INLAND WETLANDS
COMMISSION
Telephone (203) 563-0180
Fax (203) 563-0284

TOWN HALL
238 Danbury Road
Wilton, Connecticut 06897

APPLICATION FOR A SIGNIFICANT REGULATED ACTIVITY

For Office Use Only:	
	WET#
Filing Fee $	Wilton Land Record Map#
Date of Submission	Volume # ____ Page #
Date of Acceptance	Assessor's Map # ____ Lot#

APPLICANT INFORMATION:

Co-Applicant Fuller Development, LLC

Address 1 North Water St, Norwalk, CT 06854

Owner/Applicant Wilton 64 - Danbury Road Owner, LLC

Address 280 Park Ave, 5th Fl., NY, NY 10017

Applicant Telephone 203-957-3800

Applicant Email sbfuller@fullerdevelopmentllc.com

Agent (if applicable) Carmody Torrance Sandak & Hennessey

Address c/o Lisa Feinberg, 1055 Washington Boulevard
Stamford, CT 06901

Telephone 203-252-2677

Email lfeinberg@carmodylaw.com

PROJECT INFORMATION:

Property Address 64 Danbury Road

Acres of altered Wetlands On-Site 0 ac

Linear Feet of Watercourse 130± ft.

Linear Feet of Open Water n/a

Sq. Ft. of proposed and/or altered impervious coverage 126,393± sf

Site Acreage 4.8± ac (22.27± Corporate Park)

Cu. Yds. of Material Excavated 14,500± CY

Cu. Yds. of Material to be Deposited 4,400± CY

Acres of altered upland buffer 1.3± ac

Sq. Ft. of disturbed land in regulated area 54,647± sf

APPLICATION REQUIREMENTS:

Is The Site Within a Public Water Supply Watershed Boundary? NO ☑ YES* ☐

Is The Site Within 500 Feet of a Town Boundary? NO ☑ YES* ☐

* If the answer is yes, then the applicant is responsible for notifying the appropriate water authority and/or adjoining community's Wetlands Department. Instructions for notification are available at the office of the commission.

Project Description and Purpose: See attached letter to the Inland Wetlands Commission of Wilton from Kate Throckmorton of Environmental Land Solutions, LLC, dated January 2, 2024.

In addition, the applicant shall provide eleven (11) collated copies of the following information as well as an electronic submission via email to mike.conklin@wiltonct.org & elizabeth.larkin@wiltonct.org **

- ☑ A. Written consent from the owner authorizing the agent to act on his/her behalf
- ☑ B. A Location Map at a scale of 1" = 800'
- ☑ **C.** ***A Site Plan showing existing and proposed features at a scale not to exceed 1" = 40'*** accurate to the level of a A-2 property and T-2 topographic surveys
- ☑ D. Sketch Plans depicting the alternatives considered
- ☑ E. Engineering Reports and Analysis and additional drawing to fully describe the proposed project
- ☑ F. Sedimentation and Erosion Control Plan, including the Construction Sequence
- ☑ G. Names and addresses of adjoining property owners
- ☑ H. A narrative describing, in detail
  - a. the proposed activity
  - b. the alternatives considered
  - c. impacts
  - d. proposed mitigation measures
- ☑ I. Soils Report prepared by a Certified Soil Scientist and Wetlands Map prepared by a Registered Land Surveyor
- ☑ J. A Biological Evaluation prepared by a biologist or other qualified professional
- ☑ K Description of the chemical and physical characteristics of fill material to be used in the Regulated Area
- ☑ L. Description and maps detailing the watershed of the Regulated Area
- ☑ M. Envelopes addressed to adjacent neighbors, the applicant, and/or agent, with ***certified*** postage and no return address

****Application materials shall be collated and copies of documents more than two pages in length shall be double sided.**

See Section 7 of the Wetlands and Watercourses Regulations of the Town of Wilton for a more detailed description of applications requirements.

The Applicant or his/her agent certifies that he is familiar with the information provided in this application and is aware of the penalties for obtaining a permit through deception, inaccurate or misleading information.

By signing this application, permission is hereby given to necessary and proper inspections of the subject property by the Commissioners and designated agents of the Commission or consultants to the Commission, at reasonable times, both before and after a final decision has been rendered.

Applicant's Signature: ______________________ Date: ____________

Agent's Signature (if applicable): Lisa Feinberg Date: 1/2/24

CARMODY
TORRANCE | SANDAK | HENNESSEY LLP

Lisa L. Feinberg
Partner
Phone: 203.252.2677
Fax: 203.325.8608
LFeinberg@carmodylaw.com

1055 Washington Blvd.
4th Floor
Stamford, CT 06901

January 2, 2024

<u>VIA E-MAIL & HAND DELIVERY</u>

Michael Conklin
Director
Environmental Affairs Department
Town of Wilton
Town Annex
238 Danbury Road
Wilton, CT 06897
Mike.Conklin@wiltonct.org

Re: Application for a Significant Regulated Activity
***Address*: 64 Danbury Road, Wilton, Connecticut**
***Applicants*: Wilton – 64 Danbury Road Owner LLC(Owner)**
Fuller Development, LLC (Contract Purchaser)

Dear Director Conklin:

Our firm represents the Owner and Contract Purchaser (collectively the "Applicants") of the property located at 64 Danbury Road, Wilton Connecticut (the "Subject Property"). The Subject Property is located within the Wilton Corporate Park, which includes 50, 60, and 64 Danbury Road (the "Office Park"). The Park is approximately 22.27± acres and is located on the eastern side of Danbury Road, in southern Wilton. It is designated as Unit 64 of Tax Lot 33 on Map 68 in a DE-5 Design Enterprise District. The Subject Property is currently improved with an office building, surface parking areas, landscaping and other associated improvements.

The Applicants propose removing the improvements on the Subject Property and replacing them with eight (8) new multifamily residential buildings and associated parking, an amenity building, a pool, and landscaping, including enhancement of the vegetative buffers adjacent to the pocket wetlands and Copts Brook on the Subject Property (the "Natural Features"), among other site improvements. In connection with the proposal, no development will occur in or directly adjacent to the Natural Features. However, because the project will involve the disturbance of land and location of structures within the upland review area of said Natural Features, the Applicants are requesting approval from the Inland Wetlands Commission related to a Regulated Activity. Applications in support of the proposed redevelopment will also be filed with the Planning and Zoning Commission under separate cover.

In furtherance of the proposed application, please find enclosed the following revised materials:

- Letters of Authority from the Owner, Contract Purchaser, and Office Park;

- Check in the amount of $1,260, representing the fees associated with the application for a Significant Regulated Activity and the State Permit;[1]

- Check in the amount of $36.12, representing the fees associated with mailing the required notices to adjacent property owners;

- Copy of an Application for a Significant Regulated Activity, including:
  - Schedule A – Project Narrative
  - Reduced-size copy of the plans prepared by Lessard Design, Inc. ("Lessard Design"), depicting alternative layouts that were considered, titled:
    - "Illustrative Site Plan – 64 Danbury Road (A.01)," dated January 21, 2021; and
    - "Site Plan – 64 Danbury Road (A.4)," dated February 8, 2021;

- Full-size copy of a survey depicting the Office Park, prepared by D'Andrea Surveying & Engineering, P.C., dated September 12, 2023, entitled, "Topographic Survey of Property at 50, 60 & 64 Danbury Road, Wilton, Connecticut," prepared for DIVFIFTY, LLC";

- Full-size copy of Architectural Plans, prepared by Lessard Design, dated January 2, 2024, titled:
  - "Cover (A.01)";
  - "Illustrative Site Plan (A.02)";
  - "Floor Plans (A.03)";
  - "Floor Plans (A.04)";
  - "Floor Plans (A.05)";
  - "Amenity Floor Plan (A.06)";
  - "Gazebo & Trash Plan (A.07)";
  - "Building Height – Average Elevation (A.08)";
  - "Building Sections – Height Calculations (A.09)";
  - "Building 1 – Elevations (A.10)"
  - "Building 2 – Elevations (A.11)";
  - "Building 3 – Elevations (A.12)";
  - "Building 4 – Elevations (A.13)";
  - "Building 5 – Elevations (A.14)";
  - "Building 6 – Elevations (A.15)";
  - "Building 7 – Elevations (A.16)";
  - "Building 8 – Elevations (A.17)";
  - "Amenity Building Elevations (A.18)";

[1] Delivered separately.

  - "Gazebo & Trash Elevations (A.19)";
  - "Enlarged Elevations – Front & Rear (A.20)";
  - "Enlarged Elevations – Side (A.21)";
  - "Enlarged Elevations – Front & Rear (A.22)";
  - "Diagram – Roof And Eaves (A.23)";
  - "Enlarged Amenity Elevations (A.24)";
  - "Enlarged Gazebo Elevations (A.25)";
  - "Enlarged Trash Elevations (A.26)";
  - "Alternate Signage Diagram (A.27)";
  - "Perspective Rendering (A.28)";

- Full-size copy of Engineering Plans, prepared by Tighe & Bond, dated December 21, 2023, titled:
  - "General Notes, Legend and Abbreviations (C-001)";
  - "Existing Conditions Plan (C-002)";
  - "Overall Site Plan (C-100)";
  - "Site Plan (C-101)";
  - "Fire Truck Turning Movements Plan (C-102)";
  - "Grading Plan (C-201)";
  - "Drainage Plan (C-301)";
  - "Drainage Plan Enlargement (C-302)";
  - "Utility Plan (C-401)";
  - "Soil Erosion and Sediment Control Plan Initial Phase (C-501)";
  - "Soil Erosion and Sediment Control Plan Final Phase (C-502)";
  - "Soil Erosion and Sediment Control Notes Narrative and Details (C-503)";
  - "Soil Erosion and Sediment Control Details (C-504)";
  - "Details – 1 (C-601)";
  - "Details – 2 (C-602)";
  - "Details – 3 (C-603)";
  - "Details – 4 (C-604)";
  - "Details – 5 (C-605)";
  - "Details – 6 (C-606)";
  - "Details – 7 (C-607)";
  - "Details – 8 (C-608)"; and
  - "Details – 9 (C-609)";

- Full-size copy of Landscape Plans, prepared by ELS, dated January 2, 2024, titled:
  - "Landscape and Lights Plan (LP-1)";
  - "Details and Notes (LP-2)";

- Copy of an Engineering Report by Tighe & Bond, dated December 2023, titled, "Engineering Report, prepared for: Town of Wilton, Planning and Zoning Commission";

CARMODY TORRANCE | SANDAK | HENNESSEY LLP

- Copy of the Letter from Environmental Land Solutions to Fuller Development, LLC, dated January 2, 2024, titled, "Application for Significant – Regulated Activity Permit – Biological Evaluation, 50 60 & 64 Danbury Road, Wilton, CT";

- Copy of a report prepared by Otto Theall of Soil & Wetland Science, LLC, dated April 10, 2017, titled, "Soil Investigation Report 40, 50-60 Danbury Road Wilton, Connecticut";

- List of Project Professionals, with CVs attached; and

- List of Adjacent Property Owners.

Please let me know if you have any questions or require additional materials. We look forward to presenting the proposal before the Inland Wetlands Commission. Thank you for your time and attention regarding this matter.

Sincerely,

Lisa L. Feinberg

Lisa L. Feinberg

Enclosures.

cc: E. Larkin, Elizabeth.larkin@wiltonct.org
R. Grosso, Rocco.Grosso@wiltonct.org
F. Smeriglio, Frank.Smeriglio@wiltonct.org
M. Lawrence, Mark.Lawrence@ wiltonct.org
Development Team

December 19, 2023

Mr. Michael Wrinn
Planning and Zoning Department
Town of Wilton
Town Annex
238 Danbury Road
Wilton, CT 06897

RE: 64 Danbury Road, Wilton, CT (the "Property")
Letter of Authority

Dear Mr. Wrinn:

Wilton – 64 Danbury Road Owner LLC ("Owner") is the owner of the property located at 64 Danbury Road, Wilton, CT (the "Property") which is one unit in the Wilton Corporate Park Common Interest Community. I hereby authorize the attorneys of Carmody Torrance Sandak & Hennessey, LLP, with offices located at 1055 Washington Blvd, Stamford, Connecticut 06901, to file the enclosed land use applications on ownership's behalf in connection with the Property. Thank you for your acknowledgement of said authority.

Sincerely,

Wilton – 64 Danbury Road Owner LLC

DocuSigned by:
By: Erin Rota
67666C3E0A5C480...
Erin Rota
Duly Authorized

December 19, 2023

Mr. Michael Wrinn
Town Planner
Planning and Zoning Department
Town of Wilton
Town Annex
238 Danbury Road
Wilton, CT 06897

RE: 64 Danbury Road, Wilton, CT (the "Property")
Letter of Authority

Dear Mr. Wrinn:

Fuller Development, LLC is the contract purchaser of the property located at 64 Danbury Road, Wilton, CT (the "Property"). As such, I hereby authorize the attorneys of Carmody Torrance Sandak & Hennessey, LLP, with offices located at 1055 Washington Blvd, Stamford, Connecticut 06901, to act as agent for Fuller Development, LLC in connection with the enclosed land use applications. Thank you for your acknowledgement of said authority.

Sincerely,

FULLER DEVELOPMENT, LLC

By: Samuel B. Fuller
Samuel B. Fuller
President, Duly Authorized

December 19, 2023

Mr. Michael Wrinn
Town Planner
Planning and Zoning Department
Town of Wilton
Town Annex
238 Danbury Road
Wilton, CT 06897

RE: 64 Danbury Road, Wilton, CT (the "Property")
Letter of Authority

Dear Mr. Wrinn:

DIV Fifty, LLC is the Declarant under the Wilton Corporate Park Declaration of which the property located at 64 Danbury Road, Wilton, CT (the "Property") is a unit. As such, I hereby authorize the attorneys of Carmody Torrance Sandak & Hennessey, LLP, with offices located at 1055 Washington Blvd, Stamford, Connecticut 06901, to file the enclosed land use applications related to the redevelopment of the Property. Thank you for your acknowledgement of said authority.

Sincerely,

DIV FIFTY, LLC

By: ______________________
Name: Paul R. Marcus
Title: Authorized Signatory
Duly Authorized

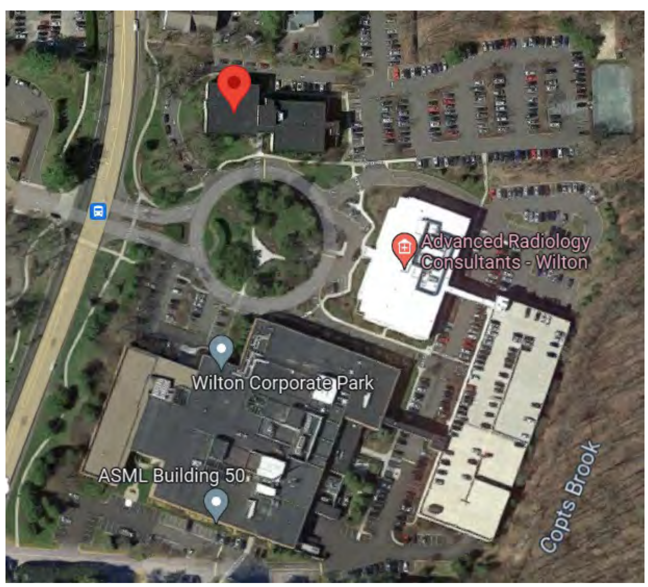
January 2, 2024

Project Narrative

I. Existing Conditions

Wilton – 64 Danbury Road Owner LLC and Fuller Development, LLC (collectively, the "**Applicants**")[1] seek review from the Wilton Inland Wetlands Commission (the "**Commission**") in connection with the redevelopment of property located at 64 Danbury Road in Wilton (the "**Subject Property**"). The Subject Property is a unit within the Wilton Corporate Park Common Interest Community (the **"Office Park**"), which consists of 50, 60, and 64 Danbury Road. The Office Park has an area of approximately 22.27± acres, while the Subject Property consists of approximately 4.8± acres.

At present, the Subject Property is improved with a large office building, surface parking, and associated landscaping. The remainder of the Office Park is improved with office buildings, multiple surface parking areas, a parking garage, a volleyball court, a tennis court, and landscaping. The topography of the site slopes primarily from east to west towards Copts Brook and Danbury Road/Route 7. There are a series of catch basins and inlet structures on the Office Park site today, which capture runoff and discharge to a 54" Reinforced Concrete Pipe (RCP) along the northern end of the site. The front yard of the Subject Property partially lies within the 500-year flood plain for the Norwalk River, while a small part of the middle of the Subject Property lies within the 100-year floodplain for Copts Brook. The Office Park, including the Subject Property, is depicted in the aerial photograph[2] below:



[1] Wilton 64 – Danbury Road Owner, LLC is the owner of the Subject Property, and Fuller Development, LLC is under contract to purchase the Subject Property.
[2] Aerial Photograph obtained from Google.

II. Proposal

The enclosed application is submitted in furtherance of the proposed redevelopment of the Subject Property and, if approved, will allow the Applicants to replace the existing vacant office building and large surface parking lot with eight (8) multifamily residential structures, a clubhouse and related landscaping and site improvements as depicted below:

Existing Subject Property

Proposed Plan

As seen in the plans above, the new residential buildings will be constructed primarily over the existing parking areas and office building footprint. While the two (2) buildings in the northeastern corner of the Subject Property (Buildings 7 & 8) partially extend within the undeveloped portion of the site, there will only be a modest increase in overall impervious surface (roughly 4.5% of the 22.27-acre property). Moreover, the existing stormwater treatment system will be expanded and upgraded to accommodate the proposed development which will improve water quality for this portion of the property overall. There will be some disturbance within the upland review areas, but there will be no work within the Copts' Brook watercourse or the wetlands on the property. Landscaping, including the existing wooded buffer in the northeastern portion of the site, will be enhanced and nonnative invasive species will be removed.

III. Compliance with Standards & Criteria For Decision

The proposal is compliant with the standards of Section 10.3 of the Inland Wetlands and Watercourses Regulations for the Town of Wilton (the **"Regulations"**) as follows:

> *In carrying out the purposes and policies of sections 22a-36 to 22a-45, inclusive, of the Connecticut General Statutes, including matters relating to regulating, licensing and enforcing of the provisions thereof, the Commission shall consider all relevant facts and circumstances in making its decision on any application for a permit, including but not limited to the following:*
>
> *a) Impacts of the proposed regulated activity on wetlands or watercourses outside the area for which the activity is proposed and future activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands or watercourses.*

The site construction will occur mainly within developed portions of the Subject Property, and any proposed Regulated Activity is limited to the Upland Review Areas. The proposal does not include any disturbance of the watercourse, Copt's Brook, or wetlands onsite. The existing woody buffer along Copt's Brook will be enhanced by removing the nonnative invasive Norway Maples and Euonymus and substantially replanted with native species. Similarly, the buffer around the pocket wetland in the northeast corner of the Subject Property will also be improved by the removal of invasive Japanese Knotweed and densely replanted. Notably, today, the area directly west of Copt's Brook is improved with a surface parking lot, and the pocket wetland is directly adjacent to the volleyball court and tennis court. All new improvements are setback from the watercourse and wetlands, and the proposed Best Management Practices (BMPs) will ensure these Regulated Areas are properly protected during and after construction. Therefore, no adverse impacts to the wetlands or watercourse on or off the site are anticipated. In fact, the Applicants submit that the removal of invasive species and improved stormwater treatment measures will have a net positive impact on the Subject Property.

> *b) The applicant's purpose for, and any feasible and prudent alternatives to, the proposed regulated activity which alternatives would cause less or no environmental impact to wetlands and watercourses. This consideration should include, but is not limited to, the alternative of requiring actions of a different nature which would provide similar benefits with different environmental impacts, such as using a different location for the activity.*

Pursuant to the Connecticut General Statutes, a *"feasible"* and *"prudent"* alternative includes one able to be *"constructed or implemented consistent with sound engineering principles"* which is *"economically and otherwise reasonable in light of the social benefits to be derived from the proposed regulated activity provided cost may be considered in deciding what is prudent and* *further provided a mere showing of expense will not necessarily mean an alternative is imprudent."*[3]

Concepts for the redevelopment of the Subject Property were developed as early as 2021 with multiple different options considered over the course of the last two (2) years. The Applicants have also spent a considerable amount of time reviewing plans with the Architectural Review Board (ARB) and Planning & Zoning Commission (P&Z) during the pre-application process. After considering these different options and the feedback obtained, the Applicants are confident that the current proposal is the most feasible and prudent alternative for the Subject Property.

There were several competing priorities to consider when designing the redevelopment of the Subject Property including but not limited to maintaining open space along Danbury Road, maintaining setbacks from Copt's Brook and producing an economically viable and contextually appropriate project. As shown in the submitted alternatives, other development scenarios would have produced a denser development with less green space and buildings in closer proximity to Copt's Brook.[4] The current proposal, which maintains a buffer from Danbury Road and is also setback from Copt's Brook and the pocket wetland, was also considered superior by the design team, staff and the reviewing boards during the pre-application process.

Every development project is a balancing act and the Applicants have submitted a plan that they believe strikes the right balance between several competing and worthy priorities. In addition to increasing green space and setbacks from Copt's Brook and the pocket wetland, the current proposal also incorporates:

- Catch Basins and yard drains fitted with 24" sumps to collect sediment and prevent discharge of oil and other pollutants into the storm drainage system;
- Hydrodynamic Separators to prevent the transport of oils and sediment further downstream, including Contech CDS units sized in accordance with the 2004 CTDEEP Stormwater Quality Manual;
- Underground infiltration as a primary treatment practice to reduce peak flow rates and promote groundwater recharge; and
- Level Spreaders as a secondary treatment practice to reduce stormwater discharge velocities to non-erosive levels.

Importantly, the proposal will also forward several important social benefits for the Town of Wilton (the **"Town"**) related to housing. As noted in the 2019 Plan of Conservation and Development (the **"POCD"**), the Town's housing stock is mainly limited to detached single-family homes with few options for younger working-age people and empty-nesters or retirees.[5]

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[3] Conn. Gen. Stat. Sec. 22a-38(17) – Conn. Gen. Stat. Sec. 22a-38(18).

[4] Arguably, another potential alternative would have been to convert the existing structure to residential units. However, because of the limitations created by the existing floor plans of the office building, this alternative was neither feasible nor prudent.

[5] POCD, pg. 8.

The prior trends of high housing costs and low housing supply were only exacerbated by the COVID-19 Pandemic. Yet, "the community has increasingly expressed interest in increasing housing type variety and price points in design and location appropriate ways" to increase the Town's overall housing stock and to attract and meet "the needs of occupants at different life and employment stages."[6]

The Applicants submit that the proposal would respond to these challenges and help further the Town's housing goals, including improved affordability with 10% of the units proposed available at prices affordable to families earning less than 80% of Area Median Income. With limited sites that are appropriate for multifamily residential development, the redevelopment of the Subject Property for this purpose is necessary to achieve the Town's housing and economic development goals. In addition to increasing housing diversity, the proposal will also remove a vacant office building. This will not only provide an infusion of new tax dollars from the apartments, but it will also reduce the Town's incredibly high office vacancy rate. For these reasons, the proposal is responsive to these trends and the vision identified in the POCD.

c) *The relationship between the short-term and long-term impacts of the proposed regulated activity on wetlands or watercourses and the maintenance and enhancement of long-term productivity of such wetlands or watercourses.*

No adverse impacts on the wetlands or watercourses are anticipated in the short-term or long-term. To mitigate any potential short-term impacts associated with site disturbance and construction, sediment and erosion controls will be implemented in accordance with the 2024 Connecticut Guidelines for Soil Erosion and Water Conservation. Additional guidelines have also been followed that are available from the Connecticut Department of Environmental Protection. The proposed stormwater management measures previously discussed will address stormwater quality on a long-term basis.

d) *Irreversible and irretrievable loss of wetland or watercourse resources which would be caused by the proposed regulated activity, including consideration of the extent to which the proposed regulated activity would foreclose a future ability to protect, enhance or restore such resources. This requires recognition that the inland wetlands and watercourses of the State of Connecticut are an indispensable, irreplaceable and fragile natural resource, and that these areas may be irreversibly destroyed by deposition, filling, and removal of material, by the diversion, obstruction or change of water flow including low flows, and by the erection of structures and other uses.*

[6] Id.

The primary function of the wetlands on the Subject Property is groundwater recharge. Other wetland values are either diminished or not present on this developed commercial site. However, no deposition, filling, removal of material, diversion, obstruction or change of water flow is proposed with regard to the onsite wetlands or watercourse. The proposal will not result in the irreversible or irretrievable loss of wetland or watercourse resources. Rather, the proposal will enhance these areas by removing invasive species and improving water quality on the Subject Property.

> e) *The character and degree of injury to, or interference with, safety, health, or the reasonable use of property, including abutting or downstream property, which would be caused or threatened by the proposed regulated activity, or the creation of conditions which may do so. This includes recognition of potential damage from erosion, turbidity, or siltation, loss of fish and wildlife and their habitat, loss of unique habitat having demonstrable natural, scientific or educational value, loss or diminution of beneficial aquatic organisms and wetland plants, the dangers of flooding and pollution, and the destruction of the economic, aesthetic, recreational and other public and private uses and values of wetlands and watercourses to the community.*

The proposal will not injure or interfere with the safety, health or reasonable use of the Subject Property or abutting/downstream properties. Replacing an underutilized office building with much-needed housing will have a positive economic impact for the Town as a whole. Moreover, building this housing within the Office Park allows the Town to better protect other areas where the preservation of open space is important.

The enhanced stormwater management system will protect the wetlands and watercourse on and adjacent to the Subject Property post-construction, and the proposed sediment and erosion controls will do so while construction is underway. Wildlife usage of the Subject Property is limited, and there is no reason to believe the change of use will impact the wildlife that does exist. Moreover, there have been no identified species of special concern, threatened species or engendered species observed on the site.

> f) *The environmental impact of the proposed regulated activity on the inland wetland or watercourse including the effects on the inland wetland's and watercourse's capacity to support desirable biological life, to prevent flooding, to supply and protect surface and ground waters, to control sediment, to facilitate drainage, to control pollution, to support recreational activities, and to promote public health and safety. Measures which would mitigate the impact of any aspect of the proposed regulated activity. Mitigation measures which may be considered as a condition of issuing a permit for such activity include but are not limited to, measures to (a) prevent or minimize pollution or other environmental damage, (b) maintain*

or enhance existing environmental quality, or (c) in the following order of priority: 1. restore, 2. enhance, and 3. create productive wetland or watercourse resources. Appropriate mitigation measures are those which could be feasibly carried out by the applicant and would protect the wetland's or watercourse's natural capacity to support fish and wildlife, to prevent flooding, to supply and protect surface and ground waters, including public water supplies to control sedimentation, to prevent erosion, to assimilate wastes, to facilitate drainage, to control pollution, to support recreational activities and open space, and to promote public health and safety.

While no adverse impacts to the wetlands or watercourse onsite are anticipated, the project has still incorporated several layers of mitigation measures and BMPs to further guard against potential impacts. The proposed mitigation measures include the following:

1. Potential impacts from vegetation removal and earthwork adjacent to the wetland resources will be minimized by the following enhancements:
   a. Maintaining a 50’ wooded buffer to Copt’s Brook along its eastern bank;
   b. Maintaining and enhancing the existing 20’ wide vegetative buffer along the western bank of Copt’s Brook;
   c. Replanting native trees, shrubs, and perennials to restore lost vegetation and reduce nonnative invasive plants and expand native plants in the buffers;
   d. Planting a mix of trees throughout the site to reduce thermal pollution; and
   e. Implementing and maintaining proper sedimentation and erosion controls and construction sequence throughout the construction period.

2. Potential impacts from new impervious areas of building and pavements will be minimized by the enhanced and modernized stormwater management system with expanded water quality treatment.

IV. Feasible & Prudent Alternative Analysis

As stated in the Applicants’ response to Section 10.3(b) above, the current proposal is the feasible and prudent alternative for the site. The current proposal has been thoughtfully designed to mitigate against any unintended consequences to the wetlands or watercourse while still responding to the Town’s well-documented need to increase housing diversity for its current and future residents.

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
LANDSCAPE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
REFER TO LANDSCAPE FOR TREES AND LANDSCAPE INFORMATION.

lessard DESIGN
8521 LEESBURG PIKE, SEVENTH FLOOR, VIENNA, VA 22182
P:571.830.1800 | F:571.830.1801 | WWW.LESSARDDESIGN.COM

ILLUSTRATIVE SITE PLAN - 64 DANBURY ROAD

SITE ANALYSIS

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT

JAN 21, 2021
FUL.003

0' 25' 50' 100'
SCALE: 1"=50' (@ 22"x34")

A.01

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
LANDSCAPE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
REFER TO LANDSCAPE FOR TREES AND LANDSCAPE INFORMATION.

lessard DESIGN
8521 LEESBURG PIKE, SEVENTH FLOOR, VIENNA, VA 22182
P:571.830.1800 | F:571.830.1801 | WWW.LESSARDDESIGN.COM

SITE PLAN - 64 DANBURY ROAD

SITE ANALYSIS

64 DANBURY ROAD

WILTON, CT

FULLER DEVELOPMENT

FEB 8, 2021
FUL.003

0' 25' 50' 100'
SCALE: 1"=50' (@ 22"x34")

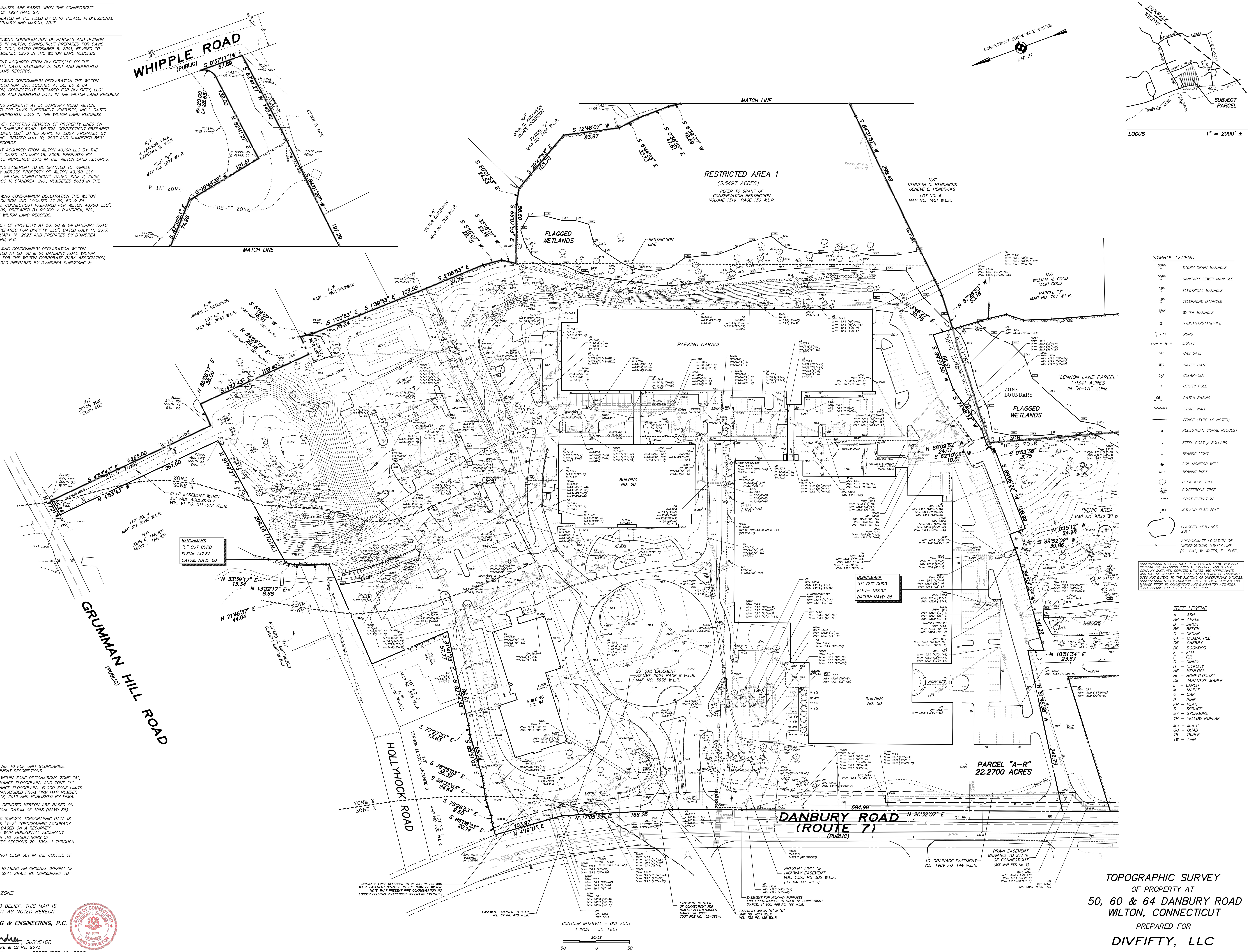
A.4

GENERAL NOTES

1. BEARINGS AND COORDINATES ARE BASED UPON THE CONNECTICUT COORDINATE SYSTEM OF 1927 (NAD 27)
2. WETLANDS WERE DELINEATED IN THE FIELD BY OTTO THEALL, PROFESSIONAL SOIL SCIENTIST IN FEBRUARY AND MARCH, 2017.

MAP REFERENCES

1. "PROPERTY SURVEY SHOWING CONSOLIDATION OF PARCELS AND DIVISION OF PROPERTY LOCATED IN WILTON, CONNECTICUT PREPARED FOR DAVIS INVESTMENT VENTURES, INC.", DATED DECEMBER 6, 2001, REVISED TO MAY 7, 2001, AND NUMBERED 5278 IN THE WILTON LAND RECORDS
2. "MAP SHOWING EASEMENT ACQUIRED FROM DIV FIFTY,LLC BY THE STATE OF CONNECTICUT", DATED DECEMBER 5, 2001 AND NUMBERED 5326 IN THE WILTON LAND RECORDS.
3. "PROPERTY SURVEY SHOWING CONDOMINIUM DECLARATION THE WILTON CORPORATE PARK ASSOCIATION, INC. LOCATED AT 50, 60 & 64 DANBURY ROAD WILTON, CONNECTICUT PREPARED FOR DIV FIFTY, LLC", DATED AUGUST 19, 2002 AND NUMBERED 5343 IN THE WILTON LAND RECORDS.
4. "EASEMENT MAP SHOWING PROPERTY AT 50 DANBURY ROAD WILTON, CONNECTICUT PREPARED FOR DAVIS INVESTMENT VENTURES, INC.", DATED AUGUST 8, 2002 AND NUMBERED 5342 IN THE WILTON LAND RECORDS.
5. "ZONING LOCATION SURVEY DEPICTING REVISION OF PROPERTY LINES ON PROPERTY AT 40 – 64 DANBURY ROAD WILTON, CONNECTICUT PREPARED FOR DMP 40/60 DEVELOPER LLC", DATED APRIL 16, 2007, PREPARED BY ROCCO V. D'ANDREA, INC., REVISED MAY 10, 2007 AND NUMBERED 5591 IN THE WILTON LAND RECORDS.
6. "MAP SHOWING EASEMENT ACQUIRED FROM WILTON 40/60 LLC BY THE STATE OF CONNECTICUT" DATED JANUARY 16, 2008, PREPARED BY ROCCO V. D'ANDREA, INC., NUMBERED 5615 IN THE WILTON LAND RECORDS.
7. "EASEMENT MAP DEPICTING EASEMENT TO BE GRANTED TO YANKEE GAS SERVICES COMPANY ACROSS PROPERTY OF WILTON 40/60, LLC 50–64 DANBURY ROAD WILTON, CONNECTICUT", DATED JUNE 2, 2008 AND PREPARED BY ROCCO V. D'ANDREA, INC., NUMBERED 5638 IN THE WILTON LAND RECORDS.
8. "PROPERTY SURVEY SHOWING CONDOMINIUM DECLARATION THE WILTON CORPORATE PARK ASSOCIATION, INC. LOCATED AT 50, 60 & 64 DANBURY ROAD WILTON, CONNECTICUT PREPARED FOR WILTON 40/60, LLC", DATED JANUARY 28, 2009, PREPARED BY ROCCO V. D'ANDREA, INC., NUMBERED 5648 IN THE WILTON LAND RECORDS.
9. "ZONING LOCATION SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD WILTON, CONNECTICUT PREPARED FOR DIVFIFTY, LLC", DATED JULY 11, 2017, REVISED THROUGH FEBRUARY 16, 2023 AND PREPARED BY D'ANDREA SURVEYING & ENGINEERING, P.C.
10. "PROPERTY SURVEY SHOWING CONDOMINIUM DECLARATION WILTON CORPORATE PARK LOCATED AT 50, 60 & 64 DANBURY ROAD WILTON, CONNECTICUT PREPARED FOR THE WILTON CORPORATE PARK ASSOCIATION, INC." DATED JUNE 17, 2020 PREPARED BY D'ANDREA SURVEYING & ENGINEERING, P.C.



REFER TO MAP REFERENCE No. 10 FOR UNIT BOUNDARIES, CONDOMINIUM AND DEVELOPMENT DESCRIPTIONS.

THE SUBJECT PARCEL LIES WITHIN ZONE DESIGNATIONS ZONE "A", ZONE "X" (0.2% ANNUAL CHANCE FLOODPLAIN) AND ZONE "X" (OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN). FLOOD ZONE LIMITS DEPICTED HEREON WERE TRANSCRIBED FROM FIRM MAP NUMBER 09001C0391F DATED JUNE 18, 2010 AND PUBLISHED BY FEMA.

CONTOURS AND ELEVATIONS DEPICTED HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

THIS MAP IS A TOPOGRAPHIC SURVEY. TOPOGRAPHIC DATA IS IN ACCORDANCE WITH CLASS "T–2" TOPOGRAPHIC ACCURACY. BOUNDARY INFORMATION IS BASED ON A RESURVEY CONDUCTED IN ACCORDANCE WITH HORIZONTAL ACCURACY CLASS "A–2" AS DEFINED IN THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20–300b–1 THROUGH SEC. 20–300b–20.

NEW MONUMENTATION HAS NOT BEEN SET IN THE COURSE OF MAKING THIS SURVEY.

ONLY COPIES OF THIS MAP, BEARING AN ORIGINAL IMPRINT OF THE SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED TO BE TRUE, VALID COPIES.

LAND LIES IN "DE–5" ZONE

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

D'ANDREA SURVEYING & ENGINEERING, P.C.

Anthony L. D'Andrea, SURVEYOR
ANTHONY L. D'ANDREA CT. PE & LS No. 9673
RIVERSIDE, CONNECTICUT SEPTEMBER 12, 2023

STATE OF CONNECTICUT ANTHONY L. D'ANDREA No. 9673 LICENSED LAND SURVEYOR

60DAN_NAVD88_16XJ_TS_0.DWG

TOPOGRAPHIC SURVEY
OF PROPERTY AT
50, 60 & 64 DANBURY ROAD WILTON, CONNECTICUT
PREPARED FOR
DIVFIFTY, LLC

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O. 203.712.1100
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ELS LANDSCAPE ARCHITECTURE ENVIRONMENTAL PLANNING
8 KNIGHT STREET, SUITE 203, NORWALK, CT 06851
PH: 203-855-7879

CARMODY TORRANCE | SANDAK | HENNESSEY LLP
1055 WASHINGTON BLVD., 4TH FLOOR | STAMFORD, CT 06901-2218 | P:203-425-4200 | www.carmodylaw.com

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STATE OF CONNECTICUT SUNGJAE LEE LICENSED ARCHITECT ARI.00...

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
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ILLUSTRATIVE SITE PLAN

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD

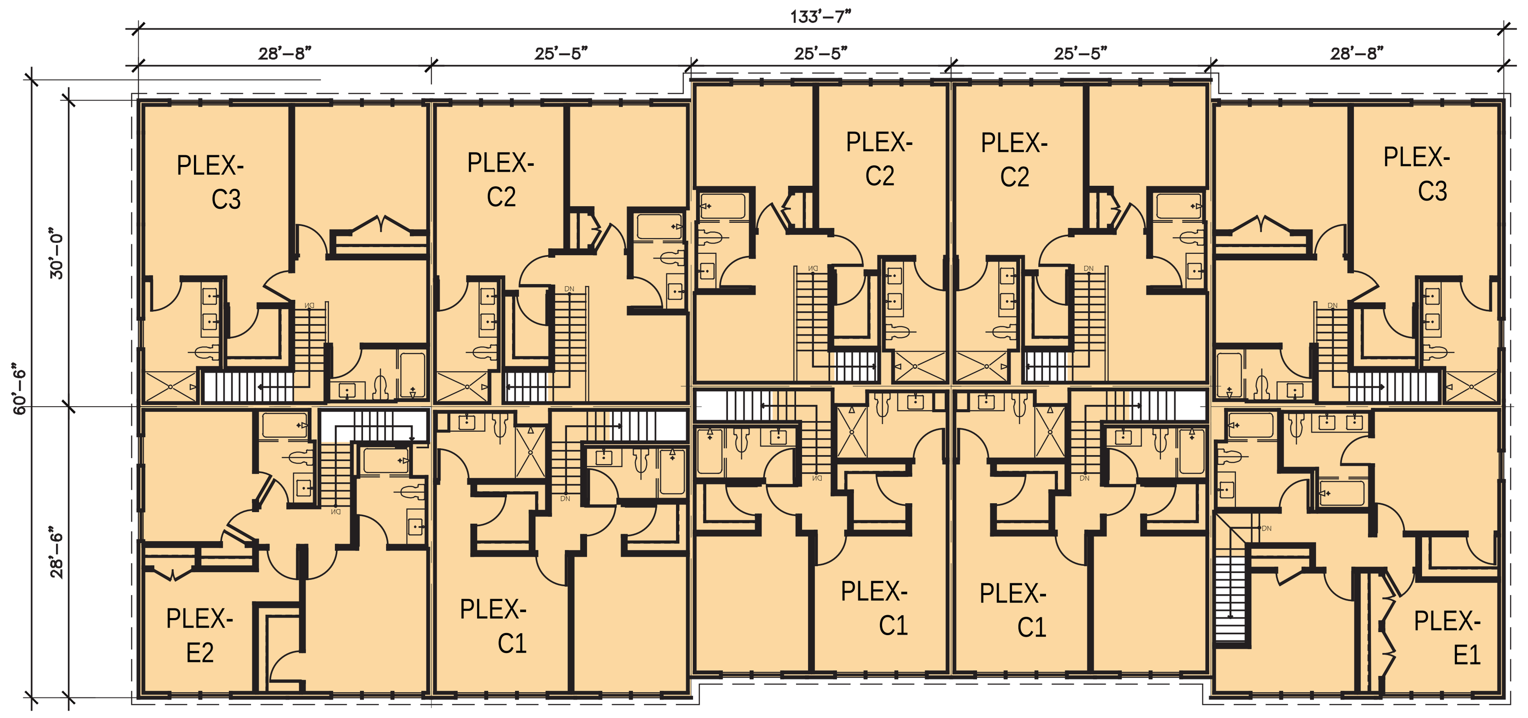
WILTON, CT

FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

A.02

0' 25' 50' 100'
SCALE: 1" = 50' (@ 22"x34")



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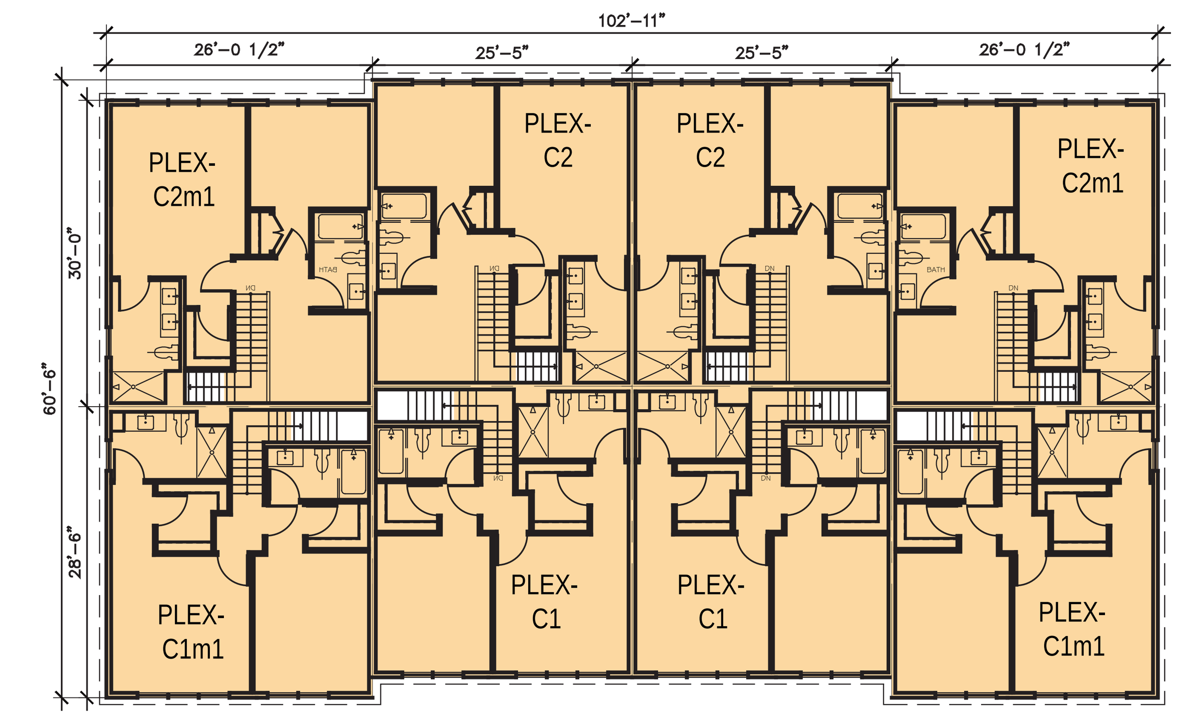

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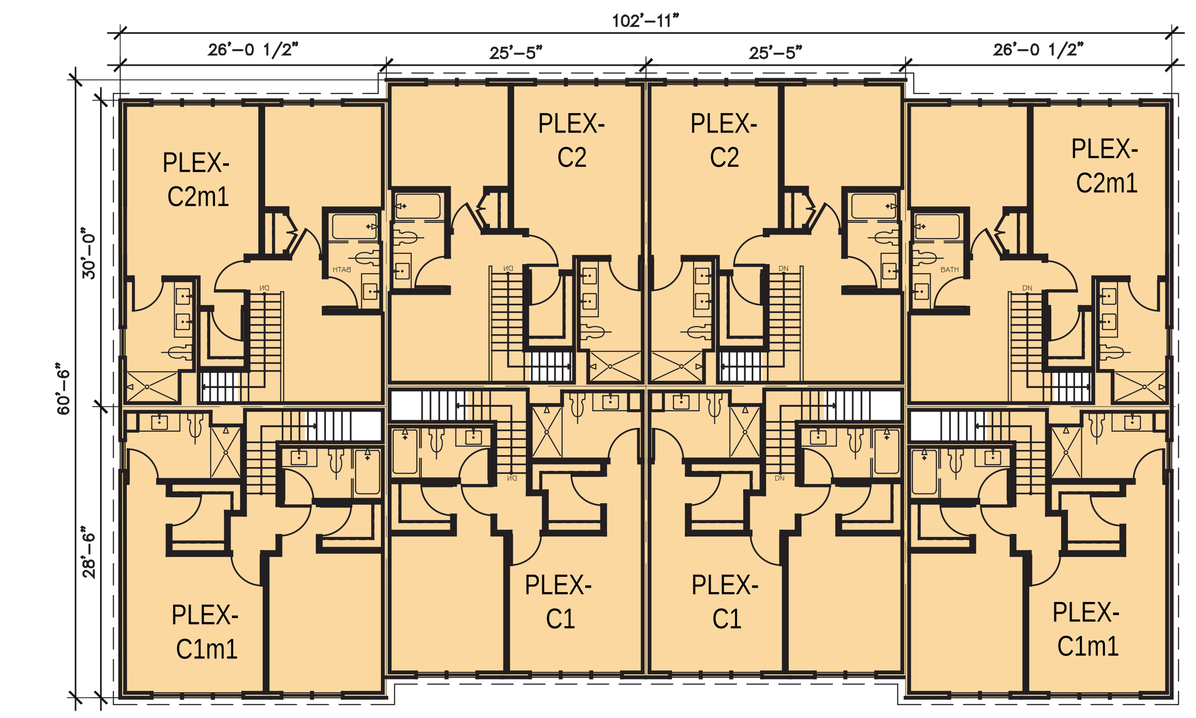

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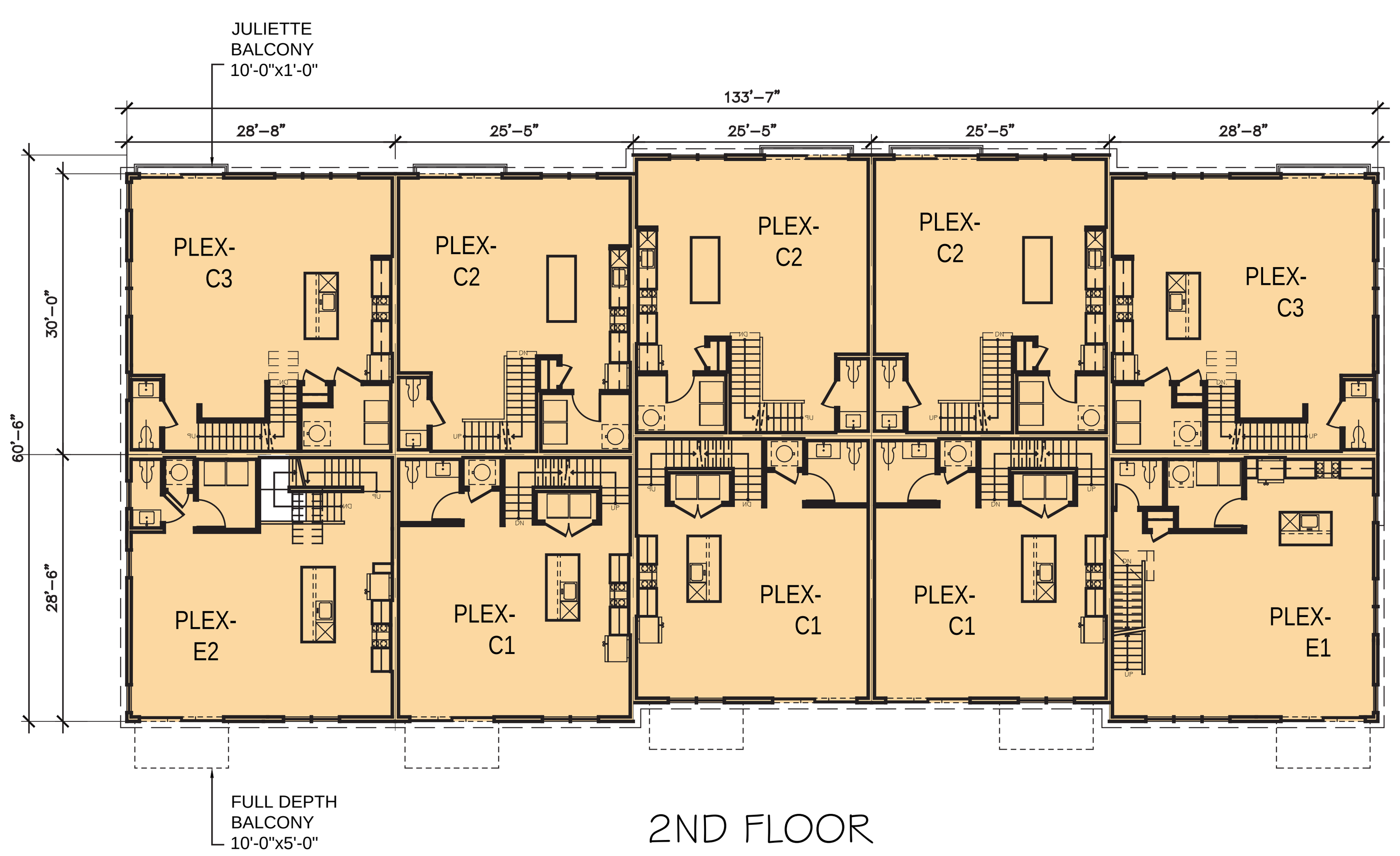

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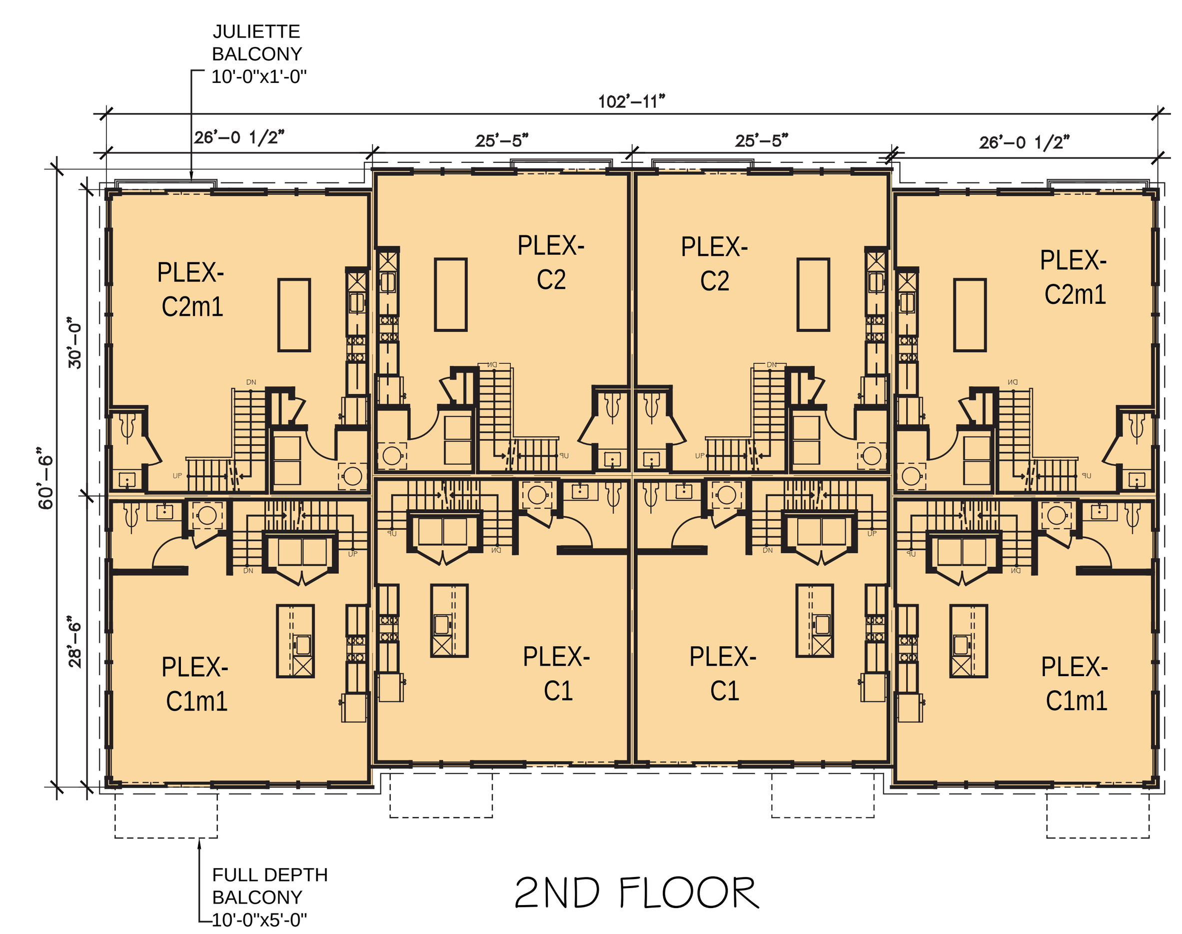

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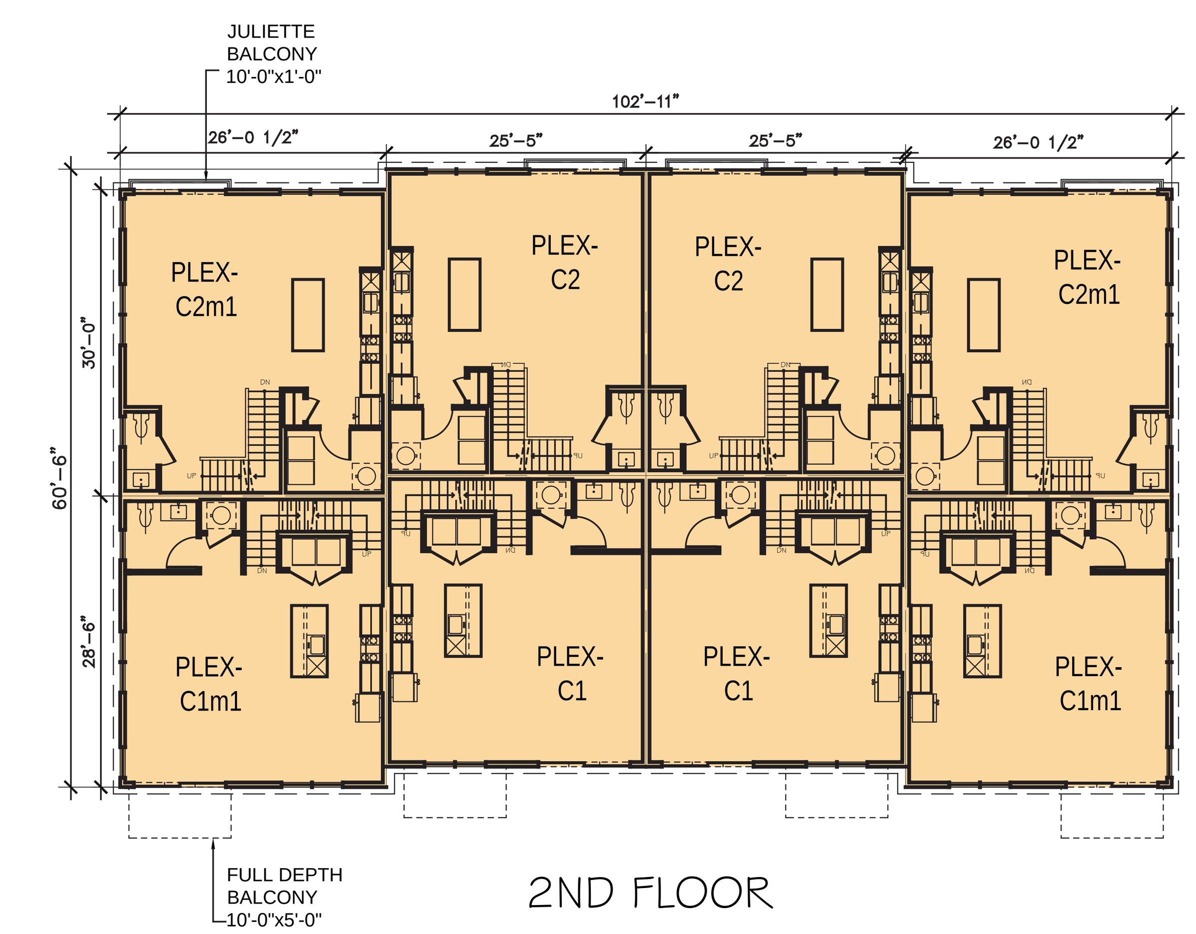

