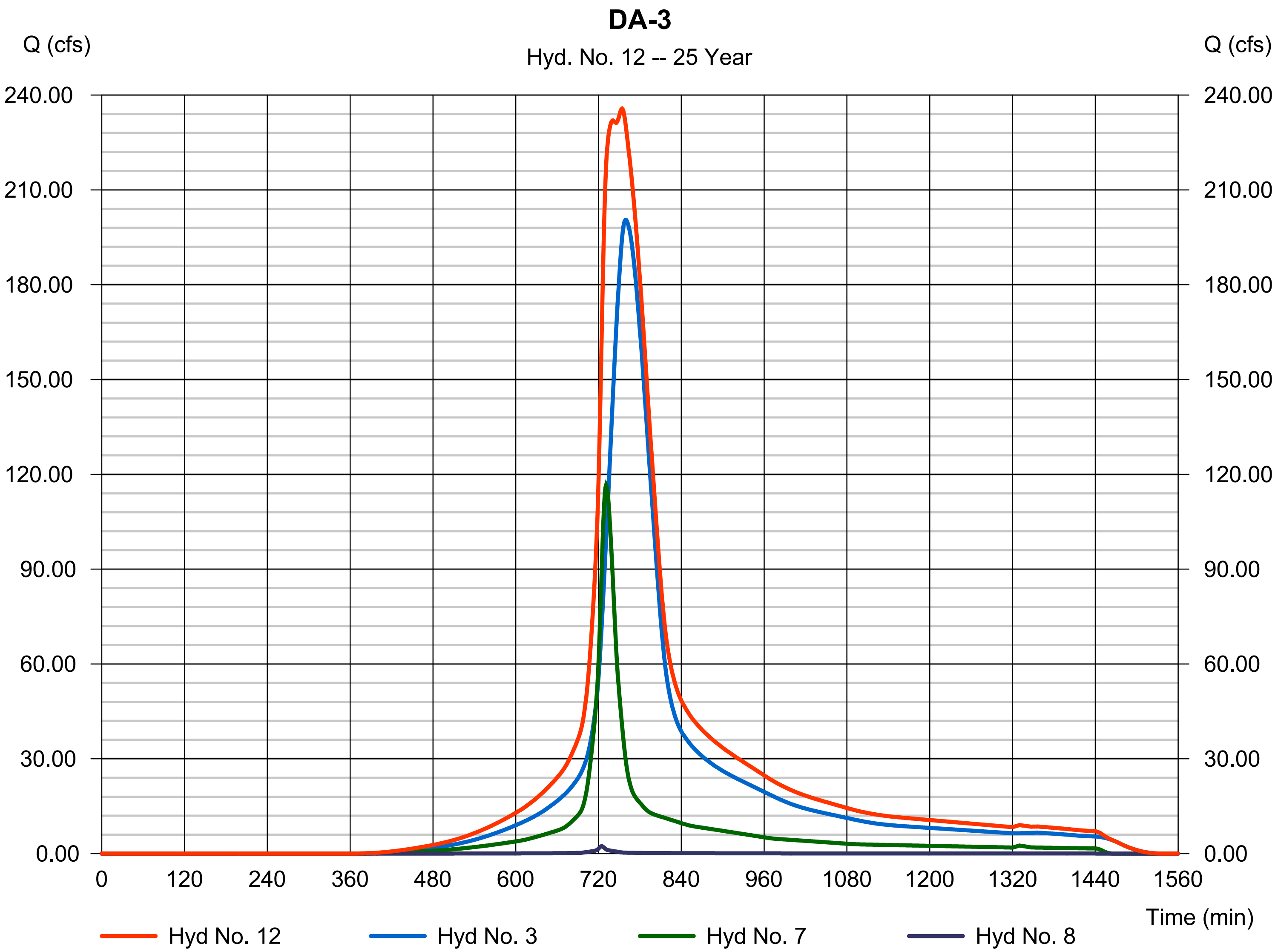
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 235.67 cfs
Storm frequency	= 25 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,012,304 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



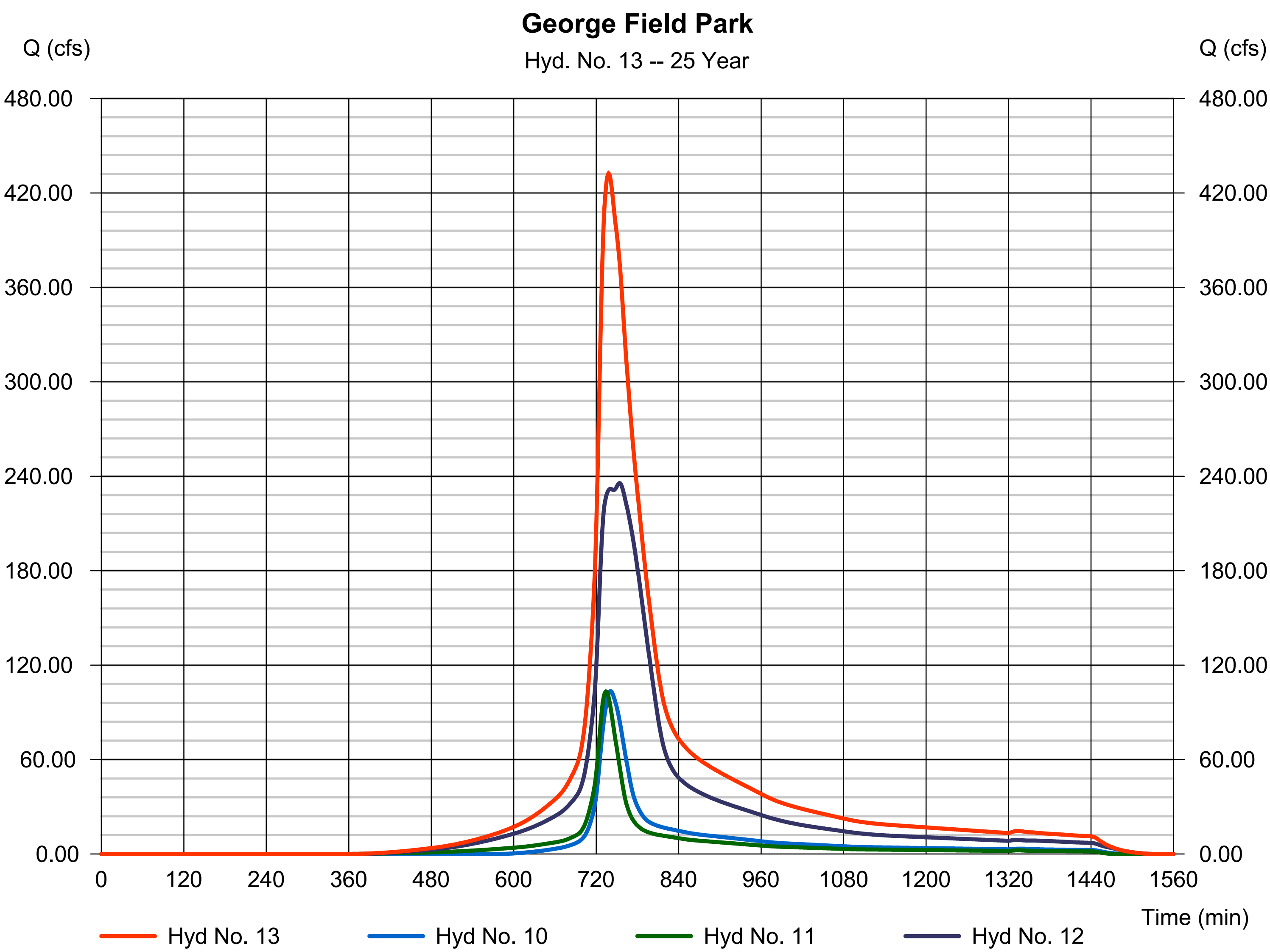
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 432.37 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,080,063 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

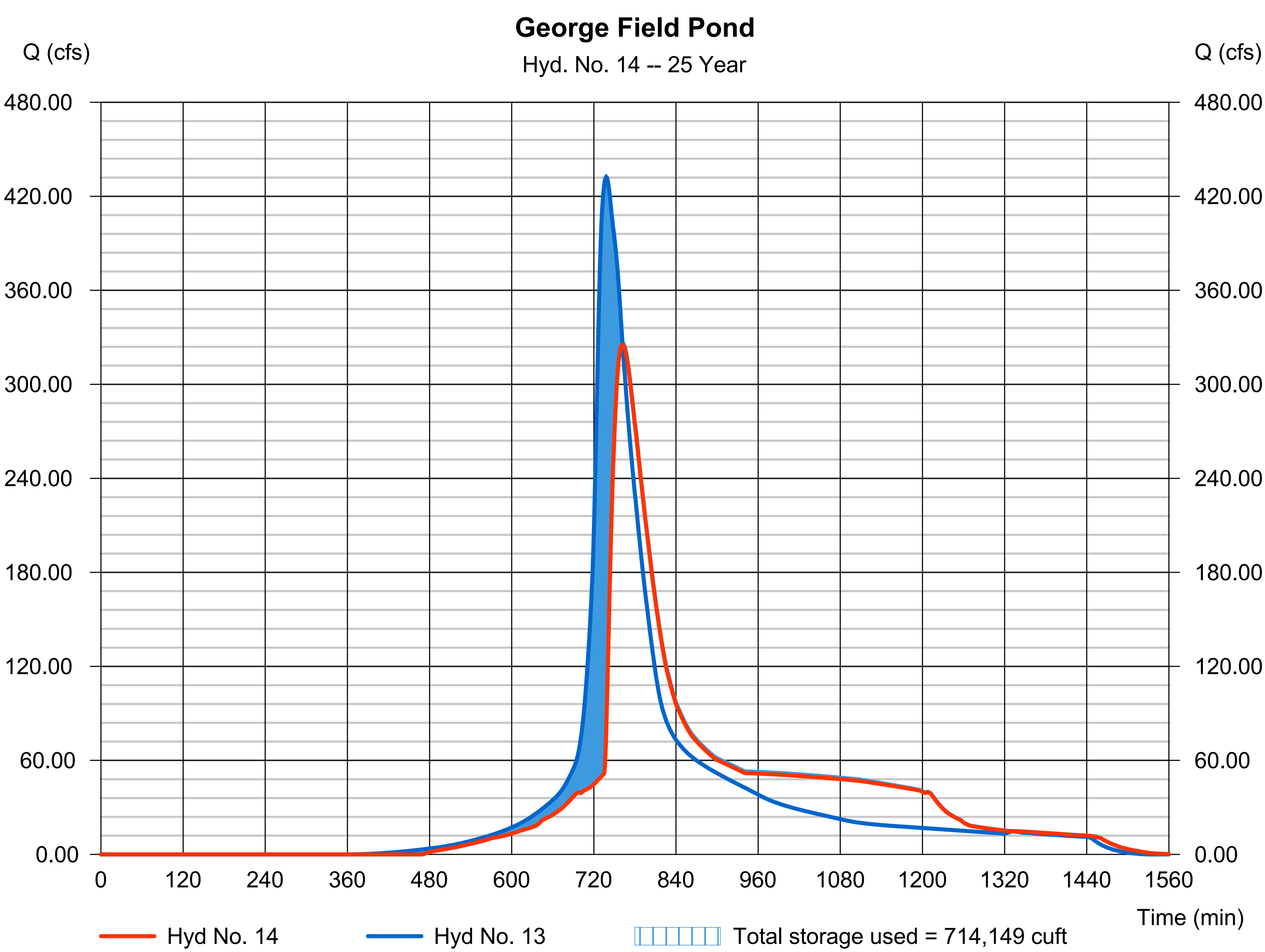
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 325.17 cfs
Storm frequency	= 25 yrs	Time to peak	= 762 min
Time interval	= 1 min	Hyd. volume	= 3,039,665 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 217.02 ft
Reservoir name	= George Field Park	Max. Storage	= 714,149 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	43.26	1	732	186,087	------	------	------	DA-1A
2	SCS Runoff	60.26	1	738	303,882	------	------	------	DA-2
3	SCS Runoff	223.32	1	759	1,696,414	------	------	------	DA-3A
4	SCS Runoff	15.44	1	738	75,381	------	------	------	DA-4
5	SCS Runoff	86.35	1	744	477,562	------	------	------	DA-5A
6	SCS Runoff	15.79	1	730	63,288	------	------	------	DA-1B
7	SCS Runoff	129.70	1	731	541,695	------	------	------	DA-3B
8	SCS Runoff	2.575	1	724	8,068	------	------	------	DA-3C
9	SCS Runoff	25.29	1	732	105,543	------	------	------	DA-5B
10	Combine	120.04	1	741	658,484	4, 5, 9	------	------	DA-4&5
11	Combine	114.65	1	734	553,257	1, 2, 6,	------	------	DA-1&2
12	Combine	262.31	1	754	2,246,176	3, 7, 8,	------	------	DA-3
13	Combine	486.55	1	738	3,457,916	10, 11, 12	------	------	George Field Park
14	Reservoir	380.07	1	760	3,415,345	13	217.16	753,739	George Field Pond

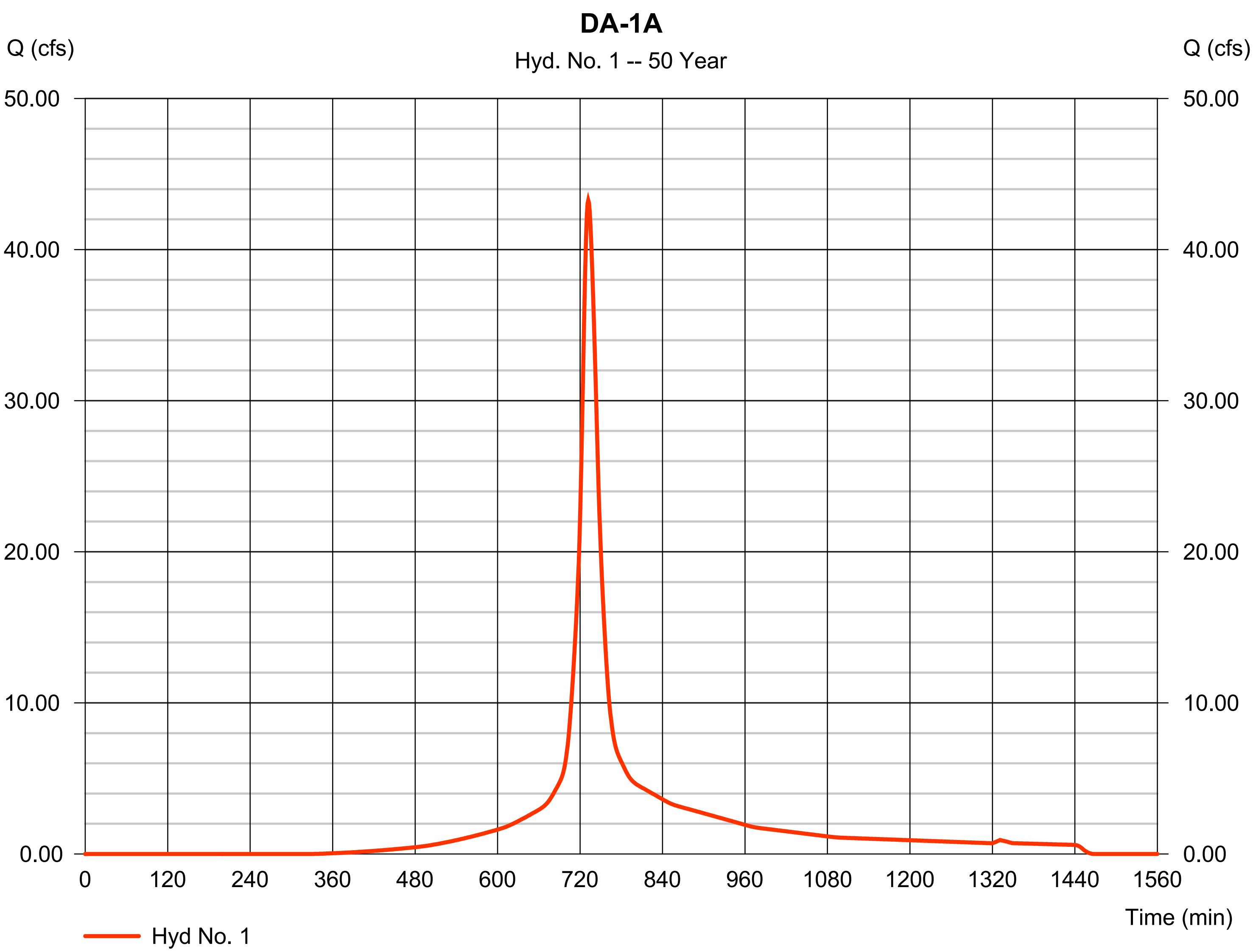
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 43.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 186,087 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

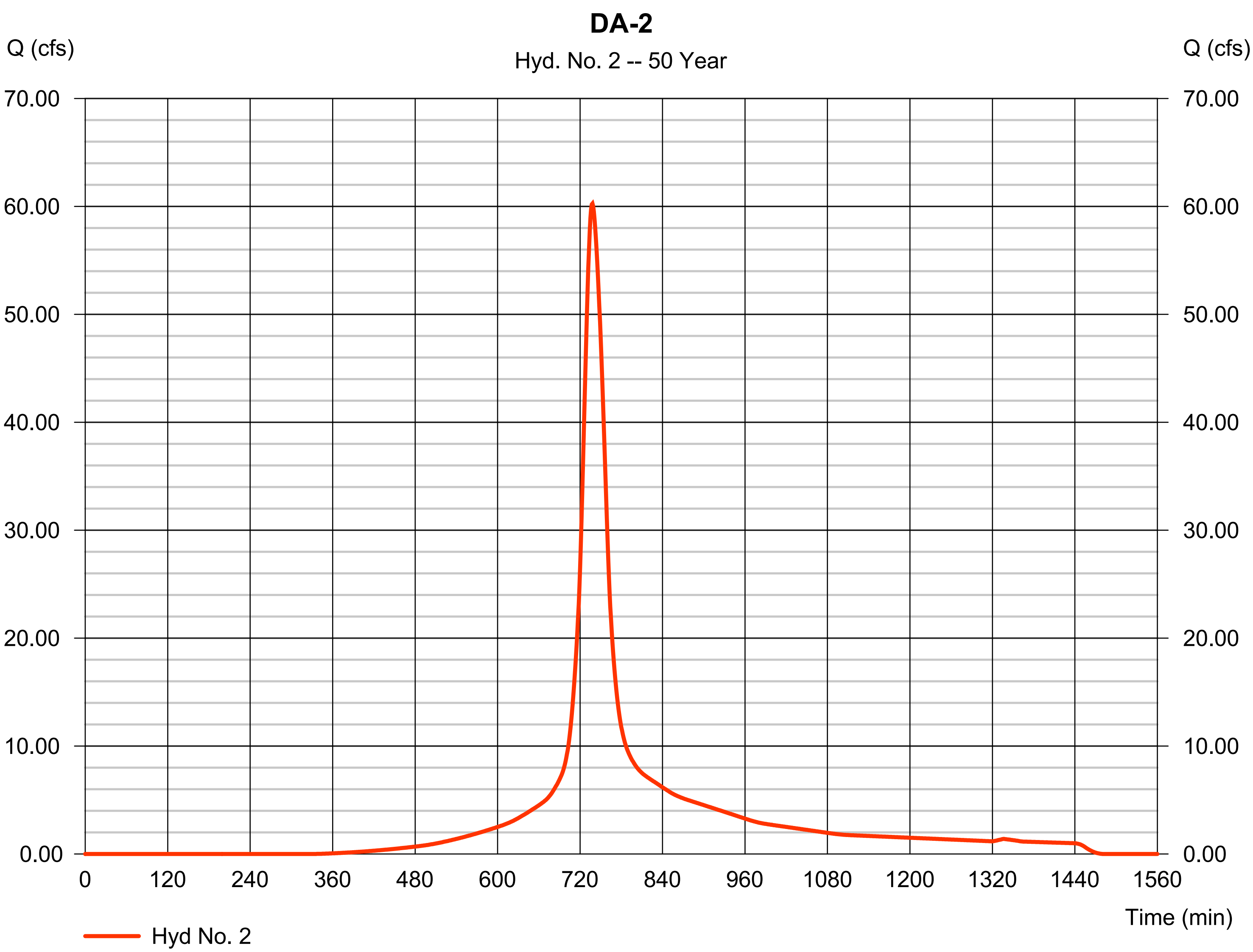


Hydrograph Report

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 60.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 303,882 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

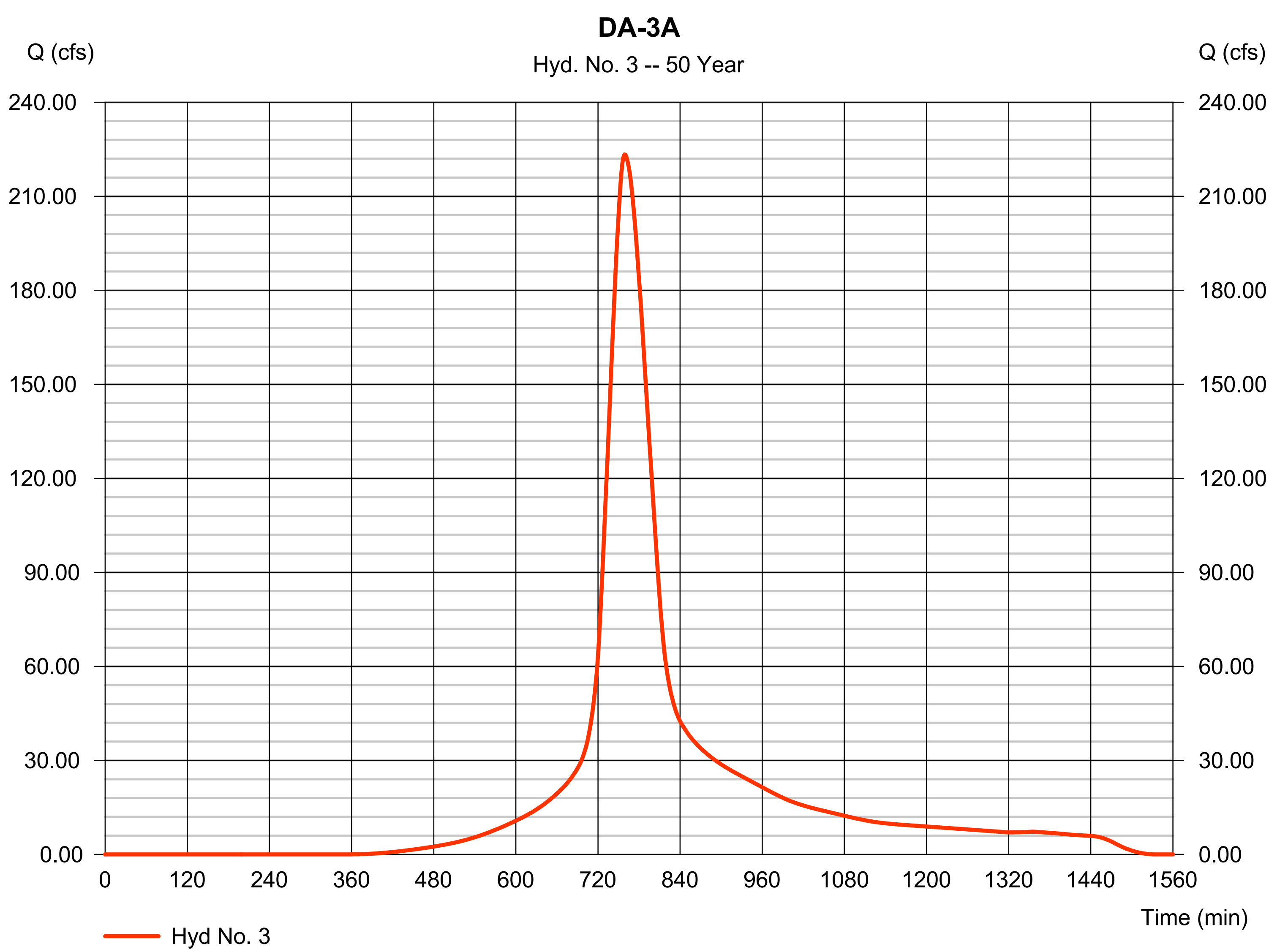
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 223.32 cfs
Storm frequency	= 50 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,696,414 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



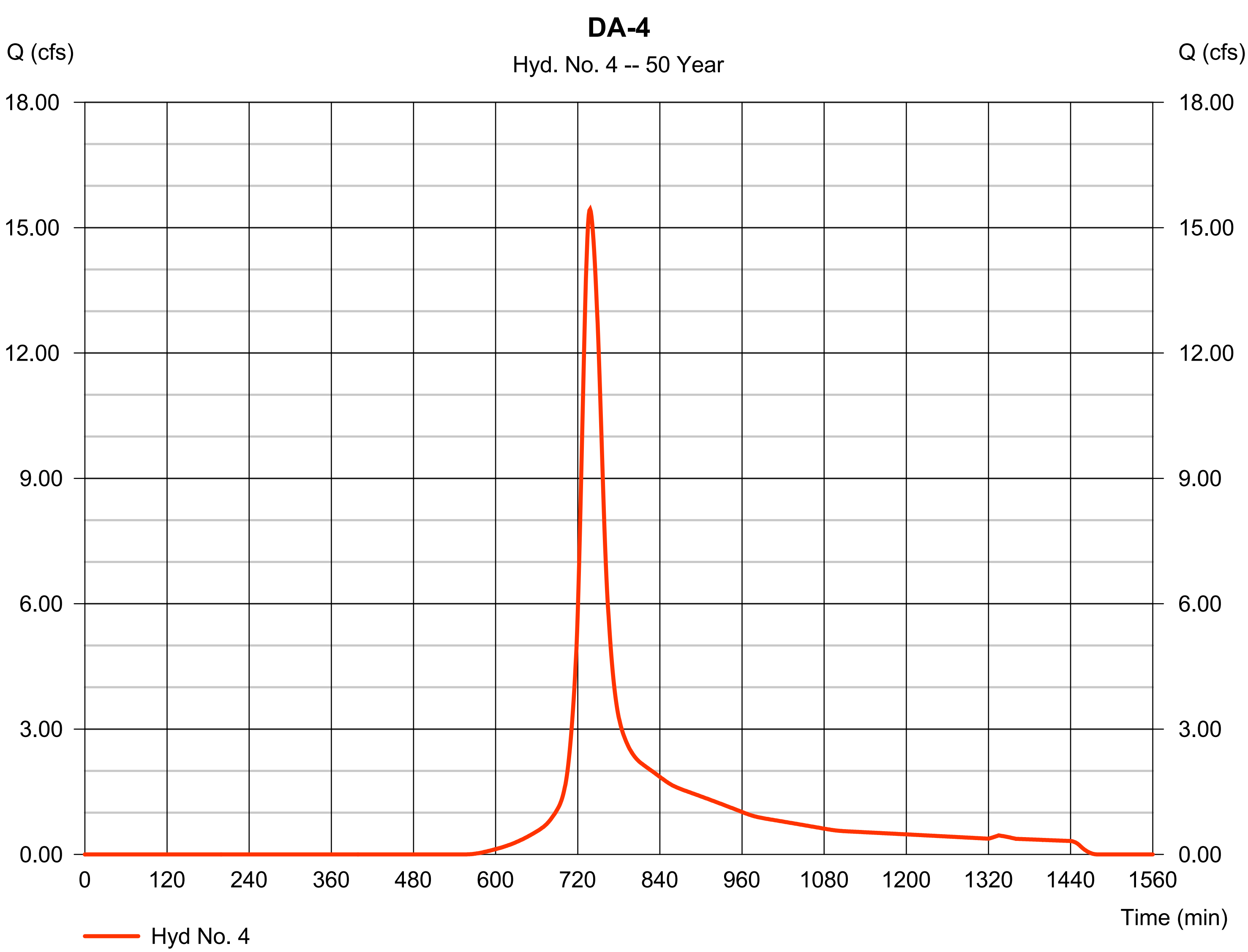
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 15.44 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 75,381 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



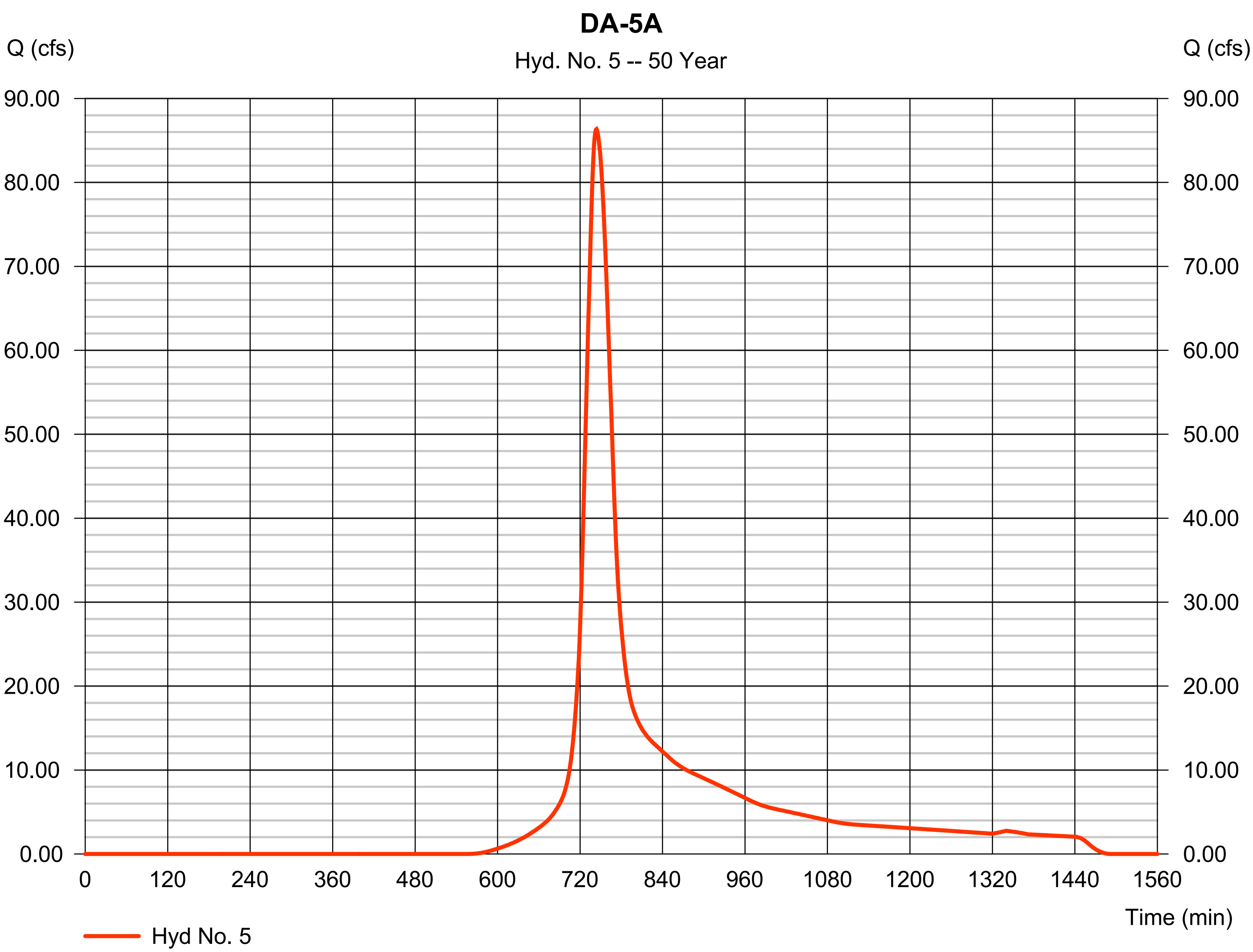
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 86.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 477,562 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



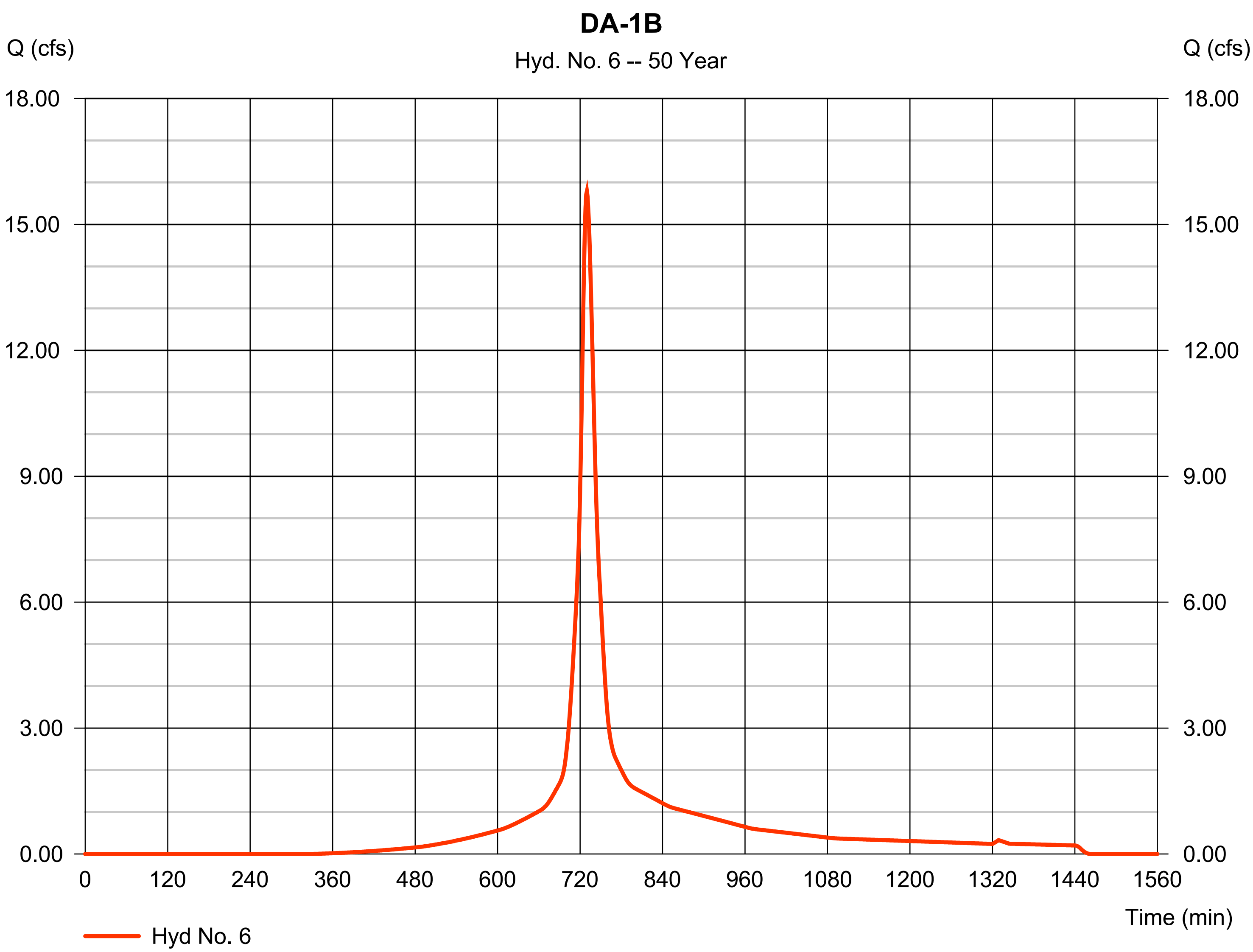
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 15.79 cfs
Storm frequency	= 50 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 63,288 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

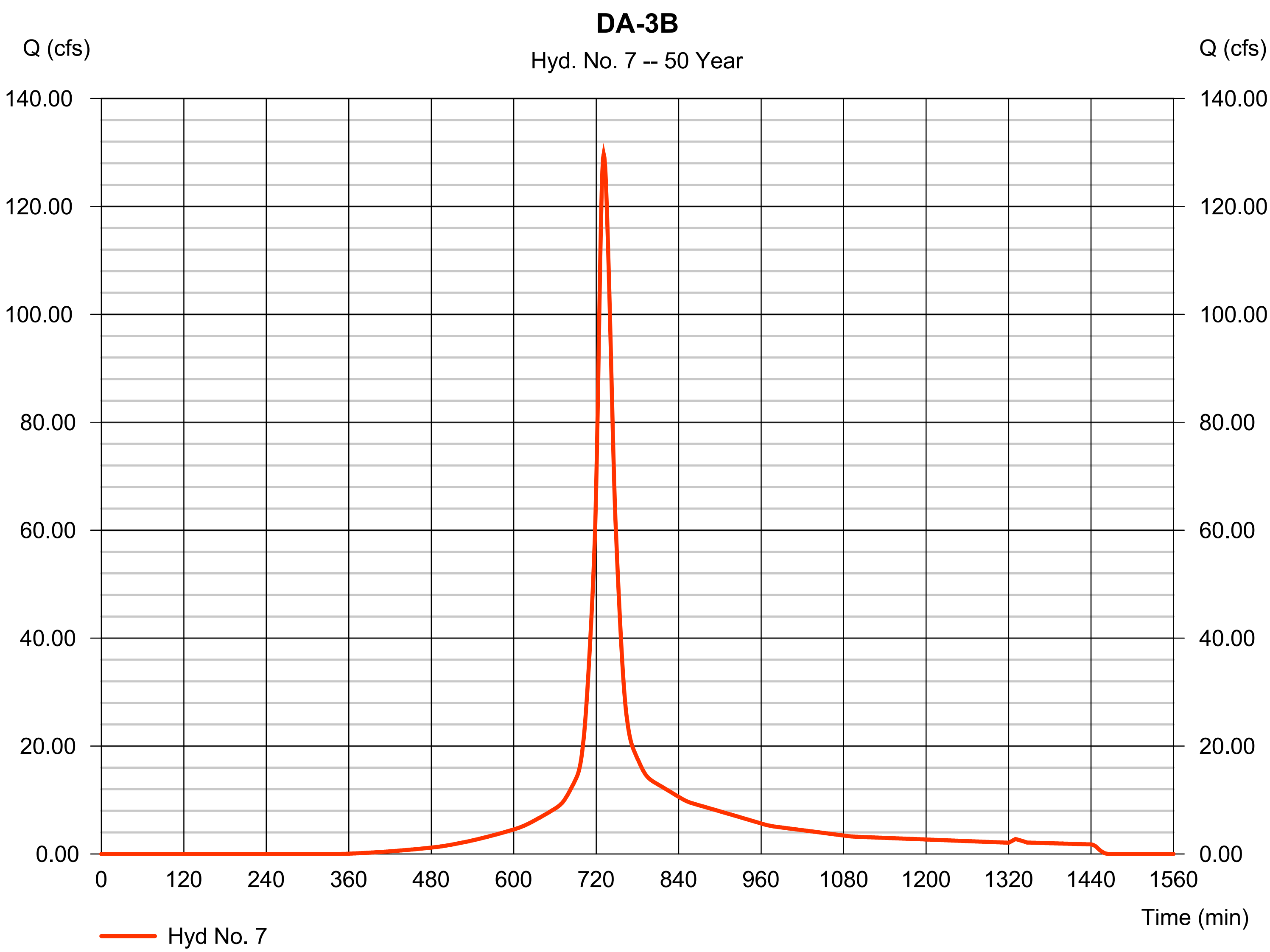


Hydrograph Report

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 129.70 cfs
Storm frequency	= 50 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 541,695 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



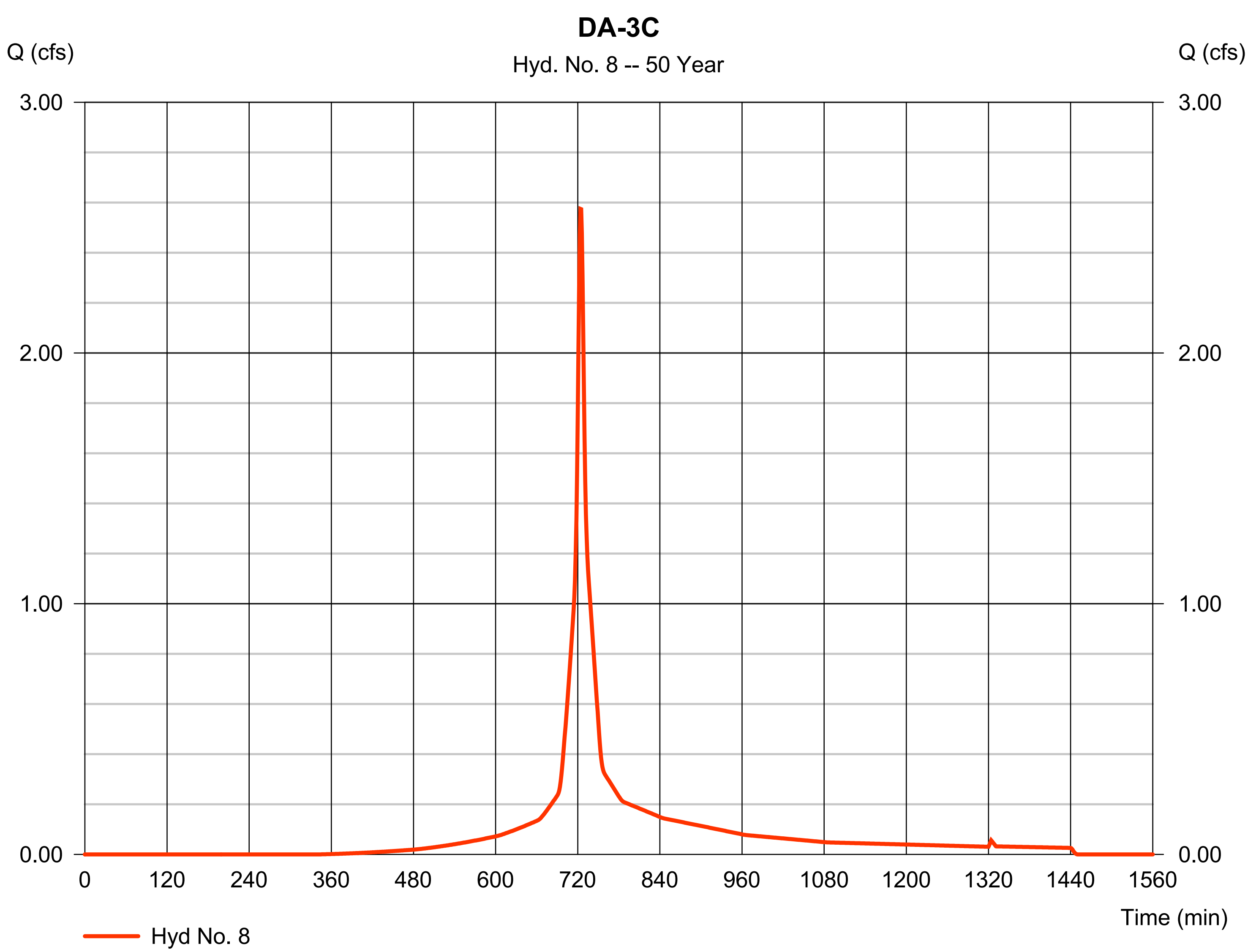
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.575 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 8,068 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



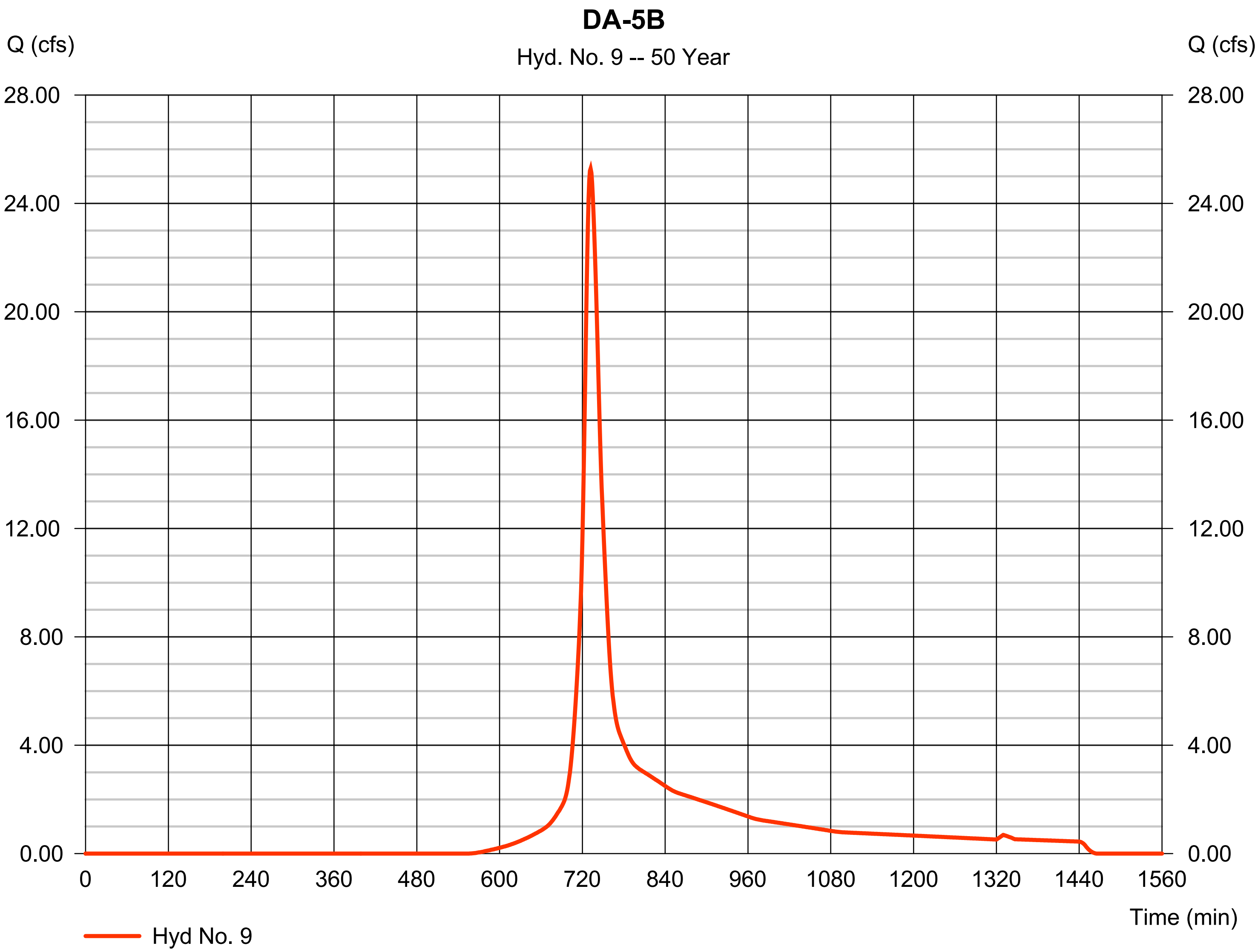
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 25.29 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 105,543 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



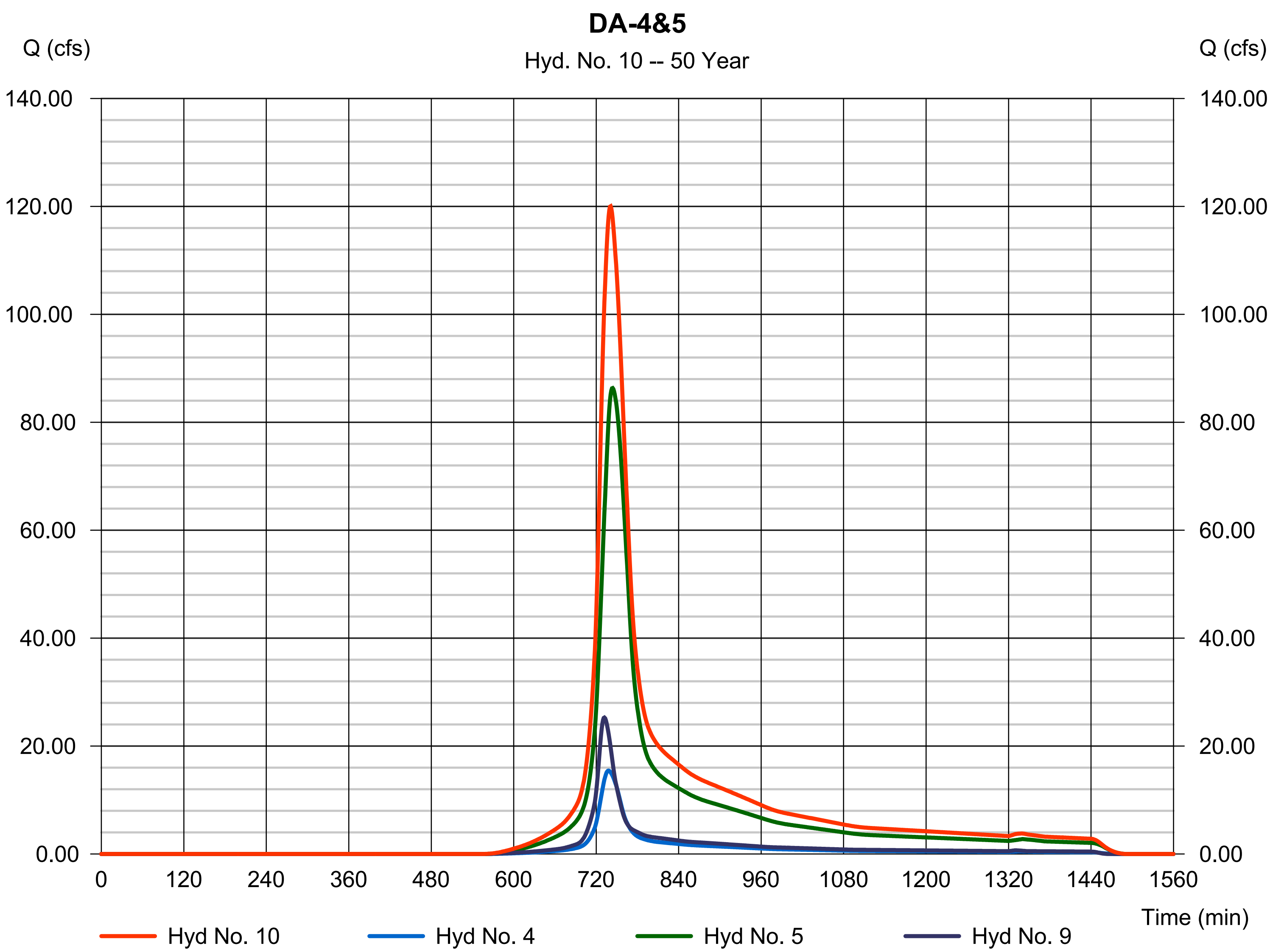
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 120.04 cfs
Storm frequency	= 50 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 658,484 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



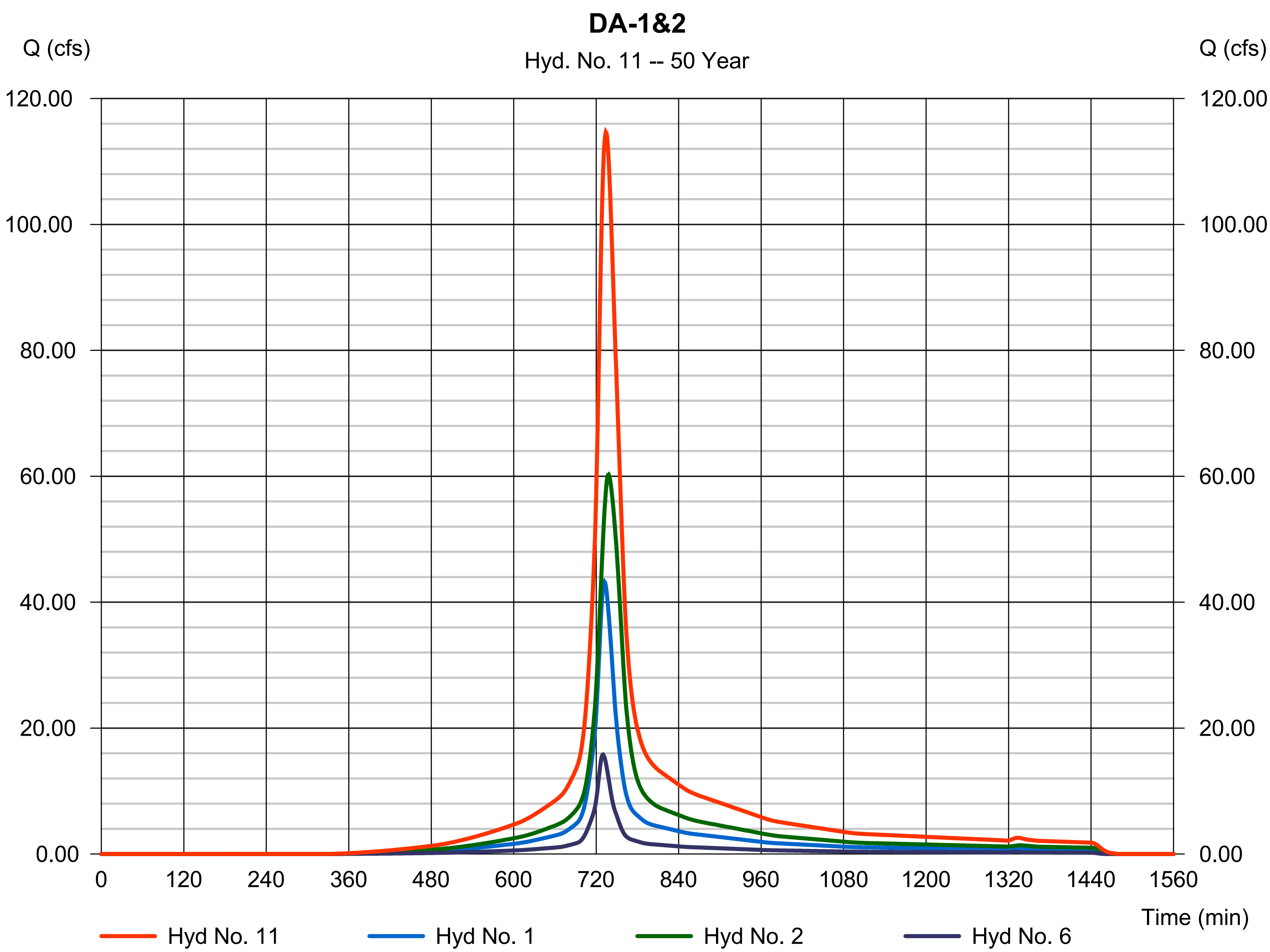
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 114.65 cfs
Storm frequency	= 50 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 553,257 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



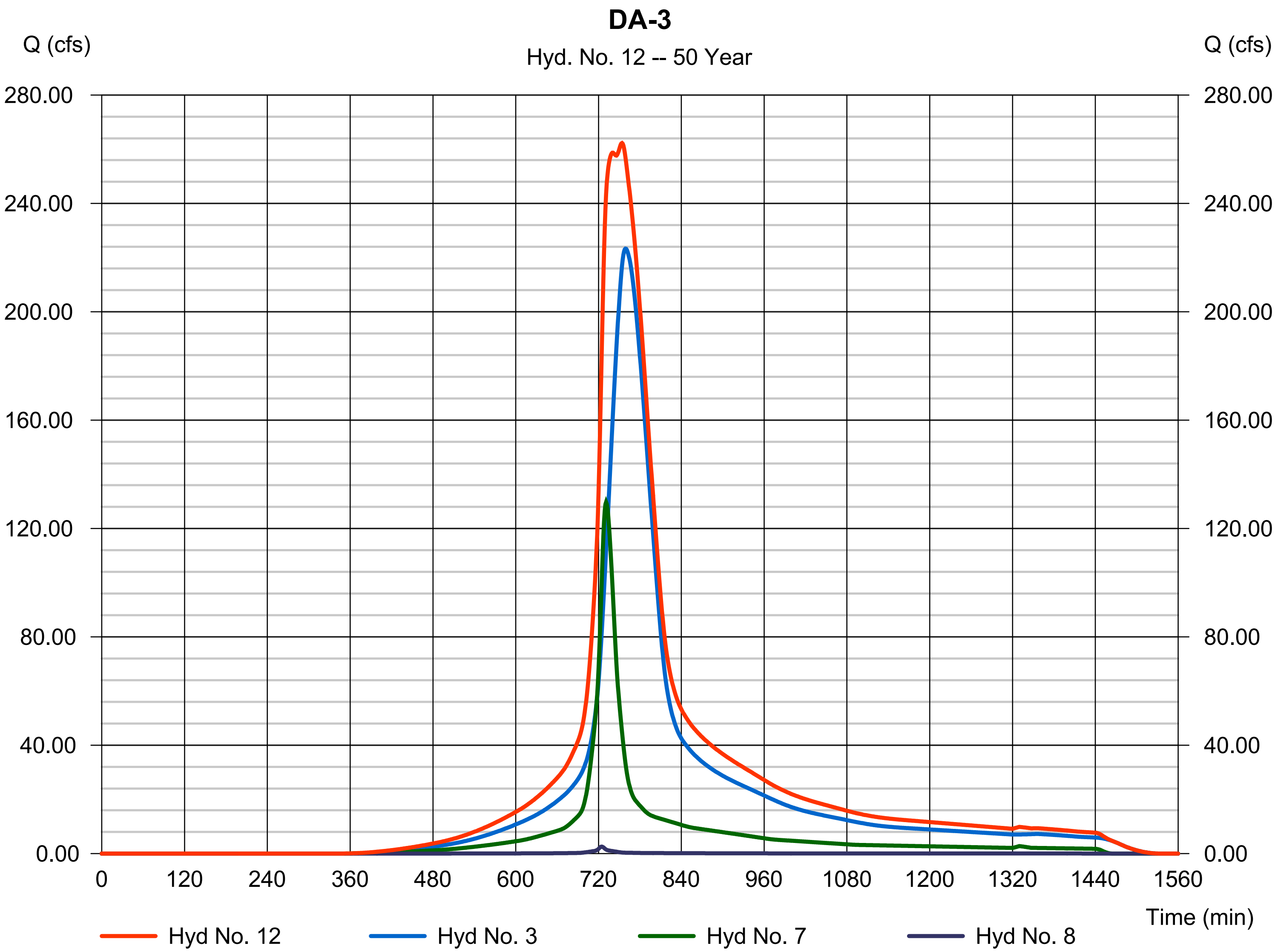
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 262.31 cfs
Storm frequency	= 50 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,246,176 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac

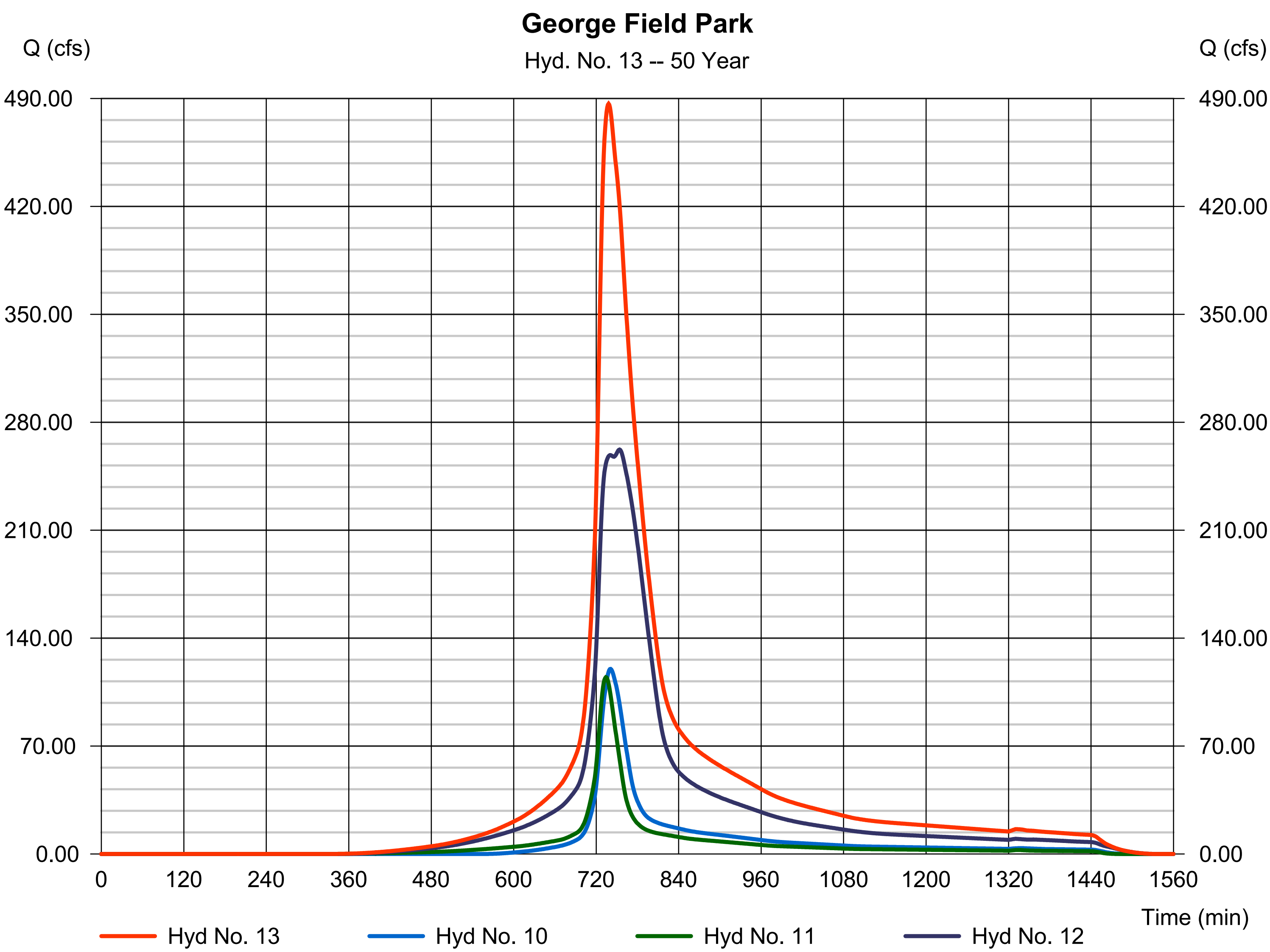


Hydrograph Report

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 486.55 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,457,916 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

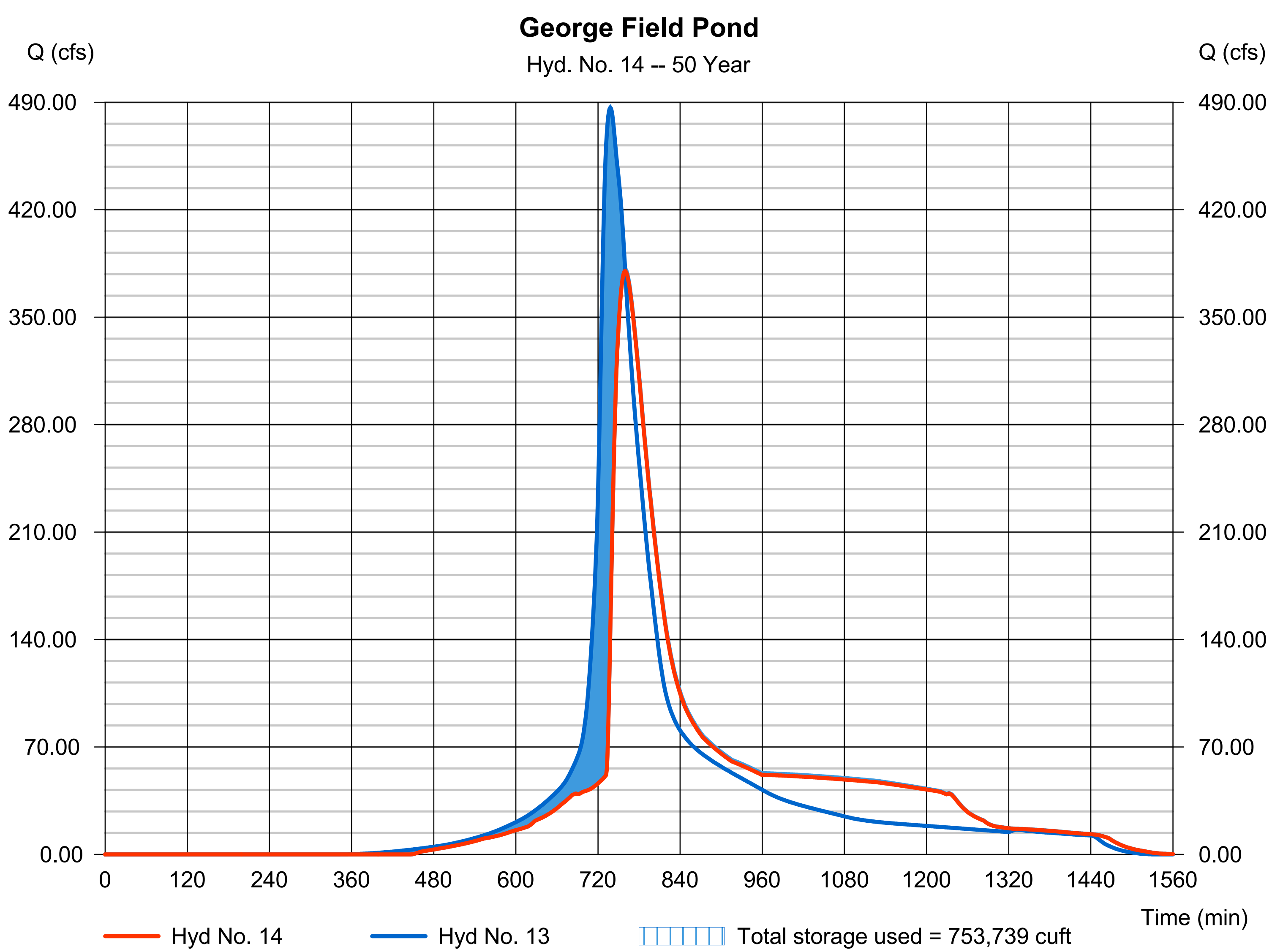
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 380.07 cfs
Storm frequency	= 50 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 3,415,345 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 217.16 ft
Reservoir name	= George Field Park	Max. Storage	= 753,739 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	52.96	1	732	229,663	------	------	------	DA-1A
2	SCS Runoff	73.79	1	738	375,041	------	------	------	DA-2
3	SCS Runoff	274.85	1	759	2,100,107	------	------	------	DA-3A
4	SCS Runoff	20.40	1	737	98,867	------	------	------	DA-4
5	SCS Runoff	114.15	1	743	626,355	------	------	------	DA-5A
6	SCS Runoff	19.32	1	730	78,108	------	------	------	DA-1B
7	SCS Runoff	159.32	1	731	670,602	------	------	------	DA-3B
8	SCS Runoff	3.162	1	724	9,988	------	------	------	DA-3C
9	SCS Runoff	33.39	1	732	138,427	------	------	------	DA-5B
10	Combine	158.66	1	740	863,647	4, 5, 9	------	------	DA-4&5
11	Combine	140.42	1	734	682,812	1, 2, 6,	------	------	DA-1&2
12	Combine	322.50	1	754	2,780,696	3, 7, 8,	------	------	DA-3
13	Combine	610.29	1	738	4,327,159	10, 11, 12	------	------	George Field Park
14	Reservoir	508.17	1	756	4,279,781	13	217.44	838,543	George Field Pond

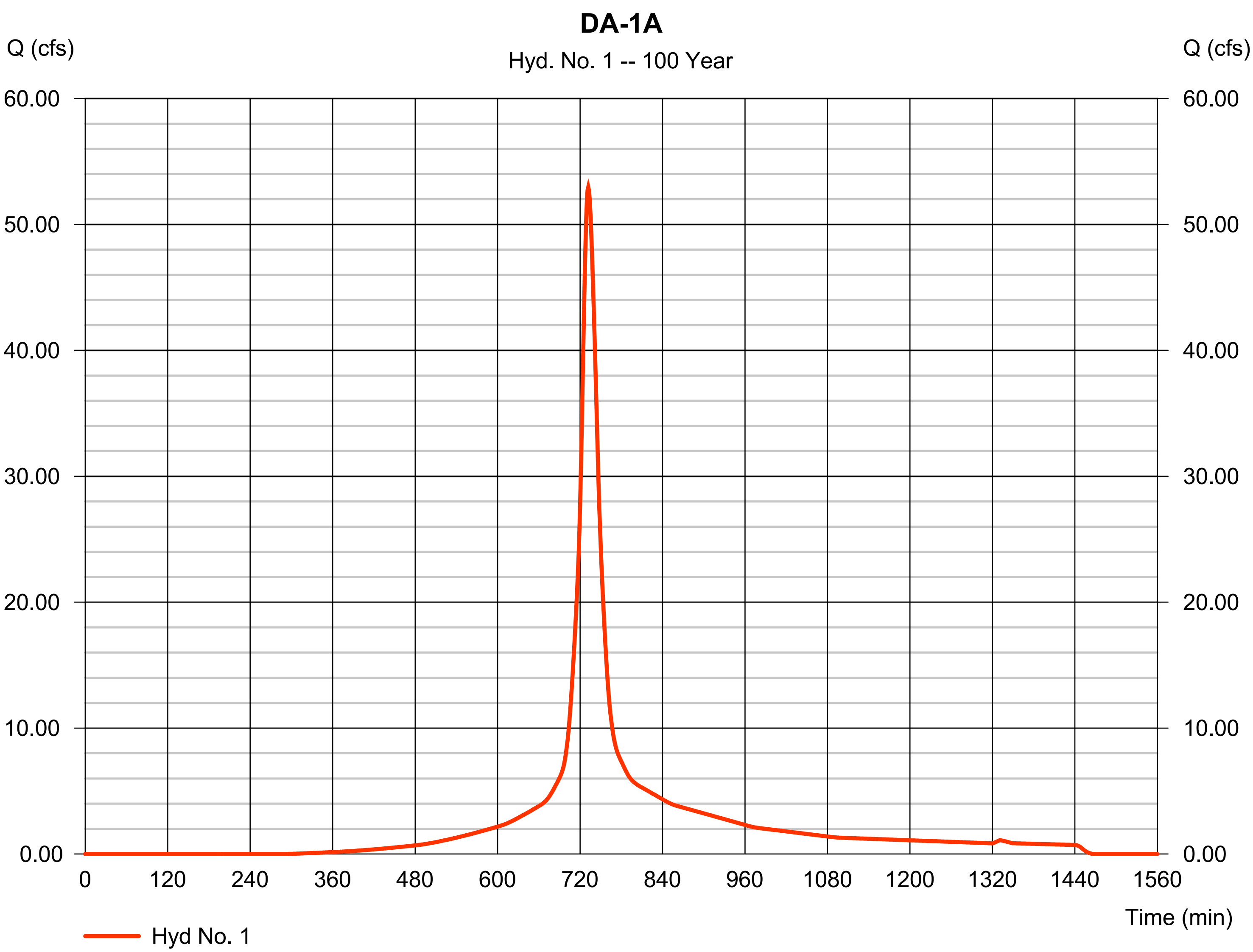
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 52.96 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 229,663 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



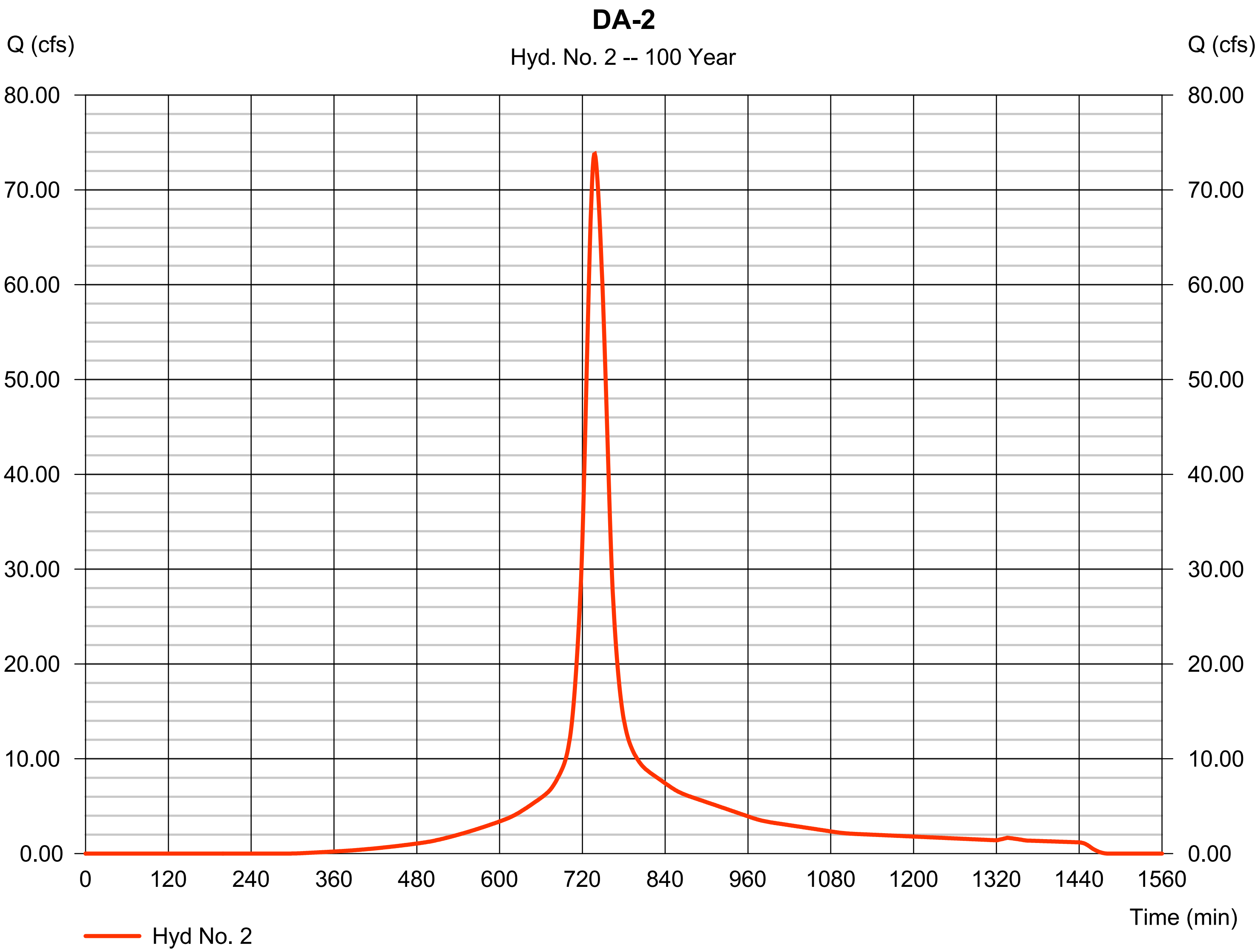
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 73.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 375,041 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

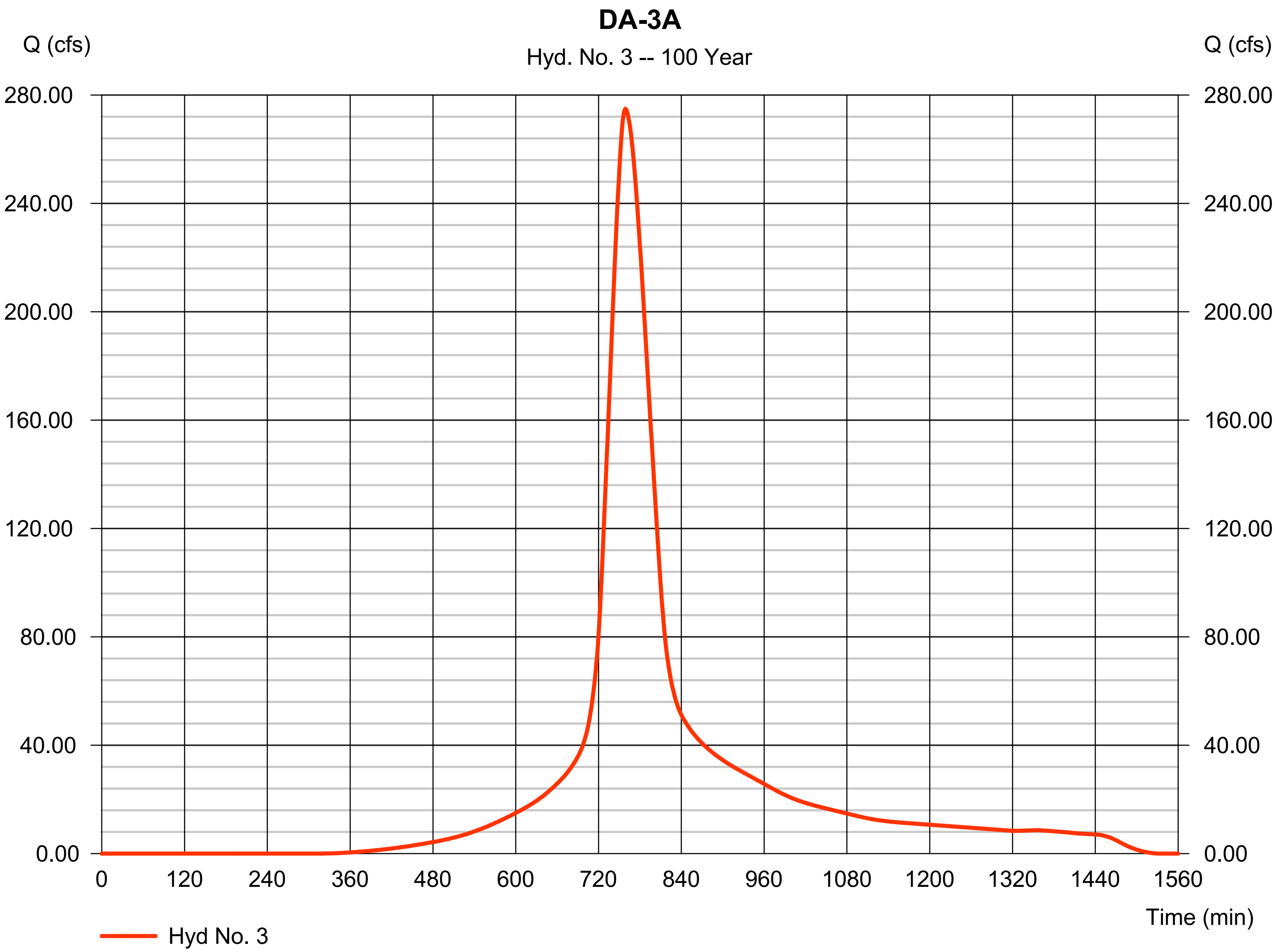
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 274.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 2,100,107 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



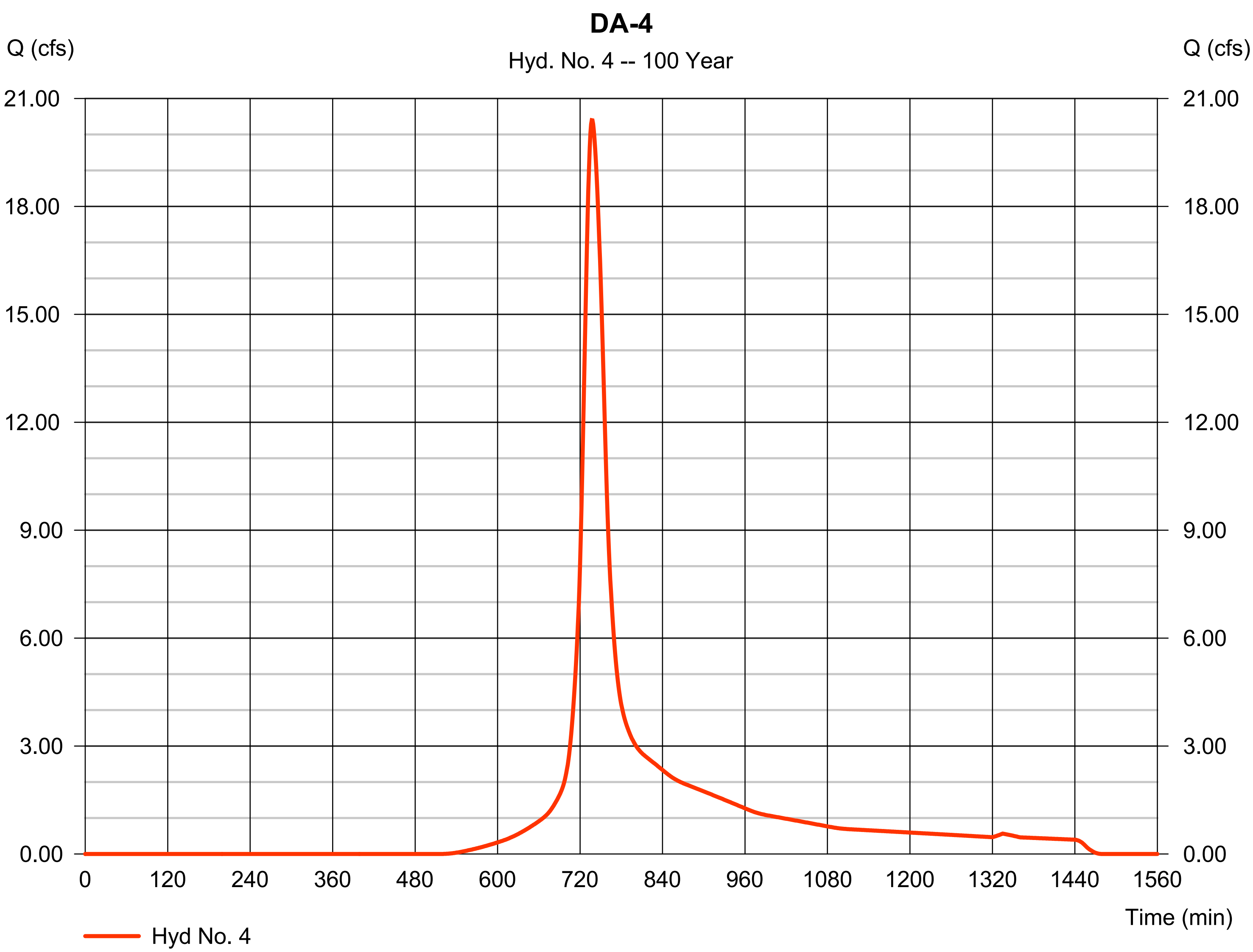
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 20.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 98,867 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



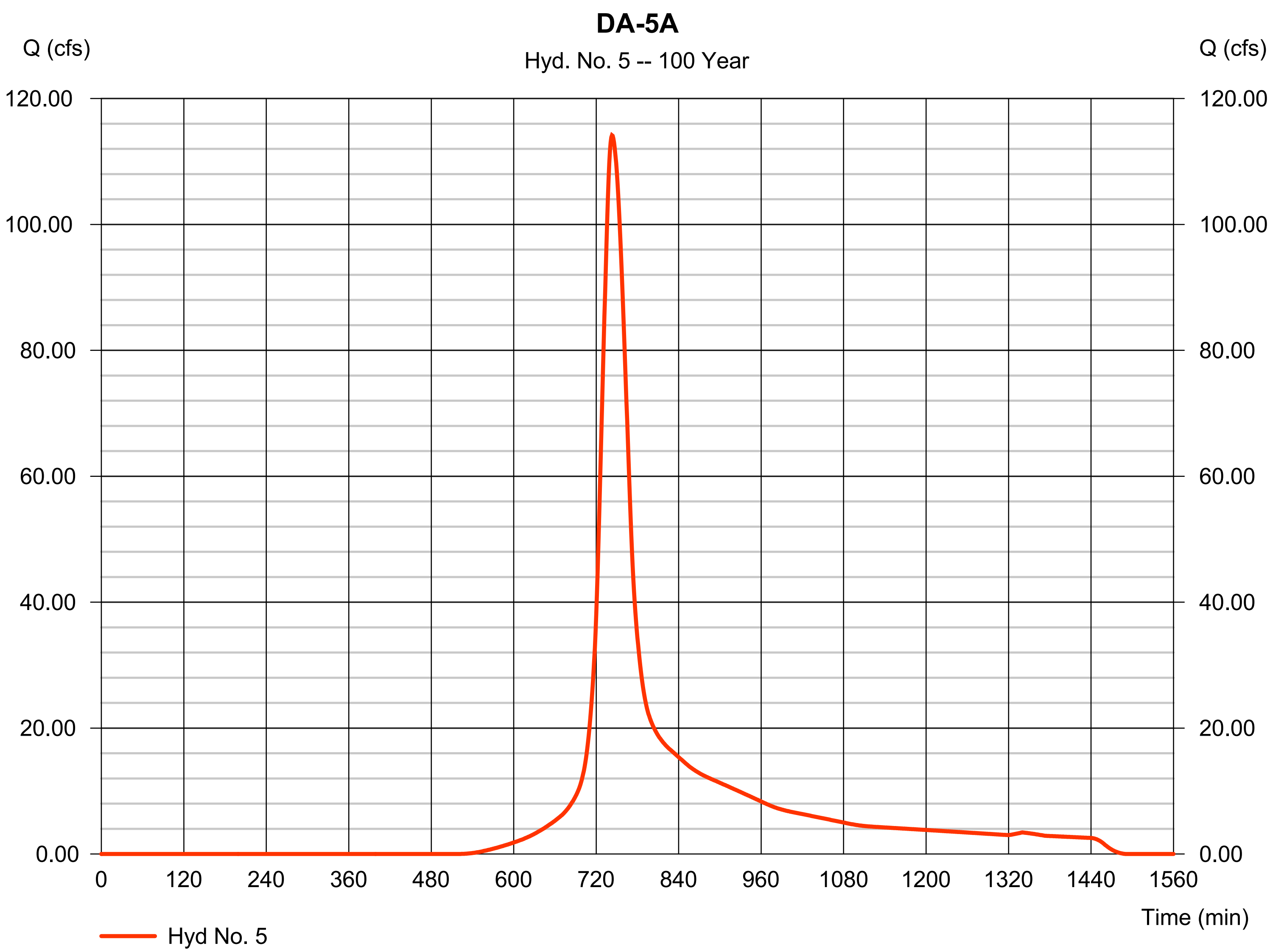
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 114.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 743 min
Time interval	= 1 min	Hyd. volume	= 626,355 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



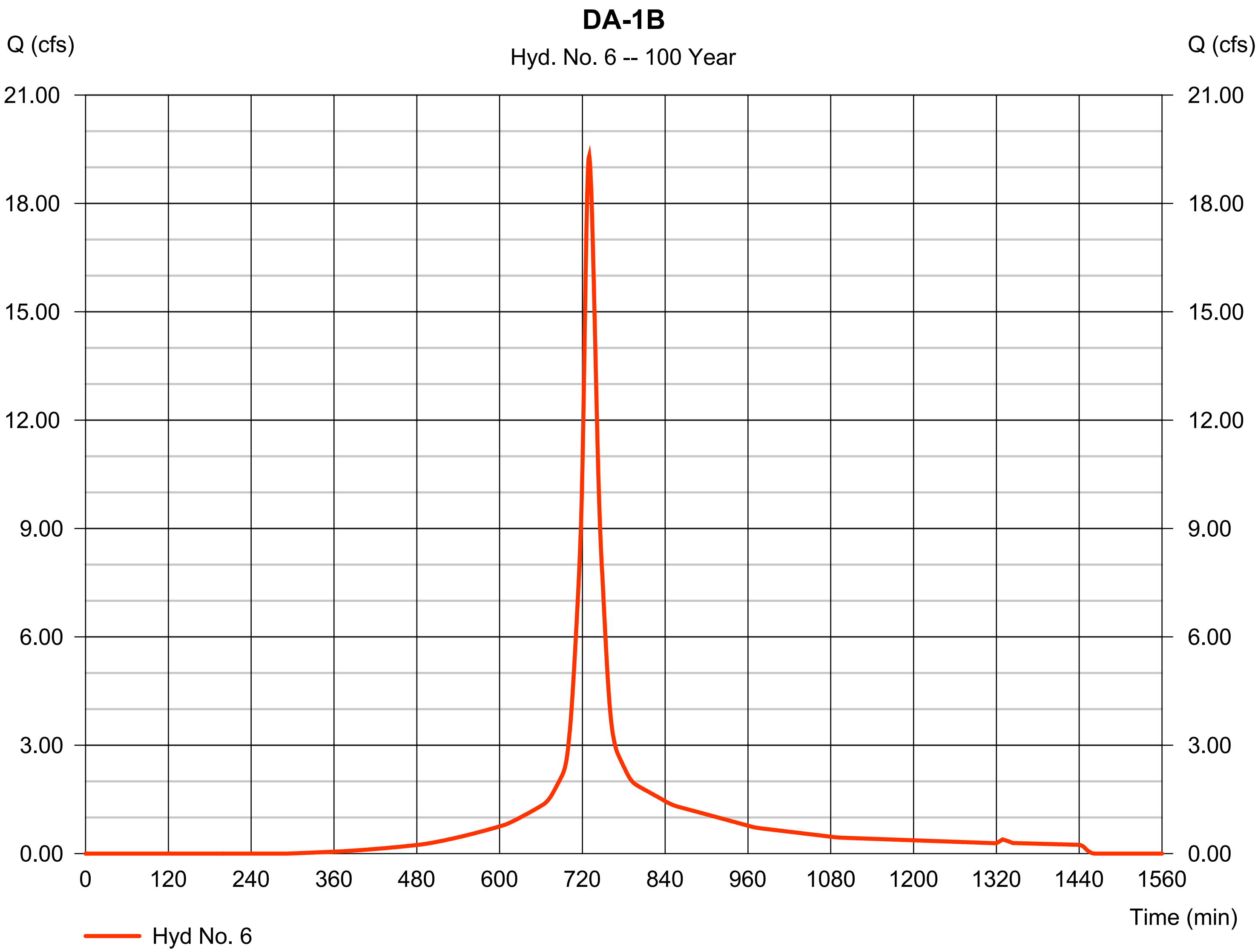
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 19.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 78,108 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



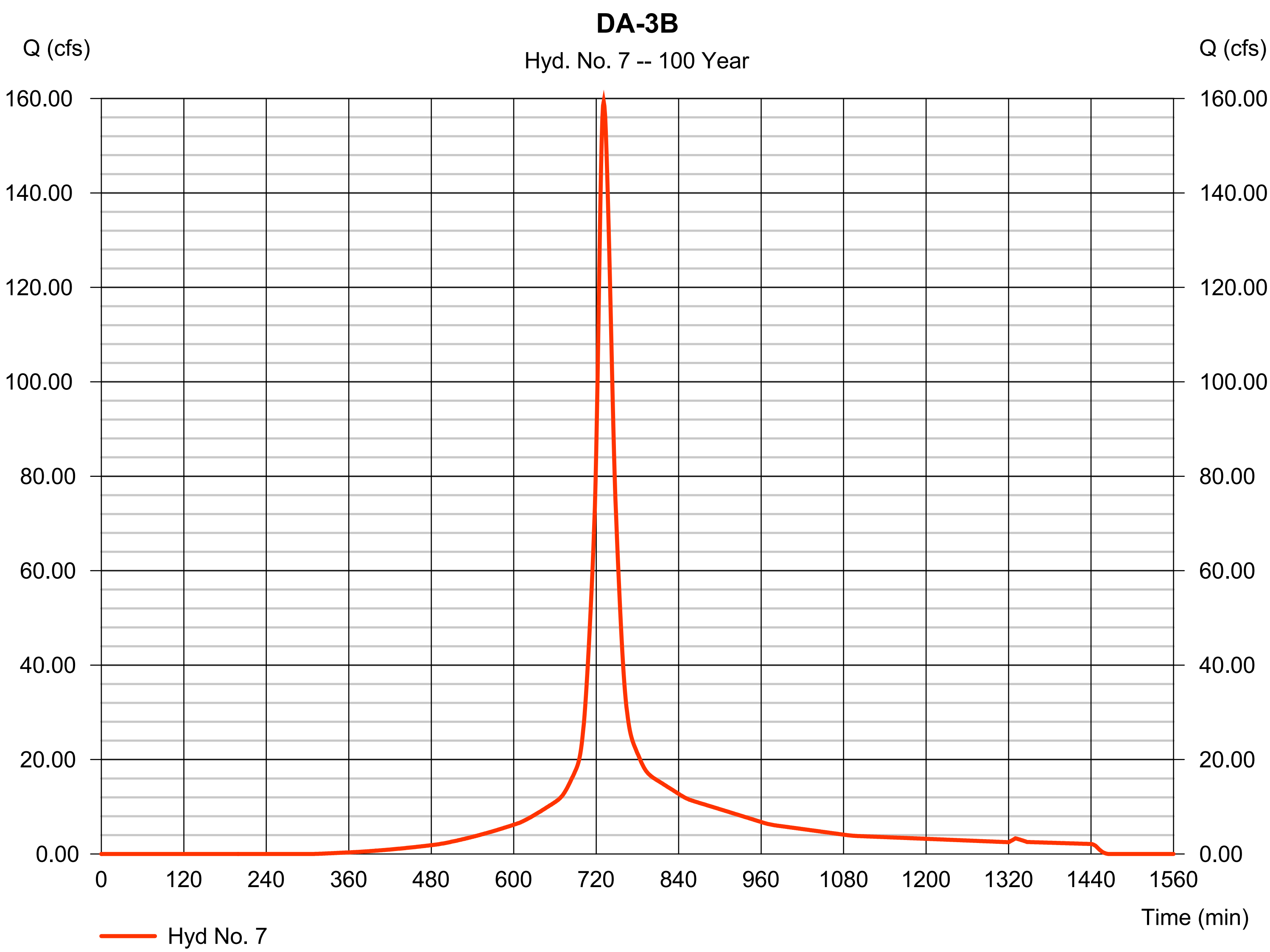
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 159.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 670,602 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



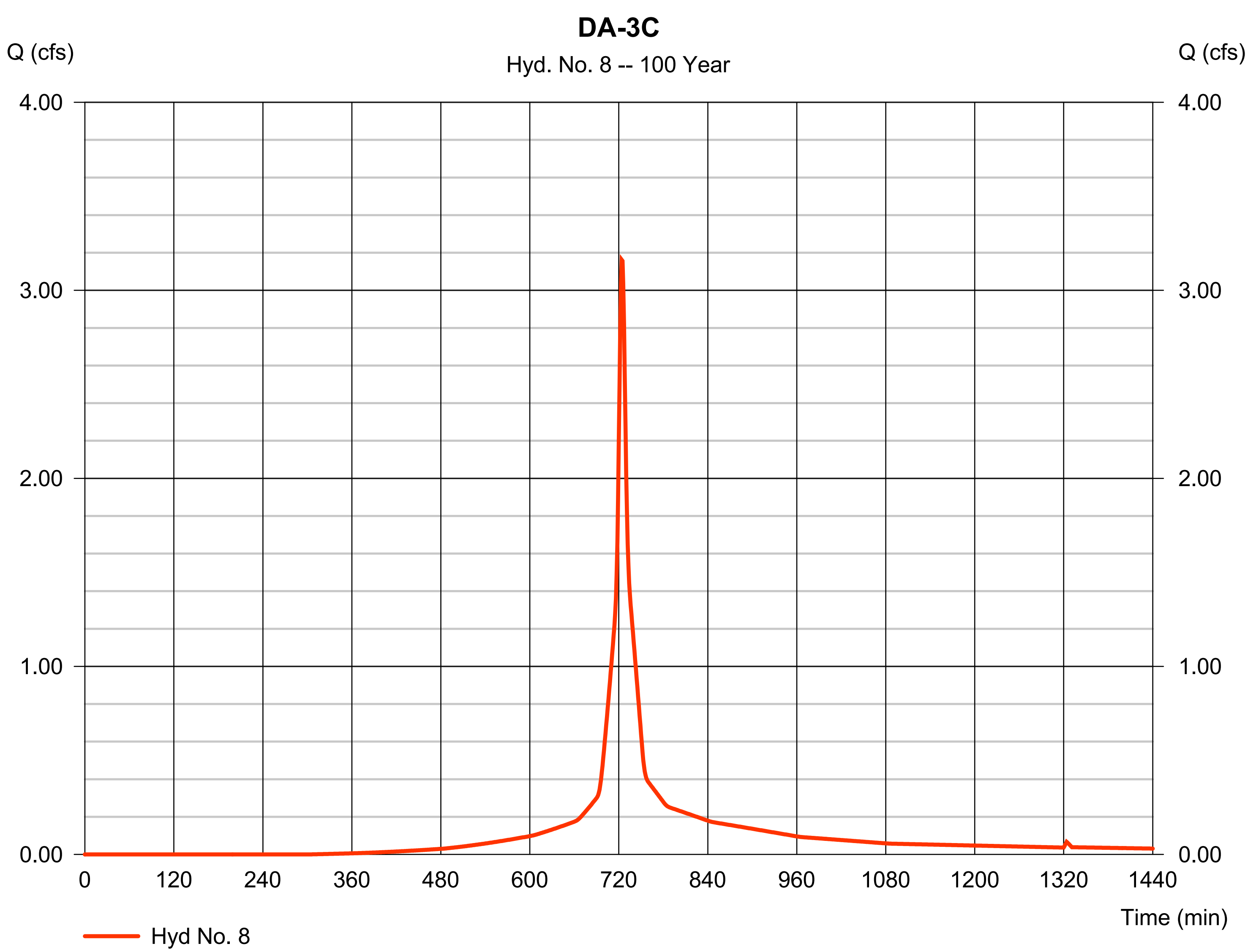
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.162 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 9,988 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



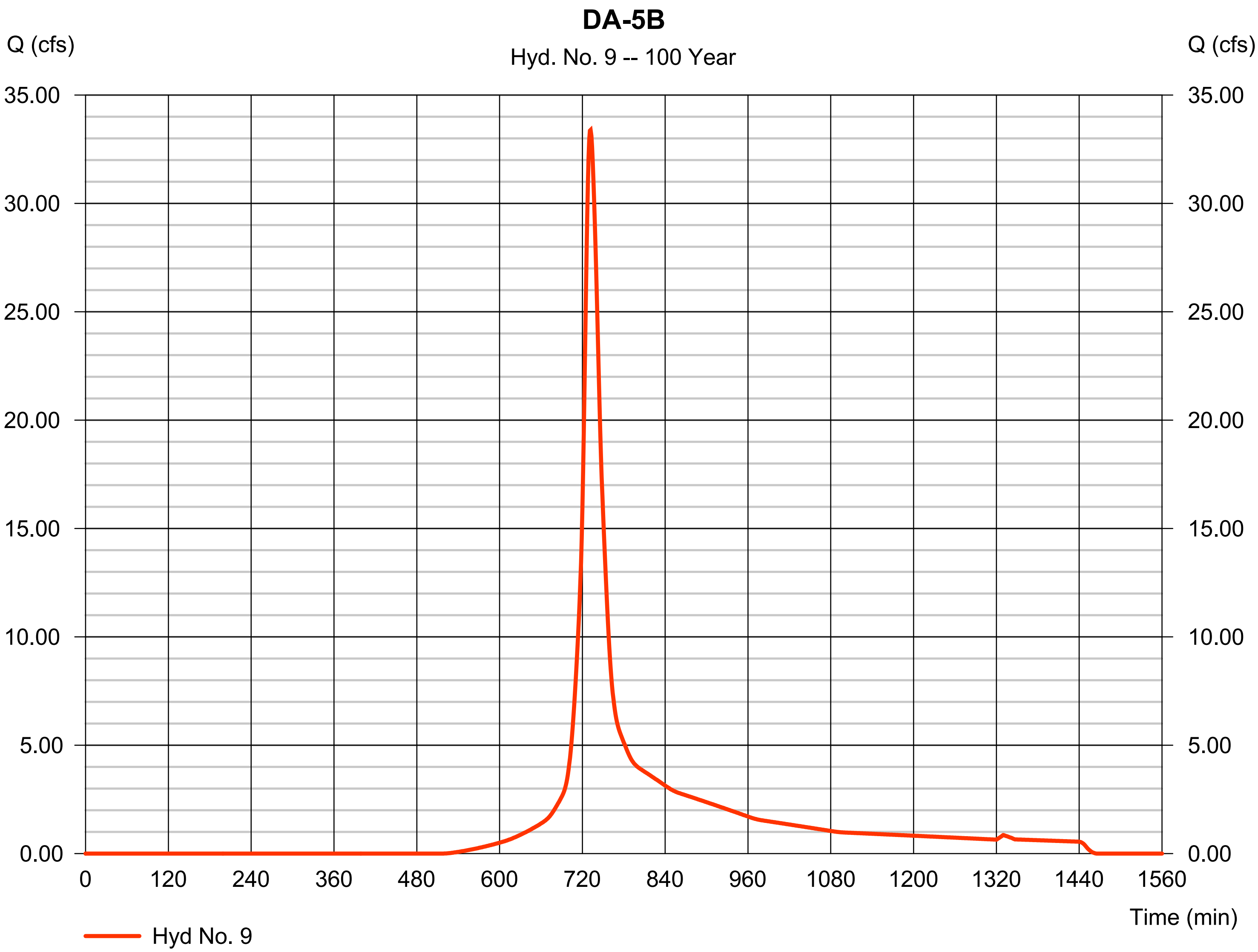
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 33.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 138,427 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



X:\SCRS (Vil of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-BIM-CADD\Con-Docs\05 Civil\C-100 - Existing Condition Hydrology.dwg Last Modified: Oct 01, 2024 - 9:10am Plotted on: Oct 01, 2024 - 9:11am By speters

GEORGE FIELD PARK SUB-WATERSHED PEAK FLOW AND RUNOFF VOLUME

STORM	PEAK FLOW (CFS)	RUNOFF VOLUME (CU-FT)
1 YEAR	35.76	408,962
2 YEAR	49.96	1,118,109
10 YEAR	203.72	2,262,048
25 YEAR	325.17	3,039,665
50 YEAR	380.07	3,415,345
100 YEAR	508.17	4,279,781

C-100

George Field Park Existing Watershed Map

GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.

SCARSDALE NEW YORK

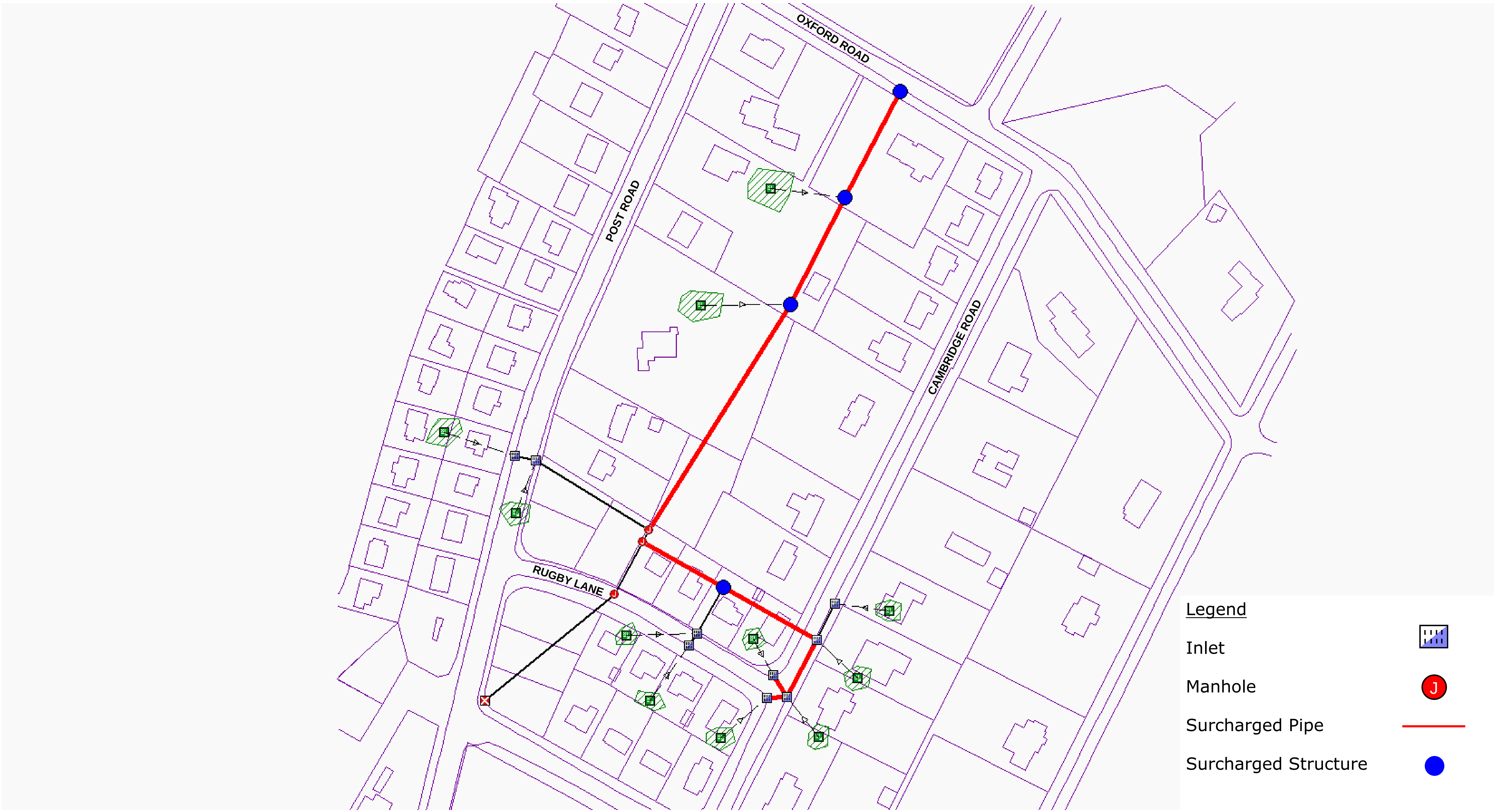
Village of Scarsdale
George Field Park Drainage Improvements

Project #
SCRS2401
DATE:
September 2024

H2M architects + engineers
www.h2m.com

Appendix B

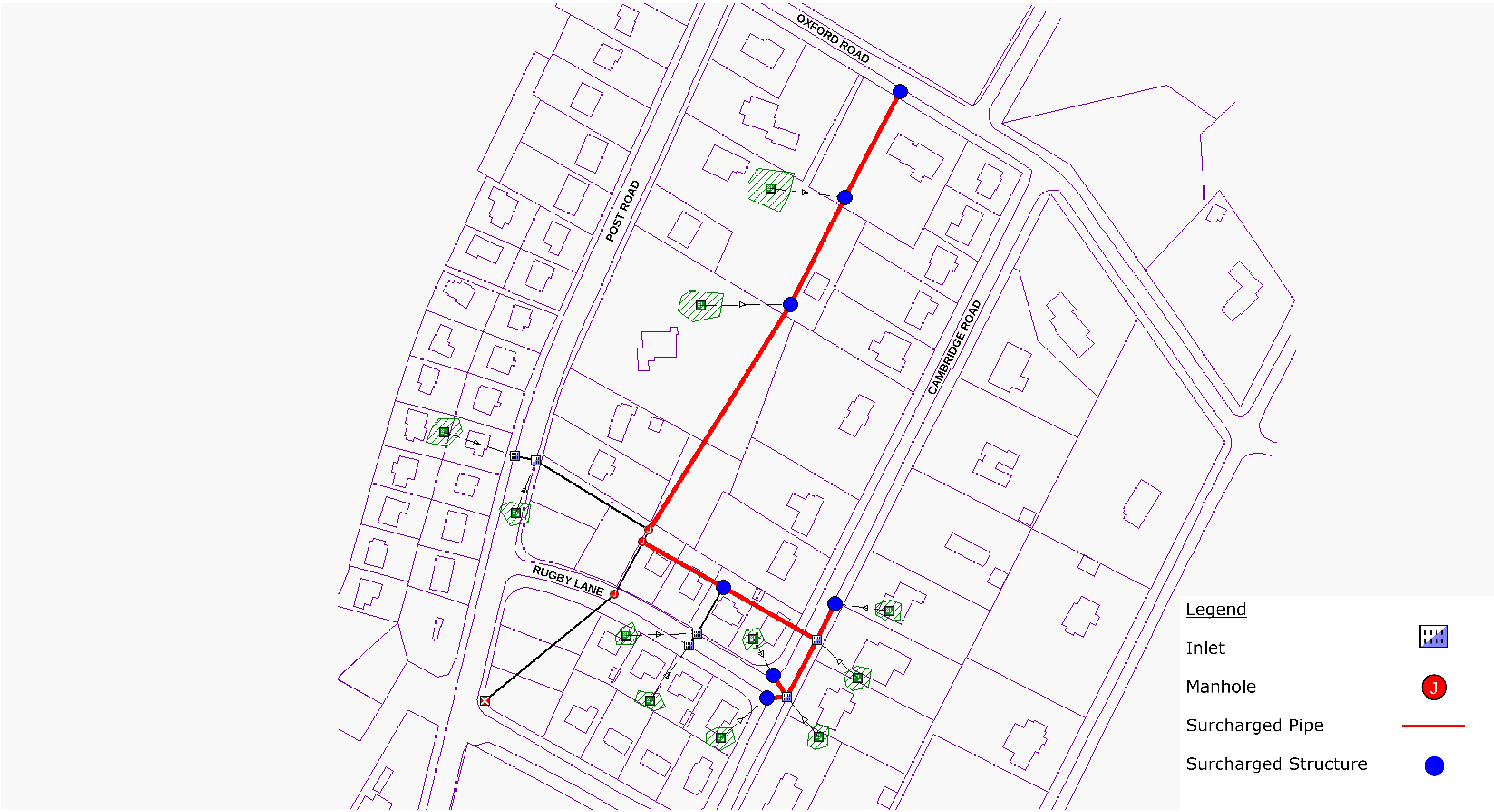
2 Year Storm Plan Plot
Cambridge Road, Rugby Lane, Post Road & Oxford Road



Autodesk Storm and Sanitary Analysis

EXISTING CONDITION

10 Year Storm Plan Plot
Cambridge Road, Rugby Lane, Post Road & Oxford Road



Autodesk Storm and Sanitary Analysis

EXISTING CONDITION

25 Year Storm Plan Plot
Cambridge Road, Rugby Lane, Post Road & Oxford Road

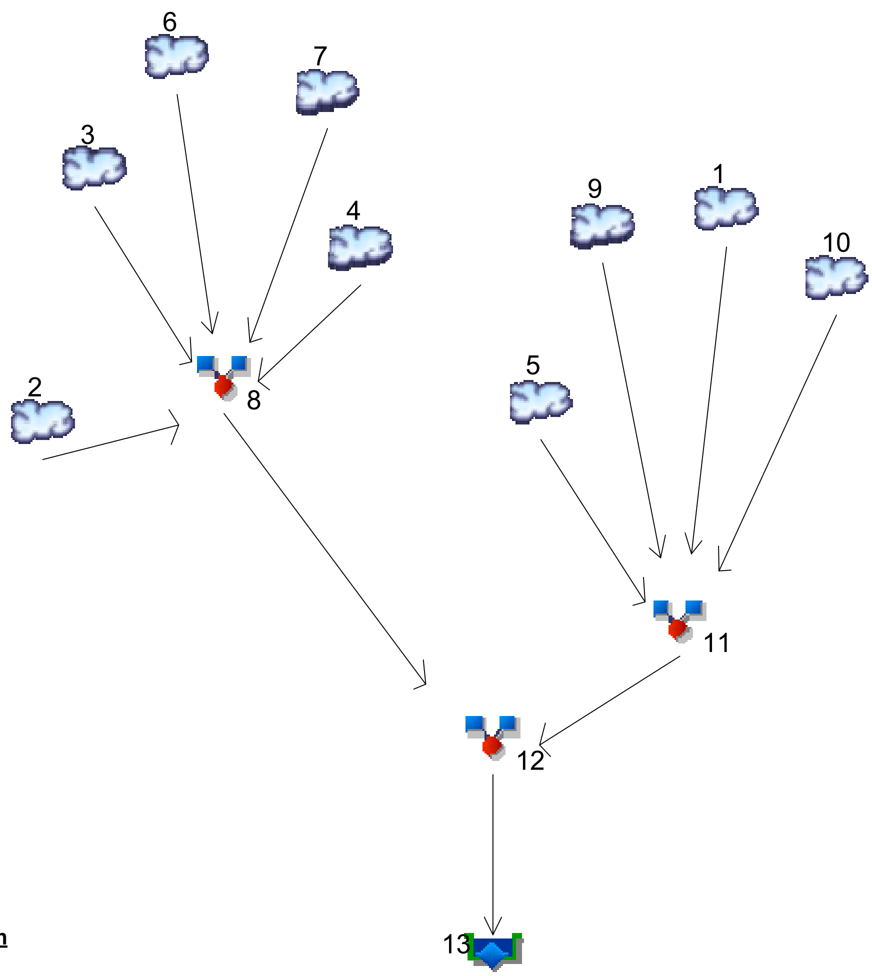
Autodesk Storm and Sanitary Analysis

EXISTING CONDITION

Appendix C

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023



Legend

Hyd.	Origin	Description
1	SCS Runoff	DA-1A
2	SCS Runoff	DA-2
3	SCS Runoff	DA-3A
4	SCS Runoff	DA-4
5	SCS Runoff	DA-5A
6	SCS Runoff	DA-3B
7	SCS Runoff	DA-3C
8	Combine	GFP - Upper Pond
9	SCS Runoff	DA-5B
10	SCS Runoff	DA-1B
11	Combine	GFP - Lower Pond
12	Combine	Runoff to George Field Pond
13	Reservoir	George Field Discharge

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	5.975	15.64	-------	23.30	29.85	38.97	43.26	52.96	DA-1A
2	SCS Runoff	------	8.303	21.75	-------	32.42	41.55	54.27	60.26	73.79	DA-2
3	SCS Runoff	------	28.66	78.17	-------	118.05	152.42	200.52	223.32	274.85	DA-3A
4	SCS Runoff	------	0.367	3.142	-------	6.143	9.008	13.31	15.44	20.40	DA-4
5	SCS Runoff	------	2.059	17.62	-------	34.39	50.40	74.46	86.35	114.15	DA-5A
6	SCS Runoff	------	16.85	45.75	-------	68.88	88.79	116.57	129.70	159.32	DA-3B
7	SCS Runoff	------	0.339	0.916	-------	1.375	1.768	2.315	2.575	3.162	DA-3C
8	Combine	2, 3, 4, 6, 7	40.65	113.50	-------	173.55	225.62	299.03	333.88	412.86	GFP - Upper Pond
9	SCS Runoff	------	0.578	5.103	-------	10.06	14.75	21.81	25.29	33.39	DA-5B
10	SCS Runoff	------	2.185	5.715	-------	8.512	10.90	14.22	15.79	19.32	DA-1B
11	Combine	1, 5, 9, 10	8.751	38.04	-------	67.36	94.28	133.83	153.14	197.88	GFP - Lower Pond
12	Combine	8, 11	48.08	151.11	-------	240.46	319.41	432.37	486.55	610.29	Runoff to George Field Pond
13	Reservoir	12	6.695	24.87	-------	41.29	48.90	56.98	60.27	273.06	George Field Discharge

Proj. file: Proposed Condition - 1 pond - SFP.gpw

Wednesday, 01 / 15 / 2025

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.975	1	734	26,574	------	------	------	DA-1A
2	SCS Runoff	8.303	1	740	43,396	------	------	------	DA-2
3	SCS Runoff	28.66	1	765	231,649	------	------	------	DA-3A
4	SCS Runoff	0.367	1	754	3,871	------	------	------	DA-4
5	SCS Runoff	2.059	1	761	24,526	------	------	------	DA-5A
6	SCS Runoff	16.85	1	733	73,970	------	------	------	DA-3B
7	SCS Runoff	0.339	1	725	1,102	------	------	------	DA-3C
8	Combine	40.65	1	752	353,987	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	0.578	1	747	5,420	------	------	------	DA-5B
10	SCS Runoff	2.185	1	731	9,038	------	------	------	DA-1B
11	Combine	8.751	1	735	65,558	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	48.08	1	742	419,545	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	6.695	1	947	304,603	12	211.47	222,520	George Field Discharge

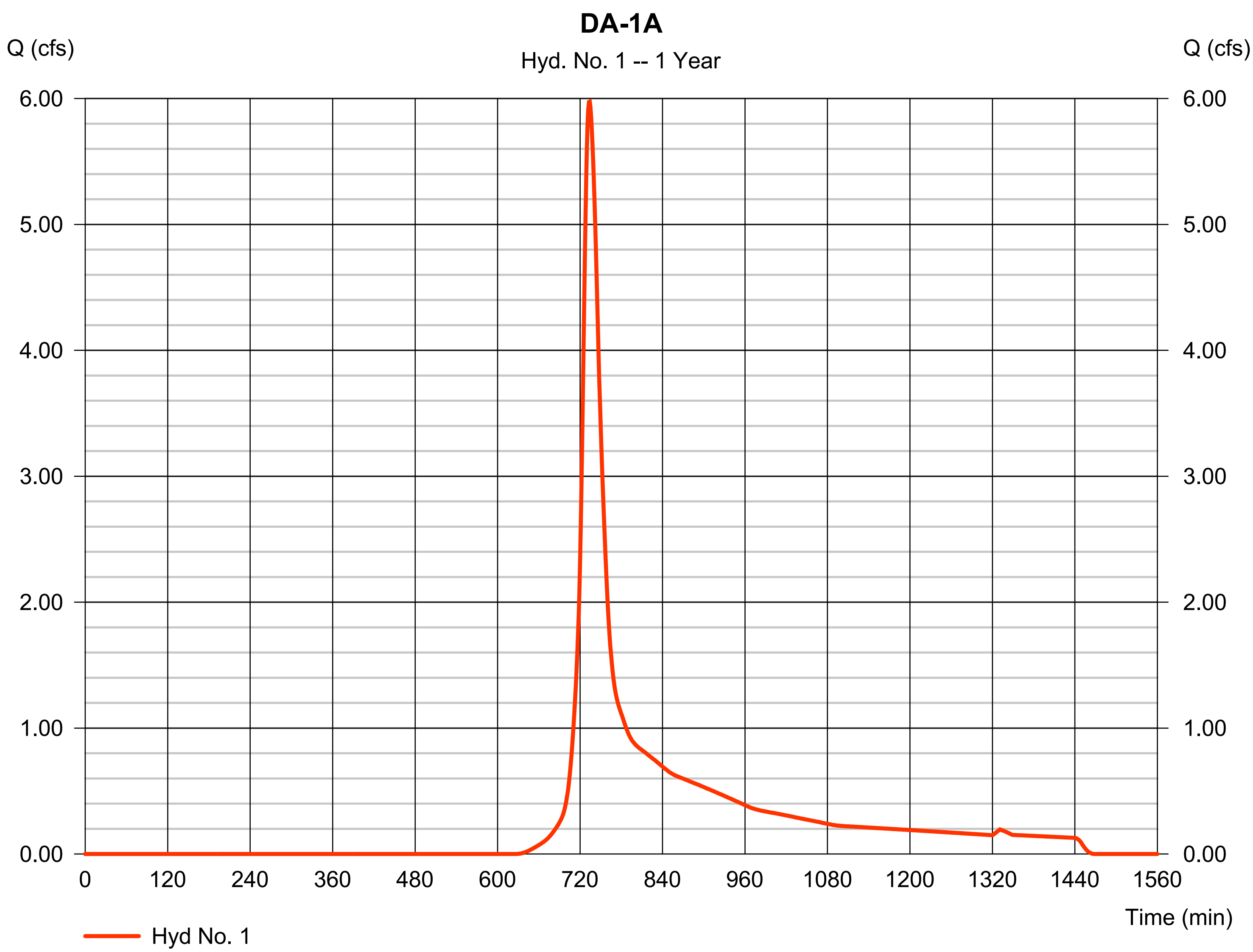
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 5.975 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 26,574 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 1

DA-1A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	8.00		0.00		0.00		
Travel Time (min)	**=**	**16.48**	**+**	**0.00**	**+**	**0.00**	**=**	**16.48**
Shallow Concentrated Flow								
Flow length (ft)	=	240.00		100.00		0.00		
Watercourse slope (%)	=	15.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.25			2.03		0.00		
Travel Time (min)	**=**	**0.64**	**+**	**0.82**	**+**	**0.00**	**=**	**1.46**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	3.14		0.00		0.00		
Channel slope (%)	=	3.00		0.00		0.00		
Manning's n-value	=	0.013		0.026		0.026		
Velocity (ft/s)	=19.85							
				0.00				
						0.00		
Flow length (ft)	({0})500.0			0.0		0.0		
Travel Time (min)	**=**	**0.42**	**+**	**0.00**	**+**	**0.00**	**=**	**0.42**

Total Travel Time, Tc .... 18.40 min

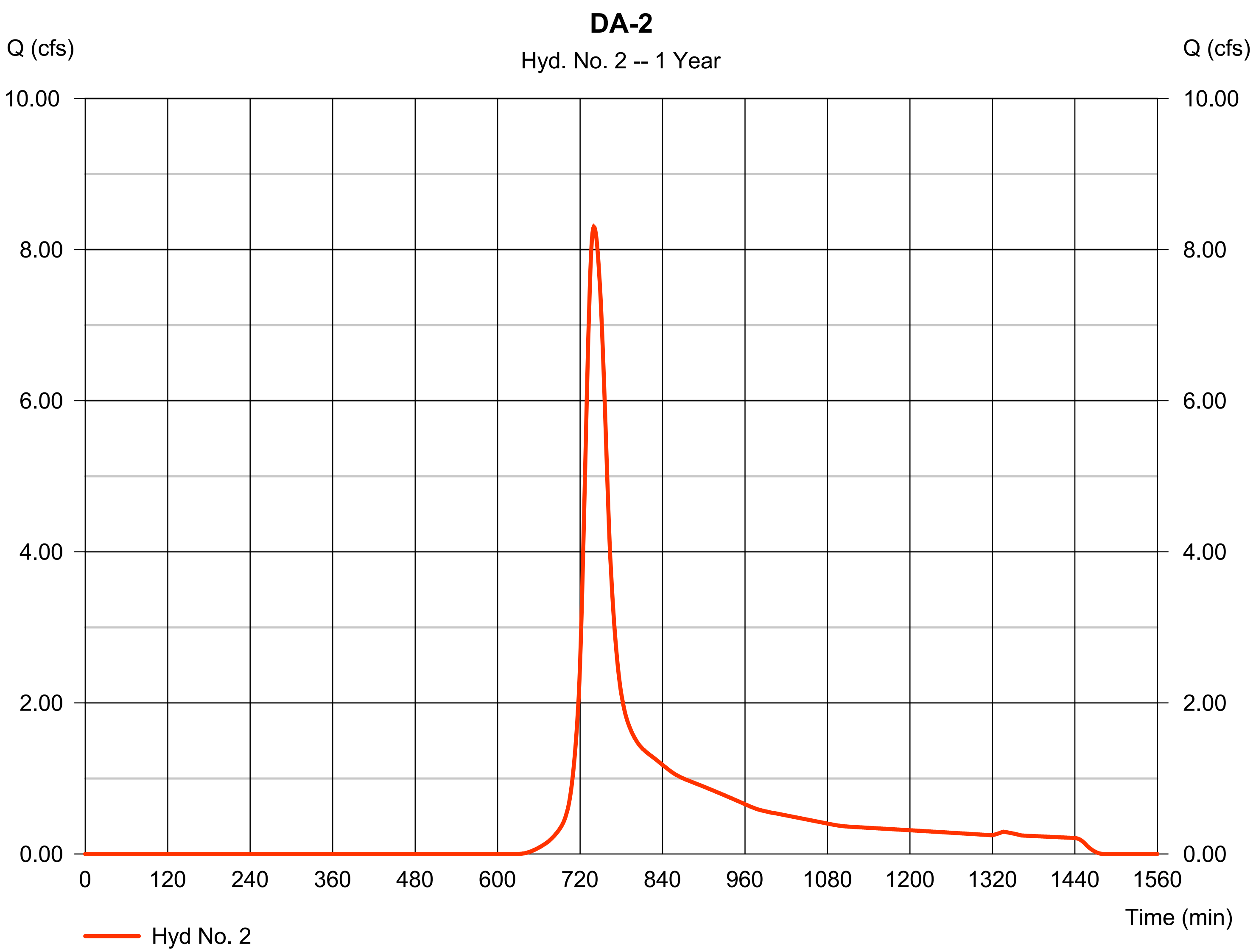
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 8.303 cfs
Storm frequency	= 1 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 43,396 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 2

DA-2

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	5.00		0.00		0.00		
Travel Time (min)	**=**	**19.89**	**+**	**0.00**	**+**	**0.00**	**=**	**19.89**
Shallow Concentrated Flow								
Flow length (ft)	=	260.00		750.00		0.00		
Watercourse slope (%)	=	5.00		3.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=3.61			3.52		0.00		
Travel Time (min)	**=**	**1.20**	**+**	**3.55**	**+**	**0.00**	**=**	**4.75**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	3.14		0.00		0.00		
Channel slope (%)	=	2.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=16.21							
				0.00				
						0.00		
Flow length (ft)	({0})1000.0			0.0		0.0		
Travel Time (min)	**=**	**1.03**	**+**	**0.00**	**+**	**0.00**	**=**	**1.03**

Total Travel Time, Tc .... **25.70 min**

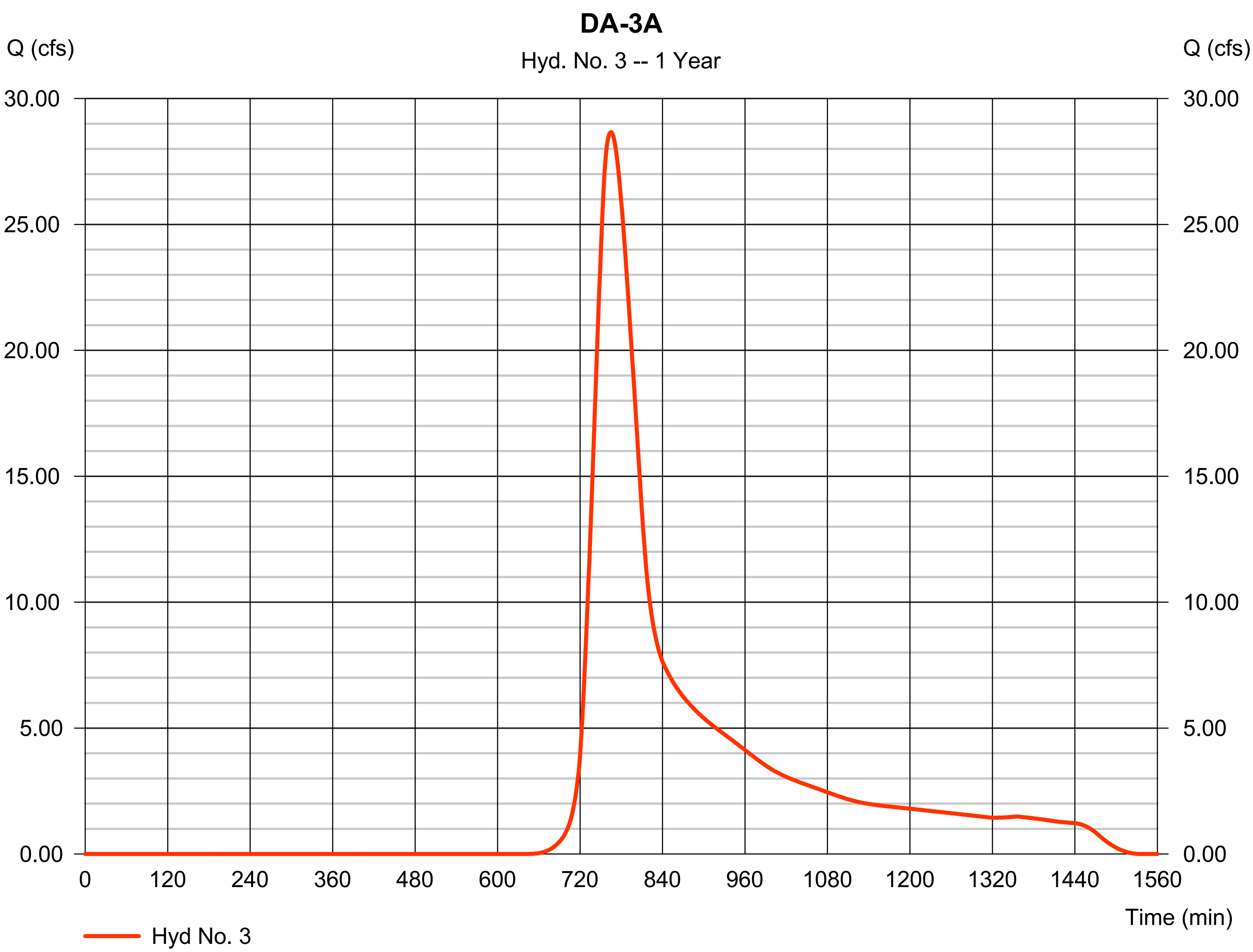
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 28.66 cfs
Storm frequency	= 1 yrs	Time to peak	= 765 min
Time interval	= 1 min	Hyd. volume	= 231,649 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 3

DA-3A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	0.75		0.00		0.00		
Travel Time (min)	**=**	**42.47**	**+**	**0.00**	**+**	**0.00**	**=**	**42.47**
Shallow Concentrated Flow								
Flow length (ft)	=	510.00		445.00		0.00		
Watercourse slope (%)	=	1.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.61			2.03		0.00		
Travel Time (min)	**=**	**5.27**	**+**	**3.65**	**+**	**0.00**	**=**	**8.92**
Channel Flow								
X sectional flow area (sqft)	=	3.14		45.00		20.00		
Wetted perimeter (ft)	=	3.14		16.00		8.00		
Channel slope (%)	=	1.00		0.10		1.00		
Manning's n-value	=	0.013		0.026		0.026		
Velocity (ft/s)	=11.46							
				3.62				
						10.59		
Flow length (ft)	({0})2150.0			1190.0		300.0		
Travel Time (min)	**=**	**3.13**	**+**	**5.47**	**+**	**0.47**	**=**	**9.07**

Total Travel Time, Tc .... **60.50 min**

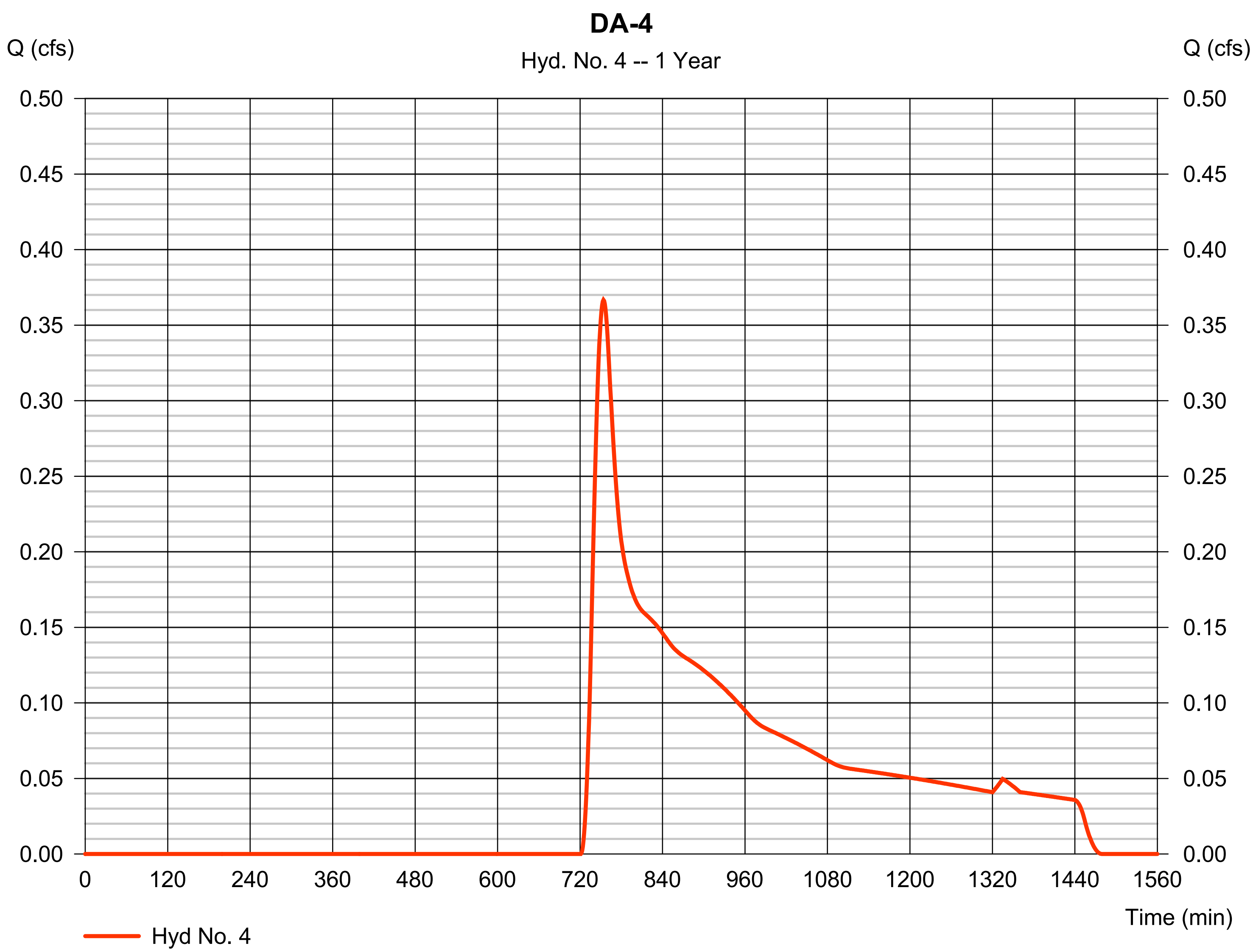
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 0.367 cfs
Storm frequency	= 1 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 3,871 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 4

DA-4

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	4.00		0.00		0.00		
Travel Time (min)	**=**	**21.74**	**+**	**0.00**	**+**	**0.00**	**=**	**21.74**
Shallow Concentrated Flow								
Flow length (ft)	=	430.00		70.00		0.00		
Watercourse slope (%)	=	14.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.04			2.03		0.00		
Travel Time (min)	**=**	**1.19**	**+**	**0.57**	**+**	**0.00**	**=**	**1.76**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	6.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=17.65							
				0.00				
						0.00		
Flow length (ft)	({0})460.0			0.0		0.0		
Travel Time (min)	**=**	**0.43**	**+**	**0.00**	**+**	**0.00**	**=**	**0.43**

Total Travel Time, Tc .... 23.90 min

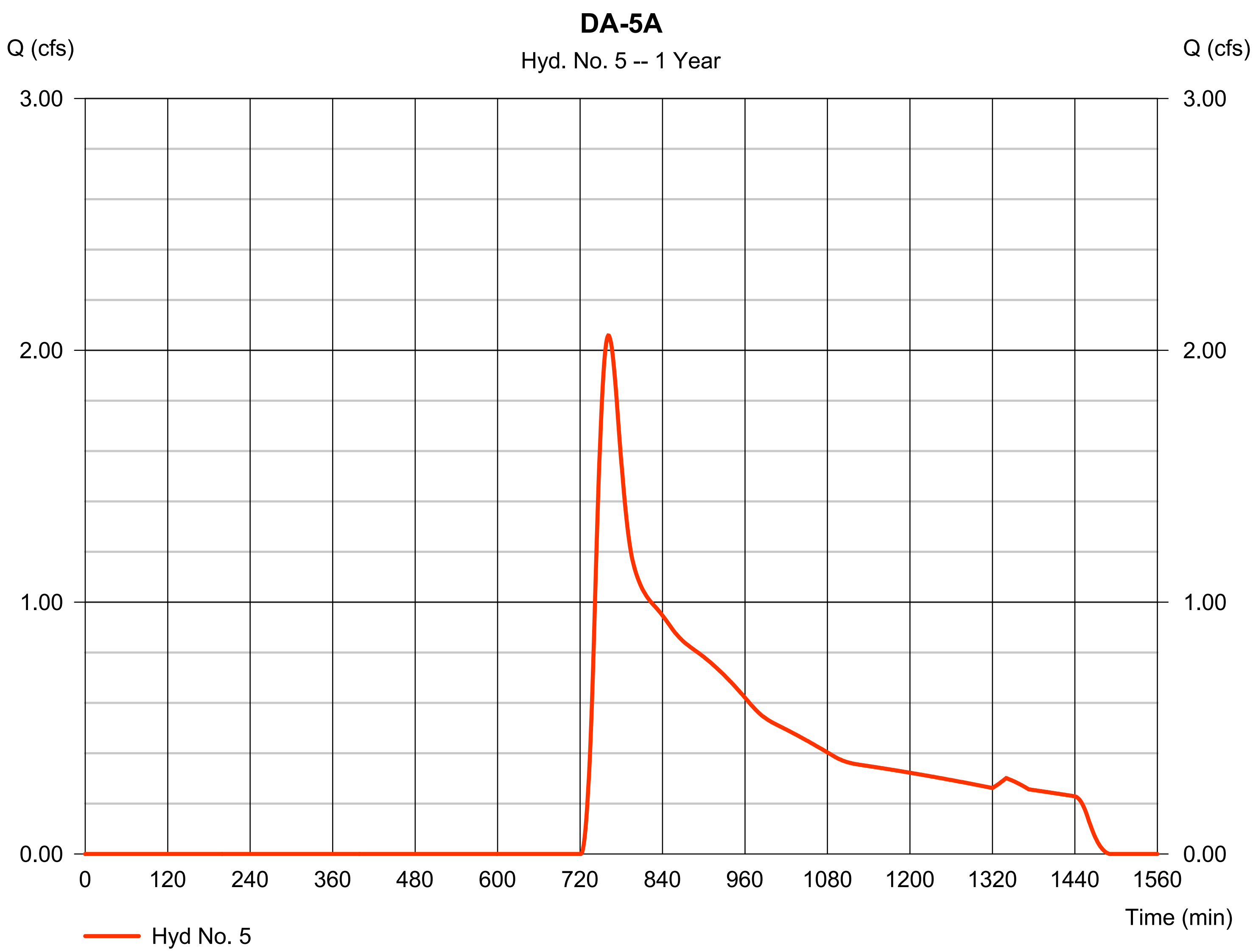
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 2.059 cfs
Storm frequency	= 1 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 24,526 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 5

DA-5A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	2.00		0.00		0.00		
Travel Time (min)	**=**	**28.69**	**+**	**0.00**	**+**	**0.00**	**=**	**28.69**
Shallow Concentrated Flow								
Flow length (ft)	=	180.00		580.00		0.00		
Watercourse slope (%)	=	11.00		3.50		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.35			3.80		0.00		
Travel Time (min)	**=**	**0.56**	**+**	**2.54**	**+**	**0.00**	**=**	**3.10**
Channel Flow								
X sectional flow area (sqft)	=	0.79		16.00		1.77		
Wetted perimeter (ft)	=	1.57		8.00		2.36		
Channel slope (%)	=	5.00		8.00		4.50		
Manning's n-value	=	0.013		0.030		0.013		
Velocity (ft/s)	=16.11			22.35		20.05		
Flow length (ft)	({0})120.0			510.0		370.0		
Travel Time (min)	**=**	**0.12**	**+**	**0.38**	**+**	**0.31**	**=**	**0.81**

Total Travel Time, Tc .... 32.60 min

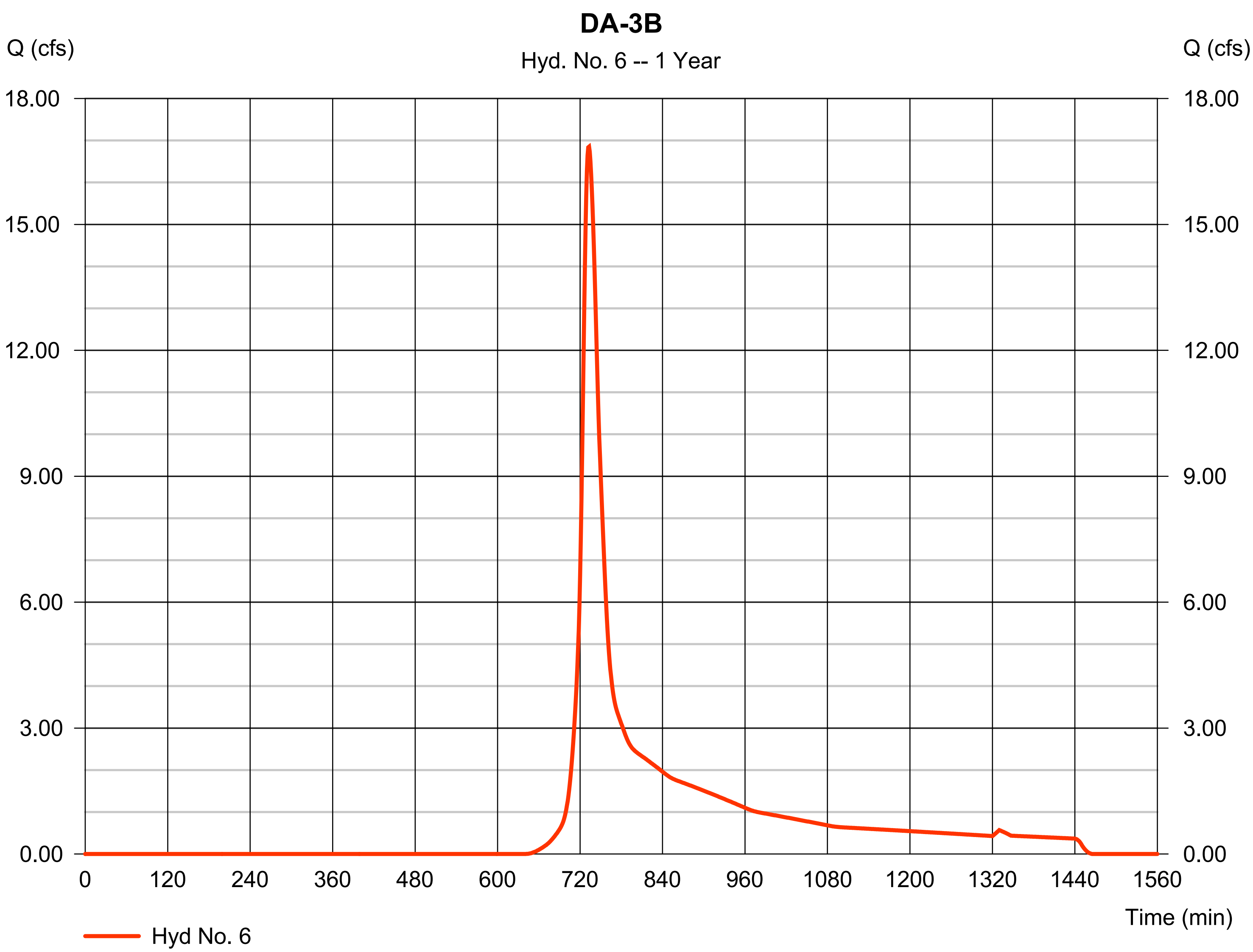
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 16.85 cfs
Storm frequency	= 1 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 73,970 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

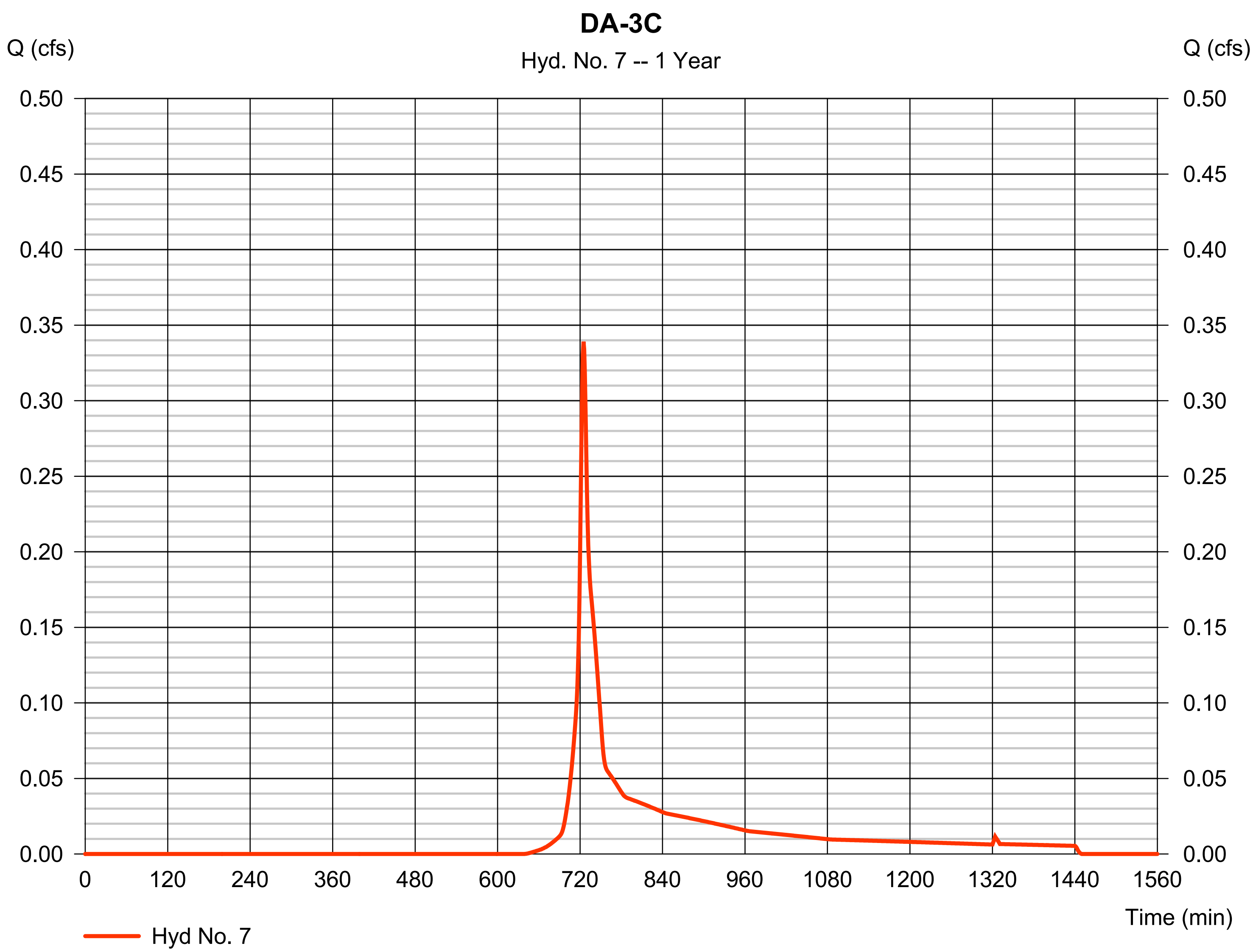


Hydrograph Report

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.339 cfs
Storm frequency	= 1 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 1,102 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



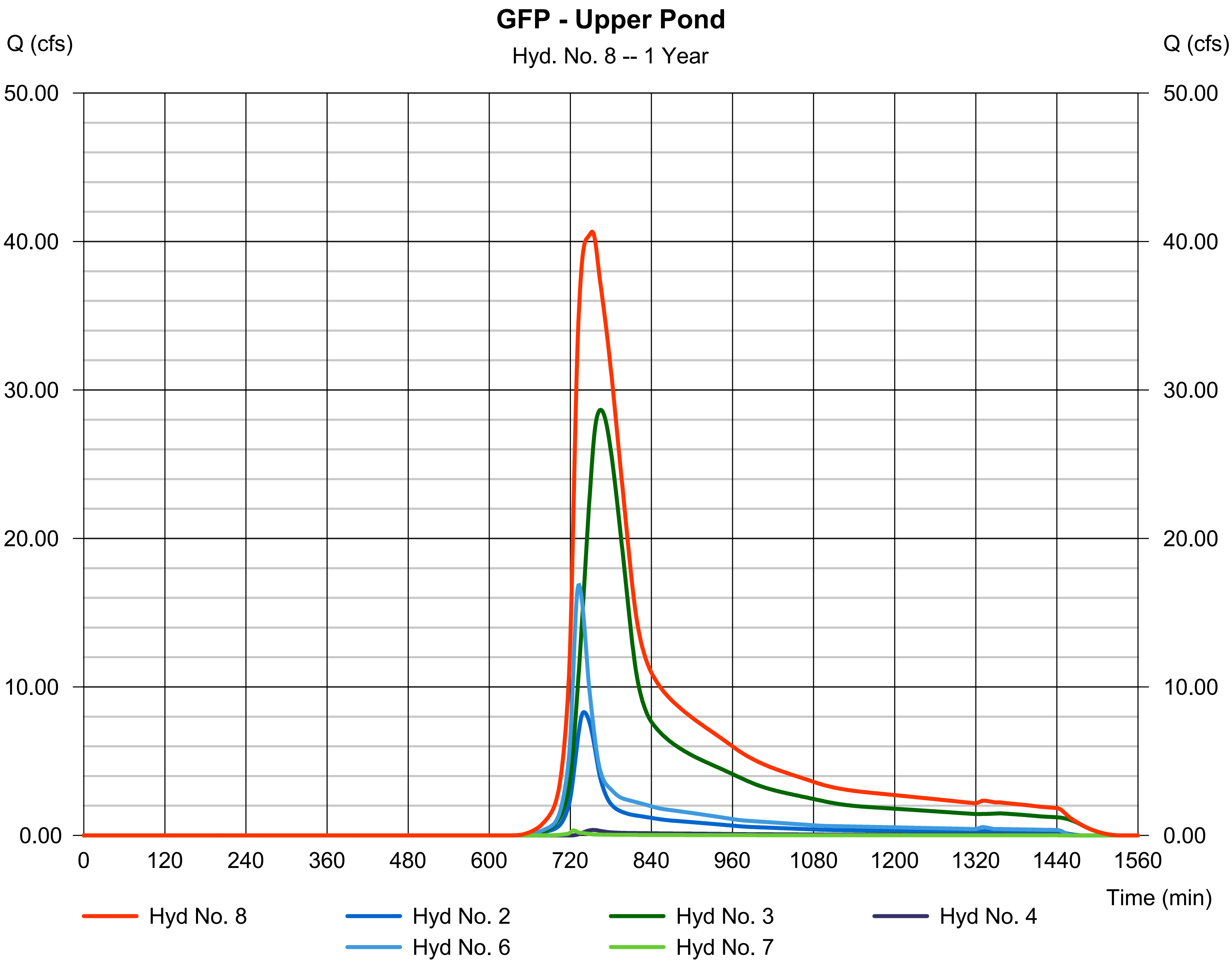
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 40.65 cfs
Storm frequency	= 1 yrs	Time to peak	= 752 min
Time interval	= 1 min	Hyd. volume	= 353,987 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac



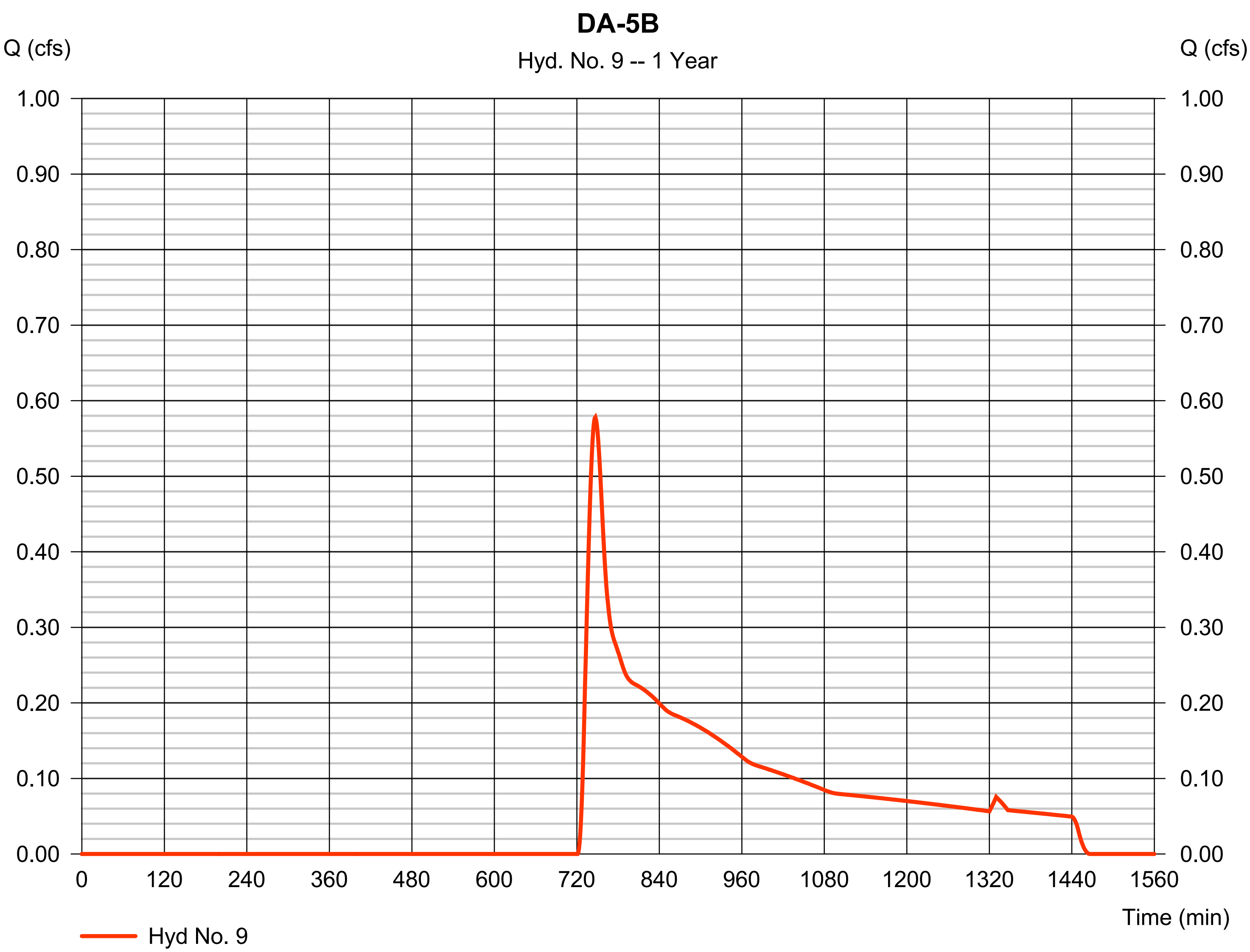
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.578 cfs
Storm frequency	= 1 yrs	Time to peak	= 747 min
Time interval	= 1 min	Hyd. volume	= 5,420 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

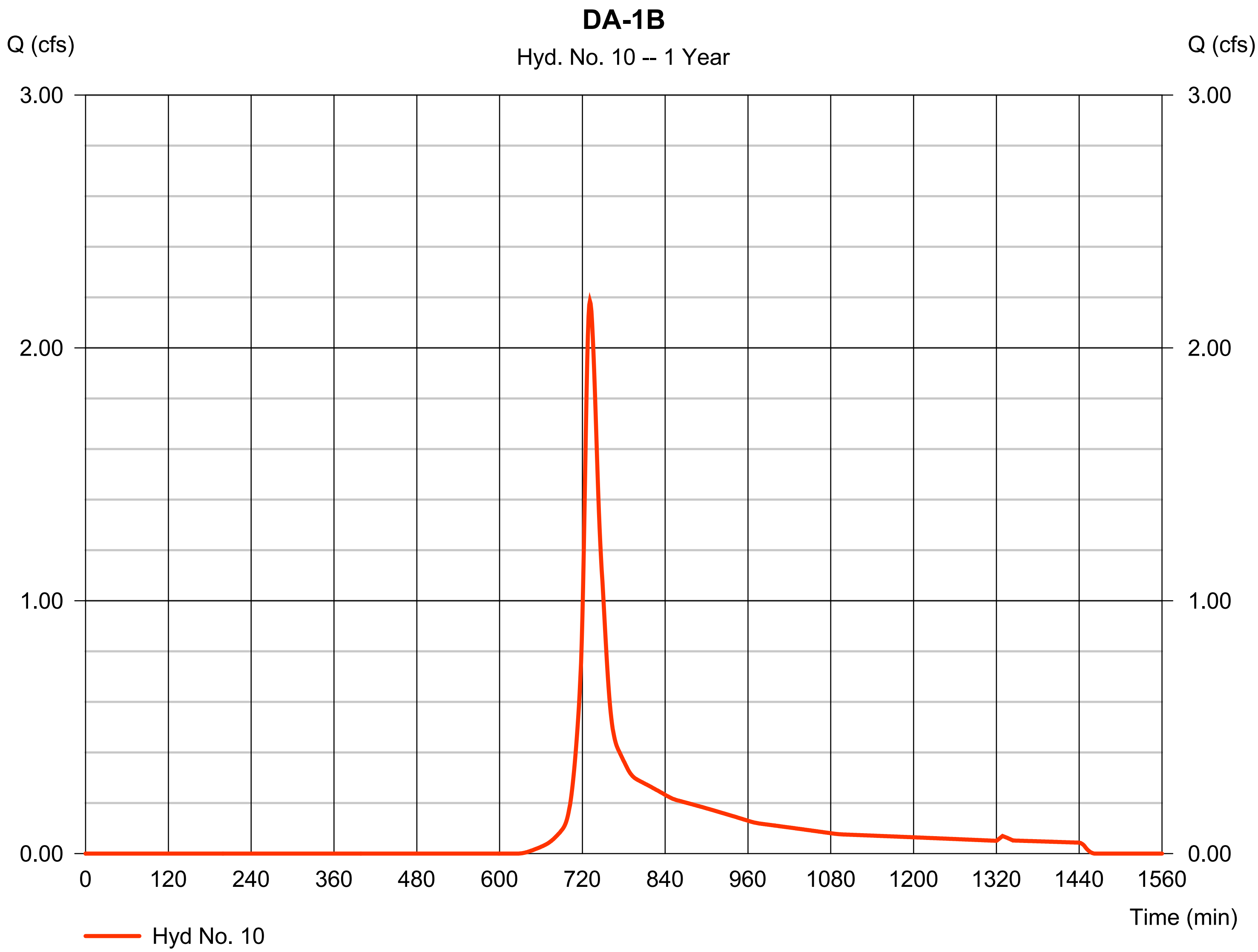


Hydrograph Report

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 2.185 cfs
Storm frequency	= 1 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 9,038 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



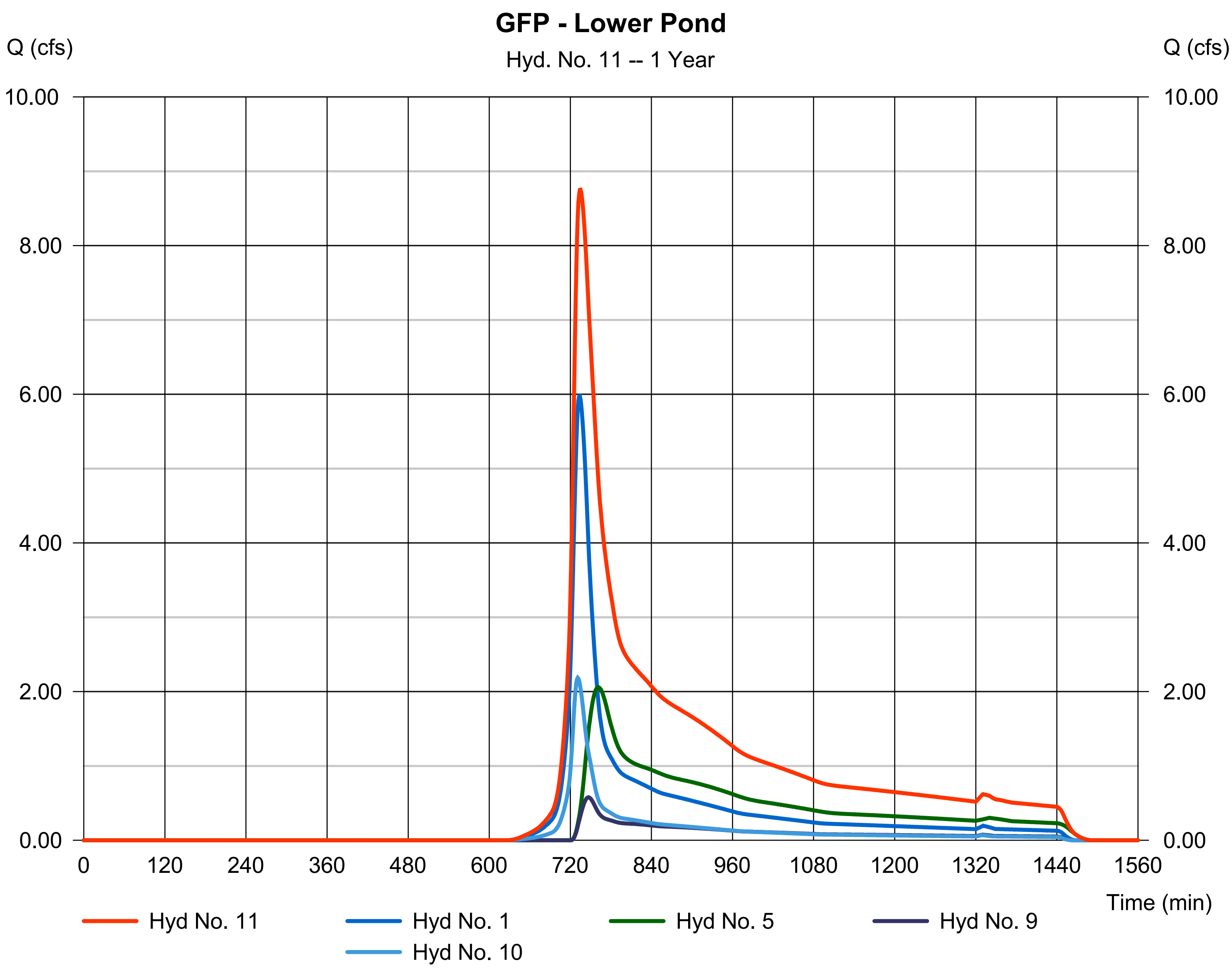
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 8.751 cfs
Storm frequency	= 1 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 65,558 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



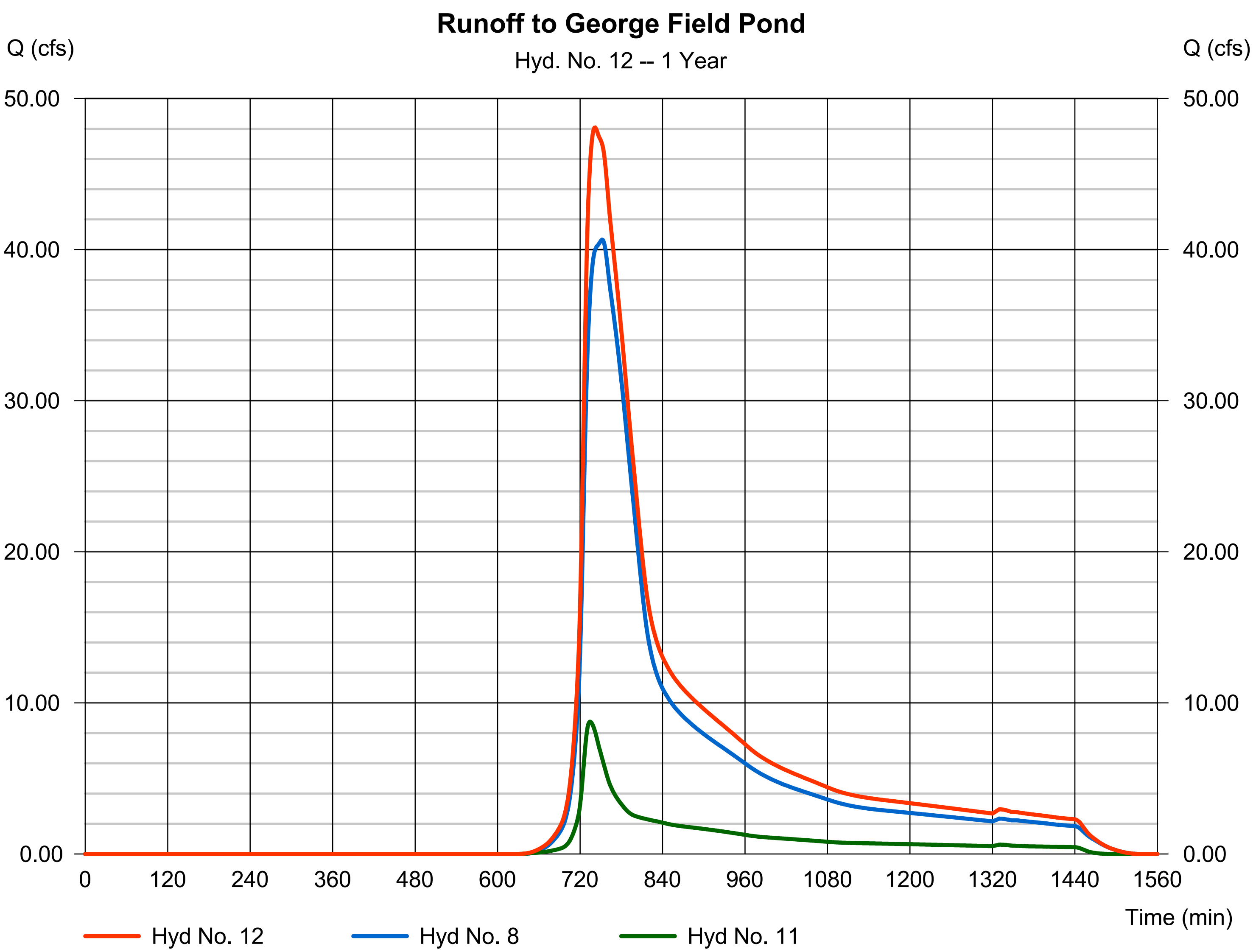
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 48.08 cfs
Storm frequency	= 1 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 419,545 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

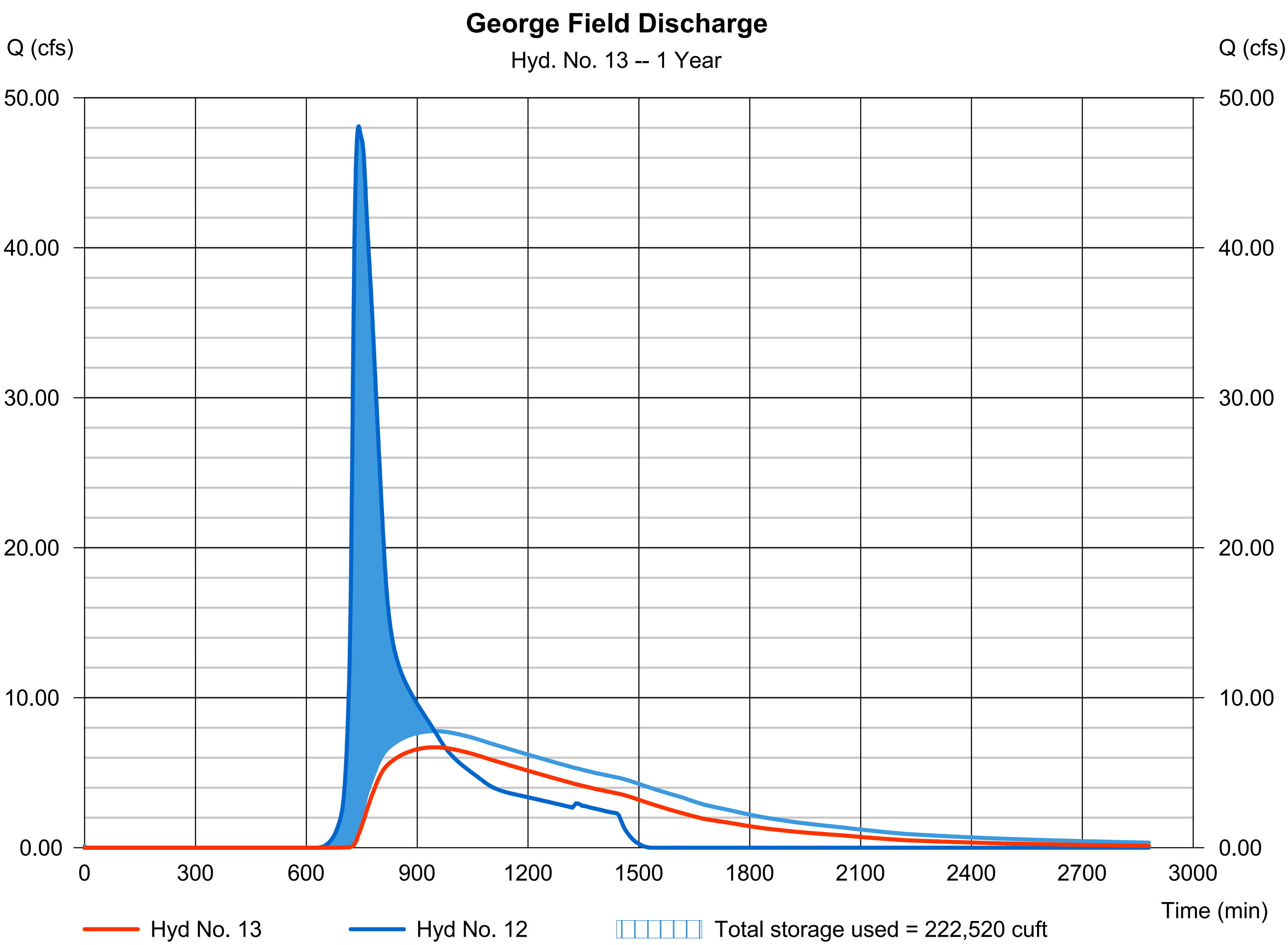
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 6.695 cfs
Storm frequency	= 1 yrs	Time to peak	= 947 min
Time interval	= 1 min	Hyd. volume	= 304,603 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 211.47 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 222,520 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 2 - GFP - One Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 210.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	210.50	223,035	0	0
0.50	211.00	227,666	112,662	112,662
1.50	212.00	239,889	233,728	346,390
2.50	213.00	251,644	245,719	592,108
3.50	214.00	263,218	257,384	849,492
4.50	215.00	275,655	269,385	1,118,877
5.50	216.00	289,529	282,536	1,401,413
6.50	217.00	299,673	294,557	1,695,970
7.50	218.00	318,176	308,847	2,004,817
8.50	219.00	373,676	345,520	2,350,337

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 36.00	24.00	0.00	0.00
Span (in)	= 36.00	24.00	0.00	0.00
No. Barrels	= 1	2	0	0
Invert El. (ft)	= 210.30	210.50	0.00	0.00
Length (ft)	= 1570.00	0.50	0.00	0.00
Slope (%)	= 0.20	1.00	0.00	n/a
N-Value	= .009	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 6.00	8.00	20.00	360.00
Crest El. (ft)	= 213.00	215.00	217.00	218.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	Rect	Rect	Broad
Multi-Stage	= Yes	Yes	Yes	No

Exfil.(in/hr) = 0.200 (by Contour)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	210.50	0.00	0.00	---	---	0.00	0.00	0.00	0.00	0.000	---	0.000
0.05	11,266	210.55	0.33 ic	0.04 ic	---	---	0.00	0.00	0.00	0.00	0.105	---	0.141
0.10	22,532	210.60	0.33 ic	0.13 ic	---	---	0.00	0.00	0.00	0.00	0.211	---	0.341
0.15	33,799	210.65	0.33 ic	0.30 ic	---	---	0.00	0.00	0.00	0.00	0.316	---	0.614
0.20	45,065	210.70	0.50 ic	0.50 ic	---	---	0.00	0.00	0.00	0.00	0.422	---	0.921
0.25	56,331	210.75	0.82 ic	0.82 ic	---	---	0.00	0.00	0.00	0.00	0.527	---	1.346
0.30	67,597	210.80	1.05 ic	1.05 ic	---	---	0.00	0.00	0.00	0.00	0.632	---	1.685
0.35	78,863	210.85	1.33 ic	1.33 ic	---	---	0.00	0.00	0.00	0.00	0.738	---	2.064
0.40	90,130	210.90	1.66 ic	1.66 ic	---	---	0.00	0.00	0.00	0.00	0.843	---	2.501
0.45	101,396	210.95	2.02 ic	1.93 ic	---	---	0.00	0.00	0.00	0.00	0.949	---	2.874
0.50	112,662	211.00	2.32 ic	2.32 ic	---	---	0.00	0.00	0.00	0.00	1.054	---	3.370
0.60	136,035	211.10	3.11 ic	3.10 ic	---	---	0.00	0.00	0.00	0.00	1.060	---	4.157
0.70	159,408	211.20	3.92 ic	3.92 ic	---	---	0.00	0.00	0.00	0.00	1.065	---	4.986
0.80	182,780	211.30	4.99 ic	4.91 ic	---	---	0.00	0.00	0.00	0.00	1.071	---	5.979
0.90	206,153	211.40	6.01 ic	5.89 ic	---	---	0.00	0.00	0.00	0.00	1.077	---	6.968
1.00	229,526	211.50	7.13 ic	7.04 ic	---	---	0.00	0.00	0.00	0.00	1.082	---	8.121
1.10	252,899	211.60	8.12 ic	8.11 ic	---	---	0.00	0.00	0.00	0.00	1.088	---	9.202
1.20	276,271	211.70	9.38 ic	9.38 ic	---	---	0.00	0.00	0.00	0.00	1.094	---	10.47
1.30	299,644	211.80	10.75 ic	10.65 ic	---	---	0.00	0.00	0.00	0.00	1.099	---	11.75
1.40	323,017	211.90	11.93 ic	11.93 ic	---	---	0.00	0.00	0.00	0.00	1.105	---	13.03
1.50	346,390	212.00	13.41 ic	13.28 ic	---	---	0.00	0.00	0.00	0.00	1.111	---	14.39
1.60	370,961	212.10	14.65 ic	14.65 ic	---	---	0.00	0.00	0.00	0.00	1.116	---	15.76
1.70	395,533	212.20	15.95 ic	15.95 ic	---	---	0.00	0.00	0.00	0.00	1.121	---	17.07
1.80	420,105	212.30	17.26 ic	17.25 ic	---	---	0.00	0.00	0.00	0.00	1.127	---	18.38
1.90	444,677	212.40	18.55 ic	18.55 ic	---	---	0.00	0.00	0.00	0.00	1.132	---	19.68
2.00	469,249	212.50	19.81 ic	19.81 ic	---	---	0.00	0.00	0.00	0.00	1.138	---	20.95
2.10	493,821	212.60	21.06 ic	20.80 ic	---	---	0.00	0.00	0.00	0.00	1.143	---	21.94
2.20	518,392	212.70	21.94 ic	21.94 ic	---	---	0.00	0.00	0.00	0.00	1.149	---	23.09
2.30	542,964	212.80	22.87 ic	22.87 ic	---	---	0.00	0.00	0.00	0.00	1.154	---	24.03
2.40	567,536	212.90	23.80 ic	23.80 ic	---	---	0.00	0.00	0.00	0.00	1.160	---	24.96
2.50	592,108	213.00	25.00 ic	24.76 ic	---	---	0.00	0.00	0.00	0.00	1.165	---	25.92
2.60	617,846	213.10	26.28 ic	25.39 ic	---	---	0.63	0.00	0.00	0.00	1.170	---	27.19
2.70	643,585	213.20	27.62 ic	25.83 ic	---	---	1.79	0.00	0.00	0.00	1.176	---	28.79