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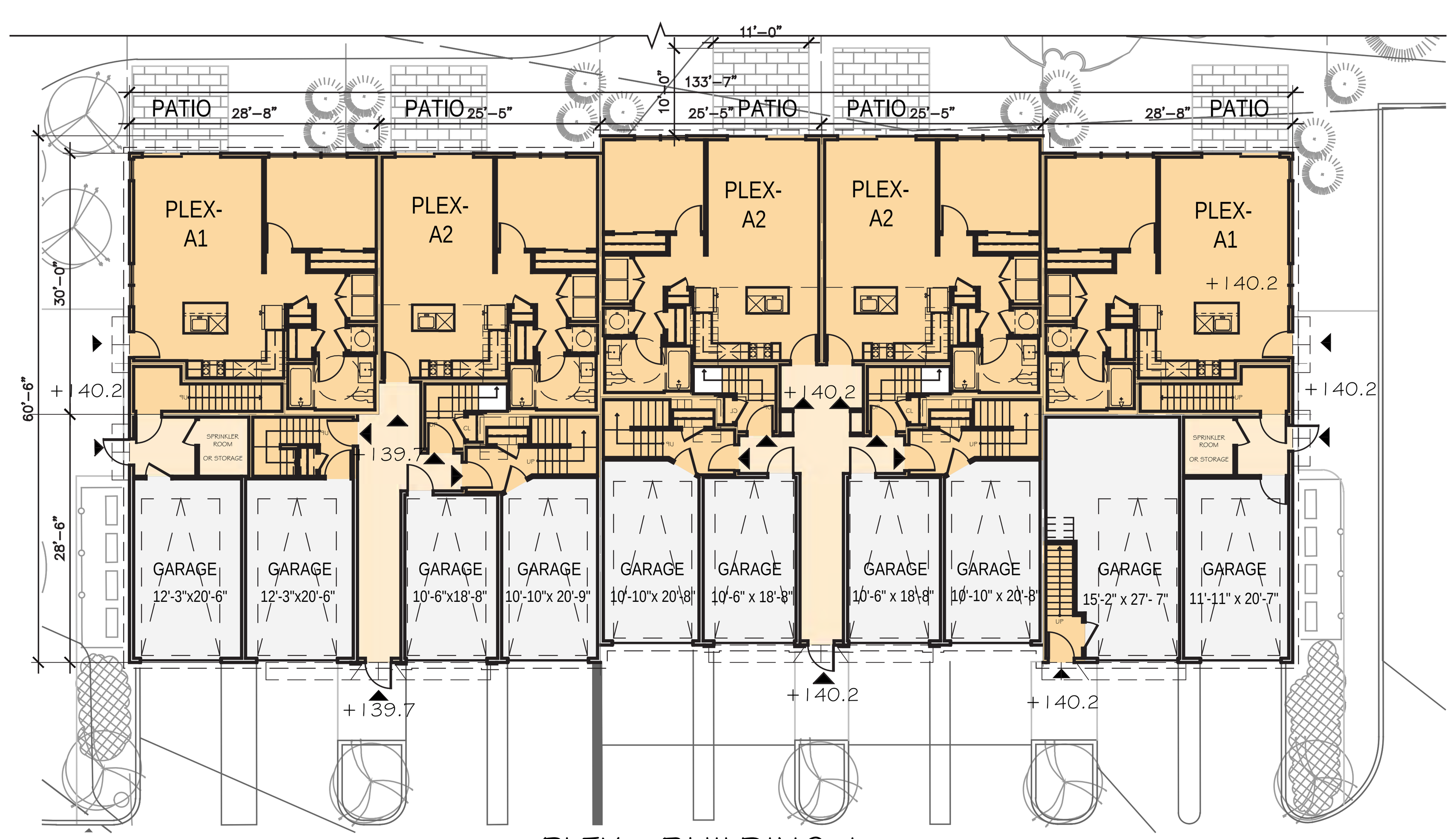
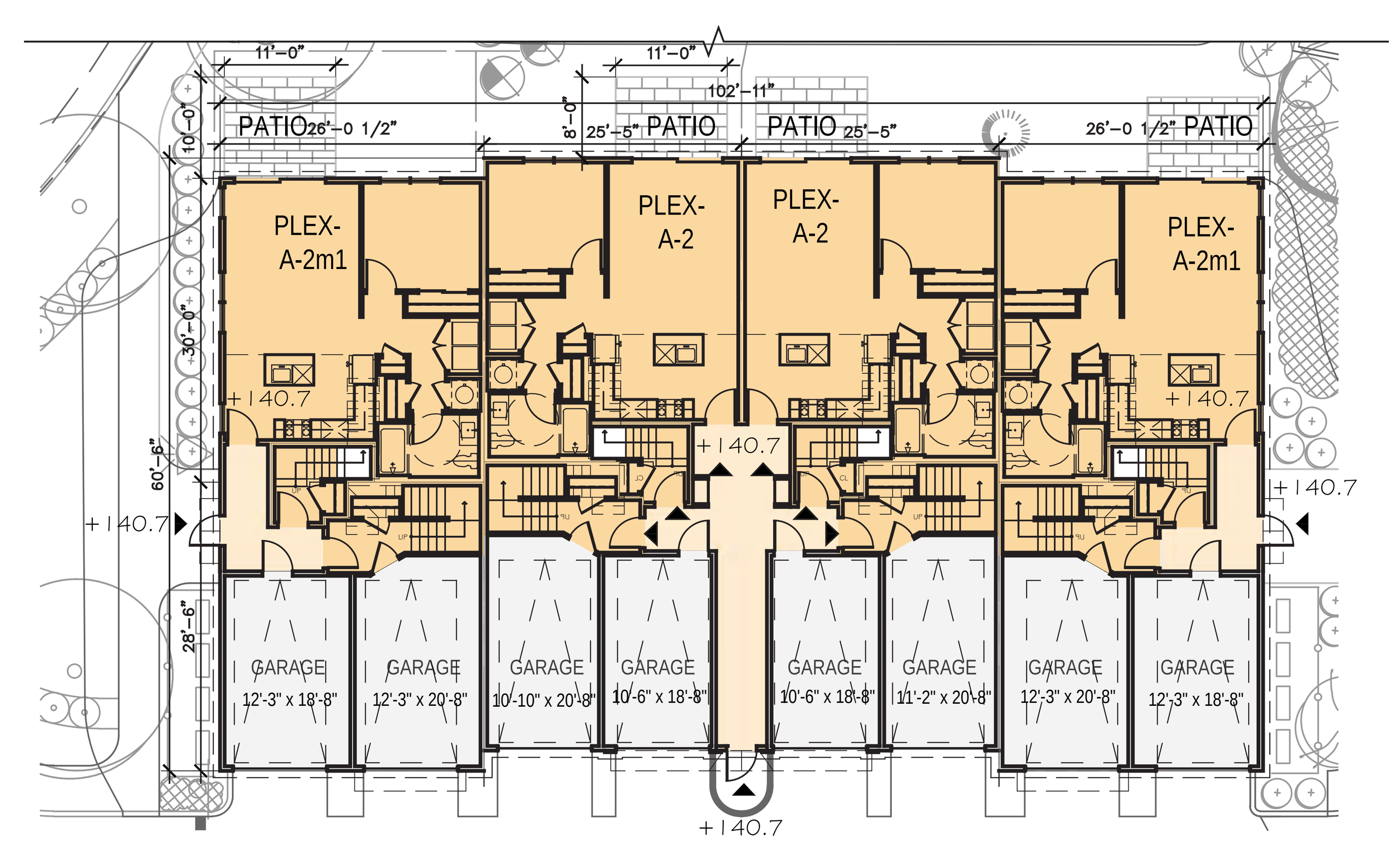


PLEX - BUILDING 1
1ST FLOOR



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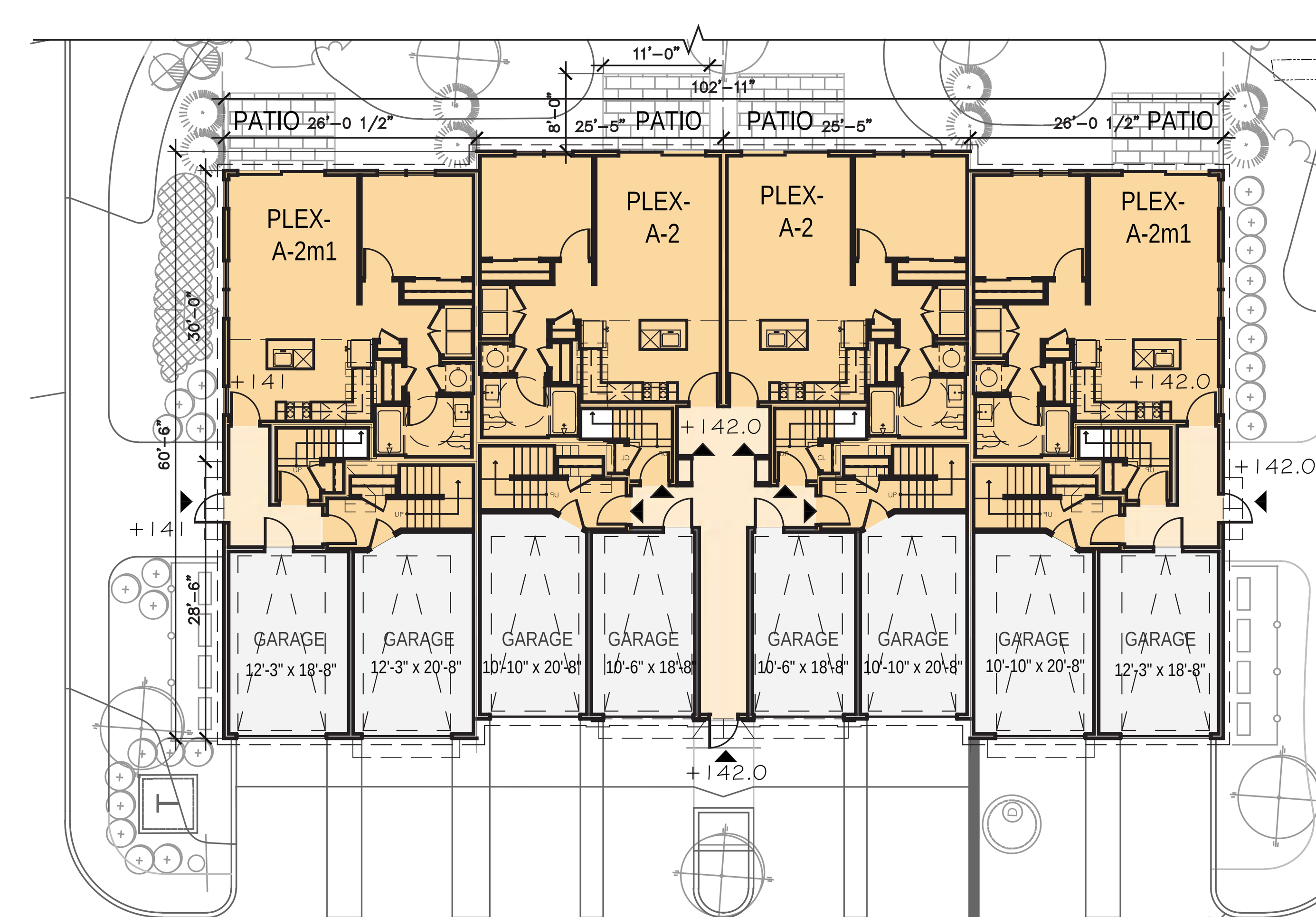

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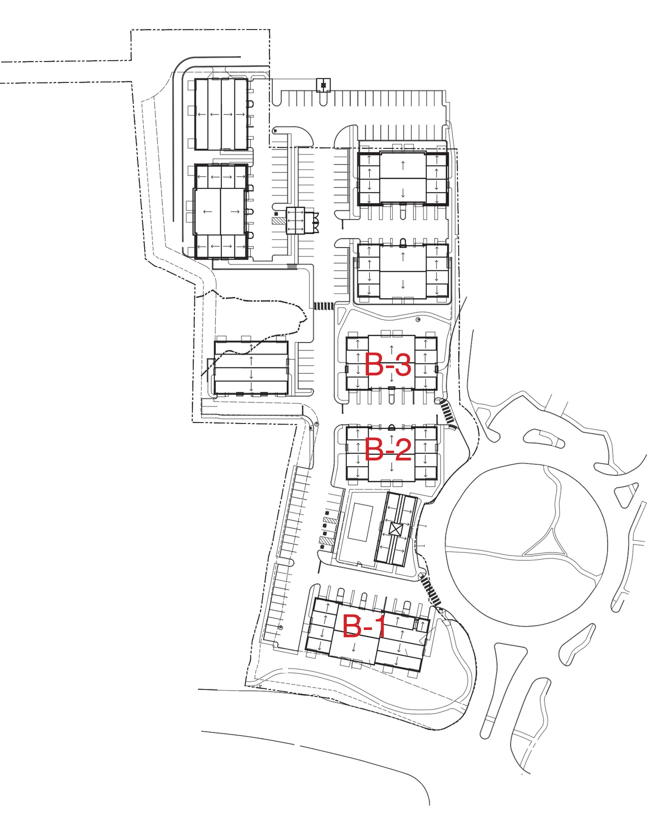

KEY PLAN

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
REFER TO LANDSCAPE FOR TREES AND LANDSCAPE INFORMATION.

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FLOOR PLANS

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD

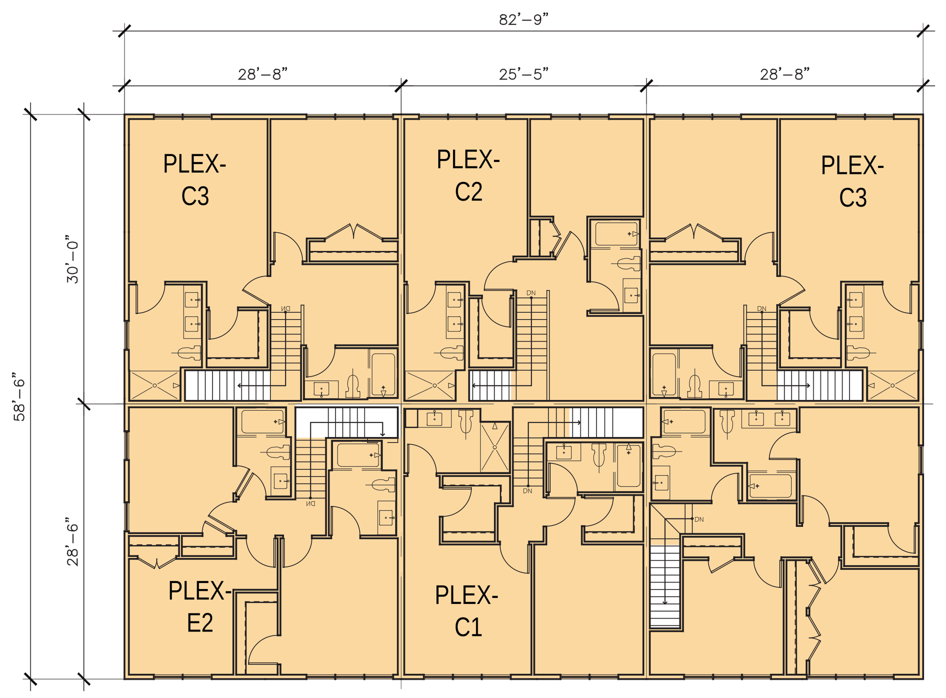
WILTON, CT

FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

A.03

0' 8' 16' 32'
SCALE: 1/16" = 1'-0" (@ 22"x34")



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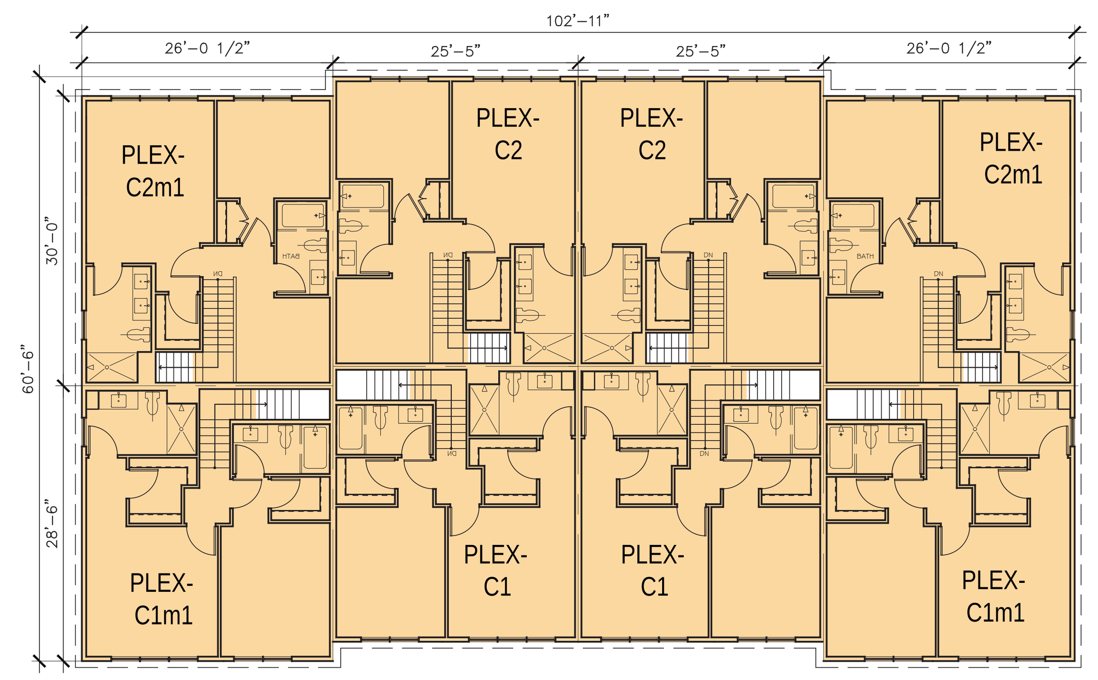

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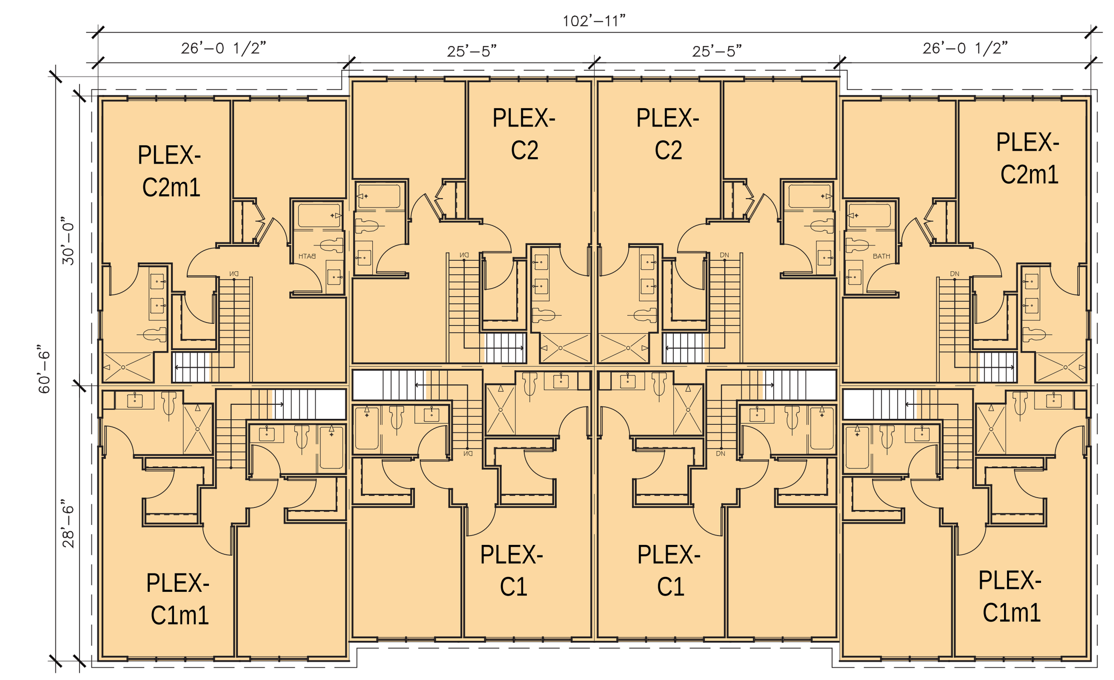

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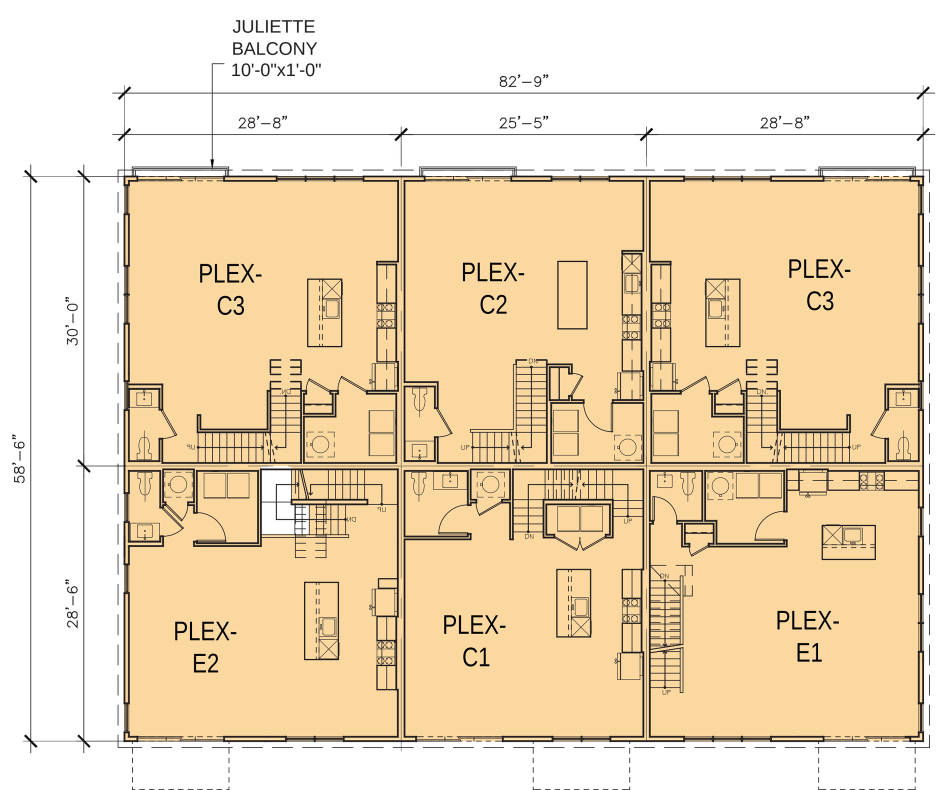

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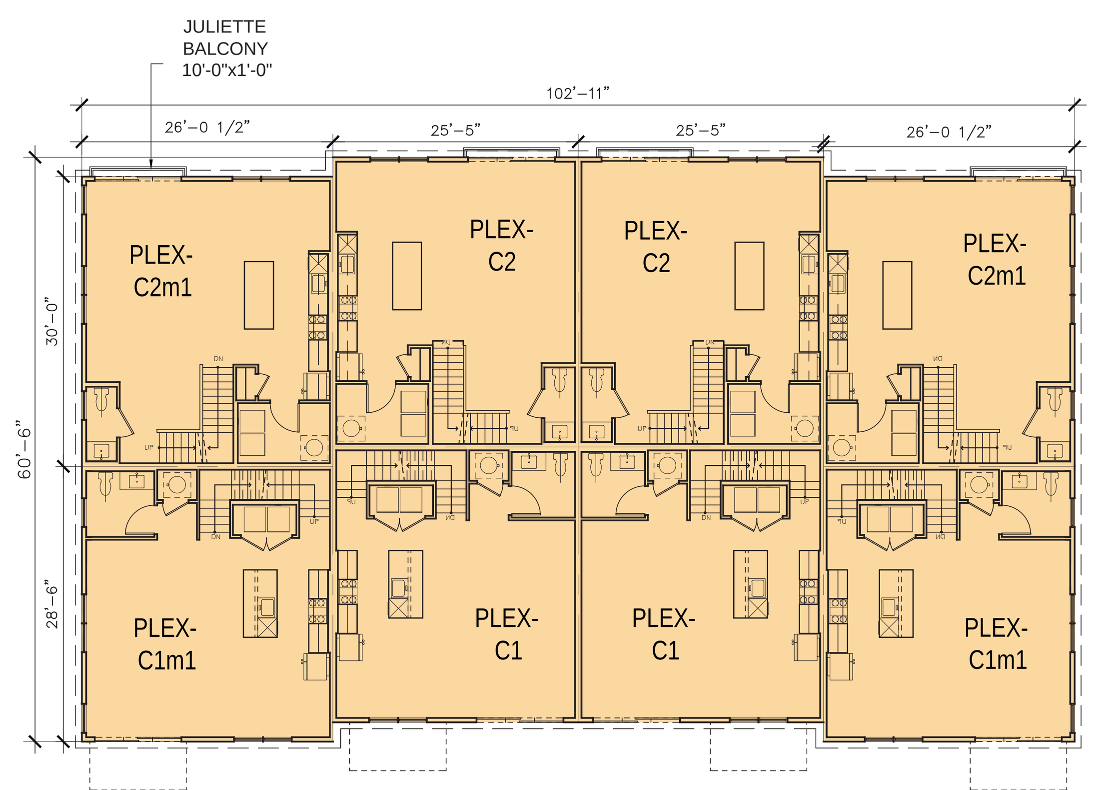

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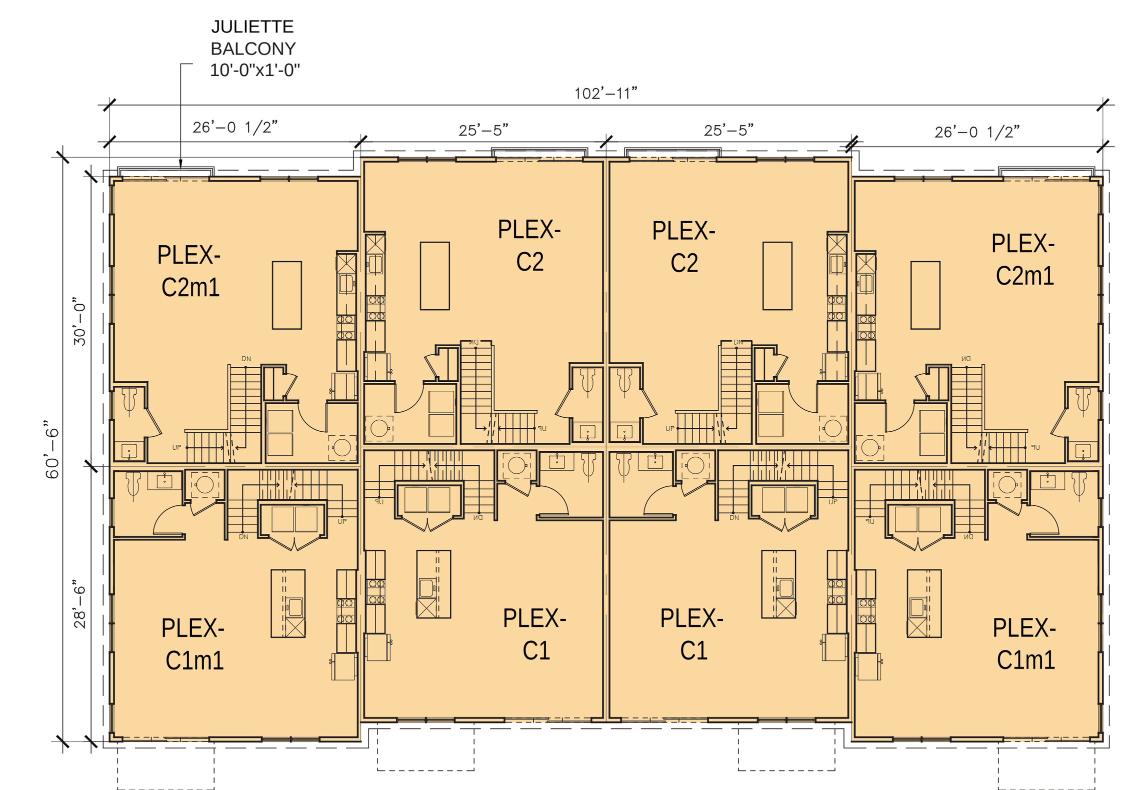

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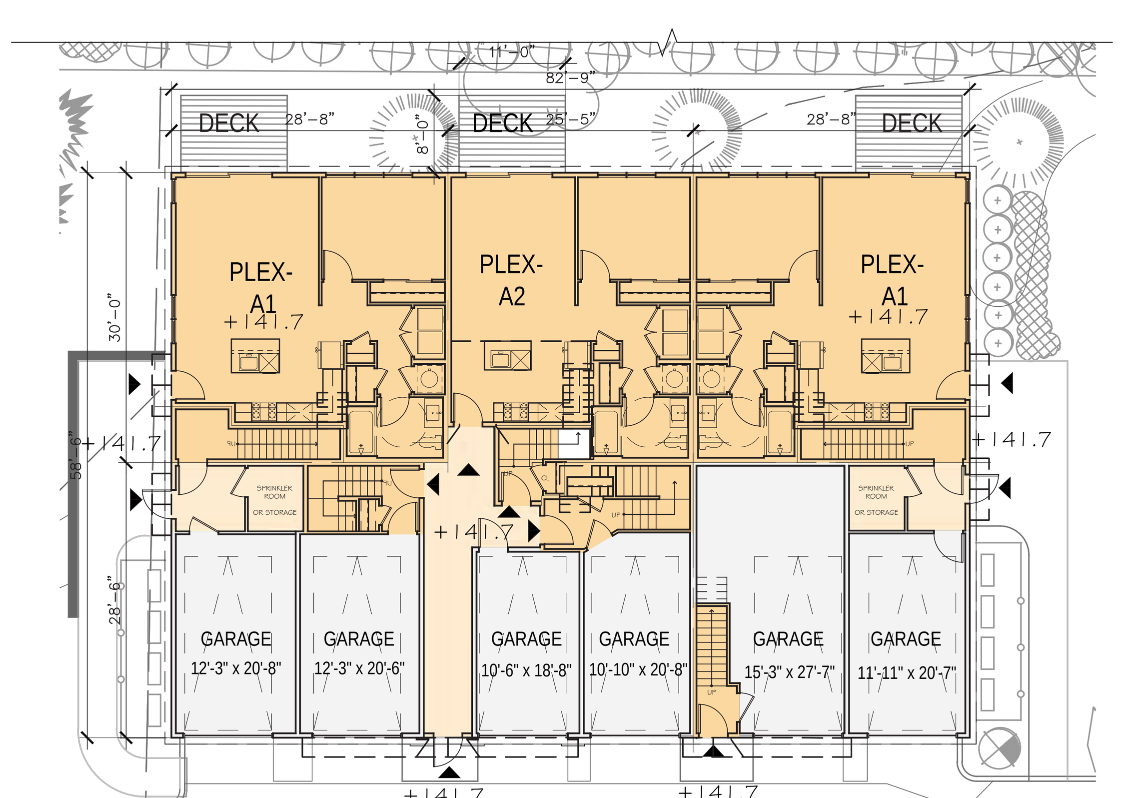
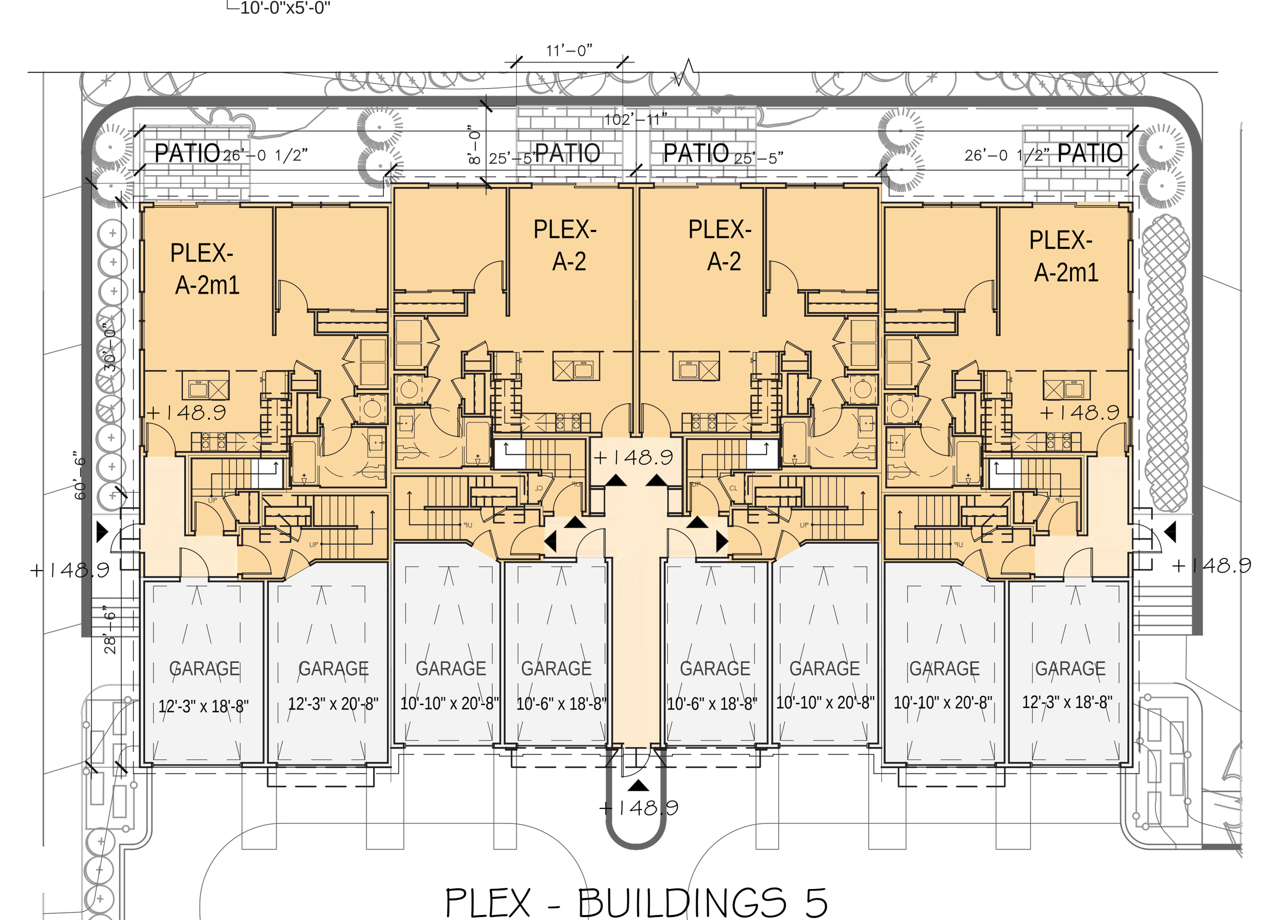


PLEX - BUILDING 4
1ST FLOOR



PLEX - BUILDINGS 5
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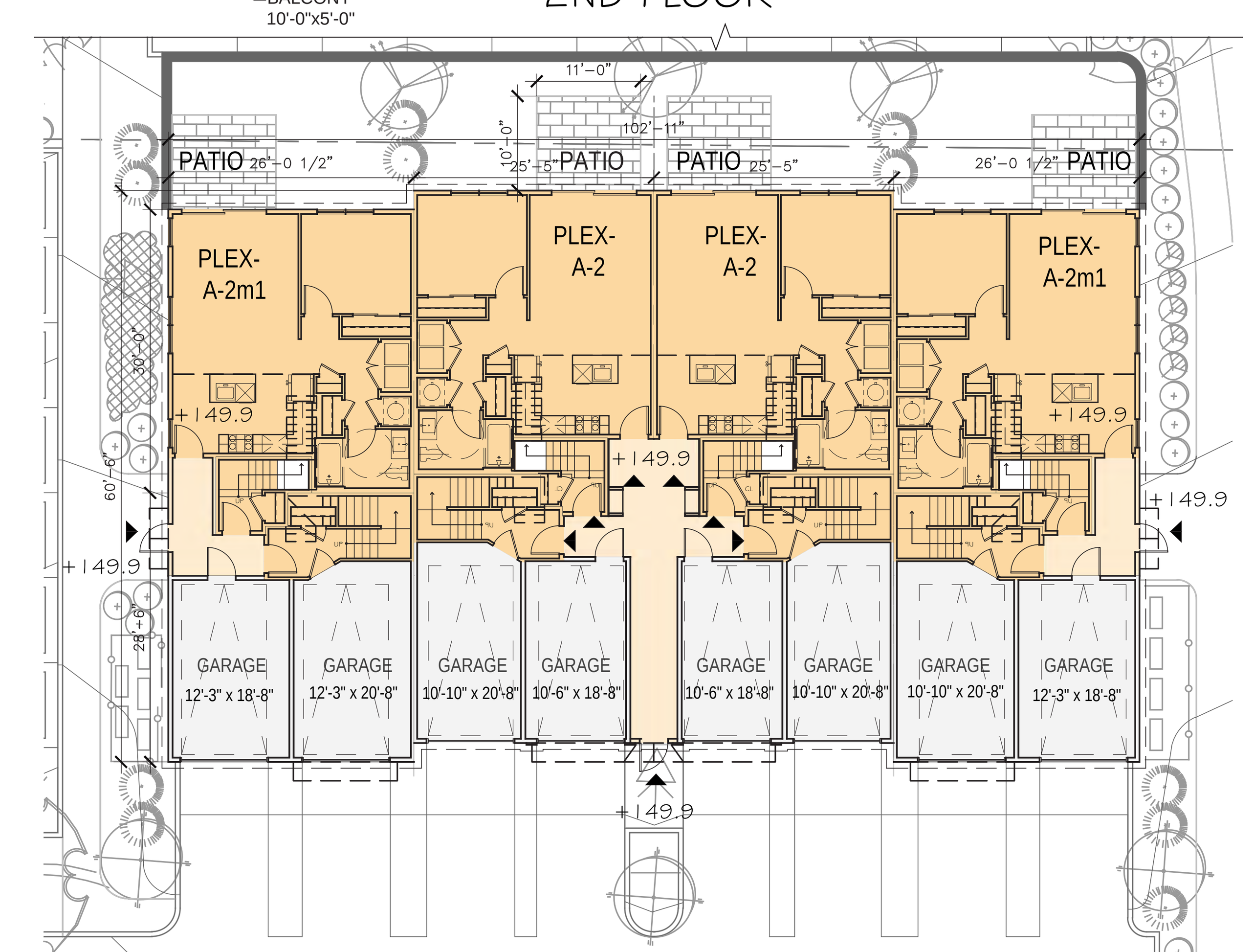

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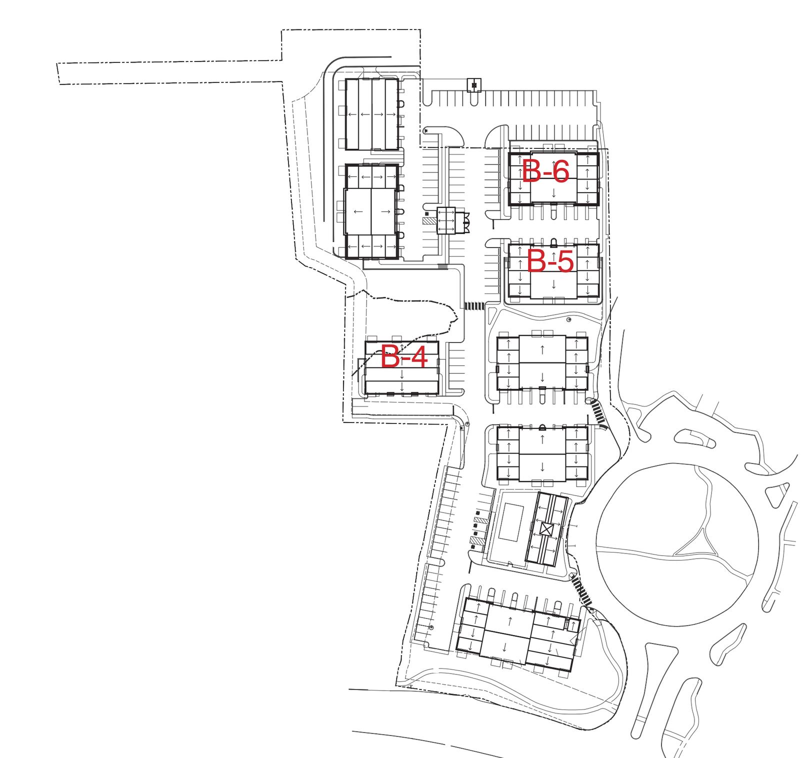
1ST FLOOR



KEY PLAN

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
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FLOOR PLANS

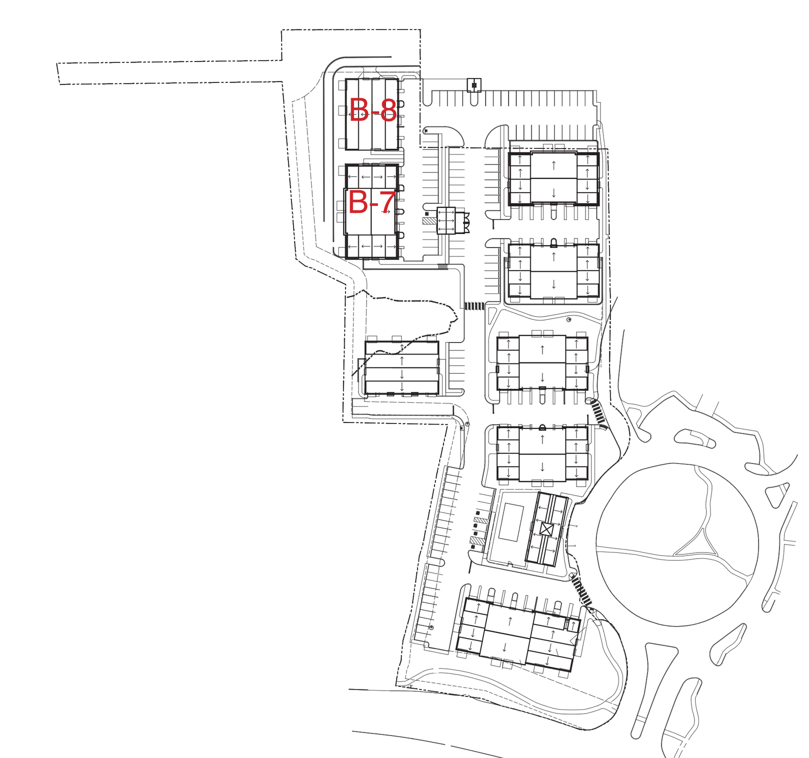
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

A.04

0' 8' 16' 32'
SCALE: 1/16" = 1'-0" (@ 22"x34")



KEY PLAN

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FLOOR PLANS

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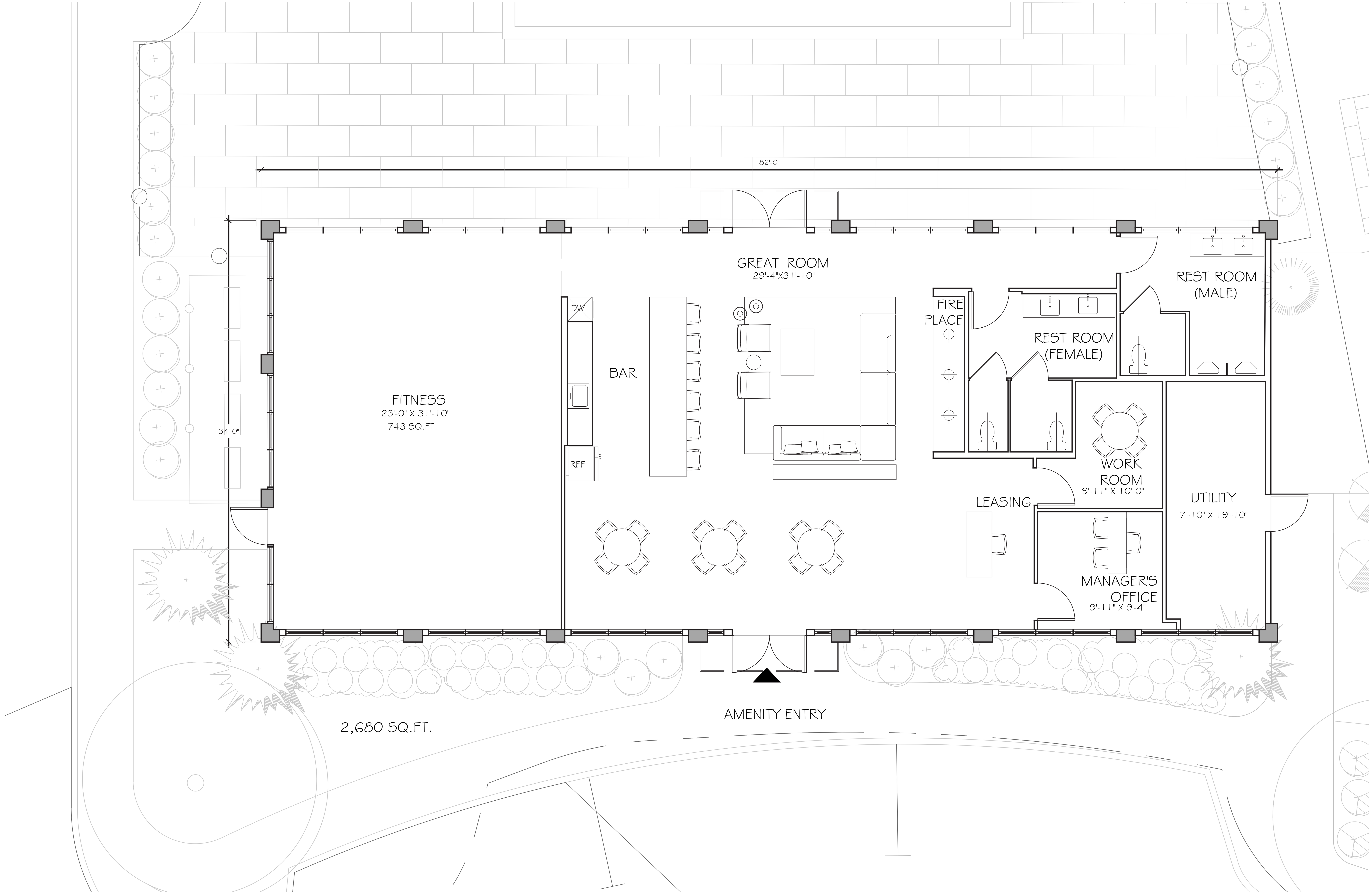
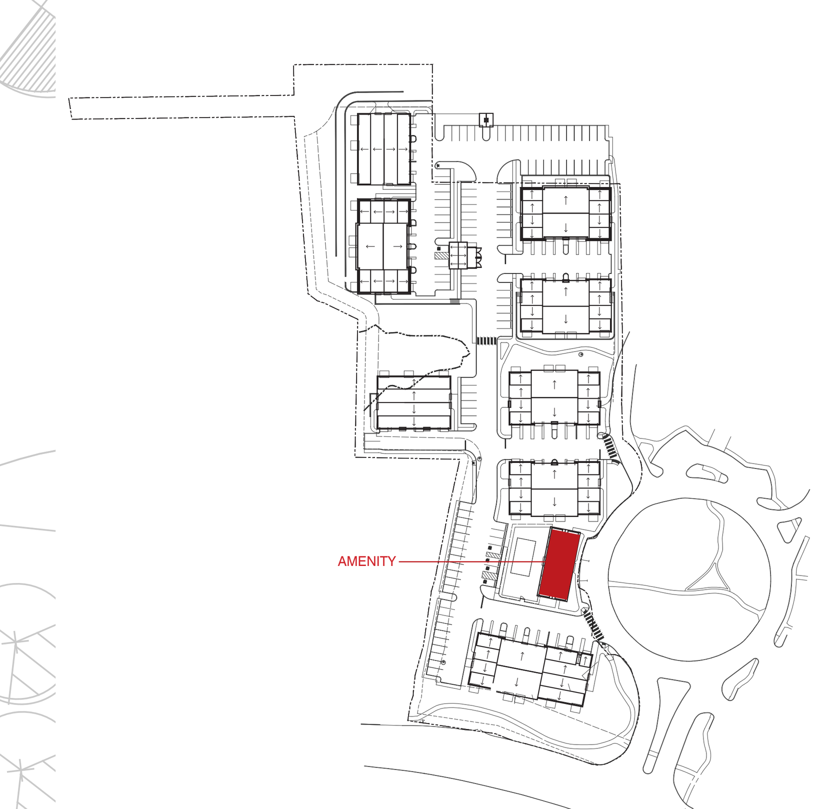
JAN 02, 2024
FUL.003

A.05

0' 8' 16' 32'
SCALE: 1/16" = 1'-0" (@ 22"x34")

STATE OF CONNECTICUT SUNGJAE LEE LICENSED ARCHITECT





KEY PLAN

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AMENITY FLOOR PLAN

PLANNING AND ZONING SUBMISSION

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WILTON, CT

FULLER DEVELOPMENT, LLC

JAN 02, 2024

FUL.003

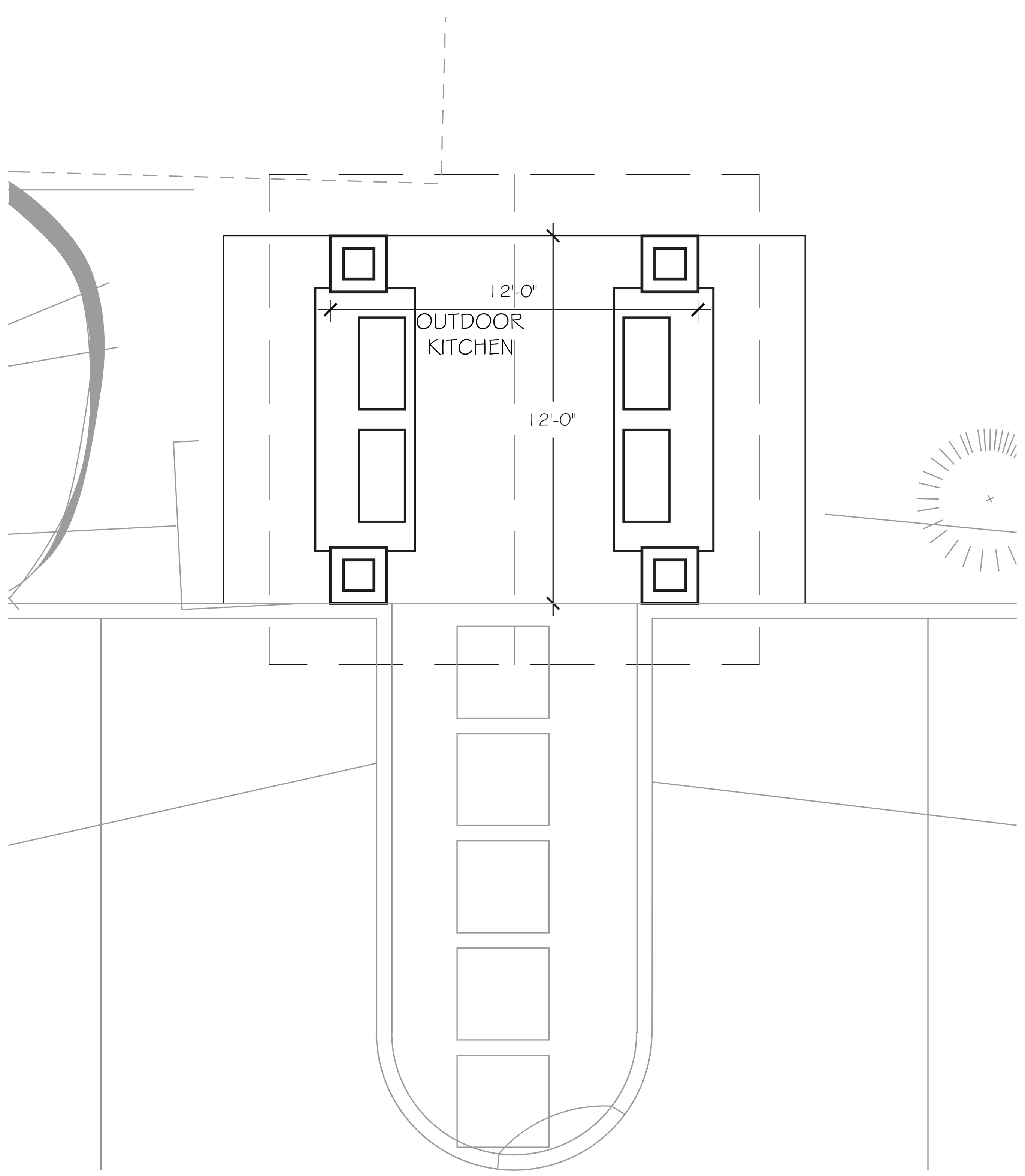
A.06

0' 2' 4' 8'

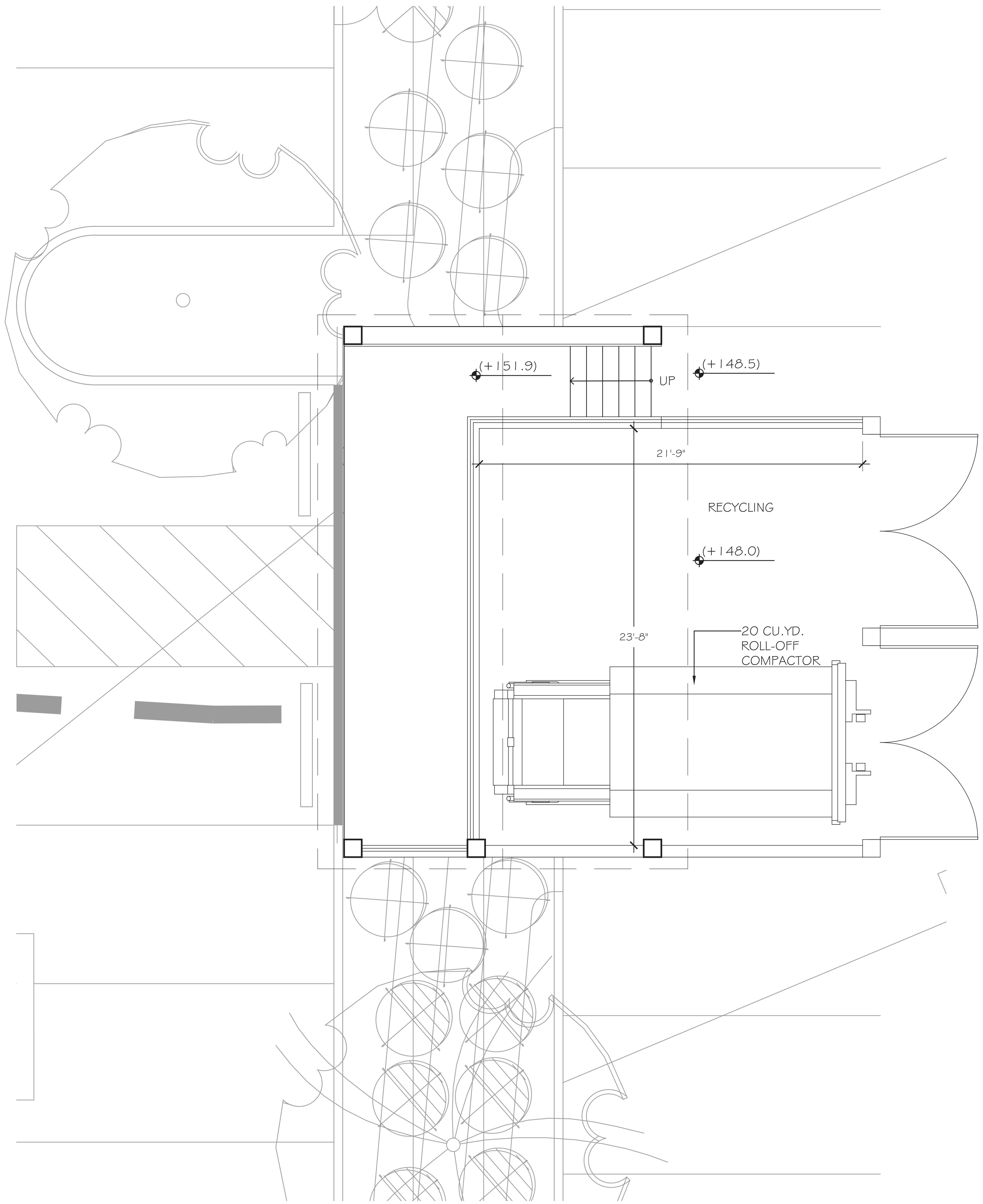
SCALE: 1/4"= 1'-0" (@ 22"x34")

STATE OF CONNECTICUT SUNGJAE LEE LICENSED ARCHITECT ARI 0013687

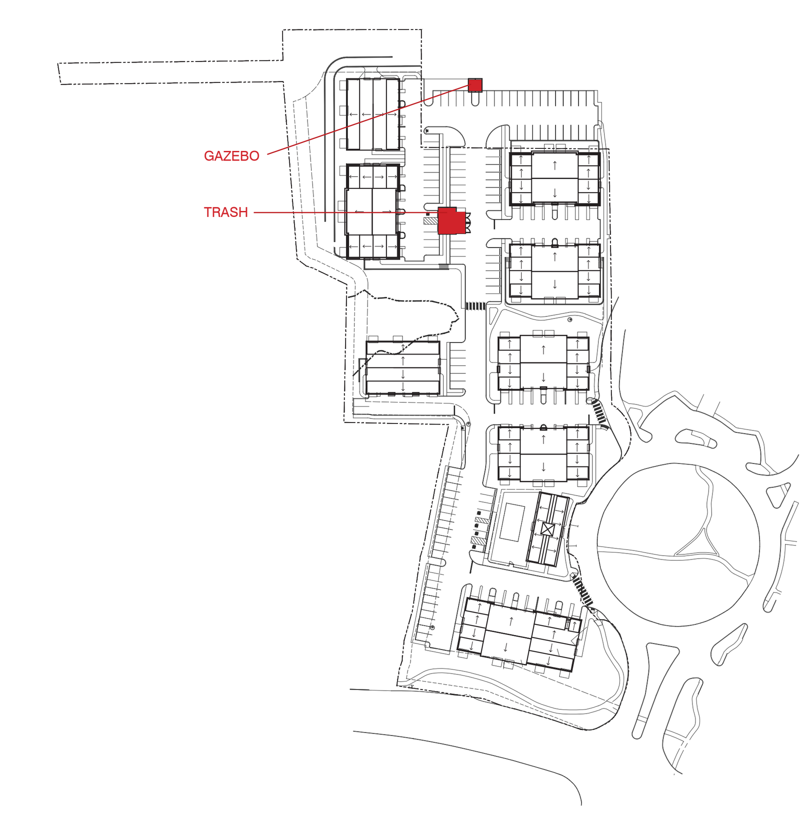
01-02-2024



GAZEBO FLOOR PLAN



TRASH SHED FLOOR PLAN



KEY PLAN

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
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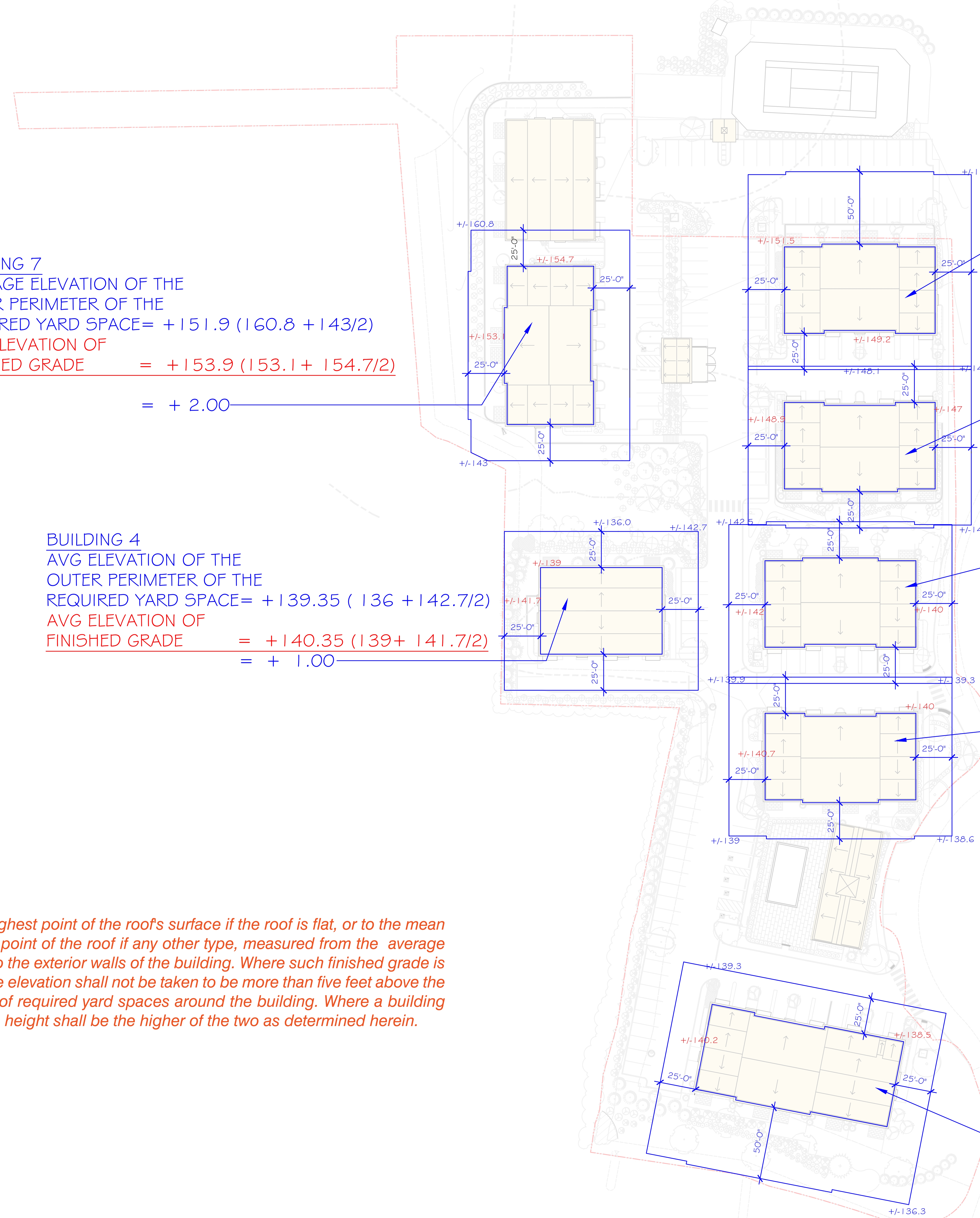
GAZEBO & TRASH PLAN

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

0' 2' 4' 8'
SCALE: 1/4"= 1'-0" (@ 22"x34")



BUILDING 7
AVERAGE ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= +151.9 (160.8 +143/2)
AVG ELEVATION OF
FINISHED GRADE = +153.9 (153.1+ 154.7/2)
= + 2.00

BUILDING 6
AVERAGE ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= +150.9 (155.8 +146/2)
AVG ELEVATION OF
FINISHED GRADE = +150.35 (151.5+ 149.2/2)
= - 0.55

BUILDING 5
AVERAGE ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= + 144.55 (148.1 +141/2)
AVG ELEVATION OF
FINISHED GRADE = +147.95 (148.9+ 147/2)
= + 3.4

BUILDING 4
AVG ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= +139.35 (136 +142.7/2)
AVG ELEVATION OF
FINISHED GRADE = +140.35 (139+ 141.7/2)
= + 1.00

BUILDING 3
AVERAGE ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= + 140.9 (142.5 +139.3/2)
AVG ELEVATION OF
FINISHED GRADE = +141.00 (140+ 142/2)
= + 0.10

BUILDING 2
AVERAGE ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= +139.25 (139.9 +138.6/2)
AVG ELEVATION OF
FINISHED GRADE = +140.35 (140+ 140.7/2)
= + 1.10

BUILDING HEIGHT:
The vertical distance to the level of the highest point of the roof's surface if the roof is flat, or to the mean level between the eaves and the highest point of the roof if any other type, measured from the average elevation of the finished grade adjacent to the exterior walls of the building. Where such finished grade is established by filling, however, its average elevation shall not be taken to be more than five feet above the average elevation of the outer perimeter of required yard spaces around the building. Where a building comprises a flat roof and sloped roof, the height shall be the higher of the two as determined herein.

BUILDING 1
AVERAGE ELEVATION OF THE
OUTER PERIMETER OF THE
REQUIRED YARD SPACE= +137.8 (139.3 +136.3/2)
AVG ELEVATION OF
FINISHED GRADE = +139.35 (140.2+ 138.5/2)
= + 1.55

*NOTE: REFER TO CIVIL FOR SITE PLAN AND CIVIL INFORMATION.
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REFER TO LANDSCAPE FOR TREES AND LANDSCAPE INFORMATION.

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BUILDING HEIGHT- AVERAGE ELEVATION

PLANNING AND ZONING SUBMISSION

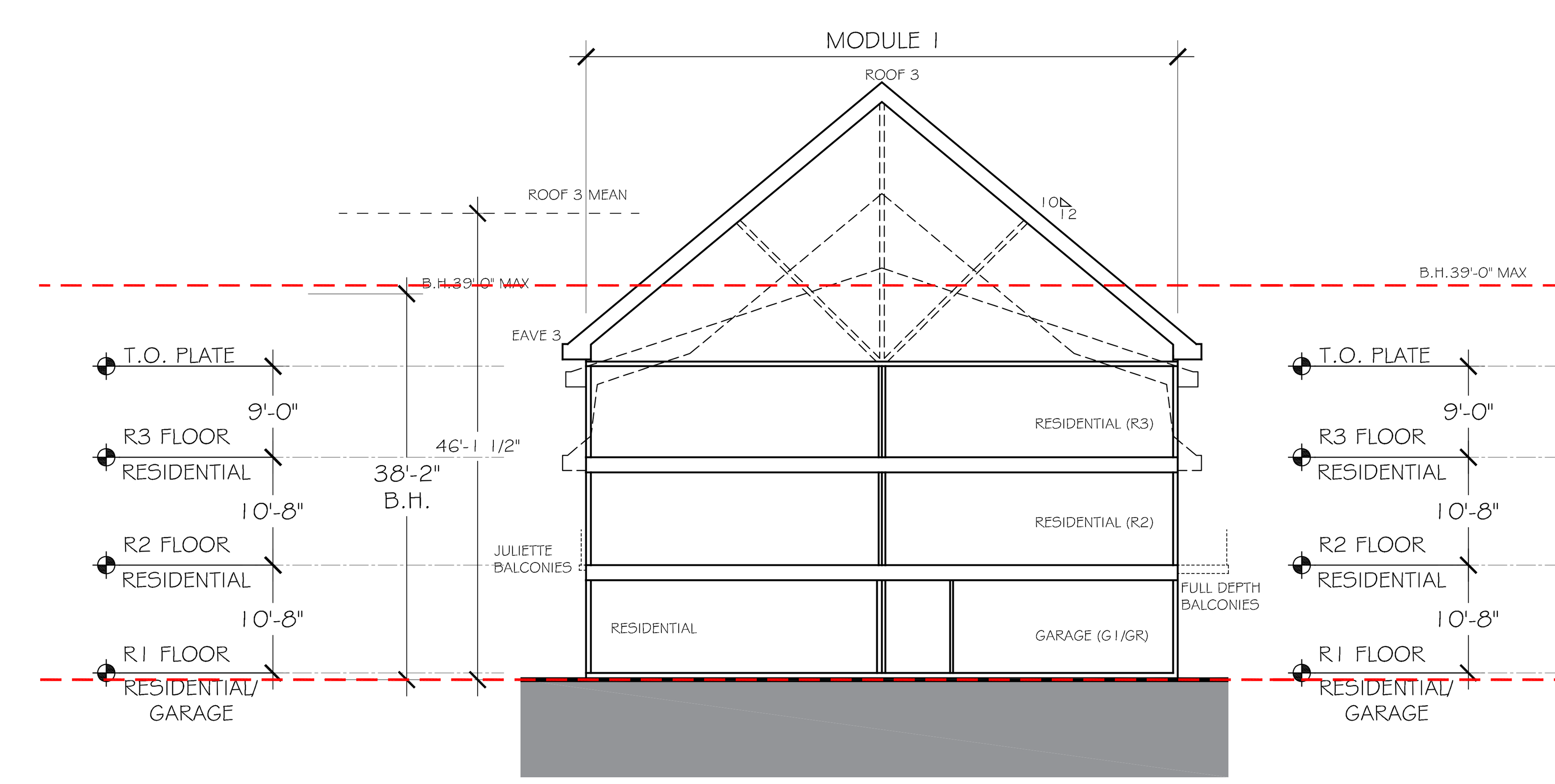
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

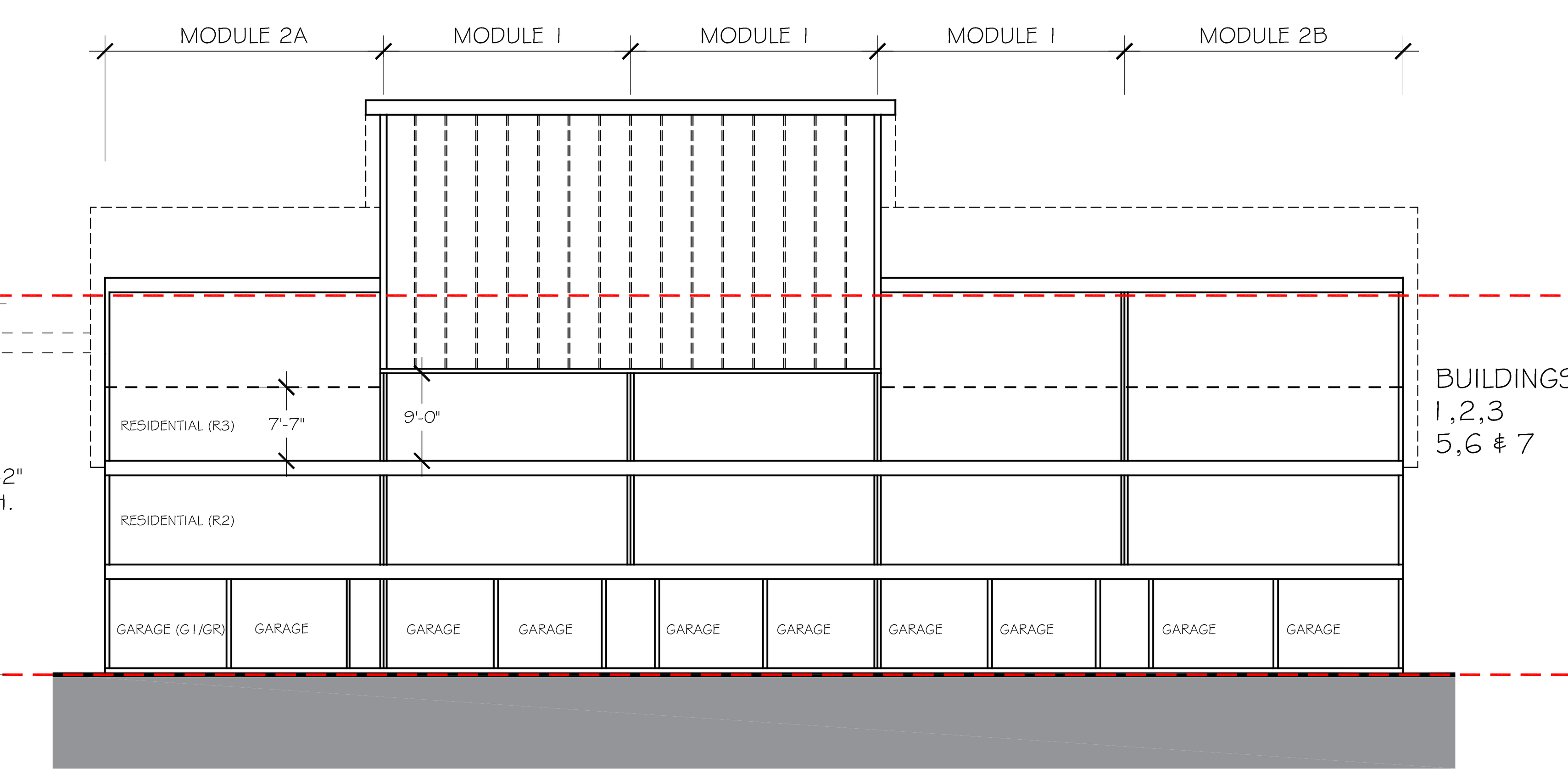
JAN 02, 2024
FUL.003

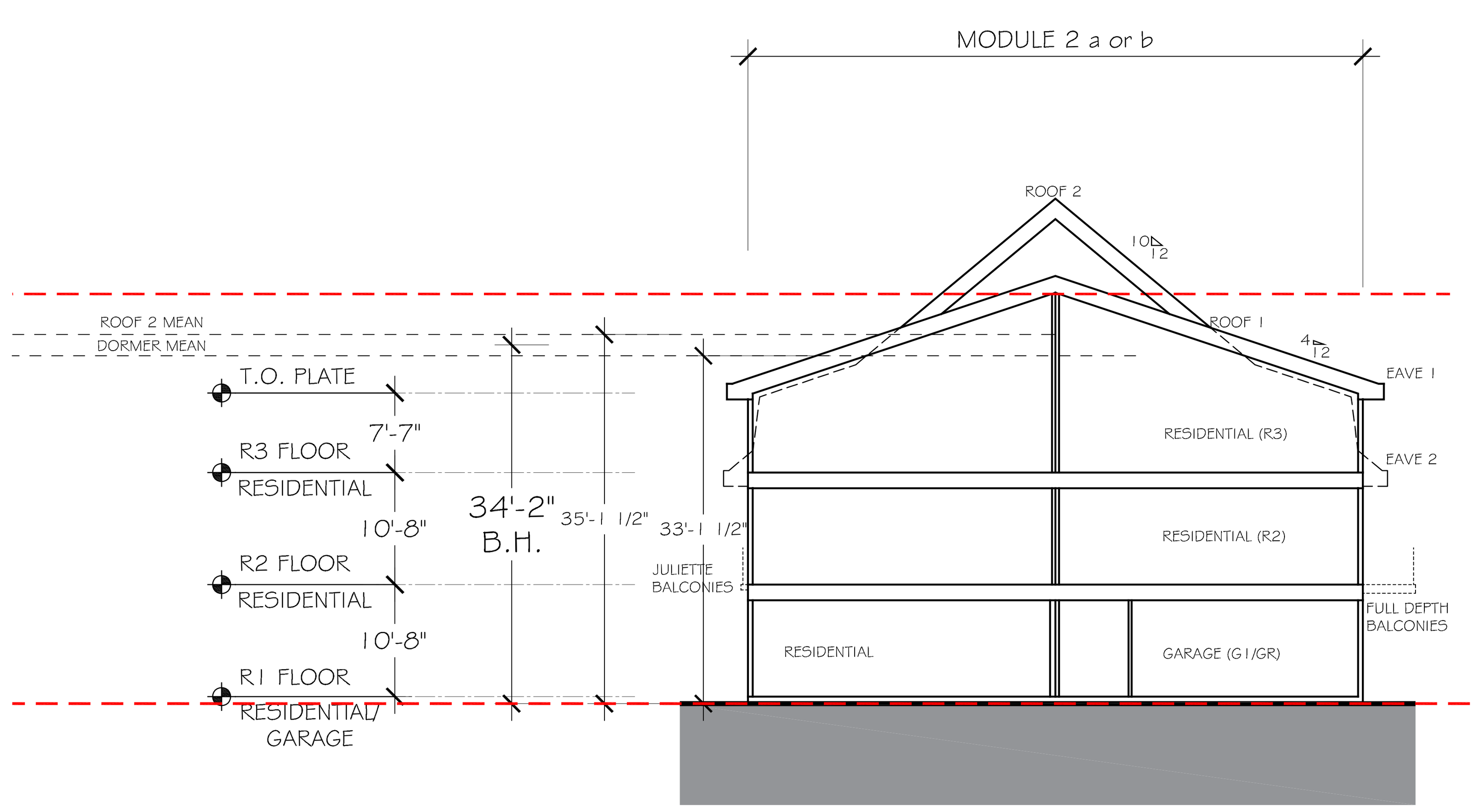
A.08

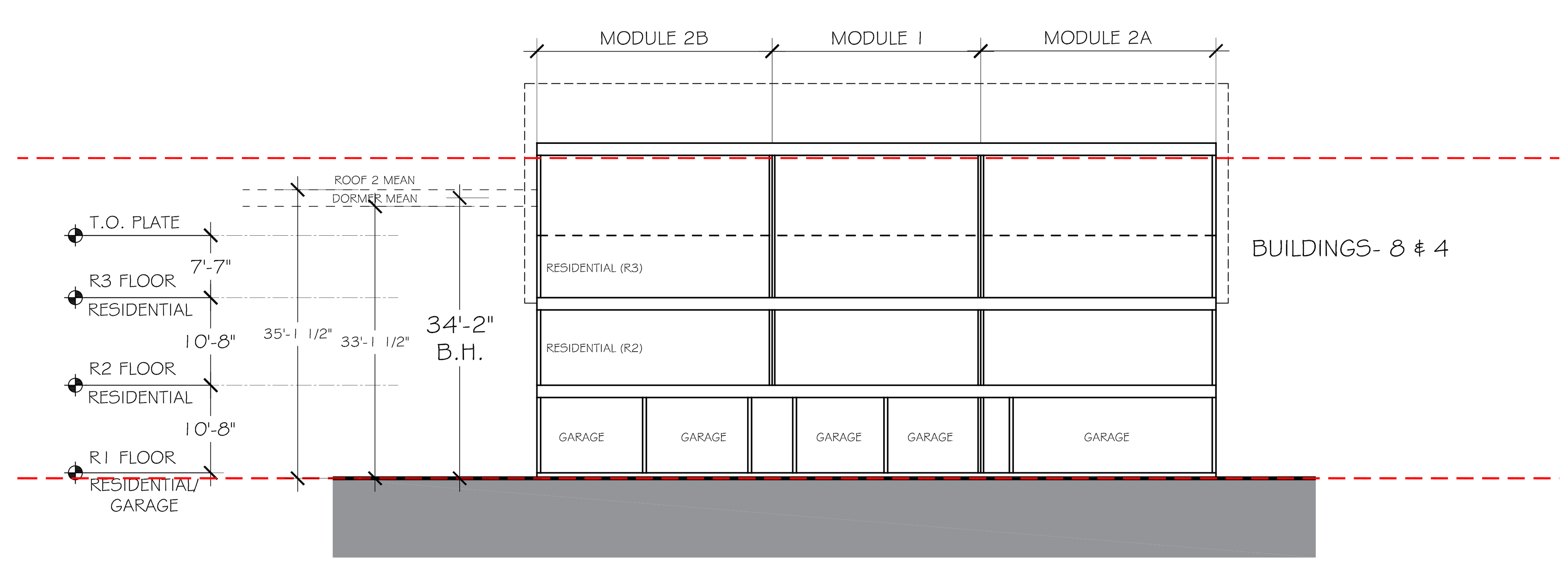
0' 25' 50' 100'
SCALE: 1"= 50' (@ 22"x34")

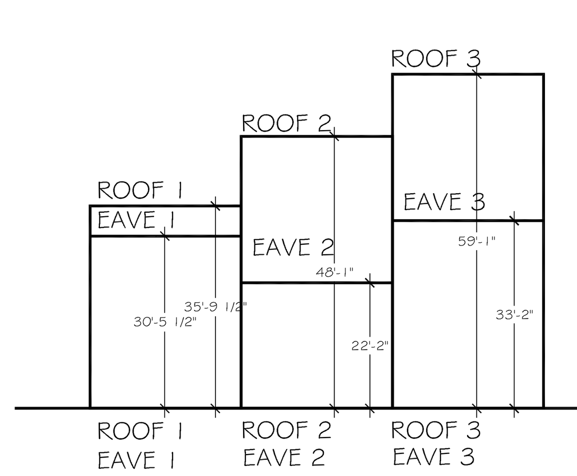
STATE OF CONNECTICUT SUNGJAE LEE LICENSED ARCHITECT ARI 0010267

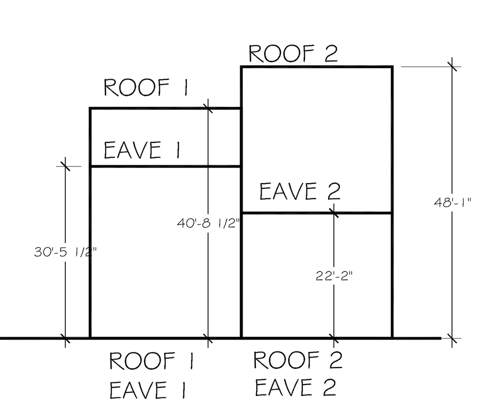












Building- 1,2,3,5,6 & 7

	HEIGHT(FT)		HEIGHT(FT)		HEIGHT(FT)
ROOF 1	35.8	ROOF 2	48.08	ROOF 3	59.08
EAVE 1	30.5	EAVE 2	22.2	EAVE 3	33.2
MEAN LEVEL	33.15	MEAN LEVEL	35.14	MEAN LEVEL	46.14

TOTAL MEAN/ BUILDING HEIGHT	38.143

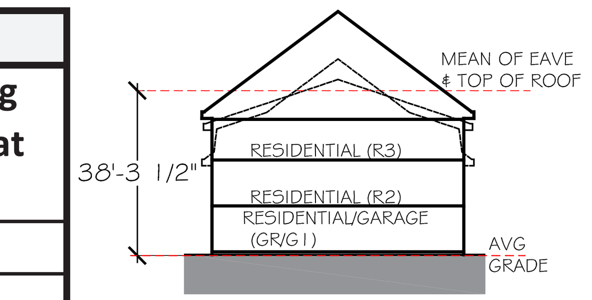
Buildings 8 & 4

	HEIGHT(FT)		HEIGHT(FT)
ROOF 1	35.8	ROOF 2	48.08
EAVE 1	30.5	EAVE 2	22.2
MEAN LEVEL	33.15	MEAN LEVEL	35.14

TOTAL MEAN/ BUILDING HEIGHT	34.145

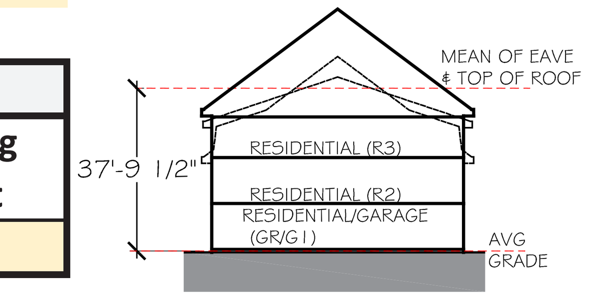
Building 1

	FFE	Avg grade		Building height at step
FFE 1	140.2	139.35	0.85	38.29
FFE 2	139.2		-0.15	37.29
				38.29



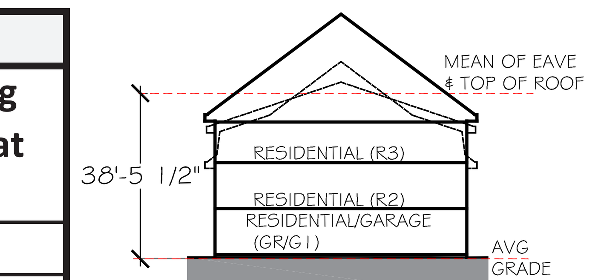
Building 2

	FFE	Avg grade		Building height
FFE	140.7	140.35	0.35	37.79



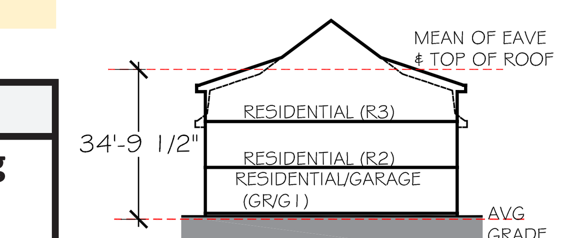
Building 3

	FFE	Avg grade		Building height at step
FFE 1	142	141	1	38.44
FFE 2	141		0	37.44
				38.44



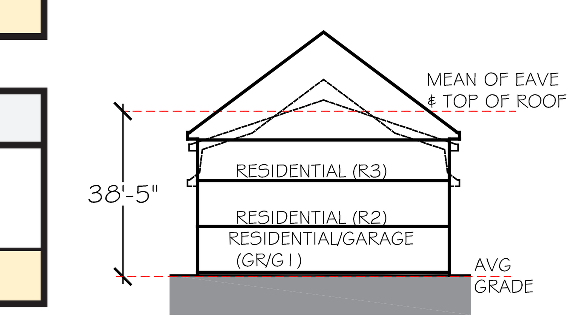
Building 4

	FFE	Avg grade		Building height
FFE	141.7	140.35	1.35	34.80



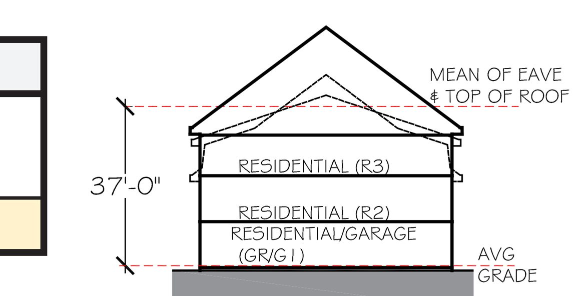
Building 5

	FFE	Avg grade		Building height
FFE	148.9	147.95	0.95	38.39



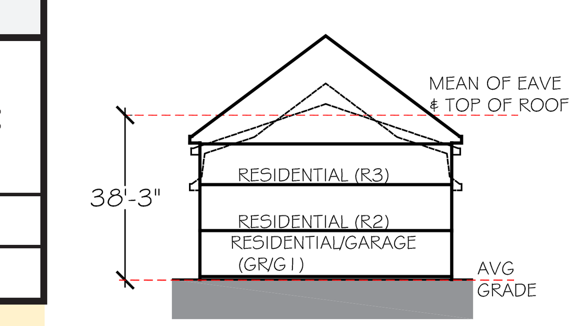
Building 6

	FFE	Avg grade		Building height
FFE	149.9	150.35	-0.45	36.99



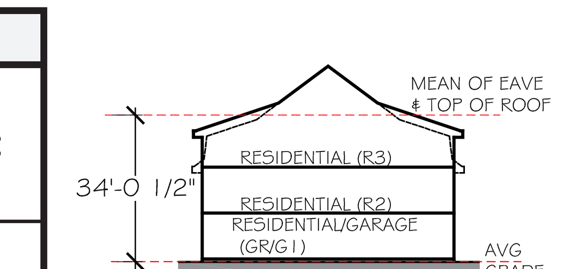
Building 7

	FFE	Avg grade		Building height at step
FFE 1	153.8	153.9	-0.1	37.34
FFE 2	154.7		0.8	38.24
				38.24



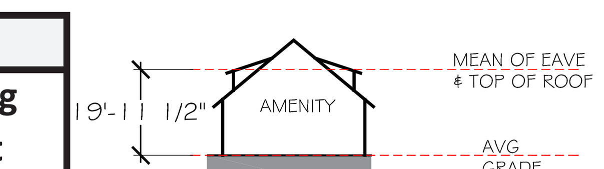
Building 8

	FFE	Avg grade		Building height at step
FFE 1	156.2	155.6	0.6	34.05
FFE 2	155.7		0.1	33.55
				34.05



Amenity

	FFE	Avg grade		Building height
FFE	139.5	138.8	0.7	19.96



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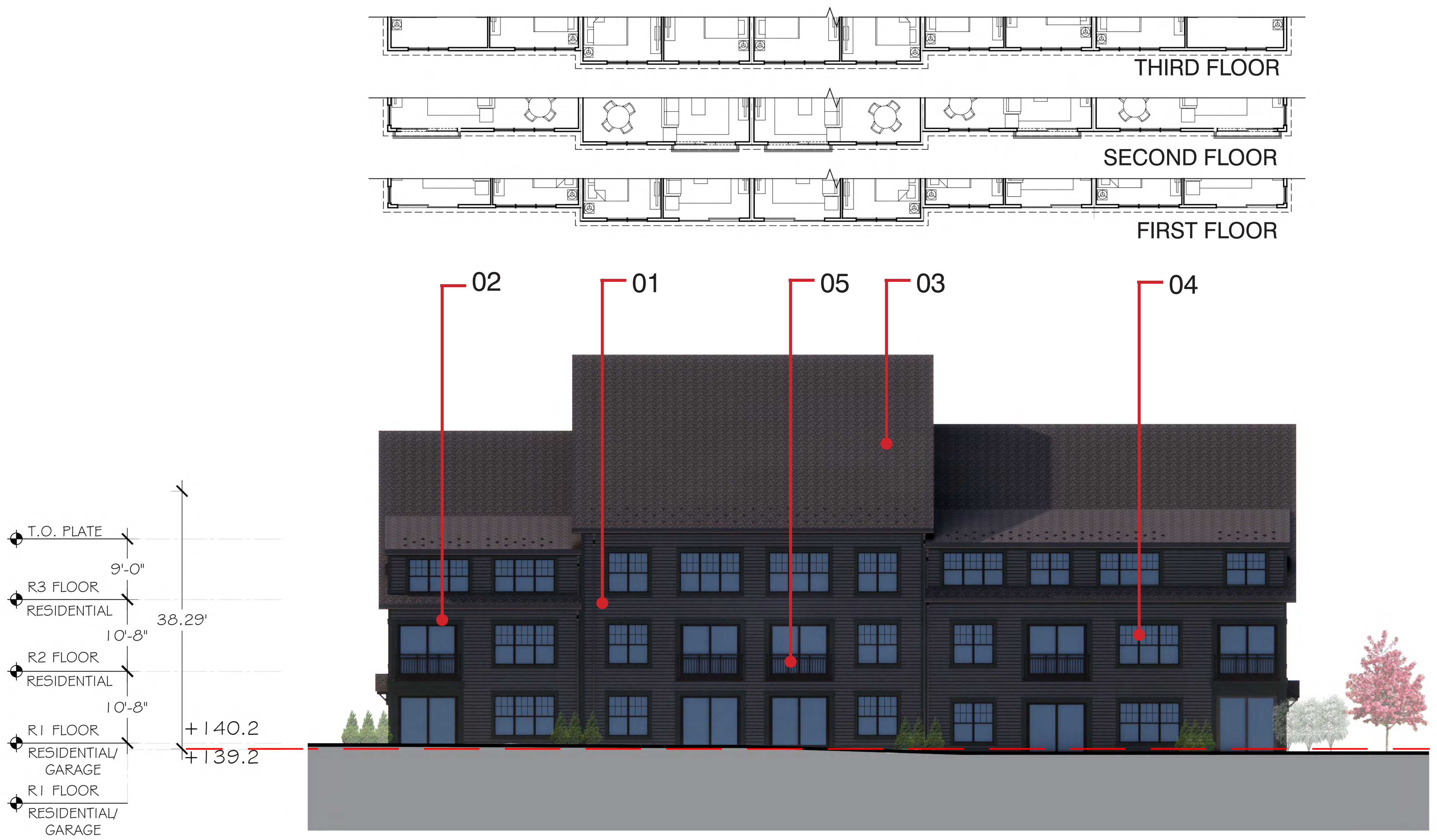
BUILDING SECTIONS - HEIGHT CALCULATIONS

PLANNING AND ZONING SUBMISSION

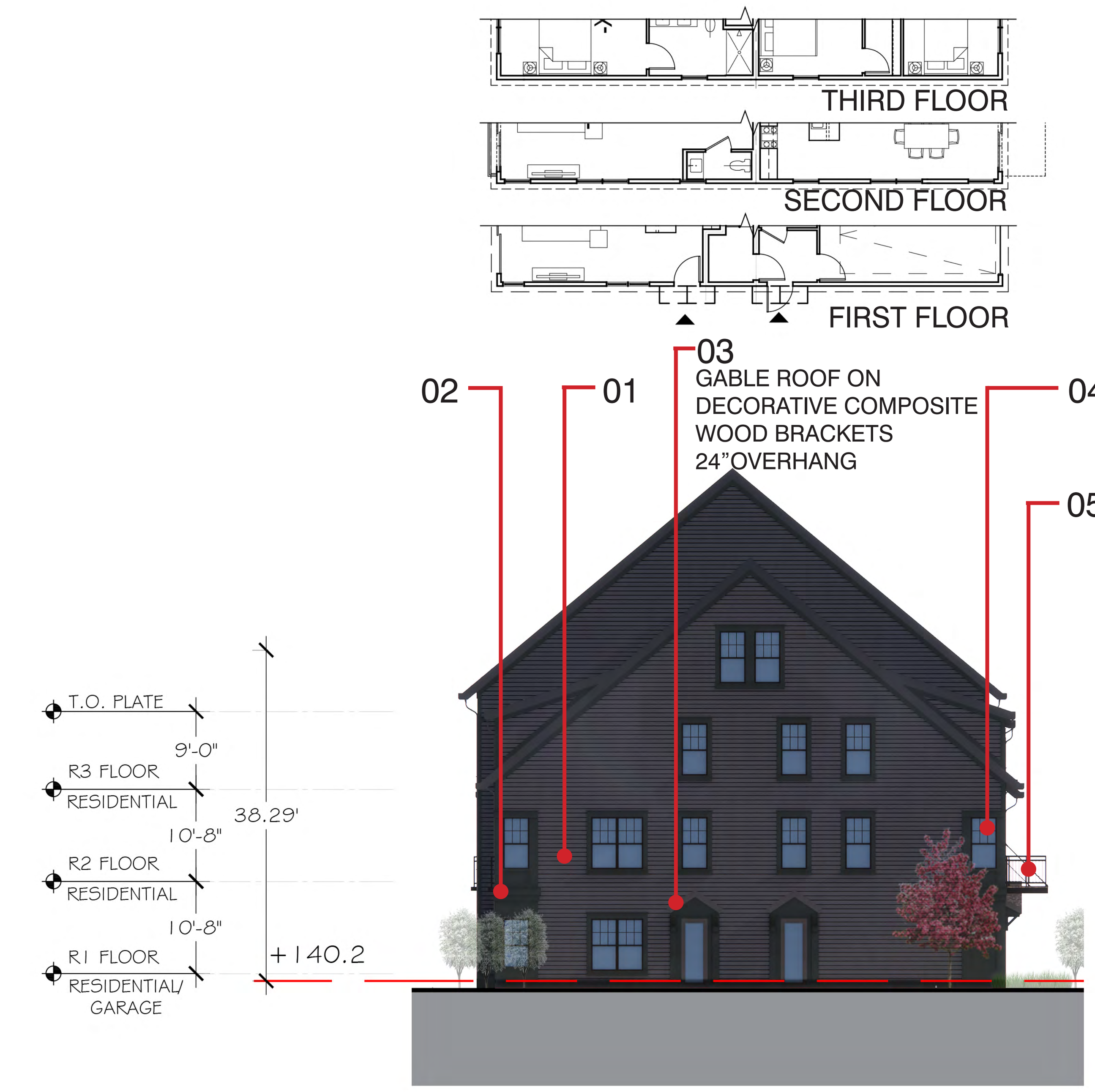
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

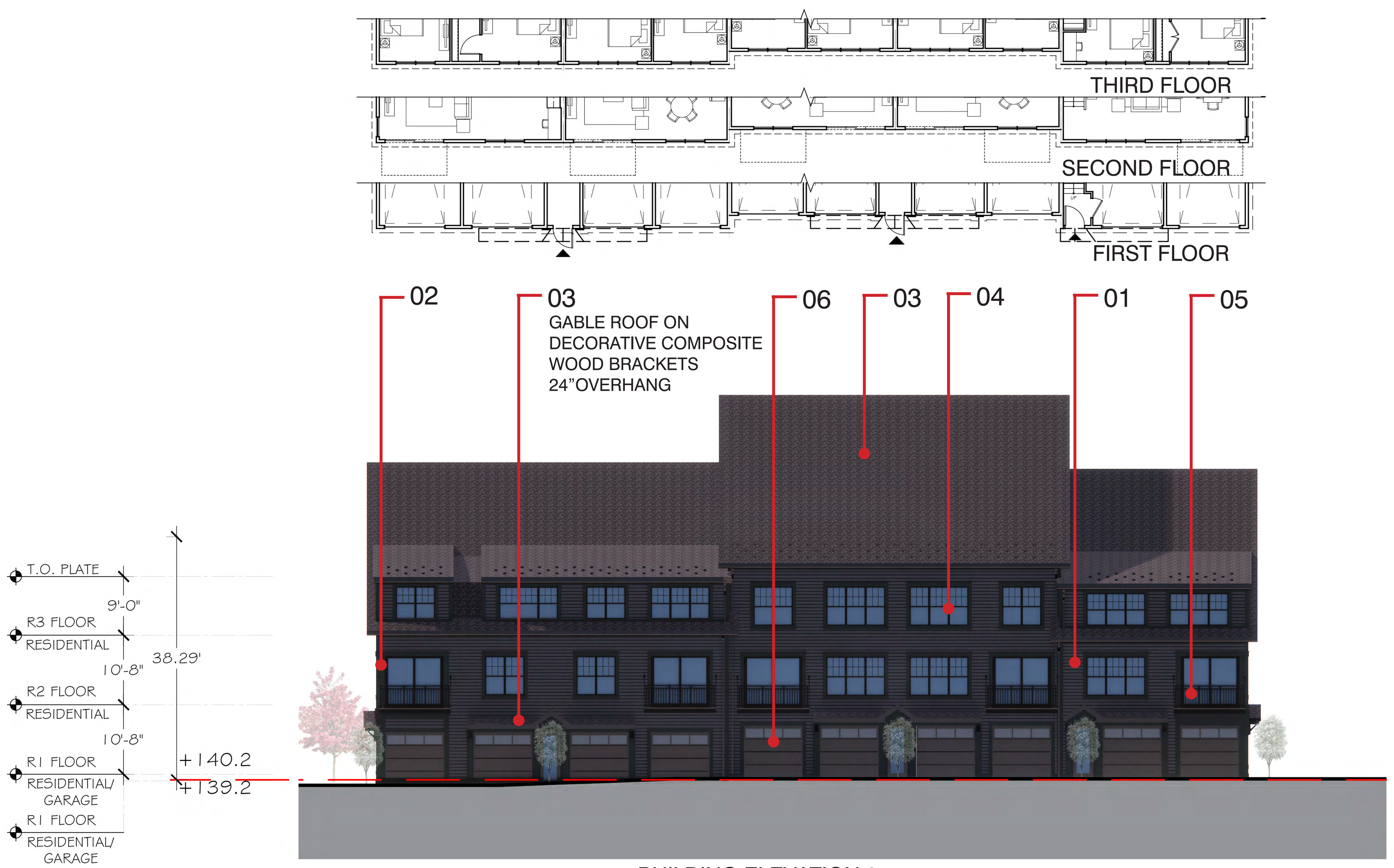
SCALE: 1/16" = 1'-0" (@ 22"x34")



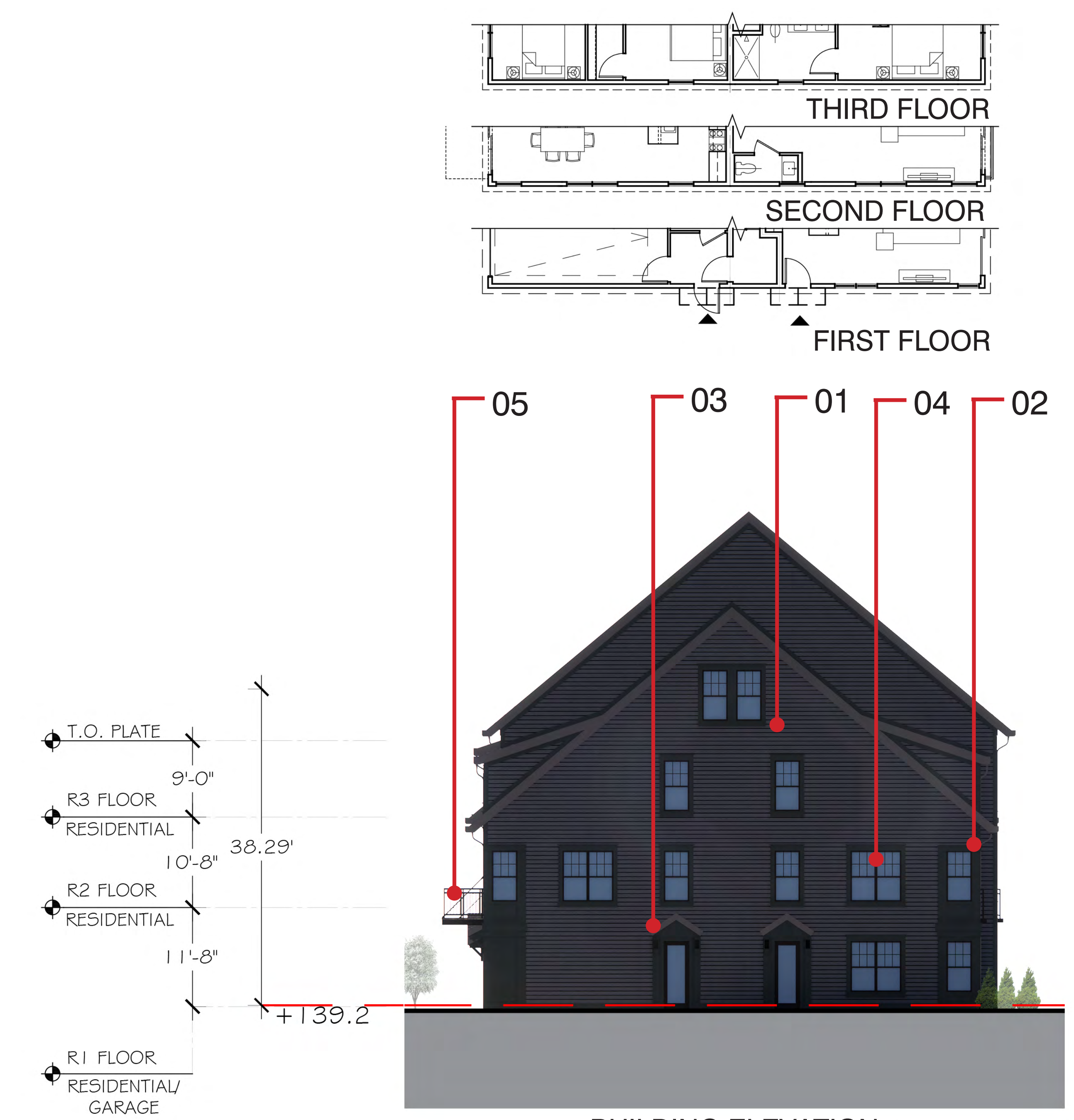
BUILDING ELEVATION 1



BUILDING ELEVATION 2

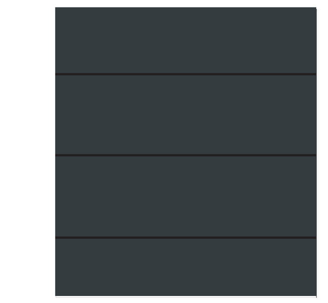


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

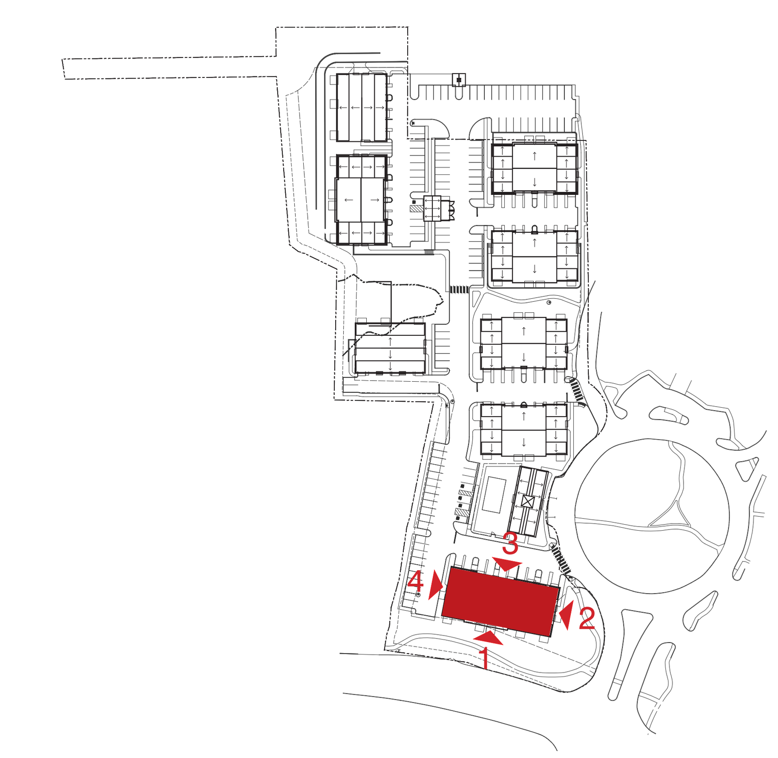
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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*NOTE: SIGNAGE NAME OR NUMBER SHOWN TO BE DETERMINED AS THE PROJECT DEVELOPS.
*NOTE: LIGHT FIXTURES AND LANDSCAPE SHOWN FOR ILLUSTRATIVE PURPOSE ONLY, REFER TO LANDSCAPE DRAWINGS FOR MORE INFORMATION.

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BUILDING 1- ELEVATIONS

PLANNING AND ZONING SUBMISSION

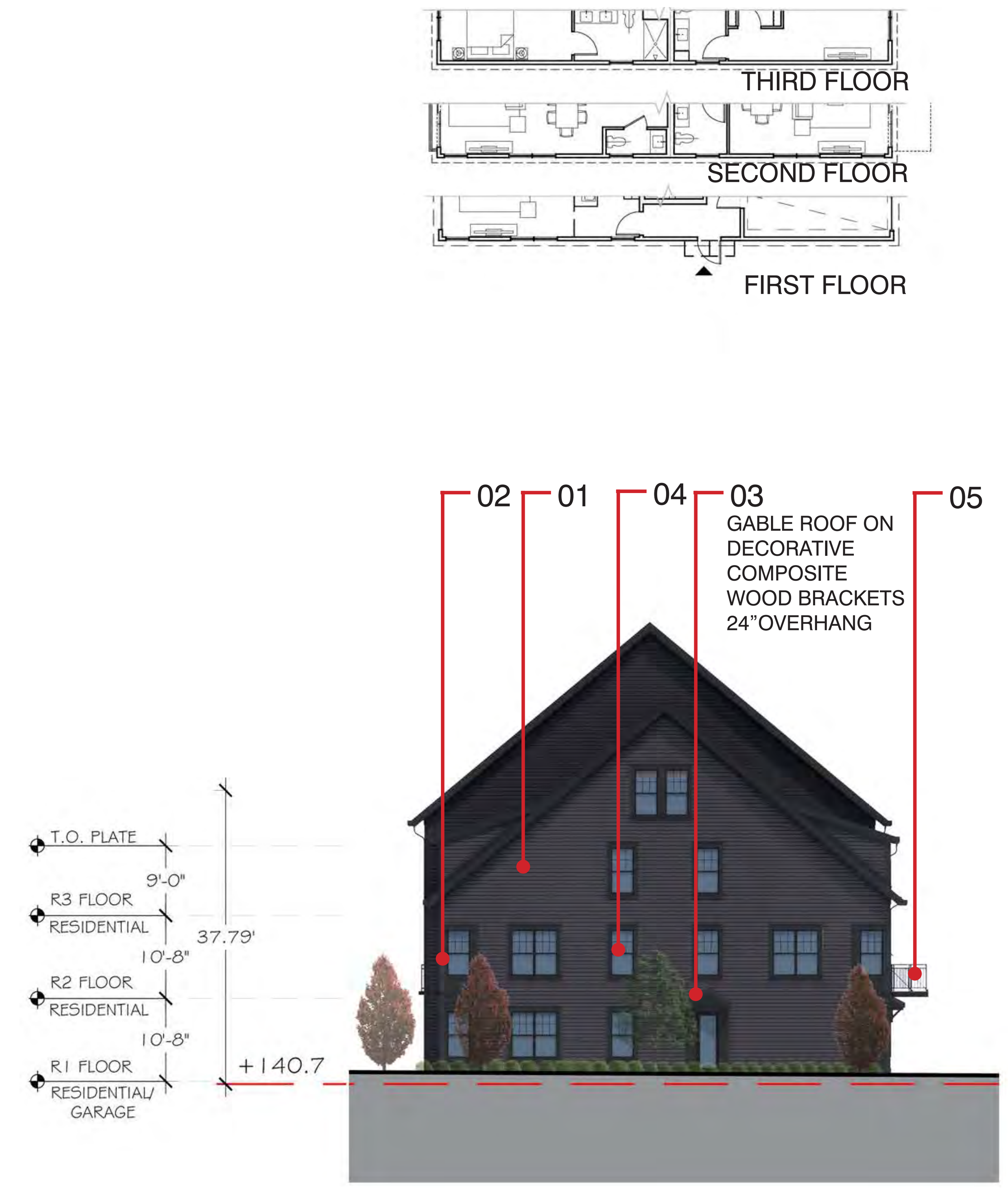
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

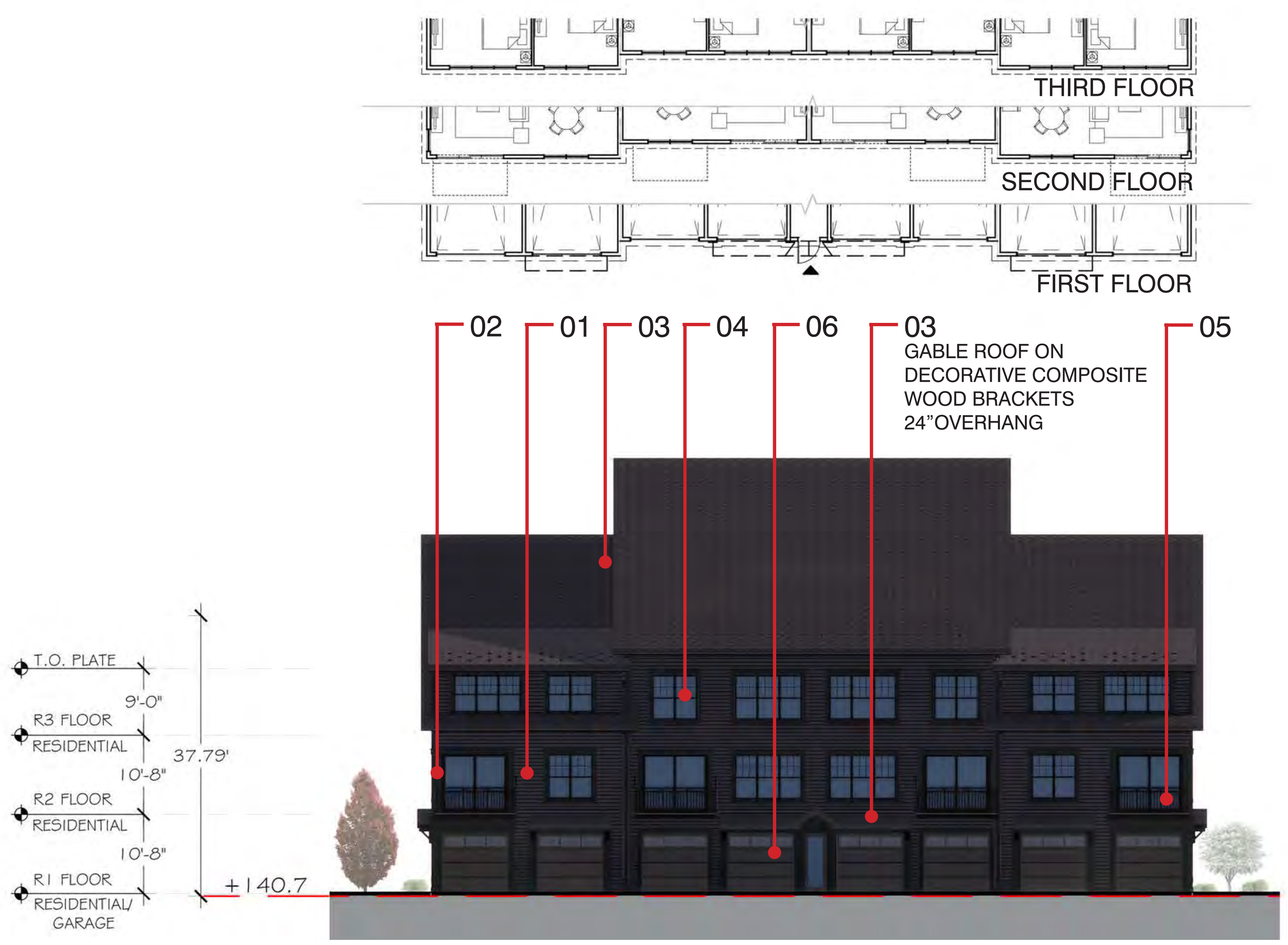
A.10

0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")

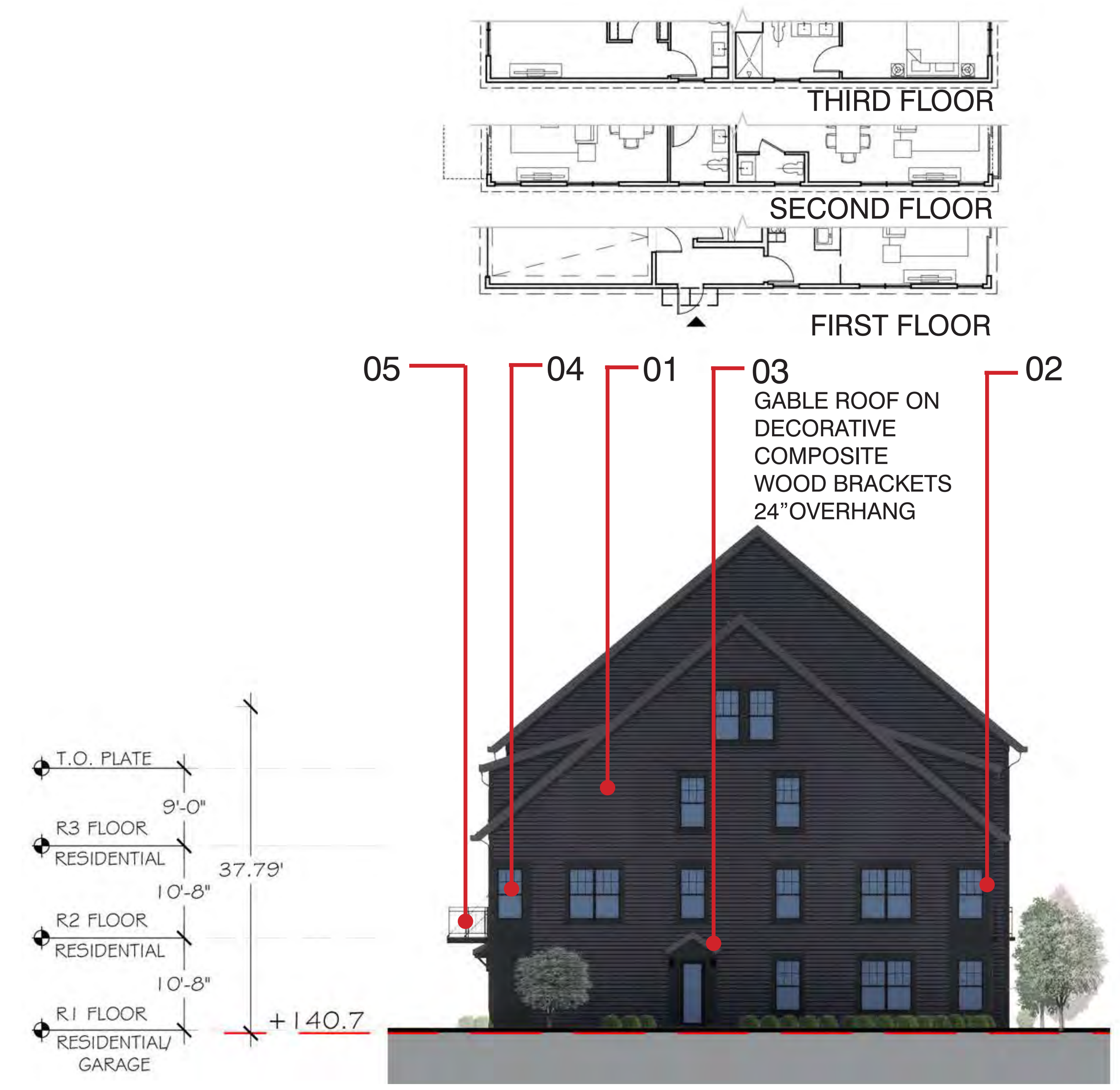
BUILDING ELEVATION 1



BUILDING ELEVATION 2

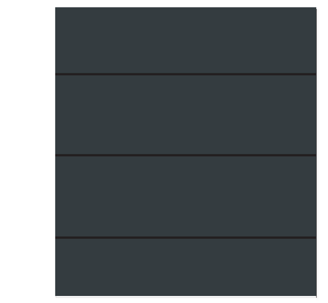


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

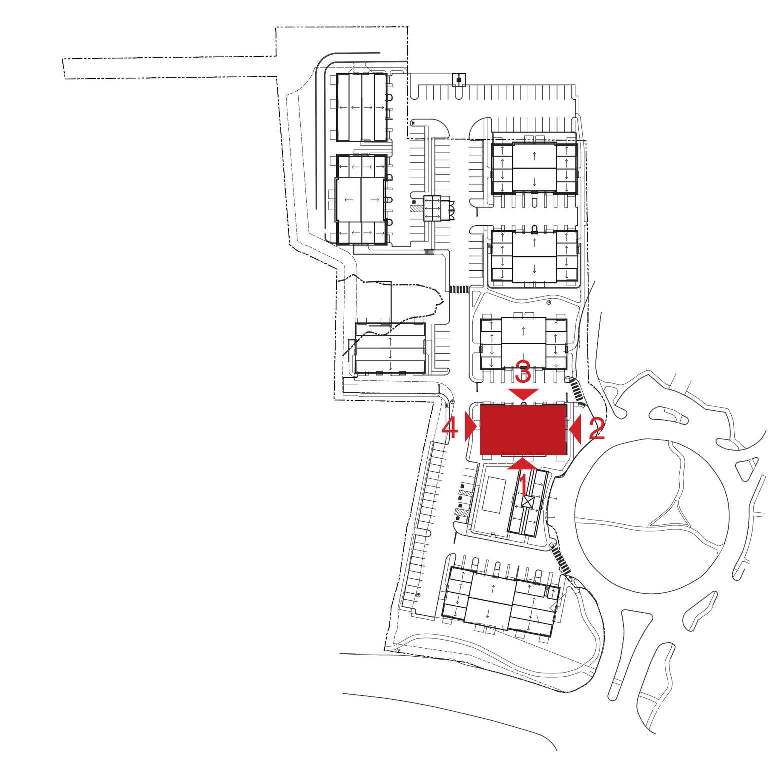
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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BUILDING 2- ELEVATIONS