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GFP - One Pond

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
2.80	669,323	213.30	29.29 ic	26.01 ic	---	---	3.28	0.00	0.00	0.00	1.181	---	30.47
2.90	695,062	213.40	31.19 ic	26.13 ic	---	---	5.06	0.00	0.00	0.00	1.186	---	32.37
3.00	720,800	213.50	33.27 ic	26.09 ic	---	---	7.06	0.00	0.00	0.00	1.192	---	34.35
3.10	746,538	213.60	35.23 ic	25.94 ic	---	---	9.29	0.00	0.00	0.00	1.197	---	36.43
3.20	772,277	213.70	37.38 ic	25.57 ic	---	---	11.70	0.00	0.00	0.00	1.203	---	38.48
3.30	798,015	213.80	39.27 ic	25.23 ic	---	---	14.03 s	0.00	0.00	0.00	1.208	---	40.47
3.40	823,753	213.90	38.41 oc	22.89 ic	---	---	15.51 s	0.00	0.00	0.00	1.213	---	39.62
3.50	849,492	214.00	39.26 oc	22.04 ic	---	---	17.21 s	0.00	0.00	0.00	1.219	---	40.47
3.60	876,430	214.10	40.06 oc	21.24 ic	---	---	18.82 s	0.00	0.00	0.00	1.224	---	41.29
3.70	903,369	214.20	40.84 oc	20.49 ic	---	---	20.34 s	0.00	0.00	0.00	1.230	---	42.06
3.80	930,307	214.30	41.58 oc	19.79 ic	---	---	21.79 s	0.00	0.00	0.00	1.236	---	42.81
3.90	957,246	214.40	42.29 oc	19.12 ic	---	---	23.17 s	0.00	0.00	0.00	1.242	---	43.53
4.00	984,184	214.50	42.98 oc	18.49 ic	---	---	24.48 s	0.00	0.00	0.00	1.247	---	44.22
4.10	1,011,123	214.60	43.64 oc	17.90 ic	---	---	25.74 s	0.00	0.00	0.00	1.253	---	44.89
4.20	1,038,062	214.70	44.29 oc	17.33 ic	---	---	26.95 s	0.00	0.00	0.00	1.259	---	45.54
4.30	1,065,000	214.80	44.91 oc	16.80 ic	---	---	28.11 s	0.00	0.00	0.00	1.265	---	46.17
4.40	1,091,939	214.90	45.52 oc	16.30 ic	---	---	29.22 s	0.00	0.00	0.00	1.270	---	46.79
4.50	1,118,877	215.00	46.11 oc	15.82 ic	---	---	30.29 s	0.00	0.00	0.00	1.276	---	47.39
4.60	1,147,131	215.10	46.75 oc	15.05 ic	---	---	30.84 s	0.84	0.00	0.00	1.283	---	48.02
4.70	1,175,384	215.20	47.39 oc	14.08 ic	---	---	30.92 s	2.38	0.00	0.00	1.289	---	48.68
4.80	1,203,638	215.30	48.02 oc	13.16 ic	---	---	30.89 s	3.97 s	0.00	0.00	1.295	---	49.30
4.90	1,231,891	215.40	48.61 oc	12.35 ic	---	---	30.88 s	5.37 s	0.00	0.00	1.302	---	49.91
5.00	1,260,145	215.50	49.17 oc	11.62 ic	---	---	30.88 s	6.67 s	0.00	0.00	1.308	---	50.47
5.10	1,288,398	215.60	49.72 oc	10.96 ic	---	---	30.87 s	7.88 s	0.00	0.00	1.315	---	51.03
5.20	1,316,652	215.70	50.25 oc	10.37 ic	---	---	30.86 s	9.02 s	0.00	0.00	1.321	---	51.57
5.30	1,344,905	215.80	50.77 oc	9.82 ic	---	---	30.85 s	10.08 s	0.00	0.00	1.328	---	52.08
5.40	1,373,159	215.90	51.27 oc	9.33 ic	---	---	30.85 s	11.08 s	0.00	0.00	1.334	---	52.60
5.50	1,401,413	216.00	51.76 oc	8.88 ic	---	---	30.86 s	12.02 s	0.00	0.00	1.340	---	53.09
5.60	1,430,868	216.10	52.25 oc	8.47 ic	---	---	30.87 s	12.91 s	0.00	0.00	1.345	---	53.59
5.70	1,460,324	216.20	52.72 oc	8.09 ic	---	---	30.87 s	13.74 s	0.00	0.00	1.350	---	54.05
5.80	1,489,780	216.30	53.19 oc	7.74 ic	---	---	30.90 s	14.54 s	0.00	0.00	1.354	---	54.53
5.90	1,519,236	216.40	53.65 oc	7.42 ic	---	---	30.91 s	15.29 s	0.00	0.00	1.359	---	54.97
6.00	1,548,691	216.50	54.10 oc	7.12 ic	---	---	30.95 s	16.01 s	0.00	0.00	1.364	---	55.44
6.10	1,578,147	216.60	54.55 oc	6.84 ic	---	---	30.98 s	16.70 s	0.00	0.00	1.369	---	55.89
6.20	1,607,603	216.70	54.99 oc	6.59 ic	---	---	31.01 s	17.35 s	0.00	0.00	1.373	---	56.32
6.30	1,637,059	216.80	55.42 oc	6.35 ic	---	---	31.08 s	17.99 s	0.00	0.00	1.378	---	56.80
6.40	1,666,514	216.90	55.85 oc	6.12 ic	---	---	31.11 s	18.58 s	0.00	0.00	1.383	---	57.20
6.50	1,695,970	217.00	56.28 oc	5.92 ic	---	---	31.18 s	19.18 s	0.00	0.00	1.387	---	57.67
6.60	1,726,854	217.10	56.71 oc	5.53 ic	---	---	30.41 s	19.22 s	1.56 s	0.00	1.396	---	58.11
6.70	1,757,739	217.20	57.14 oc	5.14 ic	---	---	29.55 s	19.15 s	3.26 s	0.00	1.404	---	58.51
6.80	1,788,624	217.30	57.56 oc	4.79 ic	---	---	28.74 s	19.06 s	4.88 s	0.00	1.413	---	58.89
6.90	1,819,509	217.40	57.98 oc	4.49 ic	---	---	28.03 s	19.00 s	6.41 s	0.00	1.422	---	59.35
7.00	1,850,393	217.50	58.39 oc	4.20 ic	---	---	27.32 s	18.91 s	7.83 s	0.00	1.430	---	59.70
7.10	1,881,278	217.60	58.79 oc	3.96 ic	---	---	26.73 s	18.86 s	9.17 s	0.00	1.439	---	60.16
7.20	1,912,163	217.70	59.20 oc	3.73 ic	---	---	26.17 s	18.80 s	10.42 s	0.00	1.447	---	60.56
7.30	1,943,048	217.80	59.60 oc	3.53 ic	---	---	25.67 s	18.76 s	11.59 s	0.00	1.456	---	61.00
7.40	1,973,932	217.90	59.99 oc	3.34 ic	---	---	25.18 s	18.71 s	12.68 s	0.00	1.464	---	61.37
7.50	2,004,817	218.00	60.38 oc	3.18 ic	---	---	24.78 s	18.69 s	13.72 s	0.00	1.473	---	61.84
7.60	2,039,369	218.10	60.77 oc	3.01 ic	---	---	24.32 s	18.61 s	14.65 s	37.91	1.499	---	100.01
7.70	2,073,921	218.20	61.16 oc	2.87 ic	---	---	23.96 s	18.59 s	15.56 s	107.23	1.524	---	169.73
7.80	2,108,473	218.30	61.54 oc	2.74 ic	---	---	23.60 s	18.55 s	16.41 s	197.00	1.550	---	259.86
7.90	2,143,025	218.40	61.92 oc	2.62 ic	---	---	23.28 s	18.53 s	17.22 s	303.30	1.576	---	366.53
8.00	2,177,577	218.50	62.30 oc	2.51 ic	---	---	23.01 s	18.53 s	18.01 s	423.88	1.601	---	487.55
8.10	2,212,129	218.60	62.67 oc	2.42 ic	---	---	22.80 s	18.57 s	18.80 s	557.20	1.627	---	621.42
8.20	2,246,681	218.70	63.04 oc	2.32 ic	---	---	22.54 s	18.56 s	19.49 s	702.16	1.653	---	766.72
8.30	2,281,233	218.80	63.41 oc	2.24 ic	---	---	22.35 s	18.60 s	20.21 s	857.87	1.679	---	922.95
8.40	2,315,785	218.90	63.78 oc	2.16 ic	---	---	22.13 s	18.60 s	20.85 s	1023.65	1.704	---	1089.09
8.50	2,350,337	219.00	64.14 oc	2.08 ic	---	---	21.92 s	18.60 s	21.46 s	1198.80	1.730	---	1264.59

...End

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	15.64	1	733	66,519	------	------	------	DA-1A
2	SCS Runoff	21.75	1	739	108,626	------	------	------	DA-2
3	SCS Runoff	78.17	1	761	594,545	------	------	------	DA-3A
4	SCS Runoff	3.142	1	742	17,949	------	------	------	DA-4
5	SCS Runoff	17.62	1	749	113,716	------	------	------	DA-5A
6	SCS Runoff	45.75	1	732	189,849	------	------	------	DA-3B
7	SCS Runoff	0.916	1	725	2,828	------	------	------	DA-3C
8	Combine	113.50	1	741	913,796	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	5.103	1	734	25,132	------	------	------	DA-5B
10	SCS Runoff	5.715	1	730	22,623	------	------	------	DA-1B
11	Combine	38.04	1	738	227,990	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	151.11	1	740	1,141,785	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	24.87	1	868	997,031	12	213.01	594,493	George Field Discharge

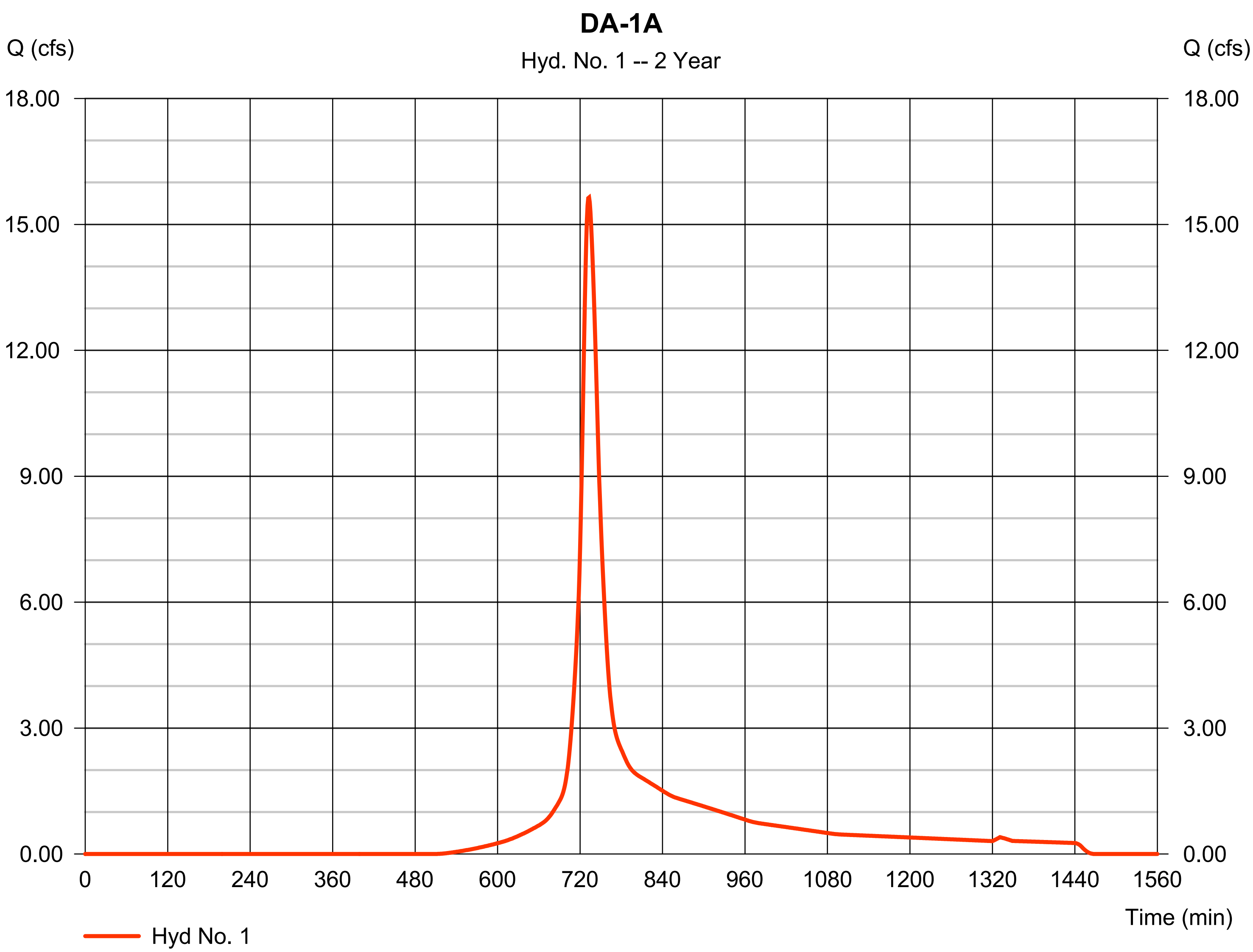
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 15.64 cfs
Storm frequency	= 2 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 66,519 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



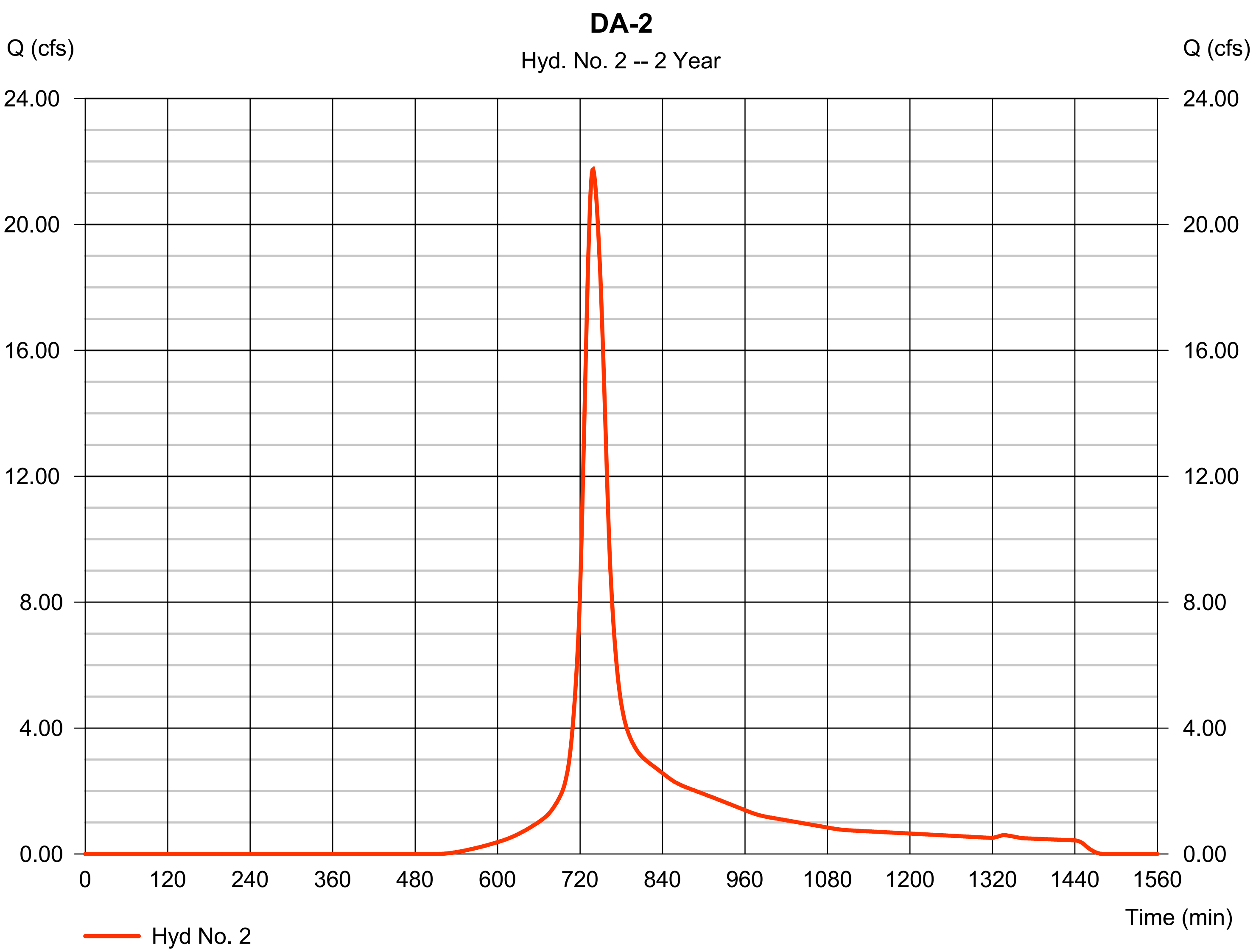
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 21.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 108,626 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



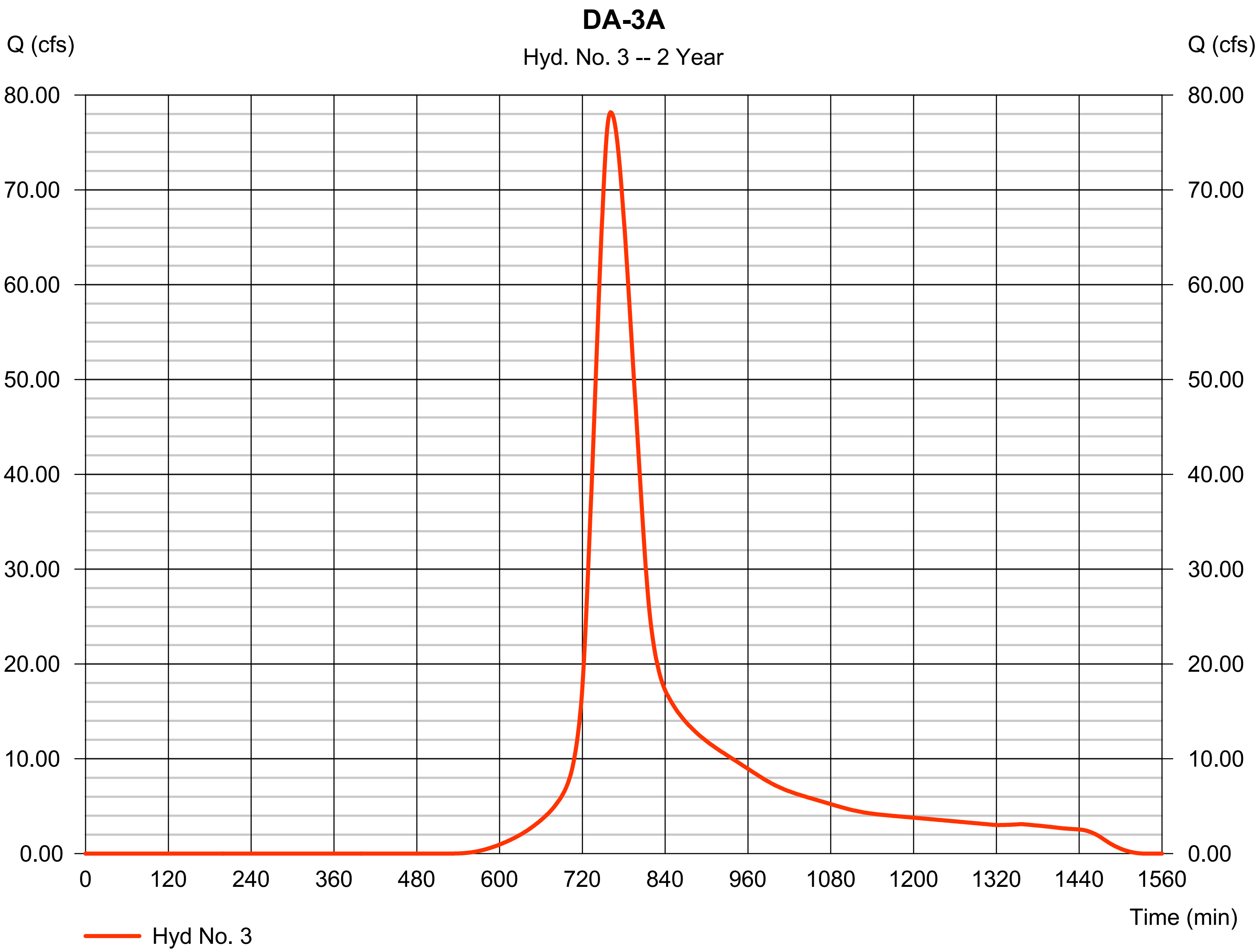
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 78.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 594,545 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

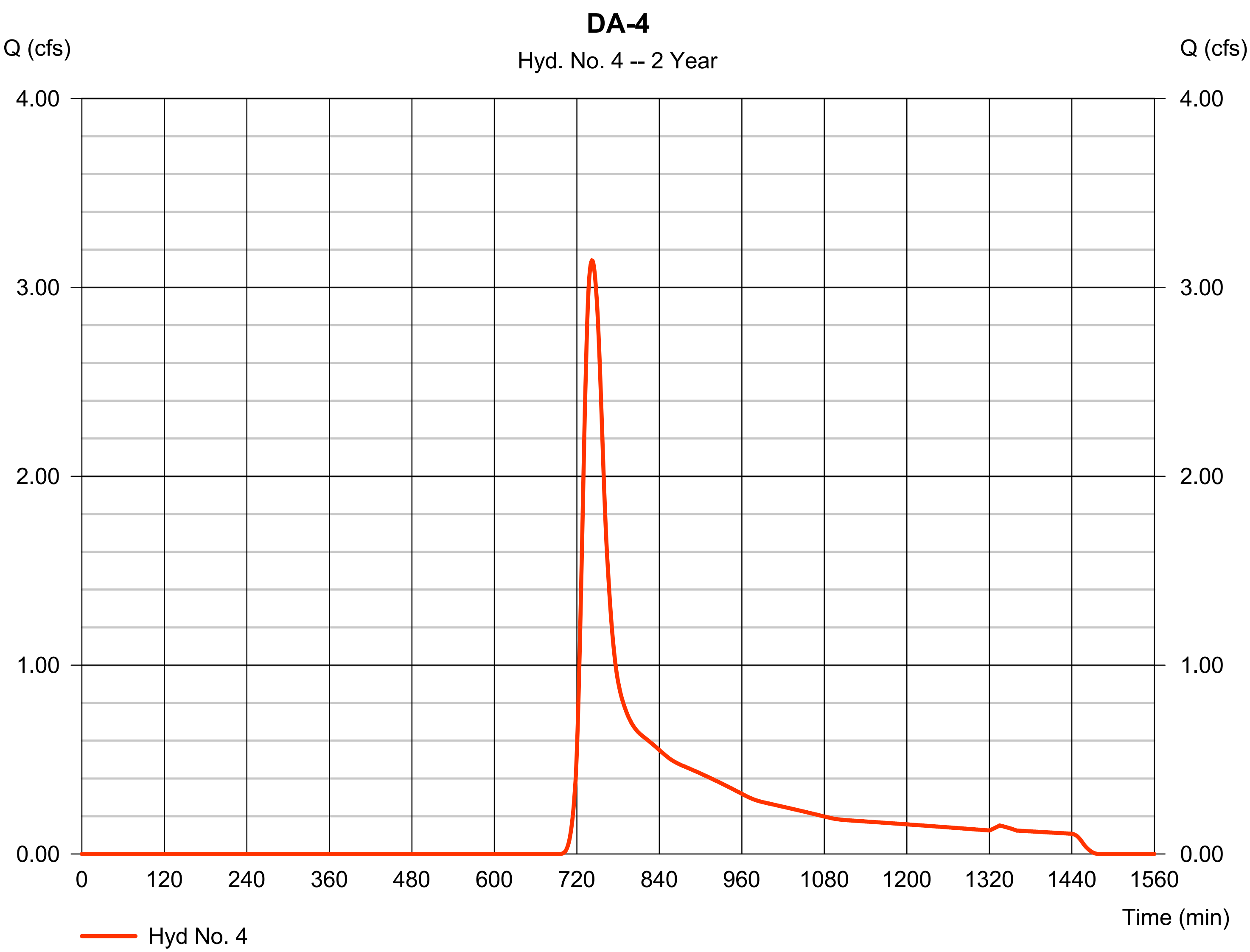


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 3.142 cfs
Storm frequency	= 2 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 17,949 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



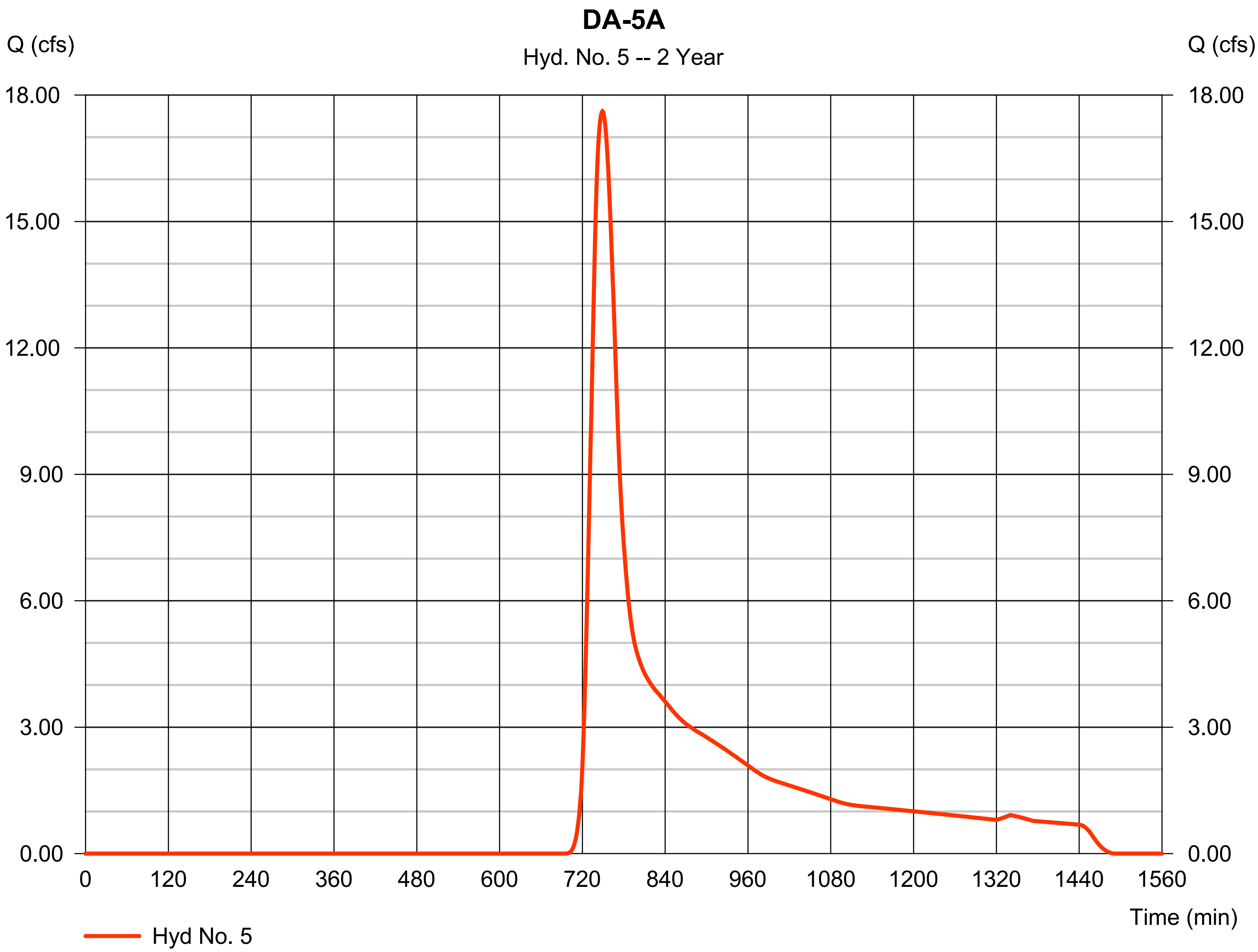
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 17.62 cfs
Storm frequency	= 2 yrs	Time to peak	= 749 min
Time interval	= 1 min	Hyd. volume	= 113,716 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



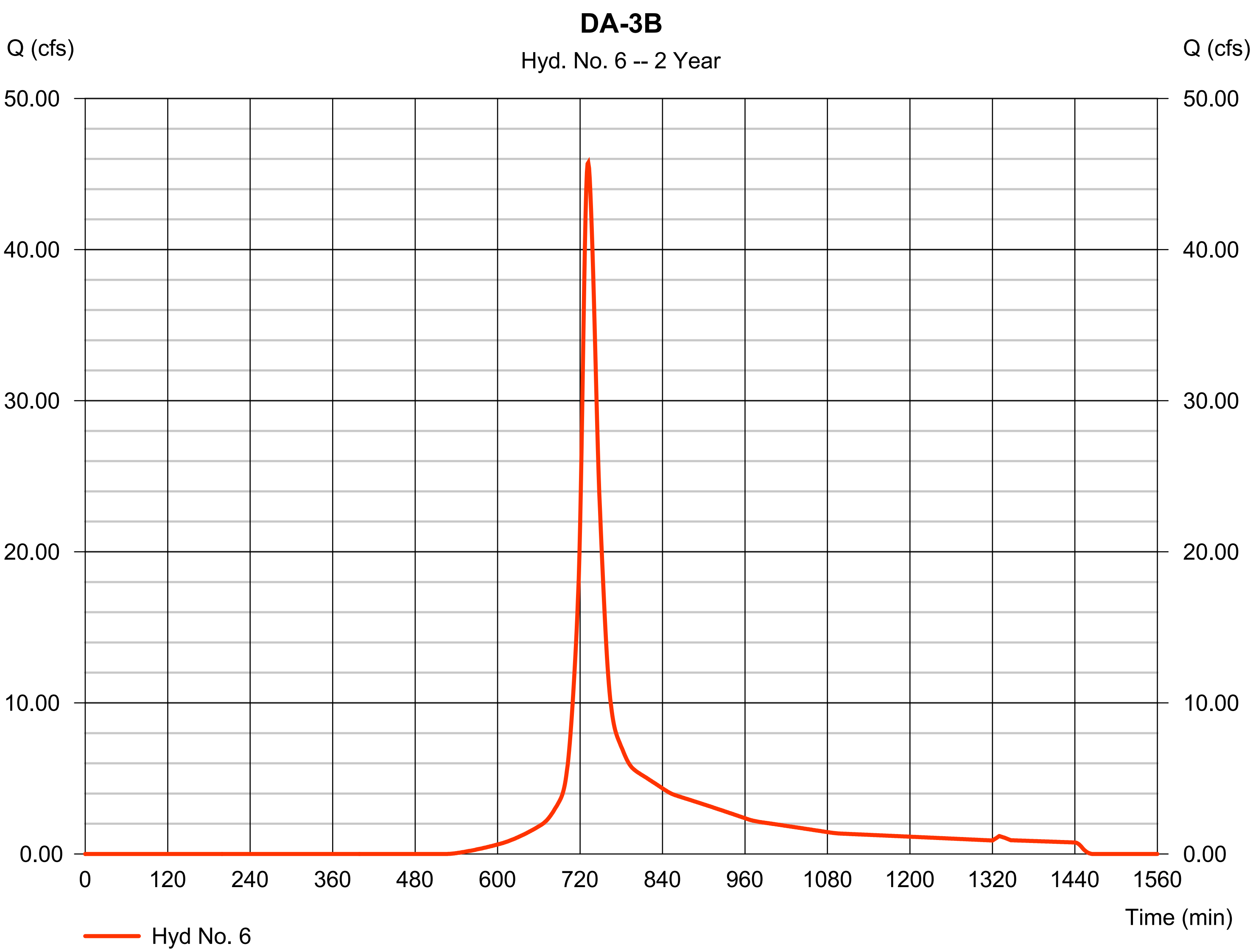
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 45.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 189,849 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

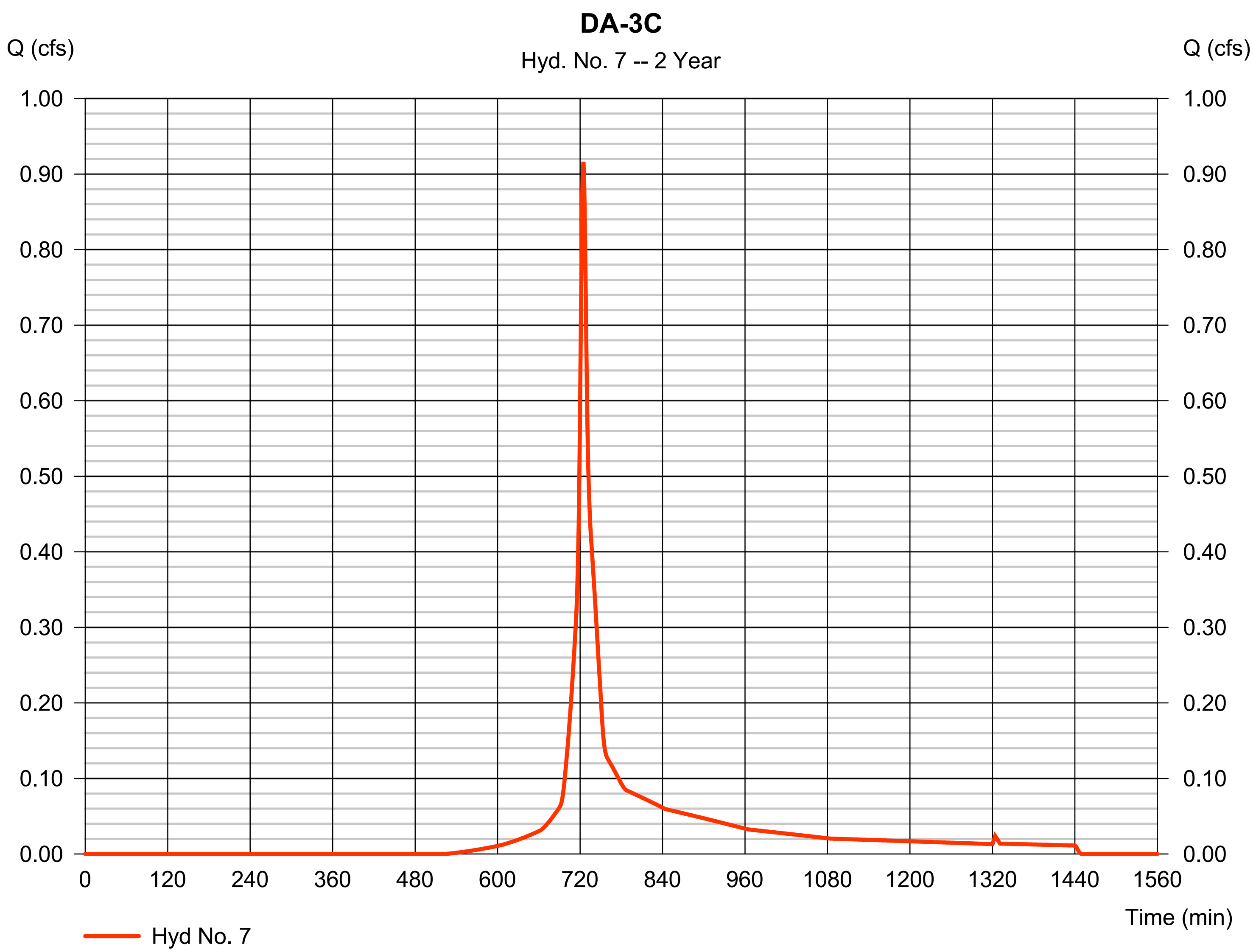


Hydrograph Report

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.916 cfs
Storm frequency	= 2 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 2,828 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



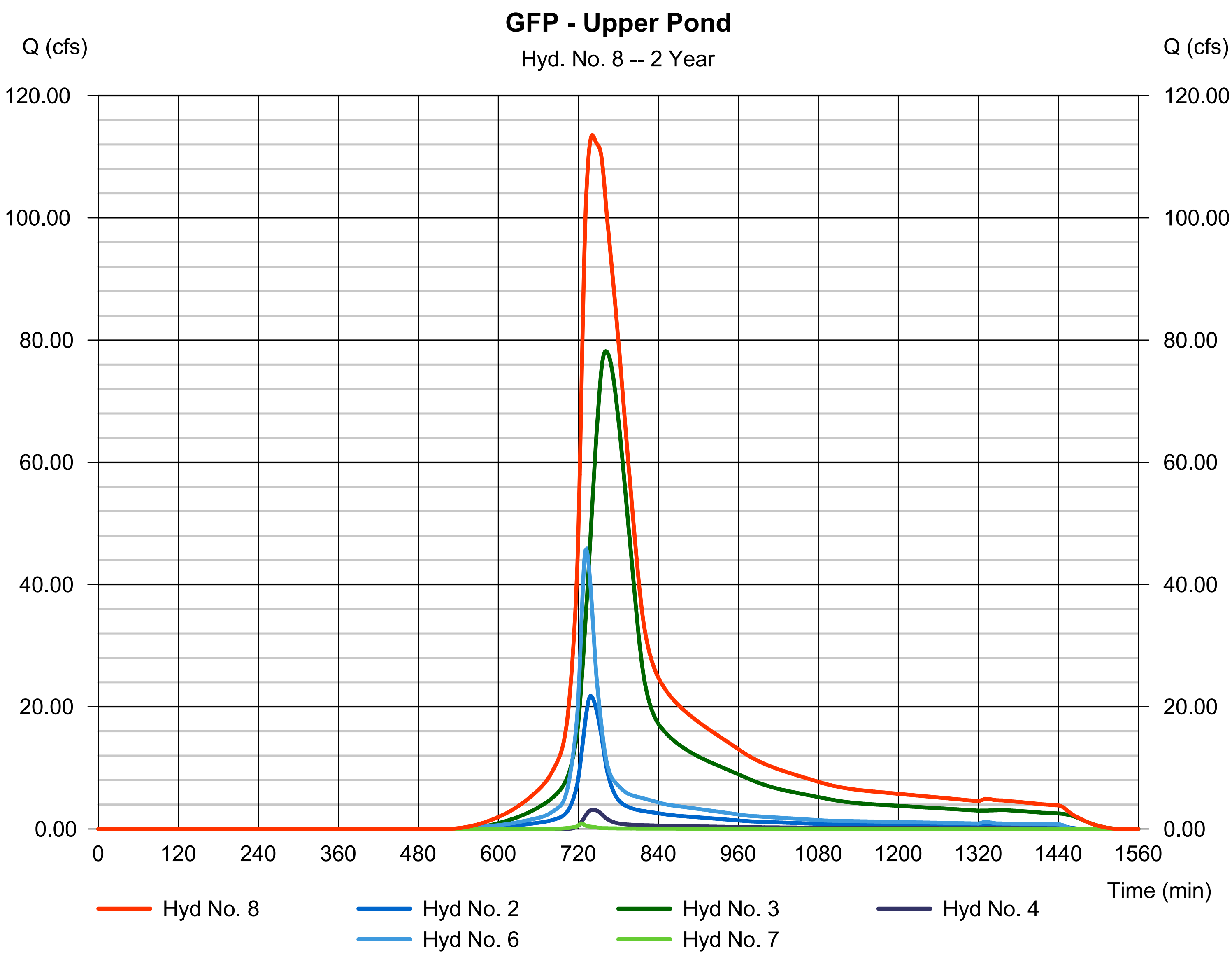
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 113.50 cfs
Storm frequency	= 2 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 913,796 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac



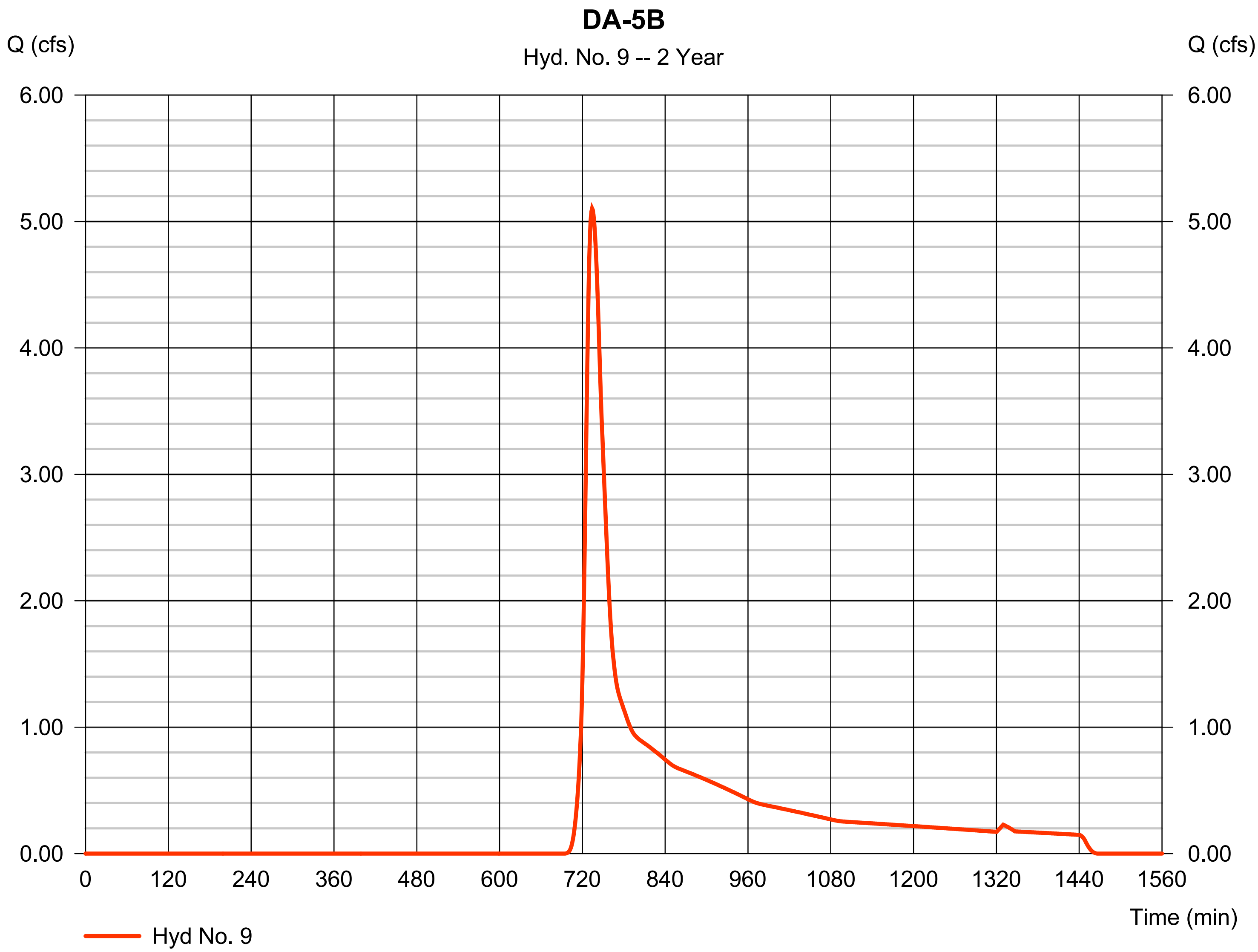
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.103 cfs
Storm frequency	= 2 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 25,132 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



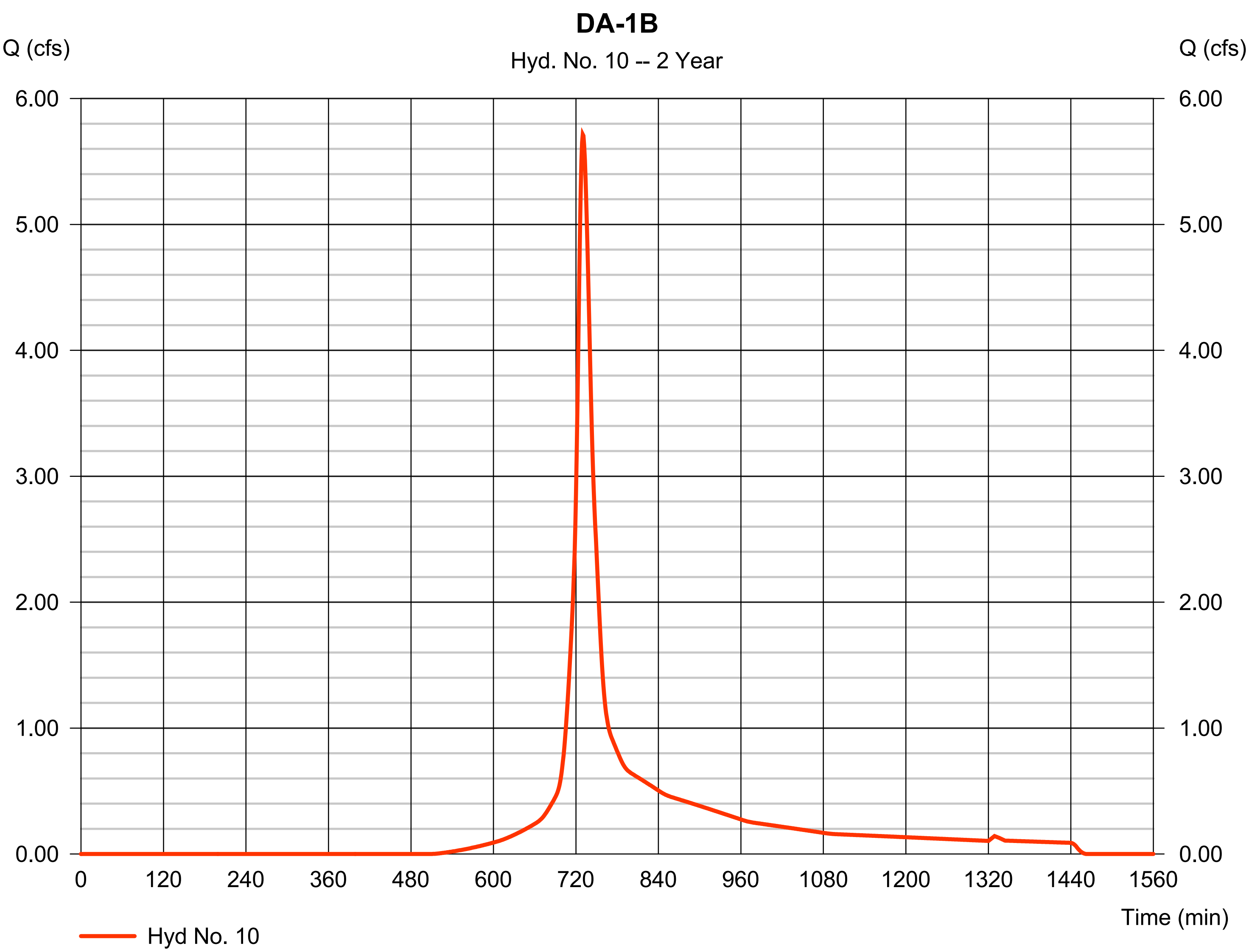
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.715 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 22,623 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



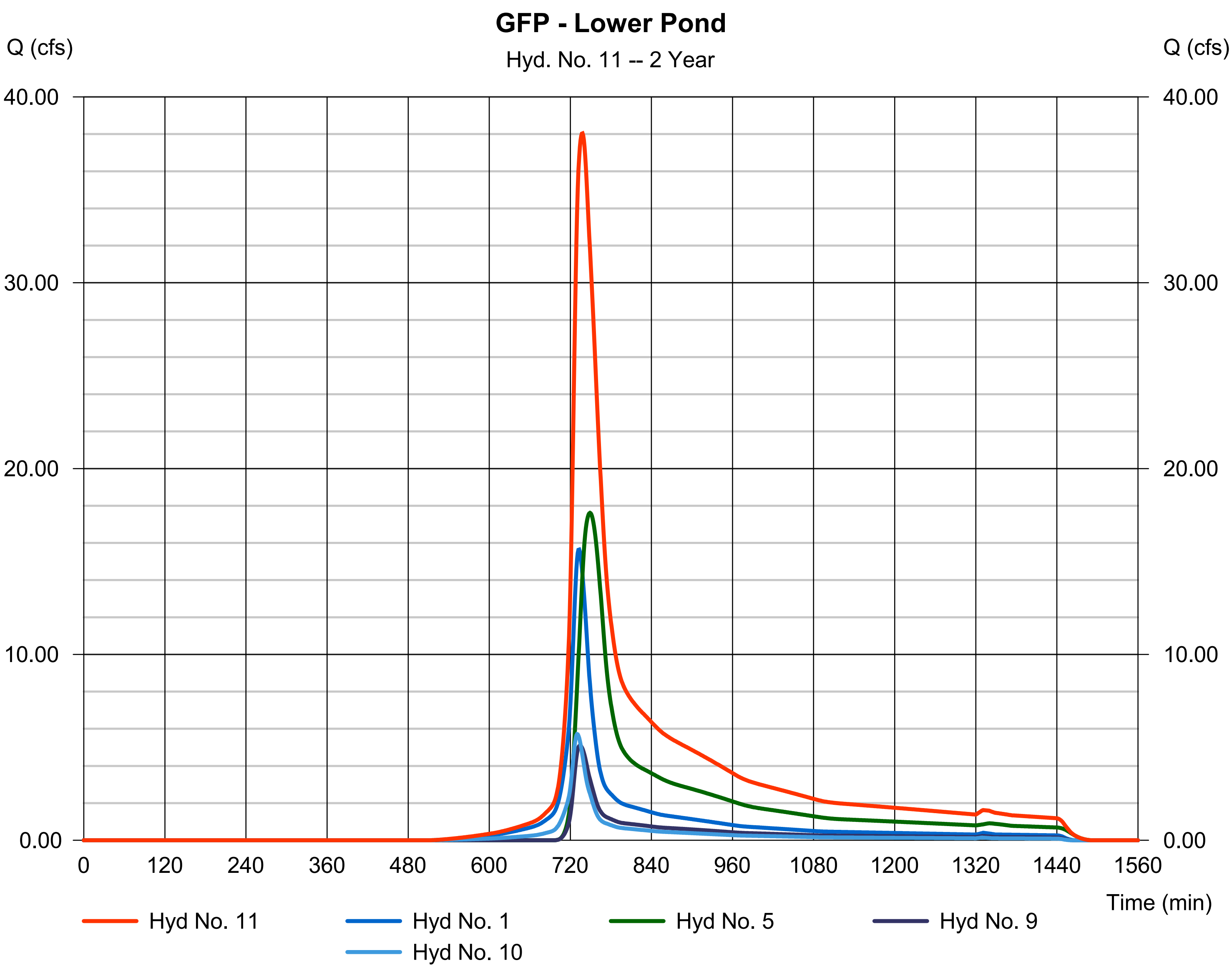
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 38.04 cfs
Storm frequency	= 2 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 227,990 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



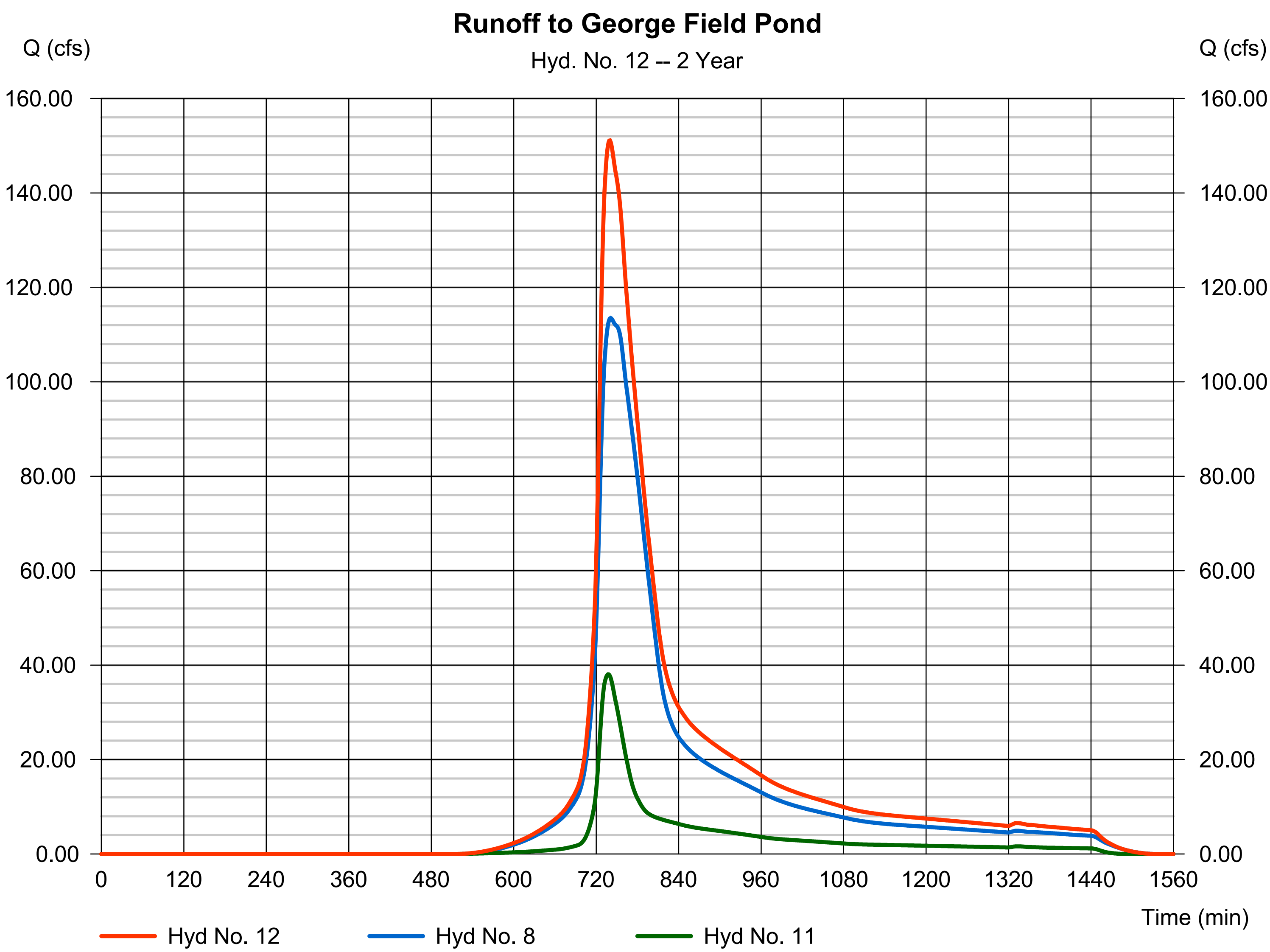
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 151.11 cfs
Storm frequency	= 2 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 1,141,785 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

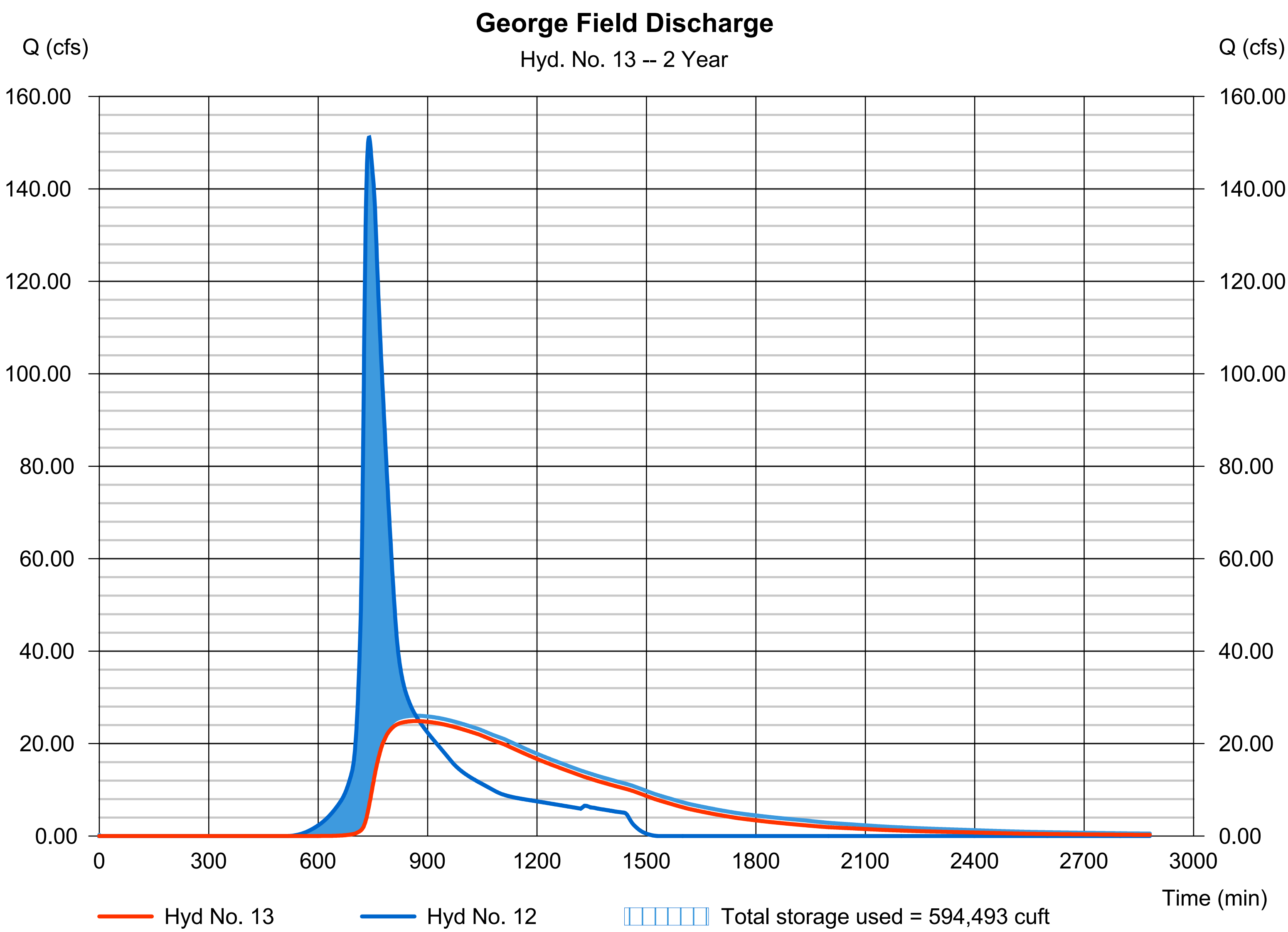
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 24.87 cfs
Storm frequency	= 2 yrs	Time to peak	= 868 min
Time interval	= 1 min	Hyd. volume	= 997,031 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 213.01 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 594,493 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	23.30	1	732	98,891	------	------	------	DA-1A
2	SCS Runoff	32.42	1	738	161,489	------	------	------	DA-2
3	SCS Runoff	118.05	1	760	891,484	------	------	------	DA-3A
4	SCS Runoff	6.143	1	739	31,981	------	------	------	DA-4
5	SCS Runoff	34.39	1	746	202,611	------	------	------	DA-5A
6	SCS Runoff	68.88	1	731	284,667	------	------	------	DA-3B
7	SCS Runoff	1.375	1	725	4,240	------	------	------	DA-3C
8	Combine	173.55	1	740	1,373,861	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	10.06	1	733	44,778	------	------	------	DA-5B
10	SCS Runoff	8.512	1	730	33,632	------	------	------	DA-1B
11	Combine	67.36	1	737	379,912	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	240.46	1	739	1,753,773	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	41.29	1	847	1,593,667	12	214.26	919,761	George Field Discharge

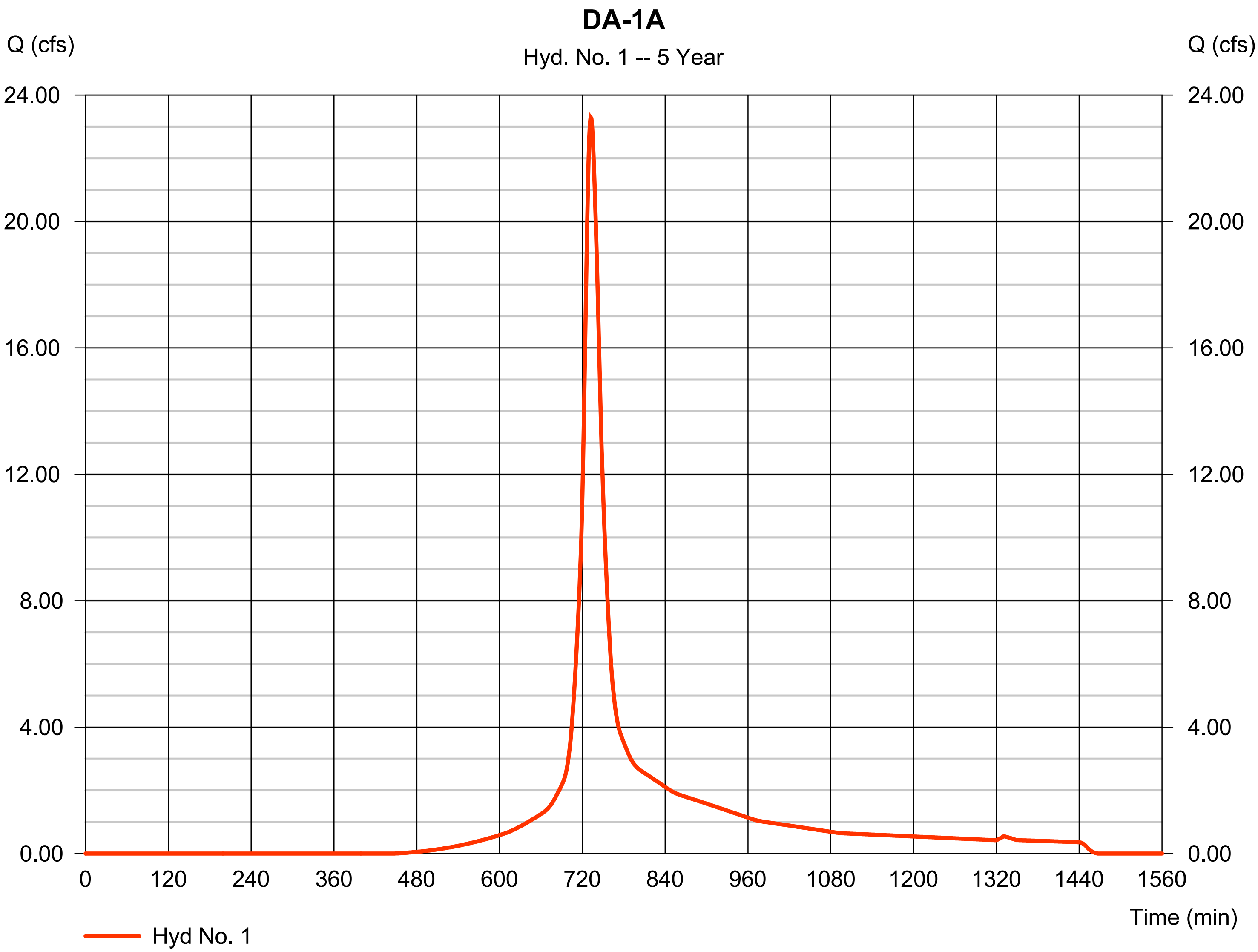
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 23.30 cfs
Storm frequency	= 5 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 98,891 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

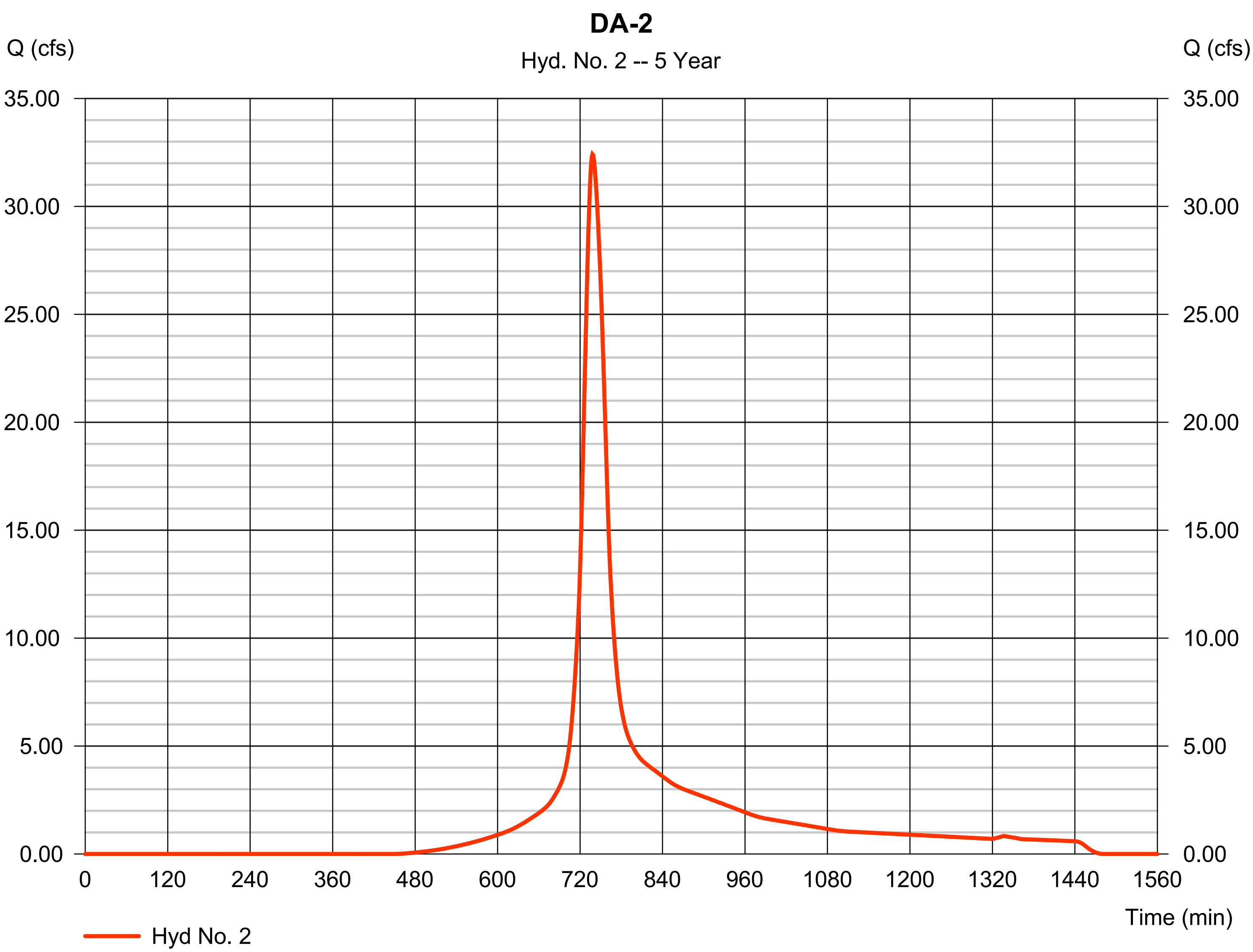


Hydrograph Report

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 32.42 cfs
Storm frequency	= 5 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 161,489 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

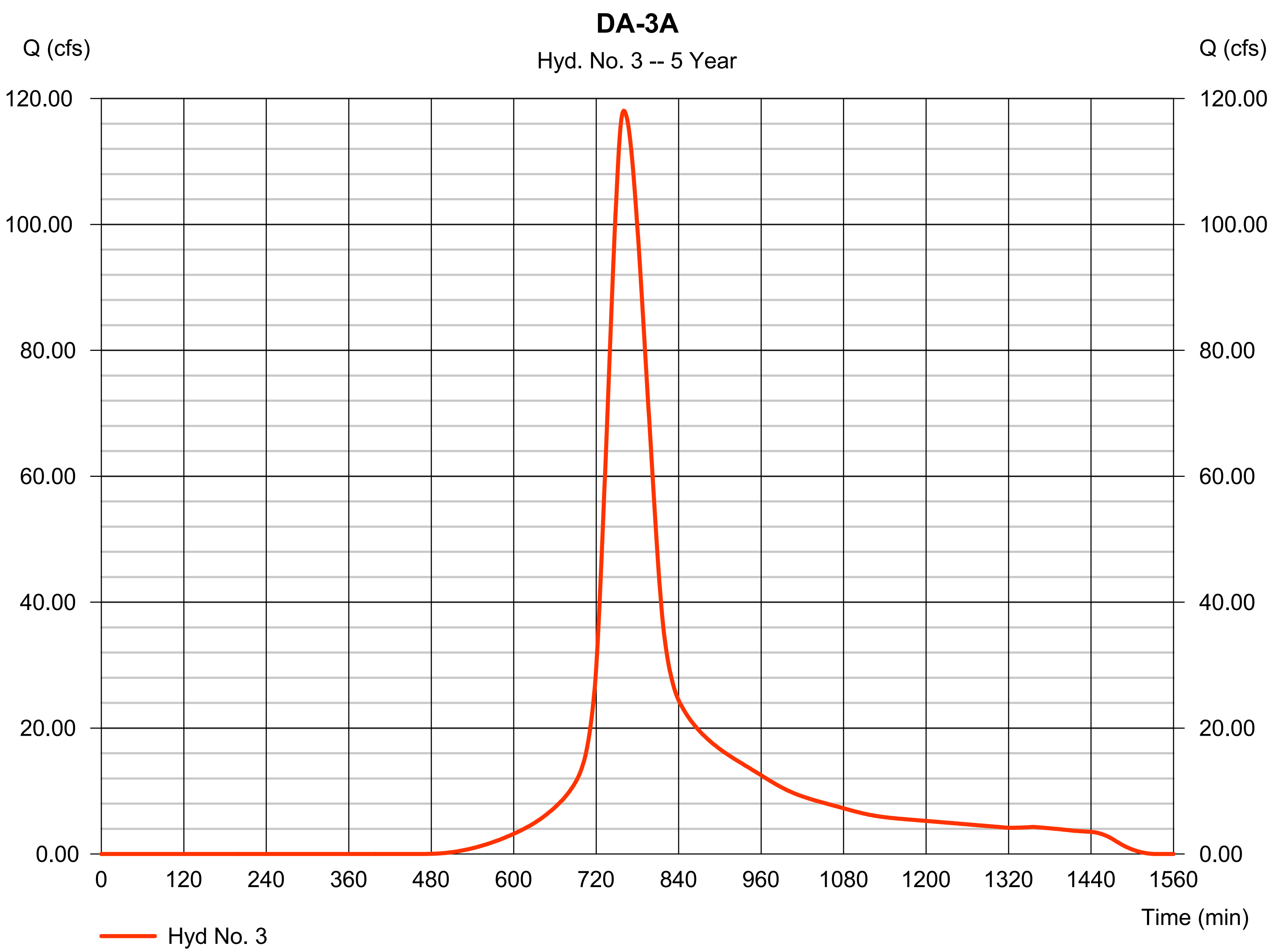


Hydrograph Report

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 118.05 cfs
Storm frequency	= 5 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 891,484 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



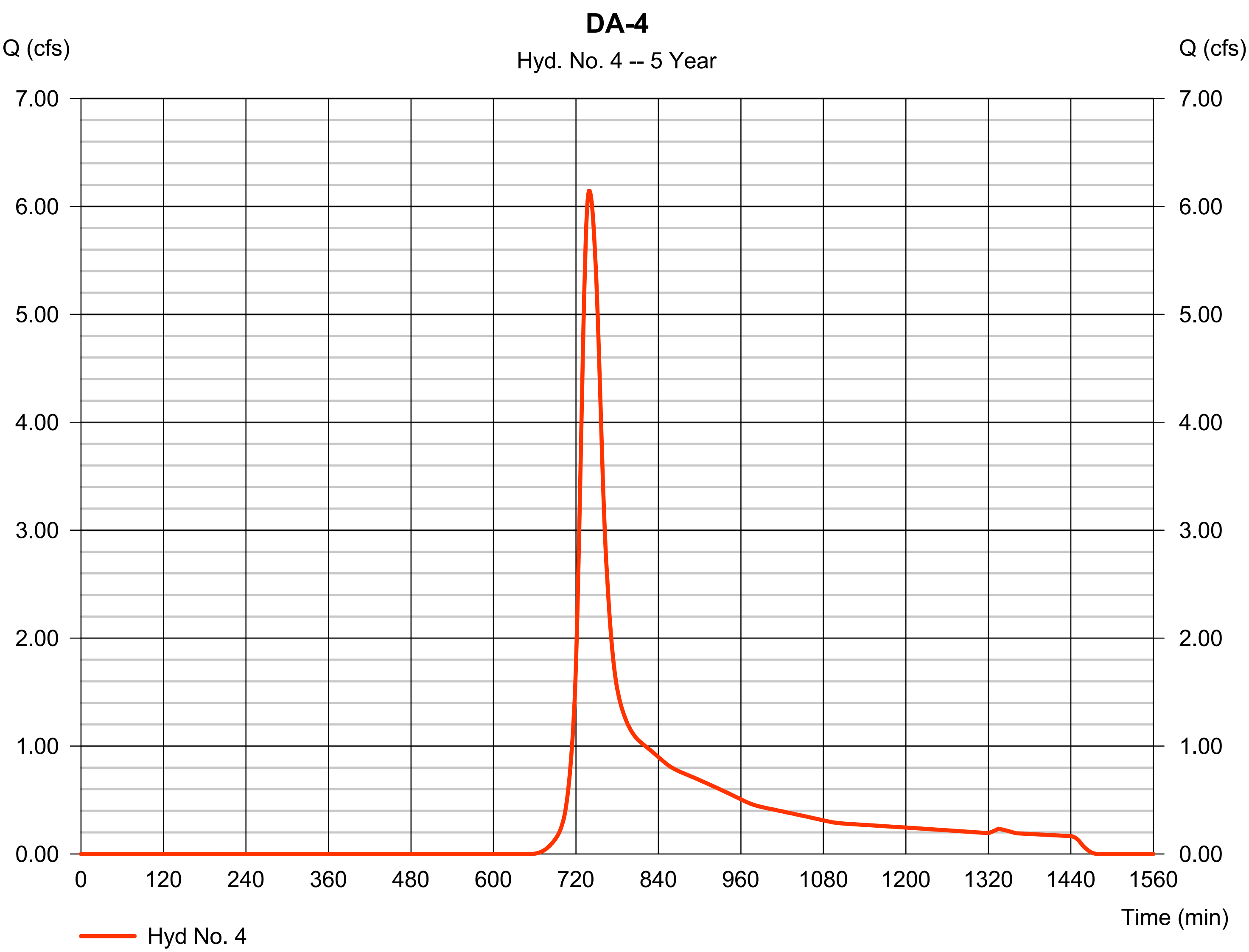
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.143 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 31,981 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



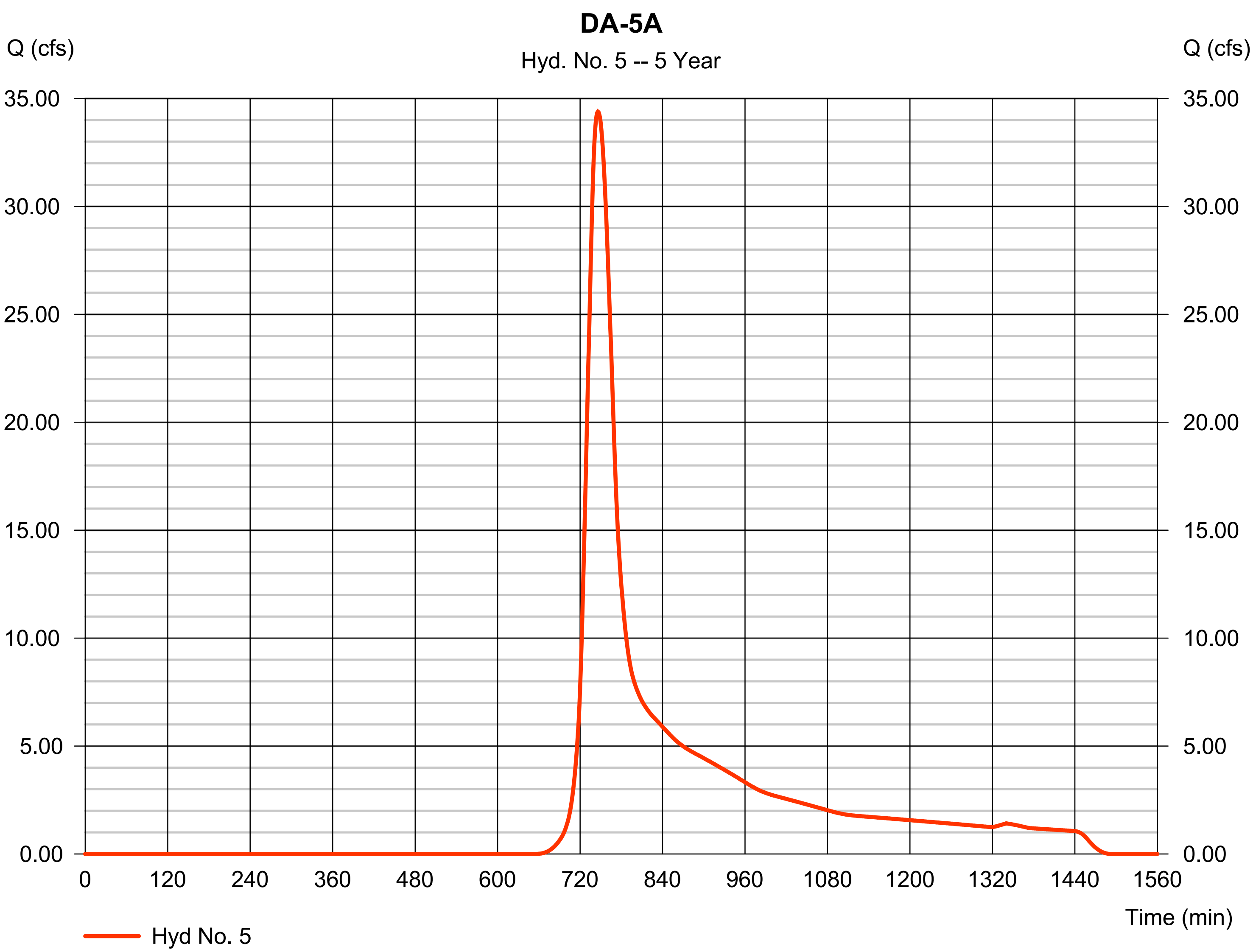
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 34.39 cfs
Storm frequency	= 5 yrs	Time to peak	= 746 min
Time interval	= 1 min	Hyd. volume	= 202,611 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

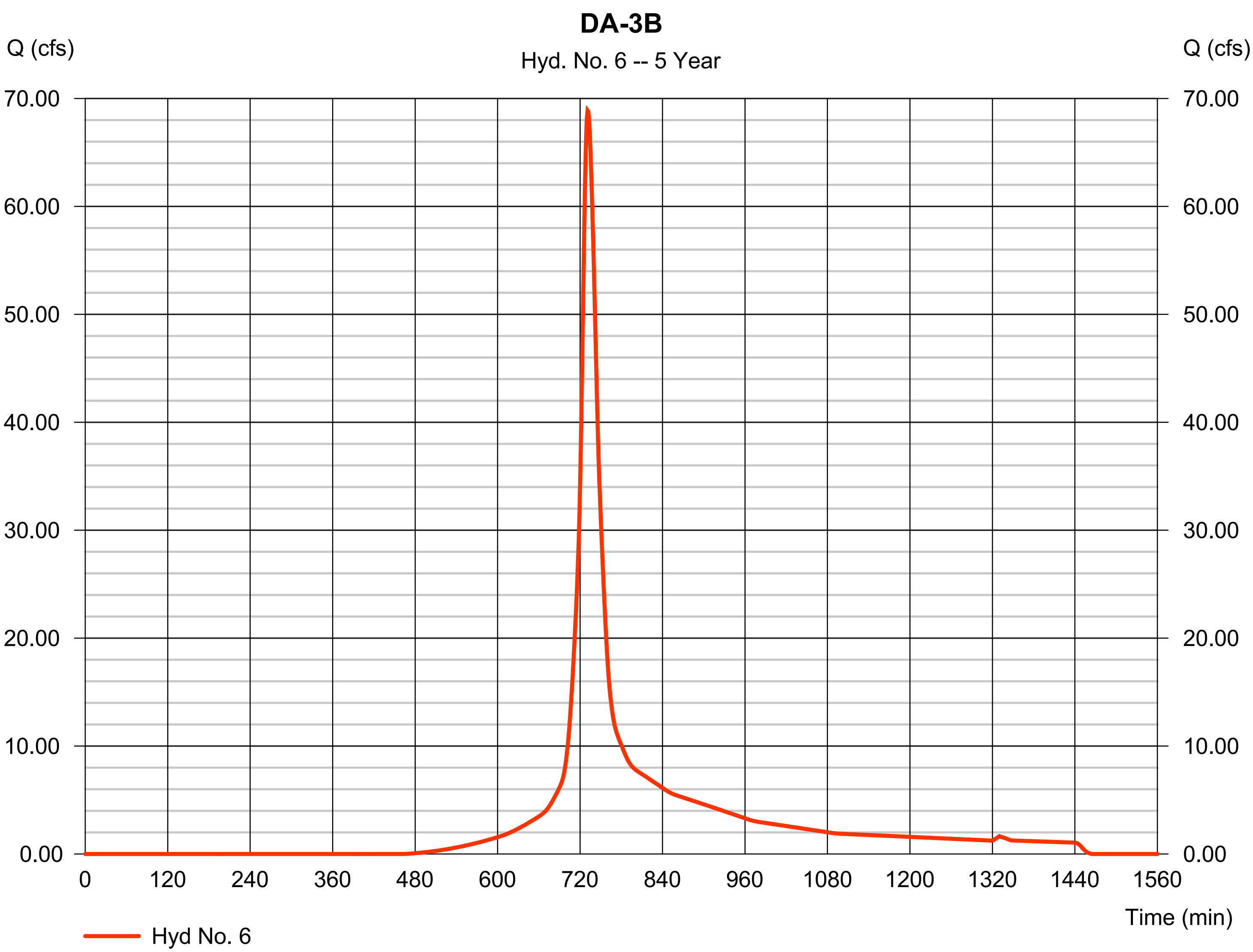


Hydrograph Report

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 68.88 cfs
Storm frequency	= 5 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 284,667 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



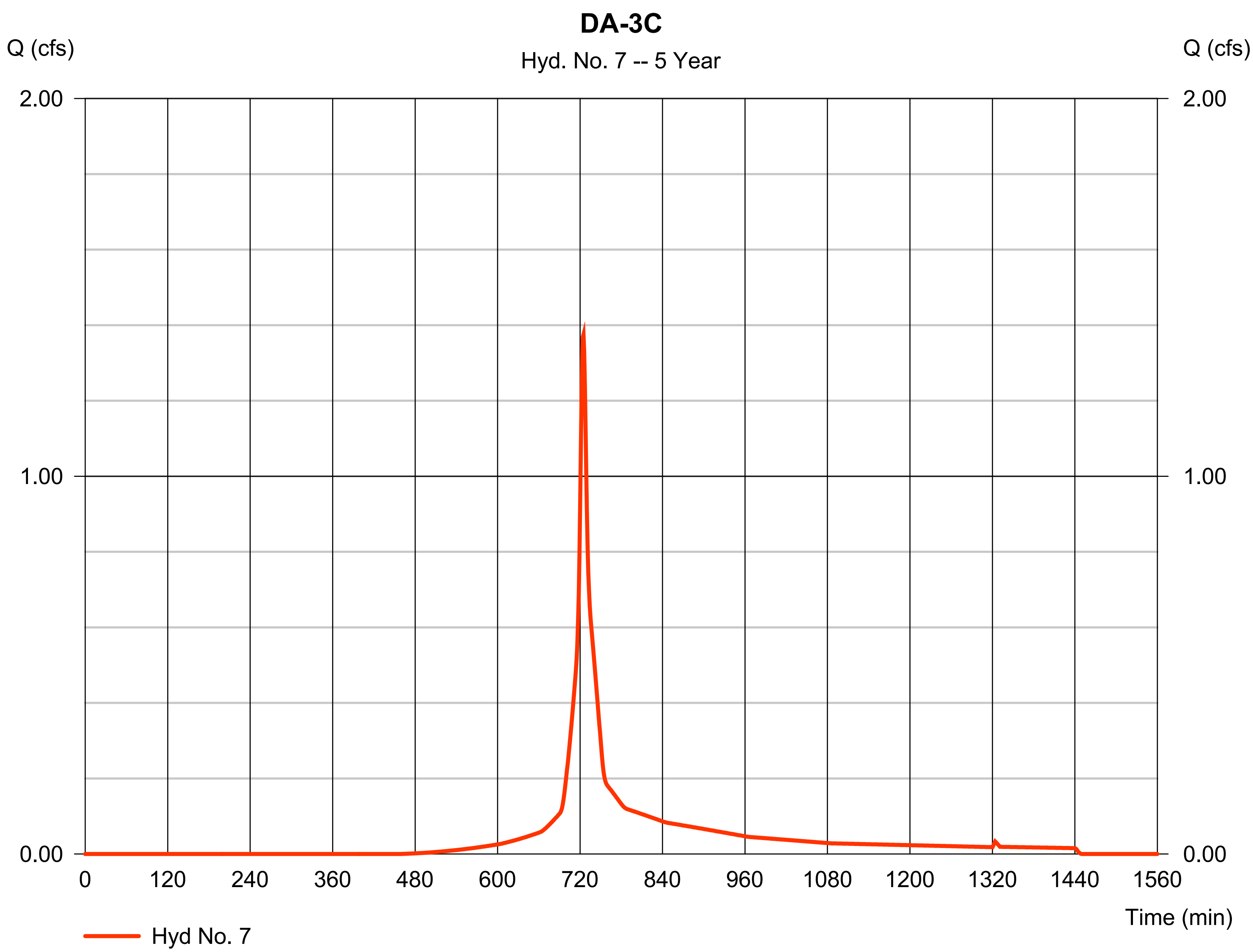
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.375 cfs
Storm frequency	= 5 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 4,240 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



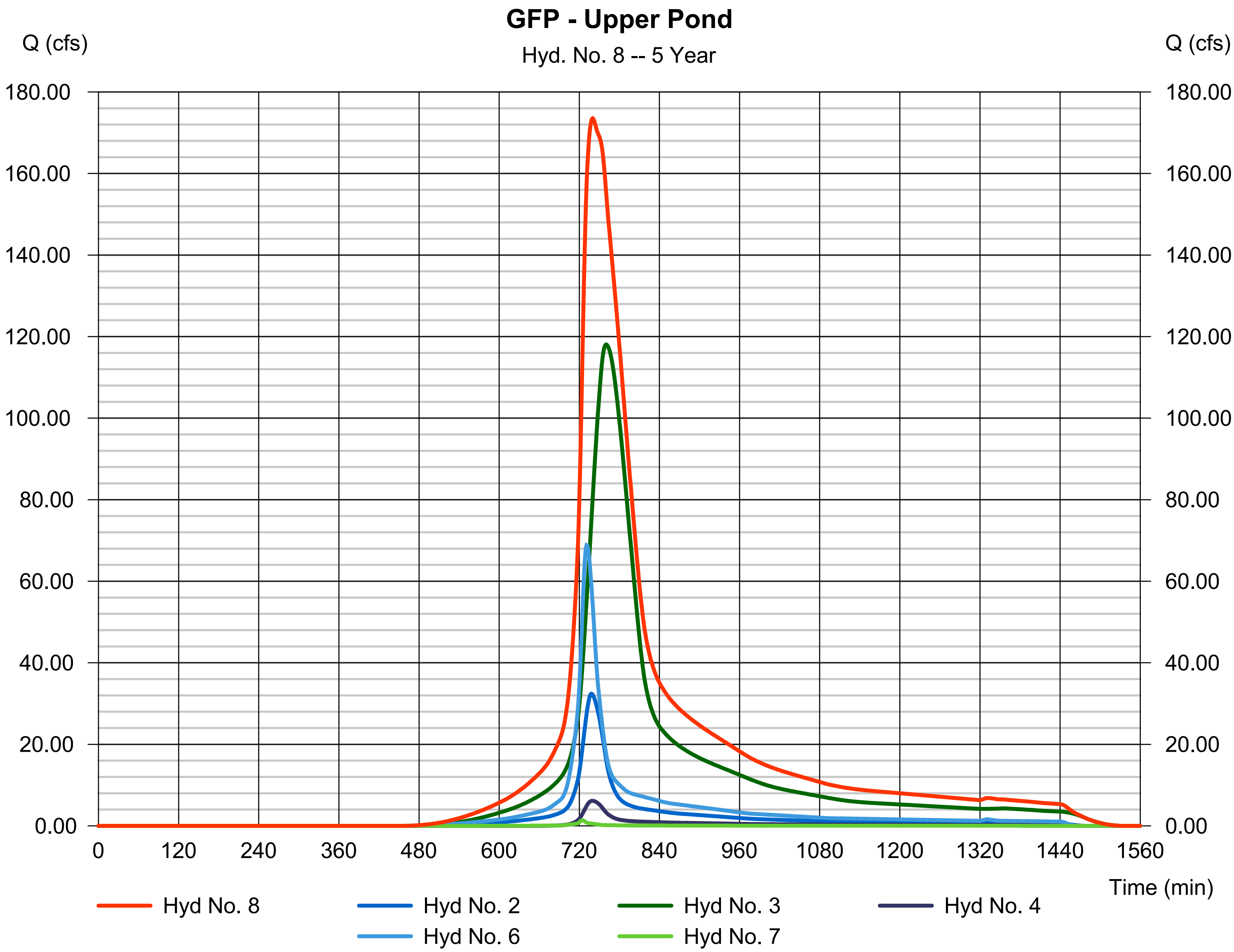
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 173.55 cfs
Storm frequency	= 5 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 1,373,861 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac

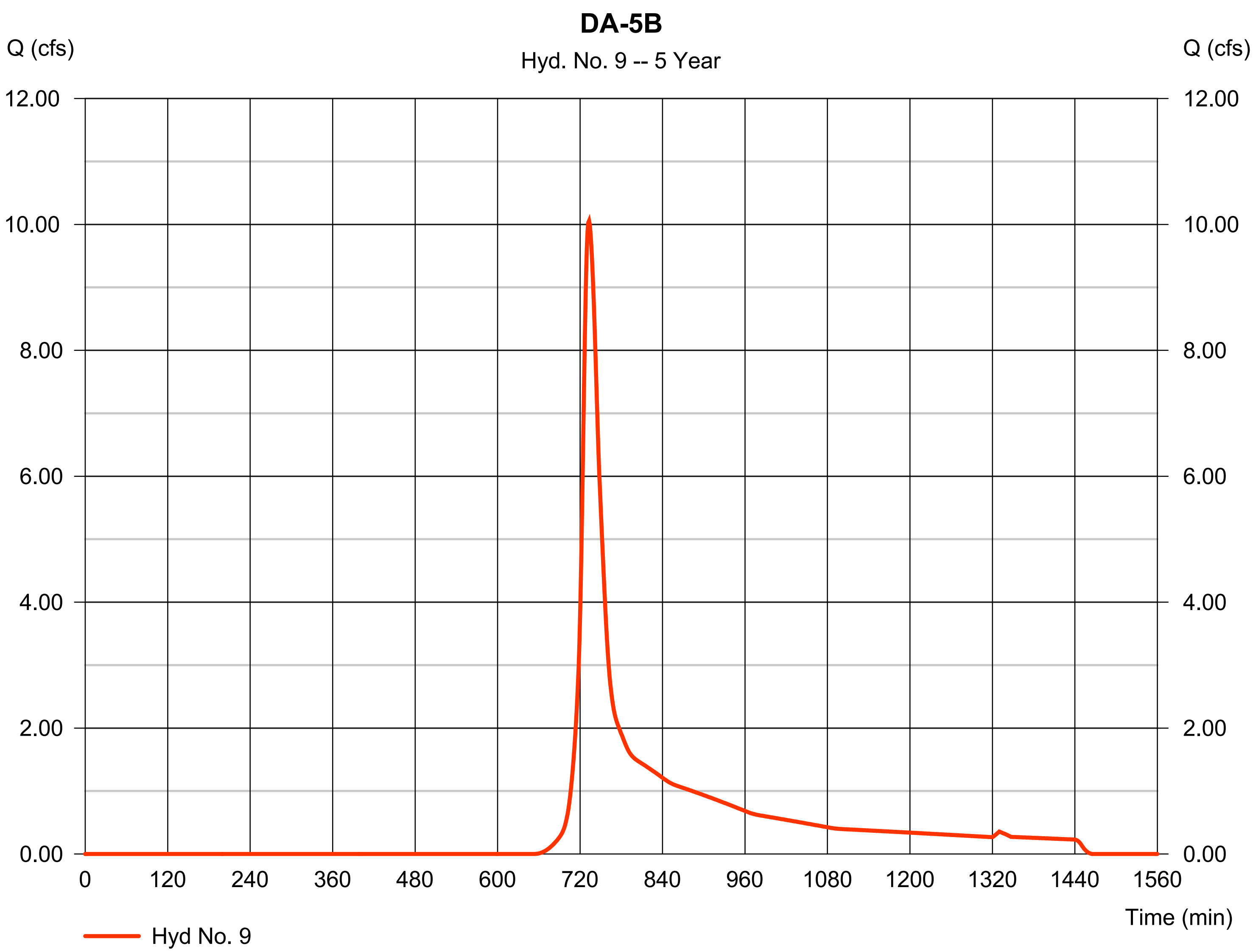


Hydrograph Report

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.06 cfs
Storm frequency	= 5 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 44,778 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



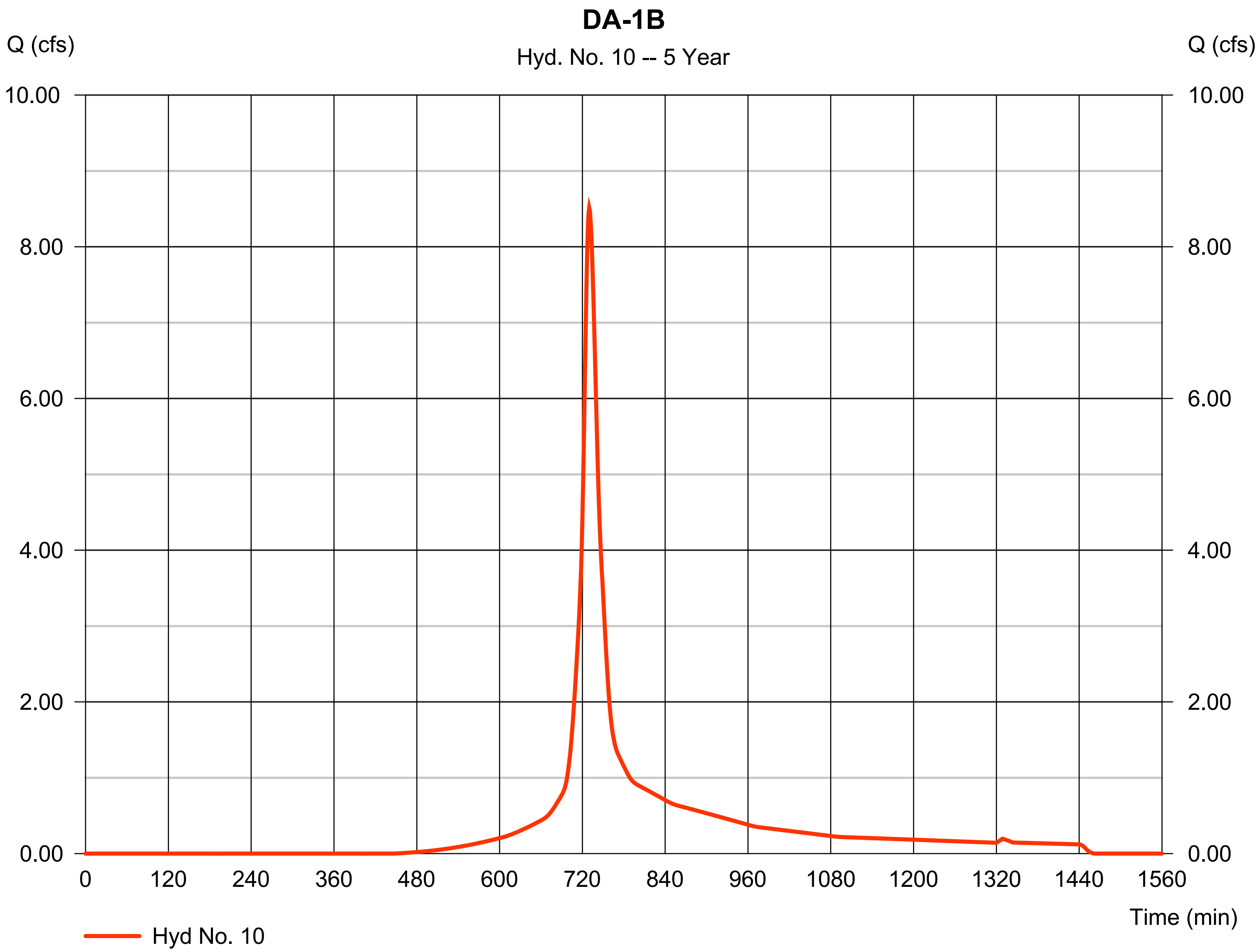
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 8.512 cfs
Storm frequency	= 5 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 33,632 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



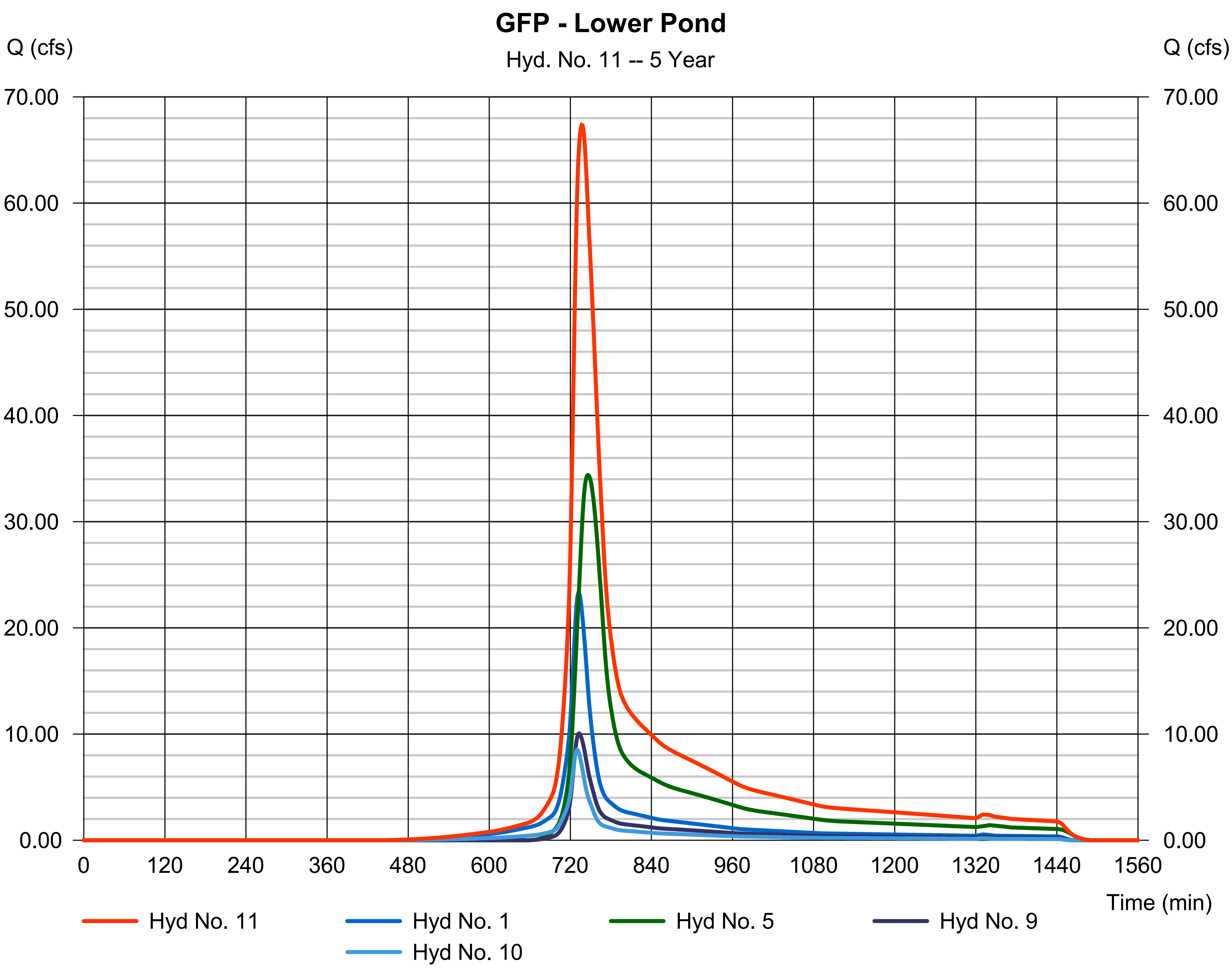
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 67.36 cfs
Storm frequency	= 5 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 379,912 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



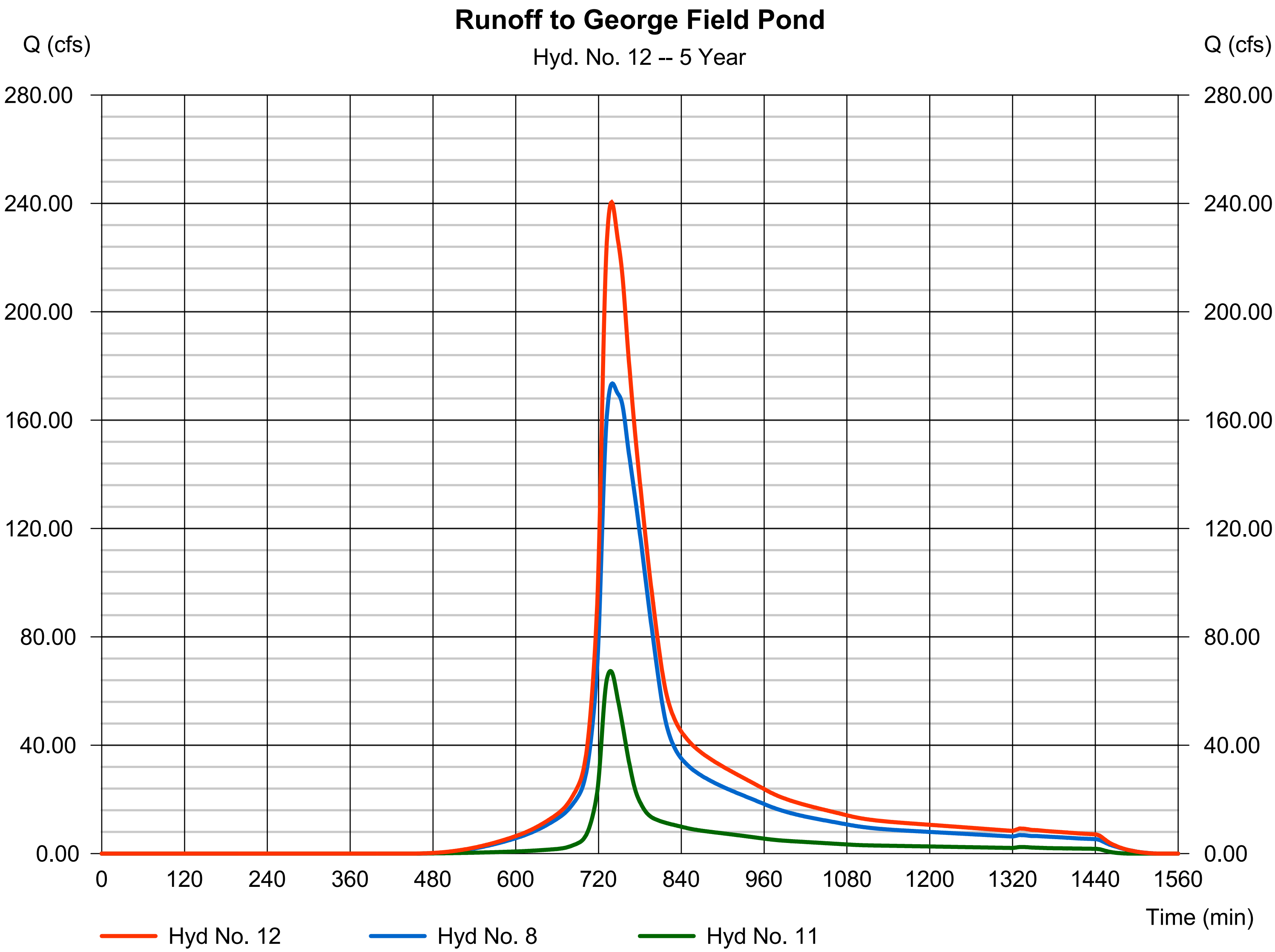
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 240.46 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 1,753,773 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

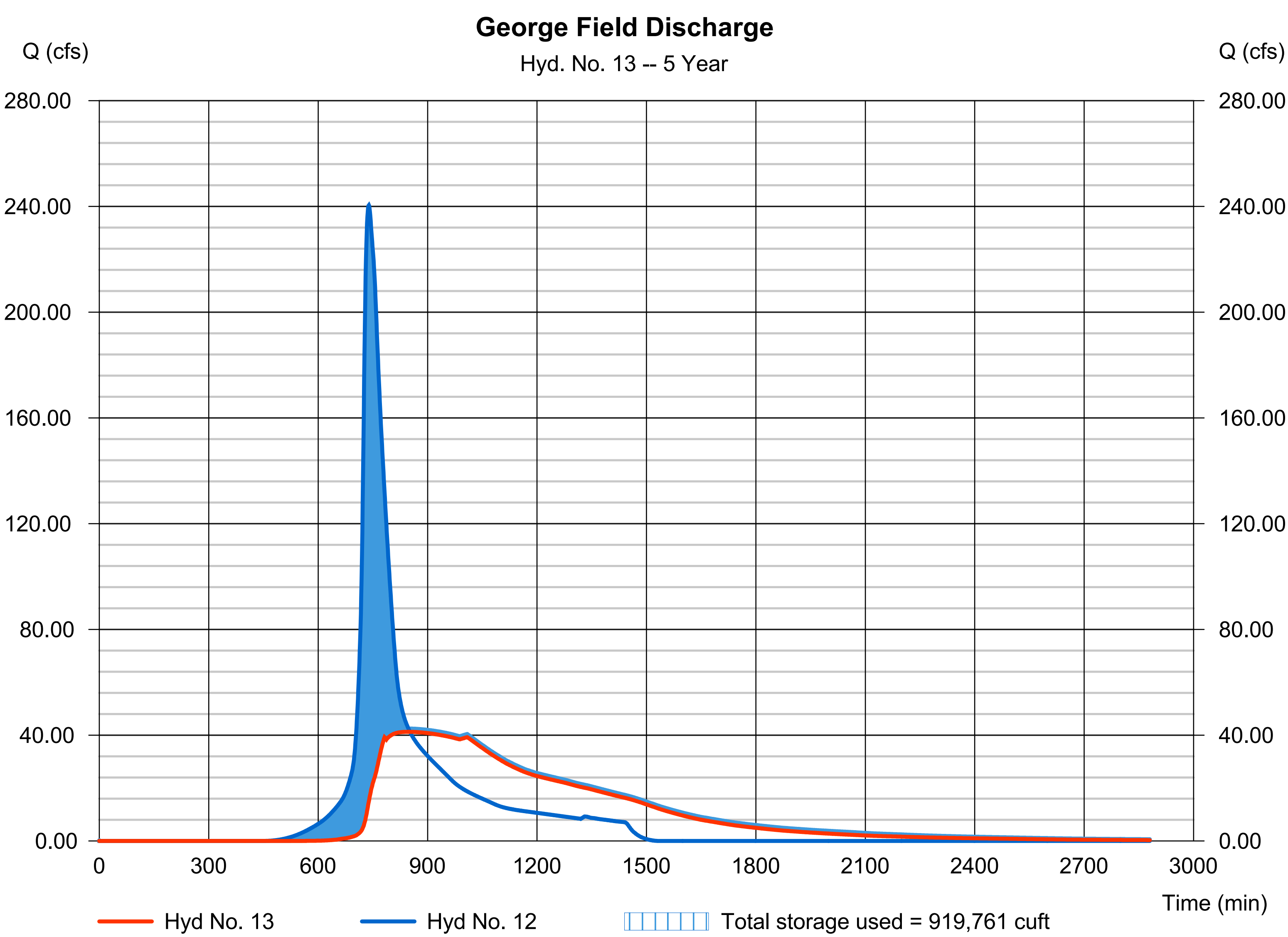
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 41.29 cfs
Storm frequency	= 5 yrs	Time to peak	= 847 min
Time interval	= 1 min	Hyd. volume	= 1,593,667 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 214.26 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 919,761 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	29.85	1	732	127,072	------	------	------	DA-1A
2	SCS Runoff	41.55	1	738	207,508	------	------	------	DA-2
3	SCS Runoff	152.42	1	760	1,151,029	------	------	------	DA-3A
4	SCS Runoff	9.008	1	739	45,306	------	------	------	DA-4
5	SCS Runoff	50.40	1	745	287,030	------	------	------	DA-5A
6	SCS Runoff	88.79	1	731	367,545	------	------	------	DA-3B
7	SCS Runoff	1.768	1	725	5,474	------	------	------	DA-3C
8	Combine	225.62	1	739	1,776,863	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	14.75	1	732	63,435	------	------	------	DA-5B
10	SCS Runoff	10.90	1	730	43,217	------	------	------	DA-1B
11	Combine	94.28	1	737	520,753	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	319.41	1	738	2,297,616	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	48.90	1	857	2,123,394	12	215.45	1,247,028	George Field Discharge

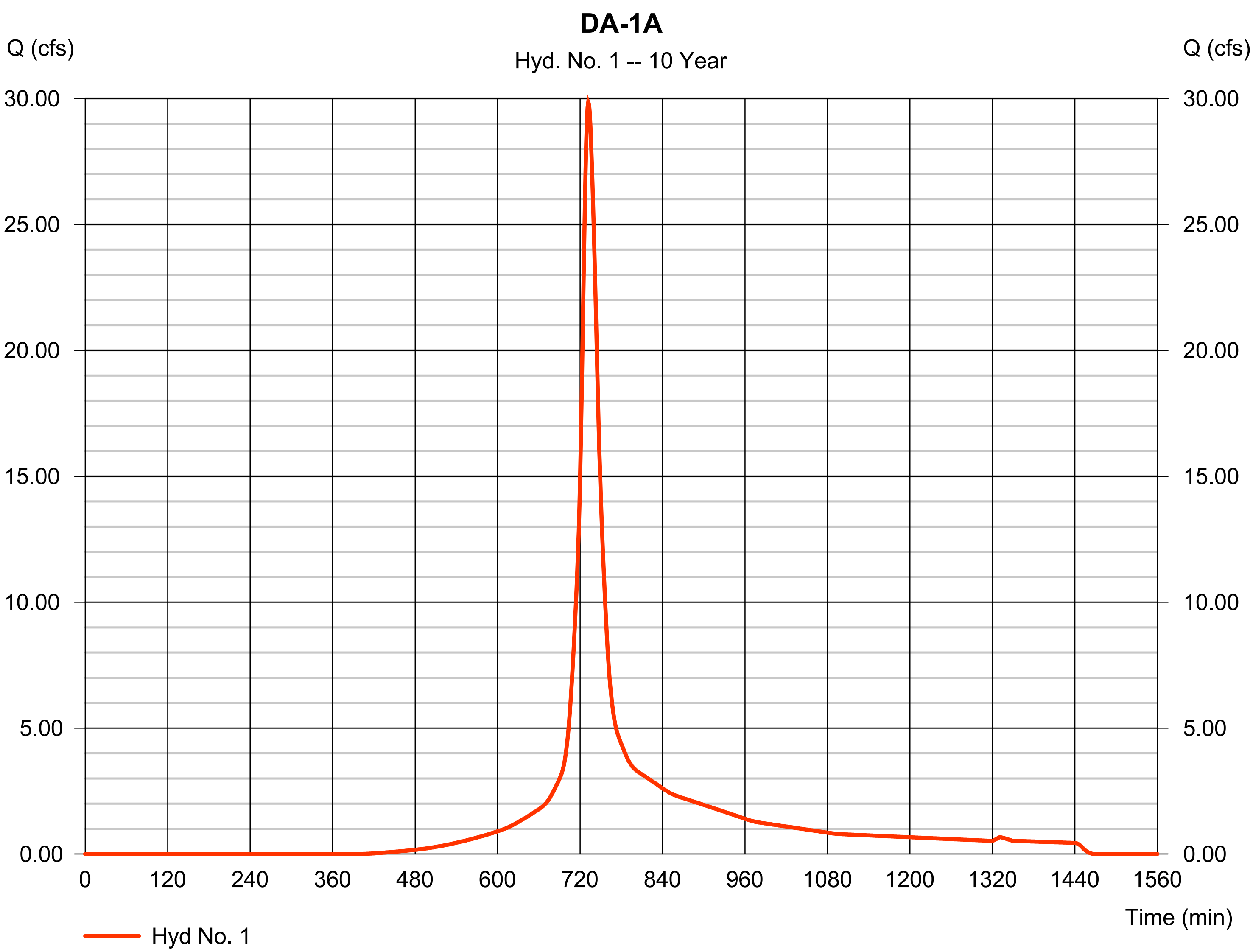
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 29.85 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 127,072 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



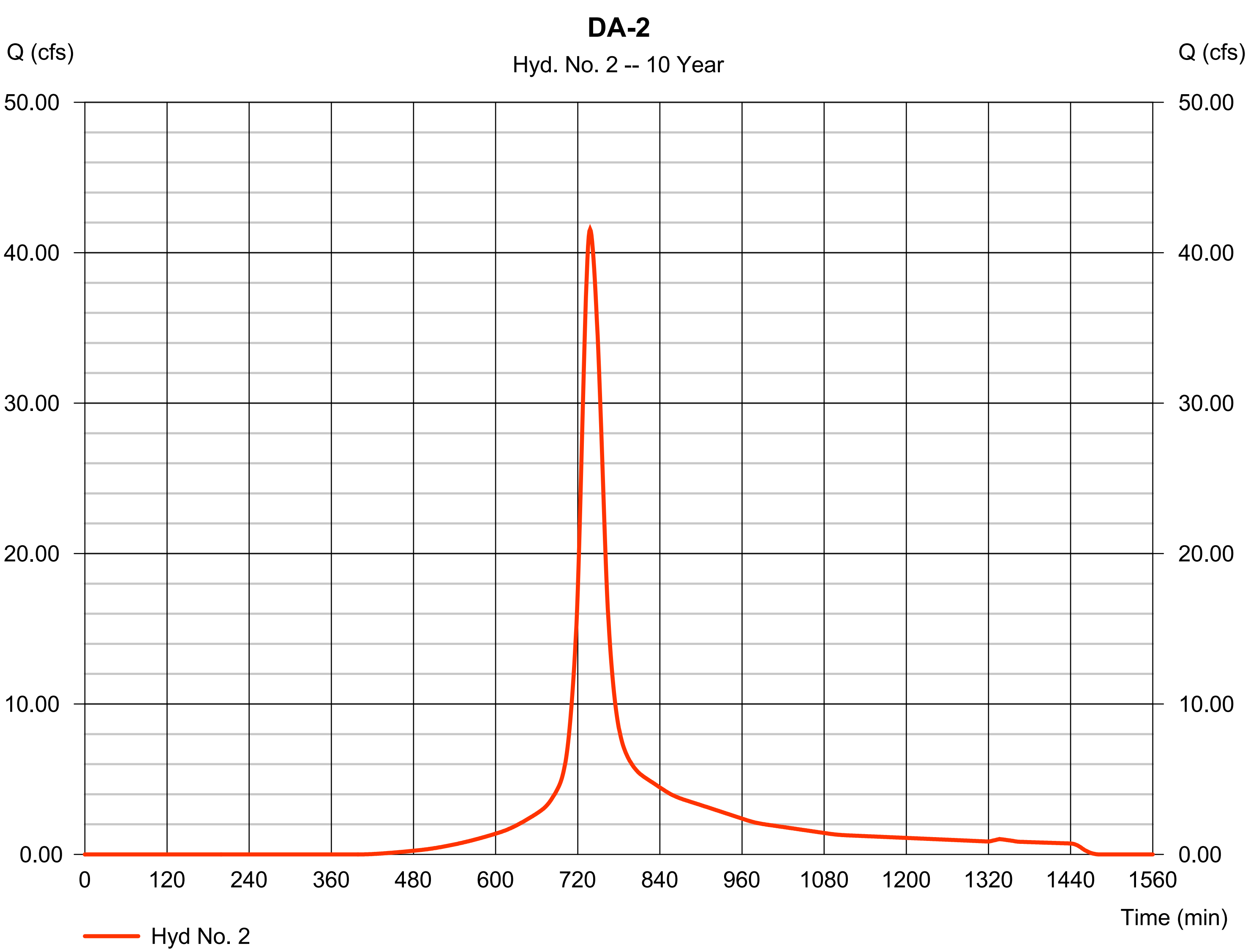
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 41.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 207,508 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



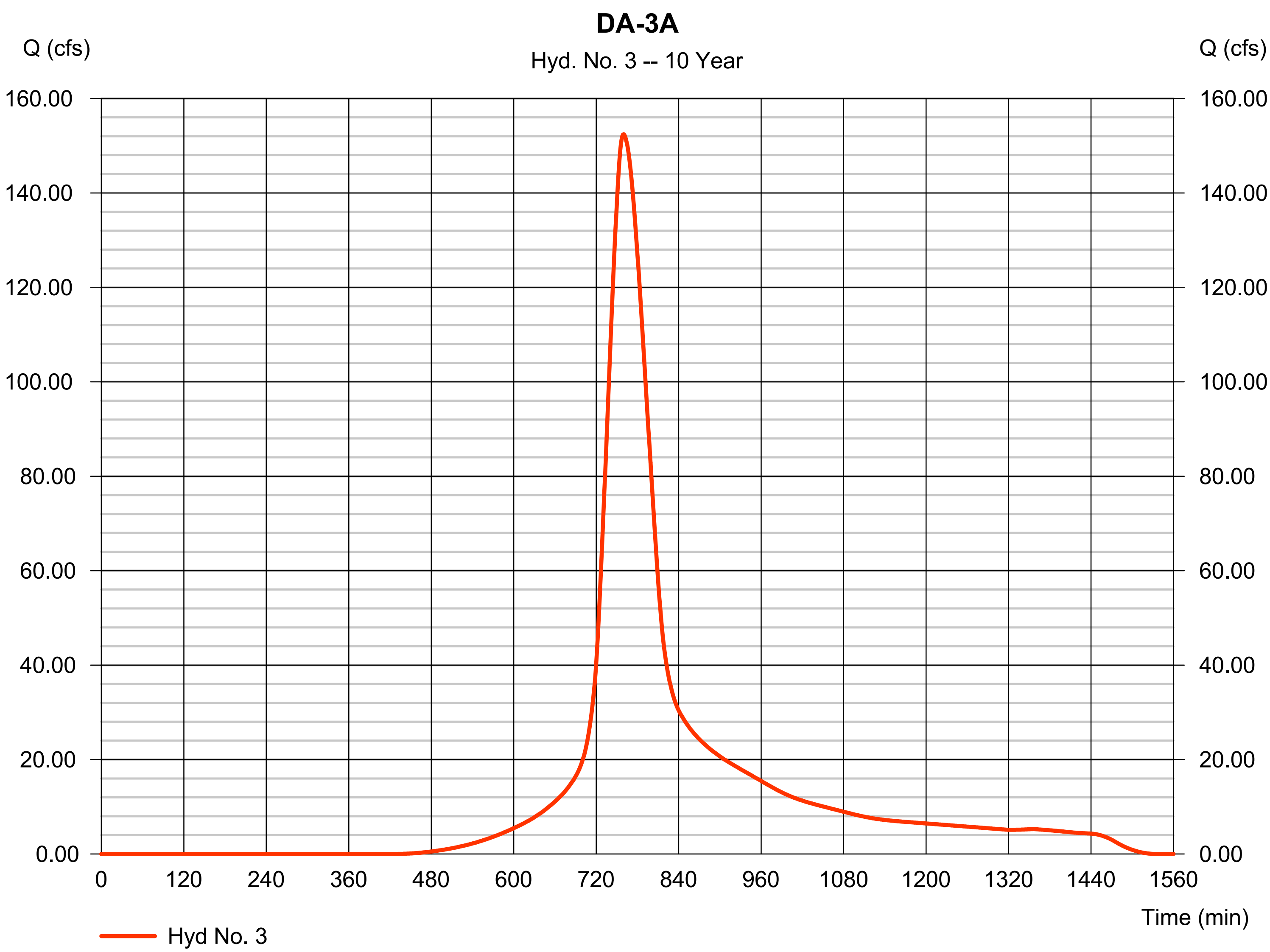
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 152.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 1,151,029 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



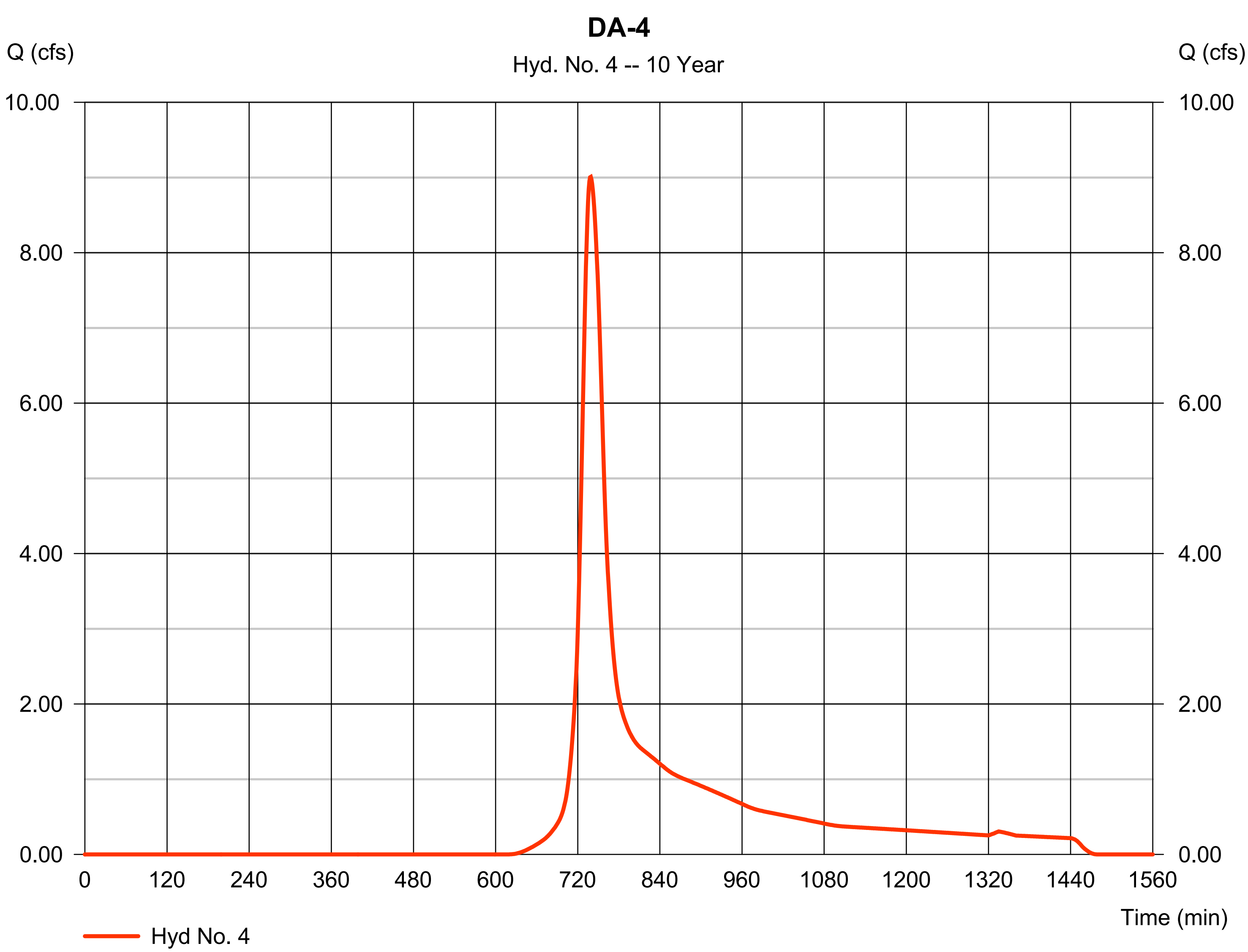
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 9.008 cfs
Storm frequency	= 10 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 45,306 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

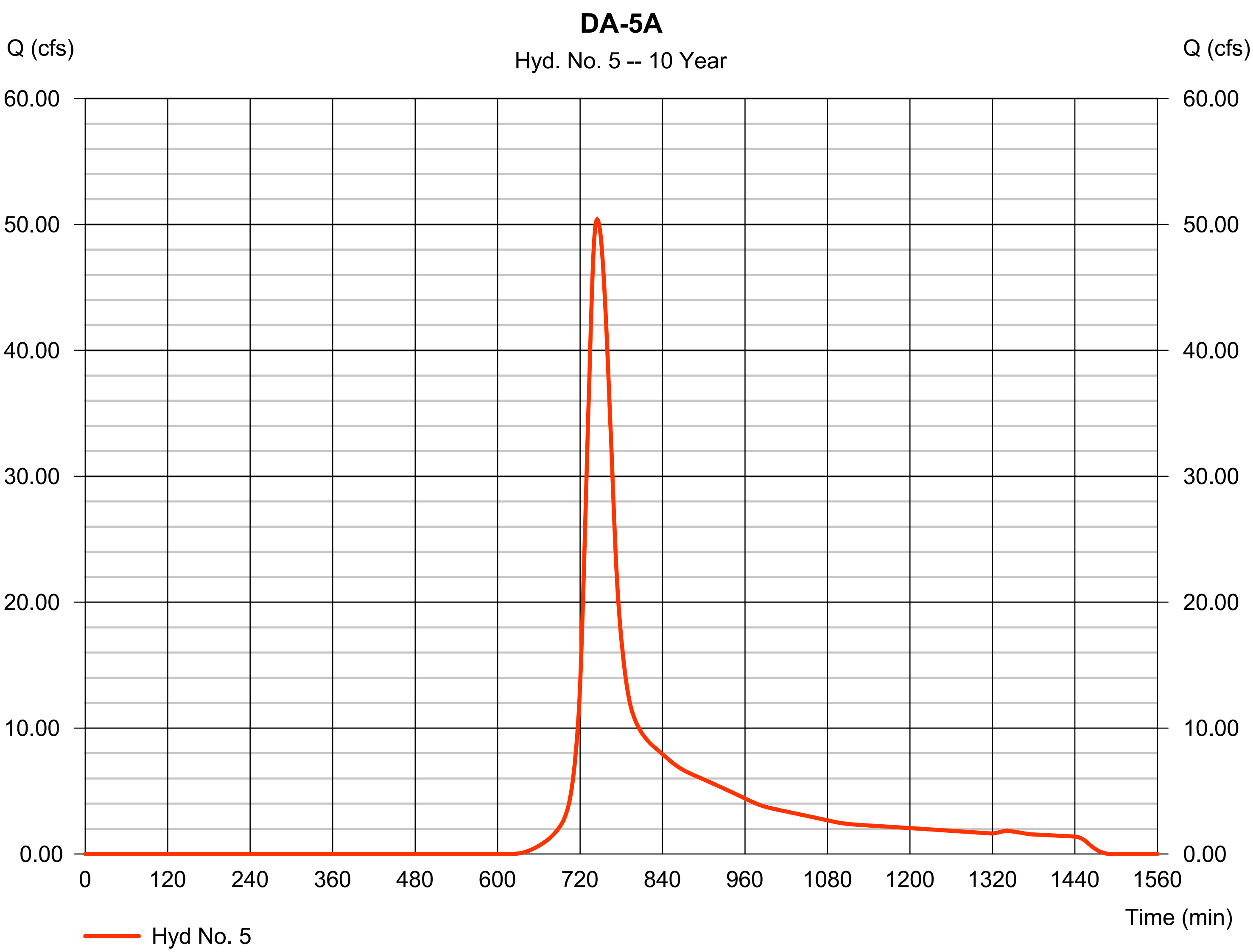


Hydrograph Report

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 50.40 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 287,030 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

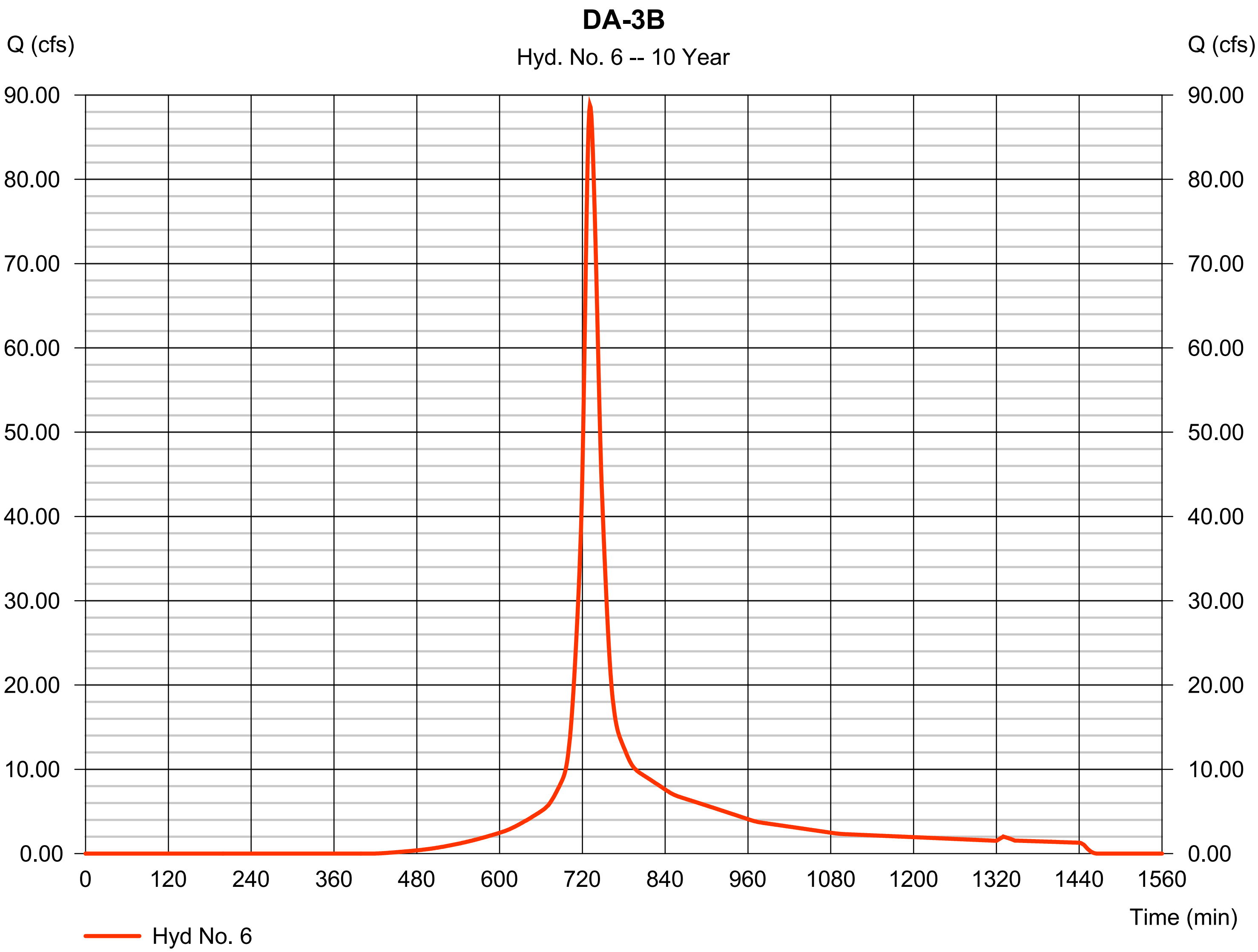


Hydrograph Report

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 88.79 cfs
Storm frequency	= 10 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 367,545 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



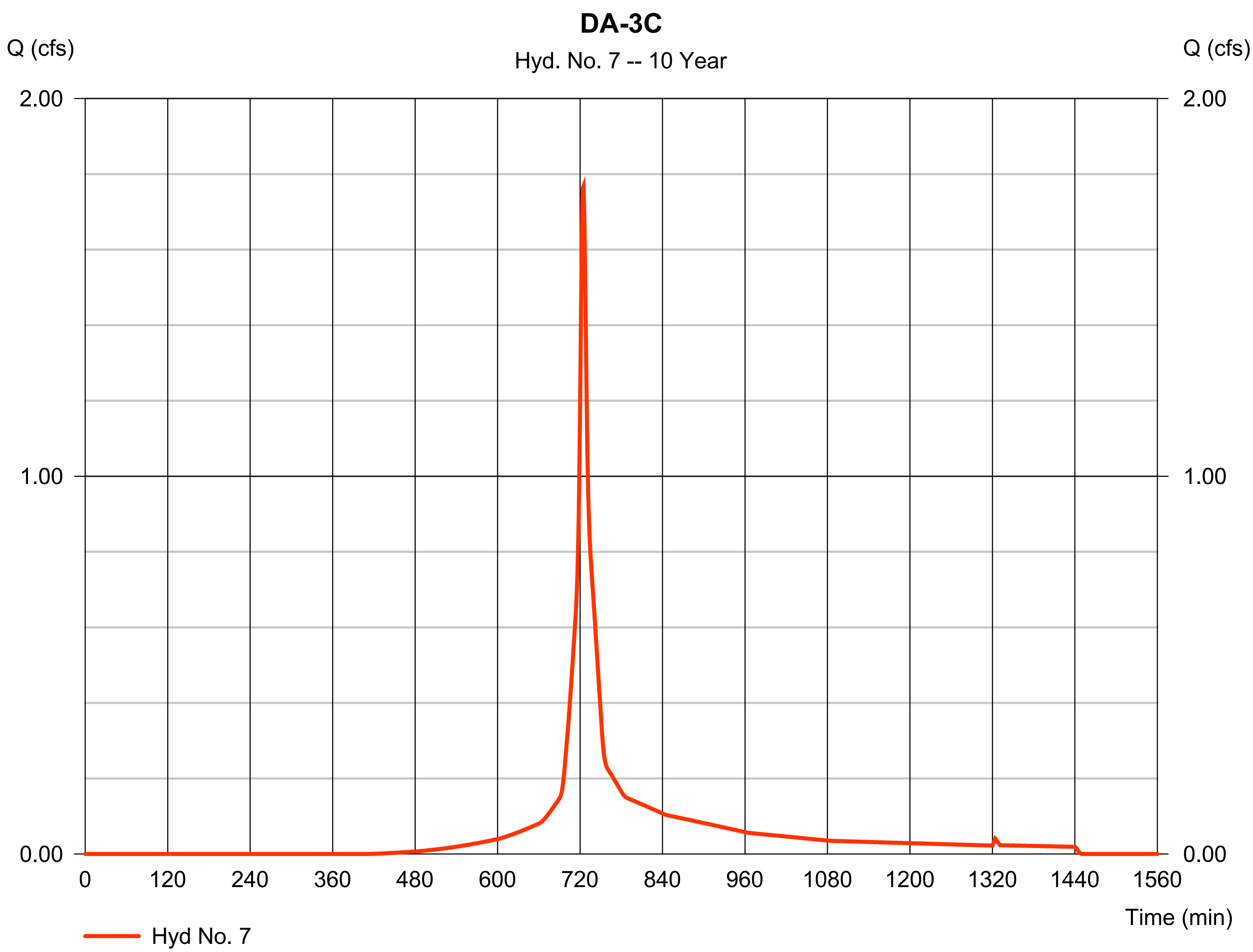
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.768 cfs
Storm frequency	= 10 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 5,474 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



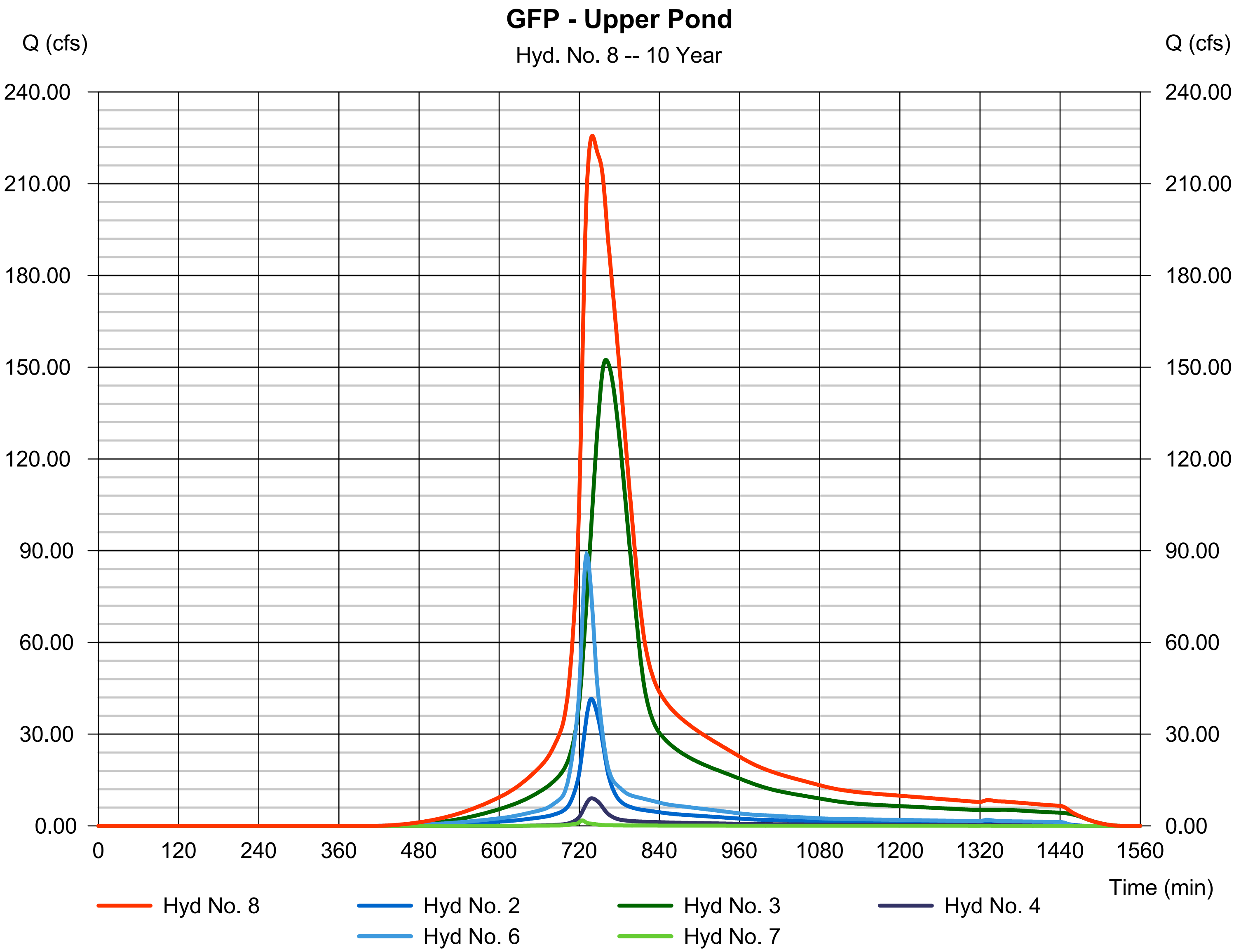
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 225.62 cfs
Storm frequency	= 10 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 1,776,863 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac



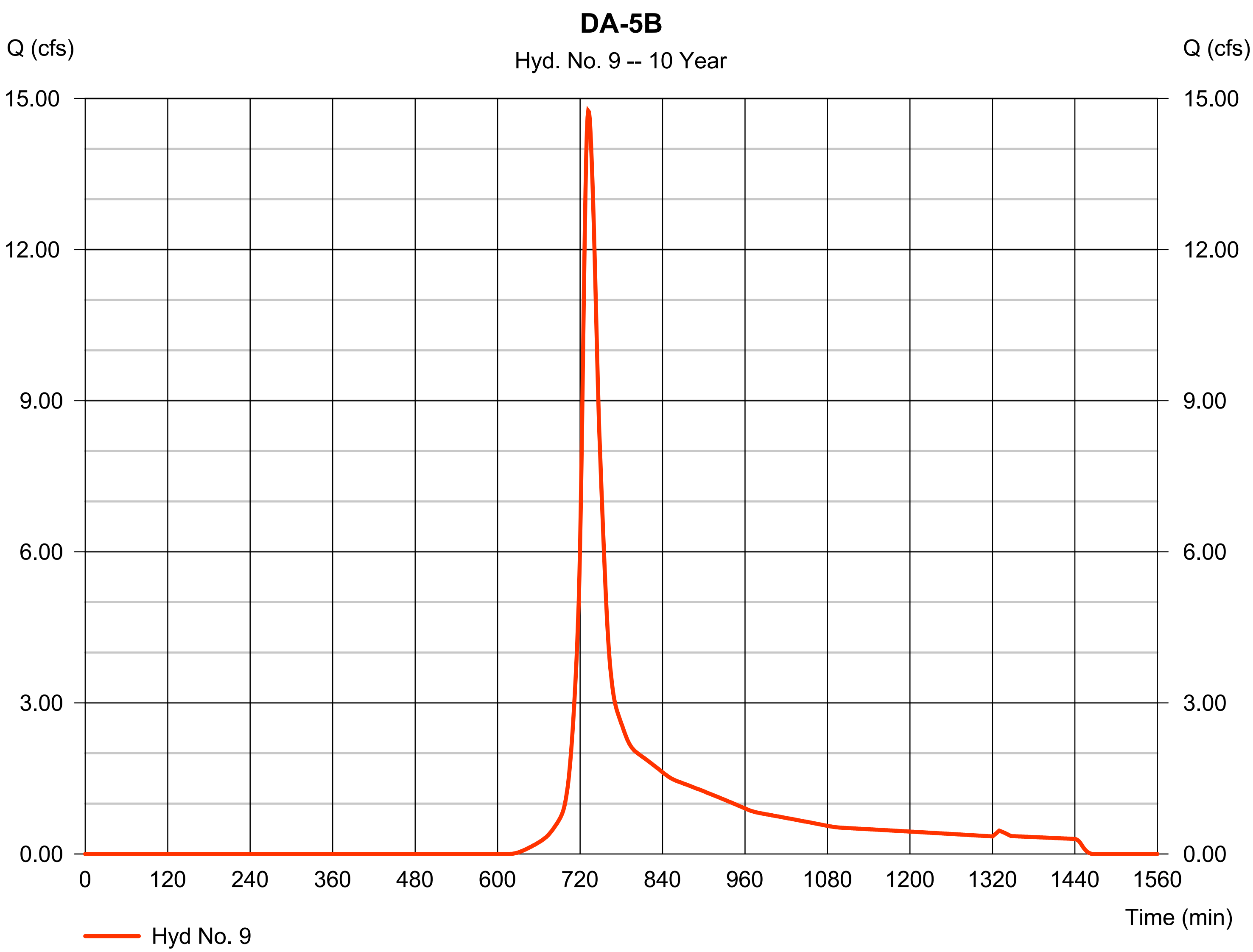
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.75 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 63,435 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



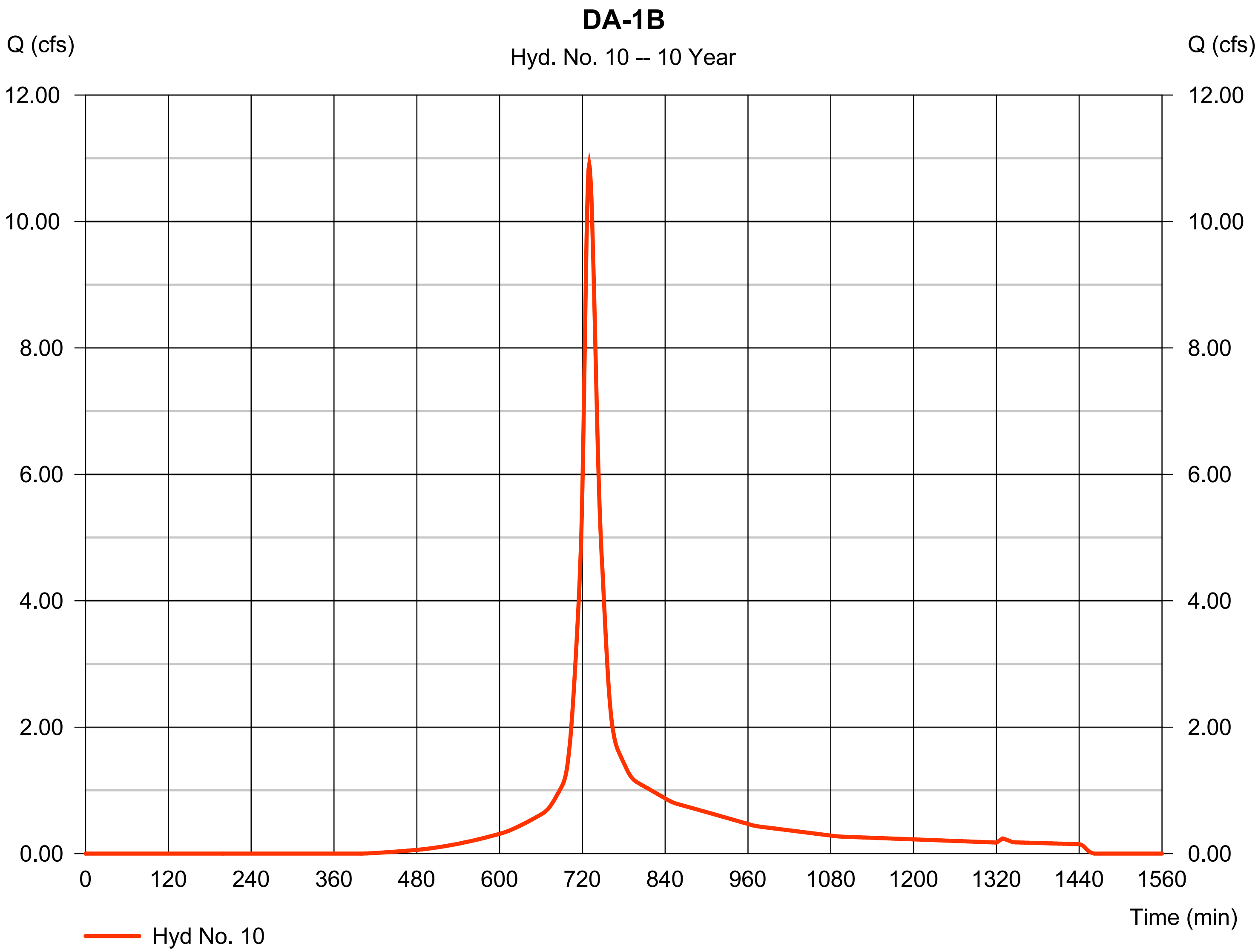
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.90 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 43,217 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



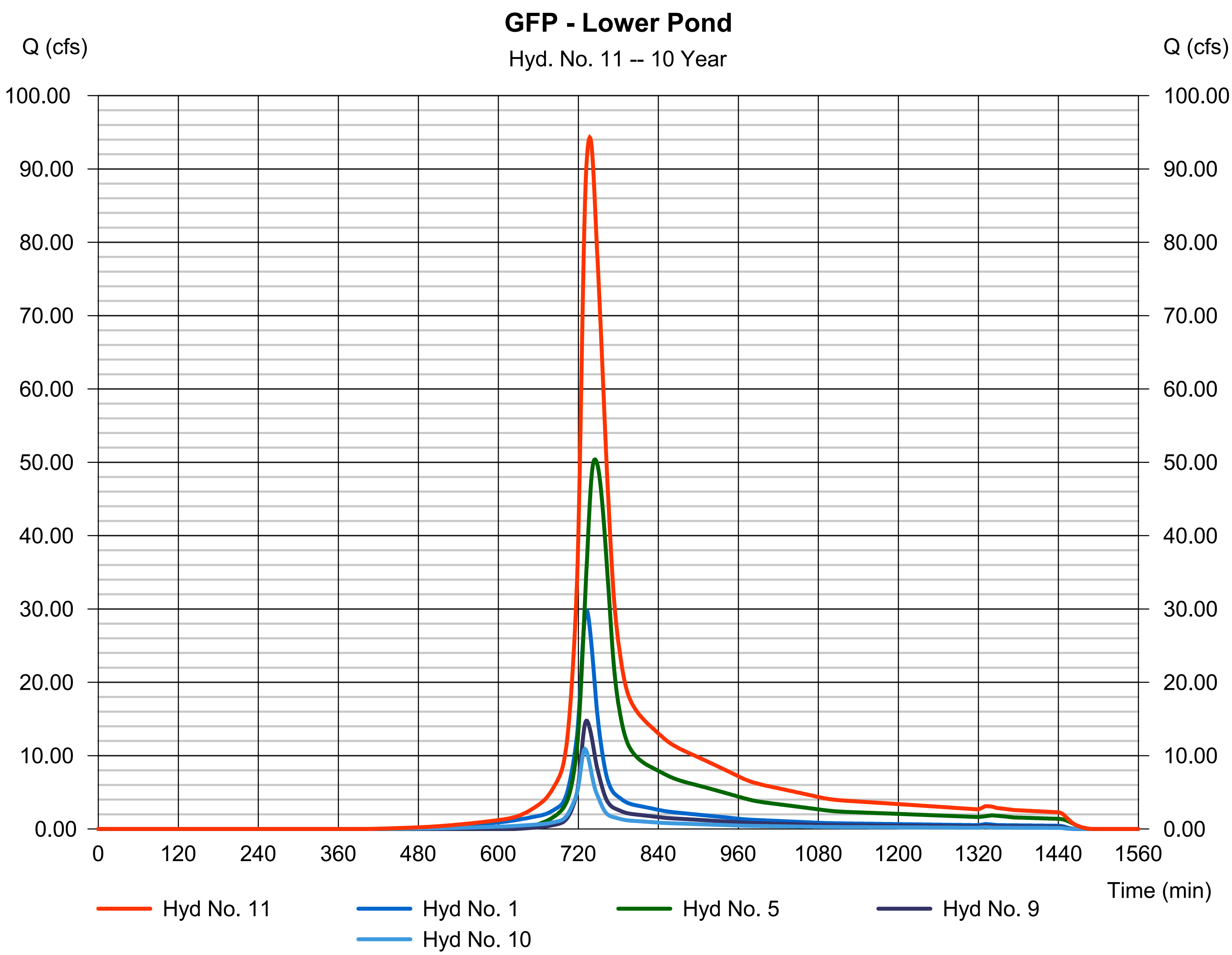
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 94.28 cfs
Storm frequency	= 10 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 520,753 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



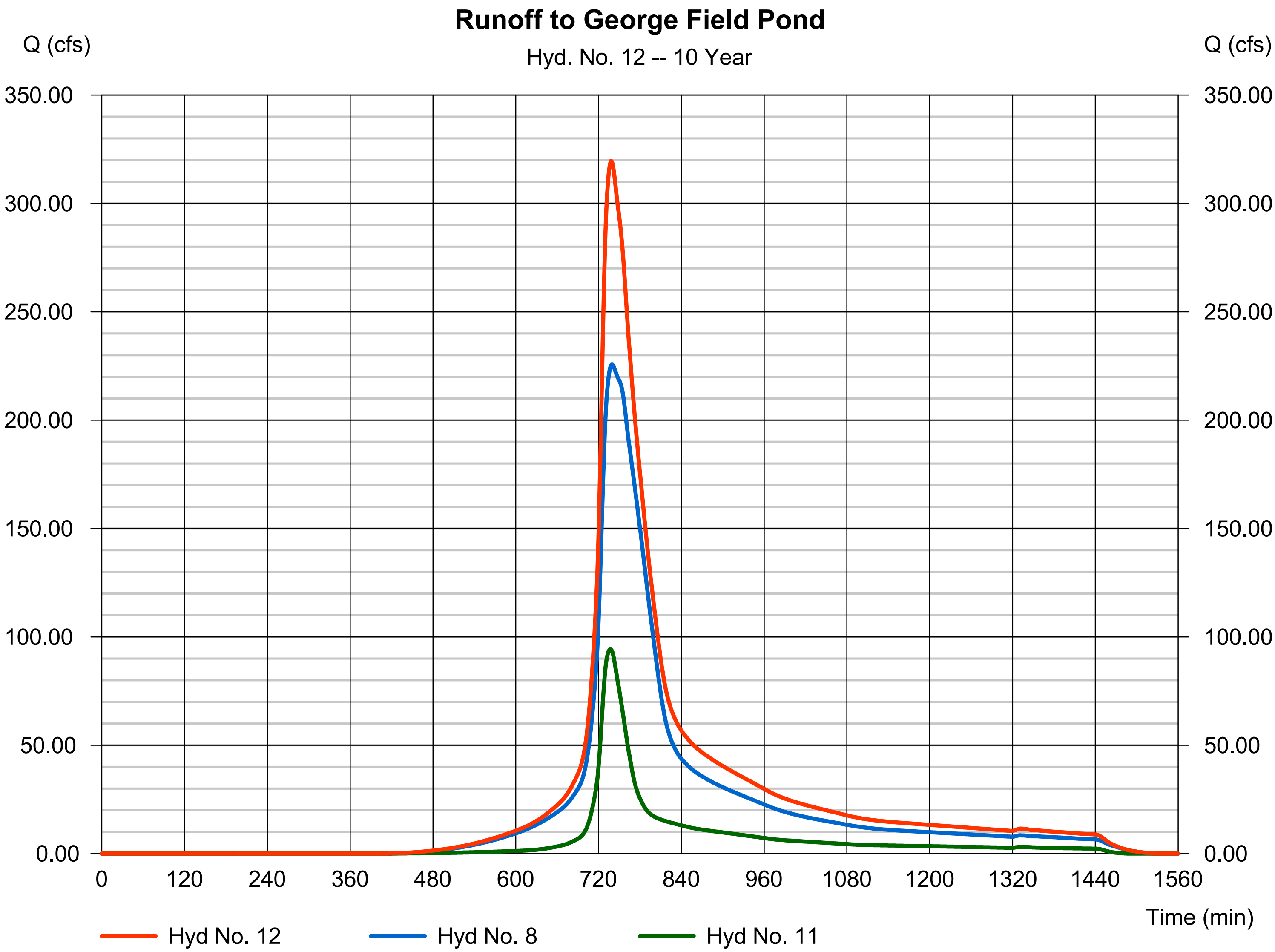
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 319.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 2,297,616 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

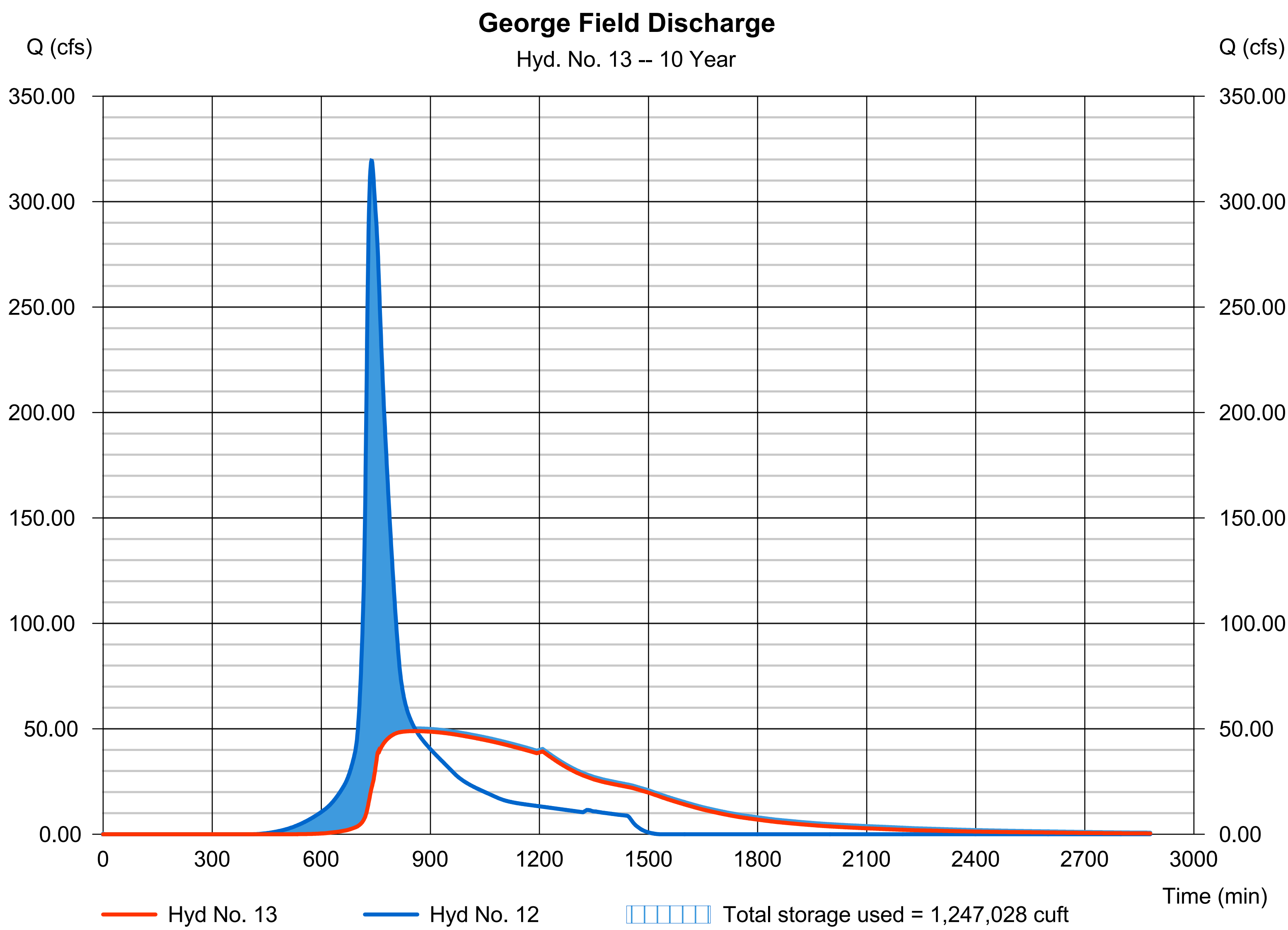
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 48.90 cfs
Storm frequency	= 10 yrs	Time to peak	= 857 min
Time interval	= 1 min	Hyd. volume	= 2,123,394 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 215.45 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 1,247,028 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	38.97	1	732	166,997	------	------	------	DA-1A
2	SCS Runoff	54.27	1	738	272,706	------	------	------	DA-2
3	SCS Runoff	200.52	1	759	1,519,784	------	------	------	DA-3A
4	SCS Runoff	13.31	1	738	65,395	------	------	------	DA-4
5	SCS Runoff	74.46	1	744	414,301	------	------	------	DA-5A
6	SCS Runoff	116.57	1	731	485,294	------	------	------	DA-3B
7	SCS Runoff	2.315	1	725	7,228	------	------	------	DA-3C
8	Combine	299.03	1	739	2,350,407	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	21.81	1	732	91,562	------	------	------	DA-5B
10	SCS Runoff	14.22	1	730	56,795	------	------	------	DA-1B
11	Combine	133.83	1	737	729,655	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	432.37	1	738	3,080,063	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	56.98	1	875	2,884,295	12	217.17	1,747,830	George Field Discharge

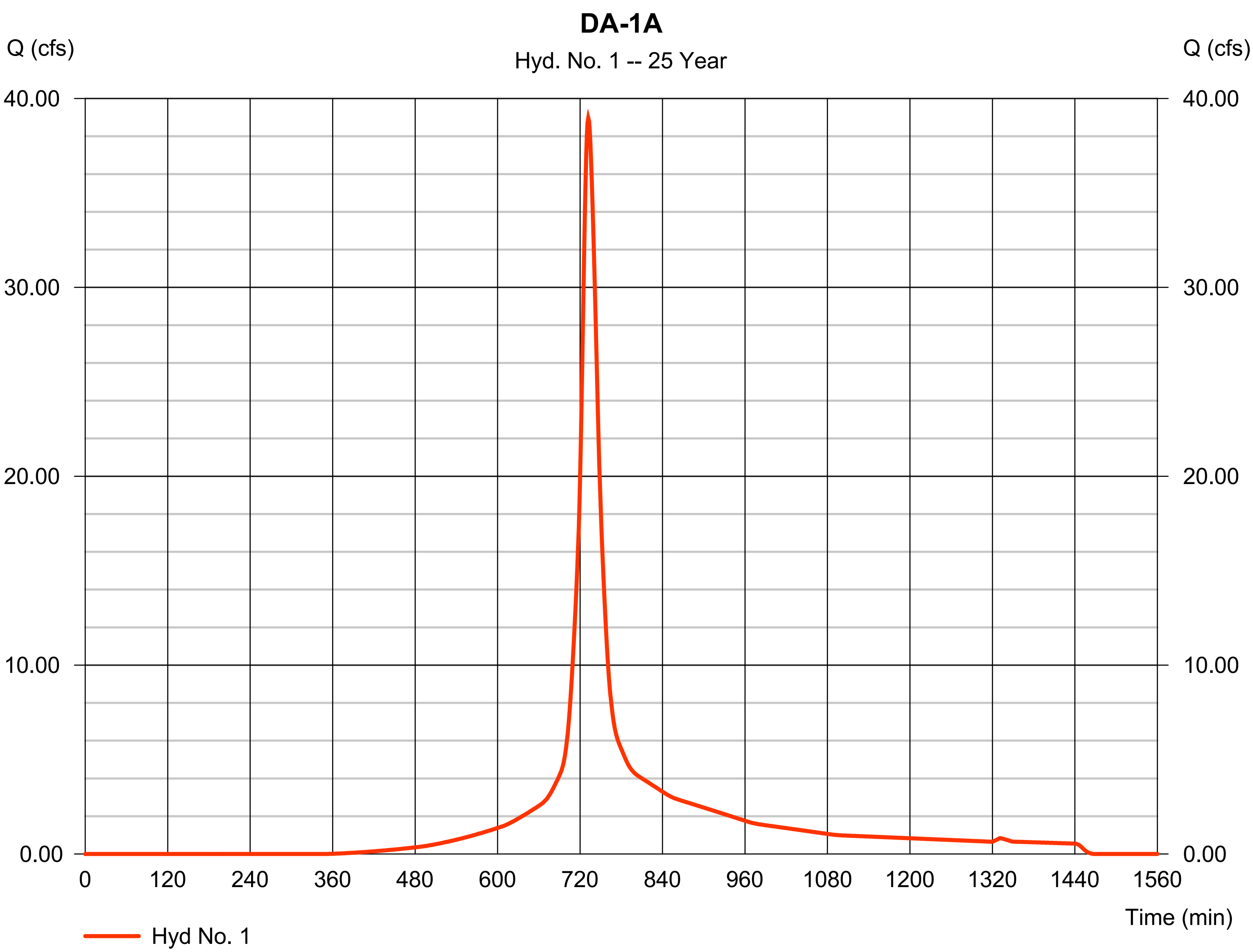
Proposed Condition - 1 pond - SFP.gpw	Return Period: 25 Year	Wednesday, 01 / 15 / 2025

Hydrograph Report

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 38.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 166,997 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



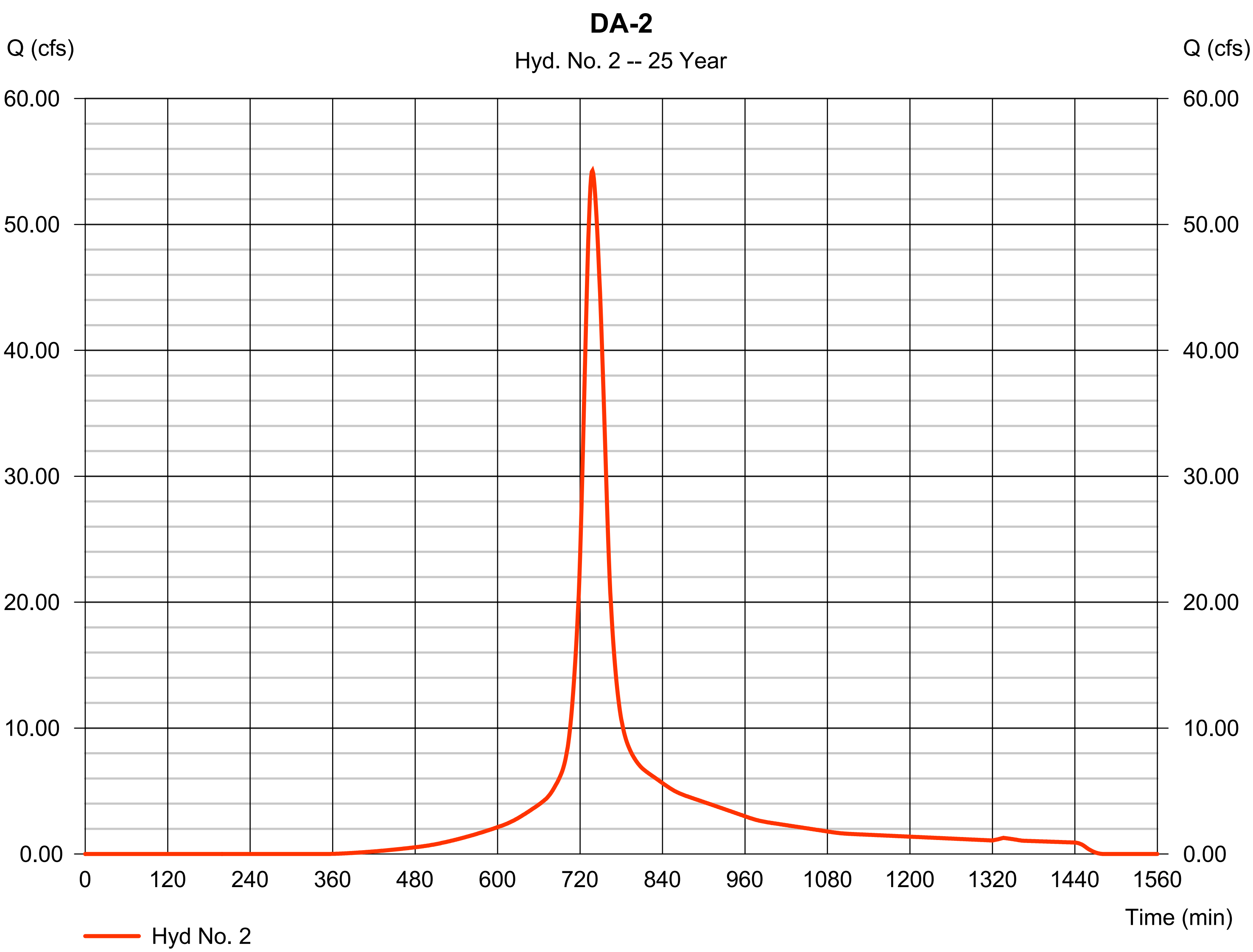
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 54.27 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 272,706 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



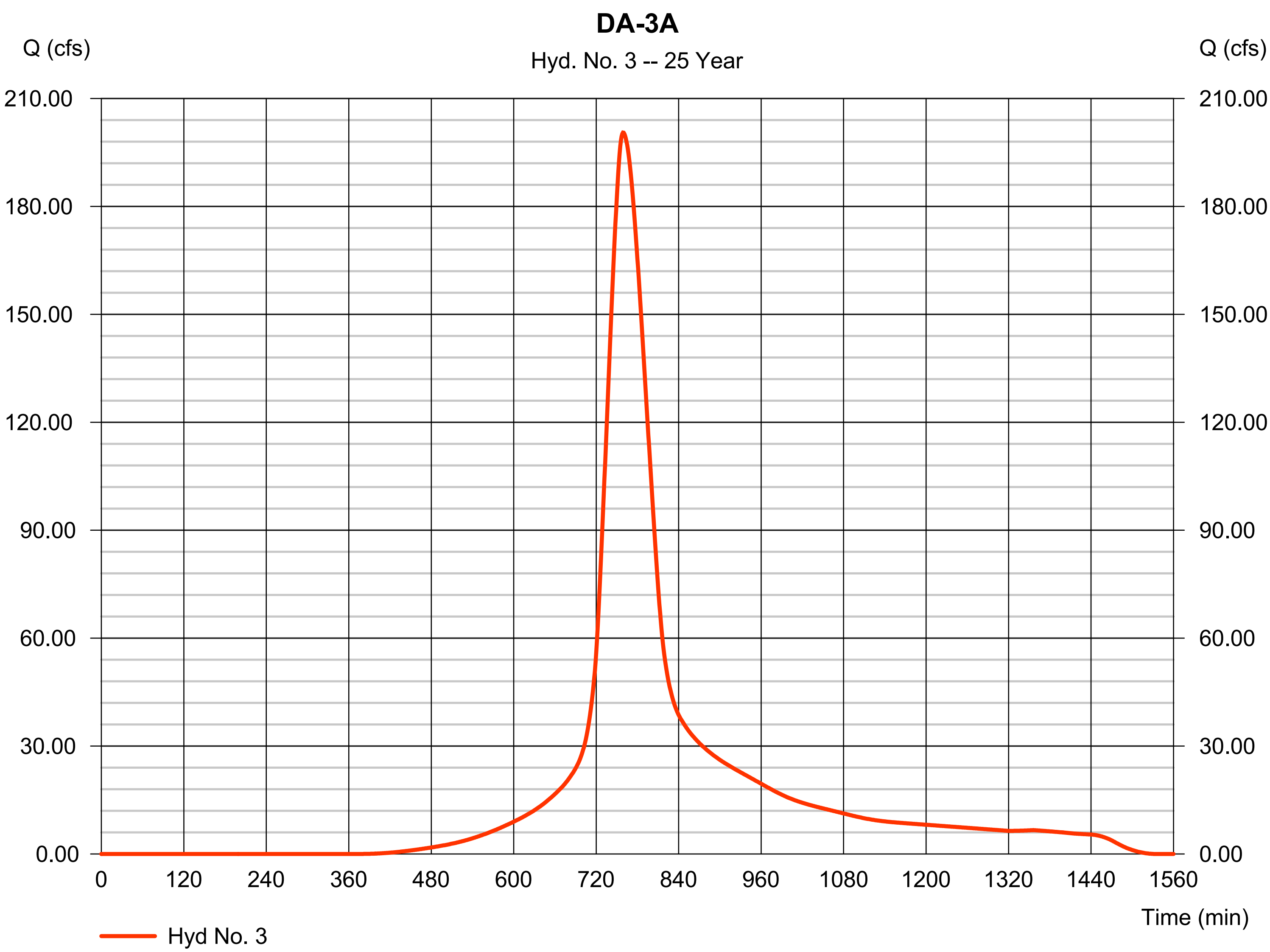
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 200.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,519,784 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