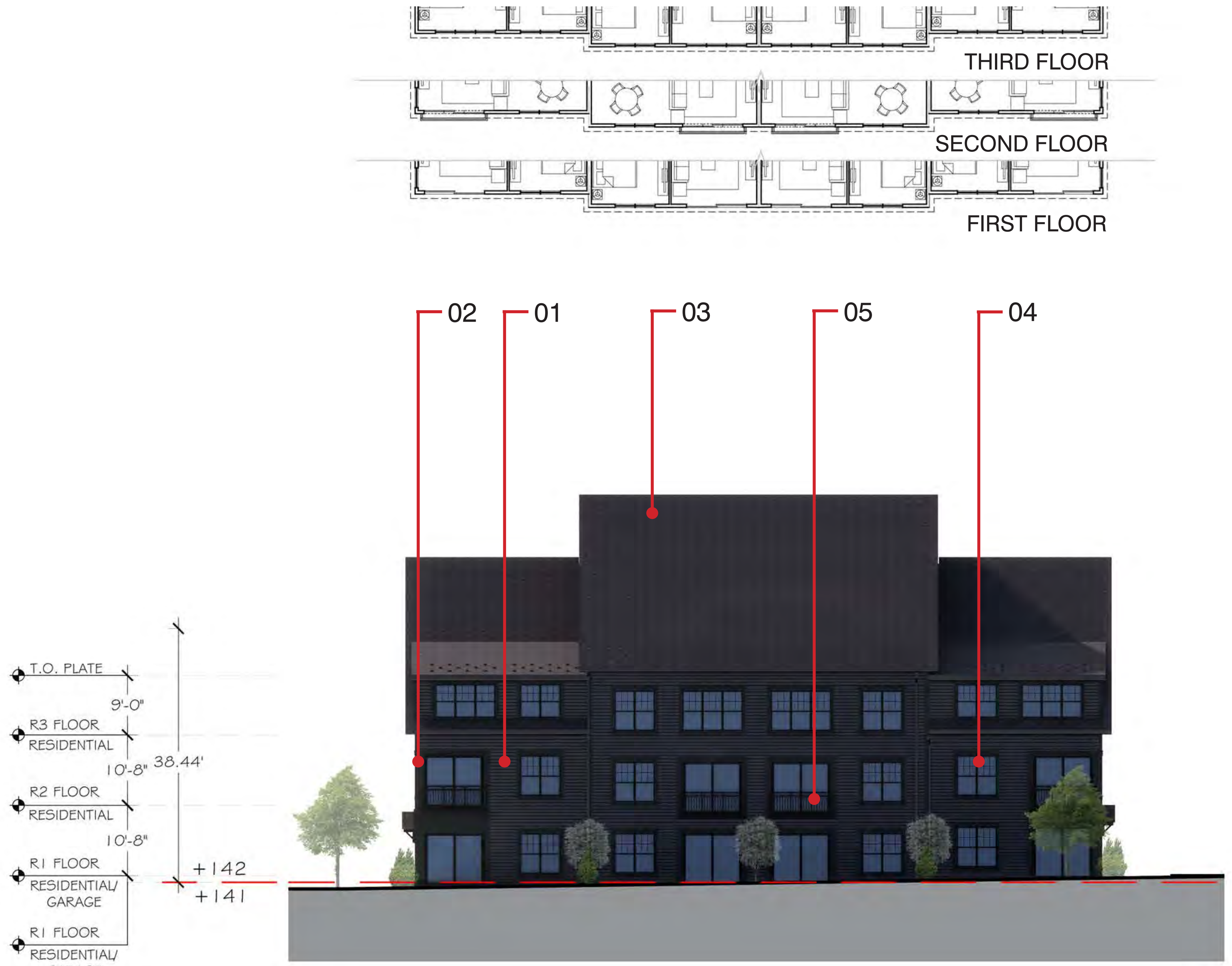
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

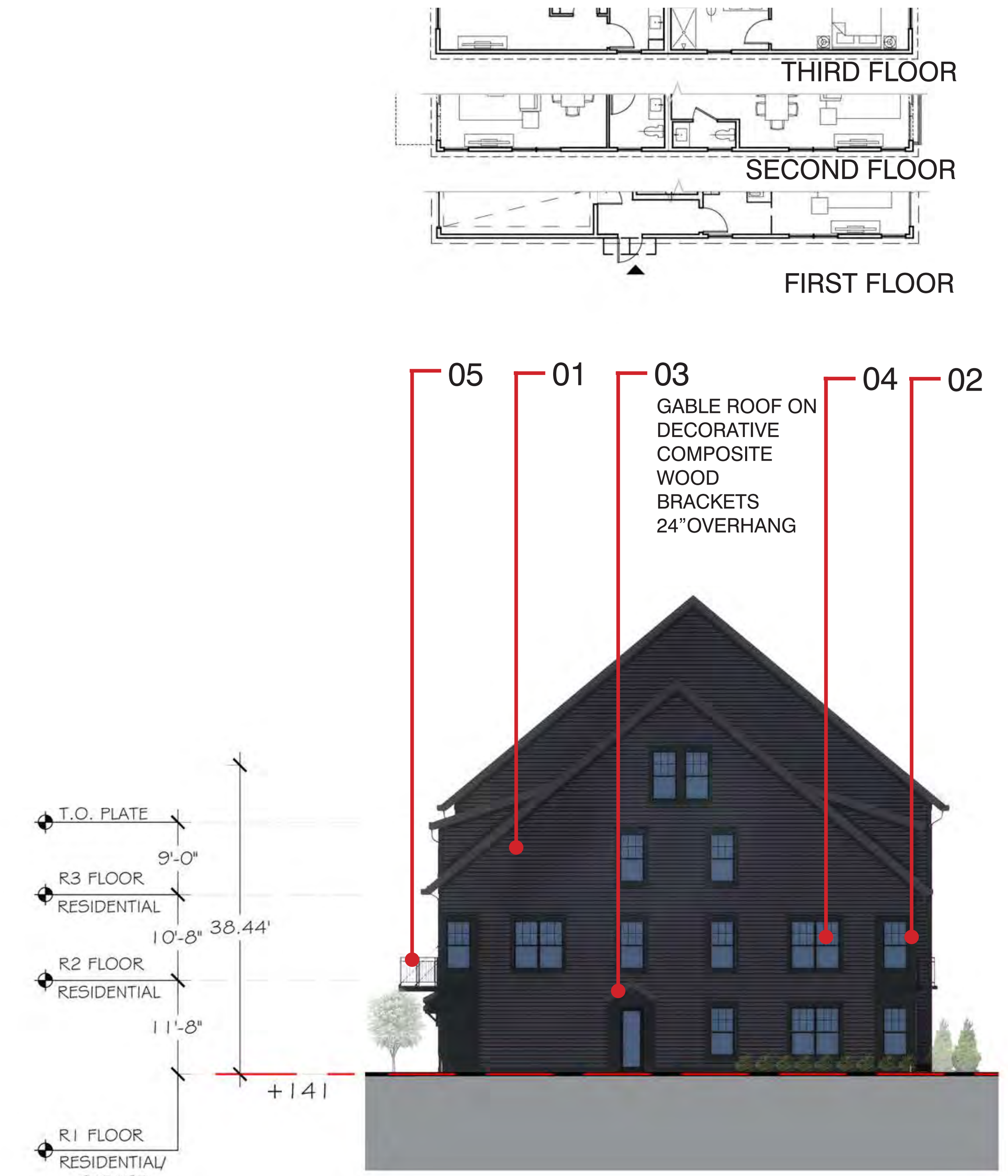
JAN 02, 2024
FUL.003

A.11

0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")

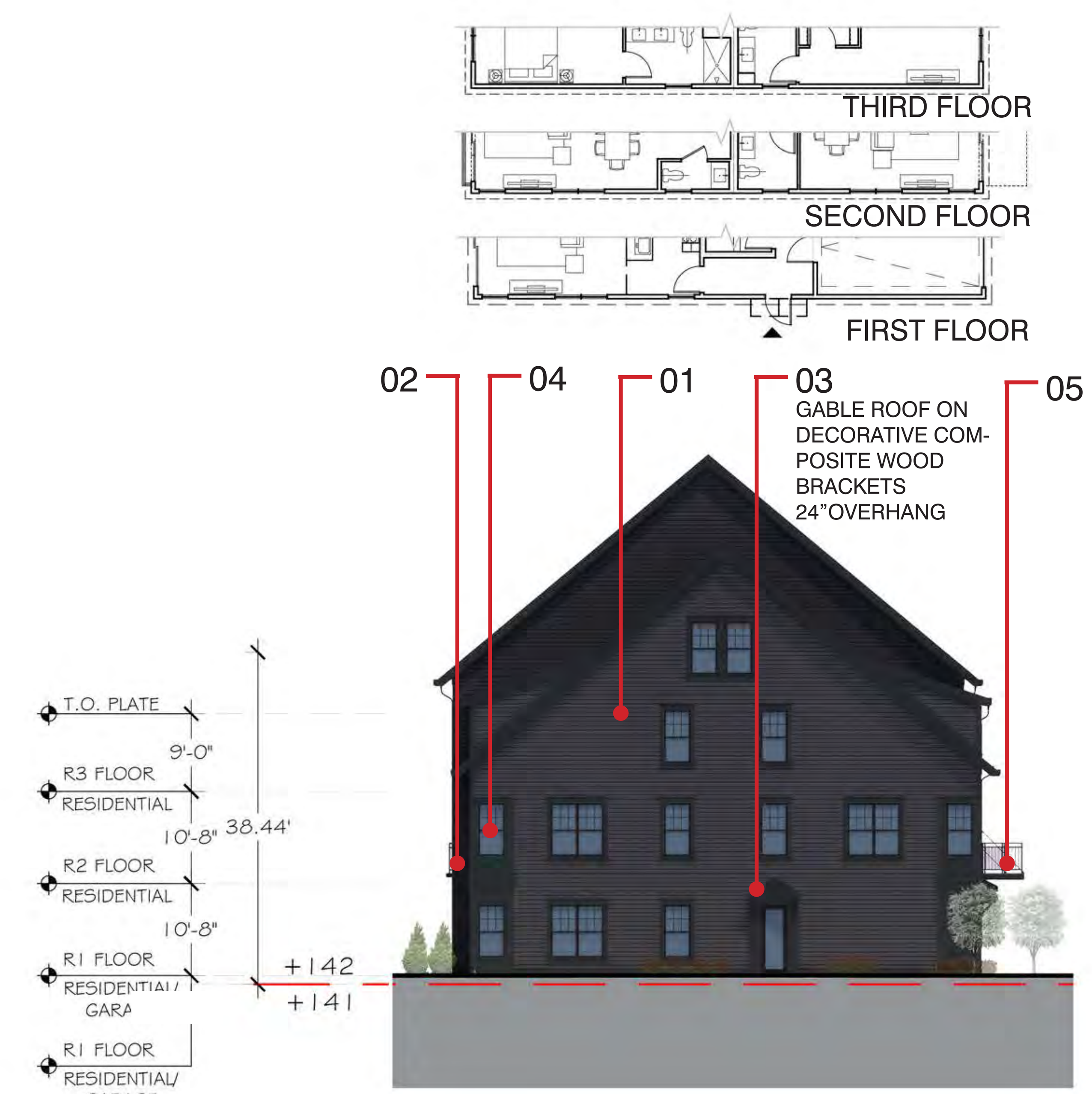


BUILDING ELEVATION 1



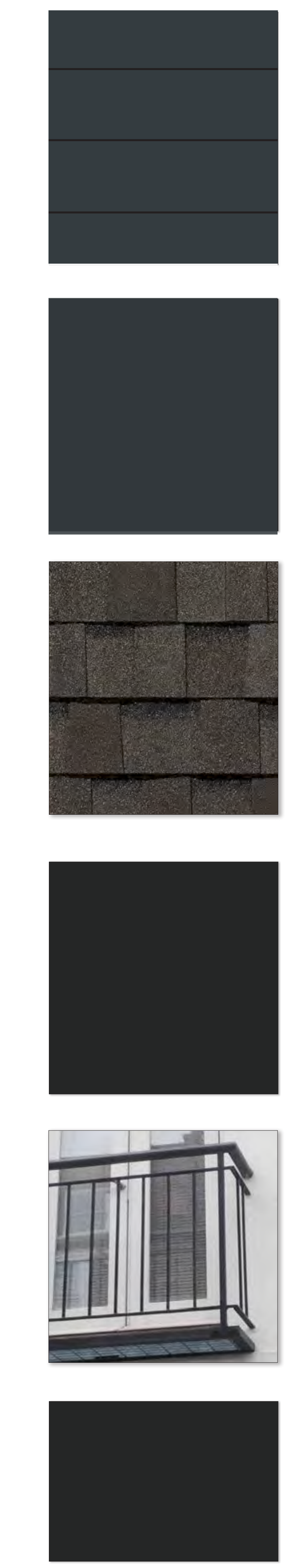
BUILDING ELEVATION 2

BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

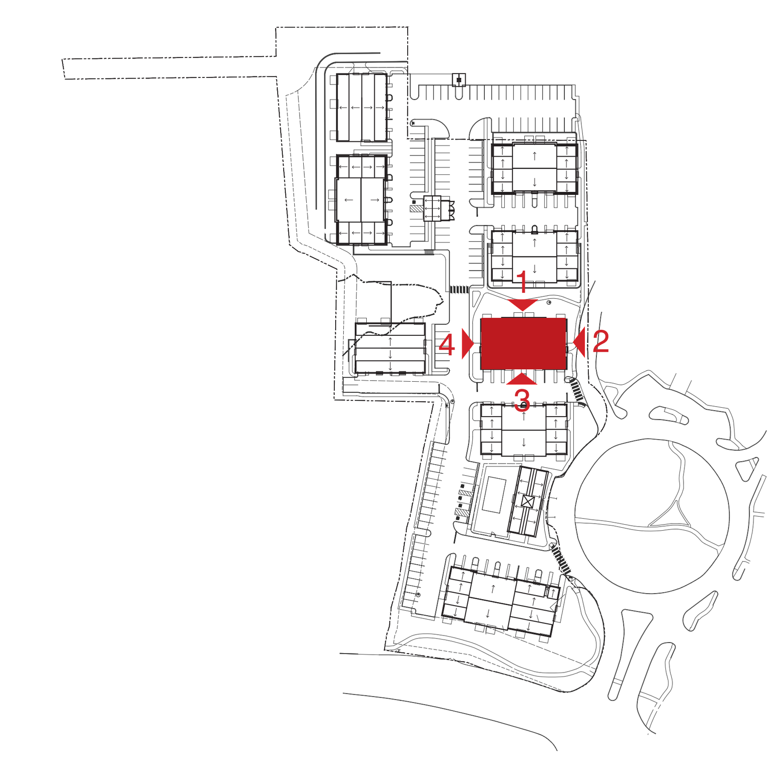
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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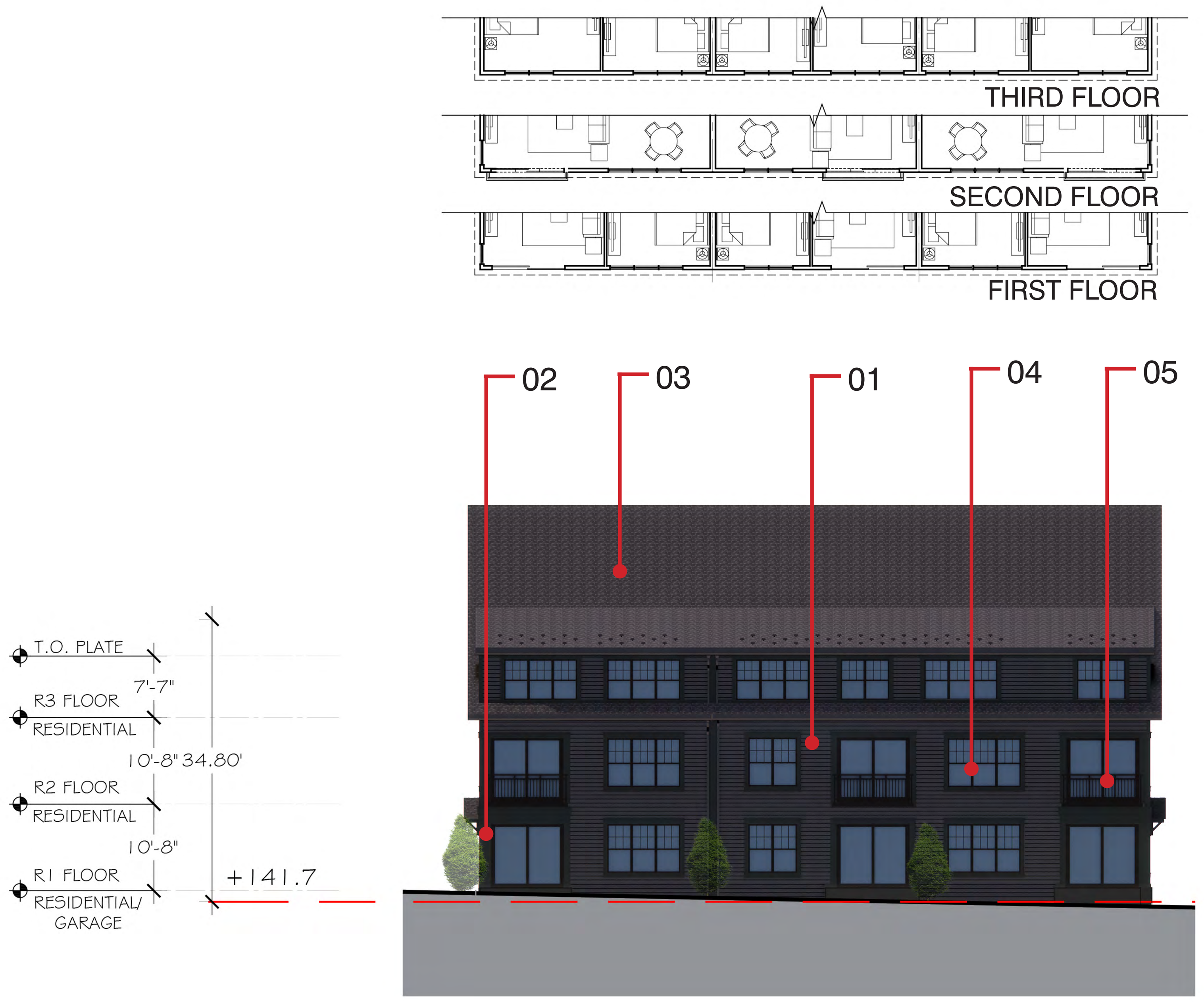
BUILDING 3- ELEVATIONS

PLANNING AND ZONING SUBMISSION

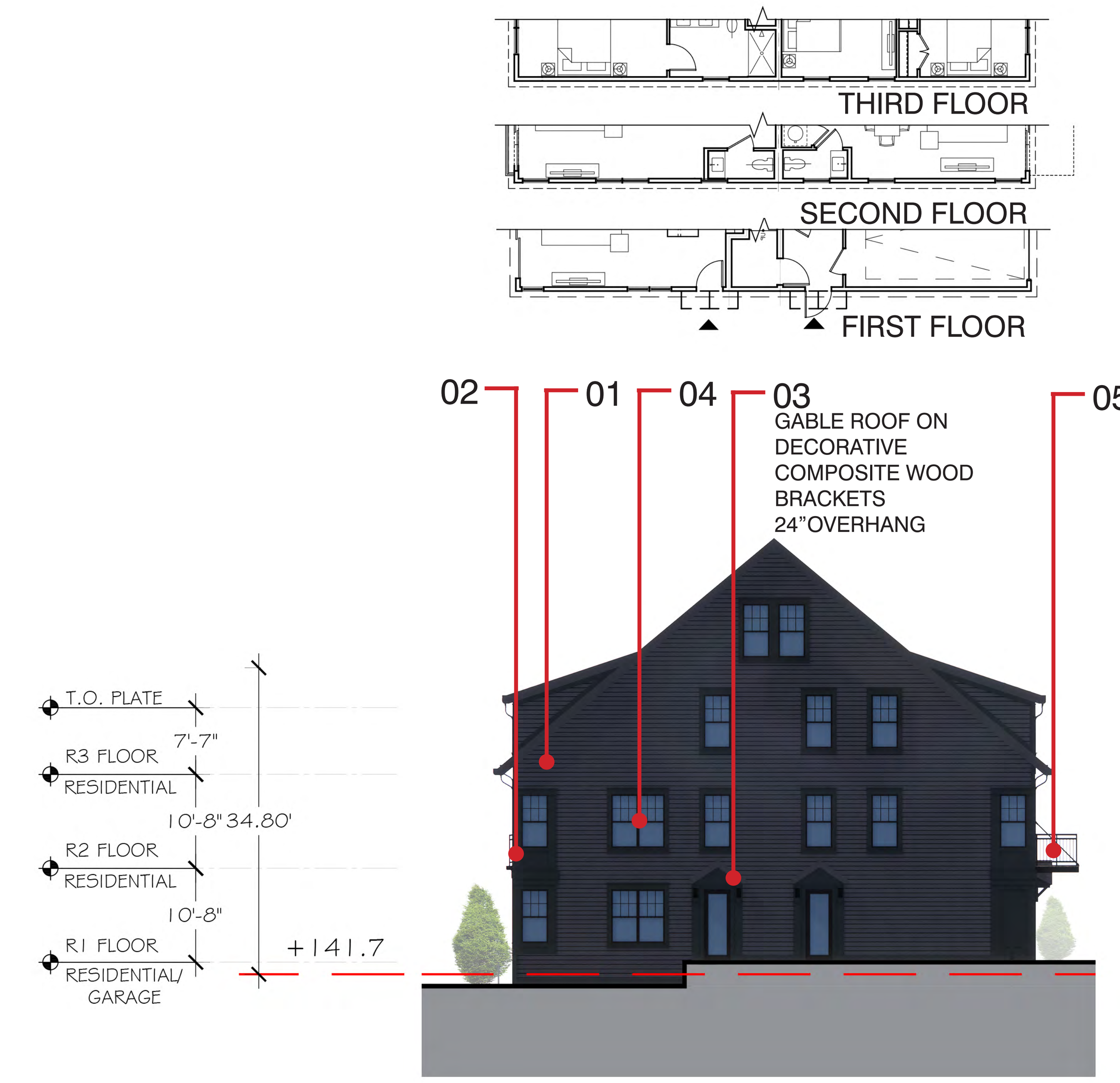
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

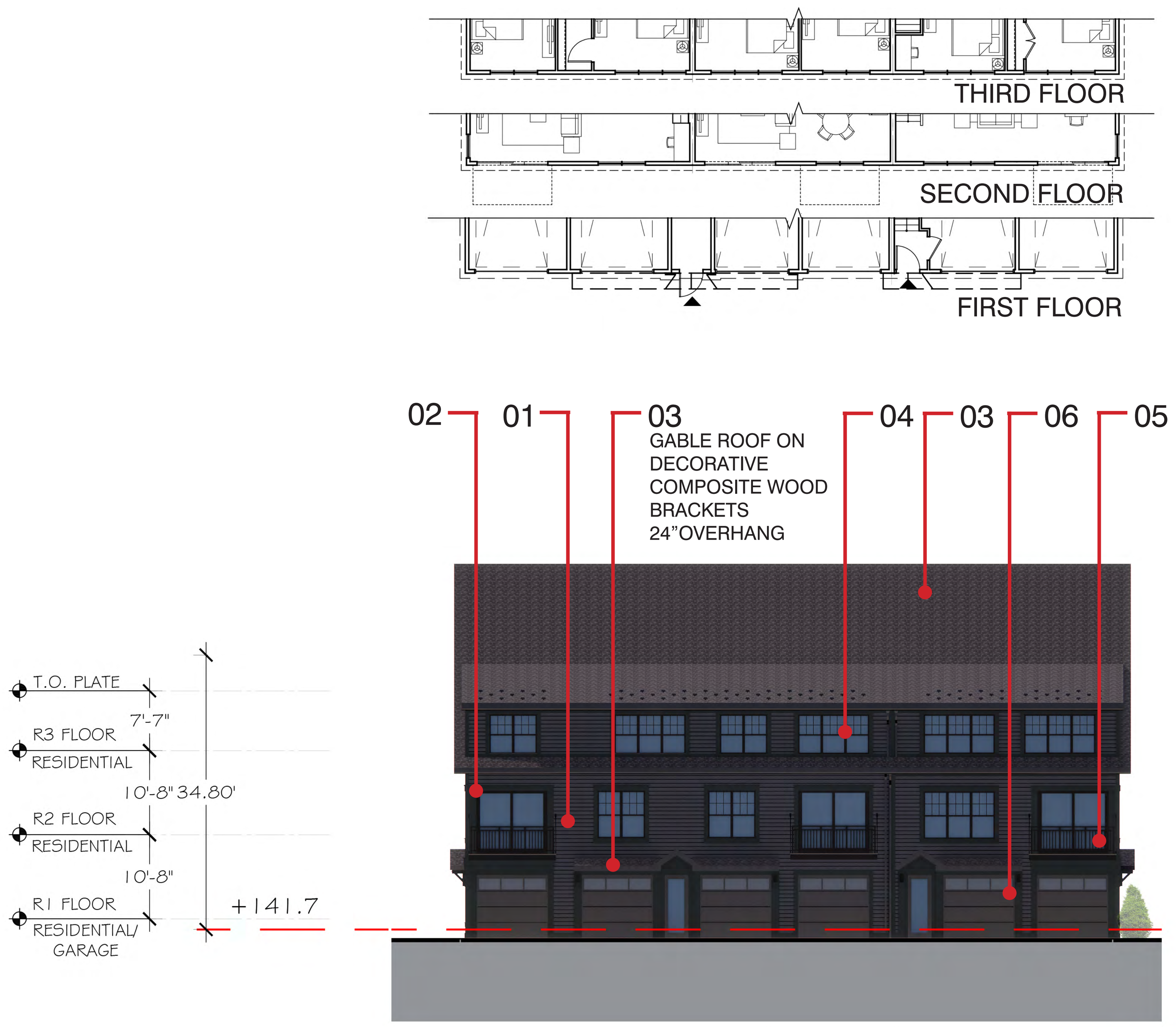
0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")



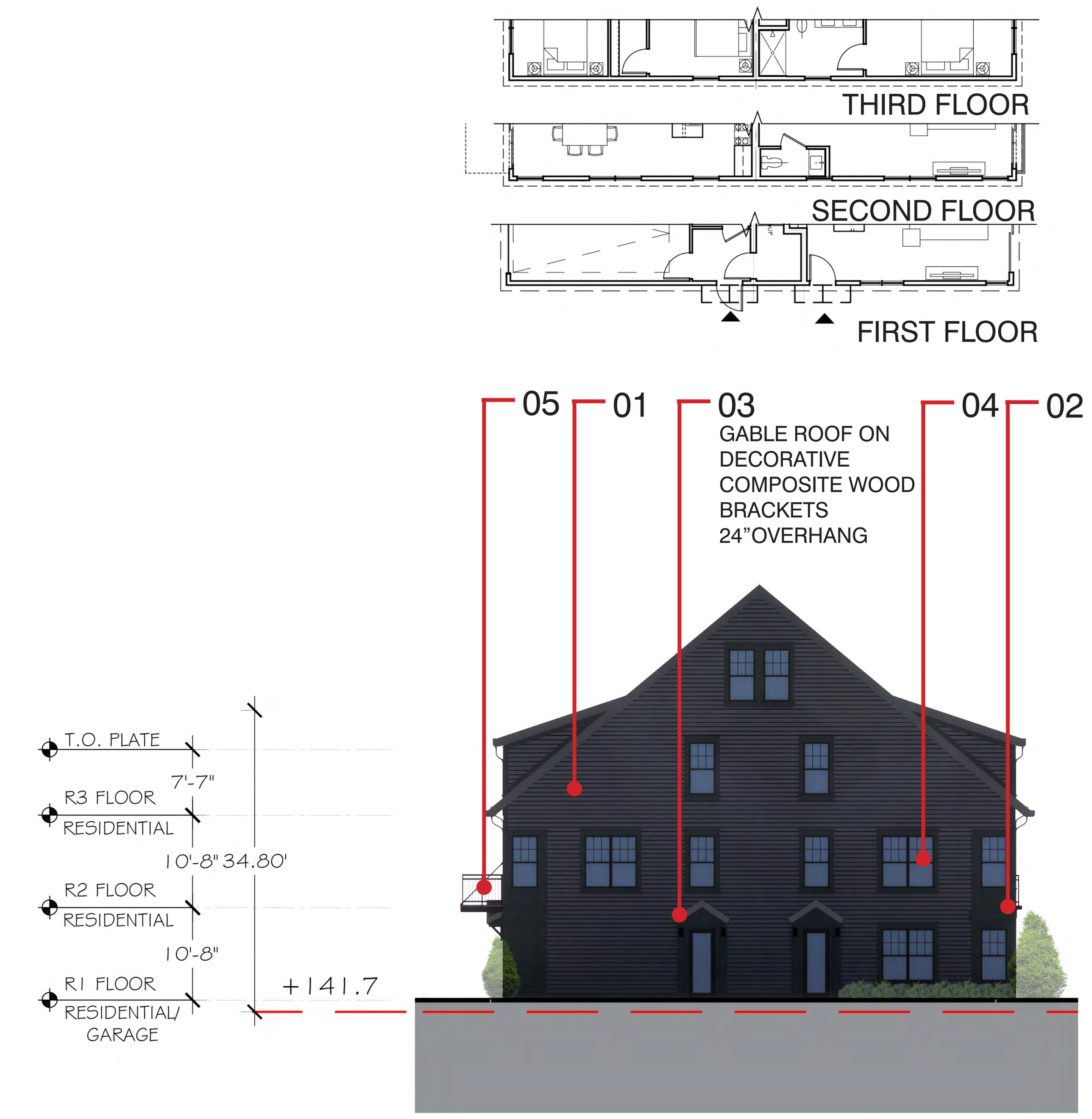
BUILDING ELEVATION 1



BUILDING ELEVATION 2

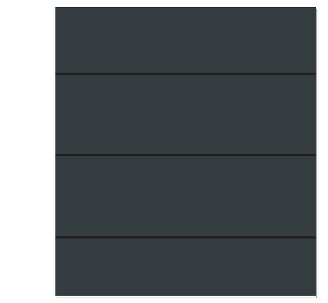


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND


01.FIBER CEMENT SIDING
ANTHRACITE GREY


02. FIBER CEMENT TRIM
ANTHRACITE GREY

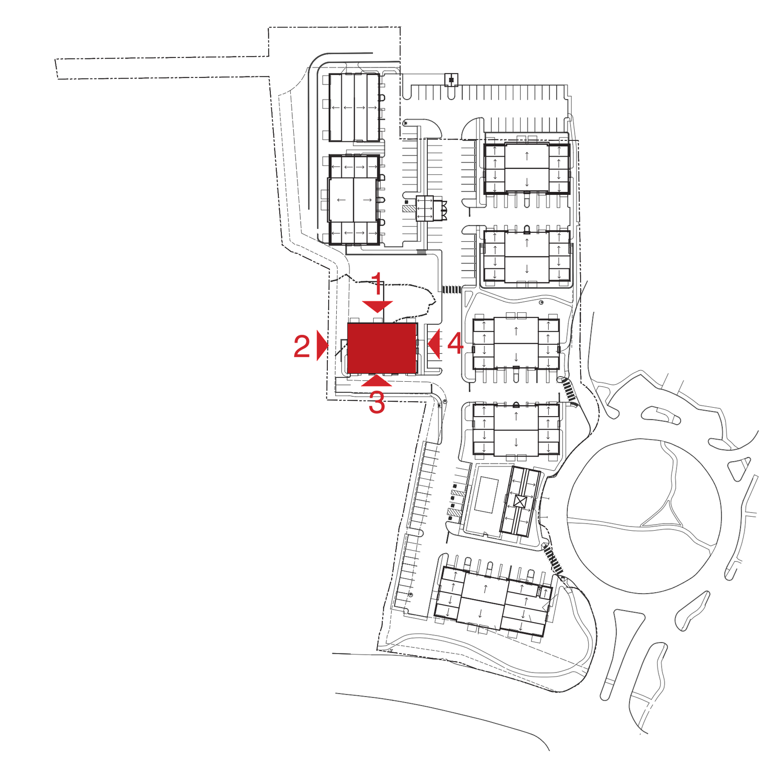

03.ROOFING SHINGLES WOOD
DARK GREY


04.VINYL WINDOWS & DOORS
DARK GREY


05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE


06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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SUNGJAE LEE
LICENSED ARCHITECT

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BUILDING 4- ELEVATIONS

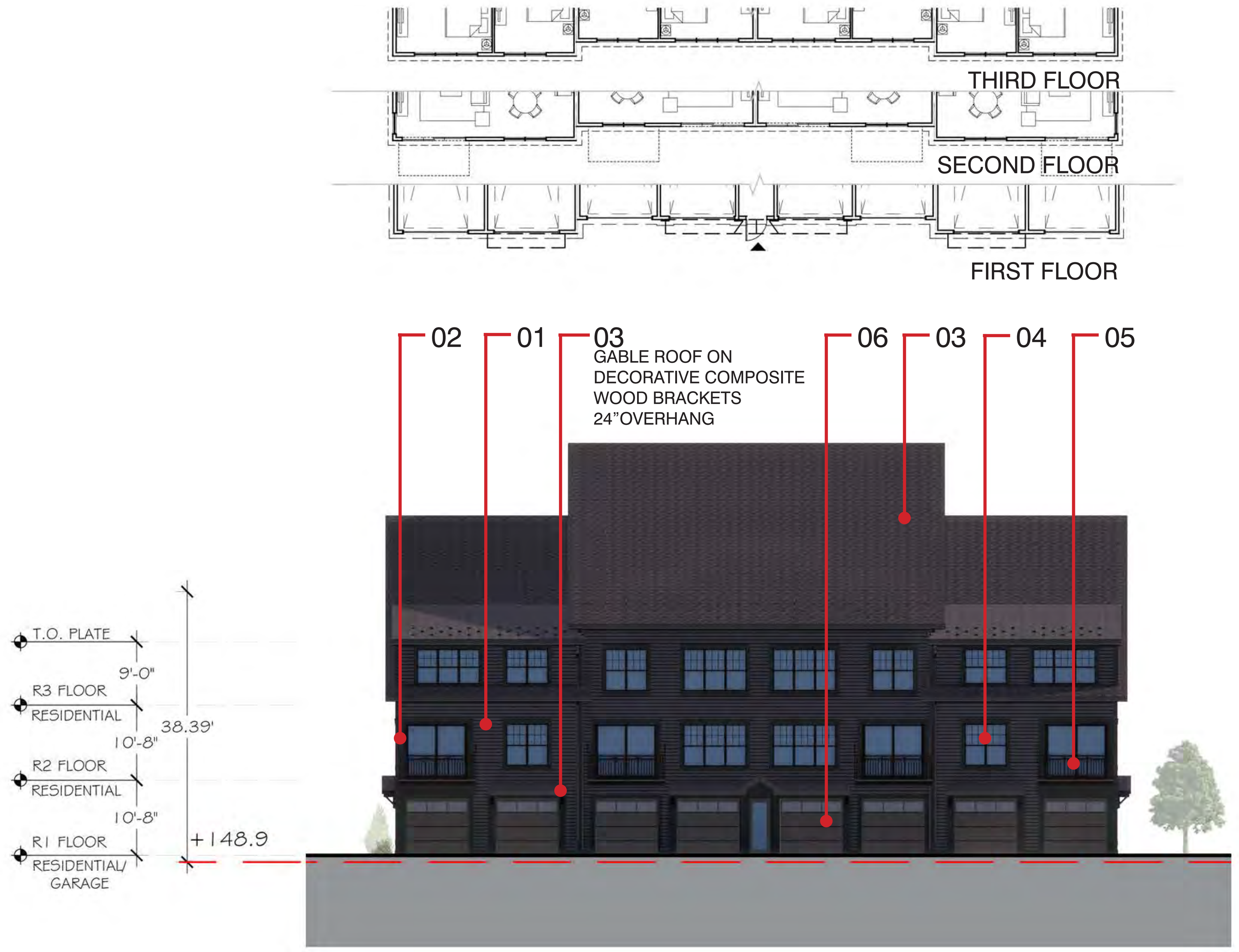
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

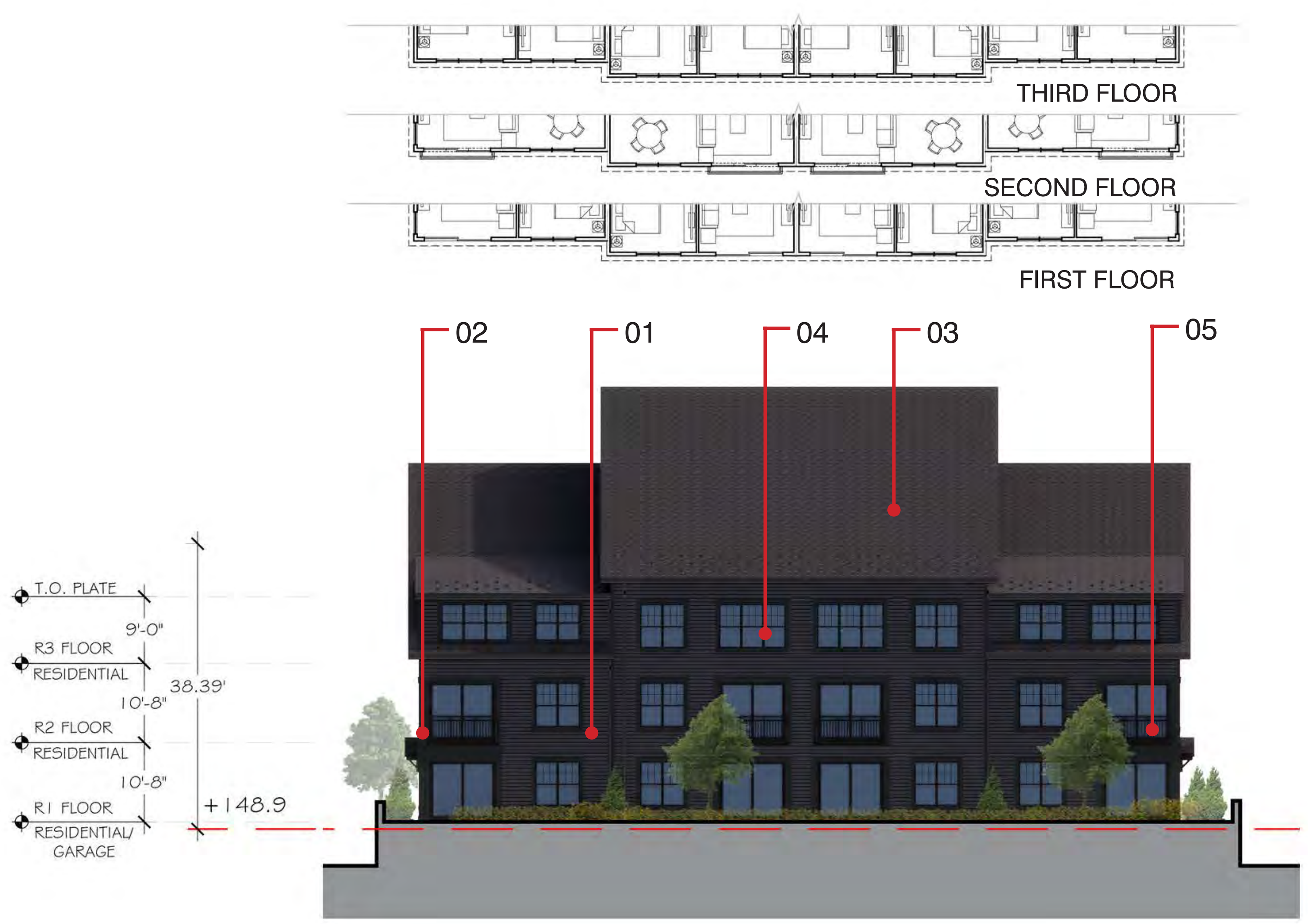
0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")

A.13

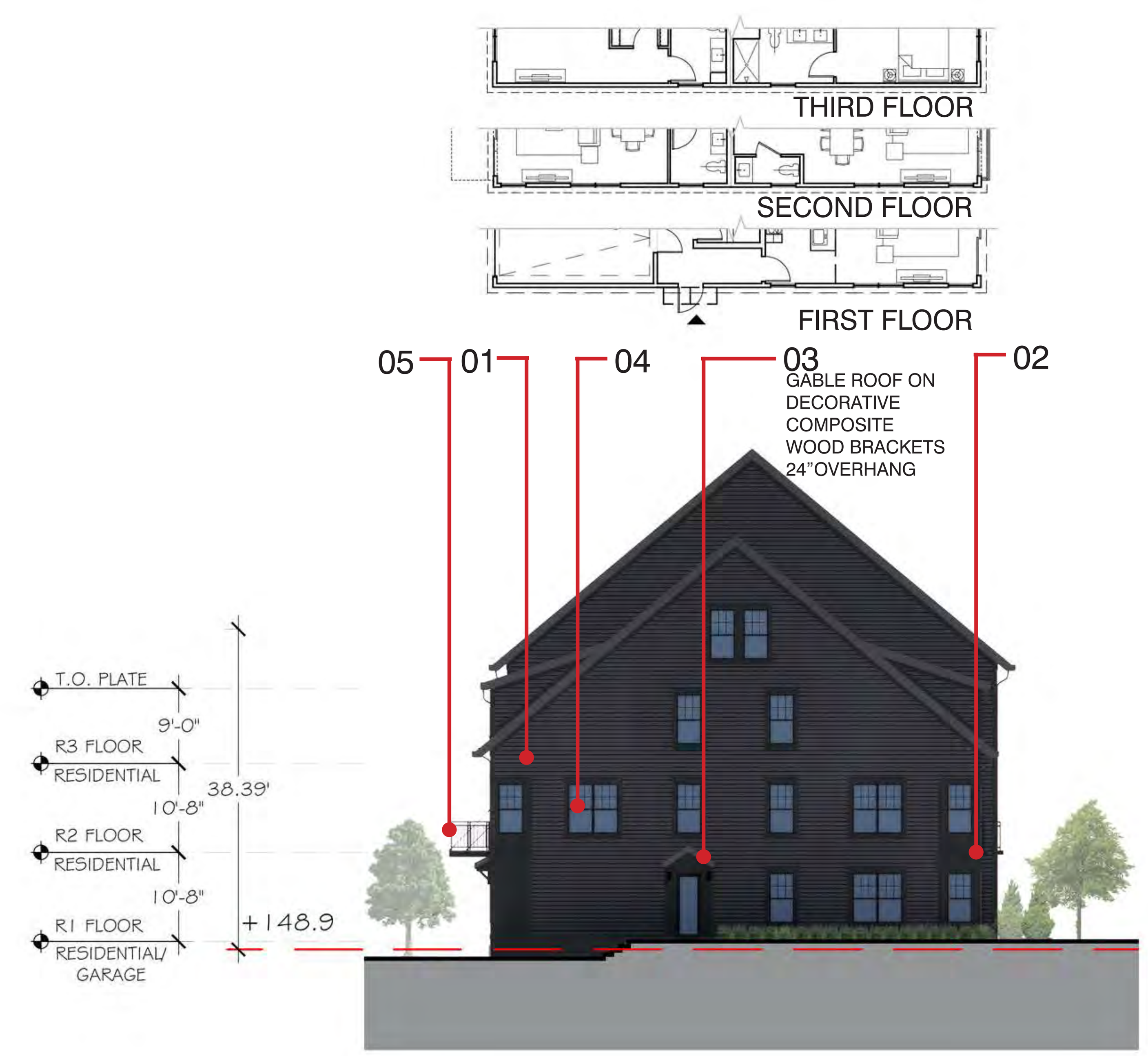


BUILDING ELEVATION 1

BUILDING ELEVATION 2

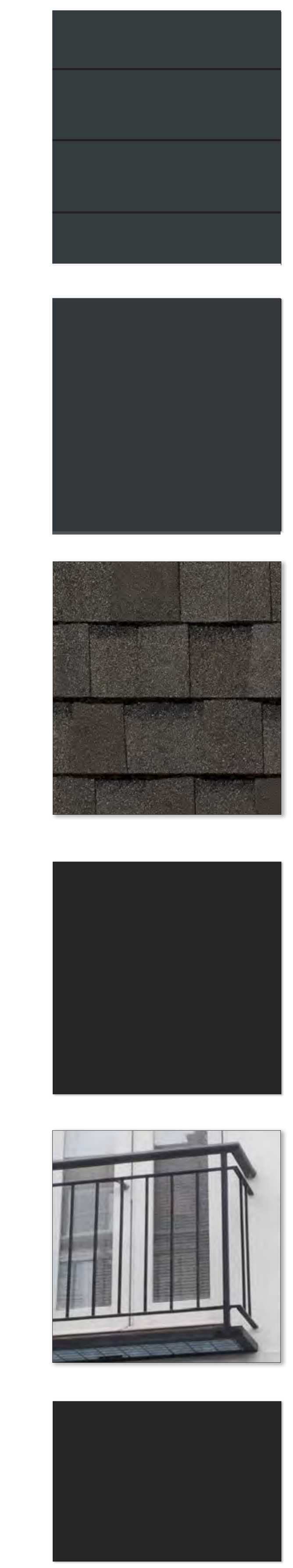


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

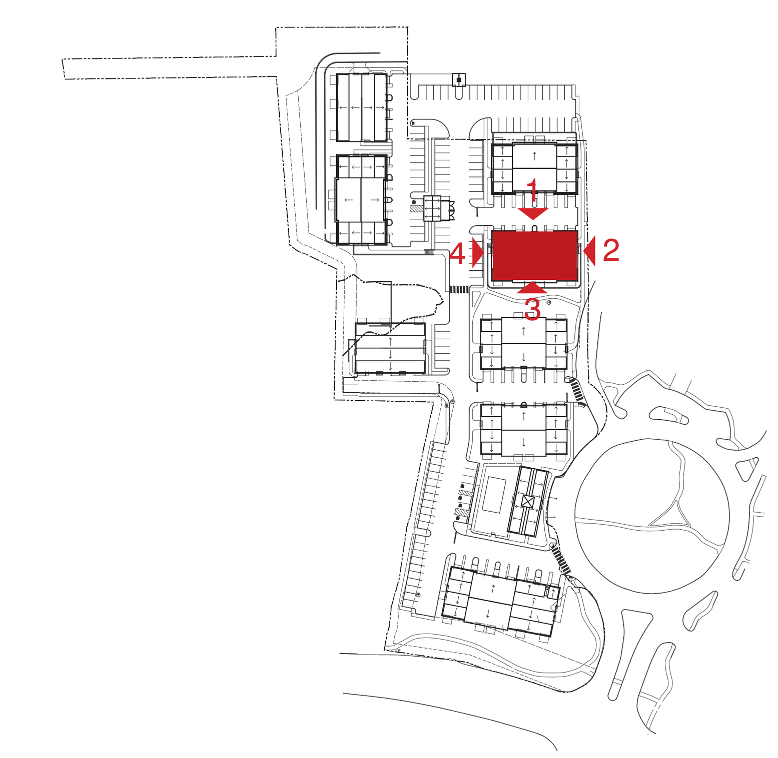
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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BUILDING 5- ELEVATIONS

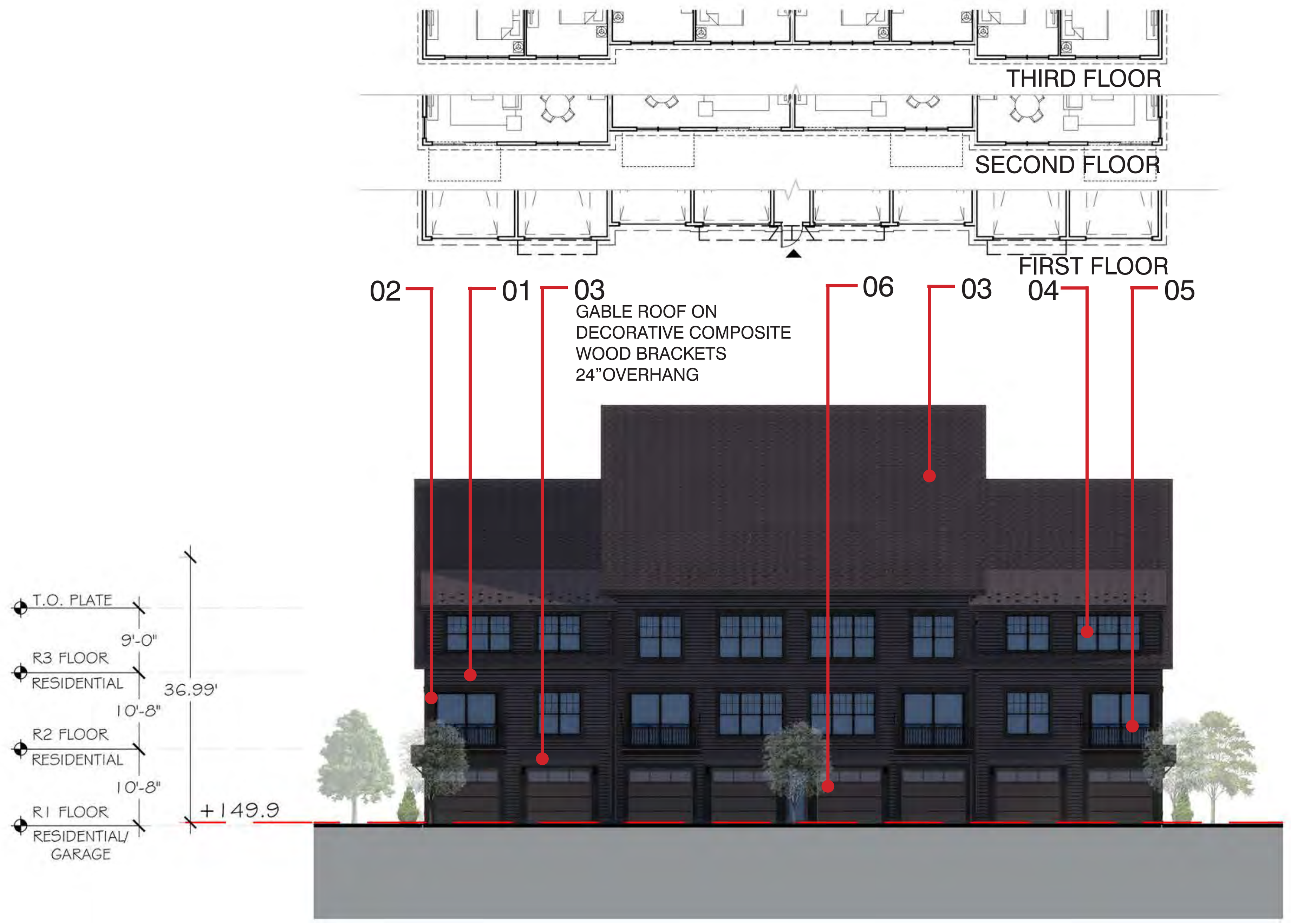
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

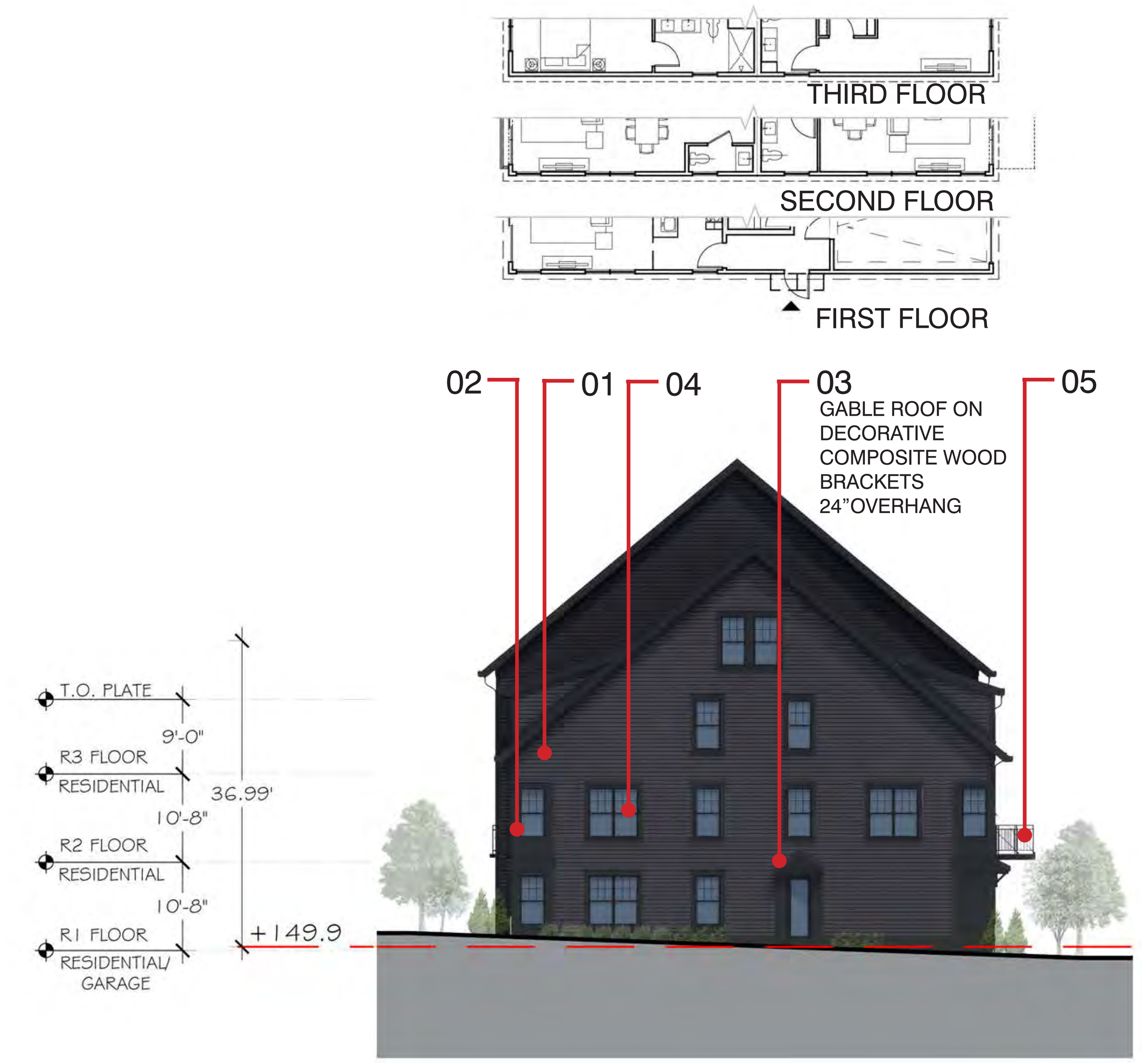
JAN 02, 2024
FUL.003

A.14

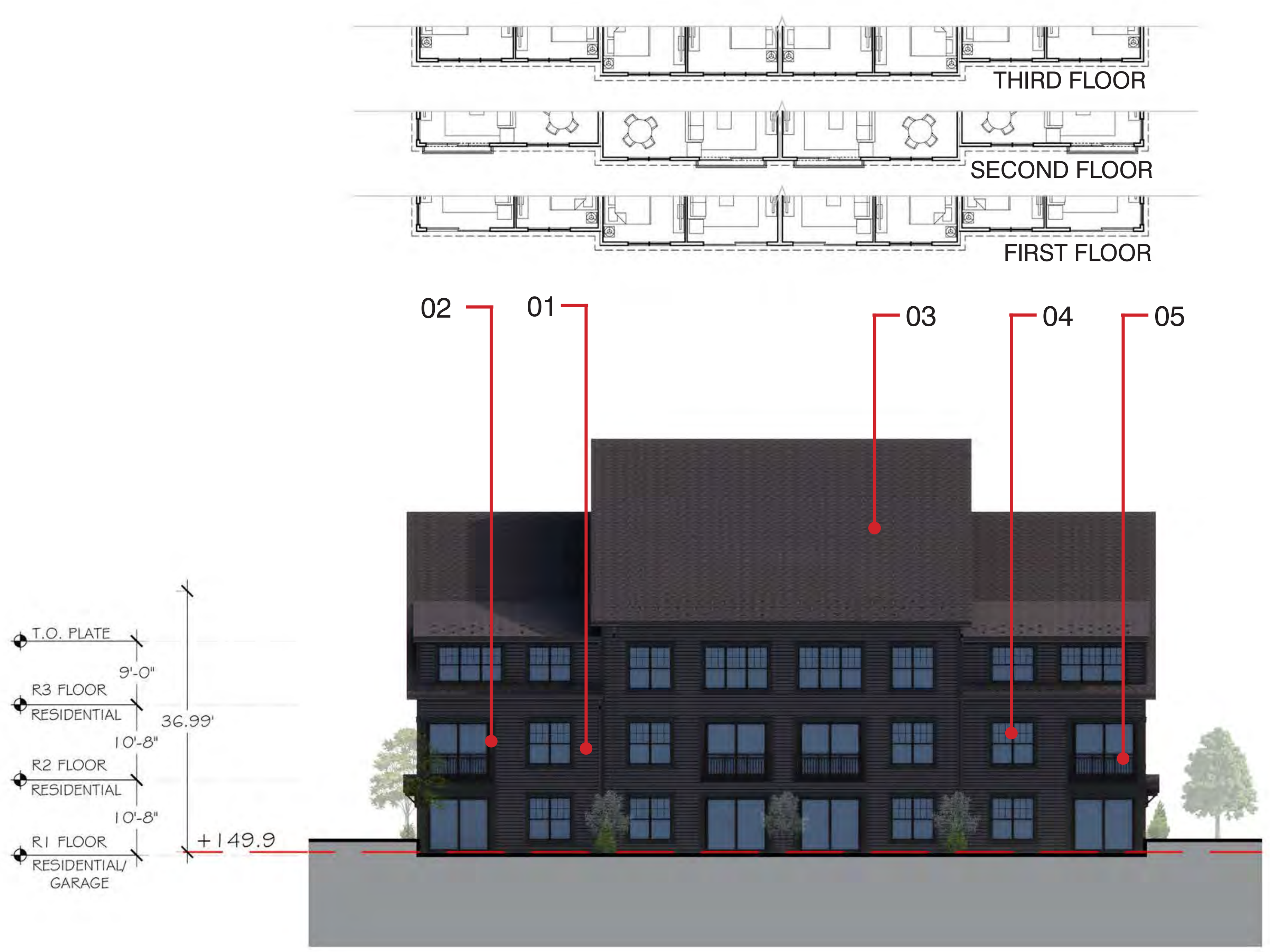
0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")



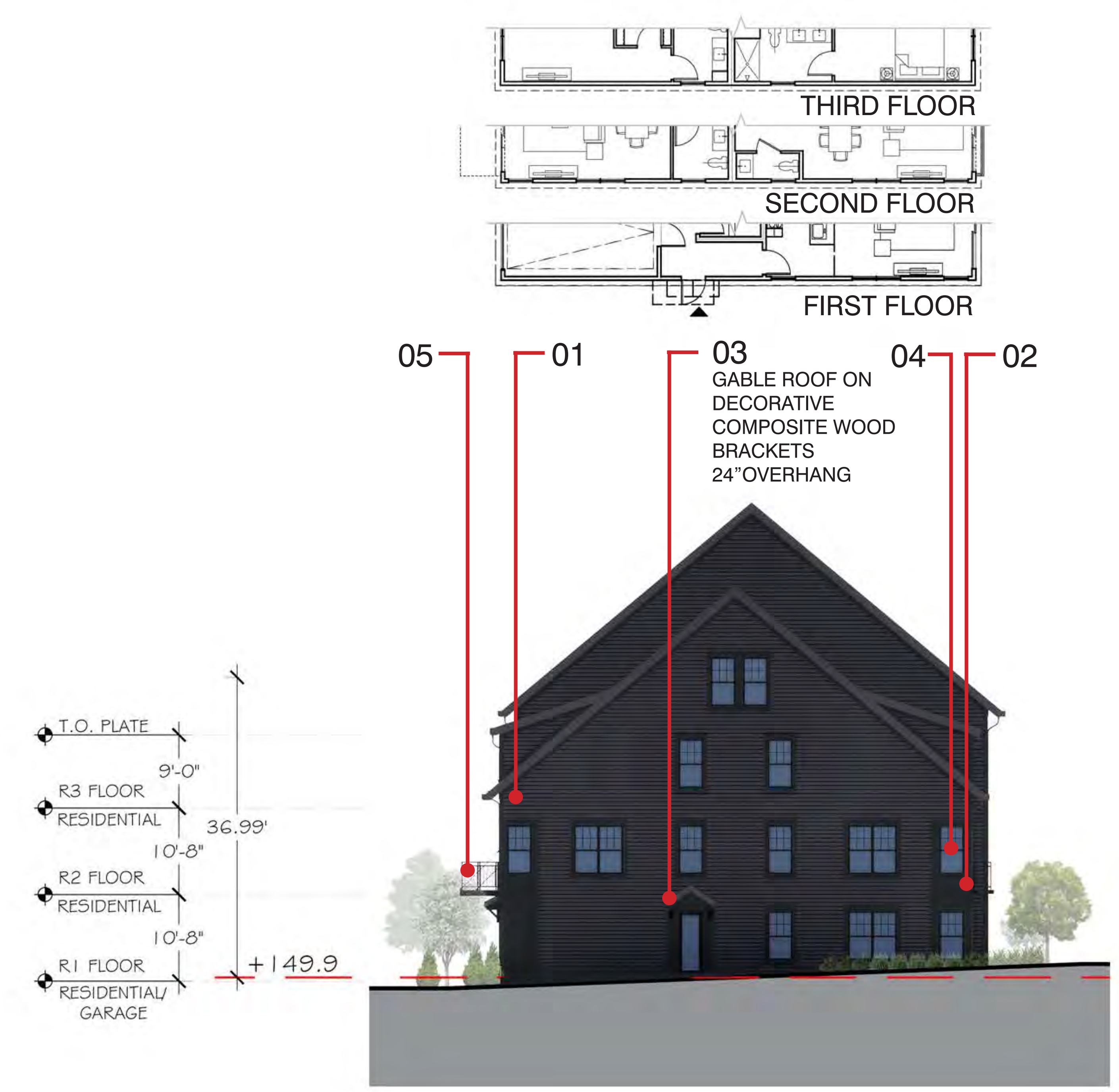
BUILDING ELEVATION 1



BUILDING ELEVATION 2

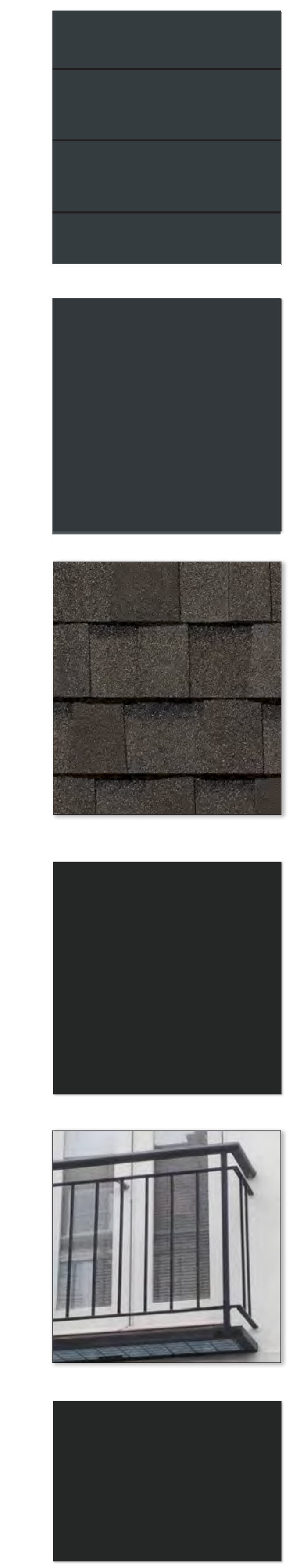


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

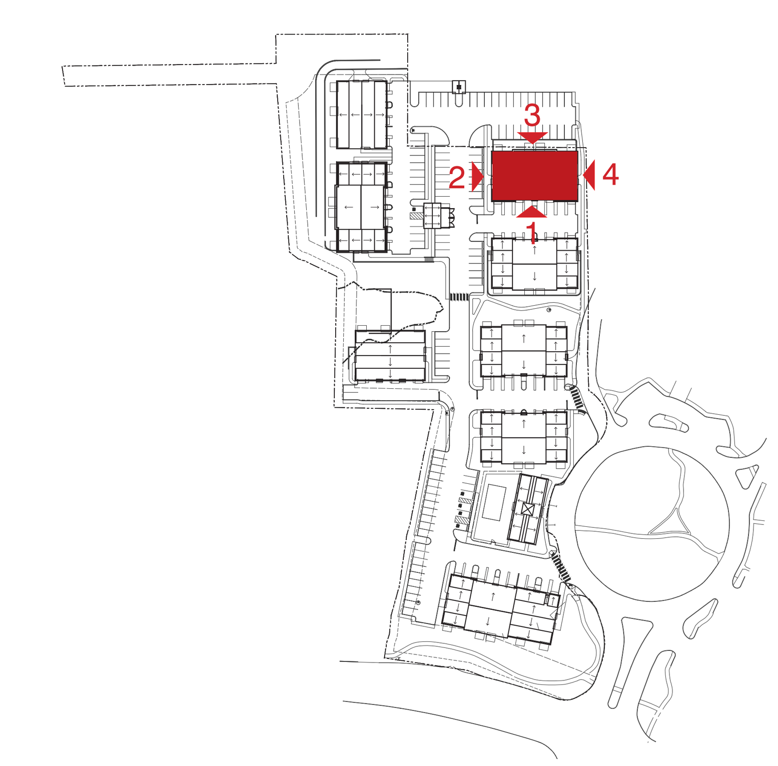
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

*NOTE: PRODUCTS AND MANUFACTURERS LISTED ARE SUBJECT TO CHANGE AND/OR TO BE SUBSTITUTED WITH EQUIVALENT AND COMPATIBLE OPTIONS
*NOTE: SIGNAGE NAME OR NUMBER SHOWN TO BE DETERMINED AS THE PROJECT DEVELOPS.
*NOTE: LIGHT FIXTURES AND LANDSCAPE SHOWN FOR ILLUSTRATIVE PURPOSE ONLY, REFER TO LANDSCAPE DRAWINGS FOR MORE INFORMATION.

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BUILDING 6- ELEVATIONS

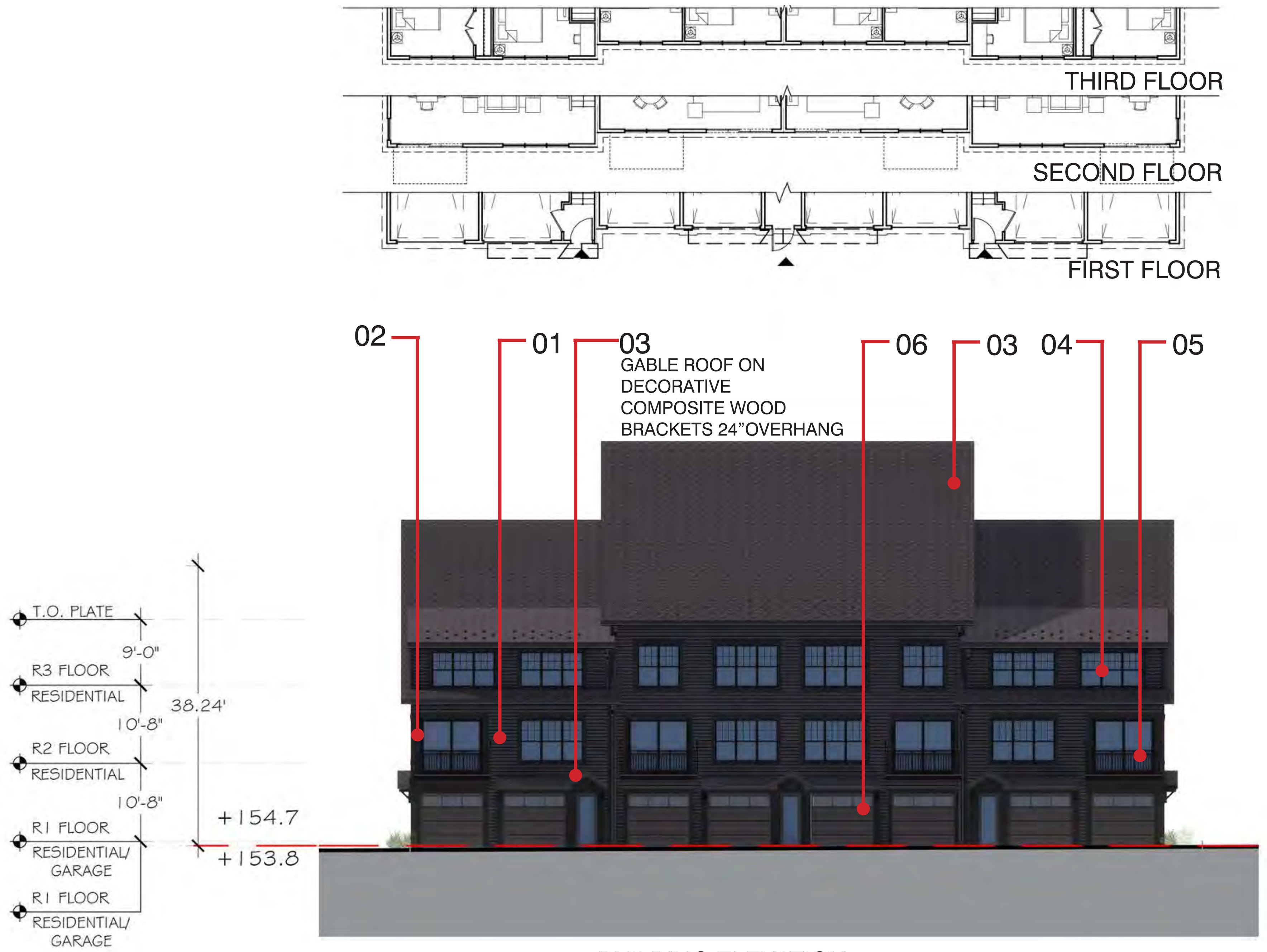
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

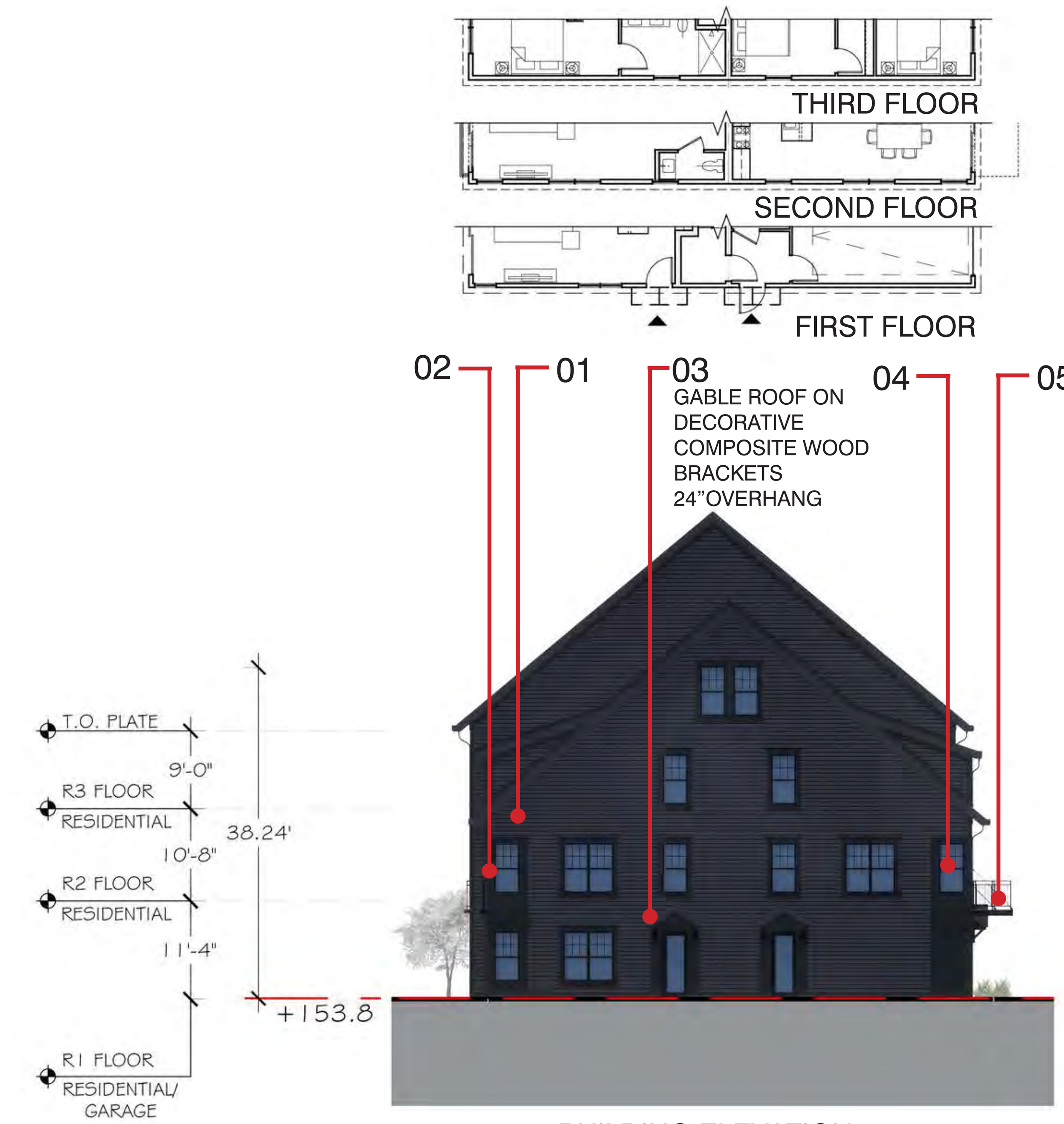
JAN 02, 2024
FUL.003

0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")

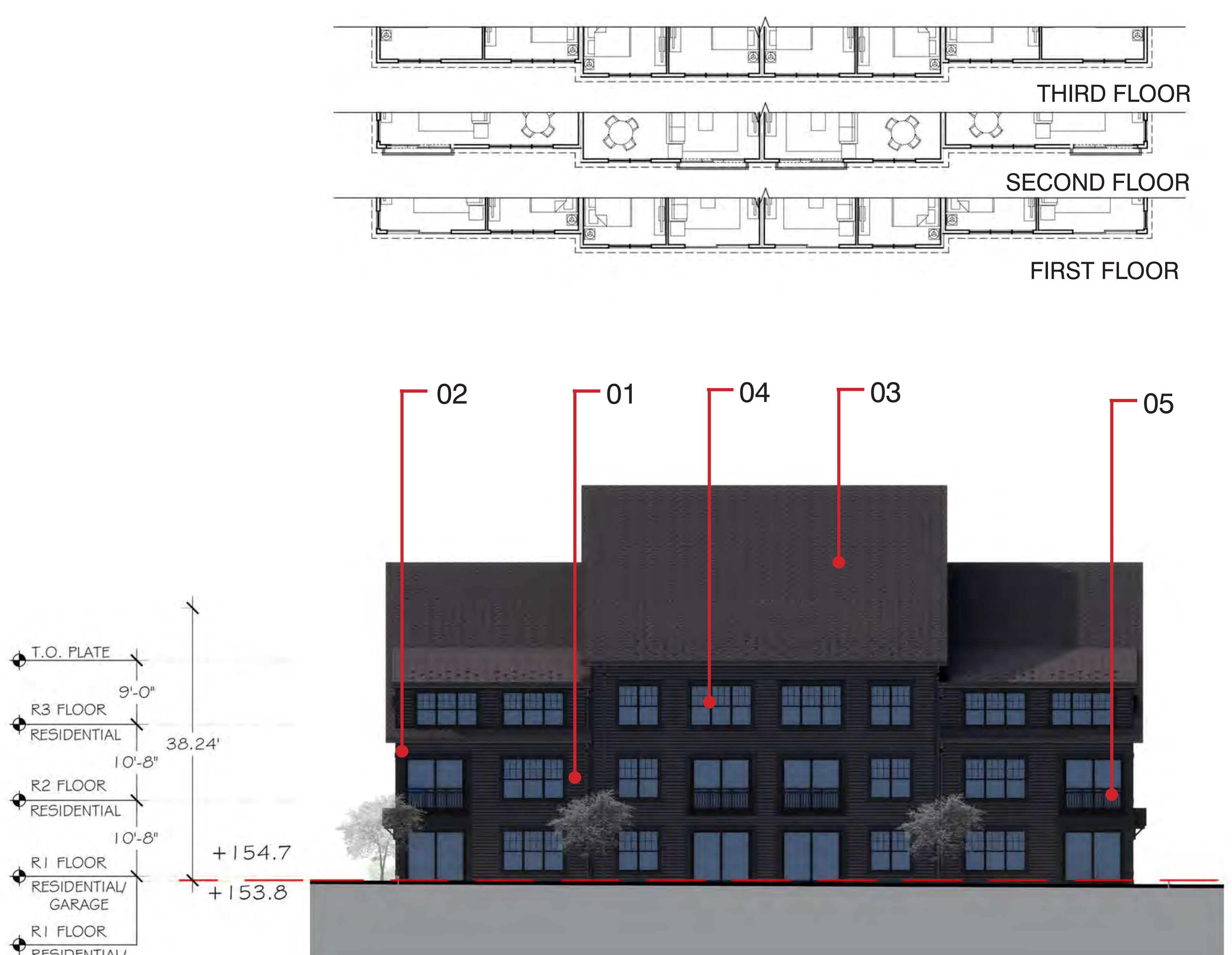
A.15



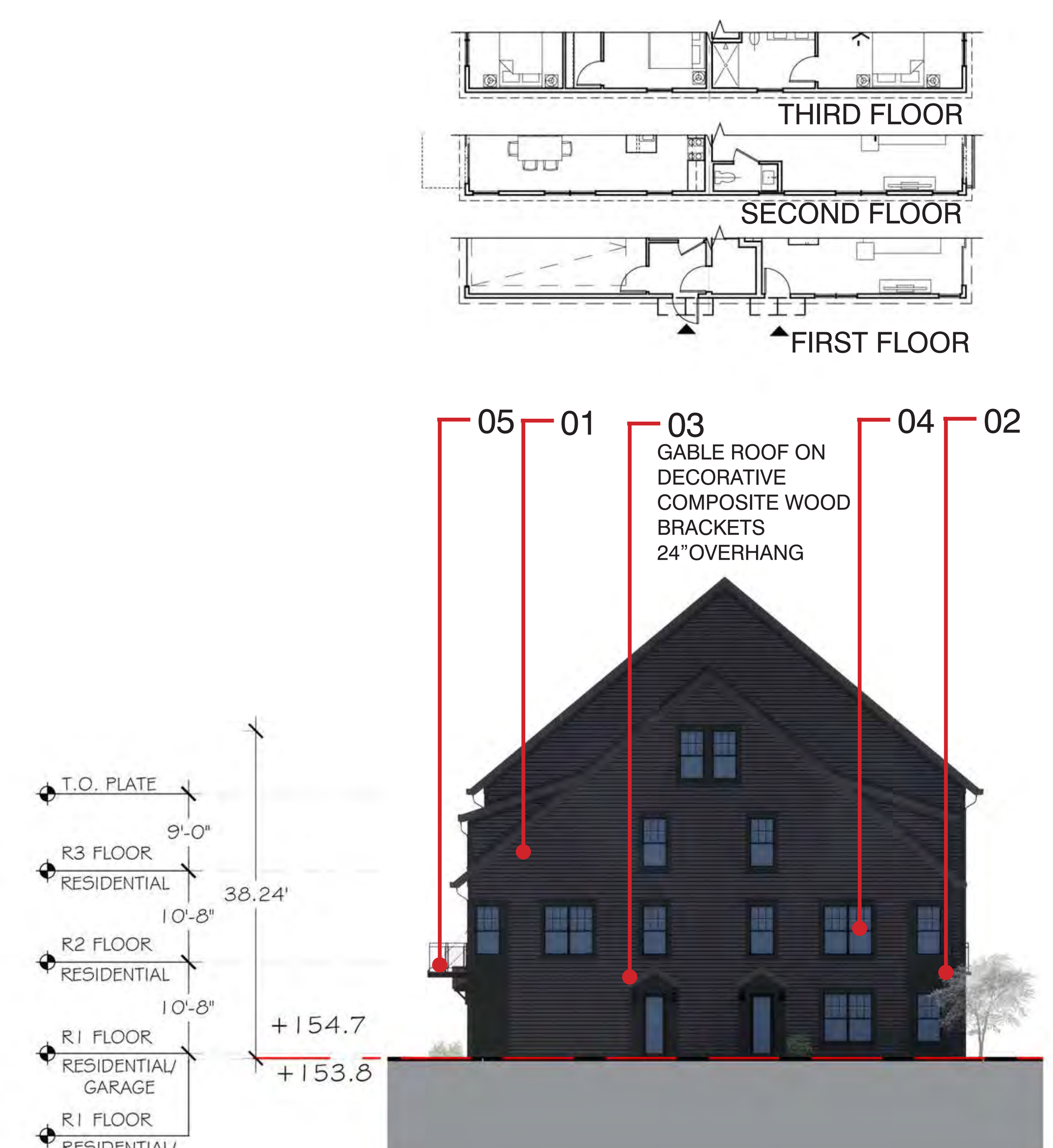
BUILDING ELEVATION 1



BUILDING ELEVATION 2

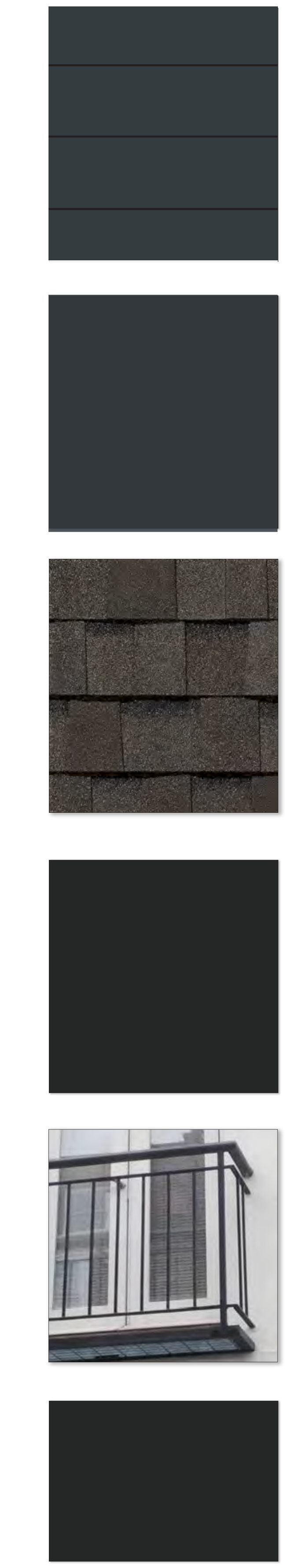


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

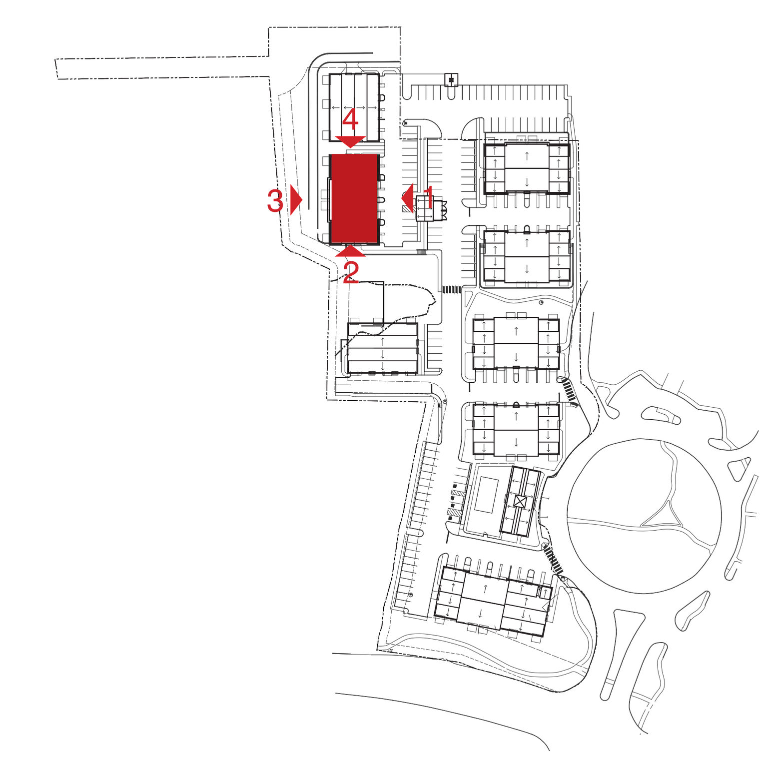
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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*NOTE: LIGHT FIXTURES AND LANDSCAPE SHOWN FOR ILLUSTRATIVE PURPOSE ONLY, REFER TO LANDSCAPE DRAWINGS FOR MORE INFORMATION.

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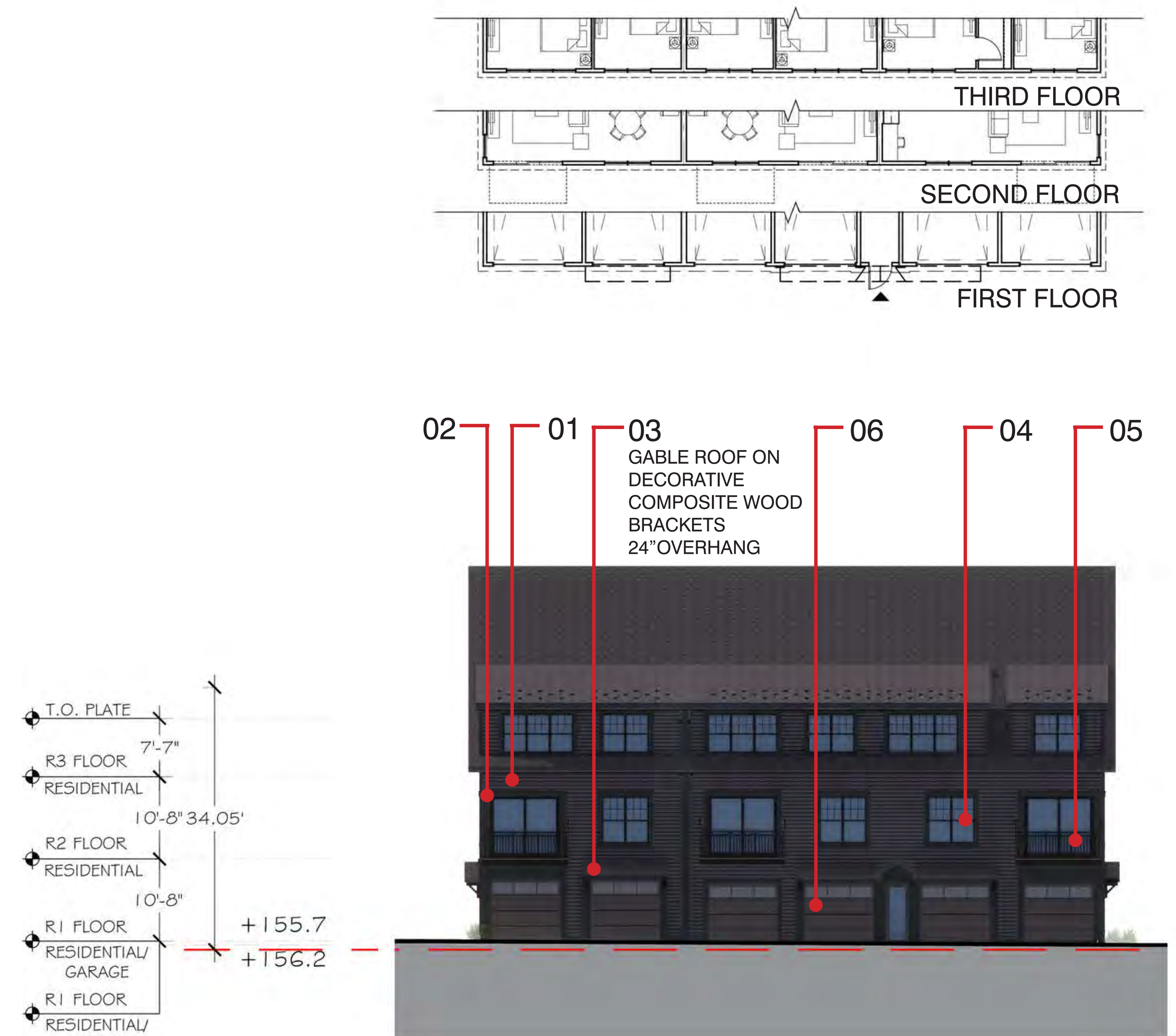
BUILDING 7- ELEVATIONS

PLANNING AND ZONING SUBMISSION

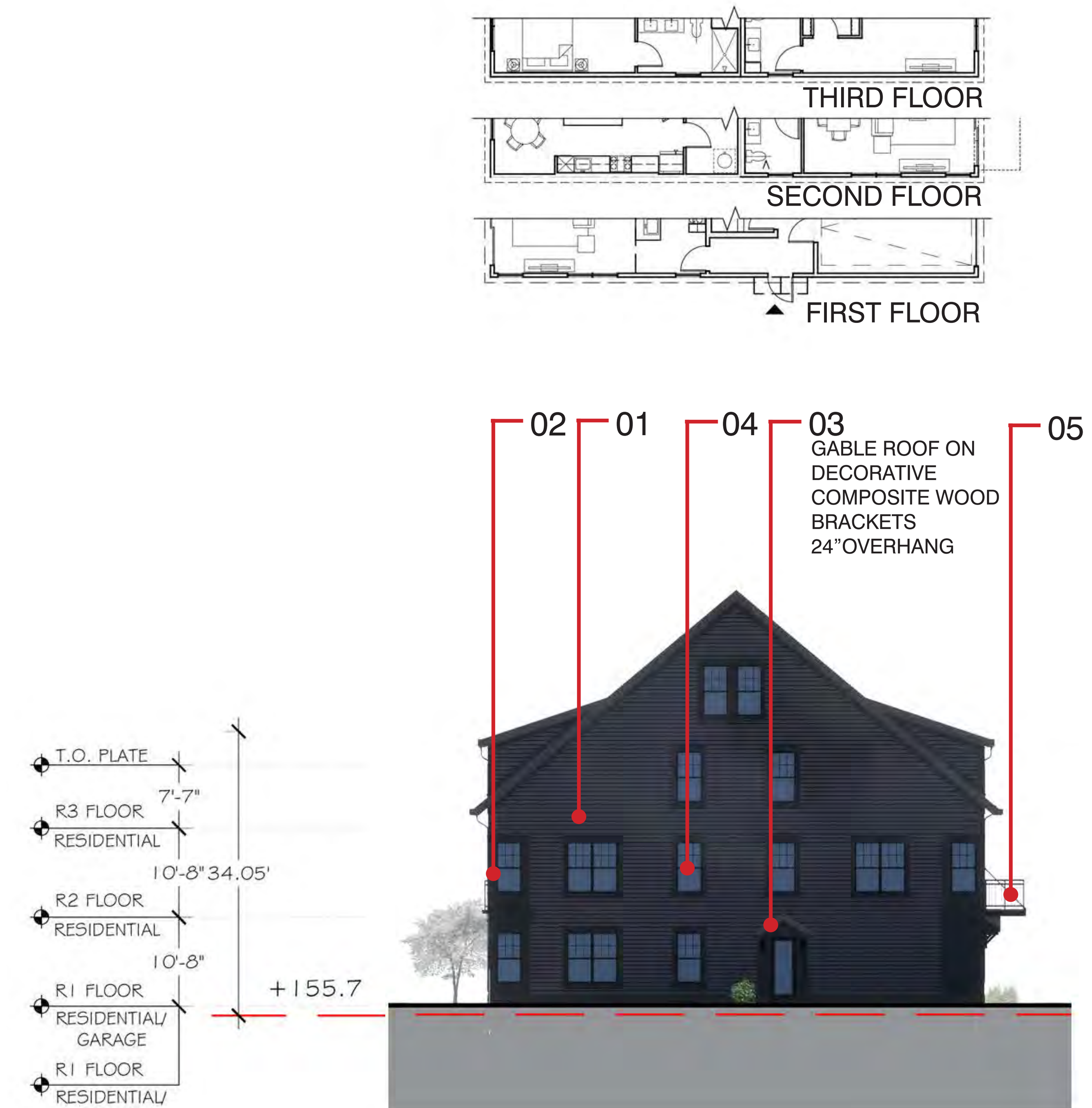
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

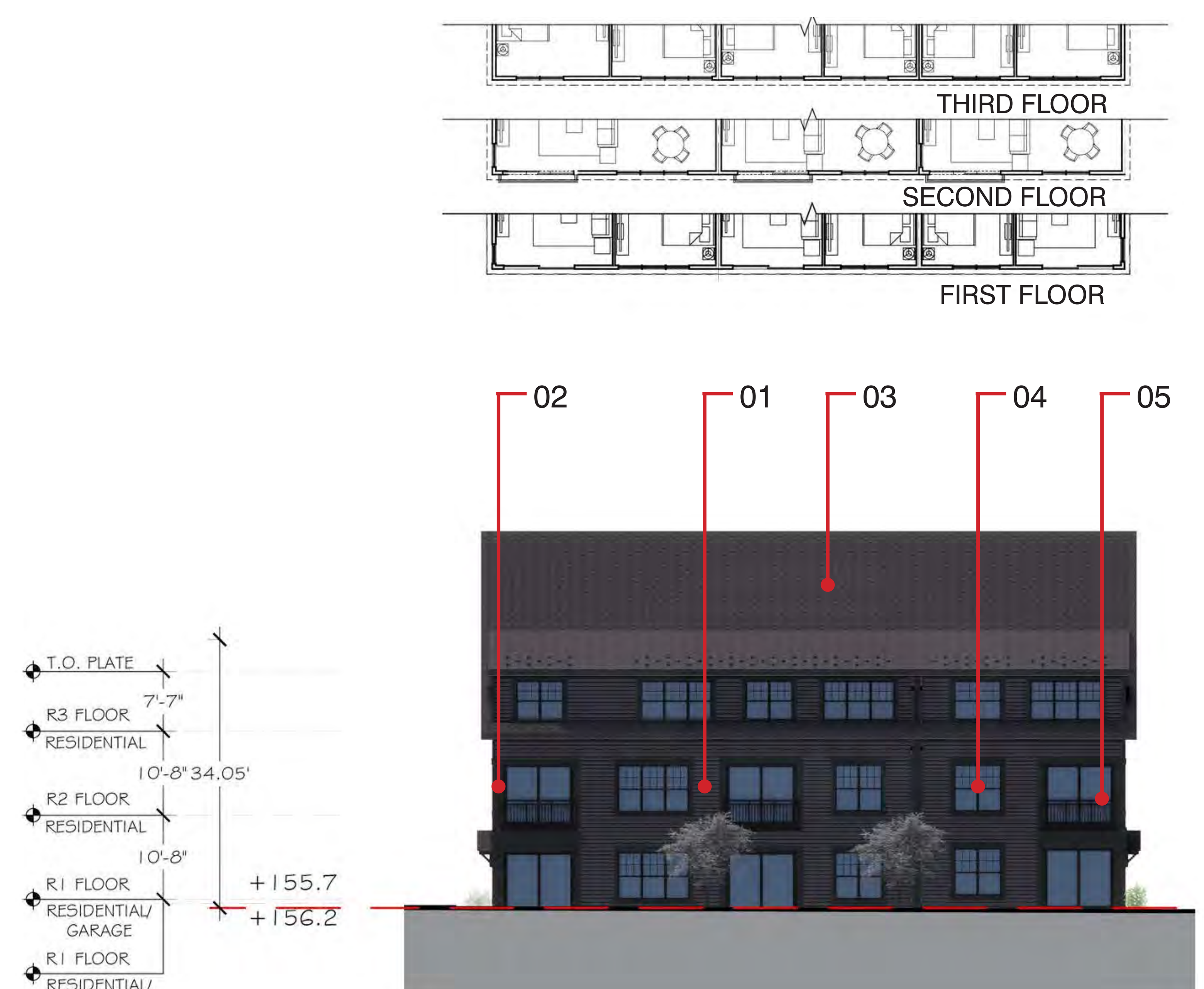
0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")



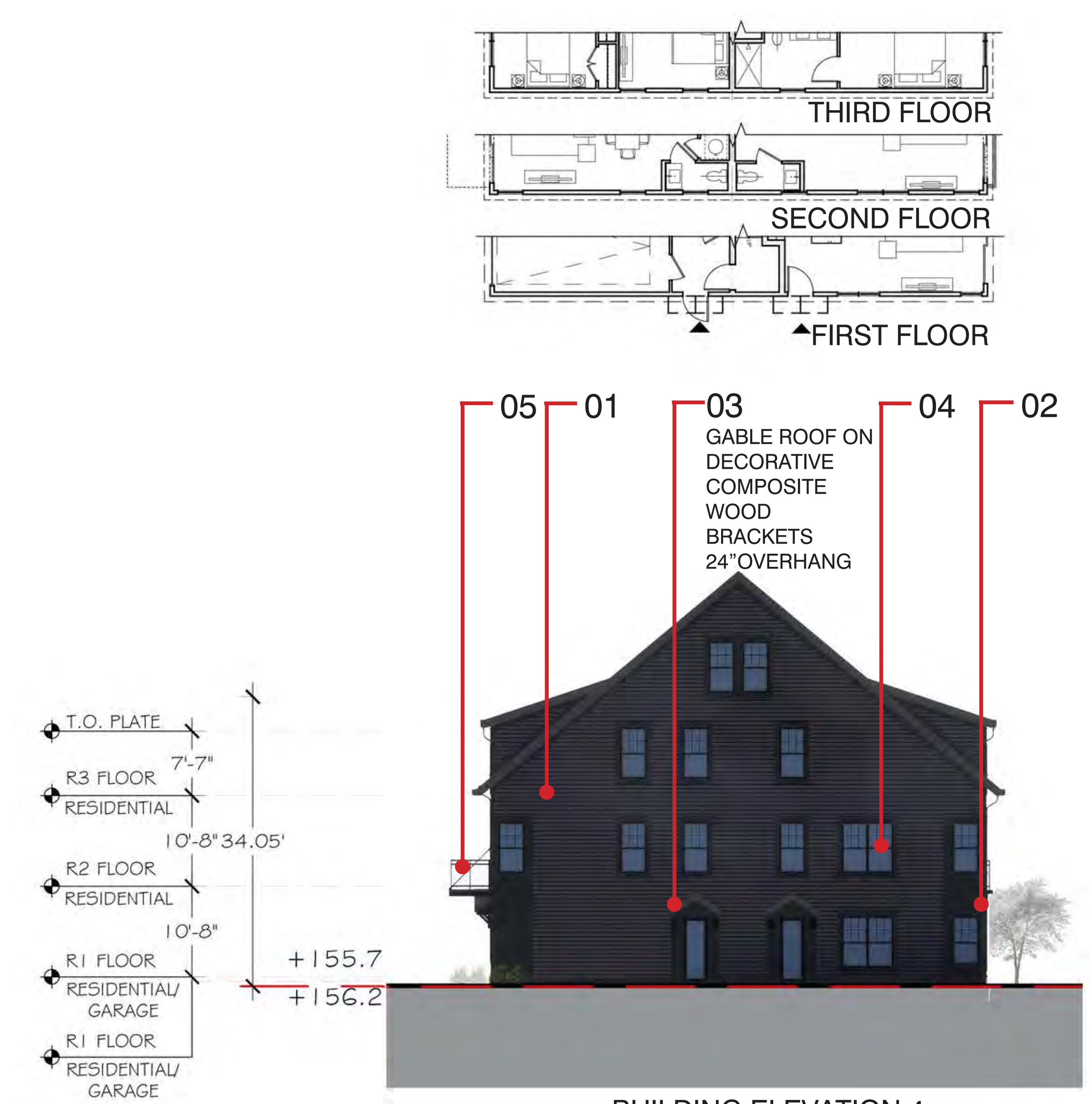
BUILDING ELEVATION 1



BUILDING ELEVATION 2

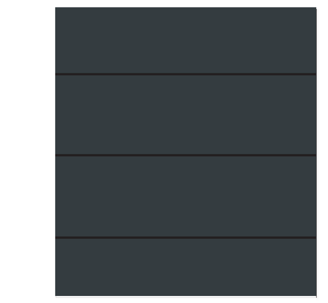


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

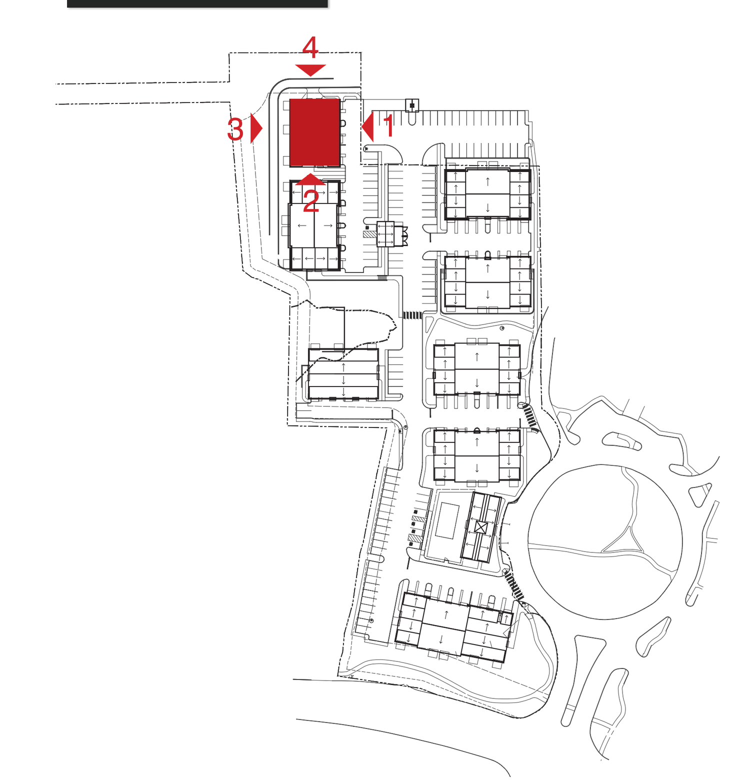
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -POWDER COATED ALUMINIUM

*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

STATE OF CONNECTICUT SUNGJAE LEE LICENSED ARCHITECT

*NOTE: PRODUCTS AND MANUFACTURERS LISTED ARE SUBJECT TO CHANGE AND/OR TO BE SUBSTITUTED WITH EQUIVALENT AND COMPATIBLE OPTIONS
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BUILDING 8- ELEVATIONS

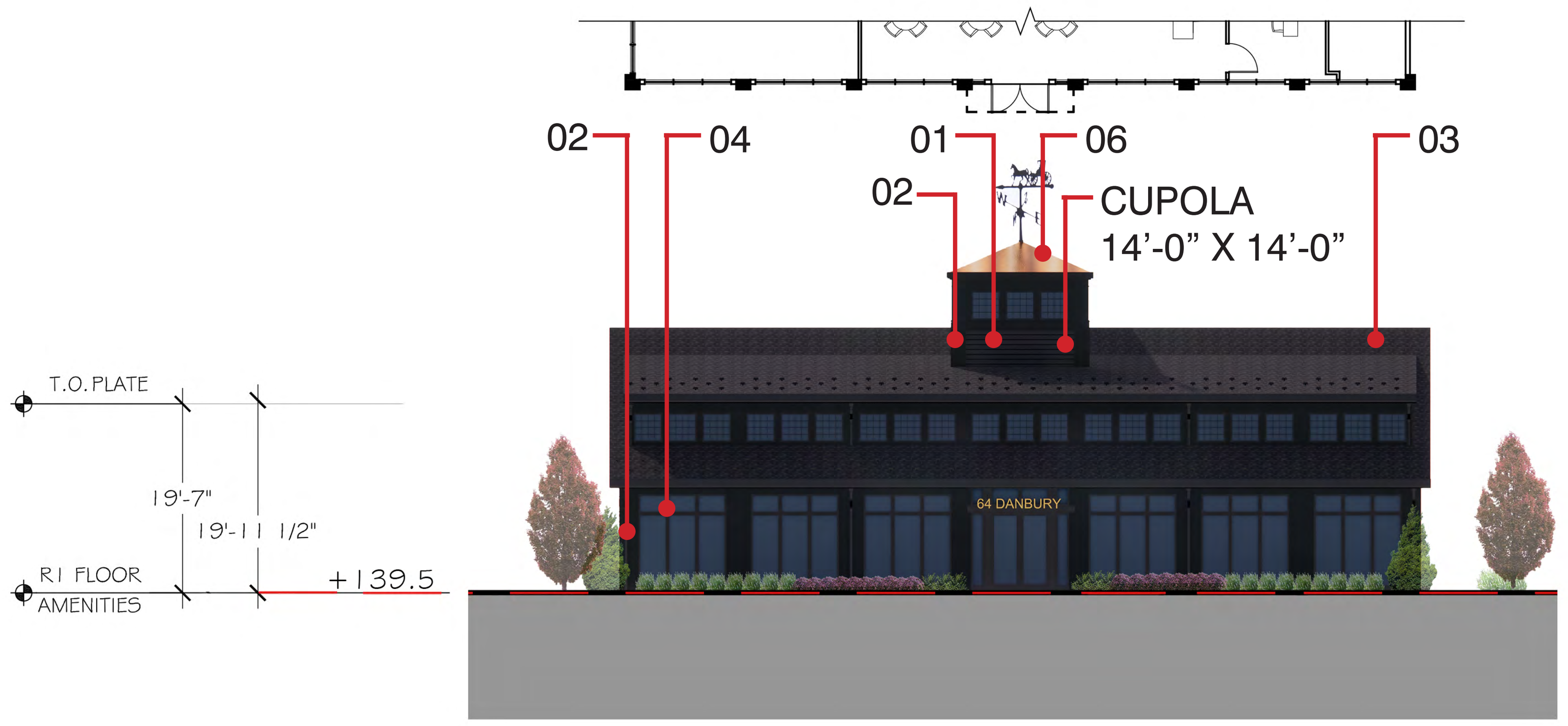
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

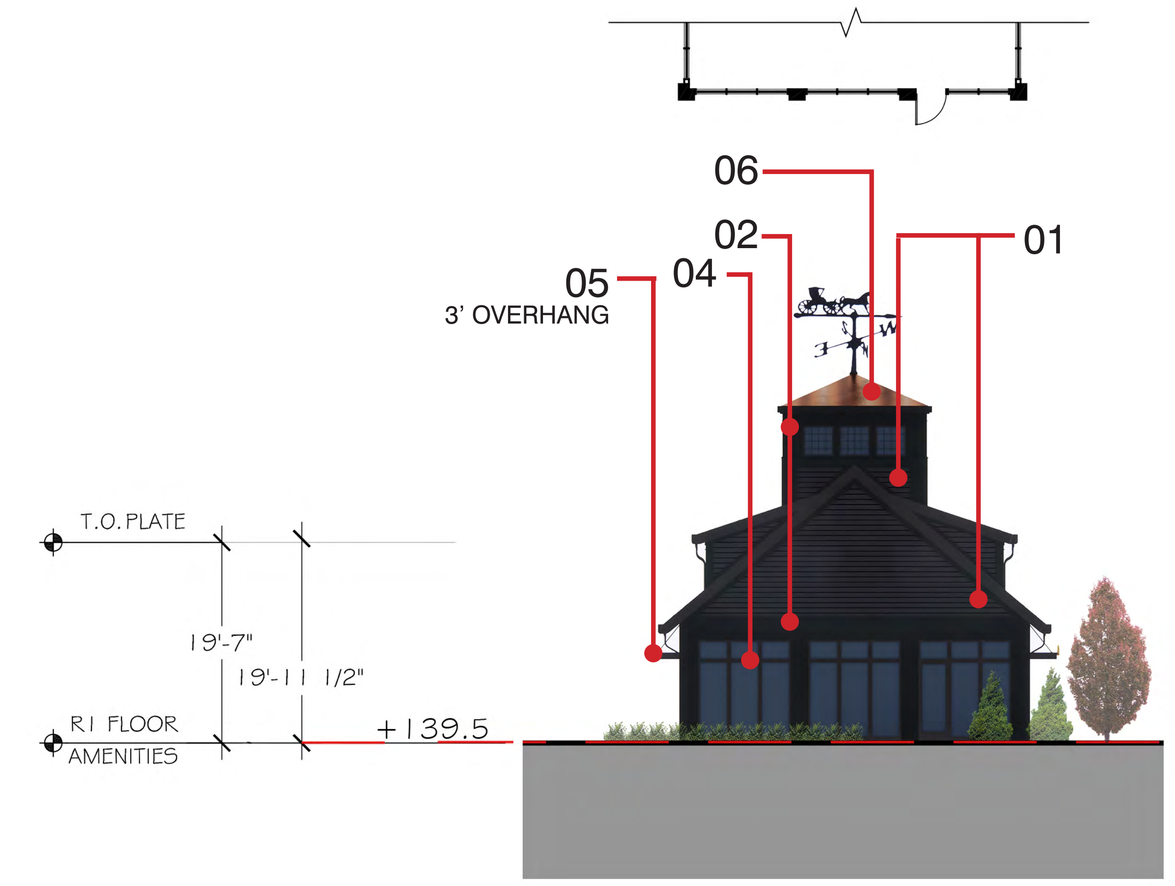
JAN 02, 2024
FUL.003

A.17

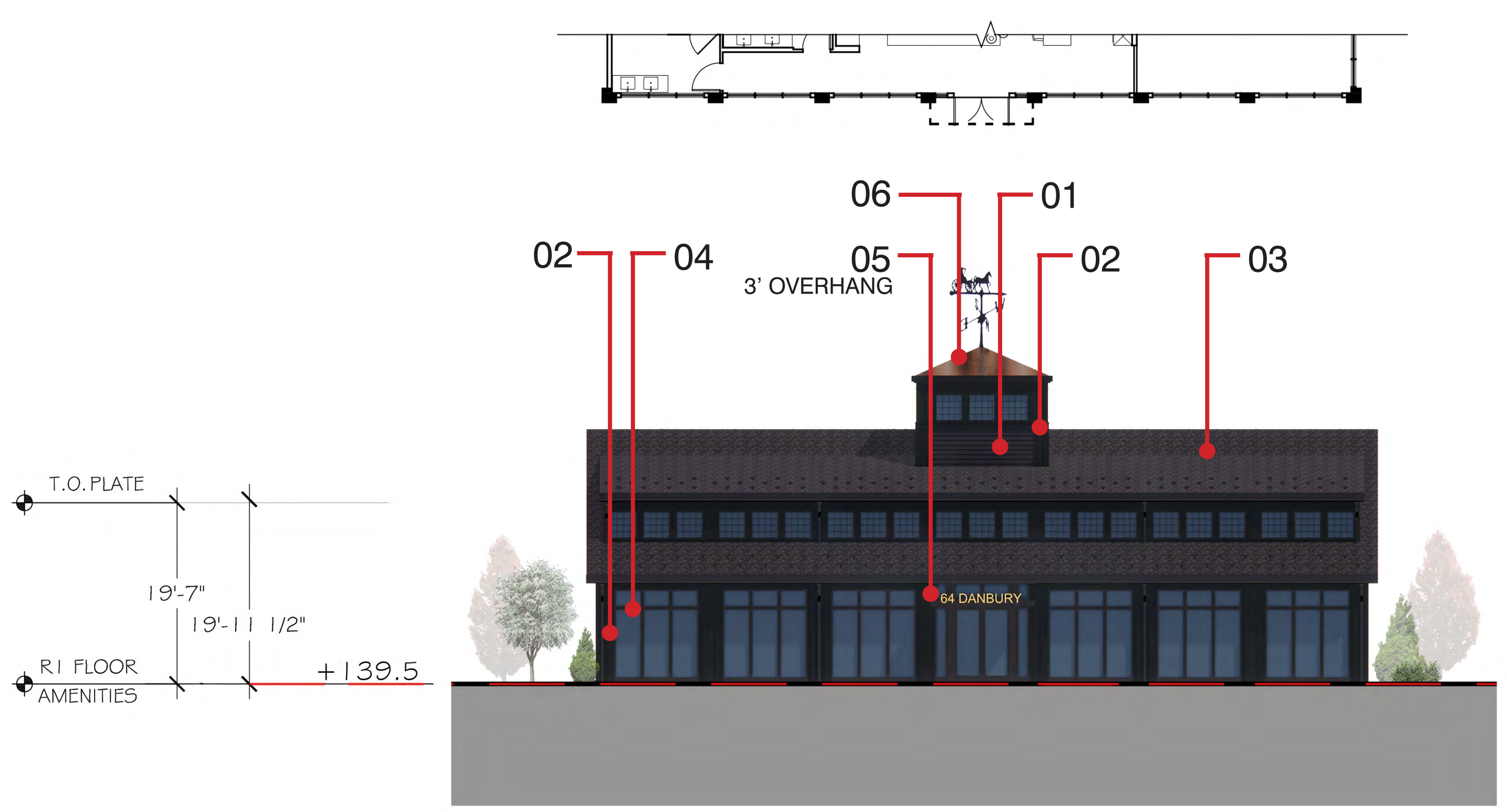
0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")