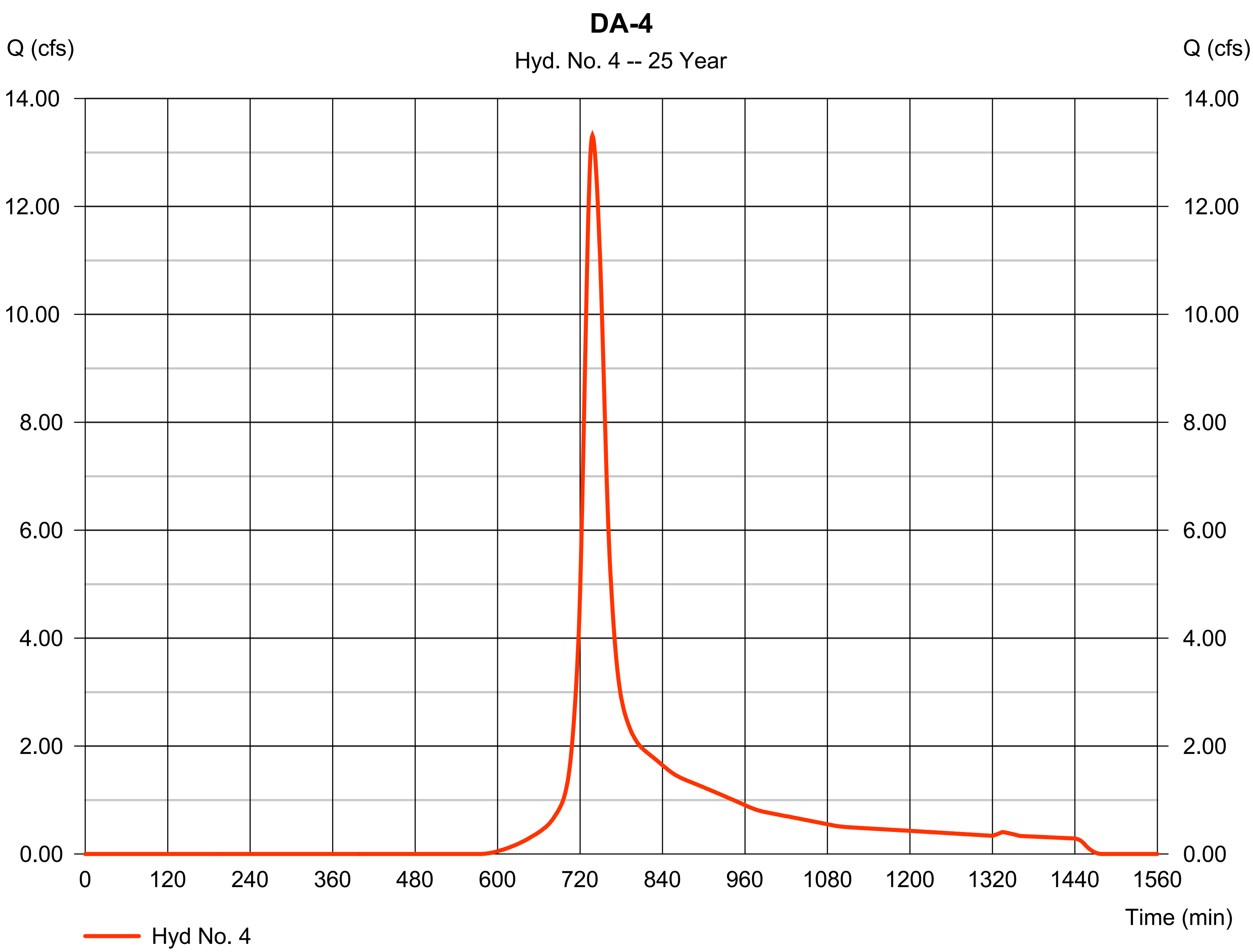
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 13.31 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 65,395 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



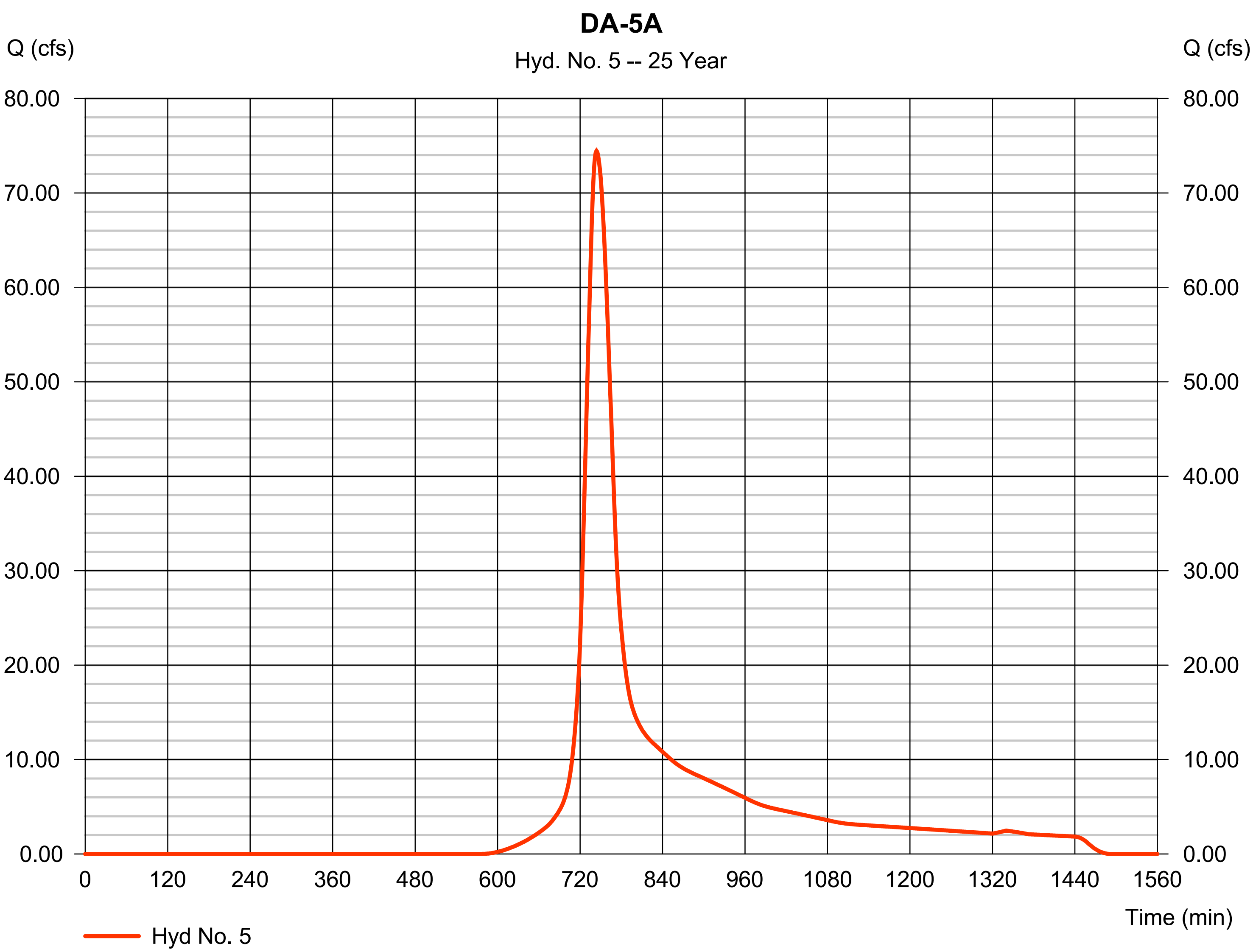
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 74.46 cfs
Storm frequency	= 25 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 414,301 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

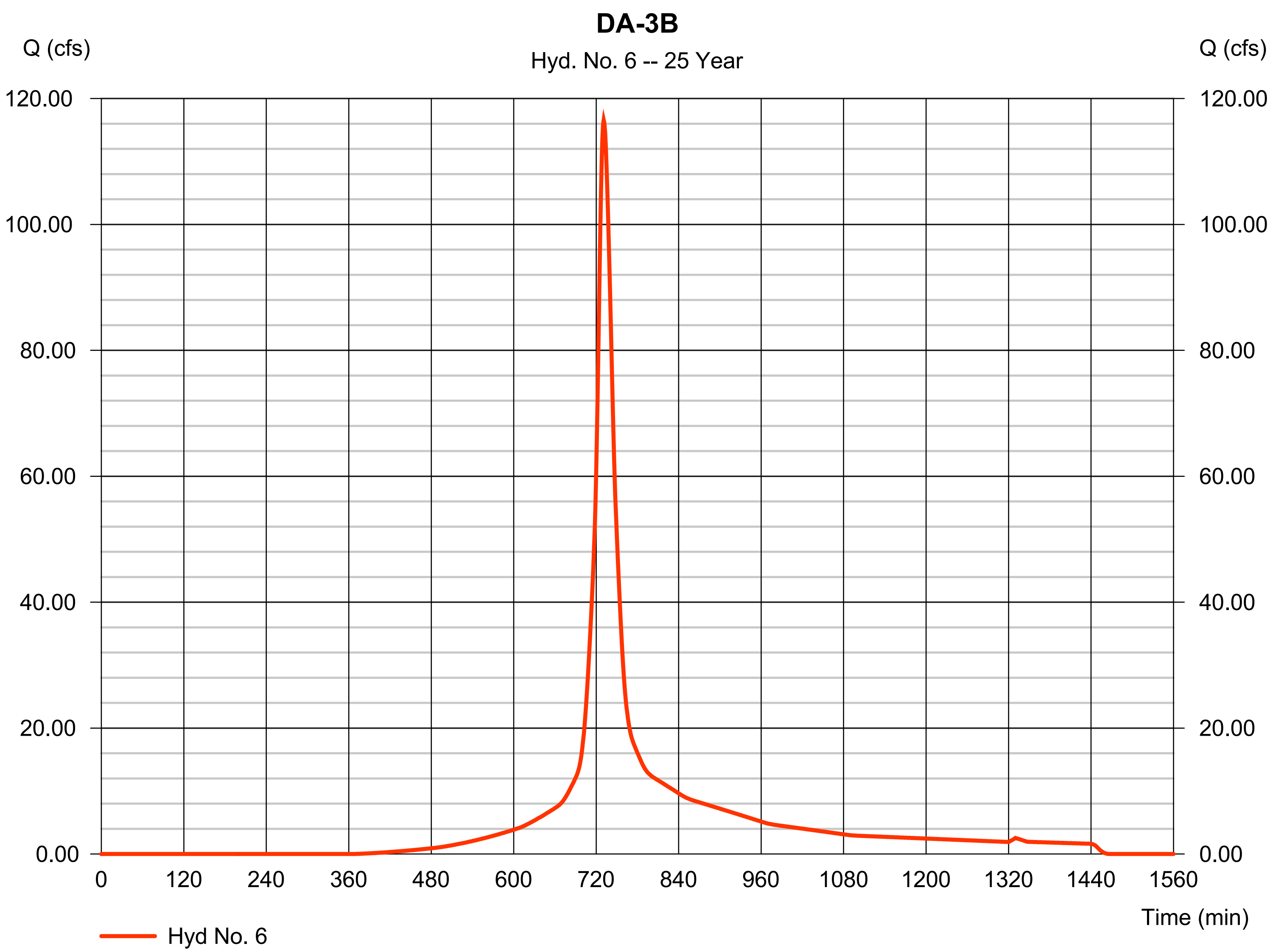


Hydrograph Report

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 116.57 cfs
Storm frequency	= 25 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 485,294 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



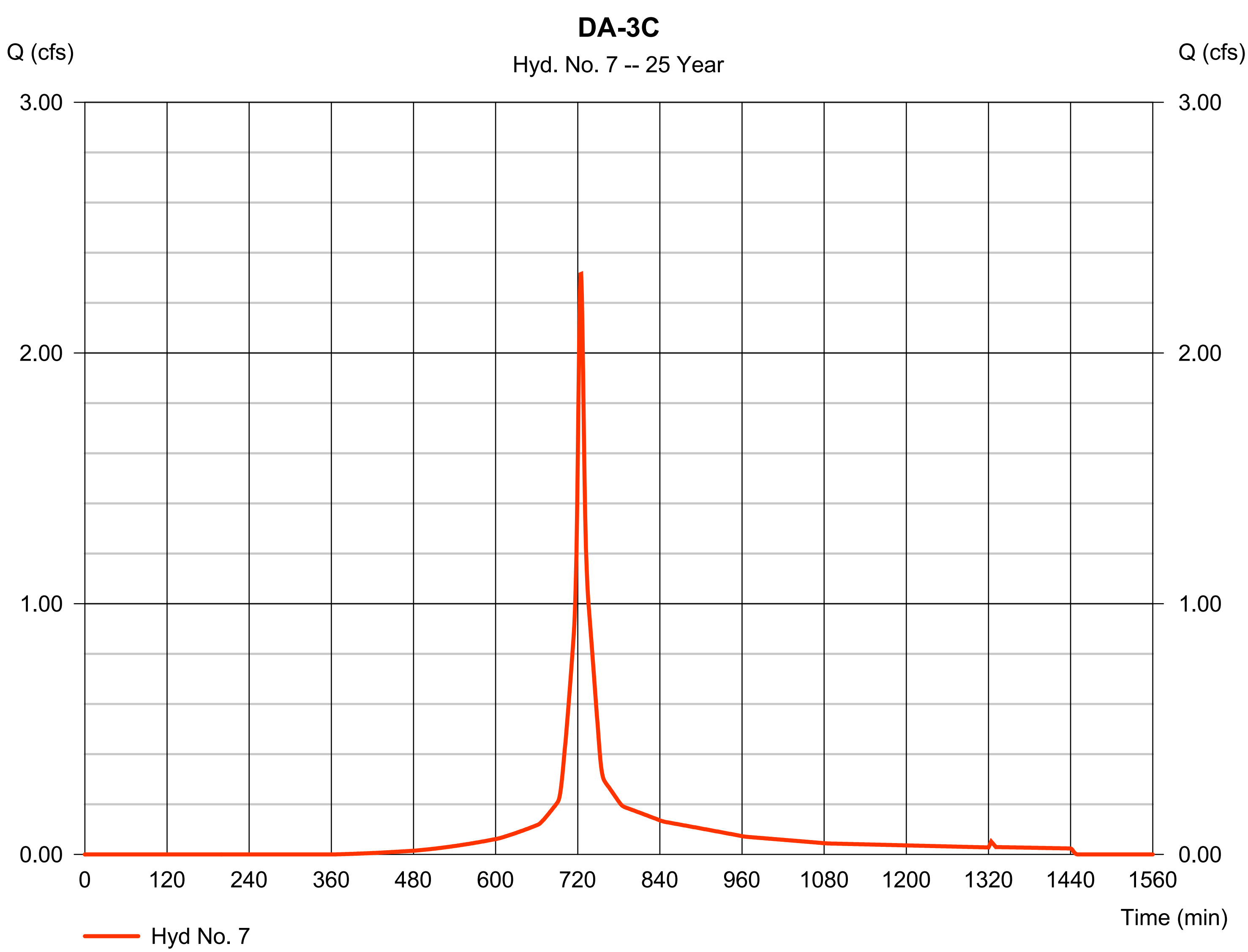
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.315 cfs
Storm frequency	= 25 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 7,228 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



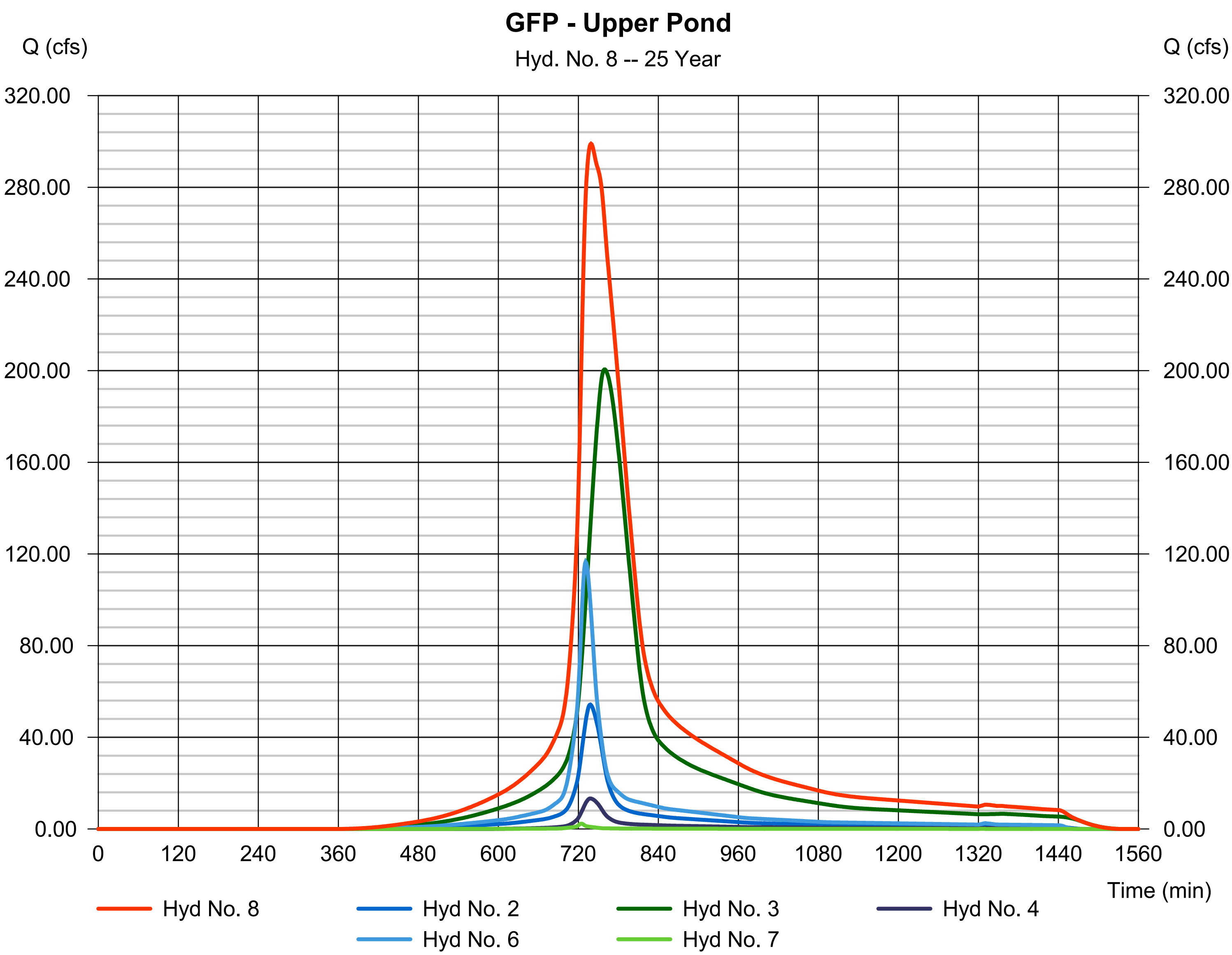
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 299.03 cfs
Storm frequency	= 25 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 2,350,407 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac



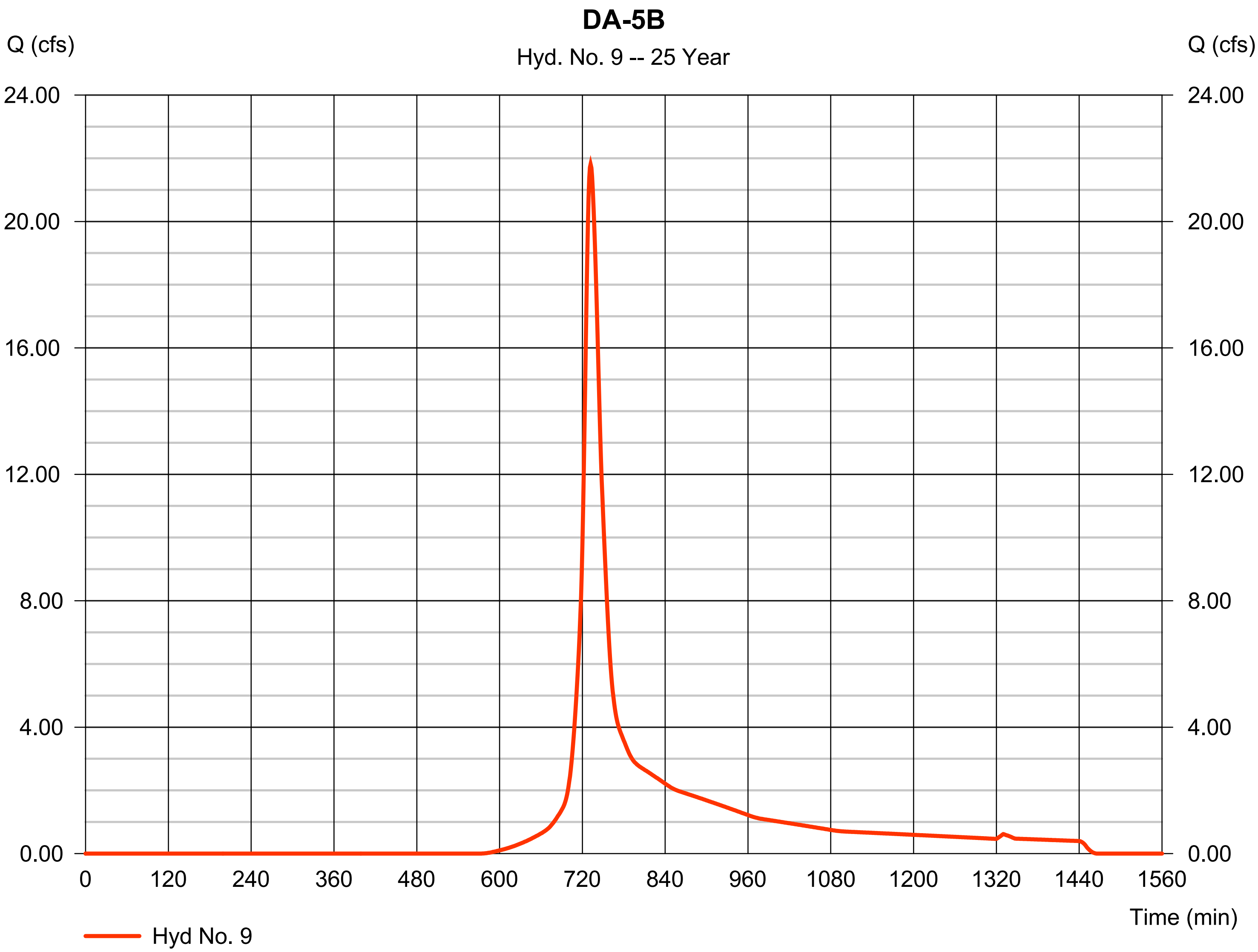
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 21.81 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 91,562 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

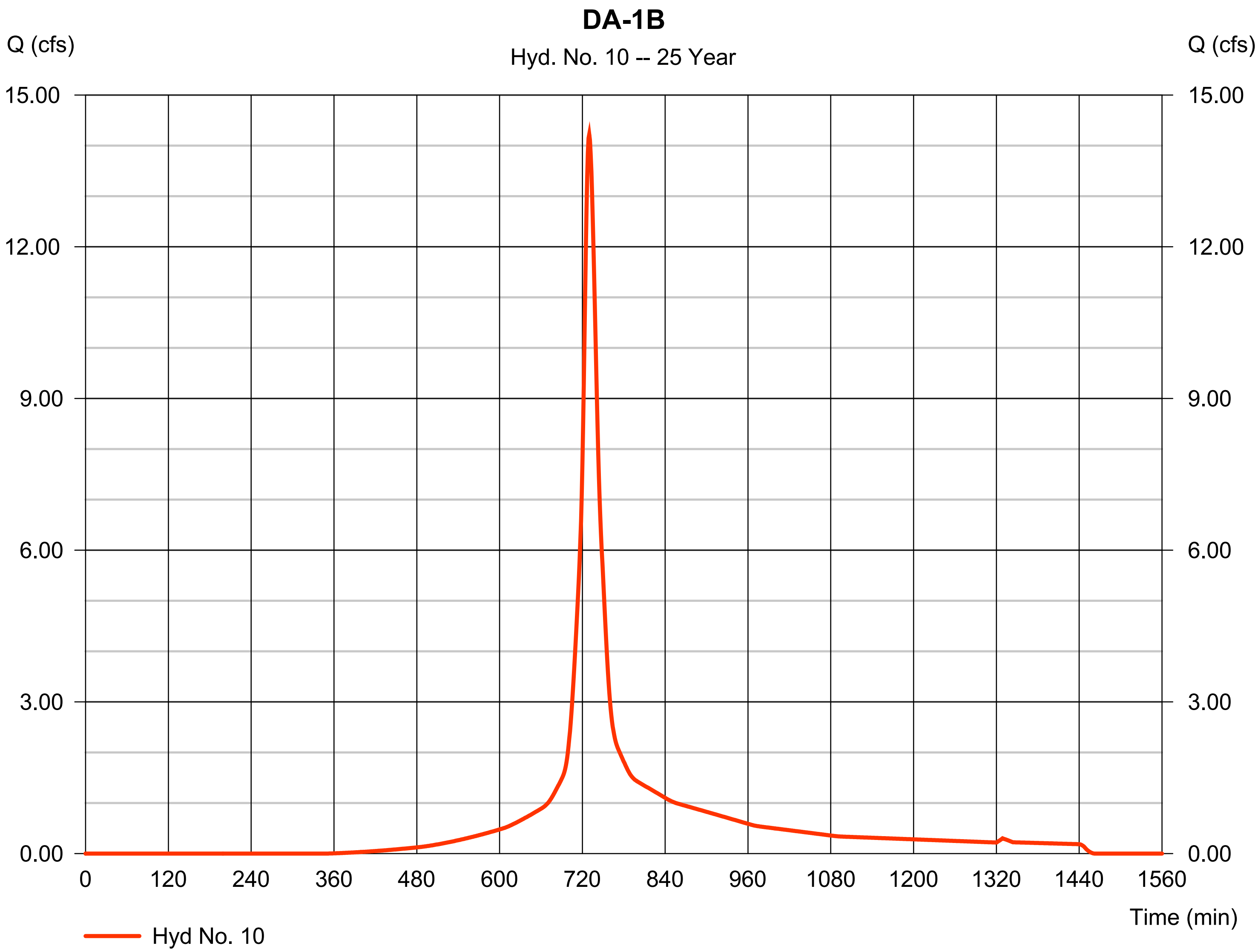


Hydrograph Report

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 56,795 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



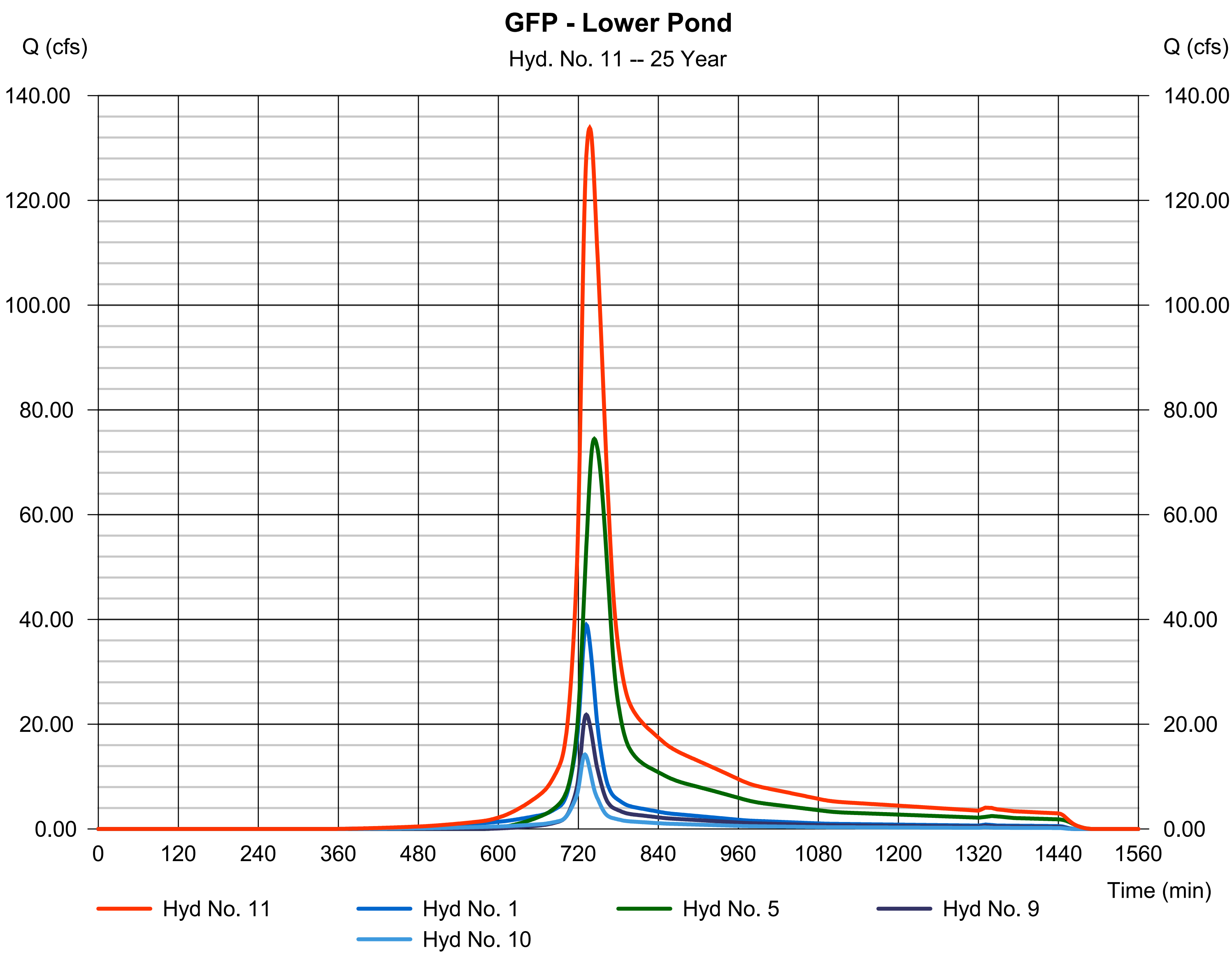
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 133.83 cfs
Storm frequency	= 25 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 729,655 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



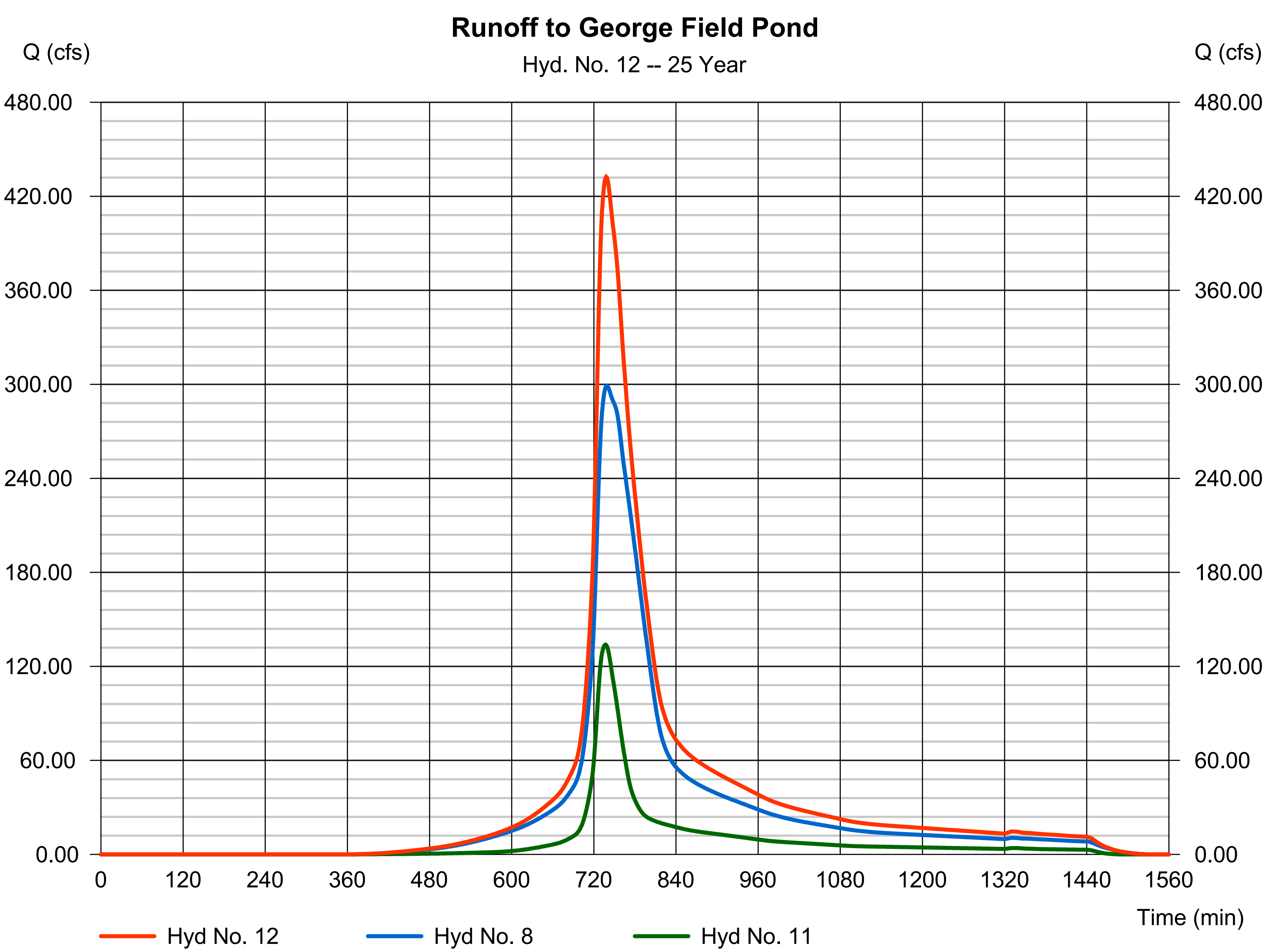
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 432.37 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,080,063 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

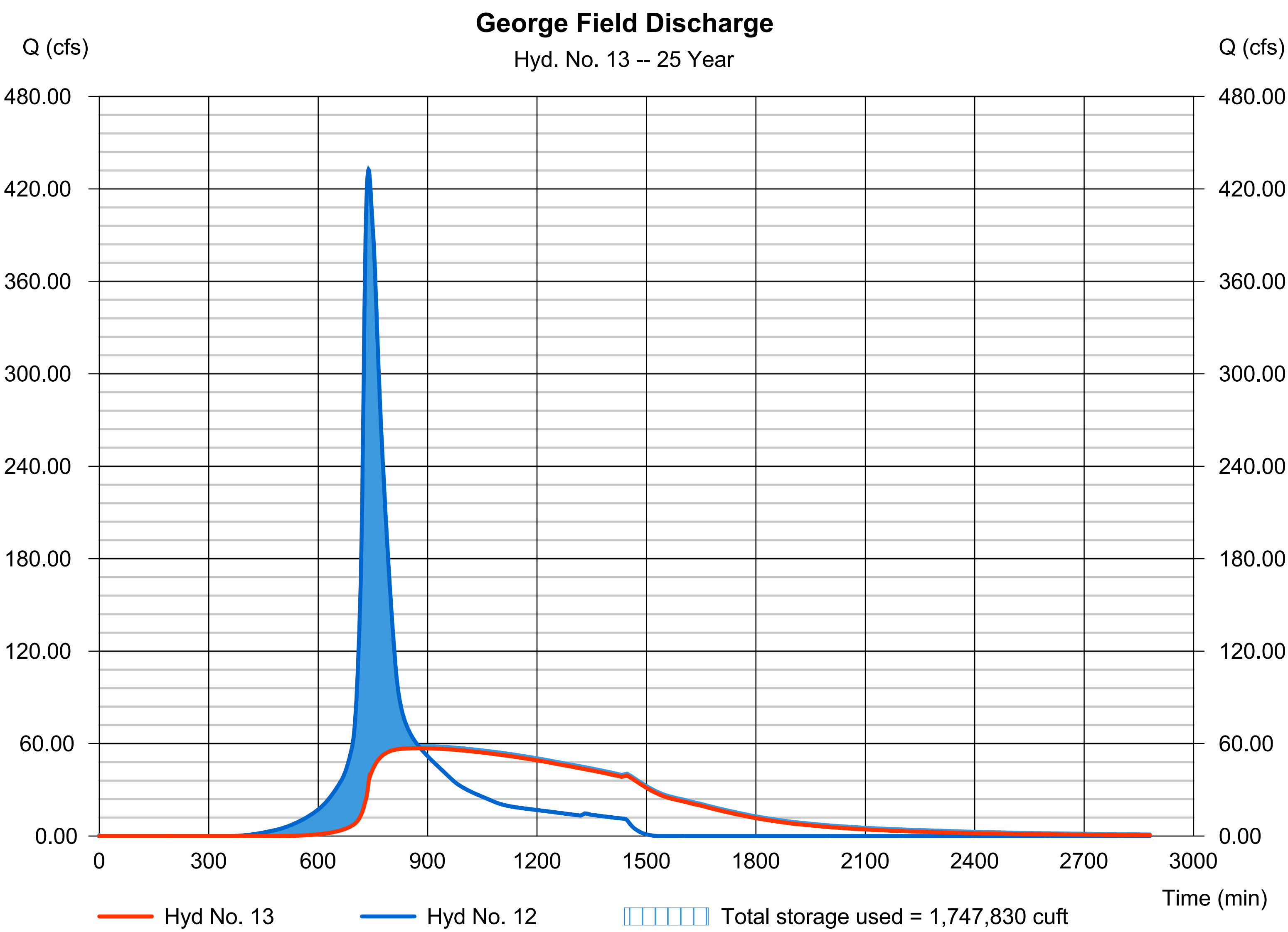
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 56.98 cfs
Storm frequency	= 25 yrs	Time to peak	= 875 min
Time interval	= 1 min	Hyd. volume	= 2,884,295 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 217.17 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 1,747,830 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	43.26	1	732	186,087	------	------	------	DA-1A
2	SCS Runoff	60.26	1	738	303,882	------	------	------	DA-2
3	SCS Runoff	223.32	1	759	1,696,414	------	------	------	DA-3A
4	SCS Runoff	15.44	1	738	75,381	------	------	------	DA-4
5	SCS Runoff	86.35	1	744	477,562	------	------	------	DA-5A
6	SCS Runoff	129.70	1	731	541,695	------	------	------	DA-3B
7	SCS Runoff	2.575	1	724	8,068	------	------	------	DA-3C
8	Combine	333.88	1	739	2,625,439	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	25.29	1	732	105,543	------	------	------	DA-5B
10	SCS Runoff	15.79	1	730	63,288	------	------	------	DA-1B
11	Combine	153.14	1	737	832,480	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	486.55	1	738	3,457,916	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	60.27	1	884	3,250,244	12	217.98	1,998,383	George Field Discharge

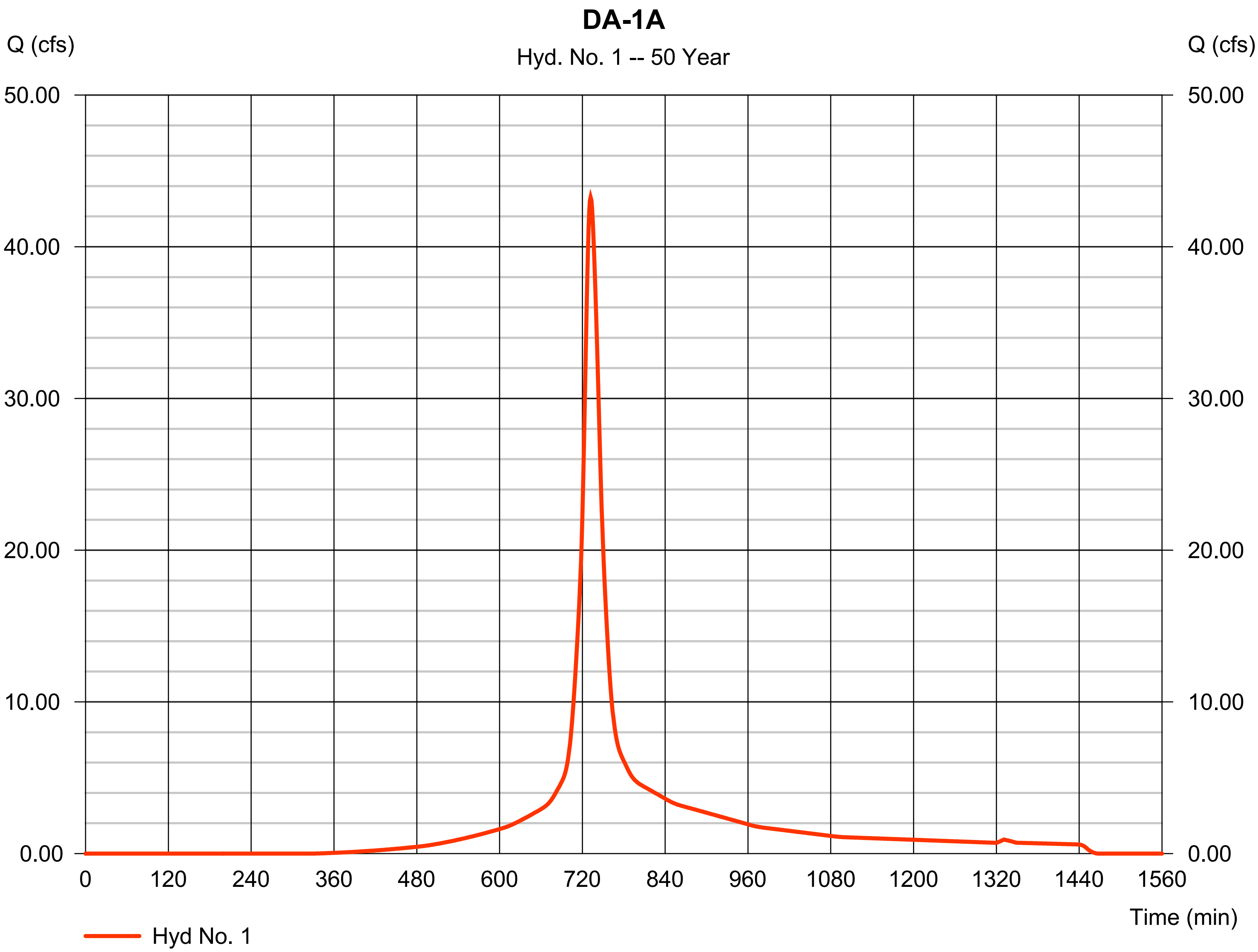
Proposed Condition - 1 pond - SFP.gpw	Return Period: 50 Year	Wednesday, 01 / 15 / 2025

Hydrograph Report

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 43.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 186,087 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



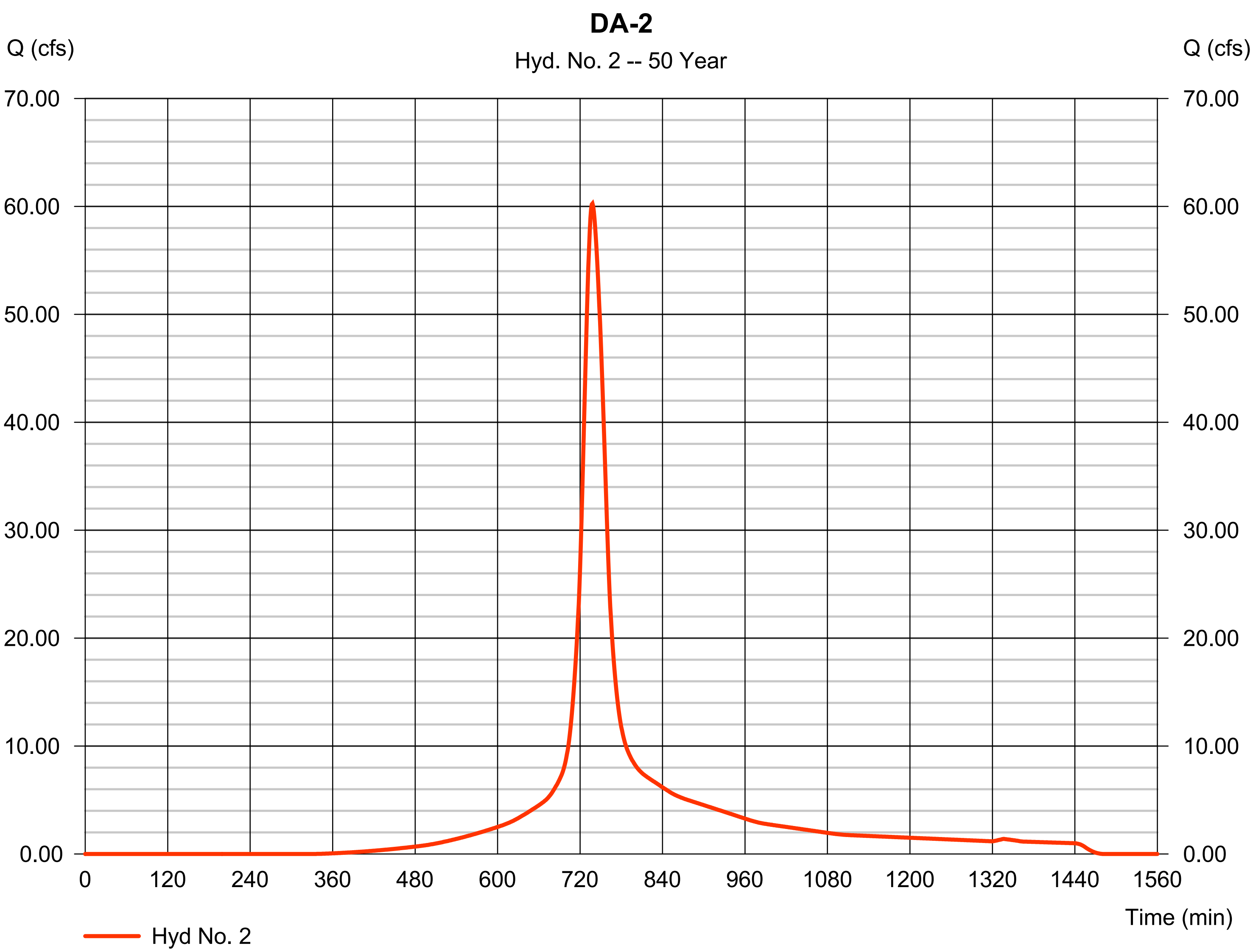
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 60.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 303,882 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

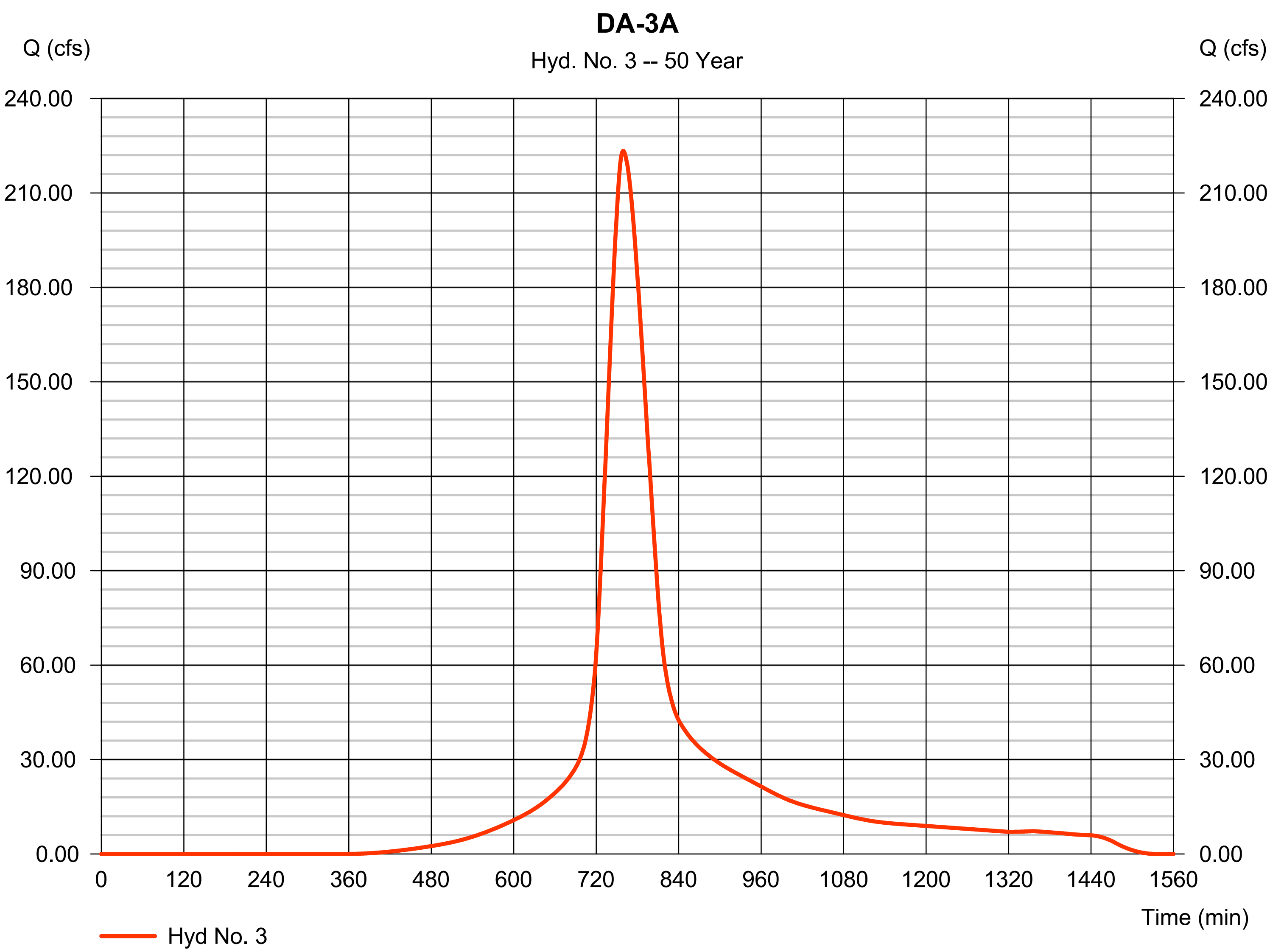


Hydrograph Report

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 223.32 cfs
Storm frequency	= 50 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,696,414 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



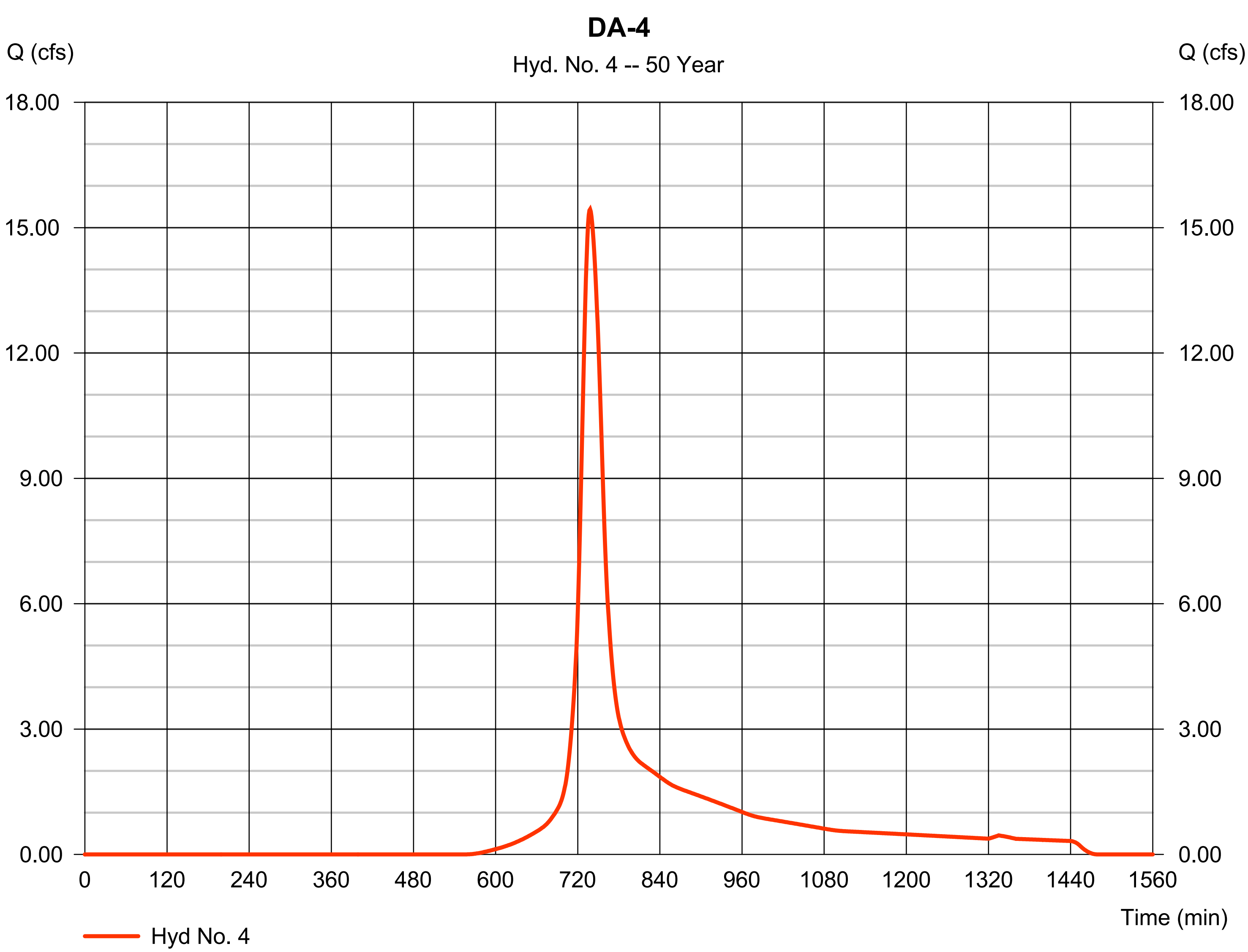
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 15.44 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 75,381 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

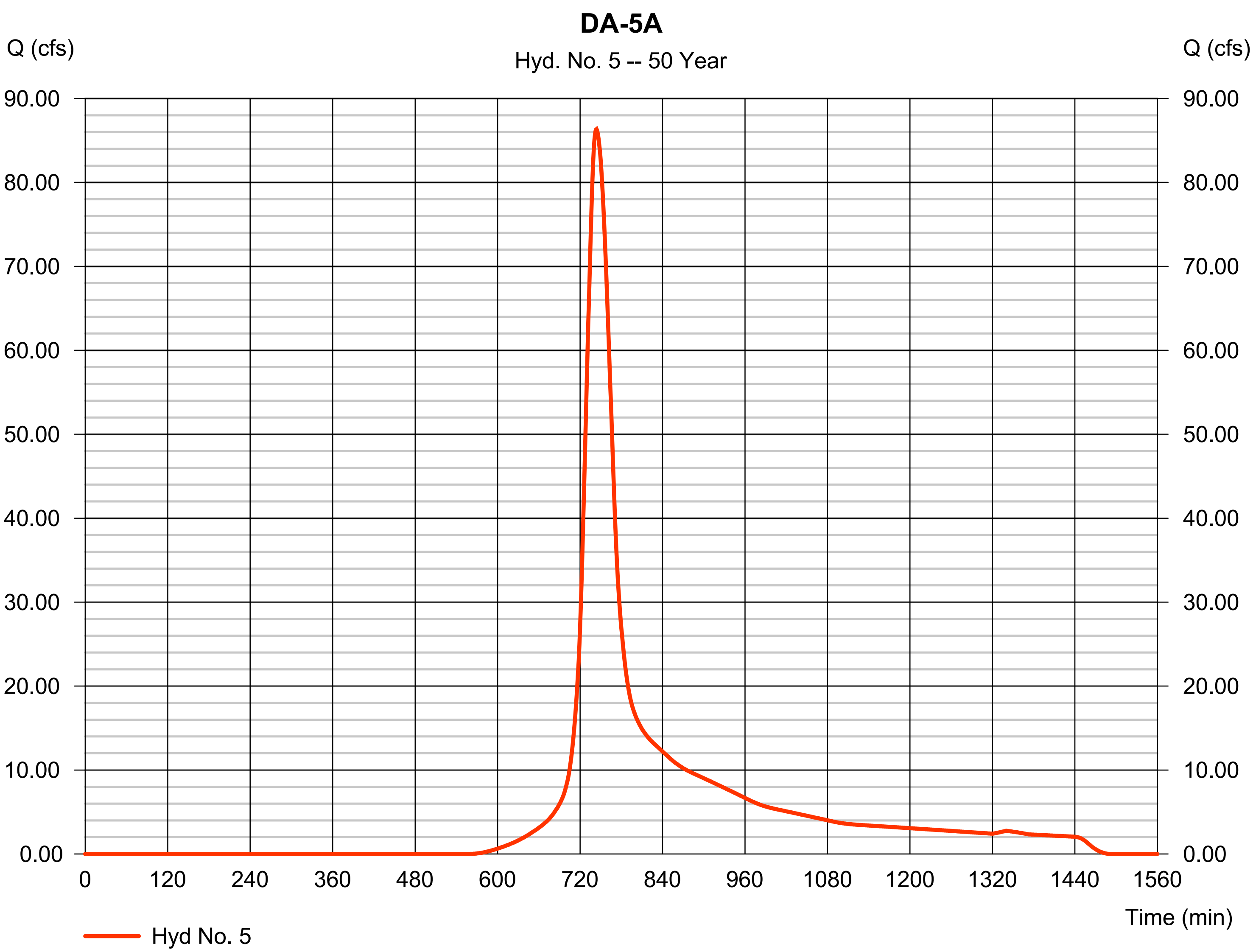


Hydrograph Report

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 86.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 477,562 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



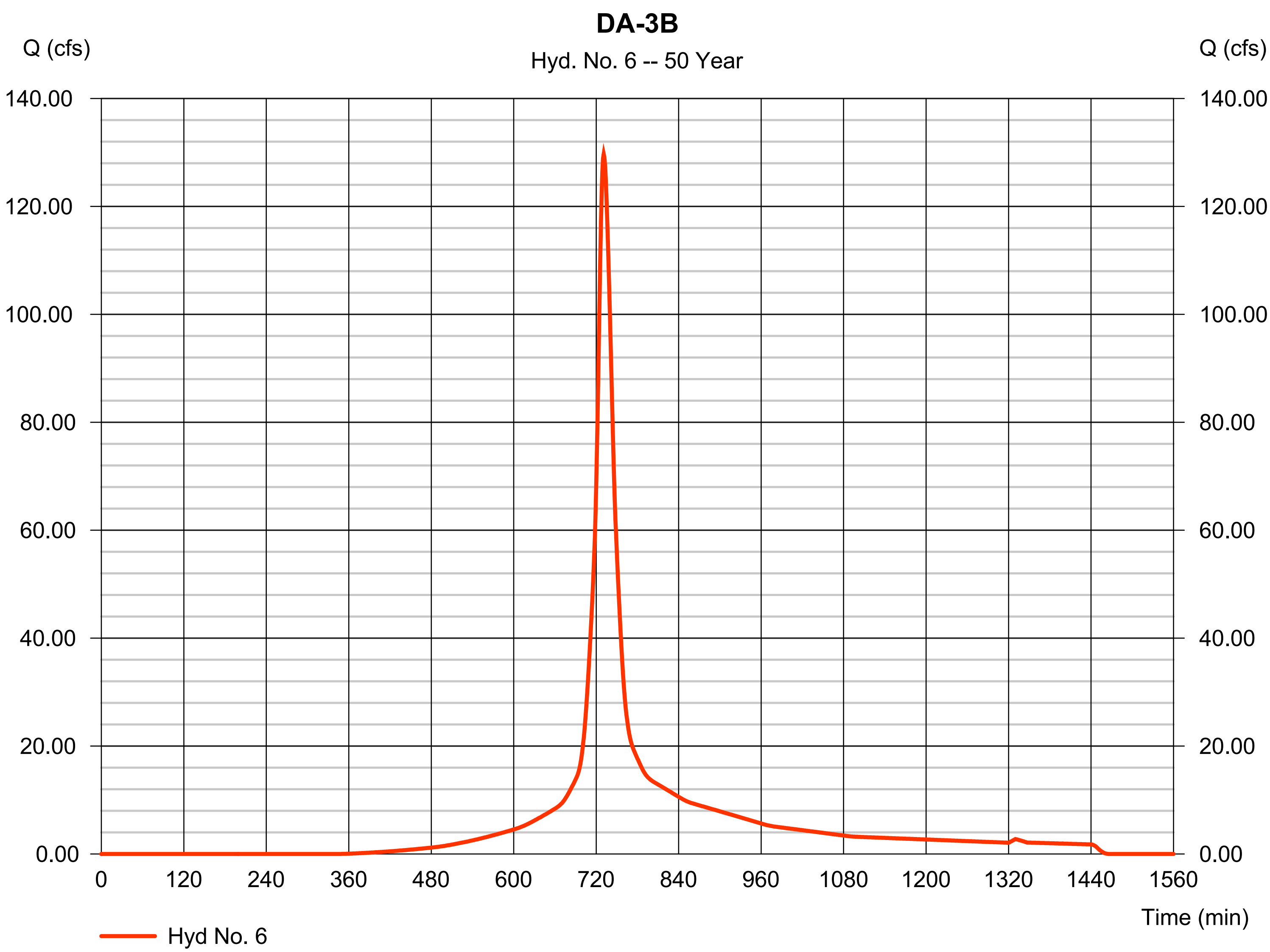
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 129.70 cfs
Storm frequency	= 50 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 541,695 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



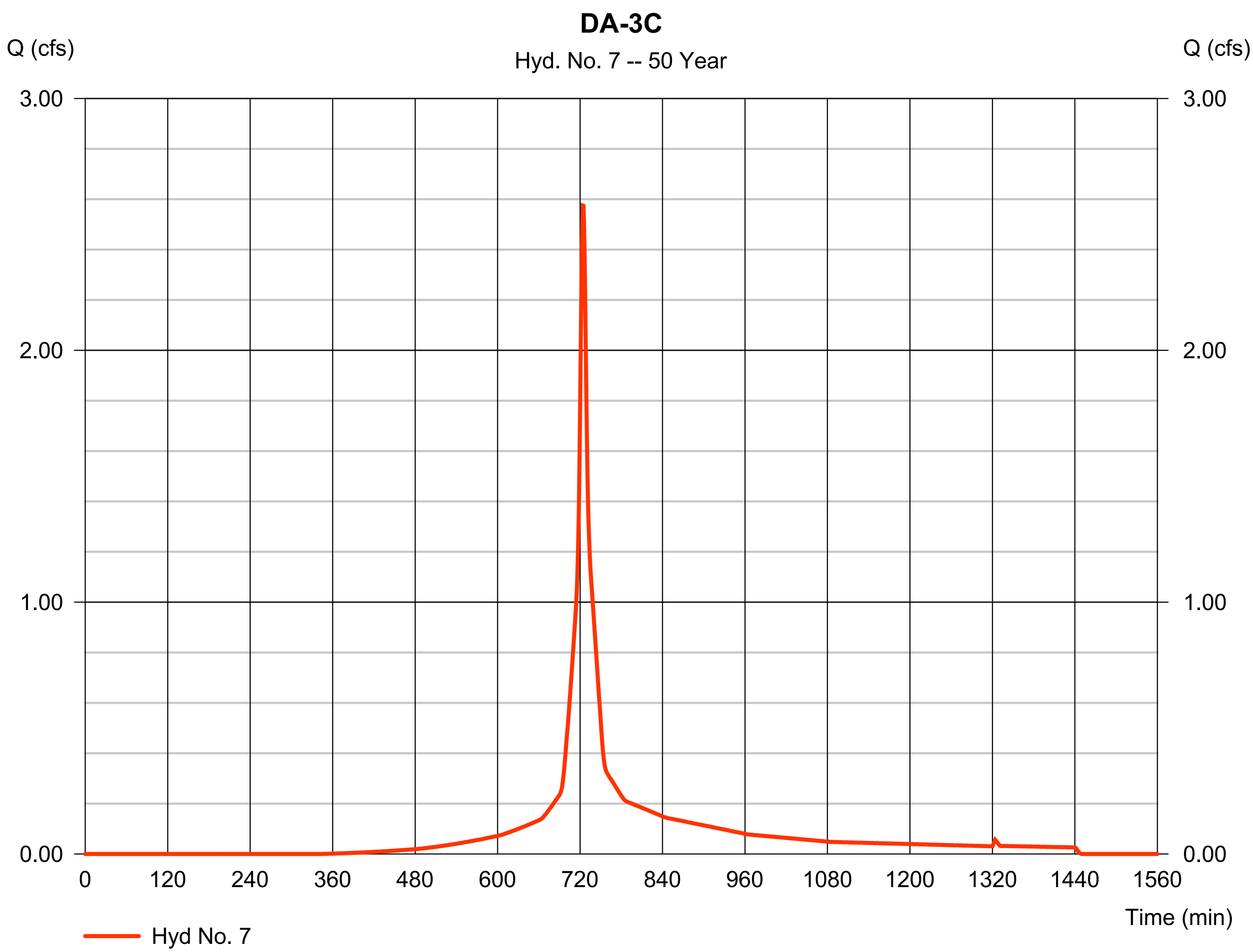
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.575 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 8,068 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



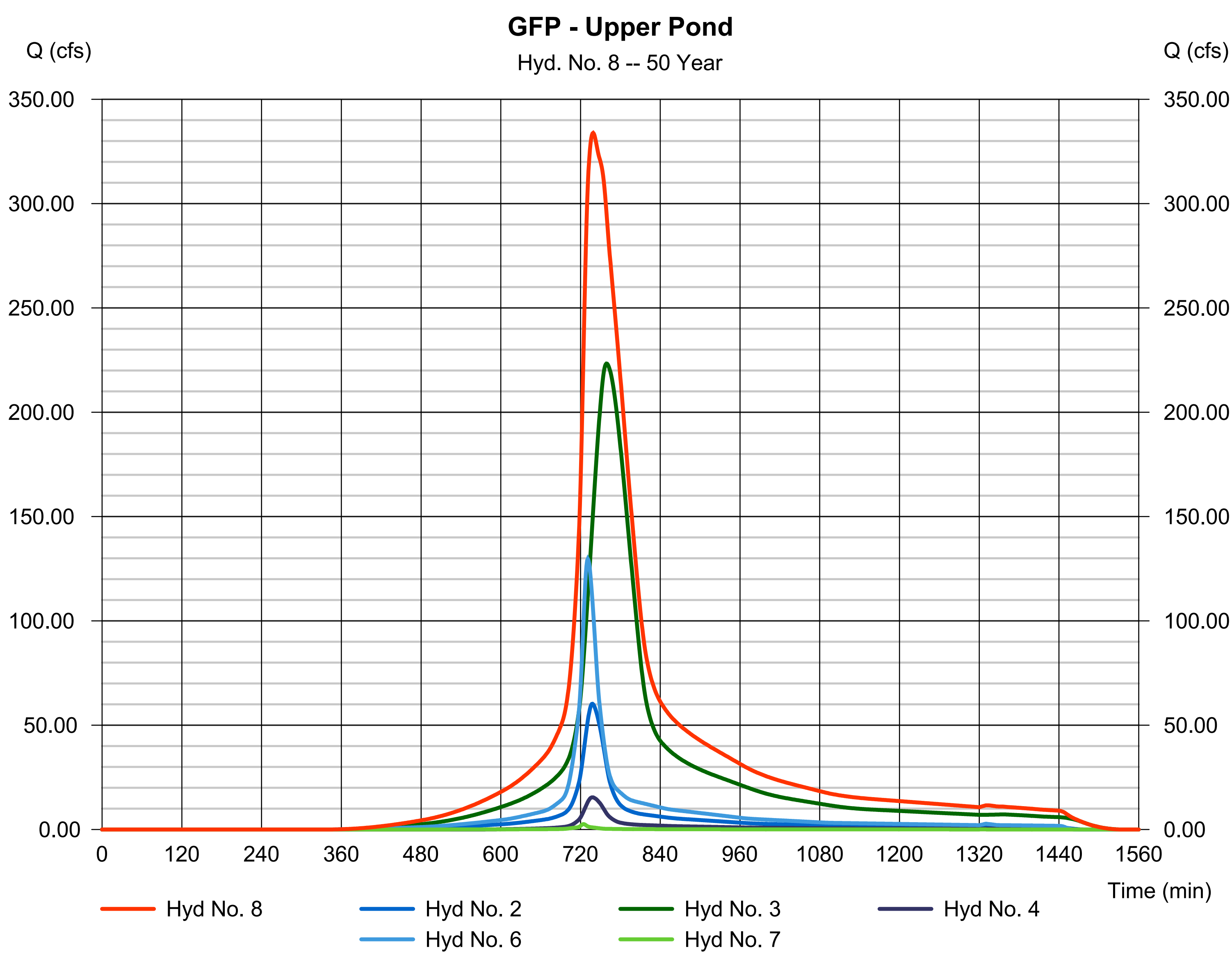
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 333.88 cfs
Storm frequency	= 50 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 2,625,439 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac



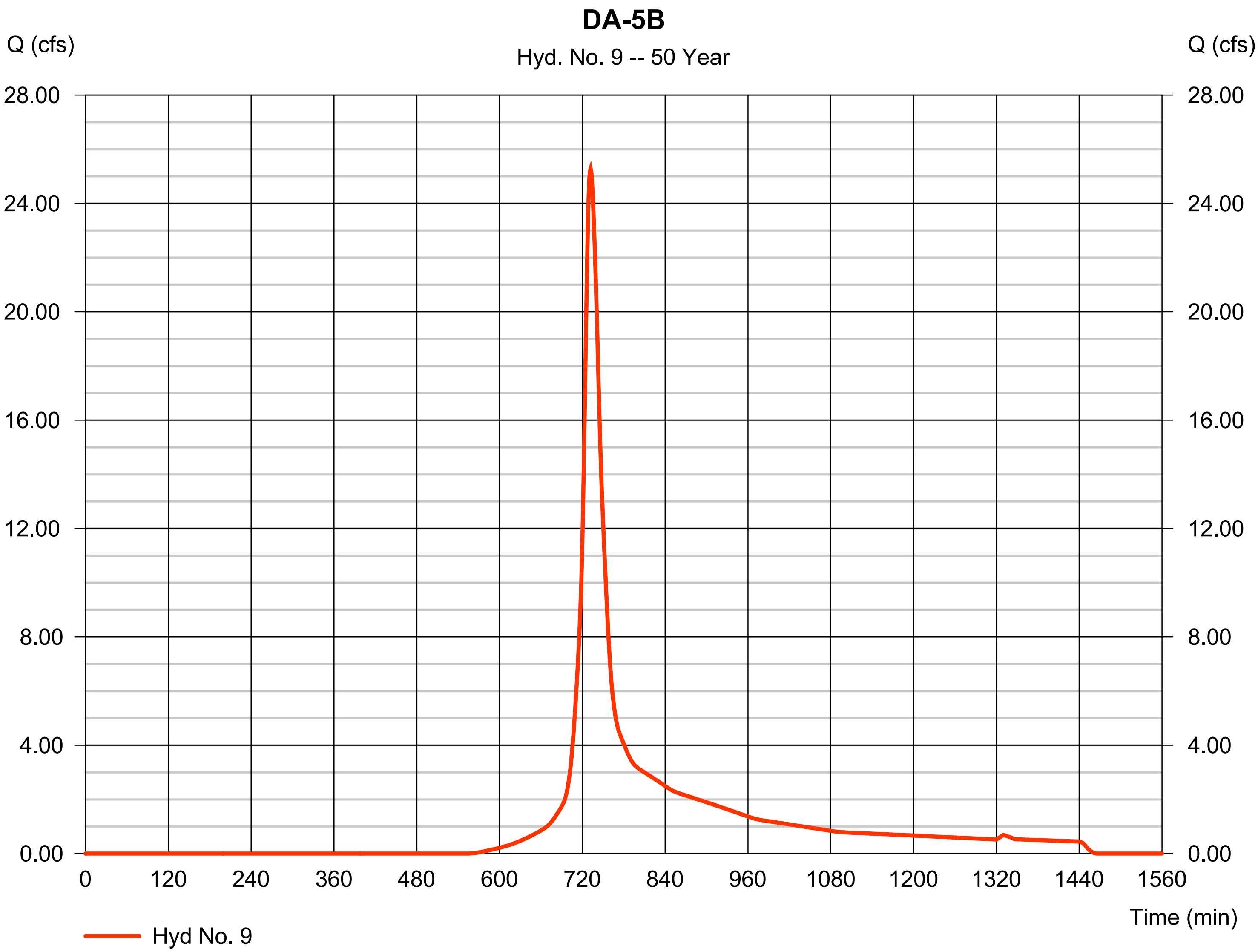
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 25.29 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 105,543 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



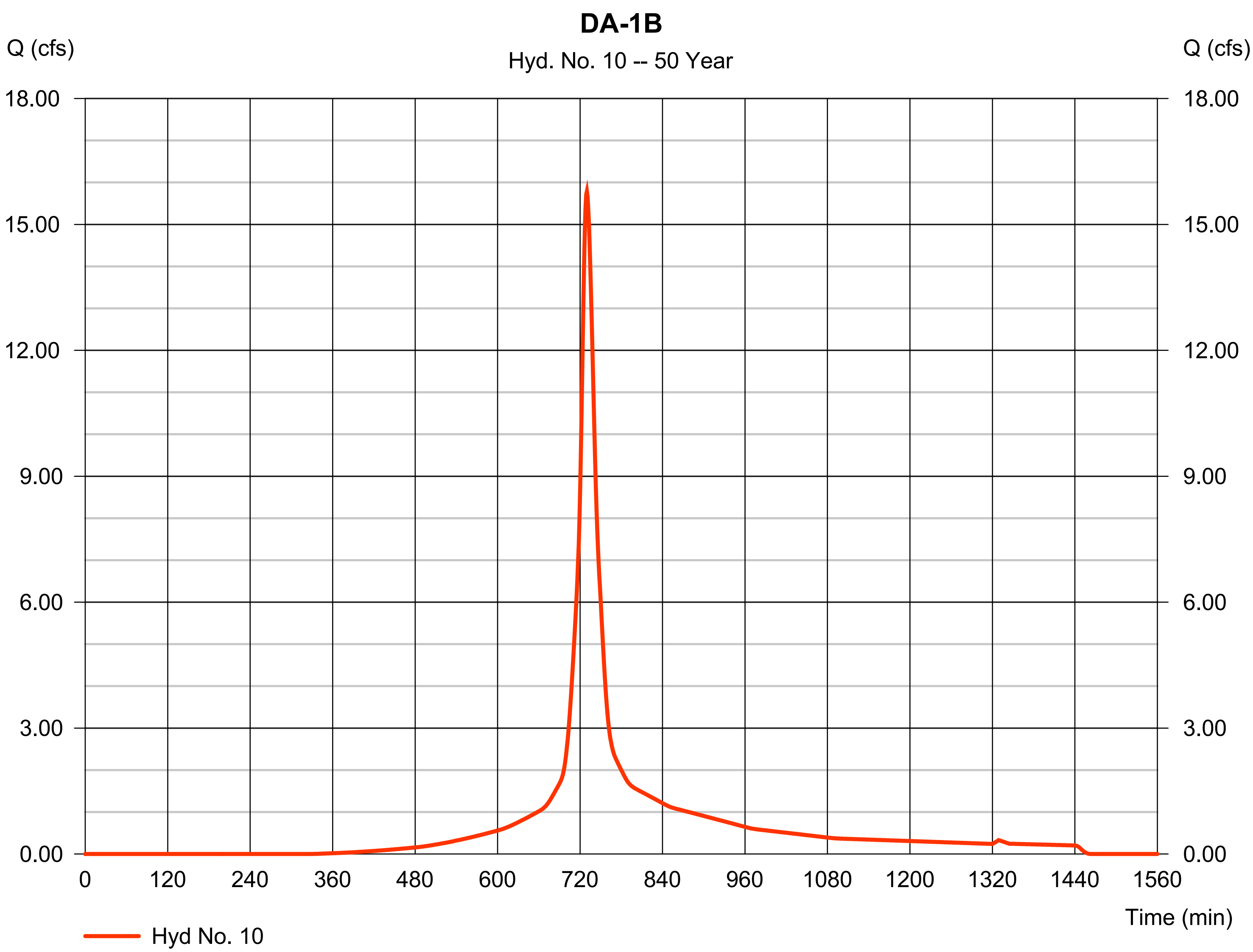
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 15.79 cfs
Storm frequency	= 50 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 63,288 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



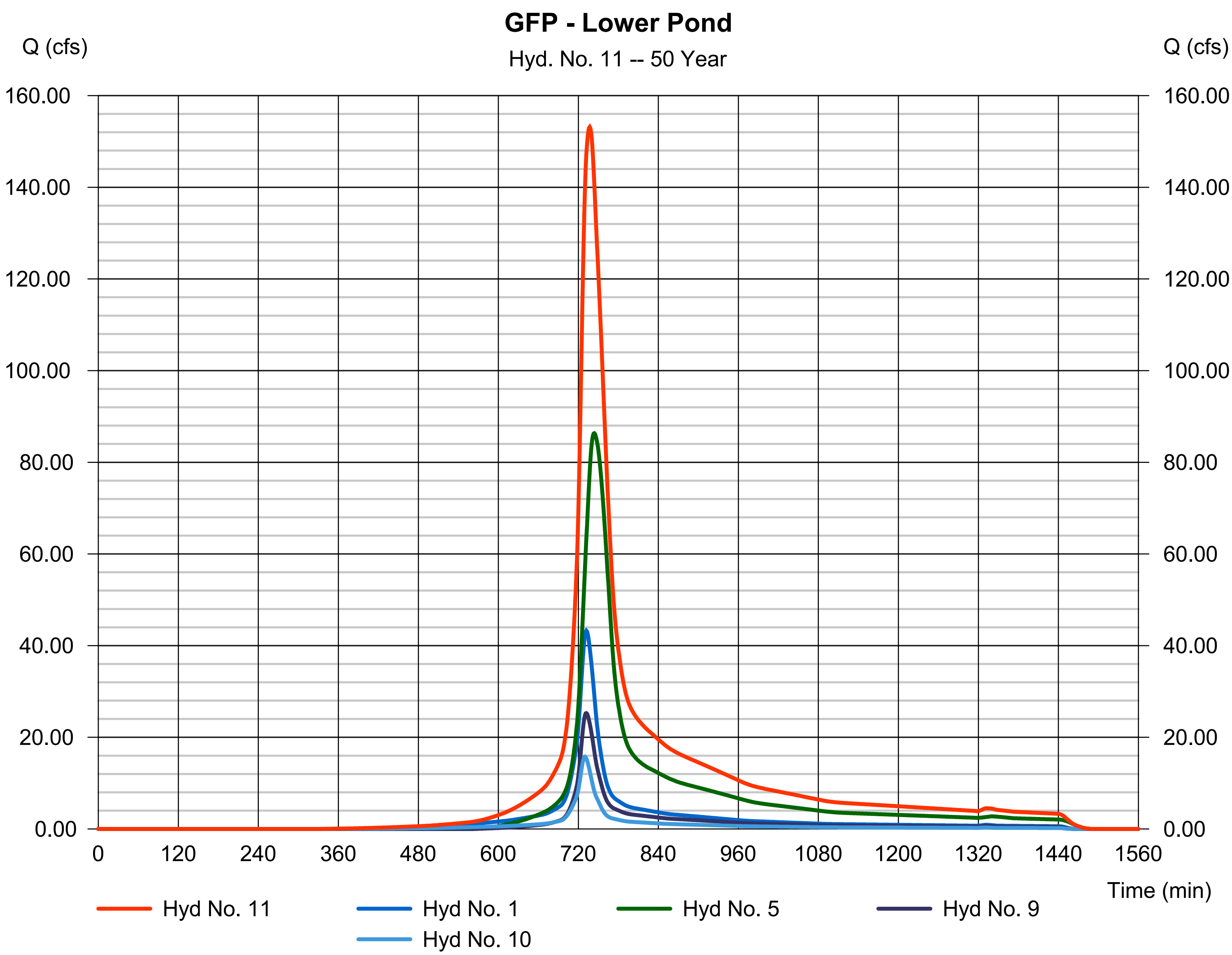
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 153.14 cfs
Storm frequency	= 50 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 832,480 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



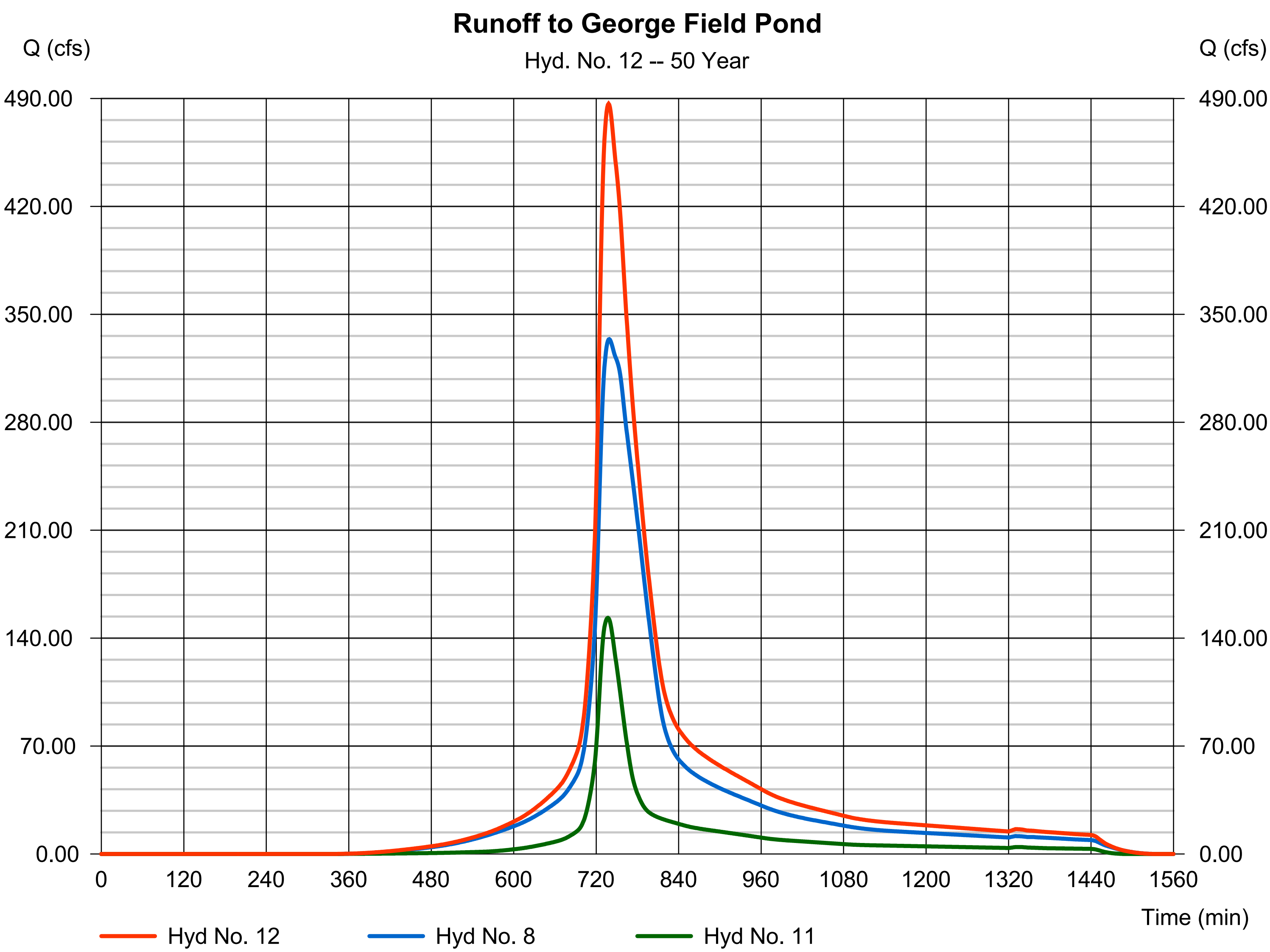
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 486.55 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,457,916 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

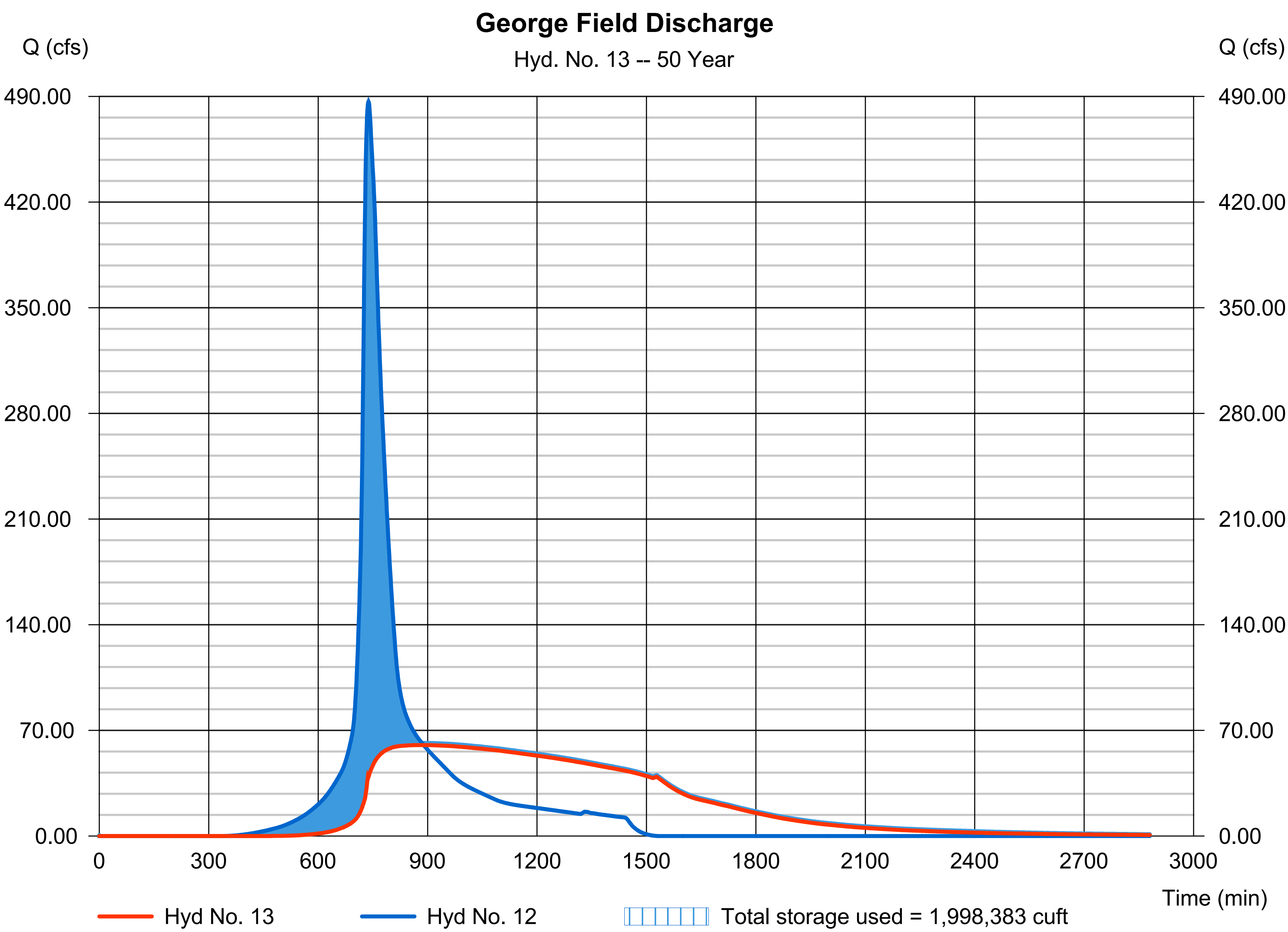
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 60.27 cfs
Storm frequency	= 50 yrs	Time to peak	= 884 min
Time interval	= 1 min	Hyd. volume	= 3,250,244 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 217.98 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 1,998,383 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

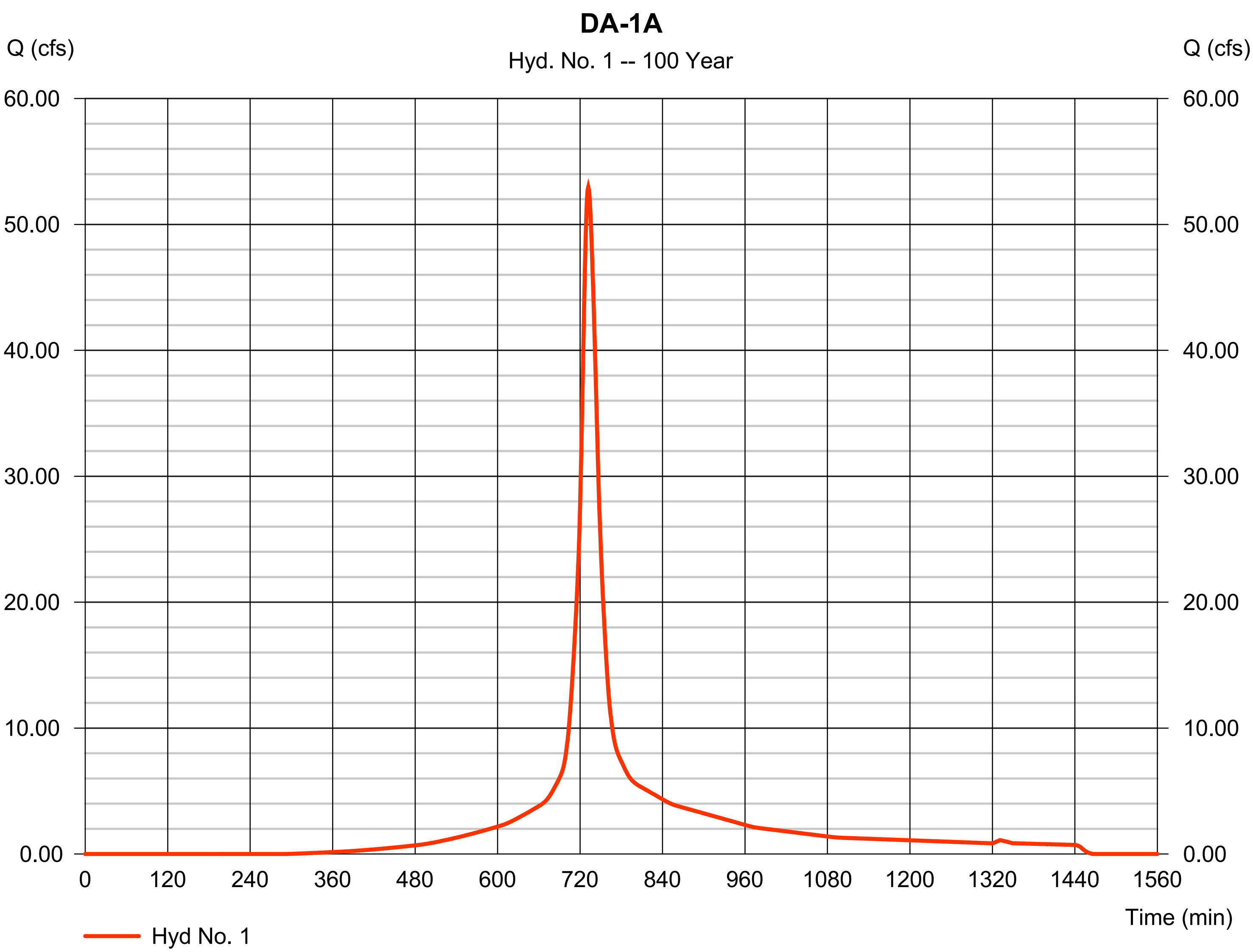
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	52.96	1	732	229,663	------	------	------	DA-1A
2	SCS Runoff	73.79	1	738	375,041	------	------	------	DA-2
3	SCS Runoff	274.85	1	759	2,100,107	------	------	------	DA-3A
4	SCS Runoff	20.40	1	737	98,867	------	------	------	DA-4
5	SCS Runoff	114.15	1	743	626,355	------	------	------	DA-5A
6	SCS Runoff	159.32	1	731	670,602	------	------	------	DA-3B
7	SCS Runoff	3.162	1	724	9,988	------	------	------	DA-3C
8	Combine	412.86	1	739	3,254,607	2, 3, 4, 6, 7	------	------	GFP - Upper Pond
9	SCS Runoff	33.39	1	732	138,427	------	------	------	DA-5B
10	SCS Runoff	19.32	1	730	78,108	------	------	------	DA-1B
11	Combine	197.88	1	737	1,072,552	1, 5, 9, 10	------	------	GFP - Lower Pond
12	Combine	610.29	1	738	4,327,160	8, 11	------	------	Runoff to George Field Pond
13	Reservoir	273.06	1	786	4,110,209	12	218.31	2,113,252	George Field Discharge

Hydrograph Report

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 52.96 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 229,663 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



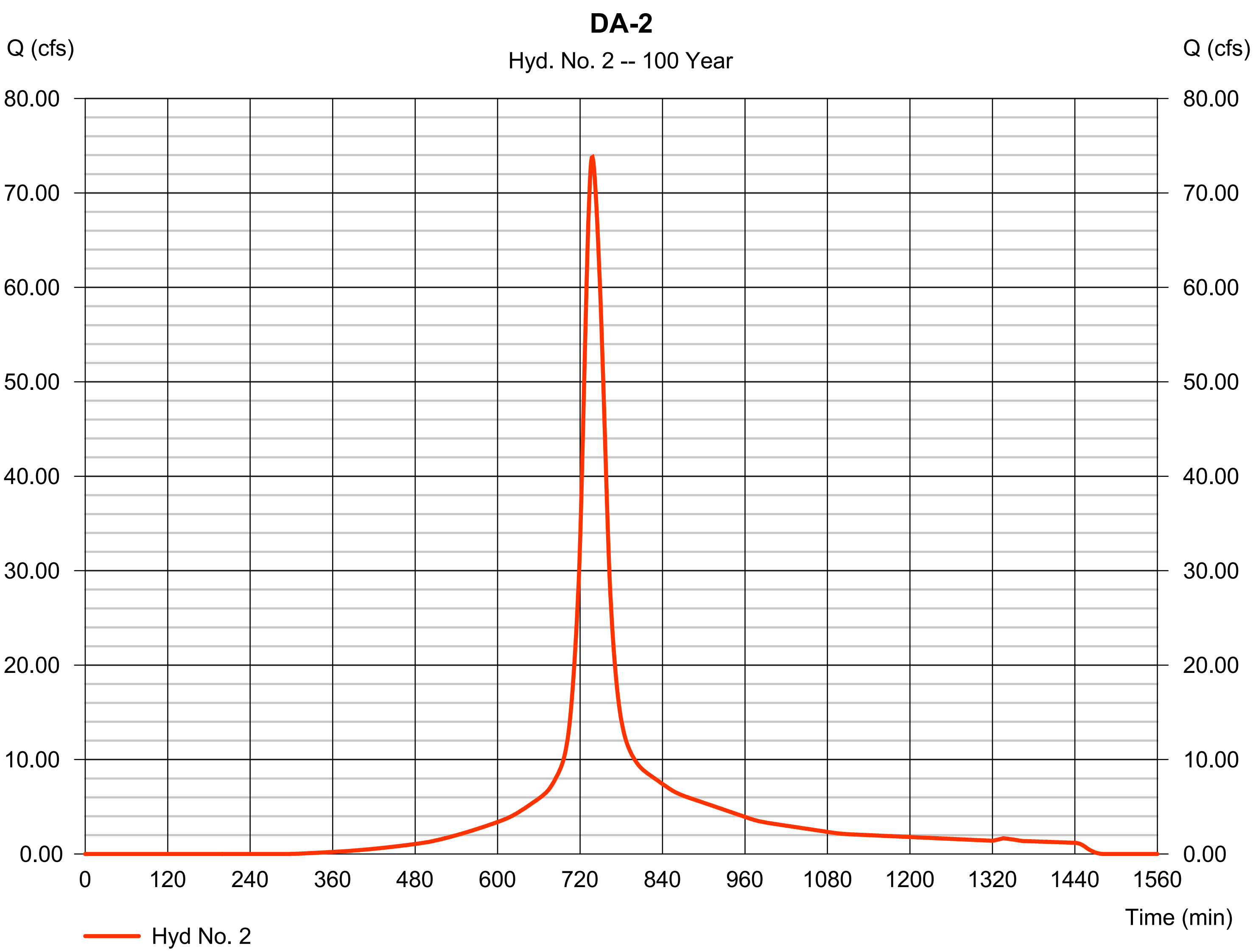
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 73.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 375,041 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

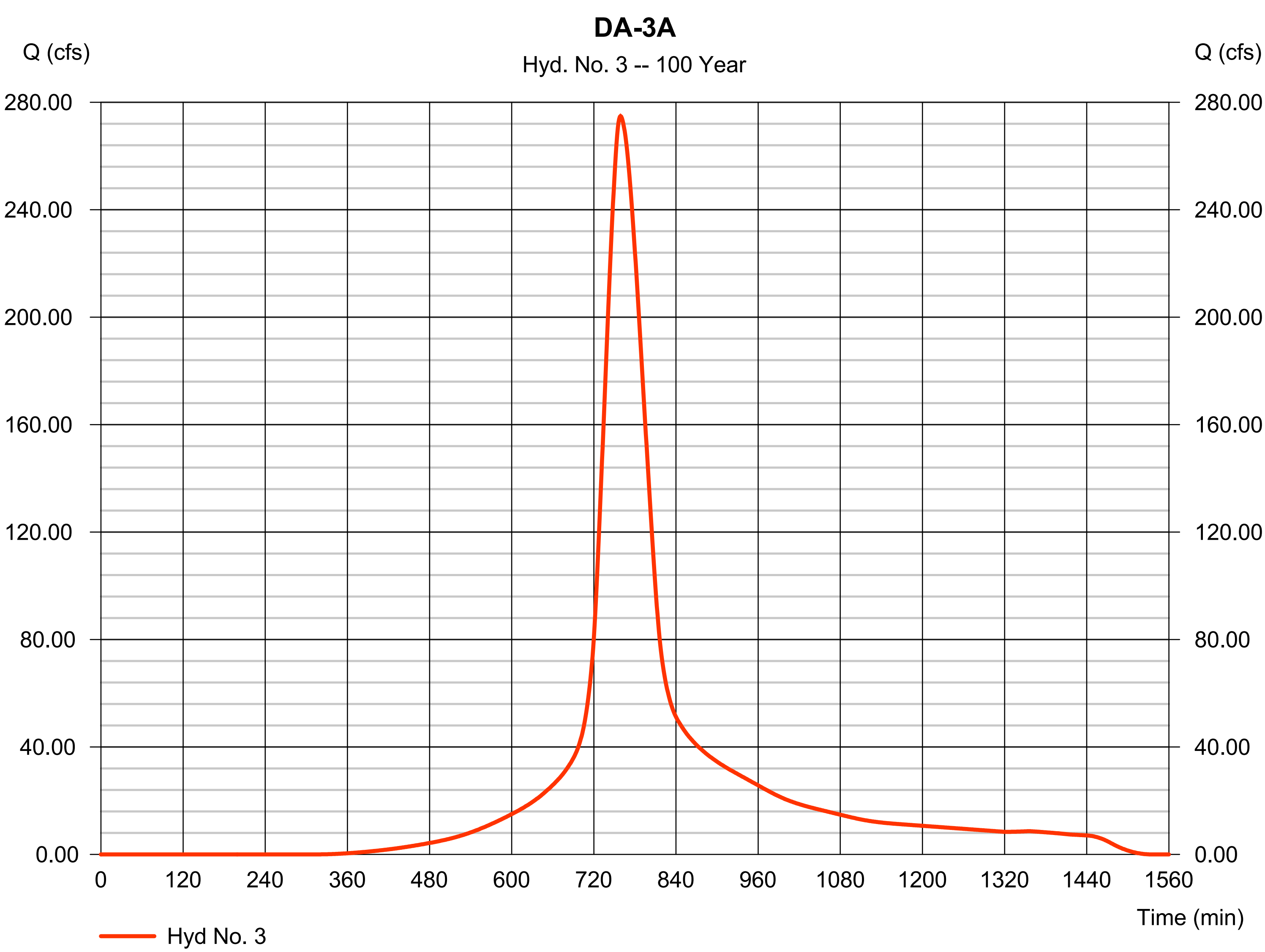


Hydrograph Report

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 274.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 2,100,107 cuft
Drainage area	= 95.410 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

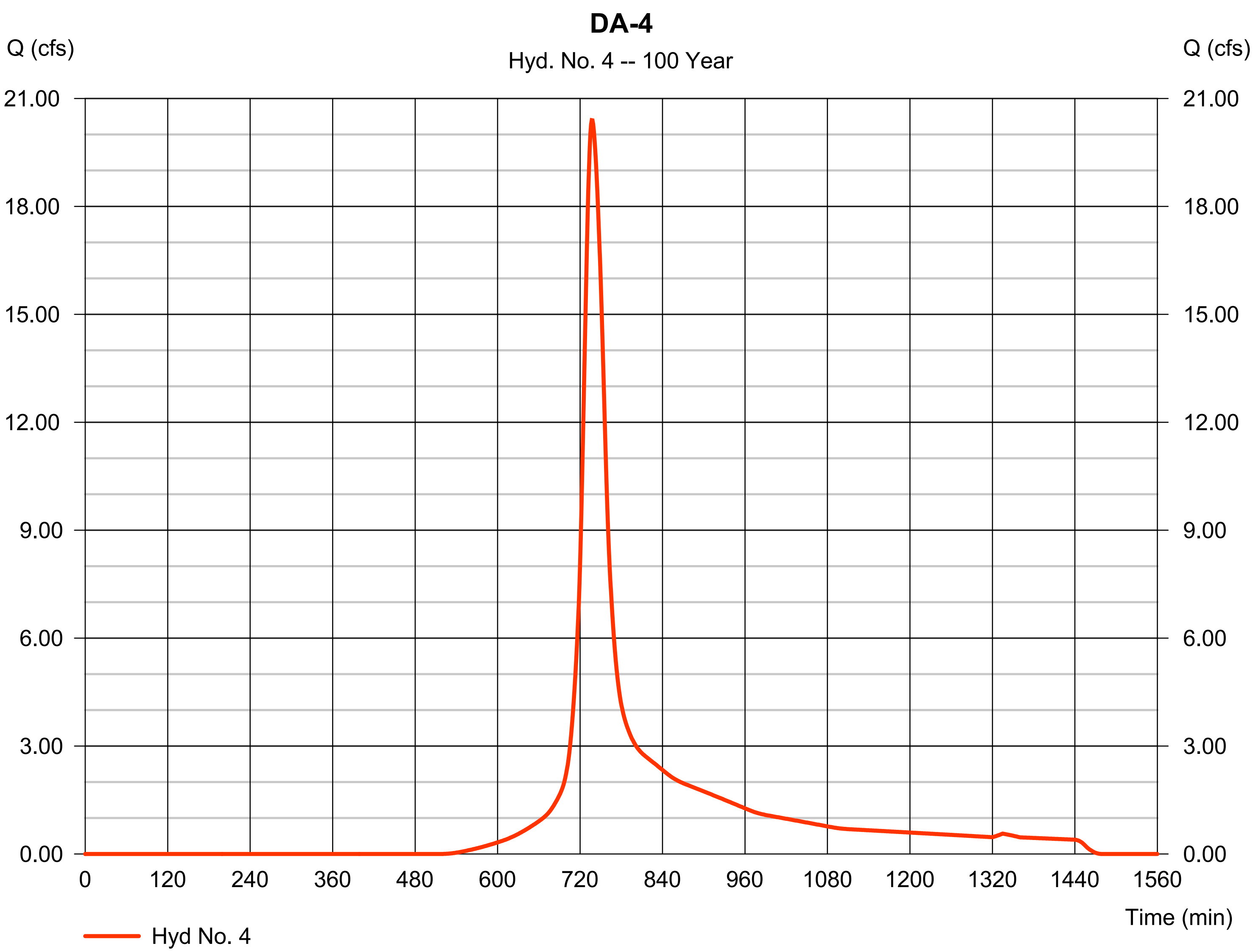


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 20.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 98,867 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



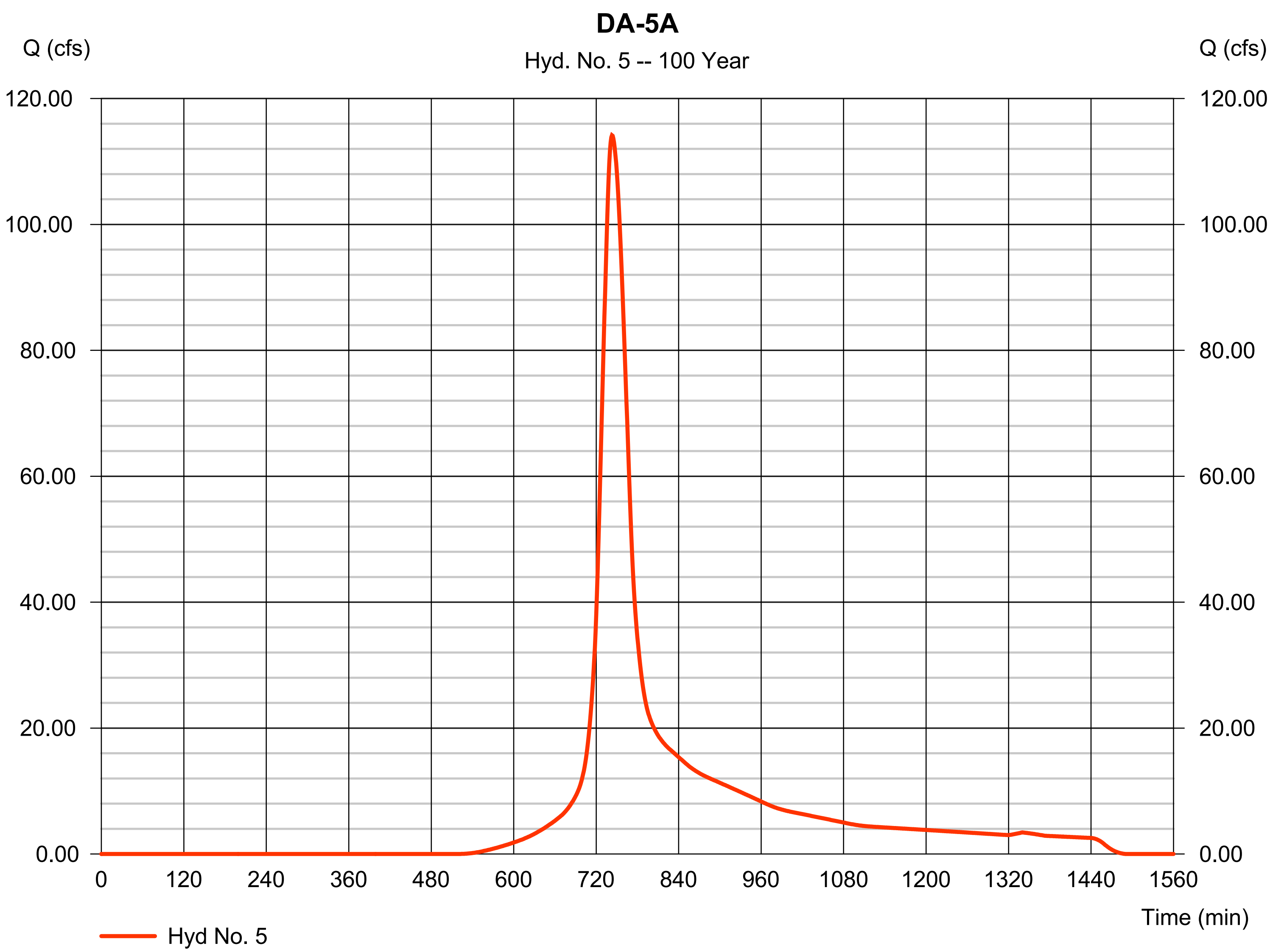
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 114.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 743 min
Time interval	= 1 min	Hyd. volume	= 626,355 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



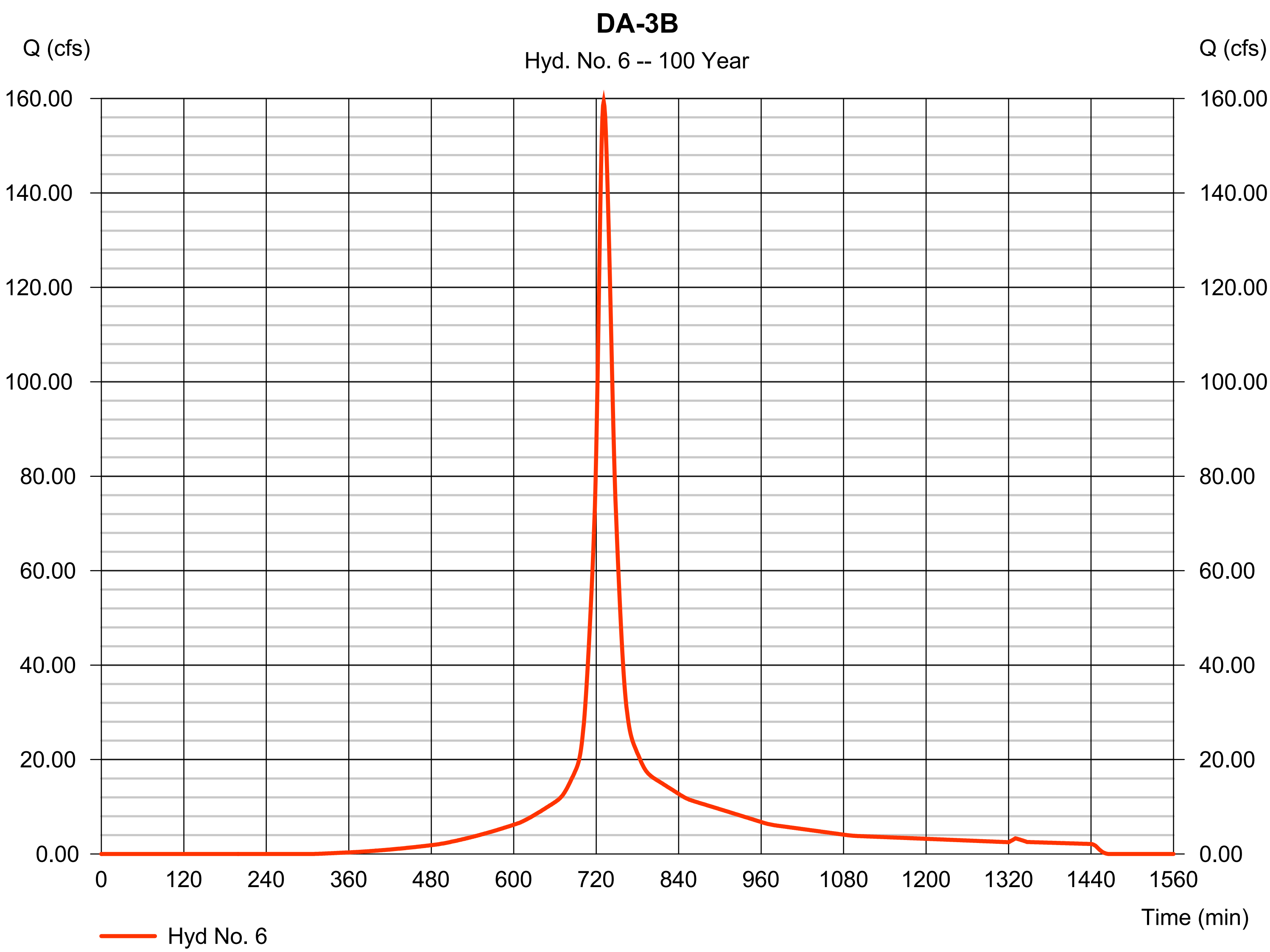
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 159.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 670,602 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.80 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



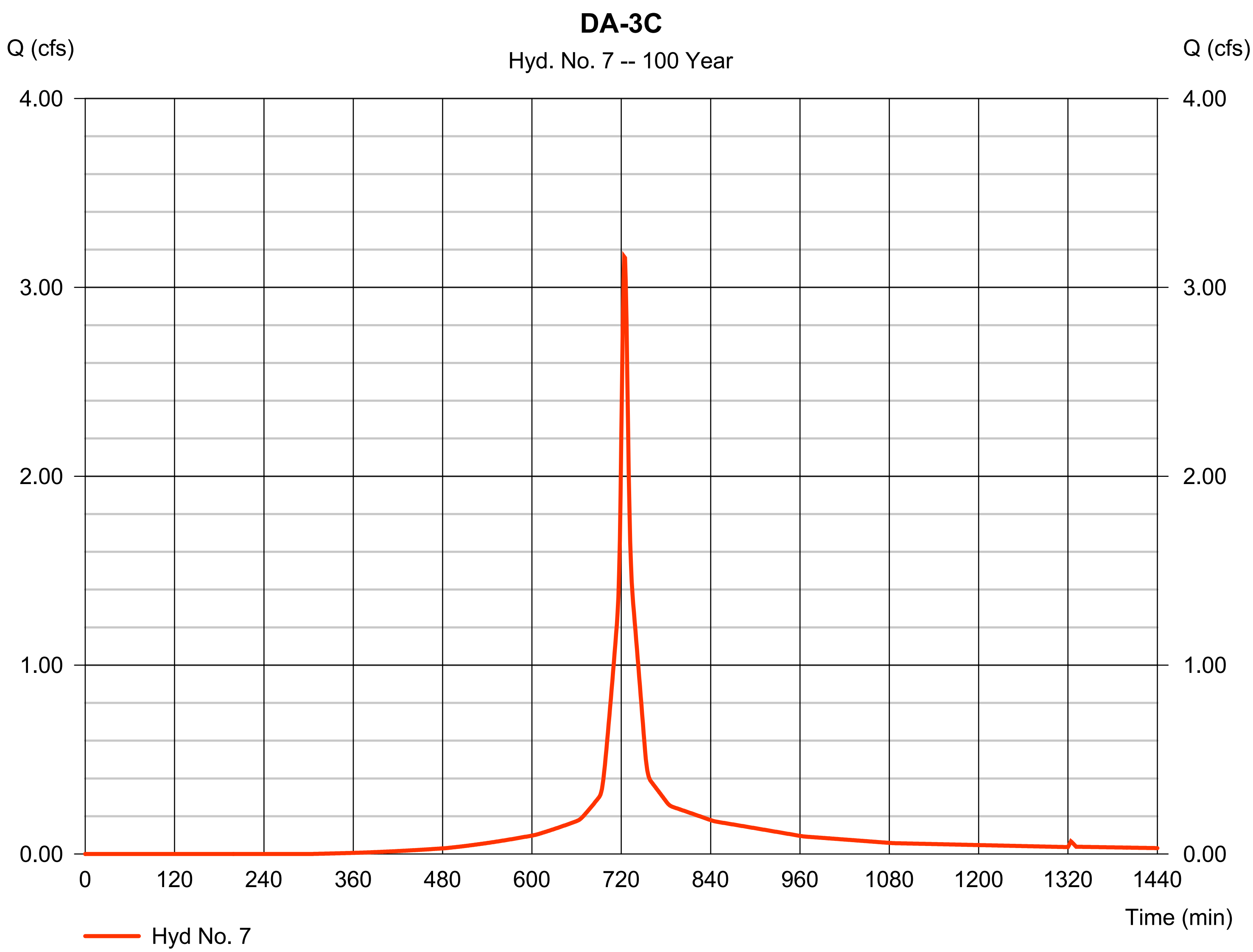
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.162 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 9,988 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



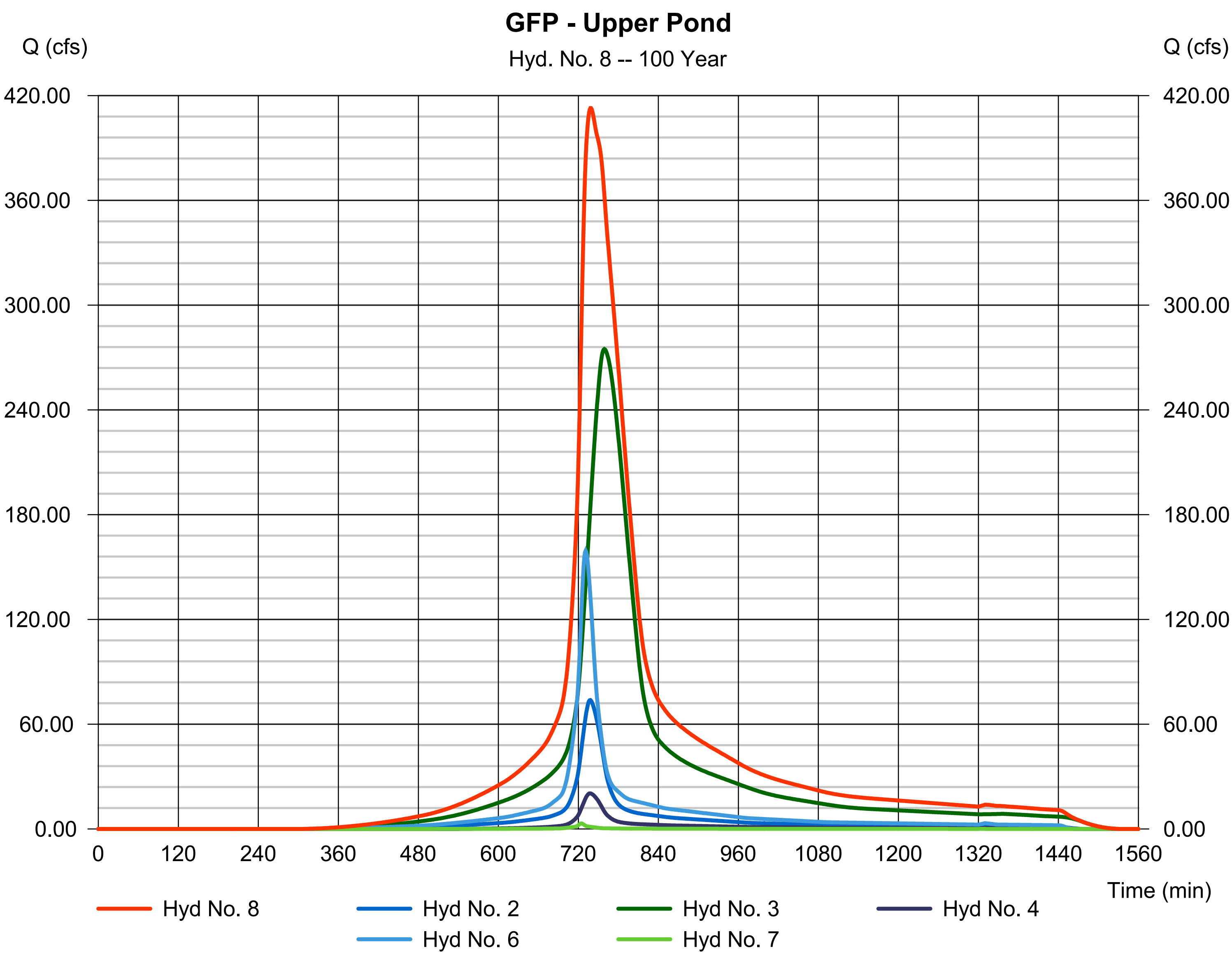
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

GFP - Upper Pond

Hydrograph type	= Combine	Peak discharge	= 412.86 cfs
Storm frequency	= 100 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 3,254,607 cuft
Inflow hyds.	= 2, 3, 4, 6, 7	Contrib. drain. area	= 149.050 ac



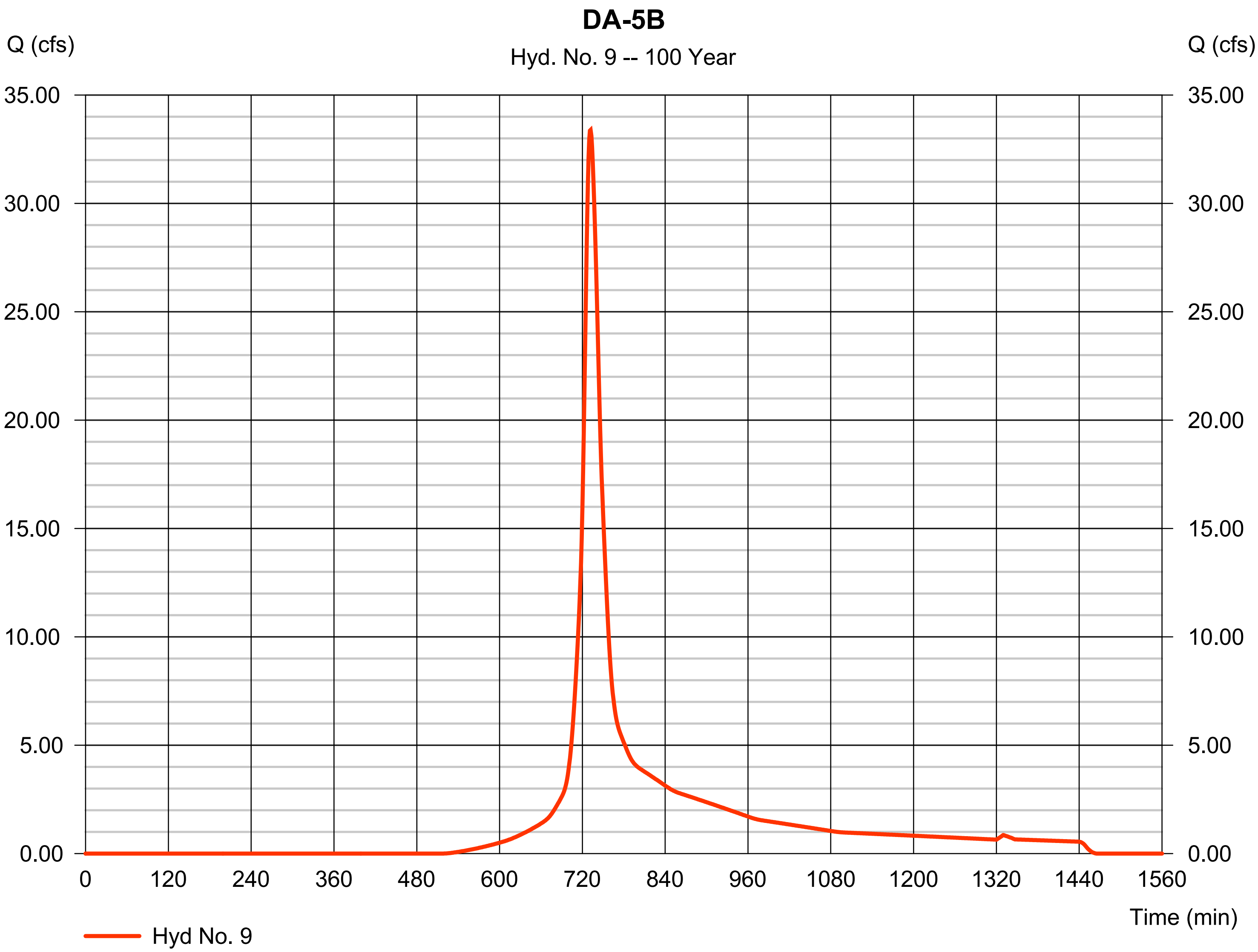
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 33.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 138,427 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



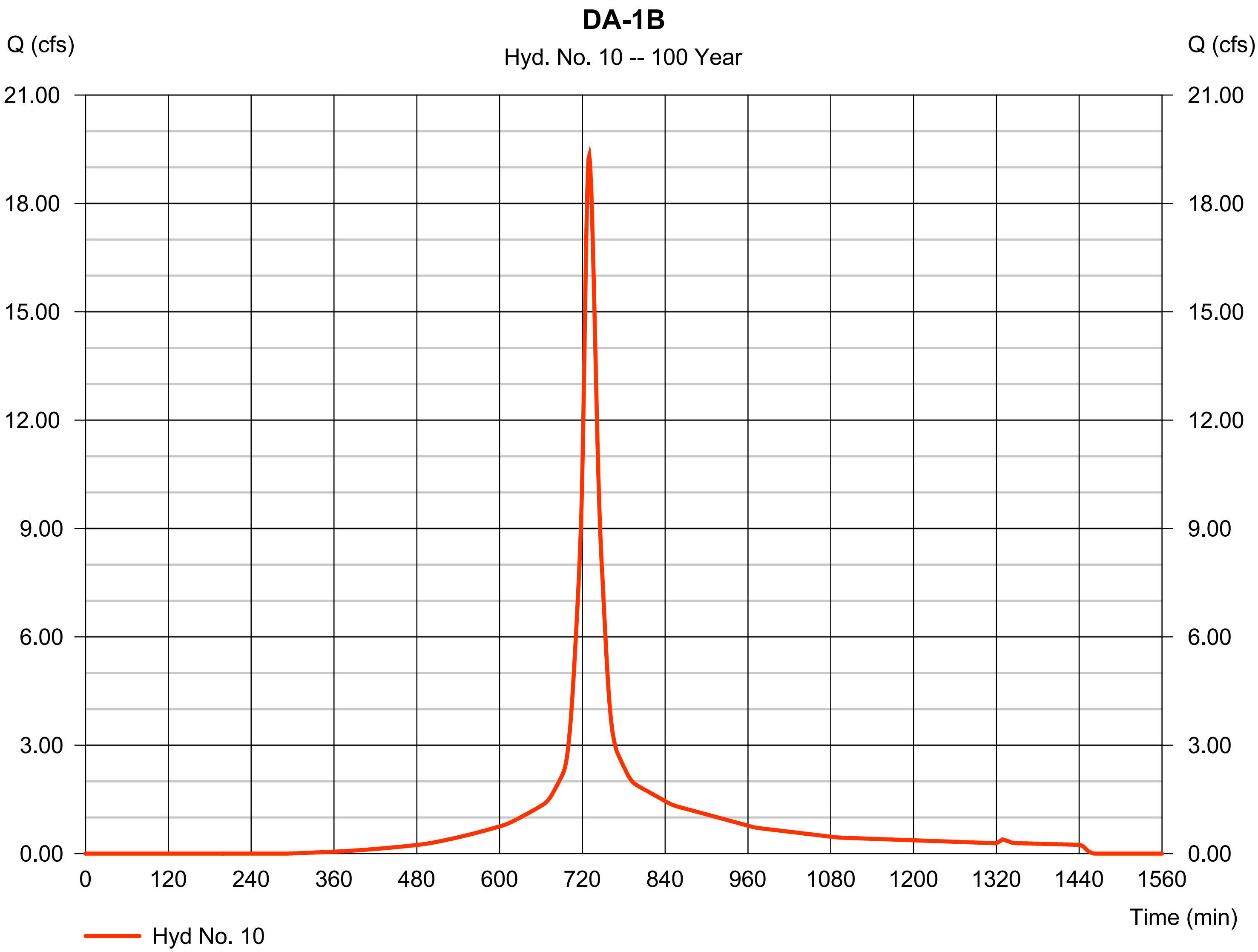
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 19.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 78,108 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 14.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



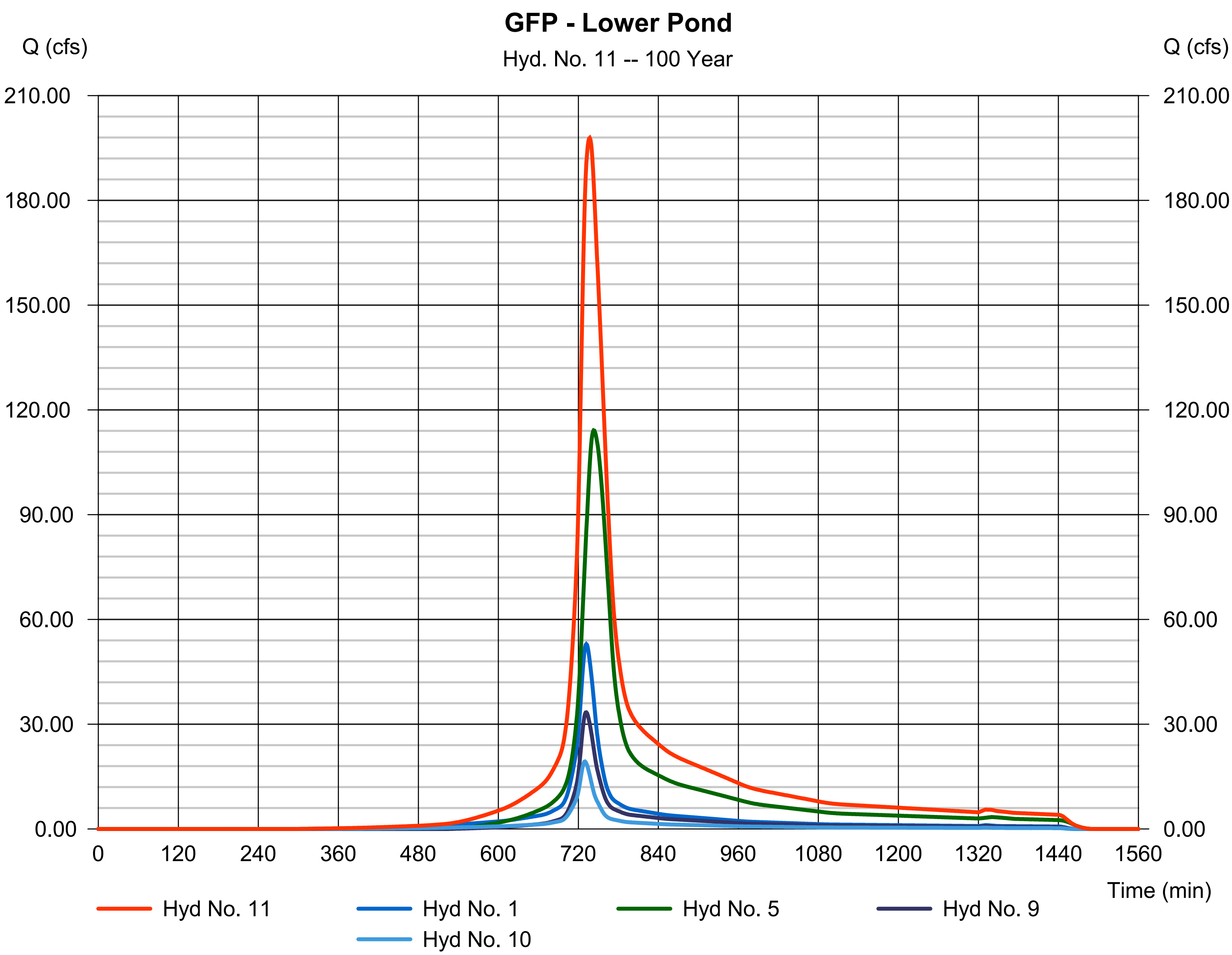
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

GFP - Lower Pond

Hydrograph type	= Combine	Peak discharge	= 197.88 cfs
Storm frequency	= 100 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 1,072,552 cuft
Inflow hyds.	= 1, 5, 9, 10	Contrib. drain. area	= 64.490 ac



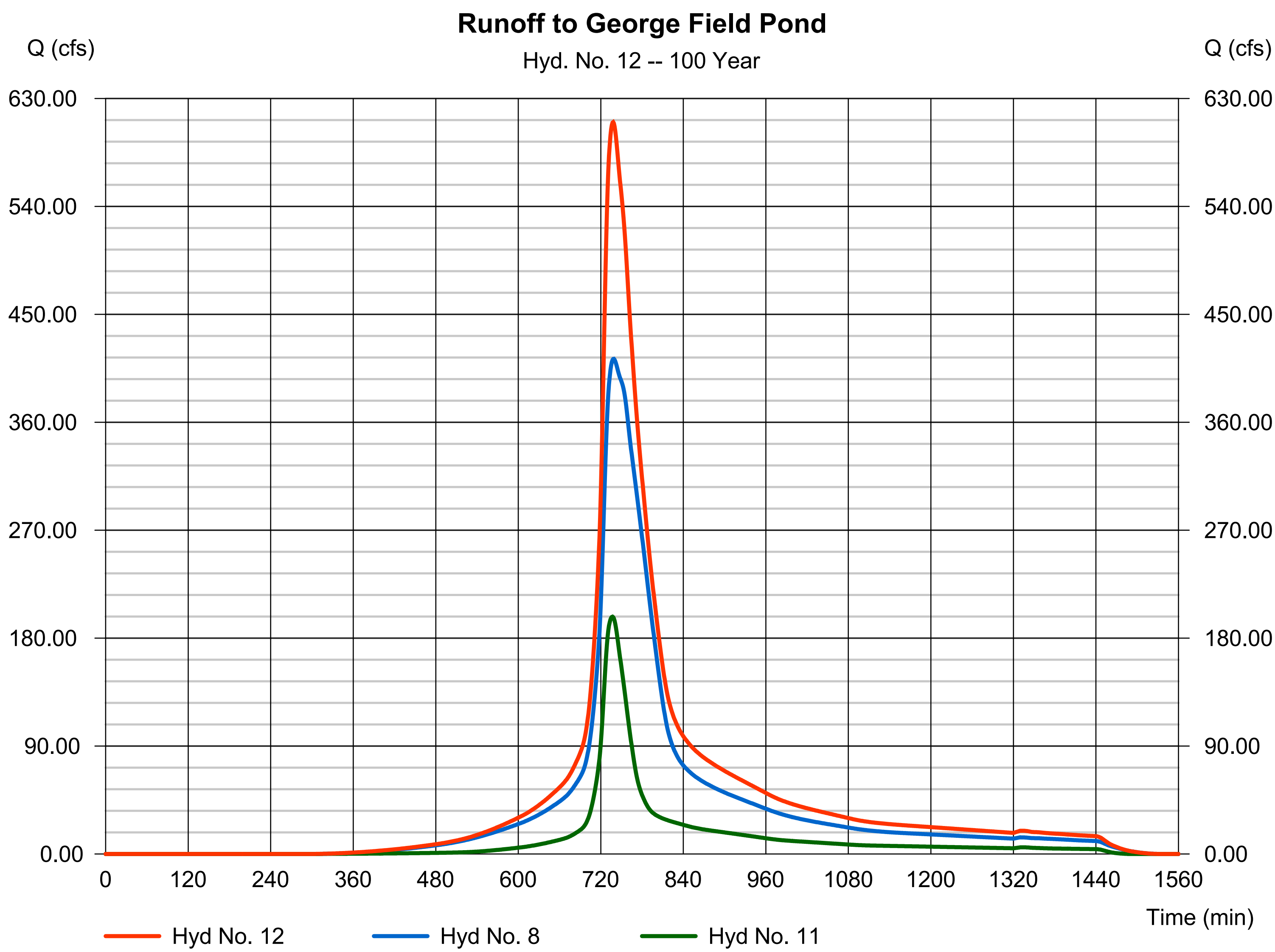
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 12

Runoff to George Field Pond

Hydrograph type	= Combine	Peak discharge	= 610.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 4,327,160 cuft
Inflow hyds.	= 8, 11	Contrib. drain. area	= 0.000 ac



Hydrograph Report

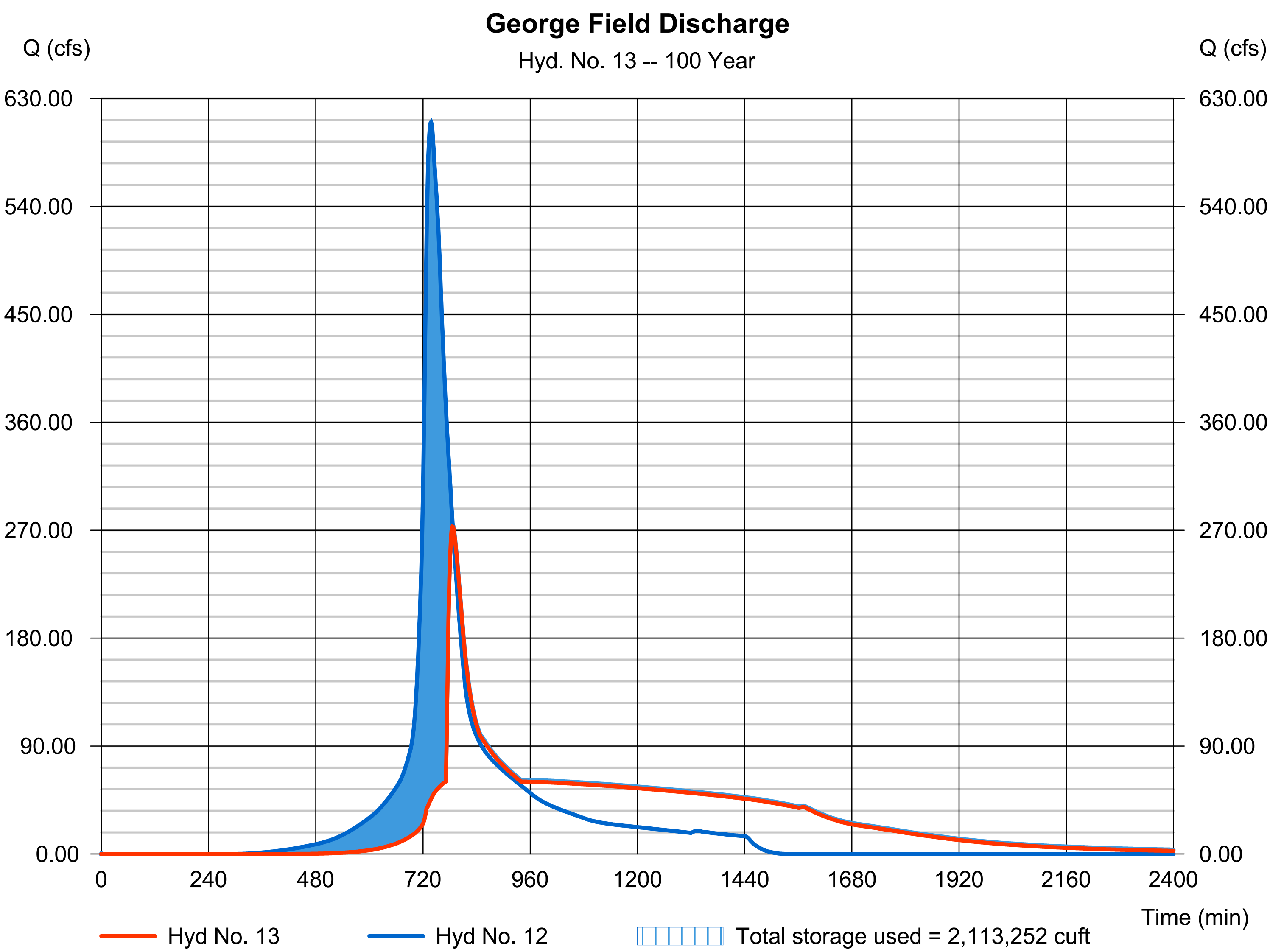
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Discharge

Hydrograph type	= Reservoir	Peak discharge	= 273.06 cfs
Storm frequency	= 100 yrs	Time to peak	= 786 min
Time interval	= 1 min	Hyd. volume	= 4,110,209 cuft
Inflow hyd. No.	= 12 - Runoff to George Field Pond	Max. Elevation	= 218.31 ft
Reservoir name	= GFP - One Pond	Max. Storage	= 2,113,252 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.idf

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

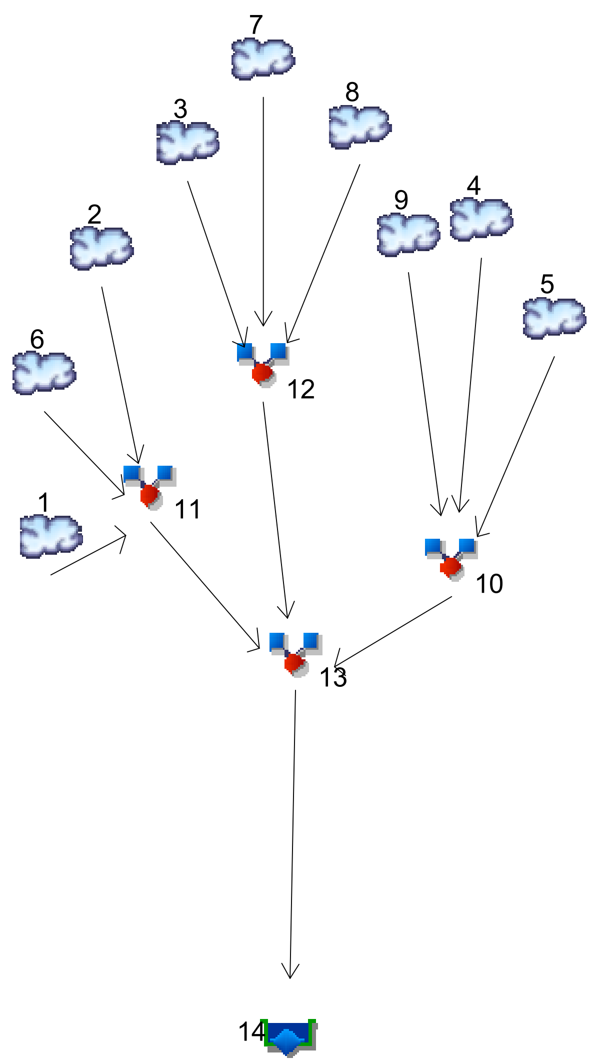
Tc = time in minutes. Values may exceed 60.

of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-DisciplineFolders\Civil\Hydrology\precip.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.10	3.51	0.00	4.53	5.38	6.55	7.10	8.34
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023



Legend

Hyd.	Origin	Description
1	SCS Runoff	DA-1A
2	SCS Runoff	DA-2
3	SCS Runoff	DA-3A
4	SCS Runoff	DA-4
5	SCS Runoff	DA-5A
6	SCS Runoff	DA-1B
7	SCS Runoff	DA-3B
8	SCS Runoff	DA-3C
9	SCS Runoff	DA-5B
10	Combine	DA-4&5
11	Combine	DA-1&2
12	Combine	DA-3
13	Combine	George Field Park
14	Reservoir	George Field Pond

Project: Proposed Condition - 1 pond (minor mods) - SFP.gpw

Wednesday, 01 / 15 / 2025

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	5.975	15.64	-------	23.30	29.85	38.97	43.26	52.96	DA-1A
2	SCS Runoff	------	8.303	21.75	-------	32.42	41.55	54.27	60.26	73.79	DA-2
3	SCS Runoff	------	28.66	78.17	-------	118.05	152.42	200.52	223.32	274.85	DA-3A
4	SCS Runoff	------	0.367	3.142	-------	6.143	9.008	13.31	15.44	20.40	DA-4
5	SCS Runoff	------	2.059	17.62	-------	34.39	50.40	74.46	86.35	114.15	DA-5A
6	SCS Runoff	------	2.185	5.715	-------	8.512	10.90	14.22	15.79	19.32	DA-1B
7	SCS Runoff	------	16.85	45.75	-------	68.88	88.79	116.57	129.70	159.32	DA-3B
8	SCS Runoff	------	0.339	0.916	-------	1.375	1.768	2.315	2.575	3.162	DA-3C
9	SCS Runoff	------	0.578	5.103	-------	10.06	14.75	21.81	25.29	33.39	DA-5B
10	Combine	4, 5, 9	2.816	24.29	-------	47.76	70.04	103.52	120.04	158.66	DA-4&5
11	Combine	1, 2, 6,	15.79	41.40	-------	61.68	79.01	103.22	114.65	140.42	DA-1&2
12	Combine	3, 7, 8,	33.92	92.34	-------	139.11	179.37	235.67	262.31	322.50	DA-3
13	Combine	10, 11, 12	48.08	151.11	-------	240.46	319.41	432.37	486.55	610.29	George Field Park
14	Reservoir	13	12.75	40.18	-------	52.94	58.54	228.05	314.91	507.39	George Field Pond

Proj. file: Proposed Condition - 1 pond (minor mods) - SFP.gpw	Wednesday, 01 / 15 / 2025

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.975	1	734	26,574	------	------	------	DA-1A
2	SCS Runoff	8.303	1	740	43,396	------	------	------	DA-2
3	SCS Runoff	28.66	1	765	231,649	------	------	------	DA-3A
4	SCS Runoff	0.367	1	754	3,871	------	------	------	DA-4
5	SCS Runoff	2.059	1	761	24,526	------	------	------	DA-5A
6	SCS Runoff	2.185	1	731	9,038	------	------	------	DA-1B
7	SCS Runoff	16.85	1	733	73,970	------	------	------	DA-3B
8	SCS Runoff	0.339	1	725	1,102	------	------	------	DA-3C
9	SCS Runoff	0.578	1	747	5,420	------	------	------	DA-5B
10	Combine	2.816	1	757	33,817	4, 5, 9	------	------	DA-4&5
11	Combine	15.79	1	736	79,008	1, 2, 6,	------	------	DA-1&2
12	Combine	33.92	1	757	306,721	3, 7, 8,	------	------	DA-3
13	Combine	48.08	1	742	419,545	10, 11, 12	------	------	George Field Park
14	Reservoir	12.75	1	839	349,336	13	212.24	177,171	George Field Pond

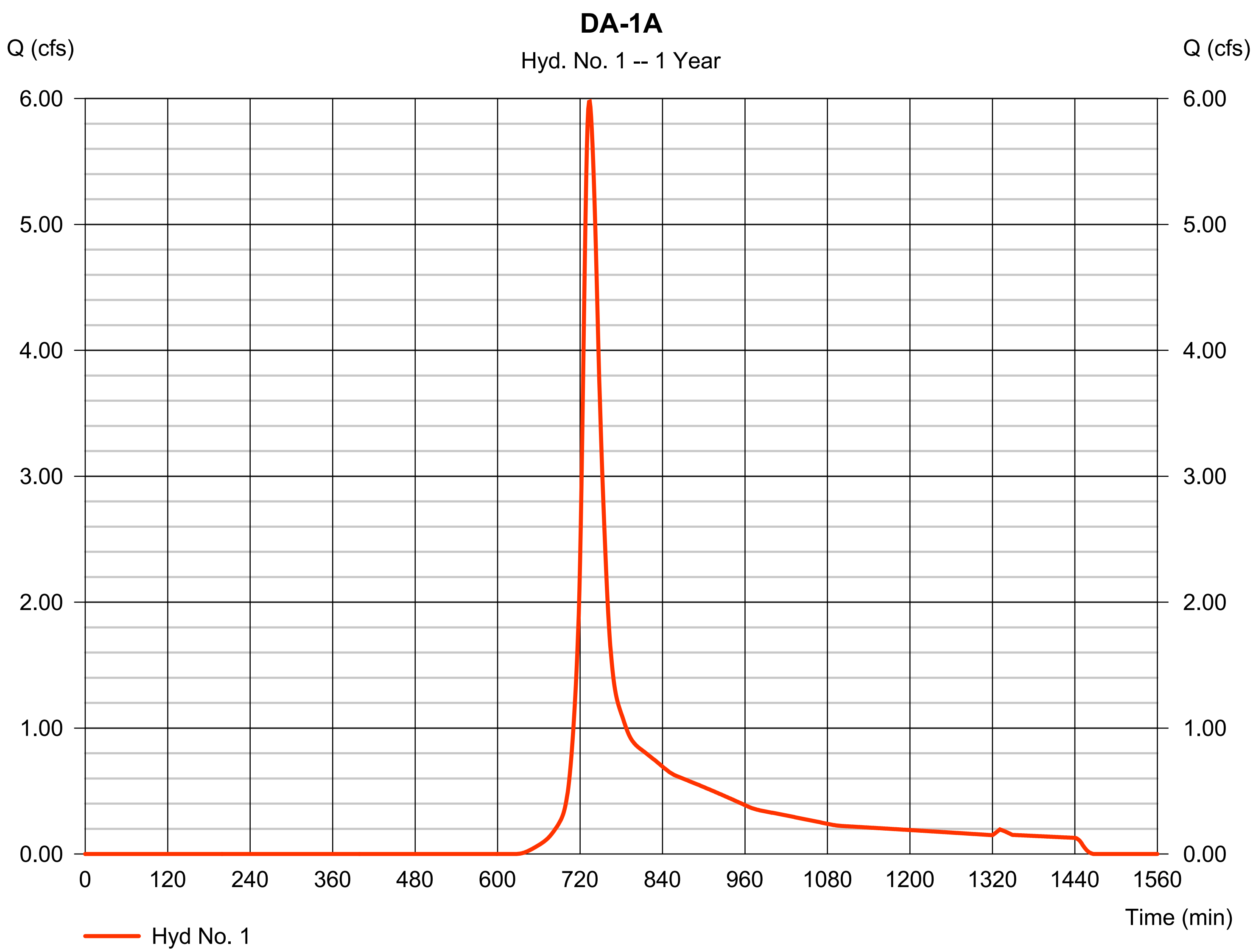
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 5.975 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 26,574 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 1

DA-1A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	8.00		0.00		0.00		
Travel Time (min)	**=**	**16.48**	**+**	**0.00**	**+**	**0.00**	**=**	**16.48**
Shallow Concentrated Flow								
Flow length (ft)	=	240.00		100.00		0.00		
Watercourse slope (%)	=	15.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.25			2.03		0.00		
Travel Time (min)	**=**	**0.64**	**+**	**0.82**	**+**	**0.00**	**=**	**1.46**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	3.14		0.00		0.00		
Channel slope (%)	=	3.00		0.00		0.00		
Manning's n-value	=	0.013		0.026		0.026		
Velocity (ft/s)	=19.85							
				0.00				
						0.00		
Flow length (ft)	({0})500.0			0.0		0.0		
Travel Time (min)	**=**	**0.42**	**+**	**0.00**	**+**	**0.00**	**=**	**0.42**

Total Travel Time, Tc .... **18.40 min**

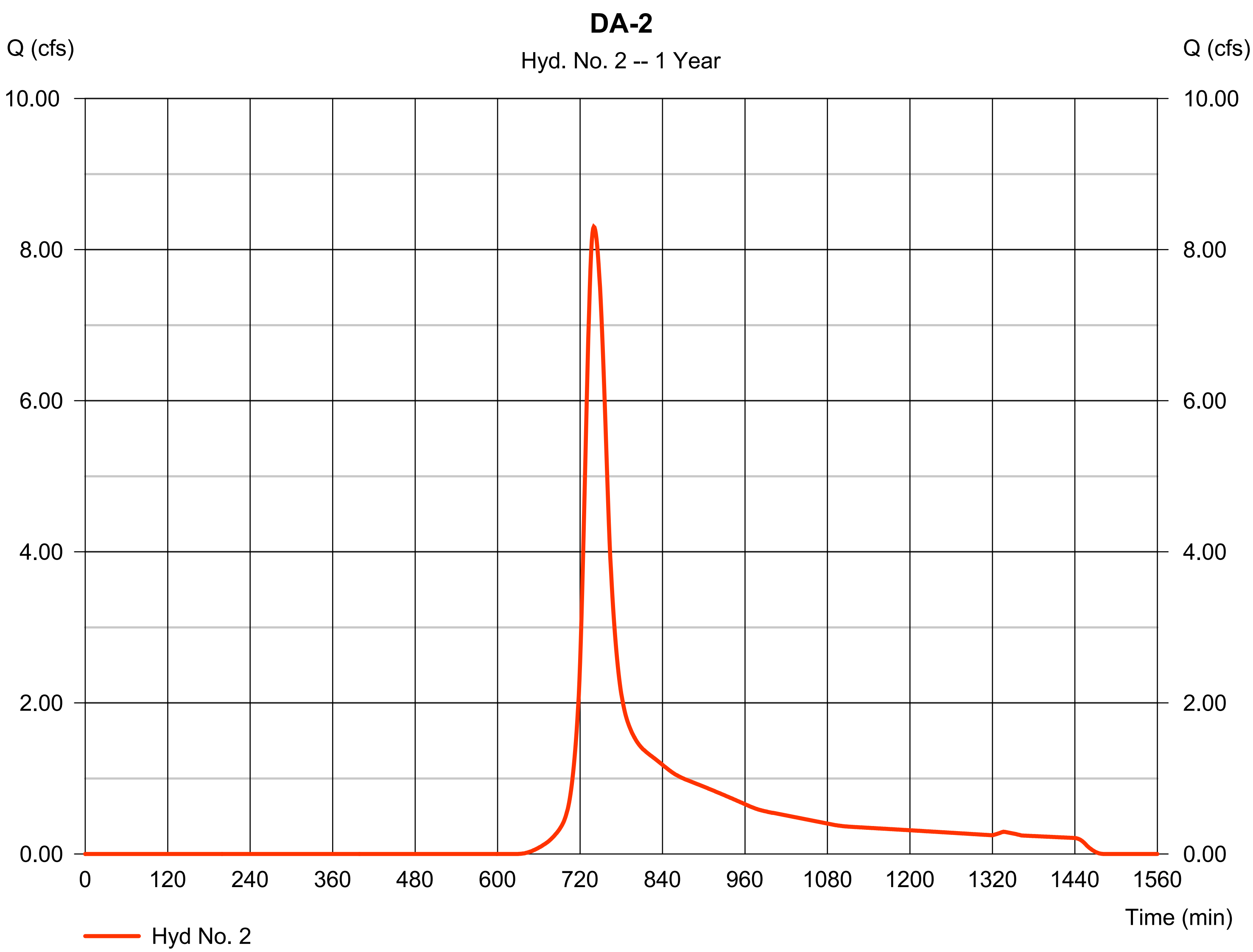
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 8.303 cfs
Storm frequency	= 1 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 43,396 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 2

DA-2

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	5.00		0.00		0.00		
Travel Time (min)	**=**	**19.89**	**+**	**0.00**	**+**	**0.00**	**=**	**19.89**
Shallow Concentrated Flow								
Flow length (ft)	=	260.00		750.00		0.00		
Watercourse slope (%)	=	5.00		3.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	3.61		3.52		0.00		
Travel Time (min)	**=**	**1.20**	**+**	**3.55**	**+**	**0.00**	**=**	**4.75**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	3.14		0.00		0.00		
Channel slope (%)	=	2.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=	16.21						
				0.00				
						0.00		
Flow length (ft)		({0})1000.0		0.0		0.0		
Travel Time (min)	**=**	**1.03**	**+**	**0.00**	**+**	**0.00**	**=**	**1.03**

Total Travel Time, Tc .... 25.70 min

Hydrograph Report

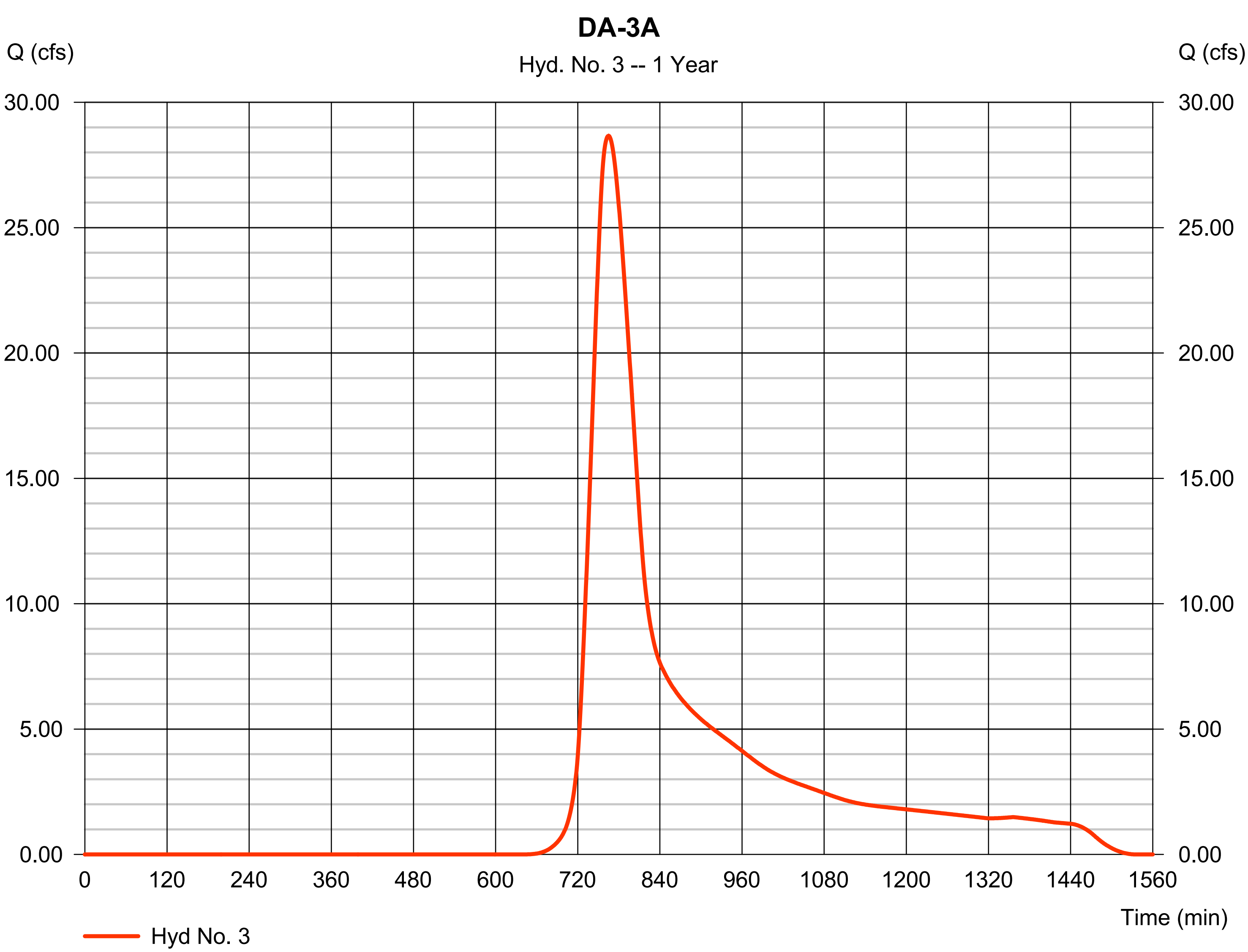
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 28.66 cfs
Storm frequency	= 1 yrs	Time to peak	= 765 min
Time interval	= 1 min	Hyd. volume	= 231,649 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



TR55 Tc Worksheet

Hyd. No. 3

DA-3A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	0.75		0.00		0.00		
Travel Time (min)	**=**	**42.47**	**+**	**0.00**	**+**	**0.00**	**=**	**42.47**
Shallow Concentrated Flow								
Flow length (ft)	=	510.00		445.00		0.00		
Watercourse slope (%)	=	1.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	1.61		2.03		0.00		
Travel Time (min)	**=**	**5.27**	**+**	**3.65**	**+**	**0.00**	**=**	**8.92**
Channel Flow								
X sectional flow area (sqft)	=	3.14		45.00		20.00		
Wetted perimeter (ft)	=	3.14		16.00		8.00		
Channel slope (%)	=	1.00		0.10		1.00		
Manning's n-value	=	0.013		0.026		0.026		
Velocity (ft/s)	=	11.46		3.62		10.59		
Flow length (ft)	({0})	2150.0		1190.0		300.0		
Travel Time (min)	**=**	**3.13**	**+**	**5.47**	**+**	**0.47**	**=**	**9.07**

Total Travel Time, Tc .... 60.50 min

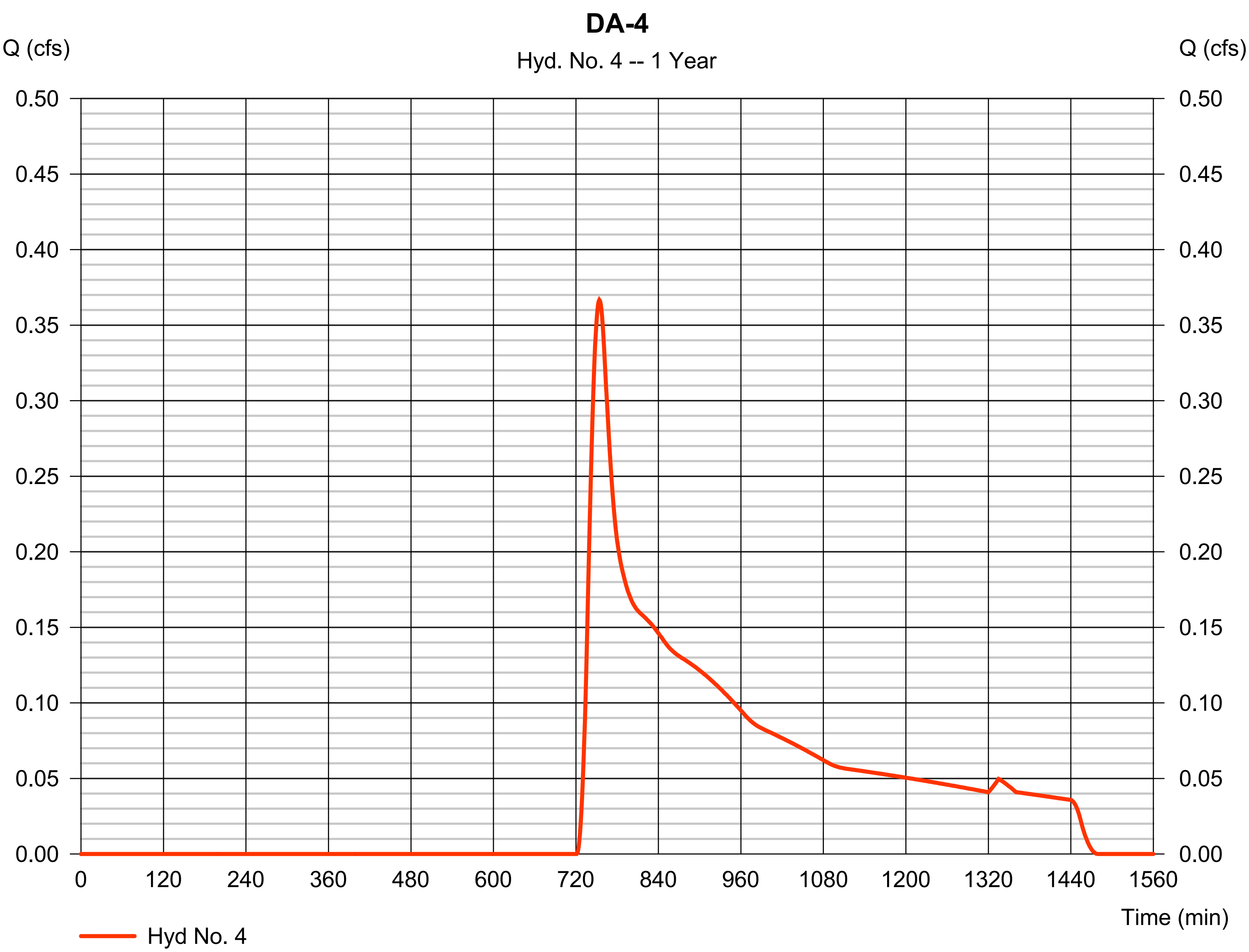
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 0.367 cfs
Storm frequency	= 1 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 3,871 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 4

DA-4

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	4.00		0.00		0.00		
Travel Time (min)	**=**	**21.74**	**+**	**0.00**	**+**	**0.00**	**=**	**21.74**
Shallow Concentrated Flow								
Flow length (ft)	=	430.00		70.00		0.00		
Watercourse slope (%)	=	14.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.04			2.03		0.00		
Travel Time (min)	**=**	**1.19**	**+**	**0.57**	**+**	**0.00**	**=**	**1.76**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	6.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=17.65							
				0.00				
						0.00		
Flow length (ft)	({0})460.0			0.0		0.0		
Travel Time (min)	**=**	**0.43**	**+**	**0.00**	**+**	**0.00**	**=**	**0.43**

Total Travel Time, Tc .... **23.90 min**

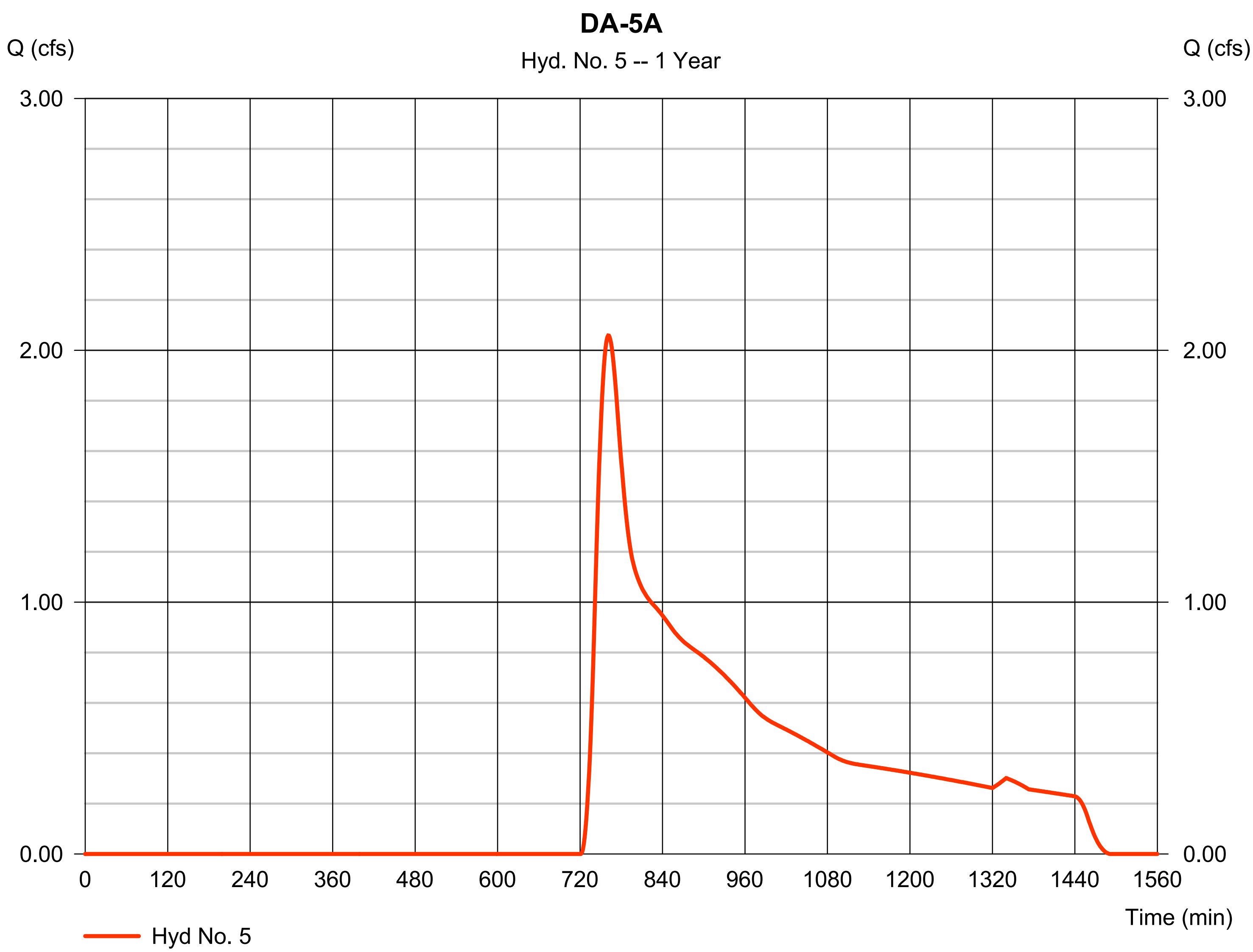
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 2.059 cfs
Storm frequency	= 1 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 24,526 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 5

DA-5A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	2.00		0.00		0.00		
Travel Time (min)	**=**	**28.69**	**+**	**0.00**	**+**	**0.00**	**=**	**28.69**
Shallow Concentrated Flow								
Flow length (ft)	=	180.00		580.00		0.00		
Watercourse slope (%)	=	11.00		3.50		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.35			3.80		0.00		
Travel Time (min)	**=**	**0.56**	**+**	**2.54**	**+**	**0.00**	**=**	**3.10**
Channel Flow								
X sectional flow area (sqft)	=	0.79		16.00		1.77		
Wetted perimeter (ft)	=	1.57		8.00		2.36		
Channel slope (%)	=	5.00		8.00		4.50		
Manning's n-value	=	0.013		0.030		0.013		
Velocity (ft/s)	=16.11			22.35		20.05		
Flow length (ft)	({0})120.0			510.0		370.0		
Travel Time (min)	**=**	**0.12**	**+**	**0.38**	**+**	**0.31**	**=**	**0.81**

Total Travel Time, Tc .... 32.60 min

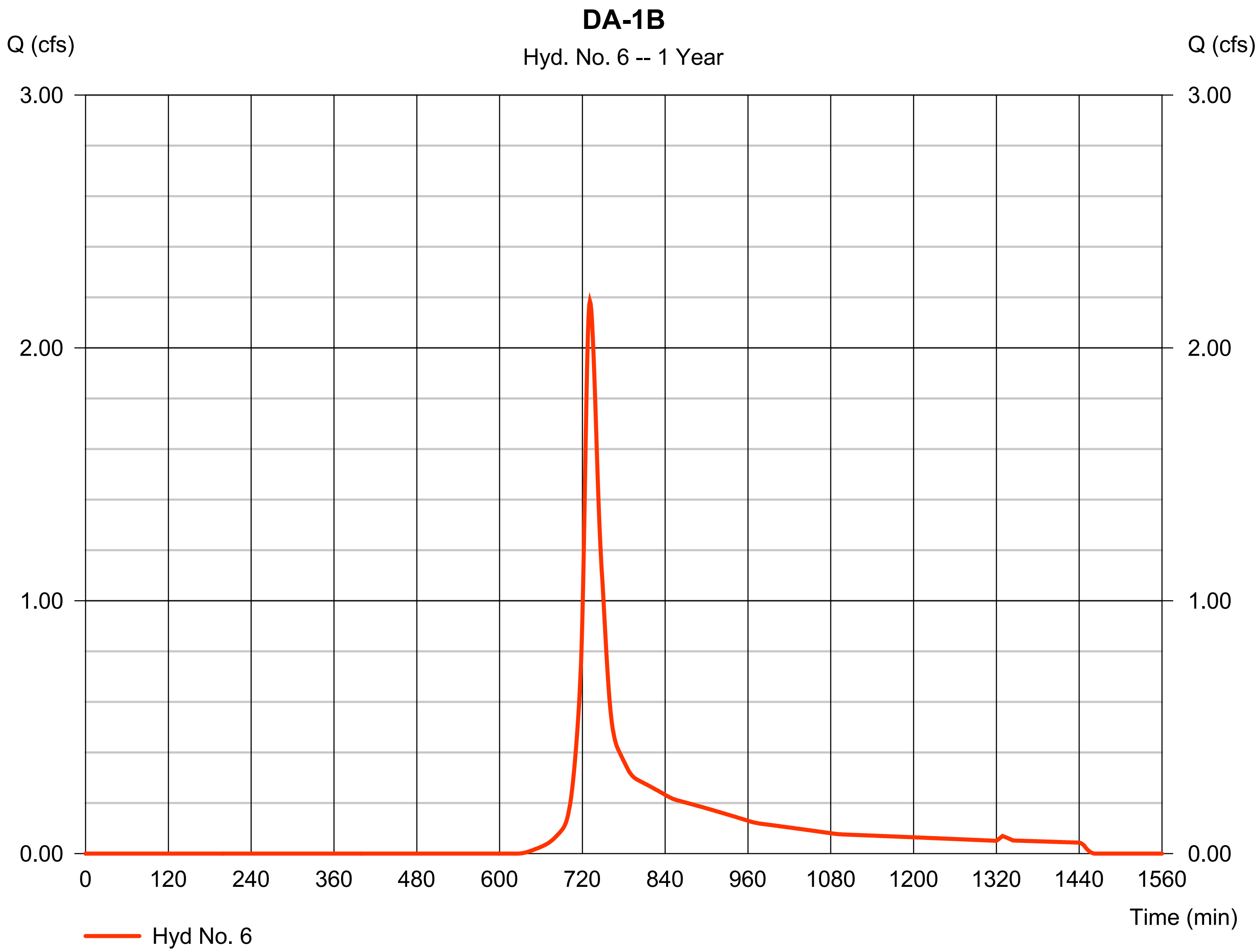
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 2.185 cfs
Storm frequency	= 1 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 9,038 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 6

DA-1B

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	135.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.51		0.00		0.00		
Land slope (%)	=	10.00		0.00		0.00		
Travel Time (min)	**=**	**13.69**	**+**	**0.00**	**+**	**0.00**	**=**	**13.69**
Shallow Concentrated Flow								
Flow length (ft)	=	80.00		0.00		0.00		
Watercourse slope (%)	=	5.00		0.00		0.00		
Surface description	=	Paved		Paved		Paved		
Average velocity (ft/s)	=4.55			0.00		0.00		
Travel Time (min)	**=**	**0.29**	**+**	**0.00**	**+**	**0.00**	**=**	**0.29**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	6.14		0.00		0.00		
Channel slope (%)	=	5.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=16.35							
				0.00				
						0.00		
Flow length (ft)	({0})450.0			0.0		0.0		
Travel Time (min)	**=**	**0.46**	**+**	**0.00**	**+**	**0.00**	**=**	**0.46**

Total Travel Time, Tc .... **14.40 min**

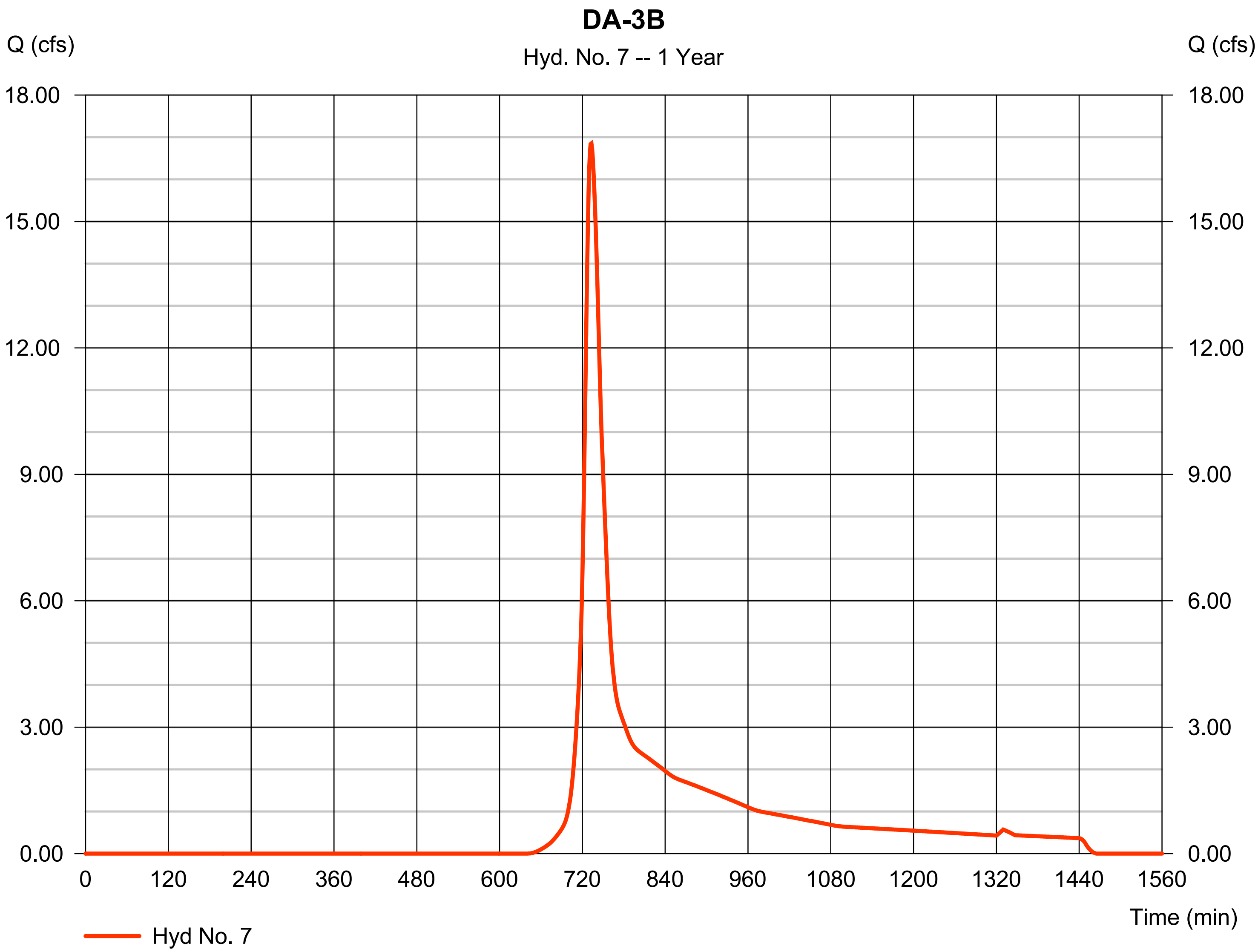
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 16.85 cfs
Storm frequency	= 1 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 73,970 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 7

DA-3B

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.240		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.51		0.00		0.00		
Land slope (%)	=	5.30		0.00		0.00		
Travel Time (min)	**=**	**12.76**	**+**	**0.00**	**+**	**0.00**	**=**	**12.76**
Shallow Concentrated Flow								
Flow length (ft)	=	530.00		0.00		0.00		
Watercourse slope (%)	=	8.50		0.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	4.70		0.00		0.00		
Travel Time (min)	**=**	**1.88**	**+**	**0.00**	**+**	**0.00**	**=**	**1.88**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	5.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=	16.11		0.00		0.00		
Flow length (ft)		({0})1135.0		0.0		0.0		
Travel Time (min)	**=**	**1.17**	**+**	**0.00**	**+**	**0.00**	**=**	**1.17**

Total Travel Time, Tc .... 15.80 min

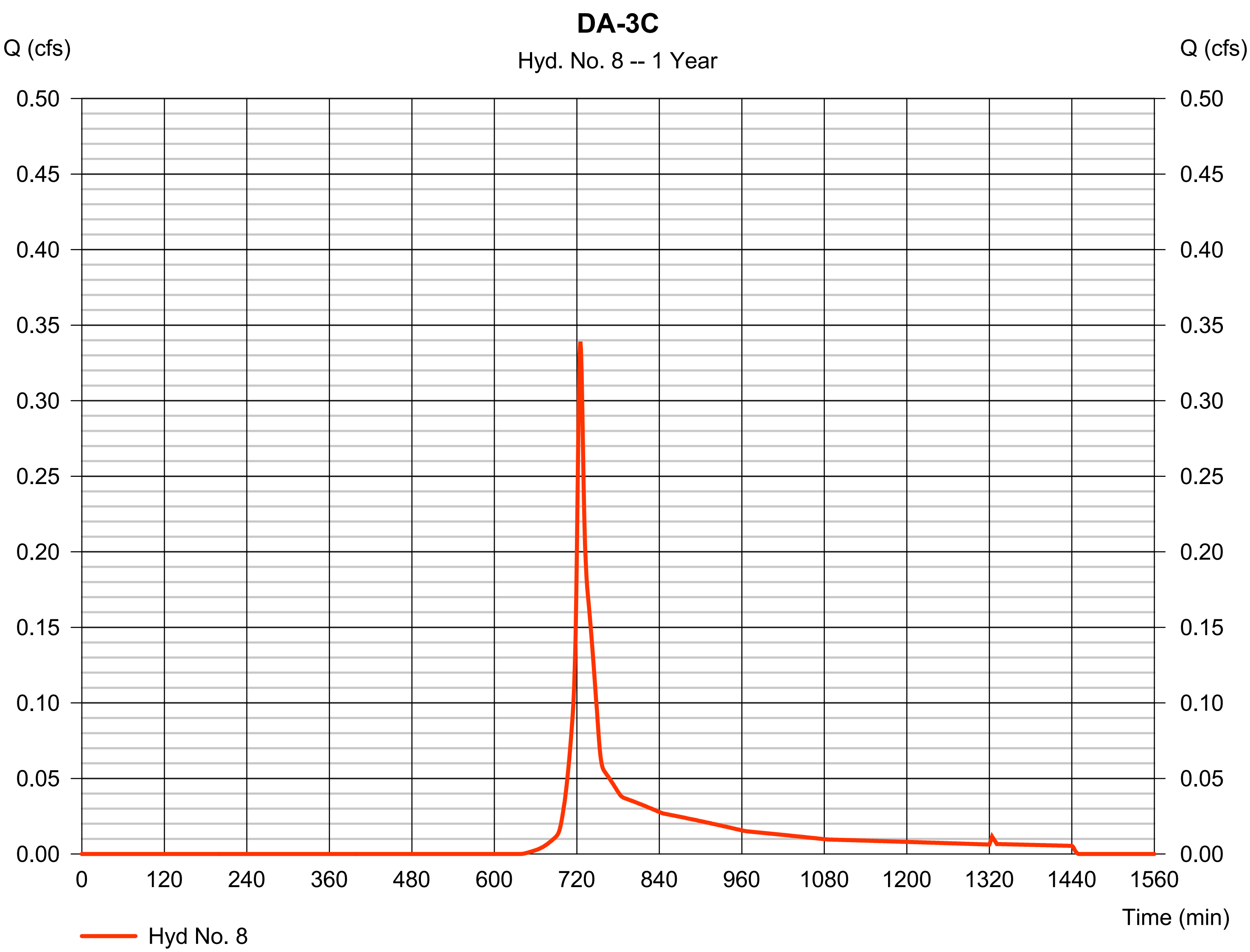
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.339 cfs
Storm frequency	= 1 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 1,102 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



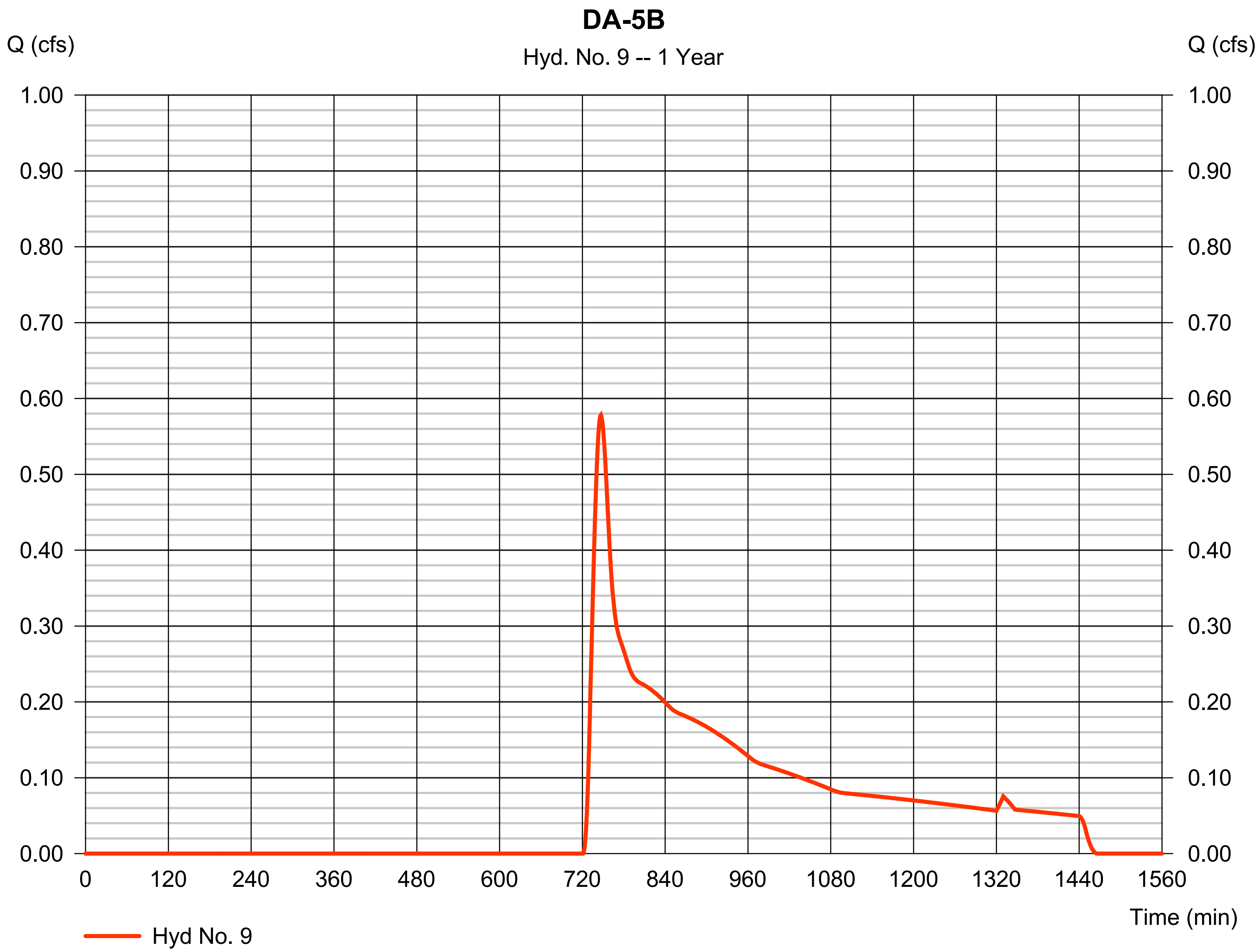
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.578 cfs
Storm frequency	= 1 yrs	Time to peak	= 747 min
Time interval	= 1 min	Hyd. volume	= 5,420 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 9

DA-5B

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.240		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.51		0.00		0.00		
Land slope (%)	=	5.50		0.00		0.00		
Travel Time (min)	**=**	**12.57**	**+**	**0.00**	**+**	**0.00**	**=**	**12.57**
Shallow Concentrated Flow								
Flow length (ft)	=	765.00		0.00		0.00		
Watercourse slope (%)	=	10.00		0.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.10			0.00		0.00		
Travel Time (min)	**=**	**2.50**	**+**	**0.00**	**+**	**0.00**	**=**	**2.50**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	1.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=7.20							
				0.00				
						0.00		
Flow length (ft)	({0})250.0			0.0		0.0		
Travel Time (min)	**=**	**0.58**	**+**	**0.00**	**+**	**0.00**	**=**	**0.58**

Total Travel Time, Tc .... **15.70 min**

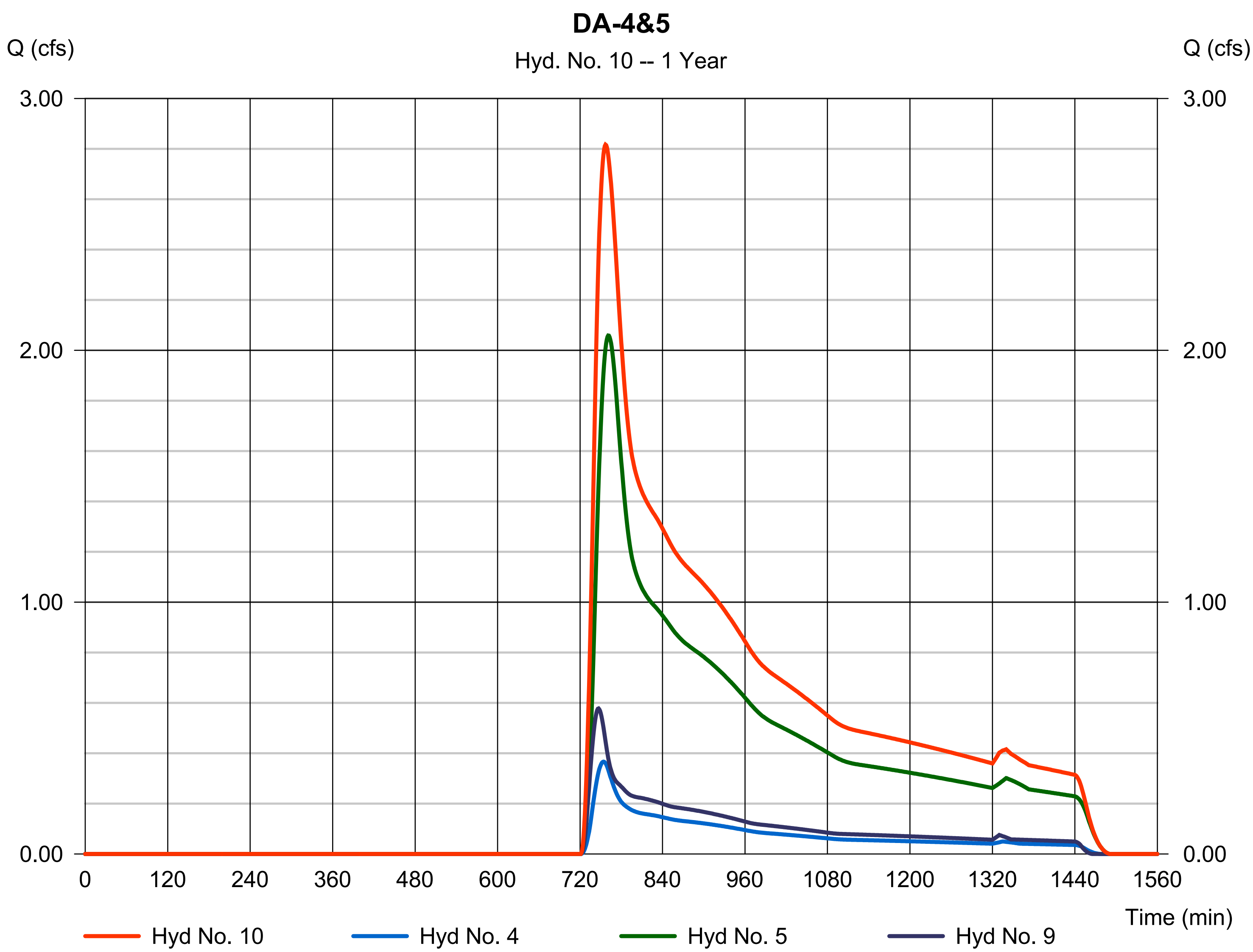
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 2.816 cfs
Storm frequency	= 1 yrs	Time to peak	= 757 min
Time interval	= 1 min	Hyd. volume	= 33,817 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac

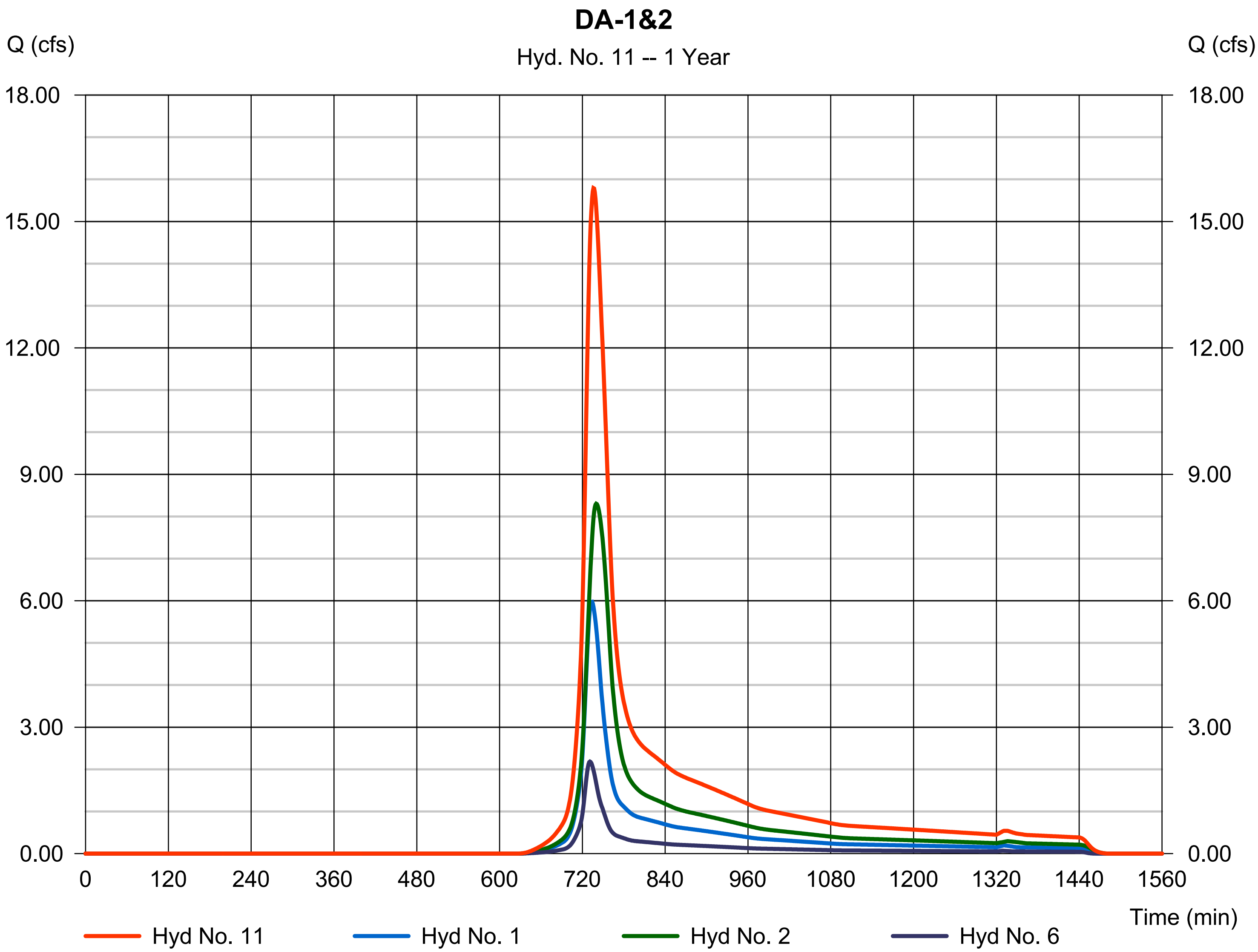


Hydrograph Report

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 15.79 cfs
Storm frequency	= 1 yrs	Time to peak	= 736 min
Time interval	= 1 min	Hyd. volume	= 79,008 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



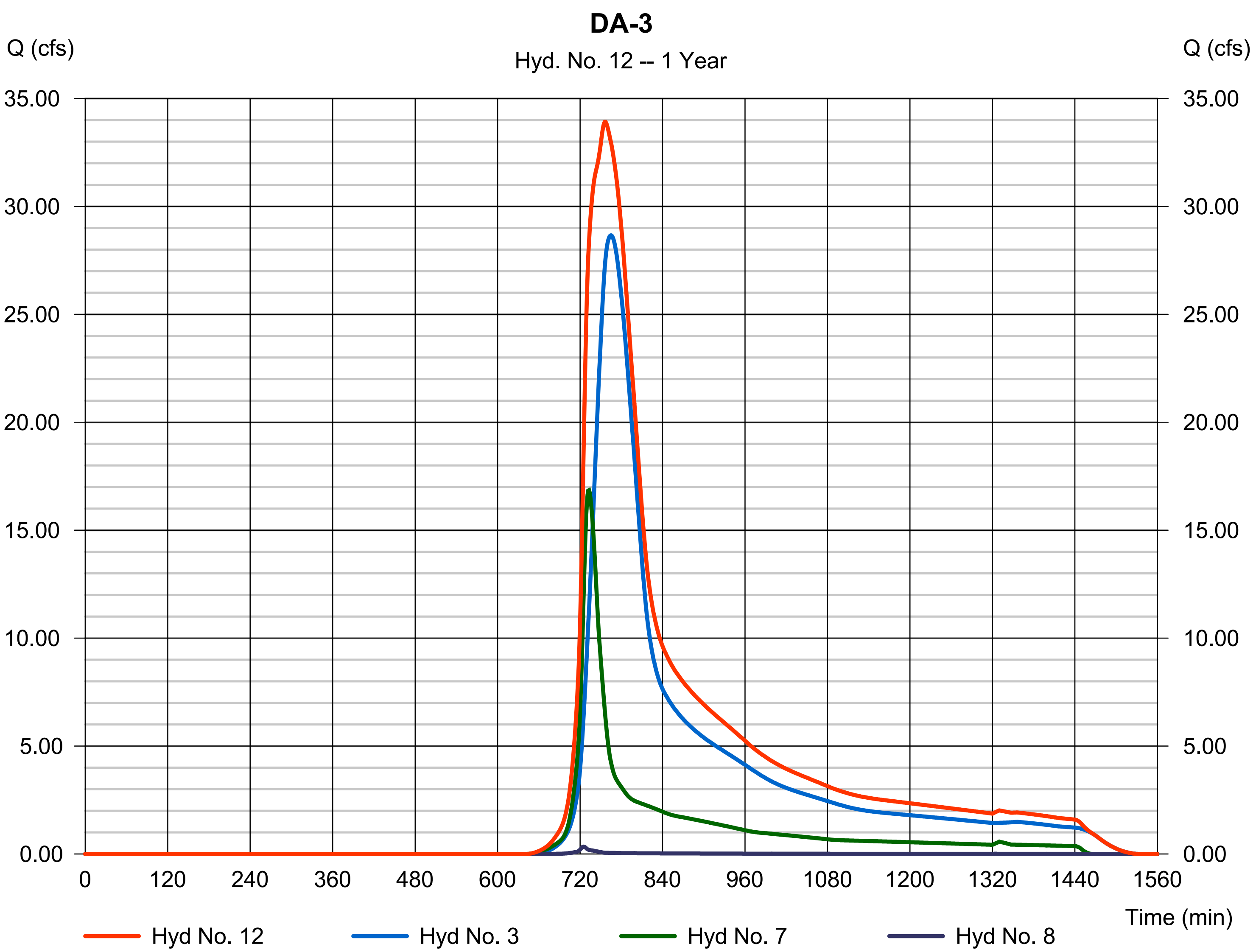
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 33.92 cfs
Storm frequency	= 1 yrs	Time to peak	= 757 min
Time interval	= 1 min	Hyd. volume	= 306,721 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



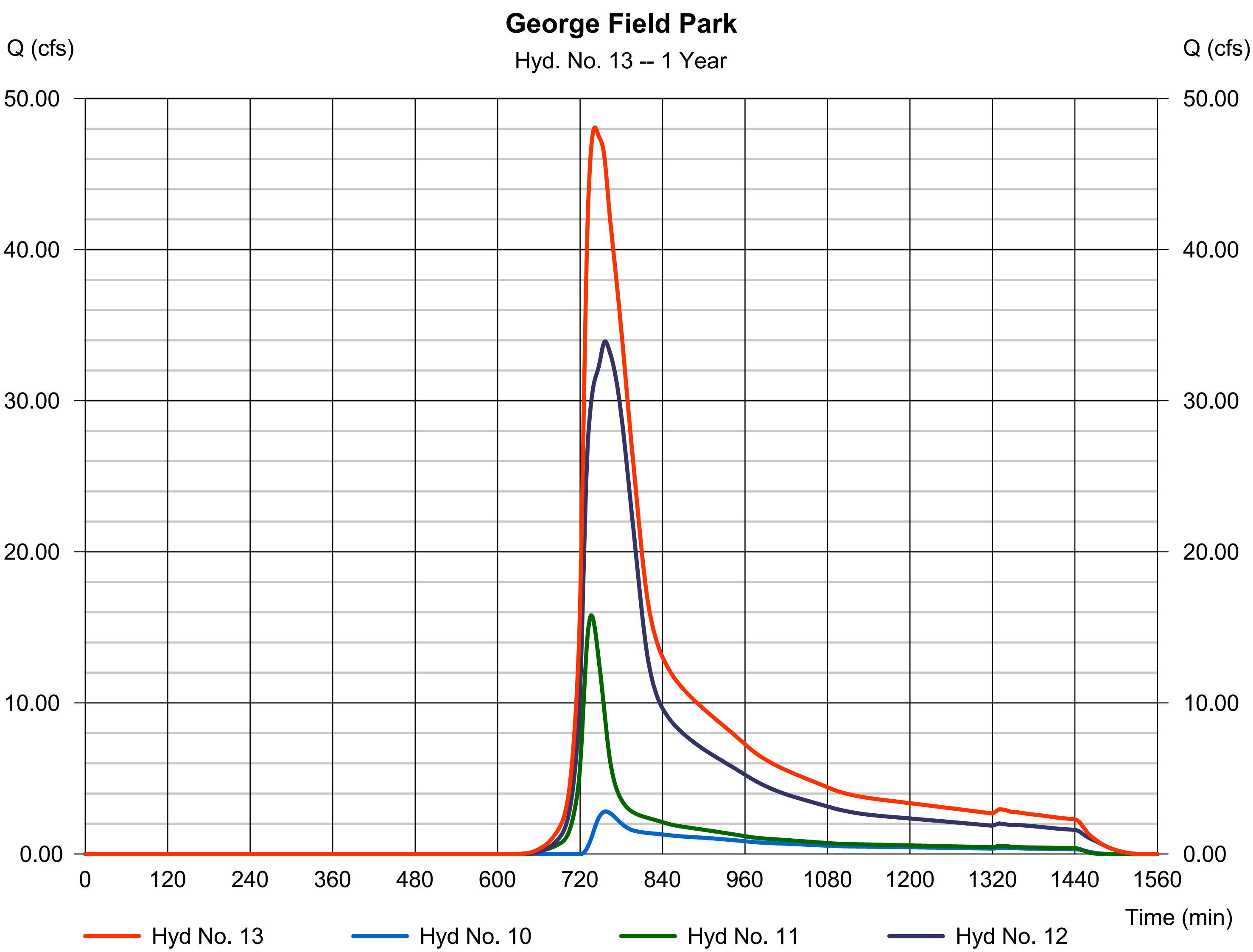
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 48.08 cfs
Storm frequency	= 1 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 419,545 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

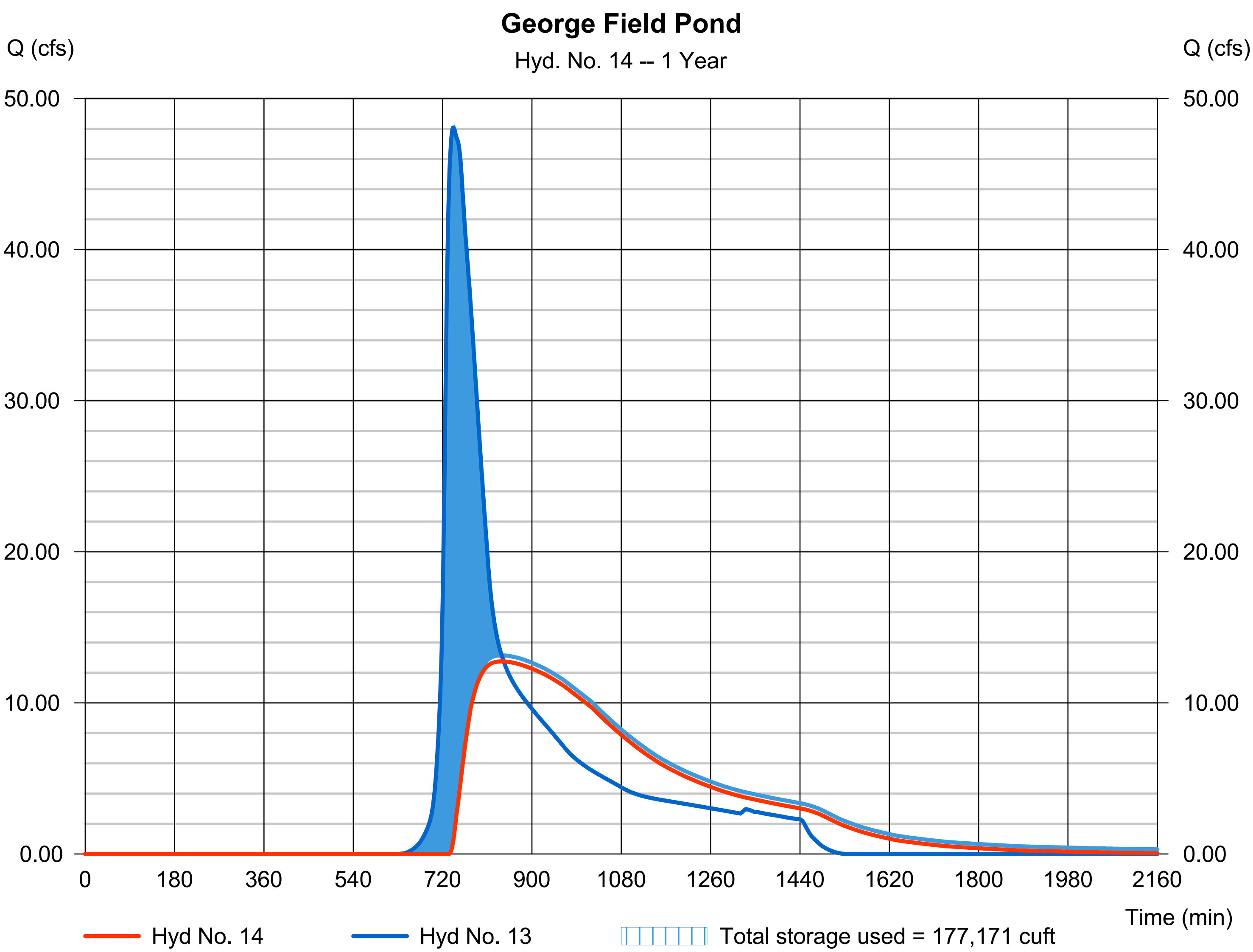
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 12.75 cfs
Storm frequency	= 1 yrs	Time to peak	= 839 min
Time interval	= 1 min	Hyd. volume	= 349,336 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 212.24 ft
Reservoir name	= George Field Park	Max. Storage	= 177,171 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 1 - George Field Park

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 209.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	209.00	3,675	0	0
1.00	210.00	43,602	19,977	19,977
2.00	211.00	73,984	58,122	78,098
3.00	212.00	81,755	77,829	155,928
4.00	213.00	97,005	89,263	245,190
5.00	214.00	137,353	116,584	361,774
6.00	215.00	196,750	166,148	527,922
7.00	216.00	229,165	212,730	740,652
8.00	217.00	258,855	243,835	984,487
9.00	218.00	292,450	275,455	1,259,942
10.00	219.00	350,000	320,762	1,580,704

Culvert / Orifice Structures

		[A]	[B]	[C]	[PrfRsr]
Rise (in)	=	36.00	18.00	14.00	0.00
Span (in)	=	36.00	18.00	14.00	0.00
No. Barrels	=	1	2	3	0
Invert El. (ft)	=	210.30	210.30	212.30	0.00
Length (ft)	=	1570.00	0.50	0.50	0.00
Slope (%)	=	0.20	1.00	1.00	n/a
N-Value	=	.009	.013	.013	n/a
Orifice Coeff.	=	0.60	0.60	0.60	0.60
Multi-Stage	=	n/a	Yes	Yes	No

Weir Structures

		[A]	[B]	[C]	[D]
Crest Len (ft)	=	10.00	24.00	Inactive	710.00
Crest El. (ft)	=	215.00	216.00	0.00	218.00
Weir Coeff.	=	3.33	3.33	3.33	3.33
Weir Type	=	Rect	Rect	Rect	Broad
Multi-Stage	=	Yes	Yes	No	No
Exfil.(in/hr)	=	0.200 (by Contour)			
TW Elev. (ft)	=	0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	209.00	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.000	---	0.000
0.10	1,998	209.10	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.020	---	0.020
0.20	3,995	209.20	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.040	---	0.040
0.30	5,993	209.30	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.061	---	0.061
0.40	7,991	209.40	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.081	---	0.081
0.50	9,988	209.50	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.101	---	0.101
0.60	11,986	209.60	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.121	---	0.121
0.70	13,984	209.70	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.141	---	0.141
0.80	15,981	209.80	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.161	---	0.161
0.90	17,979	209.90	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.182	---	0.182
1.00	19,977	210.00	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.202	---	0.202
1.10	25,789	210.10	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.216	---	0.216
1.20	31,601	210.20	0.00	0.00	0.00	---	0.00	0.00	---	0.00	0.230	---	0.230
1.30	37,413	210.30	0.00	0.00 ic	0.00	---	0.00	0.00	---	0.00	0.244	---	0.244
1.40	43,225	210.40	0.06 ic	0.06 ic	0.00	---	0.00	0.00	---	0.00	0.258	---	0.319
1.50	49,037	210.50	0.23 ic	0.23 ic	0.00	---	0.00	0.00	---	0.00	0.272	---	0.505
1.60	54,850	210.60	0.51 ic	0.51 ic	0.00	---	0.00	0.00	---	0.00	0.286	---	0.800
1.70	60,662	210.70	0.90 ic	0.90 ic	0.00	---	0.00	0.00	---	0.00	0.300	---	1.198
1.80	66,474	210.80	1.42 ic	1.41 ic	0.00	---	0.00	0.00	---	0.00	0.314	---	1.721
1.90	72,286	210.90	2.02 ic	1.97 ic	0.00	---	0.00	0.00	---	0.00	0.328	---	2.296
2.00	78,098	211.00	2.62 ic	2.62 ic	0.00	---	0.00	0.00	---	0.00	0.343	---	2.964
2.10	85,881	211.10	3.34 ic	3.33 ic	0.00	---	0.00	0.00	---	0.00	0.346	---	3.680
2.20	93,664	211.20	4.13 ic	4.13 ic	0.00	---	0.00	0.00	---	0.00	0.350	---	4.479
2.30	101,447	211.30	5.02 ic	5.02 ic	0.00	---	0.00	0.00	---	0.00	0.353	---	5.373
2.40	109,230	211.40	6.01 ic	5.92 ic	0.00	---	0.00	0.00	---	0.00	0.357	---	6.278
2.50	117,013	211.50	6.87 ic	6.87 ic	0.00	---	0.00	0.00	---	0.00	0.361	---	7.229
2.60	124,796	211.60	7.80 ic	7.80 ic	0.00	---	0.00	0.00	---	0.00	0.364	---	8.159
2.70	132,579	211.70	8.75 ic	8.75 ic	0.00	---	0.00	0.00	---	0.00	0.368	---	9.114
2.80	140,362	211.80	9.70 ic	9.70 ic	0.00	---	0.00	0.00	---	0.00	0.371	---	10.07
2.90	148,145	211.90	10.42 ic	10.42 ic	0.00	---	0.00	0.00	---	0.00	0.375	---	10.79
3.00	155,928	212.00	11.14 ic	11.14 ic	0.00	---	0.00	0.00	---	0.00	0.378	---	11.52
3.10	164,854	212.10	11.87 ic	11.87 ic	0.00	---	0.00	0.00	---	0.00	0.386	---	12.25

Continues on next page...

George Field Park

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.20	173,780	212.20	12.63 ic	12.52 ic	0.00	---	0.00	0.00	---	0.00	0.393	---	12.91
3.30	182,706	212.30	13.12 ic	13.12 ic	0.00 ic	---	0.00	0.00	---	0.00	0.400	---	13.52
3.40	191,633	212.40	13.90 ic	13.75 ic	0.15 ic	---	0.00	0.00	---	0.00	0.407	---	14.30
3.50	200,559	212.50	15.03 ic	14.24 ic	0.58 ic	---	0.00	0.00	---	0.00	0.414	---	15.22
3.60	209,485	212.60	15.91 ic	14.68 ic	1.23 ic	---	0.00	0.00	---	0.00	0.421	---	16.33
3.70	218,411	212.70	17.15 ic	15.03 ic	2.12 ic	---	0.00	0.00	---	0.00	0.428	---	17.57
3.80	227,338	212.80	18.46 ic	15.29 ic	3.17 ic	---	0.00	0.00	---	0.00	0.435	---	18.89
3.90	236,264	212.90	19.84 ic	15.44 ic	4.40 ic	---	0.00	0.00	---	0.00	0.442	---	20.28
4.00	245,190	213.00	21.50 ic	15.69 ic	5.74 ic	---	0.00	0.00	---	0.00	0.449	---	21.87
4.10	256,849	213.10	23.25 ic	15.77 ic	7.20 ic	---	0.00	0.00	---	0.00	0.468	---	23.44
4.20	268,507	213.20	24.61 ic	16.00 ic	8.61 ic	---	0.00	0.00	---	0.00	0.486	---	25.10
4.30	280,165	213.30	26.28 ic	16.18 ic	9.98 ic	---	0.00	0.00	---	0.00	0.505	---	26.67
4.40	291,824	213.40	27.61 ic	16.40 ic	11.21 ic	---	0.00	0.00	---	0.00	0.524	---	28.14
4.50	303,482	213.50	28.85 ic	16.72 ic	12.13 ic	---	0.00	0.00	---	0.00	0.542	---	29.39
4.60	315,141	213.60	30.08 ic	17.01 ic	13.07 ic	---	0.00	0.00	---	0.00	0.561	---	30.64
4.70	326,799	213.70	31.49 ic	17.33 ic	13.95 ic	---	0.00	0.00	---	0.00	0.580	---	31.86
4.80	338,457	213.80	32.58 ic	17.69 ic	14.78 ic	---	0.00	0.00	---	0.00	0.599	---	33.07
4.90	350,116	213.90	33.62 ic	18.05 ic	15.57 ic	---	0.00	0.00	---	0.00	0.617	---	34.23
5.00	361,774	214.00	34.66 ic	18.34 ic	16.32 ic	---	0.00	0.00	---	0.00	0.636	---	35.30
5.10	378,389	214.10	35.79 ic	18.69 ic	16.96 ic	---	0.00	0.00	---	0.00	0.663	---	36.31
5.20	395,004	214.20	36.45 ic	19.11 ic	17.34 ic	---	0.00	0.00	---	0.00	0.691	---	37.13
5.30	411,619	214.30	37.23 ic	19.52 ic	17.71 ic	---	0.00	0.00	---	0.00	0.718	---	37.95
5.40	428,233	214.40	38.07 ic	19.94 ic	18.09 ic	---	0.00	0.00	---	0.00	0.746	---	38.77
5.50	444,848	214.50	38.75 ic	20.32 ic	18.44 ic	---	0.00	0.00	---	0.00	0.773	---	39.53
5.60	461,463	214.60	39.47 ic	20.70 ic	18.78 ic	---	0.00	0.00	---	0.00	0.801	---	40.28
5.70	478,078	214.70	40.18 ic	21.07 ic	19.12 ic	---	0.00	0.00	---	0.00	0.828	---	41.01
5.80	494,692	214.80	38.71 oc	20.29 ic	18.41 ic	---	0.00	0.00	---	0.00	0.856	---	39.56
5.90	511,307	214.90	39.12 oc	20.51 ic	18.61 ic	---	0.00	0.00	---	0.00	0.883	---	40.01
6.00	527,922	215.00	39.53 oc	20.73 ic	18.81 ic	---	0.00	0.00	---	0.00	0.911	---	40.44
6.10	549,195	215.10	40.26 oc	20.55 ic	18.65 ic	---	1.05	0.00	---	0.00	0.926	---	41.19
6.20	570,468	215.20	41.23 oc	20.06 ic	18.20 ic	---	2.98	0.00	---	0.00	0.941	---	42.17
6.30	591,741	215.30	42.34 oc	19.33 ic	17.54 ic	---	5.47	0.00	---	0.00	0.956	---	43.30
6.40	613,014	215.40	43.53 oc	18.41 ic	16.70 ic	---	8.43	0.00	---	0.00	0.971	---	44.50
6.50	634,287	215.50	44.78 oc	17.30 ic	15.70 ic	---	11.77	0.00	---	0.00	0.986	---	45.76
6.60	655,560	215.60	46.05 oc	16.03 ic	14.54 ic	---	15.48	0.00	---	0.00	1.001	---	47.05
6.70	676,833	215.70	47.31 oc	14.58 ic	13.23 ic	---	19.50	0.00	---	0.00	1.016	---	48.32
6.80	698,107	215.80	48.35 oc	13.39 ic	12.15 ic	---	22.81 s	0.00	---	0.00	1.031	---	49.38
6.90	719,380	215.90	49.22 oc	12.49 ic	11.33 ic	---	25.39 s	0.00	---	0.00	1.046	---	50.26
7.00	740,652	216.00	49.99 oc	11.71 ic	10.62 ic	---	27.66 s	0.00	---	0.00	1.061	---	51.05
7.10	765,036	216.10	50.92 oc	10.39 ic	9.43 ic	---	28.56 s	2.53	---	0.00	1.075	---	51.99
7.20	789,419	216.20	51.86 oc	8.77 ic	7.96 ic	---	27.98 s	7.15	---	0.00	1.088	---	52.94
7.30	813,803	216.30	52.66 oc	7.32 ic	6.64 ic	---	26.86 s	11.83 s	---	0.00	1.102	---	53.75
7.40	838,186	216.40	53.31 oc	6.31 ic	5.73 ic	---	26.15 s	15.11 s	---	0.00	1.116	---	54.42
7.50	862,570	216.50	53.88 oc	5.53 ic	5.02 ic	---	25.57 s	17.76 s	---	0.00	1.130	---	55.01
7.60	886,953	216.60	54.41 oc	4.90 ic	4.44 ic	---	25.07 s	19.98 s	---	0.00	1.143	---	55.53
7.70	911,337	216.70	54.91 oc	4.38 ic	3.98 ic	---	24.65 s	21.88 s	---	0.00	1.157	---	56.05
7.80	935,720	216.80	55.38 oc	3.96 ic	3.59 ic	---	24.30 s	23.53 s	---	0.00	1.171	---	56.55
7.90	960,104	216.90	55.84 oc	3.59 ic	3.26 ic	---	24.00 s	24.97 s	---	0.00	1.185	---	57.02
8.00	984,487	217.00	56.28 oc	3.29 ic	2.98 ic	---	23.74 s	26.26 s	---	0.00	1.198	---	57.48
8.10	1,012,033	217.10	56.72 oc	3.02 ic	2.74 ic	---	23.50 s	27.39 s	---	0.00	1.214	---	57.88
8.20	1,039,578	217.20	57.15 oc	2.80 ic	2.54 ic	---	23.34 s	28.47 s	---	0.00	1.230	---	58.38
8.30	1,067,124	217.30	57.57 oc	2.60 ic	2.36 ic	---	23.14 s	29.38 s	---	0.00	1.245	---	58.72
8.40	1,094,669	217.40	57.98 oc	2.42 ic	2.20 ic	---	23.01 s	30.27 s	---	0.00	1.261	---	59.16
8.50	1,122,214	217.50	58.39 oc	2.27 ic	2.06 ic	---	22.90 s	31.08 s	---	0.00	1.276	---	59.57
8.60	1,149,760	217.60	58.80 oc	2.13 ic	1.93 ic	---	22.79 s	31.82 s	---	0.00	1.292	---	59.97
8.70	1,177,305	217.70	59.20 oc	2.01 ic	1.82 ic	---	22.74 s	32.57 s	---	0.00	1.307	---	60.46
8.80	1,204,851	217.80	59.60 oc	1.90 ic	1.72 ic	---	22.67 s	33.24 s	---	0.00	1.323	---	60.85
8.90	1,232,396	217.90	59.99 oc	1.80 ic	1.63 ic	---	22.59 s	33.83 s	---	0.00	1.338	---	61.19
9.00	1,259,942	218.00	60.38 oc	1.71 ic	1.55 ic	---	22.57 s	34.46 s	---	0.00	1.354	---	61.65
9.10	1,292,018	218.10	60.77 oc	1.62 ic	1.47 ic	---	22.48 s	34.95 s	---	74.77	1.381	---	136.68
9.20	1,324,094	218.20	61.16 oc	1.55 ic	1.40 ic	---	22.47 s	35.52 s	---	211.49	1.407	---	273.84
9.30	1,356,170	218.30	61.54 oc	1.48 ic	1.34 ic	---	22.47 s	36.06 s	---	388.53	1.434	---	451.32
9.40	1,388,247	218.40	61.92 oc	1.42 ic	1.29 ic	---	22.51 s	36.63 s	---	598.18	1.461	---	661.49
9.50	1,420,323	218.50	62.30 oc	1.36 ic	1.23 ic	---	22.45 s	37.01 s	---	835.98	1.487	---	899.52
9.60	1,452,399	218.60	62.67 oc	1.30 ic	1.18 ic	---	22.44 s	37.47 s	---	1098.93	1.514	---	1162.84
9.70	1,484,475	218.70	63.04 oc	1.26 ic	1.14 ic	---	22.51 s	38.01 s	---	1384.81	1.540	---	1449.27
9.80	1,516,552	218.80	63.41 oc	1.21 ic	1.10 ic	---	22.52 s	38.44 s	---	1691.91	1.567	---	1756.74
9.90	1,548,628	218.90	63.78 oc	1.16 ic	1.05 ic	---	22.44 s	38.71 s	---	2018.86	1.594	---	2083.81
10.00	1,580,704	219.00	64.15 oc	1.13 ic	1.02 ic	---	22.58 s	39.31 s	---	2364.30	1.620	---	2429.96

...End

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	15.64	1	733	66,519	------	------	------	DA-1A
2	SCS Runoff	21.75	1	739	108,626	------	------	------	DA-2
3	SCS Runoff	78.17	1	761	594,545	------	------	------	DA-3A
4	SCS Runoff	3.142	1	742	17,949	------	------	------	DA-4
5	SCS Runoff	17.62	1	749	113,716	------	------	------	DA-5A
6	SCS Runoff	5.715	1	730	22,623	------	------	------	DA-1B
7	SCS Runoff	45.75	1	732	189,849	------	------	------	DA-3B
8	SCS Runoff	0.916	1	725	2,828	------	------	------	DA-3C
9	SCS Runoff	5.103	1	734	25,132	------	------	------	DA-5B
10	Combine	24.29	1	745	156,797	4, 5, 9	------	------	DA-4&5
11	Combine	41.40	1	735	197,768	1, 2, 6,	------	------	DA-1&2
12	Combine	92.34	1	755	787,221	3, 7, 8,	------	------	DA-3
13	Combine	151.11	1	740	1,141,785	10, 11, 12	------	------	George Field Park
14	Reservoir	40.18	1	857	1,060,571	13	214.70	495,647	George Field Pond

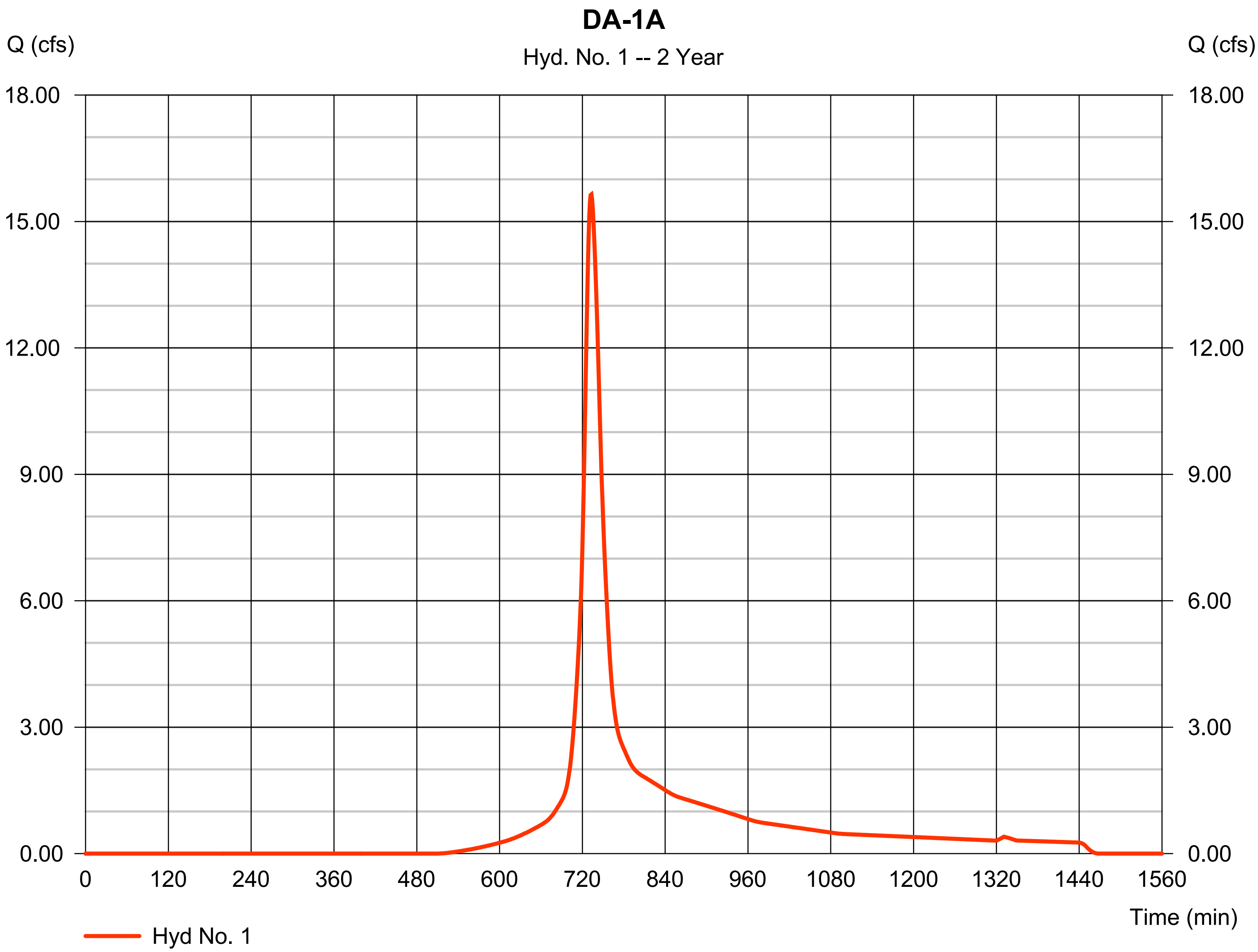
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 15.64 cfs
Storm frequency	= 2 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 66,519 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

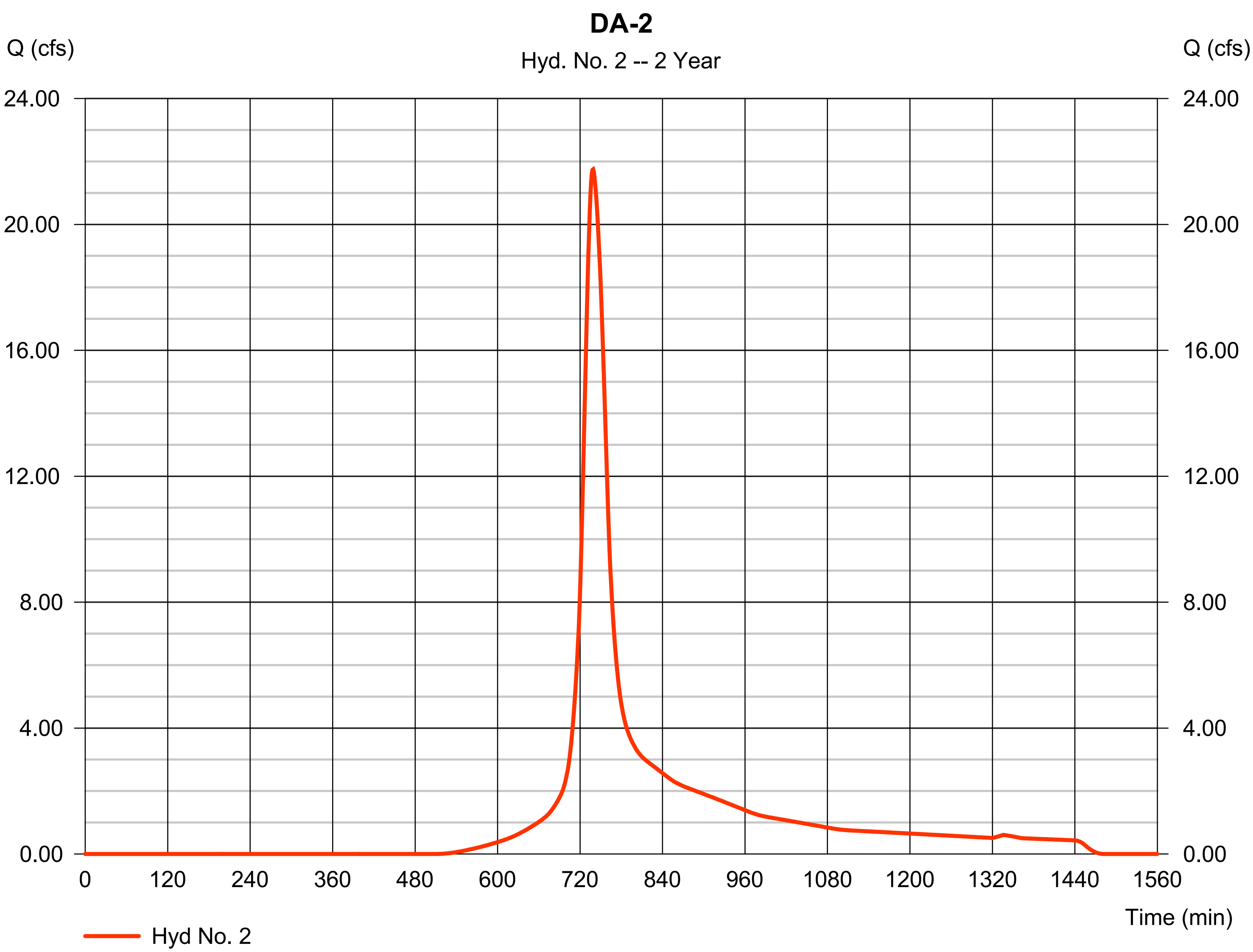


Hydrograph Report

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 21.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 108,626 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

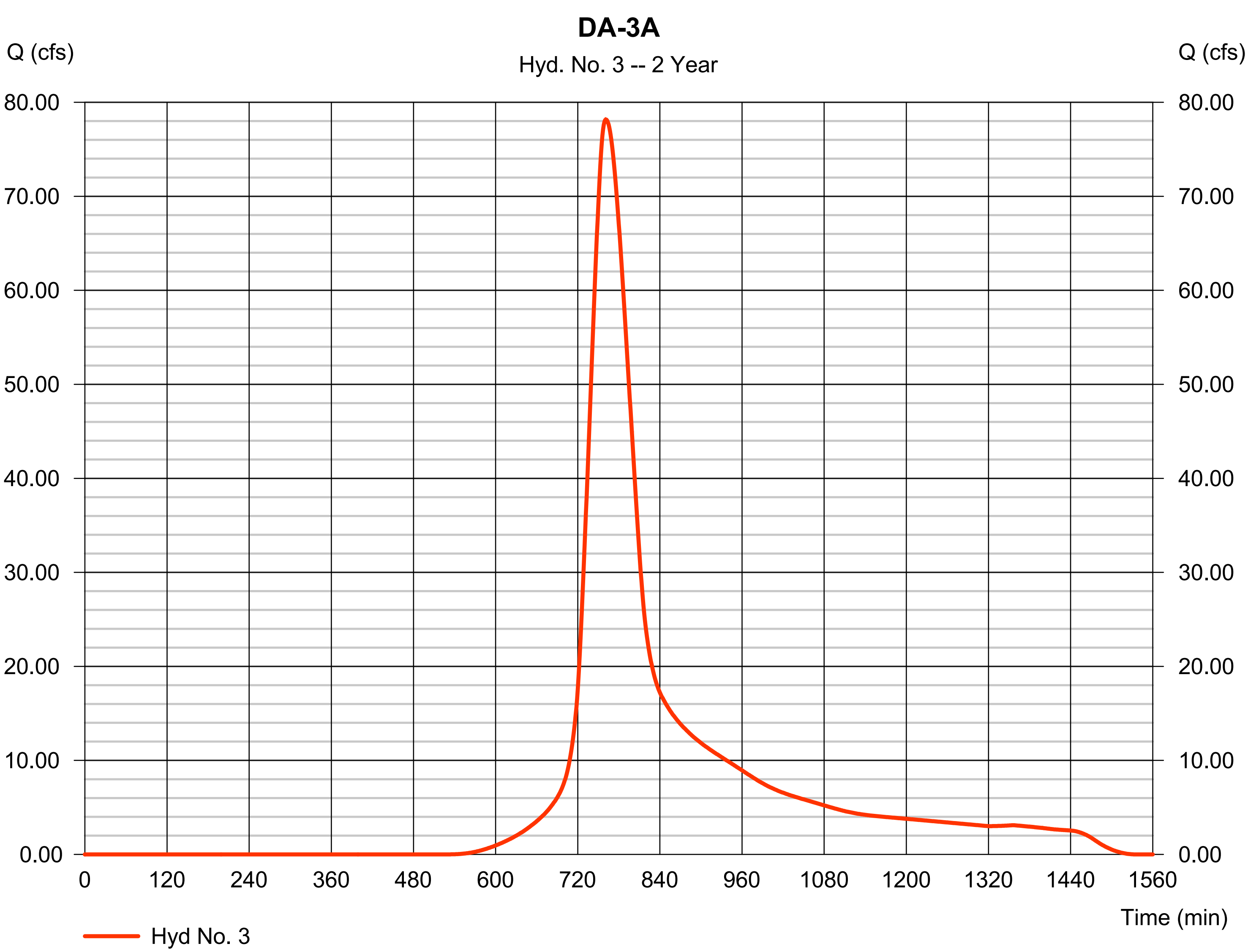
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 78.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 594,545 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



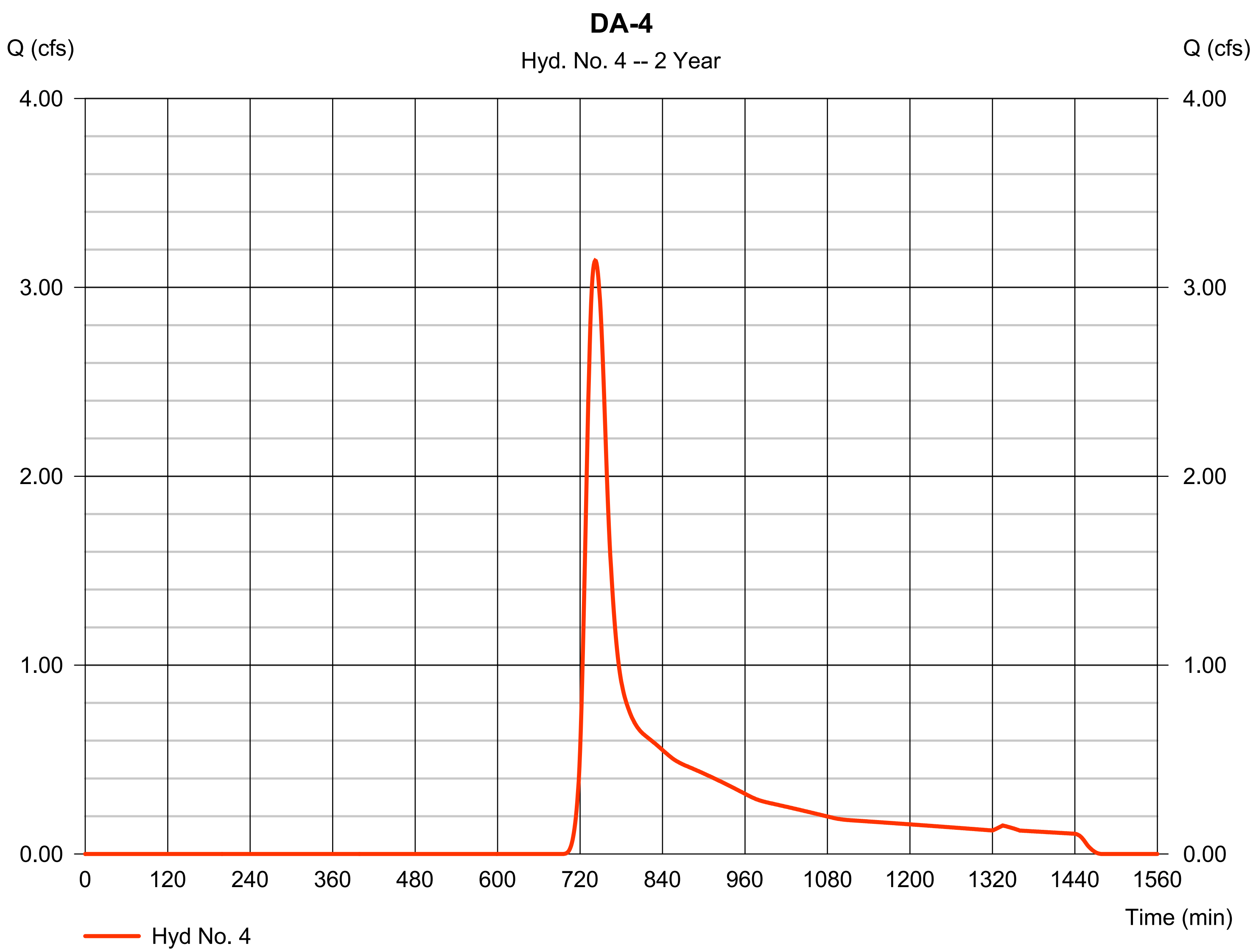
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 3.142 cfs
Storm frequency	= 2 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 17,949 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



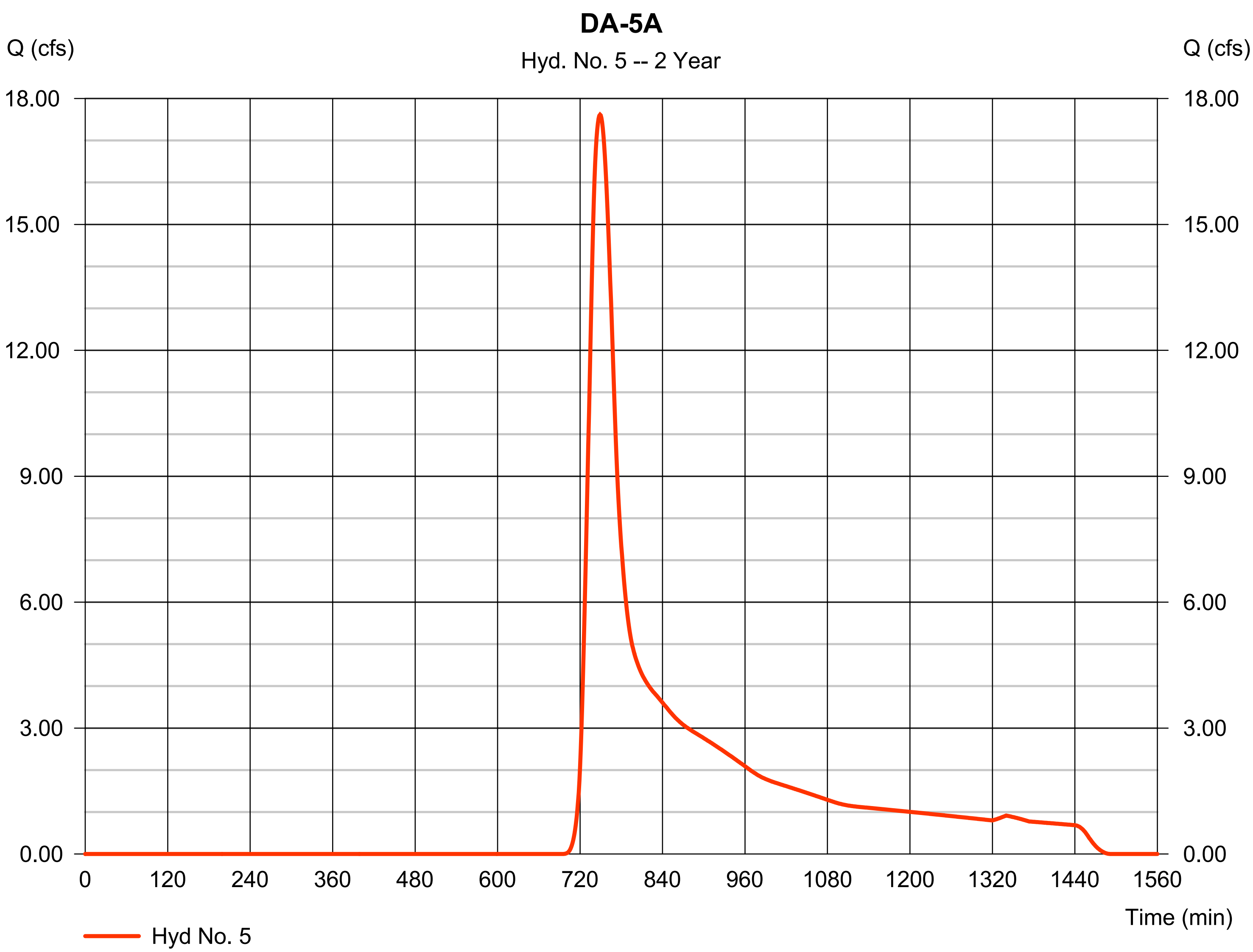
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 17.62 cfs
Storm frequency	= 2 yrs	Time to peak	= 749 min
Time interval	= 1 min	Hyd. volume	= 113,716 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



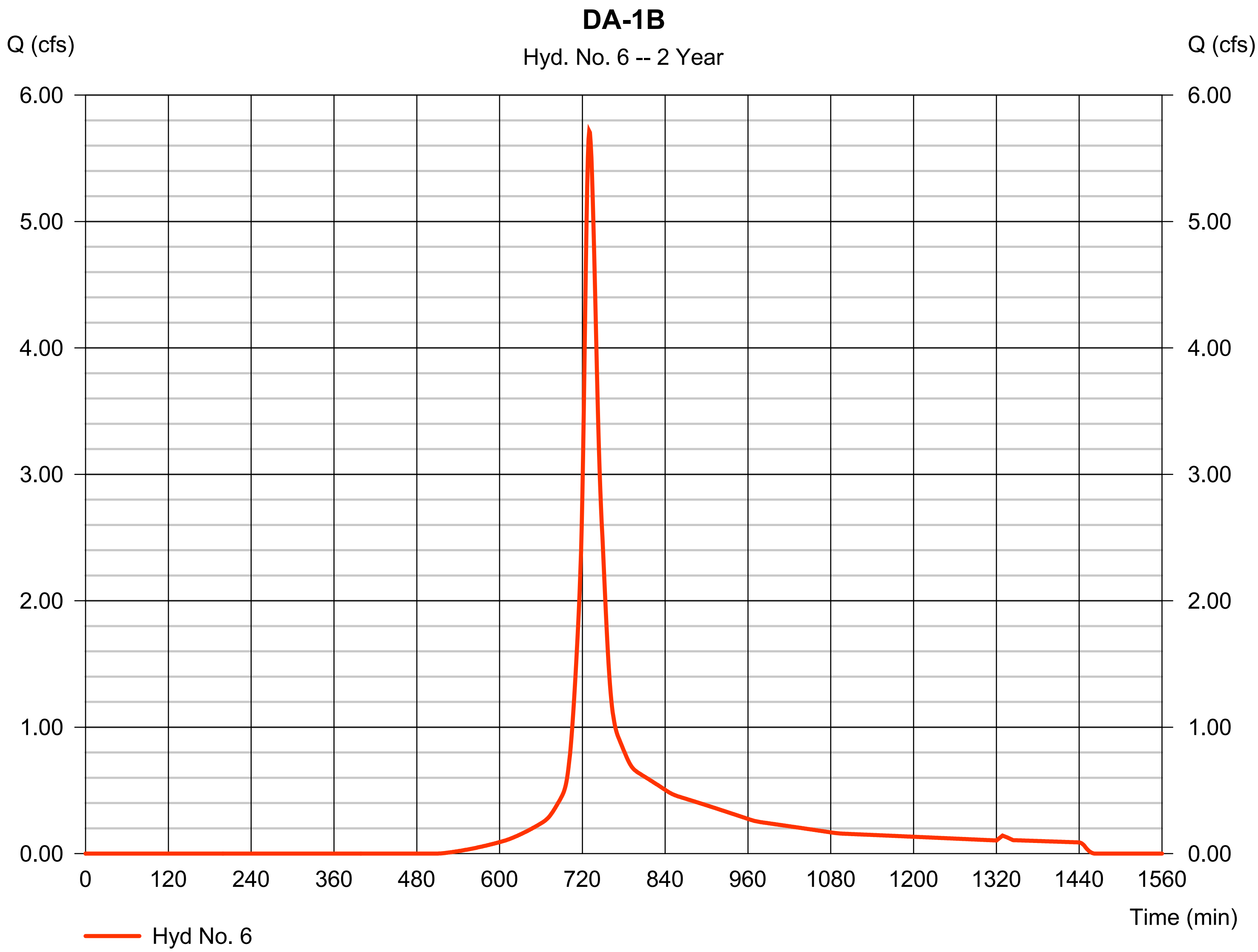
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.715 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 22,623 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



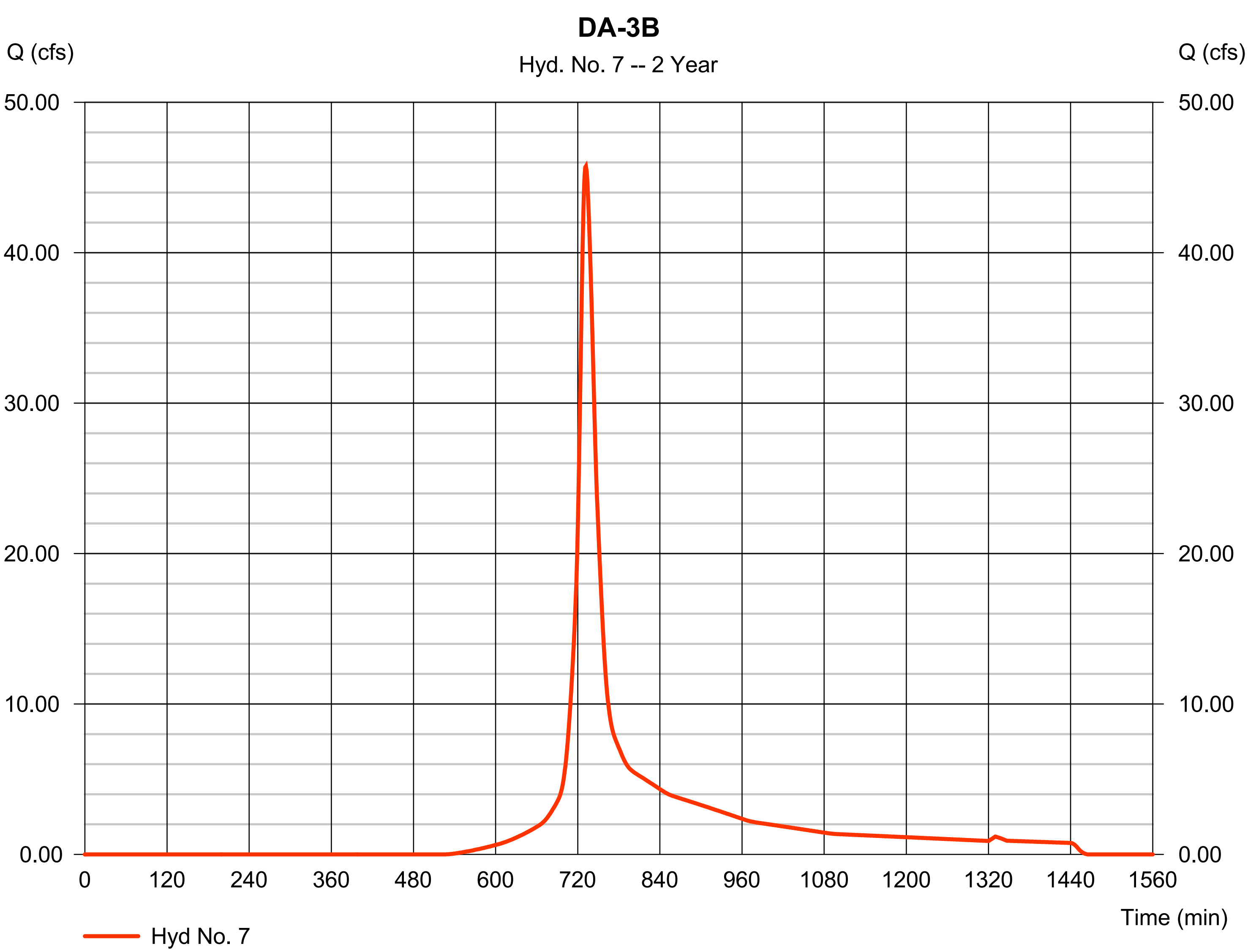
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 45.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 189,849 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



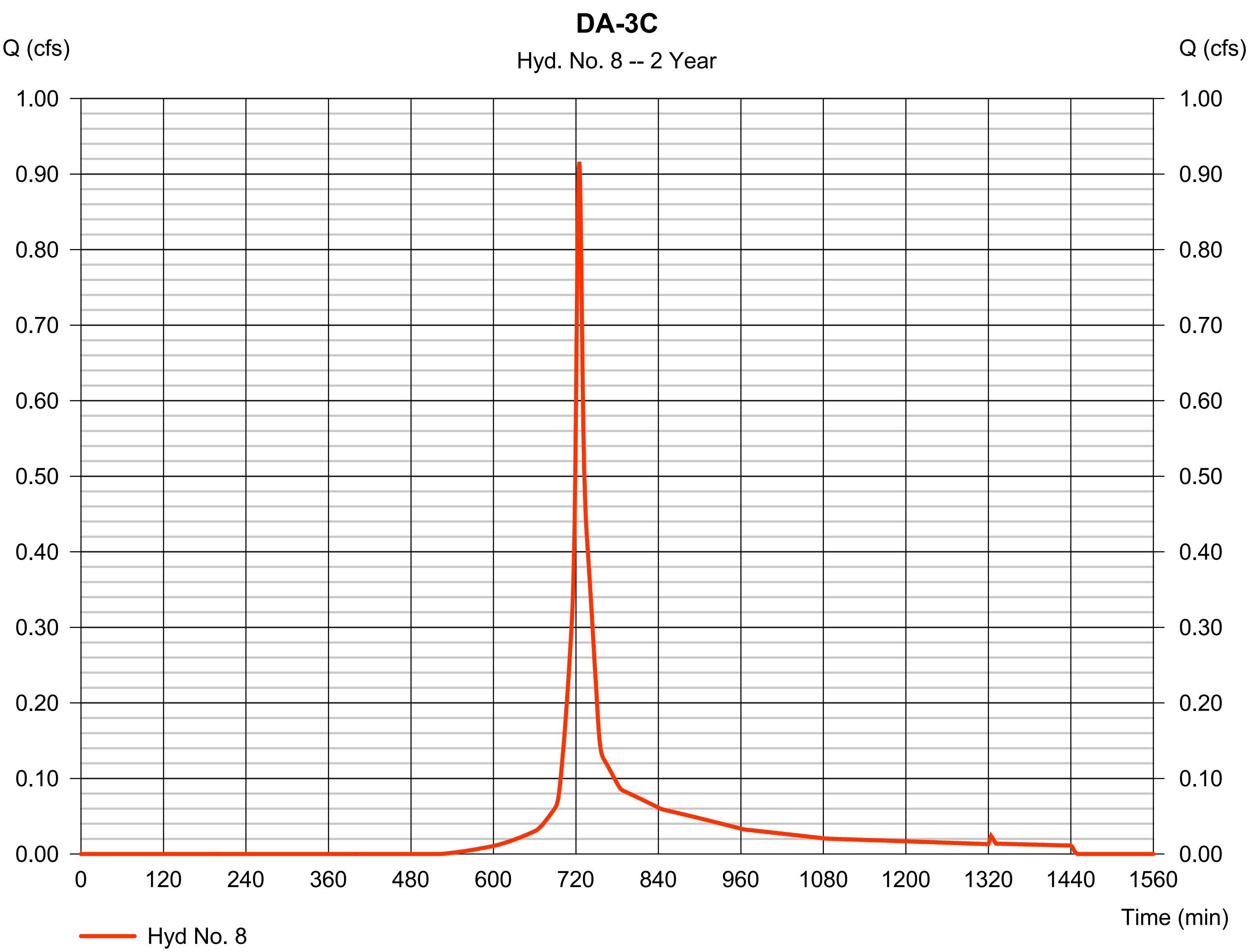
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.916 cfs
Storm frequency	= 2 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 2,828 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

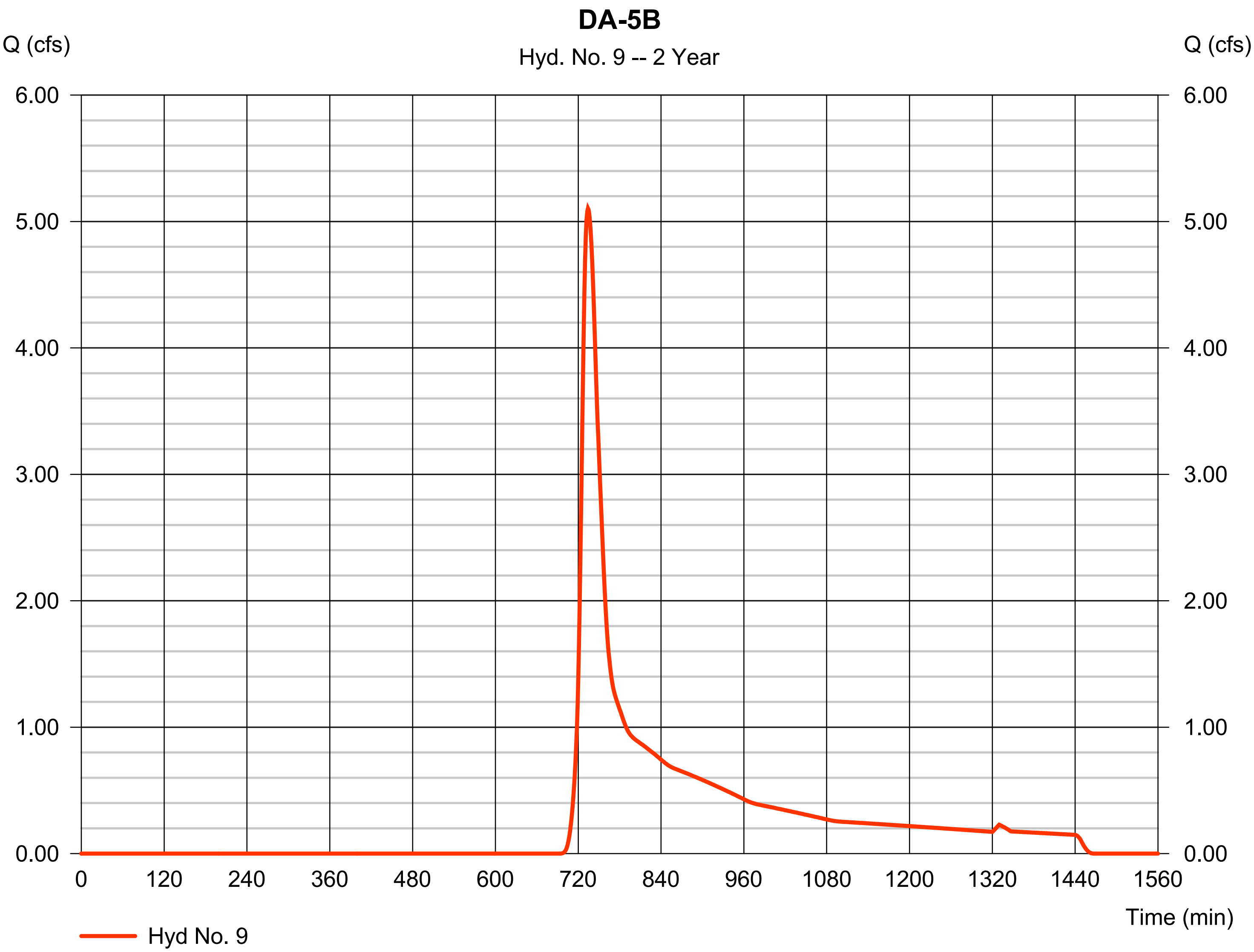


Hydrograph Report

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.103 cfs
Storm frequency	= 2 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 25,132 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



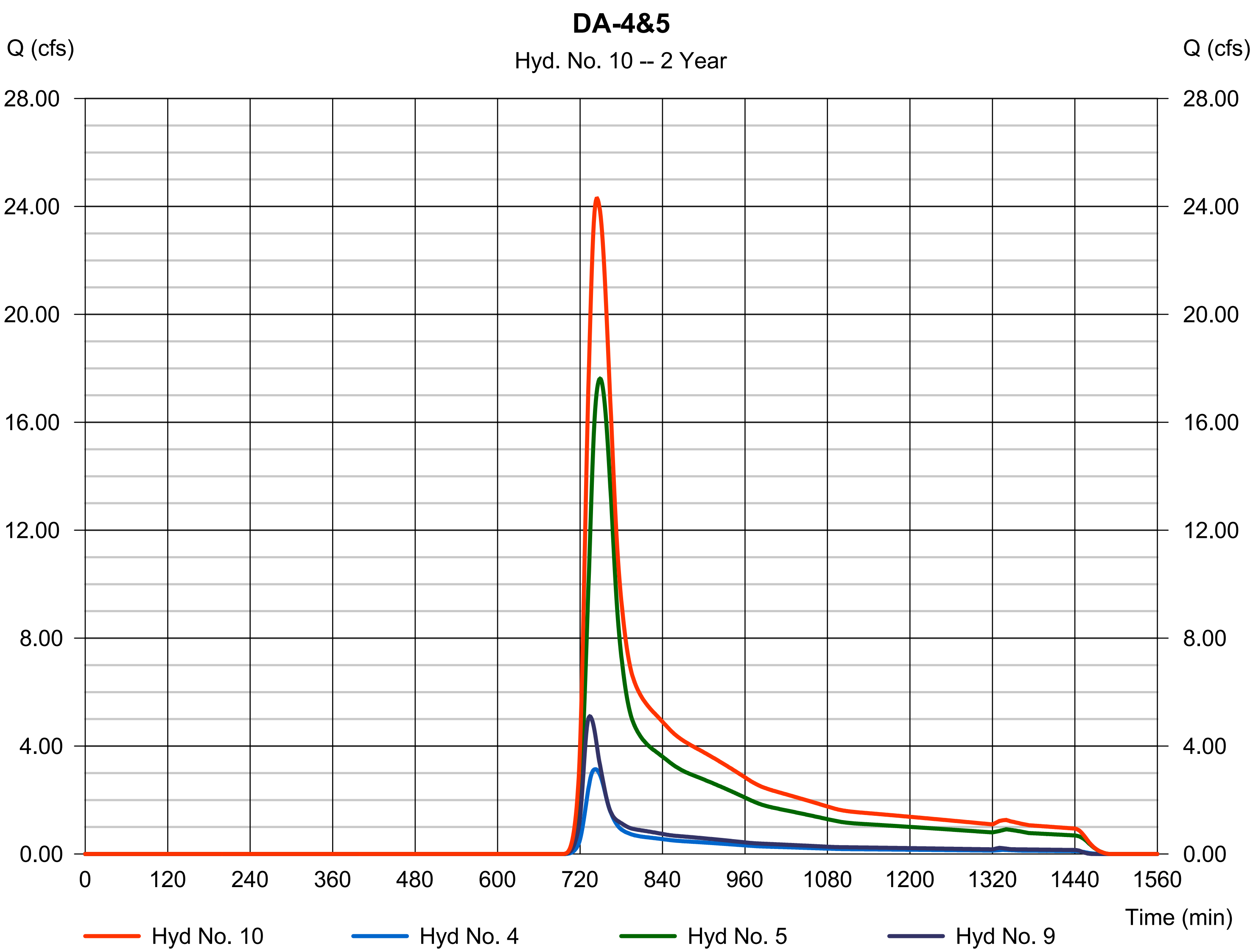
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 24.29 cfs
Storm frequency	= 2 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 156,797 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



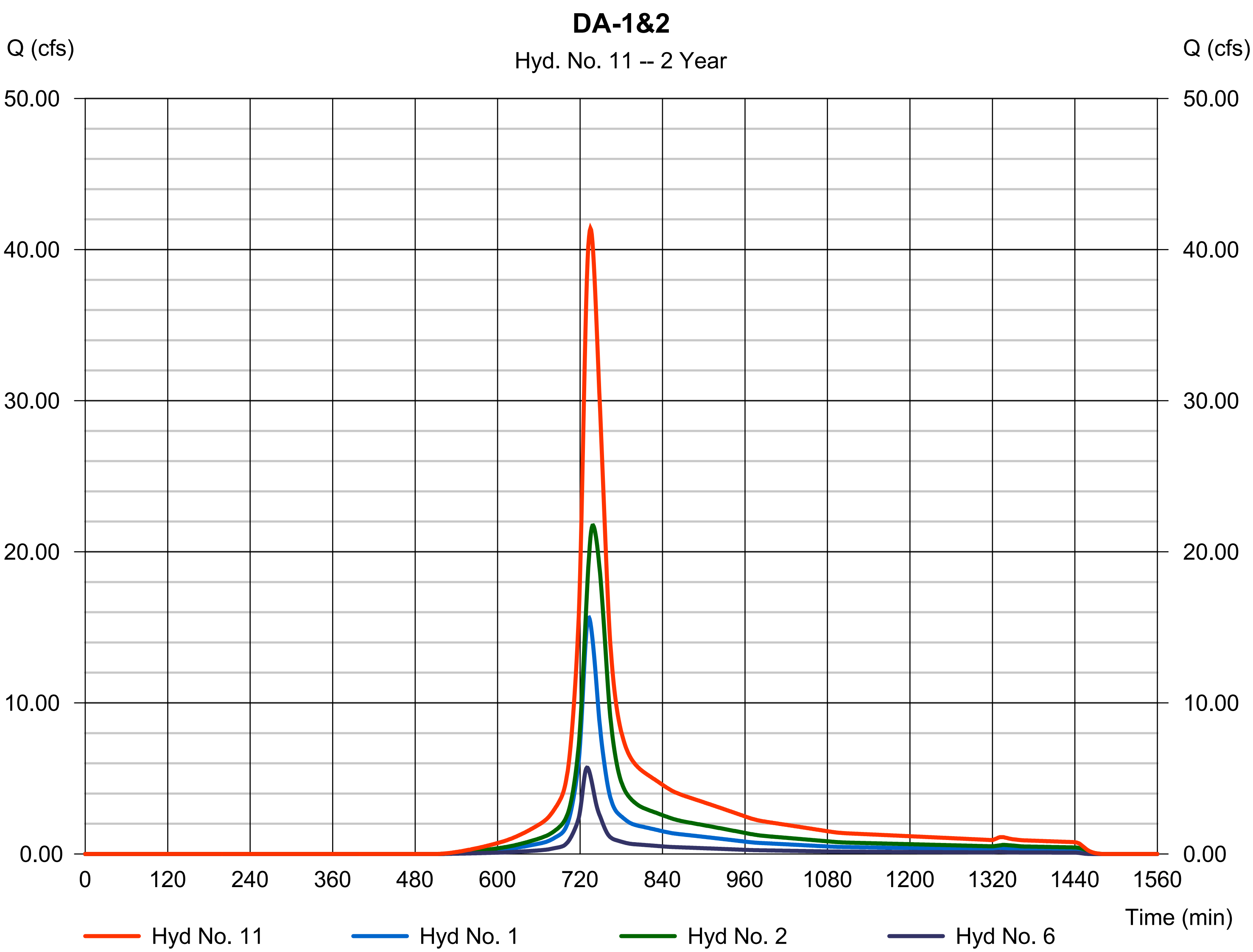
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 41.40 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 197,768 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



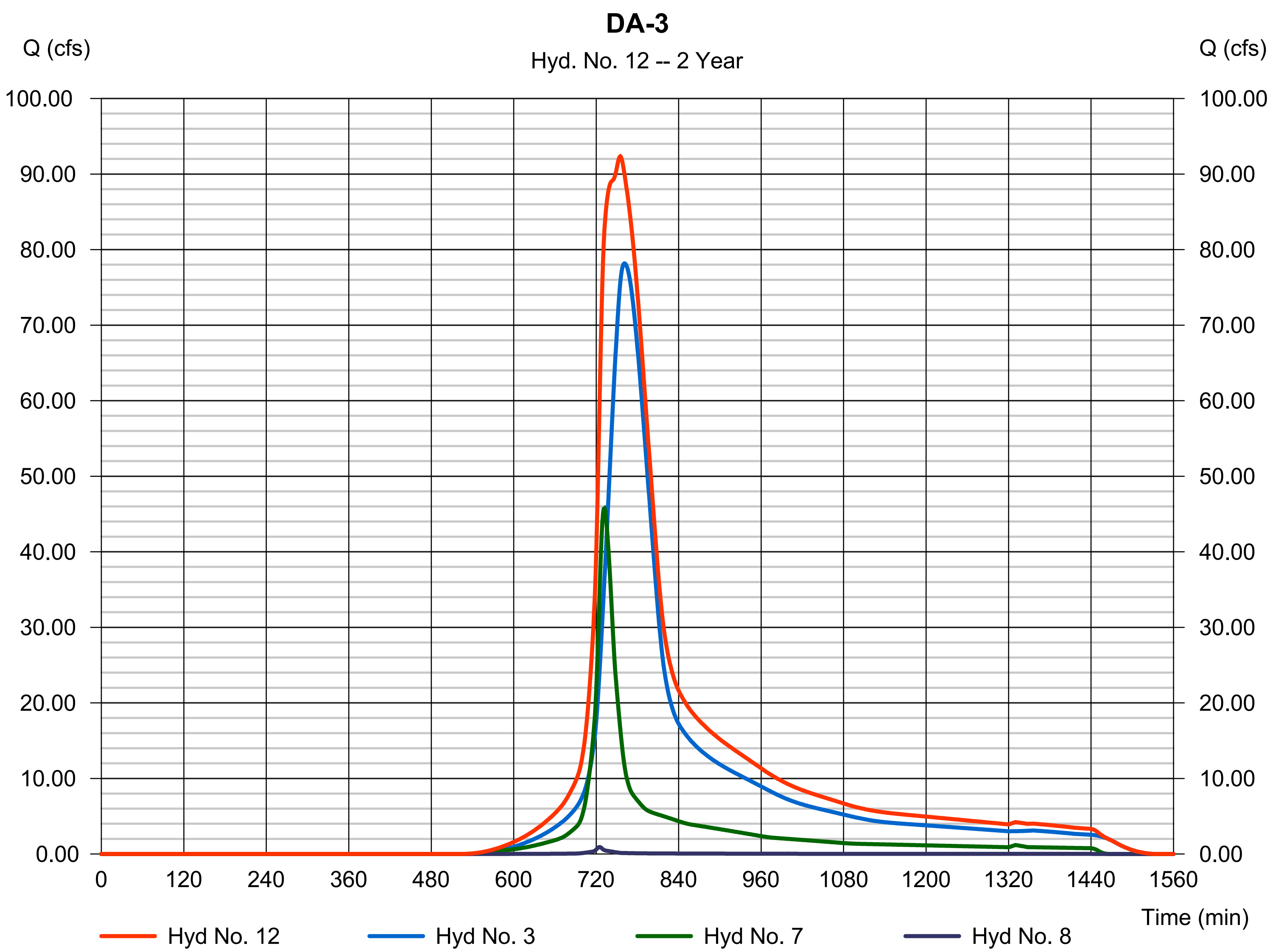
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 92.34 cfs
Storm frequency	= 2 yrs	Time to peak	= 755 min
Time interval	= 1 min	Hyd. volume	= 787,221 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



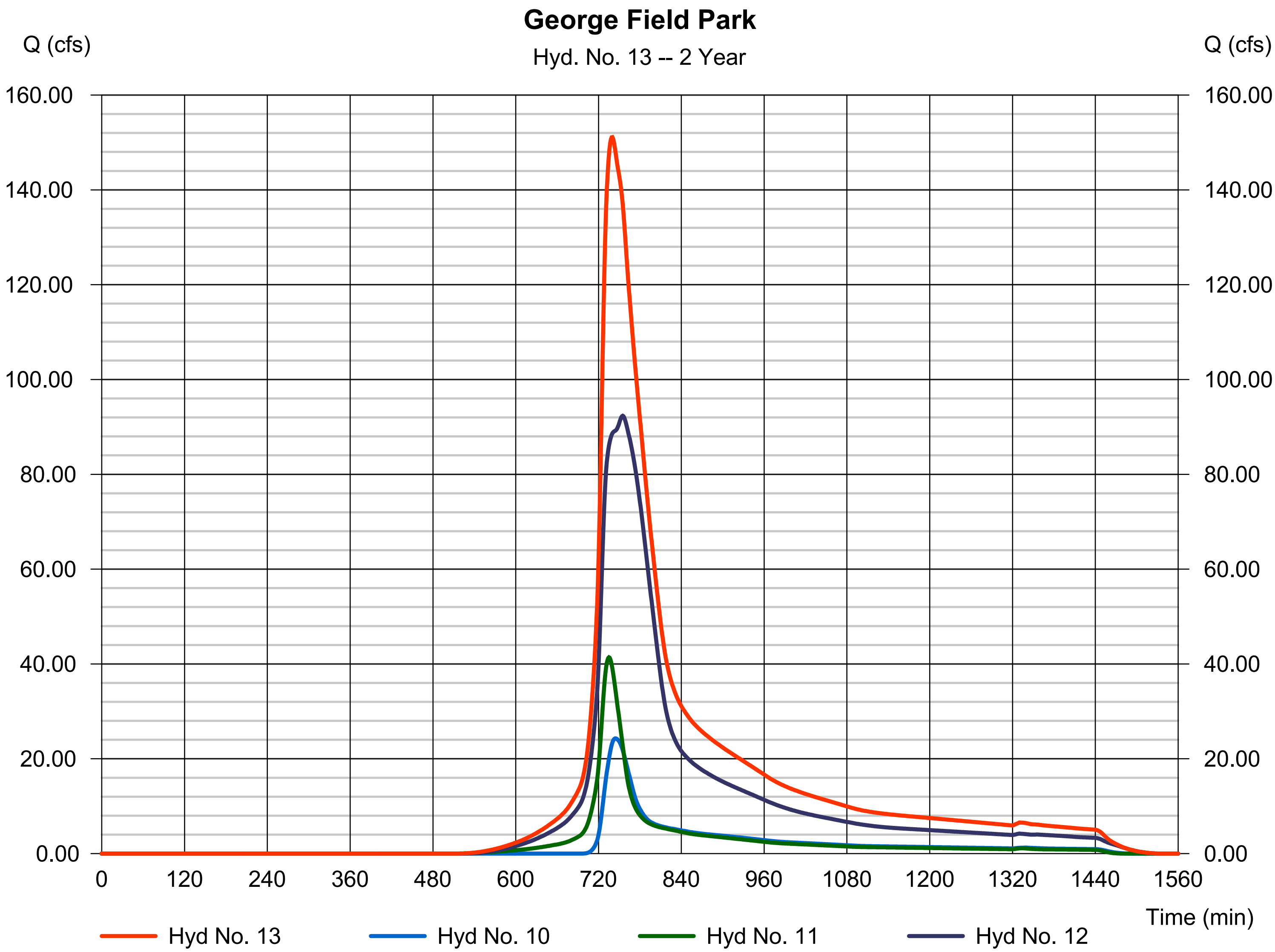
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 151.11 cfs
Storm frequency	= 2 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 1,141,785 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

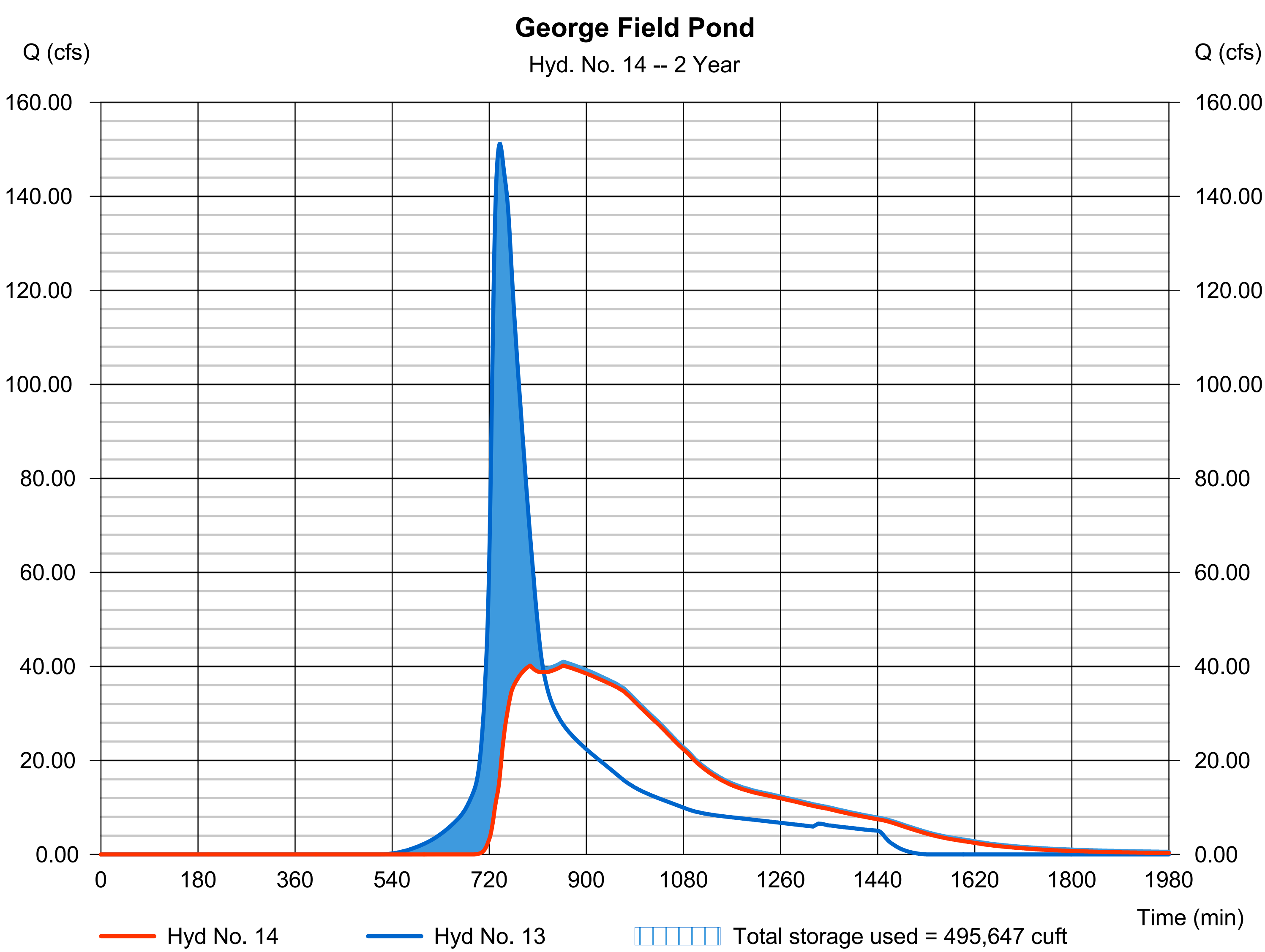
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 40.18 cfs
Storm frequency	= 2 yrs	Time to peak	= 857 min
Time interval	= 1 min	Hyd. volume	= 1,060,571 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 214.70 ft
Reservoir name	= George Field Park	Max. Storage	= 495,647 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	23.30	1	732	98,891	------	------	------	DA-1A
2	SCS Runoff	32.42	1	738	161,489	------	------	------	DA-2
3	SCS Runoff	118.05	1	760	891,484	------	------	------	DA-3A
4	SCS Runoff	6.143	1	739	31,981	------	------	------	DA-4
5	SCS Runoff	34.39	1	746	202,611	------	------	------	DA-5A
6	SCS Runoff	8.512	1	730	33,632	------	------	------	DA-1B
7	SCS Runoff	68.88	1	731	284,667	------	------	------	DA-3B
8	SCS Runoff	1.375	1	725	4,240	------	------	------	DA-3C
9	SCS Runoff	10.06	1	733	44,778	------	------	------	DA-5B
10	Combine	47.76	1	742	279,370	4, 5, 9	------	------	DA-4&5
11	Combine	61.68	1	735	294,012	1, 2, 6,	------	------	DA-1&2
12	Combine	139.11	1	755	1,180,391	3, 7, 8,	------	------	DA-3
13	Combine	240.46	1	739	1,753,773	10, 11, 12	------	------	George Field Park
14	Reservoir	52.94	1	824	1,659,824	13	216.34	824,552	George Field Pond

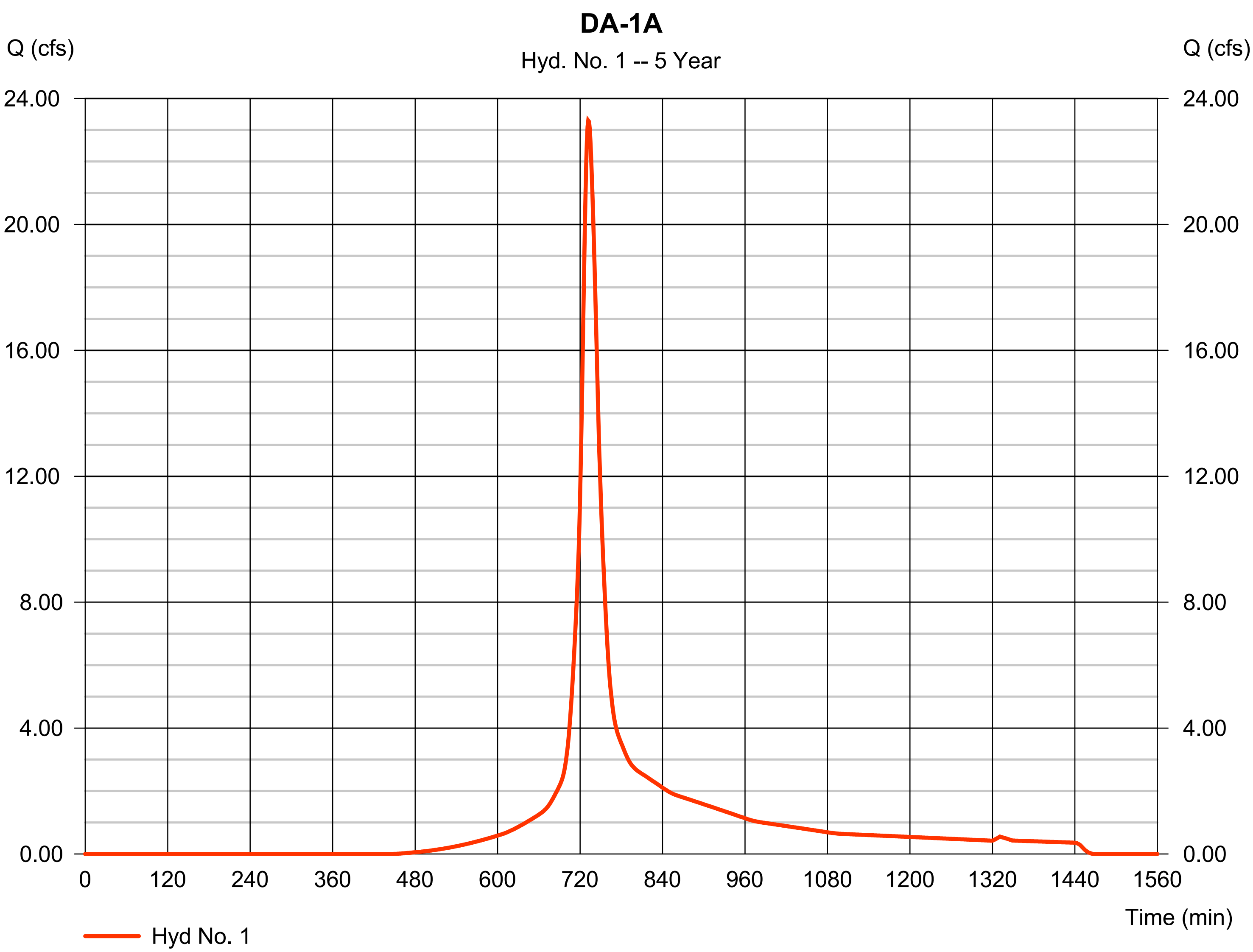
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 23.30 cfs
Storm frequency	= 5 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 98,891 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



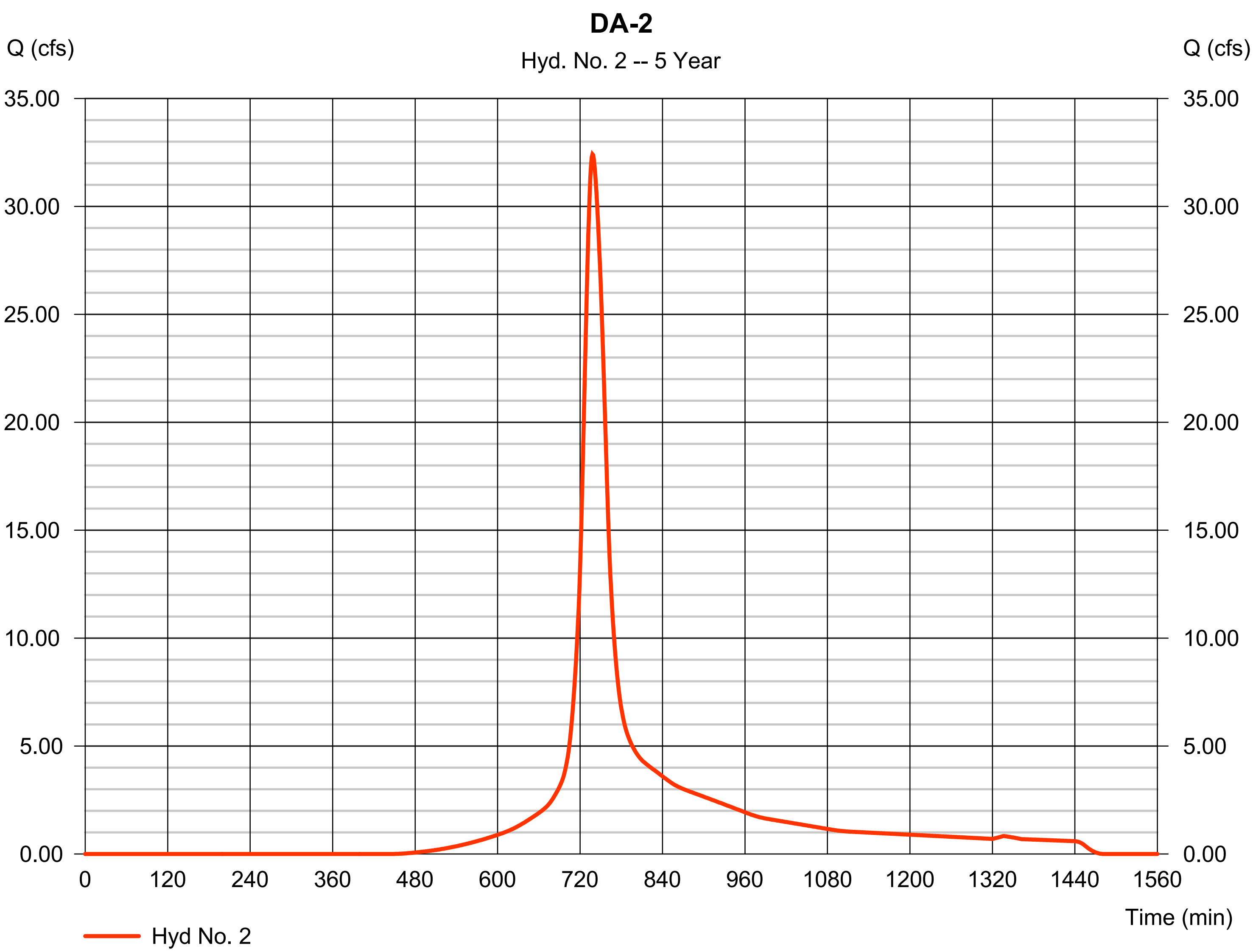
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 32.42 cfs
Storm frequency	= 5 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 161,489 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

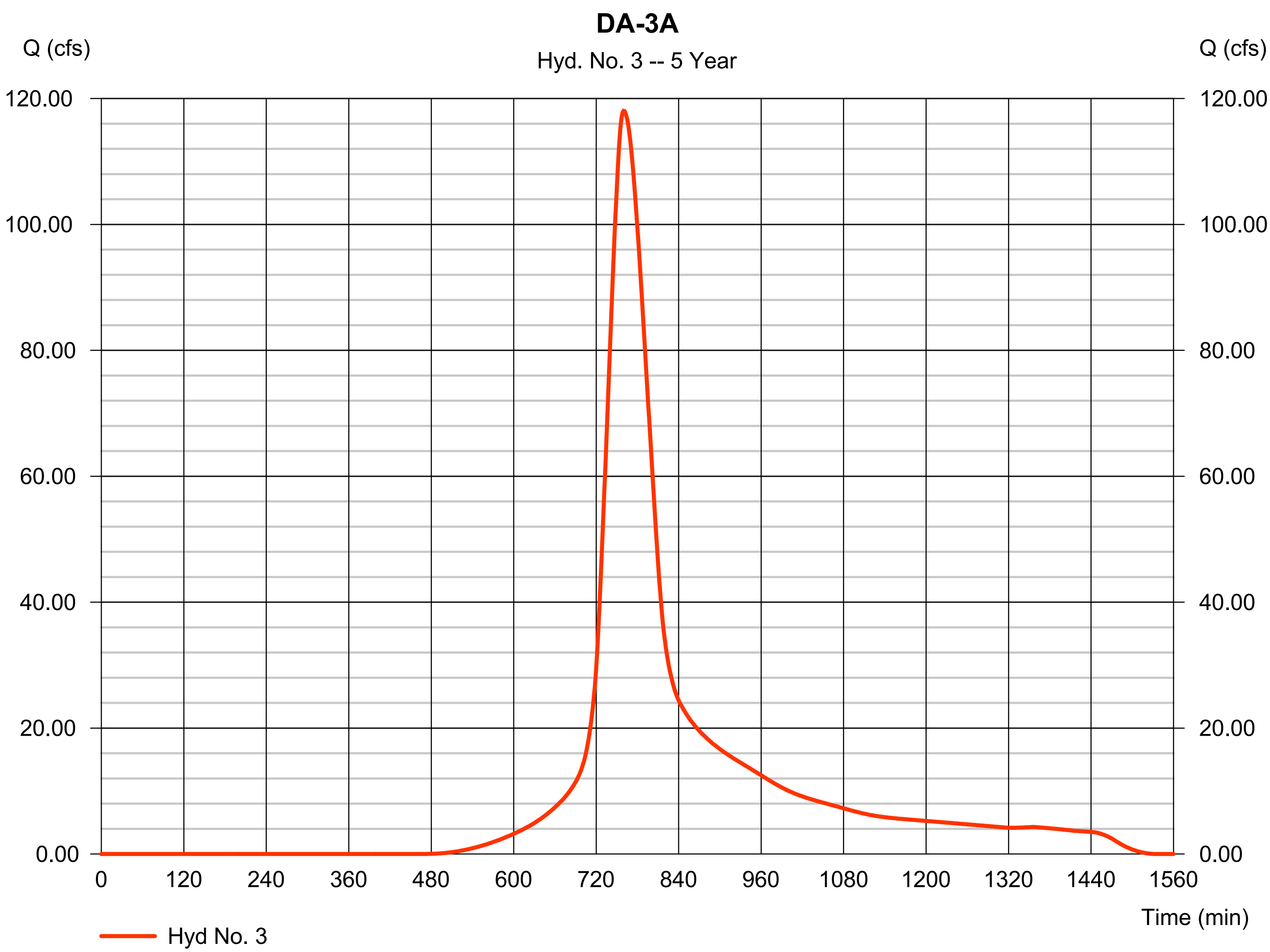
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 118.05 cfs
Storm frequency	= 5 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 891,484 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



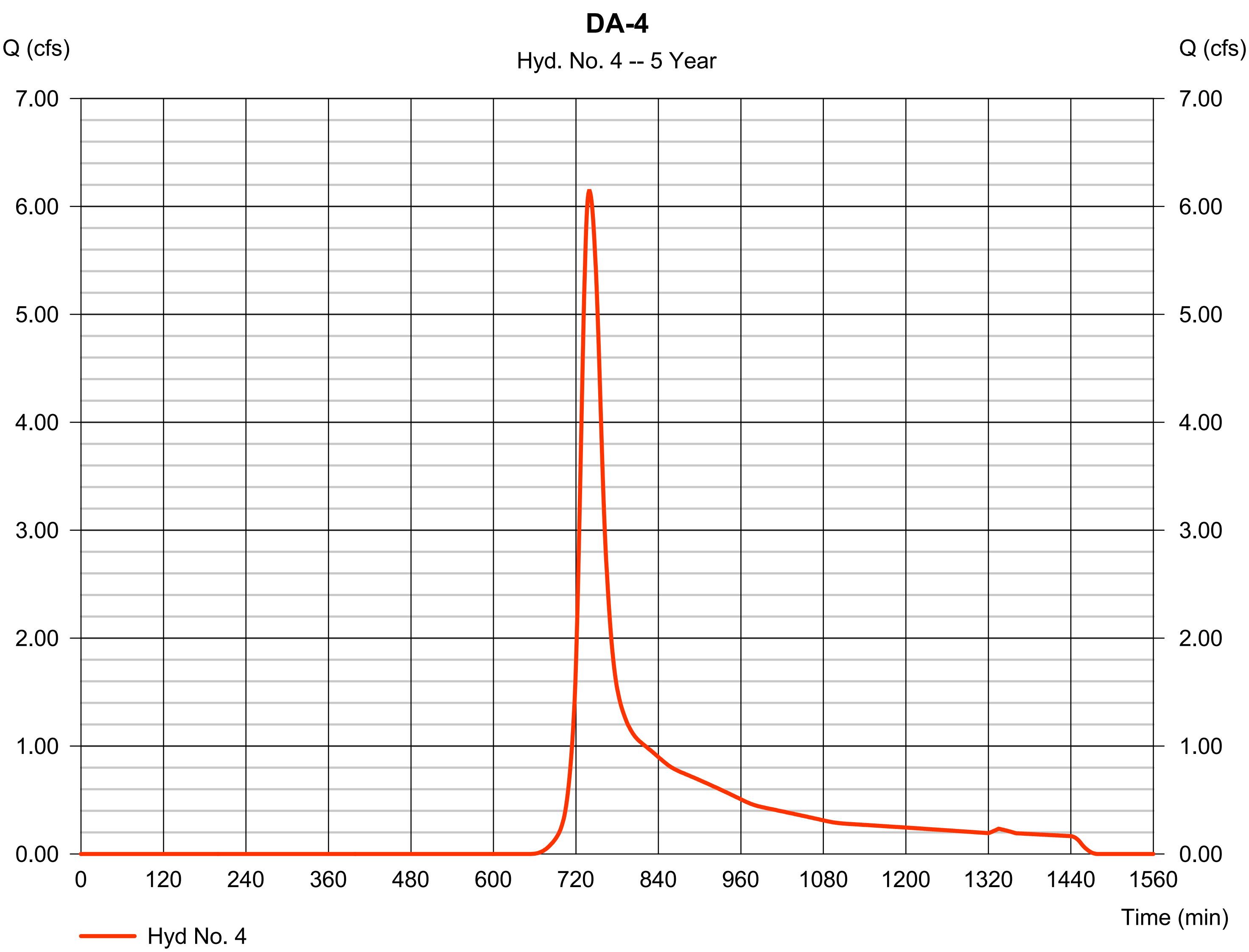
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.143 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 31,981 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



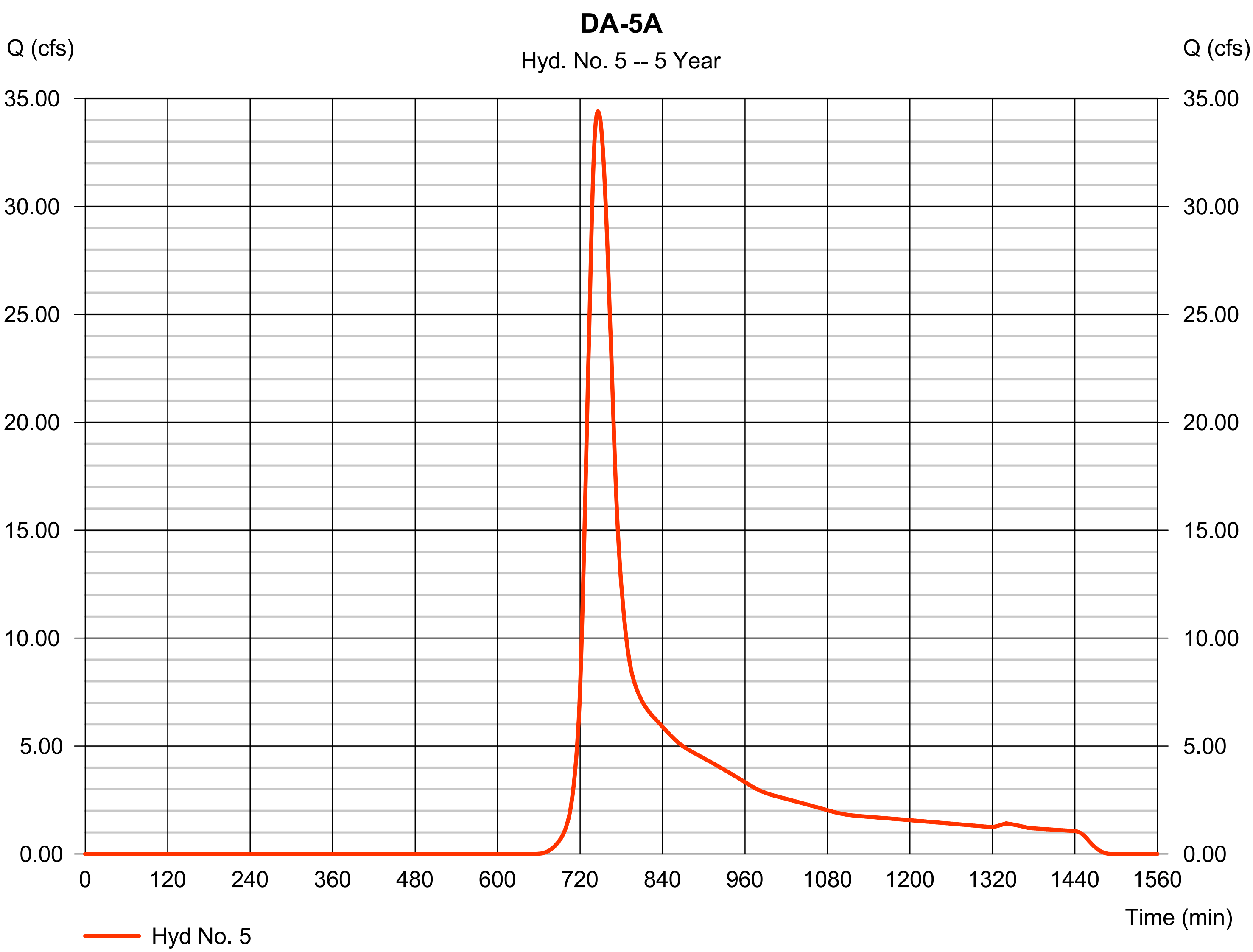
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 34.39 cfs
Storm frequency	= 5 yrs	Time to peak	= 746 min
Time interval	= 1 min	Hyd. volume	= 202,611 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



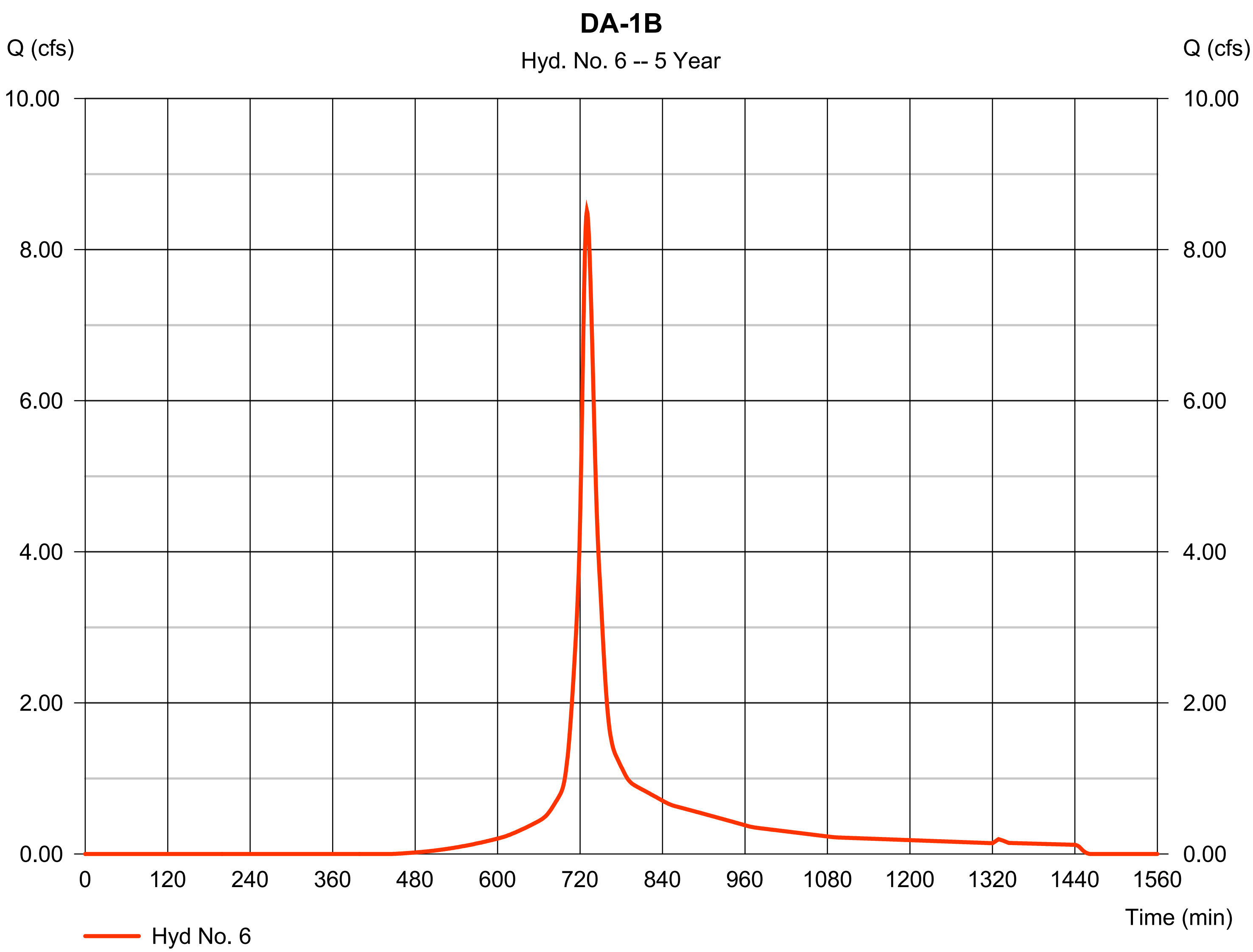
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 8.512 cfs
Storm frequency	= 5 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 33,632 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



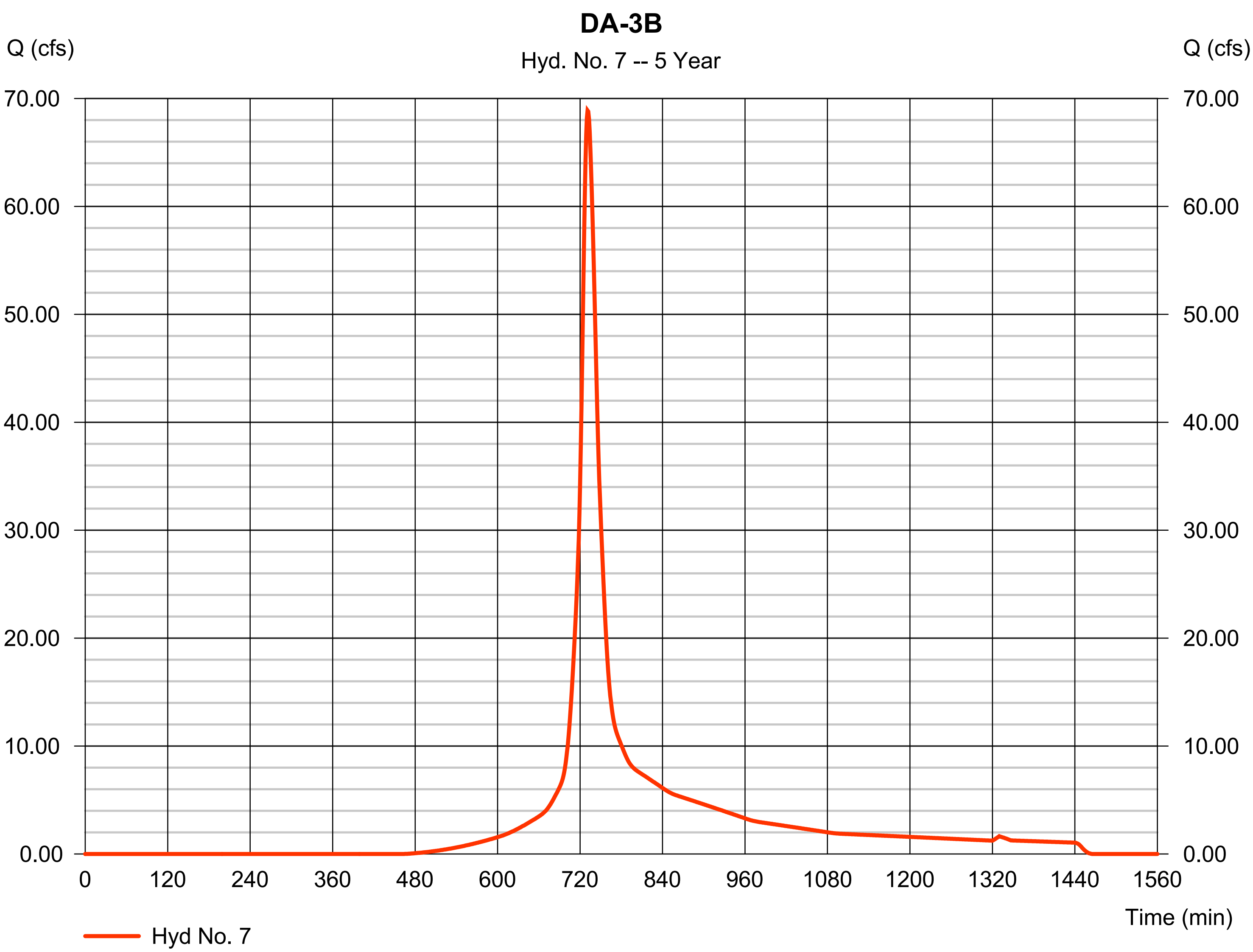
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 68.88 cfs
Storm frequency	= 5 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 284,667 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



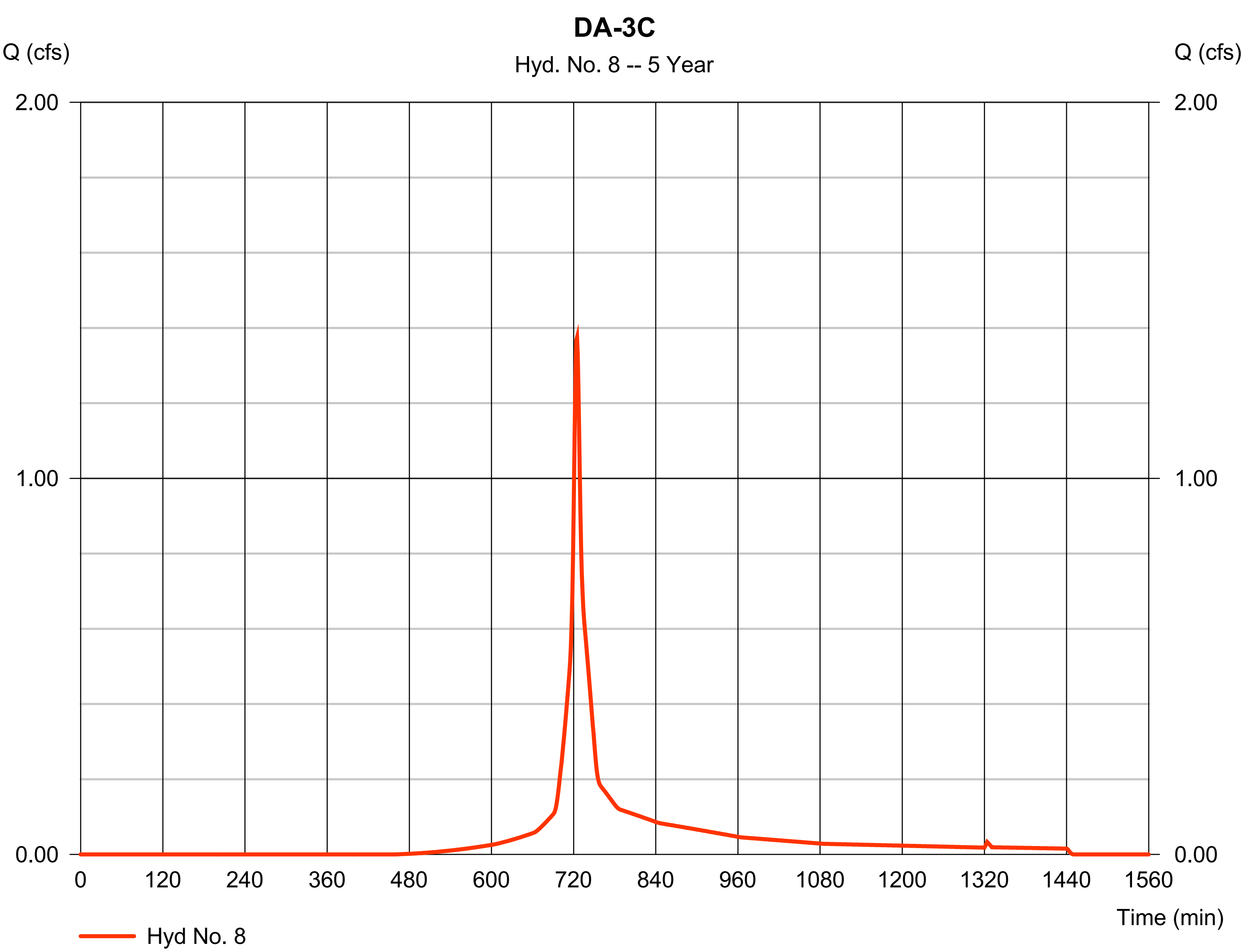
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.375 cfs
Storm frequency	= 5 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 4,240 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



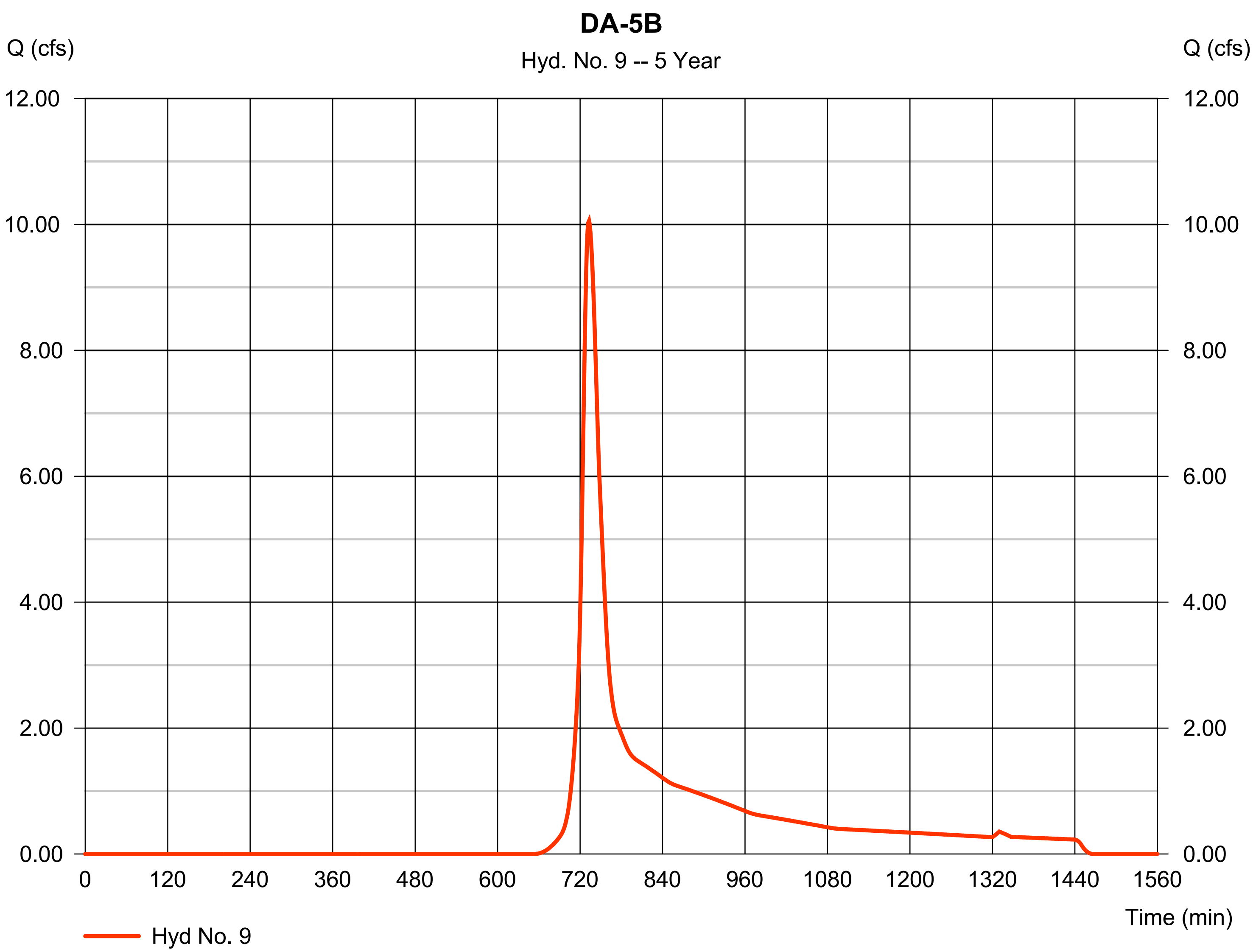
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.06 cfs
Storm frequency	= 5 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 44,778 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



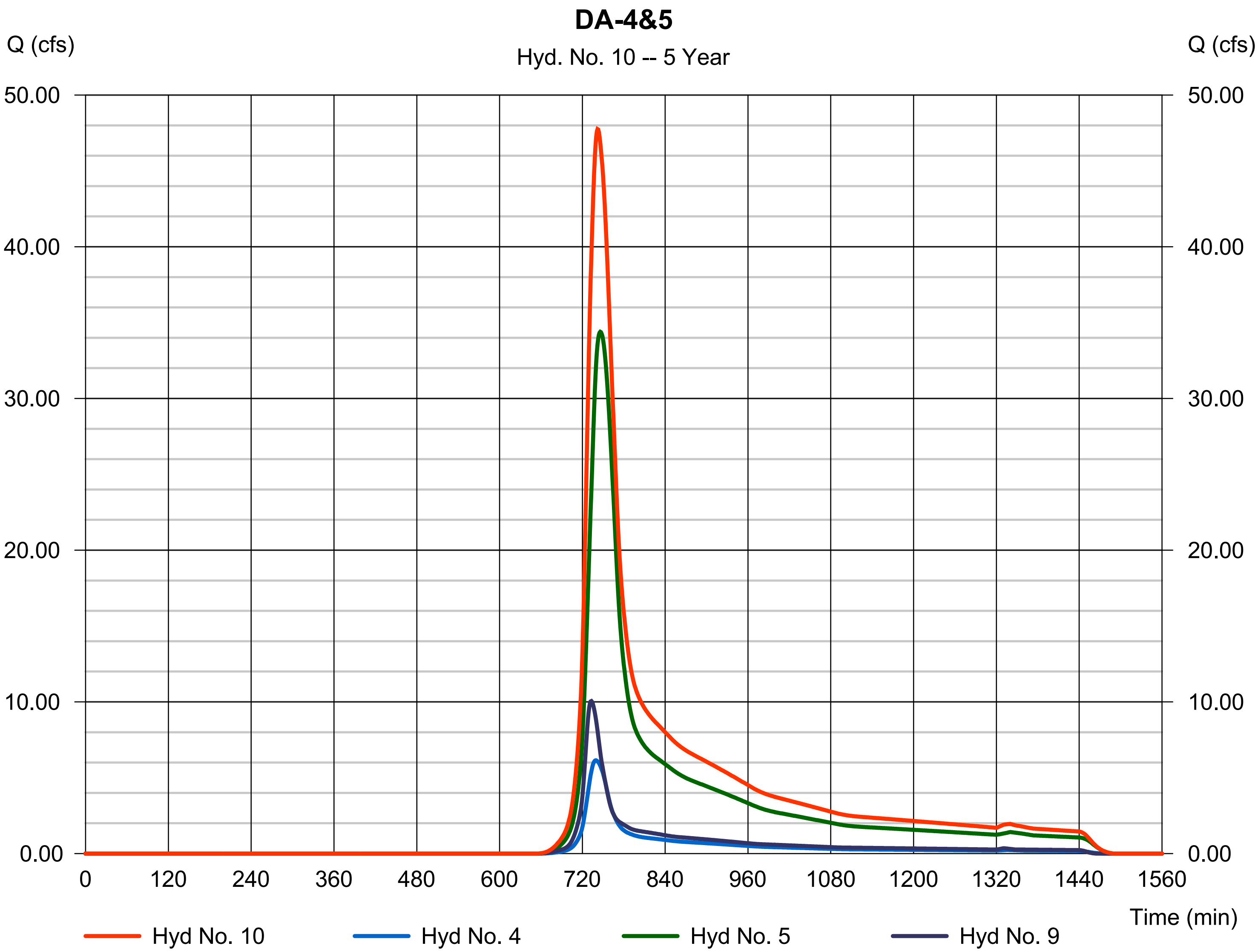
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 47.76 cfs
Storm frequency	= 5 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 279,370 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



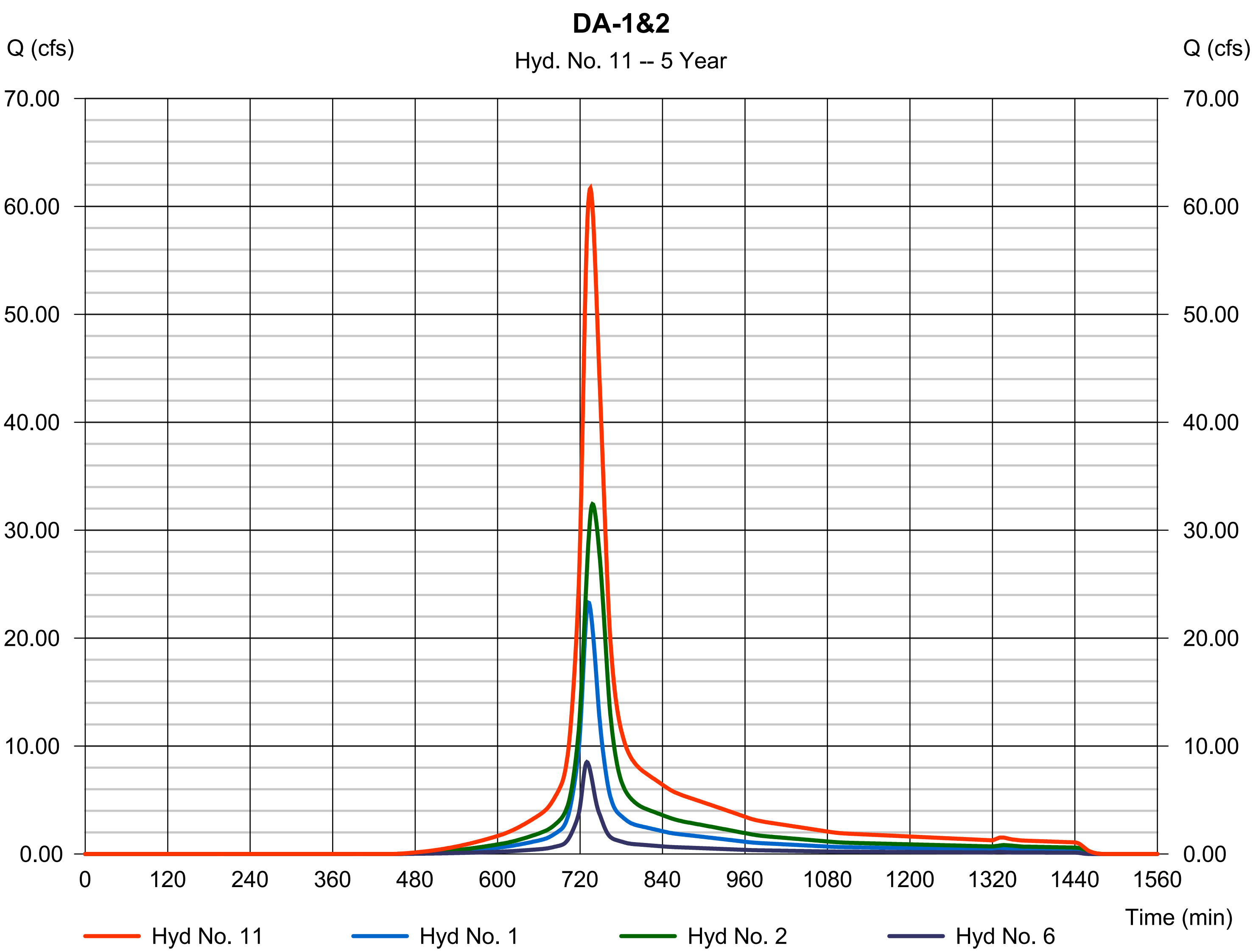
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 61.68 cfs
Storm frequency	= 5 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 294,012 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



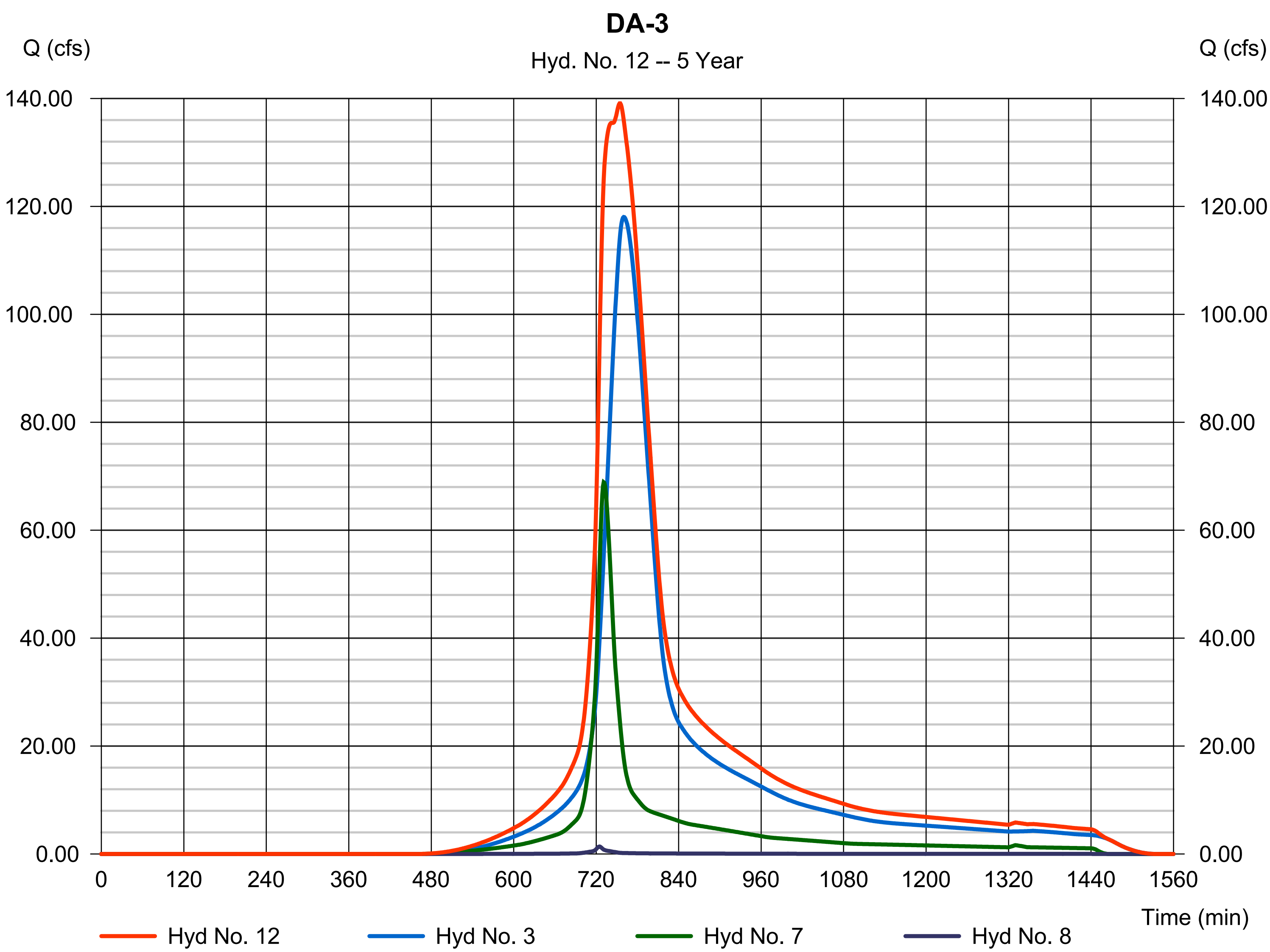
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 139.11 cfs
Storm frequency	= 5 yrs	Time to peak	= 755 min
Time interval	= 1 min	Hyd. volume	= 1,180,391 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



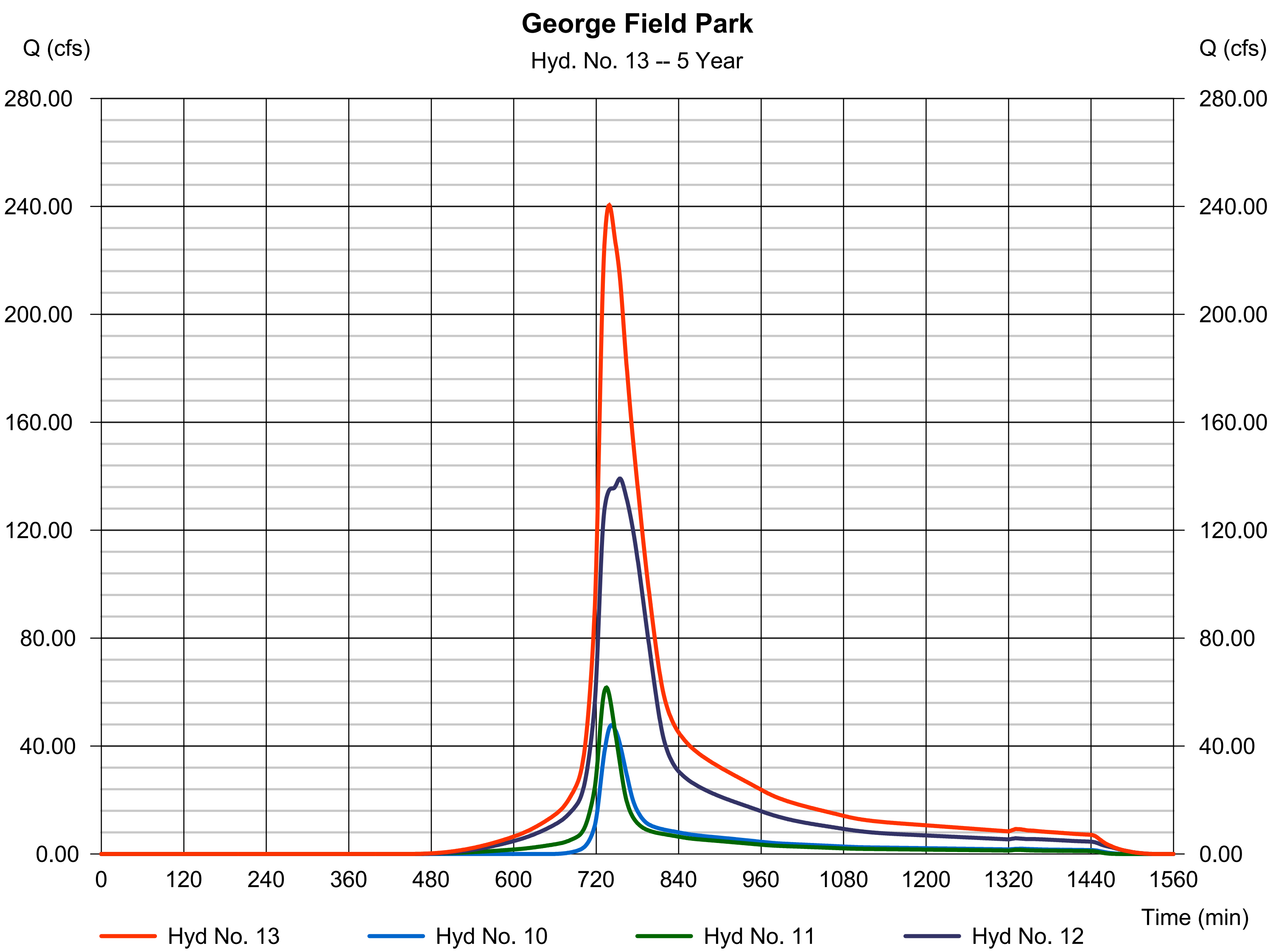
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 240.46 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 1,753,773 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

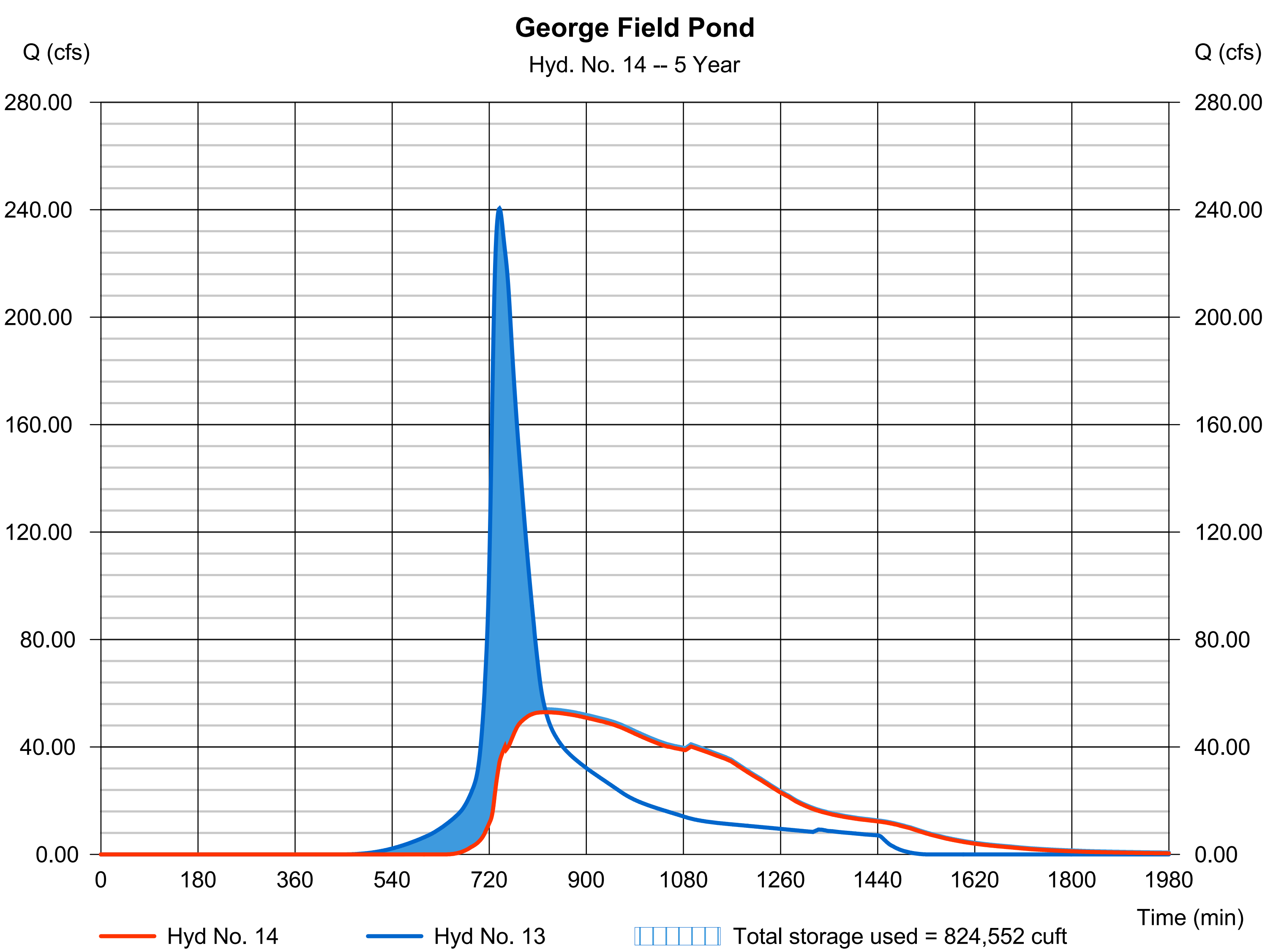
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 52.94 cfs
Storm frequency	= 5 yrs	Time to peak	= 824 min
Time interval	= 1 min	Hyd. volume	= 1,659,824 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 216.34 ft
Reservoir name	= George Field Park	Max. Storage	= 824,552 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	29.85	1	732	127,072	------	------	------	DA-1A
2	SCS Runoff	41.55	1	738	207,508	------	------	------	DA-2
3	SCS Runoff	152.42	1	760	1,151,029	------	------	------	DA-3A
4	SCS Runoff	9.008	1	739	45,306	------	------	------	DA-4
5	SCS Runoff	50.40	1	745	287,030	------	------	------	DA-5A
6	SCS Runoff	10.90	1	730	43,217	------	------	------	DA-1B
7	SCS Runoff	88.79	1	731	367,545	------	------	------	DA-3B
8	SCS Runoff	1.768	1	725	5,474	------	------	------	DA-3C
9	SCS Runoff	14.75	1	732	63,435	------	------	------	DA-5B
10	Combine	70.04	1	742	395,772	4, 5, 9	------	------	DA-4&5
11	Combine	79.01	1	735	377,796	1, 2, 6,	------	------	DA-1&2
12	Combine	179.37	1	754	1,524,048	3, 7, 8,	------	------	DA-3
13	Combine	319.41	1	738	2,297,616	10, 11, 12	------	------	George Field Park
14	Reservoir	58.54	1	834	2,192,195	13	217.56	1,139,770	George Field Pond

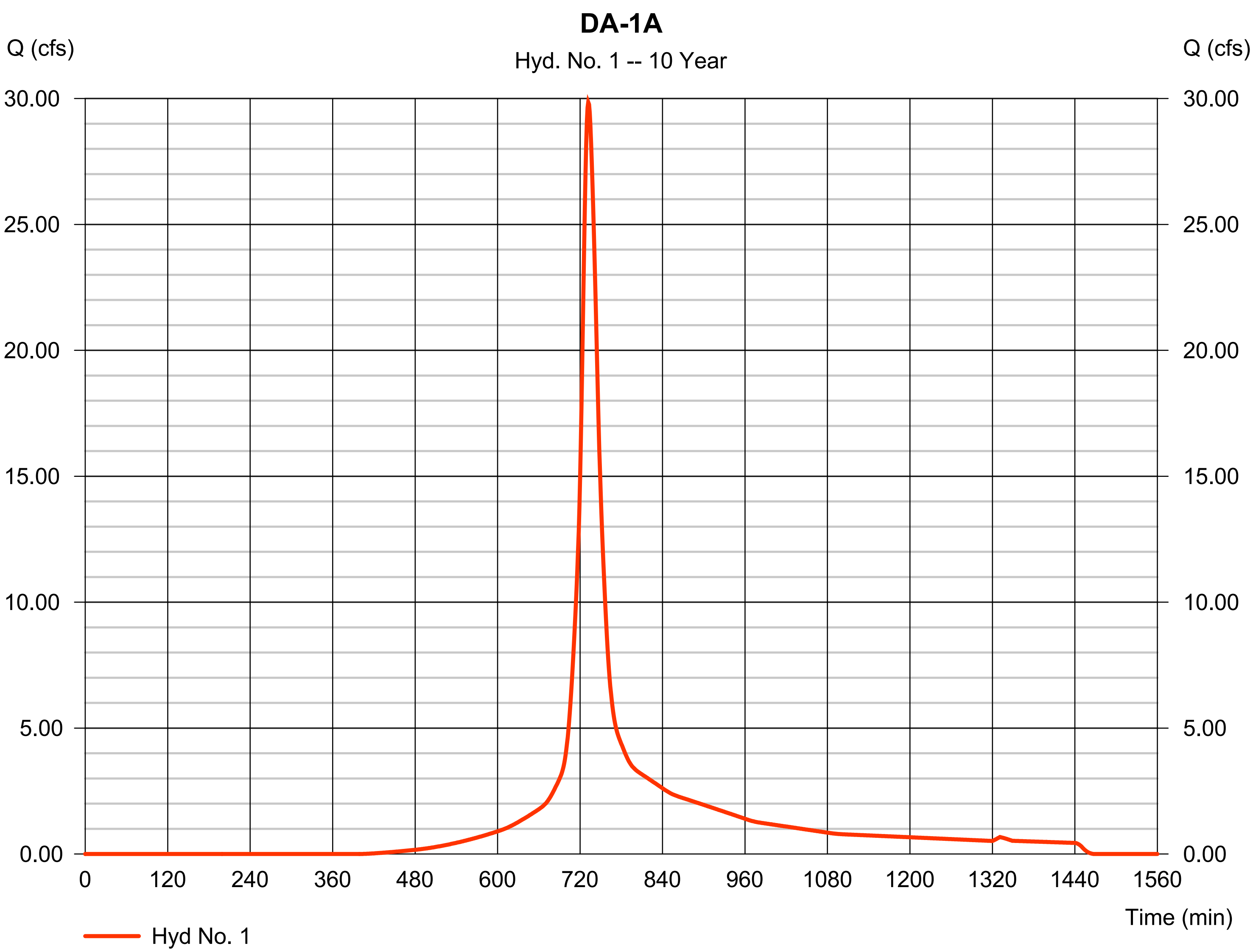
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 29.85 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 127,072 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



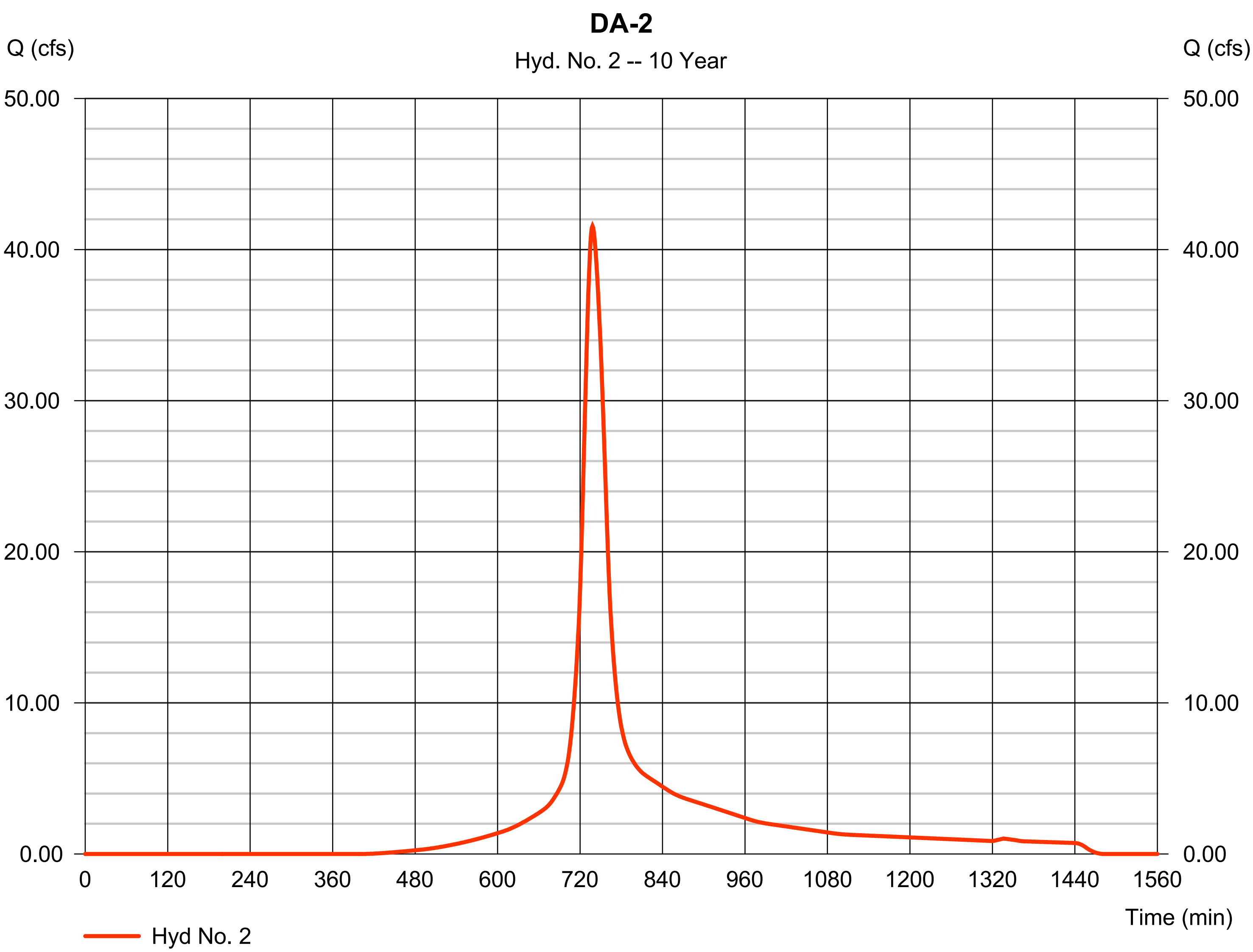
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 41.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 207,508 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



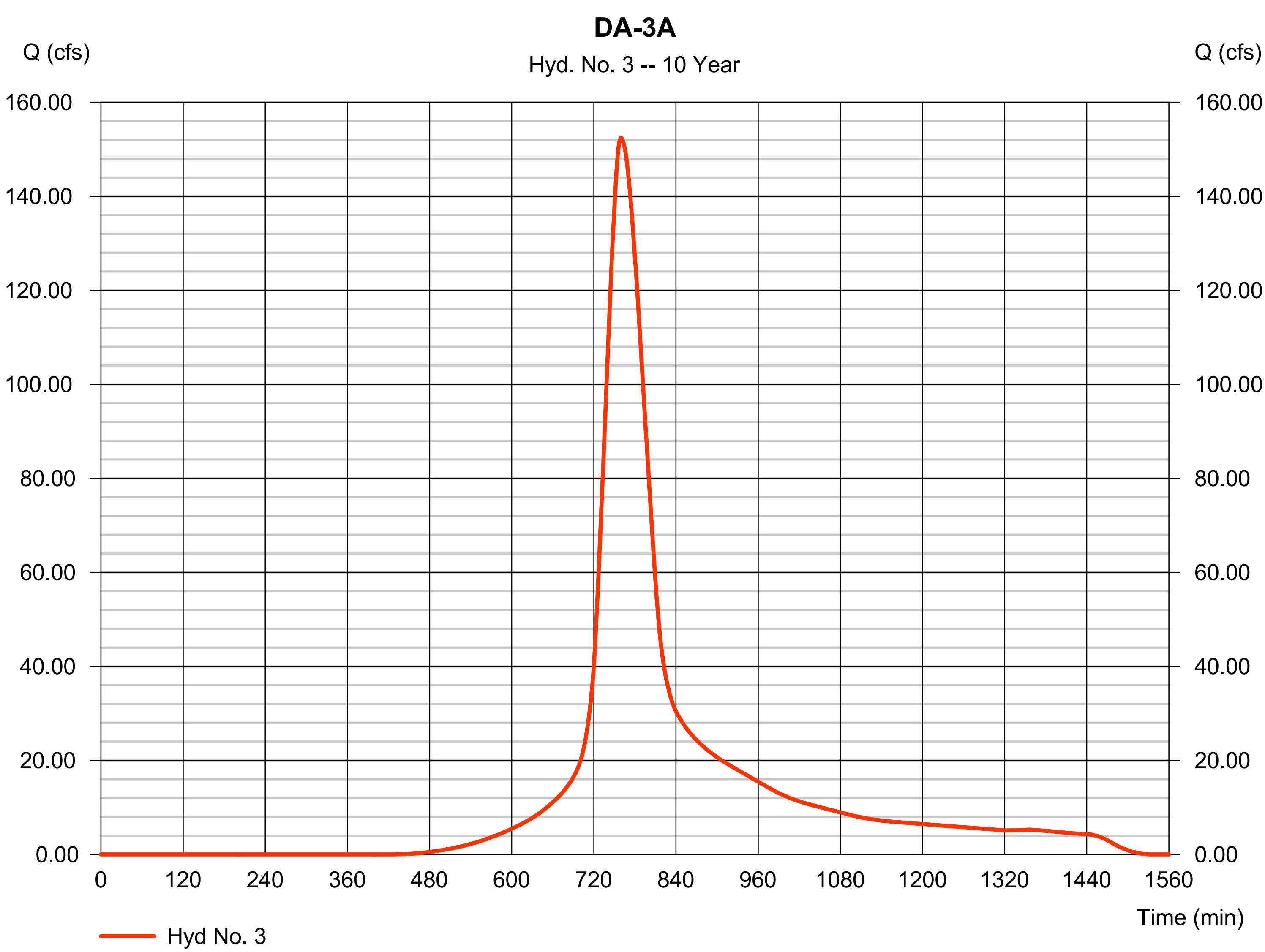
Hydrograph Report

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 152.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 1,151,029 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410

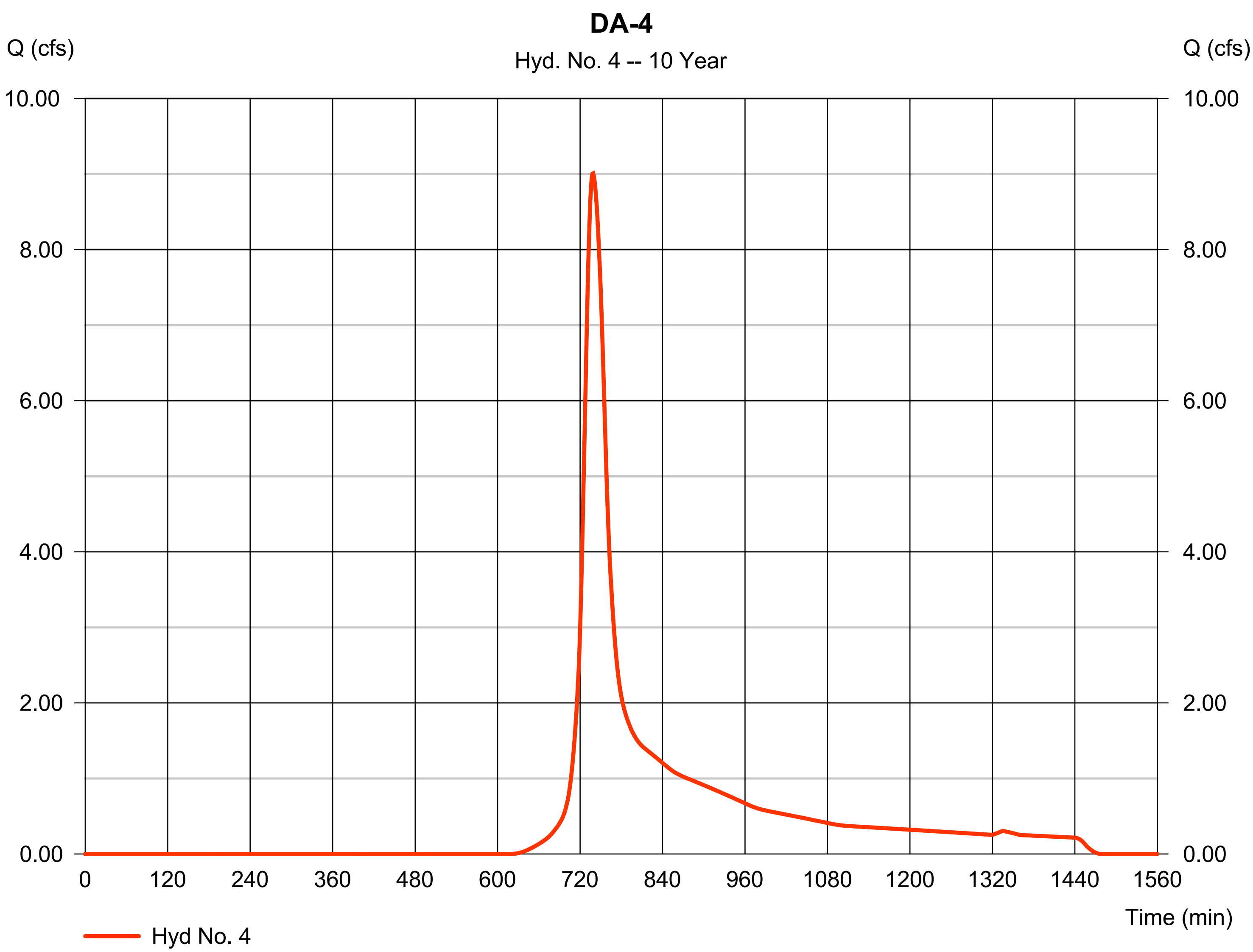


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 9.008 cfs
Storm frequency	= 10 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 45,306 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



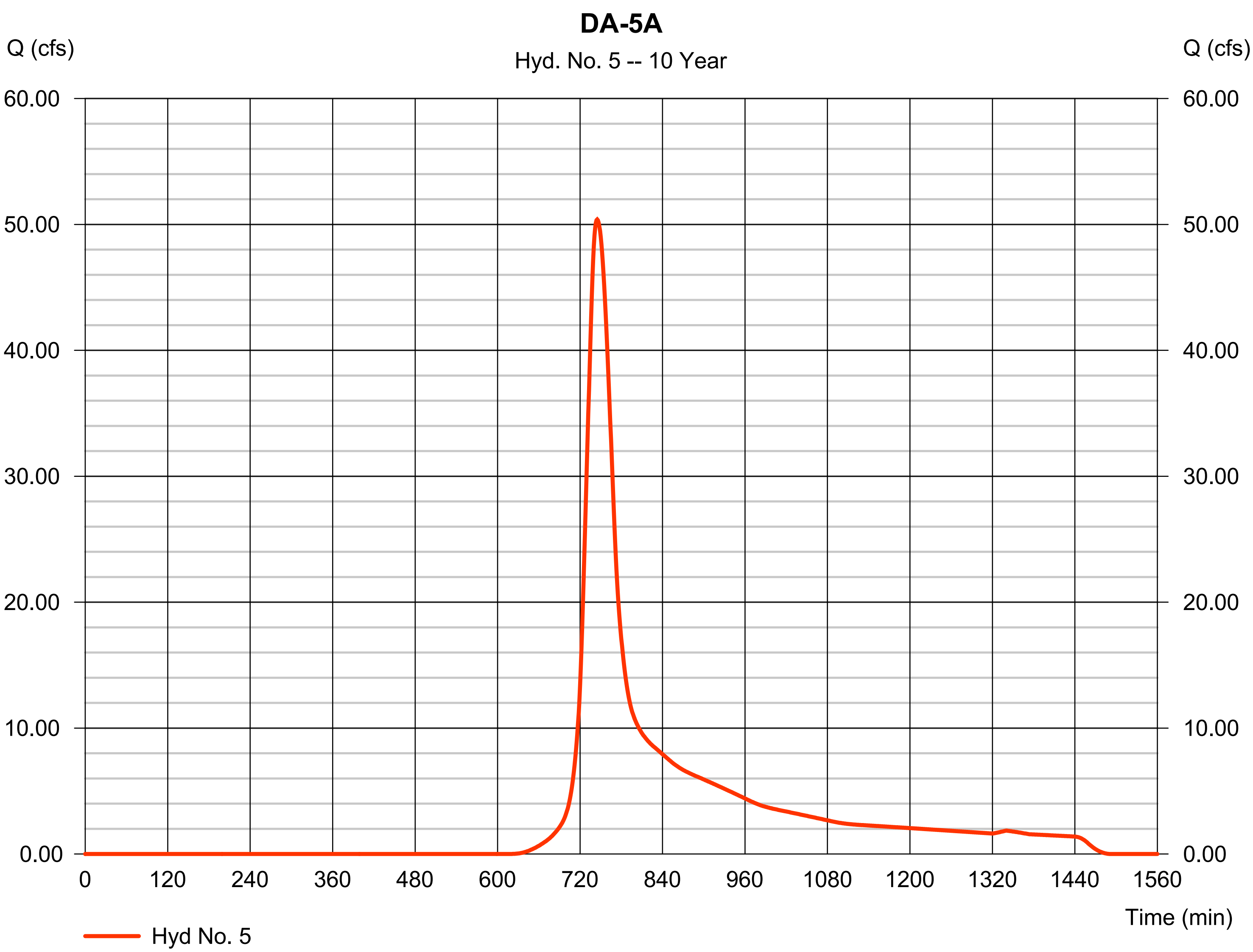
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 50.40 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 287,030 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