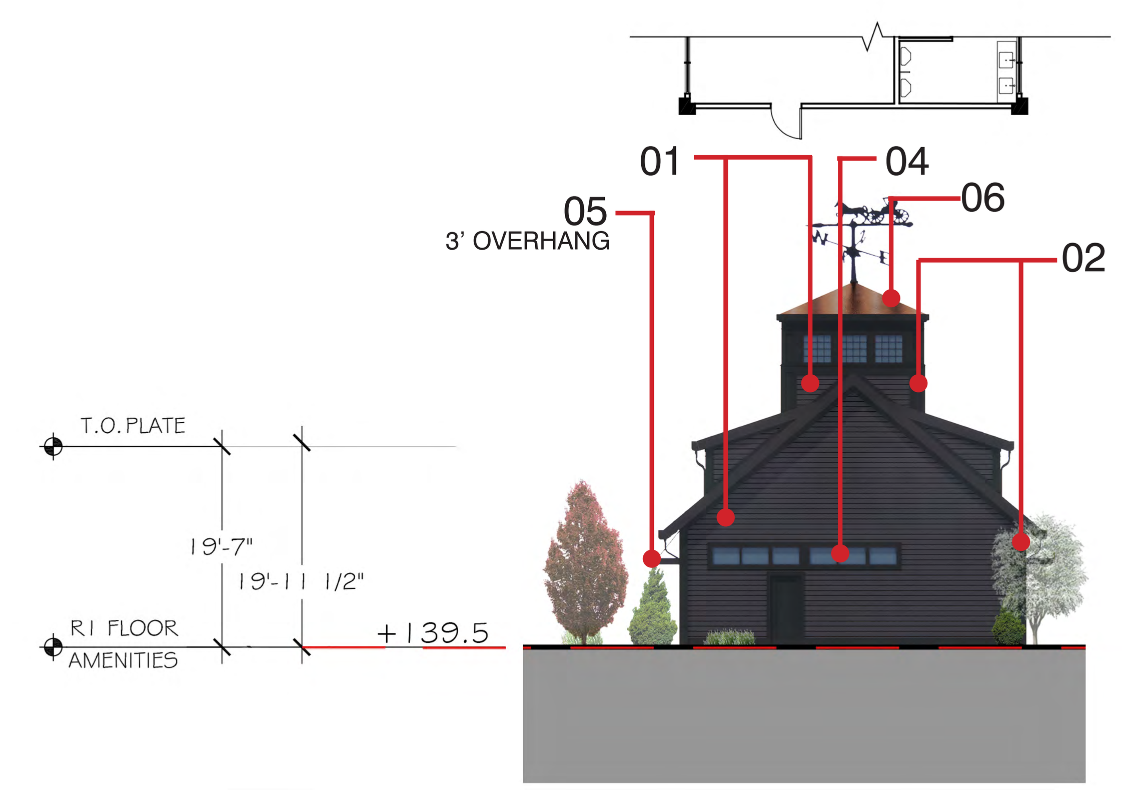
BUILDING ELEVATION 1



BUILDING ELEVATION 2

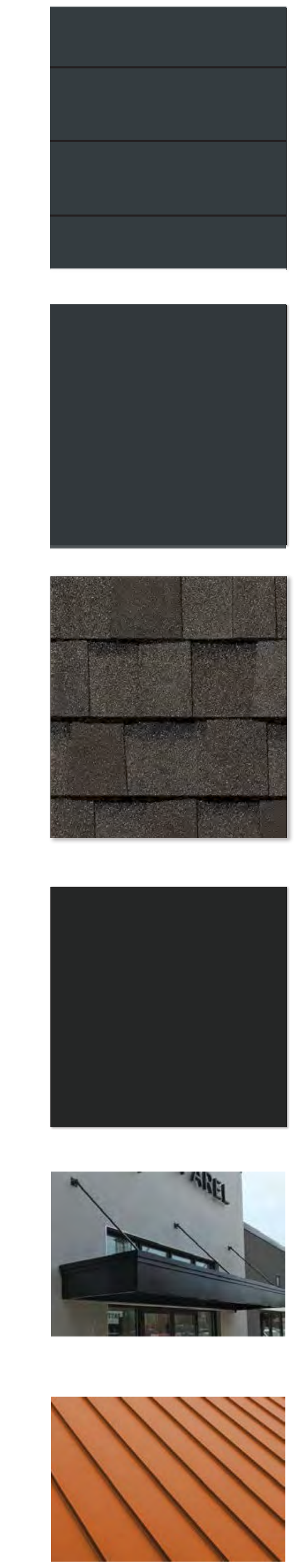


BUILDING ELEVATION 3



BUILDING ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

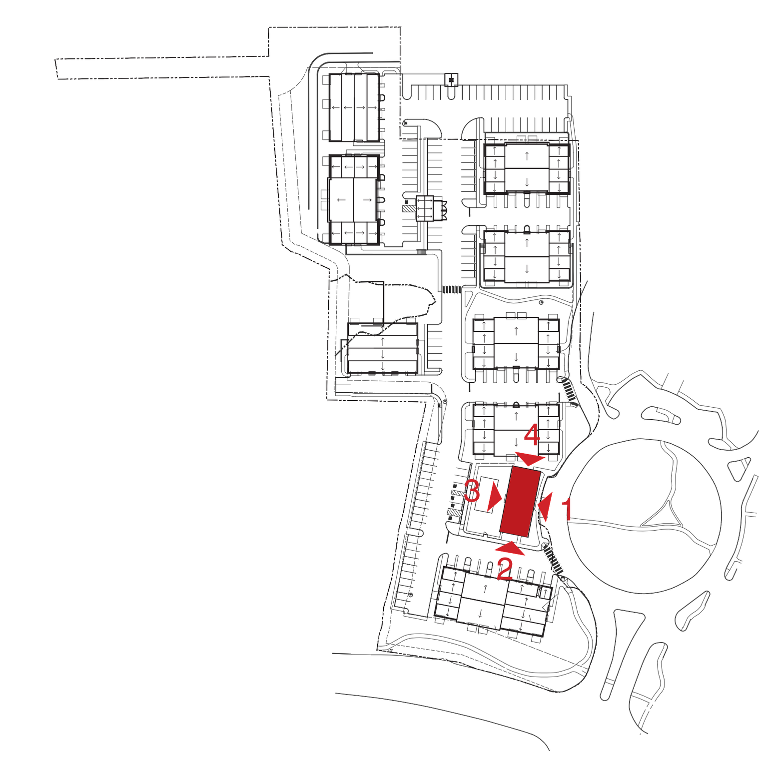
02. FIBER CEMENT TRIM
ANTHRACITE GREY

03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.METAL CANOPY
BLACK

06.STANDING SEAM ROOF
COPPER



KEY PLAN

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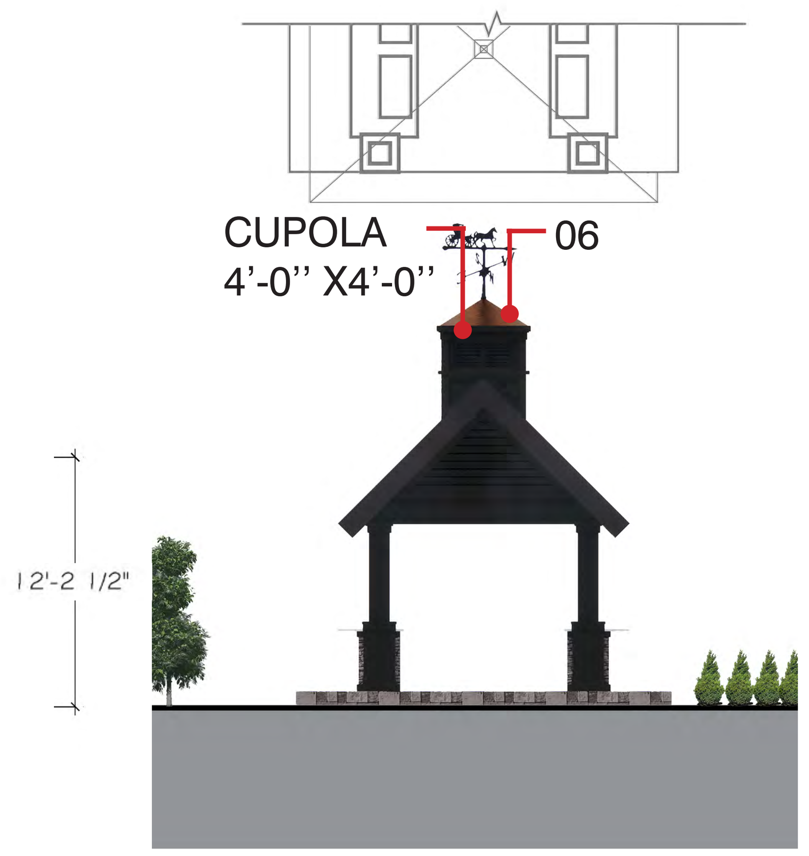
AMENITY BUILDING ELEVATIONS

PLANNING AND ZONING SUBMISSION

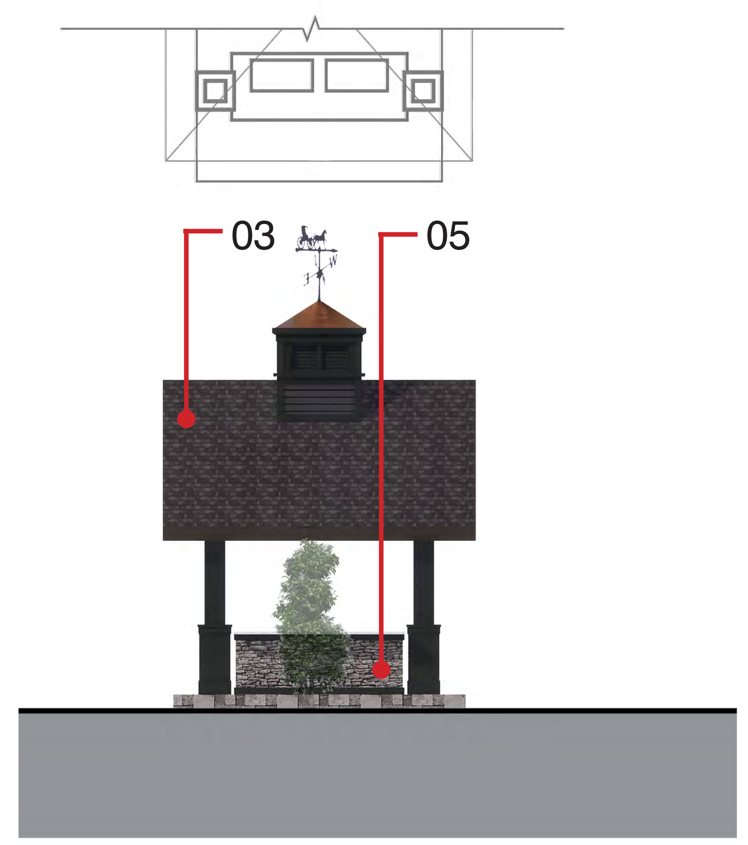
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

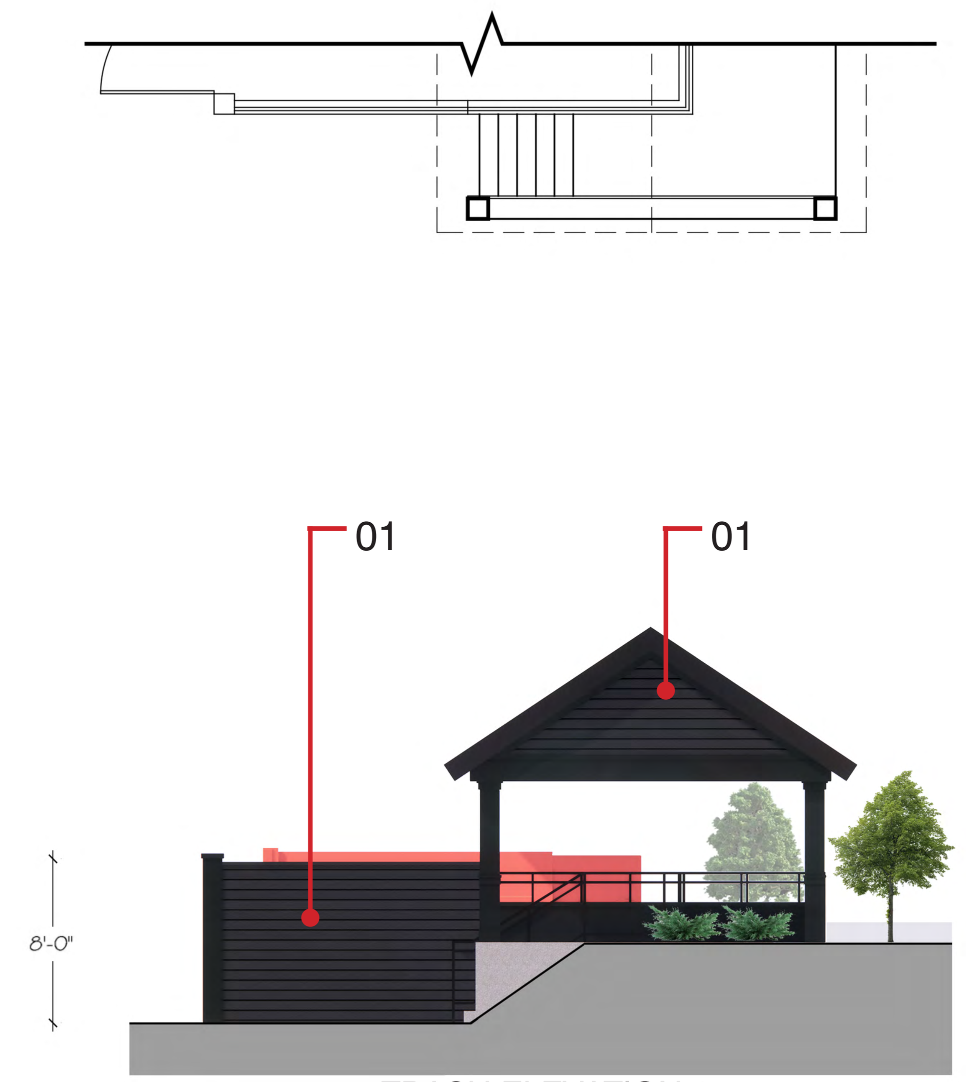
0' 8' 16' 32'
SCALE: 1/16"= 1'-0" (@ 22"x34")



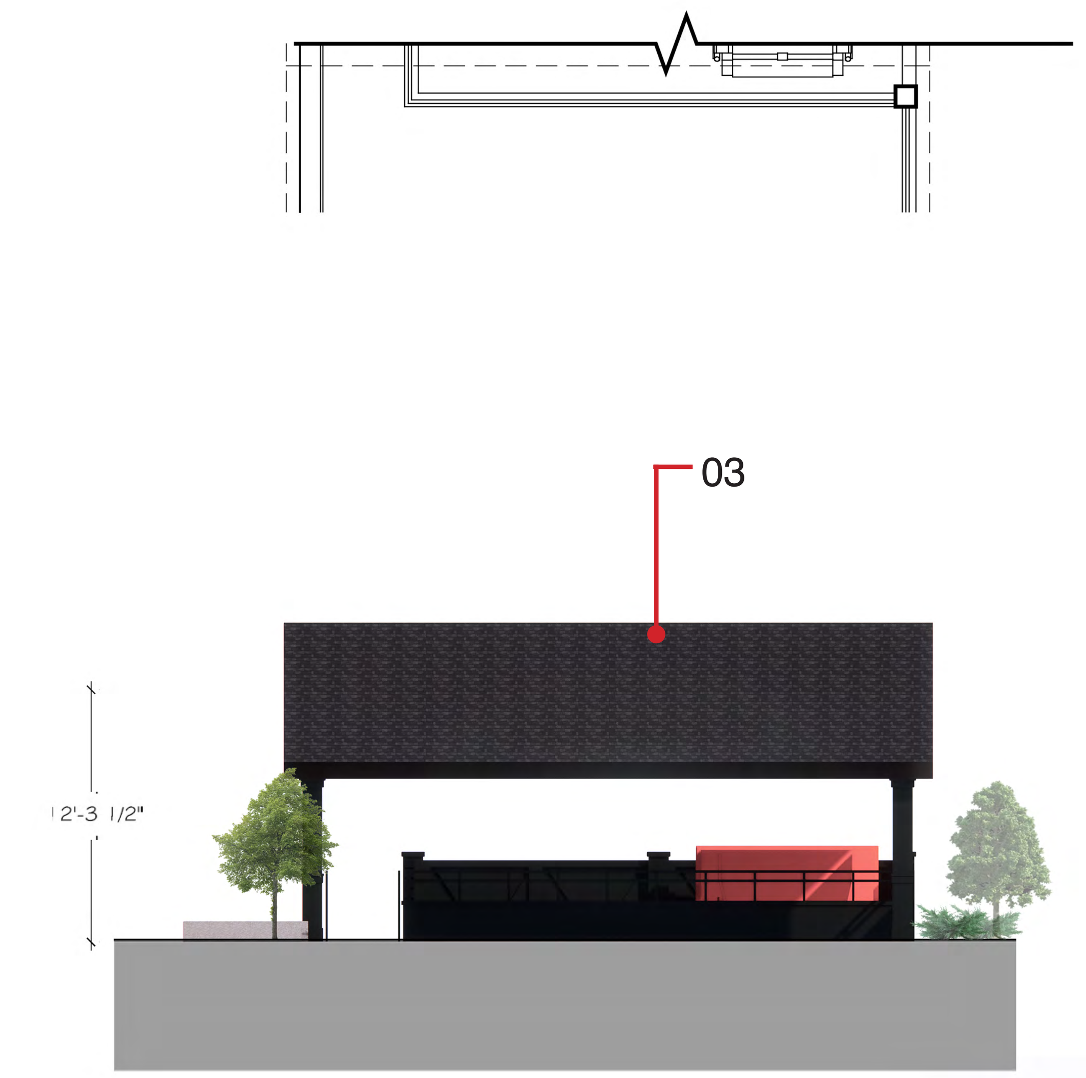
GAZEBO ELEVATION 1



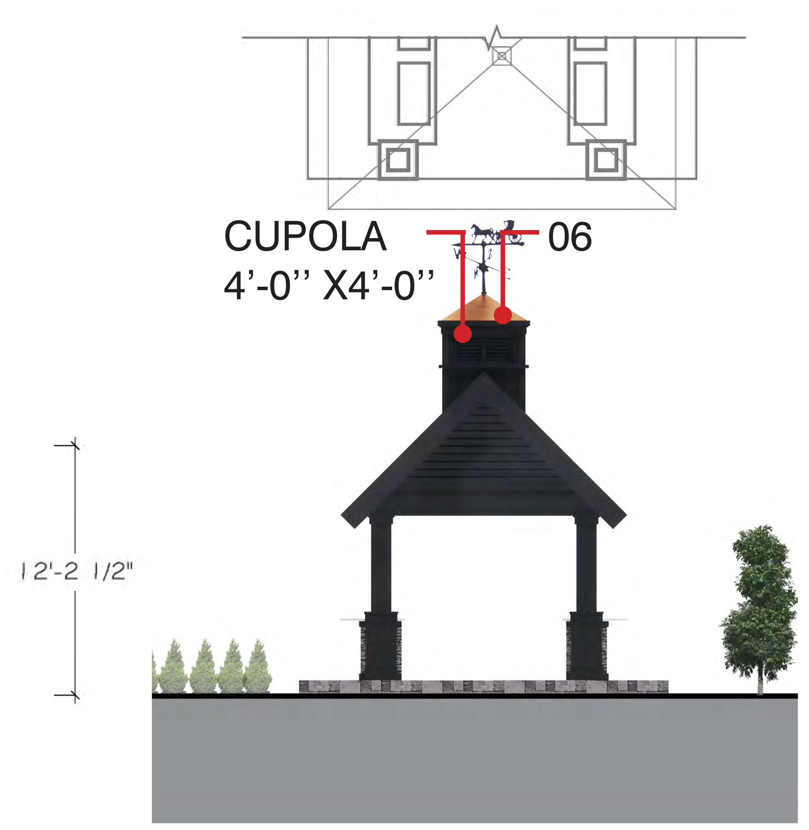
GAZEBO ELEVATION 2



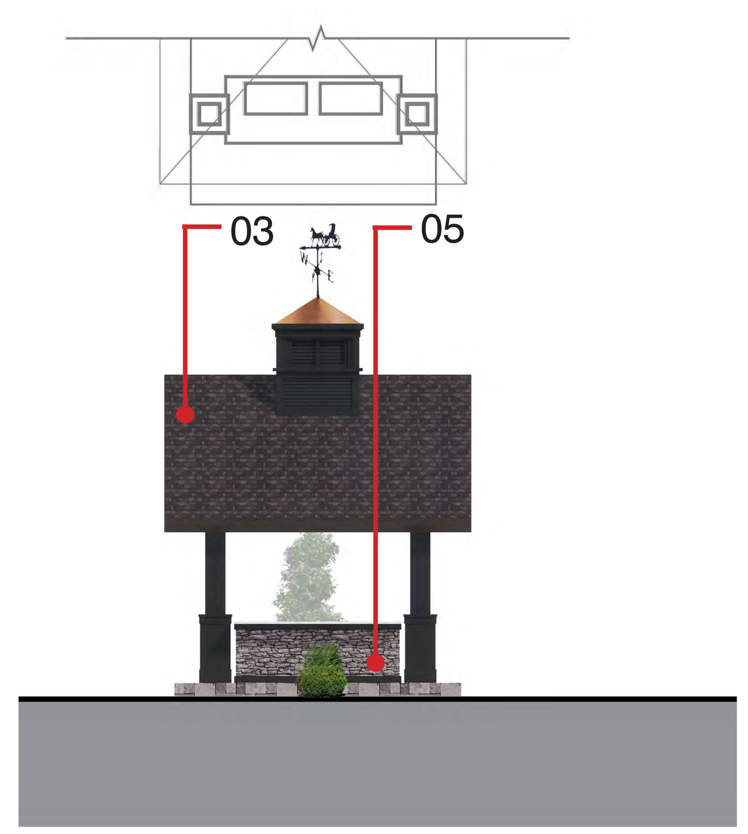
TRASH ELEVATION 1



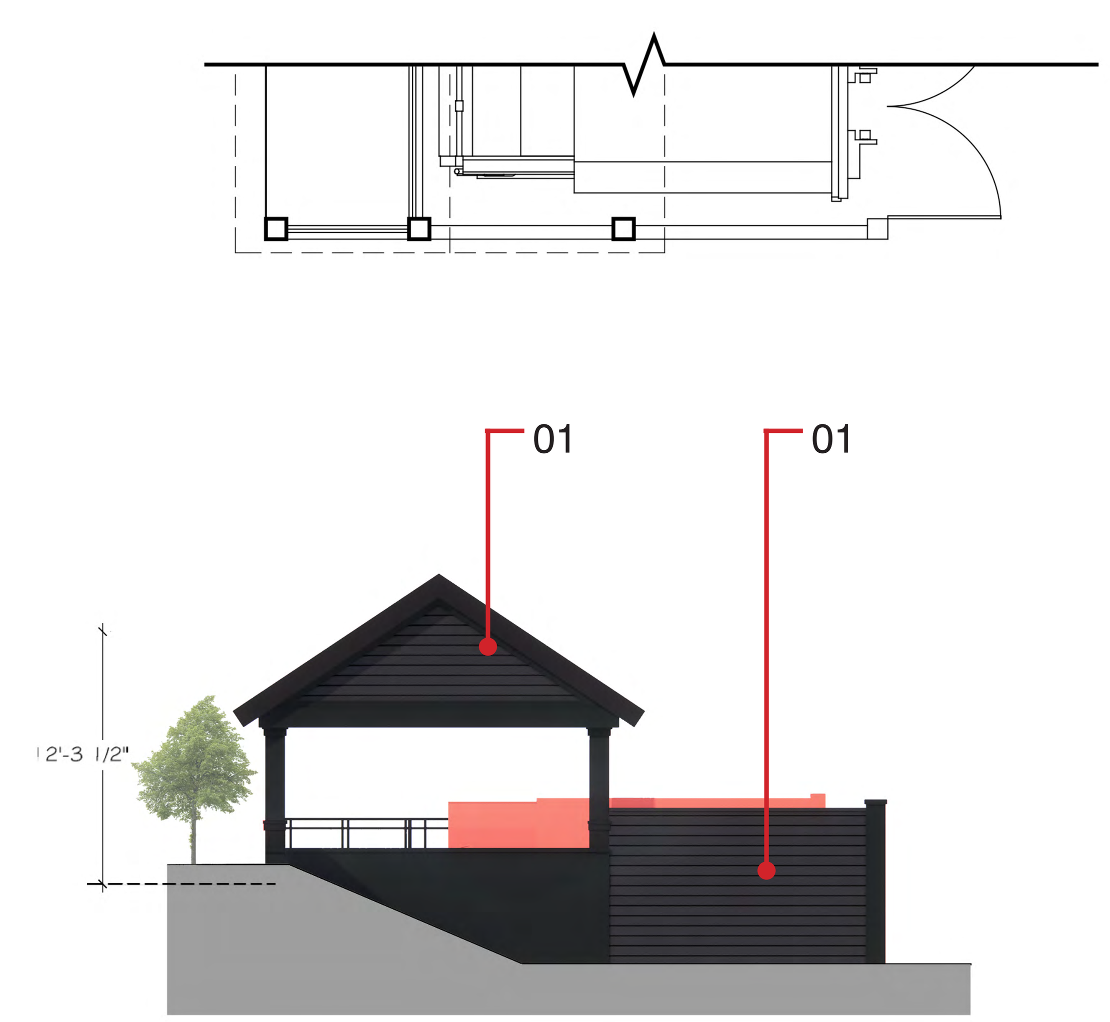
TRASH ELEVATION 2



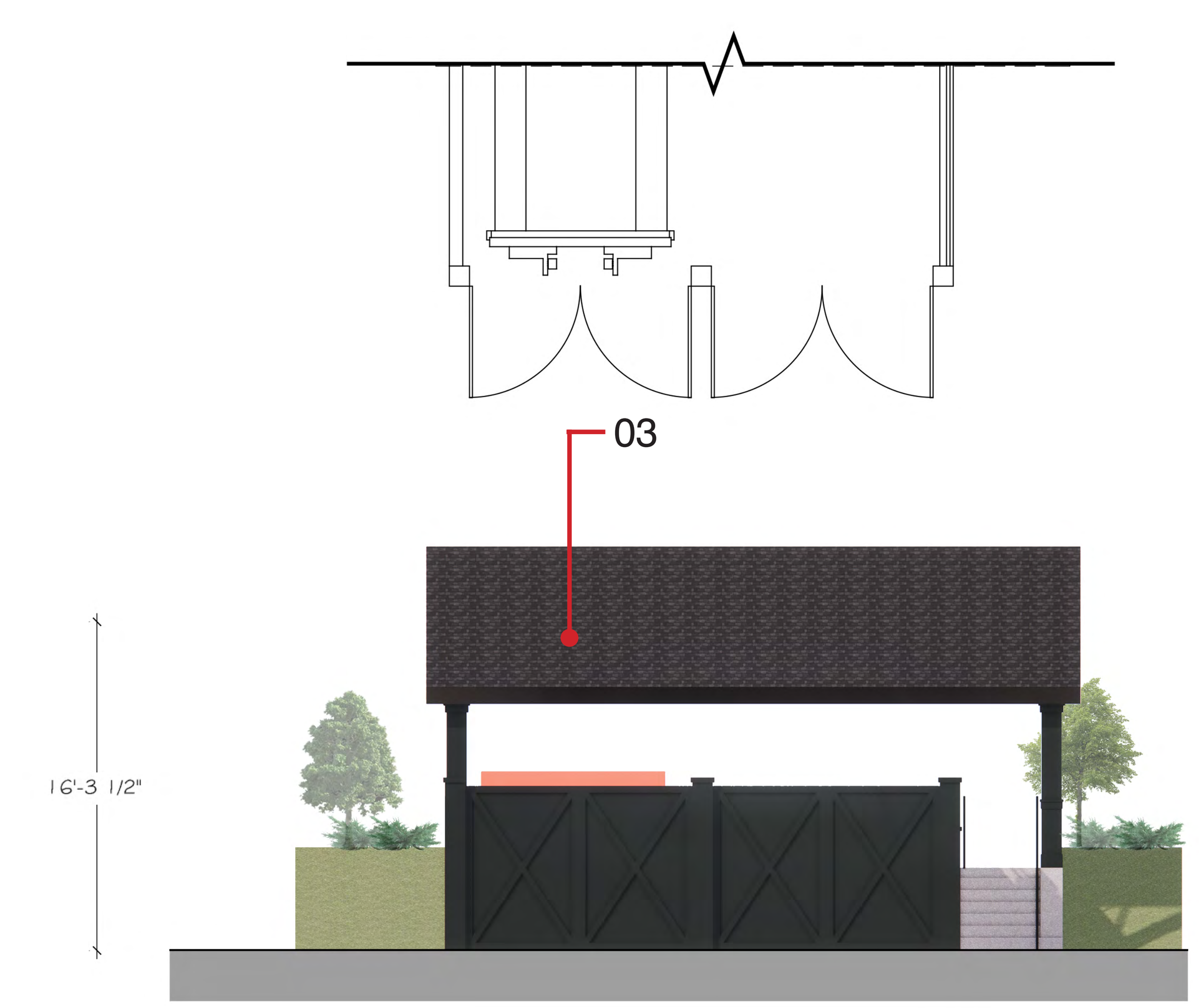
GAZEBO ELEVATION 3



GAZEBO ELEVATION 4



TRASH ELEVATION 3



TRASH ELEVATION 4

MATERIAL LEGEND

01.FIBER CEMENT SIDING
ANTHRACITE GREY

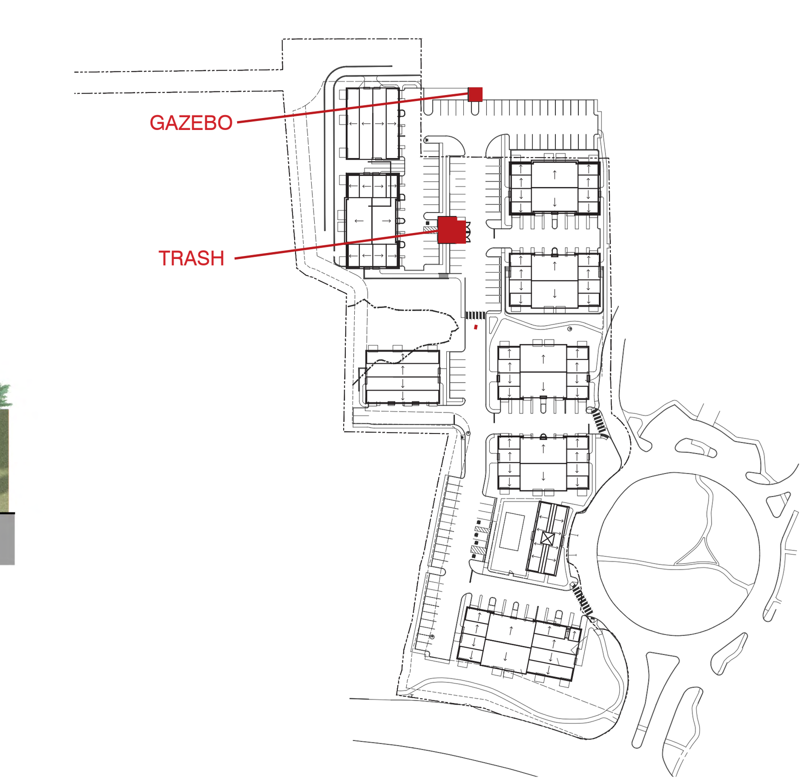
02. FIBER CEMENT TRIM
ANTHRACITE GREY

03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.STONE
DARK GREY

06.STANDING SEAM ROOF
COPPER



KEY PLAN

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GAZEBO AND TRASH ELEVATIONS

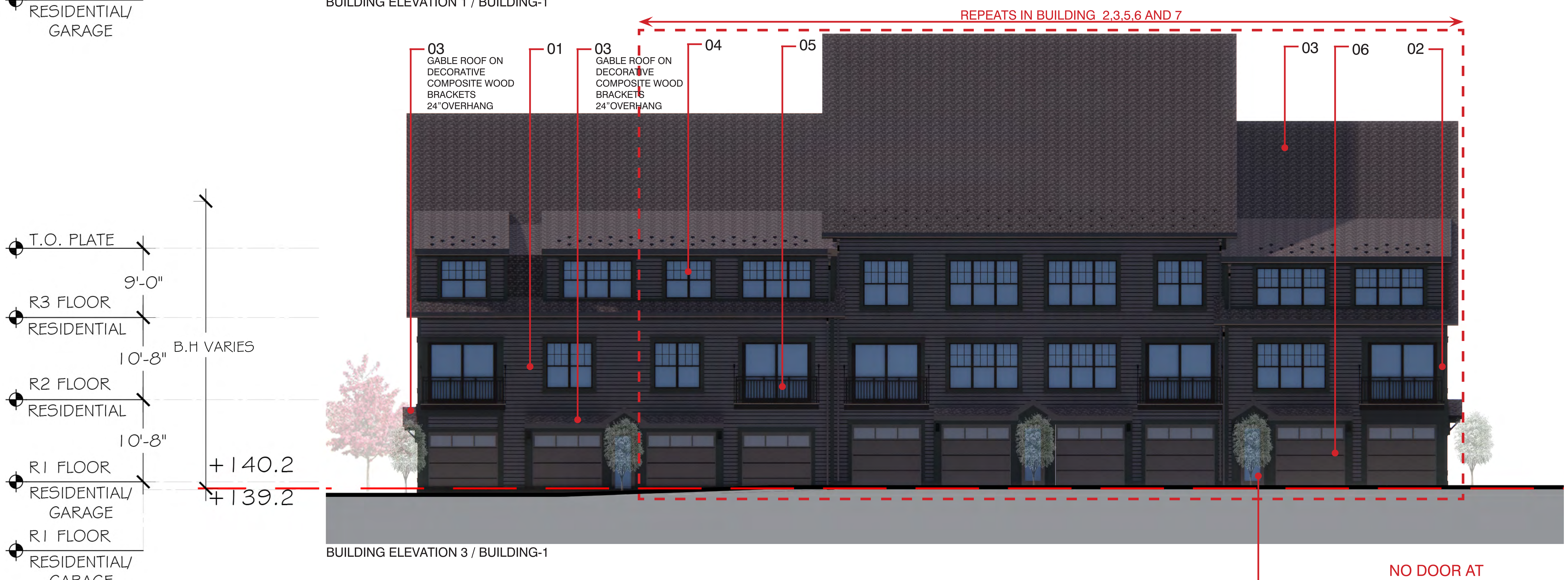
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

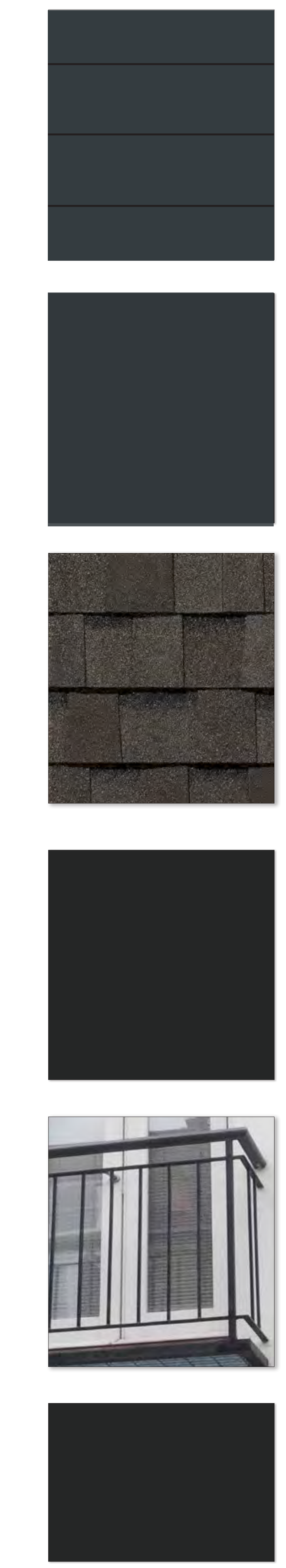
0' 4' 8' 16'
SCALE: 1/8"= 1'-0" (@ 22"x34")

BUILDING ELEVATION 1 / BUILDING-1



BUILDING ELEVATION 3 / BUILDING-1

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

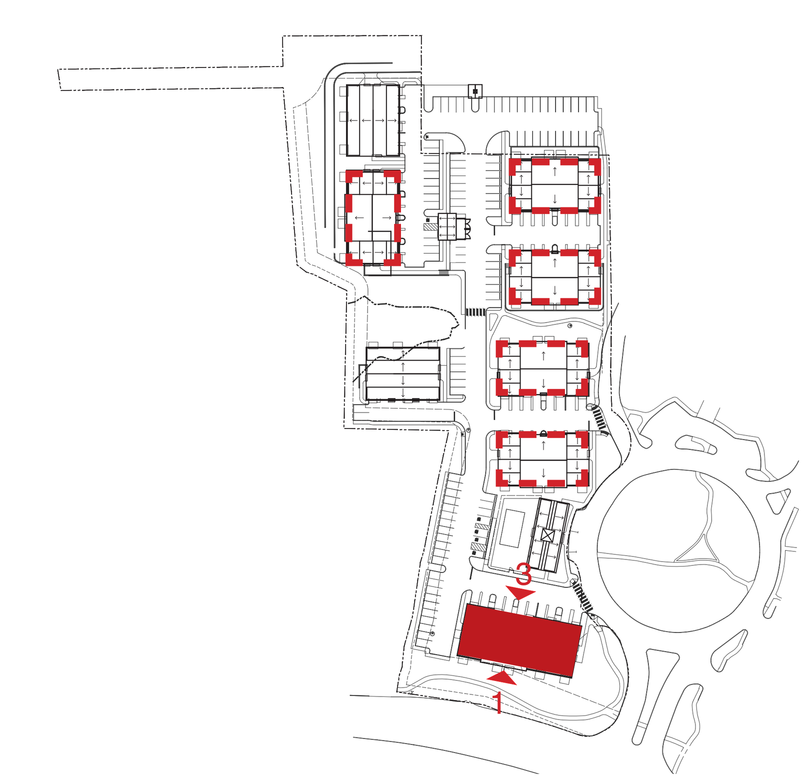
02. FIBER CEMENT TRIM
ANTHRACITE GREY

03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY - POWDER COATED ALUMINIUM
*5' DEEP BALCONY @ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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ENLARGED ELEVATIONS- FRONT AND REAR

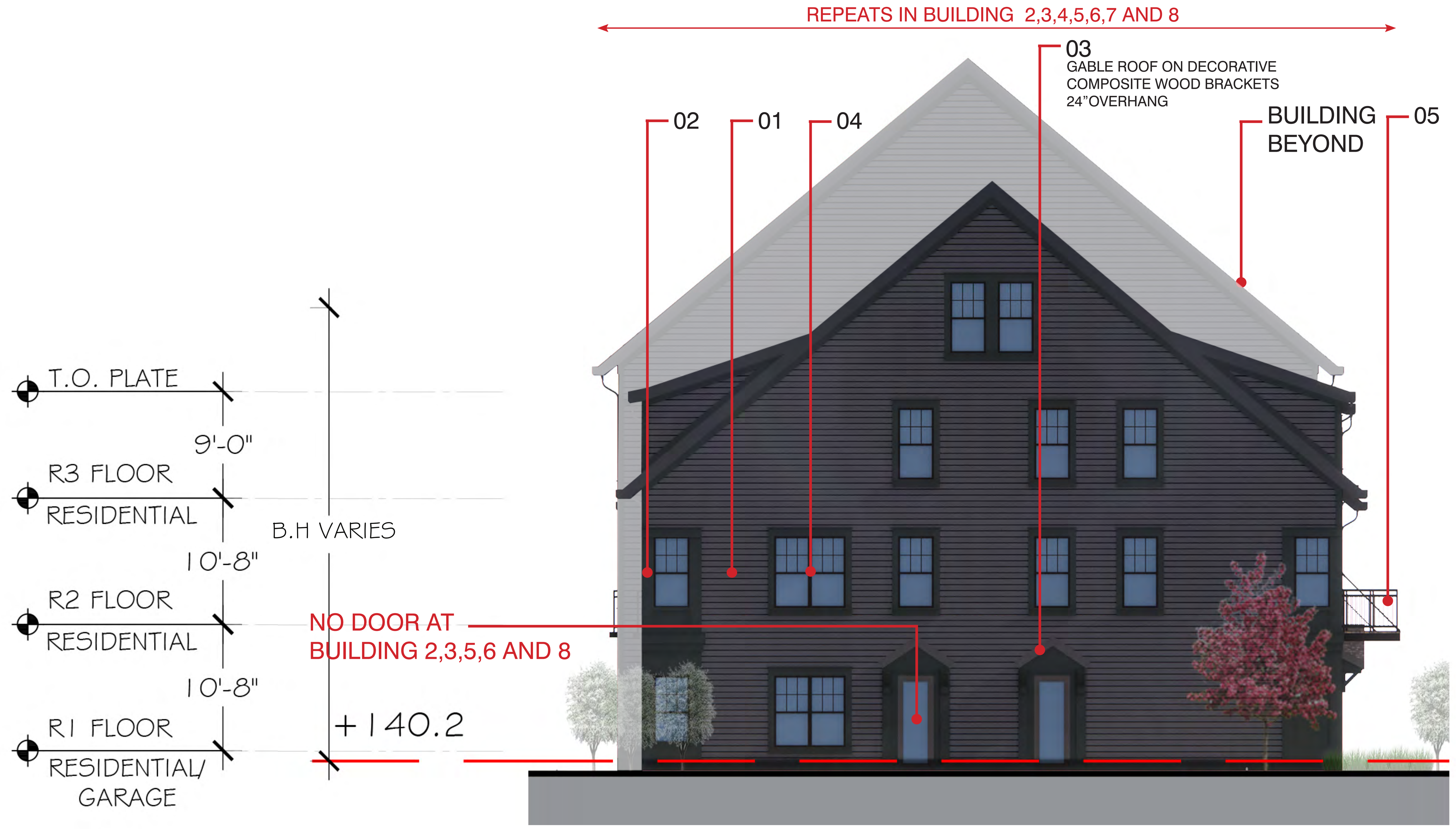
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

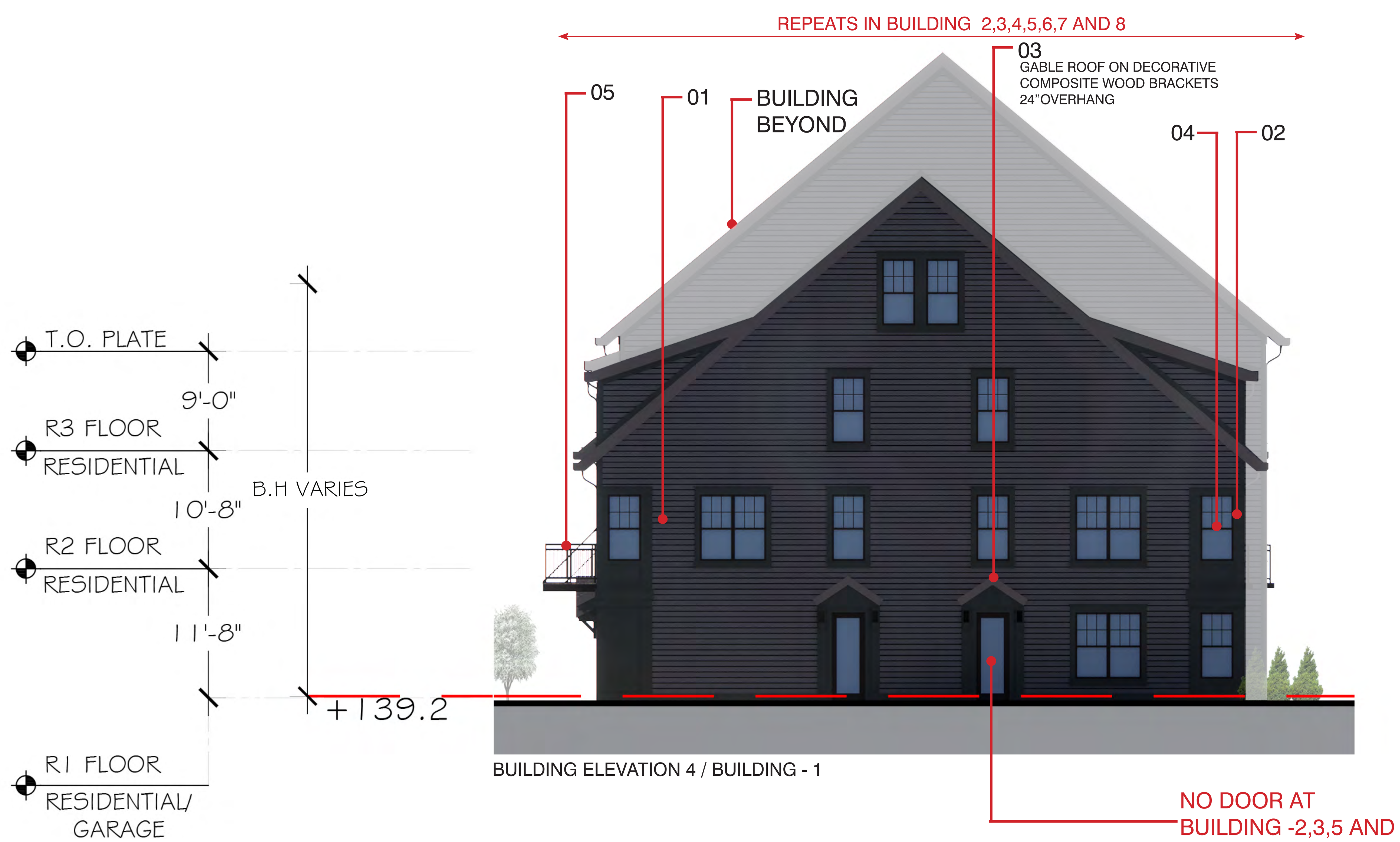
JAN 02, 2024
FUL.003

A.20

0' 4' 8' 16'
SCALE: 1/8" = 1'-0" (@ 22"x34")

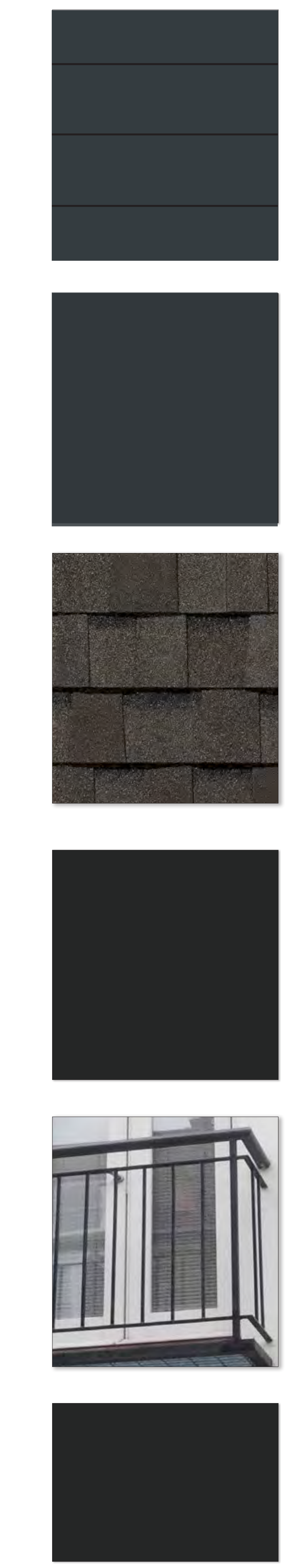


BUILDING ELEVATION 2 / BUILDING - 1



BUILDING ELEVATION 4 / BUILDING - 1

MATERIAL LEGEND



01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

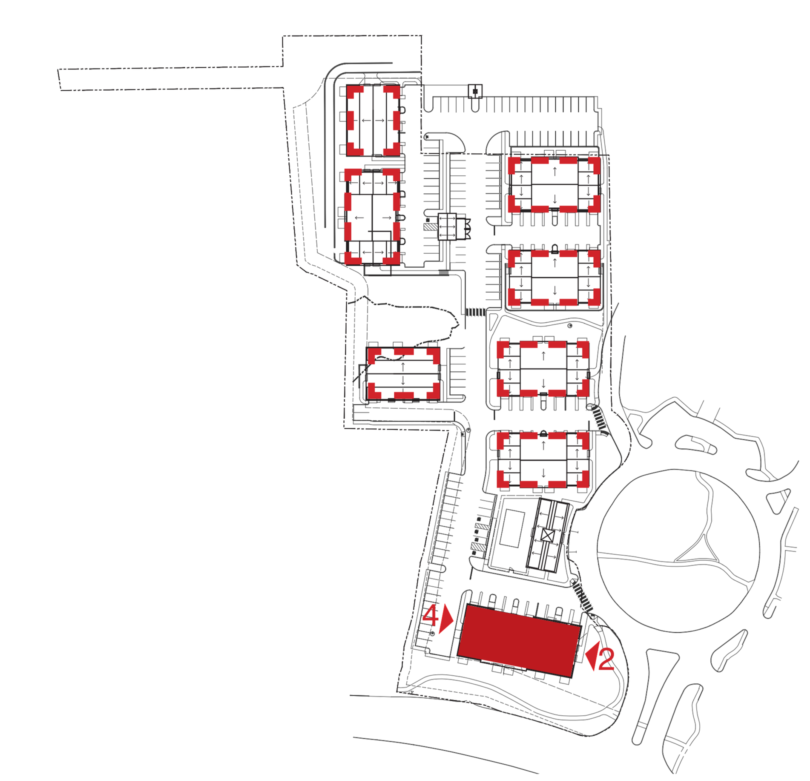
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -
POWDER COATED
ALUMINIUM

*5' DEEP BALCONY
@ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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ENLARGED ELEVATIONS- SIDE

PLANNING AND ZONING SUBMISSION

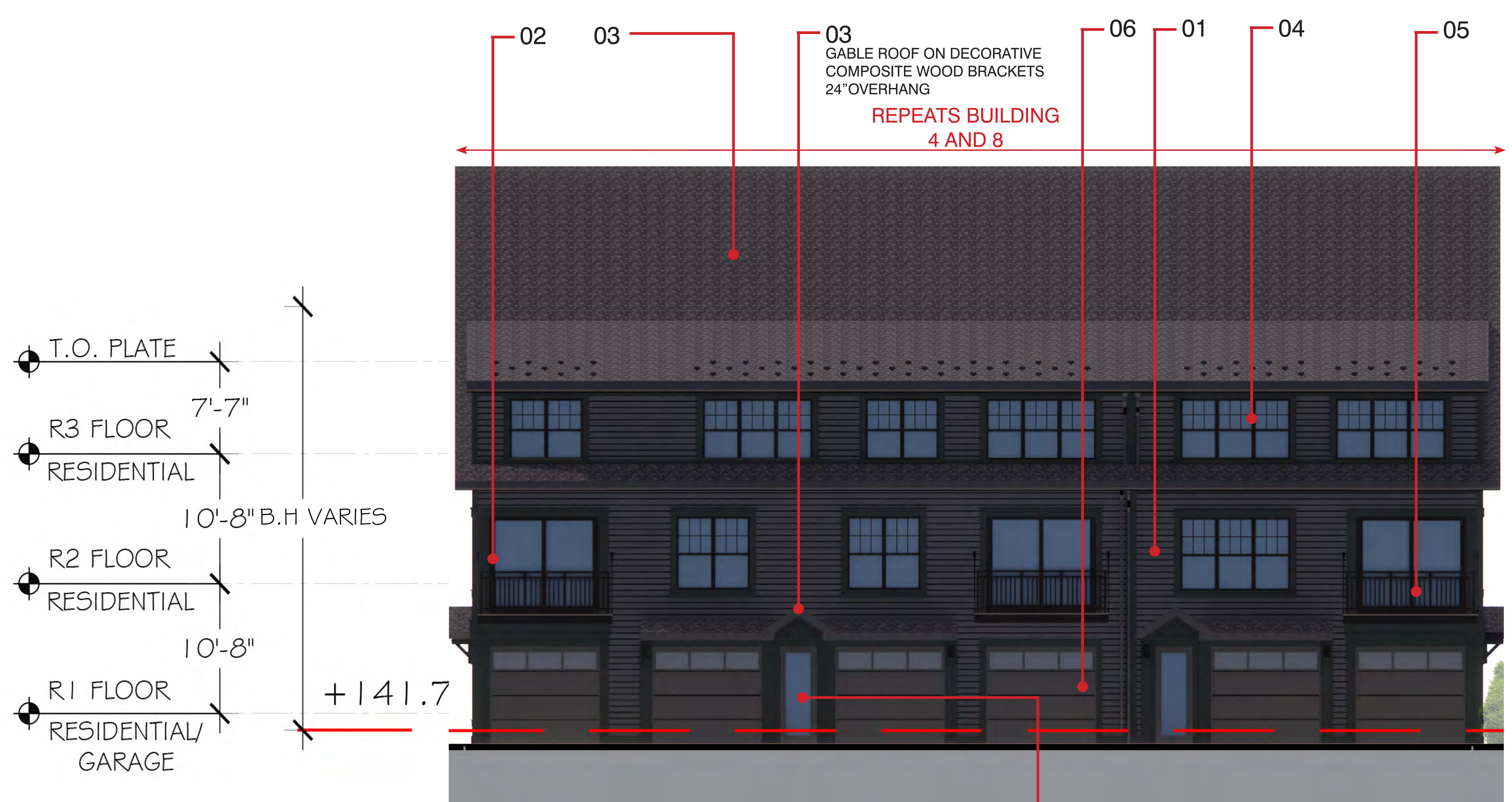
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

A.21

0' 4' 8' 16'
SCALE: 1/8" = 1'-0" (@ 22"x34")

BUILDING ELEVATION 1 / BUILDING - 4



BUILDING ELEVATION 3 / BUILDING - 4

NO DOOR AT
BUILDING - 8

MATERIAL LEGEND

01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

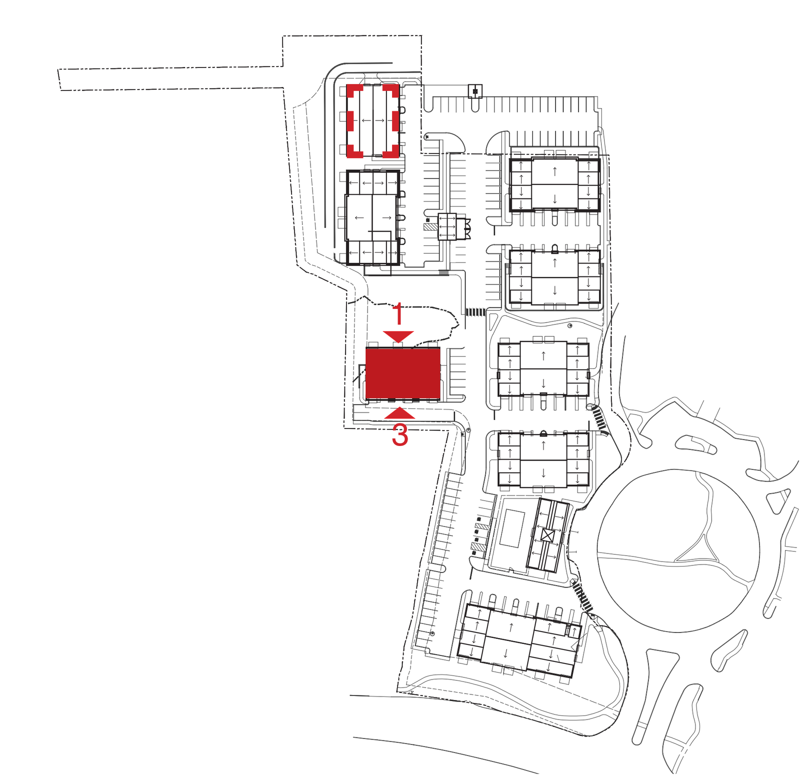
03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.JULIETTE BALCONY
DARK GREY -
POWDER COATED
ALUMINIUM

*5' DEEP BALCONY
@ GARAGE SIDE

06.ALUMINIUM GARAGE DOOR
DARK GREY



KEY PLAN

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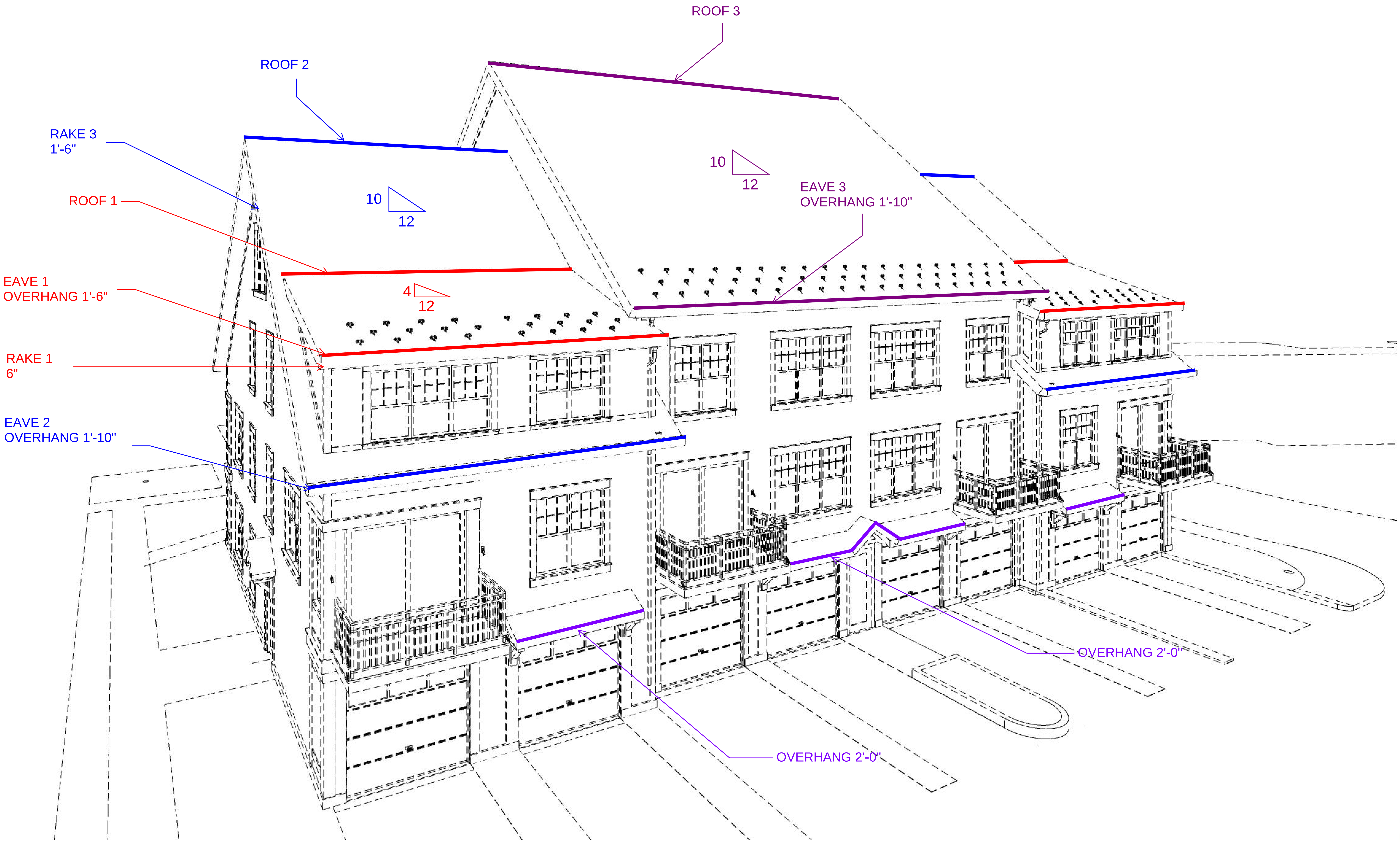
ENLARGED ELEVATIONS- FRONT AND REAR

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

0' 4' 8' 16'
SCALE: 1/8" = 1'-0" (@ 22"x34")



*NOTE: OVERHANG DIMENSIONS ARE WITHOUT GUTTERS

*NOTE: 3D IS FOR ILLUSTRATIVE PURPOSE ONLY.
SITE FEATURES, LANDSCAPING, ETC ARE FOR ILLUSTRATIVE PURPOSE AND NOT AN EXACT REPRESENTATION OF LANDSCAPE AND CIVIL DRAWINGS.
REFER TO CIVIL AND LANDSCAPE FOR MORE INFORMATION.