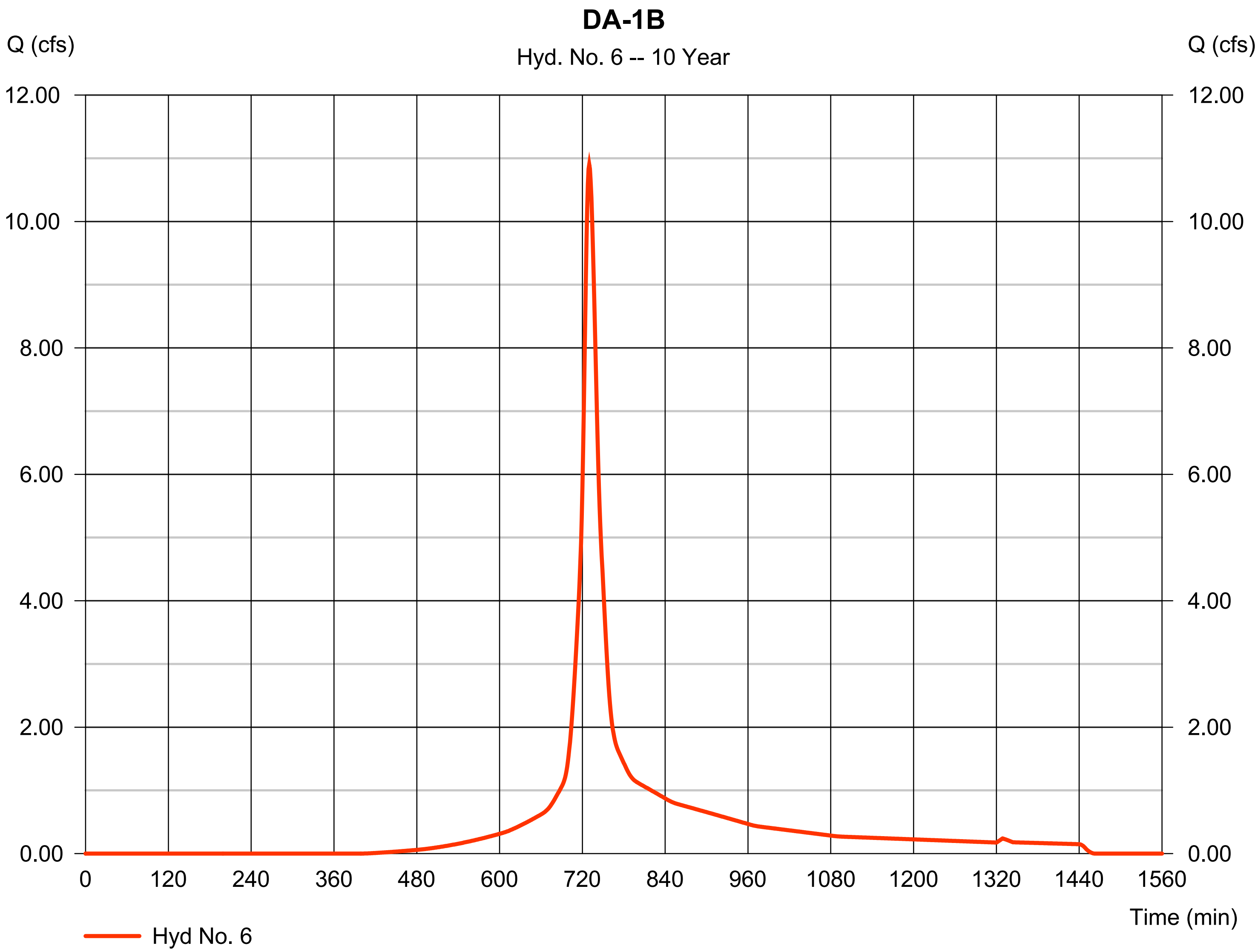
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.90 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 43,217 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



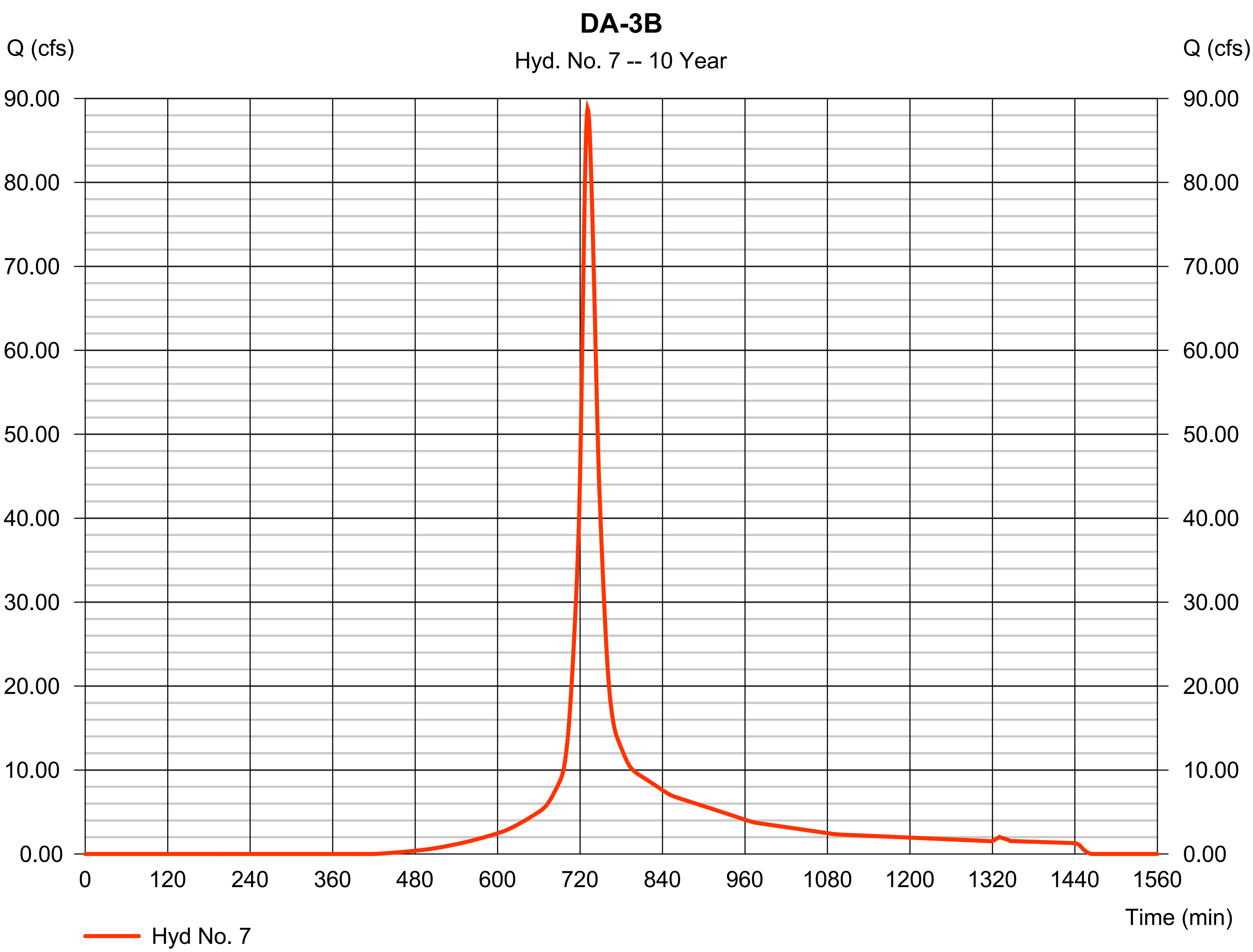
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 88.79 cfs
Storm frequency	= 10 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 367,545 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



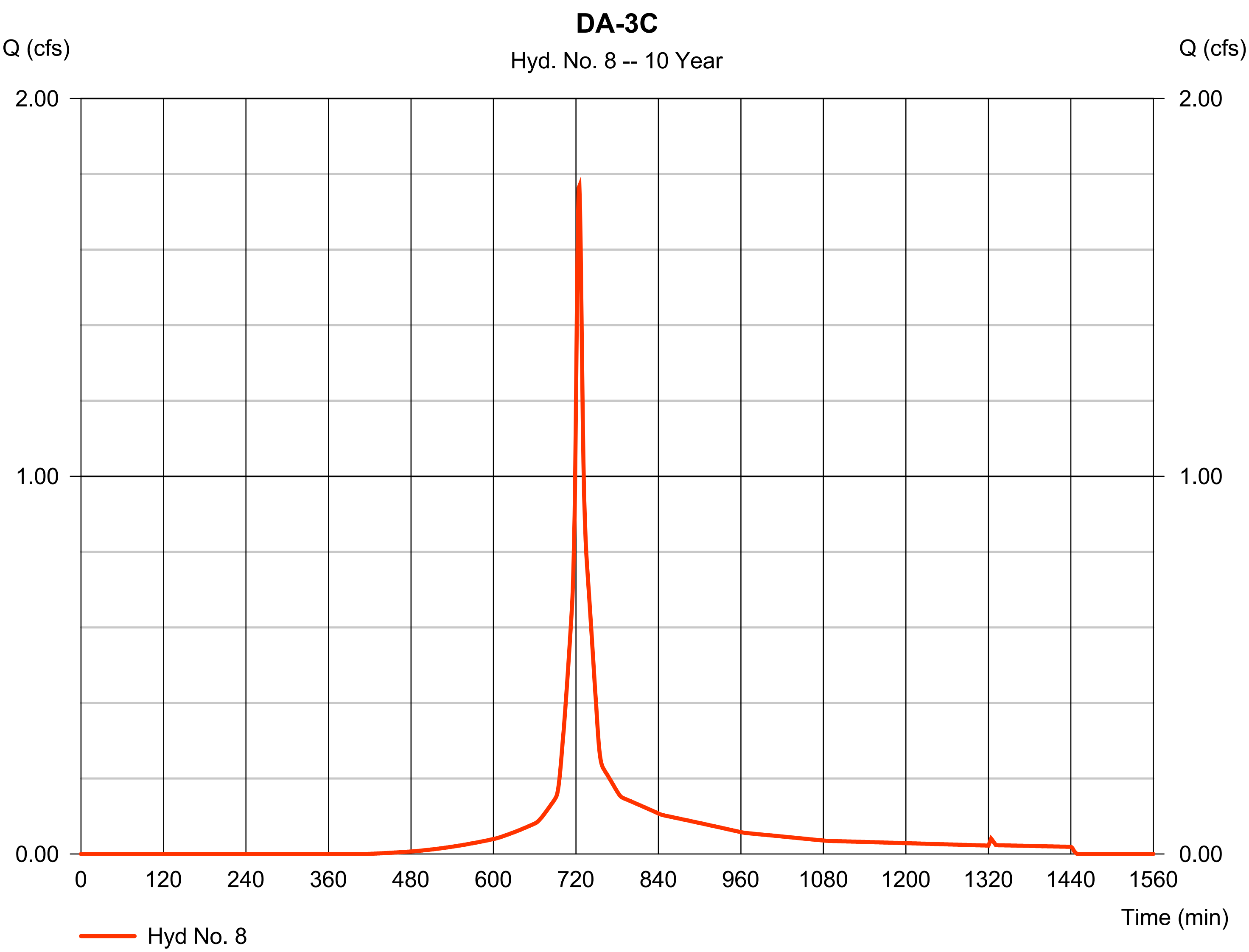
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.768 cfs
Storm frequency	= 10 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 5,474 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



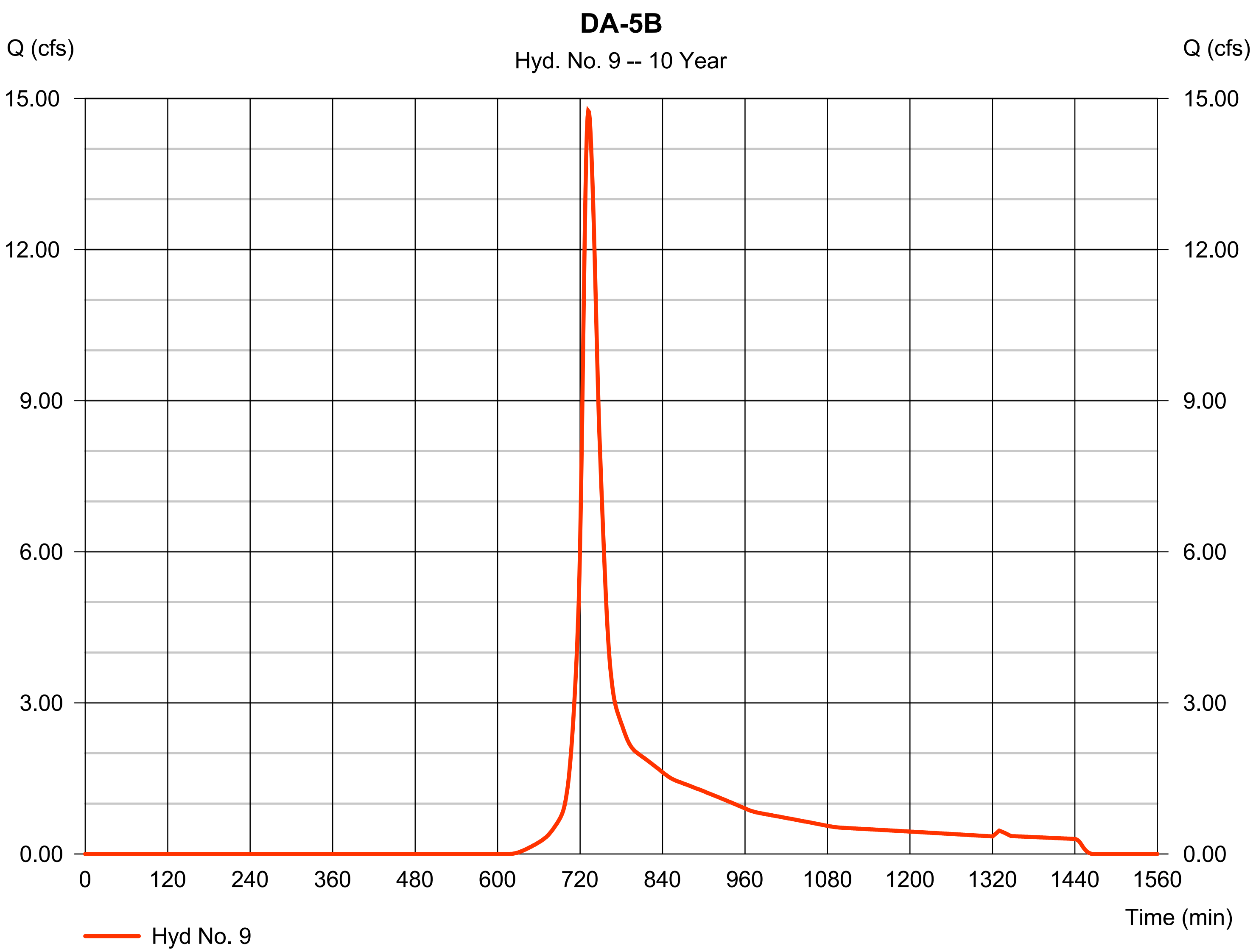
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.75 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 63,435 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

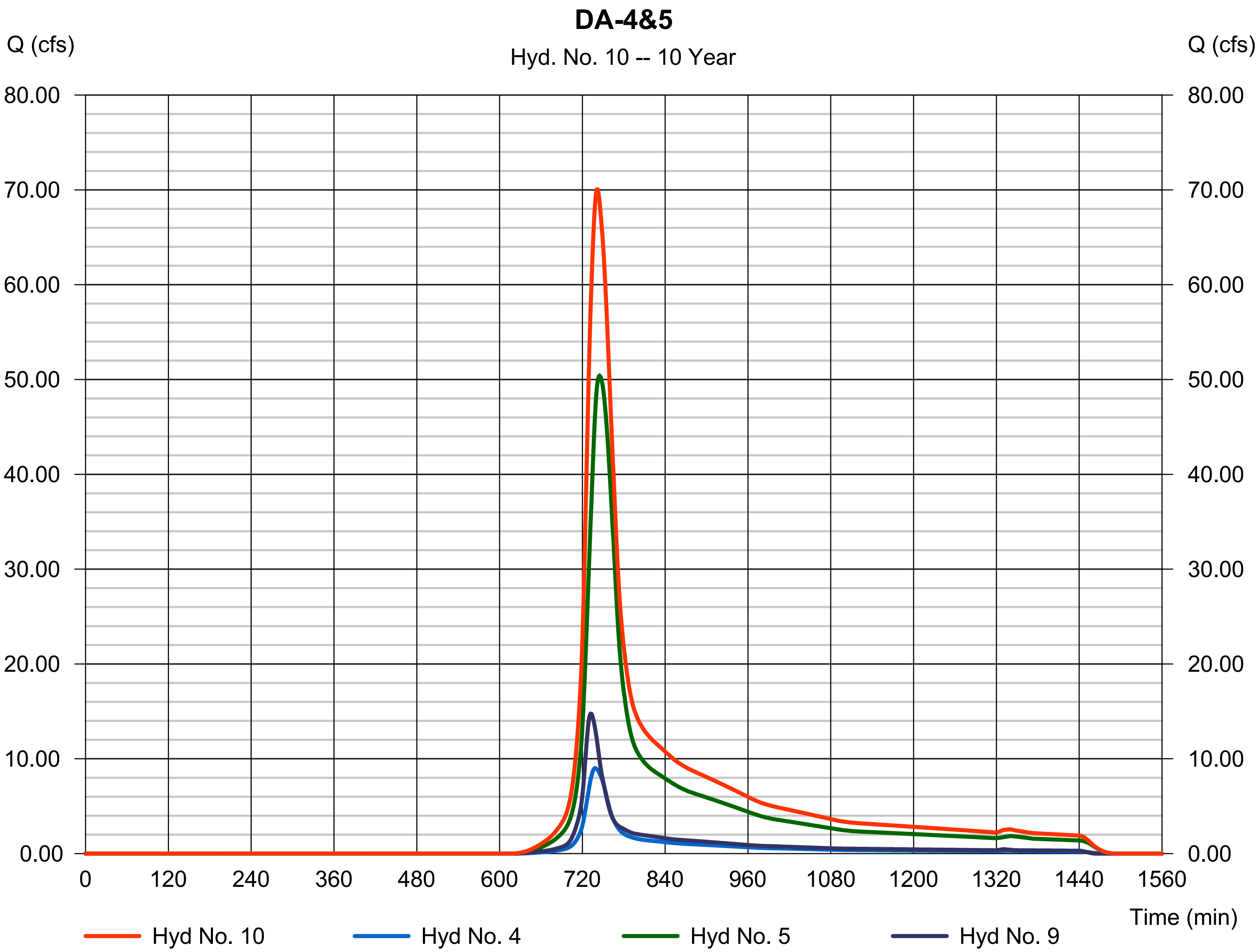


Hydrograph Report

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 70.04 cfs
Storm frequency	= 10 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 395,772 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



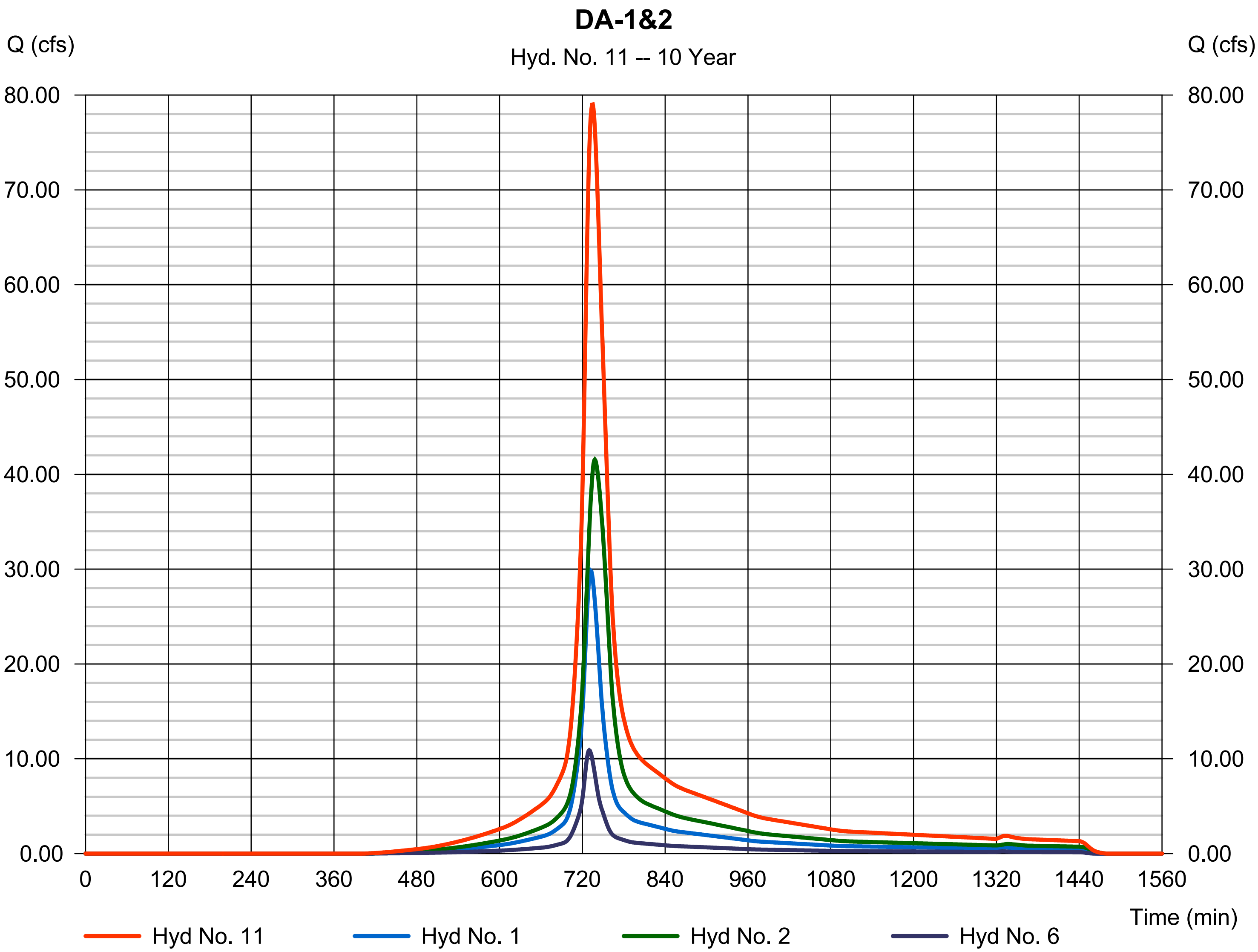
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 79.01 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 377,796 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



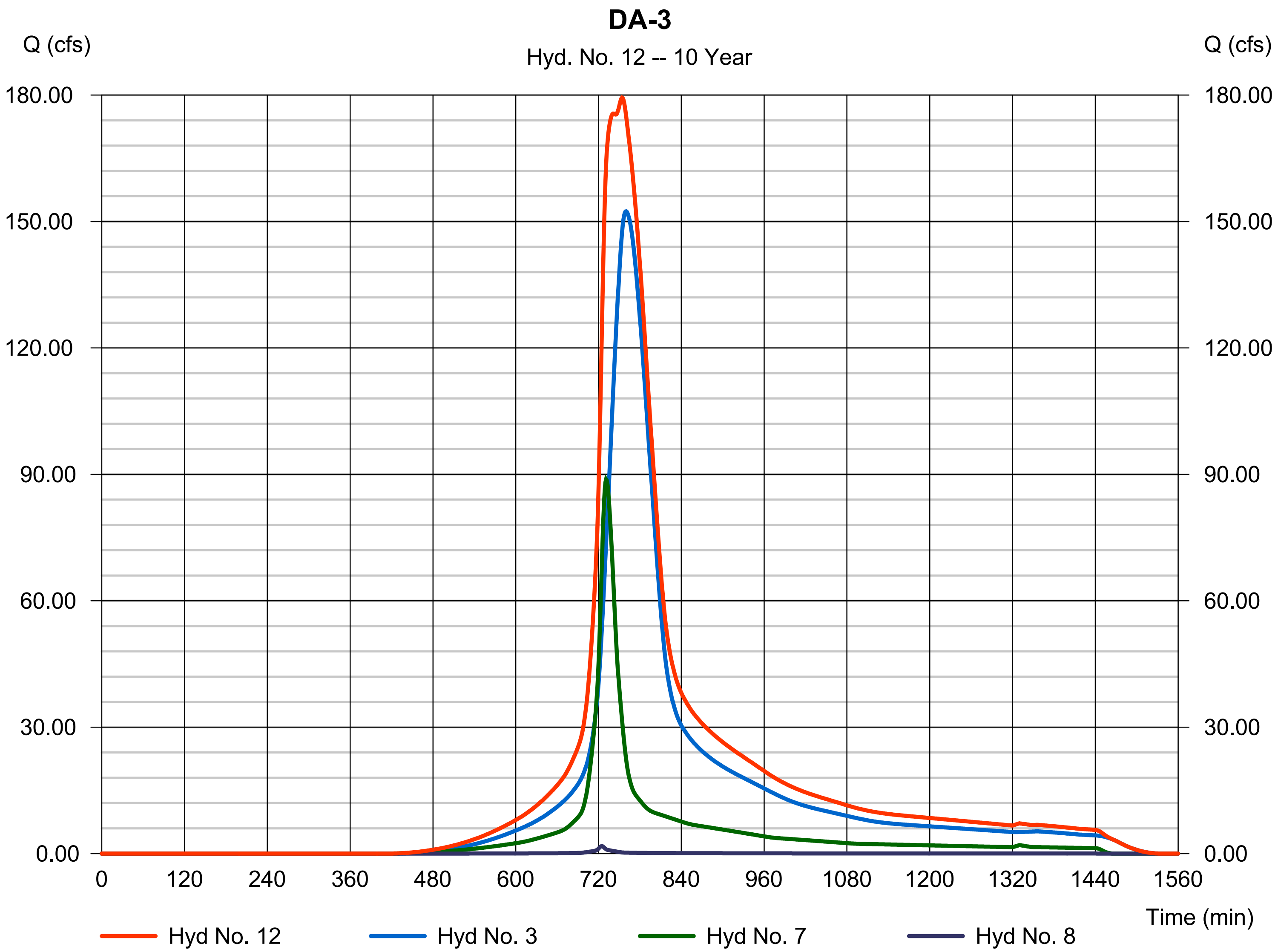
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 179.37 cfs
Storm frequency	= 10 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 1,524,048 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



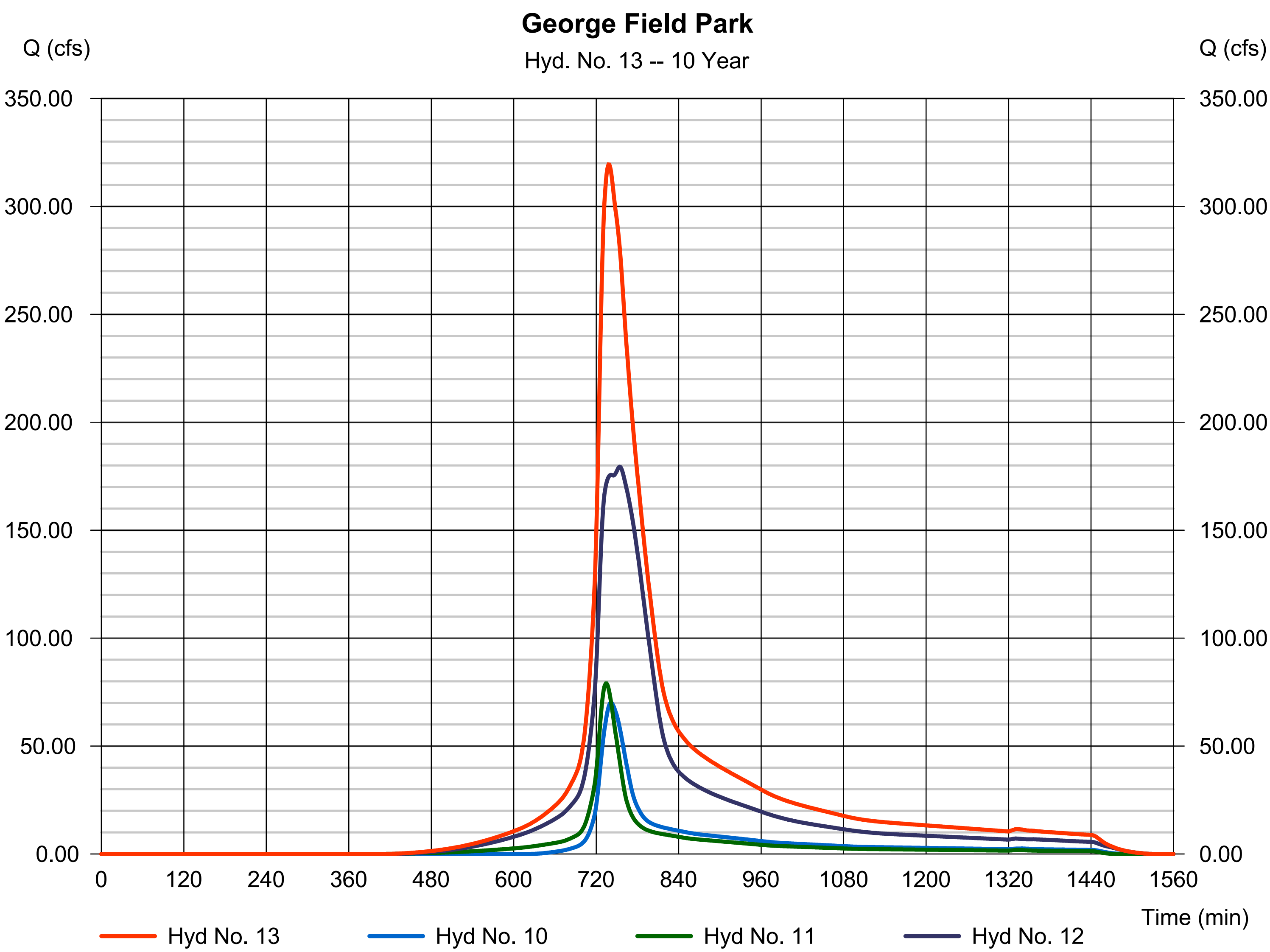
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 319.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 2,297,616 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

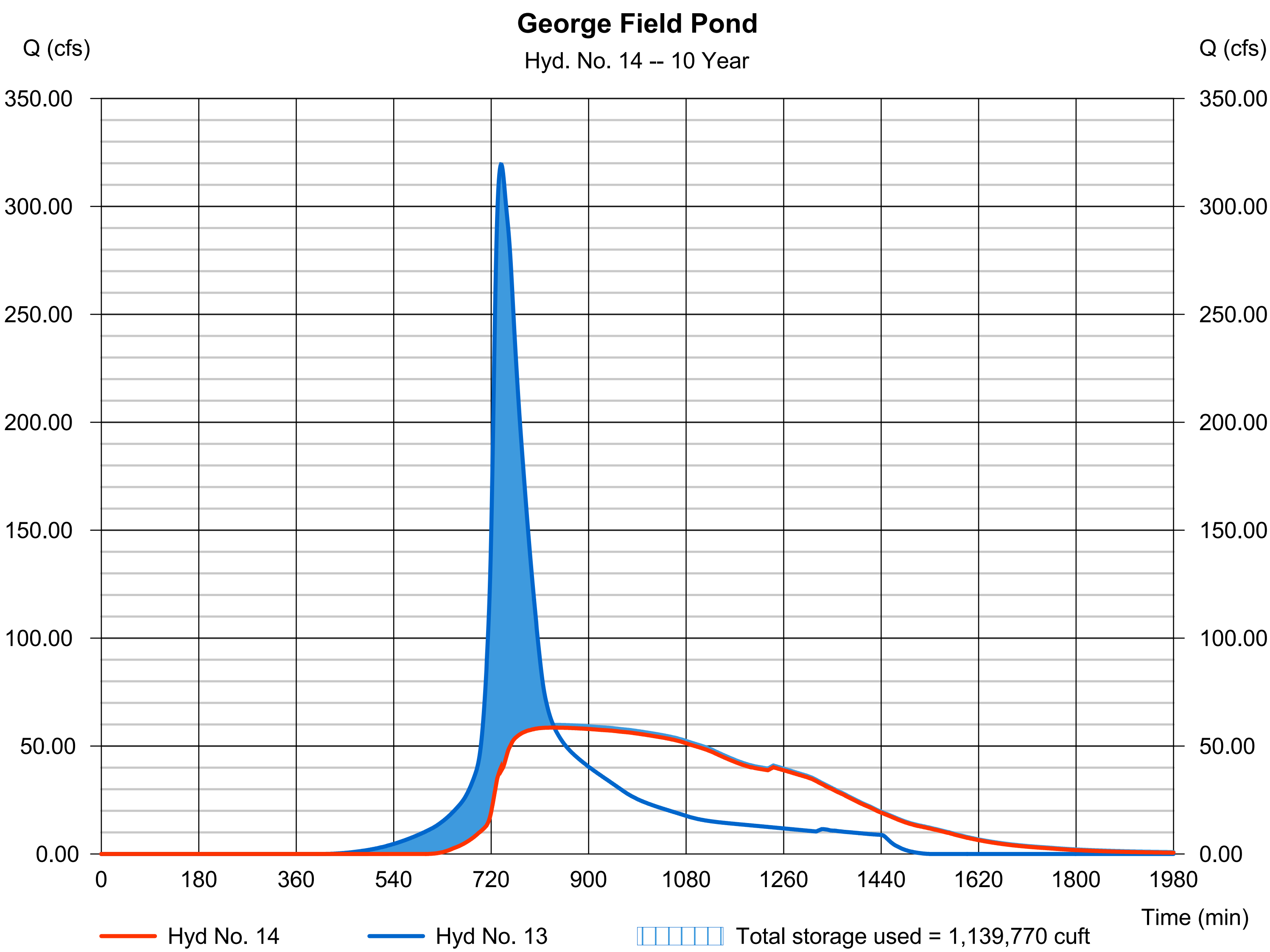
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 58.54 cfs
Storm frequency	= 10 yrs	Time to peak	= 834 min
Time interval	= 1 min	Hyd. volume	= 2,192,195 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 217.56 ft
Reservoir name	= George Field Park	Max. Storage	= 1,139,770 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

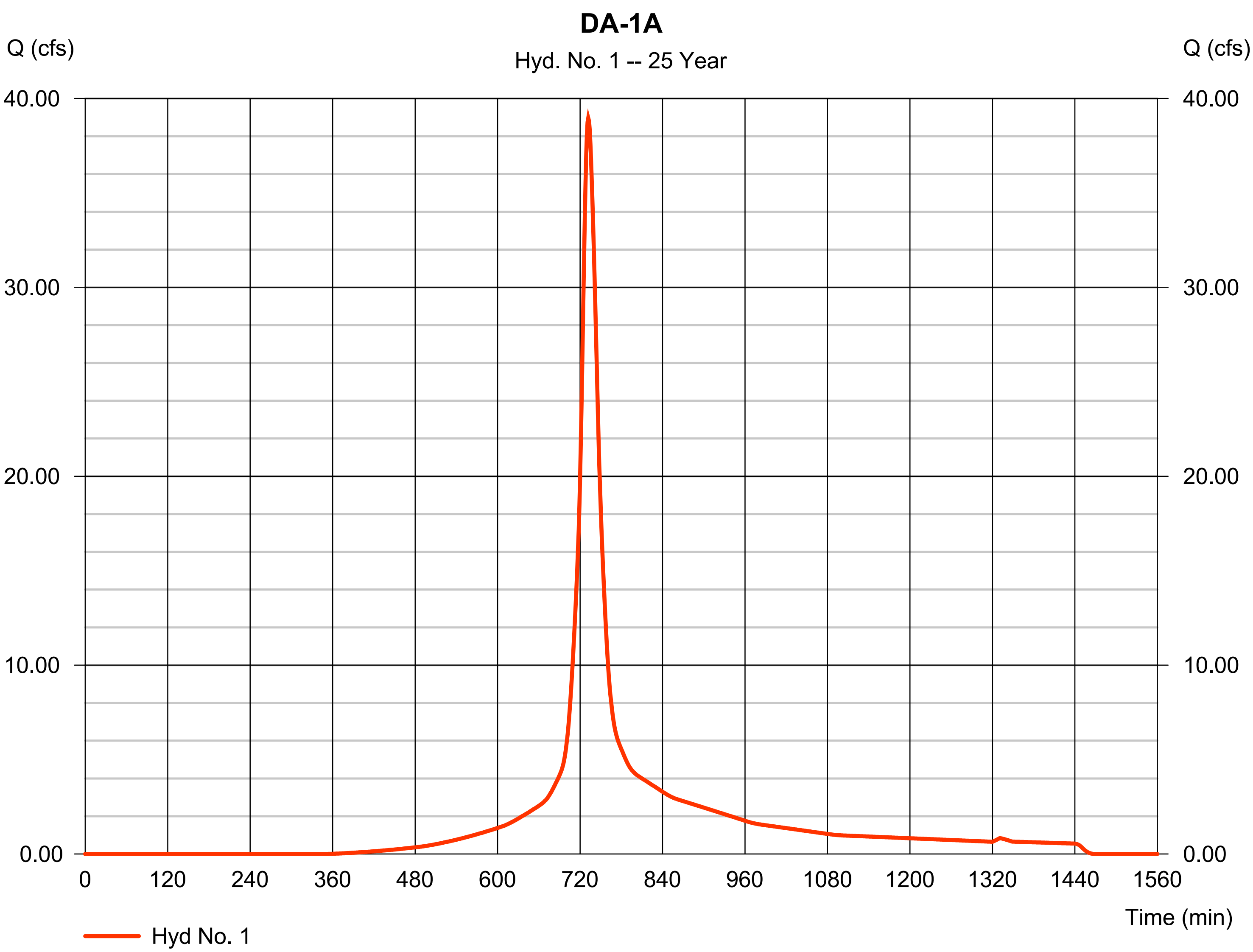
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	38.97	1	732	166,997	------	------	------	DA-1A
2	SCS Runoff	54.27	1	738	272,706	------	------	------	DA-2
3	SCS Runoff	200.52	1	759	1,519,784	------	------	------	DA-3A
4	SCS Runoff	13.31	1	738	65,395	------	------	------	DA-4
5	SCS Runoff	74.46	1	744	414,301	------	------	------	DA-5A
6	SCS Runoff	14.22	1	730	56,795	------	------	------	DA-1B
7	SCS Runoff	116.57	1	731	485,294	------	------	------	DA-3B
8	SCS Runoff	2.315	1	725	7,228	------	------	------	DA-3C
9	SCS Runoff	21.81	1	732	91,562	------	------	------	DA-5B
10	Combine	103.52	1	741	571,258	4, 5, 9	------	------	DA-4&5
11	Combine	103.22	1	734	496,498	1, 2, 6,	------	------	DA-1&2
12	Combine	235.67	1	754	2,012,304	3, 7, 8,	------	------	DA-3
13	Combine	432.37	1	738	3,080,063	10, 11, 12	------	------	George Field Park
14	Reservoir	228.05	1	780	2,965,209	13	218.17	1,313,714	George Field Pond

Hydrograph Report

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 38.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 166,997 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



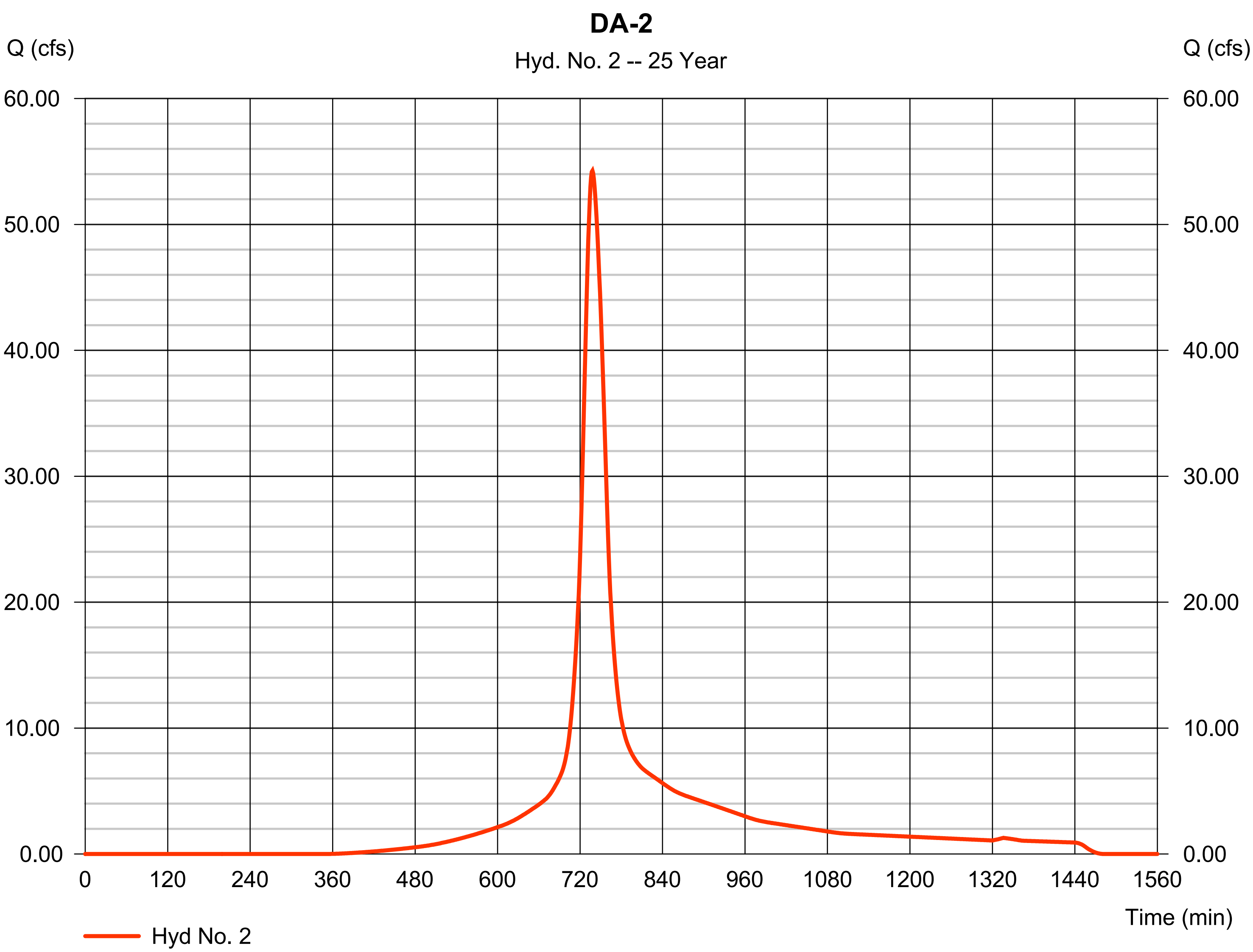
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 54.27 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 272,706 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

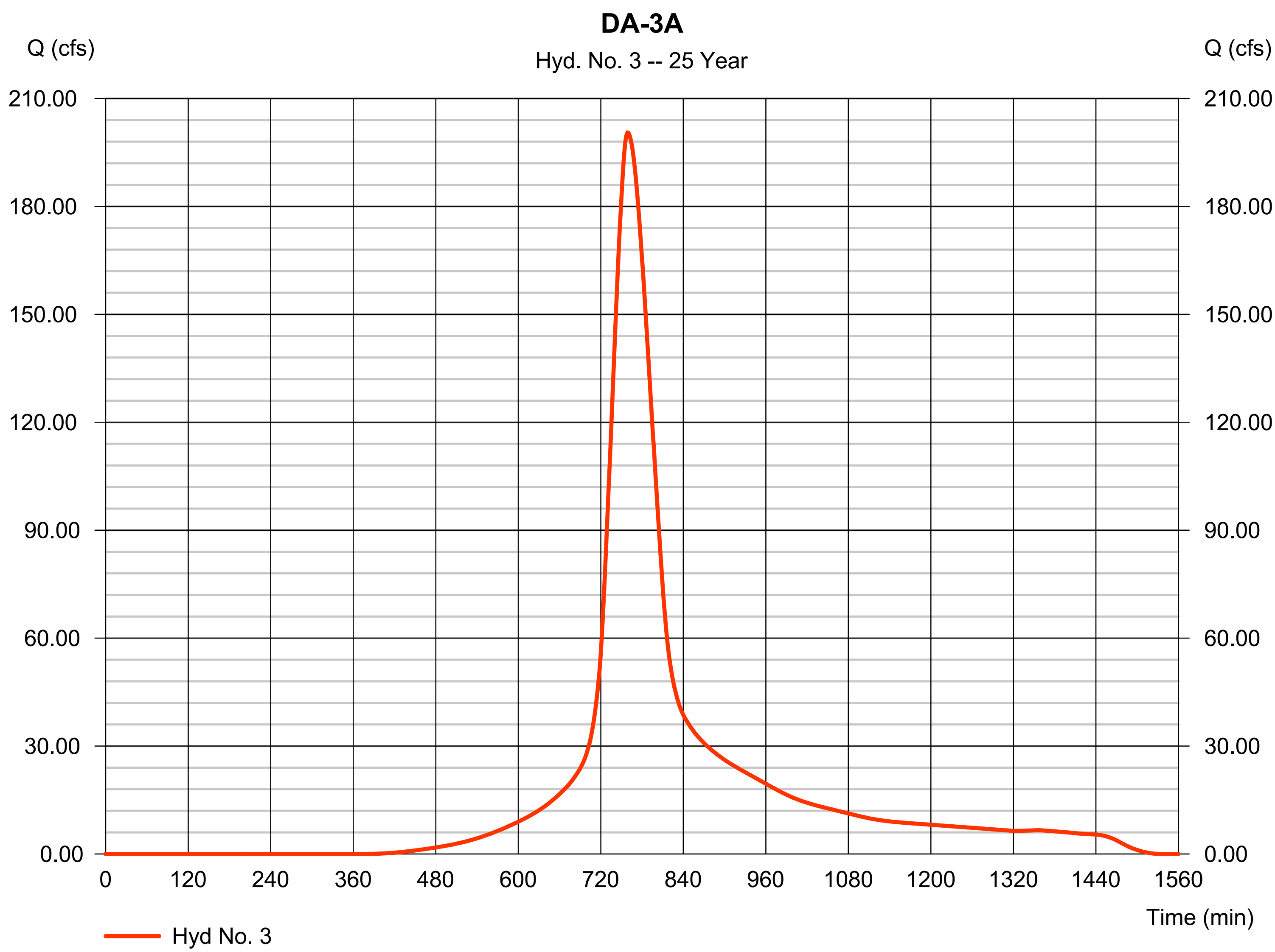
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 200.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,519,784 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



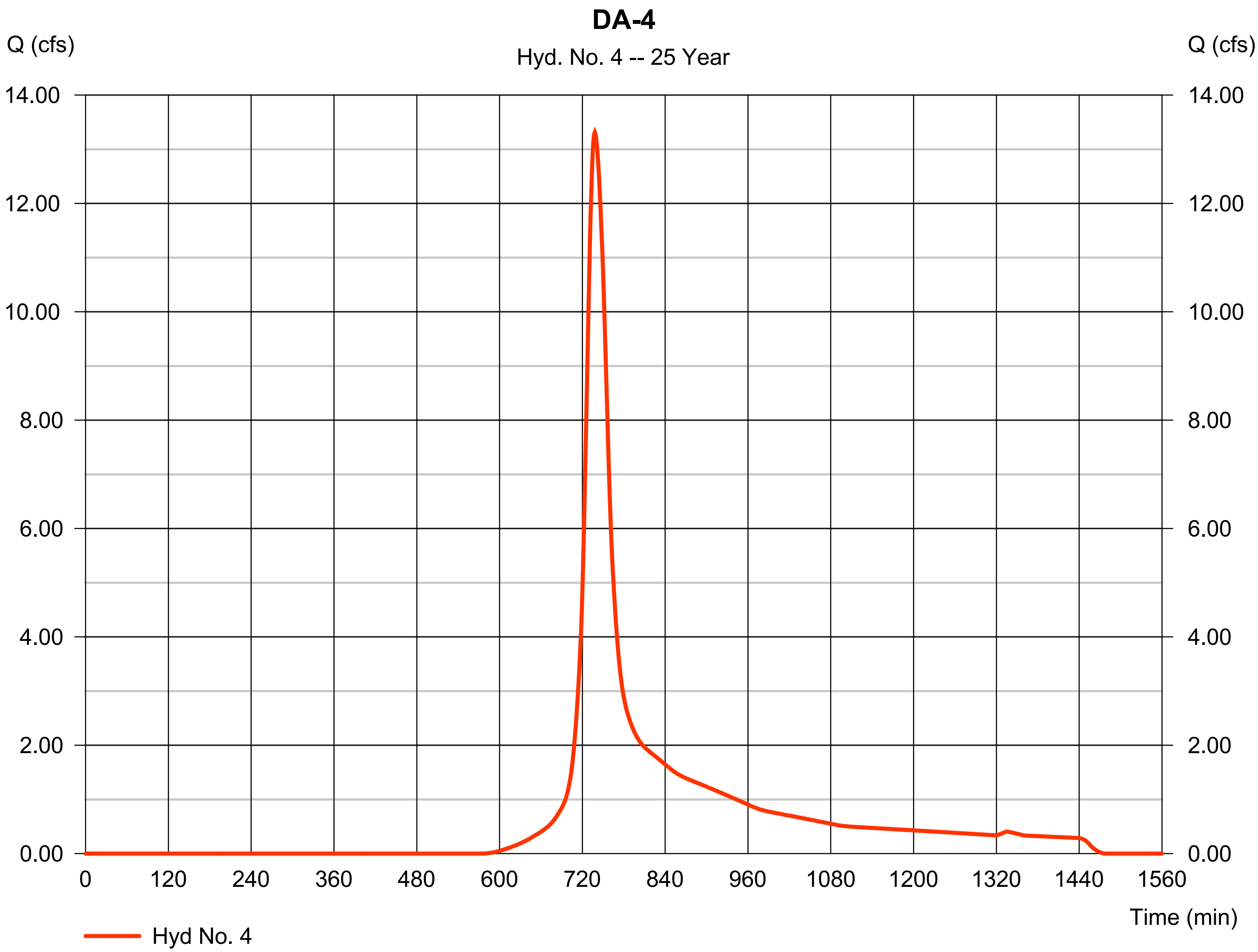
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 13.31 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 65,395 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



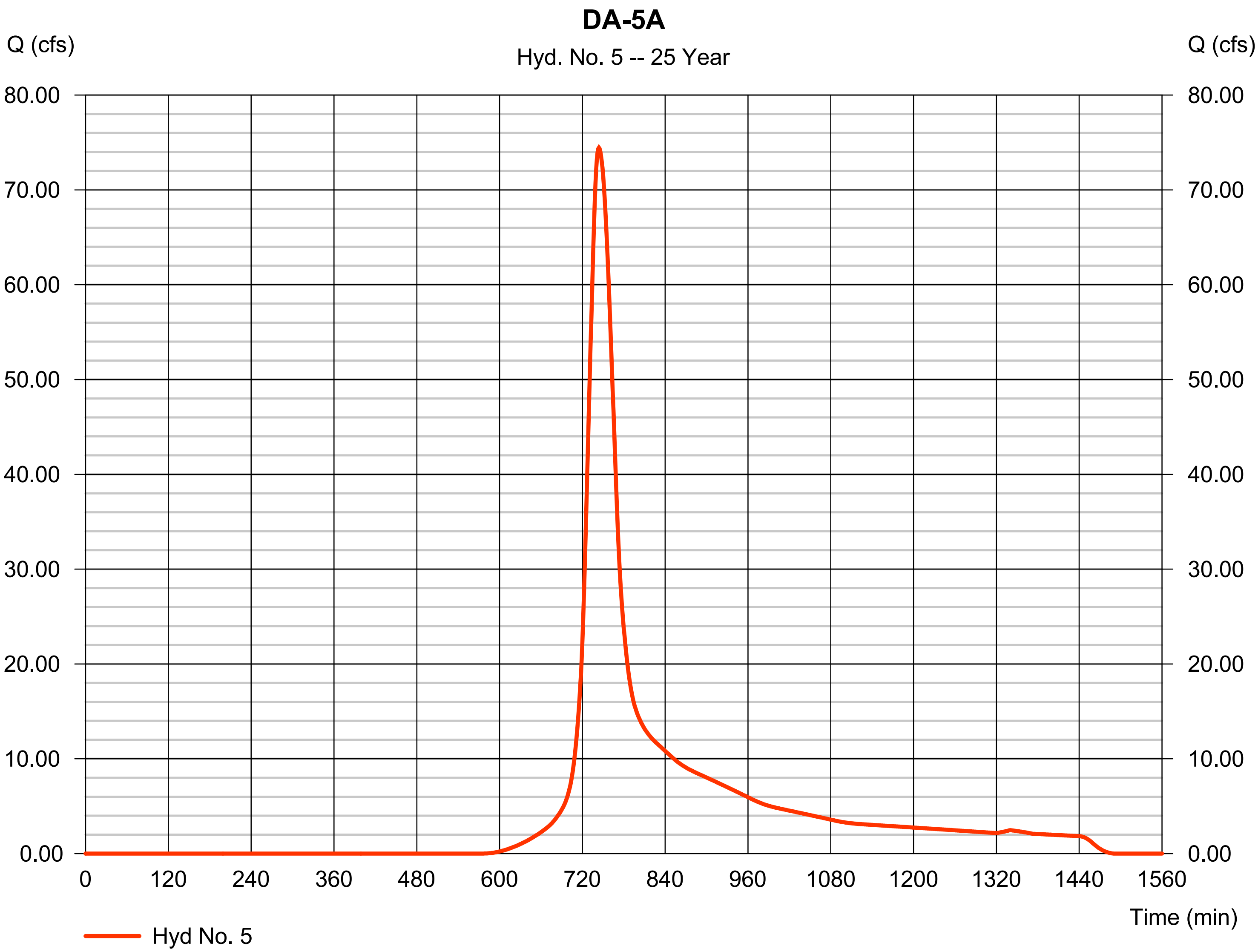
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 74.46 cfs
Storm frequency	= 25 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 414,301 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



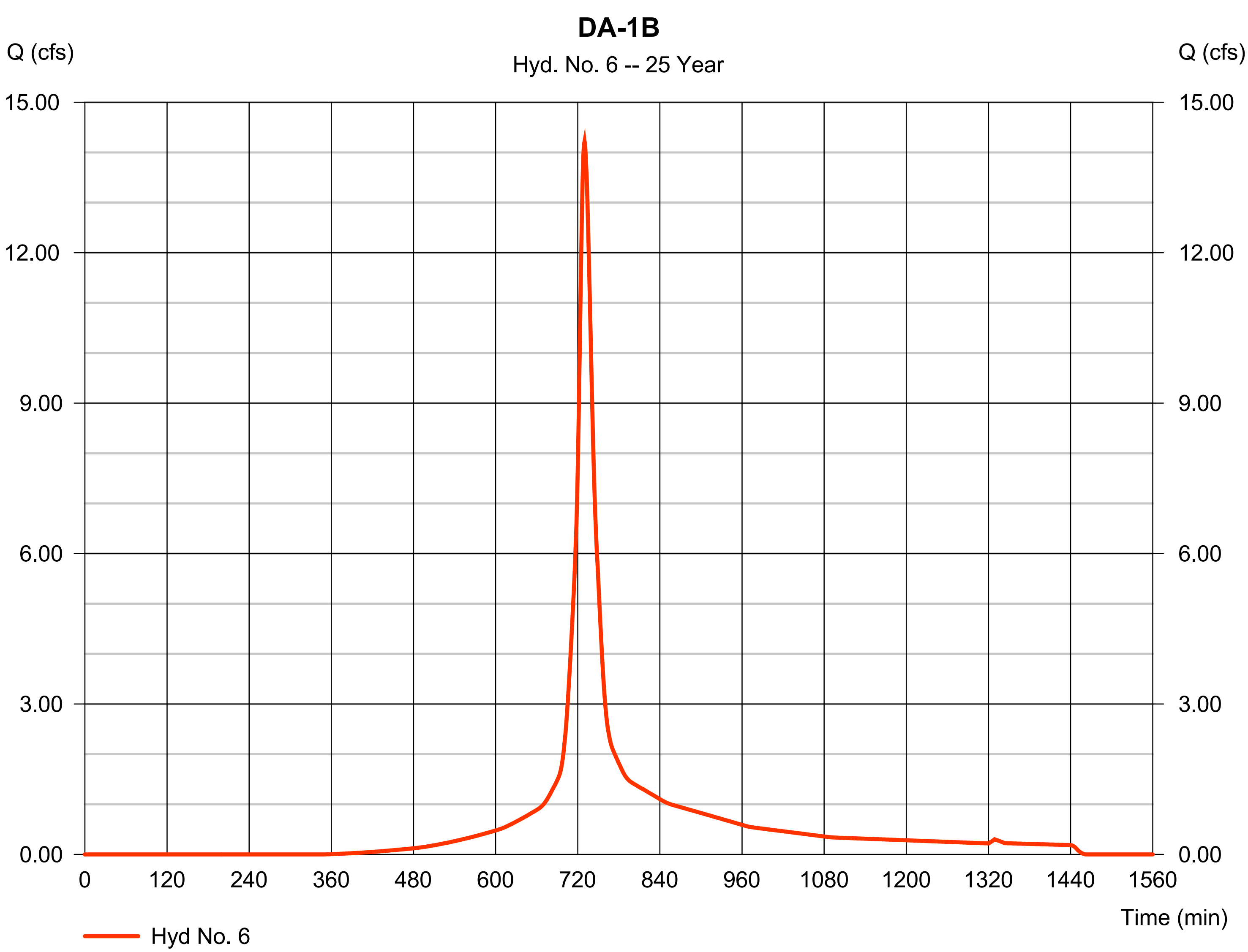
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 56,795 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



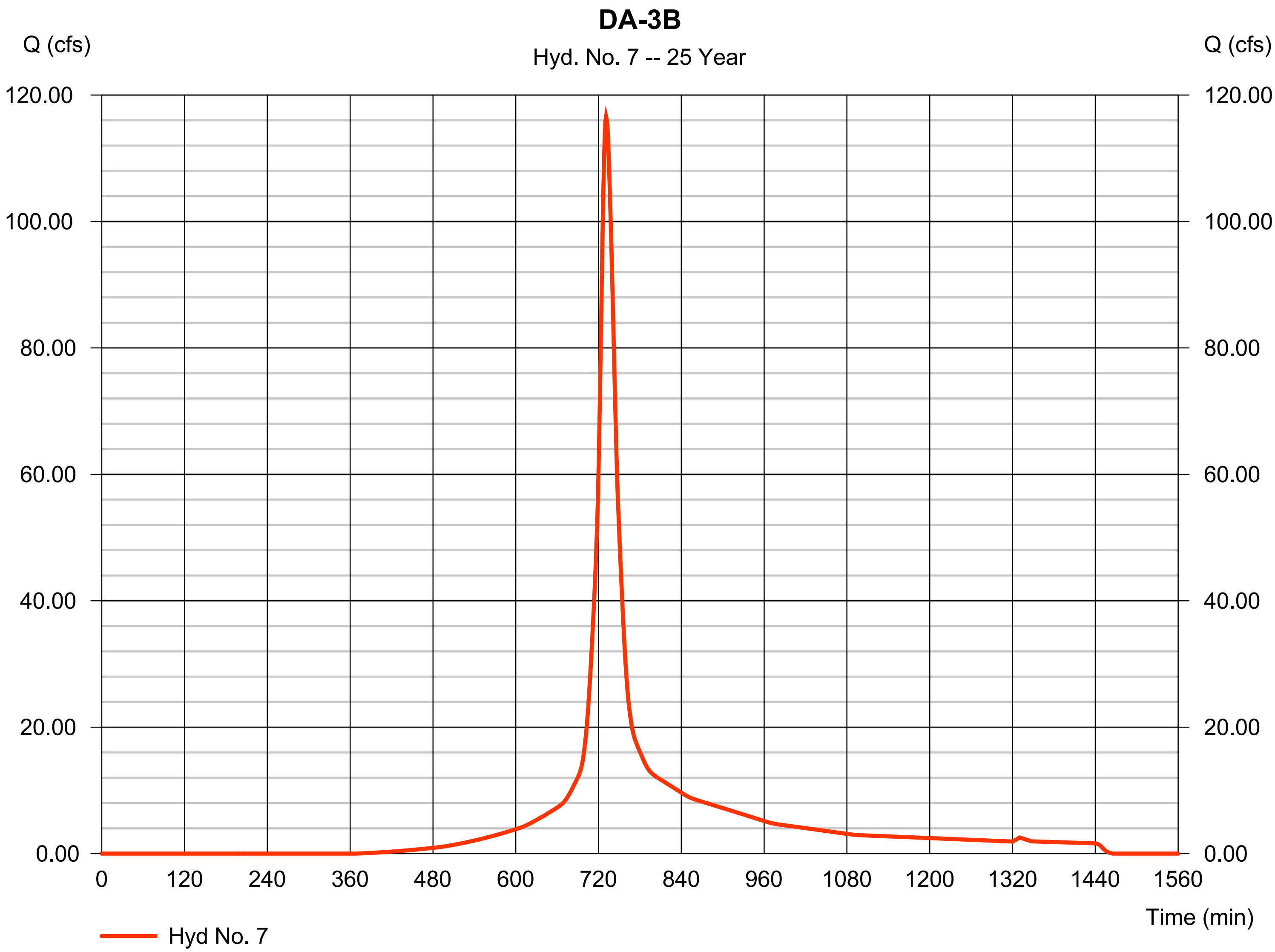
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 116.57 cfs
Storm frequency	= 25 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 485,294 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



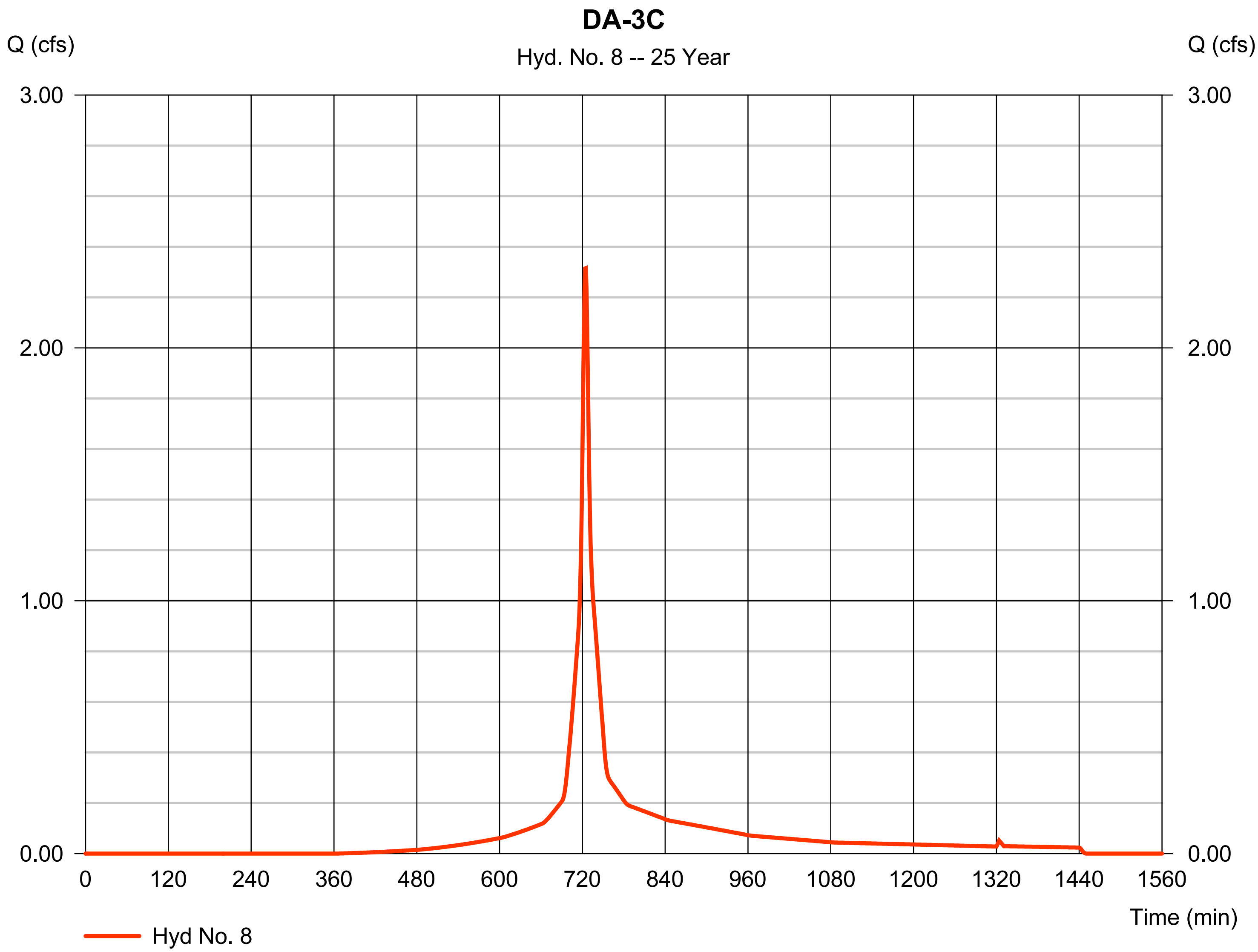
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.315 cfs
Storm frequency	= 25 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 7,228 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



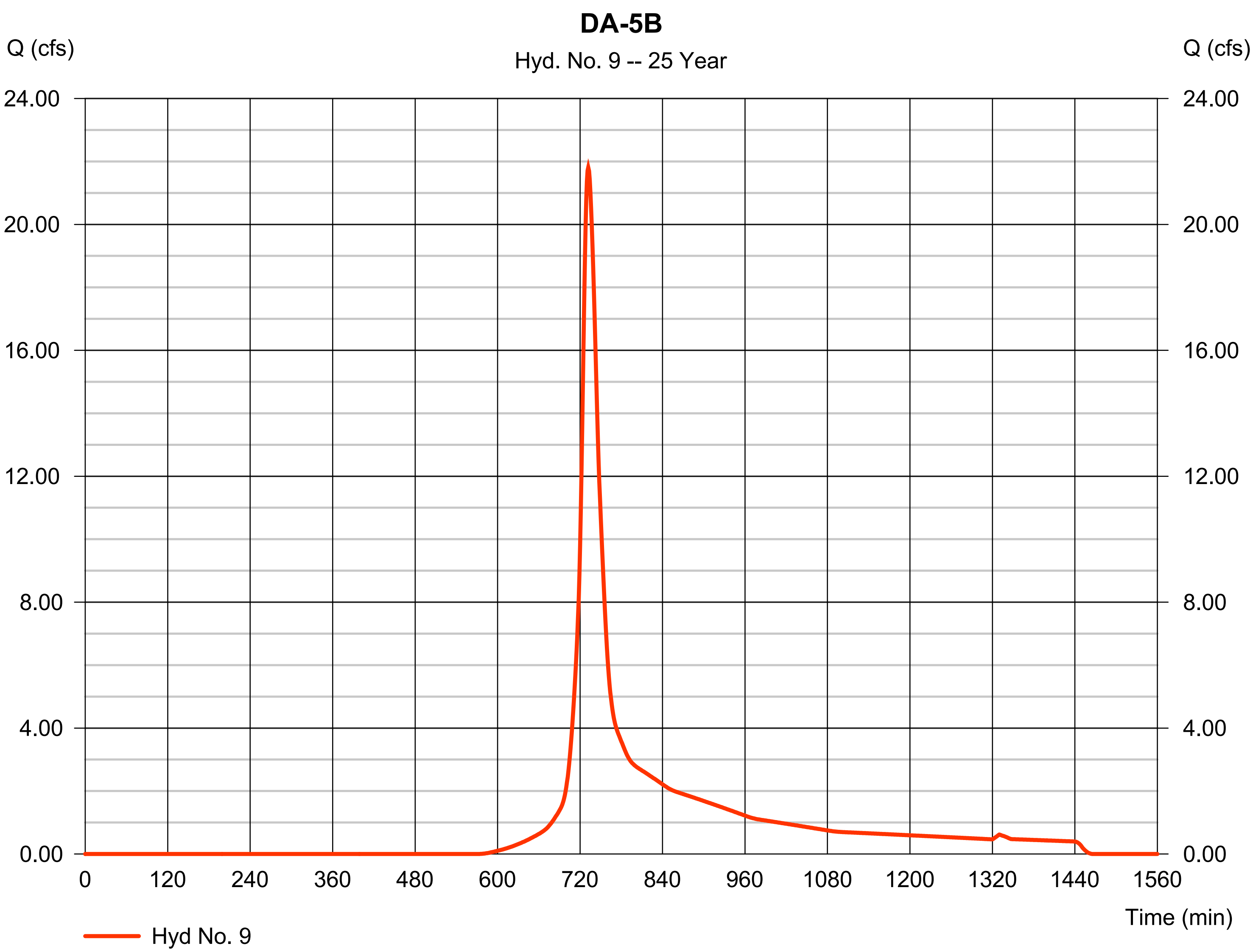
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 21.81 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 91,562 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

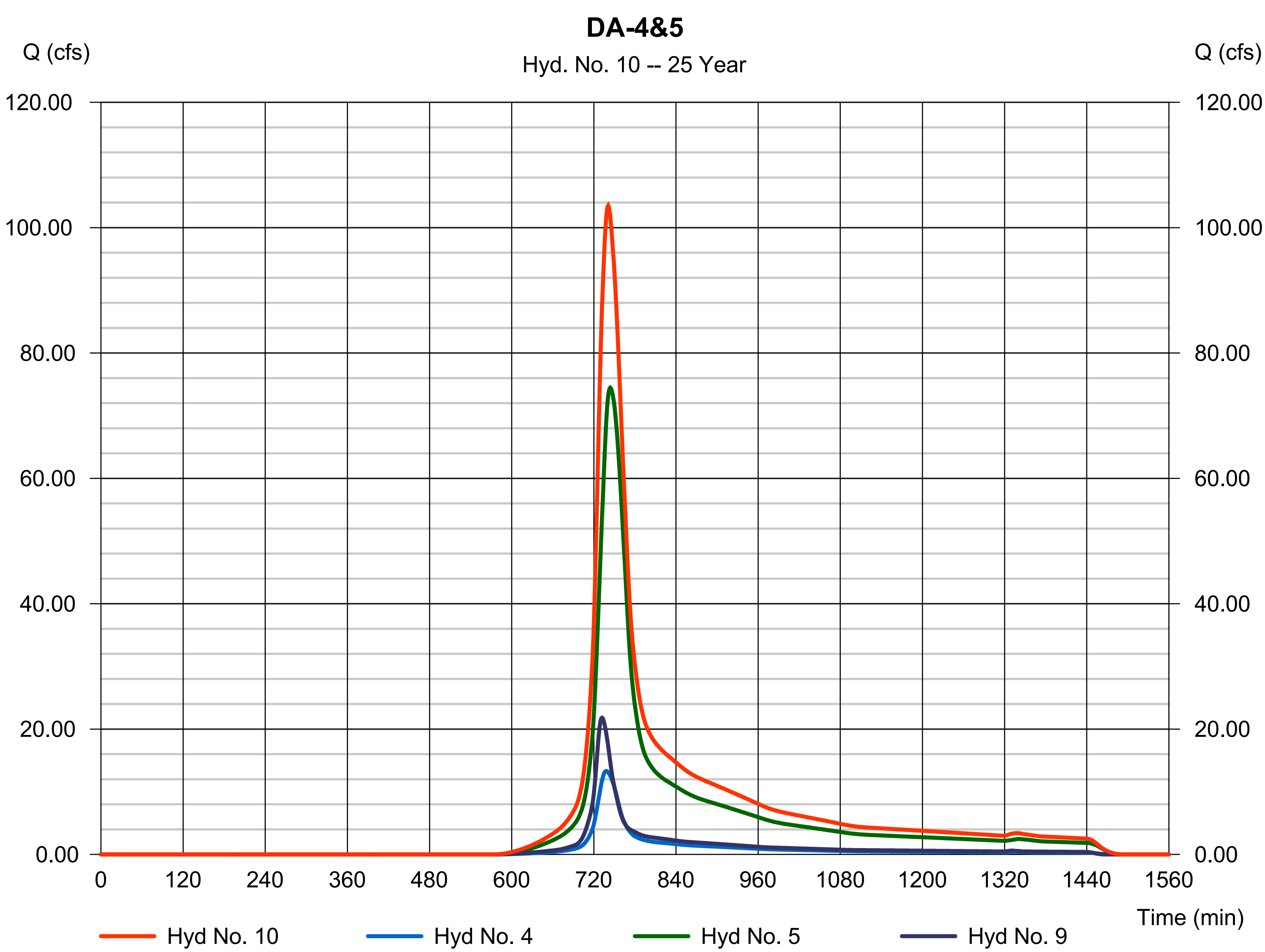


Hydrograph Report

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 103.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 571,258 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



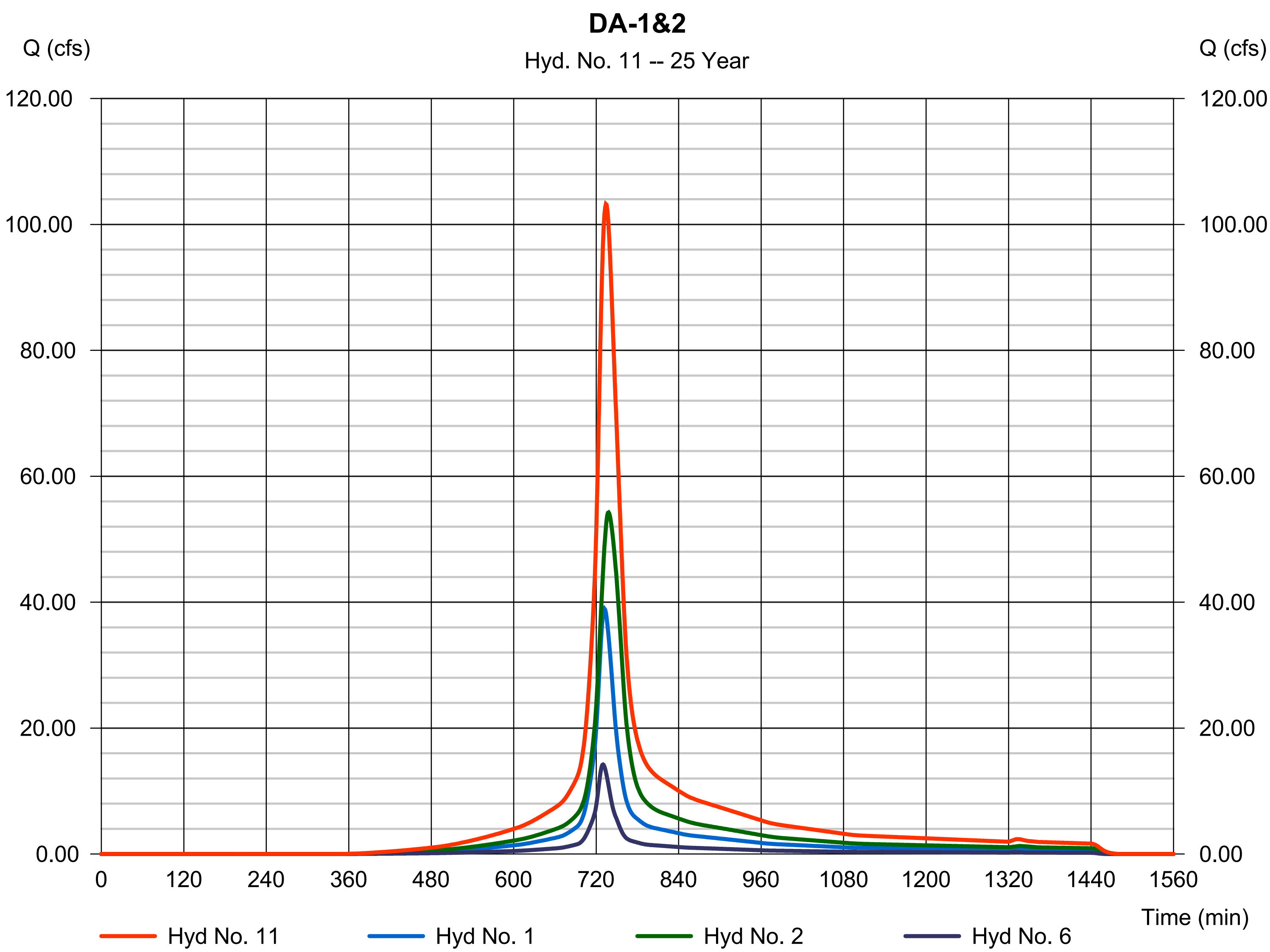
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 103.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 496,498 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



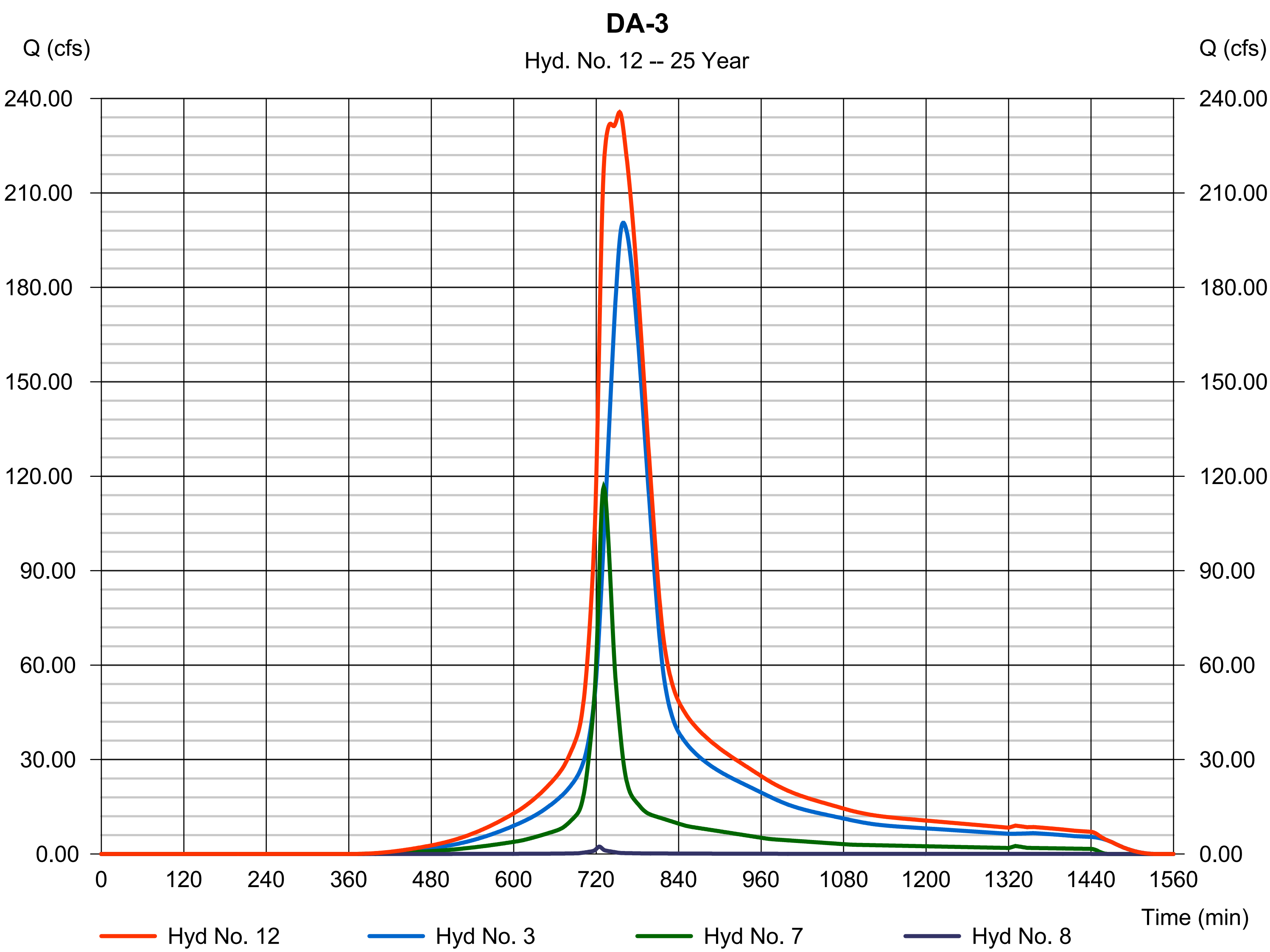
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 235.67 cfs
Storm frequency	= 25 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,012,304 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



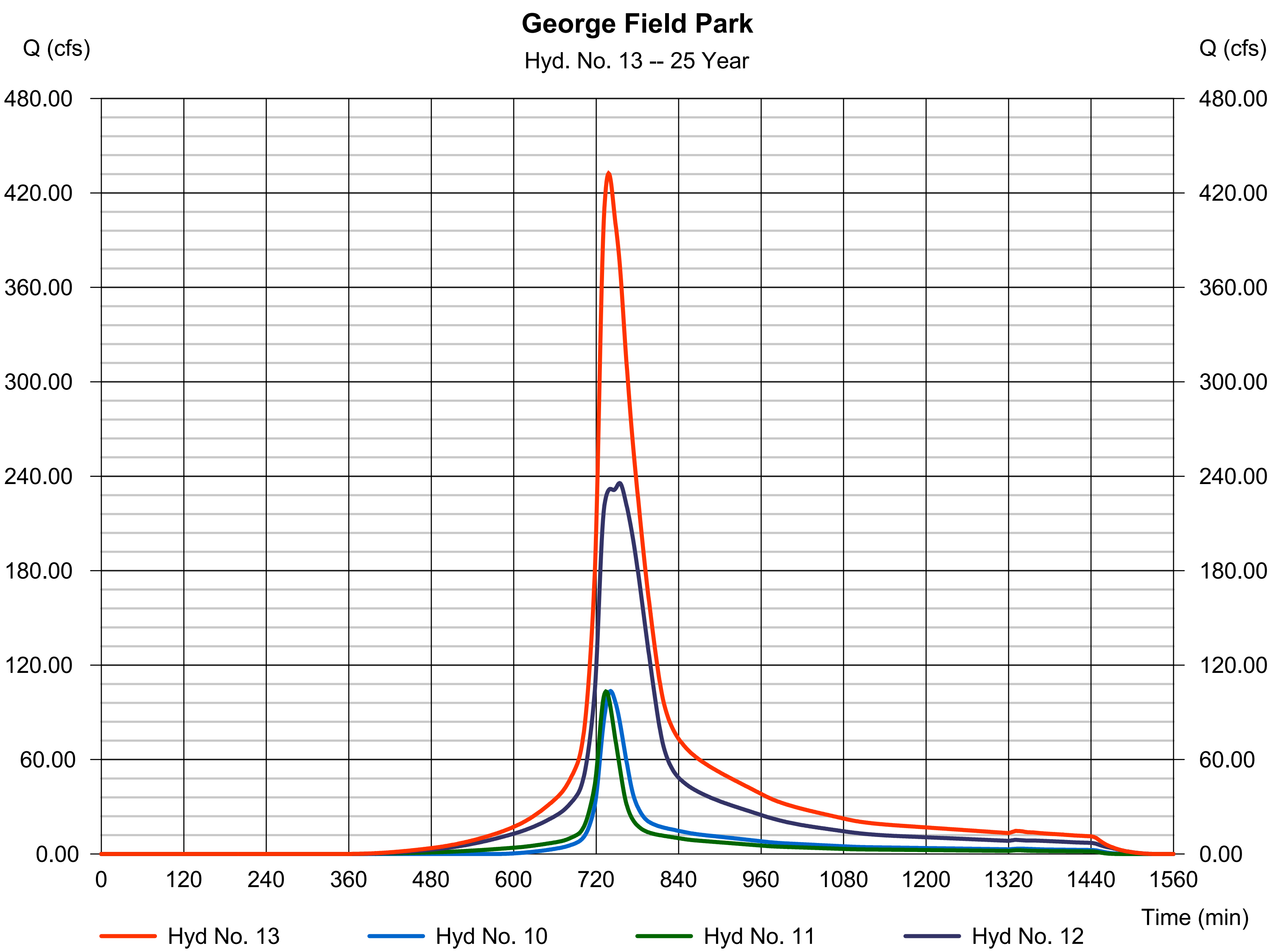
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 432.37 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,080,063 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

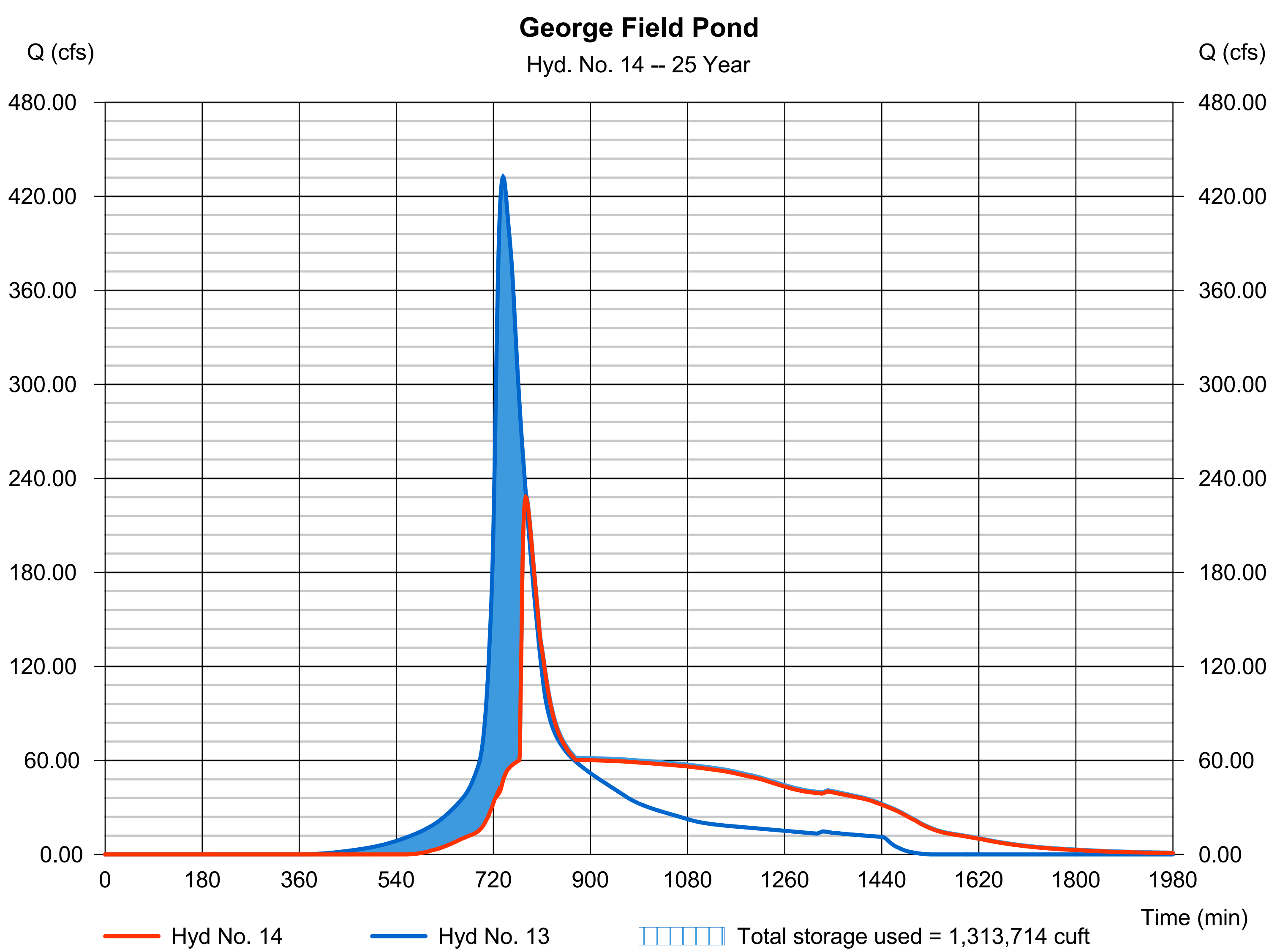
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 228.05 cfs
Storm frequency	= 25 yrs	Time to peak	= 780 min
Time interval	= 1 min	Hyd. volume	= 2,965,209 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 218.17 ft
Reservoir name	= George Field Park	Max. Storage	= 1,313,714 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	43.26	1	732	186,087	------	------	------	DA-1A
2	SCS Runoff	60.26	1	738	303,882	------	------	------	DA-2
3	SCS Runoff	223.32	1	759	1,696,414	------	------	------	DA-3A
4	SCS Runoff	15.44	1	738	75,381	------	------	------	DA-4
5	SCS Runoff	86.35	1	744	477,562	------	------	------	DA-5A
6	SCS Runoff	15.79	1	730	63,288	------	------	------	DA-1B
7	SCS Runoff	129.70	1	731	541,695	------	------	------	DA-3B
8	SCS Runoff	2.575	1	724	8,068	------	------	------	DA-3C
9	SCS Runoff	25.29	1	732	105,543	------	------	------	DA-5B
10	Combine	120.04	1	741	658,484	4, 5, 9	------	------	DA-4&5
11	Combine	114.65	1	734	553,257	1, 2, 6,	------	------	DA-1&2
12	Combine	262.31	1	754	2,246,176	3, 7, 8,	------	------	DA-3
13	Combine	486.55	1	738	3,457,916	10, 11, 12	------	------	George Field Park
14	Reservoir	314.91	1	769	3,340,356	13	218.22	1,331,772	George Field Pond

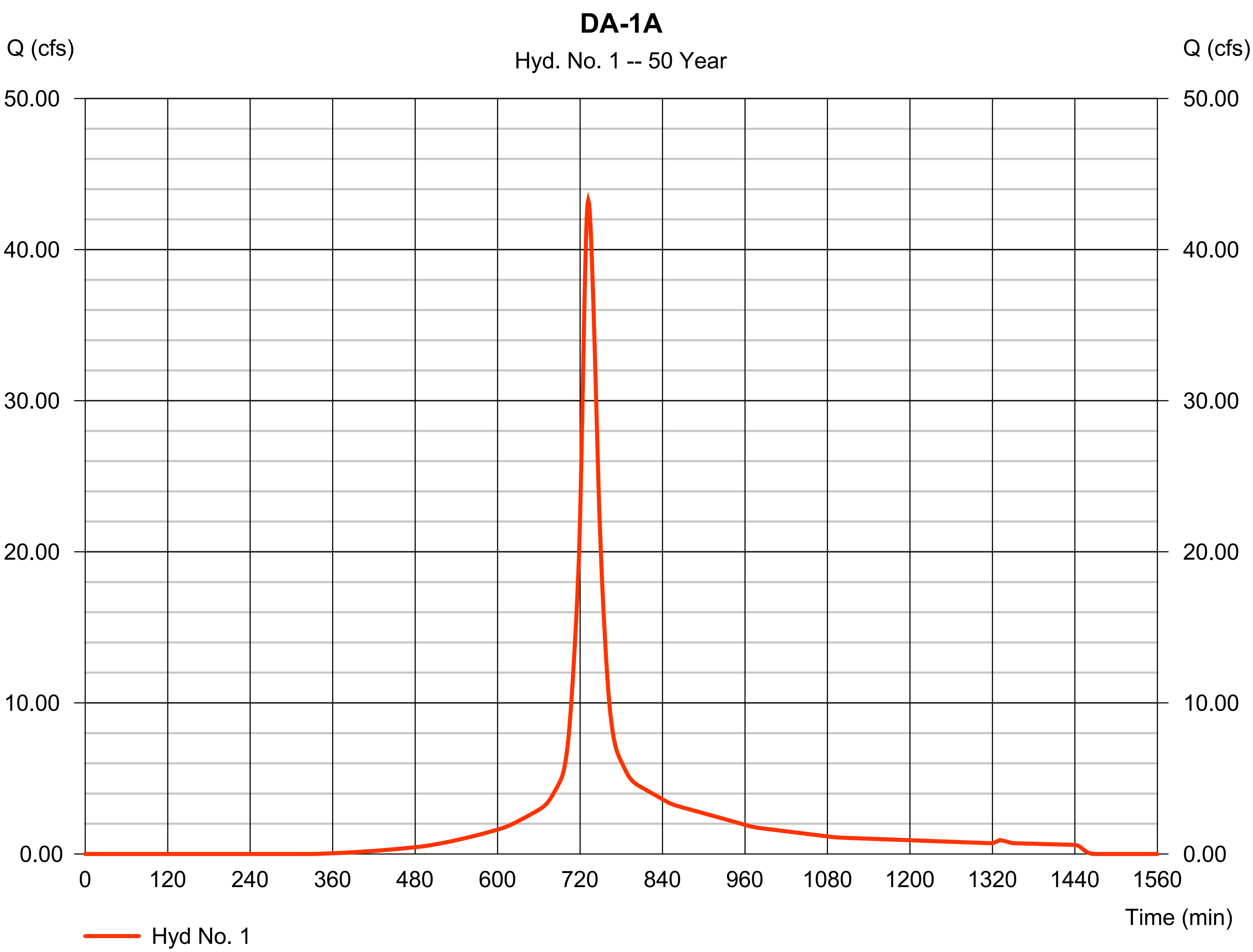
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 43.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 186,087 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



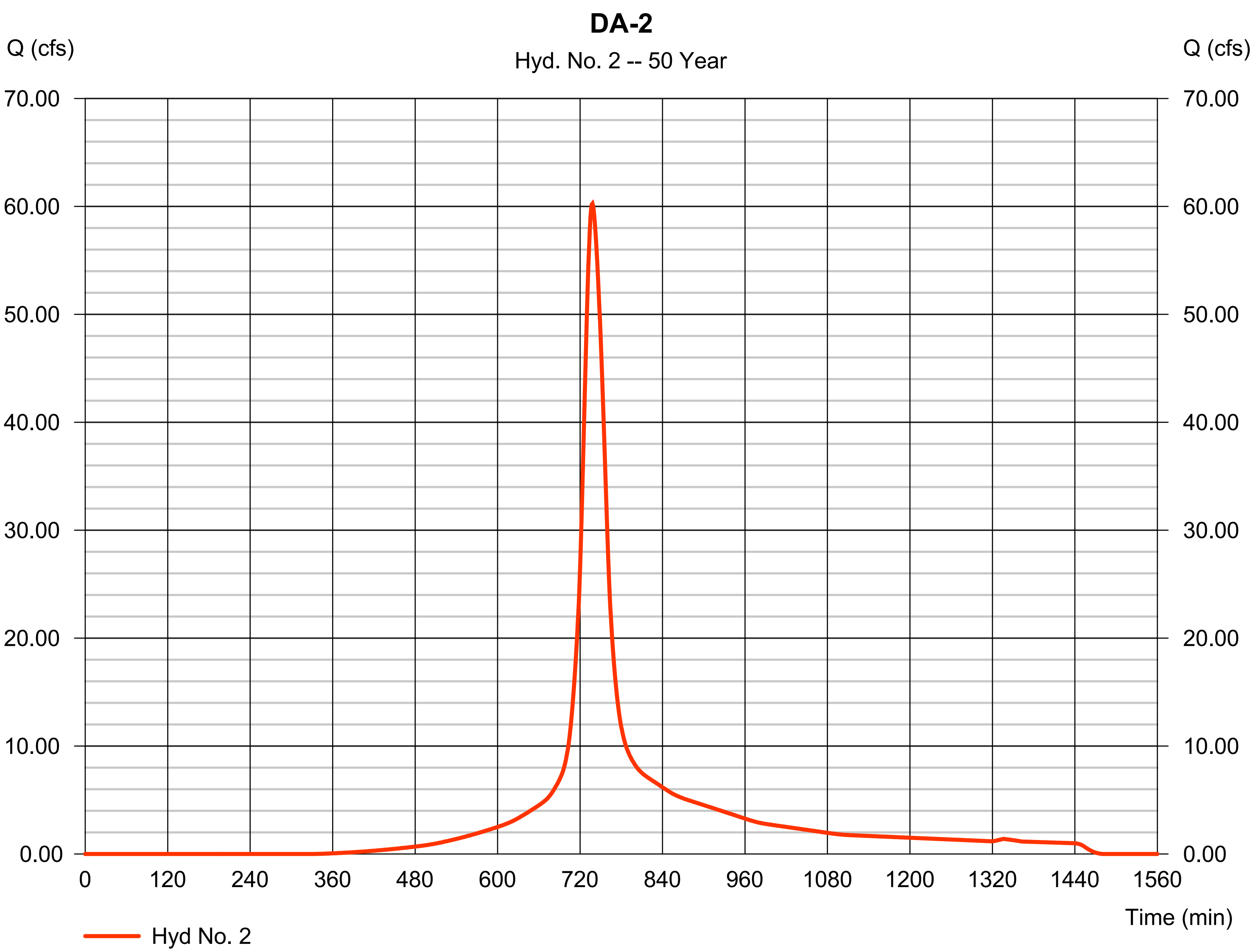
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 60.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 303,882 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

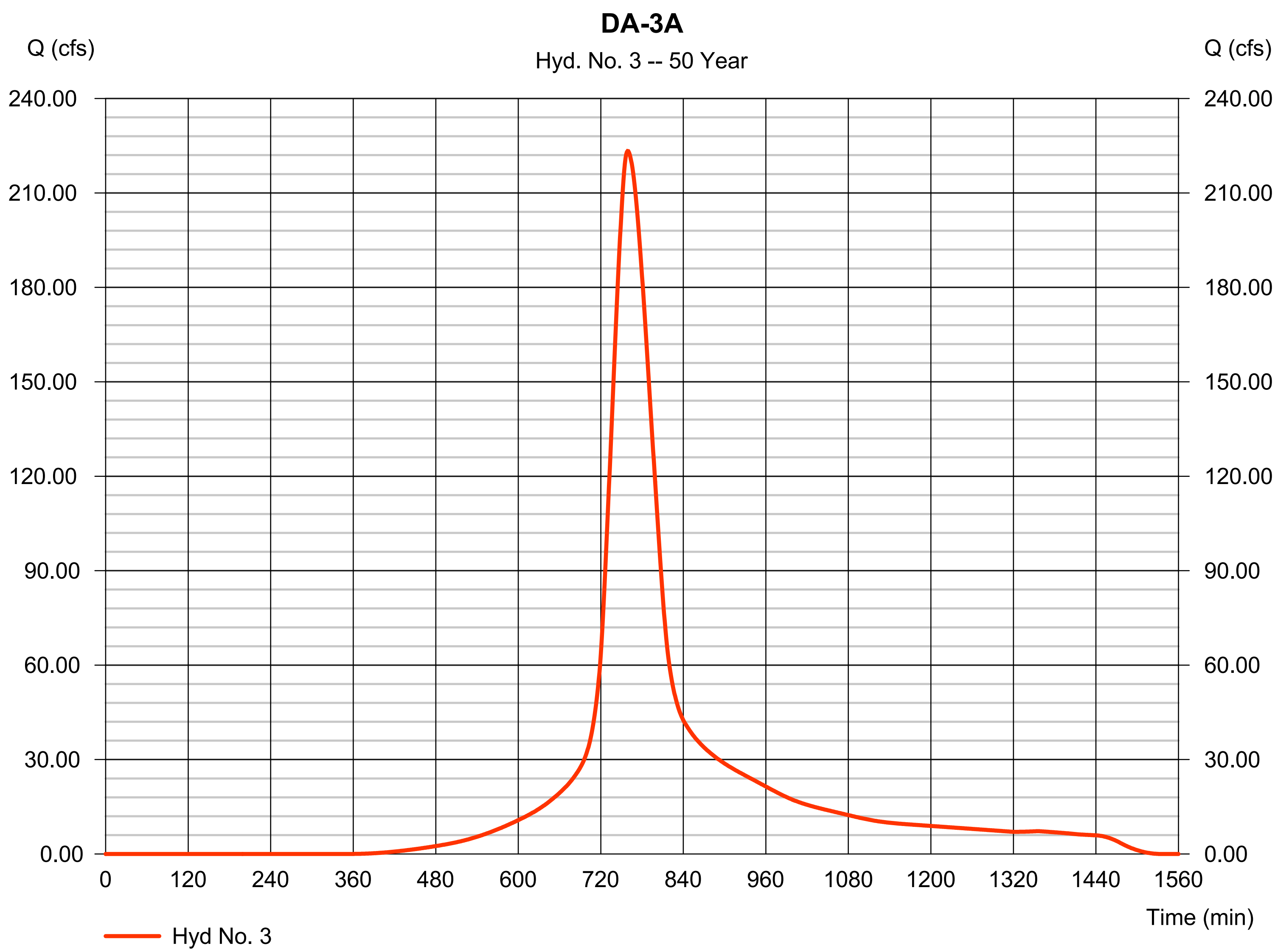
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 223.32 cfs
Storm frequency	= 50 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,696,414 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410

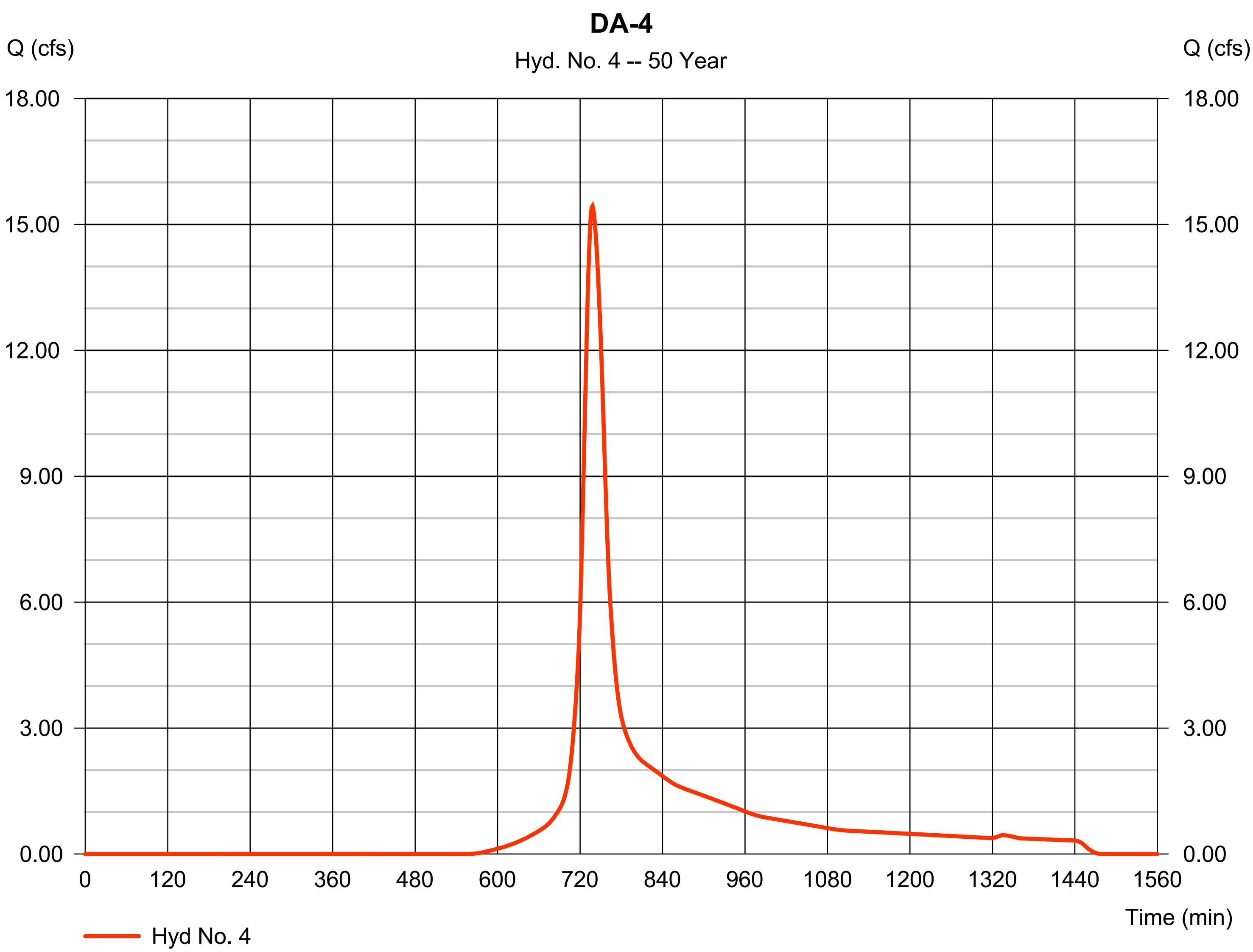


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 15.44 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 75,381 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



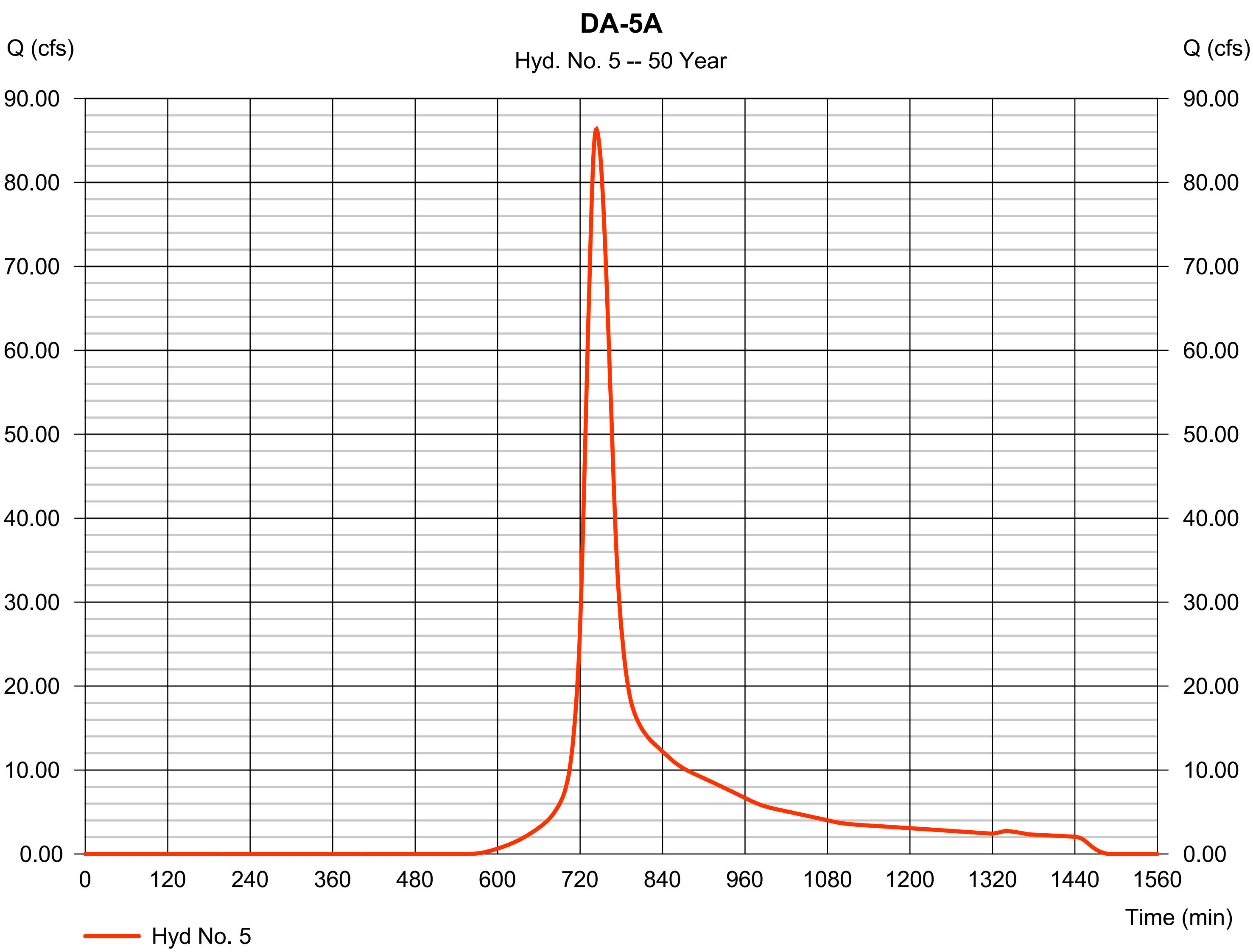
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 86.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 477,562 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

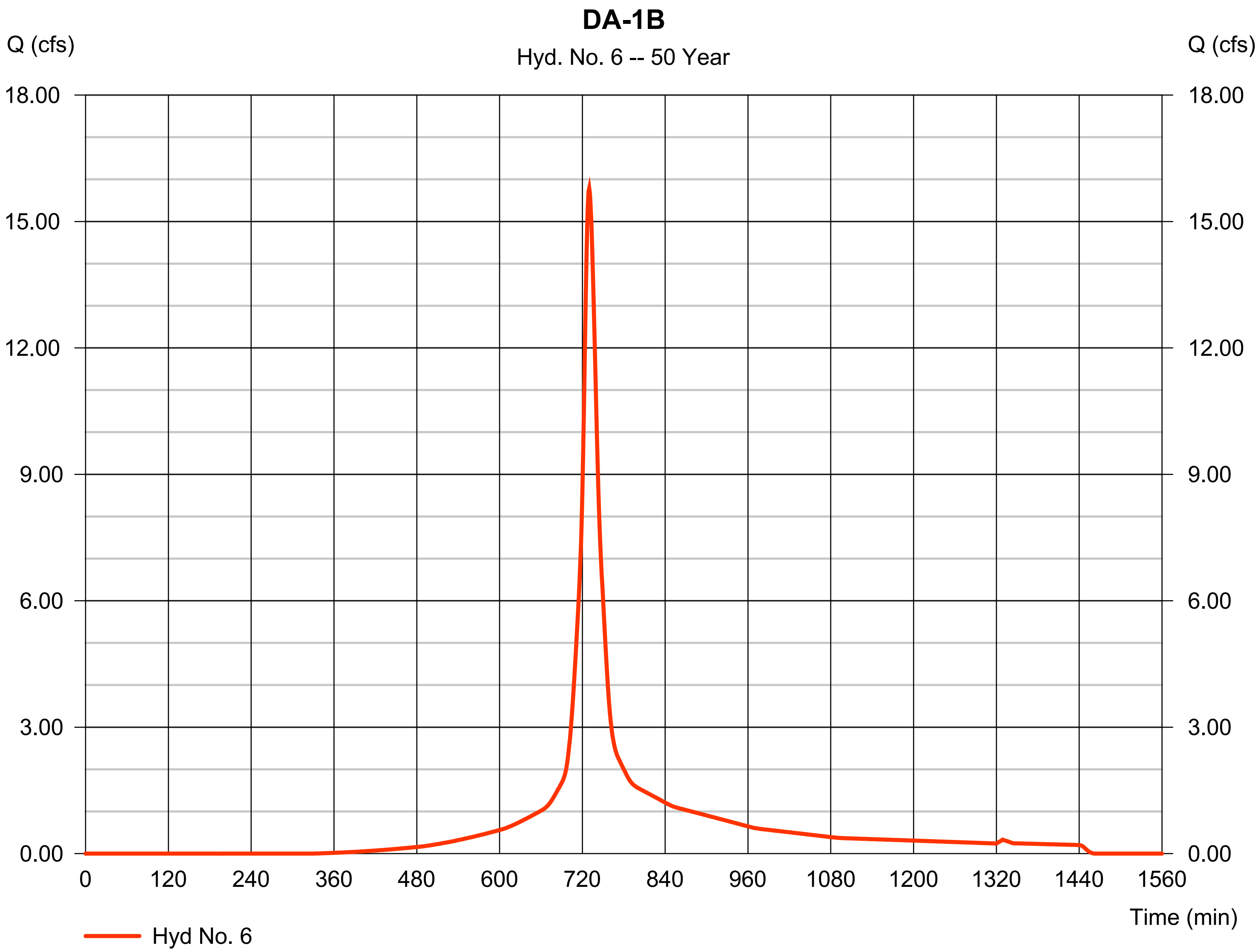


Hydrograph Report

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 15.79 cfs
Storm frequency	= 50 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 63,288 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



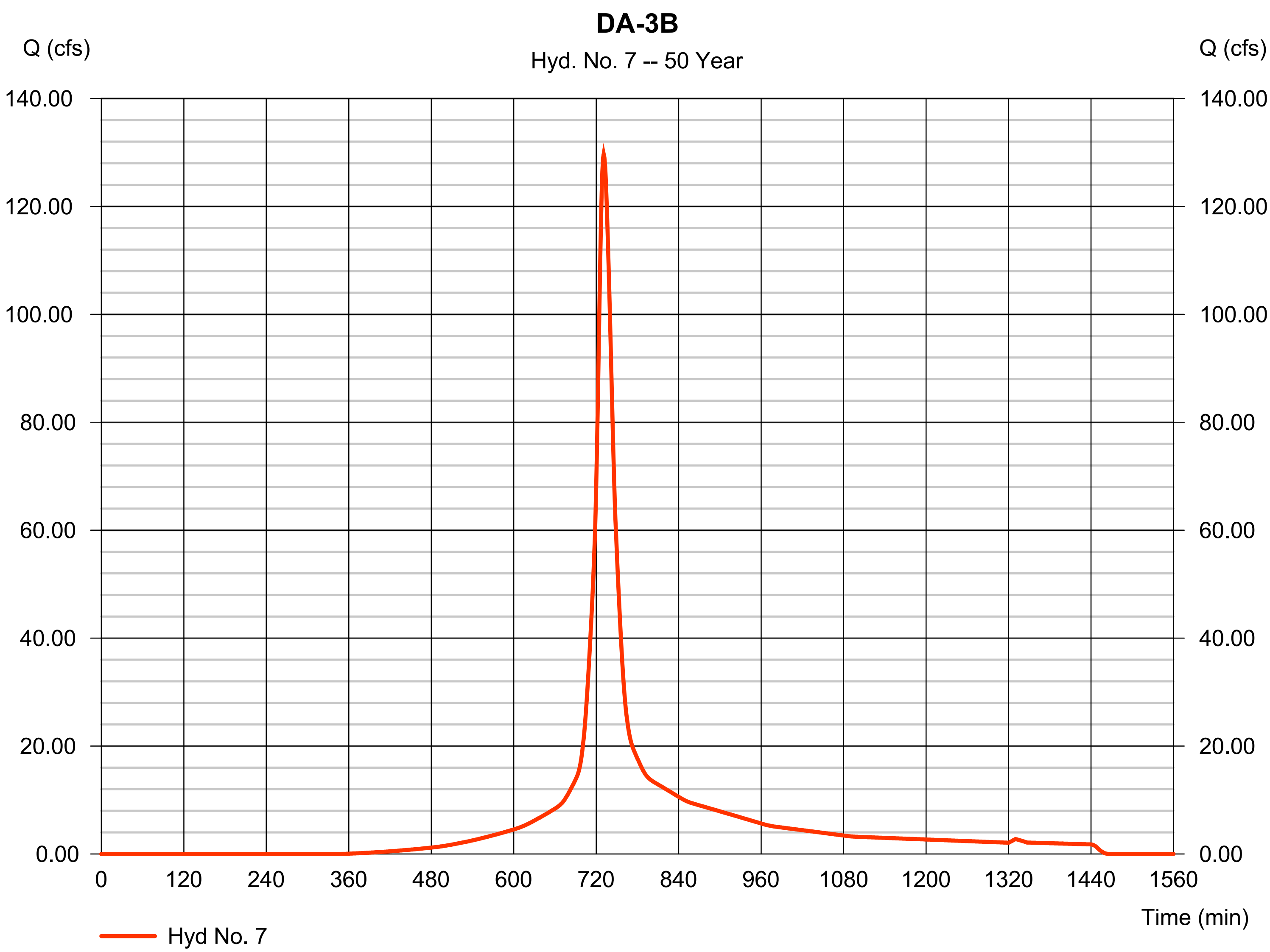
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 129.70 cfs
Storm frequency	= 50 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 541,695 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



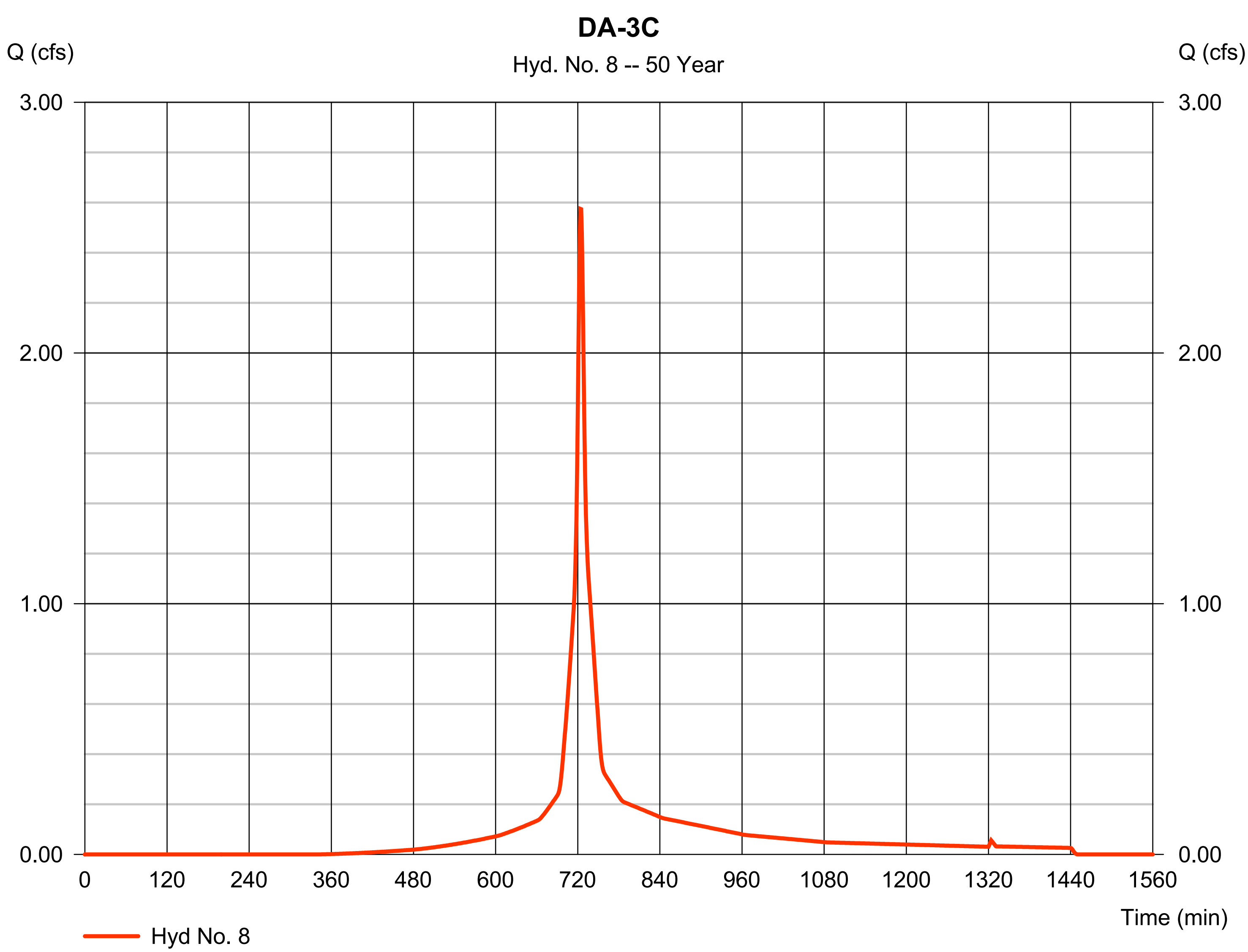
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.575 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 8,068 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



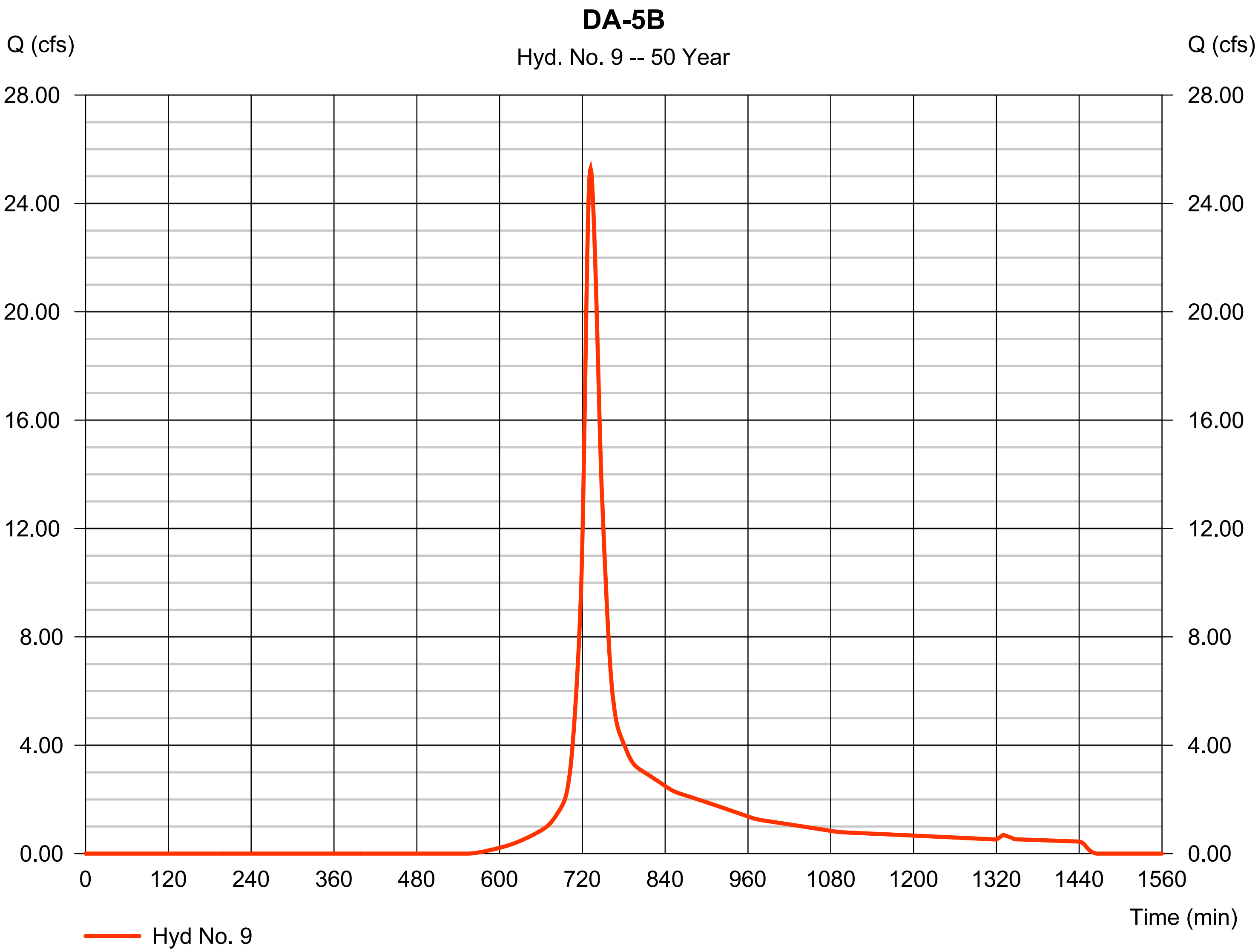
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 25.29 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 105,543 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



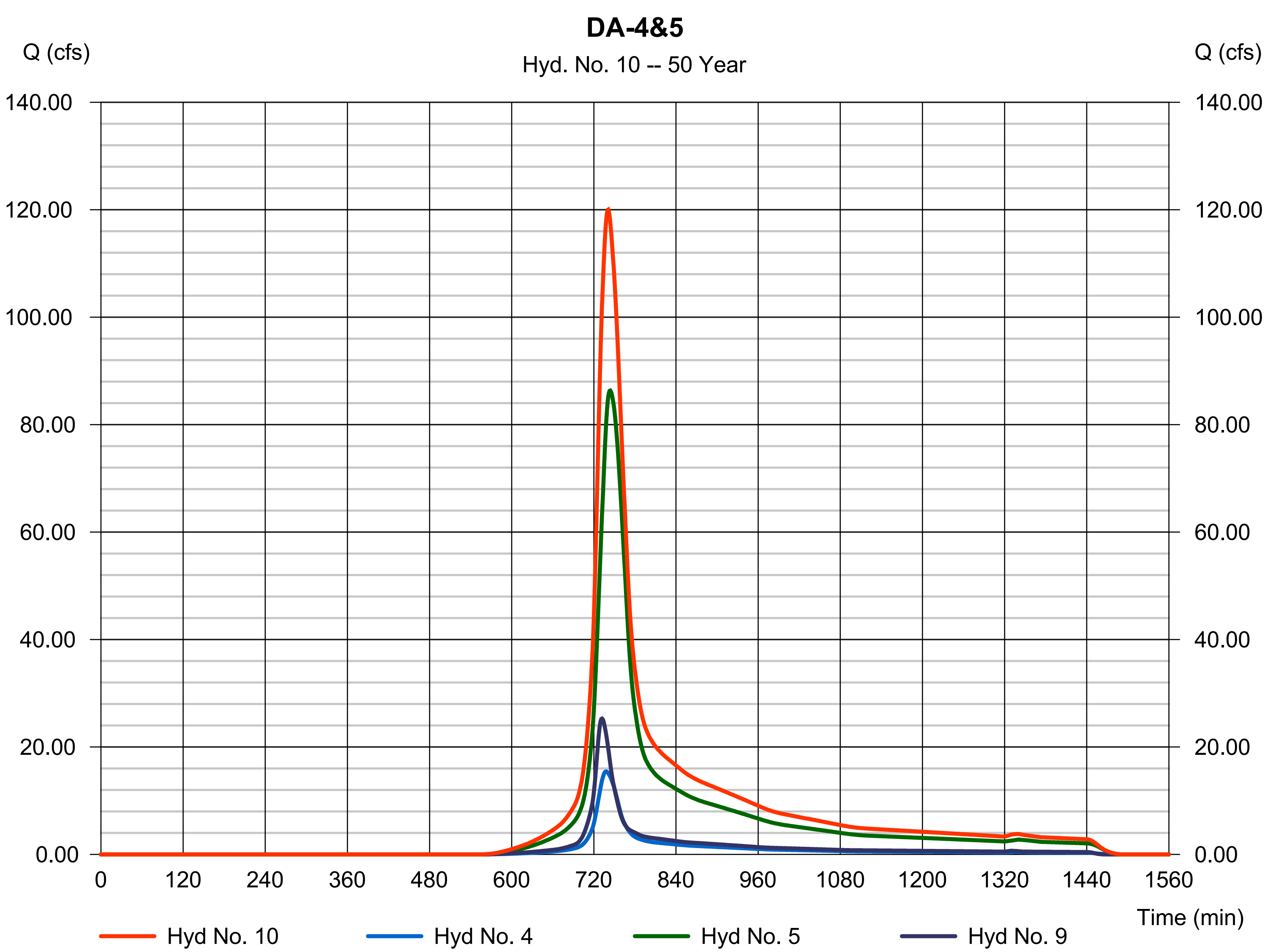
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 120.04 cfs
Storm frequency	= 50 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 658,484 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



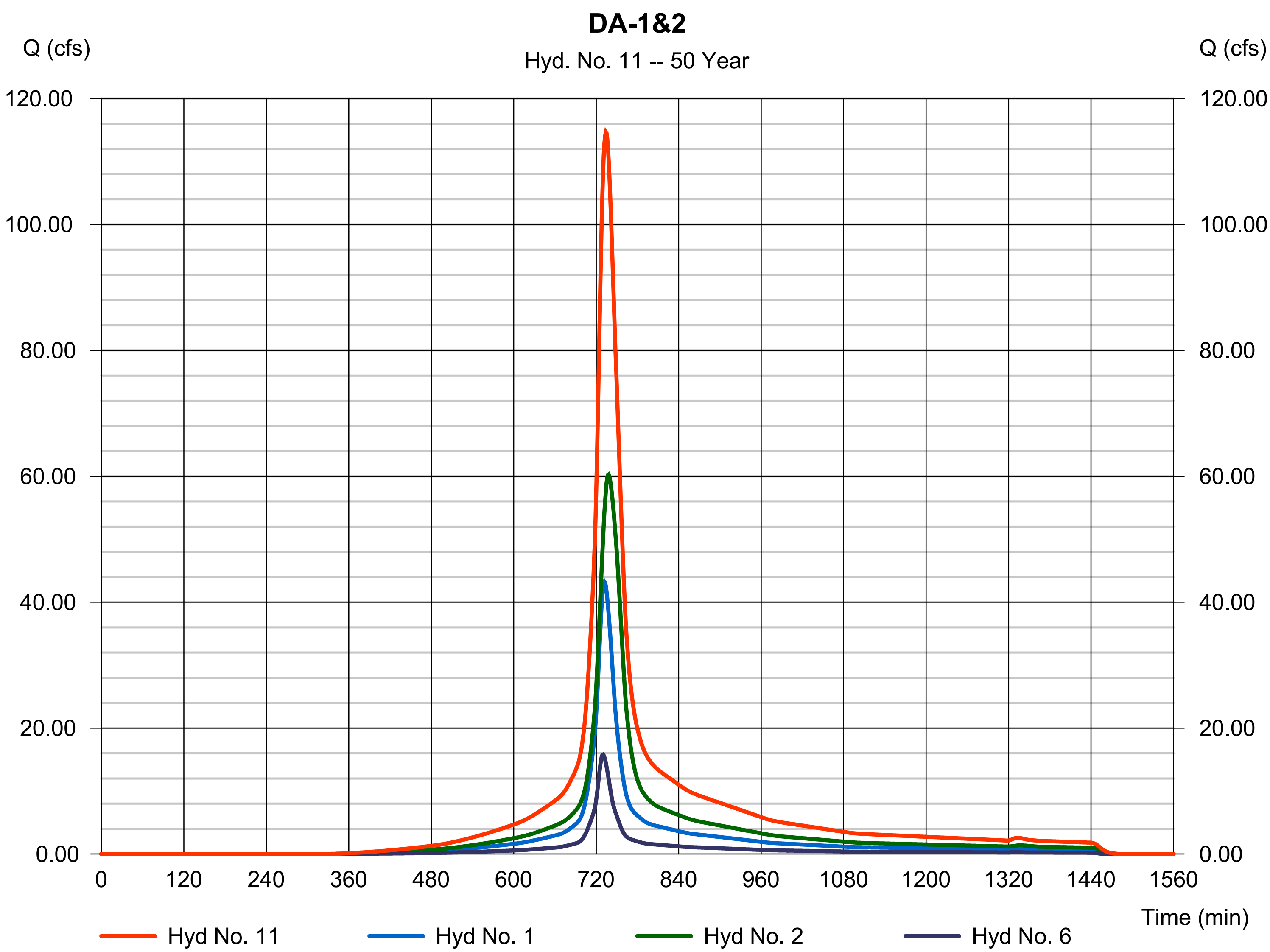
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 114.65 cfs
Storm frequency	= 50 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 553,257 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



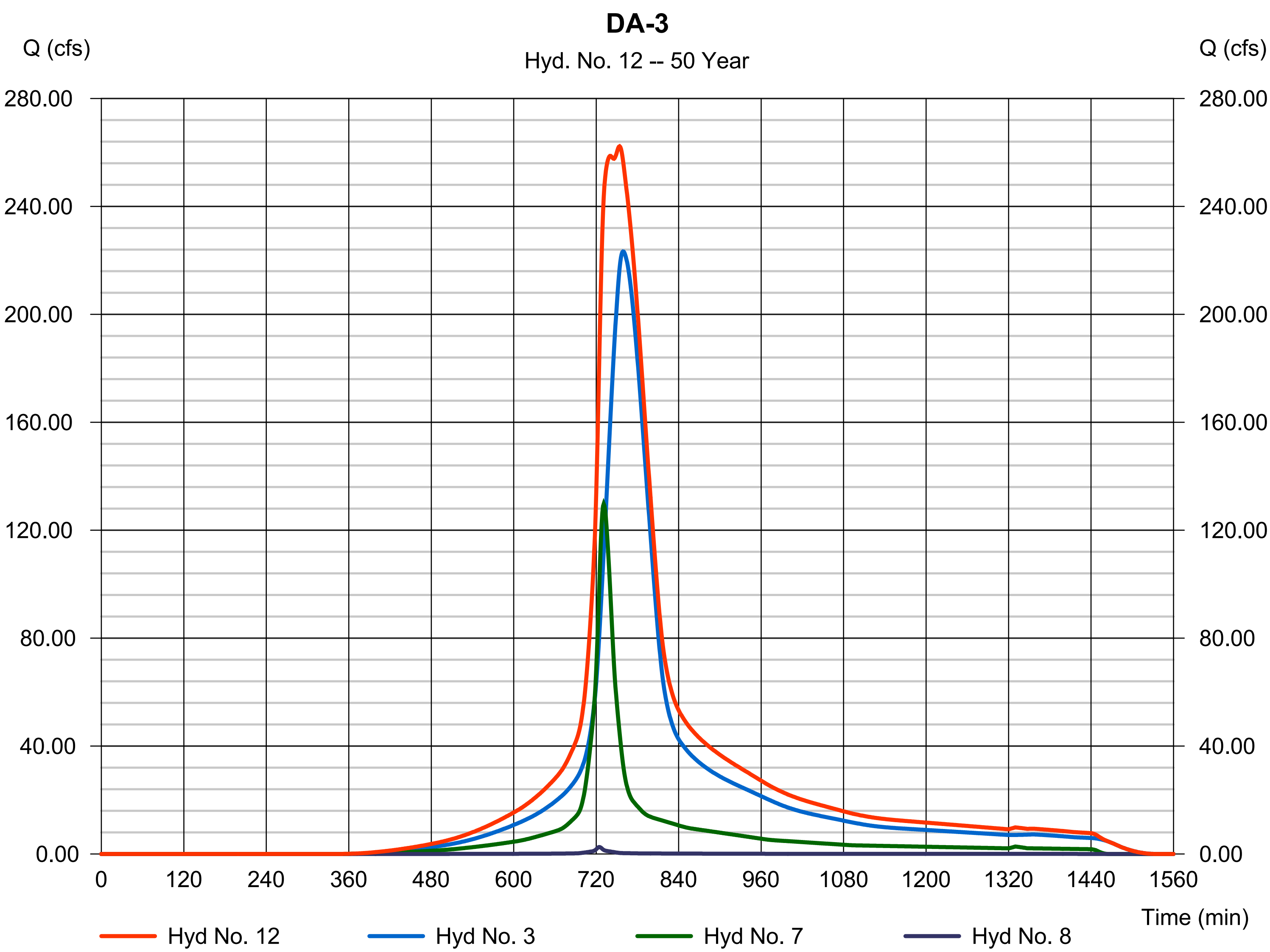
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 262.31 cfs
Storm frequency	= 50 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,246,176 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



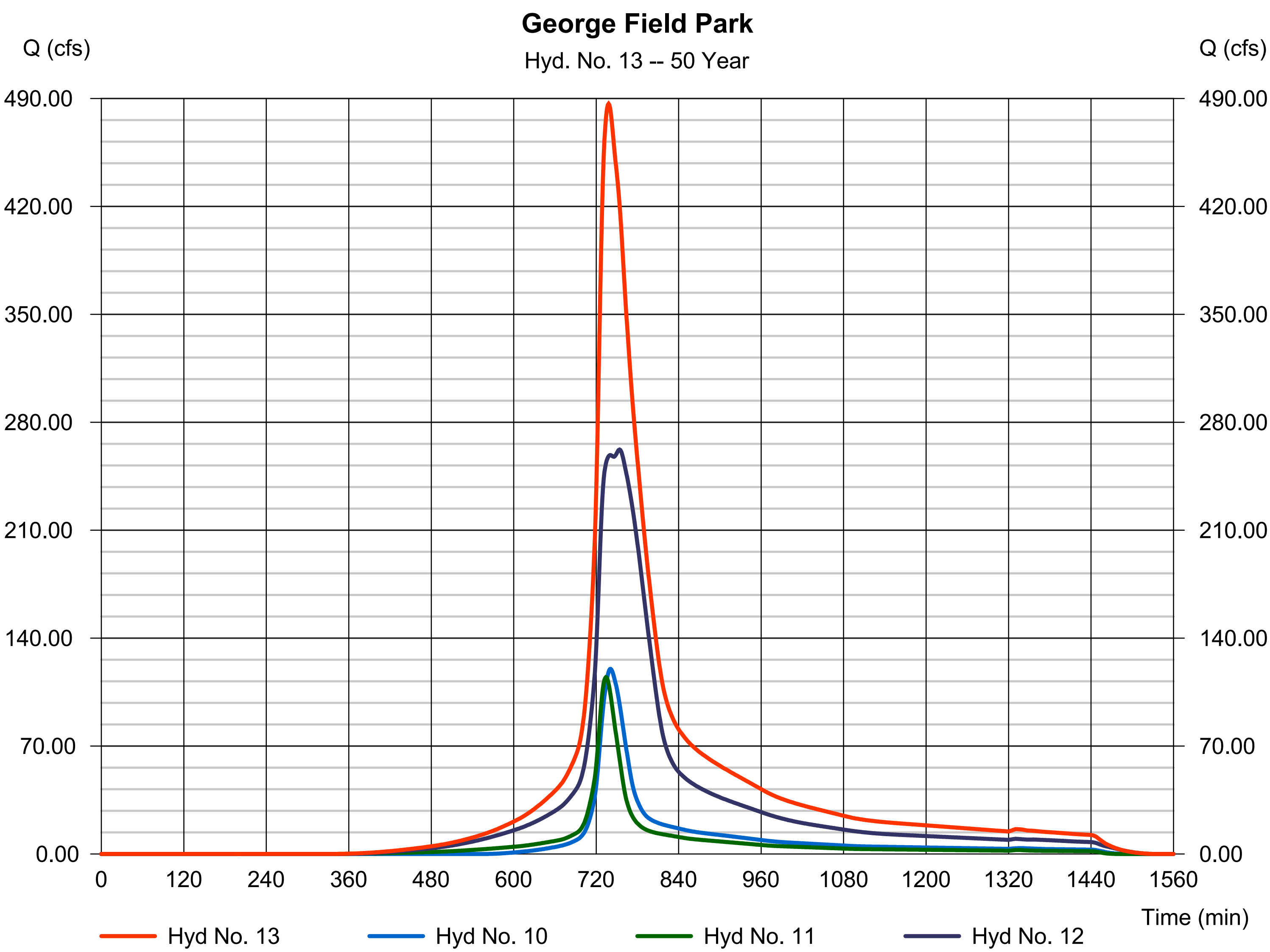
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 486.55 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,457,916 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

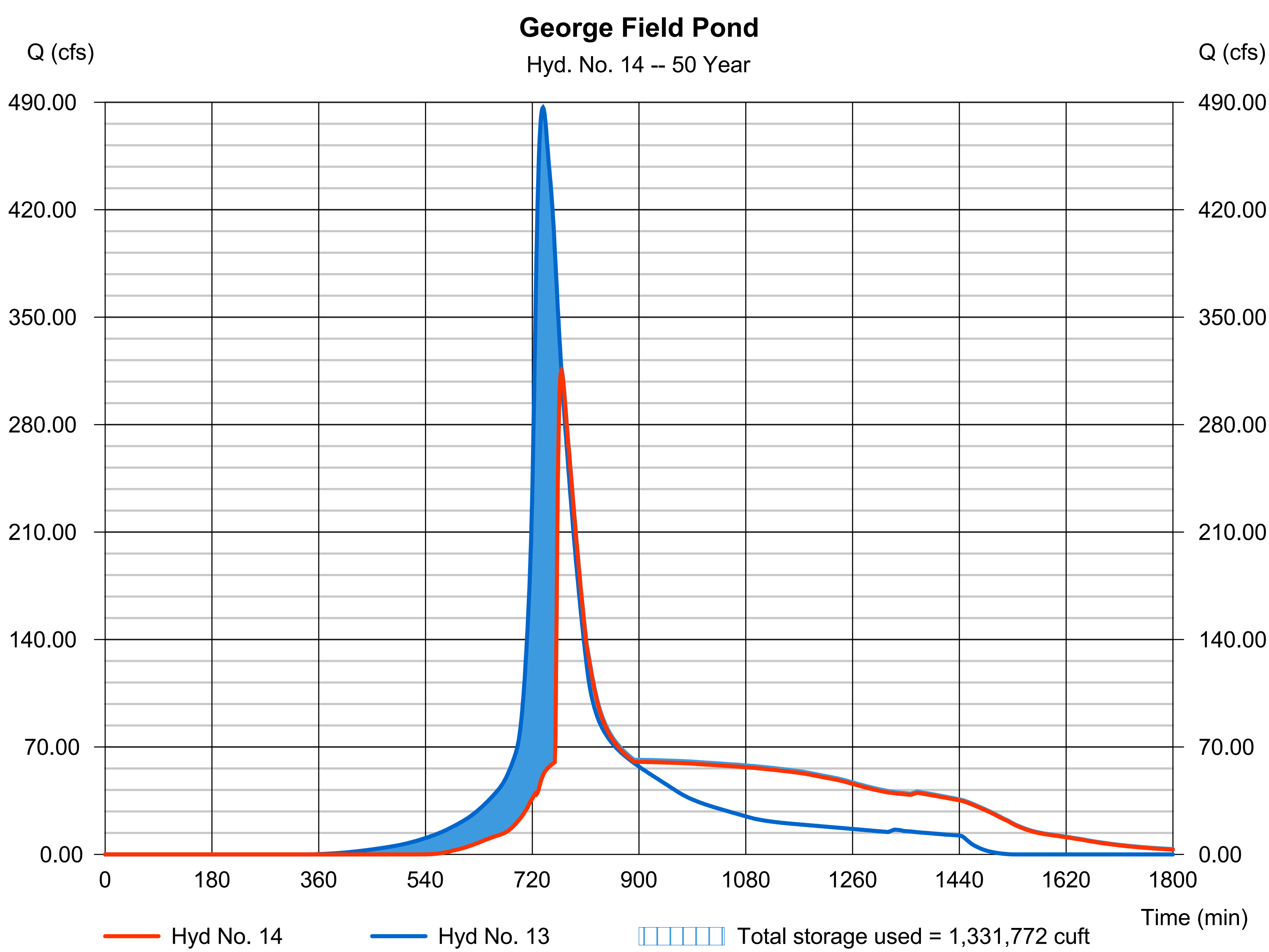
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 314.91 cfs
Storm frequency	= 50 yrs	Time to peak	= 769 min
Time interval	= 1 min	Hyd. volume	= 3,340,356 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 218.22 ft
Reservoir name	= George Field Park	Max. Storage	= 1,331,772 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	52.96	1	732	229,663	------	------	------	DA-1A
2	SCS Runoff	73.79	1	738	375,041	------	------	------	DA-2
3	SCS Runoff	274.85	1	759	2,100,107	------	------	------	DA-3A
4	SCS Runoff	20.40	1	737	98,867	------	------	------	DA-4
5	SCS Runoff	114.15	1	743	626,355	------	------	------	DA-5A
6	SCS Runoff	19.32	1	730	78,108	------	------	------	DA-1B
7	SCS Runoff	159.32	1	731	670,602	------	------	------	DA-3B
8	SCS Runoff	3.162	1	724	9,988	------	------	------	DA-3C
9	SCS Runoff	33.39	1	732	138,427	------	------	------	DA-5B
10	Combine	158.66	1	740	863,647	4, 5, 9	------	------	DA-4&5
11	Combine	140.42	1	734	682,812	1, 2, 6,	------	------	DA-1&2
12	Combine	322.50	1	754	2,780,696	3, 7, 8,	------	------	DA-3
13	Combine	610.29	1	738	4,327,159	10, 11, 12	------	------	George Field Park
14	Reservoir	507.39	1	756	4,204,108	13	218.33	1,364,947	George Field Pond

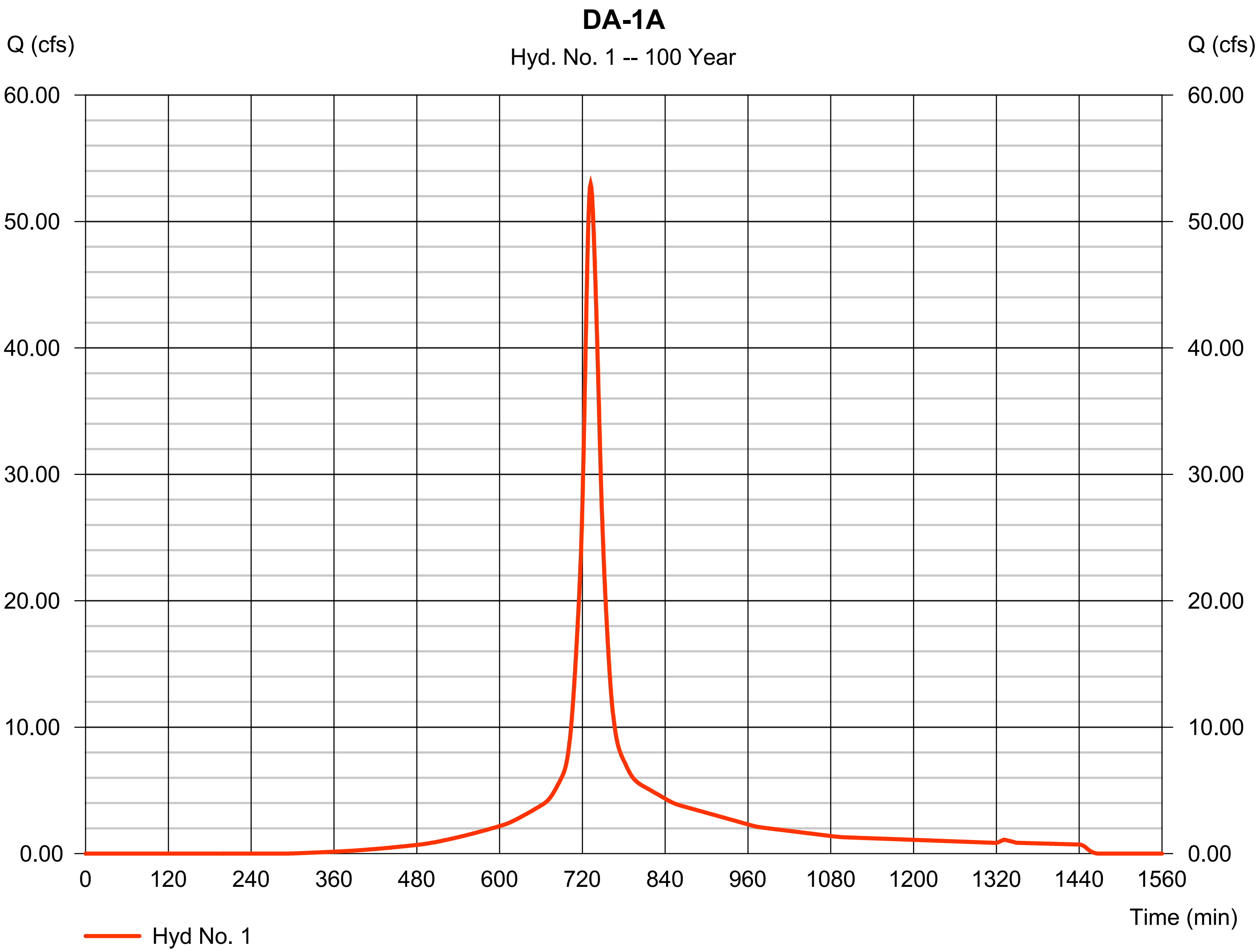
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 52.96 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 229,663 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



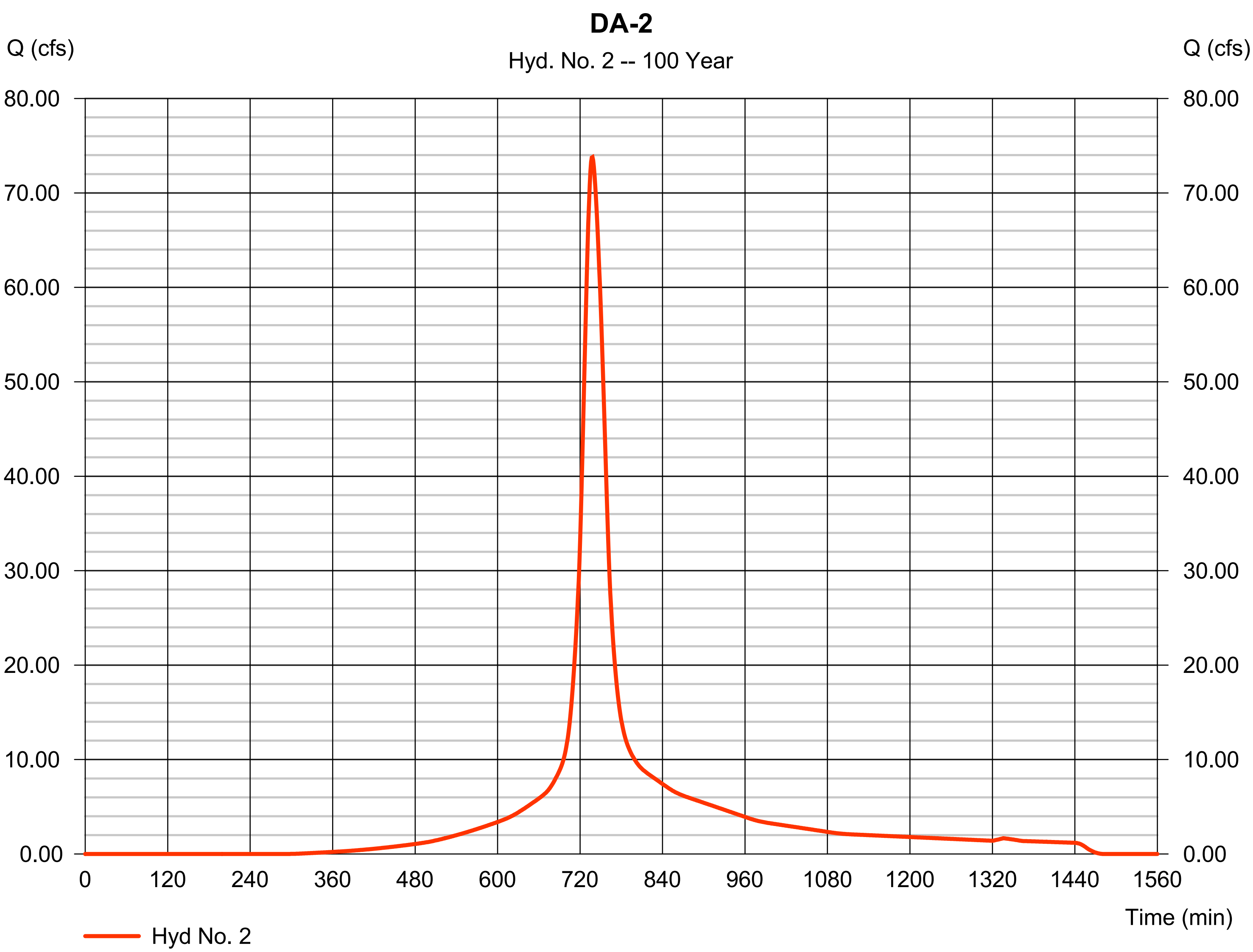
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 73.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 375,041 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

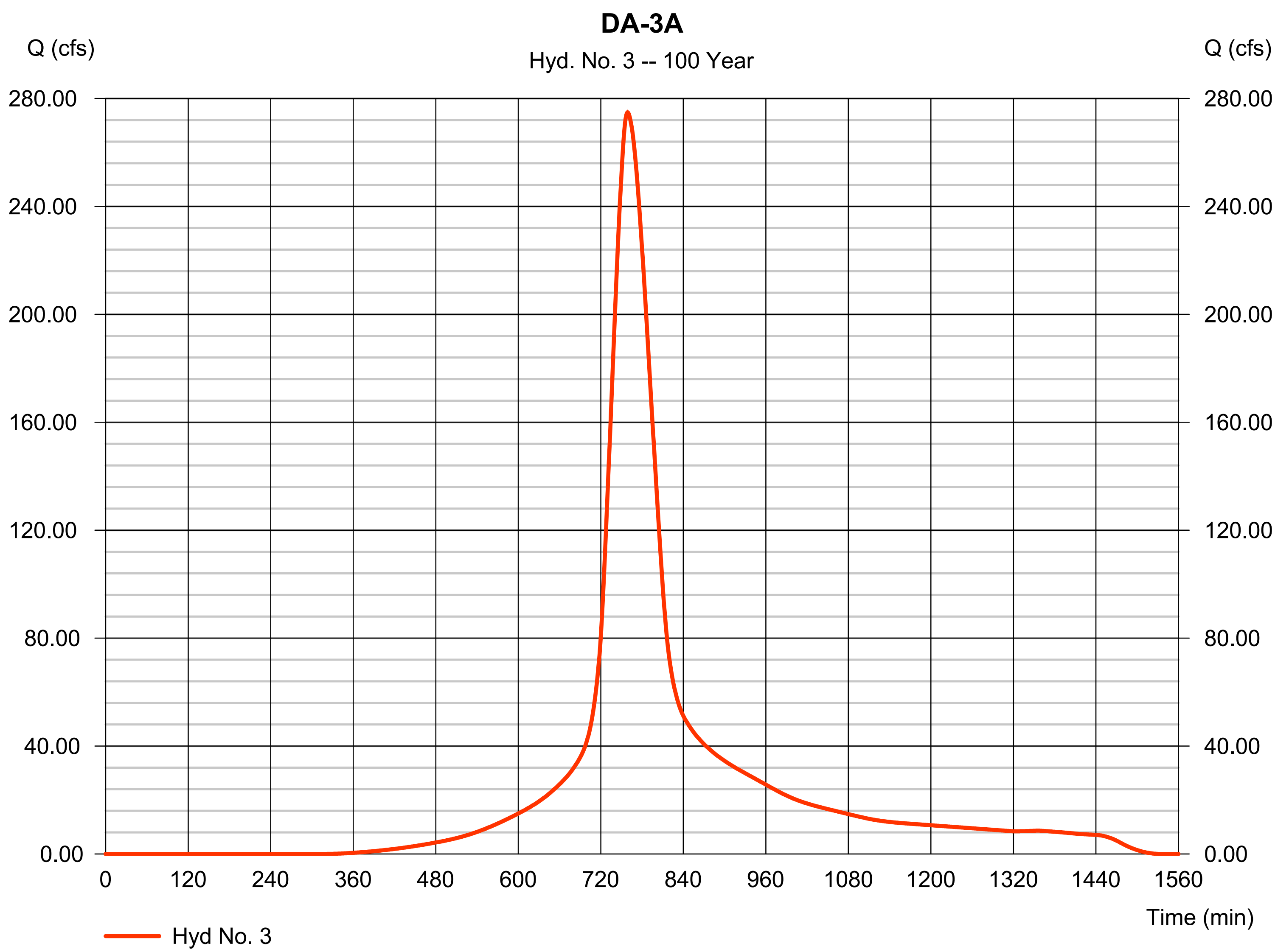
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 274.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 2,100,107 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



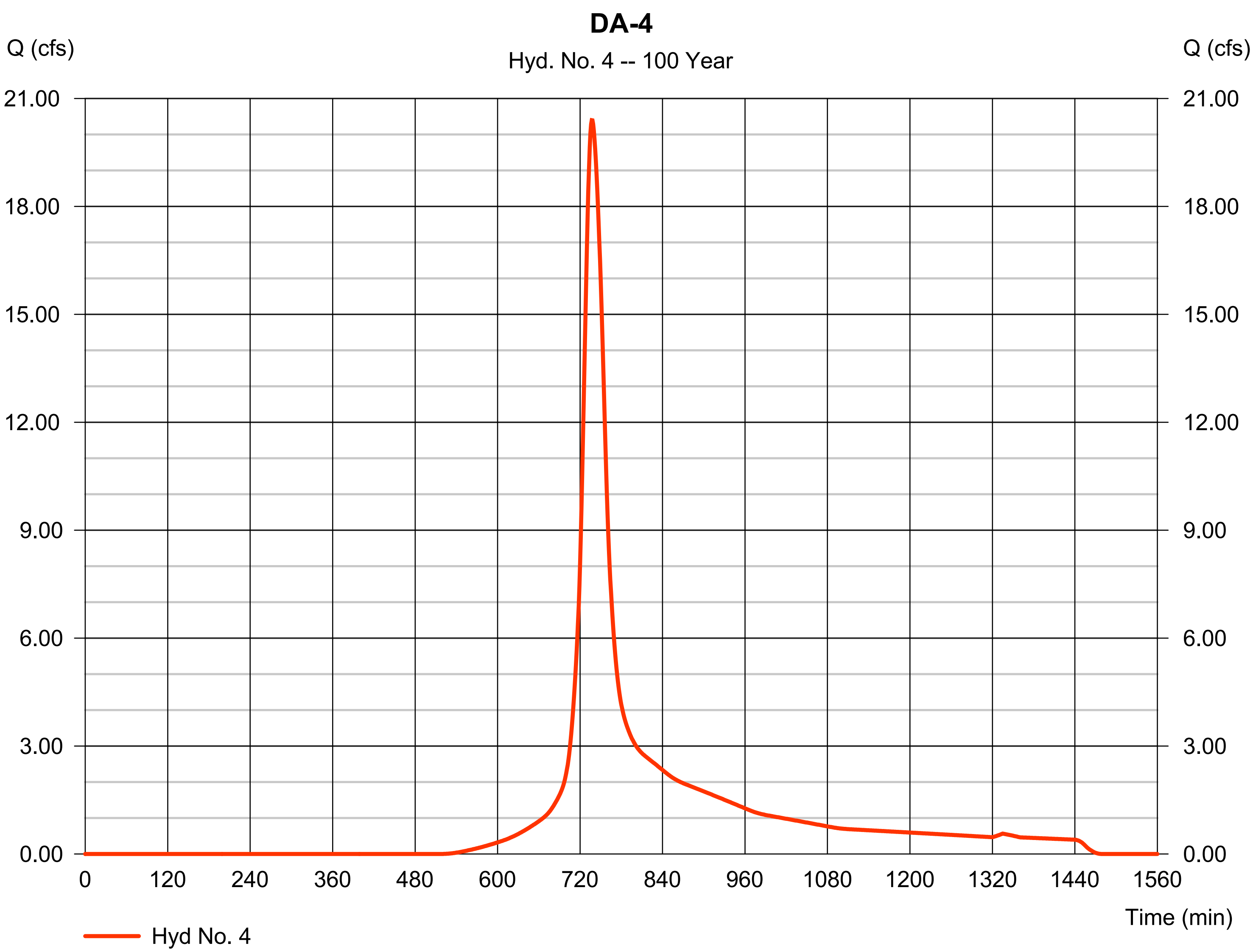
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 20.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 98,867 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



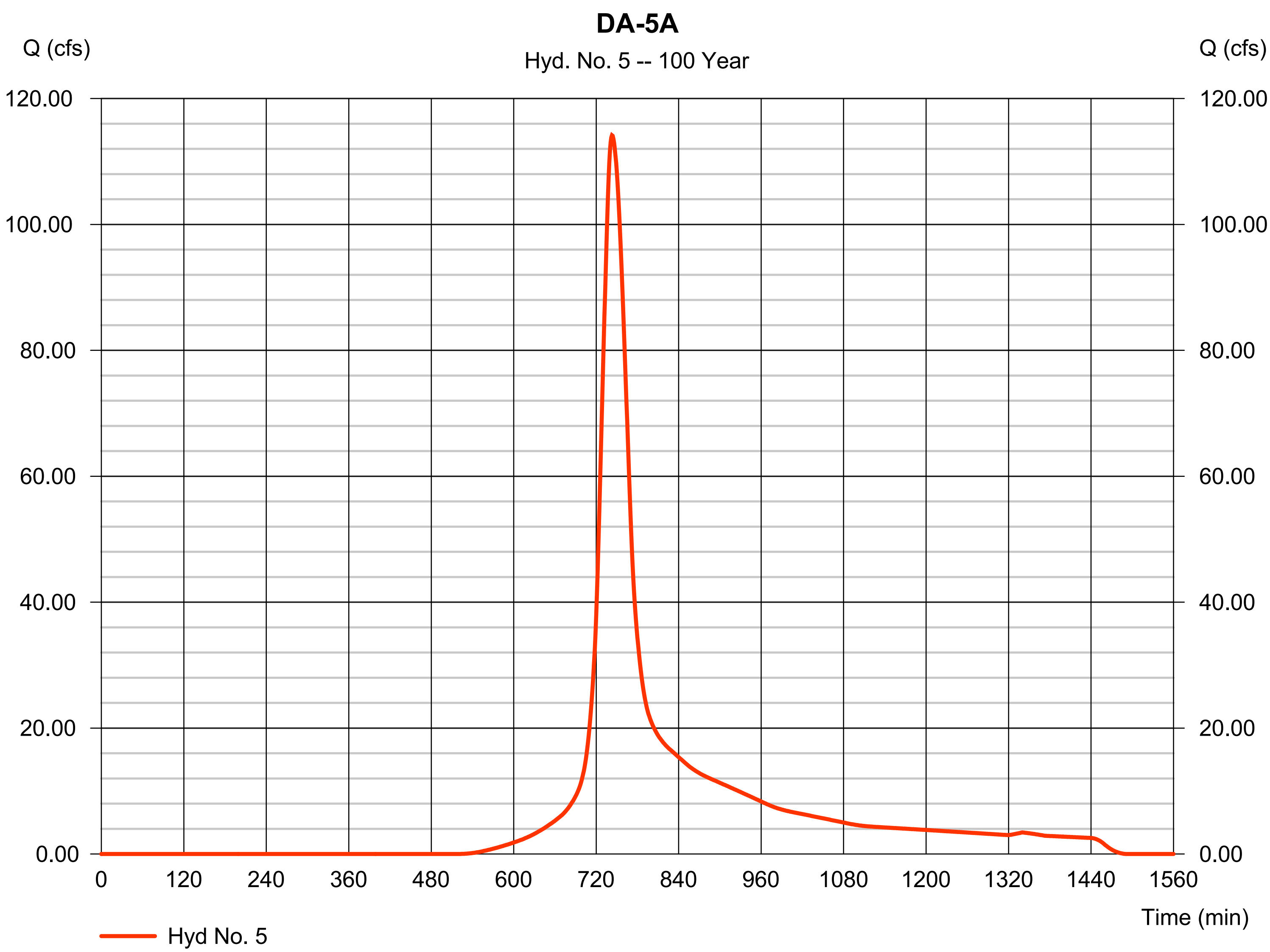
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 114.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 743 min
Time interval	= 1 min	Hyd. volume	= 626,355 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



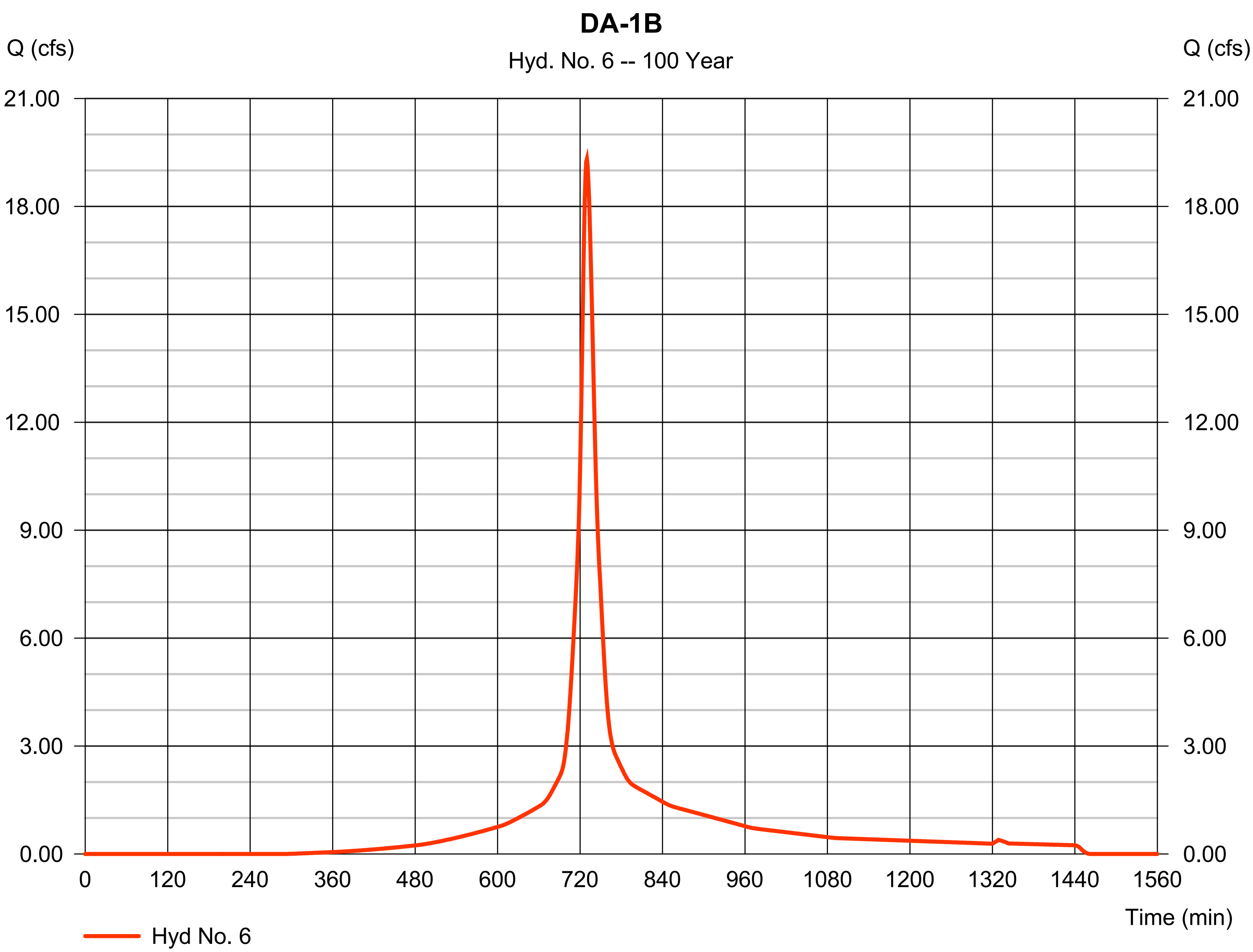
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 19.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 78,108 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



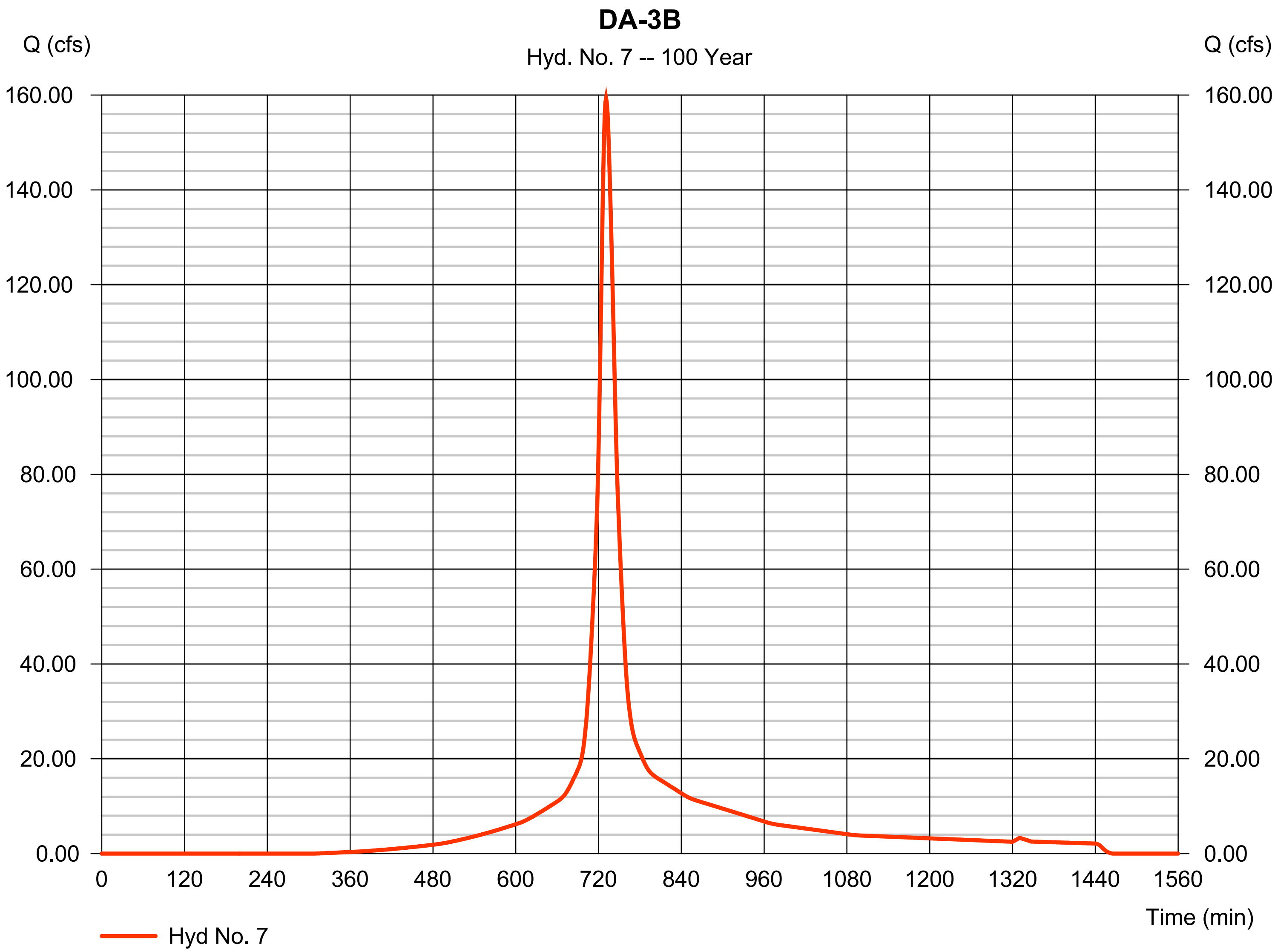
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 159.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 670,602 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



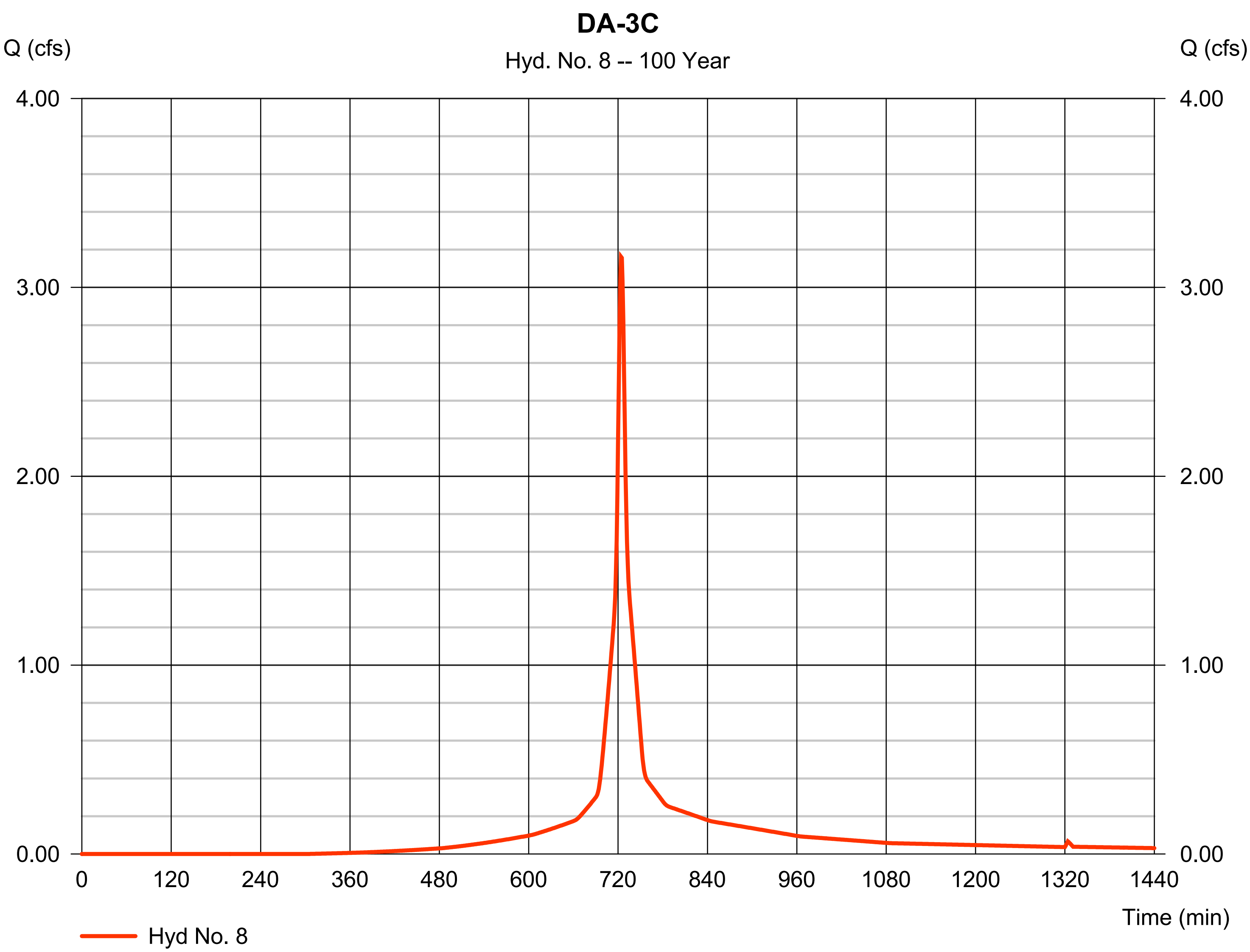
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.162 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 9,988 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