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DIAGRAM - ROOF AND EAVES

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

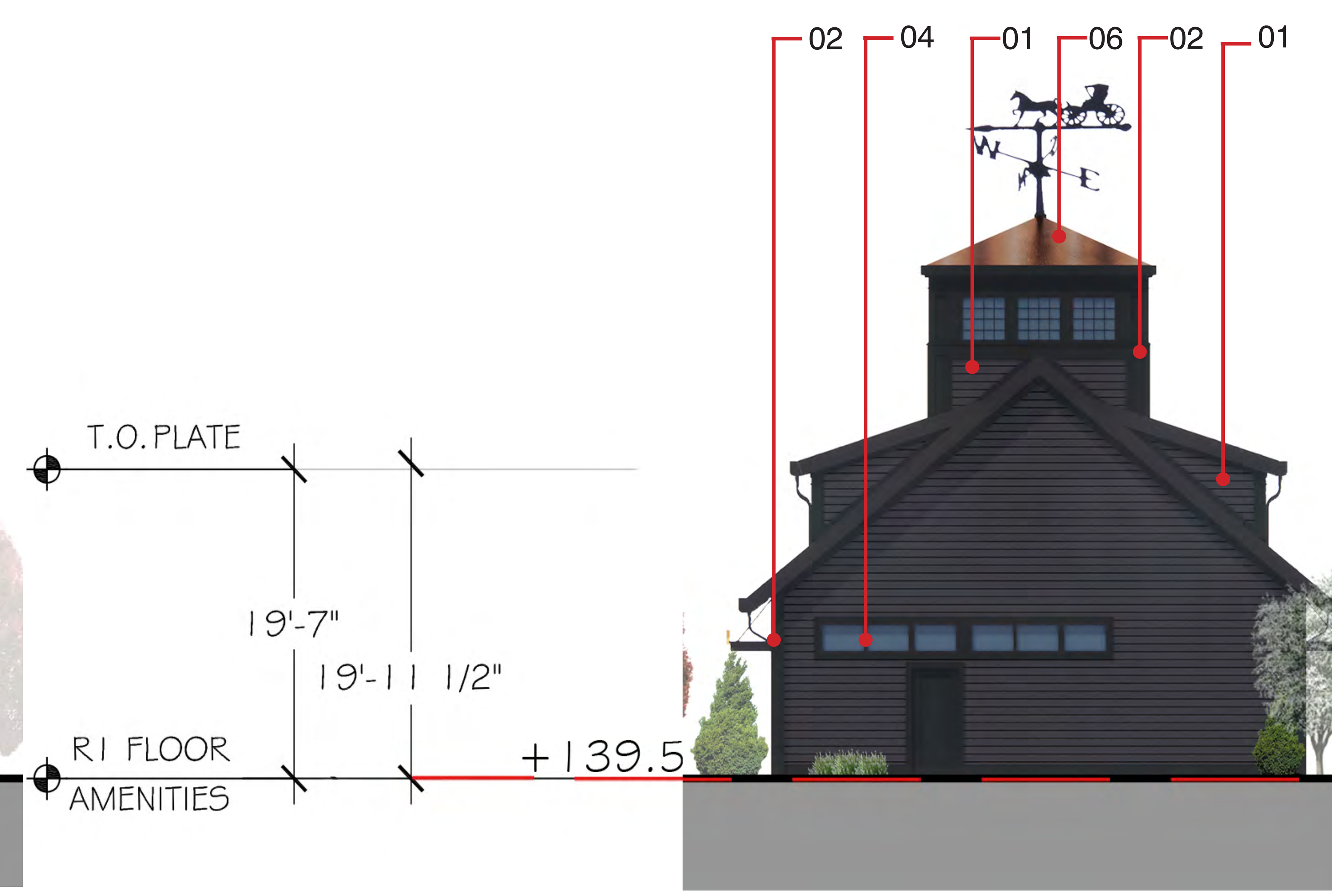
A.23

STATE OF CONNECTICUT
SUNGJAE LEE
ARI 00 ...
LICENSED ARCHITECT

BUILDING ELEVATION 1

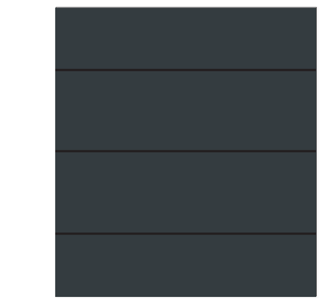
BUILDING ELEVATION 2

BUILDING ELEVATION 3



BUILDING ELEVATION 4

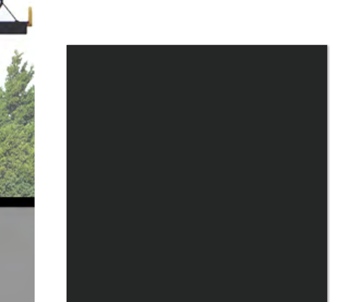
MATERIAL LEGEND



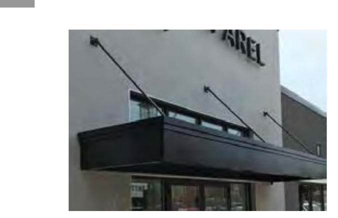
01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

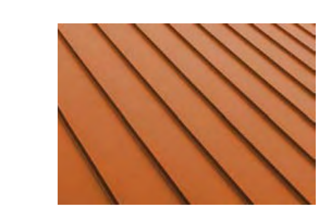
03.ROOFING SHINGLES WOOD
DARK GREY



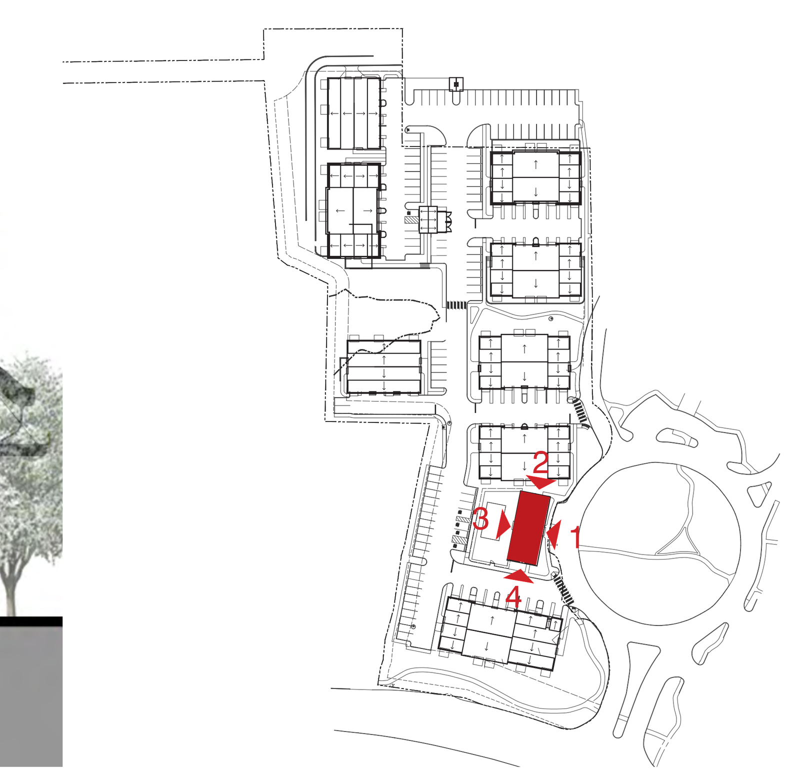
04.VINYL WINDOWS & DOORS
DARK GREY



05.METAL CANOPY
BLACK



06.CUPOLA - STANDING SEAM ROOF
COPPER



KEY PLAN

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*NOTE: SIGNAGE NAME OR NUMBER SHOWN TO BE DETERMINED AS THE PROJECT DEVELOPS.
*NOTE: LIGHT FIXTURES AND LANDSCAPE SHOWN FOR ILLUSTRATIVE PURPOSE ONLY, REFER TO LANDSCAPE DRAWINGS FOR MORE INFORMATION.

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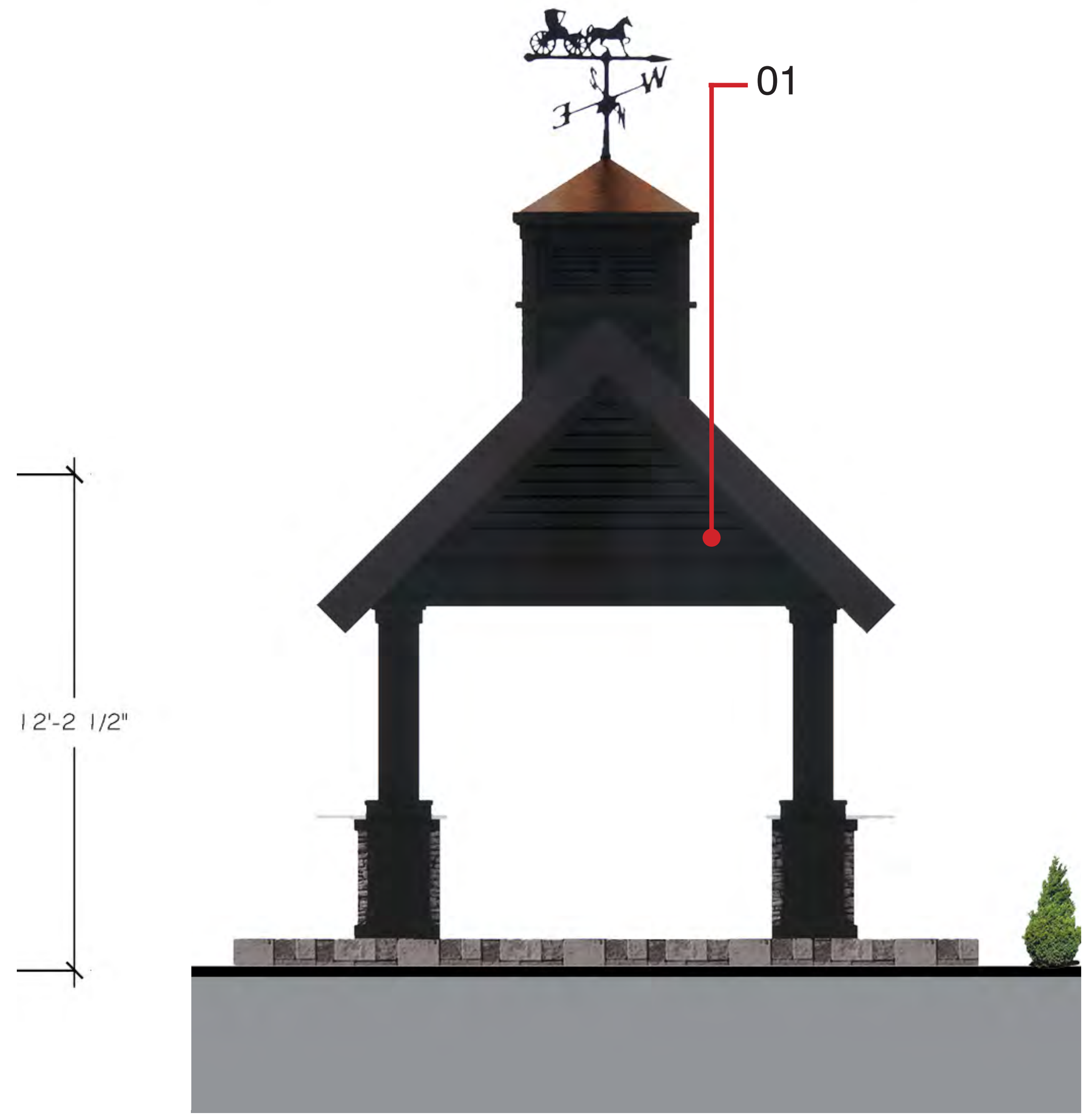
ENLARGED AMENITY ELEVATIONS

PLANNING AND ZONING SUBMISSION

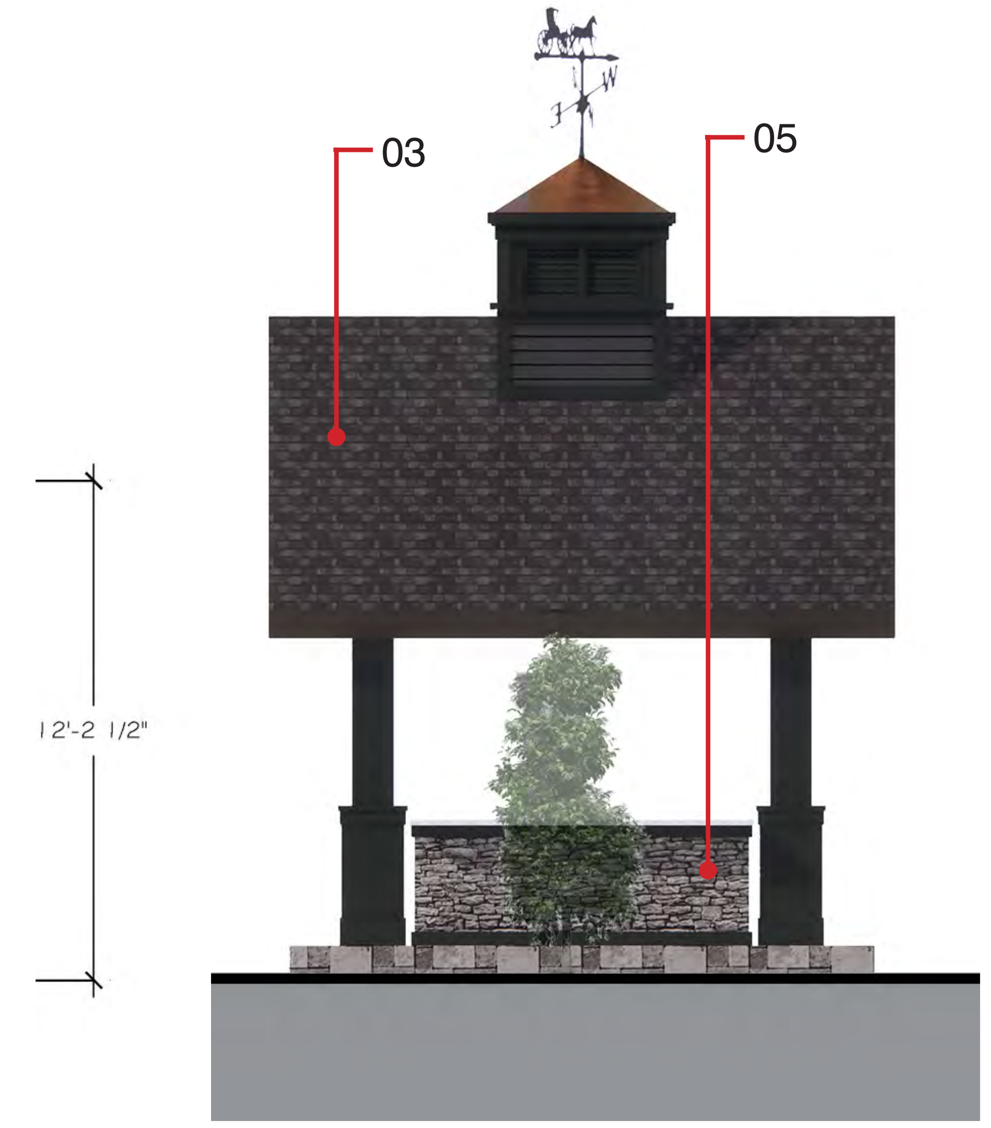
64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

0' 4' 8' 16'
SCALE: 1/8" = 1'-0" (@ 22"x34")



ELEVATION 1



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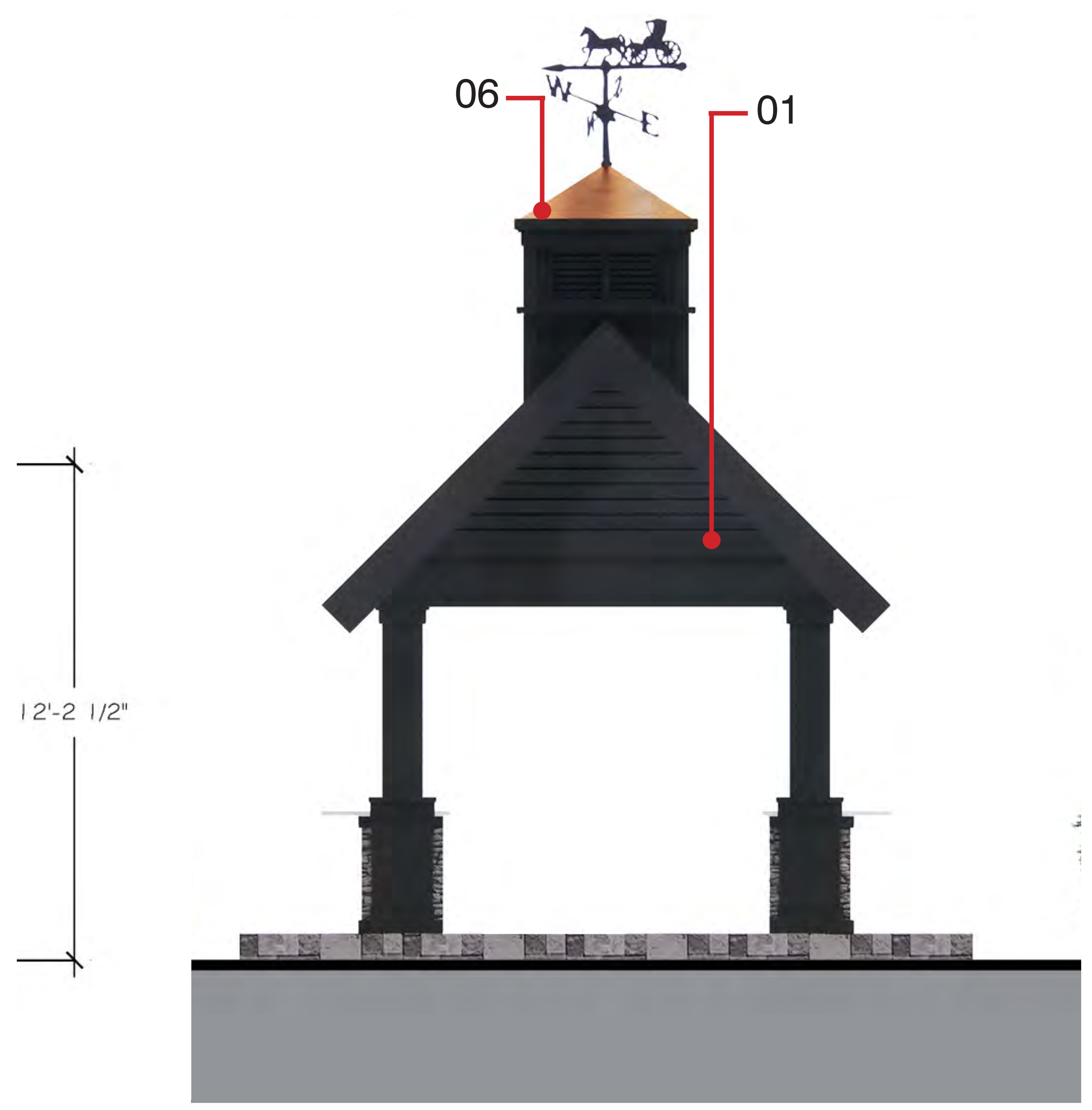

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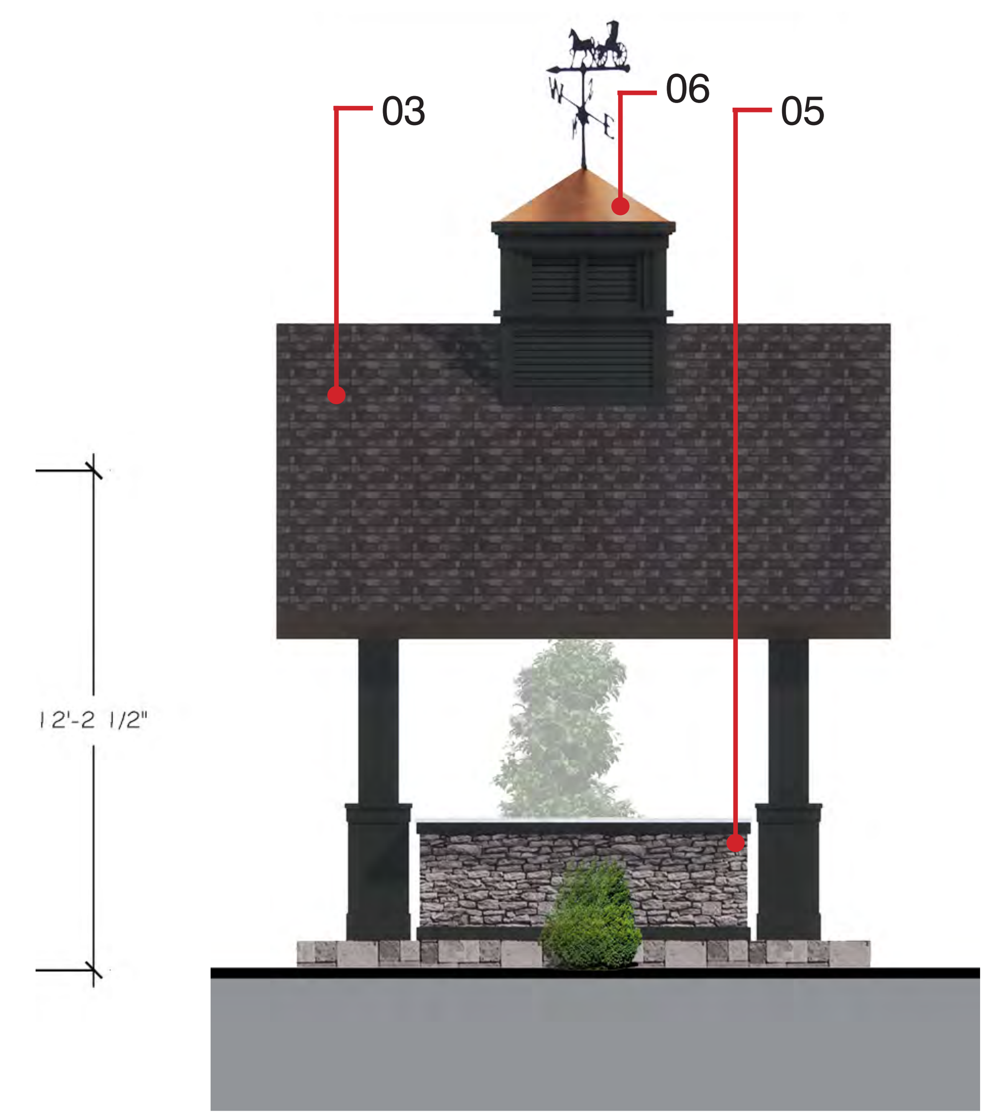
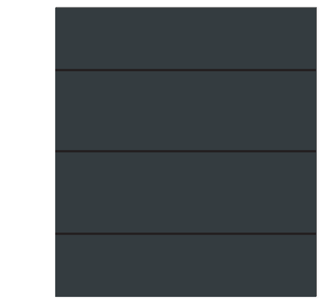


ELEVATION 4

MATERIAL LEGEND



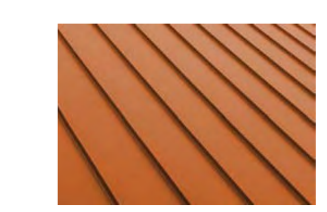
01.FIBER CEMENT SIDING
ANTHRACITE GREY

02. FIBER CEMENT TRIM
ANTHRACITE GREY

03.ROOFING SHINGLES WOOD
DARK GREY

04.VINYL WINDOWS & DOORS
DARK GREY

05.STONE
DARK GREY



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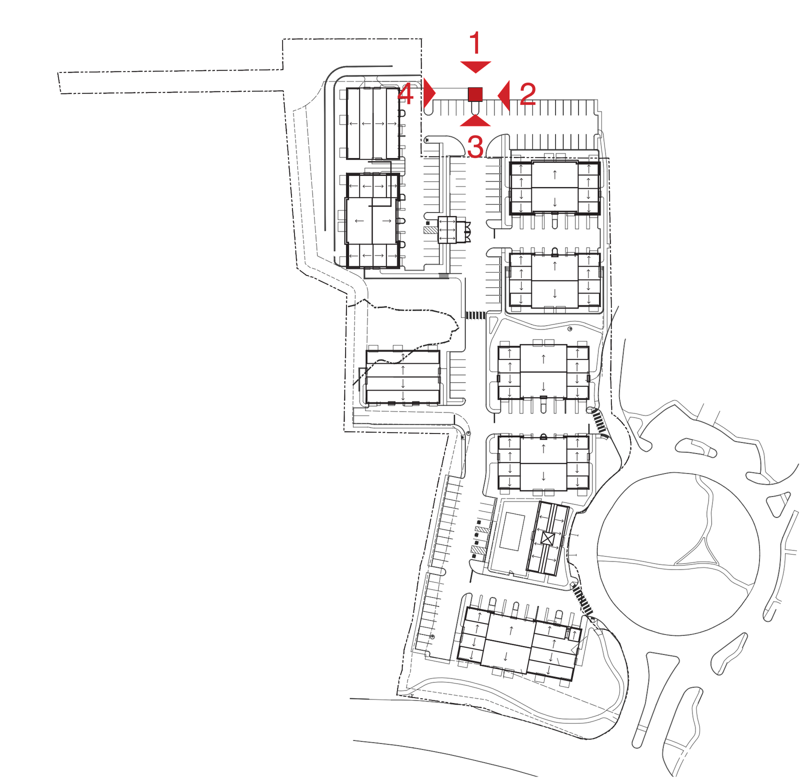
COPPER



KEY PLAN

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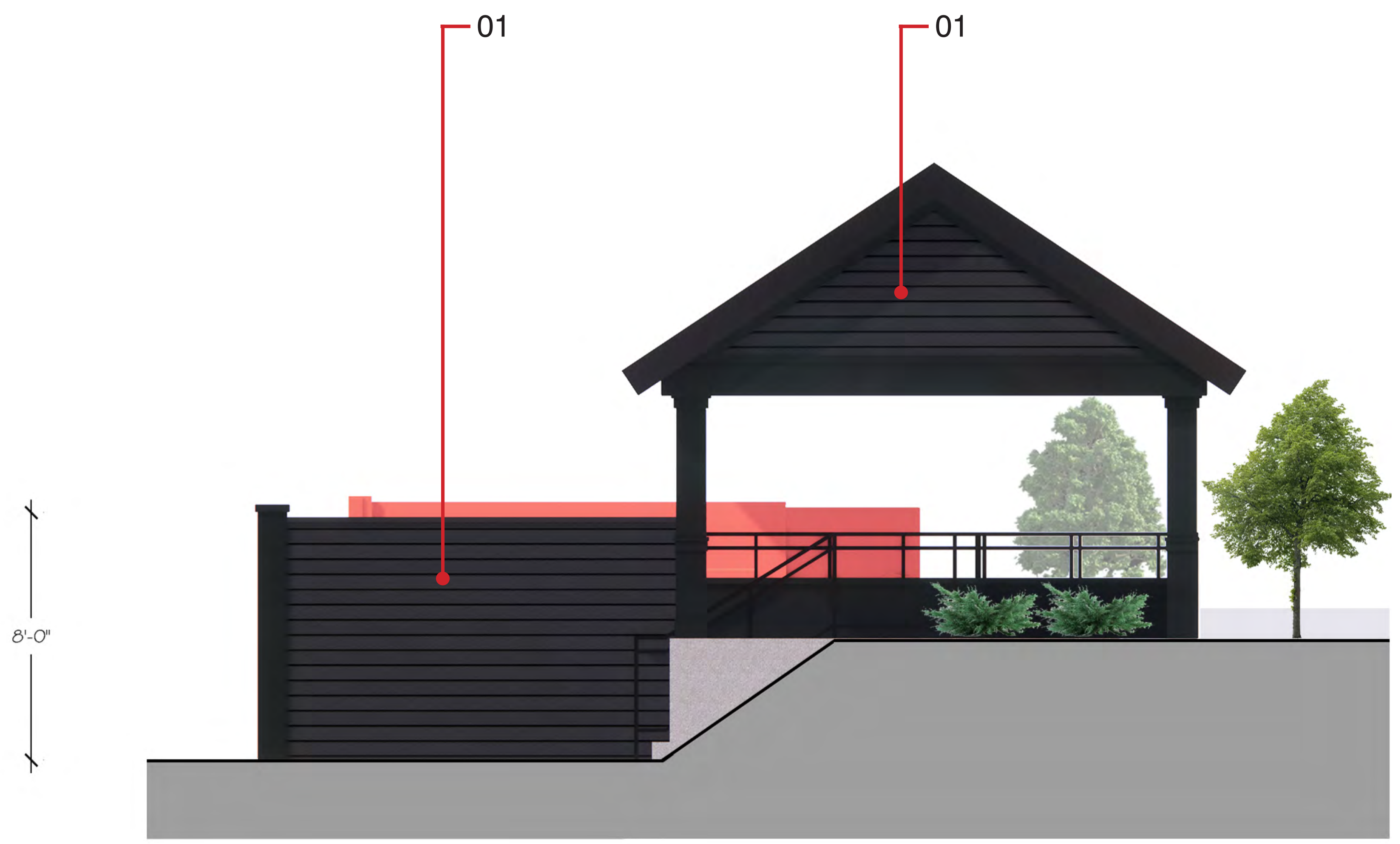
PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

DEC 21, 2023 / JAN 02, 2024
FUL.003

A.25

0' 2' 4' 8'
SCALE: 1/4" = 1'-0" (@ 22"x34")



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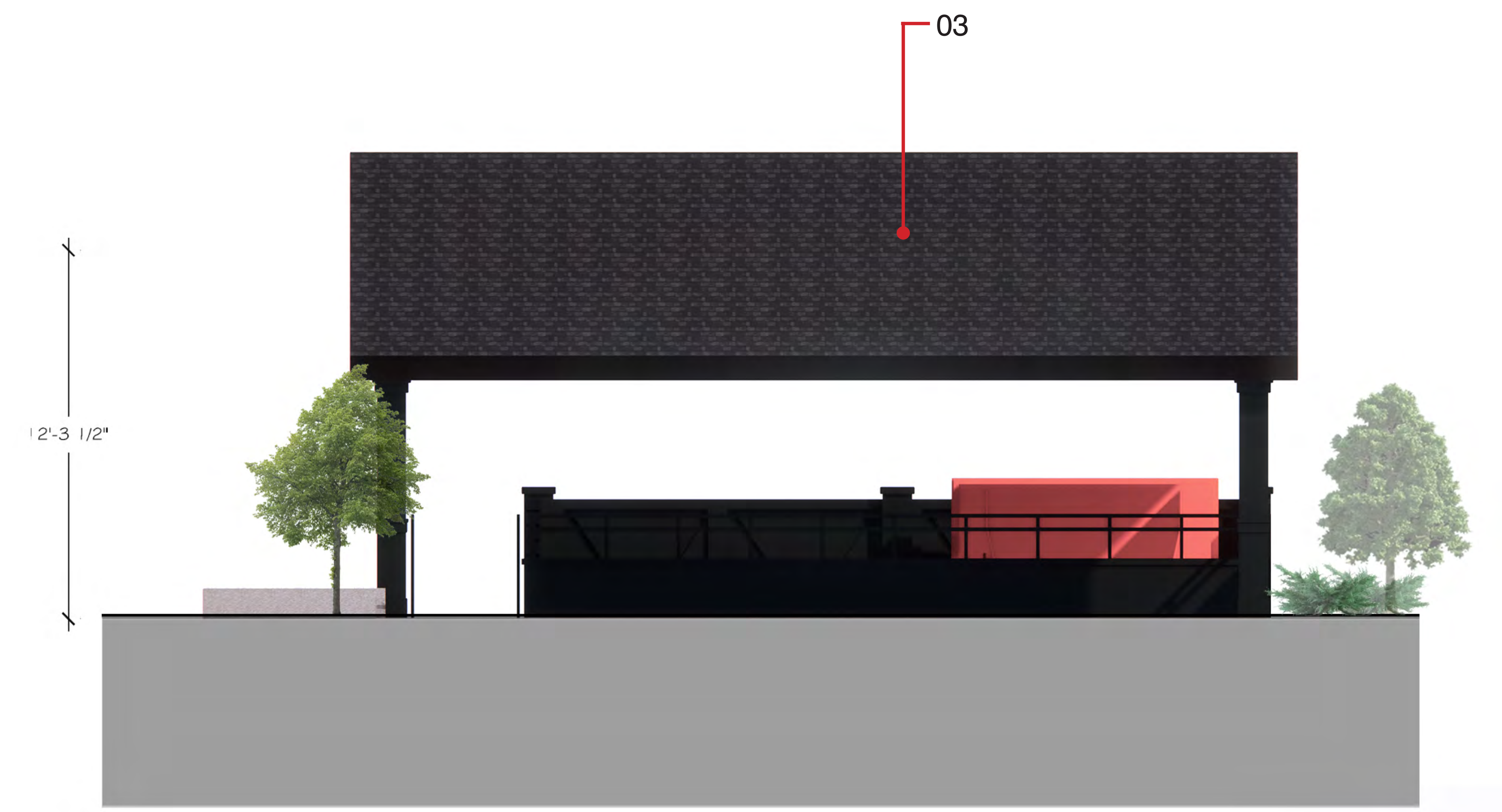

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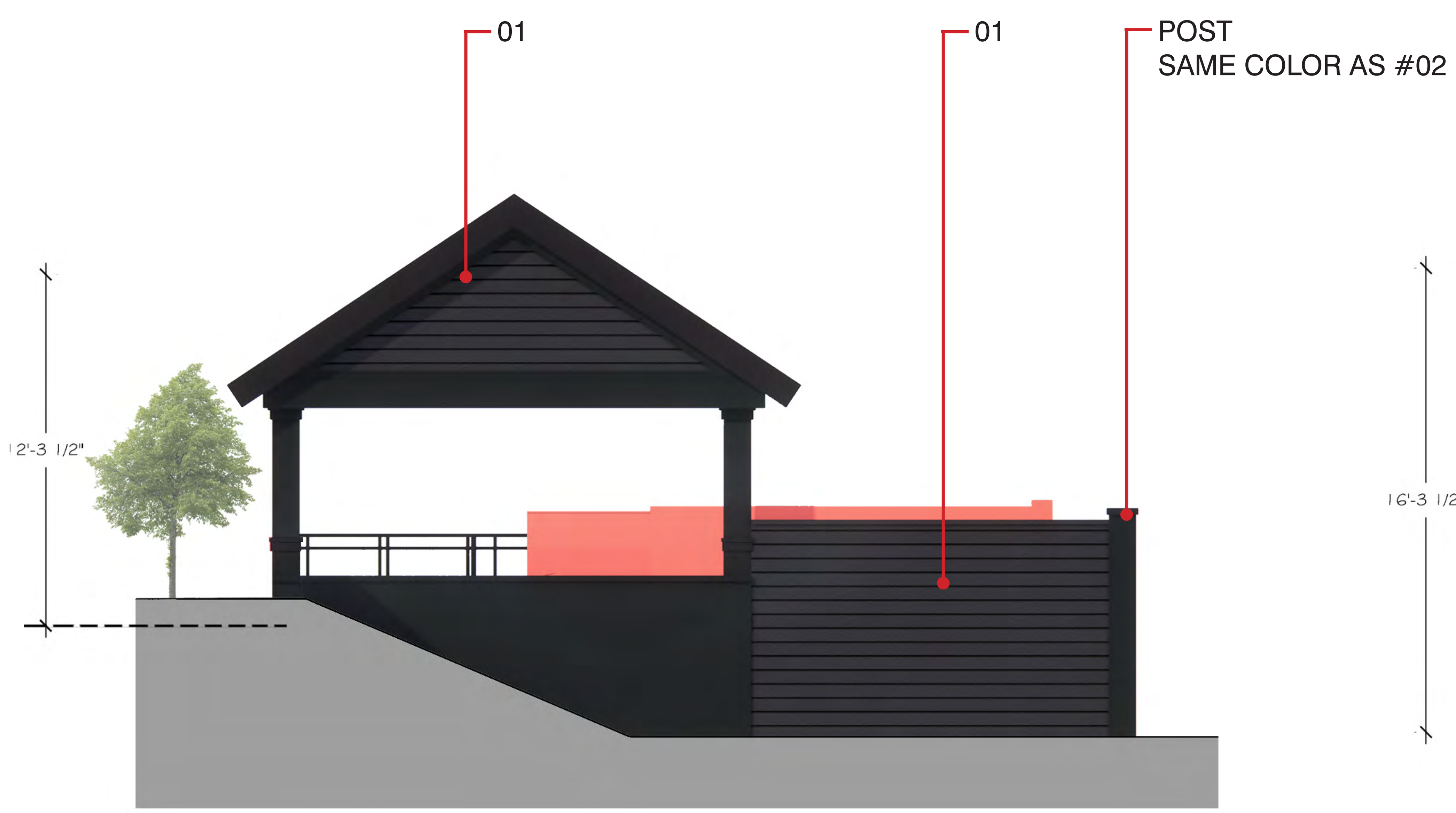

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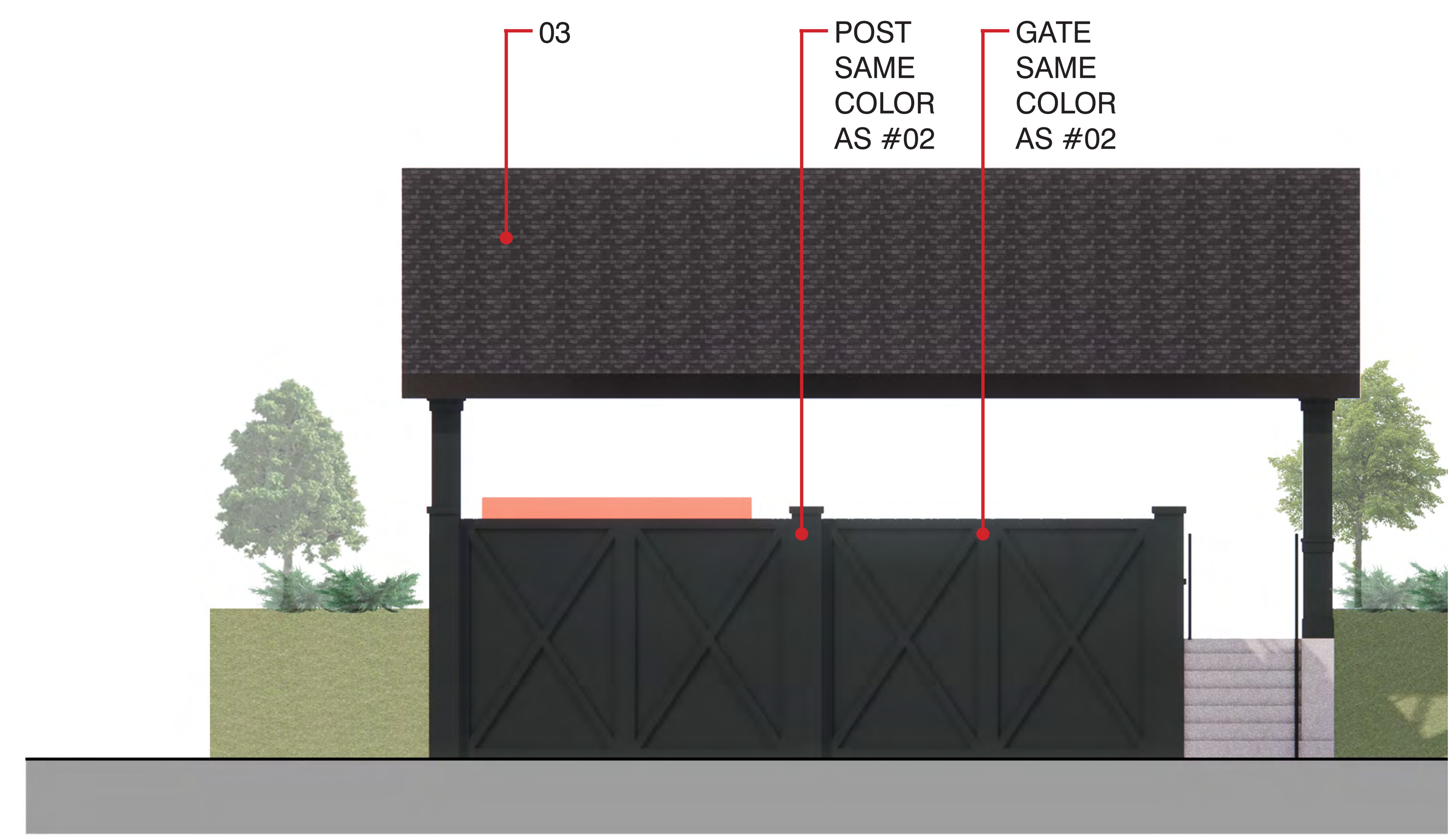
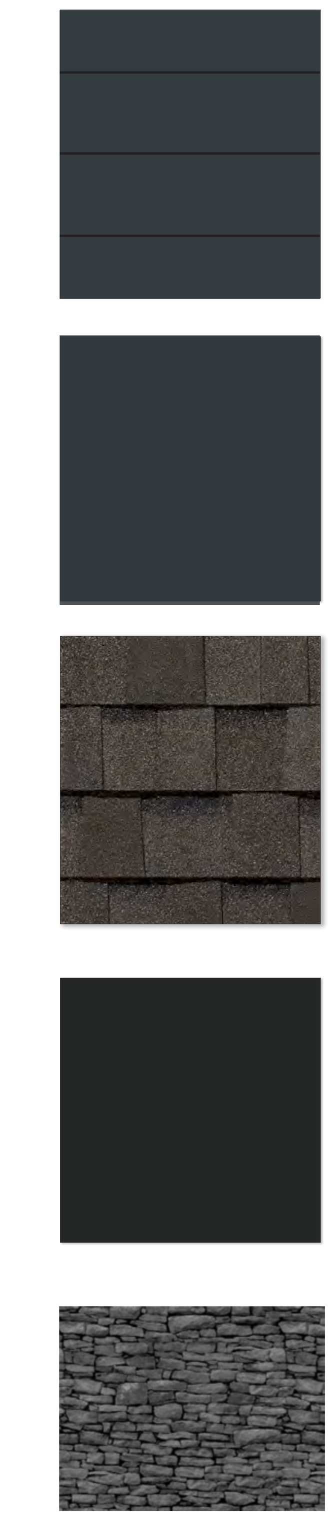


ELEVATION 4

MATERIAL LEGEND



01.FIBER CEMENT SIDING
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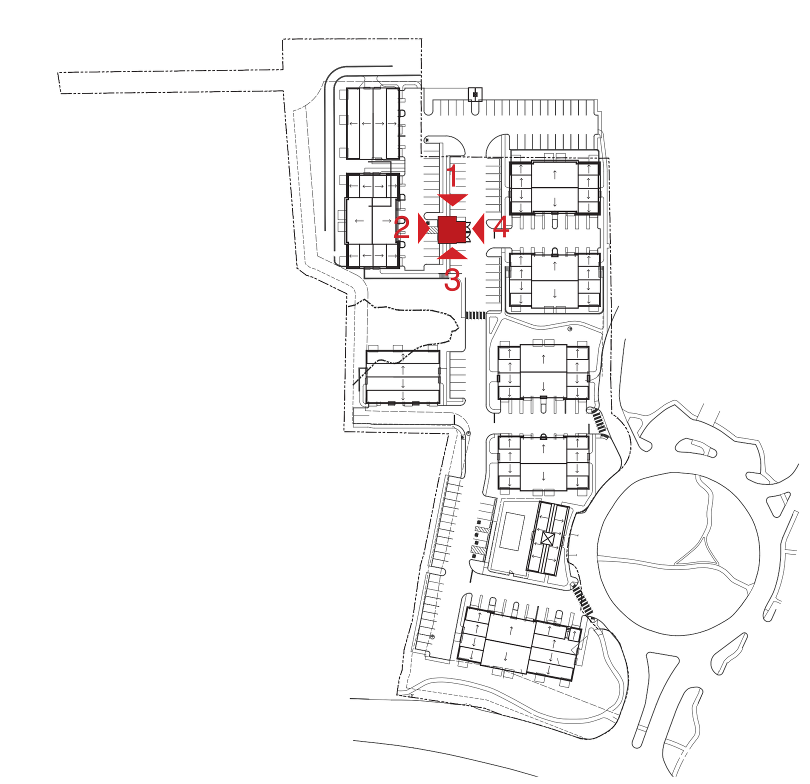

KEY PLAN

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PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

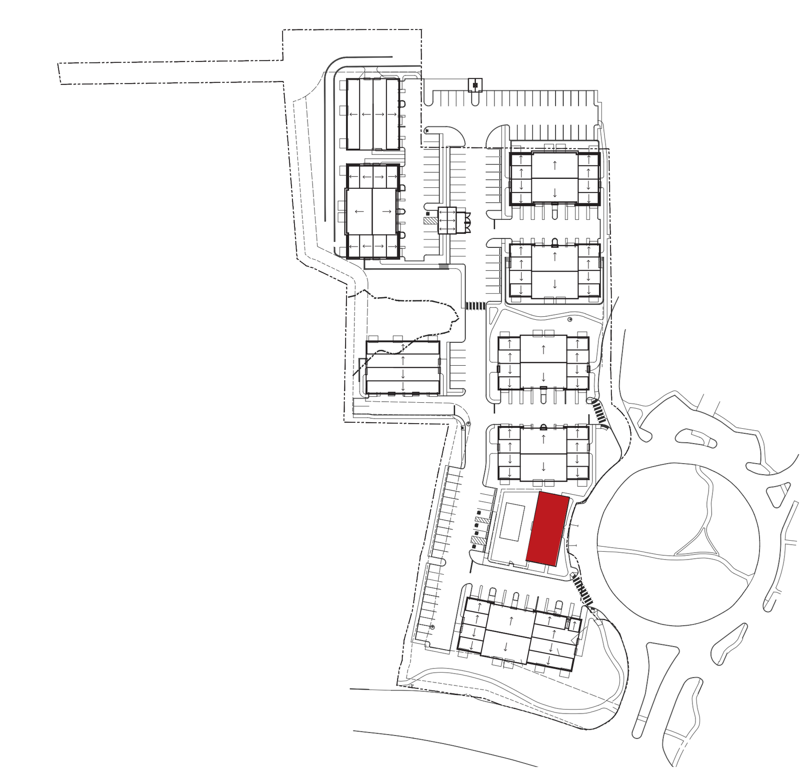
0' 2' 4' 8'
SCALE: 1/4" = 1'-0" (@ 22"x34")

PROPOSED:
CANOPY SIGN- *A SIGN ATTACHED TO THE VERTICAL FACE OF A BUILDING OR CANOPY*
SIGN AREA: +/- 9 SF
ARCH. METAL - GOLD COLOR

MIN 7'-0"

BACKLIT LETTERING 2" DEEP

MOUNTED OVER CANOPY OVERHANG



KEY PLAN

*NOTE: SIGN AND SIGNAGE BUILDING NAME SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.
*SIGNAGE MATERIAL, FONTS, COLOR, DEPTH LIGHTING AND STRUCTURAL DETAILS TO BE DEFINED AS PROJECT DEVELOPS

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ALTERNATE SIGNAGE PROGRAM

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

0' 2' 4' 8'
SCALE: 1/4" = 1'-0" (@ 22"x34")

A.27

*NOTE: PERSPECTIVE RENDERING IS FOR ILLUSTRATIVE PURPOSE ONLY.
SITE FEATURES, LANDSCAPING, ETC ARE FOR ILLUSTRATIVE PURPOSE AND NOT AN EXACT REPRESENTATION OF LANDSCAPE AND CIVIL DRAWINGS.
REFER TO CIVIL AND LANDSCAPE FOR MORE INFORMATION.

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PERSPECTIVE RENDERING

PLANNING AND ZONING SUBMISSION

64 DANBURY ROAD
WILTON, CT
FULLER DEVELOPMENT, LLC

JAN 02, 2024
FUL.003

STATE OF CONNECTICUT
SUNGJAE LEE
ARI 0013447
LICENSED ARCHITECT

GENERAL NOTES

1. NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455 AND OTHER UTILITY OWNERS IN THE AREA NOT ON THE CALL BEFORE YOU DIG LIST AT LEAST 72 HOURS PRIOR TO ANY DIGGING, TRENCHING, ROCK REMOVAL, DEMOLITION, BORING, BACKFILLING, GRADING, LANDSCAPING, OR ANY OTHER EARTH MOVING OPERATIONS.
2. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. IN ADDITION, SOME UTILITIES MAY NOT BE SHOWN. DETERMINE THE EXACT LOCATION OF UTILITIES BY TEST PIT OR OTHER METHODS, AS NECESSARY TO PREVENT DAMAGE TO UTILITIES AND/OR INTERRUPTIONS IN UTILITY SERVICE. PERFORM TEST PIT EXCAVATIONS AND OTHER INVESTIGATIONS TO LOCATE UTILITIES, AND WITH OTHER CONTRACTORS WORKING INFORMATION TO THE ENGINEER, PRIOR TO CONSTRUCTING THE PROPOSED IMPROVEMENTS. LOCATE ALL EXISTING UTILITIES TO BE CROSSED BY HAND EXCAVATION.
3. NOT ALL OF THE UTILITY SERVICES TO BUILDINGS ARE SHOWN. THE CONTRACTOR SHALL ANTICIPATE THAT EACH PROPERTY HAS SERVICE CONNECTIONS FOR THE VARIOUS UTILITIES.
4. BOLD TEXT AND LINES INDICATE PROPOSED WORK. LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.
5. TIGHE & BOND ASSUMES NO RESPONSIBILITY FOR ANY ISSUES, LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM TIGHE & BOND.
6. EXCAVATE ADDITIONAL TEST PITS TO LOCATE EXISTING UTILITIES AS DIRECTED OR APPROVED BY THE ENGINEER.
7. NOTIFY THE ENGINEER OF ANY UTILITIES IDENTIFIED DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE DRAWINGS OR THAT DIFFER IN SIZE OR MATERIAL.
8. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY; COORDINATION WITH THE OWNER, ALL SUBCONTRACTORS, AND WITH OTHER CONTRACTORS WORKING WITHIN THE LIMITS OF WORK, THE MEANS AND METHODS OF CONSTRUCTING THE PROPOSED WORK.
9. OBTAIN, PAY FOR AND COMPLY WITH PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK. ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE JURISDICTIONAL AUTHORITIES.
10. SHORE UTILITY TRENCHES WHERE FIELD CONDITIONS DICTATE AND/OR WHERE REQUIRED BY LOCAL, STATE AND FEDERAL HEALTH AND SAFETY CODES.
11. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS ARE OBSERVED THAT VARY SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION OF THE CONFLICTING INFORMATION.
12. PROTECT AND MAINTAIN ALL EXISTING UTILITIES AND STRUCTURES WITHIN THE LIMITS OF WORK DURING THE WORK. LEAVE ALL PIPES AND STRUCTURES WITHIN THE LIMITS OF THE CONTRACT IN A CLEAN AND OPERABLE CONDITION AT THE COMPLETION OF THE WORK. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SAND AND SILT FROM DISTURBED AREAS FROM ENTERING THE DRAINAGE SYSTEM.
13. NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICT, ERROR, AMBIGUITY, OR DISCREPANCY WITH THE PLANS OR BETWEEN THE PLANS AND ANY APPLICABLE LAW, REGULATION, CODE, STANDARD SPECIFICATION, OR MANUFACTURER'S INSTRUCTIONS.
14. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORT OF EXISTING UTILITIES AND REPAIR OR REPLACEMENT COSTS OF UTILITIES DAMAGED DURING CONSTRUCTION, WHETHER ABOVE OR BELOW GRADE. REPLACE DAMAGED UTILITIES IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER AND AT NO COST TO THE PROPERTY OWNER.
15. TAKE NECESSARY MEASURES AND PROVIDE CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE, AND STRENGTH TO PREVENT ACCESS TO ALL WORK AND STAGING AREAS AT THE COMPLETION OF EACH DAYS WORK.
16. NO OPEN TRENCHES WILL BE ALLOWED OVER NIGHT. THE USE OF ROAD PLATES TO PROTECT THE EXCAVATION WILL BE CONSIDERED UPON REQUEST, BUT BACKFILLING IS PREFERRED.
17. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY TRAFFIC CONTROL/SAFETY DEVICES TO ENSURE SAFE VEHICULAR AND PEDESTRIAN ACCESS THROUGH THE WORK AREA, OR FOR SAFELY IMPLEMENTING DETOURS AROUND THE WORK AREA. THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL THE APPROVED TRAFFIC CONTROL PLAN.
18. MAINTAIN EMERGENCY ACCESS TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES DURING CONSTRUCTION.
19. WHEN WORKING IN THE ROAD, PROVIDE THE OWNER AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES A DETAILED PLAN OF APPROACH INDICATING METHODS OF PROPOSED TRAFFIC ROUTING ON A DAILY BASIS. PROVIDE COORDINATION TO ENSURE COMMUNICATION AND COORDINATION BETWEEN THE OWNER, CONTRACTOR AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES THROUGHOUT THE CONSTRUCTION PERIOD.
20. REMOVE AND DISPOSE OF ALL CONSTRUCTION-RELATED WASTE MATERIALS AND DEBRIS IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.
21. THE TERM "DEMOLISH" USED ON THE DRAWINGS MEANS TO REMOVE AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
22. THE TERM "ABANDON" USED ON THE DRAWINGS MEANS TO LEAVE IN PLACE AND TAKE APPROPRIATE MEASURES TO DECOMMISSION AS SPECIFIED OR NOTED ON THE DRAWINGS.
23. ALL PROPOSED WORK MAY BE ADJUSTED IN THE FIELD BY THE OWNER'S PROJECT REPRESENTATIVE TO MEET EXISTING CONDITIONS.

STORM SEWER NOTES

1. STORM SEWER LINES ARE TO BE INSTALLED USING INVERT ELEVATIONS, PIPE SLOPES SHOWN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
2. APPLICABLE STORM SEWER CONSTRUCTION SHALL CONFORM TO THE TOWN OF WILTON STORM SEWER SPECIFICATIONS.
3. ROOF DRAINS ARE TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM WHERE SHOWN.
4. THE ON-SITE DRAINAGE SYSTEM WILL REMAIN PRIVATE. THE PROPERTY OWNER IS TO PROVIDE REGULAR MAINTENANCE OF THE SYSTEM TO ALLOW IT TO CONTINUALLY FUNCTION AS INTENDED.
5. THE STORM DRAINAGE SYSTEM IS TO BE INSPECTED PRIOR TO CONSTRUCTION, IN ORDER TO VERIFY THAT IT IS IN GOOD CONDITION AND FUNCTIONING PROPERLY. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR CLEANING, REPAIRING AND MAINTAINING ALL PARTS OF THE EXISTING ON-SITE DRAINAGE SYSTEMS, AS NECESSARY, TO INSURE THAT ALL COMPONENTS ARE FUNCTIONING AS ORIGINALLY INTENDED.
6. ALL PORTIONS OF THE STORM DRAINAGE SYSTEM ARE TO BE CAPABLE OF HANDLING AASHTO H-20 LOADS.
7. ALL REINFORCED CONCRETE PIPE SHALL BE CLASS IV UNLESS OTHERWISE NOTED.
8. ALL PVC PIPING TO BE CLASS SDR-35 UNLESS OTHERWISE NOTED. (SDR-21 REQUIRED FOR DEPTHS OVER 12 FEET.)
9. ALL CATCH BASIN GRATES TO BE TYPE A UNLESS OTHERWISE NOTED.
10. ALL CATCH BASINS SHALL HAVE BELL TRAPS EXCEPT IF CONNECTED IN A SERIES, IN WHICH CASE ONLY THE UPPER TWO CATCH BASINS IN THE SERIES SHALL HAVE BELL TRAPS.
11. HDPE PIPING SHALL CONFORM TO ASTM F2306.
12. THE INSTALLATION OF THE DRAINAGE SYSTEM IS TO BE DONE UNDER THE SUPERVISION OF THE DESIGN ENGINEER LICENSED IN THE STATE OF CONNECTICUT. AFTER CONSTRUCTION, THE ENGINEER IS TO SUBMIT TO THE TOWN OF WILTON A WRITTEN CERTIFICATION THAT THE SYSTEM WAS INSTALLED AS PER THE APPROVED DESIGN. A DRAINAGE AS-BUILT DRAWING IS SUBMITTED WITH THIS LETTER TO THE TOWN OF WILTON. A REMINDER TO THE PROPERTY OWNER THAT THE SYSTEM WILL REMAIN A PRIVATE ONE AND THAT REGULAR MAINTENANCE WILL BE CRUCIAL TO ITS CONTINUED FUNCTIONING AS INTENDED SHOULD BE MADE. ADEQUATE ACCESS TO THE SYSTEM FOR MAINTENANCE PURPOSES IS TO BE PROVIDED.