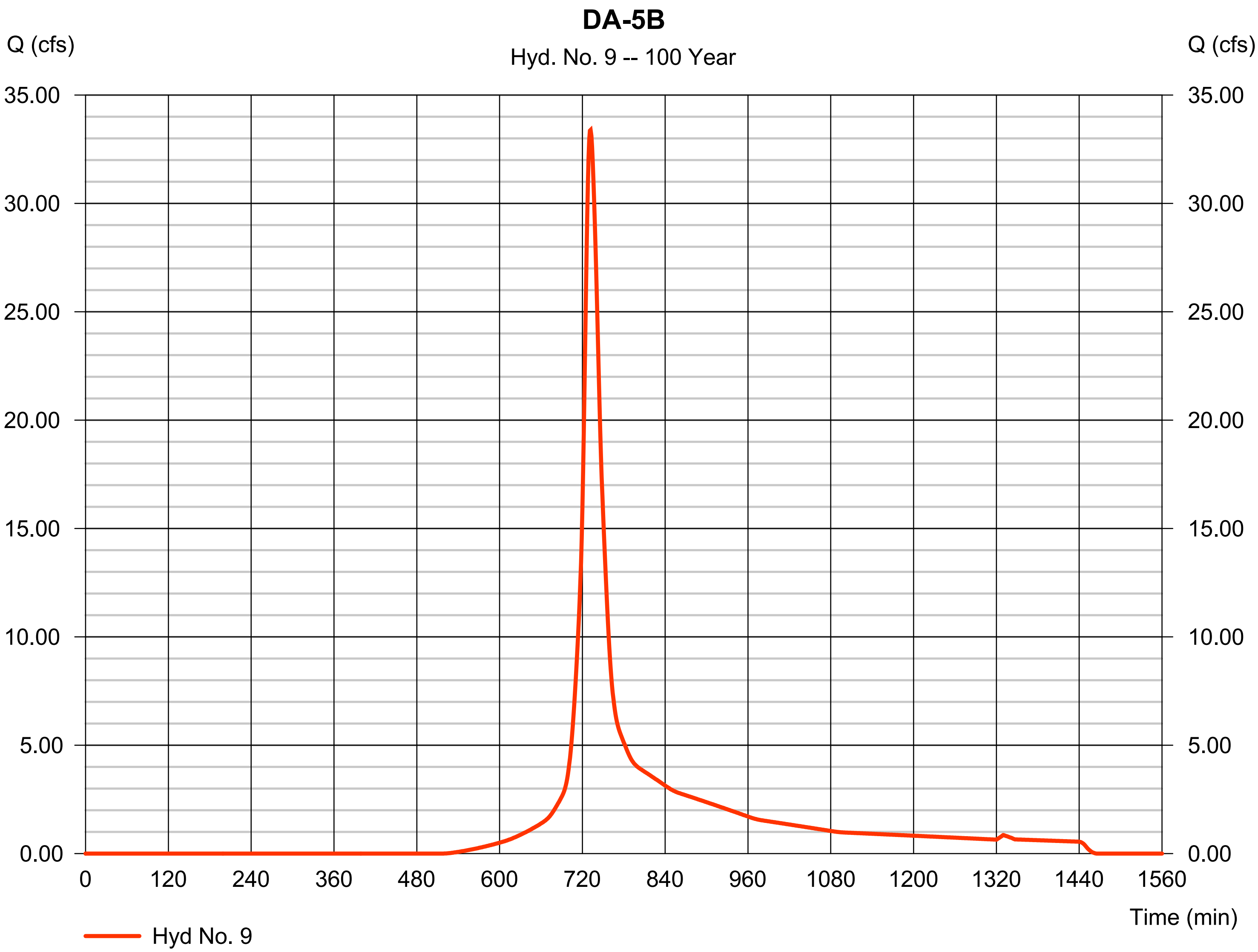
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Wednesday, 01 / 15 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 33.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 138,427 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



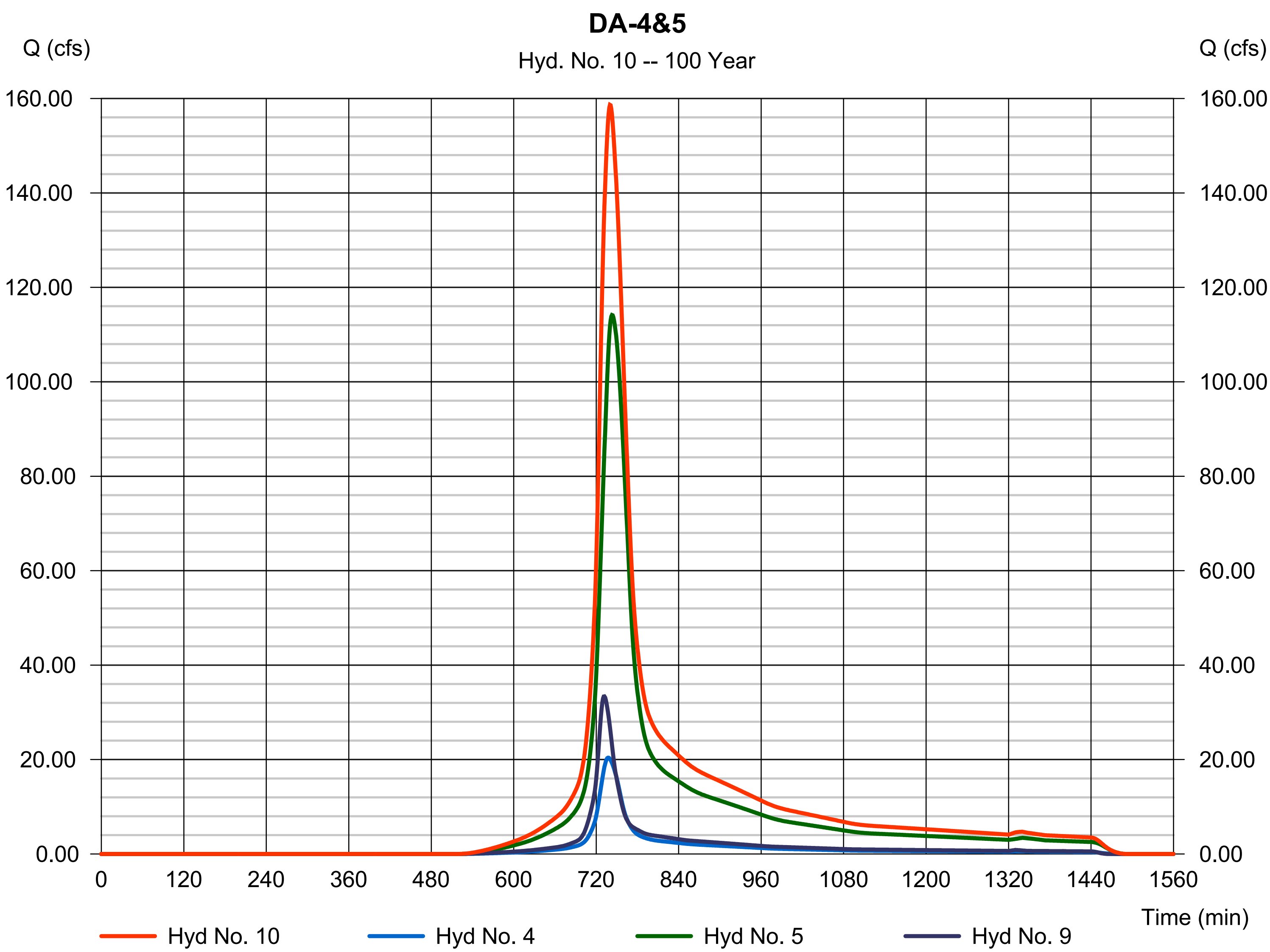
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 158.66 cfs
Storm frequency	= 100 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 863,647 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



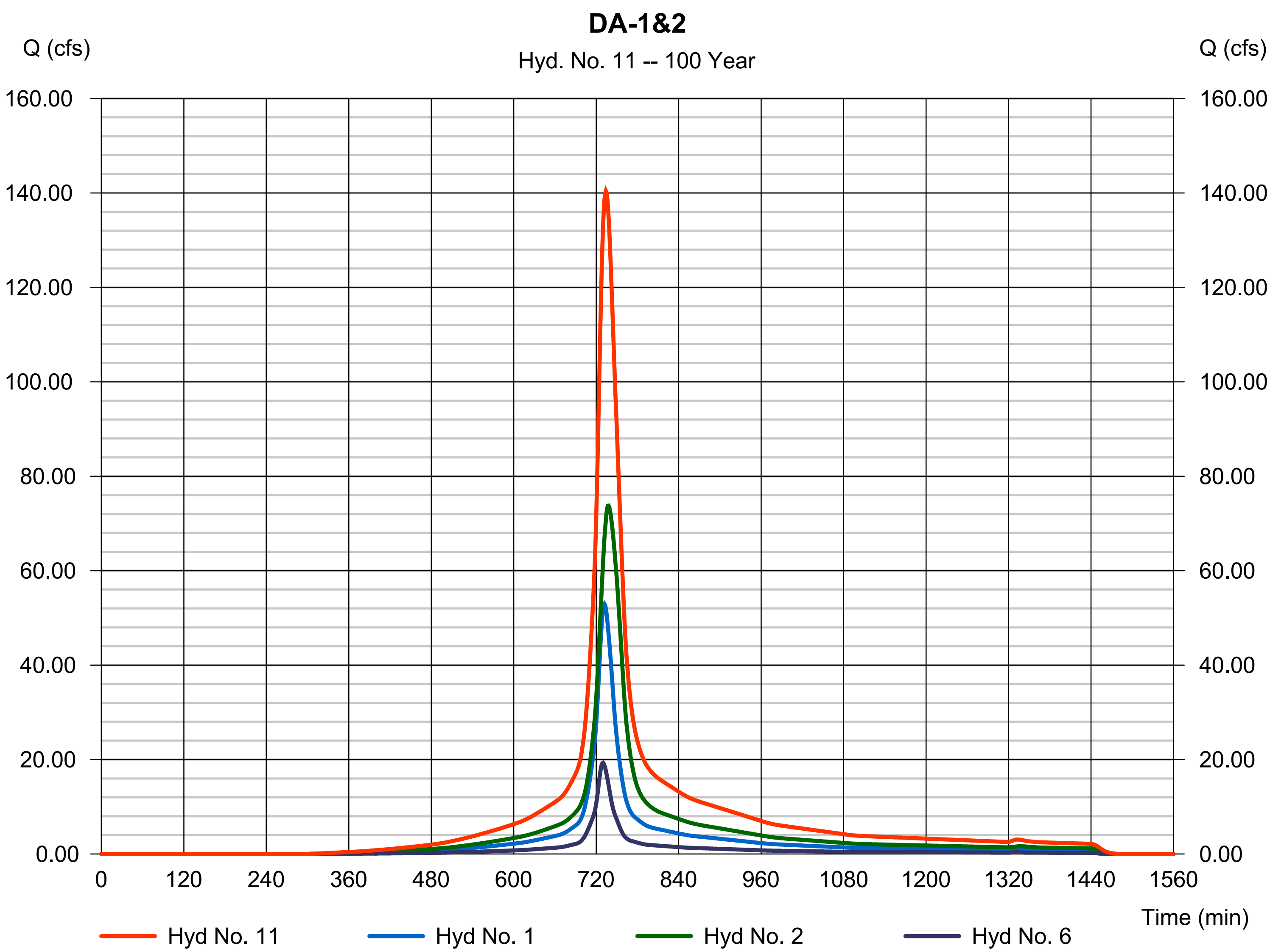
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Wednesday, 01 / 15 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 140.42 cfs
Storm frequency	= 100 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 682,812 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac

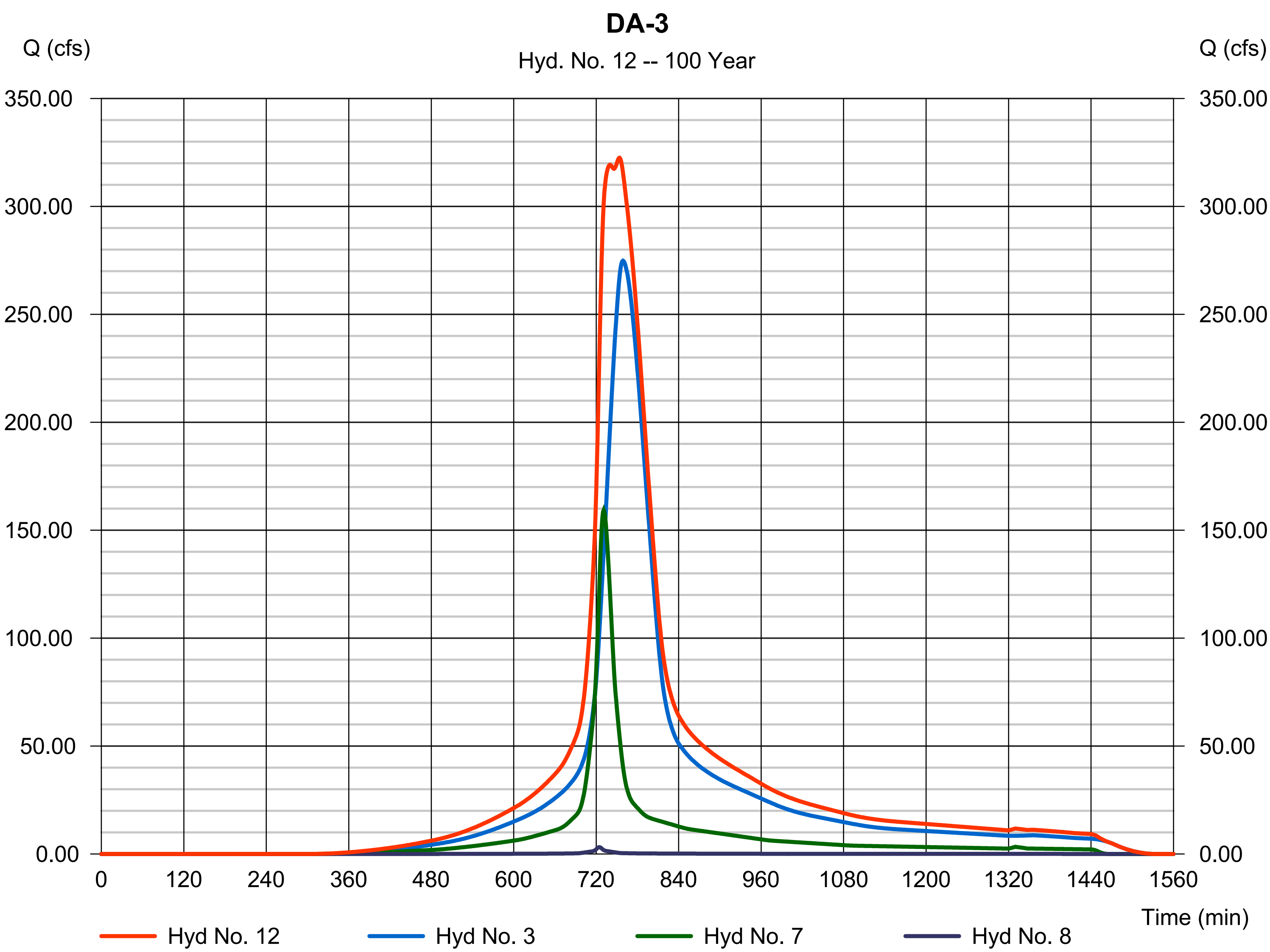


Hydrograph Report

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 322.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,780,696 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



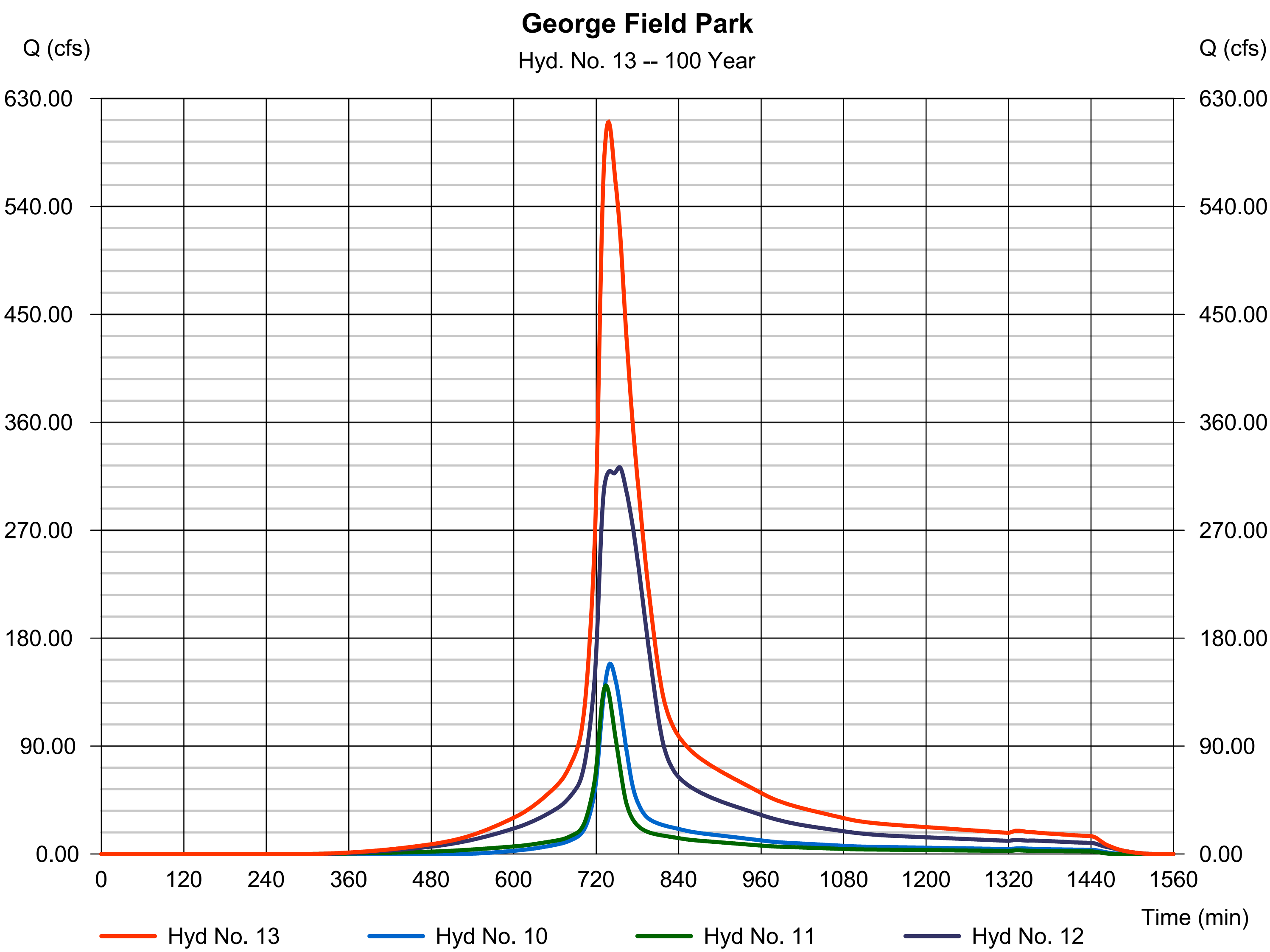
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 610.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 4,327,159 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

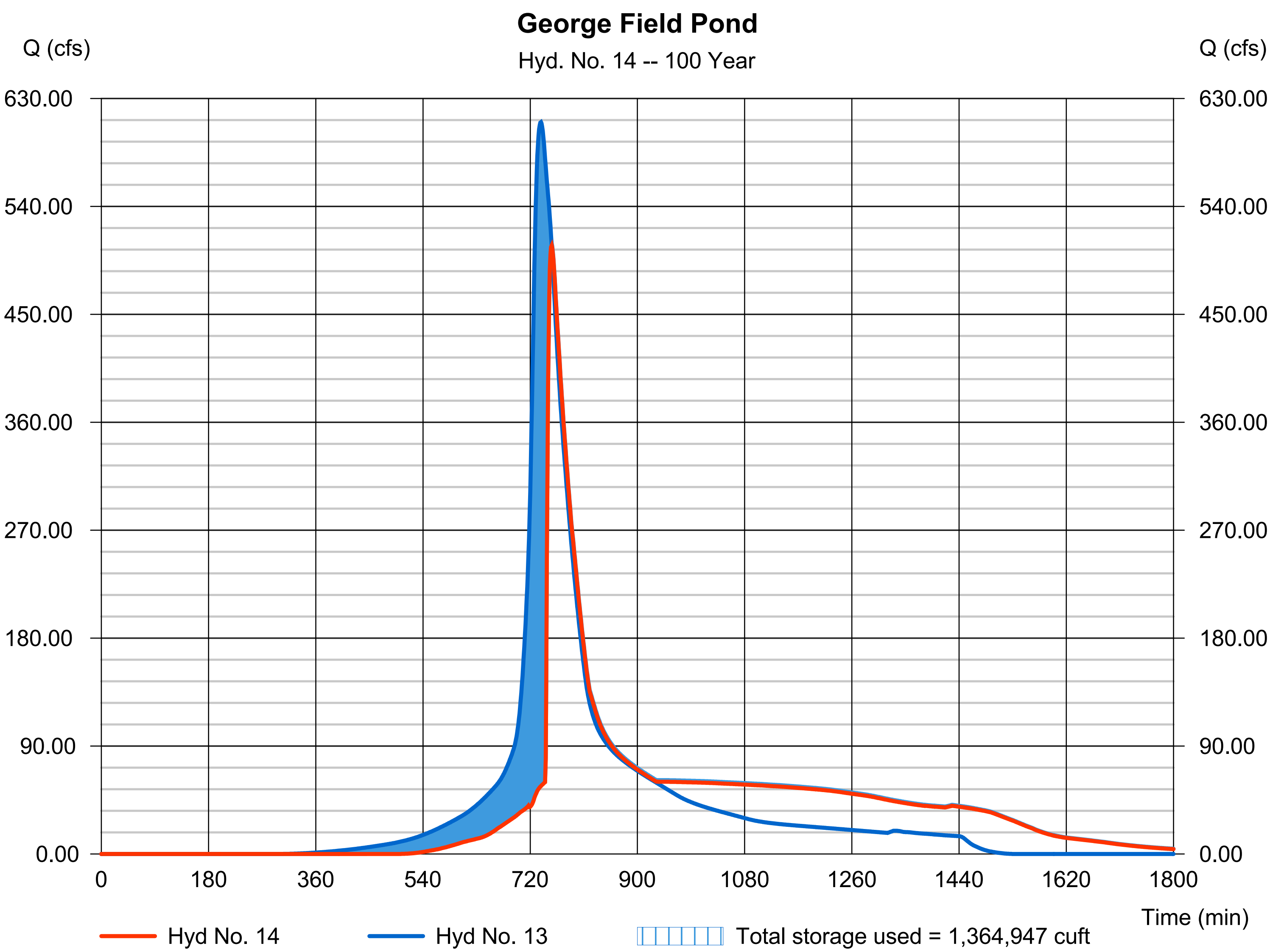
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 507.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 756 min
Time interval	= 1 min	Hyd. volume	= 4,204,108 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 218.33 ft
Reservoir name	= George Field Park	Max. Storage	= 1,364,947 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Wednesday, 01 / 15 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.idf

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

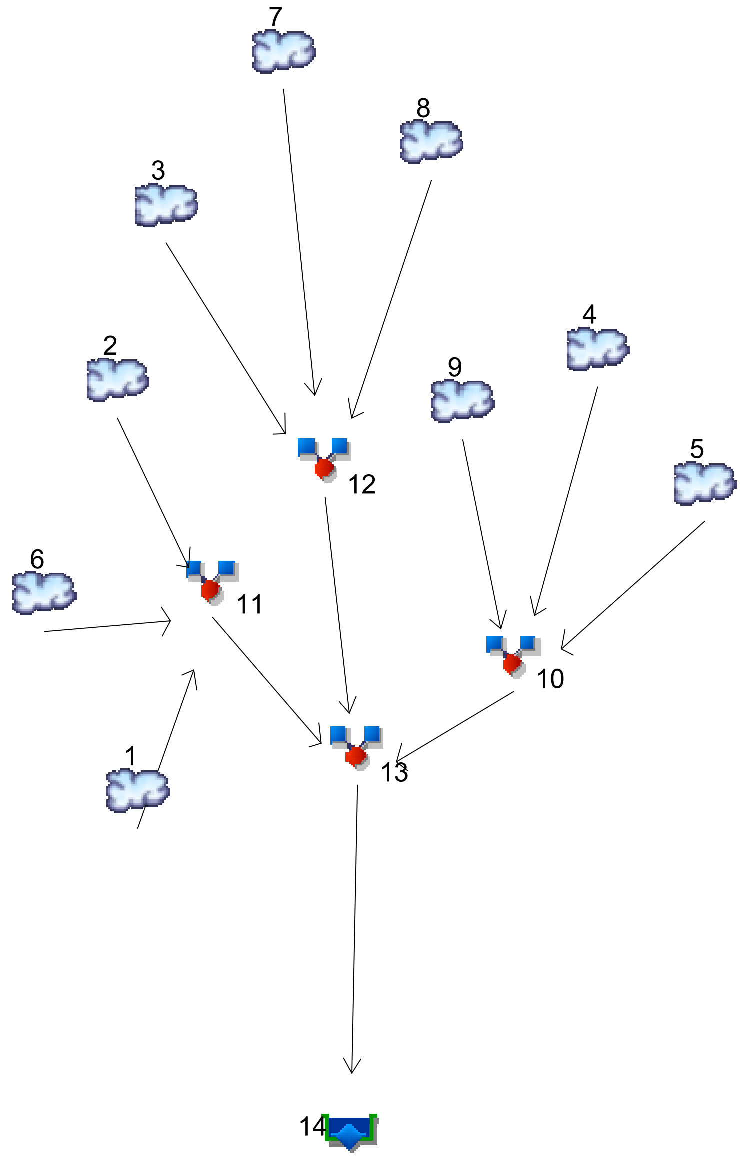
Tc = time in minutes. Values may exceed 60.

of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-DisciplineFolders\Civil\Hydrology\precip.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.10	3.51	0.00	4.53	5.38	6.55	7.10	8.34
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023



Legend

Hyd.	Origin	Description
1	SCS Runoff	DA-1A
2	SCS Runoff	DA-2
3	SCS Runoff	DA-3A
4	SCS Runoff	DA-4
5	SCS Runoff	DA-5A
6	SCS Runoff	DA-1B
7	SCS Runoff	DA-3B
8	SCS Runoff	DA-3C
9	SCS Runoff	DA-5B
10	Combine	DA-4&5
11	Combine	DA-1&2
12	Combine	DA-3
13	Combine	George Field Park
14	Reservoir	George Field Pond

Project: Proposed Condition - 1 pond (outlet mod only).gpw | Friday, 01 / 17 / 2025

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	5.975	15.64	-------	23.30	29.85	38.97	43.26	52.96	DA-1A
2	SCS Runoff	------	8.303	21.75	-------	32.42	41.55	54.27	60.26	73.79	DA-2
3	SCS Runoff	------	28.66	78.17	-------	118.05	152.42	200.52	223.32	274.85	DA-3A
4	SCS Runoff	------	0.367	3.142	-------	6.143	9.008	13.31	15.44	20.40	DA-4
5	SCS Runoff	------	2.059	17.62	-------	34.39	50.40	74.46	86.35	114.15	DA-5A
6	SCS Runoff	------	2.185	5.715	-------	8.512	10.90	14.22	15.79	19.32	DA-1B
7	SCS Runoff	------	16.85	45.75	-------	68.88	88.79	116.57	129.70	159.32	DA-3B
8	SCS Runoff	------	0.339	0.916	-------	1.375	1.768	2.315	2.575	3.162	DA-3C
9	SCS Runoff	------	0.578	5.103	-------	10.06	14.75	21.81	25.29	33.39	DA-5B
10	Combine	4, 5, 9	2.816	24.29	-------	47.76	70.04	103.52	120.04	158.66	DA-4&5
11	Combine	1, 2, 6,	15.79	41.40	-------	61.68	79.01	103.22	114.65	140.42	DA-1&2
12	Combine	3, 7, 8,	33.92	92.34	-------	139.11	179.37	235.67	262.31	322.50	DA-3
13	Combine	10, 11, 12	48.08	151.11	-------	240.46	319.41	432.37	486.55	610.29	George Field Park
14	Reservoir	13	25.31	37.06	-------	50.82	103.71	250.55	323.89	489.51	George Field Pond

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.975	1	734	26,574	------	------	------	DA-1A
2	SCS Runoff	8.303	1	740	43,396	------	------	------	DA-2
3	SCS Runoff	28.66	1	765	231,649	------	------	------	DA-3A
4	SCS Runoff	0.367	1	754	3,871	------	------	------	DA-4
5	SCS Runoff	2.059	1	761	24,526	------	------	------	DA-5A
6	SCS Runoff	2.185	1	731	9,038	------	------	------	DA-1B
7	SCS Runoff	16.85	1	733	73,970	------	------	------	DA-3B
8	SCS Runoff	0.339	1	725	1,102	------	------	------	DA-3C
9	SCS Runoff	0.578	1	747	5,420	------	------	------	DA-5B
10	Combine	2.816	1	757	33,817	4, 5, 9	------	------	DA-4&5
11	Combine	15.79	1	736	79,008	1, 2, 6,	------	------	DA-1&2
12	Combine	33.92	1	757	306,721	3, 7, 8,	------	------	DA-3
13	Combine	48.08	1	742	419,545	10, 11, 12	------	------	George Field Park
14	Reservoir	25.31	1	798	407,938	13	213.95	93,887	George Field Pond

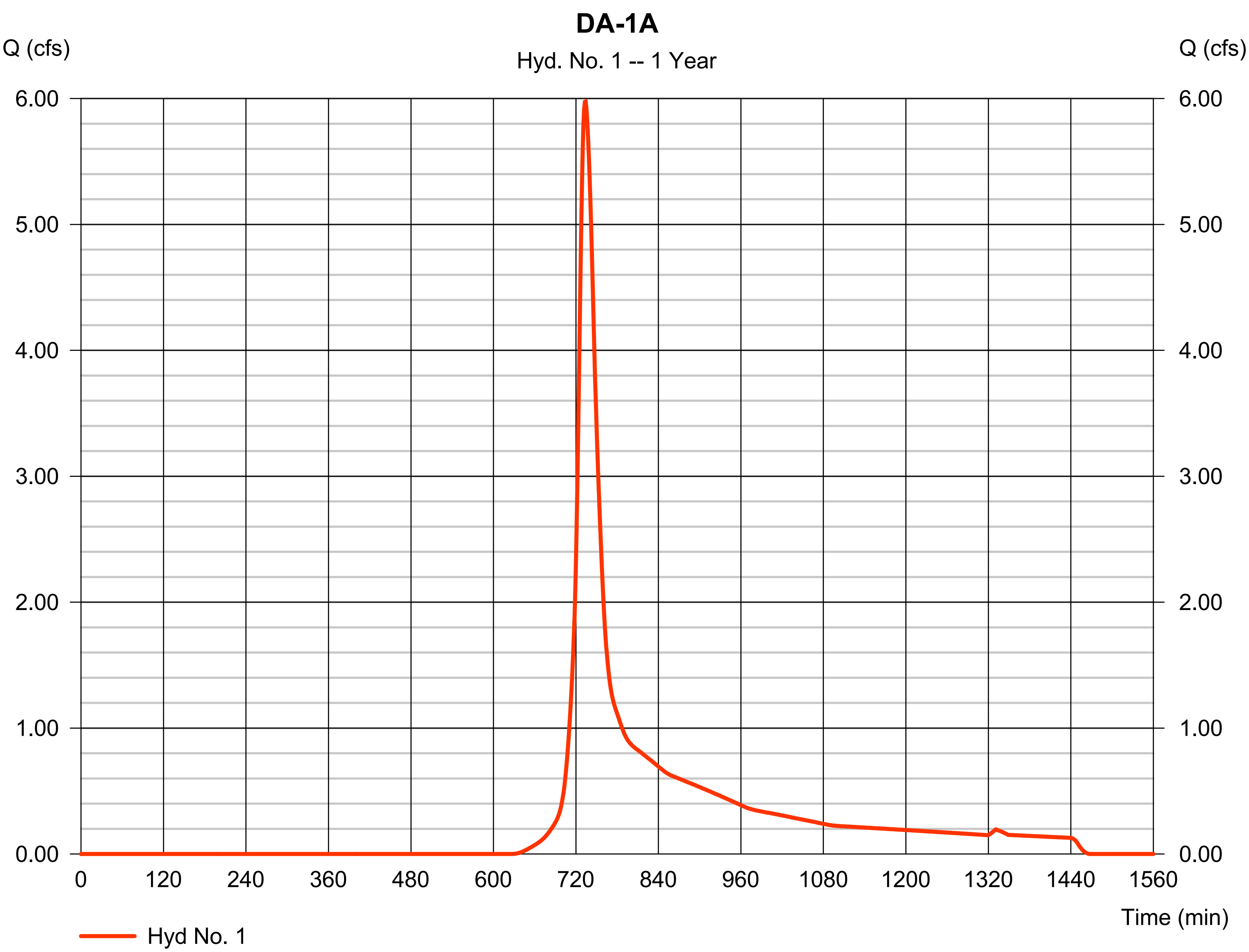
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 5.975 cfs
Storm frequency	= 1 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 26,574 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 1

DA-1A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	8.00		0.00		0.00		
Travel Time (min)	**=**	**16.48**	**+**	**0.00**	**+**	**0.00**	**=**	**16.48**
Shallow Concentrated Flow								
Flow length (ft)	=	240.00		100.00		0.00		
Watercourse slope (%)	=	15.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=6.25			2.03		0.00		
Travel Time (min)	**=**	**0.64**	**+**	**0.82**	**+**	**0.00**	**=**	**1.46**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	3.14		0.00		0.00		
Channel slope (%)	=	3.00		0.00		0.00		
Manning's n-value	=	0.013		0.026		0.026		
Velocity (ft/s)	=19.85							
				0.00				
						0.00		
Flow length (ft)	({0})500.0			0.0		0.0		
Travel Time (min)	**=**	**0.42**	**+**	**0.00**	**+**	**0.00**	**=**	**0.42**

Total Travel Time, Tc .... **18.40 min**

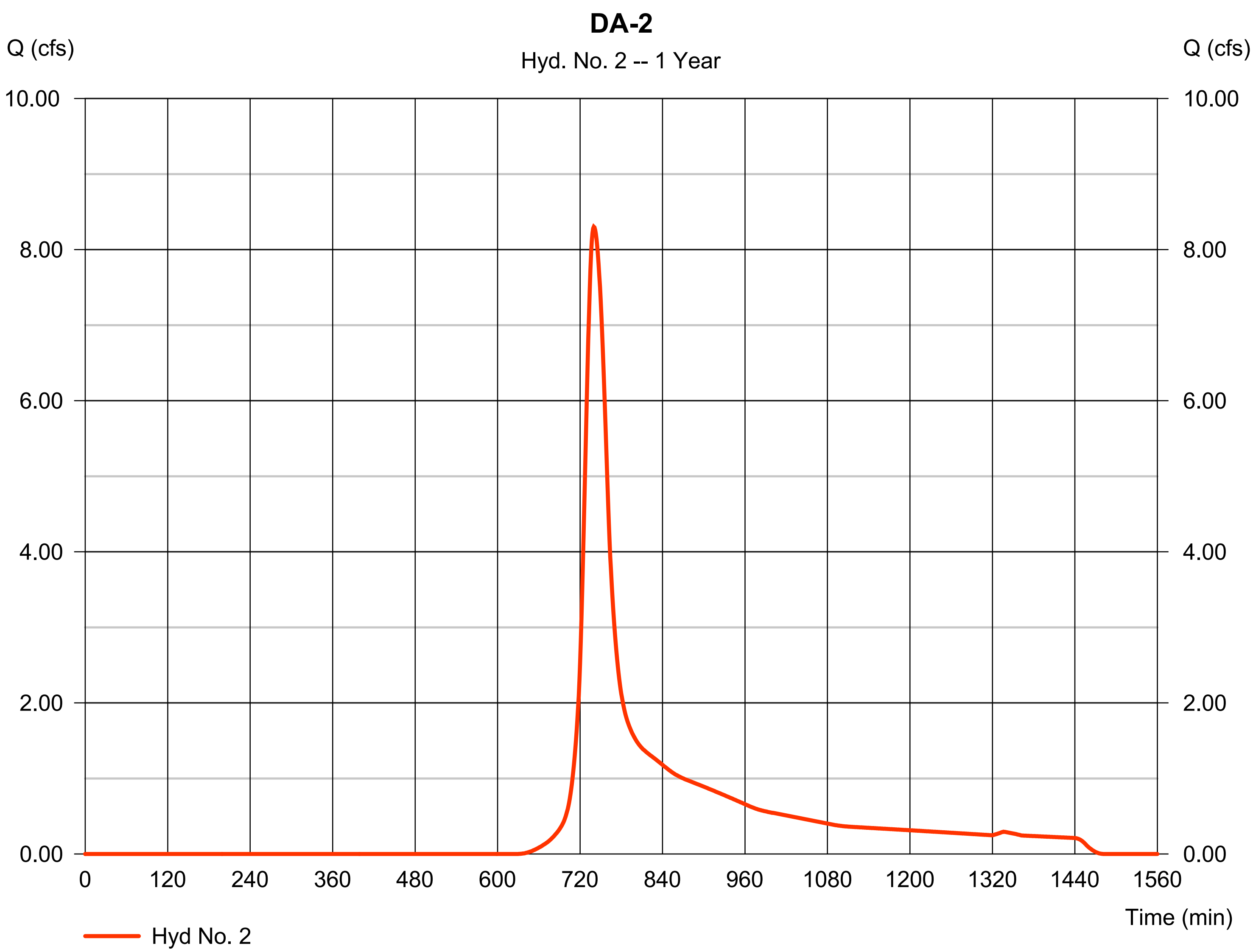
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 8.303 cfs
Storm frequency	= 1 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 43,396 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 2

DA-2

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	5.00		0.00		0.00		
Travel Time (min)	**=**	**19.89**	**+**	**0.00**	**+**	**0.00**	**=**	**19.89**
Shallow Concentrated Flow								
Flow length (ft)	=	260.00		750.00		0.00		
Watercourse slope (%)	=	5.00		3.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)		=3.61		3.52		0.00		
Travel Time (min)	**=**	**1.20**	**+**	**3.55**	**+**	**0.00**	**=**	**4.75**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	3.14		0.00		0.00		
Channel slope (%)	=	2.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)		=16.21		0.00		0.00		
Flow length (ft)		({0})1000.0		0.0		0.0		
Travel Time (min)	**=**	**1.03**	**+**	**0.00**	**+**	**0.00**	**=**	**1.03**

Total Travel Time, Tc .... 25.70 min

Hydrograph Report

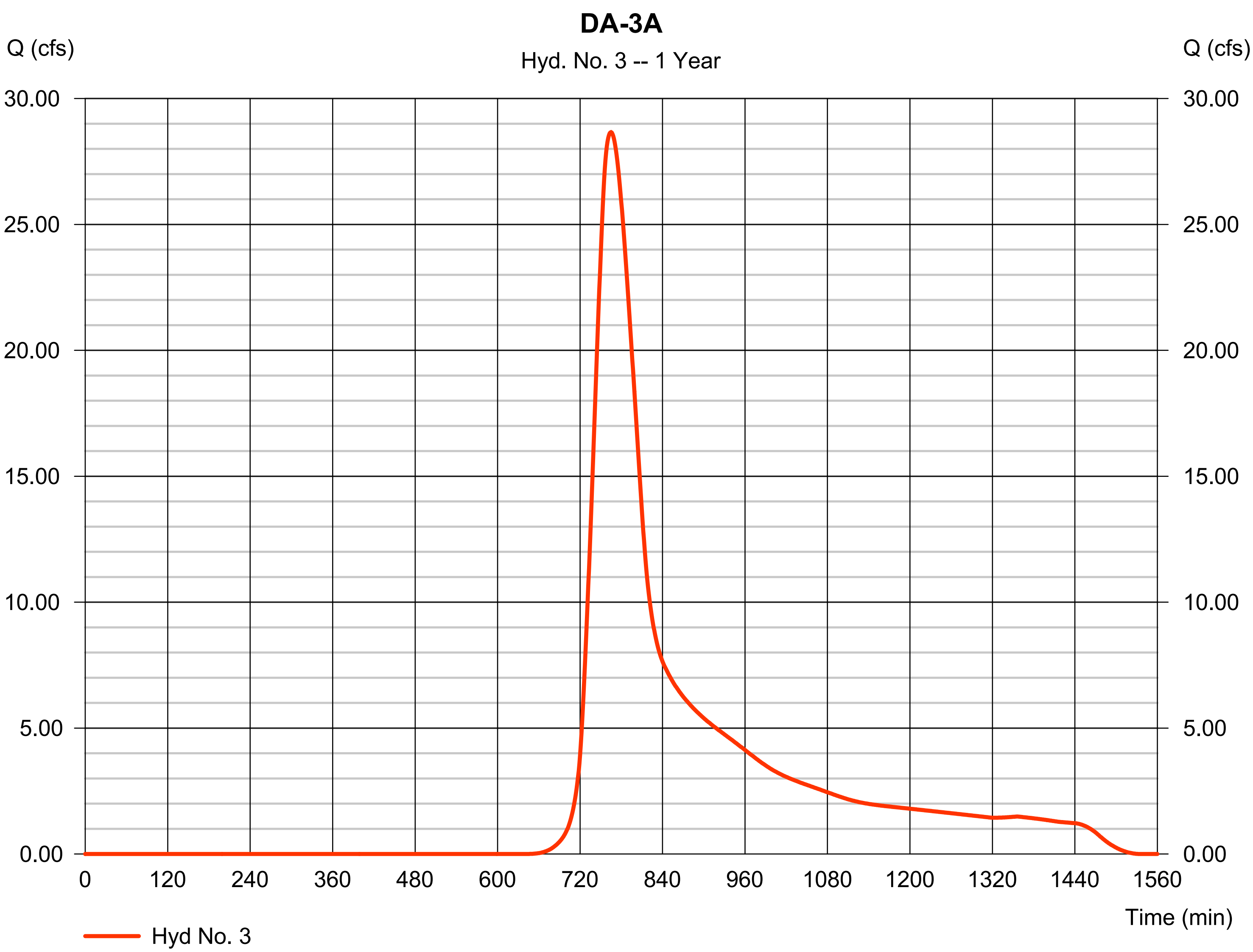
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 28.66 cfs
Storm frequency	= 1 yrs	Time to peak	= 765 min
Time interval	= 1 min	Hyd. volume	= 231,649 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 3

DA-3A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	0.75		0.00		0.00		
Travel Time (min)	**=**	**42.47**	**+**	**0.00**	**+**	**0.00**	**=**	**42.47**
Shallow Concentrated Flow								
Flow length (ft)	=	510.00		445.00		0.00		
Watercourse slope (%)	=	1.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=1.61			2.03		0.00		
Travel Time (min)	**=**	**5.27**	**+**	**3.65**	**+**	**0.00**	**=**	**8.92**
Channel Flow								
X sectional flow area (sqft)	=	3.14		45.00		20.00		
Wetted perimeter (ft)	=	3.14		16.00		8.00		
Channel slope (%)	=	1.00		0.10		1.00		
Manning's n-value	=	0.013		0.026		0.026		
Velocity (ft/s)	=11.46							
				3.62				
						10.59		
Flow length (ft)	({0})2150.0			1190.0		300.0		
Travel Time (min)	**=**	**3.13**	**+**	**5.47**	**+**	**0.47**	**=**	**9.07**

Total Travel Time, Tc .... 60.50 min

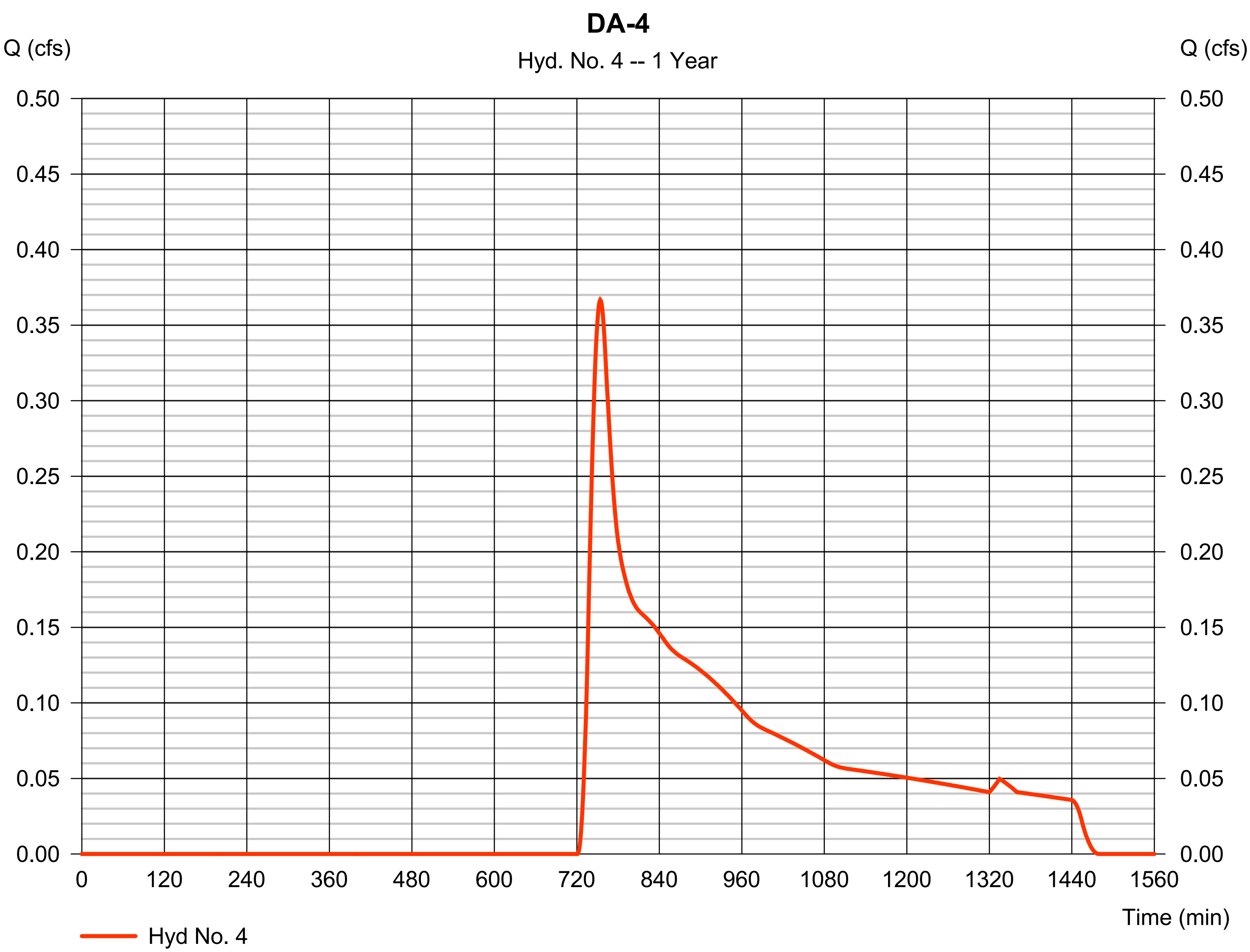
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 0.367 cfs
Storm frequency	= 1 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 3,871 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 4

DA-4

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	4.00		0.00		0.00		
Travel Time (min)	**=**	**21.74**	**+**	**0.00**	**+**	**0.00**	**=**	**21.74**
Shallow Concentrated Flow								
Flow length (ft)	=	430.00		70.00		0.00		
Watercourse slope (%)	=	14.00		1.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)		=6.04		2.03		0.00		
Travel Time (min)	**=**	**1.19**	**+**	**0.57**	**+**	**0.00**	**=**	**1.76**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	6.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)		=17.65						
				0.00				
						0.00		
Flow length (ft)		({0})460.0		0.0		0.0		
Travel Time (min)	**=**	**0.43**	**+**	**0.00**	**+**	**0.00**	**=**	**0.43**
Total Travel Time, Tc								**23.90 min**

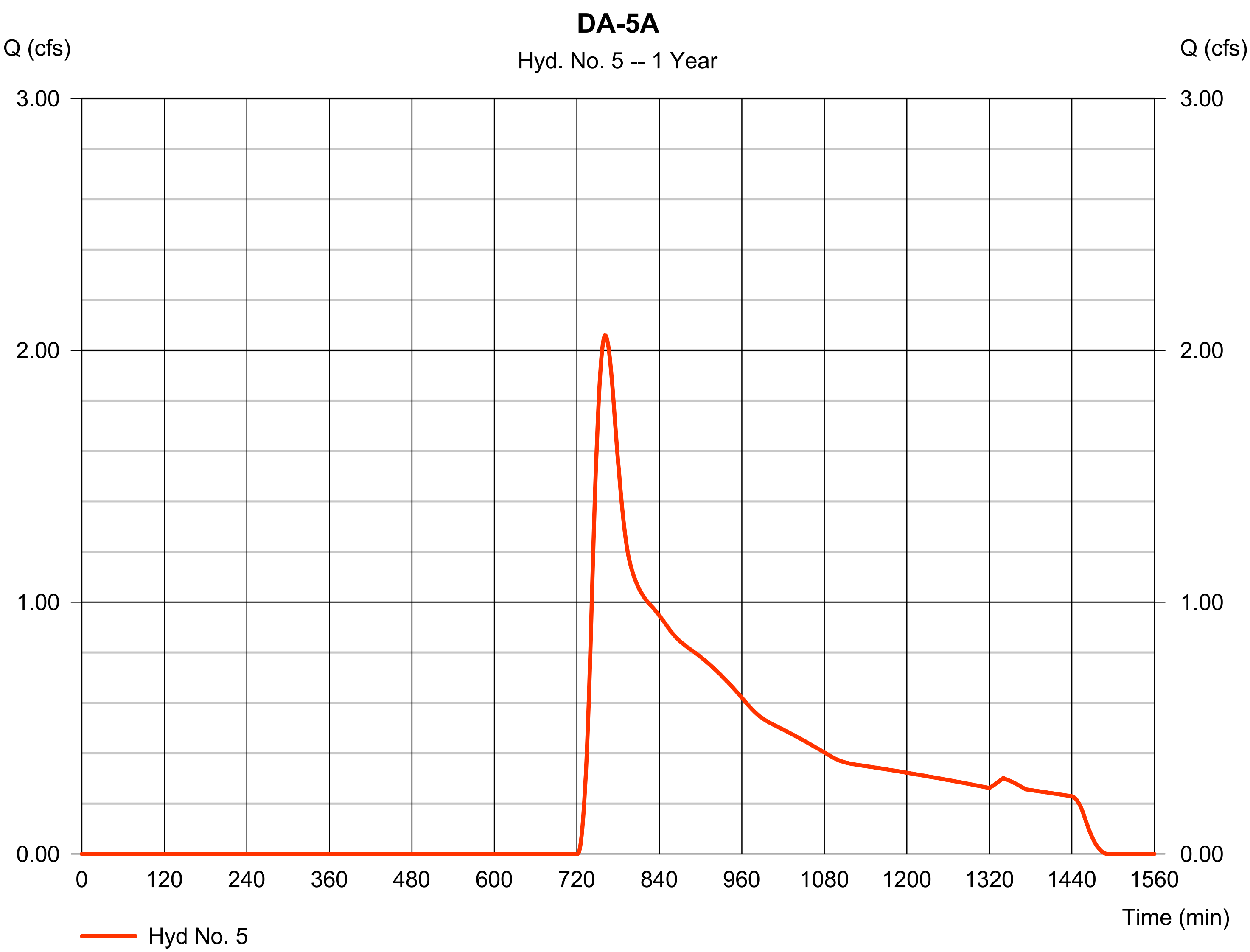
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 2.059 cfs
Storm frequency	= 1 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 24,526 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 5

DA-5A

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.43		0.00		0.00		
Land slope (%)	=	2.00		0.00		0.00		
Travel Time (min)	**=**	**28.69**	**+**	**0.00**	**+**	**0.00**	**=**	**28.69**
Shallow Concentrated Flow								
Flow length (ft)	=	180.00		580.00		0.00		
Watercourse slope (%)	=	11.00		3.50		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.35			3.80		0.00		
Travel Time (min)	**=**	**0.56**	**+**	**2.54**	**+**	**0.00**	**=**	**3.10**
Channel Flow								
X sectional flow area (sqft)	=	0.79		16.00		1.77		
Wetted perimeter (ft)	=	1.57		8.00		2.36		
Channel slope (%)	=	5.00		8.00		4.50		
Manning's n-value	=	0.013		0.030		0.013		
Velocity (ft/s)	=16.11			22.35		20.05		
Flow length (ft)	({0})120.0			510.0		370.0		
Travel Time (min)	**=**	**0.12**	**+**	**0.38**	**+**	**0.31**	**=**	**0.81**

Total Travel Time, Tc .... 32.60 min

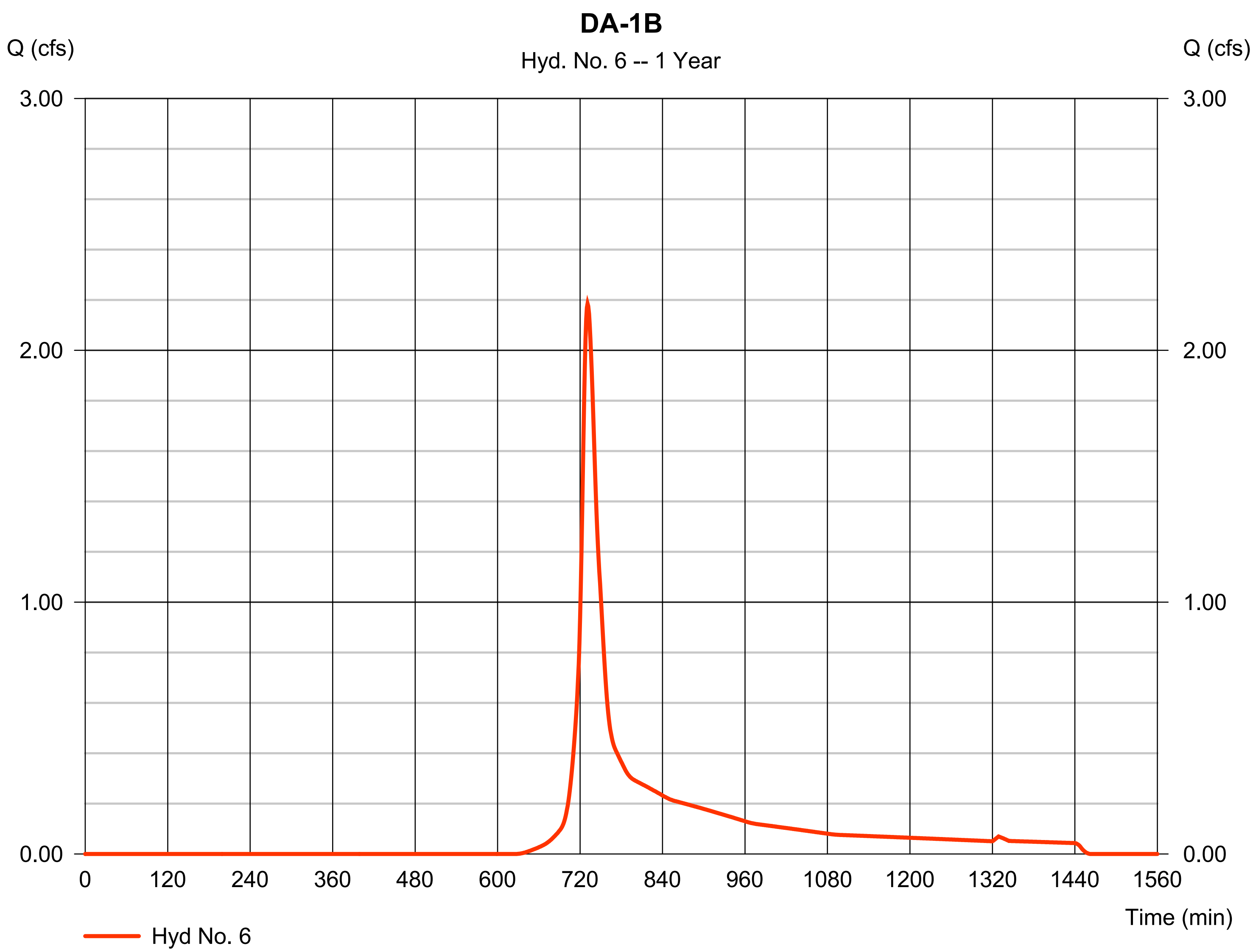
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 2.185 cfs
Storm frequency	= 1 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 9,038 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 6

DA-1B

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.400		0.011		0.011		
Flow length (ft)	=	135.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.51		0.00		0.00		
Land slope (%)	=	10.00		0.00		0.00		
Travel Time (min)	**=**	**13.69**	**+**	**0.00**	**+**	**0.00**	**=**	**13.69**
Shallow Concentrated Flow								
Flow length (ft)	=	80.00		0.00		0.00		
Watercourse slope (%)	=	5.00		0.00		0.00		
Surface description	=	Paved		Paved		Paved		
Average velocity (ft/s)	=	4.55		0.00		0.00		
Travel Time (min)	**=**	**0.29**	**+**	**0.00**	**+**	**0.00**	**=**	**0.29**
Channel Flow								
X sectional flow area (sqft)	=	3.14		0.00		0.00		
Wetted perimeter (ft)	=	6.14		0.00		0.00		
Channel slope (%)	=	5.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=	16.35		0.00		0.00		
Flow length (ft)		({0})450.0		0.0		0.0		
Travel Time (min)	**=**	**0.46**	**+**	**0.00**	**+**	**0.00**	**=**	**0.46**

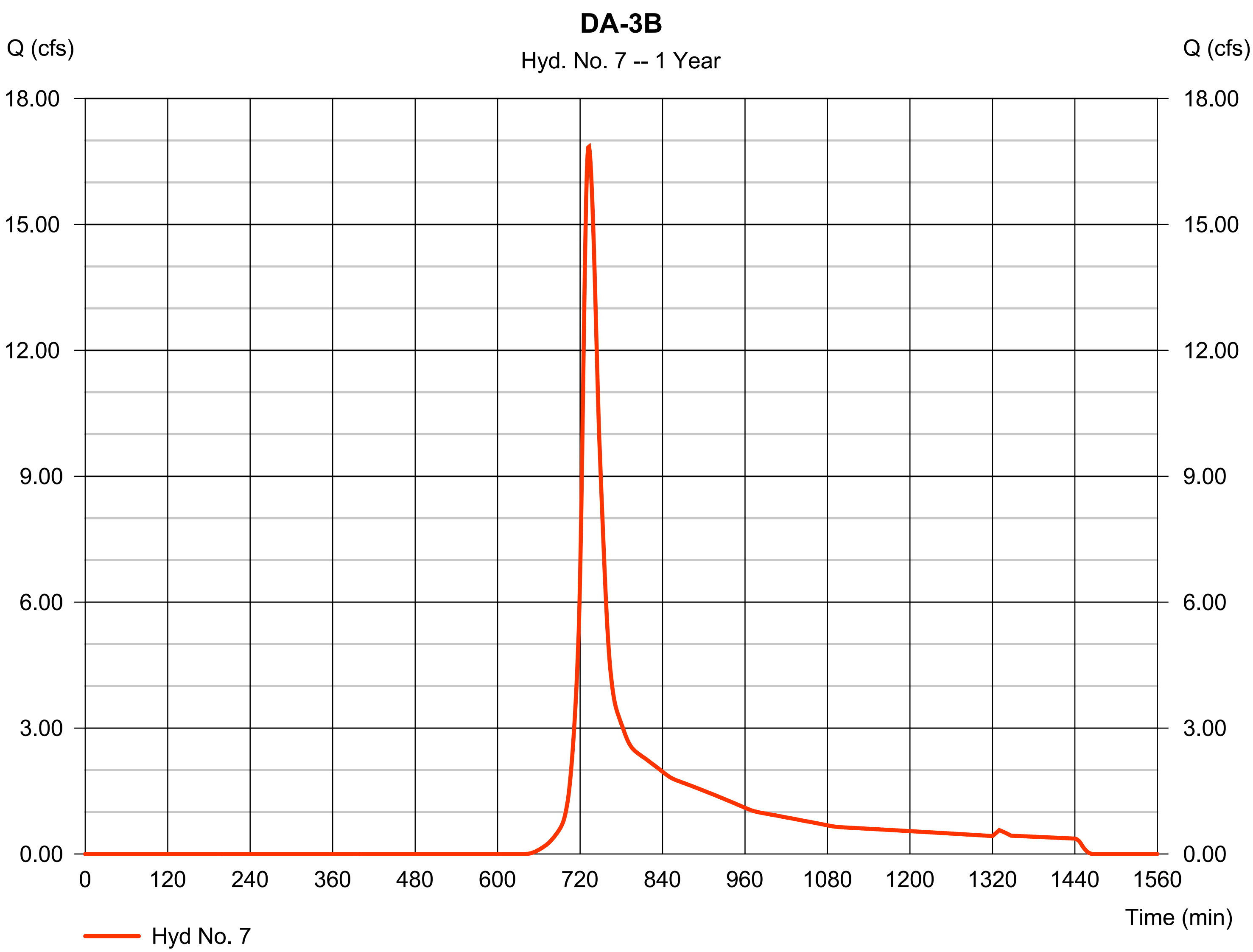
Total Travel Time, Tc .... **14.40 min**

Hydrograph Report

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 16.85 cfs
Storm frequency	= 1 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 73,970 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 7

DA-3B

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.240		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.51		0.00		0.00		
Land slope (%)	=	5.30		0.00		0.00		
Travel Time (min)	**=**	**12.76**	**+**	**0.00**	**+**	**0.00**	**=**	**12.76**
Shallow Concentrated Flow								
Flow length (ft)	=	530.00		0.00		0.00		
Watercourse slope (%)	=	8.50		0.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=	4.70		0.00		0.00		
Travel Time (min)	**=**	**1.88**	**+**	**0.00**	**+**	**0.00**	**=**	**1.88**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	5.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=	16.11		0.00		0.00		
Flow length (ft)		({0})1135.0		0.0		0.0		
Travel Time (min)	**=**	**1.17**	**+**	**0.00**	**+**	**0.00**	**=**	**1.17**

Total Travel Time, Tc .... 15.80 min

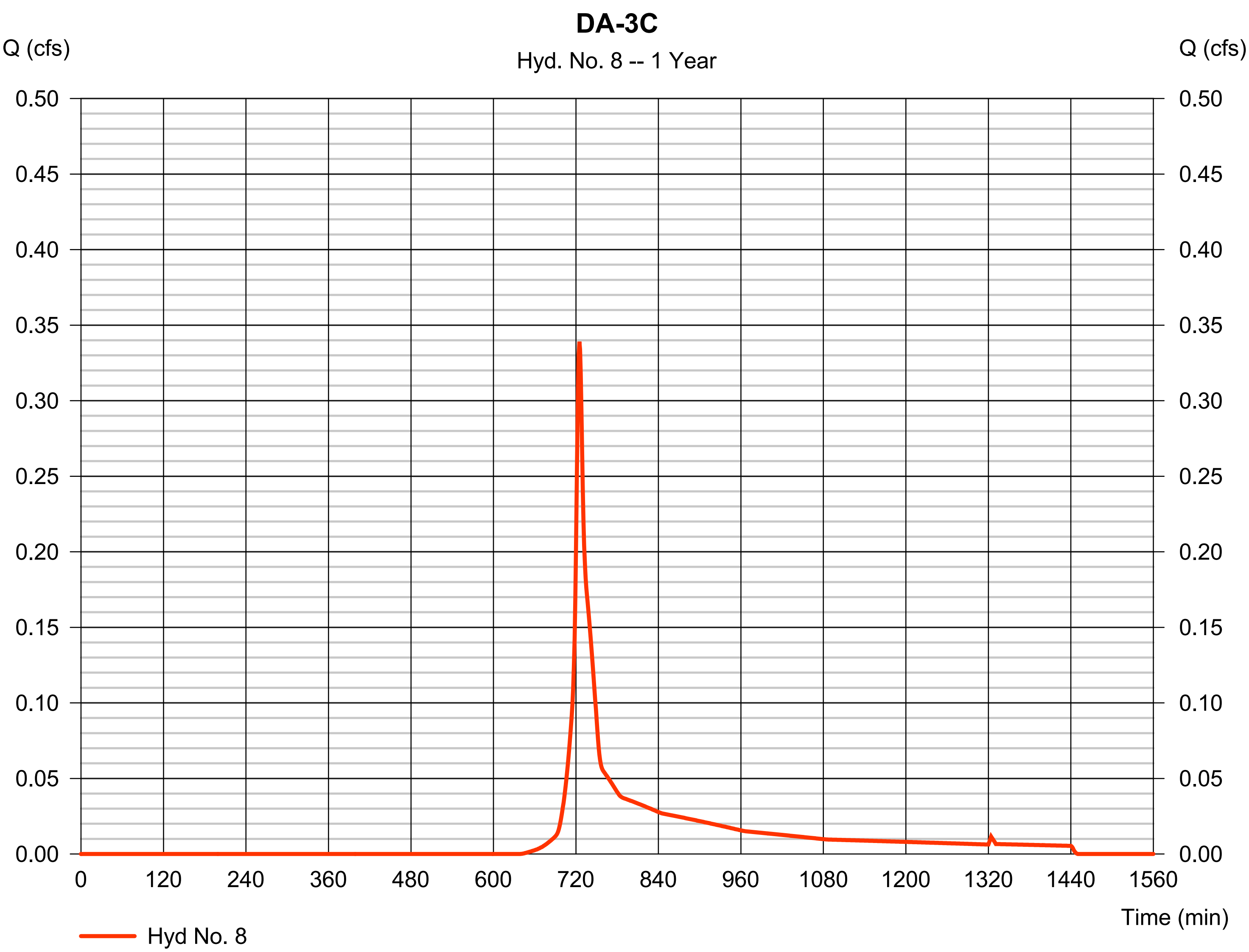
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.339 cfs
Storm frequency	= 1 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 1,102 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



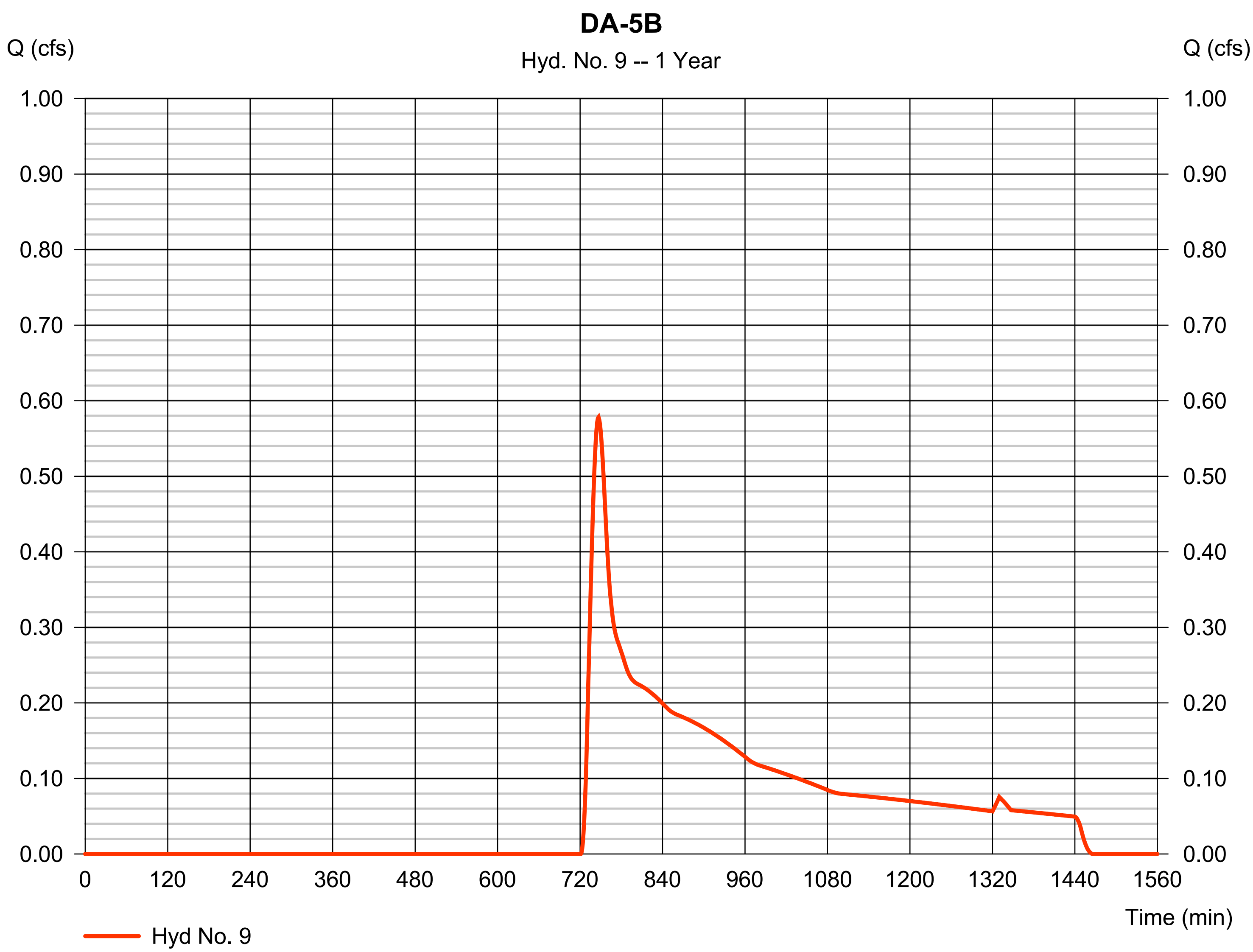
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.578 cfs
Storm frequency	= 1 yrs	Time to peak	= 747 min
Time interval	= 1 min	Hyd. volume	= 5,420 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 2.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



TR55 Tc Worksheet

Hyd. No. 9

DA-5B

Description		A		B		C		Totals
Sheet Flow								
Manning's n-value	=	0.240		0.011		0.011		
Flow length (ft)	=	150.0		0.0		0.0		
Two-year 24-hr precip. (in)	=	3.51		0.00		0.00		
Land slope (%)	=	5.50		0.00		0.00		
Travel Time (min)	**=**	**12.57**	**+**	**0.00**	**+**	**0.00**	**=**	**12.57**
Shallow Concentrated Flow								
Flow length (ft)	=	765.00		0.00		0.00		
Watercourse slope (%)	=	10.00		0.00		0.00		
Surface description	=	Unpaved		Paved		Paved		
Average velocity (ft/s)	=5.10			0.00		0.00		
Travel Time (min)	**=**	**2.50**	**+**	**0.00**	**+**	**0.00**	**=**	**2.50**
Channel Flow								
X sectional flow area (sqft)	=	0.79		0.00		0.00		
Wetted perimeter (ft)	=	1.57		0.00		0.00		
Channel slope (%)	=	1.00		0.00		0.00		
Manning's n-value	=	0.013		0.015		0.015		
Velocity (ft/s)	=7.20							
				0.00				
						0.00		
Flow length (ft)	({0})250.0			0.0		0.0		
Travel Time (min)	**=**	**0.58**	**+**	**0.00**	**+**	**0.00**	**=**	**0.58**

Total Travel Time, Tc .... 15.70 min

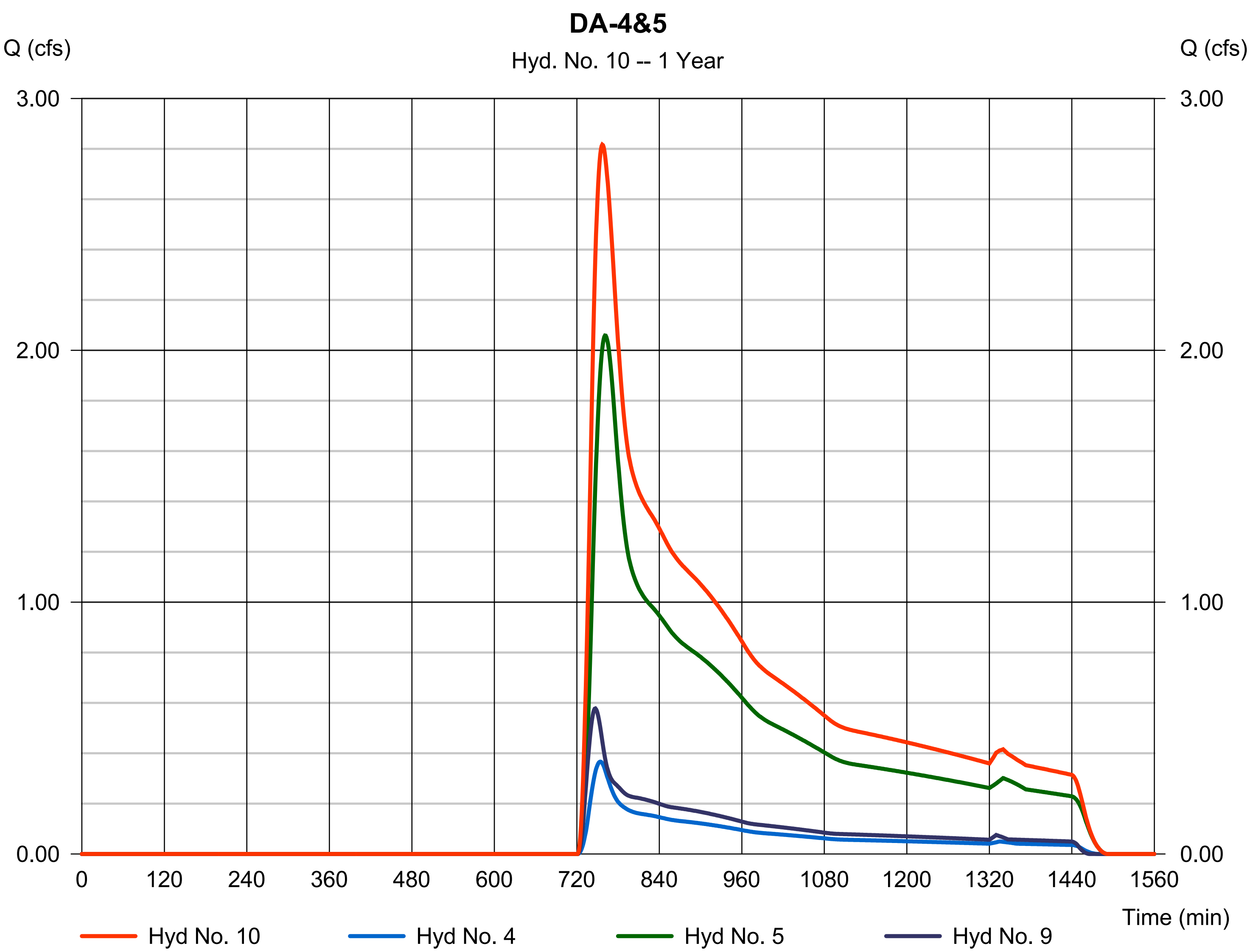
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 2.816 cfs
Storm frequency	= 1 yrs	Time to peak	= 757 min
Time interval	= 1 min	Hyd. volume	= 33,817 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



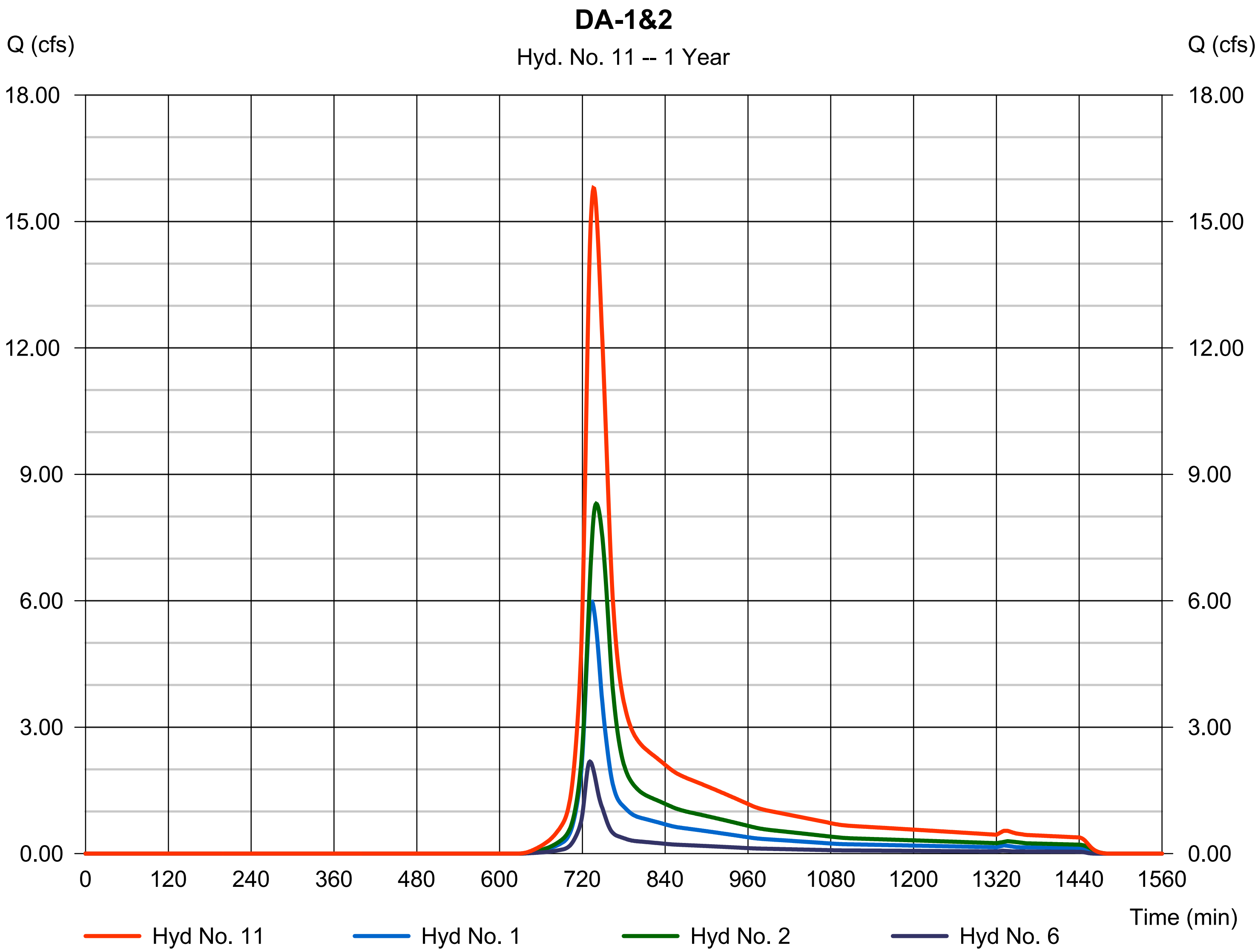
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 15.79 cfs
Storm frequency	= 1 yrs	Time to peak	= 736 min
Time interval	= 1 min	Hyd. volume	= 79,008 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



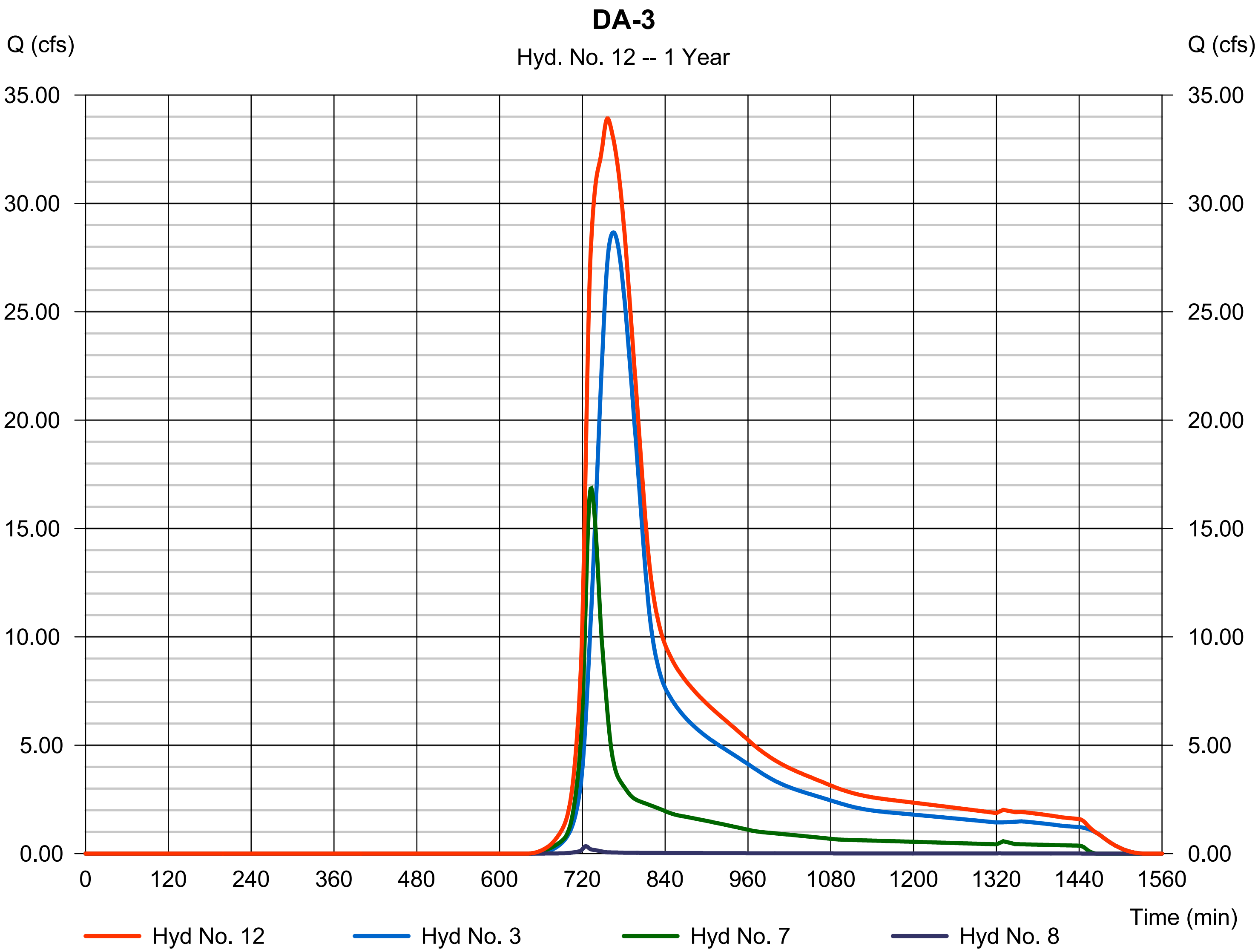
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 33.92 cfs
Storm frequency	= 1 yrs	Time to peak	= 757 min
Time interval	= 1 min	Hyd. volume	= 306,721 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



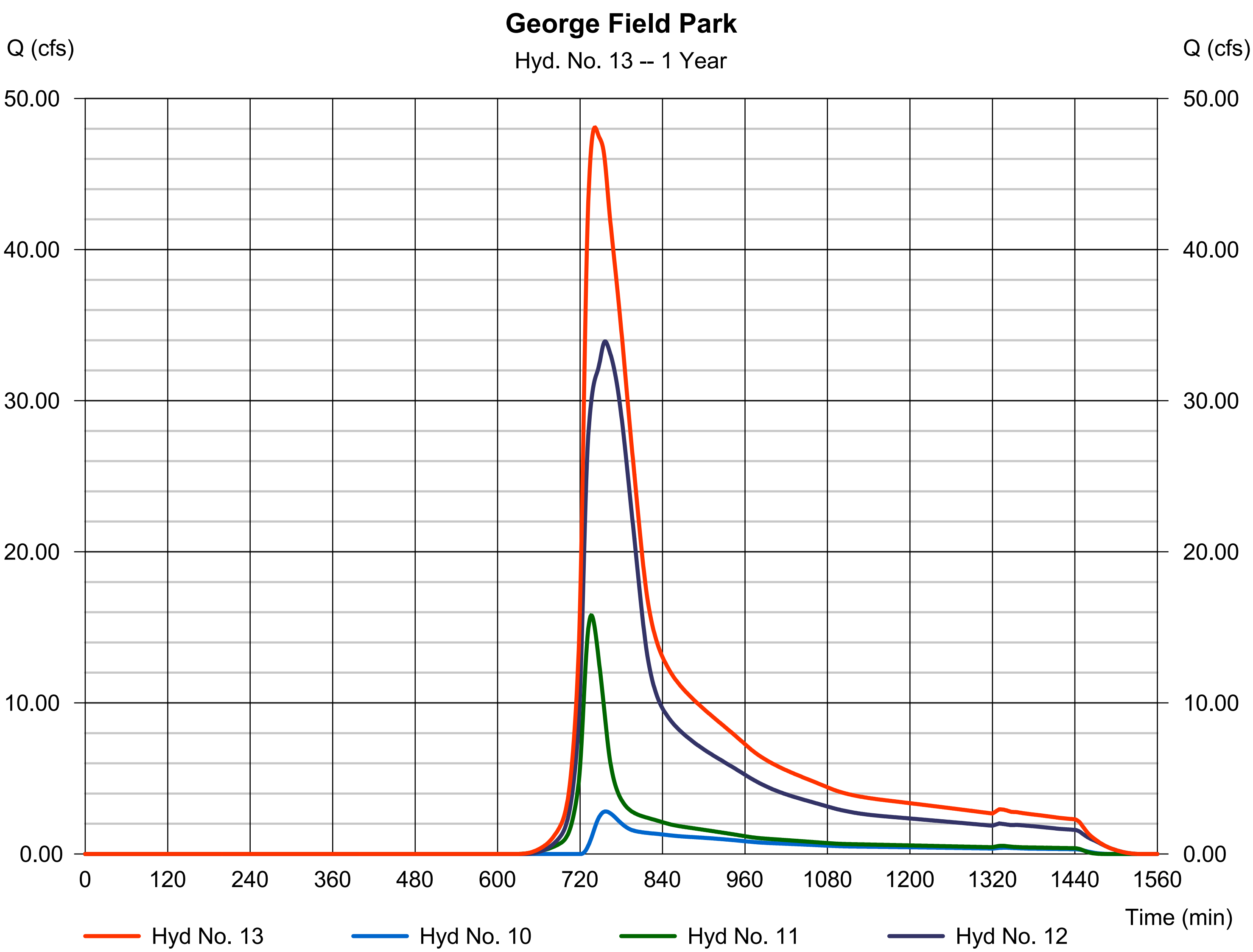
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 48.08 cfs
Storm frequency	= 1 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 419,545 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

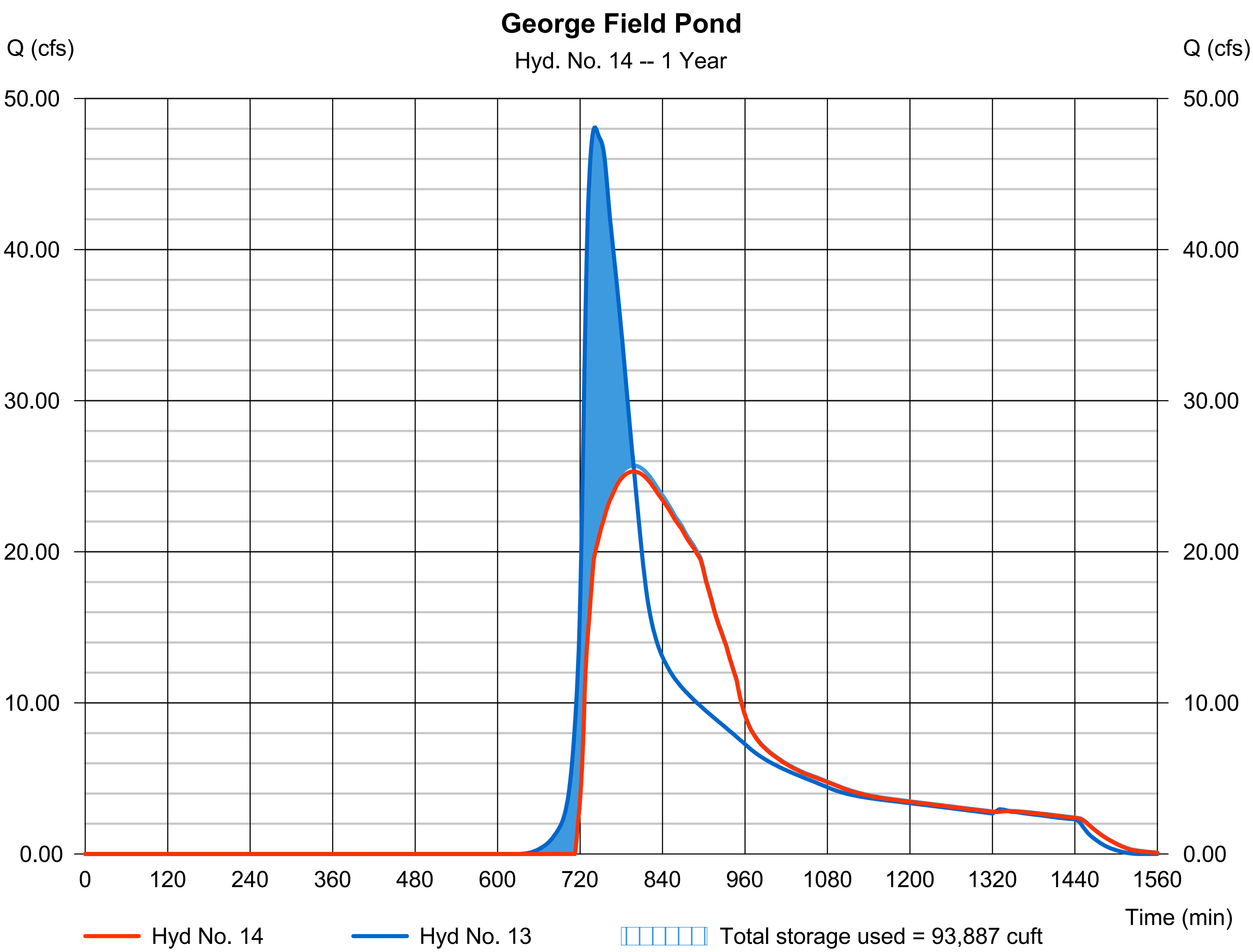
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 25.31 cfs
Storm frequency	= 1 yrs	Time to peak	= 798 min
Time interval	= 1 min	Hyd. volume	= 407,938 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 213.95 ft
Reservoir name	= George Field Park	Max. Storage	= 93,887 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Pond No. 1 - George Field Park

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 209.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	209.00	3,675	0	0
1.00	210.00	5,000	4,320	4,320
2.00	211.00	6,100	5,540	9,860
3.00	212.00	13,815	9,697	19,558
4.00	213.00	28,900	20,897	40,454
5.00	214.00	89,300	56,328	96,783
6.00	215.00	196,750	139,520	236,302
7.00	216.00	229,064	212,681	448,983
8.00	217.00	258,330	243,526	692,510
9.00	218.00	290,081	274,025	966,534
10.00	219.00	350,000	319,540	1,286,074

Culvert / Orifice Structures

		[A]	[B]	[C]	[PrfRsr]
Rise (in)	=	36.00	20.00	6.00	0.00
Span (in)	=	36.00	30.00	6.00	0.00
No. Barrels	=	1	1	3	0
Invert El. (ft)	=	210.30	210.50	215.00	0.00
Length (ft)	=	1570.00	0.00	0.00	0.00
Slope (%)	=	0.20	0.00	0.00	n/a
N-Value	=	.009	.013	.013	n/a
Orifice Coeff.	=	0.60	0.60	0.60	0.60
Multi-Stage	=	n/a	Yes	Yes	No

Weir Structures

		[A]	[B]	[C]	[D]
Crest Len (ft)	=	20.00	Inactive	Inactive	247.00
Crest El. (ft)	=	217.00	0.00	0.00	218.00
Weir Coeff.	=	3.33	3.33	3.33	2.60
Weir Type	=	Rect	Rect	Rect	Broad
Multi-Stage	=	No	No	No	No
Exfil.(in/hr)	=	0.200 (by Contour)			
TW Elev. (ft)	=	0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	209.00	0.00	0.00	0.00	---	0.00	---	---	0.00	0.000	---	0.000
0.10	432	209.10	0.00	0.00	0.00	---	0.00	---	---	0.00	0.002	---	0.002
0.20	864	209.20	0.00	0.00	0.00	---	0.00	---	---	0.00	0.005	---	0.005
0.30	1,296	209.30	0.00	0.00	0.00	---	0.00	---	---	0.00	0.007	---	0.007
0.40	1,728	209.40	0.00	0.00	0.00	---	0.00	---	---	0.00	0.009	---	0.009
0.50	2,160	209.50	0.00	0.00	0.00	---	0.00	---	---	0.00	0.012	---	0.012
0.60	2,592	209.60	0.00	0.00	0.00	---	0.00	---	---	0.00	0.014	---	0.014
0.70	3,024	209.70	0.00	0.00	0.00	---	0.00	---	---	0.00	0.016	---	0.016
0.80	3,456	209.80	0.00	0.00	0.00	---	0.00	---	---	0.00	0.019	---	0.019
0.90	3,888	209.90	0.00	0.00	0.00	---	0.00	---	---	0.00	0.021	---	0.021
1.00	4,320	210.00	0.00	0.00	0.00	---	0.00	---	---	0.00	0.023	---	0.023
1.10	4,874	210.10	0.00	0.00	0.00	---	0.00	---	---	0.00	0.024	---	0.024
1.20	5,428	210.20	0.00	0.00	0.00	---	0.00	---	---	0.00	0.024	---	0.024
1.30	5,982	210.30	0.00	0.00	0.00	---	0.00	---	---	0.00	0.025	---	0.025
1.40	6,536	210.40	0.00	0.00	0.00	---	0.00	---	---	0.00	0.025	---	0.025
1.50	7,090	210.50	0.00 oc	0.00 ic	0.00	---	0.00	---	---	0.00	0.026	---	0.026
1.60	7,644	210.60	0.29 ic	0.27 ic	0.00	---	0.00	---	---	0.00	0.026	---	0.296
1.70	8,198	210.70	0.74 ic	0.74 ic	0.00	---	0.00	---	---	0.00	0.027	---	0.769
1.80	8,752	210.80	1.22 ic	1.19 ic	0.00	---	0.00	---	---	0.00	0.027	---	1.222
1.90	9,306	210.90	1.76 ic	1.72 ic	0.00	---	0.00	---	---	0.00	0.028	---	1.743
2.00	9,860	211.00	2.32 ic	2.32 ic	0.00	---	0.00	---	---	0.00	0.028	---	2.346
2.10	10,830	211.10	2.97 ic	2.97 ic	0.00	---	0.00	---	---	0.00	0.032	---	3.000
2.20	11,800	211.20	3.71 ic	3.71 ic	0.00	---	0.00	---	---	0.00	0.035	---	3.741
2.30	12,770	211.30	4.53 ic	4.53 ic	0.00	---	0.00	---	---	0.00	0.039	---	4.569
2.40	13,739	211.40	5.30 ic	5.30 ic	0.00	---	0.00	---	---	0.00	0.043	---	5.342
2.50	14,709	211.50	6.28 ic	6.28 ic	0.00	---	0.00	---	---	0.00	0.046	---	6.329
2.60	15,679	211.60	7.18 ic	7.18 ic	0.00	---	0.00	---	---	0.00	0.050	---	7.229
2.70	16,649	211.70	8.36 ic	8.15 ic	0.00	---	0.00	---	---	0.00	0.053	---	8.206
2.80	17,618	211.80	9.35 ic	9.26 ic	0.00	---	0.00	---	---	0.00	0.057	---	9.318
2.90	18,588	211.90	10.39 ic	10.39 ic	0.00	---	0.00	---	---	0.00	0.060	---	10.45
3.00	19,558	212.00	11.51 ic	11.51 ic	0.00	---	0.00	---	---	0.00	0.064	---	11.57
3.10	21,647	212.10	12.67 ic	12.67 ic	0.00	---	0.00	---	---	0.00	0.071	---	12.74

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George Field Park

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
3.20	23,737	212.20	13.81 ic	13.76 ic	0.00	---	0.00	---	---	0.00	0.078	---	13.84
3.30	25,827	212.30	14.62 ic	14.52 ic	0.00	---	0.00	---	---	0.00	0.085	---	14.60
3.40	27,916	212.40	15.45 ic	15.23 ic	0.00	---	0.00	---	---	0.00	0.092	---	15.32
3.50	30,006	212.50	15.97 ic	15.96 ic	0.00	---	0.00	---	---	0.00	0.099	---	16.06
3.60	32,096	212.60	16.75 ic	16.75 ic	0.00	---	0.00	---	---	0.00	0.106	---	16.86
3.70	34,185	212.70	17.57 ic	17.48 ic	0.00	---	0.00	---	---	0.00	0.113	---	17.59
3.80	36,275	212.80	18.11 ic	18.11 ic	0.00	---	0.00	---	---	0.00	0.120	---	18.23
3.90	38,365	212.90	18.88 ic	18.88 ic	0.00	---	0.00	---	---	0.00	0.127	---	19.01
4.00	40,454	213.00	19.74 ic	19.47 ic	0.00	---	0.00	---	---	0.00	0.134	---	19.61
4.10	46,087	213.10	20.20 ic	20.20 ic	0.00	---	0.00	---	---	0.00	0.162	---	20.36
4.20	51,720	213.20	21.06 ic	20.78 ic	0.00	---	0.00	---	---	0.00	0.190	---	20.97
4.30	57,353	213.30	21.50 ic	21.50 ic	0.00	---	0.00	---	---	0.00	0.218	---	21.72
4.40	62,986	213.40	22.05 ic	22.05 ic	0.00	---	0.00	---	---	0.00	0.246	---	22.29
4.50	68,619	213.50	22.82 ic	22.71 ic	0.00	---	0.00	---	---	0.00	0.274	---	22.98
4.60	74,251	213.60	23.31 ic	23.31 ic	0.00	---	0.00	---	---	0.00	0.302	---	23.61
4.70	79,884	213.70	24.13 ic	23.86 ic	0.00	---	0.00	---	---	0.00	0.330	---	24.19
4.80	85,517	213.80	24.56 ic	24.50 ic	0.00	---	0.00	---	---	0.00	0.357	---	24.86
4.90	91,150	213.90	25.06 ic	25.06 ic	0.00	---	0.00	---	---	0.00	0.385	---	25.44
5.00	96,783	214.00	25.86 ic	25.58 ic	0.00	---	0.00	---	---	0.00	0.413	---	26.00
5.10	110,735	214.10	26.28 ic	26.19 ic	0.00	---	0.00	---	---	0.00	0.463	---	26.65
5.20	124,687	214.20	26.74 ic	26.74 ic	0.00	---	0.00	---	---	0.00	0.513	---	27.26
5.30	138,639	214.30	27.24 ic	27.24 ic	0.00	---	0.00	---	---	0.00	0.563	---	27.80
5.40	152,591	214.40	27.96 ic	27.79 ic	0.00	---	0.00	---	---	0.00	0.612	---	28.40
5.50	166,543	214.50	28.37 ic	28.36 ic	0.00	---	0.00	---	---	0.00	0.662	---	29.02
5.60	180,494	214.60	28.84 ic	28.84 ic	0.00	---	0.00	---	---	0.00	0.712	---	29.55
5.70	194,446	214.70	29.58 ic	29.32 ic	0.00	---	0.00	---	---	0.00	0.762	---	30.09
5.80	208,398	214.80	29.97 ic	29.87 ic	0.00	---	0.00	---	---	0.00	0.811	---	30.68
5.90	222,350	214.90	30.38 ic	30.38 ic	0.00	---	0.00	---	---	0.00	0.861	---	31.24
6.00	236,302	215.00	30.84 ic	30.84 ic	0.00	---	0.00	---	---	0.00	0.911	---	31.75
6.10	257,570	215.10	31.49 ic	31.32 ic	0.09 ic	---	0.00	---	---	0.00	0.926	---	32.34
6.20	278,839	215.20	32.22 ic	31.72 ic	0.34 ic	---	0.00	---	---	0.00	0.941	---	33.00
6.30	300,107	215.30	32.93 ic	32.11 ic	0.69 ic	---	0.00	---	---	0.00	0.956	---	33.76
6.40	321,375	215.40	33.61 ic	32.51 ic	1.09 ic	---	0.00	---	---	0.00	0.971	---	34.57
6.50	342,643	215.50	34.30 ic	32.88 ic	1.42 ic	---	0.00	---	---	0.00	0.986	---	35.28
6.60	363,911	215.60	34.94 ic	33.27 ic	1.68 ic	---	0.00	---	---	0.00	1.001	---	35.94
6.70	385,179	215.70	35.56 ic	33.66 ic	1.90 ic	---	0.00	---	---	0.00	1.016	---	36.57
6.80	406,447	215.80	36.15 ic	34.05 ic	2.10 ic	---	0.00	---	---	0.00	1.031	---	37.18
6.90	427,715	215.90	36.72 ic	34.43 ic	2.29 ic	---	0.00	---	---	0.00	1.046	---	37.76
7.00	448,983	216.00	37.38 ic	34.83 ic	2.46 ic	---	0.00	---	---	0.00	1.060	---	38.35
7.10	473,336	216.10	37.86 ic	35.24 ic	2.61 ic	---	0.00	---	---	0.00	1.074	---	38.93
7.20	497,689	216.20	38.36 ic	35.60 ic	2.76 ic	---	0.00	---	---	0.00	1.088	---	39.45
7.30	522,041	216.30	38.91 ic	36.00 ic	2.91 ic	---	0.00	---	---	0.00	1.101	---	40.01
7.40	546,394	216.40	39.43 ic	36.37 ic	3.04 ic	---	0.00	---	---	0.00	1.115	---	40.52
7.50	570,747	216.50	39.91 ic	36.73 ic	3.17 ic	---	0.00	---	---	0.00	1.128	---	41.03
7.60	595,099	216.60	39.02 oc	35.72 ic	3.30 ic	---	0.00	---	---	0.00	1.142	---	40.16
7.70	619,452	216.70	39.37 oc	35.95 ic	3.41 ic	---	0.00	---	---	0.00	1.155	---	40.52
7.80	643,804	216.80	39.72 oc	36.18 ic	3.53 ic	---	0.00	---	---	0.00	1.169	---	40.88
7.90	668,157	216.90	40.06 oc	36.41 ic	3.64 ic	---	0.00	---	---	0.00	1.182	---	41.24
8.00	692,510	217.00	40.40 oc	36.64 ic	3.75 ic	---	0.00	---	---	0.00	1.196	---	41.59
8.10	719,912	217.10	40.73 oc	36.87 ic	3.86 ic	---	2.11	---	---	0.00	1.211	---	44.05
8.20	747,315	217.20	41.06 oc	37.10 ic	3.96 ic	---	5.96	---	---	0.00	1.225	---	48.24
8.30	774,717	217.30	41.39 oc	37.33 ic	4.06 ic	---	10.94	---	---	0.00	1.240	---	53.57
8.40	802,120	217.40	41.71 oc	37.55 ic	4.16 ic	---	16.85	---	---	0.00	1.255	---	59.82
8.50	829,522	217.50	42.03 oc	37.78 ic	4.25 ic	---	23.55	---	---	0.00	1.269	---	66.85
8.60	856,925	217.60	42.35 oc	38.00 ic	4.35 ic	---	30.96	---	---	0.00	1.284	---	74.59
8.70	884,327	217.70	42.67 oc	38.23 ic	4.44 ic	---	39.01	---	---	0.00	1.299	---	82.97
8.80	911,730	217.80	42.98 oc	38.45 ic	4.53 ic	---	47.66	---	---	0.00	1.314	---	91.95
8.90	939,132	217.90	43.29 oc	38.67 ic	4.62 ic	---	56.87	---	---	0.00	1.328	---	101.49
9.00	966,534	218.00	43.60 oc	38.89 ic	4.70 ic	---	66.60	---	---	0.00	1.343	---	111.54
9.10	998,488	218.10	43.90 oc	39.11 ic	4.79 ic	---	76.84	---	---	20.31	1.371	---	142.42
9.20	1,030,442	218.20	44.21 oc	39.33 ic	4.87 ic	---	87.55	---	---	57.45	1.398	---	190.60
9.30	1,062,396	218.30	44.51 oc	39.55 ic	4.95 ic	---	98.72	---	---	105.53	1.426	---	250.18
9.40	1,094,350	218.40	44.80 oc	39.77 ic	5.03 ic	---	110.33	---	---	162.48	1.454	---	319.06
9.50	1,126,304	218.50	45.10 oc	39.99 ic	5.11 ic	---	122.36	---	---	227.07	1.482	---	396.01
9.60	1,158,258	218.60	45.39 oc	40.20 ic	5.19 ic	---	134.79	---	---	298.49	1.509	---	480.19
9.70	1,190,212	218.70	45.68 oc	40.42 ic	5.27 ic	---	147.63	---	---	376.15	1.537	---	570.99
9.80	1,222,166	218.80	45.97 oc	40.63 ic	5.34 ic	---	160.84	---	---	459.56	1.565	---	667.94
9.90	1,254,120	218.90	46.26 oc	40.84 ic	5.42 ic	---	174.43	---	---	548.37	1.593	---	770.65
10.00	1,286,074	219.00	46.55 oc	41.05 ic	5.49 ic	---	188.37	---	---	642.20	1.620	---	878.74

...End

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	15.64	1	733	66,519	------	------	------	DA-1A
2	SCS Runoff	21.75	1	739	108,626	------	------	------	DA-2
3	SCS Runoff	78.17	1	761	594,545	------	------	------	DA-3A
4	SCS Runoff	3.142	1	742	17,949	------	------	------	DA-4
5	SCS Runoff	17.62	1	749	113,716	------	------	------	DA-5A
6	SCS Runoff	5.715	1	730	22,623	------	------	------	DA-1B
7	SCS Runoff	45.75	1	732	189,849	------	------	------	DA-3B
8	SCS Runoff	0.916	1	725	2,828	------	------	------	DA-3C
9	SCS Runoff	5.103	1	734	25,132	------	------	------	DA-5B
10	Combine	24.29	1	745	156,797	4, 5, 9	------	------	DA-4&5
11	Combine	41.40	1	735	197,768	1, 2, 6,	------	------	DA-1&2
12	Combine	92.34	1	755	787,221	3, 7, 8,	------	------	DA-3
13	Combine	151.11	1	740	1,141,785	10, 11, 12	------	------	George Field Park
14	Reservoir	37.06	1	822	1,109,083	13	215.96	440,331	George Field Pond

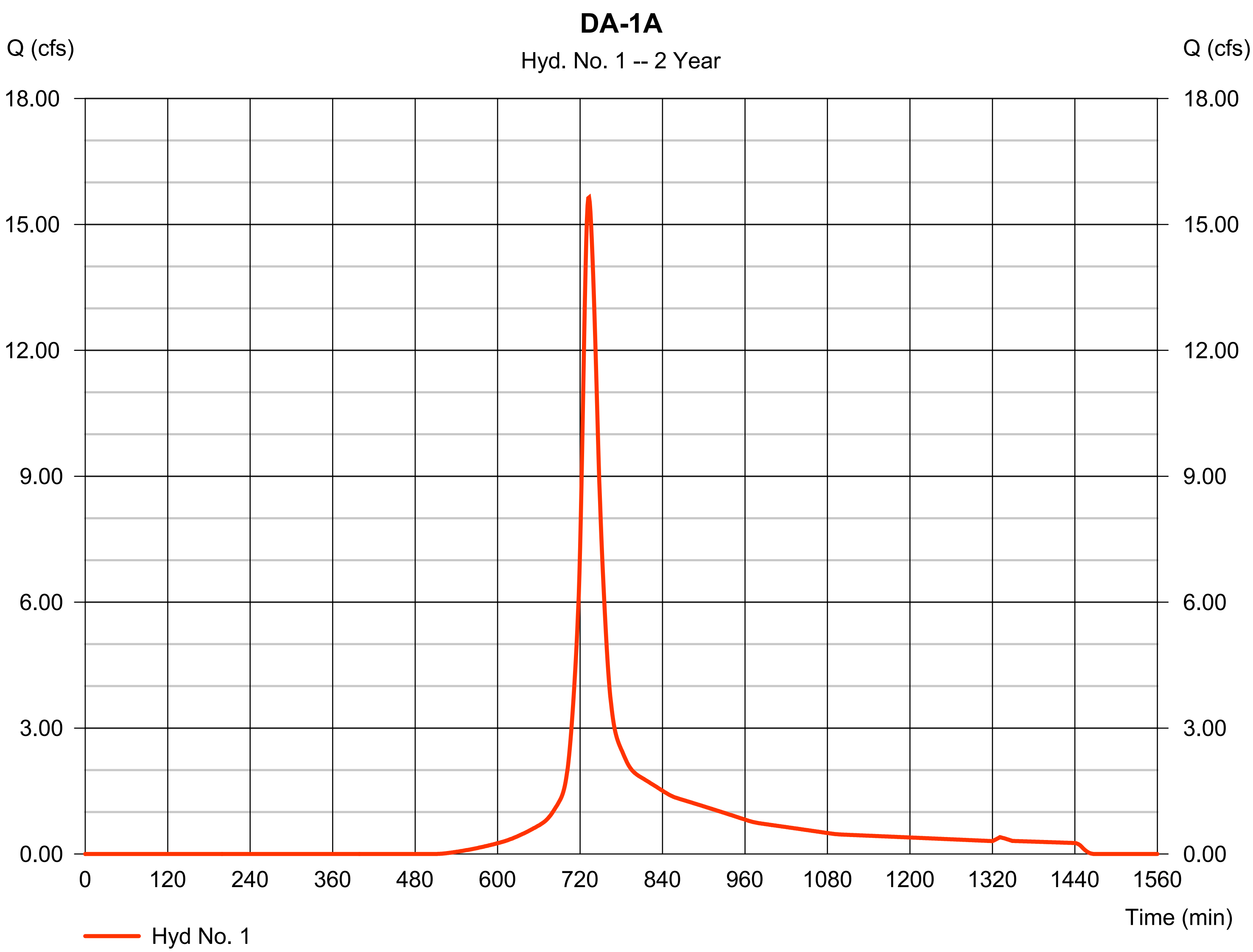
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 15.64 cfs
Storm frequency	= 2 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 66,519 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



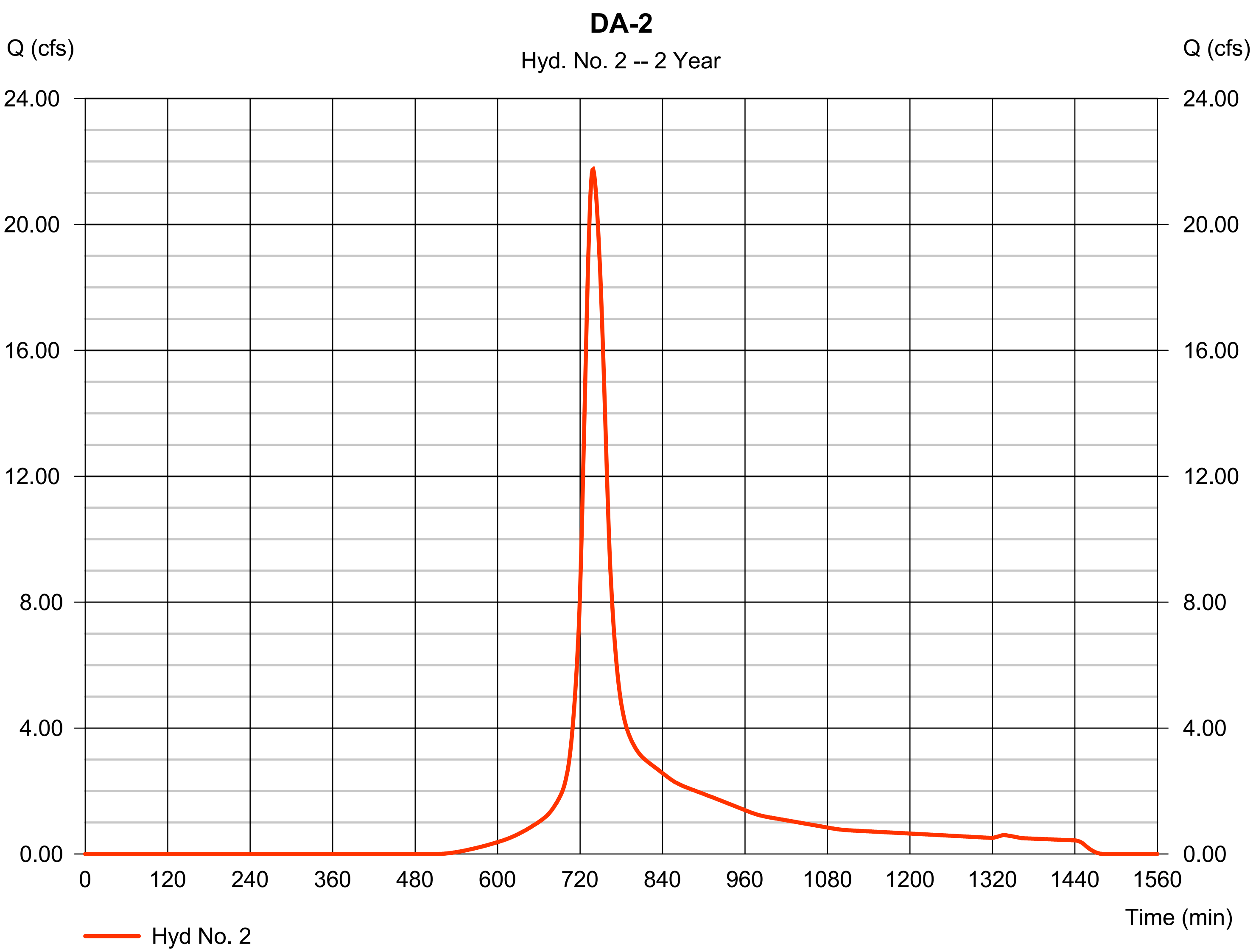
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 21.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 108,626 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

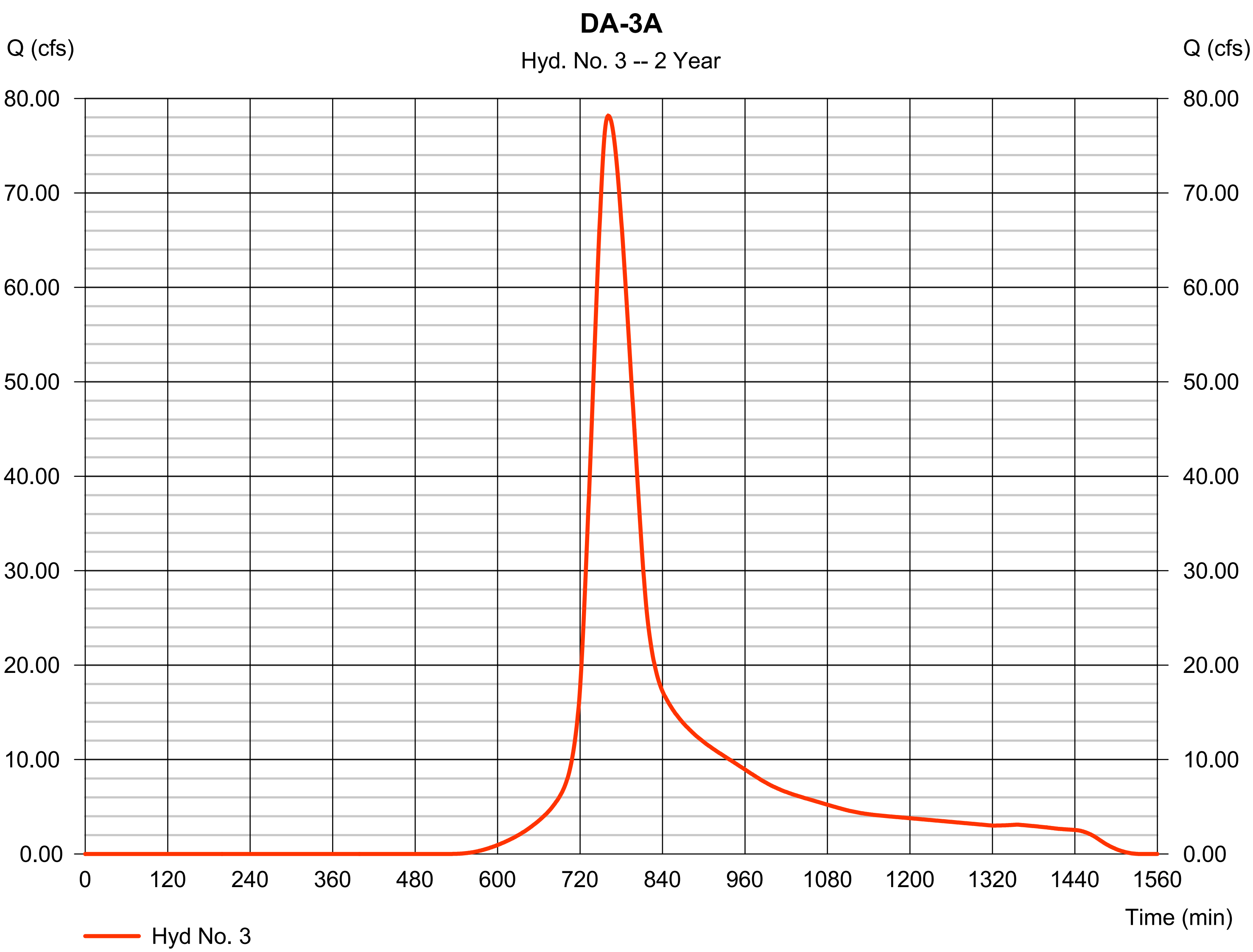
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 78.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 761 min
Time interval	= 1 min	Hyd. volume	= 594,545 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410

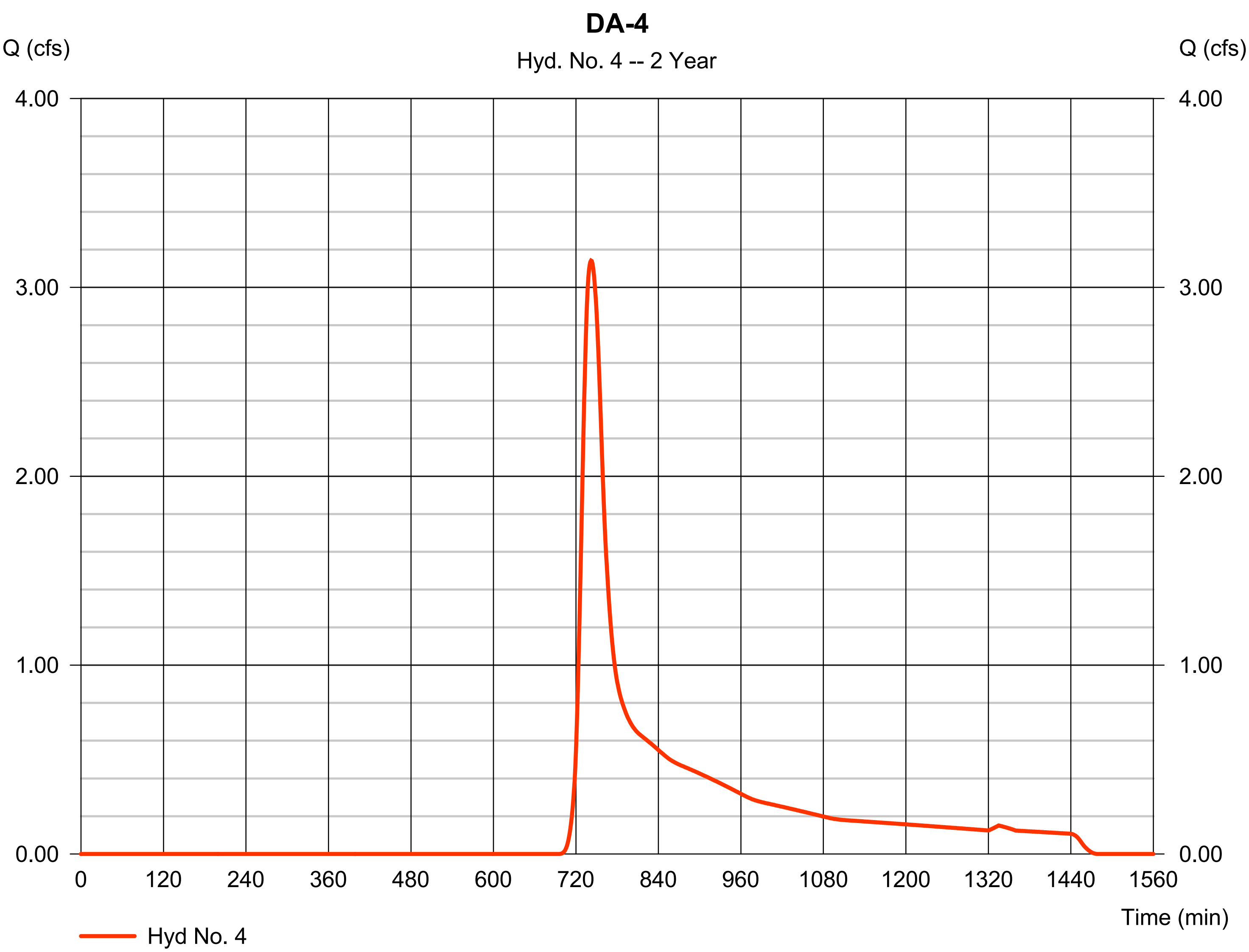


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 3.142 cfs
Storm frequency	= 2 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 17,949 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



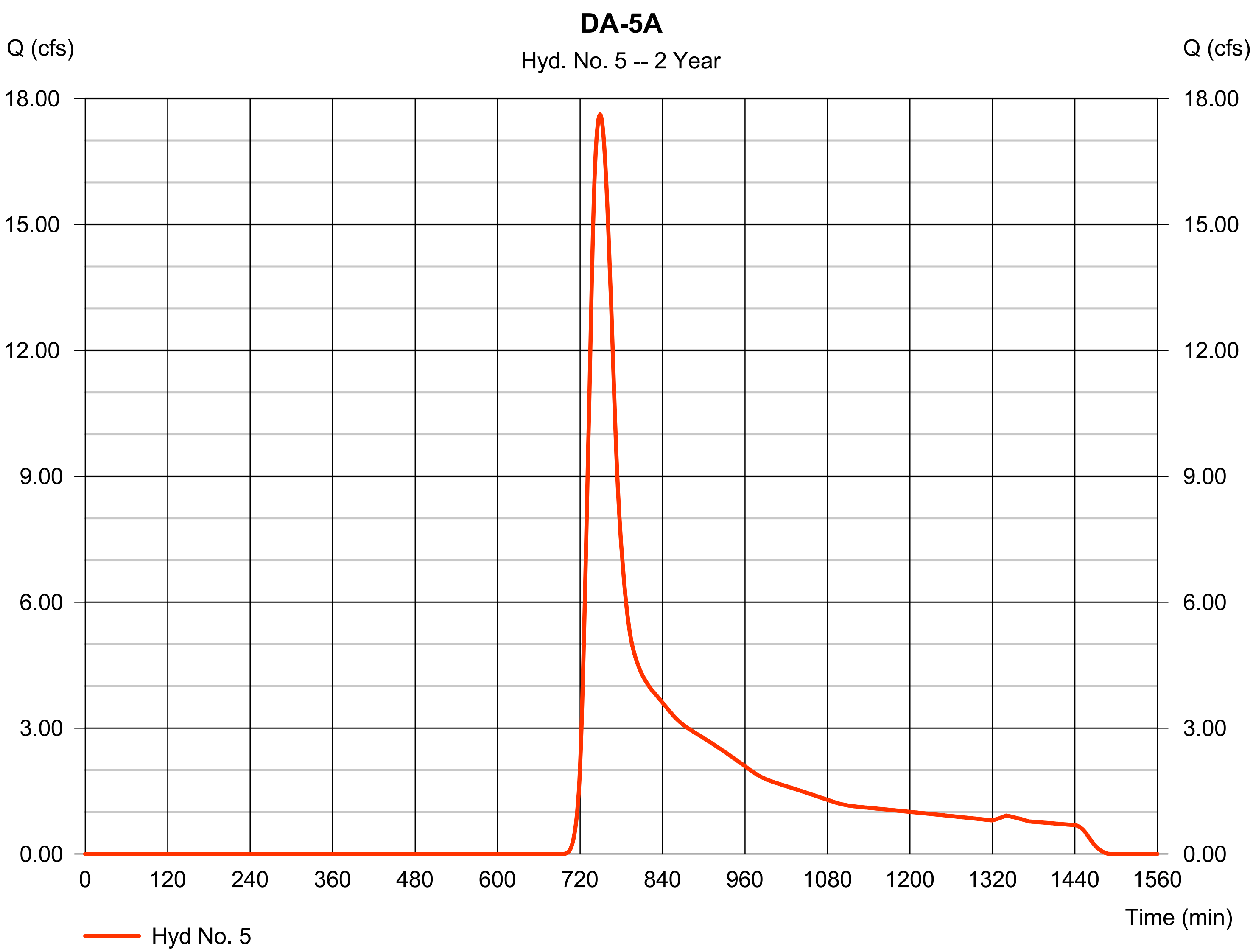
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 17.62 cfs
Storm frequency	= 2 yrs	Time to peak	= 749 min
Time interval	= 1 min	Hyd. volume	= 113,716 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



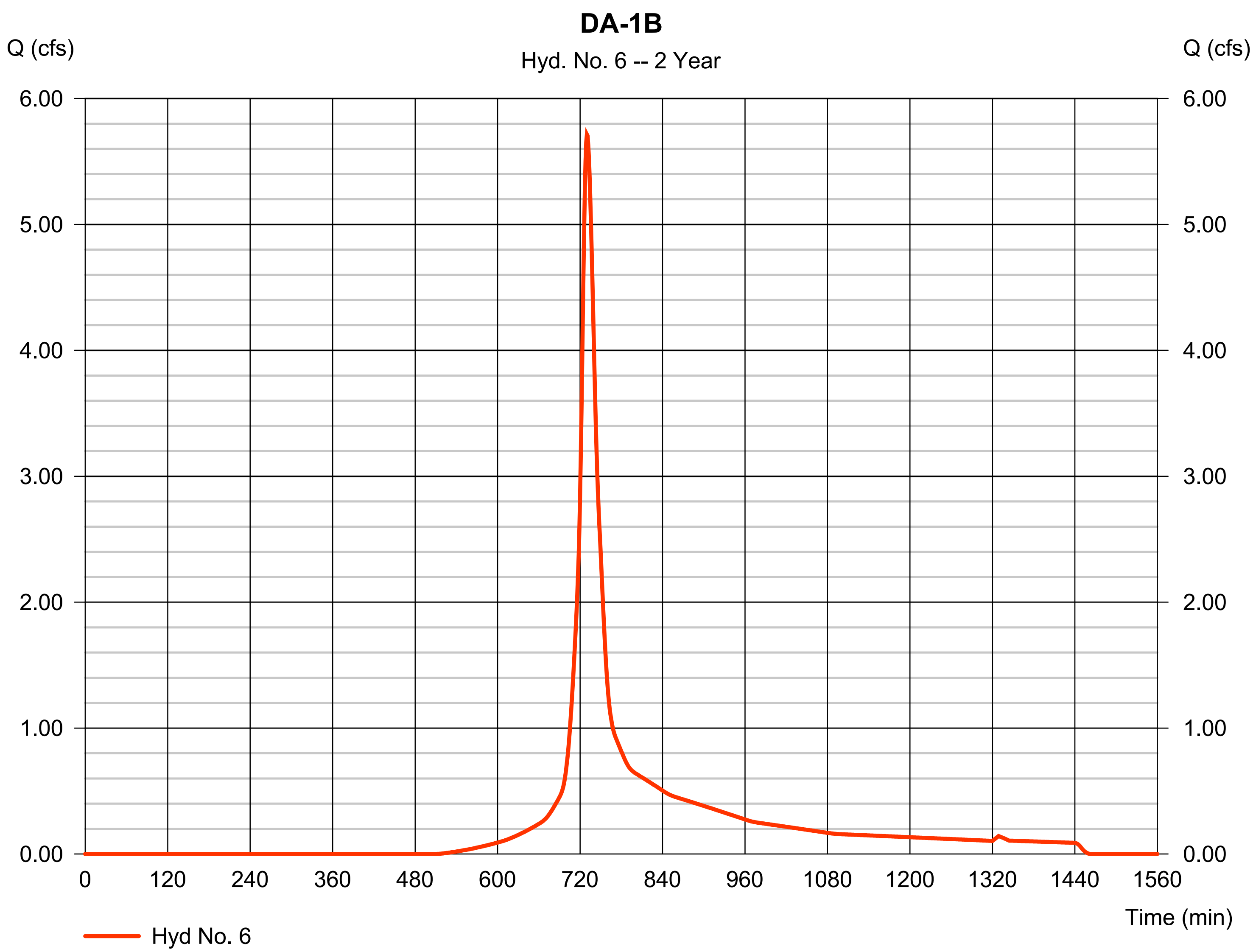
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.715 cfs
Storm frequency	= 2 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 22,623 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

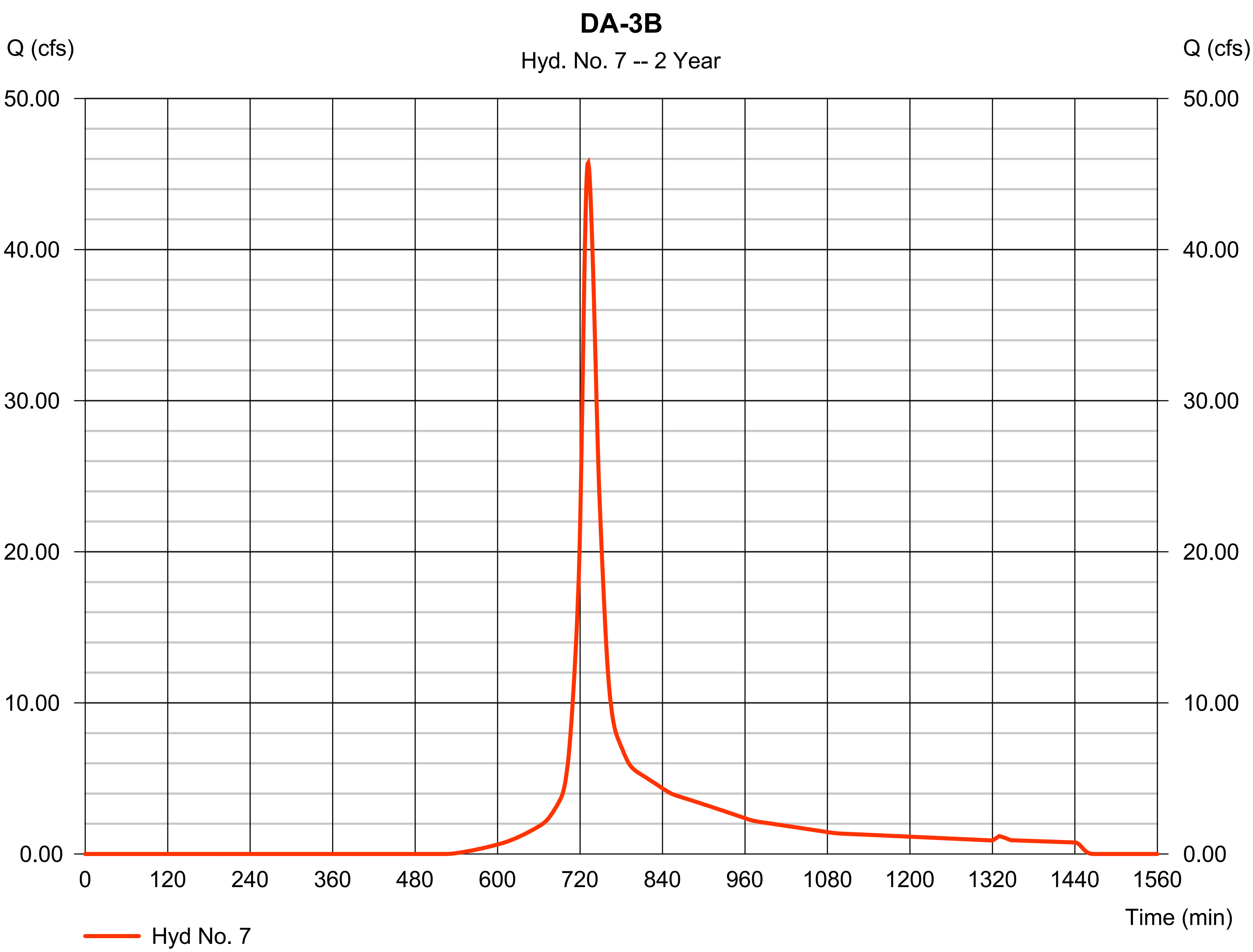


Hydrograph Report

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 45.75 cfs
Storm frequency	= 2 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 189,849 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



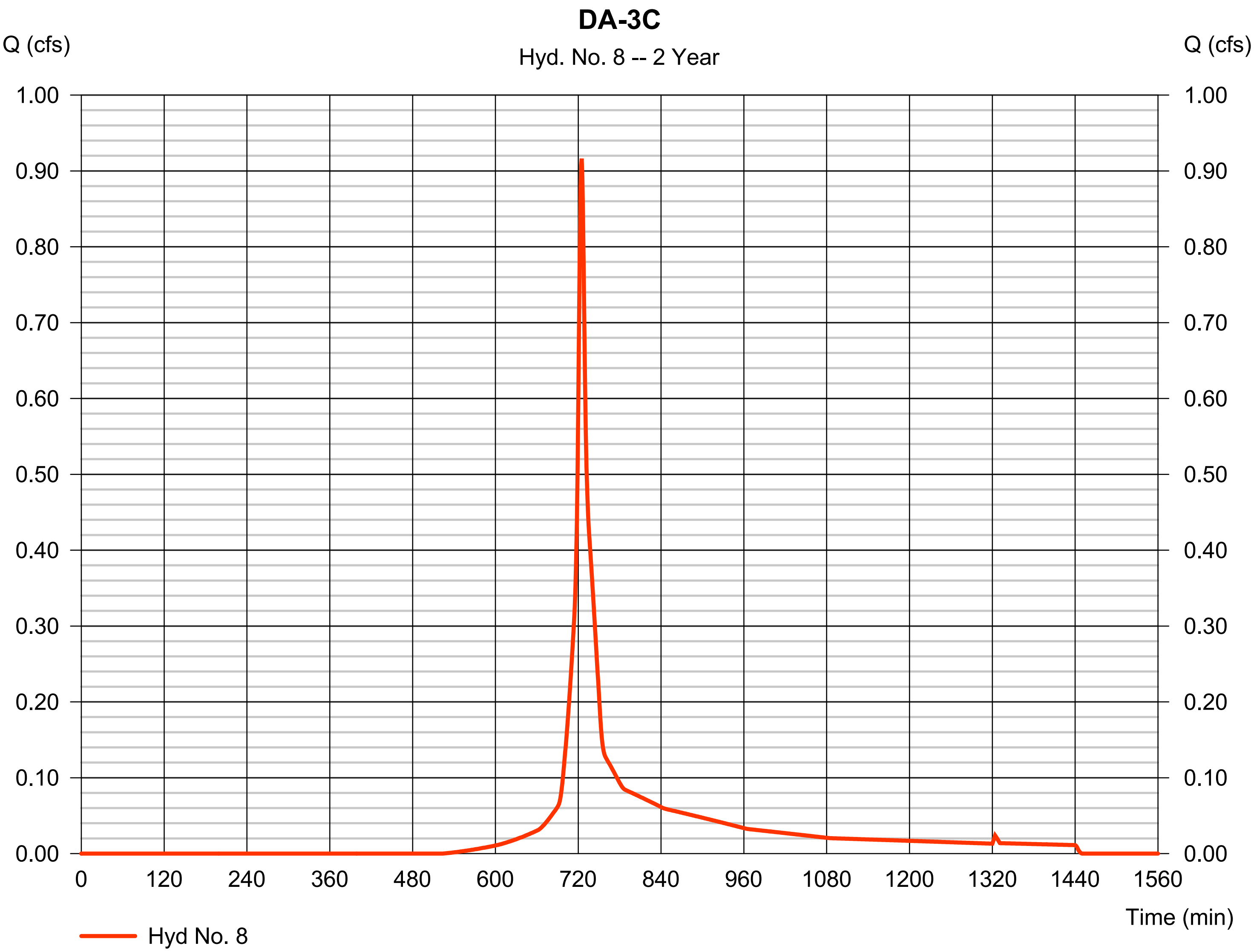
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 0.916 cfs
Storm frequency	= 2 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 2,828 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



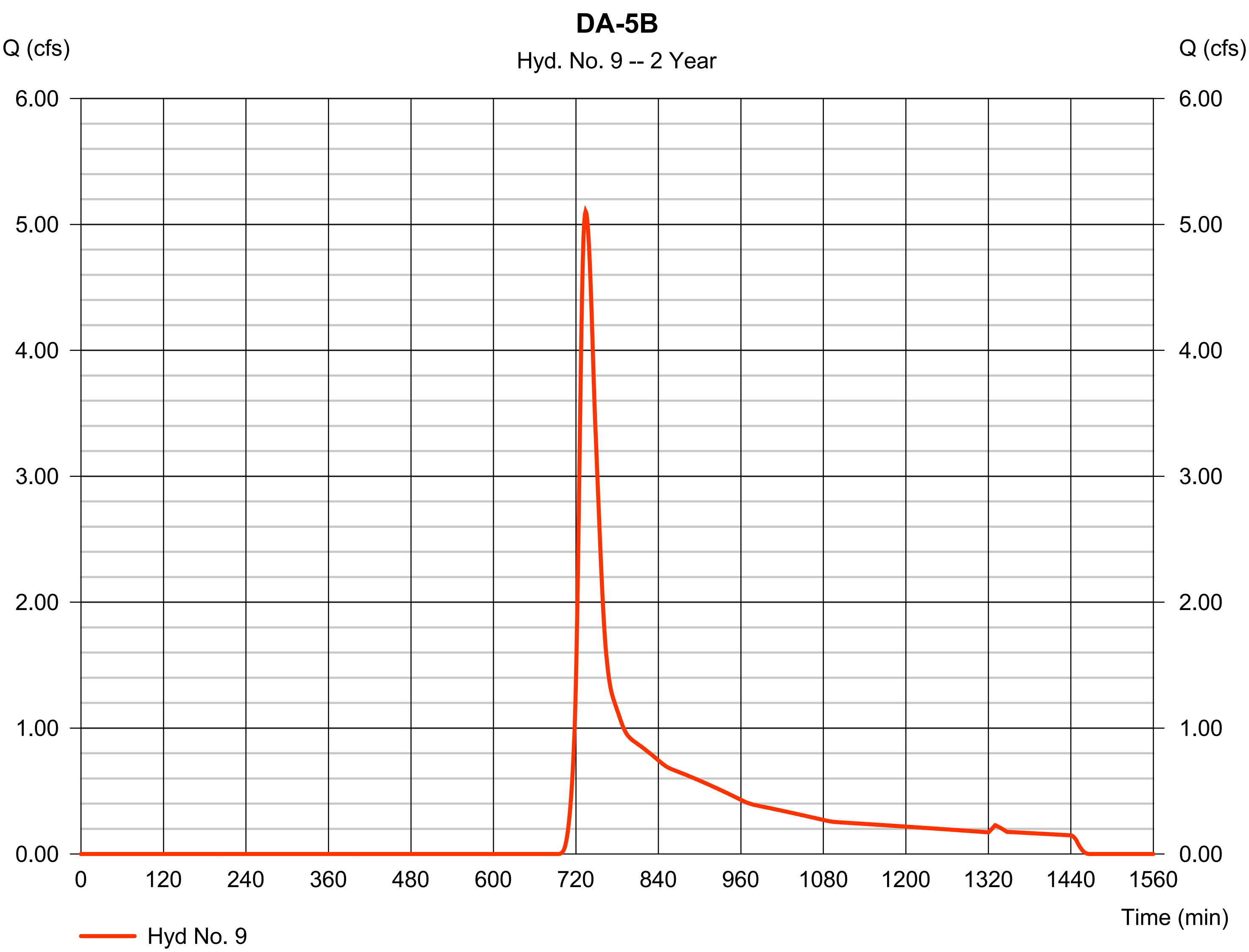
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 5.103 cfs
Storm frequency	= 2 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 25,132 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 3.51 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



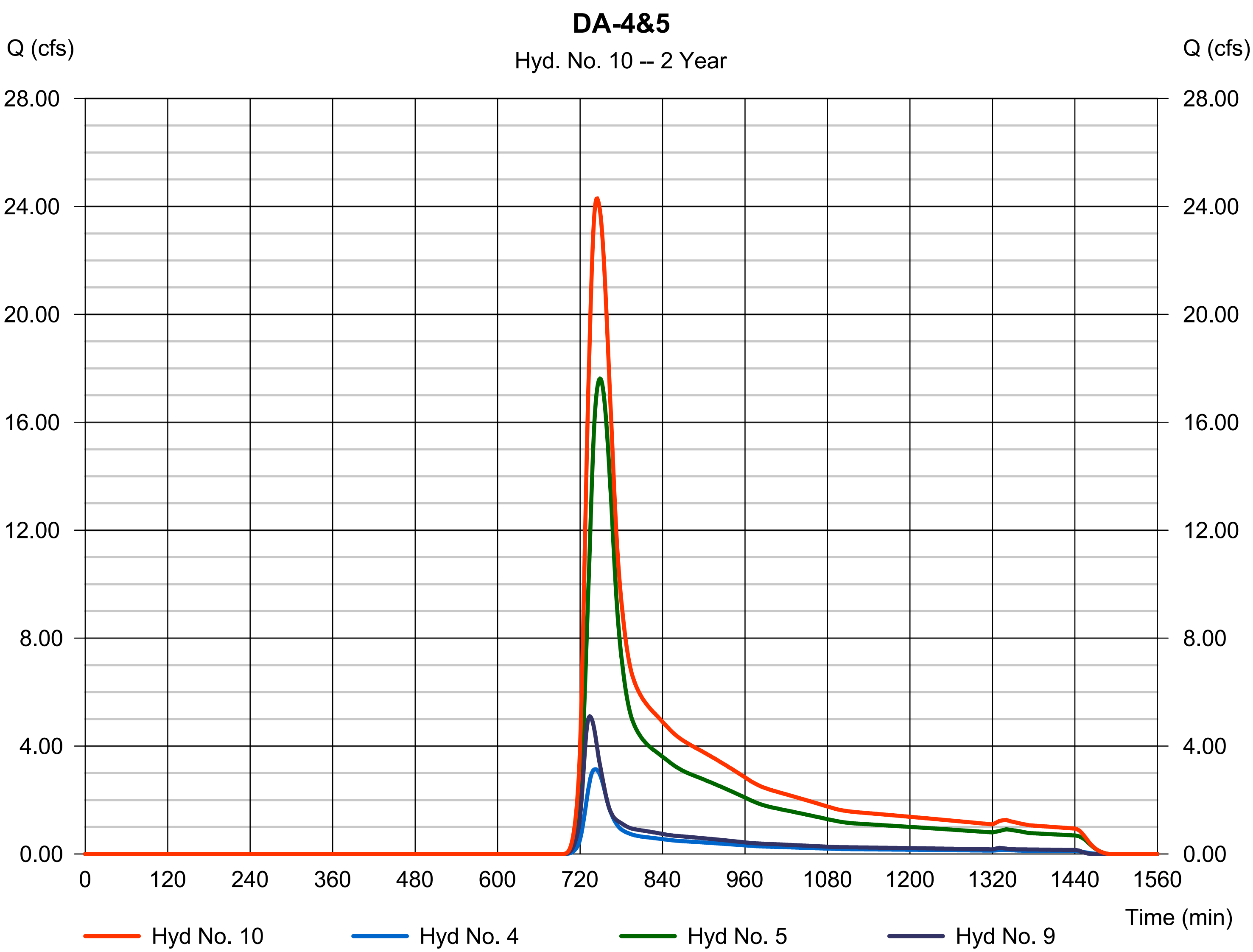
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 24.29 cfs
Storm frequency	= 2 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 156,797 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac

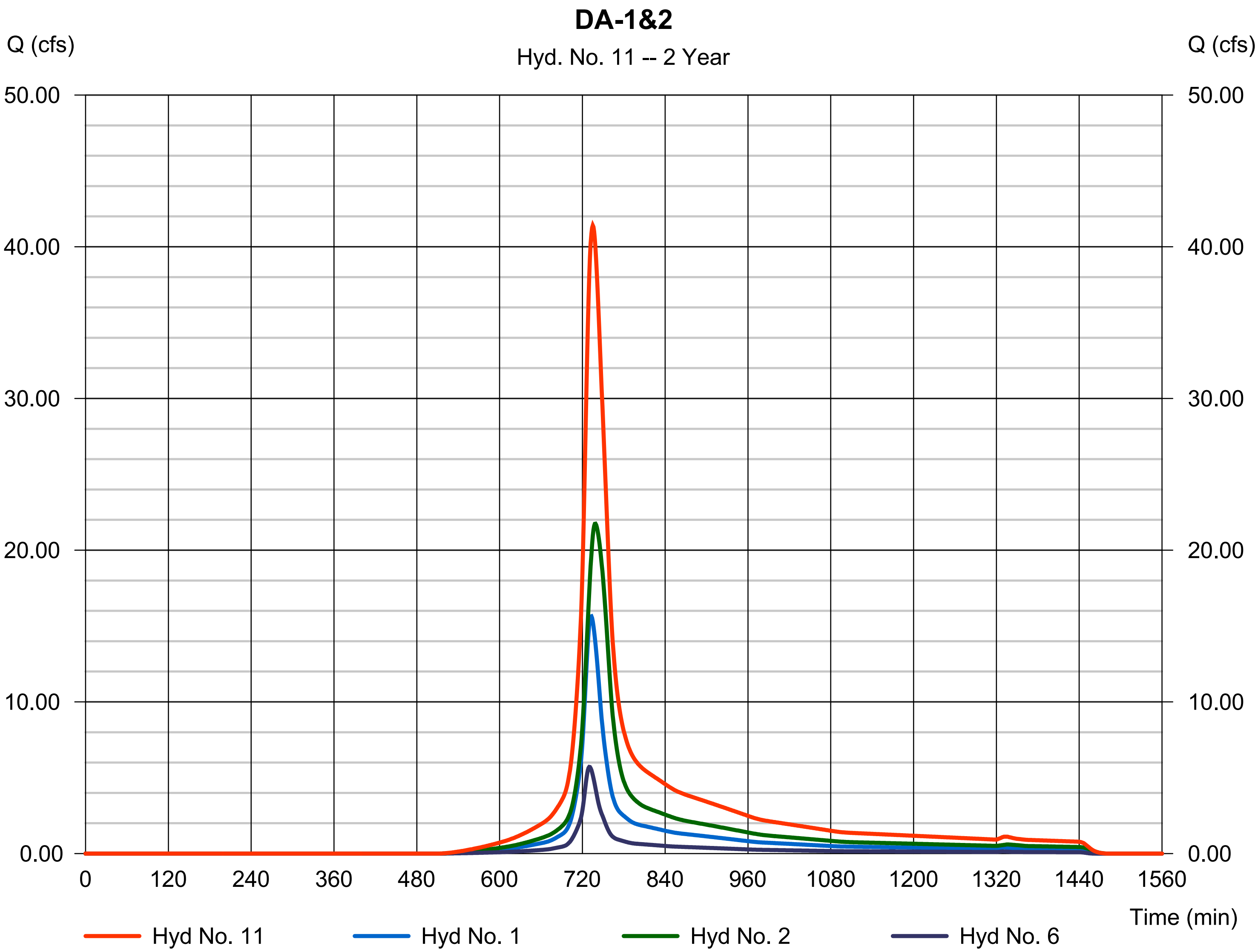


Hydrograph Report

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 41.40 cfs
Storm frequency	= 2 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 197,768 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



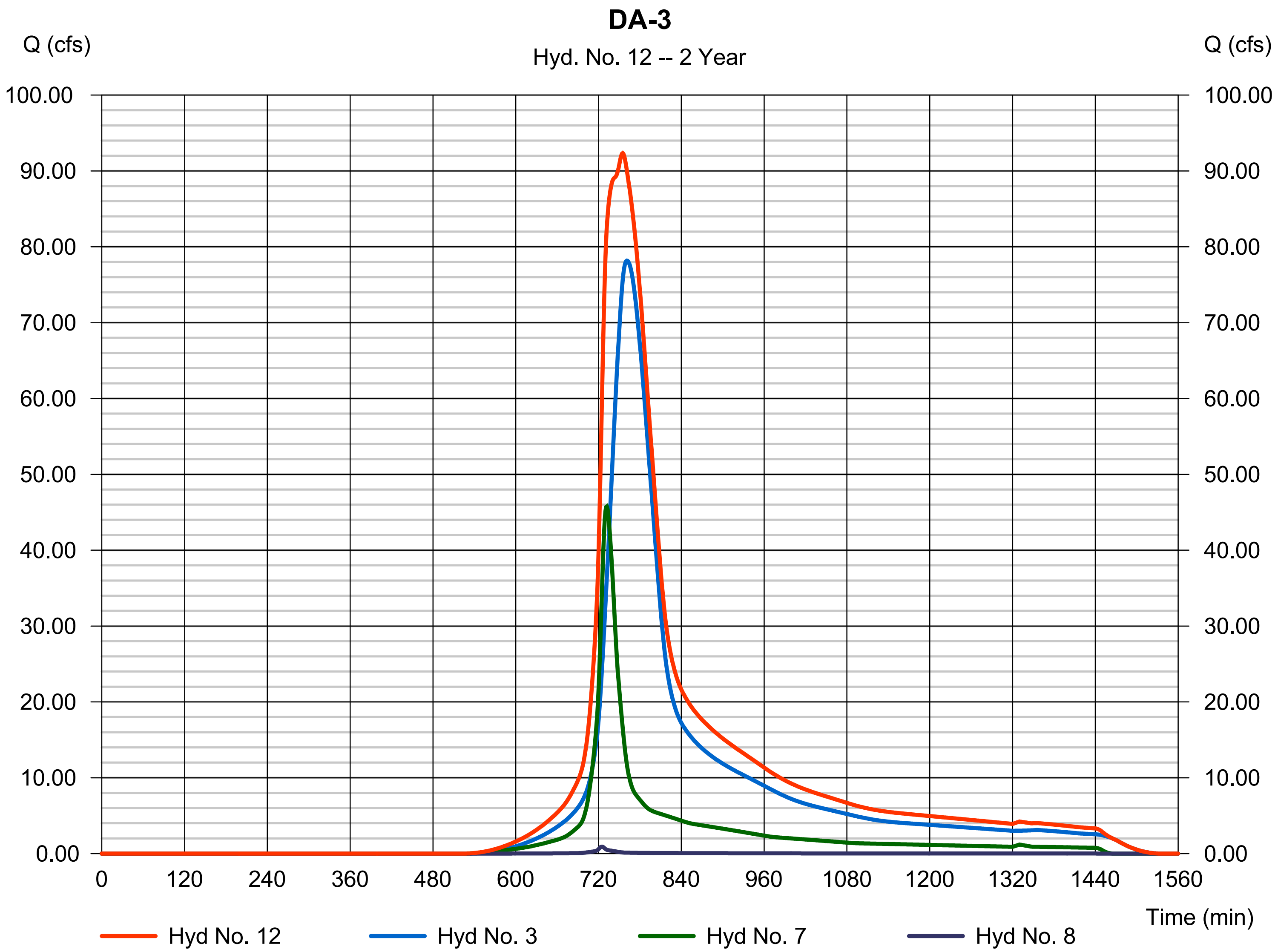
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 92.34 cfs
Storm frequency	= 2 yrs	Time to peak	= 755 min
Time interval	= 1 min	Hyd. volume	= 787,221 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac

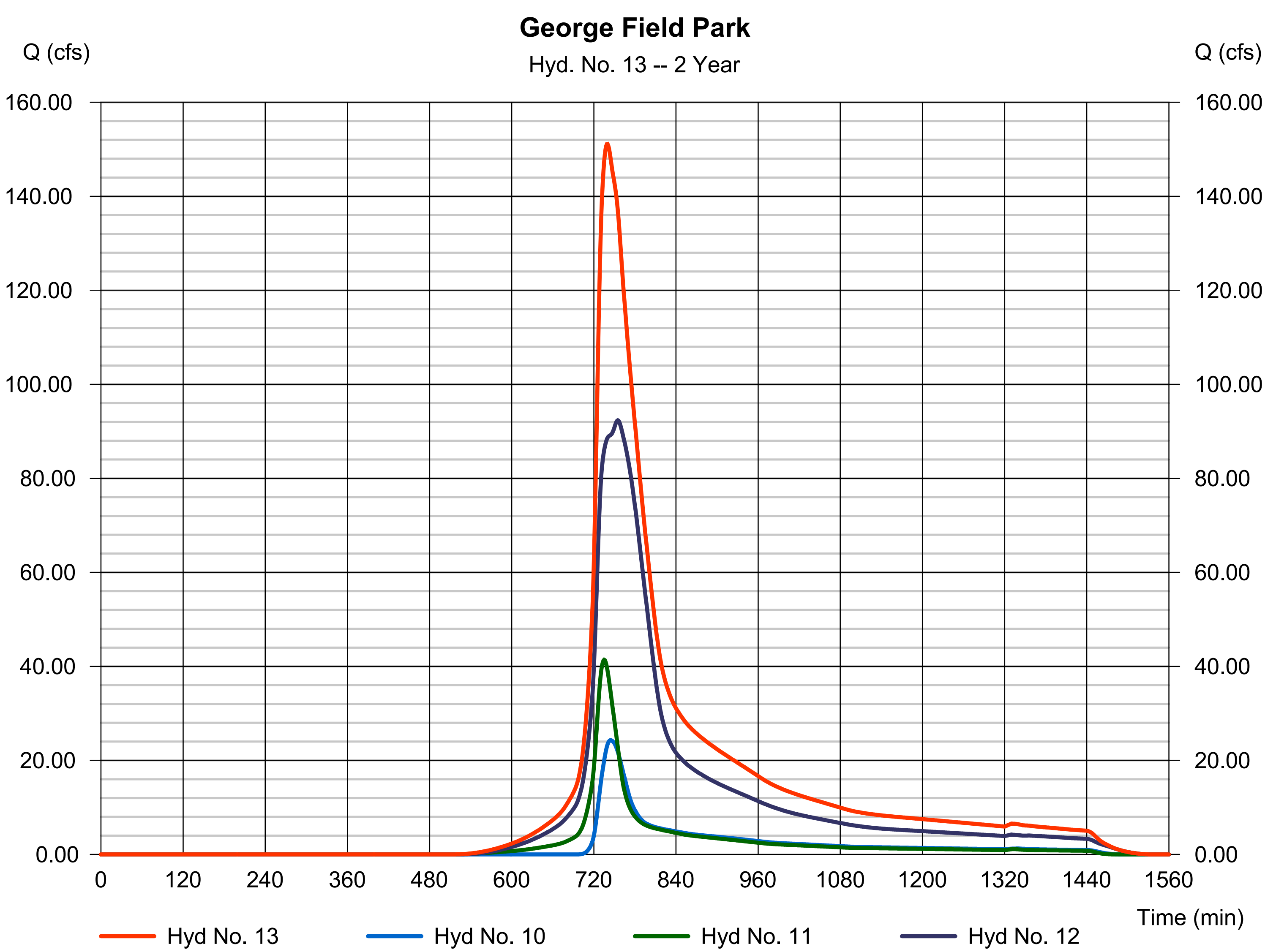


Hydrograph Report

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 151.11 cfs
Storm frequency	= 2 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 1,141,785 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

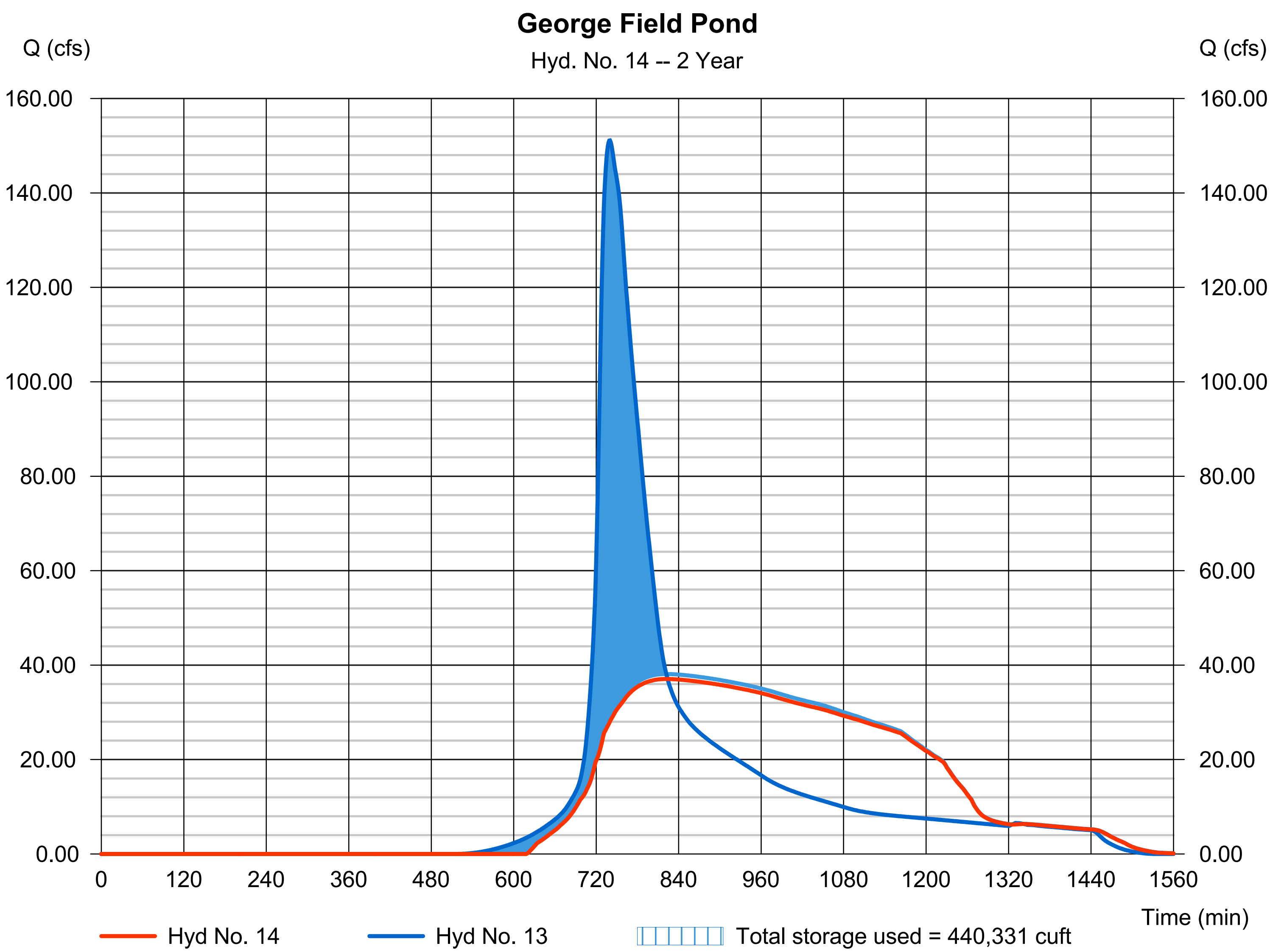
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 37.06 cfs
Storm frequency	= 2 yrs	Time to peak	= 822 min
Time interval	= 1 min	Hyd. volume	= 1,109,083 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 215.96 ft
Reservoir name	= George Field Park	Max. Storage	= 440,331 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	23.30	1	732	98,891	------	------	------	DA-1A
2	SCS Runoff	32.42	1	738	161,489	------	------	------	DA-2
3	SCS Runoff	118.05	1	760	891,484	------	------	------	DA-3A
4	SCS Runoff	6.143	1	739	31,981	------	------	------	DA-4
5	SCS Runoff	34.39	1	746	202,611	------	------	------	DA-5A
6	SCS Runoff	8.512	1	730	33,632	------	------	------	DA-1B
7	SCS Runoff	68.88	1	731	284,667	------	------	------	DA-3B
8	SCS Runoff	1.375	1	725	4,240	------	------	------	DA-3C
9	SCS Runoff	10.06	1	733	44,778	------	------	------	DA-5B
10	Combine	47.76	1	742	279,370	4, 5, 9	------	------	DA-4&5
11	Combine	61.68	1	735	294,012	1, 2, 6,	------	------	DA-1&2
12	Combine	139.11	1	755	1,180,391	3, 7, 8,	------	------	DA-3
13	Combine	240.46	1	739	1,753,773	10, 11, 12	------	------	George Field Park
14	Reservoir	50.82	1	826	1,704,128	13	217.27	766,941	George Field Pond

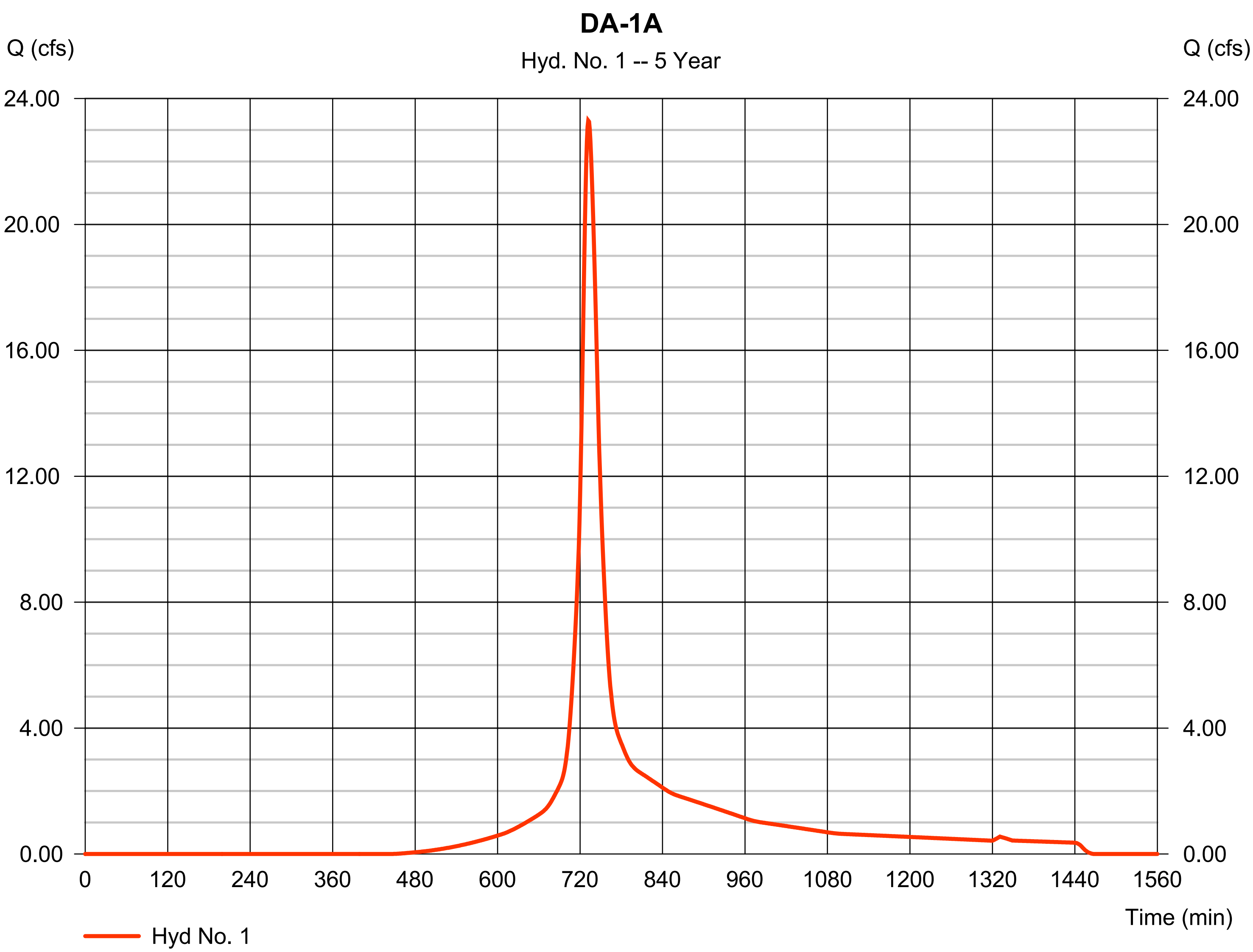
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 23.30 cfs
Storm frequency	= 5 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 98,891 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



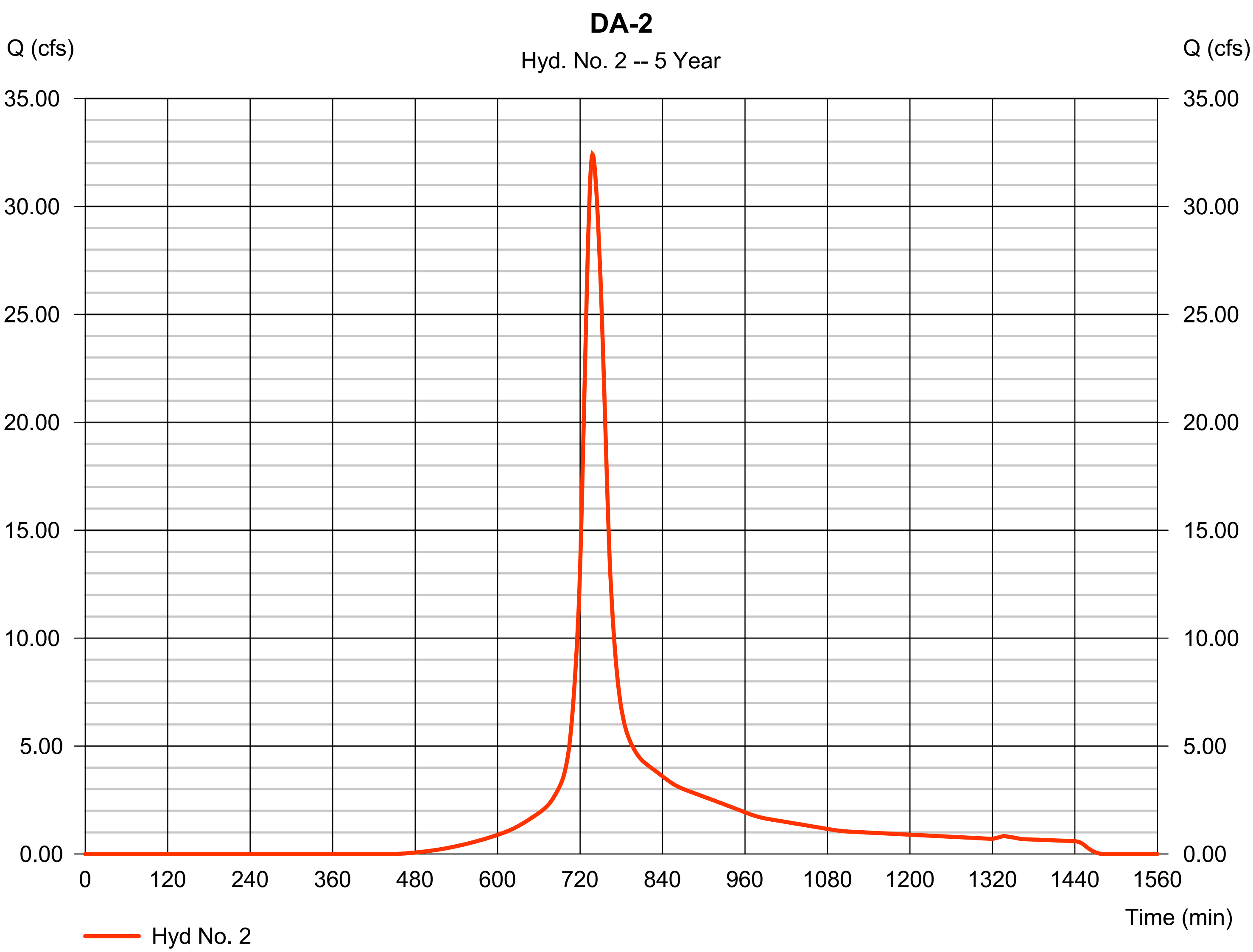
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 32.42 cfs
Storm frequency	= 5 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 161,489 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

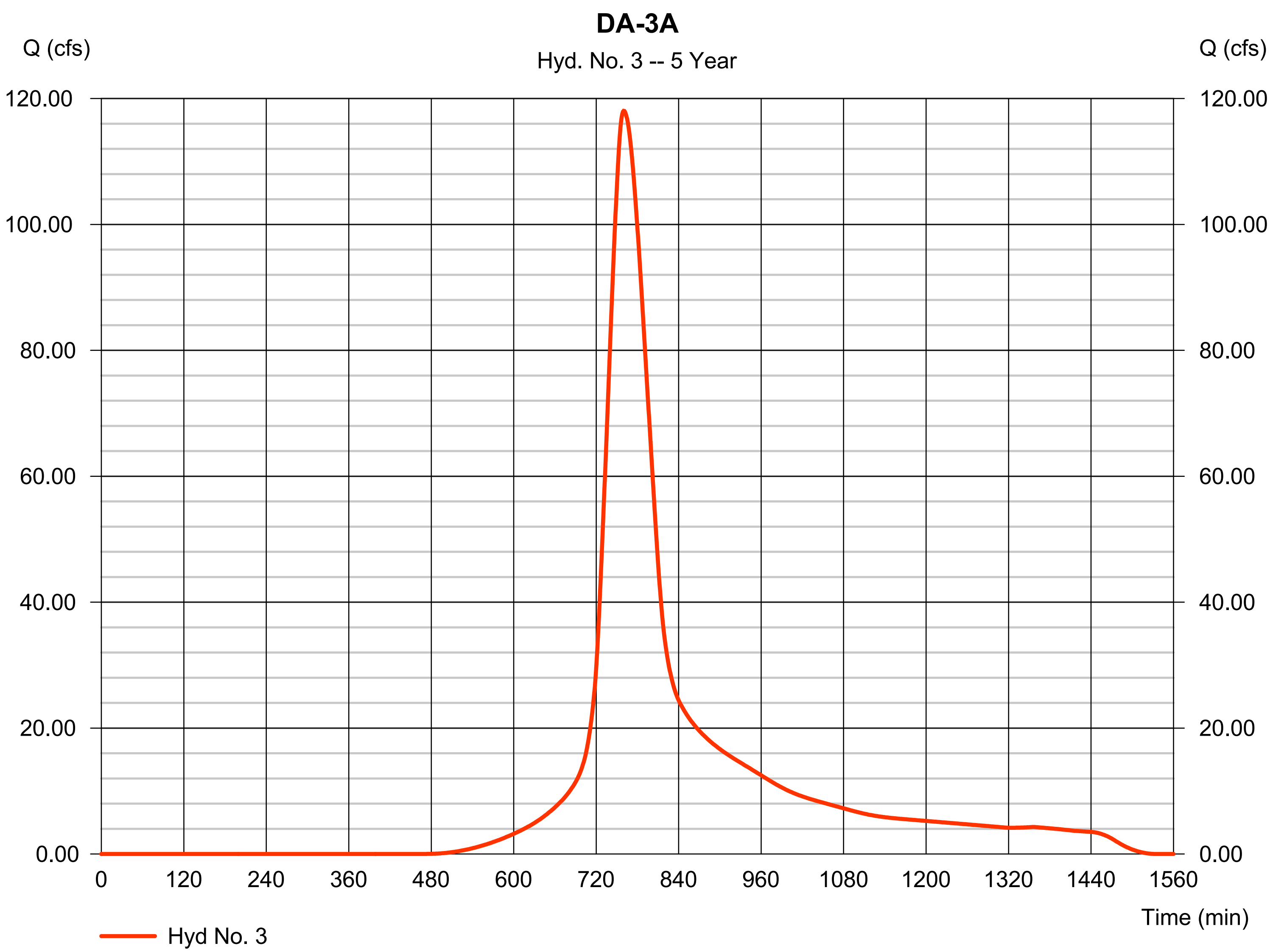
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 118.05 cfs
Storm frequency	= 5 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 891,484 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



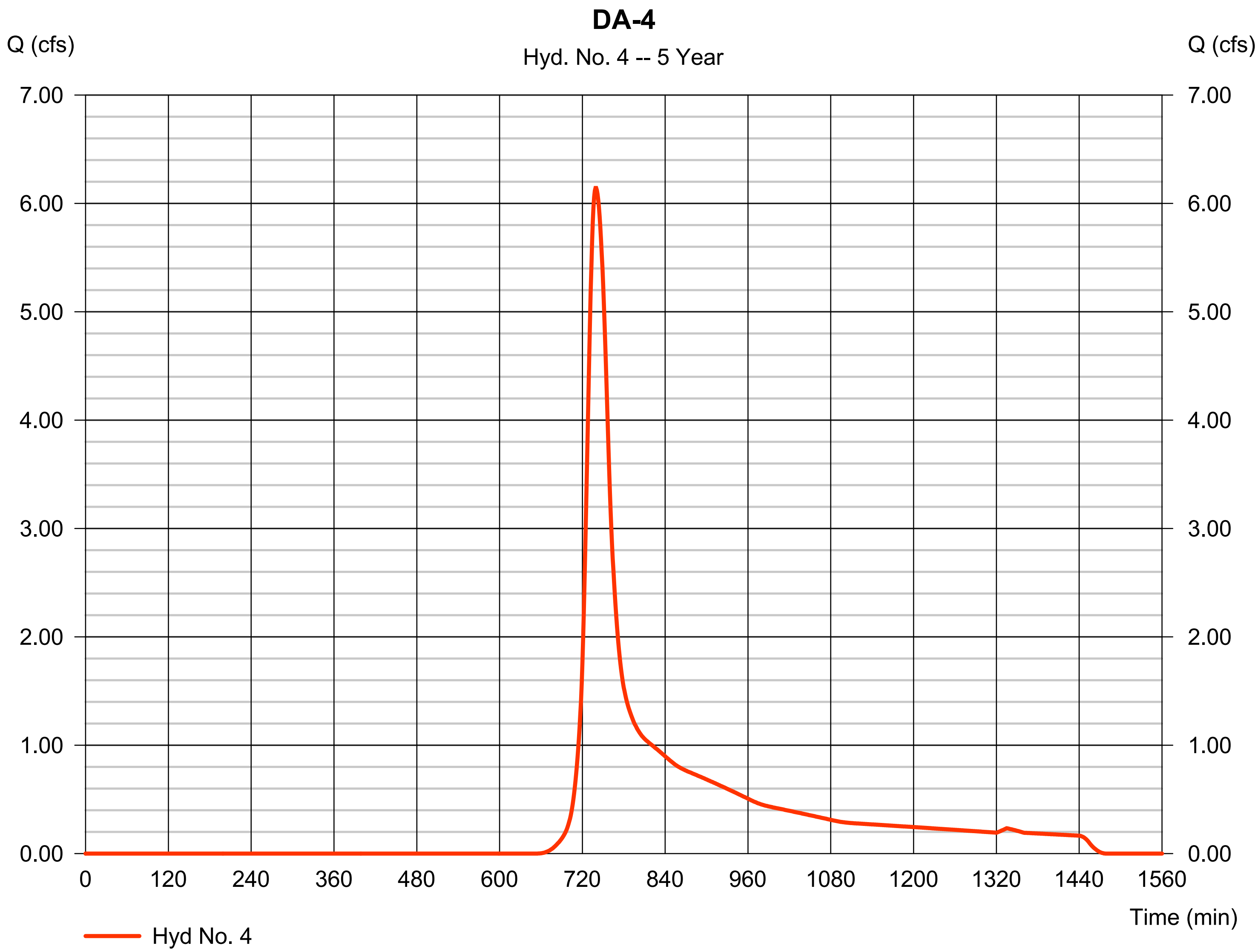
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 6.143 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 31,981 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

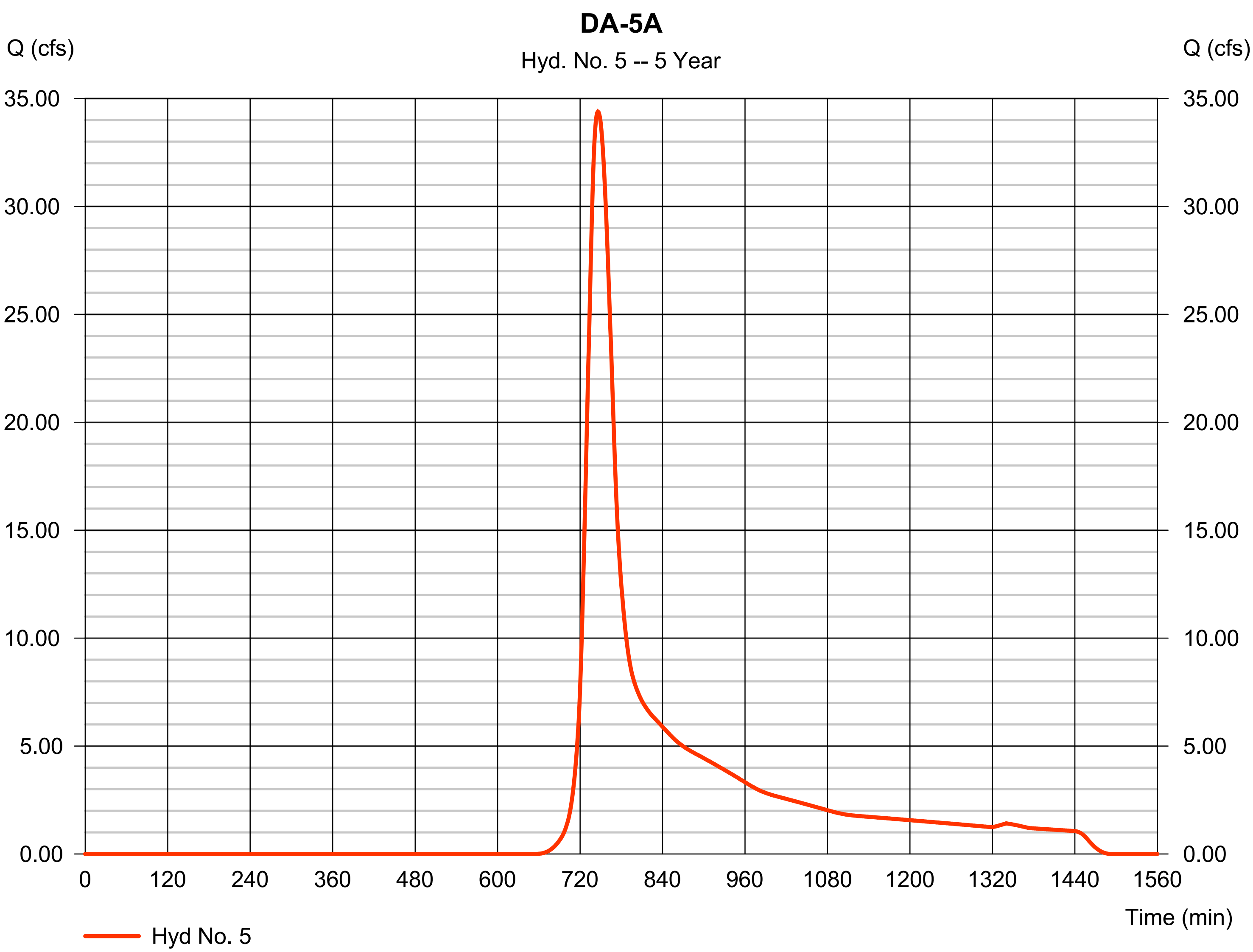


Hydrograph Report

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 34.39 cfs
Storm frequency	= 5 yrs	Time to peak	= 746 min
Time interval	= 1 min	Hyd. volume	= 202,611 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



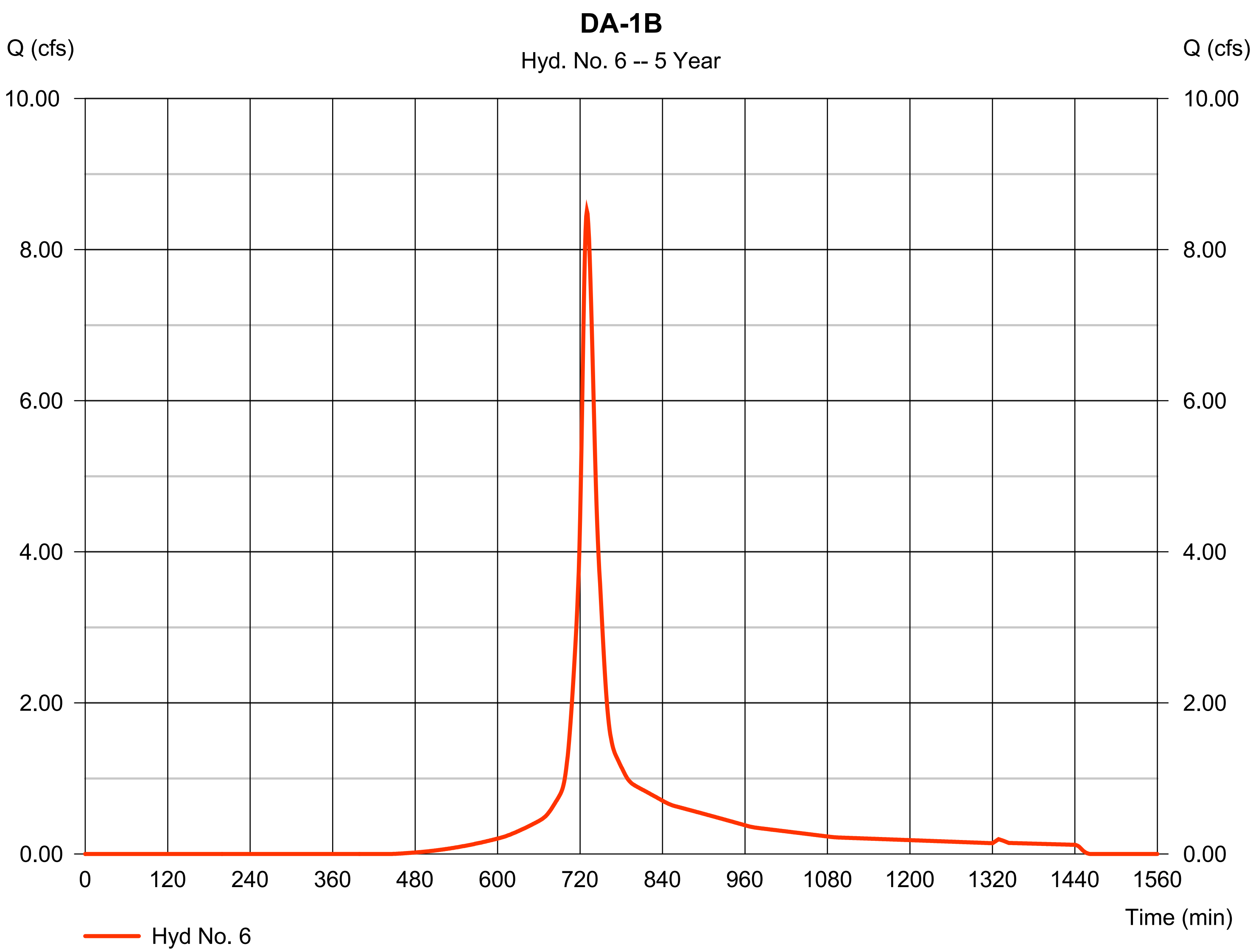
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 8.512 cfs
Storm frequency	= 5 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 33,632 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



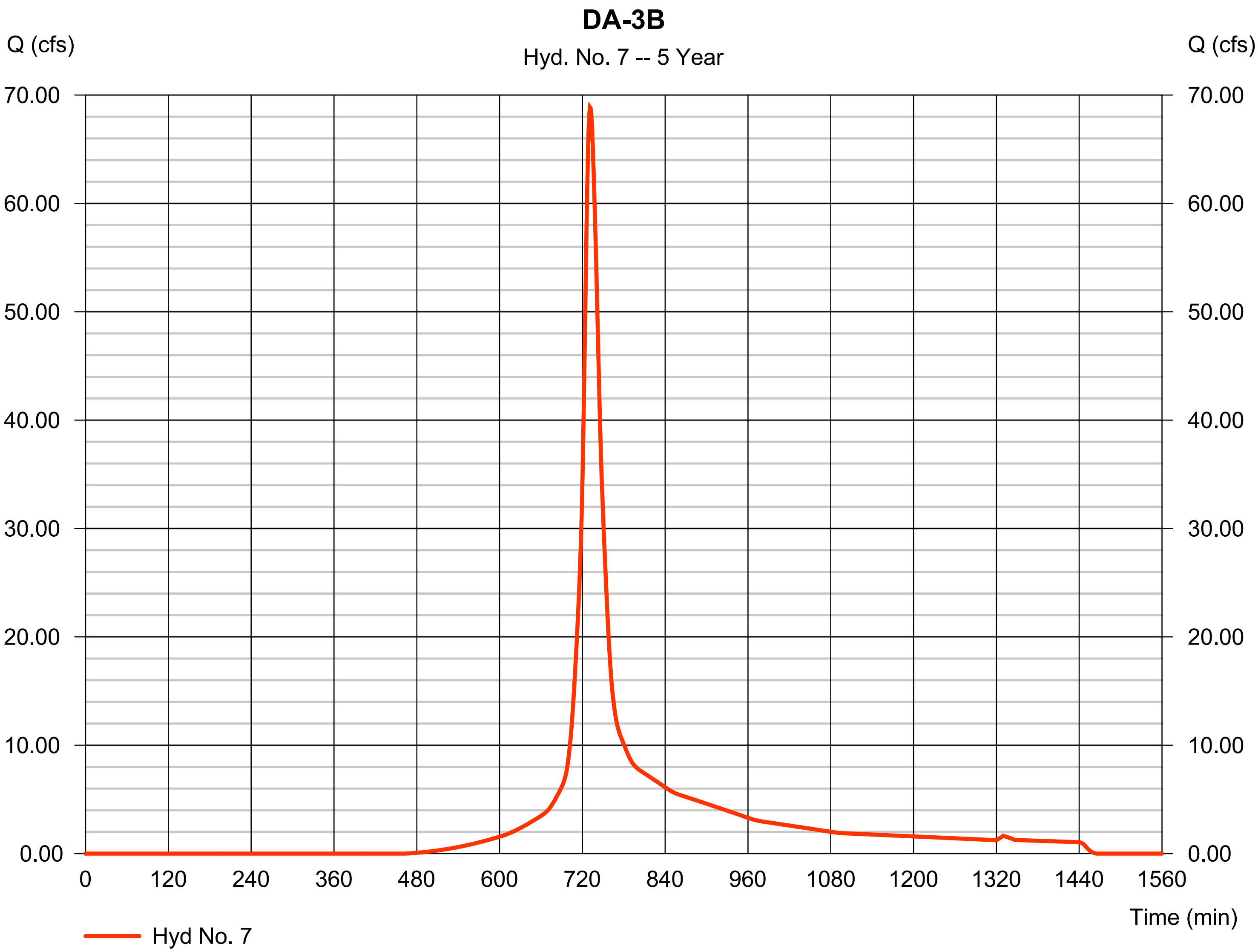
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 68.88 cfs
Storm frequency	= 5 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 284,667 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



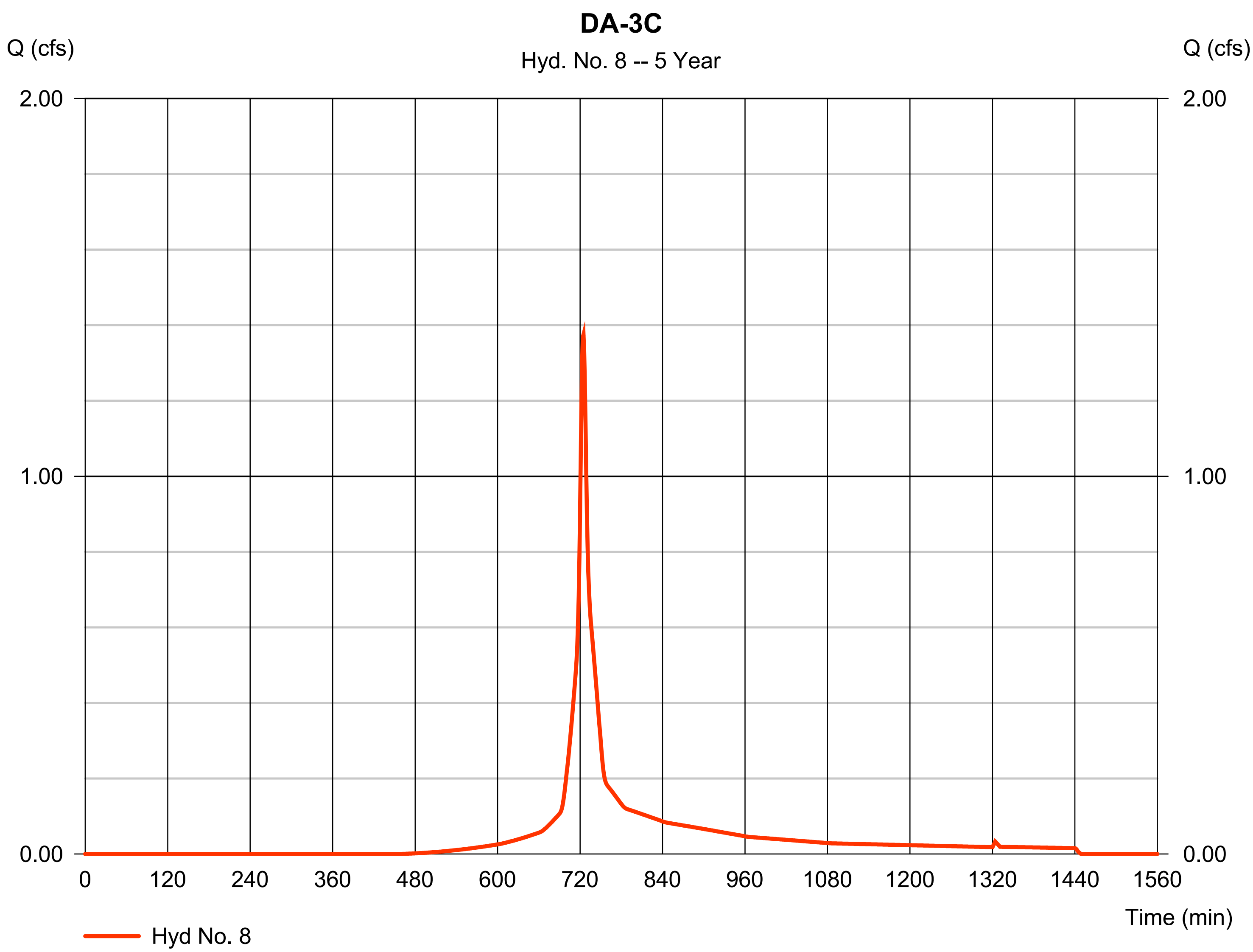
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.375 cfs
Storm frequency	= 5 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 4,240 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



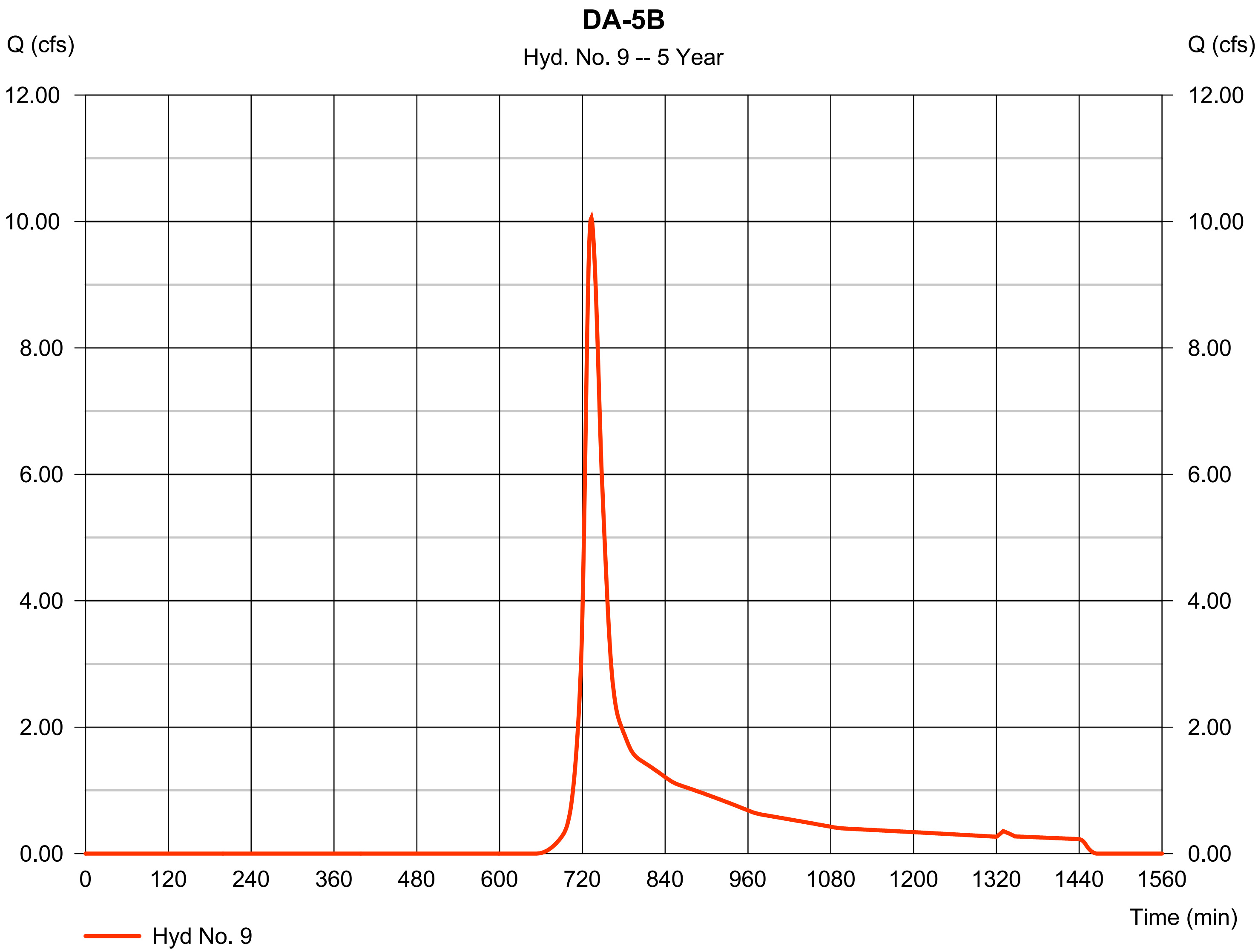
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.06 cfs
Storm frequency	= 5 yrs	Time to peak	= 733 min
Time interval	= 1 min	Hyd. volume	= 44,778 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 4.53 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



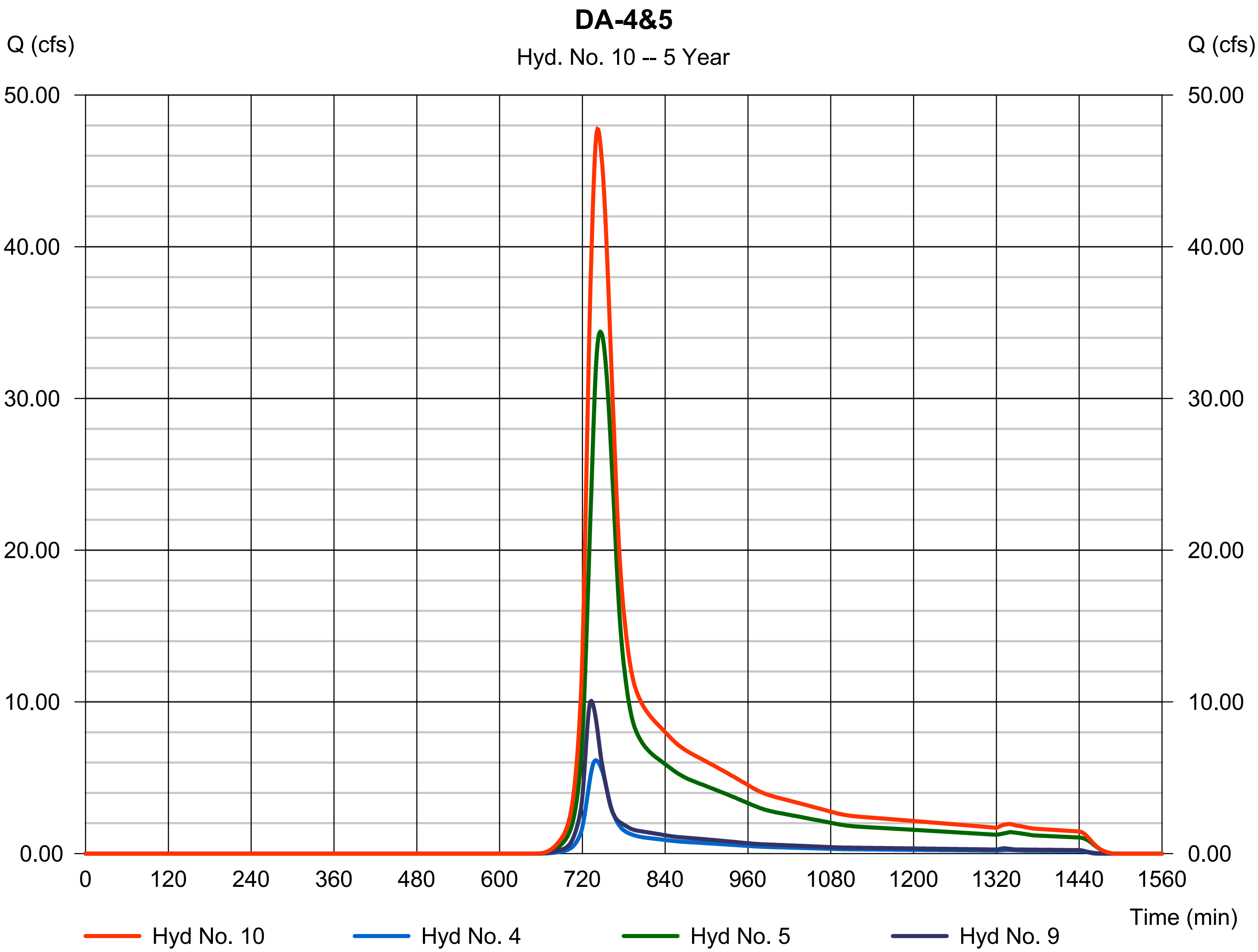
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 47.76 cfs
Storm frequency	= 5 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 279,370 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



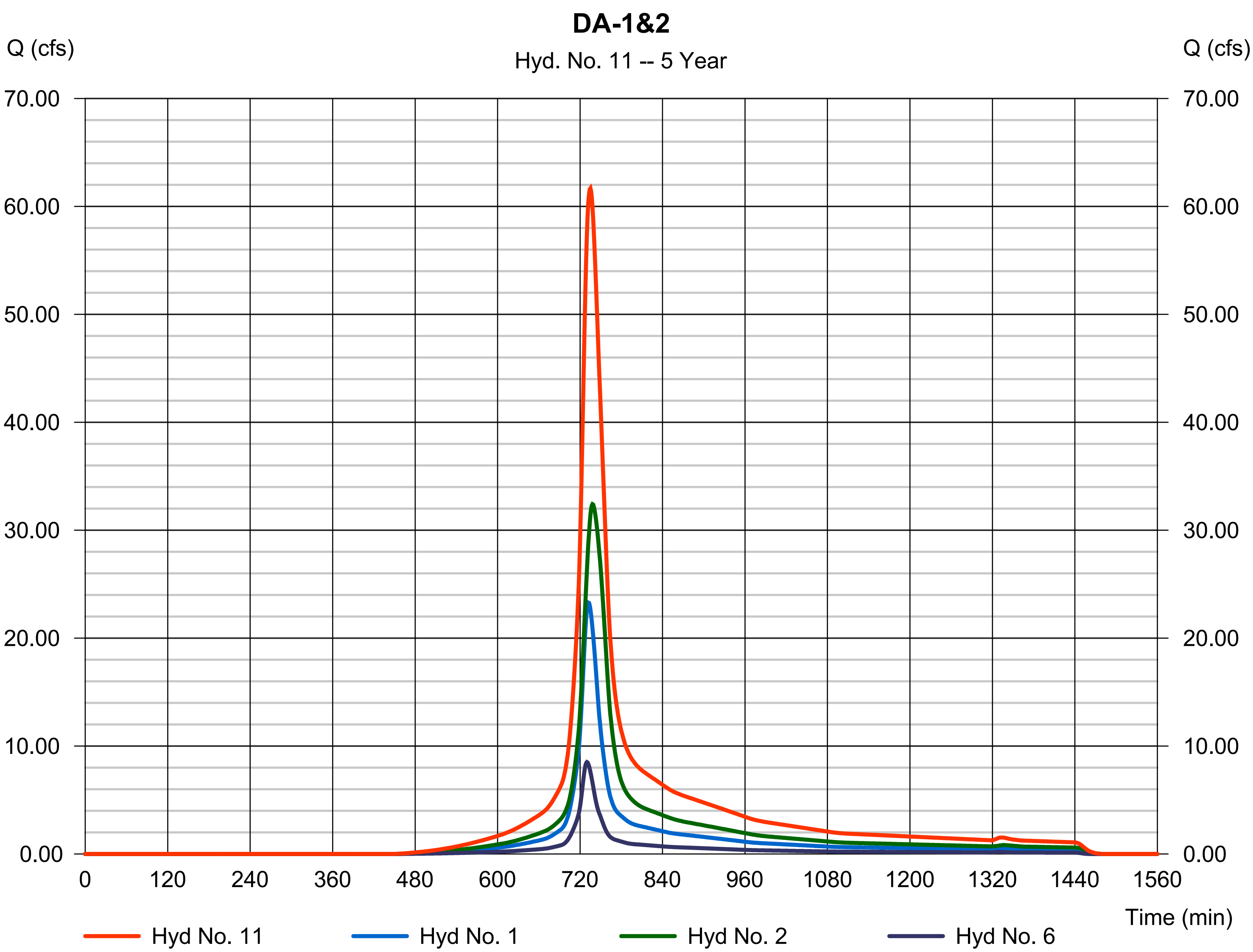
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 61.68 cfs
Storm frequency	= 5 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 294,012 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



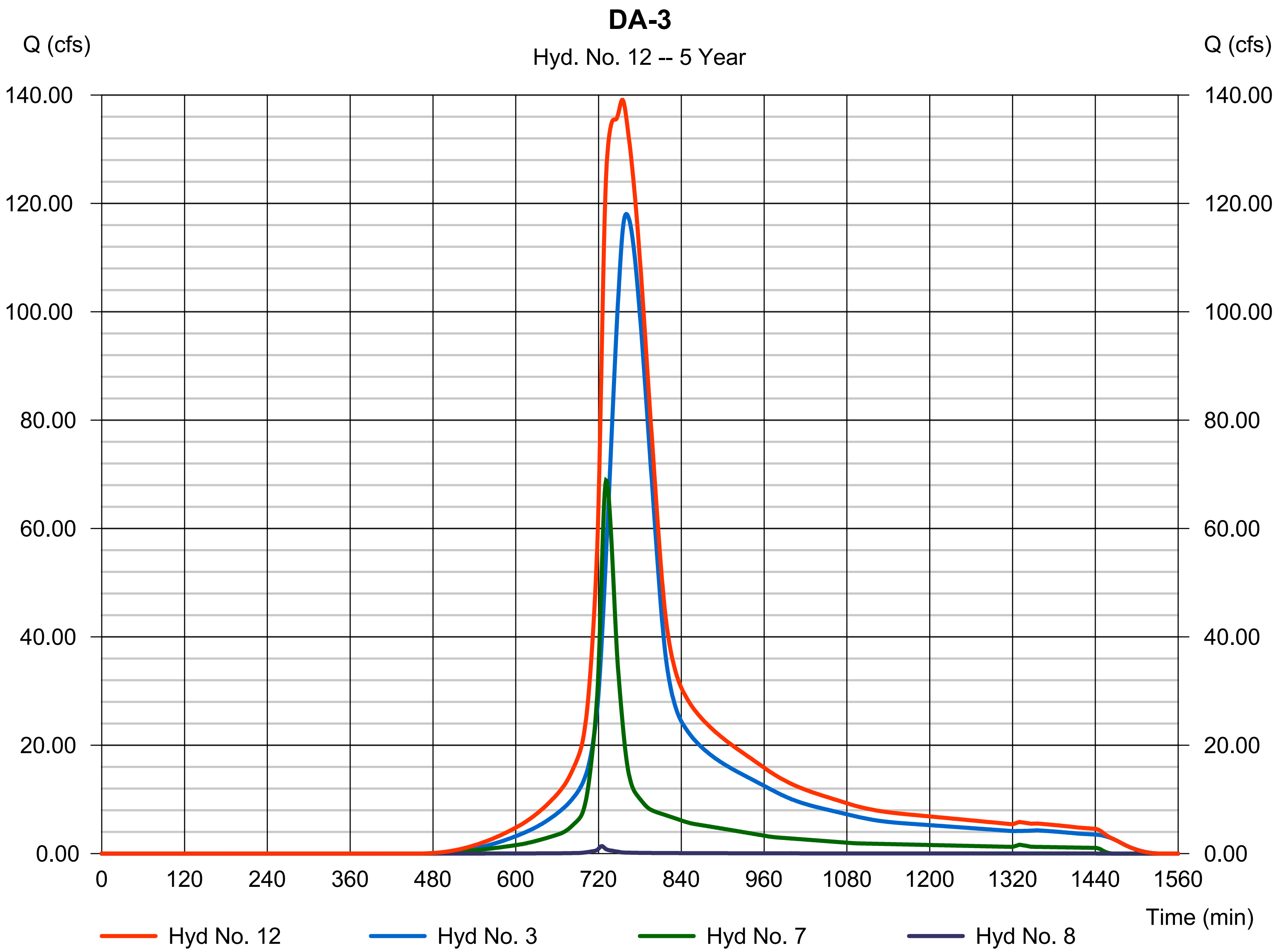
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 139.11 cfs
Storm frequency	= 5 yrs	Time to peak	= 755 min
Time interval	= 1 min	Hyd. volume	= 1,180,391 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



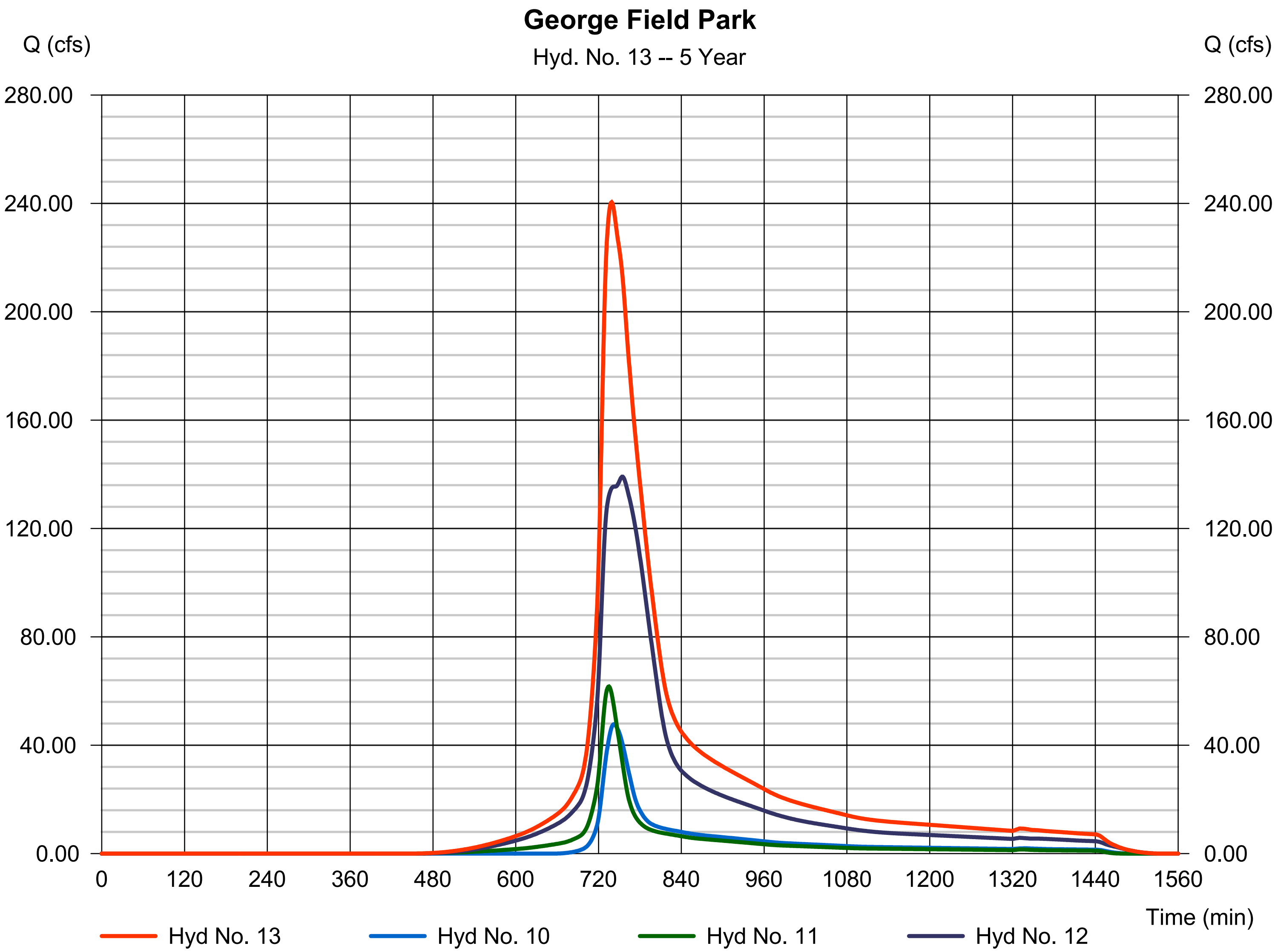
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 240.46 cfs
Storm frequency	= 5 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 1,753,773 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

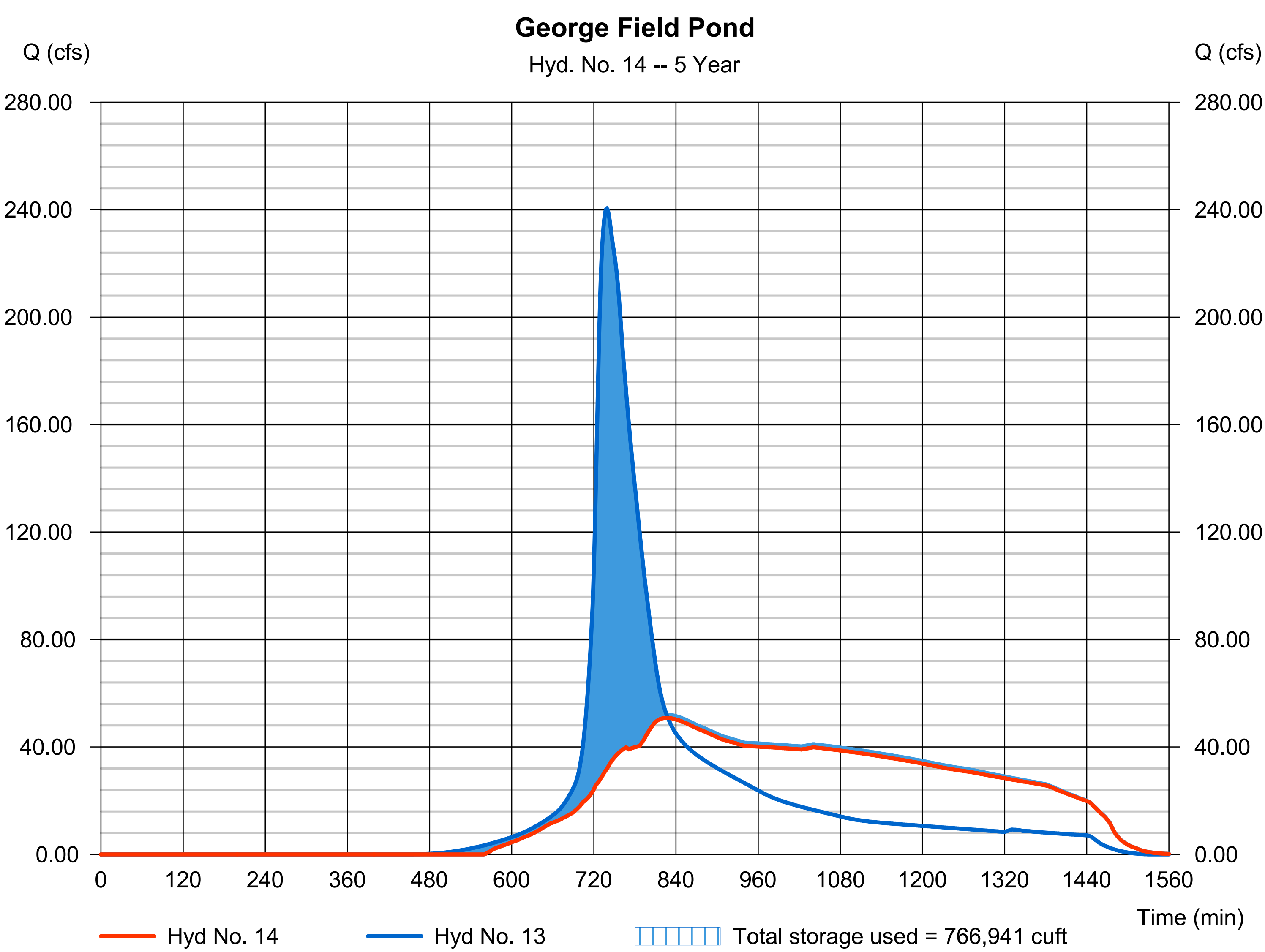
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 50.82 cfs
Storm frequency	= 5 yrs	Time to peak	= 826 min
Time interval	= 1 min	Hyd. volume	= 1,704,128 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 217.27 ft
Reservoir name	= George Field Park	Max. Storage	= 766,941 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	29.85	1	732	127,072	------	------	------	DA-1A
2	SCS Runoff	41.55	1	738	207,508	------	------	------	DA-2
3	SCS Runoff	152.42	1	760	1,151,029	------	------	------	DA-3A
4	SCS Runoff	9.008	1	739	45,306	------	------	------	DA-4
5	SCS Runoff	50.40	1	745	287,030	------	------	------	DA-5A
6	SCS Runoff	10.90	1	730	43,217	------	------	------	DA-1B
7	SCS Runoff	88.79	1	731	367,545	------	------	------	DA-3B
8	SCS Runoff	1.768	1	725	5,474	------	------	------	DA-3C
9	SCS Runoff	14.75	1	732	63,435	------	------	------	DA-5B
10	Combine	70.04	1	742	395,772	4, 5, 9	------	------	DA-4&5
11	Combine	79.01	1	735	377,796	1, 2, 6,	------	------	DA-1&2
12	Combine	179.37	1	754	1,524,048	3, 7, 8,	------	------	DA-3
13	Combine	319.41	1	738	2,297,616	10, 11, 12	------	------	George Field Park
14	Reservoir	103.71	1	804	2,241,362	13	217.94	948,816	George Field Pond

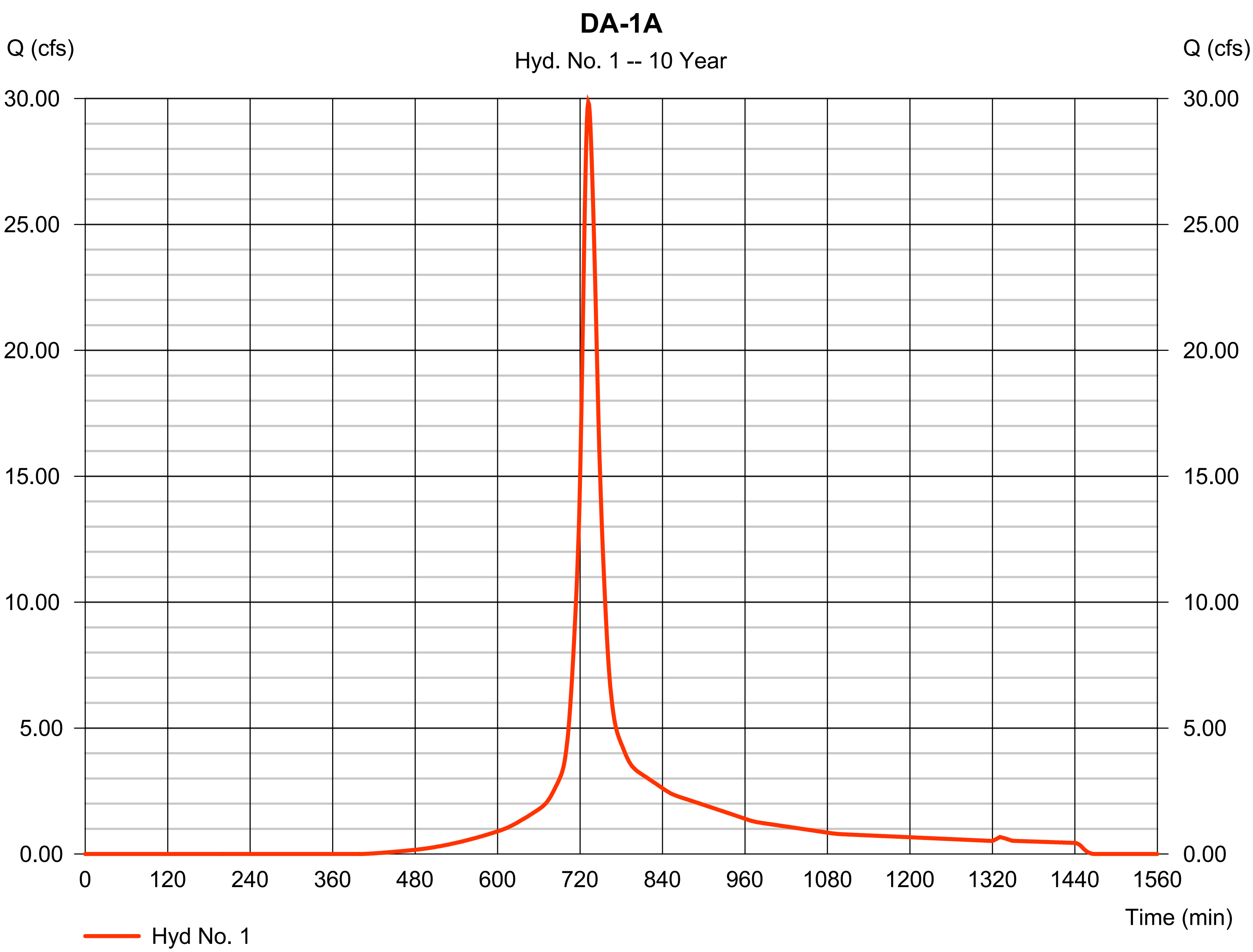
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 29.85 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 127,072 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



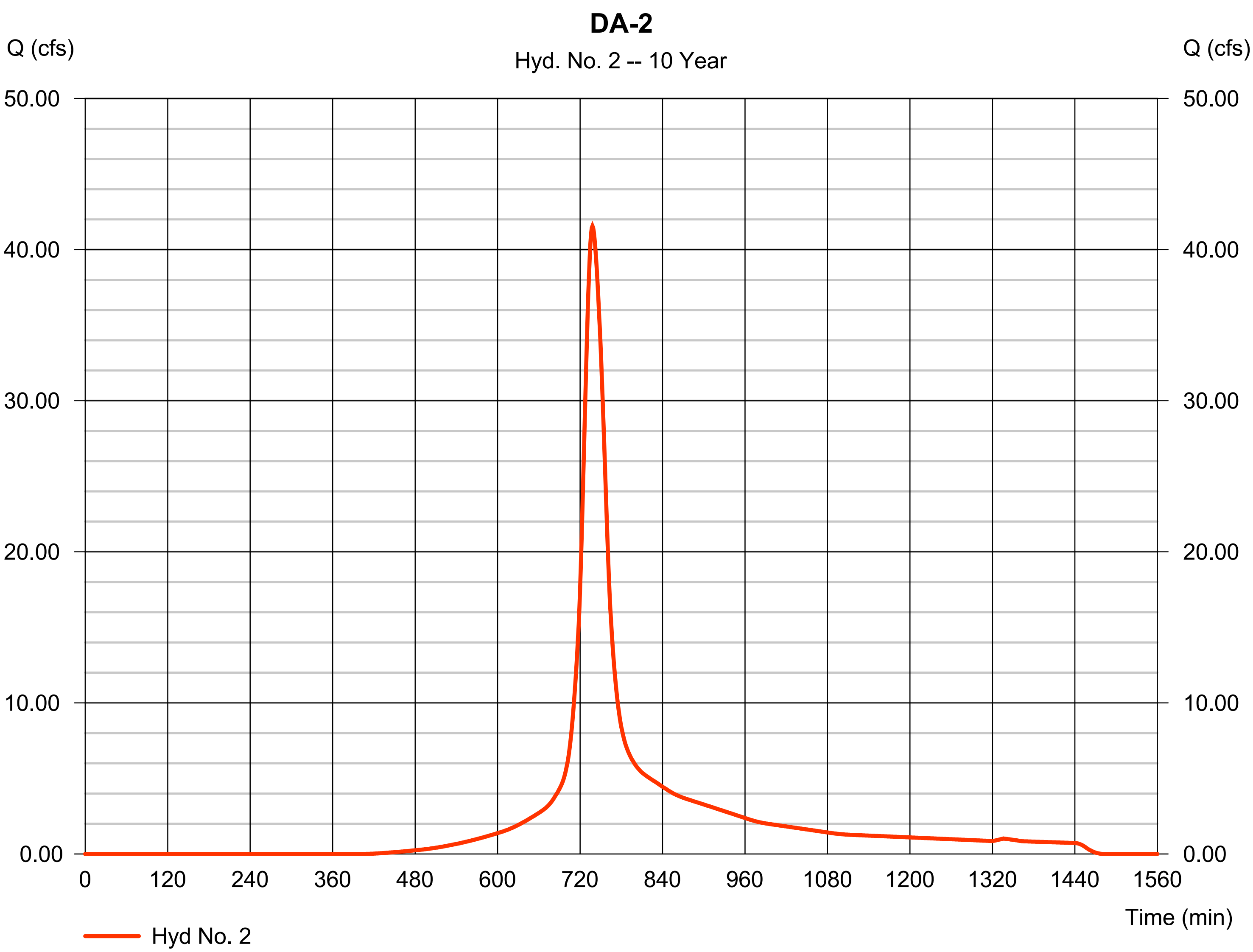
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 41.55 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 207,508 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

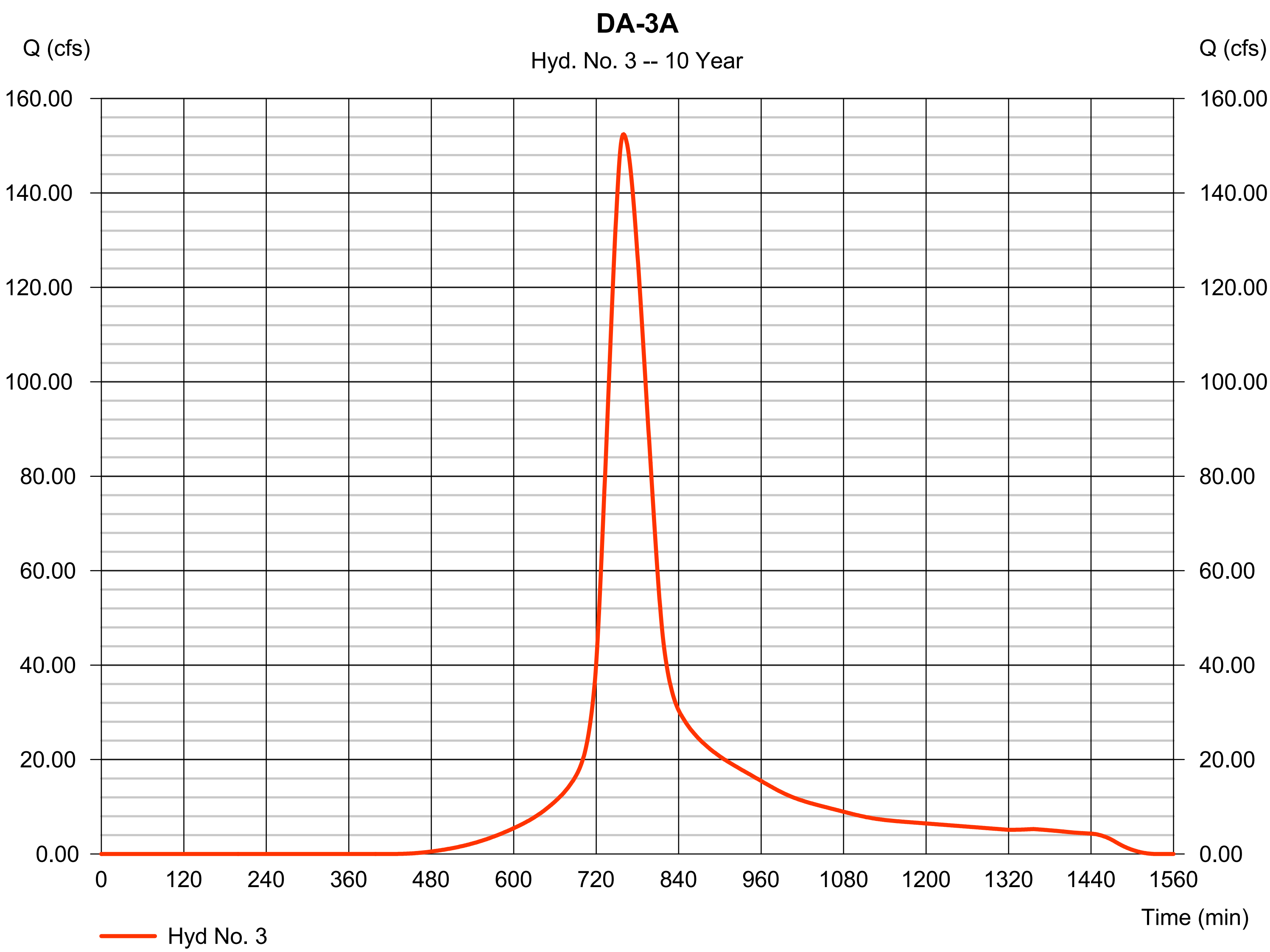
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 152.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 760 min
Time interval	= 1 min	Hyd. volume	= 1,151,029 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410

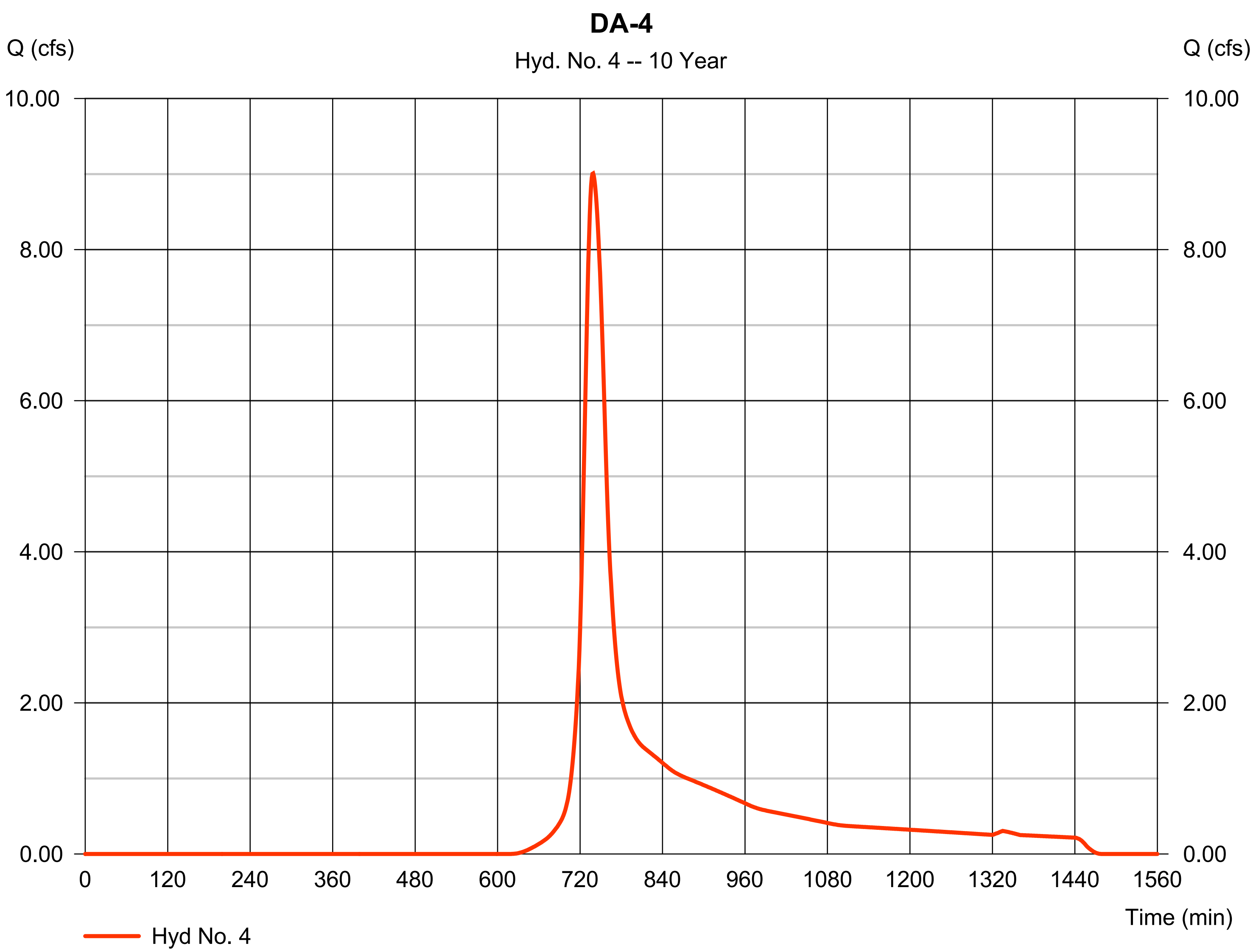


Hydrograph Report

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 9.008 cfs
Storm frequency	= 10 yrs	Time to peak	= 739 min
Time interval	= 1 min	Hyd. volume	= 45,306 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

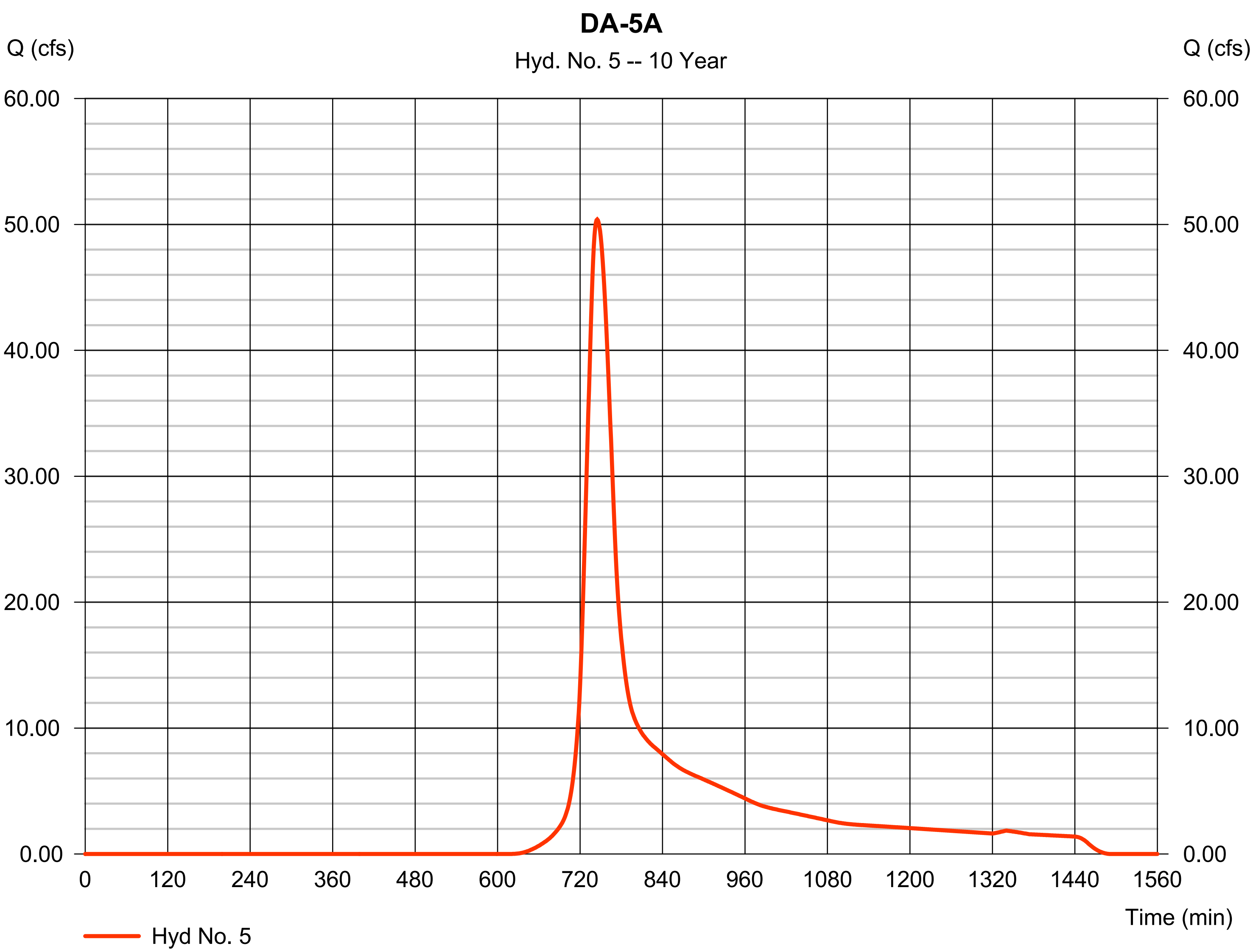


Hydrograph Report

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 50.40 cfs
Storm frequency	= 10 yrs	Time to peak	= 745 min
Time interval	= 1 min	Hyd. volume	= 287,030 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



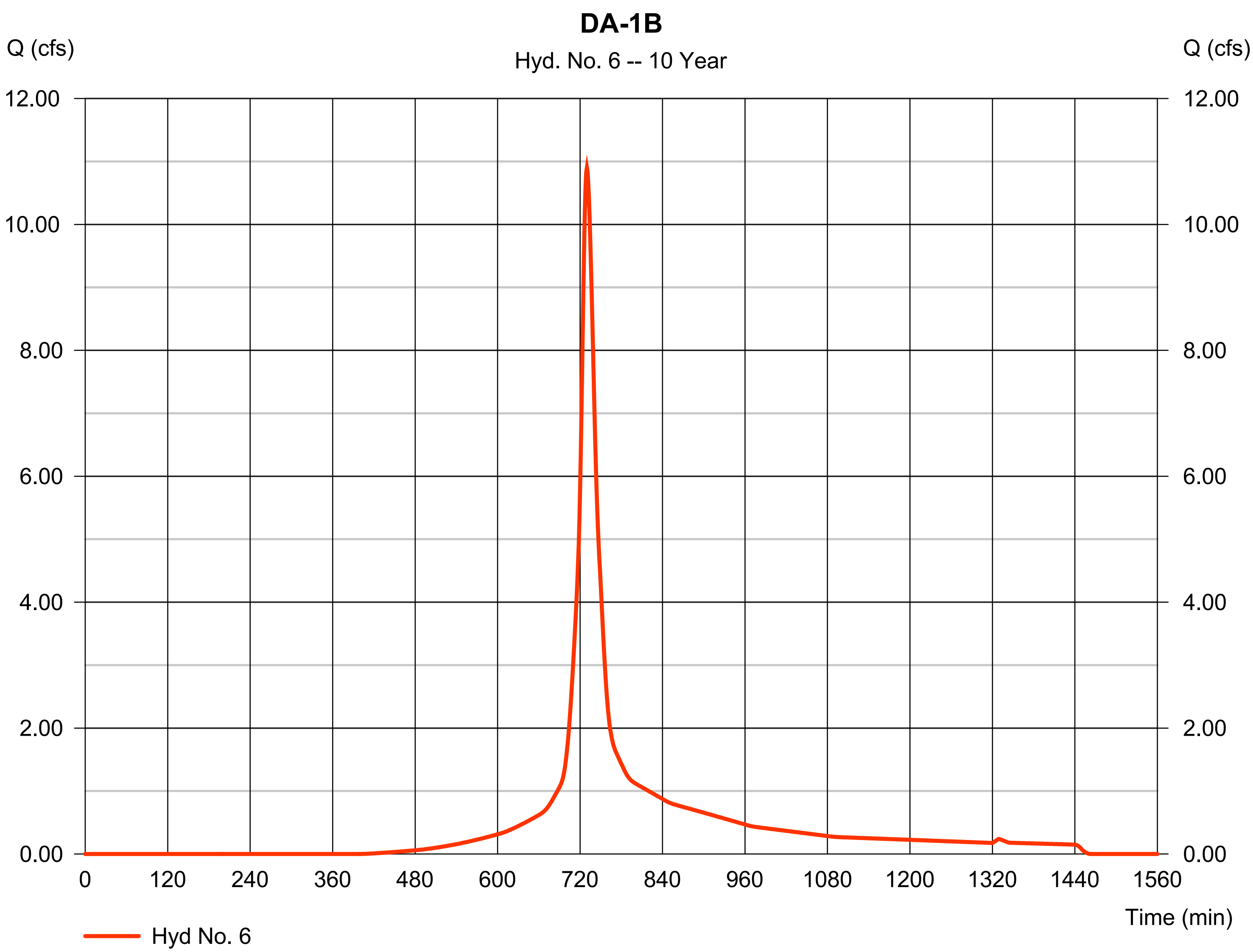
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 10.90 cfs
Storm frequency	= 10 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 43,217 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



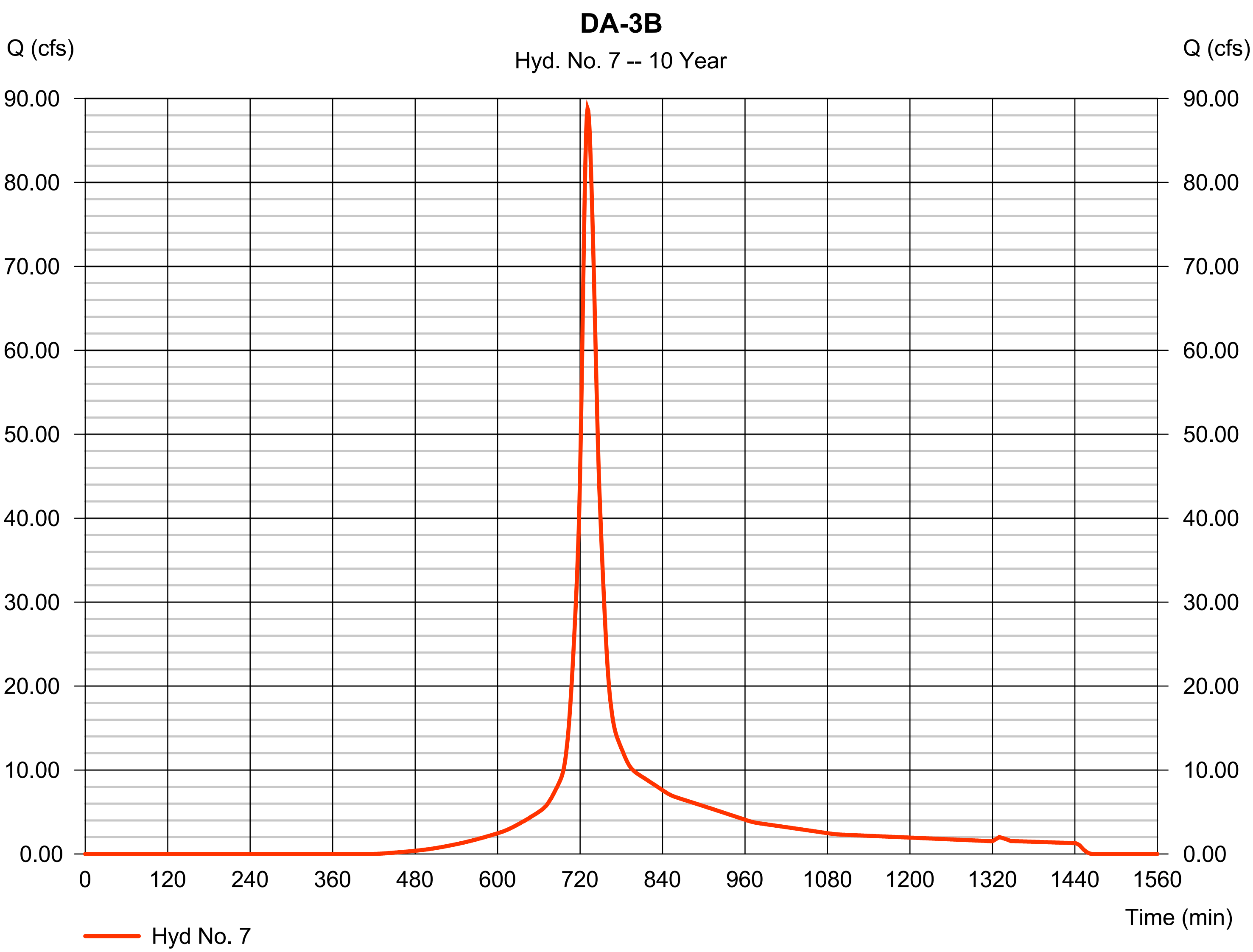
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 88.79 cfs
Storm frequency	= 10 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 367,545 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



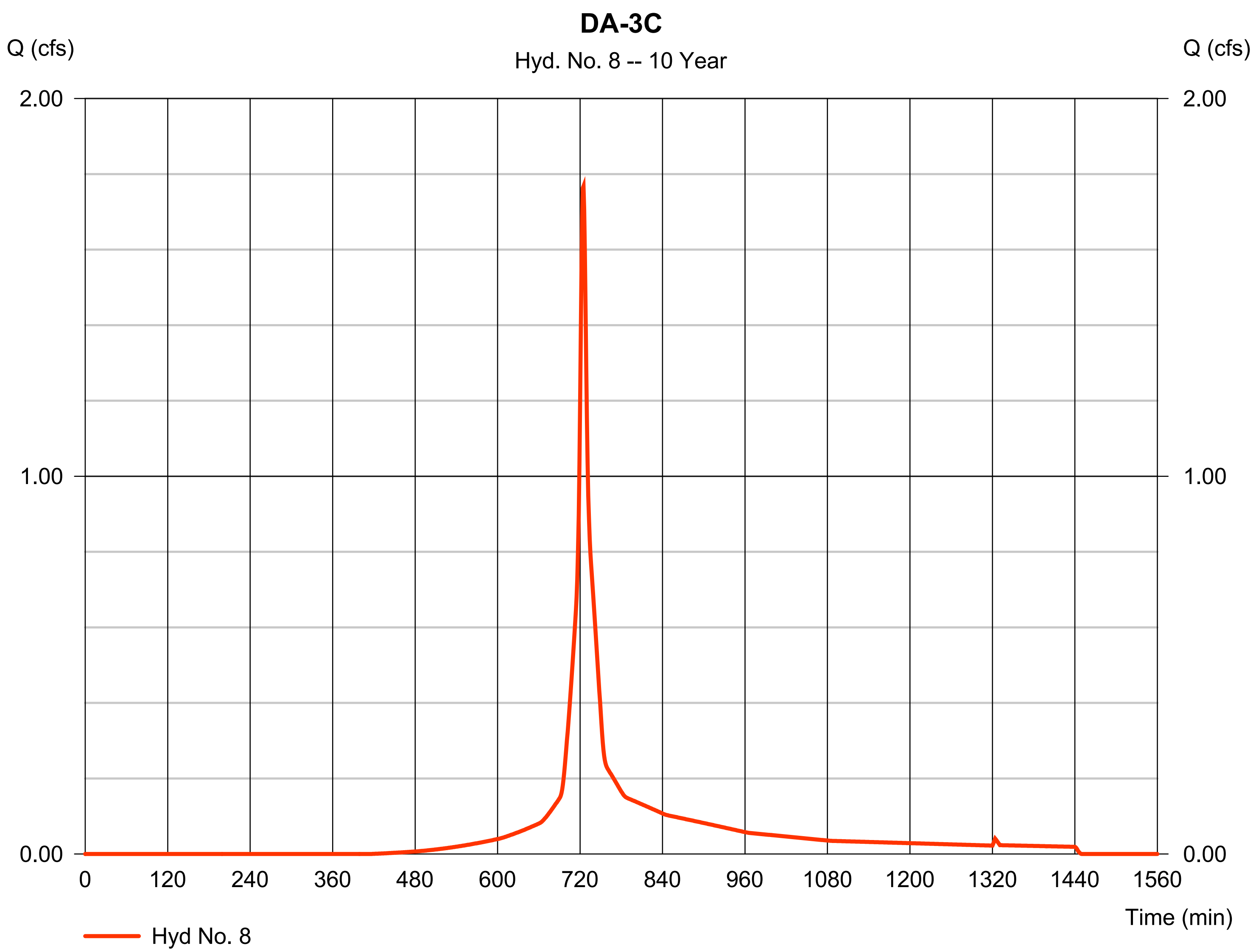
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.768 cfs
Storm frequency	= 10 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 5,474 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



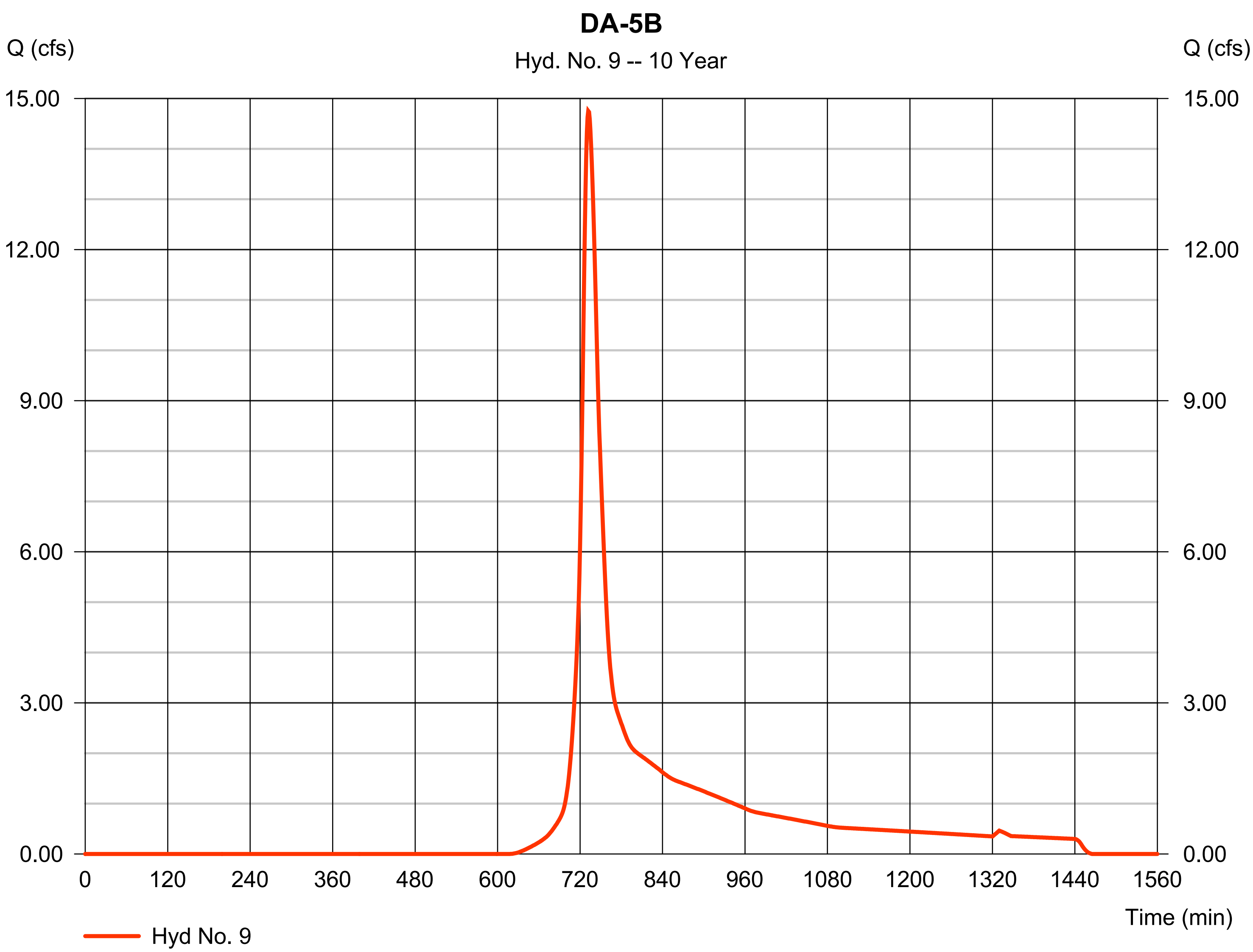
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.75 cfs
Storm frequency	= 10 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 63,435 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



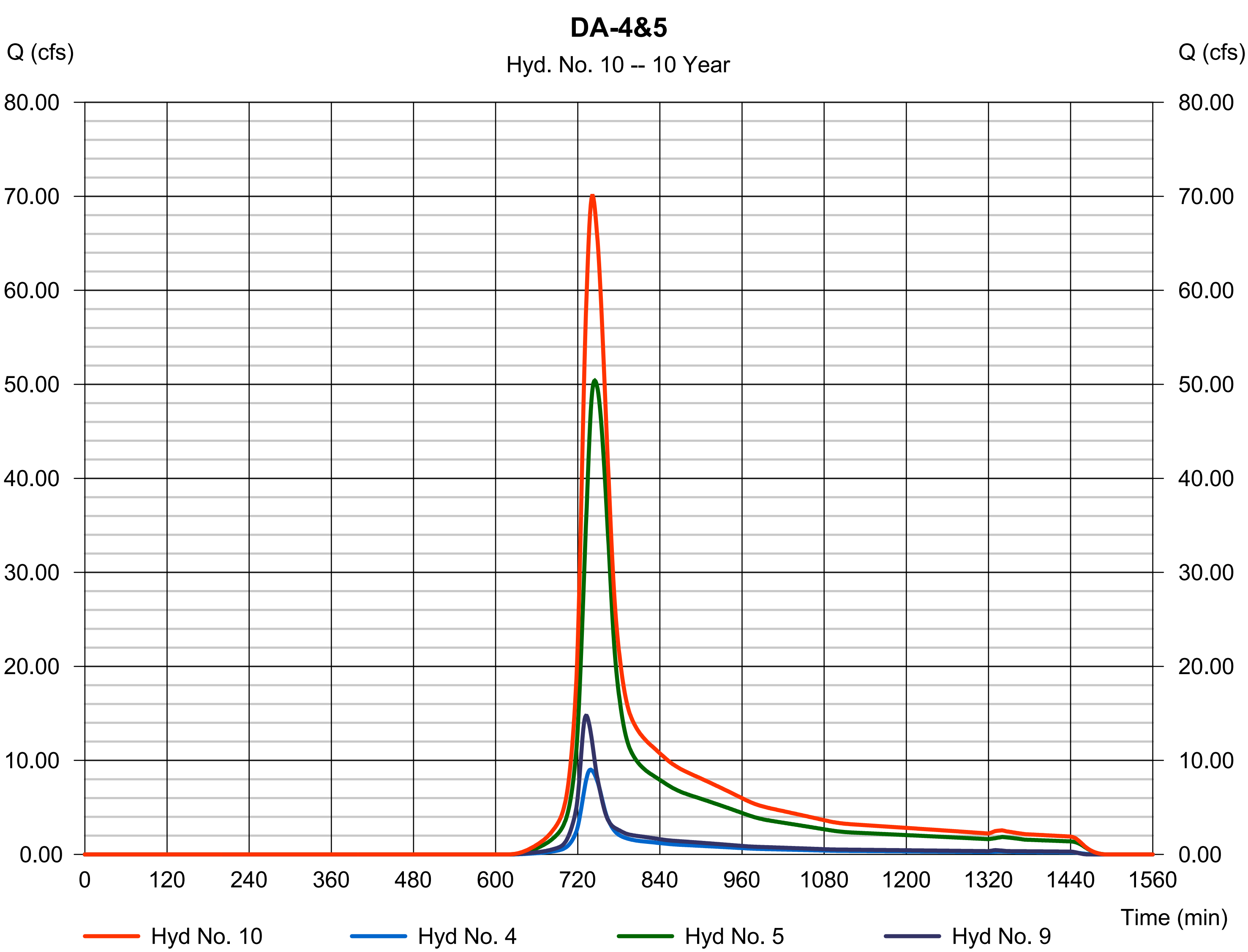
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 70.04 cfs
Storm frequency	= 10 yrs	Time to peak	= 742 min
Time interval	= 1 min	Hyd. volume	= 395,772 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



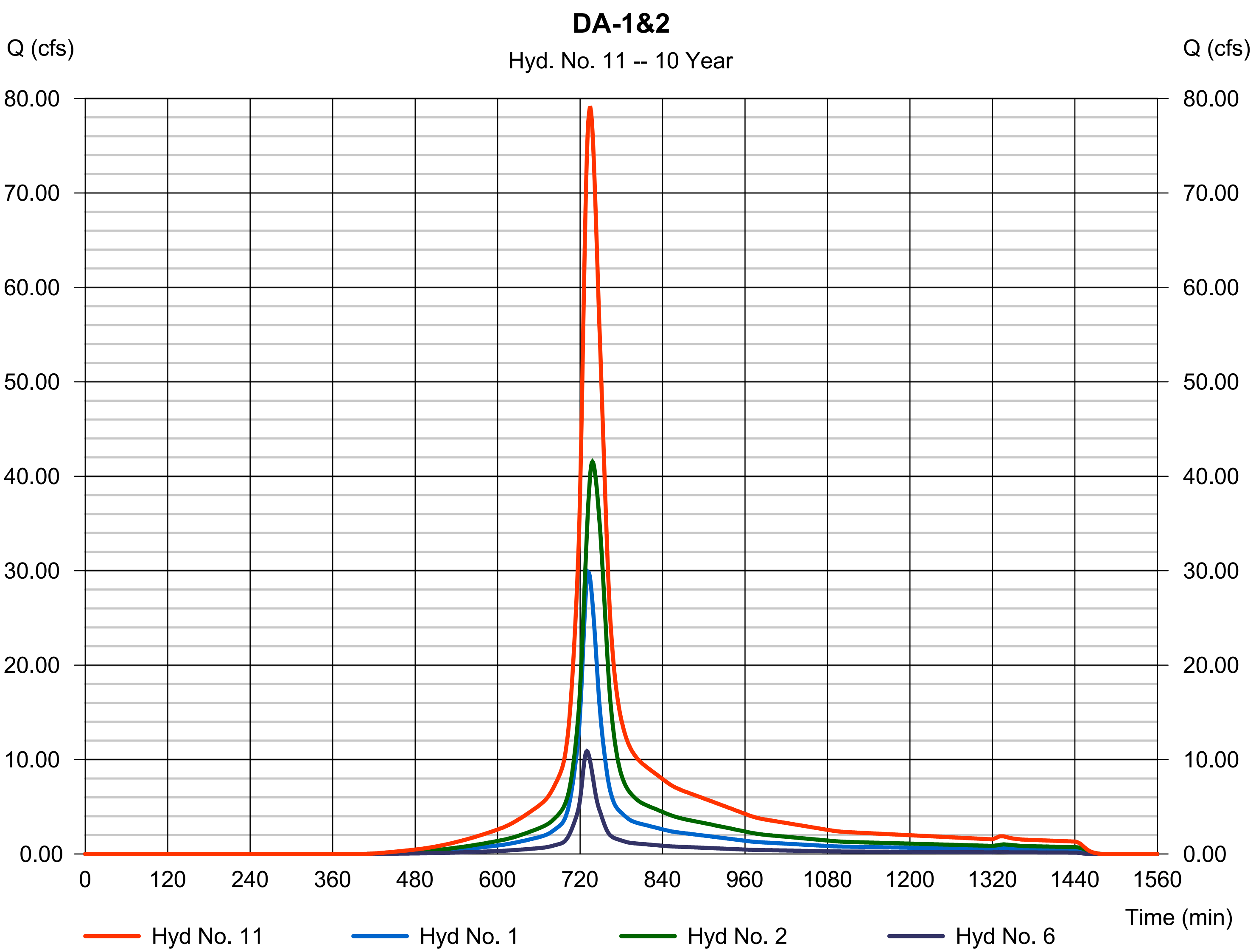
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 79.01 cfs
Storm frequency	= 10 yrs	Time to peak	= 735 min
Time interval	= 1 min	Hyd. volume	= 377,796 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



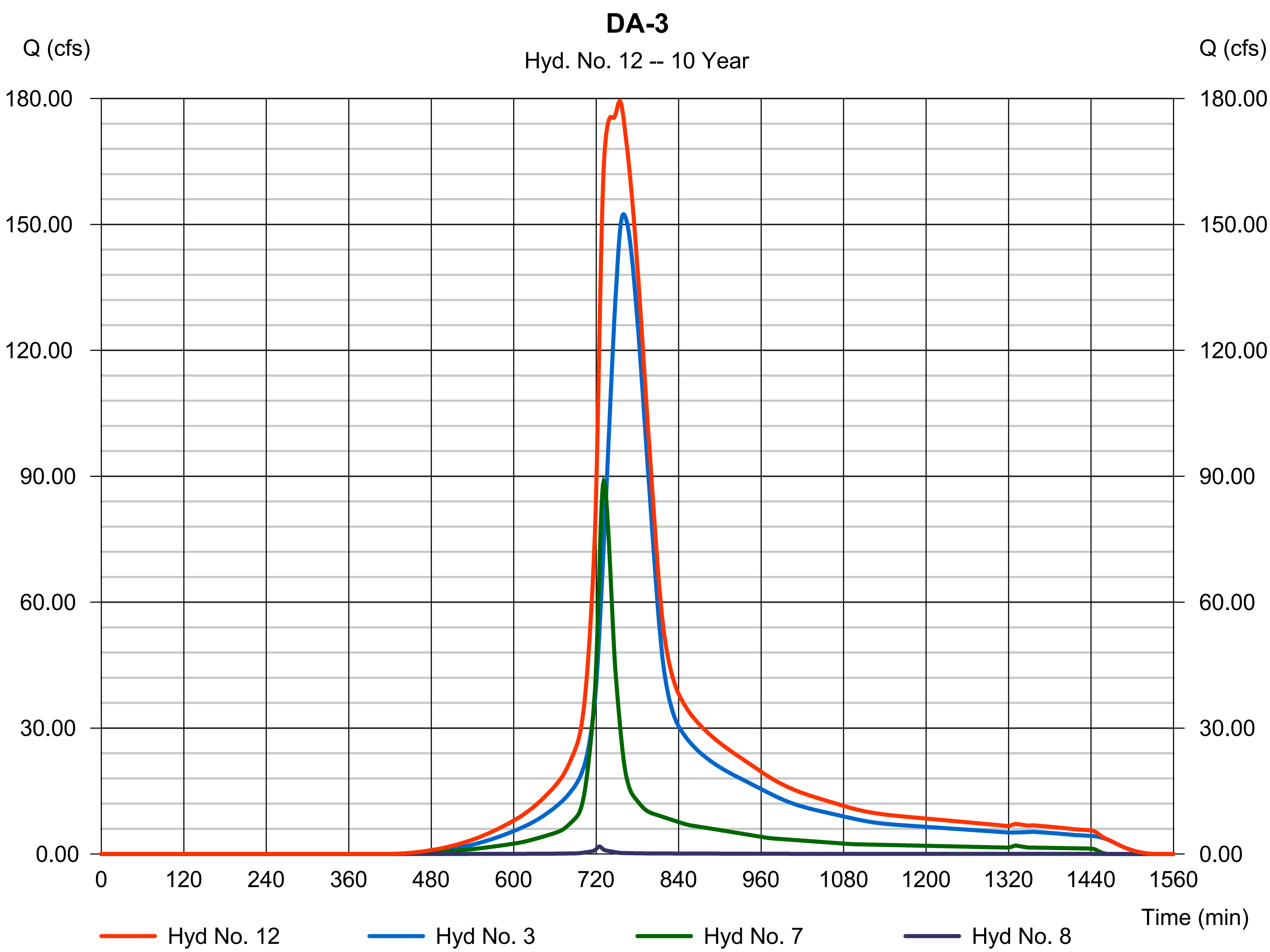
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 179.37 cfs
Storm frequency	= 10 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 1,524,048 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac

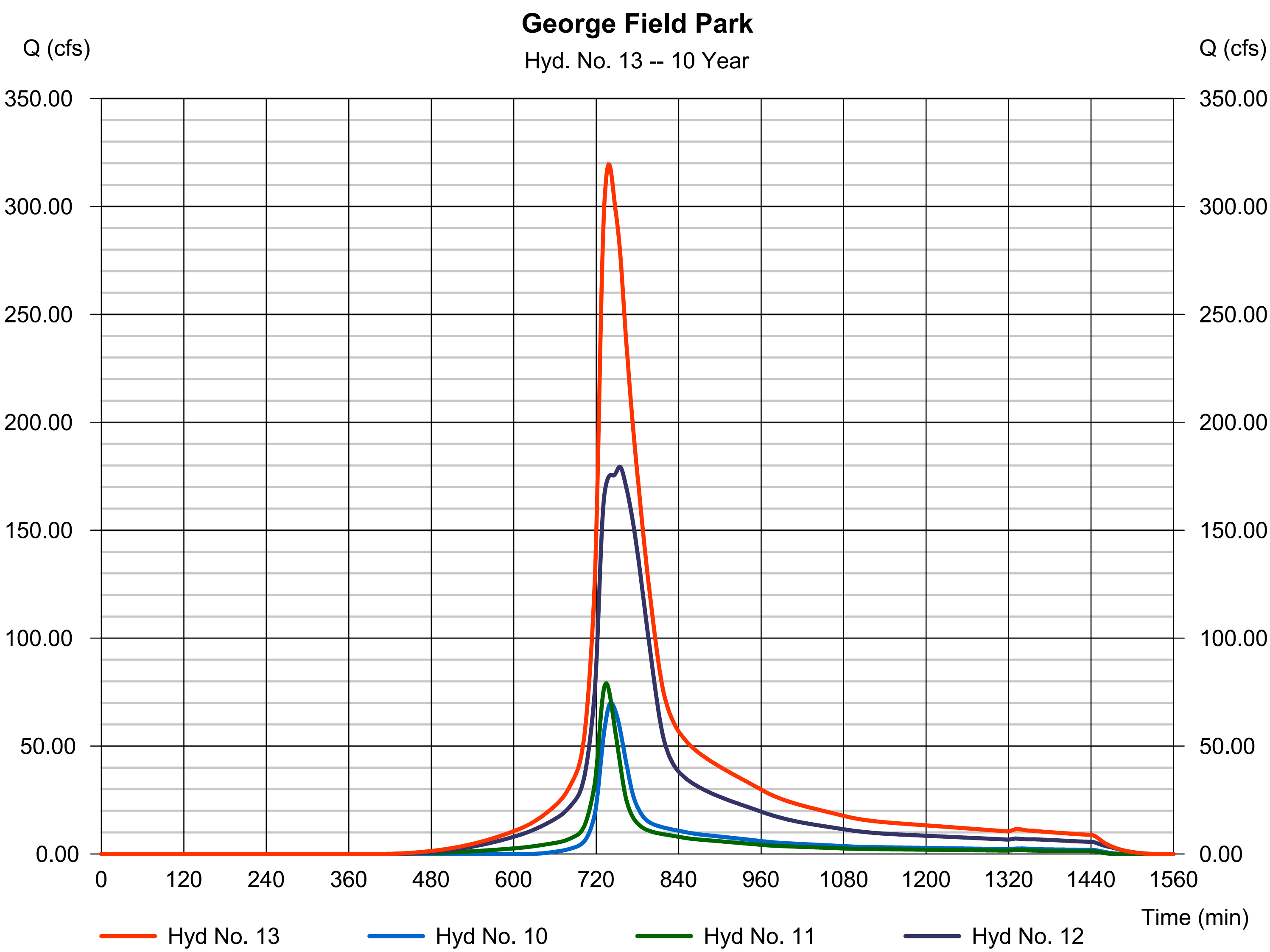


Hydrograph Report

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 319.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 2,297,616 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

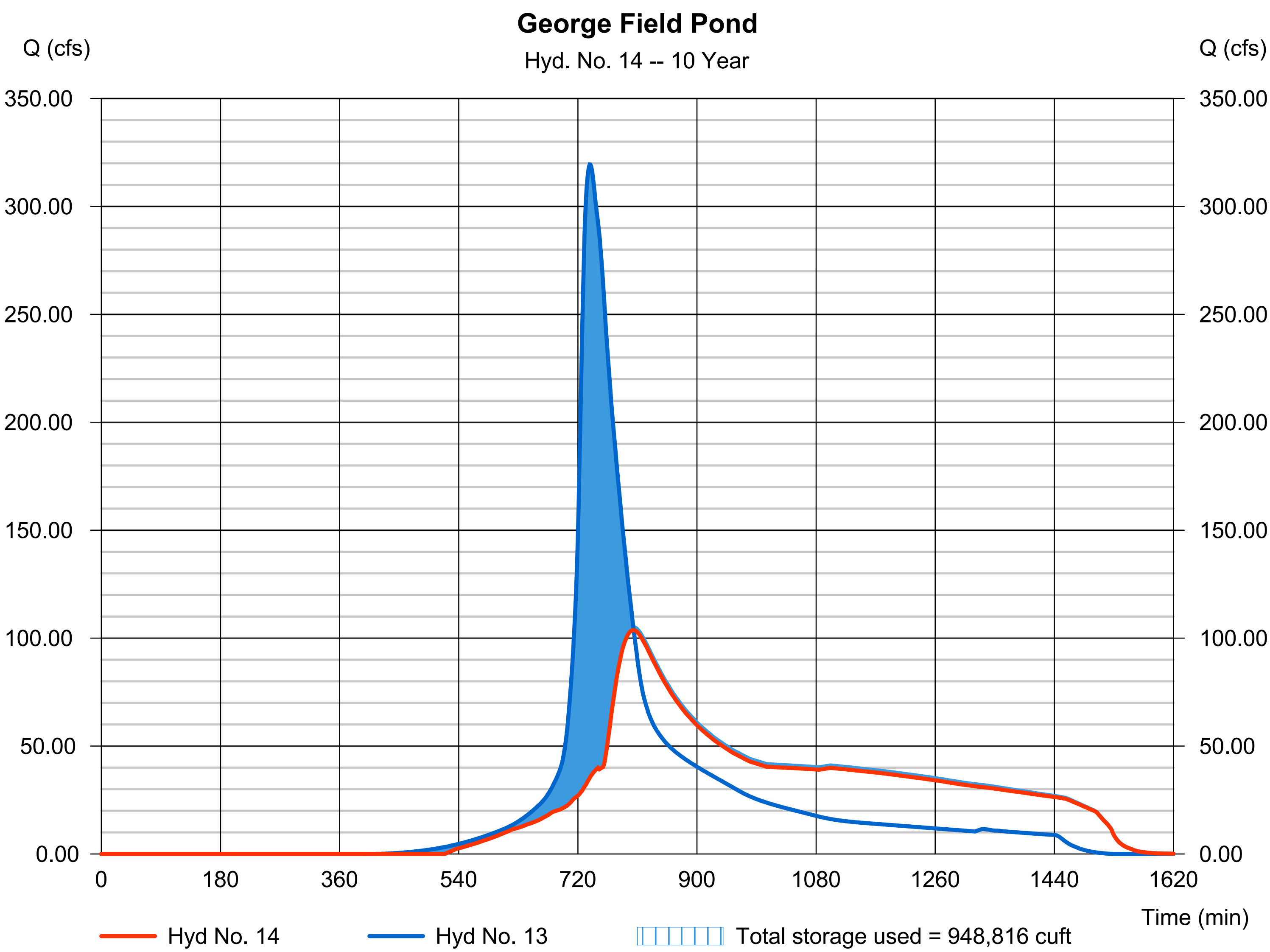
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 103.71 cfs
Storm frequency	= 10 yrs	Time to peak	= 804 min
Time interval	= 1 min	Hyd. volume	= 2,241,362 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 217.94 ft
Reservoir name	= George Field Park	Max. Storage	= 948,816 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	38.97	1	732	166,997	------	------	------	DA-1A
2	SCS Runoff	54.27	1	738	272,706	------	------	------	DA-2
3	SCS Runoff	200.52	1	759	1,519,784	------	------	------	DA-3A
4	SCS Runoff	13.31	1	738	65,395	------	------	------	DA-4
5	SCS Runoff	74.46	1	744	414,301	------	------	------	DA-5A
6	SCS Runoff	14.22	1	730	56,795	------	------	------	DA-1B
7	SCS Runoff	116.57	1	731	485,294	------	------	------	DA-3B
8	SCS Runoff	2.315	1	725	7,228	------	------	------	DA-3C
9	SCS Runoff	21.81	1	732	91,562	------	------	------	DA-5B
10	Combine	103.52	1	741	571,258	4, 5, 9	------	------	DA-4&5
11	Combine	103.22	1	734	496,498	1, 2, 6,	------	------	DA-1&2
12	Combine	235.67	1	754	2,012,304	3, 7, 8,	------	------	DA-3
13	Combine	432.37	1	738	3,080,063	10, 11, 12	------	------	George Field Park
14	Reservoir	250.55	1	775	3,017,359	13	218.30	1,063,228	George Field Pond

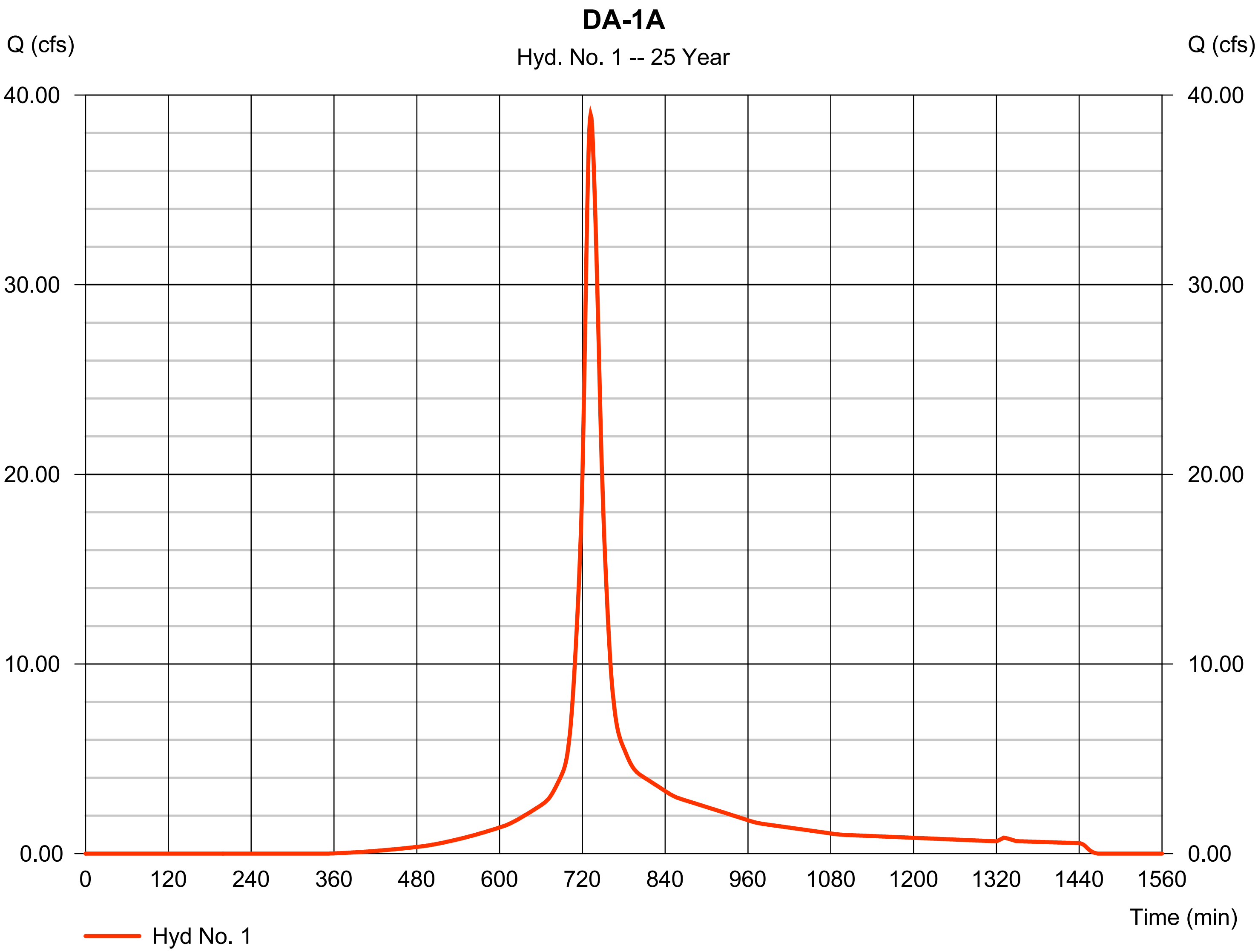
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 38.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 166,997 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



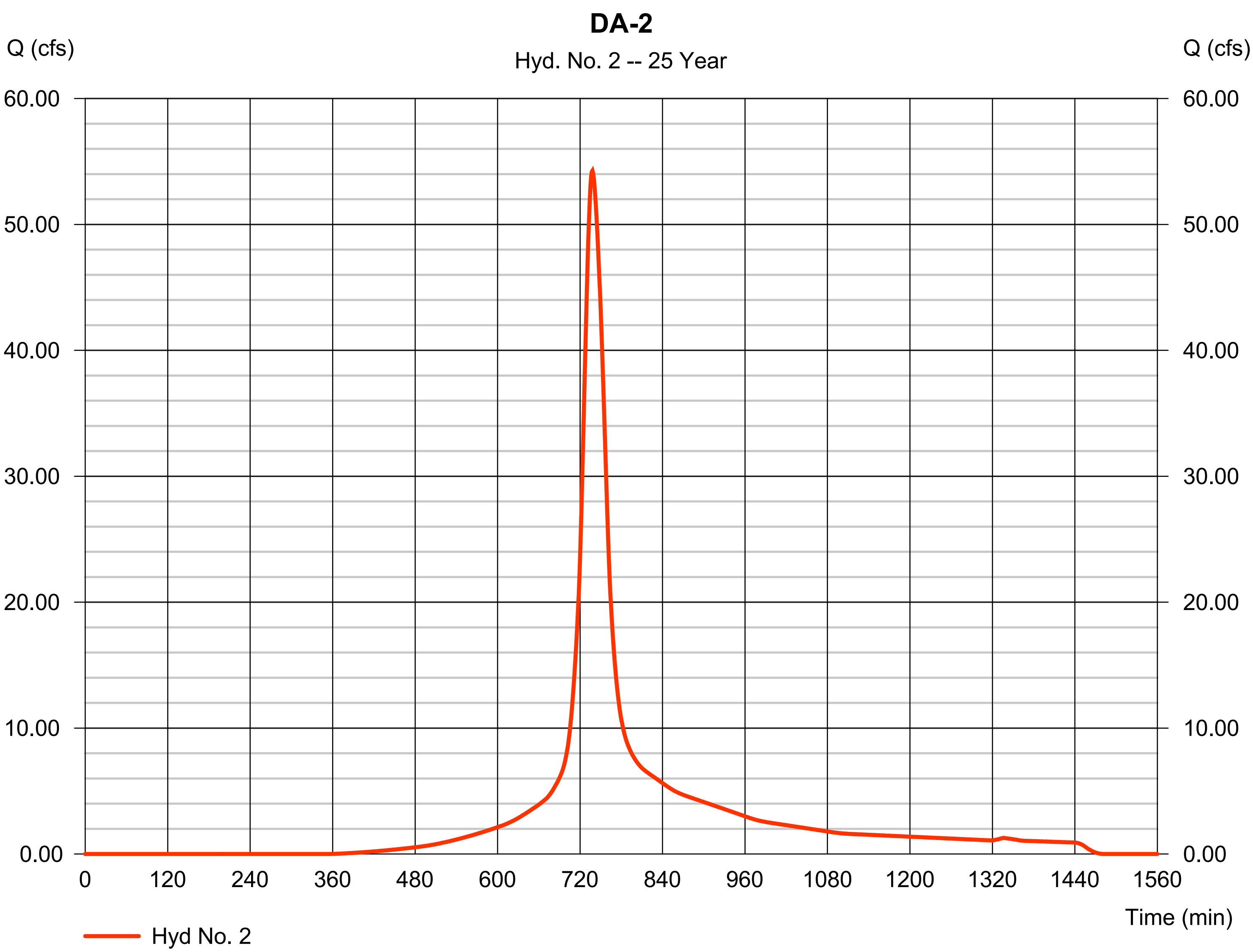
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 54.27 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 272,706 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

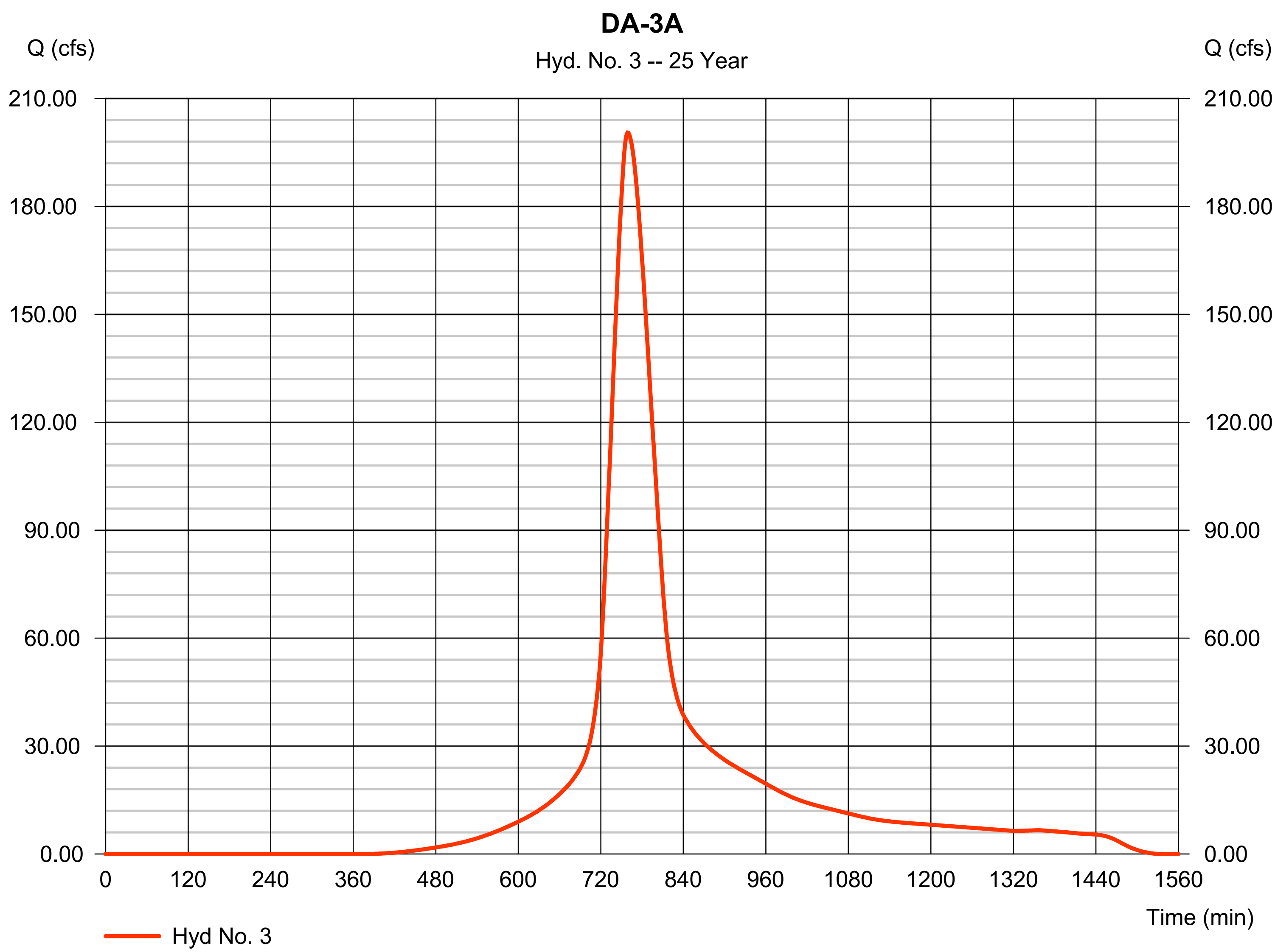
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 200.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,519,784 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



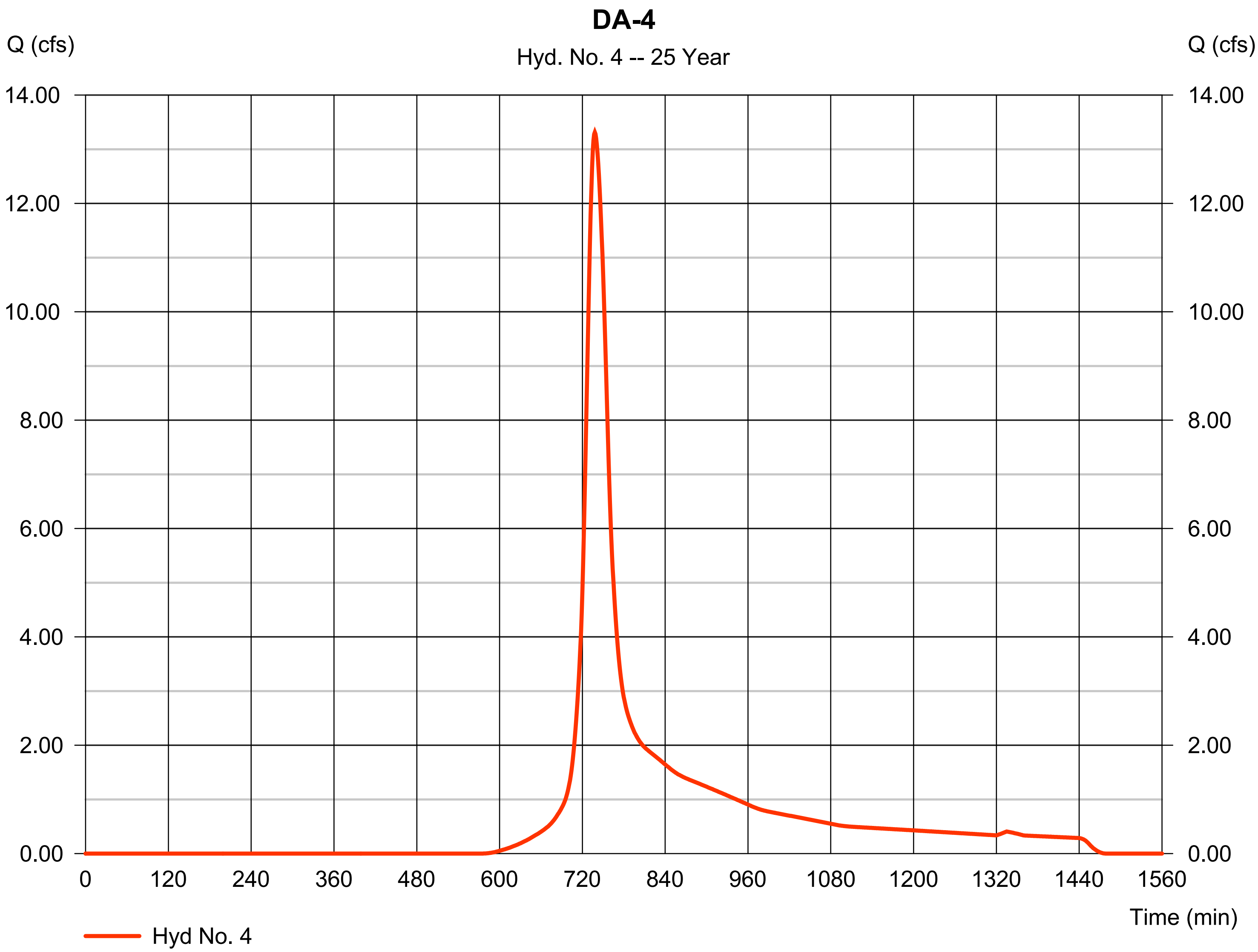
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 13.31 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 65,395 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



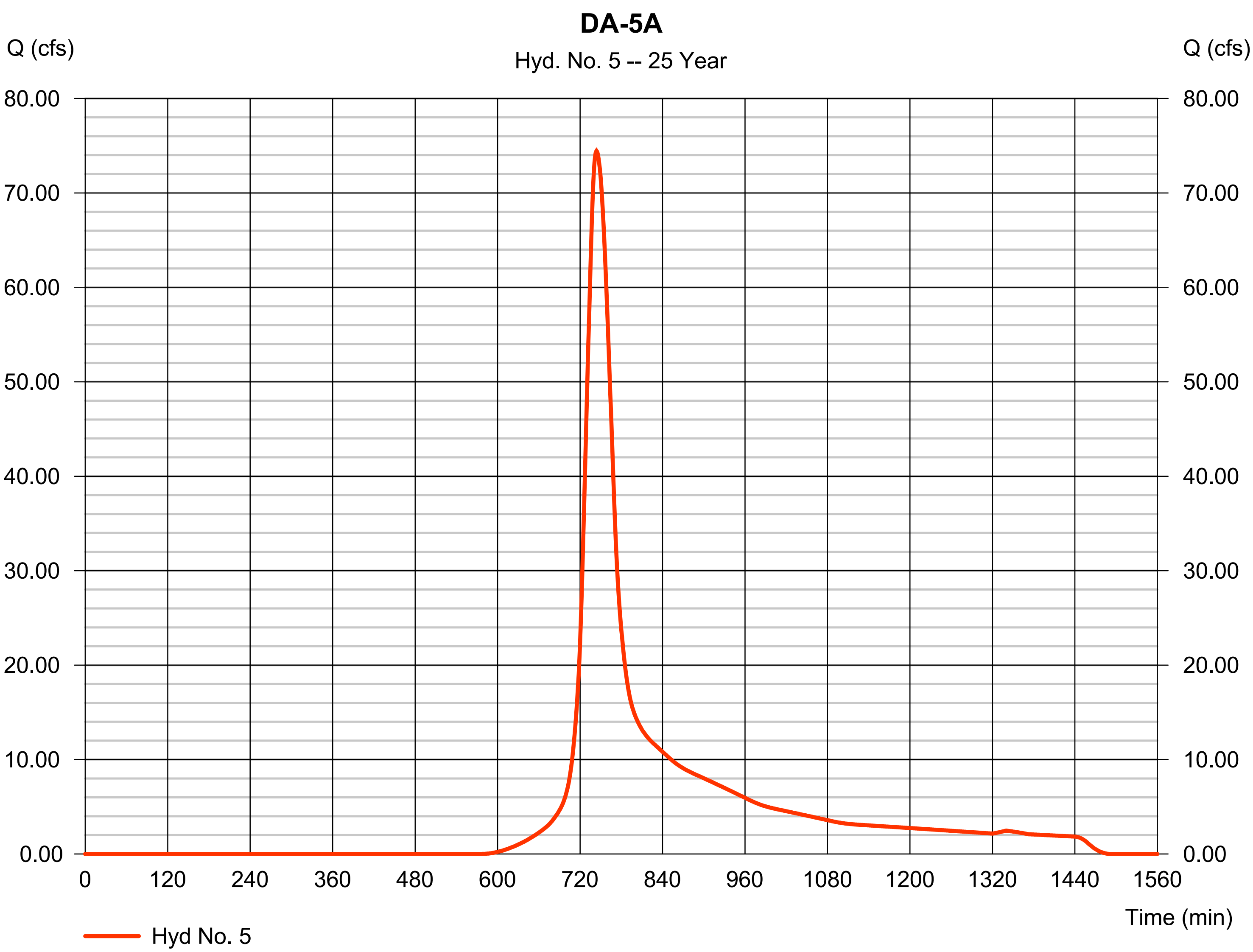
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 74.46 cfs
Storm frequency	= 25 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 414,301 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



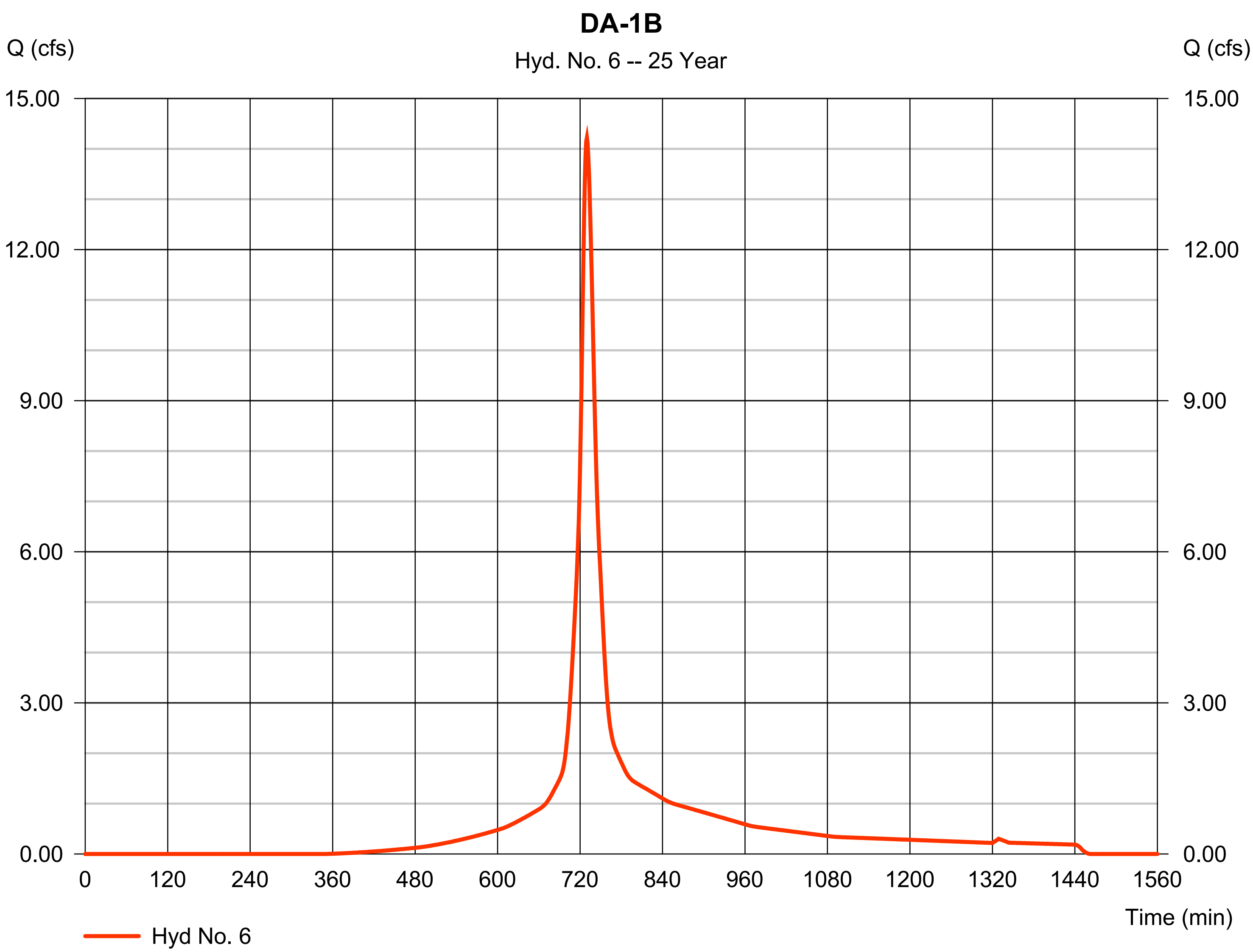
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 14.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 56,795 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



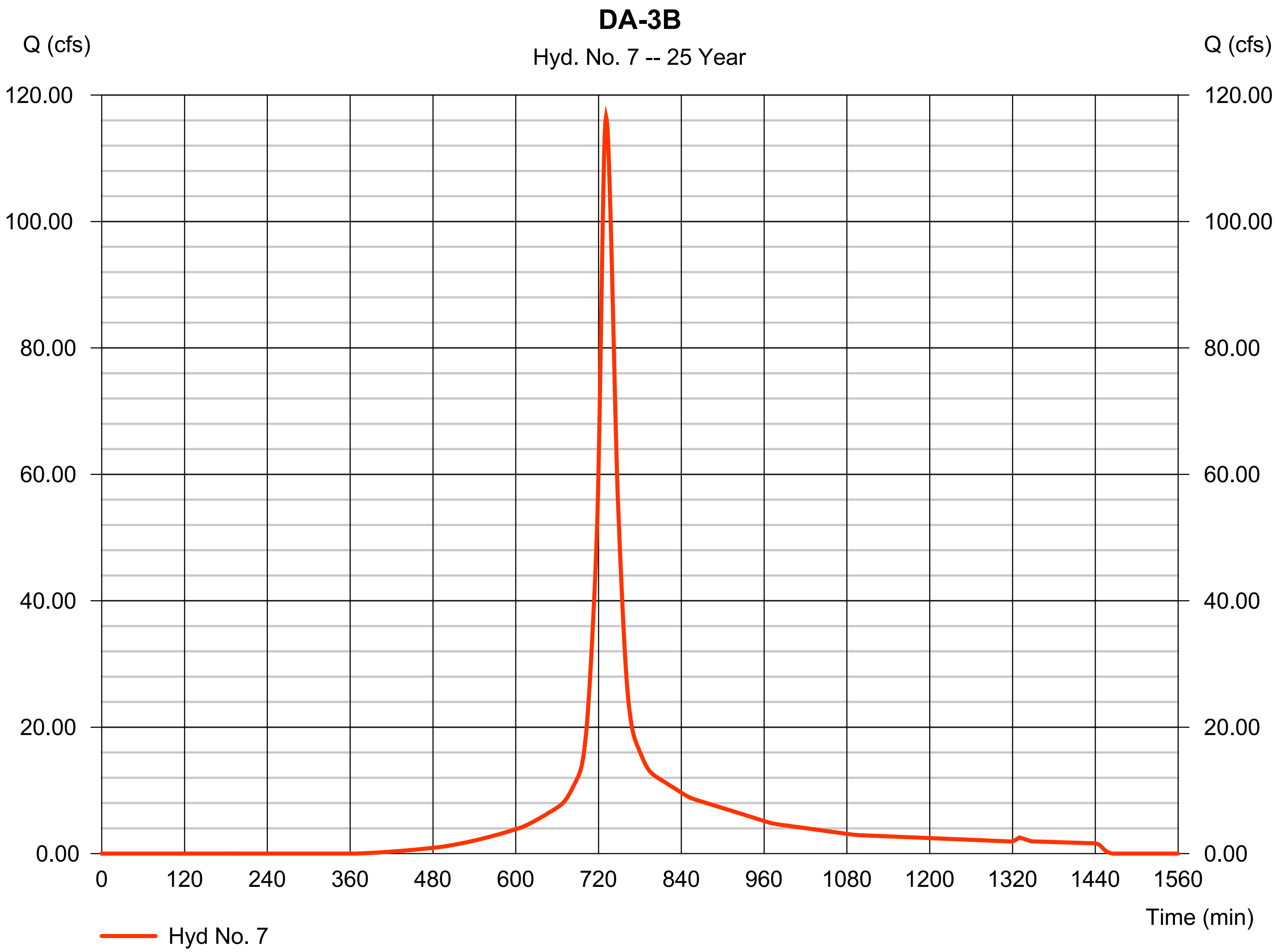
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 116.57 cfs
Storm frequency	= 25 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 485,294 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



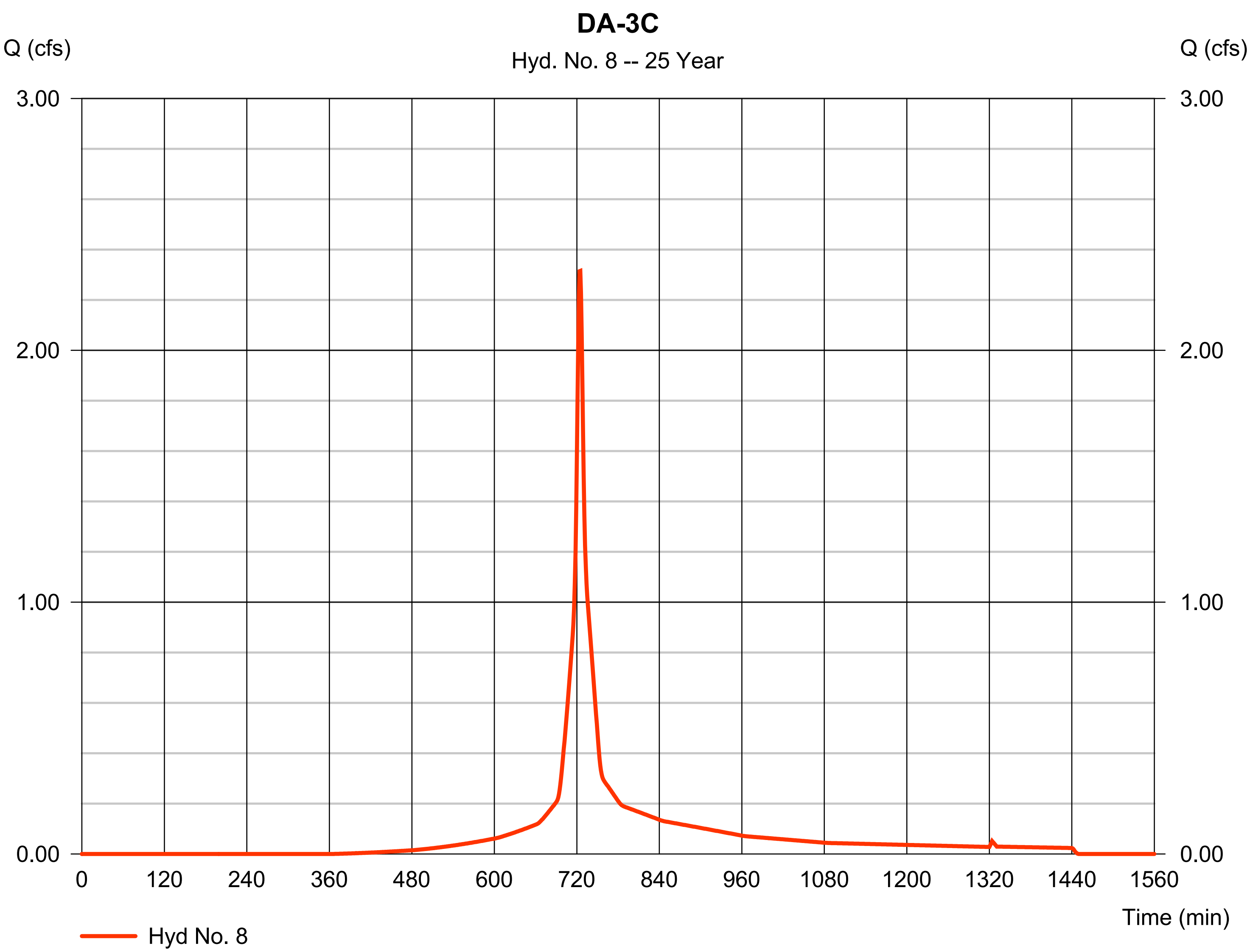
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.315 cfs
Storm frequency	= 25 yrs	Time to peak	= 725 min
Time interval	= 1 min	Hyd. volume	= 7,228 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



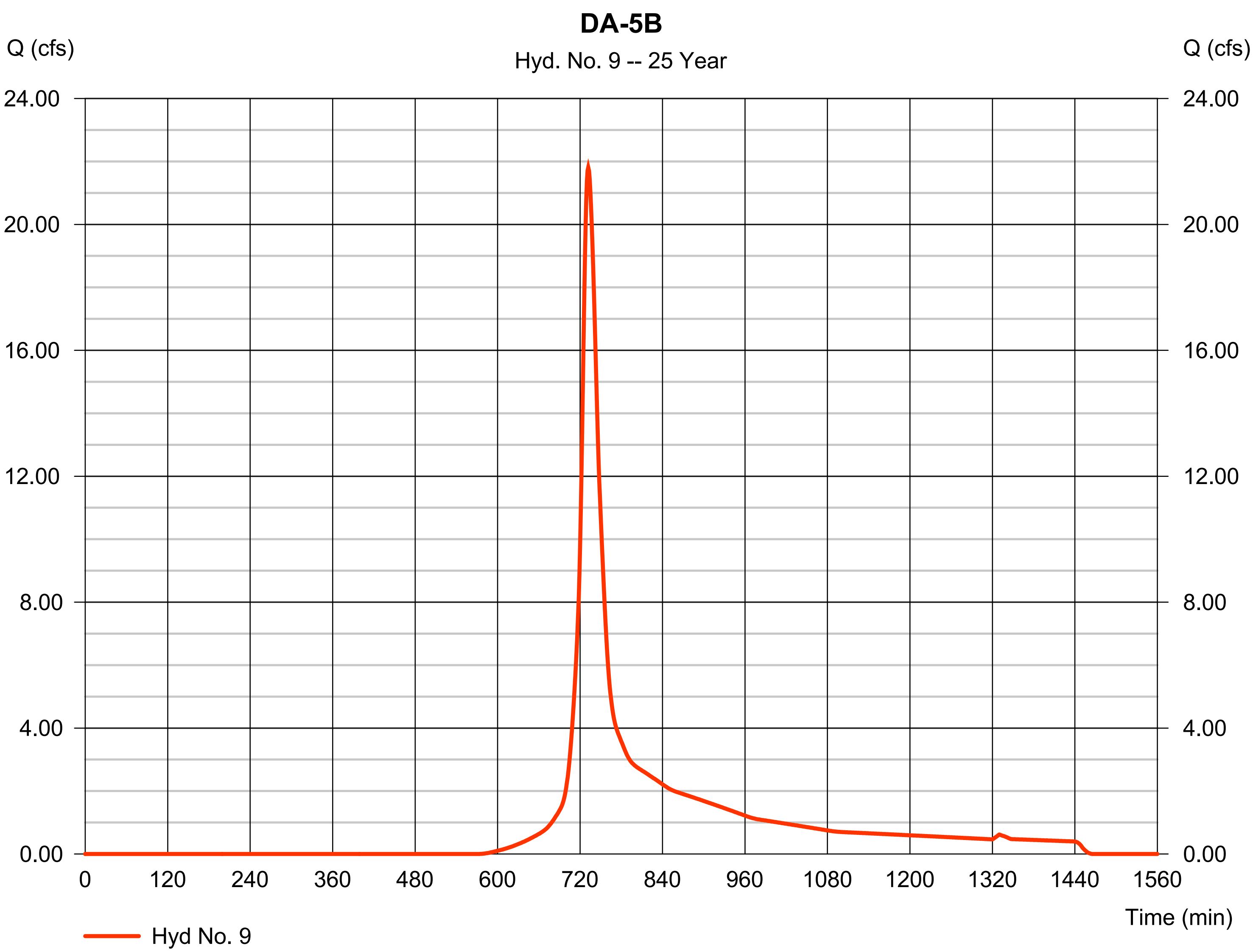
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 21.81 cfs
Storm frequency	= 25 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 91,562 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 6.55 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



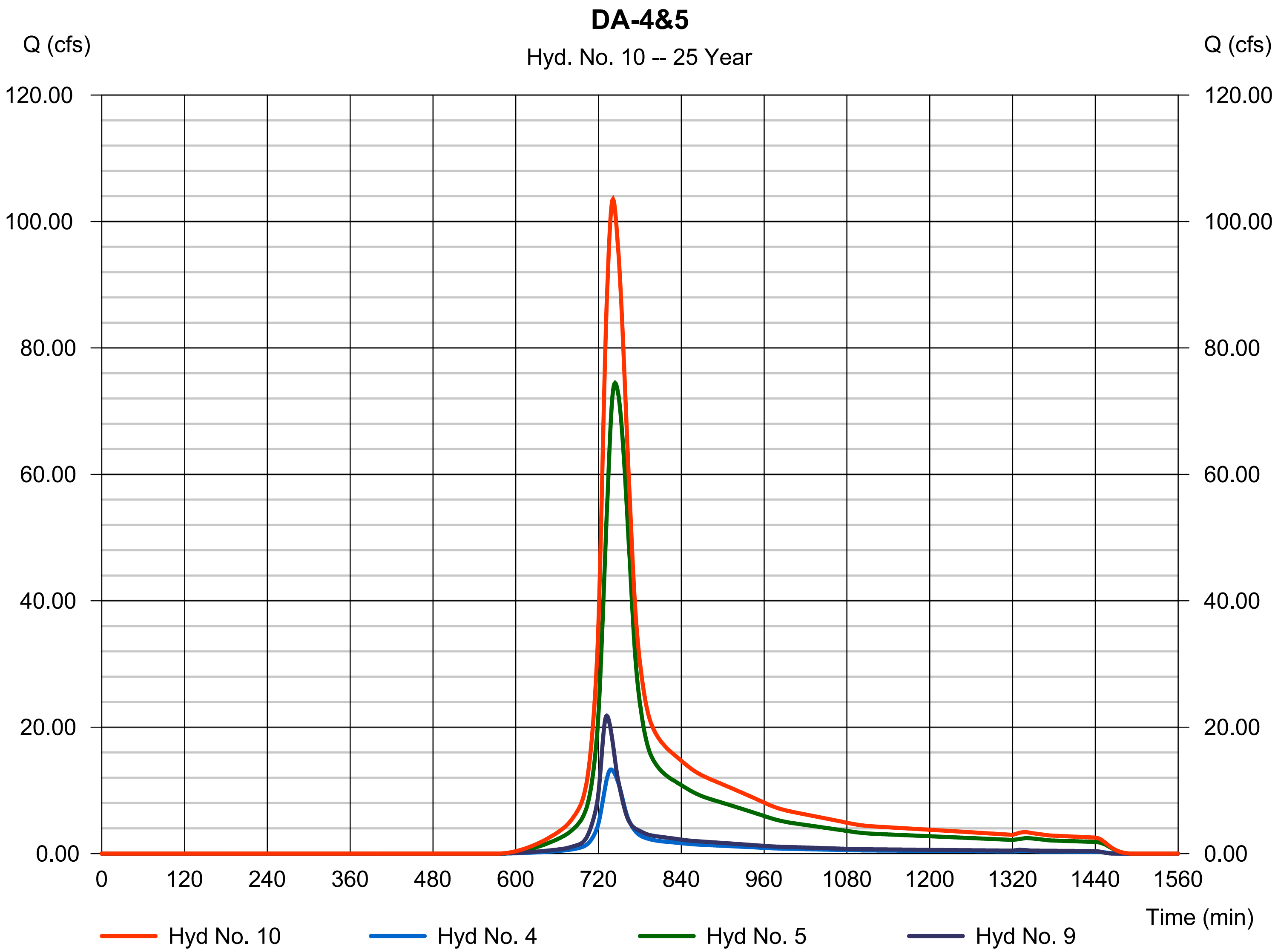
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 103.52 cfs
Storm frequency	= 25 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 571,258 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



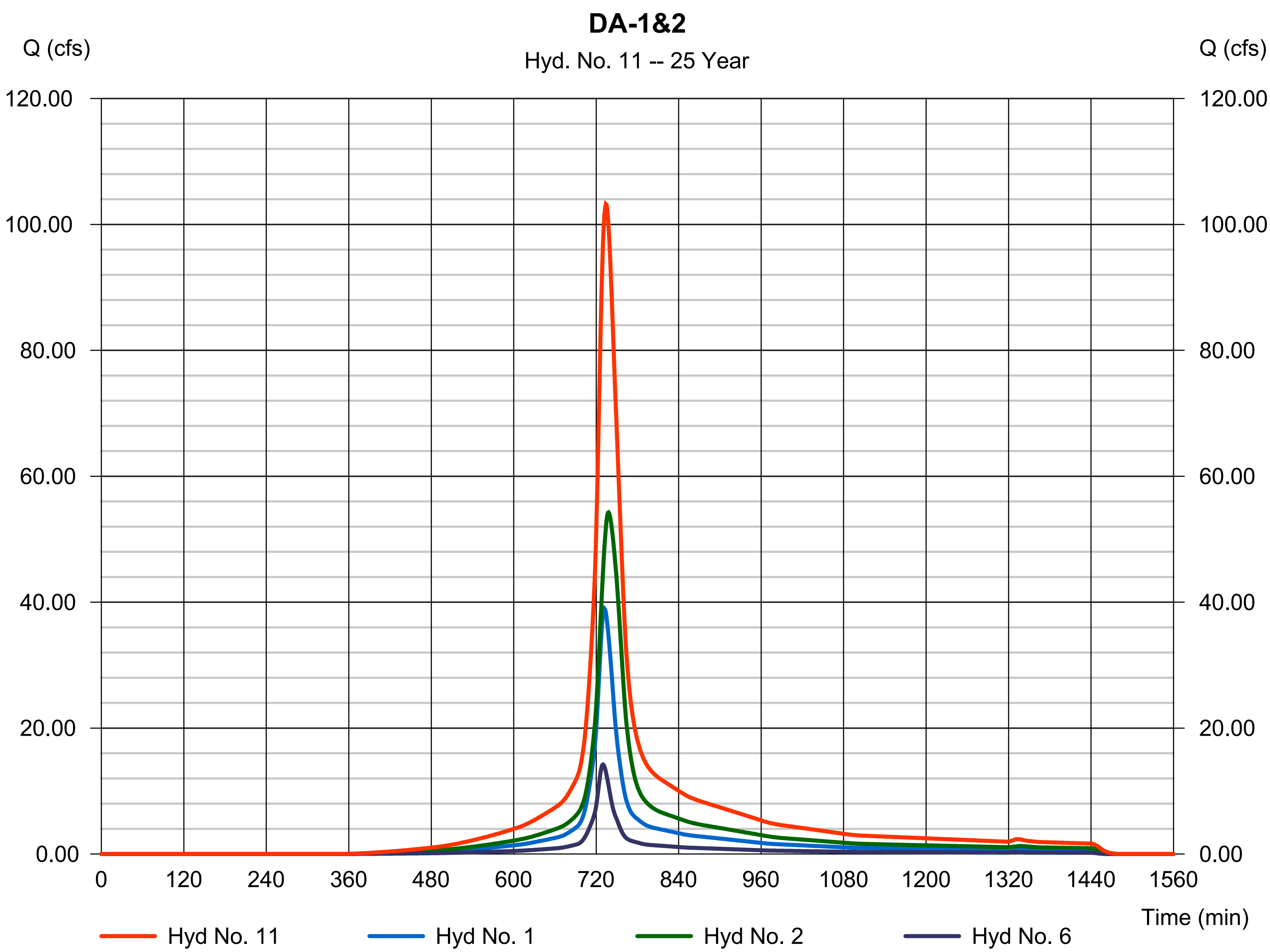
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 103.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 496,498 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac

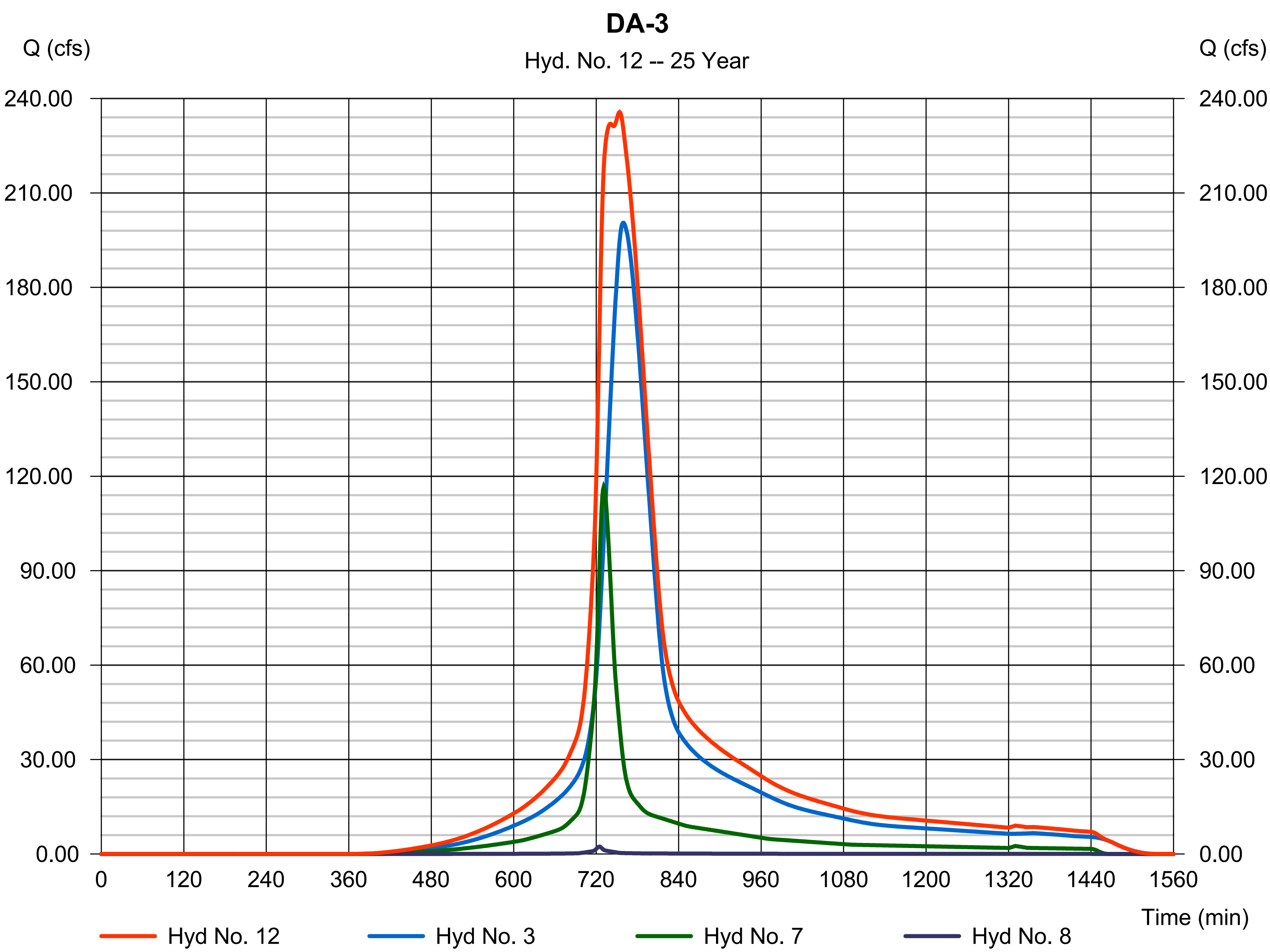


Hydrograph Report

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 235.67 cfs
Storm frequency	= 25 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,012,304 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



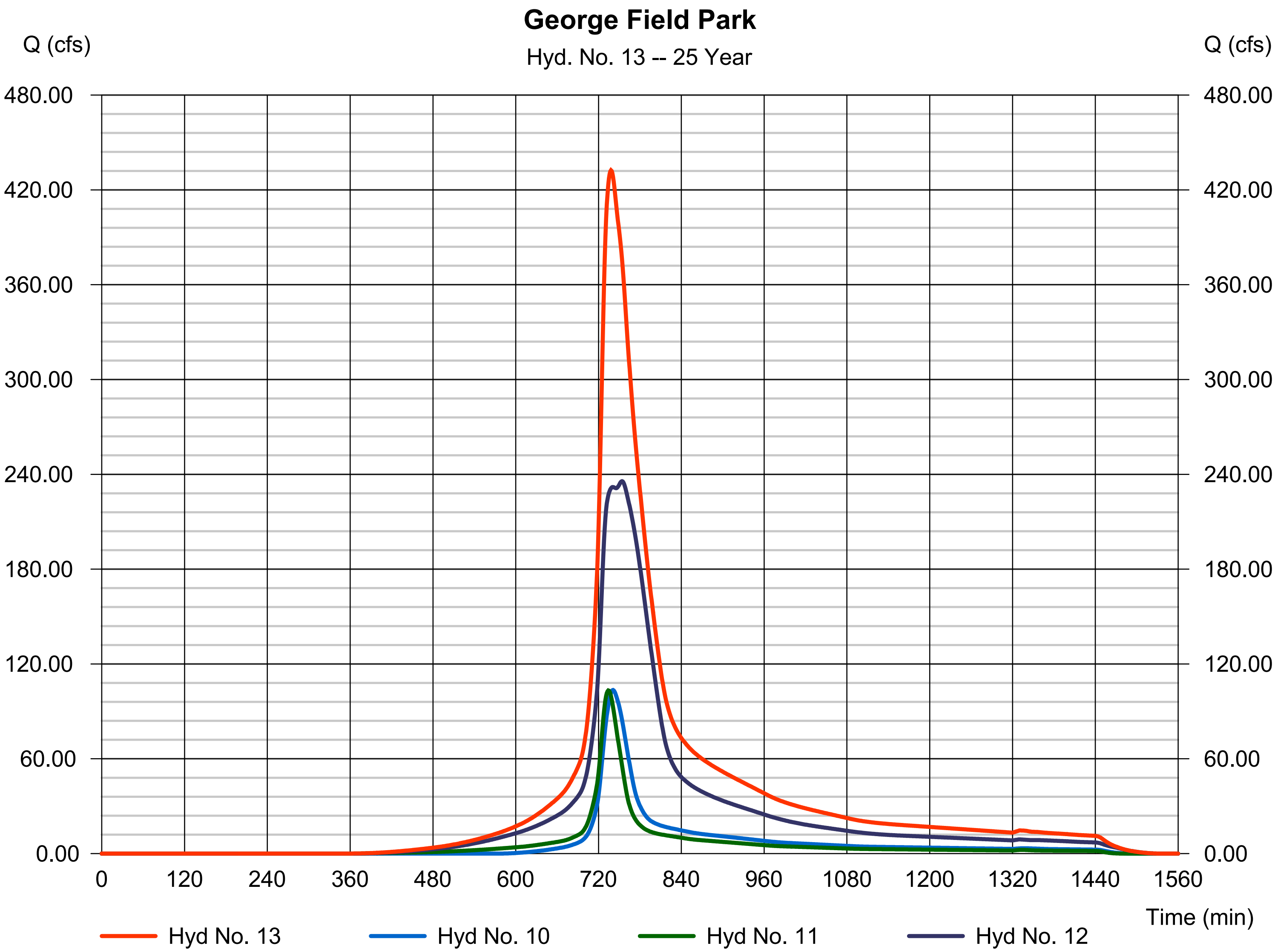
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 432.37 cfs
Storm frequency	= 25 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,080,063 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

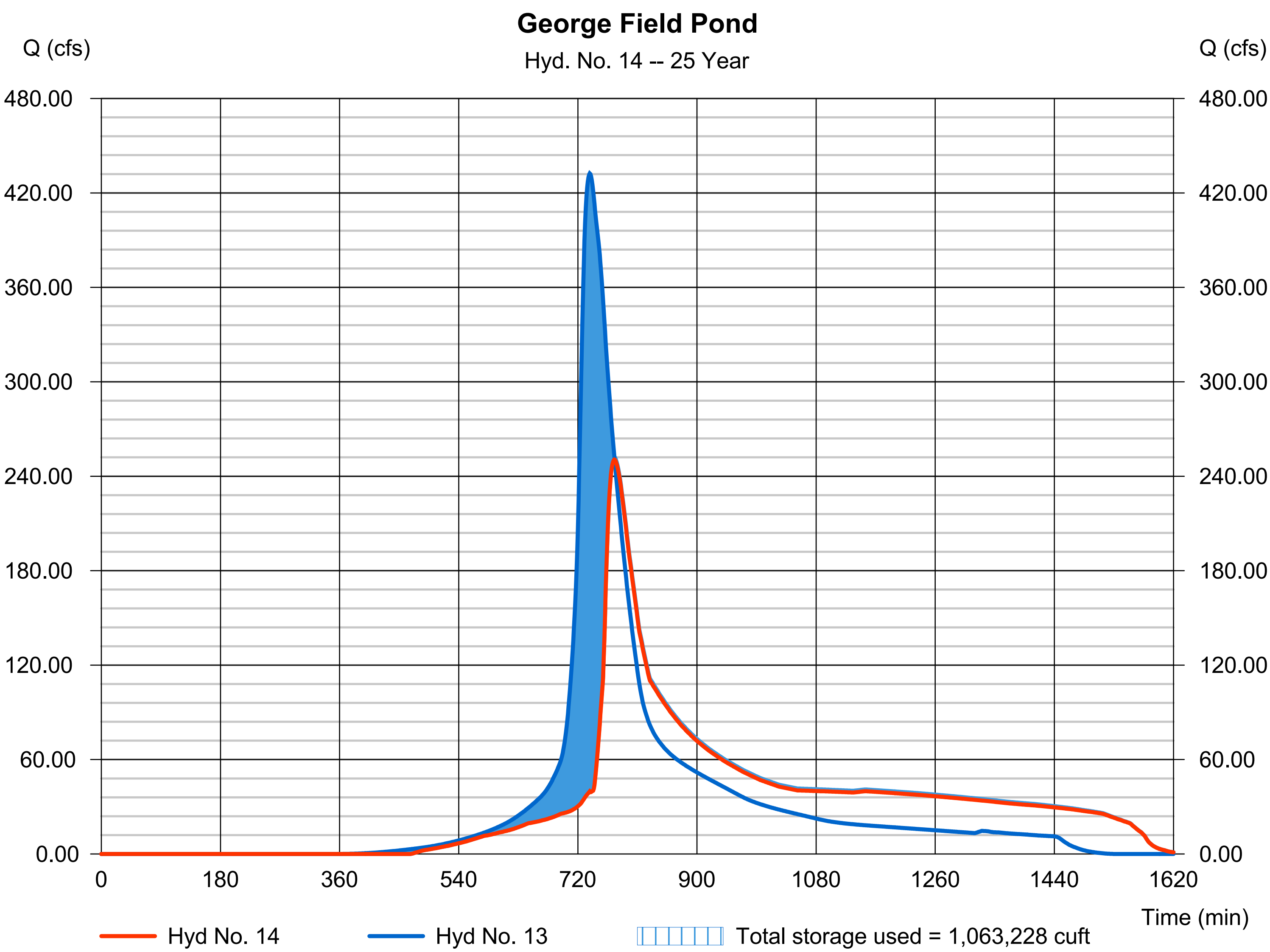
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 250.55 cfs
Storm frequency	= 25 yrs	Time to peak	= 775 min
Time interval	= 1 min	Hyd. volume	= 3,017,359 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 218.30 ft
Reservoir name	= George Field Park	Max. Storage	= 1,063,228 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	43.26	1	732	186,087	------	------	------	DA-1A
2	SCS Runoff	60.26	1	738	303,882	------	------	------	DA-2
3	SCS Runoff	223.32	1	759	1,696,414	------	------	------	DA-3A
4	SCS Runoff	15.44	1	738	75,381	------	------	------	DA-4
5	SCS Runoff	86.35	1	744	477,562	------	------	------	DA-5A
6	SCS Runoff	15.79	1	730	63,288	------	------	------	DA-1B
7	SCS Runoff	129.70	1	731	541,695	------	------	------	DA-3B
8	SCS Runoff	2.575	1	724	8,068	------	------	------	DA-3C
9	SCS Runoff	25.29	1	732	105,543	------	------	------	DA-5B
10	Combine	120.04	1	741	658,484	4, 5, 9	------	------	DA-4&5
11	Combine	114.65	1	734	553,257	1, 2, 6,	------	------	DA-1&2
12	Combine	262.31	1	754	2,246,176	3, 7, 8,	------	------	DA-3
13	Combine	486.55	1	738	3,457,916	10, 11, 12	------	------	George Field Park
14	Reservoir	323.89	1	768	3,392,546	13	218.41	1,096,957	George Field Pond

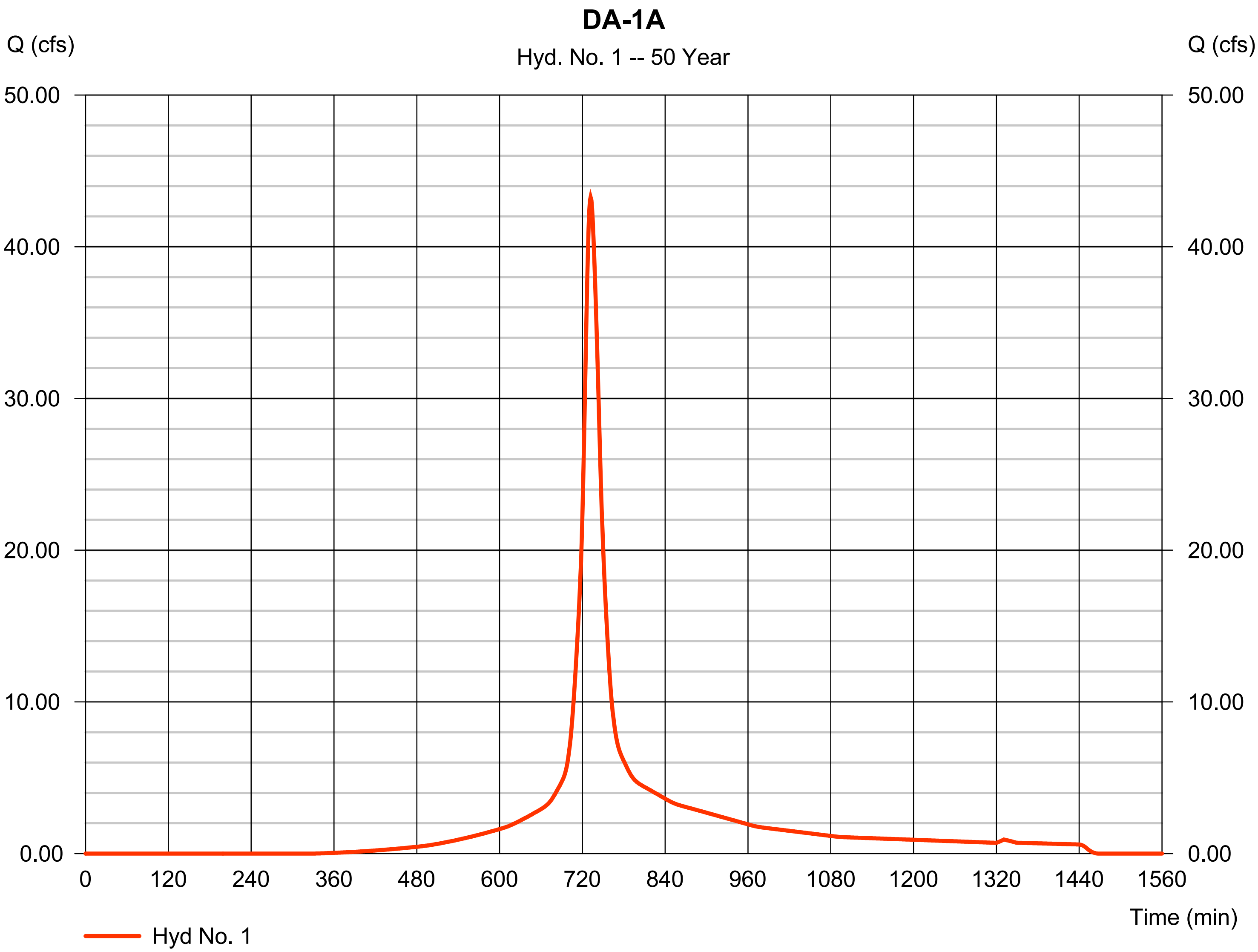
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 43.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 186,087 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



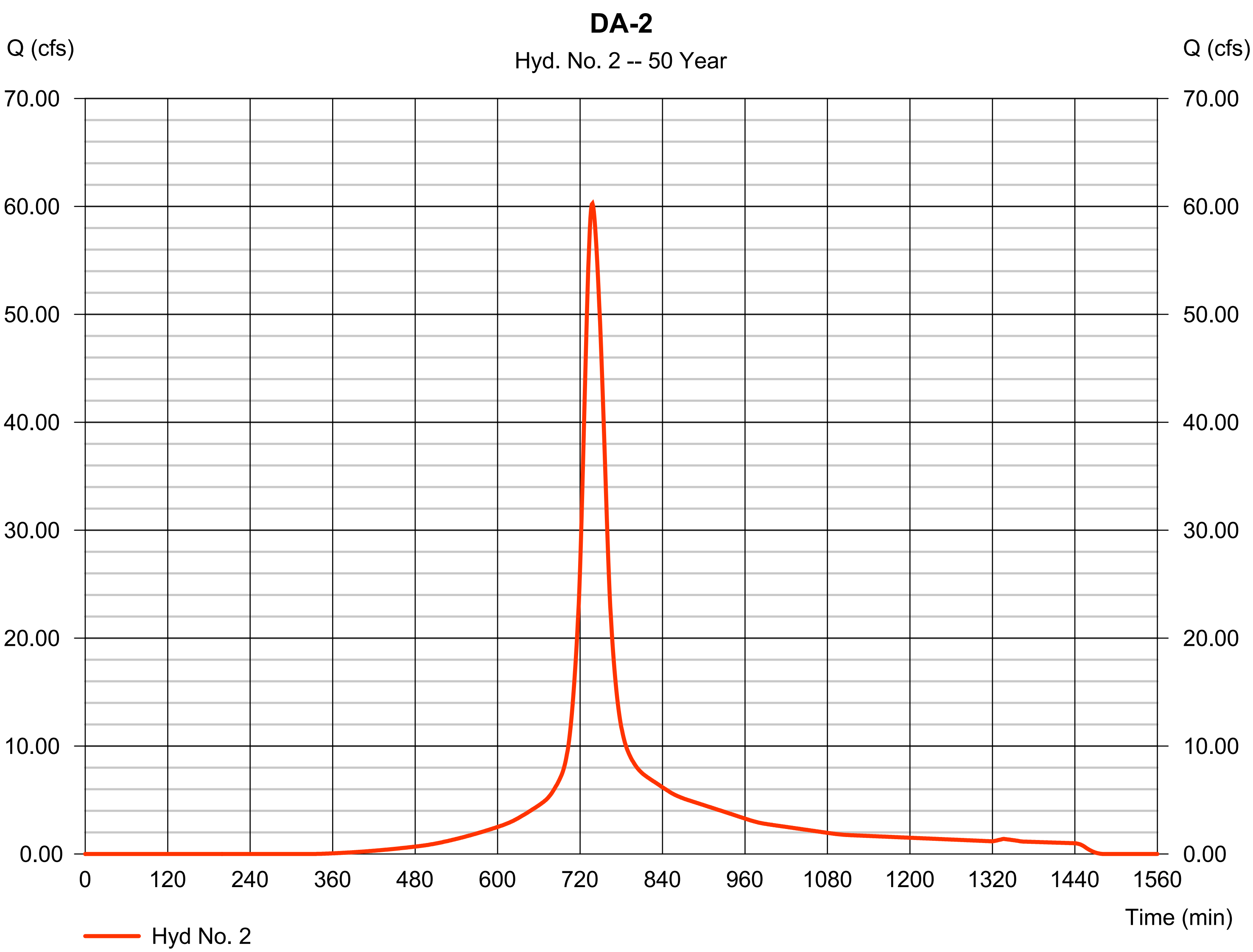
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 60.26 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 303,882 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

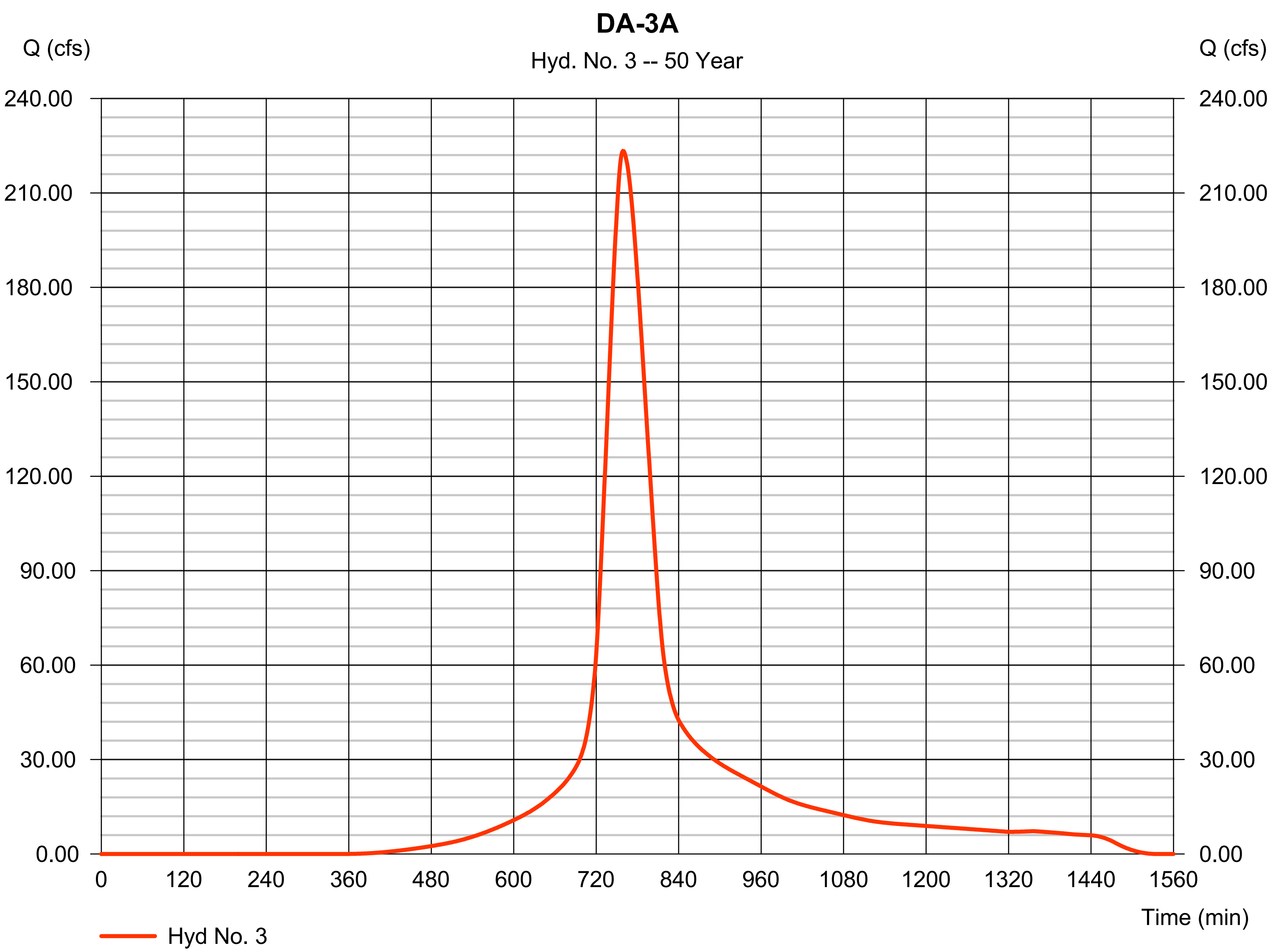
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 223.32 cfs
Storm frequency	= 50 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 1,696,414 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



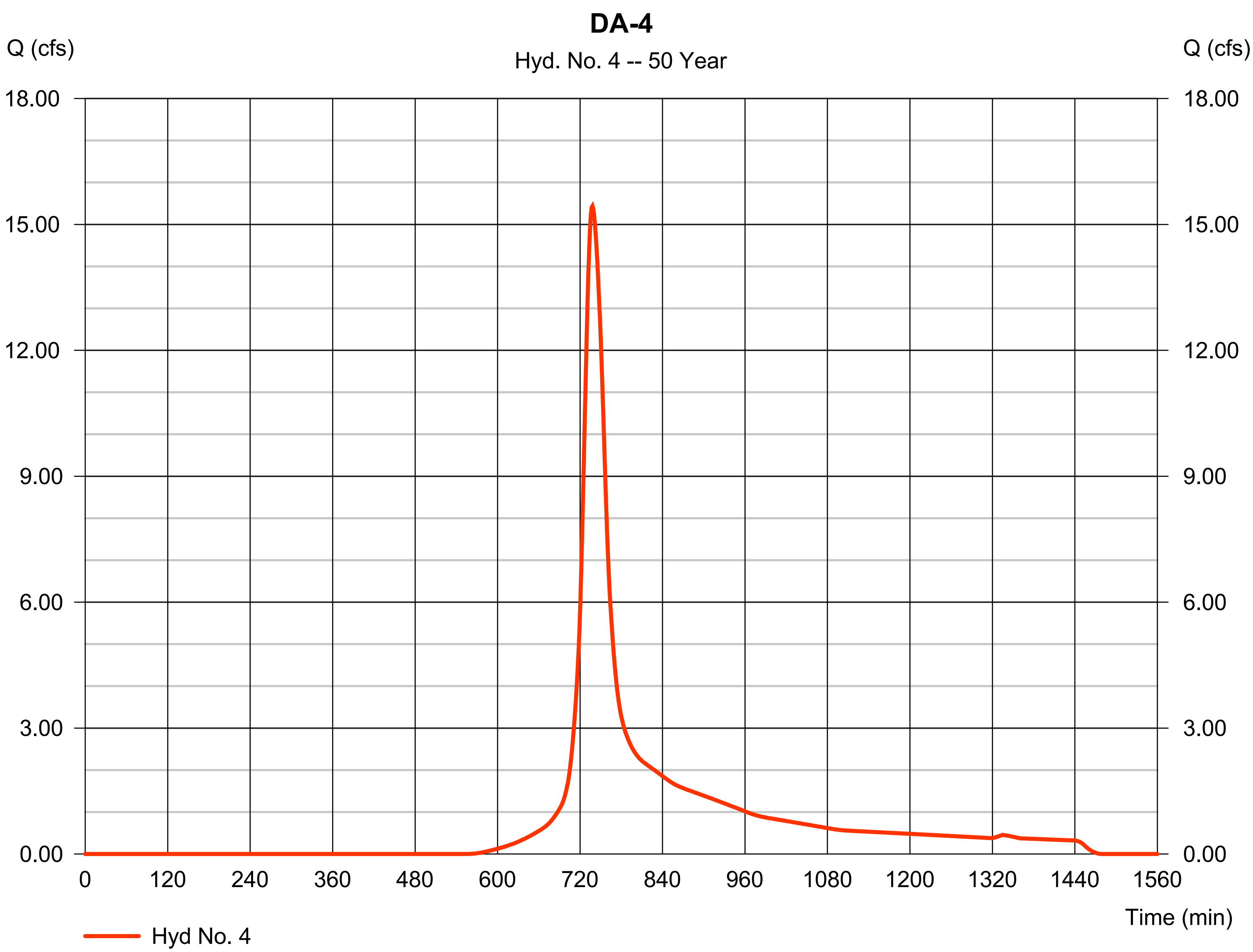
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 15.44 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 75,381 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



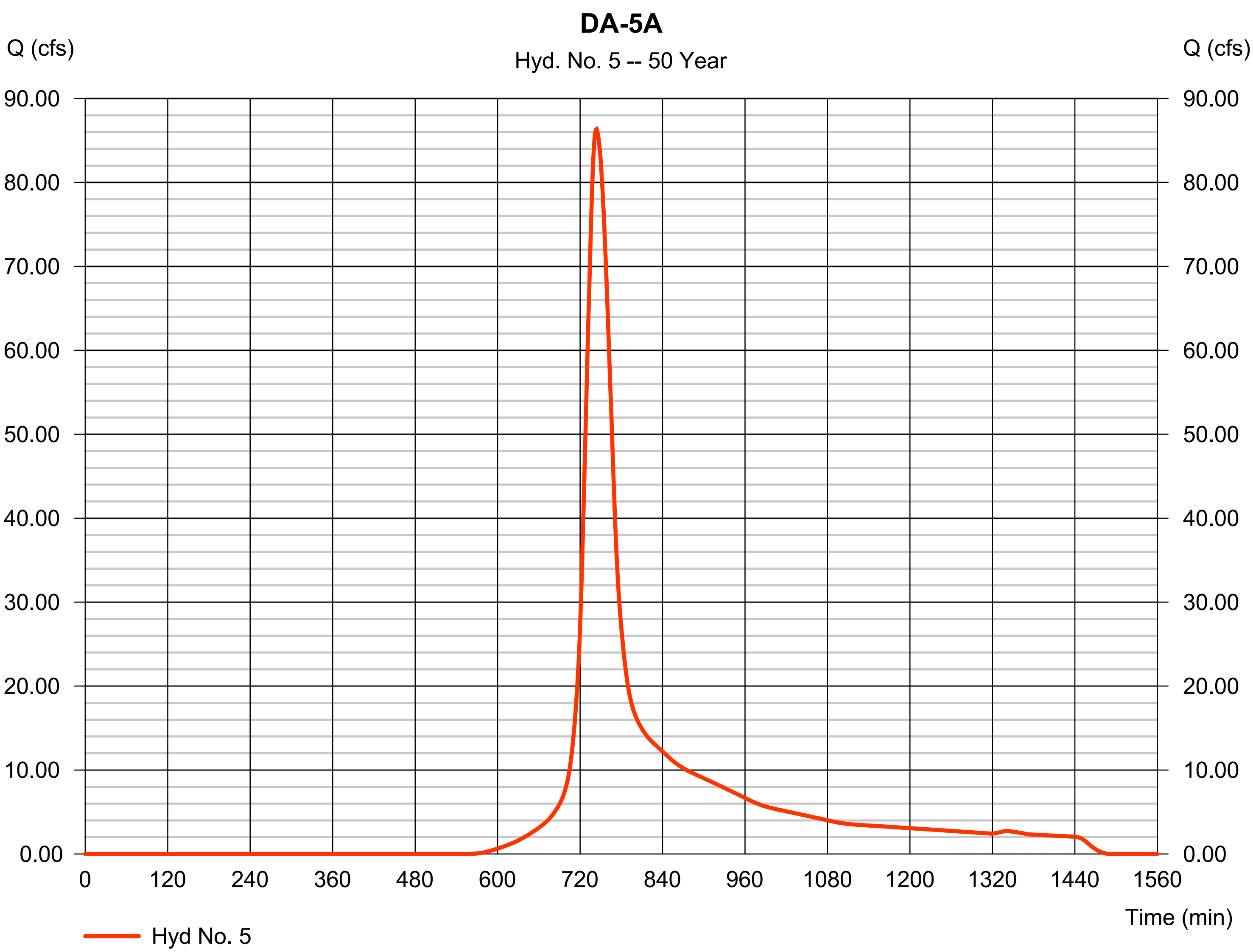
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 86.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 744 min
Time interval	= 1 min	Hyd. volume	= 477,562 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



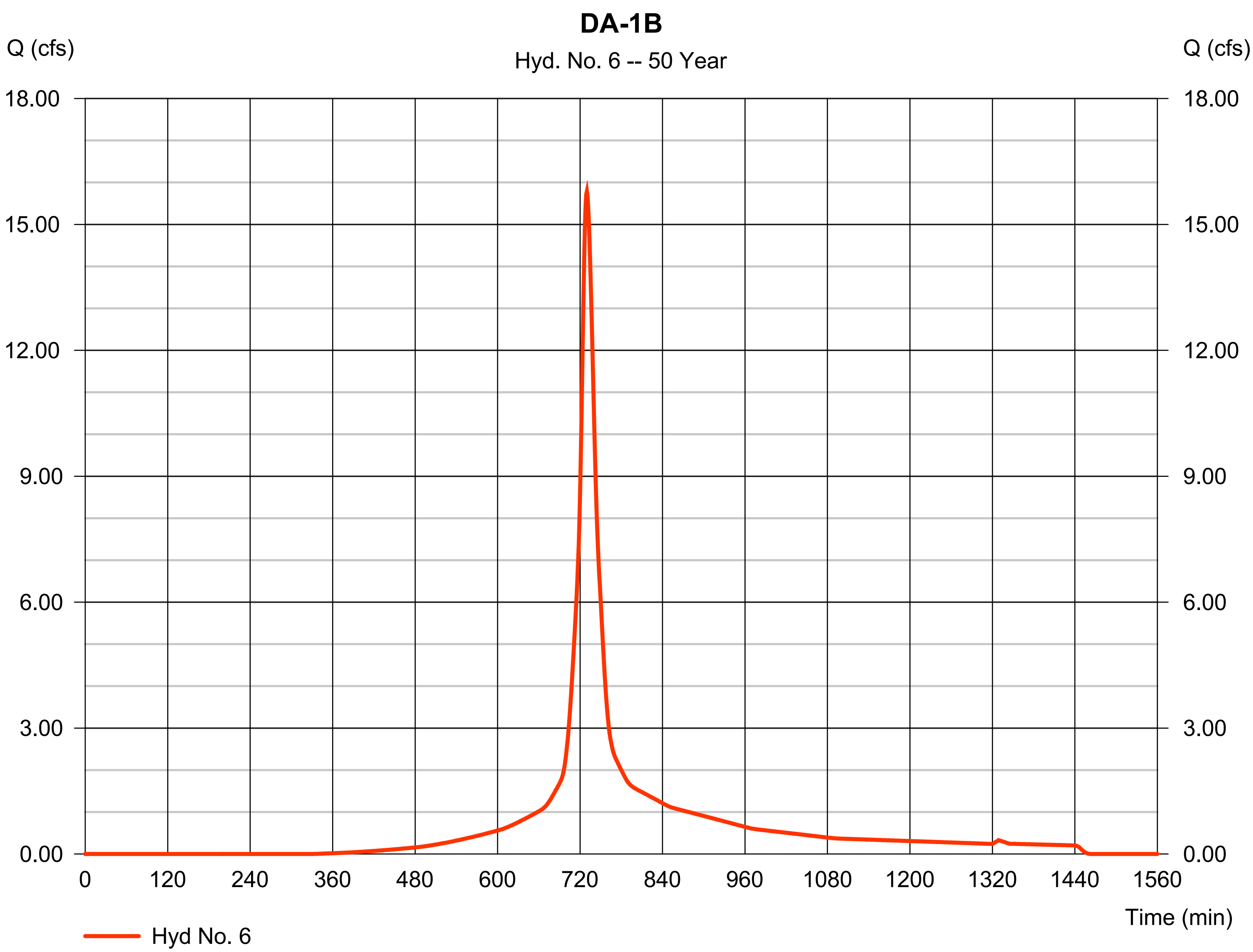
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 15.79 cfs
Storm frequency	= 50 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 63,288 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



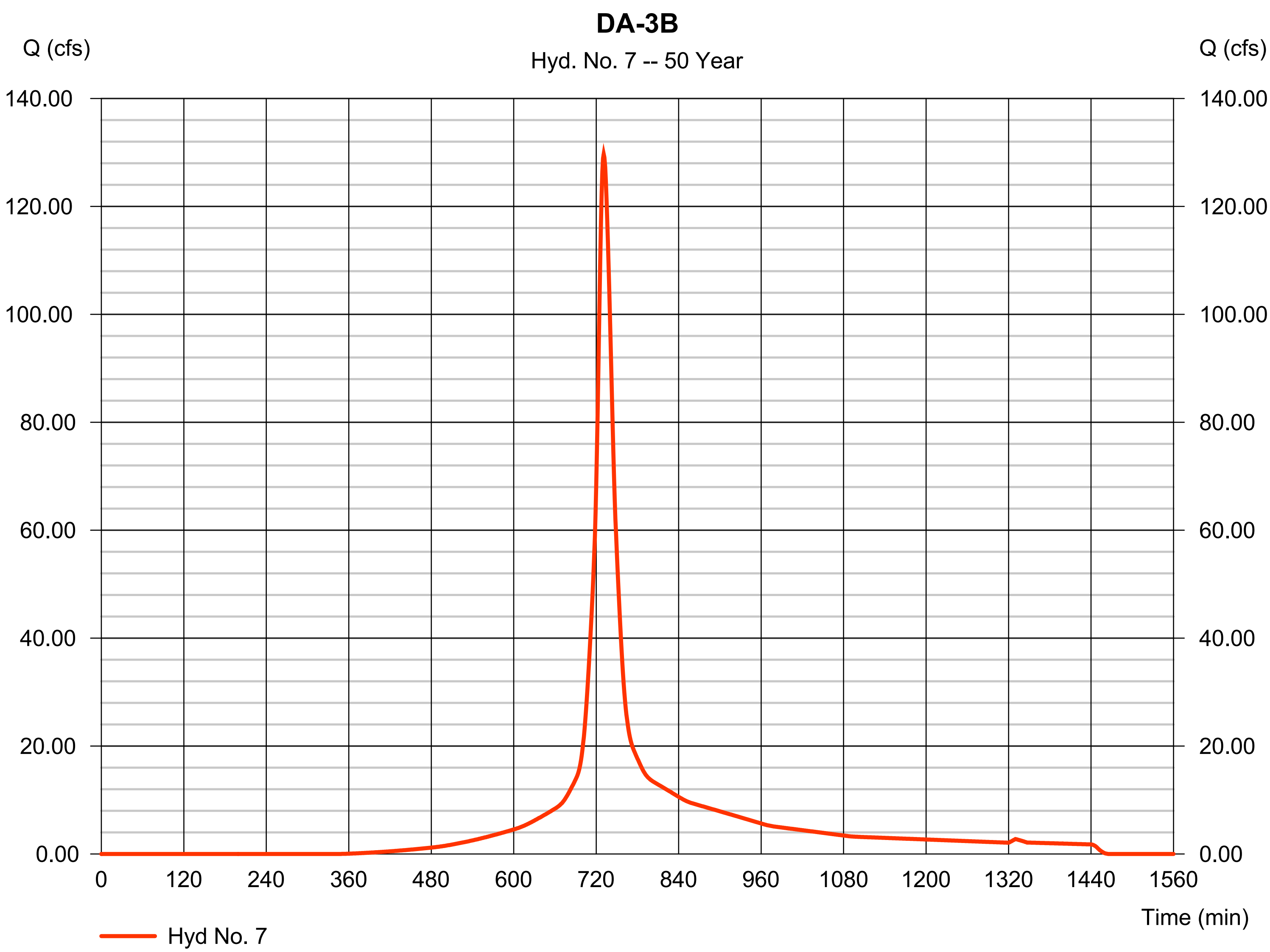
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 129.70 cfs
Storm frequency	= 50 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 541,695 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



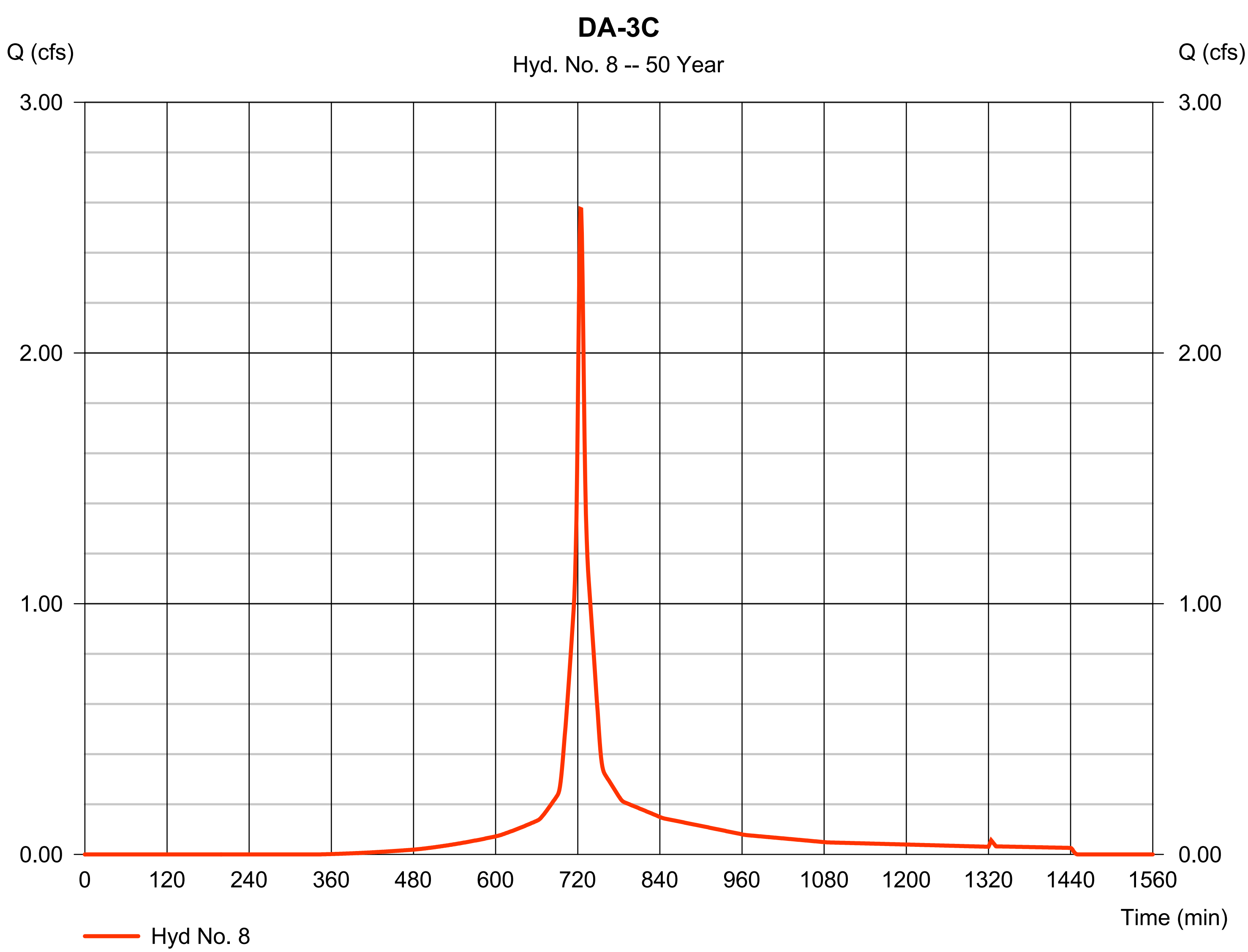
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.575 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 8,068 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



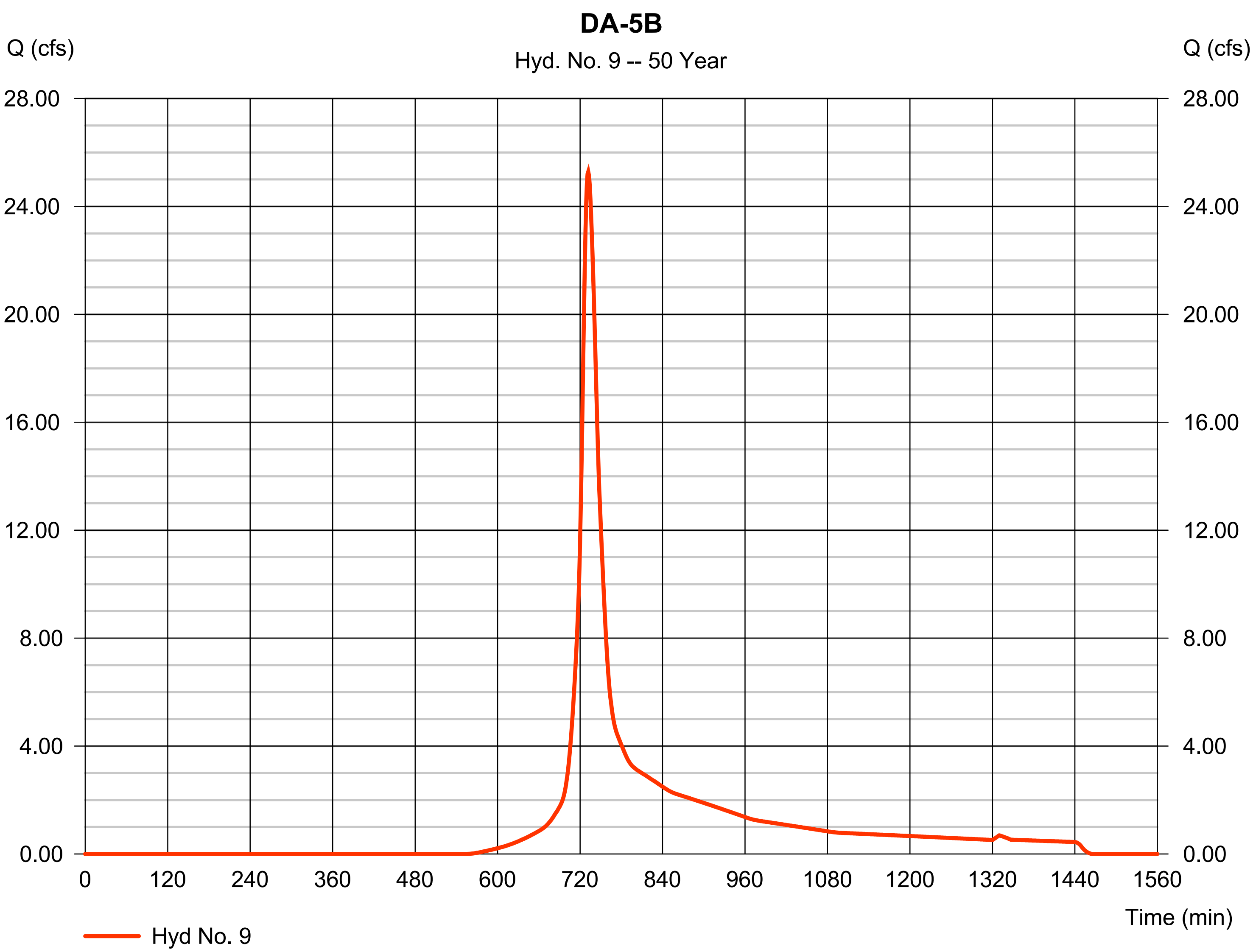
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 25.29 cfs
Storm frequency	= 50 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 105,543 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 7.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



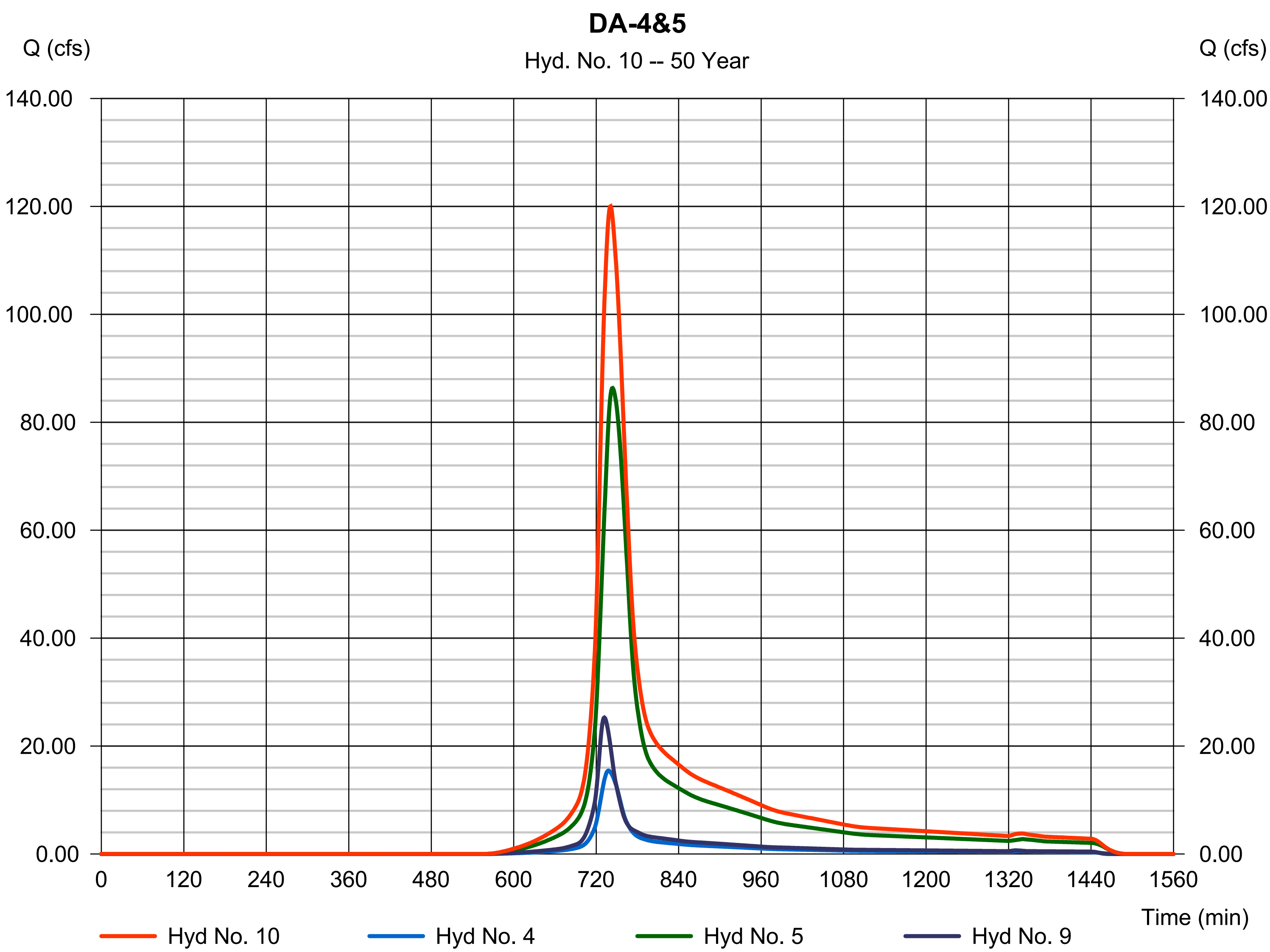
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 120.04 cfs
Storm frequency	= 50 yrs	Time to peak	= 741 min
Time interval	= 1 min	Hyd. volume	= 658,484 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac



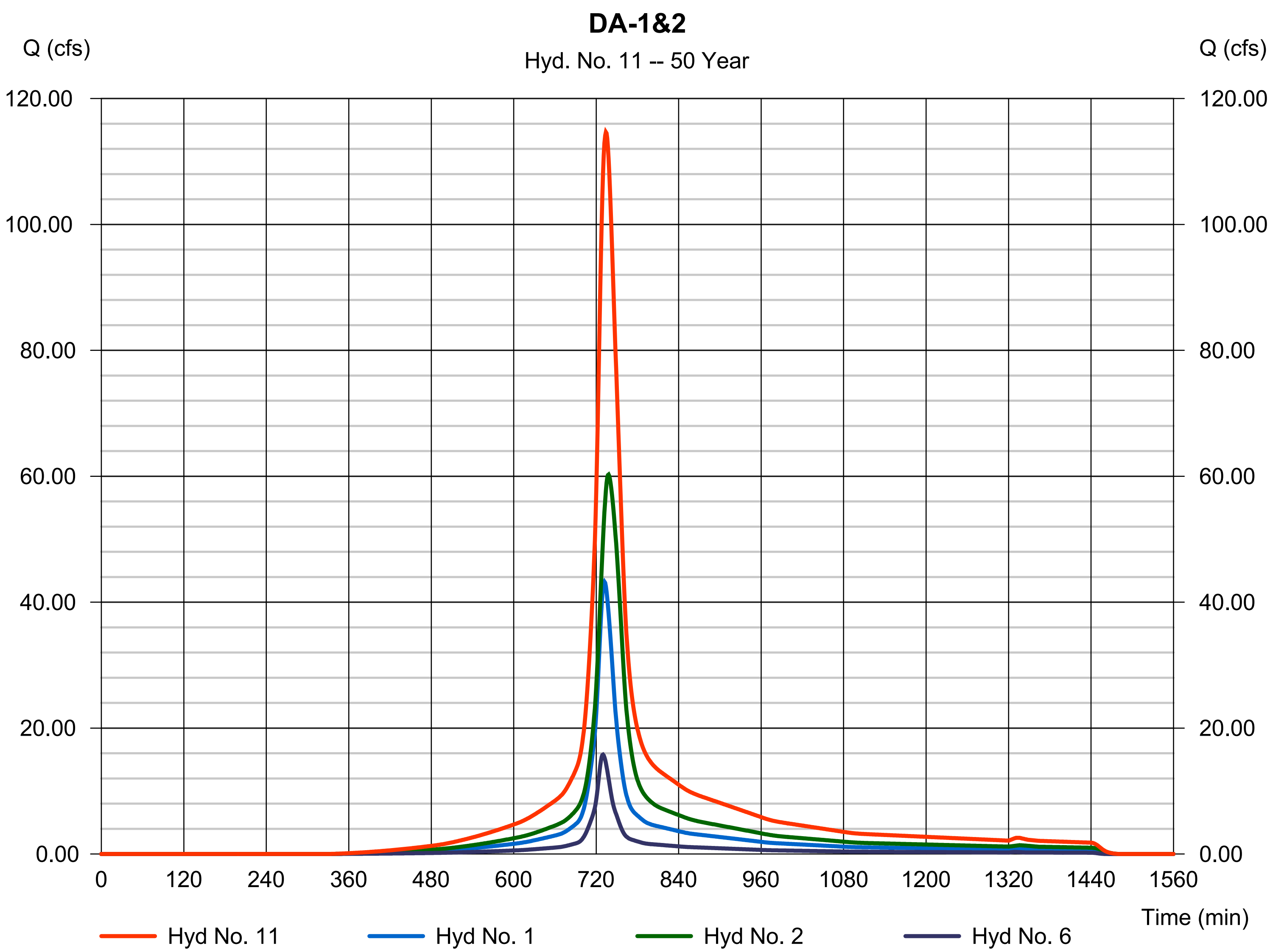
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 114.65 cfs
Storm frequency	= 50 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 553,257 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



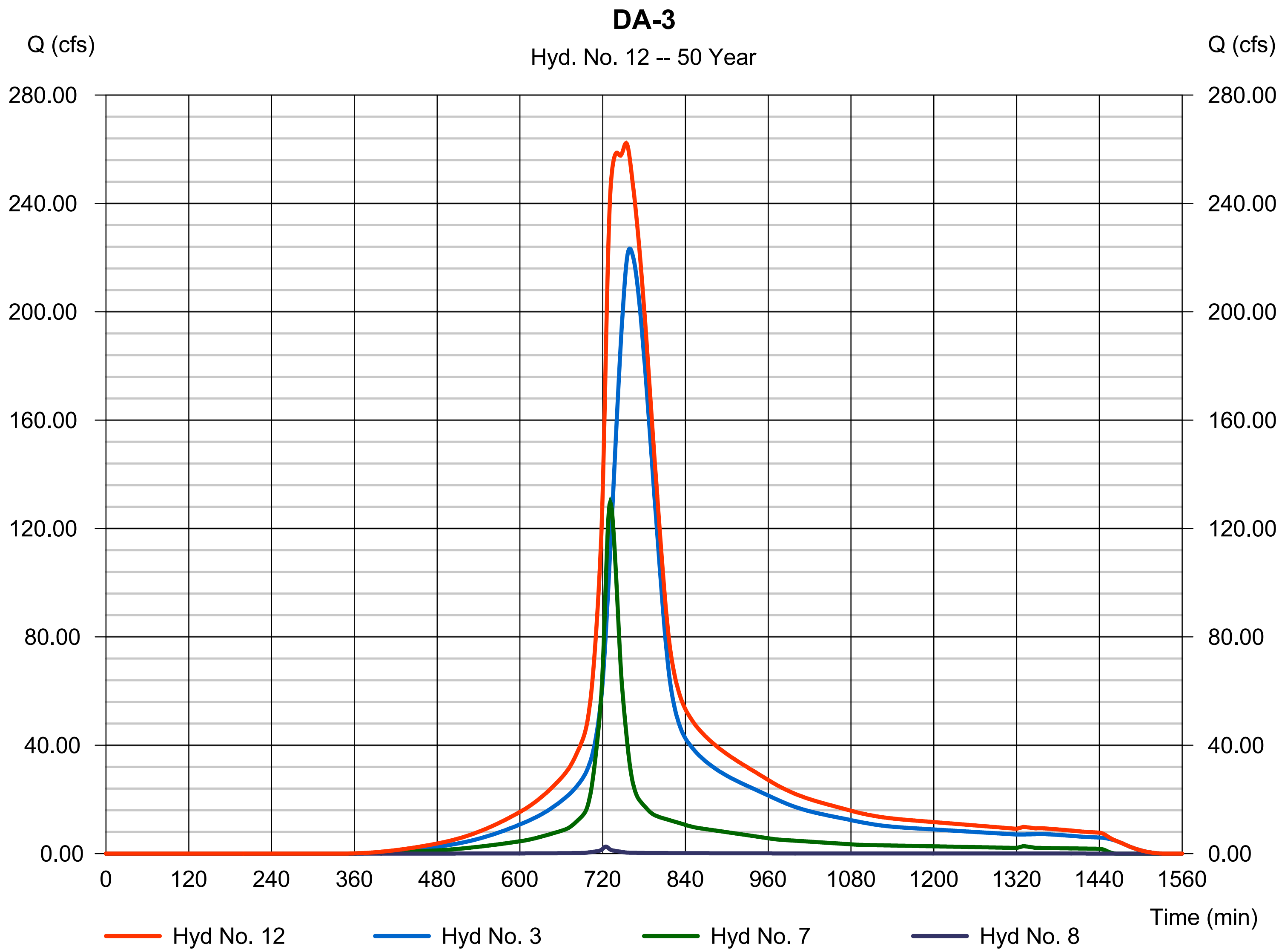
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 262.31 cfs
Storm frequency	= 50 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,246,176 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac

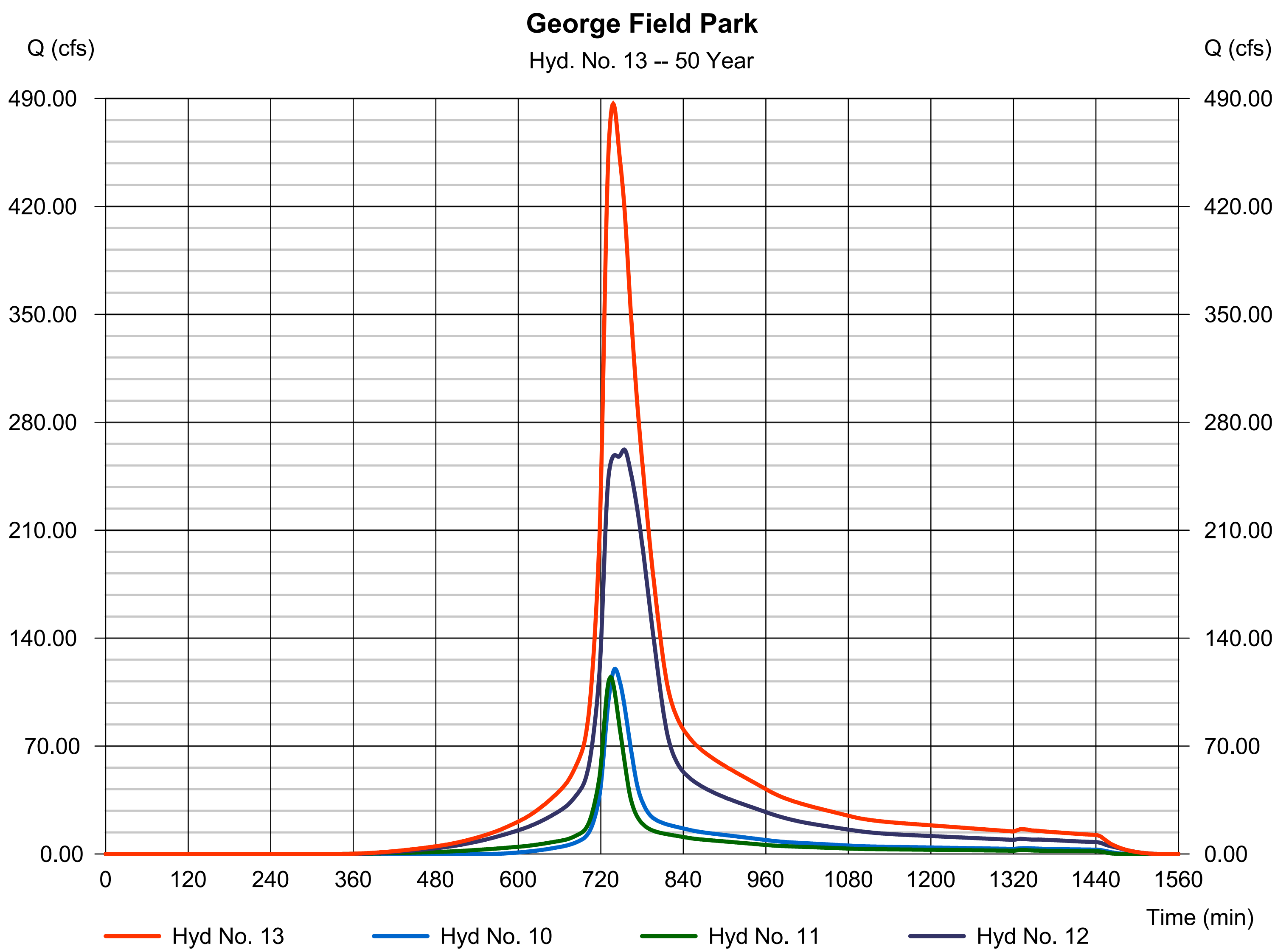


Hydrograph Report

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 486.55 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 3,457,916 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

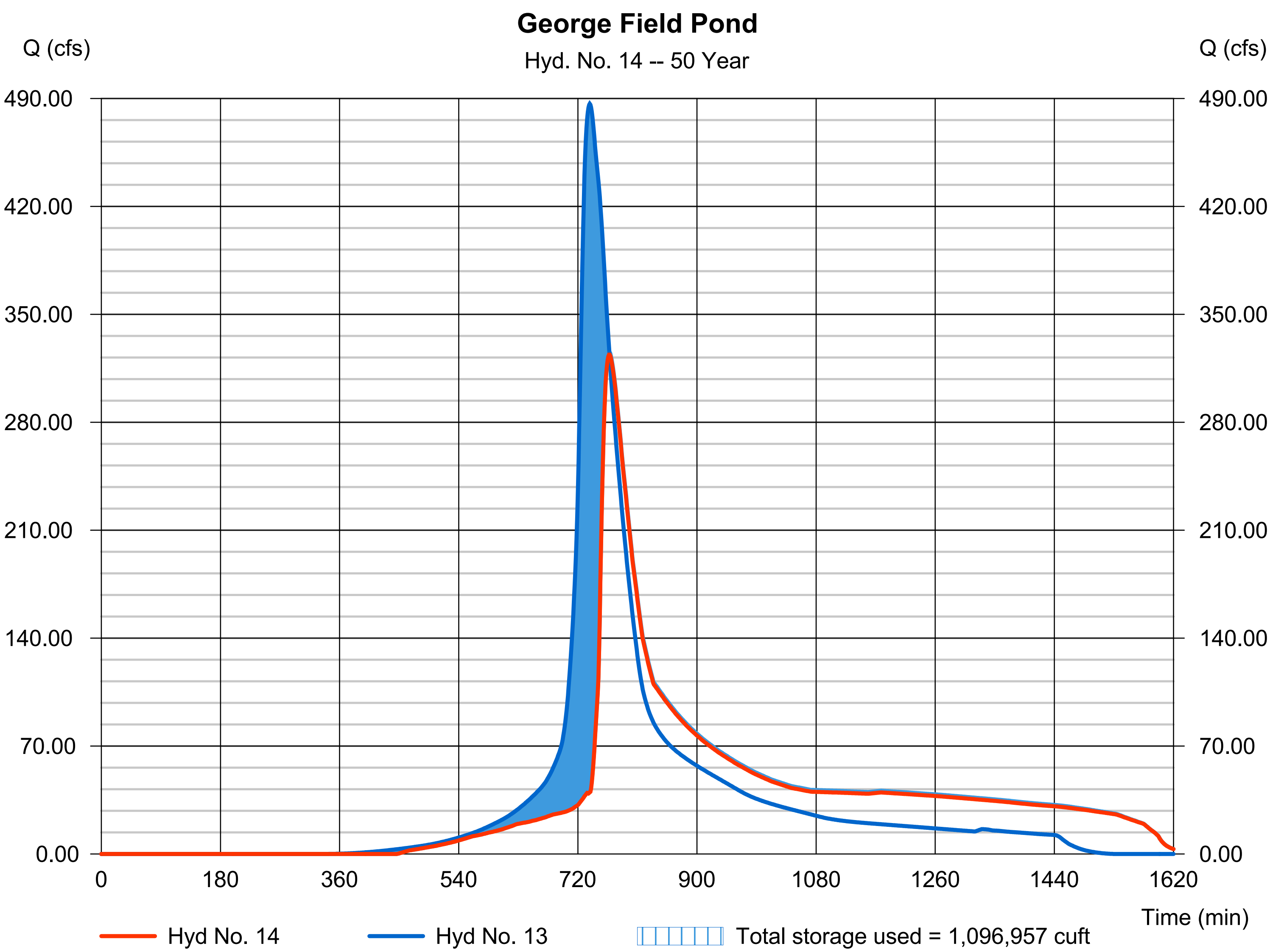
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 323.89 cfs
Storm frequency	= 50 yrs	Time to peak	= 768 min
Time interval	= 1 min	Hyd. volume	= 3,392,546 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 218.41 ft
Reservoir name	= George Field Park	Max. Storage	= 1,096,957 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	52.96	1	732	229,663	------	------	------	DA-1A
2	SCS Runoff	73.79	1	738	375,041	------	------	------	DA-2
3	SCS Runoff	274.85	1	759	2,100,107	------	------	------	DA-3A
4	SCS Runoff	20.40	1	737	98,867	------	------	------	DA-4
5	SCS Runoff	114.15	1	743	626,355	------	------	------	DA-5A
6	SCS Runoff	19.32	1	730	78,108	------	------	------	DA-1B
7	SCS Runoff	159.32	1	731	670,602	------	------	------	DA-3B
8	SCS Runoff	3.162	1	724	9,988	------	------	------	DA-3C
9	SCS Runoff	33.39	1	732	138,427	------	------	------	DA-5B
10	Combine	158.66	1	740	863,647	4, 5, 9	------	------	DA-4&5
11	Combine	140.42	1	734	682,812	1, 2, 6,	------	------	DA-1&2
12	Combine	322.50	1	754	2,780,696	3, 7, 8,	------	------	DA-3
13	Combine	610.29	1	738	4,327,159	10, 11, 12	------	------	George Field Park
14	Reservoir	489.51	1	758	4,256,251	13	218.61	1,162,071	George Field Pond

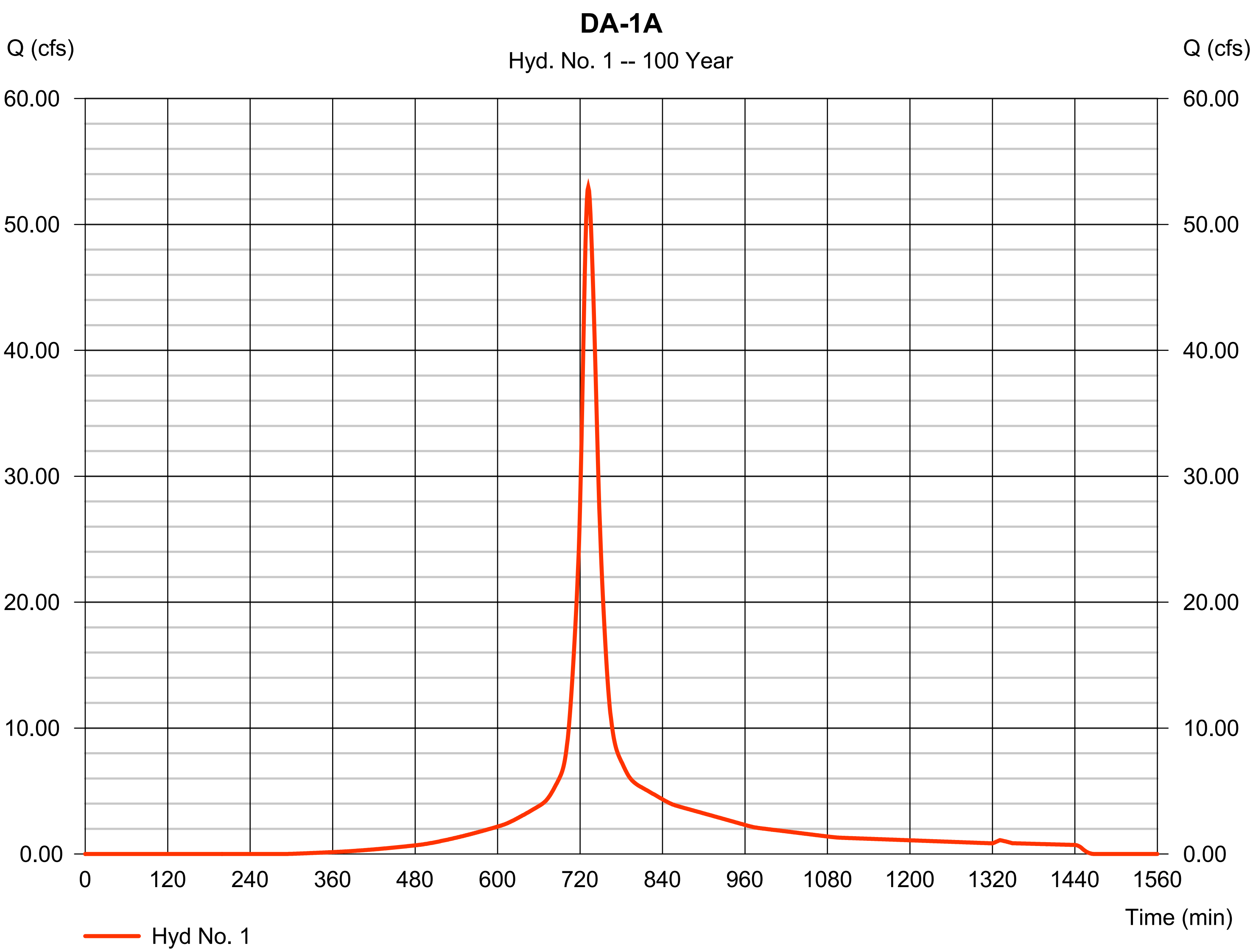
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 1

DA-1A

Hydrograph type	= SCS Runoff	Peak discharge	= 52.96 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 229,663 cuft
Drainage area	= 10.350 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



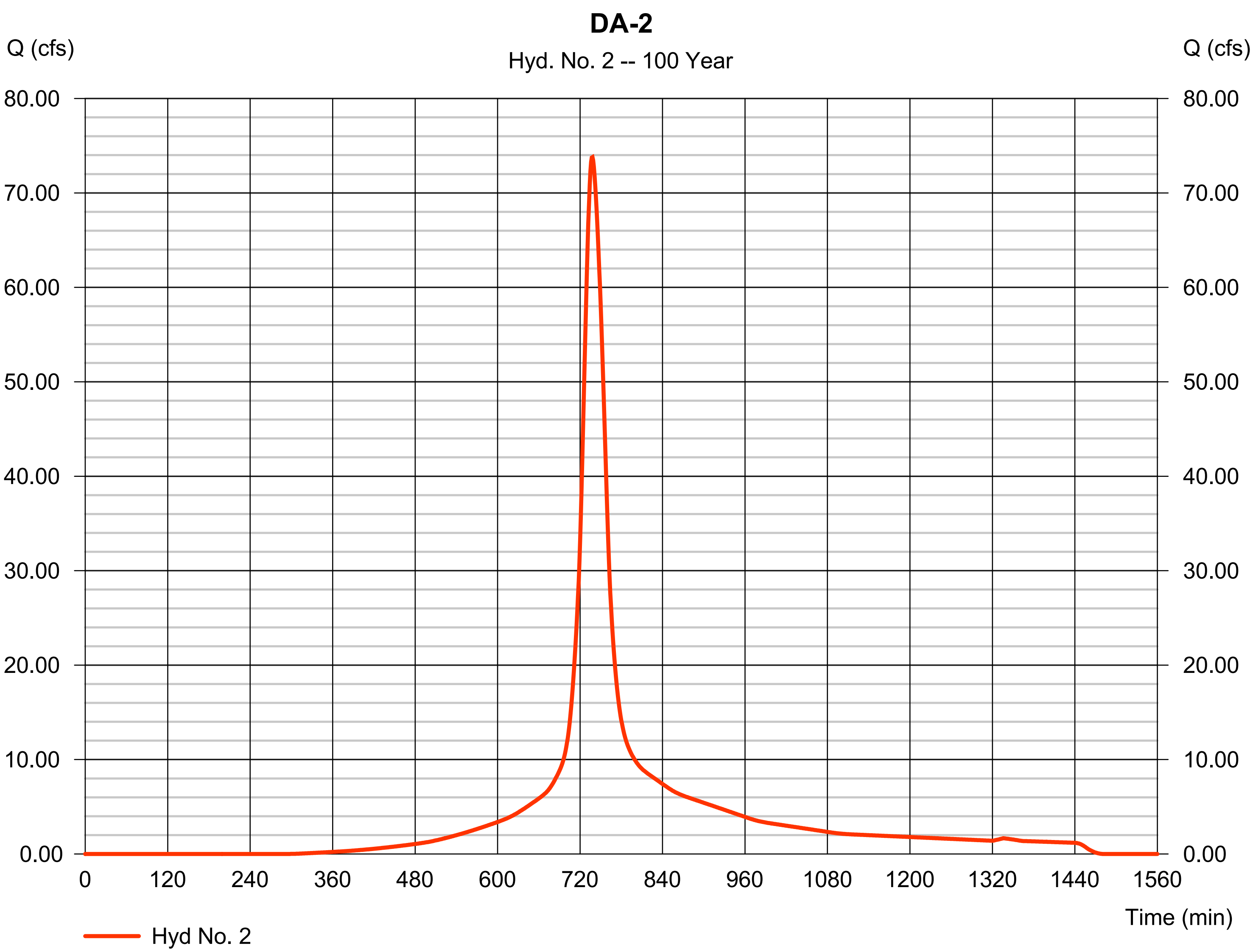
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 2

DA-2

Hydrograph type	= SCS Runoff	Peak discharge	= 73.79 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 375,041 cuft
Drainage area	= 16.580 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 25.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

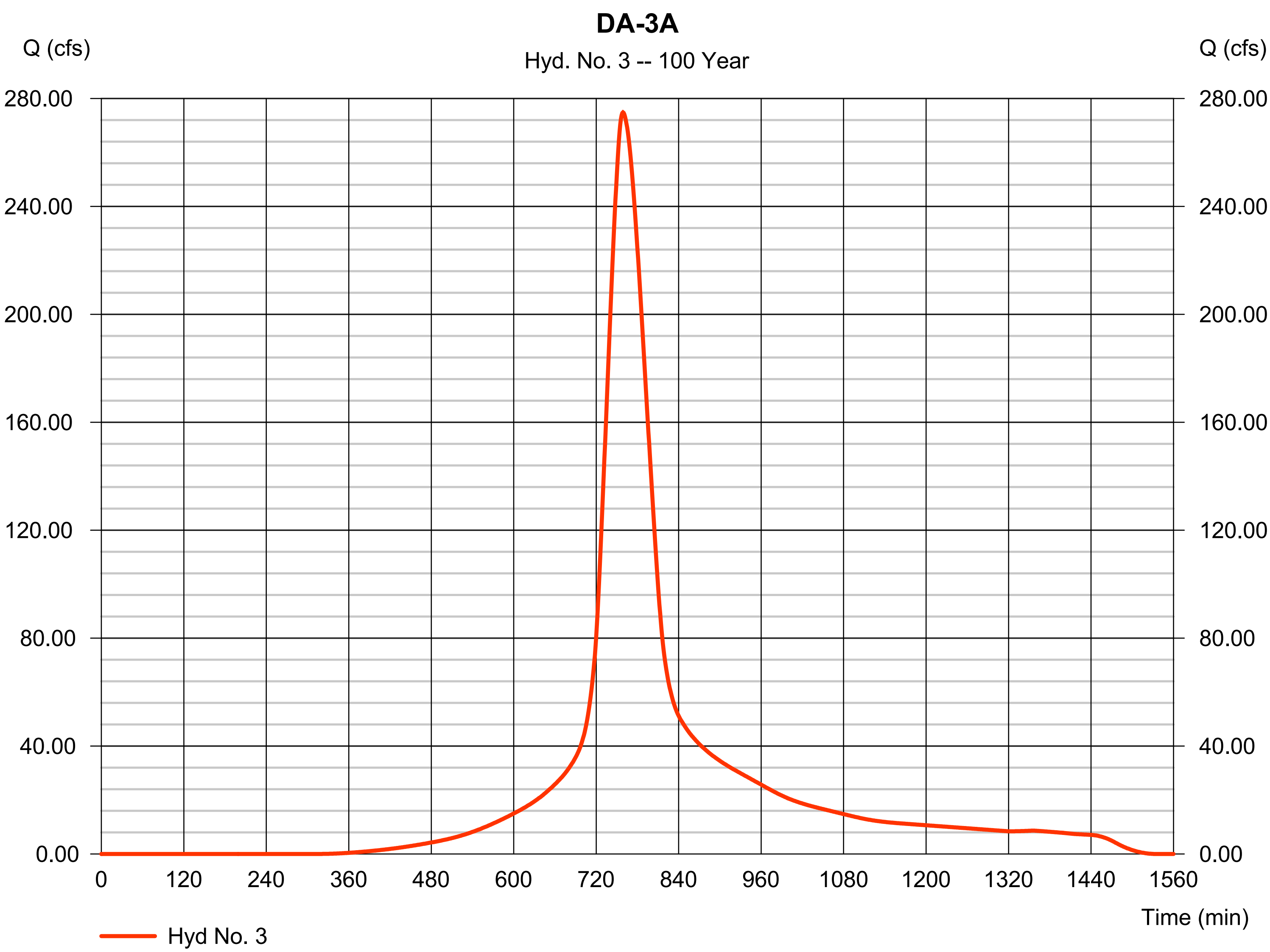
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 3

DA-3A

Hydrograph type	= SCS Runoff	Peak discharge	= 274.85 cfs
Storm frequency	= 100 yrs	Time to peak	= 759 min
Time interval	= 1 min	Hyd. volume	= 2,100,107 cuft
Drainage area	= 95.410 ac	Curve number	= 81*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 60.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(27.560 x 98) + (1.000 x 55) + (17.800 x 61) + (6.160 x 77) + (73.420 x 80)] / 95.410



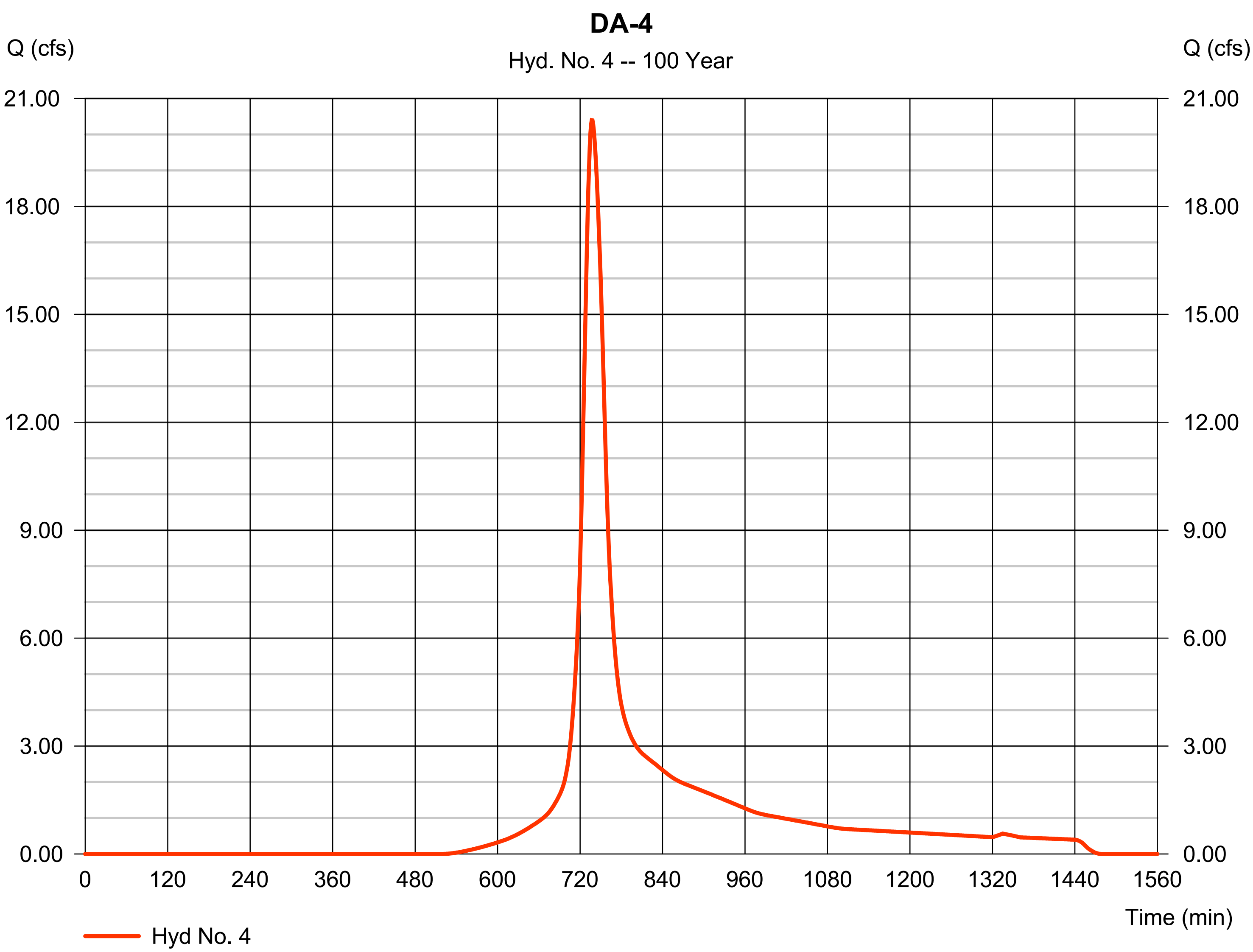
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 4

DA-4

Hydrograph type	= SCS Runoff	Peak discharge	= 20.40 cfs
Storm frequency	= 100 yrs	Time to peak	= 737 min
Time interval	= 1 min	Hyd. volume	= 98,867 cuft
Drainage area	= 6.530 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.90 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



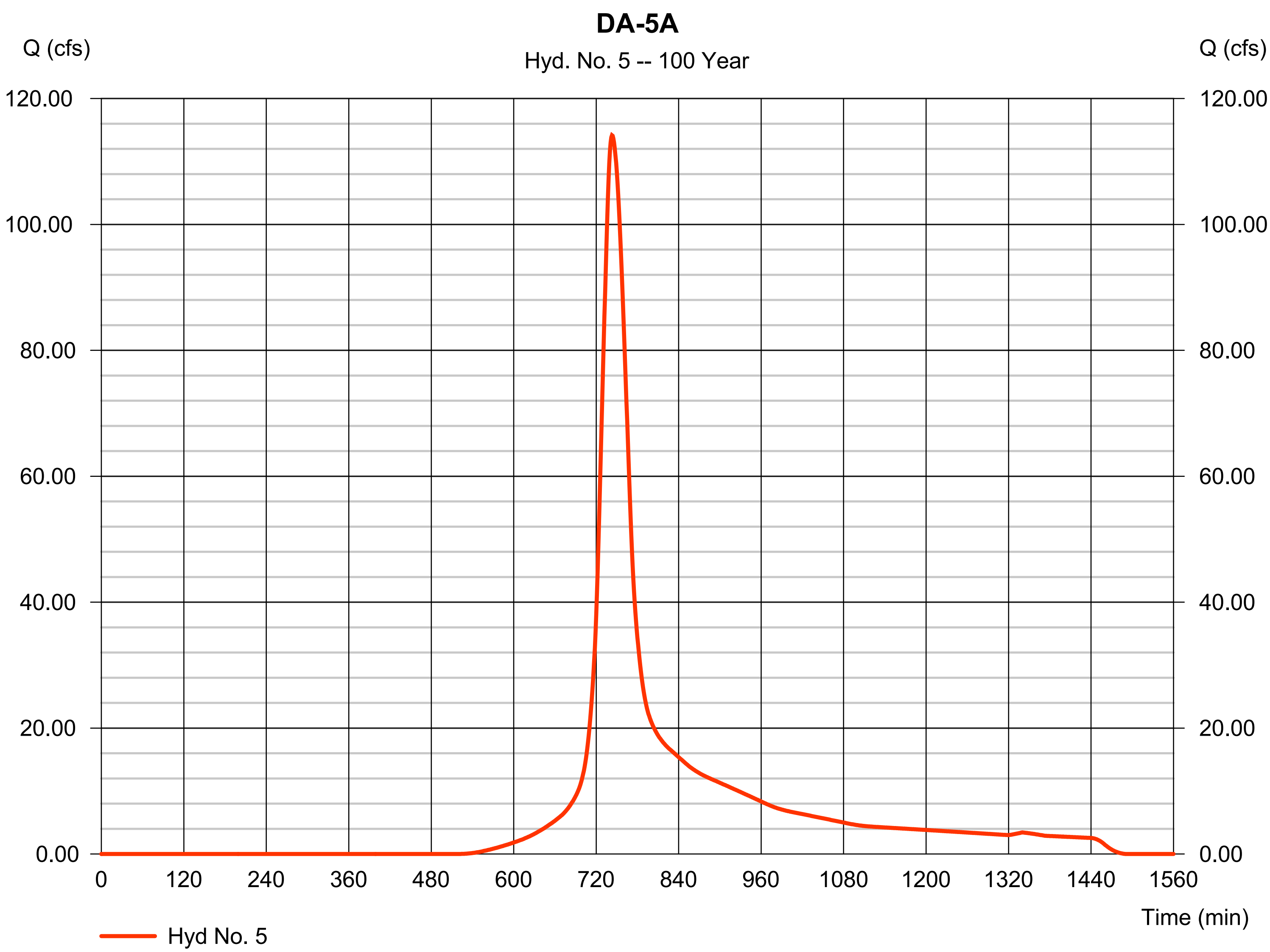
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 5

DA-5A

Hydrograph type	= SCS Runoff	Peak discharge	= 114.15 cfs
Storm frequency	= 100 yrs	Time to peak	= 743 min
Time interval	= 1 min	Hyd. volume	= 626,355 cuft
Drainage area	= 41.630 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 32.60 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



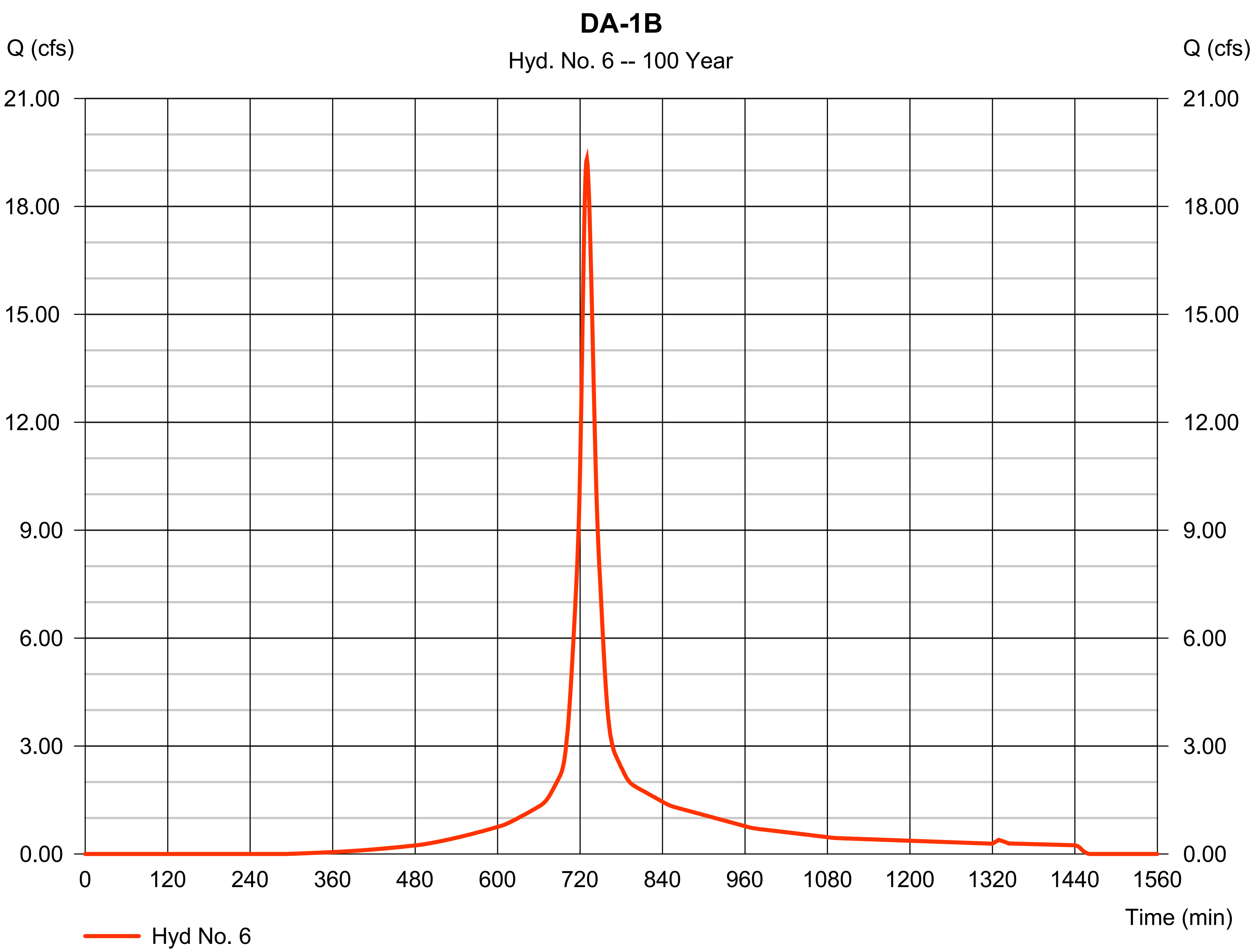
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 6

DA-1B

Hydrograph type	= SCS Runoff	Peak discharge	= 19.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 730 min
Time interval	= 1 min	Hyd. volume	= 78,108 cuft
Drainage area	= 3.480 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 14.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



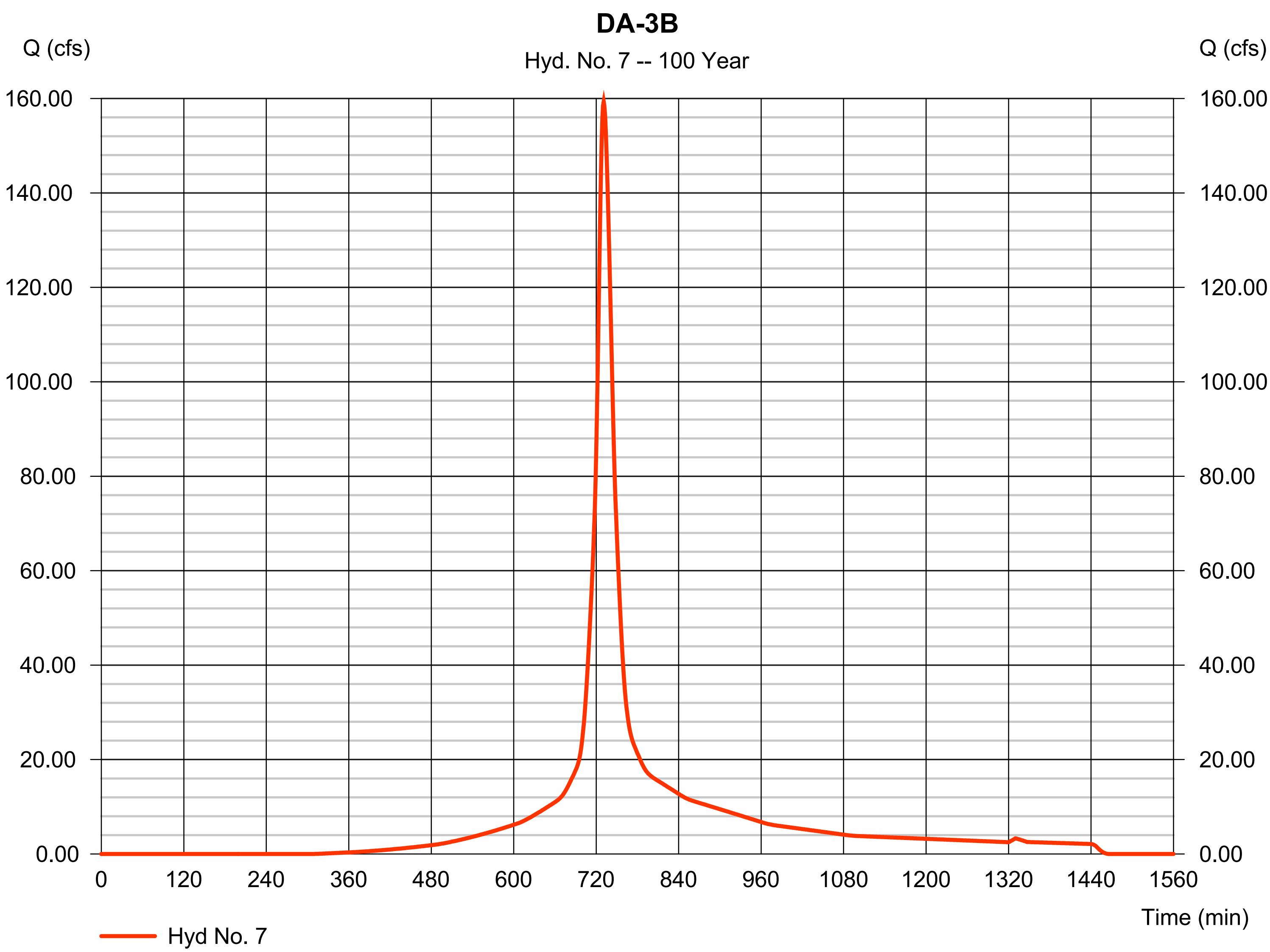
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 | Friday, 01 / 17 / 2025

Hyd. No. 7

DA-3B

Hydrograph type	= SCS Runoff	Peak discharge	= 159.32 cfs
Storm frequency	= 100 yrs	Time to peak	= 731 min
Time interval	= 1 min	Hyd. volume	= 670,602 cuft
Drainage area	= 30.090 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.80 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



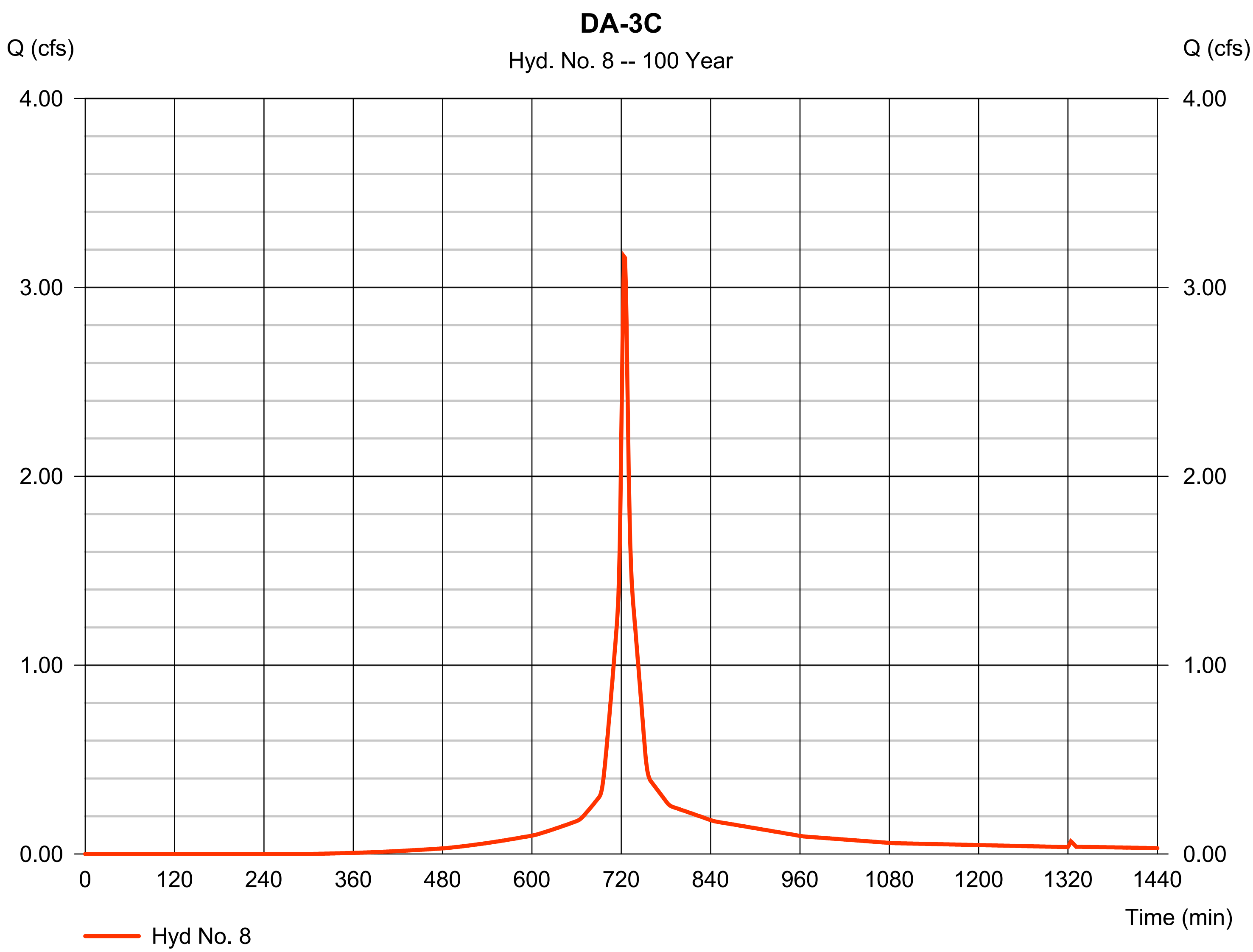
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 — Friday, 01 / 17 / 2025

Hyd. No. 8

DA-3C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.162 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 1 min	Hyd. volume	= 9,988 cuft
Drainage area	= 0.440 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



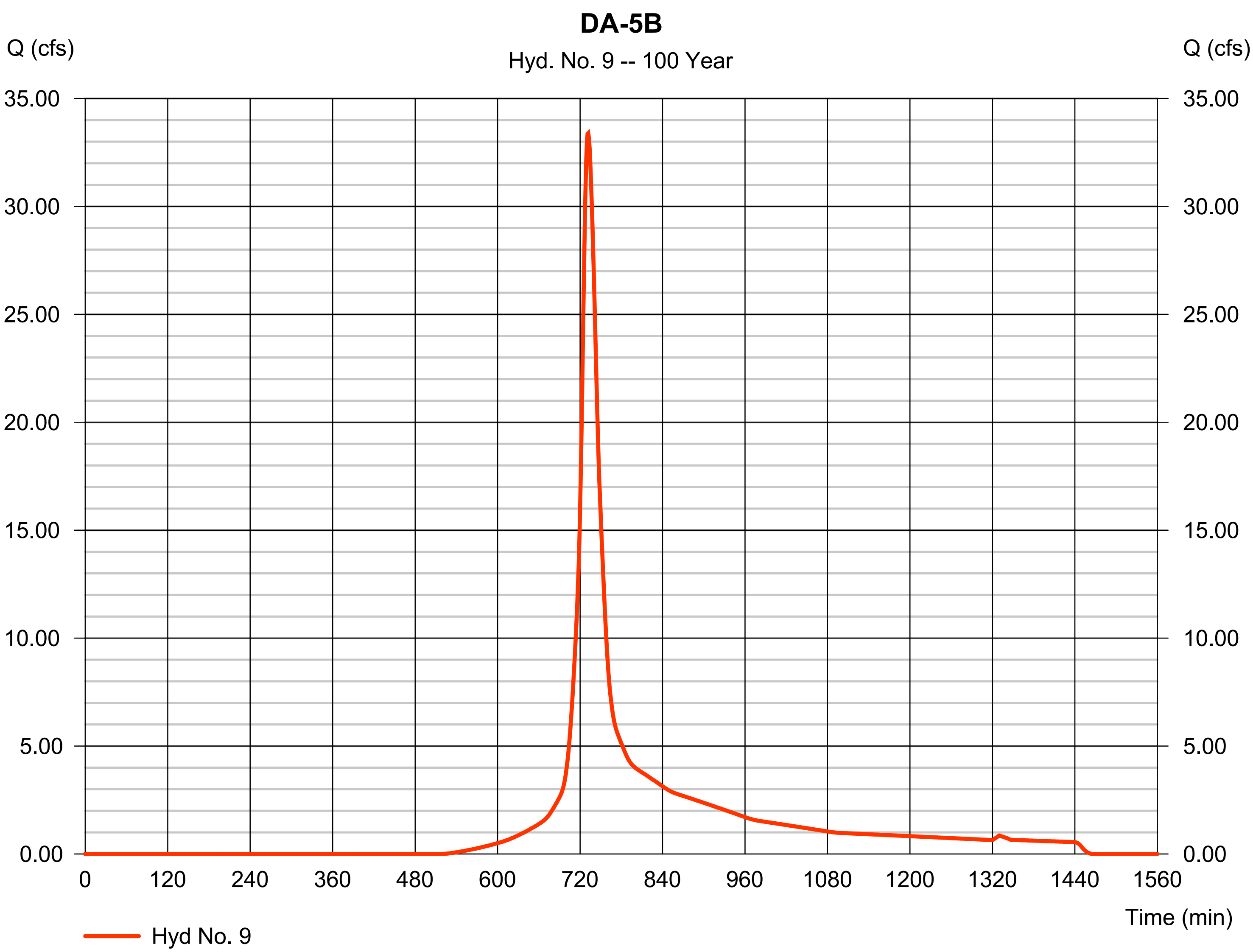
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 9

DA-5B

Hydrograph type	= SCS Runoff	Peak discharge	= 33.39 cfs
Storm frequency	= 100 yrs	Time to peak	= 732 min
Time interval	= 1 min	Hyd. volume	= 138,427 cuft
Drainage area	= 9.030 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 15.70 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



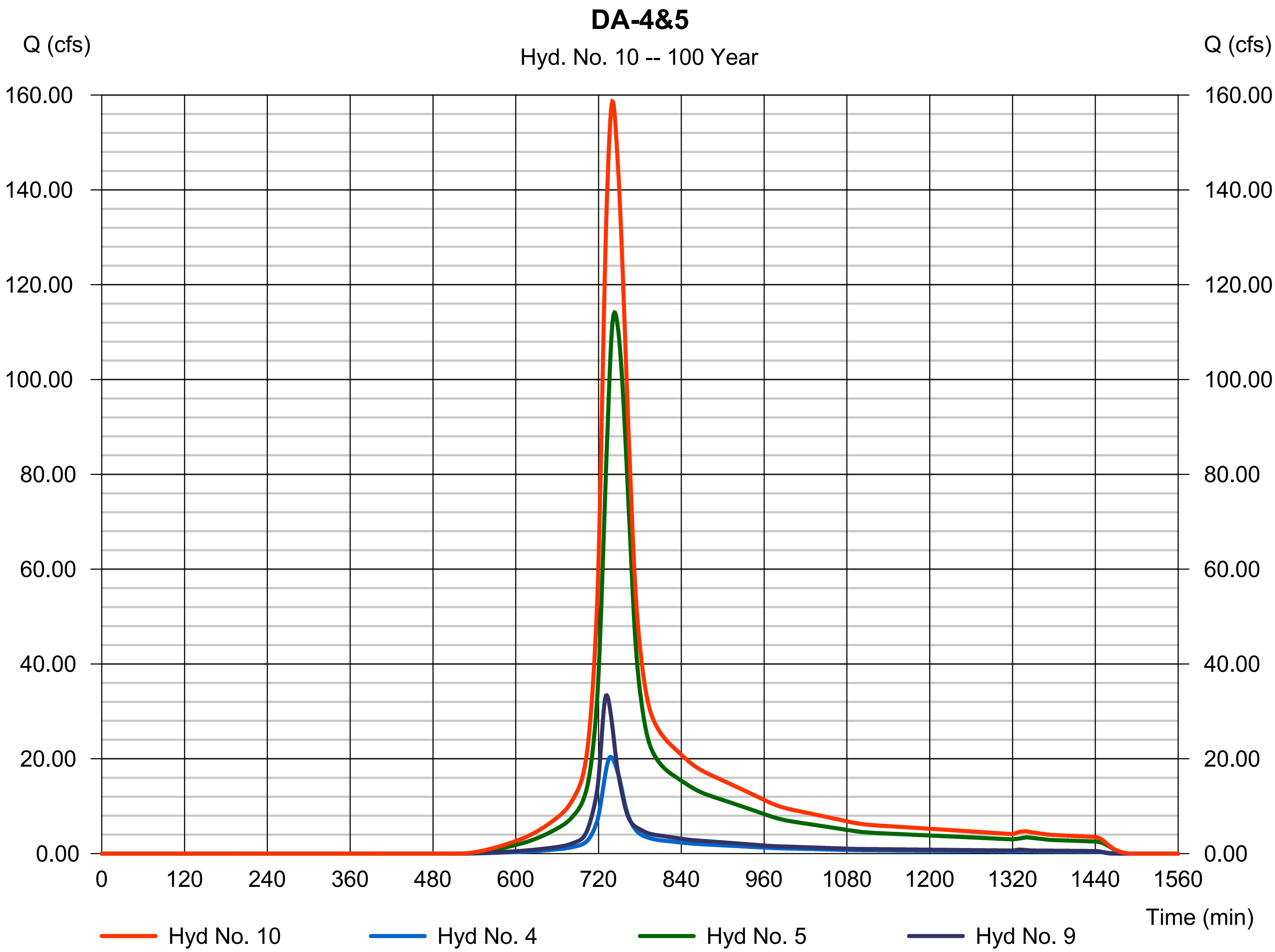
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 10

DA-4&5

Hydrograph type	= Combine	Peak discharge	= 158.66 cfs
Storm frequency	= 100 yrs	Time to peak	= 740 min
Time interval	= 1 min	Hyd. volume	= 863,647 cuft
Inflow hyds.	= 4, 5, 9	Contrib. drain. area	= 57.190 ac

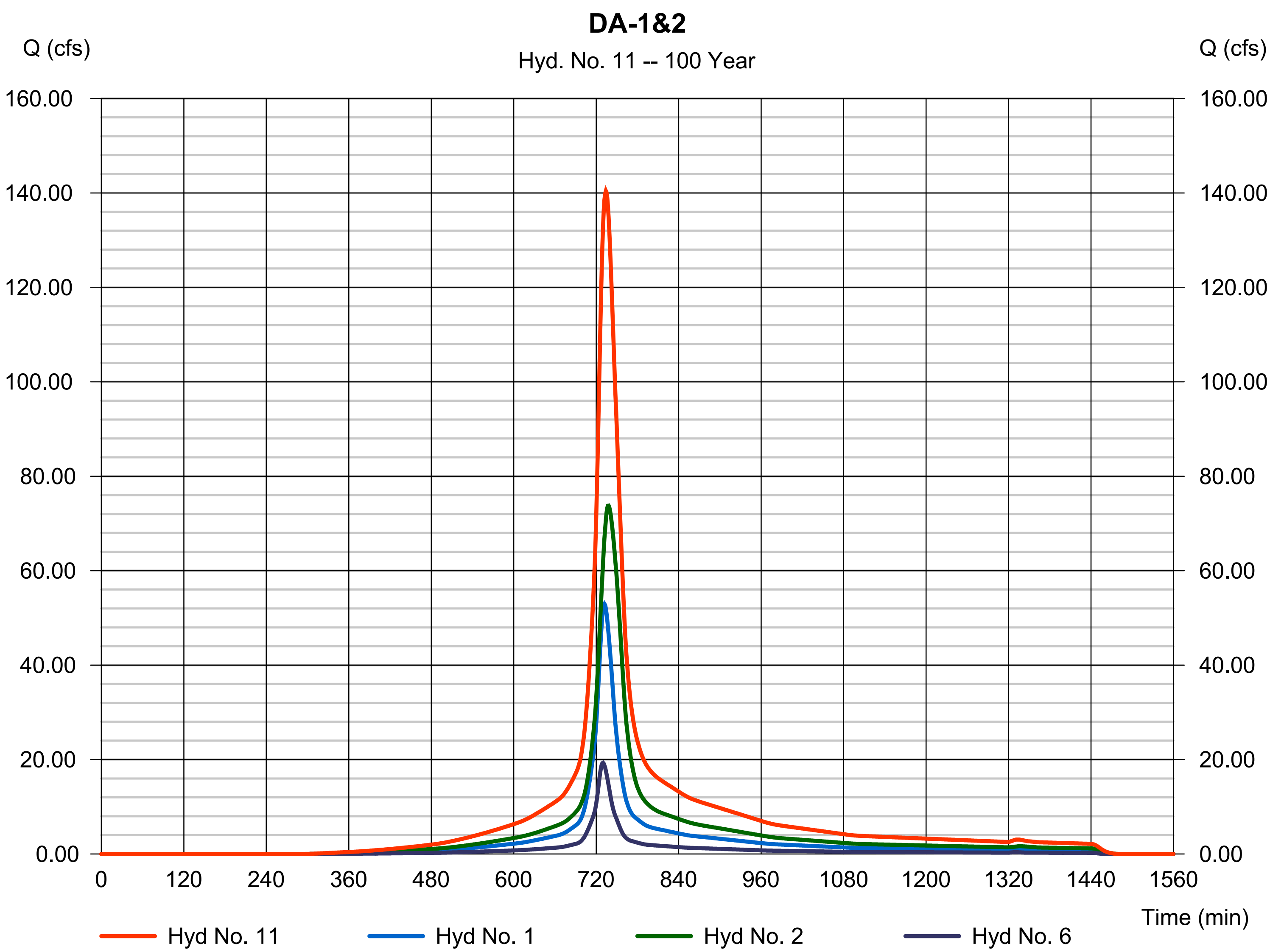


Hydrograph Report

Hyd. No. 11

DA-1&2

Hydrograph type	= Combine	Peak discharge	= 140.42 cfs
Storm frequency	= 100 yrs	Time to peak	= 734 min
Time interval	= 1 min	Hyd. volume	= 682,812 cuft
Inflow hyds.	= 1, 2, 6	Contrib. drain. area	= 30.410 ac



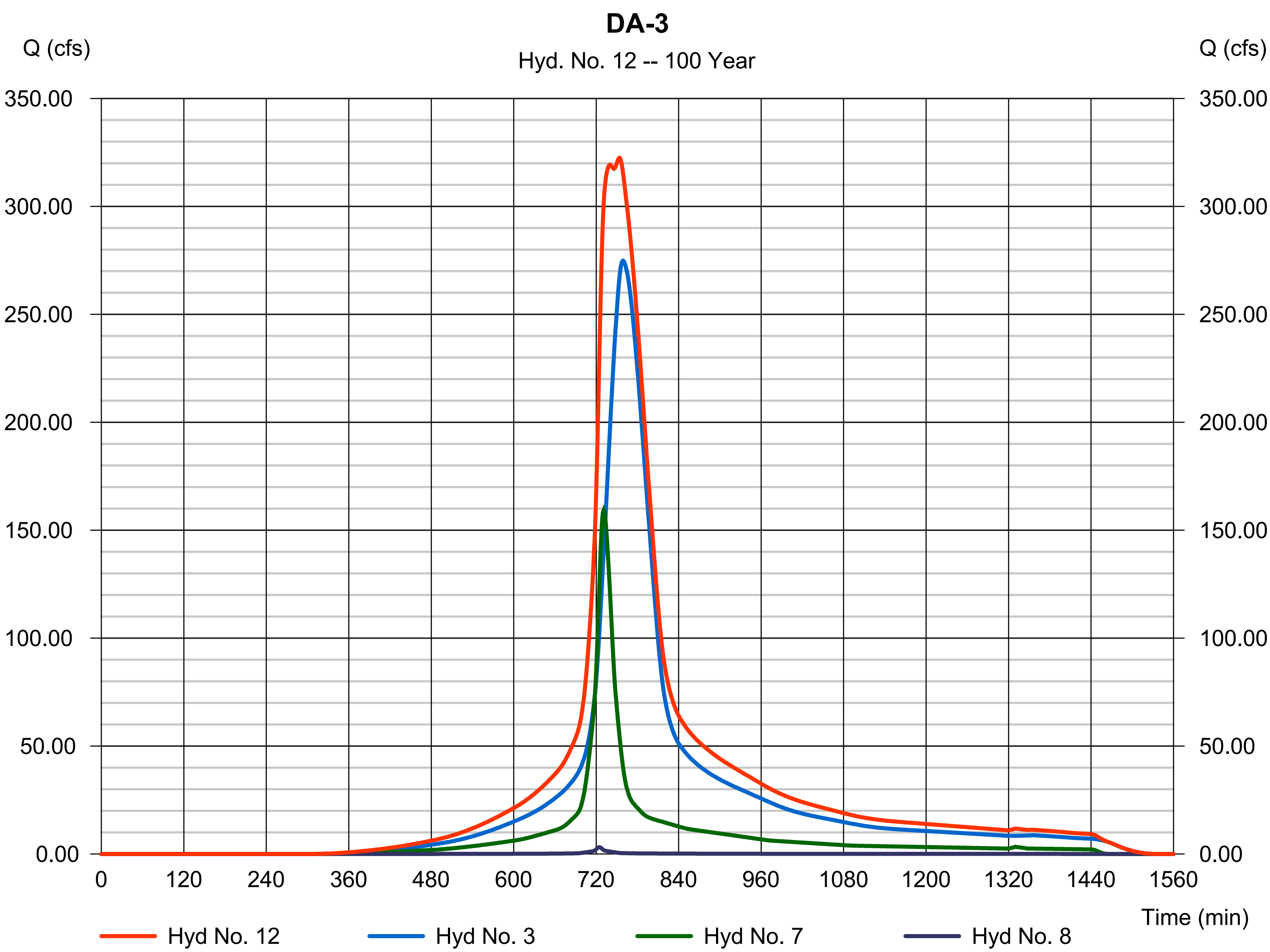
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 12

DA-3

Hydrograph type	= Combine	Peak discharge	= 322.50 cfs
Storm frequency	= 100 yrs	Time to peak	= 754 min
Time interval	= 1 min	Hyd. volume	= 2,780,696 cuft
Inflow hyds.	= 3, 7, 8	Contrib. drain. area	= 125.940 ac



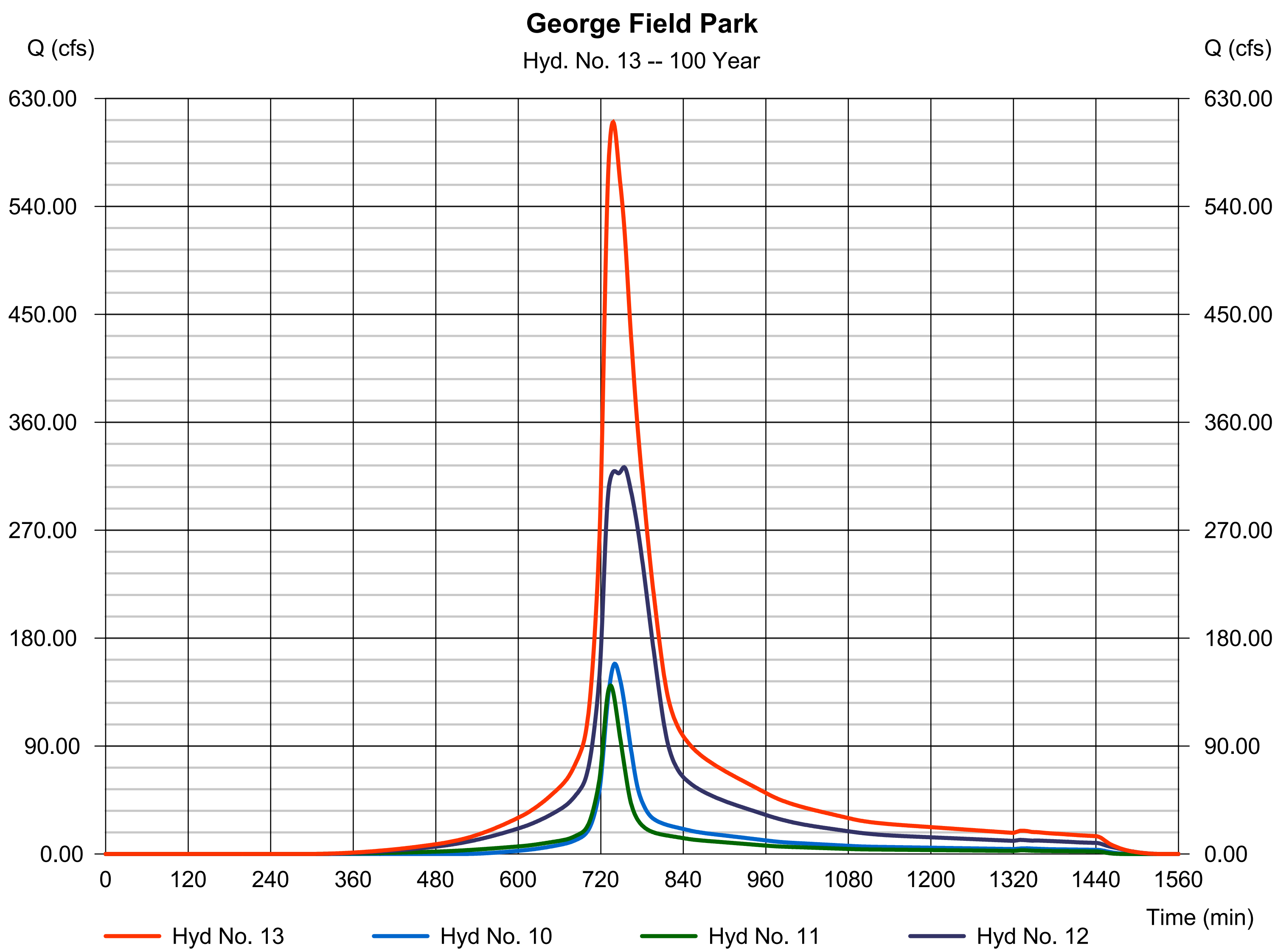
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 13

George Field Park

Hydrograph type	= Combine	Peak discharge	= 610.29 cfs
Storm frequency	= 100 yrs	Time to peak	= 738 min
Time interval	= 1 min	Hyd. volume	= 4,327,159 cuft
Inflow hyds.	= 10, 11, 12	Contrib. drain. area	= 0.000 ac



Hydrograph Report

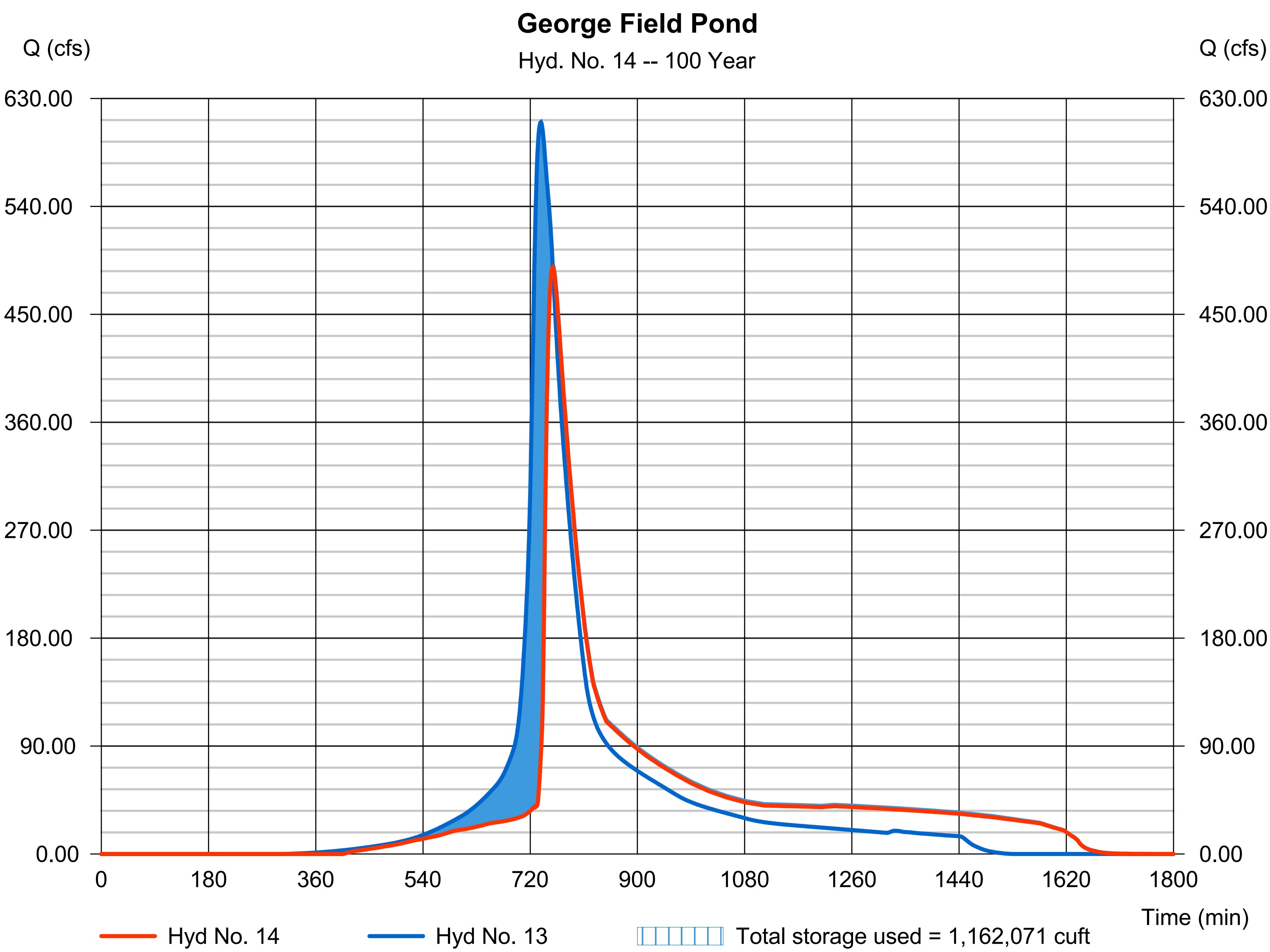
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Hyd. No. 14

George Field Pond

Hydrograph type	= Reservoir	Peak discharge	= 489.51 cfs
Storm frequency	= 100 yrs	Time to peak	= 758 min
Time interval	= 1 min	Hyd. volume	= 4,256,251 cuft
Inflow hyd. No.	= 13 - George Field Park	Max. Elevation	= 218.61 ft
Reservoir name	= George Field Park	Max. Storage	= 1,162,071 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023 Friday, 01 / 17 / 2025

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	69.8703	13.1000	0.8658	--------
3	0.0000	0.0000	0.0000	--------
5	79.2597	14.6000	0.8369	--------
10	88.2351	15.5000	0.8279	--------
25	102.6072	16.5000	0.8217	--------
50	114.8193	17.2000	0.8199	--------
100	127.1596	17.8000	0.8186	--------

File name: SampleFHA.idf

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5.69	4.61	3.89	3.38	2.99	2.69	2.44	2.24	2.07	1.93	1.81	1.70
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.57	5.43	4.65	4.08	3.65	3.30	3.02	2.79	2.59	2.42	2.27	2.15
10	7.24	6.04	5.21	4.59	4.12	3.74	3.43	3.17	2.95	2.77	2.60	2.46
25	8.25	6.95	6.03	5.34	4.80	4.38	4.02	3.73	3.48	3.26	3.07	2.91
50	9.04	7.65	6.66	5.92	5.34	4.87	4.49	4.16	3.88	3.65	3.44	3.25
100	9.83	8.36	7.30	6.50	5.87	5.36	4.94	4.59	4.29	4.03	3.80	3.60

Tc = time in minutes. Values may exceed 60.

of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-DisciplineFolders\Civil\Hydrology\precip.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.10	3.51	0.00	4.53	5.38	6.55	7.10	8.34
SCS 6-Hr	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

X:\SCRS (Vil of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-BIM-CADD\Con-Docs\05 Civil\C-201 - Proposed Pond Modifications (Minor).dwg Last Modified: Jan 17, 2025 - 4:31pm Plotted on: Jan 17, 2025 - 4:38pm By speters

C-201

George Field Park
Proposed Pond Improvements (Minor)

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

SCARSDALE
NEW YORK

Village of Scarsdale
George Field Park Drainage Improvements

Project #
SCRS2401
DATE:
September 2024

H2M
architects + engineers
www.h2m.com

X:\SCRS (Vil of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-BIM-CADD\Con-Docs\05 Civil\C-202 - Proposed Pond Modifications (Major).dwg Last Modified: Jan 17, 2025 - 4:32pm Plotted on: Jan 17, 2025 - 4:38pm By speters

C-202	George Field Park Proposed Pond Improvements (Major)	GRAPHIC SCALE 50 0 25 50 (IN FEET) 1 inch = 50 ft.	SCARSDALE NEW YORK	Village of Scarsdale George Field Park Drainage Improvements	Project # SCRS2401 DATE: September 2024	H2M architects + engineers www.h2m.com

C-203	George Field Park - Proposed Pond Improvements (Minor w/ No Regrading)	SCARSDALE NEW YORK	Village of Scarsdale George Field Park Drainage Improvements	Project # SCRS2401 DATE: September 2024

H2M architects + engineers
www.h2m.com

X:\SCRS (Vil of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-BIM-CADD\Con-Docs\05 Civil\C-203 - Proposed Pond Modifications (Outlet and Walls).dwg Last Modified: Jan 17, 2025 - 4:37pm Plotted on: Jan 17, 2025 - 4:38pm By spete

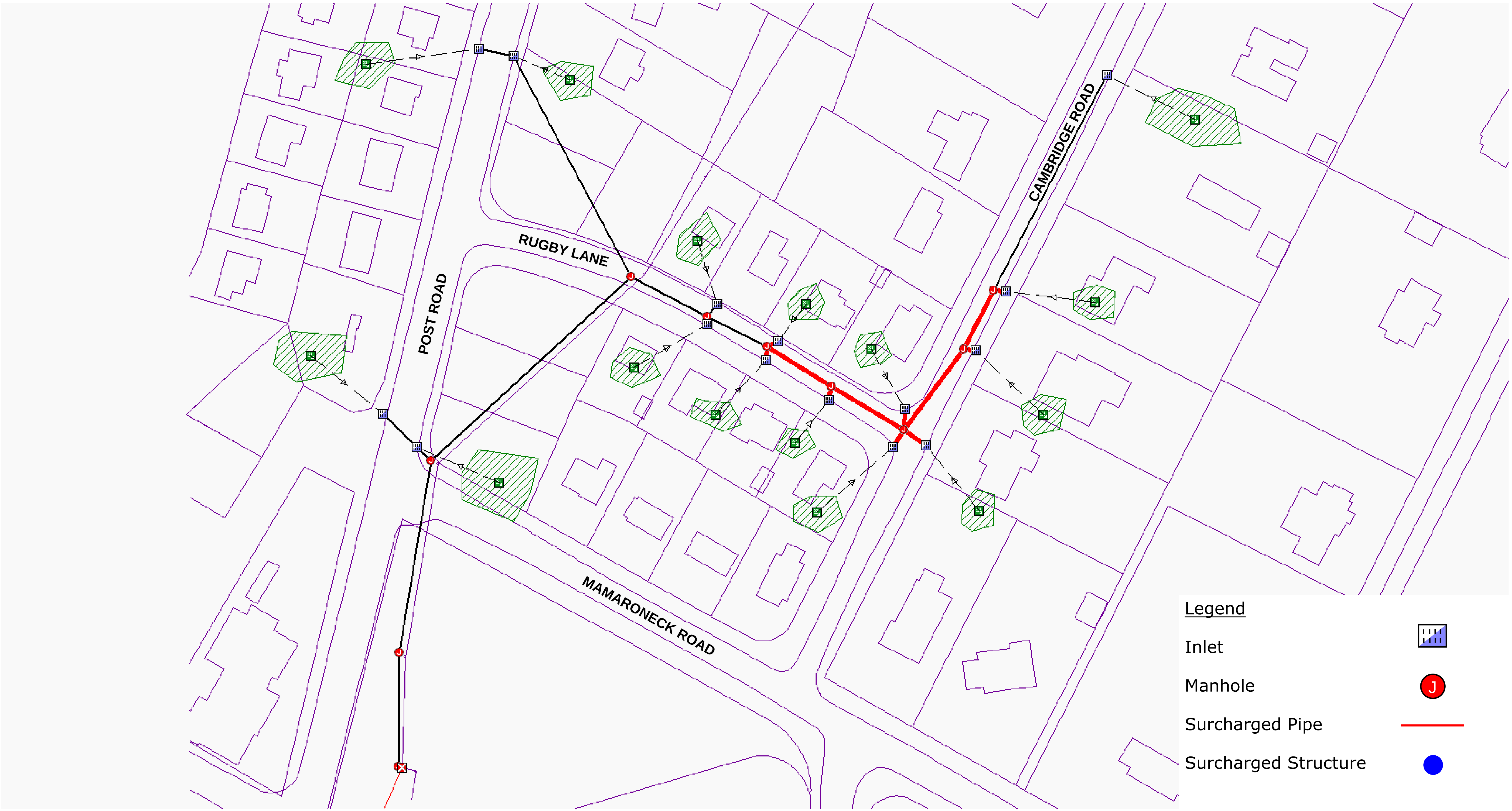
Appendix D

2 Year Storm Plan Plot
Cambridge Road, Rugby Lane & Post Road

Autodesk Storm and Sanitary Analysis

PROPOSED CONDITION

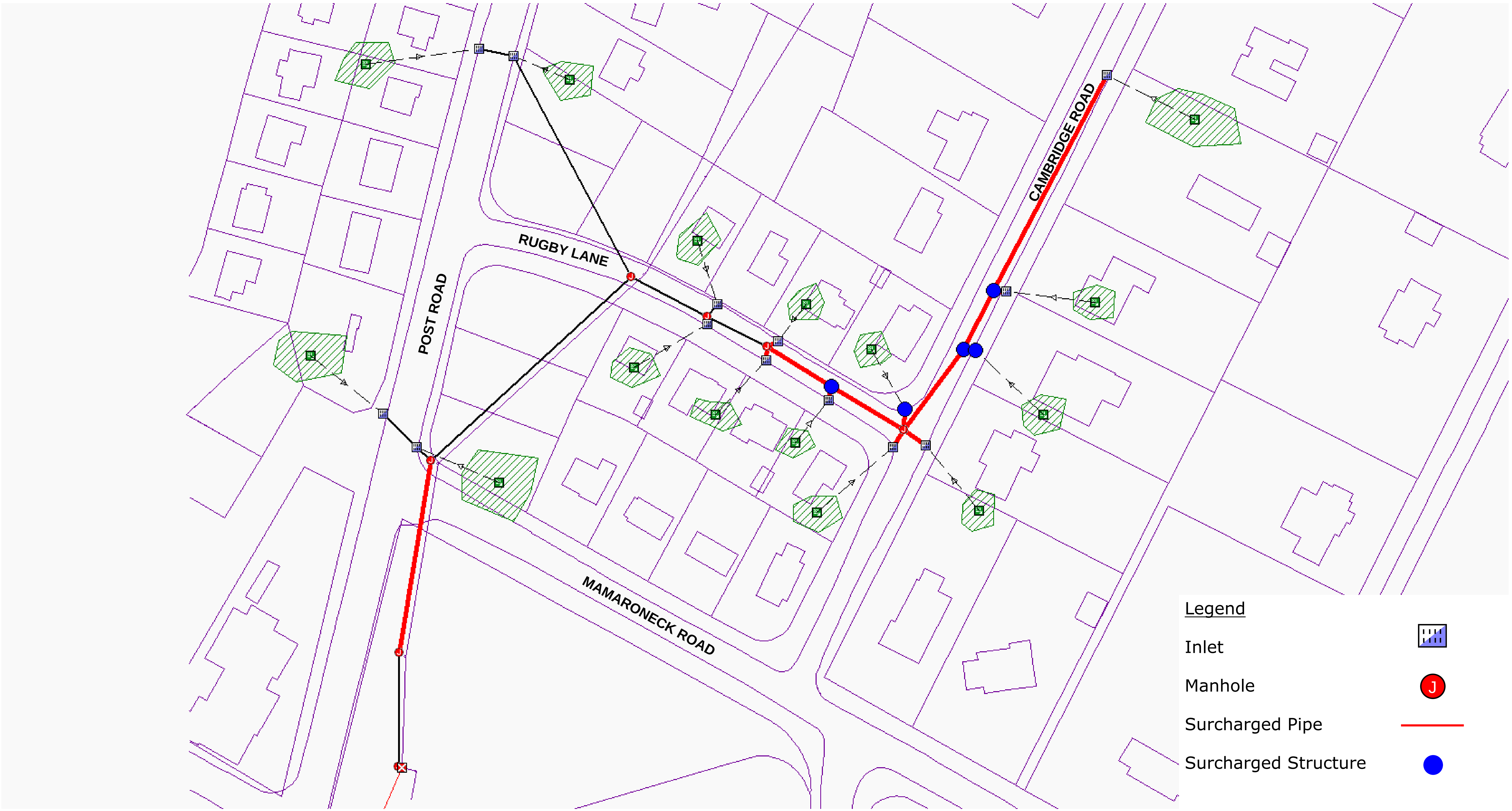
10 Year Storm Plan Plot
Cambridge Road, Rugby Lane & Post Road



Autodesk Storm and Sanitary Analysis

PROPOSED CONDITION

25 Year Storm Plan Plot
Cambridge Road, Rugby Lane & Post Road



Autodesk Storm and Sanitary Analysis

PROPOSED CONDITION

X:\SCRS (Vil of Scarsdale)\SCRS2401 (George Field Park Drainage Improvements)\02-BIM-CADD\Con-Docs\05 Civil\C-200 - Proposed Piping Re-Route.dwg Last Modified: Sep 23, 2024 - 2:13pm Plotted on: Sep 23, 2024 - 2:27pm By JBeatty

C-200	George Field Park to Cooper Green Proposed Piping Modifications	GRAPHIC SCALE 50 0 25 50 (IN FEET) 1 inch = 50 ft.	SCARSDALE NEW YORK	Village of Scarsdale George Field Park Drainage Improvements	Project # SCRS2401 DATE: September 2024	H2M architects + engineers www.h2m.com

Appendix E

Date: January 2025
Project: SCRS 2401

COST OPINION

BR4 Drainage Improvements - George Field Park

VILLAGE OF SCARSDALE

Major Pond Improvements - George Field Park

Improvement Item Description	Unit	Quantity	Unit Price	Total
Mobilization/Demobilization (4% Max.)	LS		4%	Added below
Traffic Control	LF	2000	$ 15.00	$ 30,000.00
Storm Drainage & Related Construction				
Install New Standard Catch Basin with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Catch Basin with Frame & Grate	EA	9	$ 8,000.00	$ 72,000.00
Install New Oversized Catch Basin with Frame & Grate	EA		$ 8,000.00	$ -
Remove and Replace Oversized Catch Basin with Frame & Grate	EA		$ 10,000.00	$ -
Install New Field Inlet with Frame & Grate	EA		$ 5,000.00	$ -
Remove and Replace Field Inlet with Frame & Grate	EA		$ 7,000.00	$ -
Install New Outlet Structure	EA	1	$ 15,000.00	$ 15,000.00
Install New Standard Drainage Manhole with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Drainage Manhole with Frame & Grate	EA		$ 7,000.00	$ -
Install New Oversized Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
Install New Dog House Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
12" HDPE Pipe	LF	650	$ 175.00	$ 113,750.00
15" HDPE Pipe	LF		$ 175.00	$ -
18" HDPE Pipe	LF	307	$ 200.00	$ 61,400.00
21" HDPE Pipe	LF		$ 215.00	$ -
24" HDPE Pipe	LF	24	$ 230.00	$ 5,520.00
30" HDPE Pipe	LF		$ 250.00	$ -
36" HDPE Pipe	LF		$ 315.00	$ -
42" HDPE Pipe	LF		$ 410.00	$ -
48" HDPE Pipe	LF		$ 530.00	$ -
12" RCP Pipe [2]	LF		$ 300.00	$ -
15" RCP Pipe [2]	LF		$ 450.00	$ -
18" RCP Pipe [2]	LF		$ 450.00	$ -
21" RCP Pipe [2]	LF		$ 500.00	$ -
24" RCP Pipe [2]	LF		$ 500.00	$ -
30" RCP Pipe [2]	LF		$ 750.00	$ -
36" RCP Pipe [2]	LF		$ 800.00	$ -
42" RCP Pipe [2]	LF		$ 1,000.00	$ -
48" RCP Pipe [2]	LF		$ 1,000.00	$ -
36" X 102" 3-Sided Culvert	LF		$ 2,000.00	$ -
Concrete Endwalls	LF		$ 500.00	$ -
Pipe Removal	LF		$ 20.00	$ -
12" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,800.00	$ -
15" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,900.00	$ -
18" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
21" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
24" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
30" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
36" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
42" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
12" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 4,100.00	$ -
15" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 6,600.00	$ -
18" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 7,700.00	$ -
21" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 8,400.00	$ -
24" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 10,600.00	$ -
30" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 15,000.00	$ -
36" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 17,000.00	$ -
42" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 19,000.00	$ -
48" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 30,000.00	$ -
Concrete Headwall - Piping up to 30" Diameter	EA	5	$ 10,000.00	$ 50,000.00
Concrete Headwall - Piping 30"-48" diameter	EA		$ 15,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 30" diameter	EA	2	$ 4,000.00	$ 8,000.00
Flared End Section, Reinforced Concrete Class V, up to 48" diameter	EA		$ 6,000.00	$ -
Rip-Rap Channel Protection	SY	380	$ 100.00	$ 38,000.00
Underdrain Pipe, 4"-6" Diameter	LF		$ 50.00	$ -

Remove Debris from Closed Drainage System	LF		$ 55.00	$ -
Remove Debris from Stormwater Drainage Structures	EA		$ 400.00	$ -
Roadways and Parking Areas				
Full Depth Pavement Restoration	SY	1859.00	$ 200.00	$ 371,800.00
Sawcut Pavement	LF	1962.00	$ 8.00	$ 15,696.00
Install New Concrete Vertical Curb (6 X 8"X 20")	LF		$ 70.00	$ -
Remove and Replace Concrete Vertical Curb (6 X 8"X 20")	LF		$ 95.00	$ -
Remove and Replace Granite Vertical Curb (6 X 8"X 20")	LF	1550	$ 300.00	$ 465,000.00
Bituminous asphalt curb/berm	LF		$ 40.00	$ -
Remove and Replace Concrete Sidewalk, 4" thick	SY		$ 225.00	$ -
Remove and Replace Concrete Apron, 6" thick	SY		$ 250.00	$ -
Pavement Striping	LF		$ 3.00	$ -
Reset Paver Driveway	SY	90	$ 150.00	$ 13,500.00
DWS at ADA ramp (at new concrete location)	SF		$ 100.00	$ -
Erosion And Sediment Control				
Inlet Protection	EA	11	$ 500.00	$ 5,500.00
Stabilized Construction Entrance	SY	67	$ 35.00	$ 2,345.00
Silt Fence	LF	1800	$ 20.00	$ 36,000.00
Seed & Mulch, Temporary Stabilization	SY		$ 20.00	$ -
Turf Reinforcement Matt	SY		$ 40.00	$ -
Earth Work				
Unclassified Excavation & Disposal	CY	44756	$ 85.00	$ 3,804,260.00
Clearing & Grubbing	SY	2673	$ 15.00	$ 40,095.00
Bypass Pumping and/or Dewatering	LS	1	$ 75,000.00	$ 75,000.00
Import Structural Fill	CY	1900	$ 40.00	$ 76,000.00
Temporary Construction Fence	LF	2100	$ 15.00	$ 31,500.00
Rock Excavation and Removal	CY		$ 450.00	$ -
Tree Removal, with stump	EA		$ 6,000.00	$ -
Landscaping				
Topsoil and Seeding	SF	385255.00	$ 3.50	$ 1,348,392.50
Install New Tree	EA	100	$ 1,000.00	$ 100,000.00
Miscellaneous Site Work				
Remove and Replace 6' High Chain link fence	LF		$ 150.00	$ -
Remove and Replace Stone Site Wall	LS		$ 40,000.00	$ -
Install New Retaining Wall	LF	865	$ 175.00	$ 151,375.00
Guide Rail	LF		$ 200.00	$ -
Reset Sign	EA		$ 400.00	$ -
Install New Stormwater Sign	EA	5	$ 2,500.00	$ 12,500.00

Construction Cost	$ 6,942,700
Mobilization (4%)	$ 277,800
Total	**$ 7,220,500**

Date: January 2025
Project: SCRS 2401

COST OPINION

BR4 Drainage Improvements - George Field Park

VILLAGE OF SCARSDALE

Minor Pond Improvements (w/ No Regrading) - George Field Park

Improvement Item Description	Unit	Quantity	Unit Price	Total
Mobilization/Demobilization (4% Max.)	LS		4%	Added below
Traffic Control	LF	2000	$ 15.00	$ 30,000.00
Storm Drainage & Related Construction				
Install New Standard Catch Basin with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Catch Basin with Frame & Grate	EA	9	$ 8,000.00	$ 72,000.00
Install New Oversized Catch Basin with Frame & Grate	EA		$ 8,000.00	$ -
Remove and Replace Oversized Catch Basin with Frame & Grate	EA		$ 10,000.00	$ -
Install New Field Inlet with Frame & Grate	EA		$ 5,000.00	$ -
Remove and Replace Field Inlet with Frame & Grate	EA		$ 7,000.00	$ -
Install New Outlet Structure	EA	1	$ 15,000.00	$ 15,000.00
Install New Standard Drainage Manhole with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Drainage Manhole with Frame & Grate	EA		$ 7,000.00	$ -
Install New Oversized Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
Install New Dog House Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
12" HDPE Pipe	LF	650	$ 175.00	$ 113,750.00
15" HDPE Pipe	LF		$ 175.00	$ -
18" HDPE Pipe	LF	307	$ 200.00	$ 61,400.00
21" HDPE Pipe	LF		$ 215.00	$ -
24" HDPE Pipe	LF		$ 230.00	$ -
30" HDPE Pipe	LF		$ 250.00	$ -
36" HDPE Pipe	LF		$ 315.00	$ -
42" HDPE Pipe	LF		$ 410.00	$ -
48" HDPE Pipe	LF		$ 530.00	$ -
12" RCP Pipe [2]	LF		$ 300.00	$ -
15" RCP Pipe [2]	LF		$ 450.00	$ -
18" RCP Pipe [2]	LF		$ 450.00	$ -
21" RCP Pipe [2]	LF		$ 500.00	$ -
24" RCP Pipe [2]	LF		$ 500.00	$ -
30" RCP Pipe [2]	LF		$ 750.00	$ -
36" RCP Pipe [2]	LF		$ 800.00	$ -
42" RCP Pipe [2]	LF		$ 1,000.00	$ -
48" RCP Pipe [2]	LF		$ 1,000.00	$ -
36" X 102" 3-Sided Culvert	LF		$ 2,000.00	$ -
Concrete Endwalls	LF		$ 500.00	$ -
Pipe Removal	LF		$ 20.00	$ -
12" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,800.00	$ -
15" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,900.00	$ -
18" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
21" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
24" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
30" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
36" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
42" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
12" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 4,100.00	$ -
15" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 6,600.00	$ -
18" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 7,700.00	$ -
21" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 8,400.00	$ -
24" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 10,600.00	$ -
30" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 15,000.00	$ -
36" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 17,000.00	$ -
42" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 19,000.00	$ -
48" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 30,000.00	$ -
Concrete Headwall - Piping up to 30" Diameter	EA	5	$ 10,000.00	$ 50,000.00
Concrete Headwall - Piping 30"-48" diameter	EA		$ 15,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 30" diameter	EA		$ 4,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 48" diameter	EA		$ 6,000.00	$ -
Rip-Rap Channel Protection	SY	231	$ 100.00	$ 23,100.00
Underdrain Pipe, 4"-6" Diameter	LF		$ 50.00	$ -

Remove Debris from Closed Drainage System	LF		$	55.00	$	-
Remove Debris from Stormwater Drainage Structures	EA		$	400.00	$	-
Roadways and Parking Areas						
Full Depth Pavement Restoration	SY	2458.53	$	200.00	$	491,706.48
Sawcut Pavement	LF	1914.00	$	8.00	$	15,312.00
Install New Concrete Vertical Curb (6 X 8”X 20”)	LF		$	70.00	$	-
Remove and Replace Concrete Vertical Curb (6 X 8”X 20”)	LF		$	95.00	$	-
Remove and Replace Granite Vertical Curb (6 X 8”X 20”)	LF	1550	$	300.00	$	465,000.00
Bituminous asphalt curb/berm	LF		$	40.00	$	-
Remove and Replace Concrete Sidewalk, 4" thick	SY		$	225.00	$	-
Remove and Replace Concrete Apron, 6" thick	SY		$	250.00	$	-
Pavement Striping	LF		$	3.00	$	-
Reset Paver Driveway	SY	90	$	150.00	$	13,500.00
DWS at ADA ramp (at new concrete location)	SF		$	100.00	$	-
Erosion And Sediment Control						
Inlet Protection	EA	11	$	500.00	$	5,500.00
Stabilized Construction Entrance	SY	67	$	35.00	$	2,345.00
Silt Fence	LF	1300	$	20.00	$	26,000.00
Seed & Mulch, Temporary Stabilization	SY		$	20.00	$	-
Turf Reinforcement Matt	SY		$	40.00	$	-
Earth Work						
Unclassified Excavation & Disposal	CY		$	85.00	$	-
Clearing & Grubbing	SY	100	$	15.00	$	1,500.00
Bypass Pumping and/or Dewatering	LS	1	$	75,000.00	$	75,000.00
Import Structural Fill	CY	1900	$	40.00	$	76,000.00
Temporary Construction Fence	LF	1700	$	15.00	$	25,500.00
Rock Excavation and Removal	CY		$	450.00	$	-
Tree Removal, with stump	EA		$	6,000.00	$	-
Landscaping						
Topsoil and Seeding	SF	40255.00	$	3.50	$	140,892.50
Install New Tree	EA		$	1,000.00	$	-
Miscellaneous Site Work						
Remove and Replace 6' High Chain link fence	LF		$	150.00	$	-
Remove and Replace Stone Site Wall	LS		$	40,000.00	$	-
Install New Retaining Wall	LF	700	$	175.00	$	122,500.00
Guide Rail	LF		$	200.00	$	-
Reset Sign	EA		$	400.00	$	-
Install New Stormwater Sign	EA	5	$	2,500.00	$	12,500.00

Construction Cost	$	1,838,600
Mobilization (4%)	$	73,600
Total	**$**	**1,912,200**

Date: January 2025
Project: SCRS 2401

COST OPINION

BR4 Drainage Improvements - George Field Park

VILLAGE OF SCARSDALE

Minor Pond Improvements - George Field Park

Improvement Item Description	Unit	Quantity	Unit Price	Total
Mobilization/Demobilization (4% Max.)	LS		4%	Added below
Traffic Control	LF	2000	$ 15.00	$ 30,000.00
Storm Drainage & Related Construction				
Install New Standard Catch Basin with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Catch Basin with Frame & Grate	EA	9	$ 8,000.00	$ 72,000.00
Install New Oversized Catch Basin with Frame & Grate	EA		$ 8,000.00	$ -
Remove and Replace Oversized Catch Basin with Frame & Grate	EA		$ 10,000.00	$ -
Install New Field Inlet with Frame & Grate	EA		$ 5,000.00	$ -
Remove and Replace Field Inlet with Frame & Grate	EA		$ 7,000.00	$ -
Install New Outlet Structure	EA	1	$ 15,000.00	$ 15,000.00
Install New Standard Drainage Manhole with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Drainage Manhole with Frame & Grate	EA		$ 7,000.00	$ -
Install New Oversized Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
Install New Dog House Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
12" HDPE Pipe	LF	650	$ 175.00	$ 113,750.00
15" HDPE Pipe	LF		$ 175.00	$ -
18" HDPE Pipe	LF	307	$ 200.00	$ 61,400.00
21" HDPE Pipe	LF		$ 215.00	$ -
24" HDPE Pipe	LF		$ 230.00	$ -
30" HDPE Pipe	LF		$ 250.00	$ -
36" HDPE Pipe	LF		$ 315.00	$ -
42" HDPE Pipe	LF		$ 410.00	$ -
48" HDPE Pipe	LF		$ 530.00	$ -
12" RCP Pipe [2]	LF		$ 300.00	$ -
15" RCP Pipe [2]	LF		$ 450.00	$ -
18" RCP Pipe [2]	LF		$ 450.00	$ -
21" RCP Pipe [2]	LF		$ 500.00	$ -
24" RCP Pipe [2]	LF		$ 500.00	$ -
30" RCP Pipe [2]	LF		$ 750.00	$ -
36" RCP Pipe [2]	LF		$ 800.00	$ -
42" RCP Pipe [2]	LF		$ 1,000.00	$ -
48" RCP Pipe [2]	LF		$ 1,000.00	$ -
36" X 102" 3-Sided Culvert	LF		$ 2,000.00	$ -
Concrete Endwalls	LF		$ 500.00	$ -
Pipe Removal	LF		$ 20.00	$ -
12" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,800.00	$ -
15" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,900.00	$ -
18" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
21" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
24" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
30" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
36" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
42" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
12" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 4,100.00	$ -
15" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 6,600.00	$ -
18" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 7,700.00	$ -
21" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 8,400.00	$ -
24" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 10,600.00	$ -
30" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 15,000.00	$ -
36" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 17,000.00	$ -
42" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 19,000.00	$ -
48" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 30,000.00	$ -
Concrete Headwall - Piping up to 30" Diameter	EA	5	$ 10,000.00	$ 50,000.00
Concrete Headwall - Piping 30"-48" diameter	EA		$ 15,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 30" diameter	EA		$ 4,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 48" diameter	EA		$ 6,000.00	$ -
Rip-Rap Channel Protection	SY	231	$ 100.00	$ 23,100.00
Underdrain Pipe, 4"-6" Diameter	LF		$ 50.00	$ -

Remove Debris from Closed Drainage System	LF		$ 55.00	$ -
Remove Debris from Stormwater Drainage Structures	EA		$ 400.00	$ -
Roadways and Parking Areas				
Full Depth Pavement Restoration	SY	2458.53	$ 200.00	$ 491,706.48
Sawcut Pavement	LF	1914.00	$ 8.00	$ 15,312.00
Install New Concrete Vertical Curb (6 X 8"X 20")	LF		$ 70.00	$ -
Remove and Replace Concrete Vertical Curb (6 X 8"X 20")	LF		$ 95.00	$ -
Remove and Replace Granite Vertical Curb (6 X 8"X 20")	LF	1550	$ 300.00	$ 465,000.00
Bituminous asphalt curb/berm	LF		$ 40.00	$ -
Remove and Replace Concrete Sidewalk, 4" thick	SY		$ 225.00	$ -
Remove and Replace Concrete Apron, 6" thick	SY		$ 250.00	$ -
Pavement Striping	LF		$ 3.00	$ -
Reset Paver Driveway	SY	90	$ 150.00	$ 13,500.00
DWS at ADA ramp (at new concrete location)	SF		$ 100.00	$ -
Erosion And Sediment Control				
Inlet Protection	EA	11	$ 500.00	$ 5,500.00
Stabilized Construction Entrance	SY	67	$ 35.00	$ 2,345.00
Silt Fence	LF	1300	$ 20.00	$ 26,000.00
Seed & Mulch, Temporary Stabilization	SY		$ 20.00	$ -
Turf Reinforcement Matt	SY		$ 40.00	$ -
Earth Work				
Unclassified Excavation & Disposal	CY	13130	$ 85.00	$ 1,116,050.00
Clearing & Grubbing	SY	1330	$ 15.00	$ 19,950.00
Bypass Pumping and/or Dewatering	LS	1	$ 75,000.00	$ 75,000.00
Import Structural Fill	CY	1900	$ 40.00	$ 76,000.00
Temporary Construction Fence	LF	1700	$ 15.00	$ 25,500.00
Rock Excavation and Removal	CY		$ 450.00	$ -
Tree Removal, with stump	EA		$ 6,000.00	$ -
Landscaping				
Topsoil and Seeding	SF	131555.00	$ 3.50	$ 460,442.50
Install New Tree	EA	50	$ 1,000.00	$ 50,000.00
Miscellaneous Site Work				
Remove and Replace 6' High Chain link fence	LF		$ 150.00	$ -
Remove and Replace Stone Site Wall	LS		$ 40,000.00	$ -
Install New Retaining Wall	LF	700	$ 175.00	$ 122,500.00
Guide Rail	LF		$ 200.00	$ -
Reset Sign	EA		$ 400.00	$ -
Install New Stormwater Sign	EA	5	$ 2,500.00	$ 12,500.00

Construction Cost	$ 3,342,600
Mobilization (4%)	$ 133,800
Total	**$ 3,476,400**

Date: September 2024
Project: SCRS 2401

COST OPINION

BR4 Drainage Improvements - George Field Park

VILLAGE OF SCARSDALE

Piping Improvements - Cambridge Road, Rugby Lane & Post Road

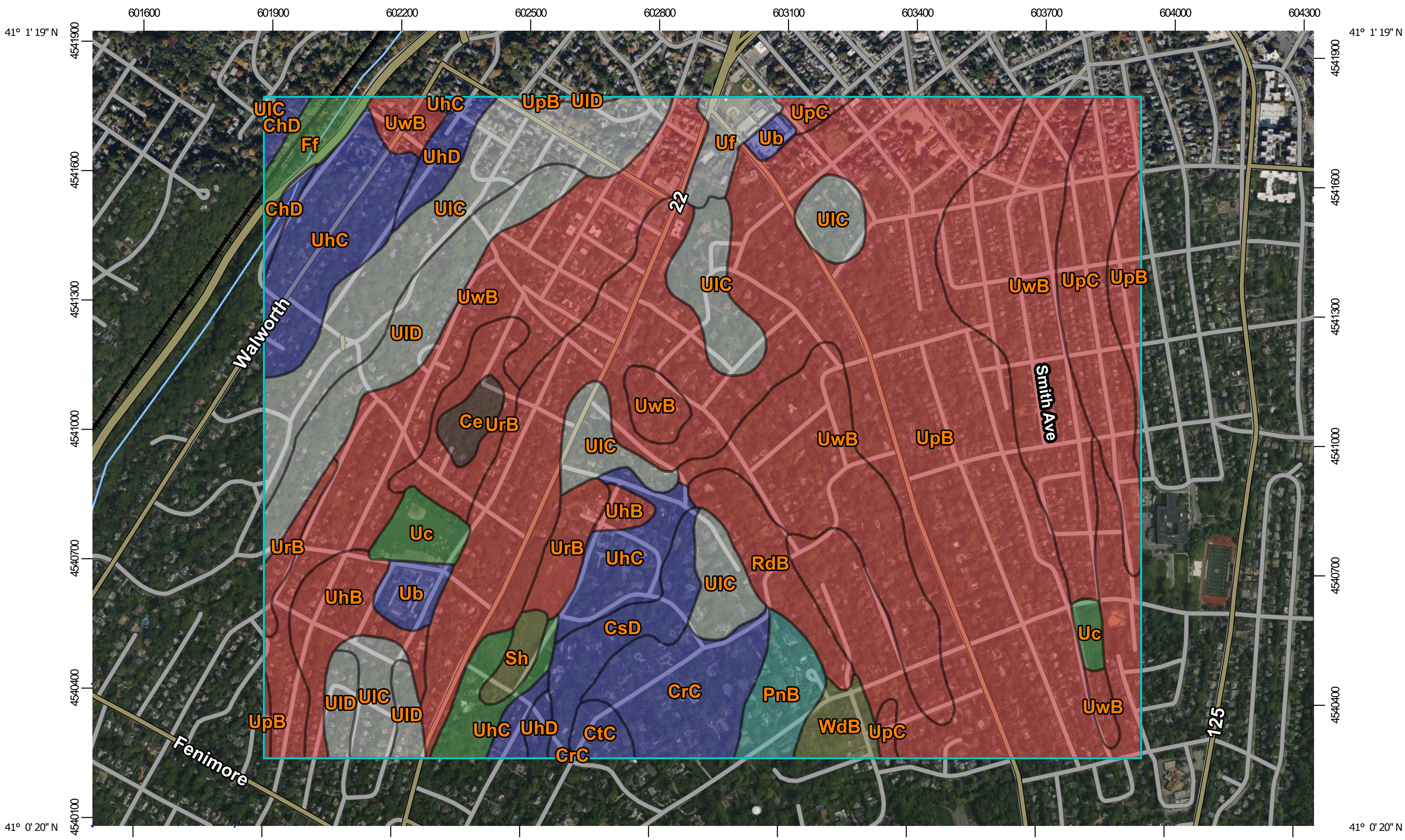
Improvement Item Description	Unit	Quantity	Unit Price	Total
Mobilization/Demobilization (4% Max.)	LS		4%	Added below
Traffic Control	LF	200	$ 15.00	$ 3,000.00
Storm Drainage & Related Construction				
Install New Standard Catch Basin with Frame & Grate	EA	4	$ 6,000.00	$ 24,000.00
Remove and Replace Standard Catch Basin with Frame & Grate	EA	7	$ 8,000.00	$ 56,000.00
Install New Oversized Catch Basin with Frame & Grate	EA		$ 8,000.00	$ -
Remove and Replace Oversized Catch Basin with Frame & Grate	EA		$ 10,000.00	$ -
Install New Field Inlet with Frame & Grate	EA		$ 5,000.00	$ -
Remove and Replace Field Inlet with Frame & Grate	EA		$ 7,000.00	$ -
Install New Outlet Structure	EA		$ 15,000.00	$ -
Install New Standard Drainage Manhole with Frame & Grate	EA		$ 6,000.00	$ -
Remove and Replace Standard Drainage Manhole with Frame & Grate	EA		$ 7,000.00	$ -
Install New Oversized Drainage Manhole with Frame & Grate	EA	10	$ 8,000.00	$ 80,000.00
Install New Dog House Drainage Manhole with Frame & Grate	EA		$ 8,000.00	$ -
12" HDPE Pipe	LF		$ 175.00	$ -
15" HDPE Pipe	LF	100	$ 175.00	$ 17,500.00
18" HDPE Pipe	LF	310	$ 200.00	$ 62,000.00
21" HDPE Pipe	LF		$ 215.00	$ -
24" HDPE Pipe	LF	575	$ 230.00	$ 132,250.00
30" HDPE Pipe	LF	660	$ 250.00	$ 165,000.00
36" HDPE Pipe	LF		$ 315.00	$ -
42" HDPE Pipe	LF	1560	$ 410.00	$ 639,600.00
48" HDPE Pipe	LF		$ 530.00	$ -
12" RCP Pipe [2]	LF		$ 300.00	$ -
15" RCP Pipe [2]	LF		$ 450.00	$ -
18" RCP Pipe [2]	LF		$ 450.00	$ -
21" RCP Pipe [2]	LF		$ 500.00	$ -
24" RCP Pipe [2]	LF		$ 500.00	$ -
30" RCP Pipe [2]	LF		$ 750.00	$ -
36" RCP Pipe [2]	LF		$ 800.00	$ -
42" RCP Pipe [2]	LF		$ 1,000.00	$ -
48" RCP Pipe [2]	LF		$ 1,000.00	$ -
36" X 102" 3-Sided Culvert	LF		$ 2,000.00	$ -
Concrete Endwalls	LF		$ 500.00	$ -
Pipe Removal	LF		$ 20.00	$ -
12" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,800.00	$ -
15" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 1,900.00	$ -
18" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
21" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,000.00	$ -
24" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
30" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,300.00	$ -
36" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
42" Flap Gate, Light Duty, such as "Agri Drain" Flap Gate	EA		$ 2,500.00	$ -
12" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 4,100.00	$ -
15" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 6,600.00	$ -
18" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 7,700.00	$ -
21" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 8,400.00	$ -
24" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 10,600.00	$ -
30" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 15,000.00	$ -
36" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 17,000.00	$ -
42" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 19,000.00	$ -
48" Heavy Duty Check Valve, such as TF-1 Tideflex	EA		$ 30,000.00	$ -
Concrete Headwall - Piping up to 30" Diameter	EA		$ 10,000.00	$ -
Concrete Headwall - Piping 30"-48" diameter	EA		$ 15,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 30" diameter	EA		$ 4,000.00	$ -
Flared End Section, Reinforced Concrete Class V, up to 48" diameter	EA		$ 6,000.00	$ -
Rip-Rap Channel Protection	SY		$ 100.00	$ -
Underdrain Pipe, 4"-6" Diameter	LF		$ 50.00	$ -

Remove Debris from Closed Drainage System	LF		$ 55.00	$ -
Remove Debris from Stormwater Drainage Structures	EA		$ 400.00	$ -
Roadways and Parking Areas				
Full Depth Pavement Restoration	SY	1519.95	$ 200.00	$ 303,990.74
Sawcut Pavement	LF	3290.00	$ 8.00	$ 26,320.00
Install New Concrete Vertical Curb (6 X 8”X 20”)	LF		$ 70.00	$ -
Remove and Replace Concrete Vertical Curb (6 X 8”X 20”)	LF		$ 95.00	$ -
Remove and Replace Granite Vertical Curb (6 X 8”X 20”)	LF		$ 300.00	$ -
Bituminous asphalt curb/berm	LF		$ 40.00	$ -
Remove and Replace Concrete Sidewalk, 4" thick	SY		$ 225.00	$ -
Remove and Replace Concrete Apron, 6" thick	SY		$ 250.00	$ -
Pavement Striping	LF		$ 3.00	$ -
Reset Paver Driveway	SY		$ 150.00	$ -
DWS at ADA ramp (at new concrete location)	SF		$ 100.00	$ -
Erosion And Sediment Control				
Inlet Protection	EA		$ 500.00	$ -
Stabilized Construction Entrance	SY		$ 35.00	$ -
Silt Fence	LF		$ 20.00	$ -
Seed & Mulch, Temporary Stabilization	SY		$ 20.00	$ -
Turf Reinforcement Matt	SY		$ 40.00	$ -
Earth Work				
Unclassified Excavation & Disposal	CY	5460.53	$ 120.00	$ 655,263.43
Clearing & Grubbing	SY		$ 15.00	$ -
Bypass Pumping and/or Dewatering	LS		$ 75,000.00	$ -
Import Structural Fill	CY		$ 40.00	$ -
Temporary Construction Fence	LF		$ 15.00	$ -
Rock Excavation and Removal	CY		$ 450.00	$ -
Tree Removal, with stump	EA		$ 6,000.00	$ -
Landscaping				
Turf Restoration	SY		$ 60.00	$ -
Install New Tree	EA		$ 1,000.00	$ -
Miscellaneous Site Work				
Remove and Replace 6' High Chain link fence	LF		$ 150.00	$ -
Remove and Replace Stone Site Wall	LS		$ 40,000.00	$ -
Guide Rail	LF		$ 200.00	$ -
Reset Sign	EA		$ 400.00	$ -
Install New Stormwater Sign	EA		$ 2,500.00	$ -

Construction Cost	$ 2,165,000
Mobilization (4%)	$ 86,600
Total	**$ 2,251,600**

Appendix F

Hydrologic Soil Group—Westchester County, New York
(George Field Park)



Map Scale: 1:13,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0, 150, 300, 600, 900

Feet: 0, 500, 1000, 2000, 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N 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: Westchester County, New York
Survey Area Data: Version 19, Sep 6, 2023

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

Date(s) aerial images were photographed: Oct 21, 2022—May 11, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	4.5	0.6%
ChD	Charlton fine sandy loam, 15 to 25 percent slopes	B	3.9	0.5%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	23.0	3.0%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	14.0	1.8%
CtC	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	B	3.9	0.5%
Ff	Fluvaquents-Udifluvents complex, frequently flooded	A/D	7.1	0.9%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	10.7	1.4%
RdB	Ridgebury complex, 3 to 8 percent slopes	D	13.5	1.7%
Sh	Sun loam	C/D	3.9	0.5%
Ub	Udorthents, smoothed	B	7.0	0.9%
Uc	Udorthents, wet substratum	A/D	17.5	2.2%
Uf	Urban land		7.2	0.9%
UhB	Urban land-Charlton complex, 3 to 8 percent slopes	D	17.4	2.2%
UhC	Urban land-Charlton complex, 8 to 15 percent slopes	B	42.4	5.5%
UhD	Urban land-Charlton complex, 15 to 25 percent slopes	B	7.8	1.0%
UlC	Urban land-Charlton-Chatfield complex, rolling, very rocky		82.0	10.6%
UlD	Urban land-Charlton-Chatfield complex, hilly, very rocky		33.4	4.3%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
UpB	Urban land-Paxton complex, 3 to 8 percent slopes	D	250.6	32.3%
UpC	Urban land-Paxton complex, 8 to 15 percent slopes	D	33.4	4.3%
UrB	Urban land-Ridgebury complex, 0 to 8 percent slopes	D	23.1	3.0%
UwB	Urban land-Woodbridge complex, 3 to 8 percent slopes	D	164.0	21.1%
WdB	Woodbridge loam, 3 to 8 percent slopes	C/D	6.5	0.8%
Totals for Area of Interest			**777.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Latitude: 41.0044°, Longitude: -73.7696°
Elevation: 285 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.372 (0.290-0.471)	0.432 (0.336-0.547)	0.530 (0.410-0.673)	0.612 (0.472-0.780)	0.724 (0.540-0.952)	0.810 (0.591-1.08)	0.898 (0.634-1.23)	0.991 (0.668-1.38)	1.12 (0.724-1.60)	1.22 (0.770-1.78)
10-min	0.527 (0.411-0.667)	0.612 (0.476-0.775)	0.751 (0.582-0.953)	0.867 (0.669-1.11)	1.03 (0.765-1.35)	1.15 (0.837-1.53)	1.27 (0.898-1.74)	1.40 (0.946-1.96)	1.58 (1.03-2.27)	1.72 (1.09-2.52)
15-min	0.620 (0.483-0.785)	0.720 (0.561-0.912)	0.884 (0.686-1.12)	1.02 (0.787-1.30)	1.21 (0.900-1.59)	1.35 (0.985-1.80)	1.50 (1.06-2.05)	1.65 (1.11-2.31)	1.86 (1.21-2.67)	2.03 (1.28-2.96)
30-min	0.857 (0.668-1.08)	0.996 (0.775-1.26)	1.22 (0.949-1.55)	1.41 (1.09-1.80)	1.67 (1.25-2.20)	1.87 (1.36-2.49)	2.07 (1.46-2.83)	2.28 (1.54-3.19)	2.56 (1.66-3.68)	2.78 (1.76-4.06)
60-min	1.09 (0.852-1.38)	1.27 (0.990-1.61)	1.56 (1.21-1.98)	1.81 (1.39-2.30)	2.14 (1.59-2.81)	2.40 (1.74-3.19)	2.65 (1.87-3.61)	2.91 (1.97-4.07)	3.26 (2.12-4.69)	3.53 (2.23-5.15)
2-hr	1.47 (1.15-1.84)	1.69 (1.33-2.13)	2.06 (1.61-2.60)	2.37 (1.84-3.00)	2.79 (2.10-3.64)	3.12 (2.28-4.12)	3.44 (2.44-4.68)	3.79 (2.56-5.26)	4.25 (2.77-6.06)	4.61 (2.93-6.69)
3-hr	1.70 (1.34-2.14)	1.97 (1.55-2.47)	2.40 (1.88-3.02)	2.76 (2.15-3.48)	3.26 (2.45-4.24)	3.63 (2.68-4.80)	4.02 (2.86-5.45)	4.43 (3.01-6.13)	5.00 (3.26-7.11)	5.45 (3.46-7.87)
6-hr	2.12 (1.68-2.64)	2.48 (1.96-3.09)	3.06 (2.42-3.82)	3.54 (2.78-4.44)	4.21 (3.20-5.46)	4.71 (3.50-6.21)	5.24 (3.77-7.10)	5.83 (3.97-8.02)	6.66 (4.36-9.41)	7.35 (4.69-10.5)
12-hr	2.52 (2.01-3.12)	3.00 (2.40-3.72)	3.80 (3.02-4.71)	4.46 (3.52-5.56)	5.36 (4.10-6.93)	6.04 (4.52-7.94)	6.76 (4.91-9.16)	7.60 (5.20-10.4)	8.84 (5.80-12.4)	9.87 (6.32-14.1)
24-hr	2.89 (2.32-3.55)	3.51 (2.82-4.32)	4.53 (3.63-5.59)	5.38 (4.28-6.66)	6.55 (5.04-8.42)	7.41 (5.59-9.70)	8.34 (6.12-11.3)	9.46 (6.49-12.9)	11.1 (7.33-15.6)	12.6 (8.08-17.8)
2-day	3.26 (2.64-3.98)	4.00 (3.24-4.89)	5.22 (4.21-6.40)	6.24 (5.00-7.67)	7.63 (5.92-9.76)	8.66 (6.58-11.3)	9.78 (7.22-13.2)	11.1 (7.67-15.0)	13.2 (8.73-18.3)	15.0 (9.67-21.1)
3-day	3.55 (2.89-4.32)	4.36 (3.54-5.31)	5.68 (4.60-6.94)	6.78 (5.46-8.31)	8.29 (6.45-10.6)	9.41 (7.17-12.2)	10.6 (7.87-14.3)	12.1 (8.35-16.3)	14.4 (9.50-19.8)	16.3 (10.5-22.8)
4-day	3.82 (3.12-4.63)	4.67 (3.80-5.67)	6.06 (4.92-7.37)	7.21 (5.82-8.81)	8.79 (6.86-11.2)	9.96 (7.61-12.9)	11.2 (8.34-15.0)	12.8 (8.83-17.1)	15.1 (10.0-20.8)	17.2 (11.1-24.0)
7-day	4.55 (3.74-5.49)	5.47 (4.48-6.60)	6.97 (5.69-8.43)	8.21 (6.66-9.98)	9.92 (7.78-12.5)	11.2 (8.58-14.4)	12.6 (9.34-16.7)	14.2 (9.85-18.9)	16.6 (11.1-22.8)	18.7 (12.1-26.0)
10-day	5.25 (4.33-6.32)	6.21 (5.12-7.48)	7.79 (6.38-9.40)	9.09 (7.41-11.0)	10.9 (8.55-13.7)	12.2 (9.39-15.6)	13.7 (10.1-18.0)	15.3 (10.7-20.3)	17.7 (11.8-24.2)	19.8 (12.8-27.4)
20-day	7.39 (6.13-8.82)	8.46 (7.02-10.1)	10.2 (8.44-12.2)	11.7 (9.58-14.1)	13.7 (10.8-17.0)	15.2 (11.7-19.1)	16.8 (12.4-21.7)	18.5 (12.9-24.3)	20.8 (13.9-28.1)	22.6 (14.7-31.1)
30-day	9.18 (7.65-10.9)	10.3 (8.61-12.3)	12.2 (10.2-14.6)	13.8 (11.4-16.6)	16.0 (12.6-19.7)	17.7 (13.6-22.1)	19.3 (14.3-24.7)	21.0 (14.8-27.6)	23.3 (15.6-31.4)	25.0 (16.3-34.2)
45-day	11.4 (9.56-13.5)	12.7 (10.6-15.1)	14.8 (12.3-17.6)	16.5 (13.7-19.7)	18.9 (15.0-23.1)	20.7 (16.0-25.7)	22.5 (16.7-28.6)	24.3 (17.1-31.7)	26.5 (17.9-35.5)	28.1 (18.3-38.3)
60-day	13.3 (11.2-15.7)	14.7 (12.3-17.4)	16.9 (14.1-20.0)	18.8 (15.6-22.3)	21.3 (17.0-26.0)	23.3 (18.0-28.8)	25.3 (18.7-31.8)	27.1 (19.1-35.2)	29.3 (19.8-39.2)	30.9 (20.2-41.9)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.
Please refer to NOAA Atlas 14 document for more information.

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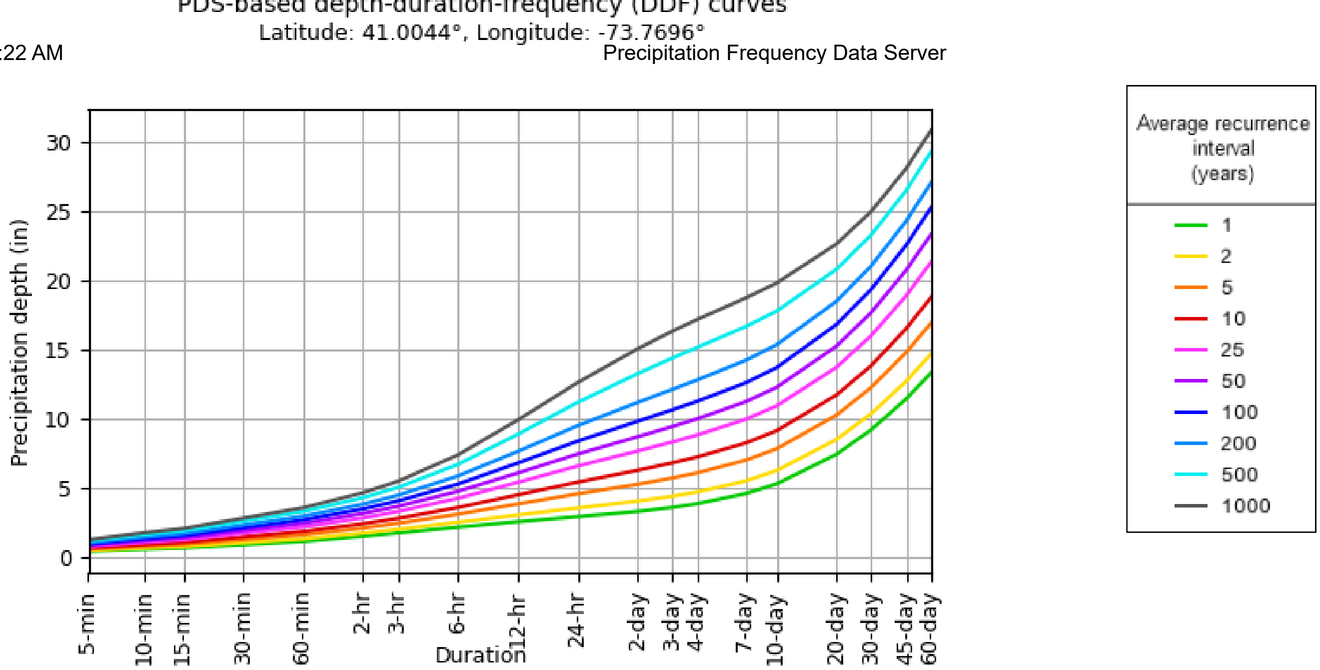
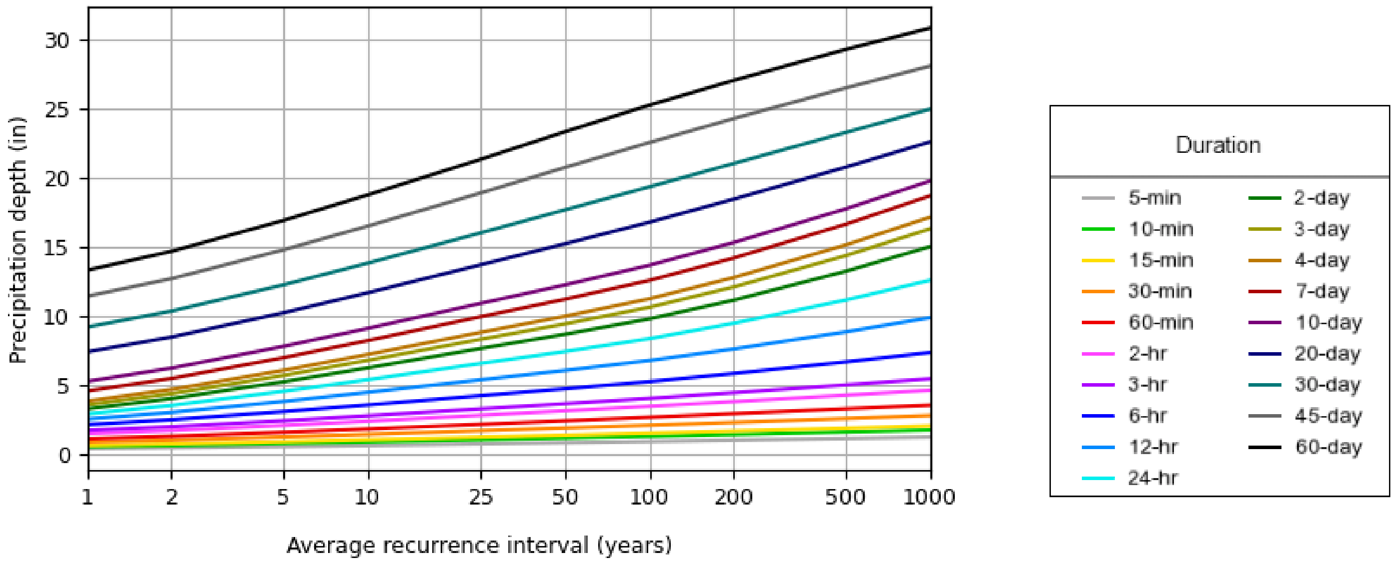
PF graphical





NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Thu Jun 20 13:21:56 2024

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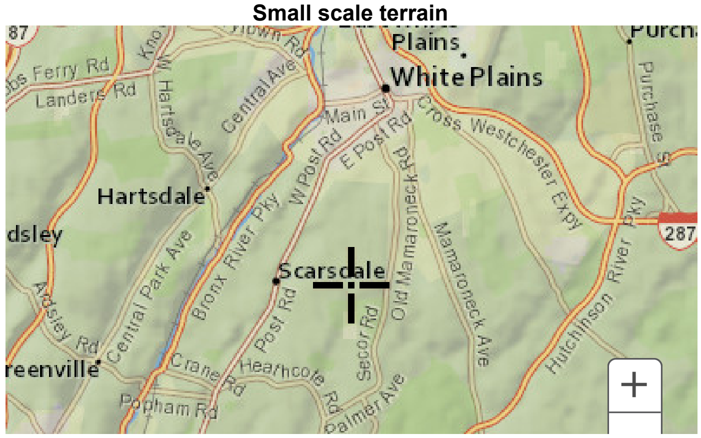
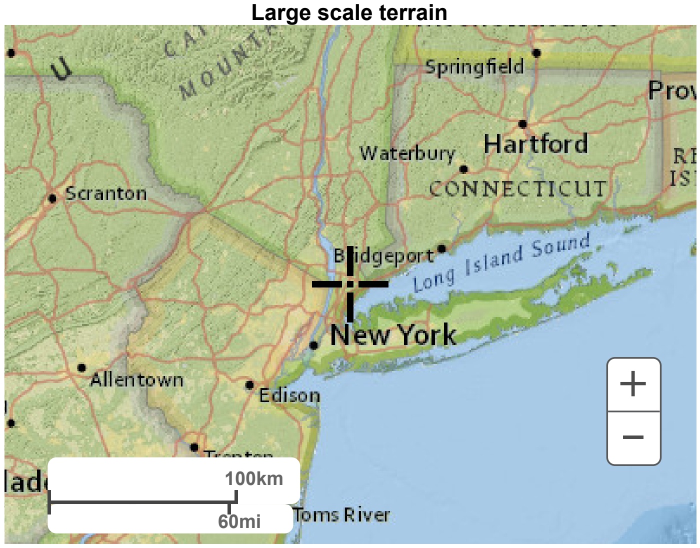
Maps & aerials

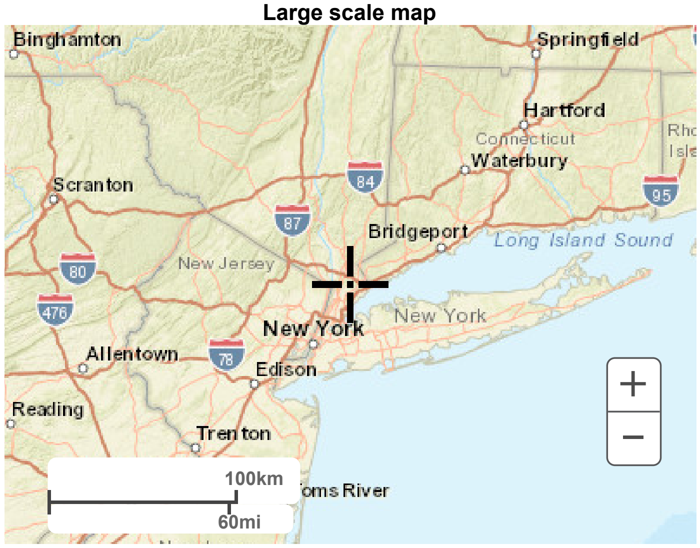
Small scale terrain



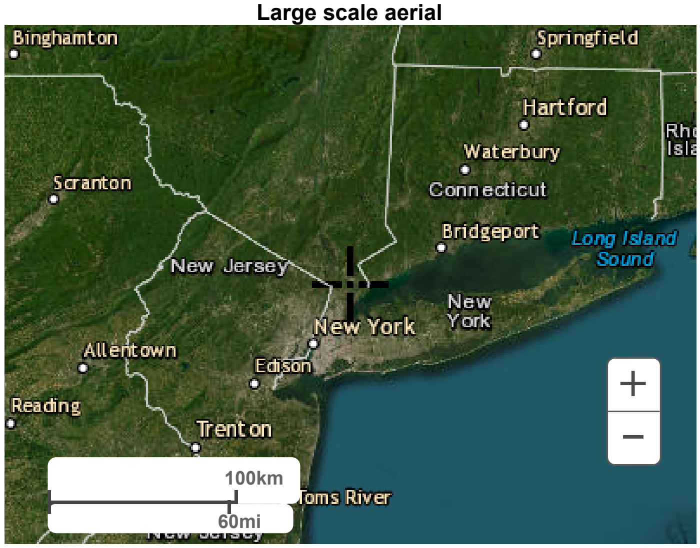
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Appendix G

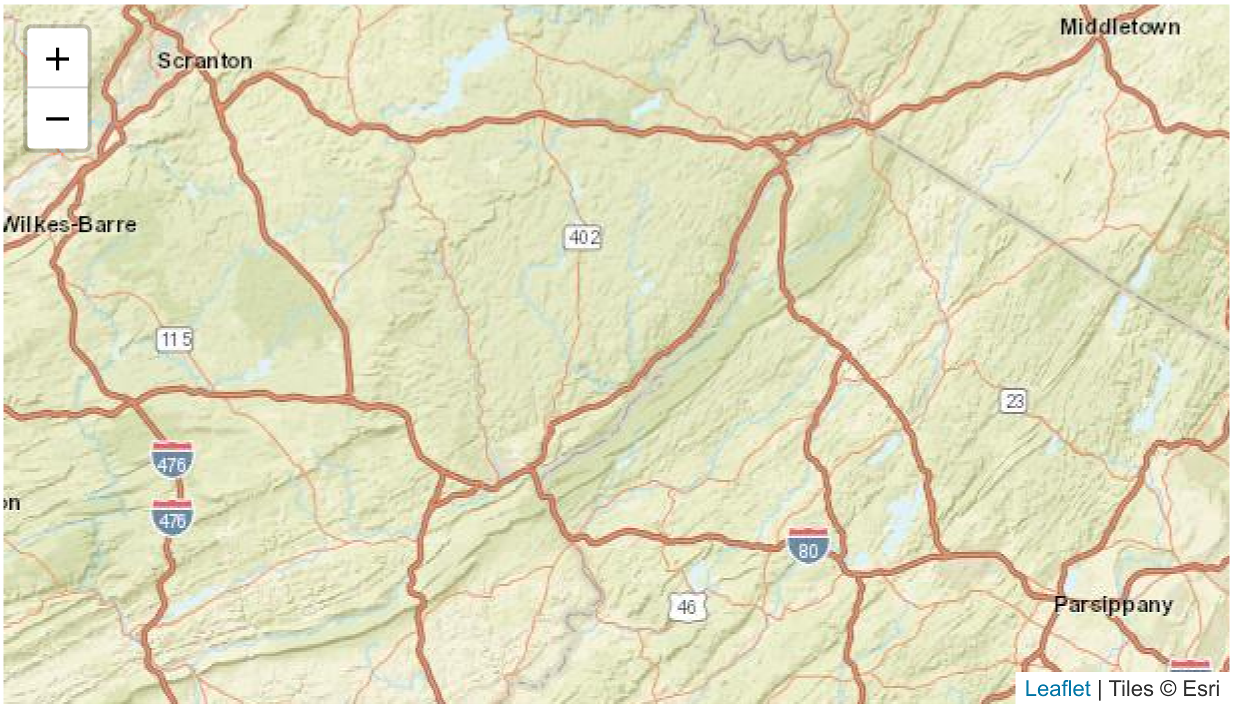
FEMA

Benefit-Cost Calculator

V.6.0 (Build 20250604.2146 | Release Notes)

Benefit-Cost Analysis

Project Name: George Field Pond & Piping Improvements to Cambridge Rd, Rugby Ln & Post Rd



Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
1	Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"	•••	DFA - Riverine Flood	7.0	$ 1,344,135	$ 4,171,841	0.32
TOTAL (SELECTED)					**$ 1,344,135**	**$ 4,171,841**	**0.32**
TOTAL					**$ 1,344,135**	**$ 4,171,841**	**0.32**

Property Configuration

Property Title:	Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"
Property Location:	10583, Westchester, New York
Property Coordinates:	41.0085889, -73.7818278
Hazard Type:	Riverine Flood
Mitigation Action Type:	Drainage Improvement
Property Type:	Other
Analysis Method Type:	Professional Expected Damages

Cost Estimation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

Discount Rate (%):	7.0% Use Default:Yes
Project Useful Life (years):	30
Project Cost:	$4,163,800
Number of Maintenance Years:	30 Use Default:Yes
Annual Maintenance Cost:	$648

Damage Analysis Parameters - Damage Frequency Assessment

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

Year of Analysis was Conducted:	2025
Year Property was Built:	0
Analysis Duration:	10 Use Default:Yes

Professional Expected Damages Before Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages ($)	Category 1 ($)	Category 2 ($)	Category 3 ($)	Number of Volunteers	Number of Days	Damages ($)
100	3,850,100	0	0	0	0	0	3,850,100
10	377,725	0	0	0	0	0	377,725

Annualized Damages Before Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

Annualized Recurrence Interval (years)	Damages and Losses ($)	Annualized Damages and Losses ($)
10	377,725	108,534
100	3,850,100	38,501
	Sum Damages and Losses ($)	Sum Annualized Damages and Losses ($)
	4,227,825	147,035

Professional Expected Damages After Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages ($)	Category 1 ($)	Category 2 ($)	Category 3 ($)	Number of Volunteers	Number of Days	Damages ($)
100	1,428,300	0	0	0	0	0	1,428,300
10	51,600	0	0	0	0	0	51,600

Annualized Damages After Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

Annualized Recurrence Interval (years)	Damages and Losses ($)	Annualized Damages and Losses ($)
10	51,600	24,433
100	1,428,300	14,283
	Sum Damages and Losses ($)	Sum Annualized Damages and Losses ($)
	1,479,900	38,716

Ecosystem Services Losses Avoided

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

Total Project Area (acres):	0
Percentage of Urban Green Open Space:	0.00%
Percentage of Rural Green Open Space:	0.00%
Percentage of Riparian:	0.00%
Percentage of Coastal Wetlands:	0.00%
Percentage of Inland Wetlands:	0.00%
Percentage of Forests:	0.00%
Percentage of Coral Reefs:	0.00%
Percentage of Shellfish Reefs:	0.00%
Percentage of Beaches and Dunes:	0.00%
Expected Annual Ecosystem Services Benefits:	$0

Benefits-Costs Summary

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -54.5800800"

Discount Rate (%):	7.0% Use Default:Yes
Total Project Benefits:	$1,344,135
Total Project Cost:	$4,171,841
Benefit-Cost Ratio:	0.32

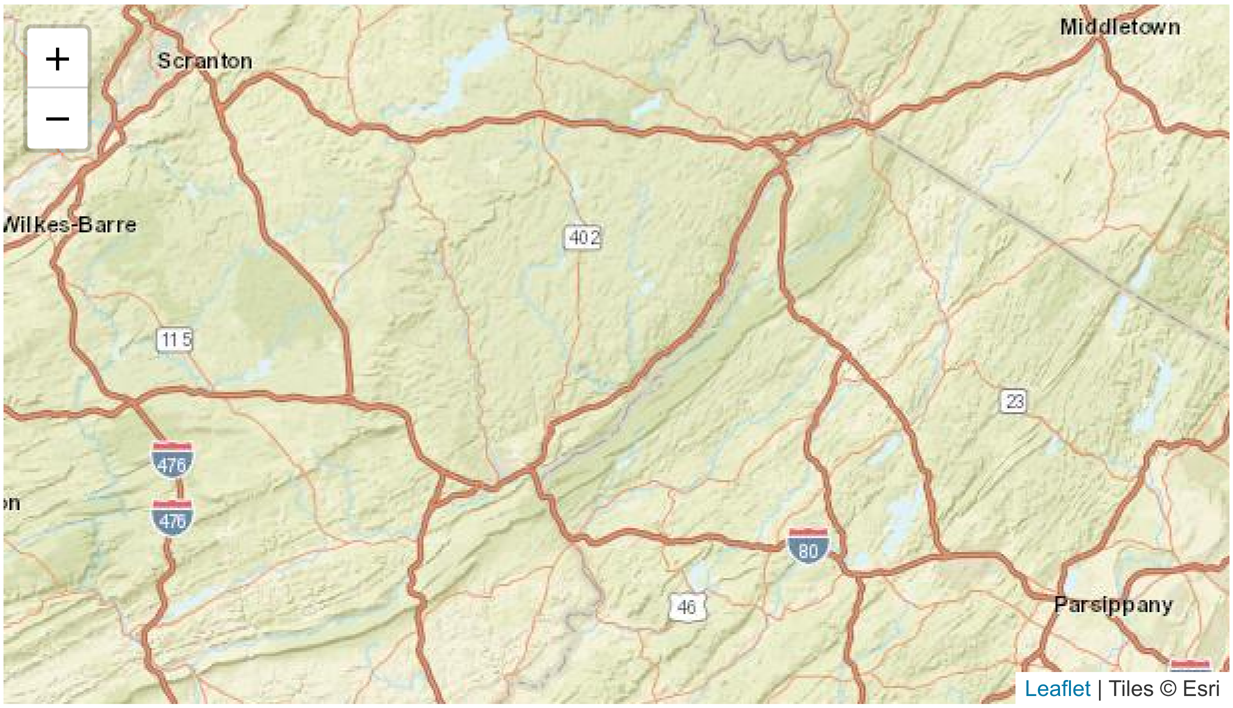
FEMA

Benefit-Cost Calculator

V.6.0 (Build 20250604.2146 | Release Notes)

Benefit-Cost Analysis

Project Name: Piping Improvements – Cambridge Road, Rugby Lane & Post Road



Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
1	Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"	•••	DFA - Riverine Flood	7.0	$ 1,165,333	$ 2,256,212	0.52
TOTAL (SELECTED)					**$ 1,165,333**	**$ 2,256,212**	**0.52**
TOTAL					**$ 1,165,333**	**$ 2,256,212**	**0.52**

Property Configuration

Property Title:	Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"
Property Location:	10583, Westchester, New York
Property Coordinates:	41.0074278, -73.7826167
Hazard Type:	Riverine Flood
Mitigation Action Type:	Drainage Improvement
Property Type:	Other
Analysis Method Type:	Professional Expected Damages

Cost Estimation

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

Discount Rate (%):	7.0% Use Default:Yes
Project Useful Life (years):	30
Project Cost:	$2,251,521
Number of Maintenance Years:	30 Use Default:Yes
Annual Maintenance Cost:	$378

Damage Analysis Parameters - Damage Frequency Assessment

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

Year of Analysis was Conducted:	2025
Year Property was Built:	0
Analysis Duration:	10 Use Default:Yes

Professional Expected Damages Before Mitigation

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages ($)	Category 1 ($)	Category 2 ($)	Category 3 ($)	Number of Volunteers	Number of Days	Damages ($)
100	3,428,100	0	0	0	0	0	3,428,100
10	314,850	0	0	0	0	0	314,850

Annualized Damages Before Mitigation

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

Annualized Recurrence Interval (years)	Damages and Losses ($)	Annualized Damages and Losses ($)
10	314,850	93,502
100	3,428,100	34,281
	Sum Damages and Losses ($)	Sum Annualized Damages and Losses ($)
	3,742,950	127,783

Professional Expected Damages After Mitigation

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages ($)	Category 1 ($)	Category 2 ($)	Category 3 ($)	Number of Volunteers	Number of Days	Damages ($)
100	1,354,500	0	0	0	0	0	1,354,500
10	37,665	0	0	0	0	0	37,665

Annualized Damages After Mitigation

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

Annualized Recurrence Interval (years)	Damages and Losses ($)	Annualized Damages and Losses ($)
10	37,665	20,328
100	1,354,500	13,545
	Sum Damages and Losses ($)	Sum Annualized Damages and Losses ($)
	1,392,165	33,873

Ecosystem Services Losses Avoided

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

Total Project Area (acres):	0
Percentage of Urban Green Open Space:	0.00%
Percentage of Rural Green Open Space:	0.00%
Percentage of Riparian:	0.00%
Percentage of Coastal Wetlands:	0.00%
Percentage of Inland Wetlands:	0.00%
Percentage of Forests:	0.00%
Percentage of Coral Reefs:	0.00%
Percentage of Shellfish Reefs:	0.00%
Percentage of Beaches and Dunes:	0.00%
Expected Annual Ecosystem Services Benefits:	$0

Benefits-Costs Summary

Drainage Improvement @ 41° 0' 26.7400800"; -73° -46' -57.4201200"

Discount Rate (%):	7.0% Use Default:Yes
Total Project Benefits:	$1,165,333
Total Project Cost:	$2,256,212
Benefit-Cost Ratio:	0.52

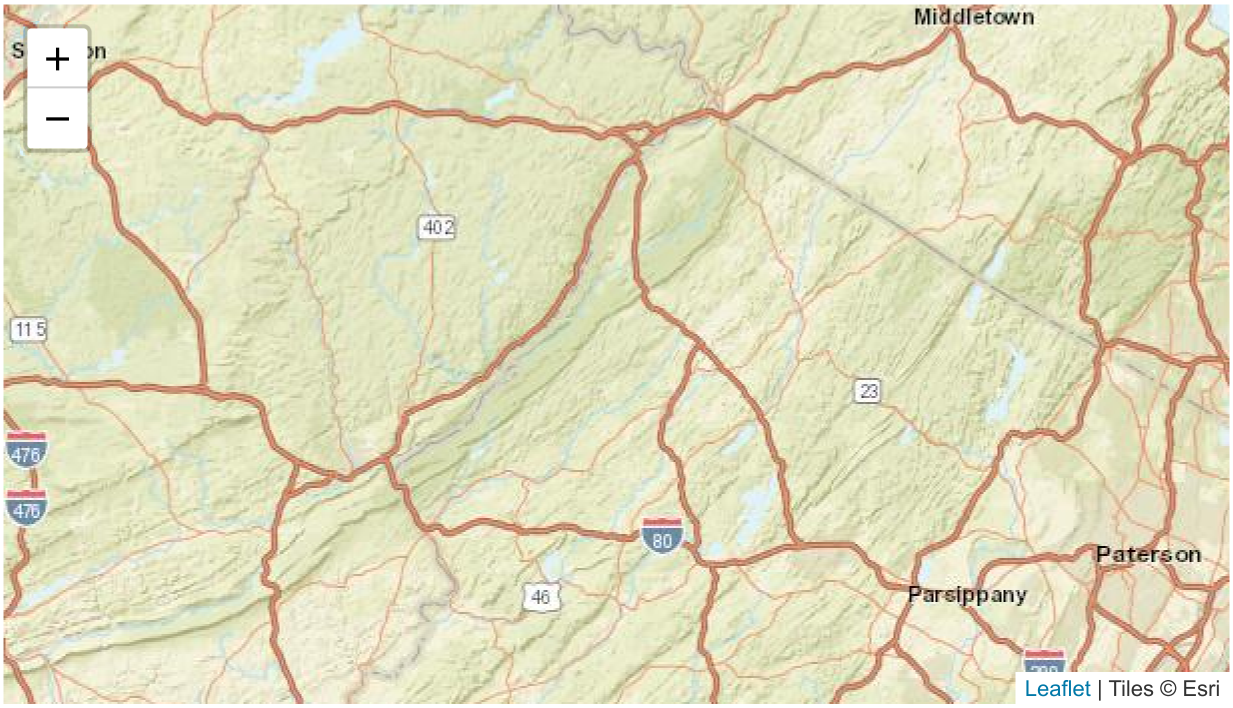
FEMA

Benefit-Cost Calculator

V.6.0 (Build 20250604.2146 | Release Notes)

Benefit-Cost Analysis

Project Name: George Field Pond Improvements (Minor No Grading)



Map Marker ▲	Mitigation Title	Property Type	Hazard	Discount Rate (%)	Benefits (B)	Costs (C)	BCR (B/C)
1	Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"	•••	DFA - Riverine Flood	7.0	$ 235,660	$ 1,915,550	0.12
TOTAL (SELECTED)					**$ 235,660**	**$ 1,915,550**	**0.12**
TOTAL					**$ 235,660**	**$ 1,915,550**	**0.12**

Property Configuration

Property Title:	Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"
Property Location:	10583, Westchester, New York
Property Coordinates:	41.0085889, -73.7809028
Hazard Type:	Riverine Flood
Mitigation Action Type:	Drainage Improvement
Property Type:	Other
Analysis Method Type:	Professional Expected Damages

Cost Estimation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

Discount Rate (%):	7.0% Use Default:Yes
Project Useful Life (years):	30
Project Cost:	$1,912,200
Number of Maintenance Years:	30 Use Default:Yes
Annual Maintenance Cost:	$270

Damage Analysis Parameters - Damage Frequency Assessment

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

Year of Analysis was Conducted:	2025
Year Property was Built:	0
Analysis Duration:	10 Use Default:Yes

Professional Expected Damages Before Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages ($)	Category 1 ($)	Category 2 ($)	Category 3 ($)	Number of Volunteers	Number of Days	Damages ($)
100	647,200	0	0	0	0	0	647,200
10	128,275	0	0	0	0	0	128,275

Annualized Damages Before Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

Annualized Recurrence Interval (years)	Damages and Losses ($)	Annualized Damages and Losses ($)
10	128,275	25,932
100	647,200	6,472
	Sum Damages and Losses ($)	Sum Annualized Damages and Losses ($)
	775,475	32,404

Professional Expected Damages After Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

	OTHER	OPTIONAL DAMAGES			VOLUNTEER COSTS		TOTAL
Recurrence Interval (years)	Damages ($)	Category 1 ($)	Category 2 ($)	Category 3 ($)	Number of Volunteers	Number of Days	Damages ($)
100	492,300	0	0	0	0	0	492,300
10	18,075	0	0	0	0	0	18,075

Annualized Damages After Mitigation

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

Annualized Recurrence Interval (years)	Damages and Losses ($)	Annualized Damages and Losses ($)
10	18,075	8,490
100	492,300	4,923
	Sum Damages and Losses ($)	Sum Annualized Damages and Losses ($)
	510,375	13,413

Ecosystem Services Losses Avoided

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

Total Project Area (acres):	0
Percentage of Urban Green Open Space:	0.00%
Percentage of Rural Green Open Space:	0.00%
Percentage of Riparian:	0.00%
Percentage of Coastal Wetlands:	0.00%
Percentage of Inland Wetlands:	0.00%
Percentage of Forests:	0.00%
Percentage of Coral Reefs:	0.00%
Percentage of Shellfish Reefs:	0.00%
Percentage of Beaches and Dunes:	0.00%
Expected Annual Ecosystem Services Benefits:	$0

Benefits-Costs Summary

Drainage Improvement @ 41° 0' 30.9200400"; -73° -46' -51.25"

Discount Rate (%):	7.0% Use Default:Yes
Total Project Benefits:	$235,660
Total Project Cost:	$1,915,550
Benefit-Cost Ratio:	0.12

CALCULATIONS FOR BCA CALCULATOR - Piping Improvements						
Improvement Item Description	**Unit**	**Quantity**		**Unit Price**		**Total**
Annual Maintenance - Inspect and Clean Drainage Structures	EA	21	$	18.00	$	378.00
Damages Before Mitigation - 100 year						
Property Damages - Hurrican Ida (2021) - 100 year	EA	33	$	100,000.00	$	3,300,000
DPW	/100 LF	550	$	15,000.00	$	82,500.00
Pavement and Drainage Repairs	/100 LF	3100	$	800.00	$	24,800.00
Police Cost	EA Location	4	$	3,100.00	$	12,400.00
Heavy Cleaning - Drainage	/750 LF	1400	$	4,500.00	$	8,400.00
				Total	$	3,428,100.00
Damages Before Mitigation - 10-year						
Property Damages from Major Rain Events - 10 year	EA	33	$	5,500.00	$	181,500
DPW	/100 LF	550	$	15,000.00	$	82,500.00
Pavement and Drainage Repairs	/100 LF	3100	$	800.00	$	24,800.00
Police Cost	EA Location	4	$	3,100.00	$	12,400.00
Heavy Cleaning - Drainage	/750 LF	1400	$	4,500.00	$	8,400.00
Sanitary Backups, Maintenance, and Repairs	LF	1500	$	3.50	$	5,250.00
				Total	$	314,850.00
Damages After Mitigation - Property, Roadway and Drainage (100-year)						
Property Damages	EA	16	$	75,000.00	$	1,200,000
DPW	/100 LF	750	$	15,000.00	$	112,500
Pavement and Drainage Repairs	/100 LF	3100	$	800.00	$	24,800
Police Cost	EA Location	4	$	3,100.00	$	12,400
Heavy Cleaning - Drainage	/750 LF	800	$	4,500.00	$	4,800.00
				Total	$	1,354,500.00
Damages After Mitigation - Property, Roadway and Drainage (10-year)						
Property Damages	EA	0	$	-	$	-
DPW	/100 LF	0	$	15,000.00	$	-
Pavement and Drainage Repairs	/100 LF	3100	$	800.00	$	24,800
Police Cost	EA Location	3	$	3,100.00	$	9,300
Heavy Cleaning - Drainage	/750 LF	390	$	4,500.00	$	2,340.00
Sanitary Backups, Maintenance, and Repairs	LF	350	$	3.50	$	1,225.00
				Total	$	37,665.00

CALCULATIONS FOR BCA CALCULATOR - Piping & Minor Pond Improvements (No Regrading)						
Improvement Item Description	**Unit**	**Quantity**	**Unit Price**		**Total**	
Annual Maintenance - Inspect and Clean Drainage Structures	EA	36	$	18.00	$	648.00
Damages Before Mitigation - 100 year						
Property Damages - Hurrican Ida (2021) - 100 year	EA	36	$	100,000.00	$	3,600,000
DPW	/100 LF	1250	$	15,000.00	$	187,500.00
Pavement and Drainage Repairs	/100 LF	4450	$	800.00	$	35,600.00
Police Cost	EA Location	6	$	3,100.00	$	18,600.00
Heavy Cleaning - Drainage	/750 LF	1400	$	4,500.00	$	8,400.00
				Total	$	3,850,100.00
Damages Before Mitigation - 10-year						
Property Damages from Major Rain Events - 10 year	EA	33	$	4,000.00	$	132,000
DPW	/100 LF	1180	$	15,000.00	$	177,000.00
Pavement and Drainage Repairs	/100 LF	4450	$	800.00	$	35,600.00
Police Cost	EA Location	6	$	3,100.00	$	18,600.00
Heavy Cleaning - Drainage	/750 LF	1400	$	4,500.00	$	8,400.00
Sanitary Backups, Maintenance, and Repairs	LF	1750	$	3.50	$	6,125.00
				Total	$	377,725.00
Damages After Mitigation - Property, Roadway and Drainage (100-year)						
Property Damages	EA	19	$	60,000.00	$	1,140,000
DPW	/100 LF	1510	$	15,000.00	$	226,500
Pavement and Drainage Repairs	/100 LF	4650	$	800.00	$	37,200
Police Cost	EA Location	6	$	3,100.00	$	18,600
Heavy Cleaning - Drainage	/750 LF	1000	$	4,500.00	$	6,000.00
				Total	$	1,428,300.00
Damages After Mitigation - Property, Roadway and Drainage (10-year)						
Property Damages	EA	0	$	-	$	-
DPW	/100 LF	0	$	15,000.00	$	-
Pavement and Drainage Repairs	/100 LF	4650	$	800.00	$	37,200
Police Cost	EA Location	3	$	3,100.00	$	9,300
Heavy Cleaning - Drainage	/750 LF	500	$	4,500.00	$	3,000.00
Sanitary Backups, Maintenance, and Repairs	LF	600	$	3.50	$	2,100.00
				Total	$	51,600.00

CALCULATIONS FOR BCA CALCULATOR - Minor Pond Improvements (No Regrading)					
Improvement Item Description	**Unit**	**Quantity**	**Unit Price**		**Total**
Annual Maintenance - Inspect and Clean Drainage Structures	EA	15	$	18.00	$ 270.00
Damages Before Mitigation - 100 year					
Property Damages - Hurrican Ida (2021) - 100 year	EA	7	$	77,500.00	$ 542,500
DPW	/100 LF	700	$	15,000.00	$ 105,000.00
Pavement and Drainage Repairs	/100 LF	1800	$	800.00	$ 14,400.00
Police Cost	EA Location	3	$	3,100.00	$ 9,300.00
Heavy Cleaning - Drainage	/750 LF	500	$	4,500.00	$ 3,000.00
				Total	$ 674,200.00
Damages Before Mitigation - 10-year					
Property Damages from Major Rain Events - 10 year	EA	2	$	4,000.00	$ 8,000
DPW	/100 LF	630	$	15,000.00	$ 94,500.00
Pavement and Drainage Repairs	/100 LF	1800	$	800.00	$ 14,400.00
Police Cost	EA Location	3	$	3,100.00	$ 9,300.00
Heavy Cleaning - Drainage	/750 LF	200	$	4,500.00	$ 1,200.00
Sanitary Backups, Maintenance, and Repairs	LF	250	$	3.50	$ 875.00
				Total	$ 128,275.00
Damages After Mitigation - Property, Roadway and Drainage (100-year)					
Property Damages	EA	7	$	50,000.00	$ 350,000
DPW	/100 LF	760	$	15,000.00	$ 114,000
Pavement and Drainage Repairs	/100 LF	2000	$	800.00	$ 16,000
Police Cost	EA Location	3	$	3,100.00	$ 9,300
Heavy Cleaning - Drainage	/750 LF	500	$	4,500.00	$ 3,000.00
				Total	$ 492,300.00
Damages After Mitigation - Property, Roadway and Drainage (10-year)					
Property Damages	EA	0	$	-	$ -
DPW	/100 LF	0	$	15,000.00	$ -
Pavement and Drainage Repairs	/100 LF	2000	$	800.00	$ 16,000
Police Cost	EA Location	0	$	3,100.00	$ -
Heavy Cleaning - Drainage	/750 LF	200	$	4,500.00	$ 1,200.00
Sanitary Backups, Maintenance, and Repairs	LF	250	$	3.50	$ 875.00
				Total	$ 18,075.00

VILLAGE OF SCARSDALE
WESTCHESTER COUNTY, NY 10583
FLOOD DAMAGE SURVEY - 2025
GEORGE FIELD NEIGHBORHOOD

DATE OF CALL	FLOOD DAMAGES (Y/N)	ESTIMATED COSTS	COMMENTS & REMARKS
3/21/2025	Yes	Less than $10k per major event	Dwelling has several sump pumps that appear to keep up with large rain events. Owner bough the property post IDA and has yet to experience large storms. The problems that they see are that the front yard floods, drainage system surcharges then clogs with debris. Owners are landlocked when Village closes the road due to flooding. Damages are mostly cleanup, pipe maintenance and erosion.
4/18/2025	Yes	Approximate damages/losses from Tropical Storm Ida is $100k for insured costs and anoth $50k out of pocket.	Previous owner mitigated flood damage from that event. Owner called and states property and dwelling floods with approximate 4 feet of water in the dwelling and ponding throughout the yard. Reoccured with all of the larde storms. For smaller events, there is seepage through the foundation wall and floor slabs. Multiple sump pumps. When roadway floods, water enters property through driveway apron.
4/21/2025	Yes	Approx $60k to $75k for Ida with around $10k for smaller storms.	Experianced flooding several times with Ida being the worst. Previous owners have disclosed flooding for prior major storms and have rebuilt/mitigated the same. There is municipal easement pipes through and adjacent to this parcel.
4/21/2025	Yes	$75,000 for IDA. $1,000 for smaller storms	Unfinshed basement gets flooded and loses contents, 6' of water in basement during Ida.
	Yes	flooded basement	as reported
	Yes	flooded basement	as reported
	Yes	flooded basement	as reported
	Yes	Significant	As reported - property owner has moved away had multple storms with significant losses. Flooded finished lower level
	Yes	flooded basement	as reported
	Yes	Significant	As reported - flooding during IDA and smaller storms
	Yes	Significant	As reported - Contents of garage and motor vehicles and business equipment have been lost during IDA and other storm events