UTILITY COORDINATION NOTES

1. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND ARE SUBJECT TO FINAL SITE SURVEY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL ELEVATIONS, PROPERTY LINES, LOCATION OF UTILITIES AND SITE CONDITIONS IN THE FIELD. IF AN UNFORESEEN INTERFERENCE EXISTS BETWEEN AN EXISTING AND A PROPOSED STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER SO THAT THE APPROPRIATE REVISIONS CAN BE MADE.
2. IT IS THE RESPONSIBILITY OF EACH BIDDER IN EVALUATING THESE PLANS TO MAKE EXAMINATIONS IN THE FIELD BY VARIOUS METHODS AND OBTAIN NECESSARY INFORMATION FROM AVAILABLE RECORDS, UTILITY CORPORATIONS, AND INDIVIDUALS AS TO THE LOCATION OF ALL SUBSURFACE STRUCTURES.
3. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING NEAR OR UNDER OVERHEAD AND UNDERGROUND UTILITIES. THE CONTRACTOR IS TO NOTIFY THE UTILITY COMPANIES OF HIS INTENT PRIOR TO THE COMMENCEMENT OF ANY WORK.
4. LANDSCAPING SHALL NOT BE PLACED ON TOP OF UTILITIES.
5. ELECTRICAL CONDUIT SHALL BE INSTALLED BY AN ELECTRICIAN LICENSED IN THE STATE OF CONNECTICUT

FORM 818 NOTES

1. CONSTRUCTION SPECIFICATIONS FOR WORK WITHIN THE STATE RIGHT-OF-WAY SHALL BE THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION, FORM 818, DATED 2020; SUPPLEMENTAL SPECIFICATIONS, DATED JULY 2020 AND ALL SUPPLEMENTS THERETO; AND SPECIAL PROVISIONS.
2. NEW PAVEMENT MARKINGS SHALL BE PAINTED WITH EPOXY RESIN PAINT IN COMPLIANCE WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION FORM 818, SECTION 12.10.
3. NEW SIGN MATERIAL AND SHEETING SHALL BE MADE OF REFLECTIVE MATERIAL IN COMPLIANCE WITH THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION FORM 818, SECTION 12.08. TYPE 1 REFLECTIVE SHEETING SHALL BE USED FOR SIGNS WITH WHITE BACKGROUND, TYPE 3 REFLECTIVE SHEETING SHALL BE USED FOR SIGNS WITH COLORED BACKGROUND EXCEPT FOR SIGNS WITH RED BACKGROUND THAT SHALL BE TYPE 8 OR 9 REFLECTIVE SHEETING.
4. ALL SIGNS AND PAVEMENT MARKINGS INSTALLED ALONG THE STATE ROAD MUST CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," LATEST STATE OF CONNECTICUT CATALOGUE OF SIGNS AND STANDARDS, AS REVISED.
5. ANY DAMAGE TO EXISTING CURB, SIDEWALK, OR ANY OTHER HIGHWAY APPURTENANCES DURING THE DEVELOPMENT OF THE PERMITTED SITE WILL BE REPLACED BY THE CONTRACTOR AS DIRECTED BY THE DISTRICT 3 PERMIT SECTION AT NO COST TO THE STATE.
6. THE FINAL LIMITS OF MILLING AND OVERLAY SHALL BE DETERMINED PRIOR TO FINAL PAVING BY CTDOT DISTRICT 4 PERMIT INSPECTOR. THE CONTRACTOR SHALL COORDINATE WITH CTDOT TO DETERMINE THESE LIMITS AND NOTIFY THE OWNER AND ENGINEER OF ANY CHANGES TO THE LIMITS SHOWN ON THE DRAWINGS.

SANITARY SEWER & WATER NOTES

1. SANITARY SEWER AND WATER LINE CROSSINGS SHALL MAINTAIN AN 18 INCH MINIMUM VERTICAL SEPARATION DISTANCE OR PROVIDE A CONCRETE ENCASEMENT AT THE CROSSING.
2. SEWER AND WATER LINE CROSSING ALL OTHER UTILITIES SHALL MAINTAIN A 12 INCH VERTICAL SEPARATION DISTANCE.
3. SANITARY SEWER LINES ARE TO BE INSTALLED USING INVERT ELEVATIONS. PIPE SLOPES SHOWN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
4. PROPOSED SANITARY SEWER SERVICES ARE TO MEET THE REQUIREMENTS OF THE TOWN OF WILTON.
5. PROPOSED WATER SERVICES ARE TO MEET THE REQUIREMENTS OF THE STATE PLUMBING CODES AND THE AQUARION WATER COMPANY RULES AND REGULATIONS.

GRADING NOTES

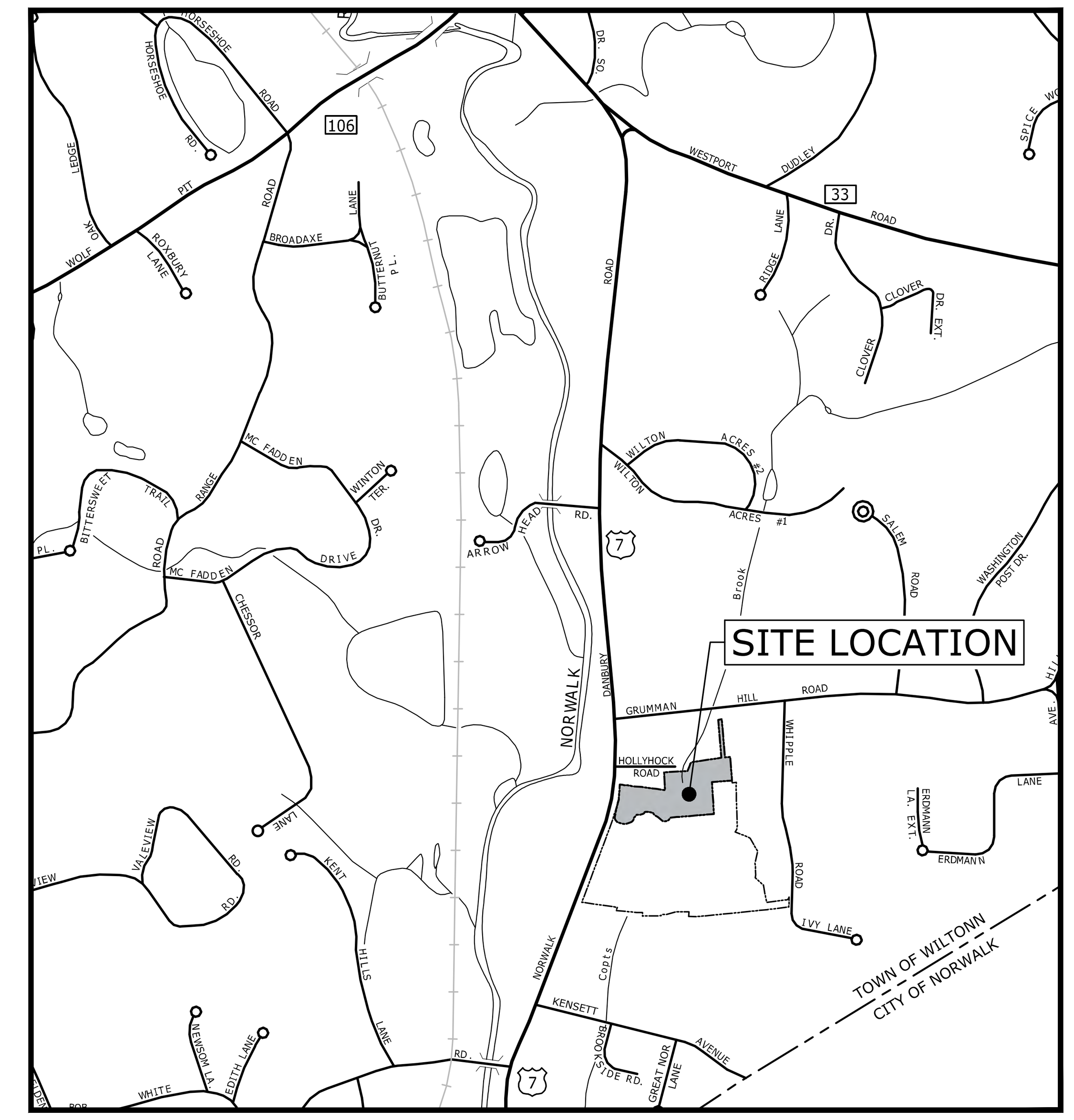
1. AREAS OF DISTURBED EARTH SHALL BE STABILIZED BY MULCHING OR OTHER MEANS. SEEDING OF GRASSED AREAS SHALL BE INITIATED AS SOON AS PRACTICAL AS AN EROSION AND SILTATION CONTROL MEASURE.
2. RETAINING WALLS OVER 3' IN HEIGHT ARE TO BE DESIGNED AND CONSTRUCTED UNDER THE SUPERVISION OF A STATE OF CONNECTICUT LICENSED PROFESSIONAL ENGINEER OR ARCHITECT. WOOD RETAINING WALLS OVER 3 FEET IN HEIGHT ARE NOT PERMITTED.
3. RETAINING WALLS REQUIRING AN ENGINEERED DESIGN SHALL BE SUBMITTED TO AND APPROVED BY THE TOWN OF WILTON BUILDING DEPARTMENT WITH CALCULATIONS BEFORE CONSTRUCTION OF THESE WALLS BEGINS.
4. RETAINING WALLS ARE TO HAVE PROTECTIVE FENCING WHERE WARRANTED.
5. WHERE LEDGE IS TO BE LEFT IN PLACE, THE STABILITY OF THE LEDGE IS TO BE VERIFIED BY A QUALIFIED STATE OF CONNECTICUT LICENSED PROFESSIONAL ENGINEER OR SOIL SCIENTIST.
6. ALL LAND CLEARING AND CONSTRUCTION DEBRIS SHALL BE PROPERLY DISPOSED OF OFFSITE.
7. MAXIMUM GRADE AT ACCESSIBLE PARKING SPACES NOT TO EXCEED 2%.

ABBREVIATIONS

ABDN('D)	ABANDON(ED)
AC	ASBESTOS CEMENT PIPE
BC	BITUMINOUS CURB
BFP	BACK FLOW PREVENTOR
BIT	BITUMINOUS
BL	BASELINE
BLDG	BUILDING
BND	BOUND
BOC	BOTTOM OF CURB
BOT	BOTTOM
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCW	CEMENT CONCRETE WALK
CEM	CEMENT
CI	CAST IRON PIPE
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CO	CLEAN OUT
CONC	CONCRETE
CPP	CORRUGATED POLYETHYLENE PIPE
CY	CUBIC YARD
DH	DRILL HOLE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
E	EAST
EF	EACH FACE
EG	EXISTING GRADE
EL/ELEV	ELEVATION
ELEC	ELECTRIC
EMH	ELECTRIC MANHOLE
EOP	EDGE OF PAVEMENT
EW	EACH WAY
EXIST	EXISTING
FES	FLARED END SECTION
FF	FINISH FLOOR
FM	FORCE MAIN
G	GAS
GG	GAS GATE
GRAN	GRANITE
HC	HANDICAP
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HYD	HYDRANT
IN	INCHES
INV	INVERT
IP	IRON PIN
L	LENGTH OF CURB
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM

ABBREVIATIONS CONT'D

MISC	MISCELLANEOUS
MON	MONUMENT
MJ	MECHANICAL JOINT
N	NORTH
NITC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
N/F	NOW OR FORMERLY
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
OH	OVERHEAD
PB	PLANT BED
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCPP	PERFORATED CORRUGATED POLYETHYLENE PIPE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PRC	POINT OF REVERSE CURVATURE
PROT	PROTECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYLCHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REV	REVISION
ROW	RIGHT OF WAY
RT	RIGHT
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
S	SOUTH
SAN	SANITARY
SCH	SCHEDULE
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SS	STAINLESS STEEL
STA	STATION
STL	STEEL
STRM	STORM
T	TANGENT LENGTH
TC	TOP OF CURB
TEL	TEL-DATA
TP	TEST PIT
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UP	UTILITY POLE
W	WATER
WG	WATER GATE
WV	WATER VALVE
XFMR	TRANSFORMER



LOCATION MAP
SCALE: 1" = 1000'

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
PROPERTY LINE ADJACENT		
RIGHT-OF-WAY LINE		
EASEMENT LINE		
CALCULATED 100-YEAR FLOODPLAIN		
UPLAND REVIEW AREA		
INTERMEDIATE CONTOURS		
INDEX CONTOURS	25	25
SPOT GRADE	X 141.2	+ 32.0
MAGNITUDE & DIRECTION OF SLOPE		0.0%
STORM DRAIN	SD SD	SD
STORM UNDERDRAIN		UD
GRAVITY SANITARY SEWER	SS SS	SS SS
SANITARY SEWER FORCE MAIN	SFM	SFM
SANITARY SEWER LOW PRESSURE	SSLP SSLP	SSLP
SANITARY SEWER COMBINED	COMB	COMB
WATER SERVICE	W W	W W
FIRE SERVICE		F F
UNDERGROUND ELECTRIC	E E	E E
PRIMARY ELECTRIC SERVICE	PE	PE PE
SECONDARY ELECTRIC	SE	SE SE
OVERHEAD ELECTRIC	OE OE	OE OE
TELEPHONE SERVICE	T T	T T
TEL-DATA SERVICE	T-D T-D	T-D T-D
COMMUNICATIONS SERVICE	T-C T-C	T-C T-C
CABLE TV SERVICE	CTV CTV	CTV CTV
GAS SERVICE	G G	G G
OVERHEAD UTILITY (UNSPECIFIED)	OHW OHW	
CURB		
EDGE OF PAVEMENT		
DIRT ROAD		
SIDEWALK		
RETAINING WALL		
STONE WALL		
FENCE - UNSPECIFIED	X X X	X X X
FENCE - CHAIN LINK		
FENCE - WOOD POST		
GUARDRAIL		
METAL BEAM RAIL		
TRAIN TRACKS		
STORM DRAIN STRUCTURES	MANHOLE (D) CATCH BASIN	MANHOLE AREA DRAIN CATCH BASIN
SANITARY SEWER STRUCTURES	MANHOLE (S) TANK	MANHOLE TANK
WATER SERVICE STRUCTURES	HYDRANT MANHOLE (W) VALVE	HYDRANT MANHOLE (W) VALVE
GAS SERVICE STRUCTURES	MANHOLE (G) VALVE GG	MANHOLE (G) VALVE
ELECTRIC SERVICE STRUCTURES	UTILITY CO. POLE # MANHOLE (E) LIGHT	UTILITY CO. POLE # MANHOLE (E) LIGHT
TELECOMMUNICATIONS MANHOLE	(T)	(T)
TREELINE		
TREE	EVERGREEN DECIDUOUS STUMP	EVERGREEN DECIDUOUS
SNOW STORAGE AREA		

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
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TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-001-GENR.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

GENERAL NOTES, LEGEND AND ABBREVIATIONS

SCALE: AS SHOWN

C-001

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Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

TOWN SUBMISSION

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Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-002-EXCN.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

EXISTING CONDITIONS PLAN

SCALE: 1" = 30'

C-002

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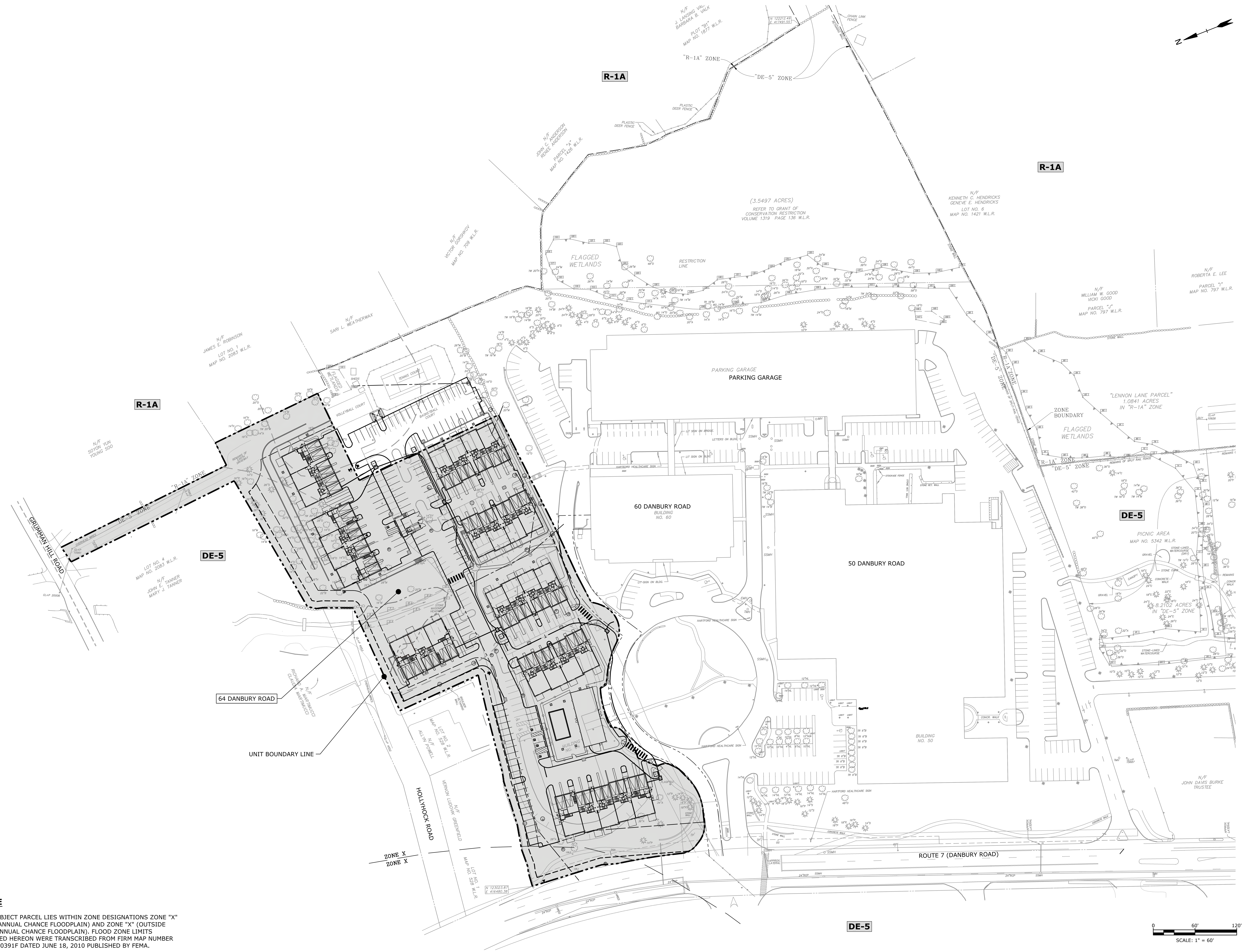

NOTE

THE SUBJECT PARCEL LIES WITHIN ZONE DESIGNATIONS ZONE "X" (0.2% ANNUAL CHANCE FLOODPLAIN) AND ZONE "X" (OUTSIDE 0.2% ANNUAL CHANCE FLOODPLAIN). FLOOD ZONE LIMITS DEPICTED HEREON WERE TRANSCRIBED FROM FIRM MAP NUMBER 09001C0391F DATED JUNE 18, 2010 PUBLISHED BY FEMA.

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Wilton, CT

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PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-100-OVRL.dwg
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OVERALL SITE PLAN

SCALE: 1" = 60'

C-100

SITE PLAN LEGEND

- UPLAND REVIEW AREA
- CALCULATED 100-YEAR FLOODPLAIN
- UNIT BOUNDARY LINE
- PROPOSED CURB
- PROPOSED RETAINING WALL
- SNOW STORAGE AREA
- PROPOSED SIGN
- PROPOSED ACCESSIBLE SYMBOL

AREA AND BULK REQUIREMENTS	DE-5R (EAST)	EXISTING	PROPOSED
MIN FRONT YARD	50	101.35	50.7
MIN SIDE YARD (EACH)	25	65.44	26.3
MIN SIDE YARD (RESIDENTIAL)	50	NA	80.37
MIN. REAR YARD	50	495.2	59.13
MIN. PARKING & LOADING SETBACKS (SIDE AND REAR YARDS)	10	14.0	10
MIN. PARKING & LOADING SETBACKS (RESIDENTIAL)	50	95.0	71.76
MAX. BUILDING HEIGHT (FEET)	3 / 39	< 39	< 39
MAX. BUILDING COVERAGE (%)	40%	21.74%	25.69%
MAX. SITE COVERAGE (%)	75%	46.41%	50.99%
MIN. LOT SIZE (ACRES)	3	22.27	22.27
MIN. LOT FRONTAGE	150	> 150	> 150

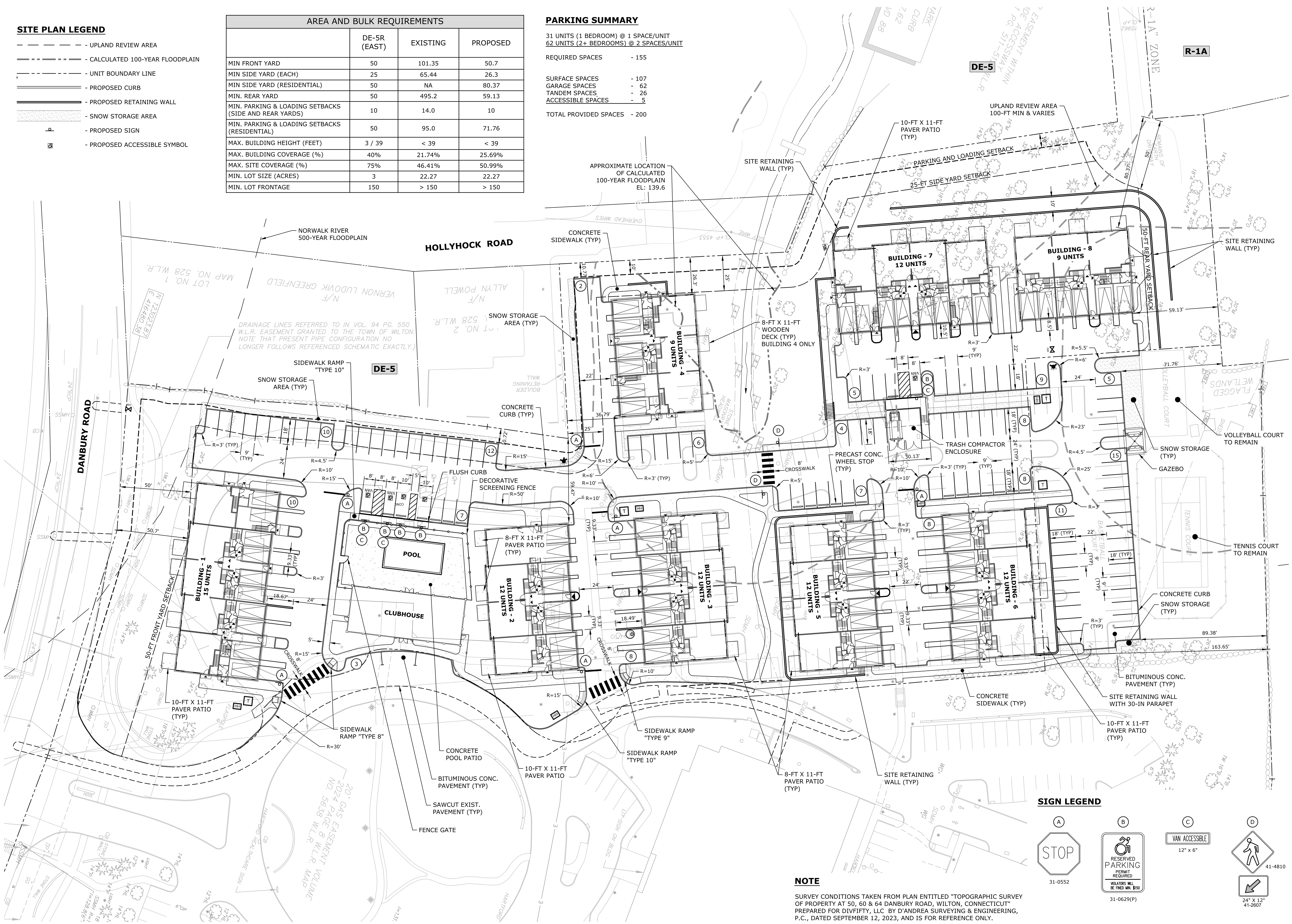
PARKING SUMMARY

31 UNITS (1 BEDROOM) @ 1 SPACE/UNIT
62 UNITS (2+ BEDROOMS) @ 2 SPACES/UNIT

REQUIRED SPACES - 155

SURFACE SPACES - 107
GARAGE SPACES - 62
TANDEM SPACES - 26
ACCESSIBLE SPACES - 5

TOTAL PROVIDED SPACES - 200



SIGN LEGEND

A	B	C	D
STOP	RESERVED PARKING PERMIT REQUIRED VIOLATORS WILL BE FINED MIN. $150	VAN ACCESSIBLE	41-4810
31-0552	31-0629(P)	12" x 6"	24" X 12" 41-2607

NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

0 30' 60'
SCALE: 1" = 30'

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1000 Bridgeport Avenue
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(203) 712-1100

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64 Danbury Road

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Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-101-SITE.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

SITE PLAN

SCALE: 1" = 30'

C-101

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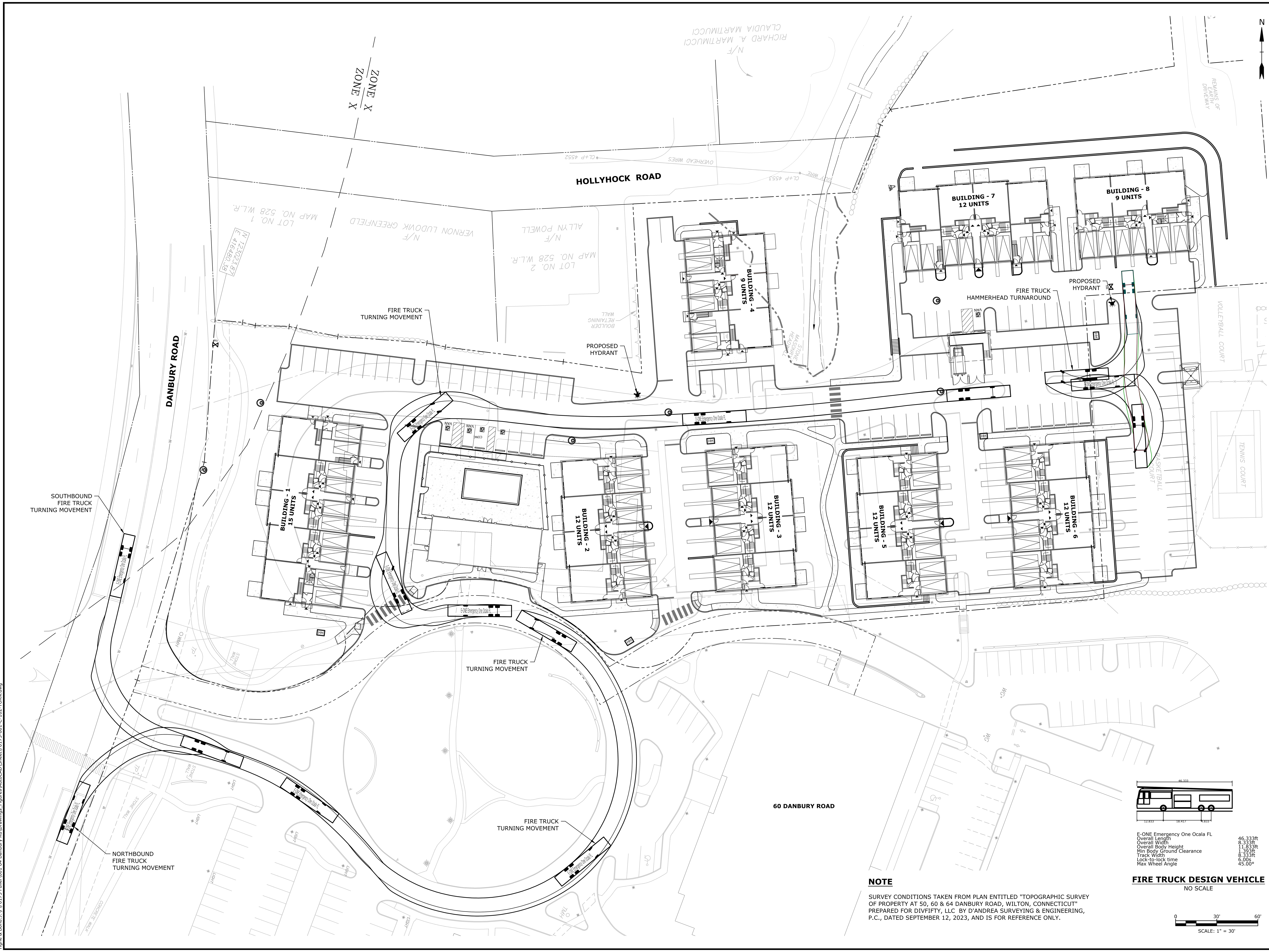

NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

E-ONE Emergency One Ocala FL	
Overall Length	46.333ft
Overall Width	8.333ft
Overall Body Height	11.833ft
Min Body Ground Clearance	1.393ft
Track Width	8.333ft
Lock-to-lock time	6.00s
Max Wheel Angle	45.00°

FIRE TRUCK DESIGN VEHICLE

NO SCALE

0 30' 60'

SCALE: 1" = 30'

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

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MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-102-TURN.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

FIRE TRUCK TURNING MOVEMENTS PLAN

SCALE: 1" = 30'

C-102

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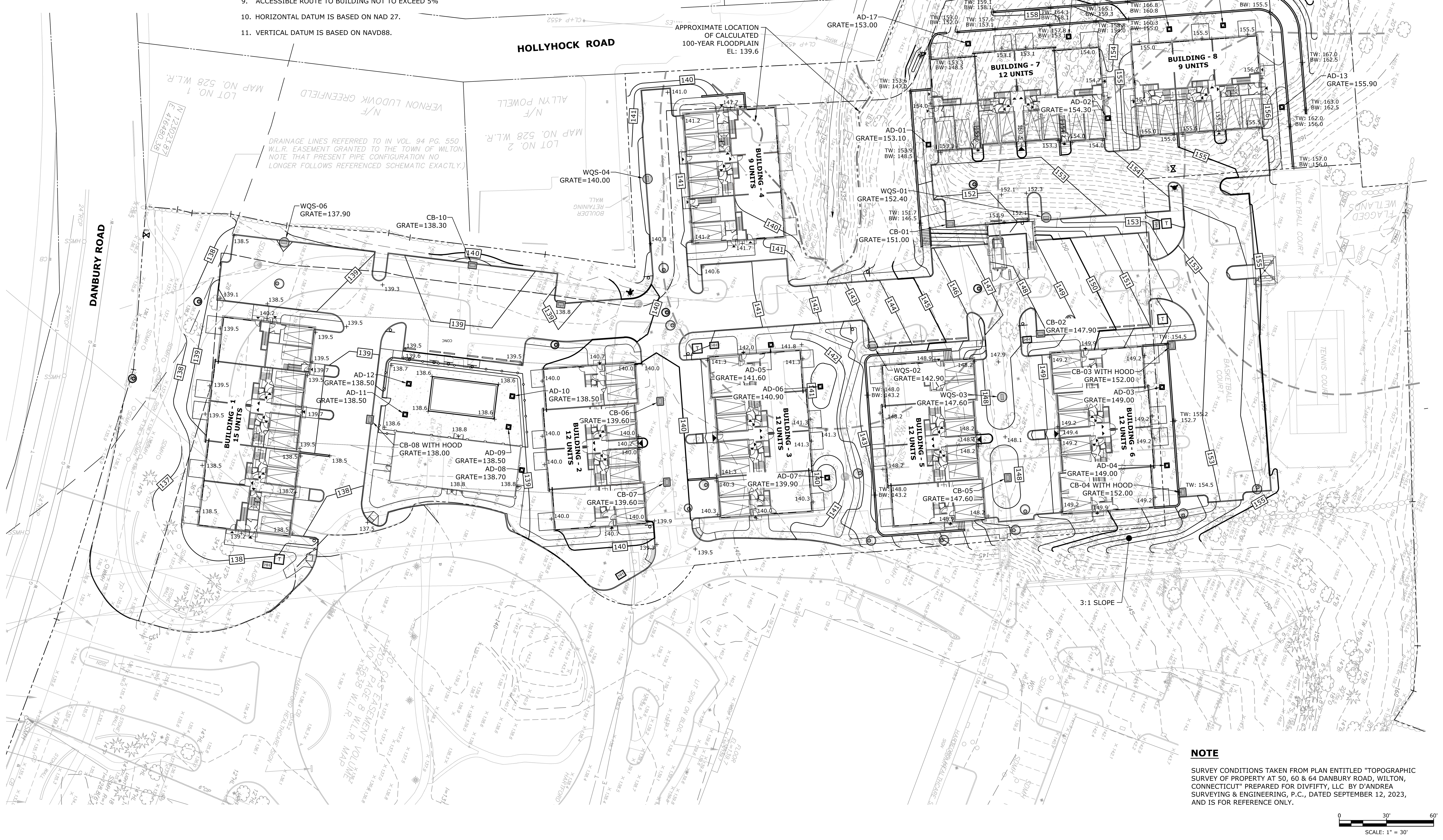
SITE PLAN LEGEND

- UPLAND REVIEW AREA
- UNIT BOUNDARY LINE
- PROPOSED CURB
- PROPOSED RETAINING WALL
- PROPOSED SIGN
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED MANHOLE

GRADING PLAN NOTES

1. THE CONTRACTOR SHALL VERIFY ALL GRADES AND EXISTING CONDITIONS, AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE.
2. MAKE SMOOTH TRANSITIONS BETWEEN ALL SLOPE CHANGES AND FEATHER EDGES OF ALL CUTS AND FILLS TO BLEND WITH EXISTING CONDITIONS.
3. PRIOR TO PAVING, PLANTING AND SEEDING, ALL FINAL GRADING SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE.
4. ADJUST ALL EXISTING AND RELOCATED UTILITY COLLARS, FRAMES, INLETS, VALVE BOXES, ETC. TO MEET NEW GRADES.
5. ADJUST ALL EXISTING AND RELOCATED MANHOLES, CATCH BASINS AND UTILITY STRUCTURES TO TNEW ELEVATIONS WHERE REQUIRED.
6. ALL EXCAVATED MATERIAL NOT REQUIRED FOR GRADING OR FILLING SHALL BE REMOVED PROMPTLY FROM THE SITE AND DISPOSED OF LEGALLY.
7. SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY DEPICTING 141 DANBURY ROAD IN WILTON, CONNECTICUT, PREPARED FOR FDSPIN 141 DR LLC" BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED APRIL 19, 2021, AND IS FOR REFERENCE ONLY.
8. ACCESSIBLE SPACES TO BE GRADED AT 2% OR LESS.
9. ACCESSIBLE ROUTE TO BUILDING NOT TO EXCEED 5%
10. HORIZONTAL DATUM IS BASED ON NAD 27.
11. VERTICAL DATUM IS BASED ON NAVD88.



NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

0 30' 60'
SCALE: 1" = 30'

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MARK	DATE	DESCRIPTION

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DATE:	12/21/2023
FILE:	F0173-001-C-201-GRAD.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

GRADING PLAN

SCALE: 1" = 30'

C-201

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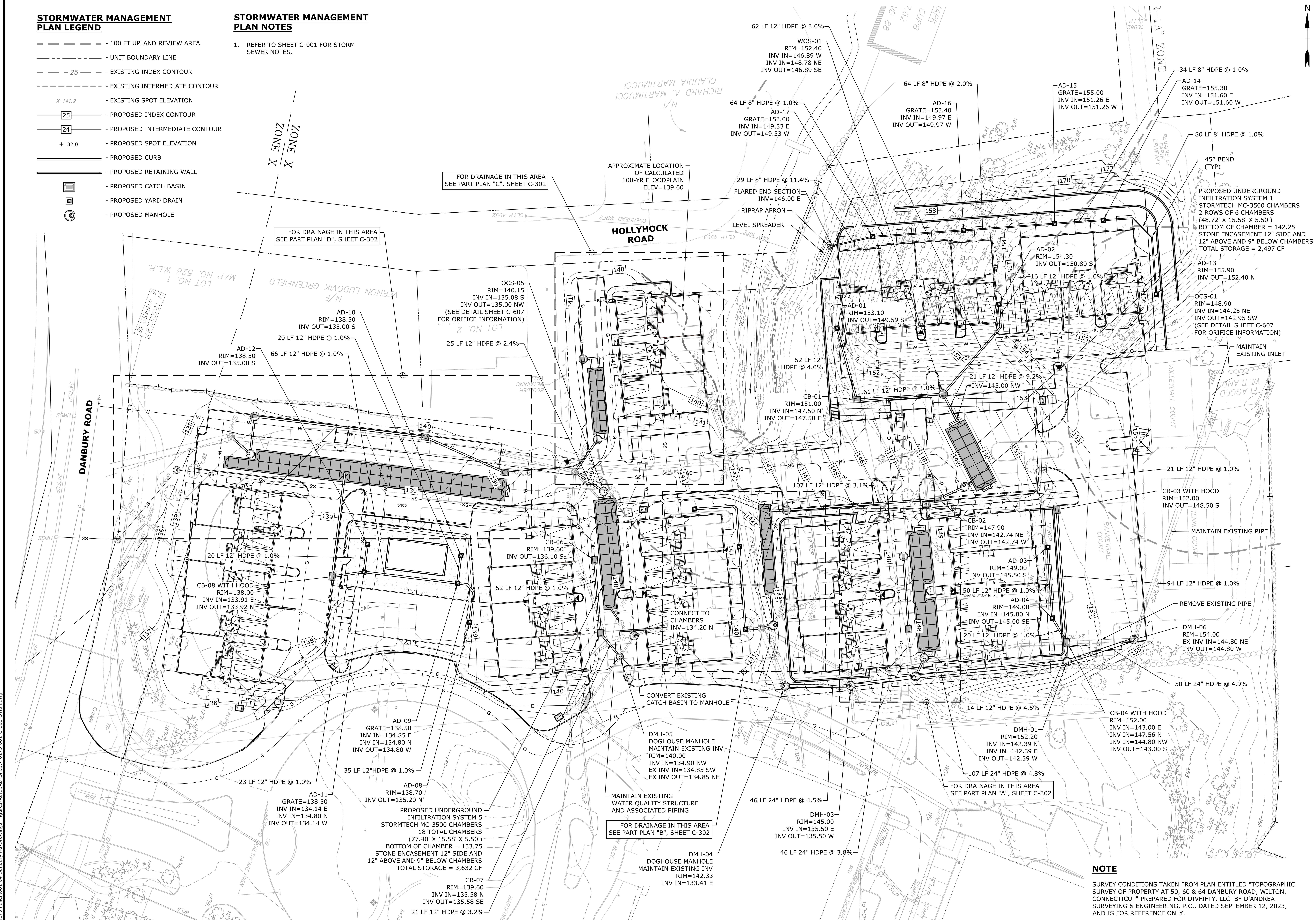
STORMWATER MANAGEMENT PLAN LEGEND

- 100 FT UPLAND REVIEW AREA
- UNIT BOUNDARY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED CURB
- PROPOSED RETAINING WALL
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED MANHOLE

STORMWATER MANAGEMENT PLAN NOTES

1. REFER TO SHEET C-001 FOR STORM SEWER NOTES.



NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

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1000 Bridgeport Avenue
Suite 320
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64 Danbury Road

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Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-301-STRM.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DRAINAGE PLAN

SCALE: 1" = 30'

C-301

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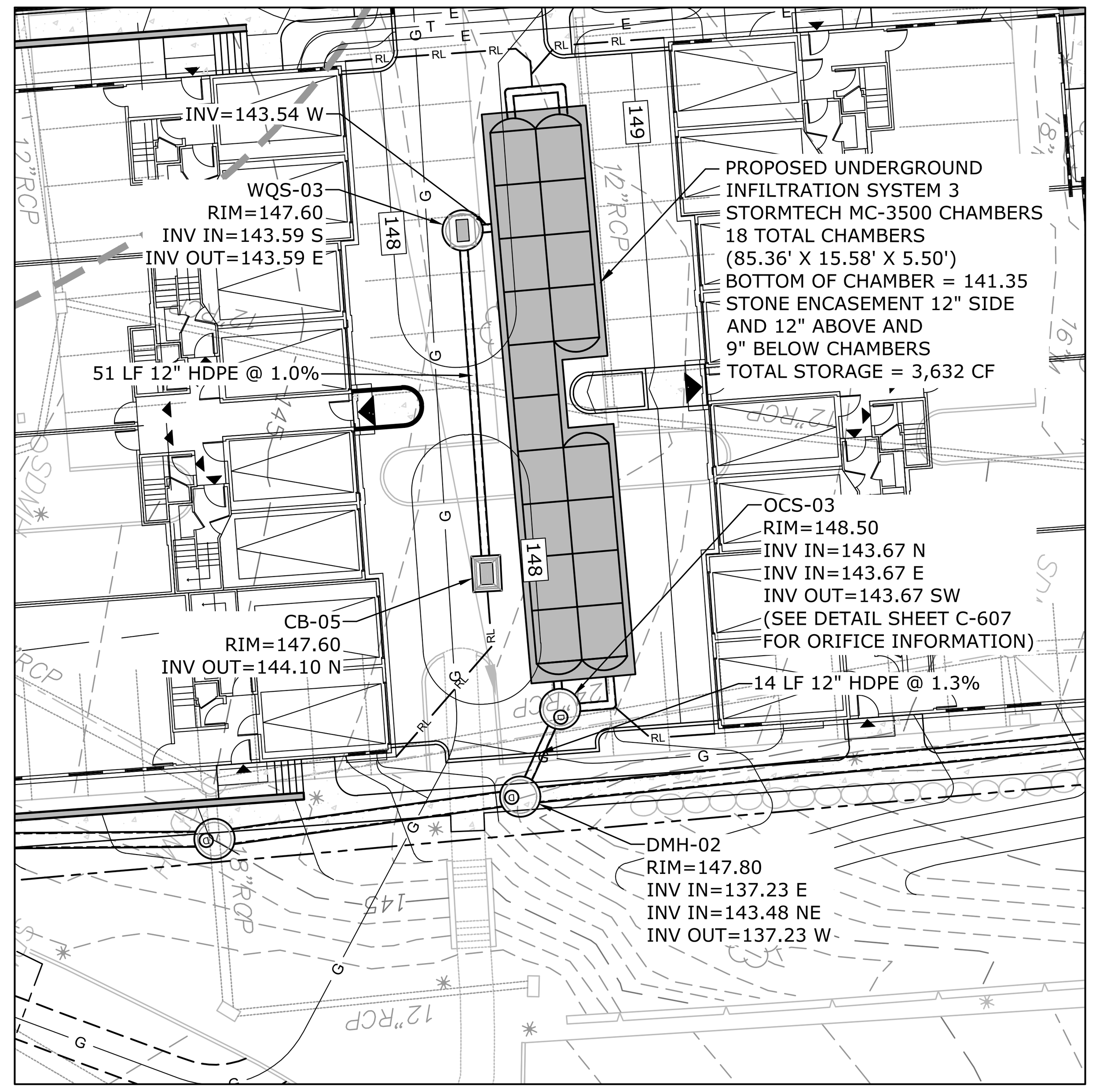
STORMWATER MANAGEMENT PLAN LEGEND

- 100 FT UPLAND REVIEW AREA
- UNIT BOUNDARY LINE
- EXISTING INDEX CONTOUR
- EXISTING INTERMEDIATE CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED CURB
- PROPOSED RETAINING WALL
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED MANHOLE

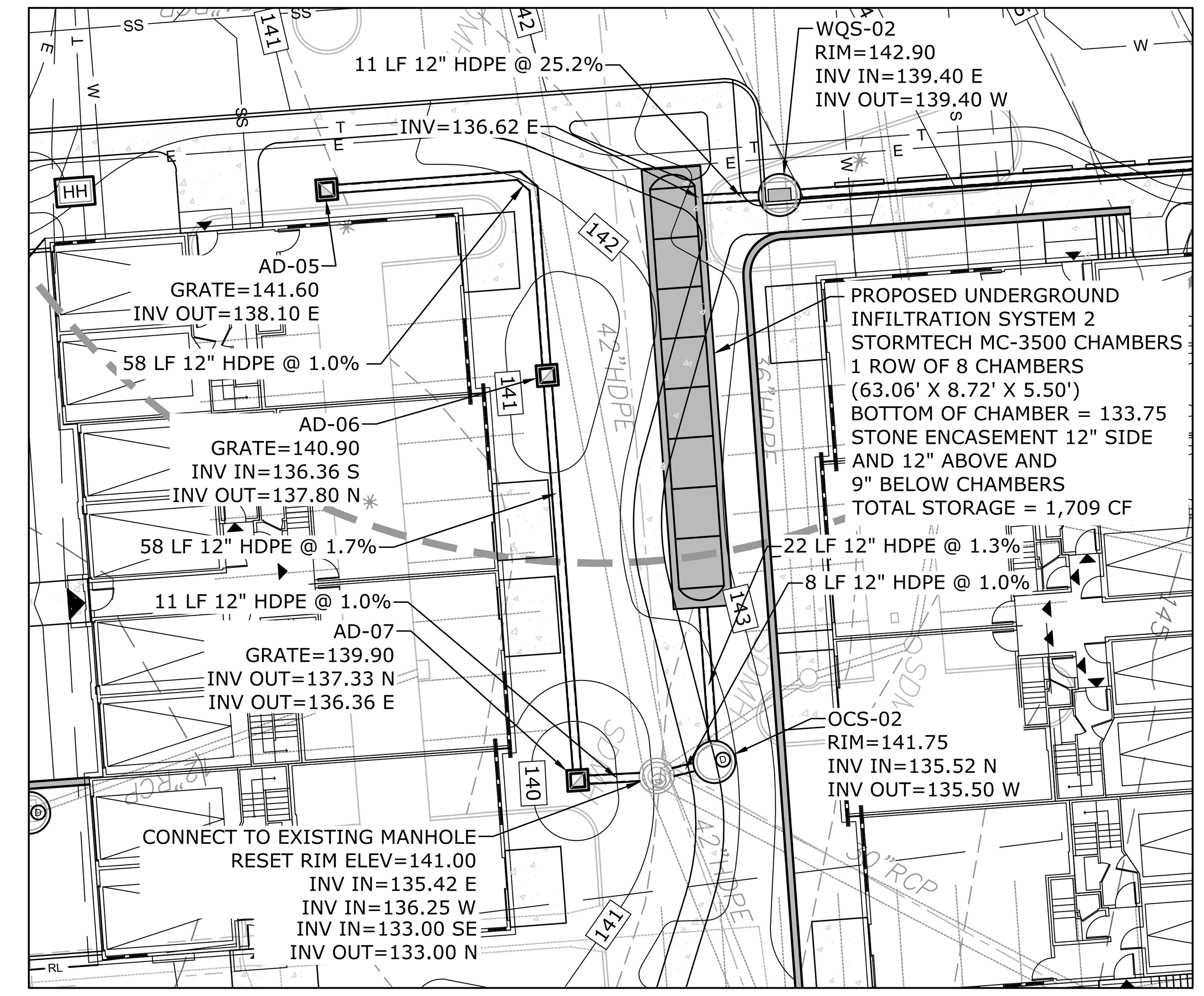
STORMWATER MANAGEMENT PLAN NOTES

1. REFER TO SHEET C-001 FOR STORM SEWER NOTES.



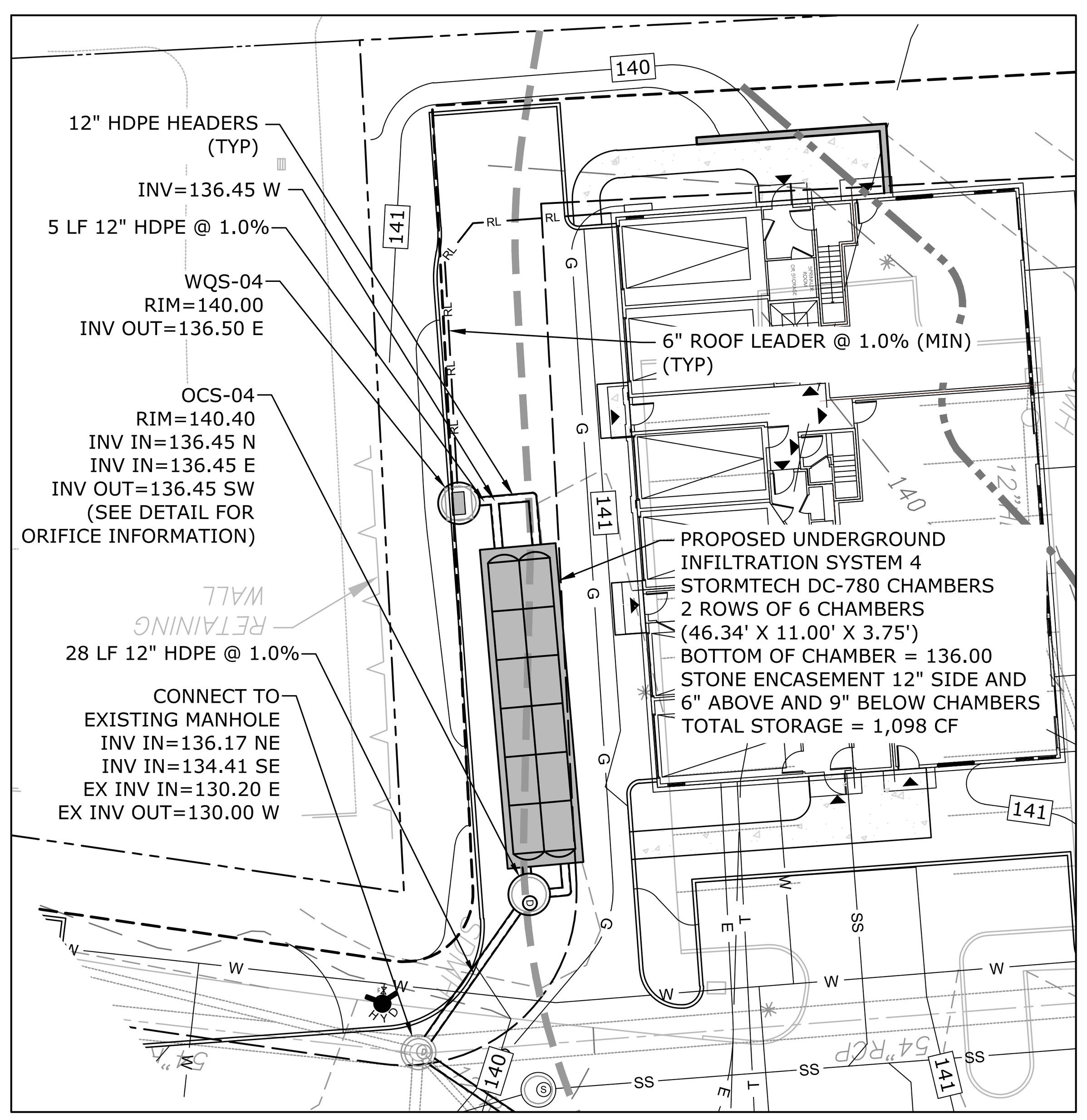
PART PLAN "A" - INFILTRATION SYSTEM 3

SCALE: 1" = 20'



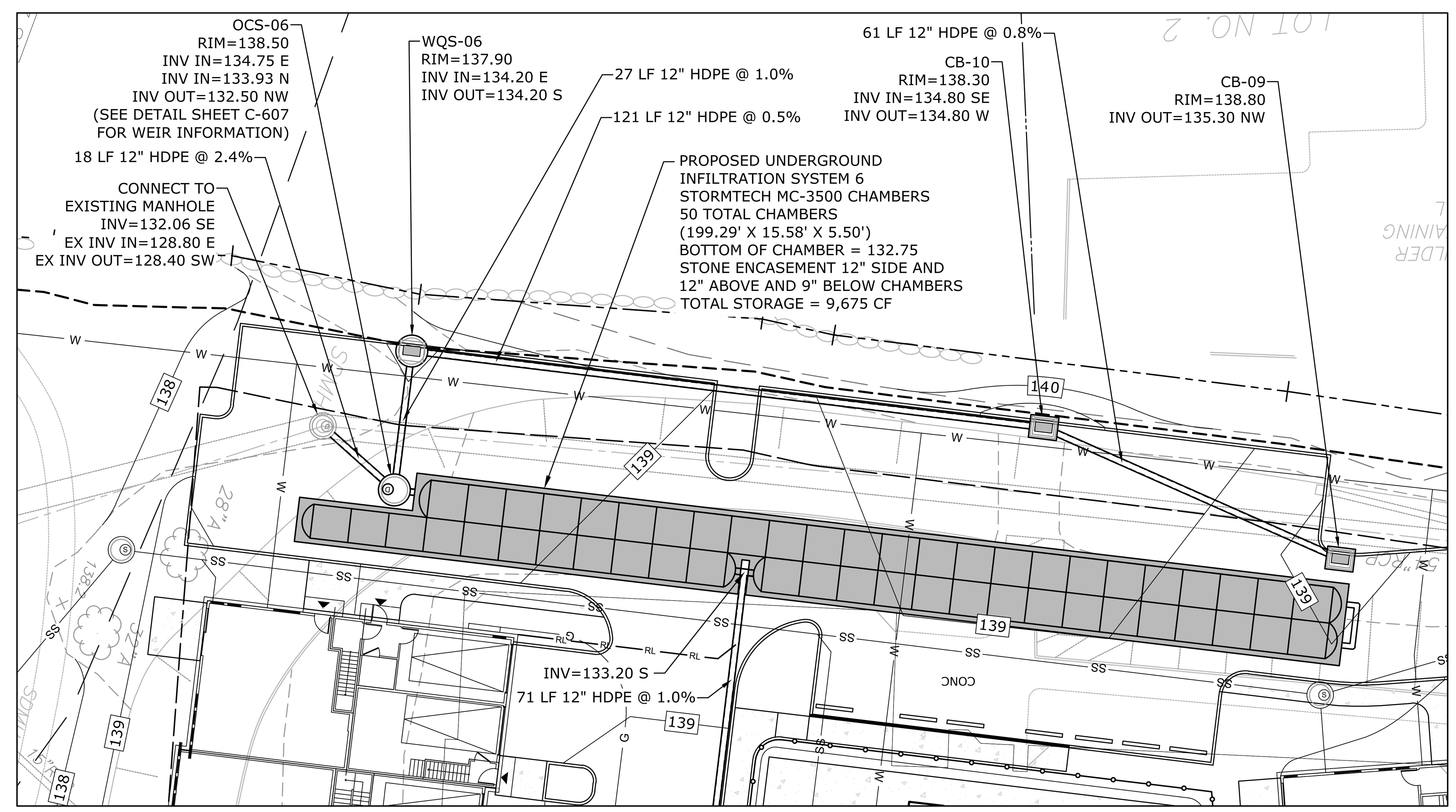
PART PLAN "B" - INFILTRATION SYSTEM 2

SCALE: 1" = 20'



PART PLAN "C" - INFILTRATION SYSTEM 4

SCALE: 1" = 20'



PART PLAN "D" - INFILTRATION SYSTEM 6

SCALE: 1" = 20'

NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

0 20' 40'
SCALE: 1" = 20'

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TOWN SUBMISSION

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FILE:	F0173-001-C-301-STRM.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DRAINAGE PLAN ENLARGEMENT

SCALE: 1" = 20'

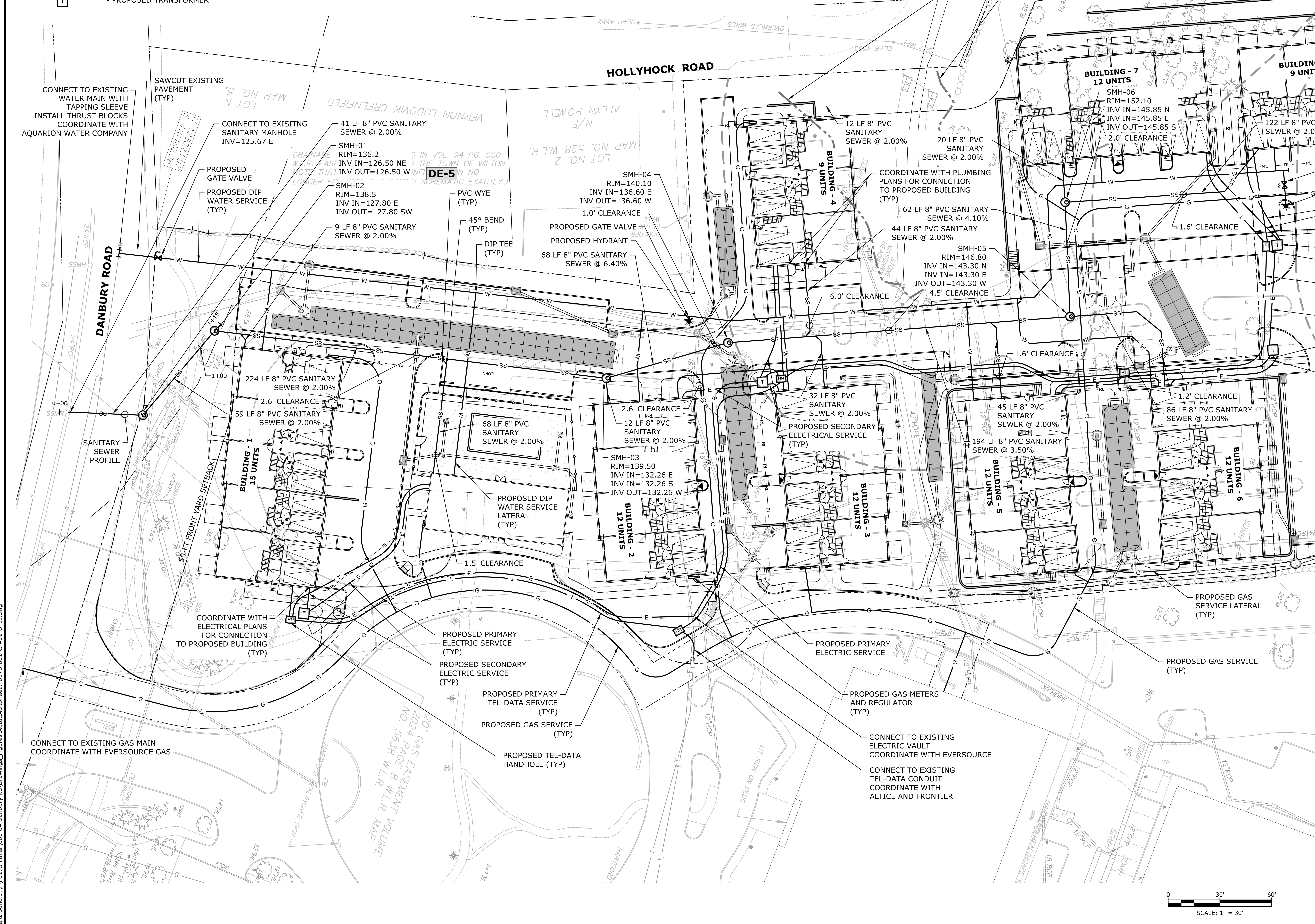
C-302

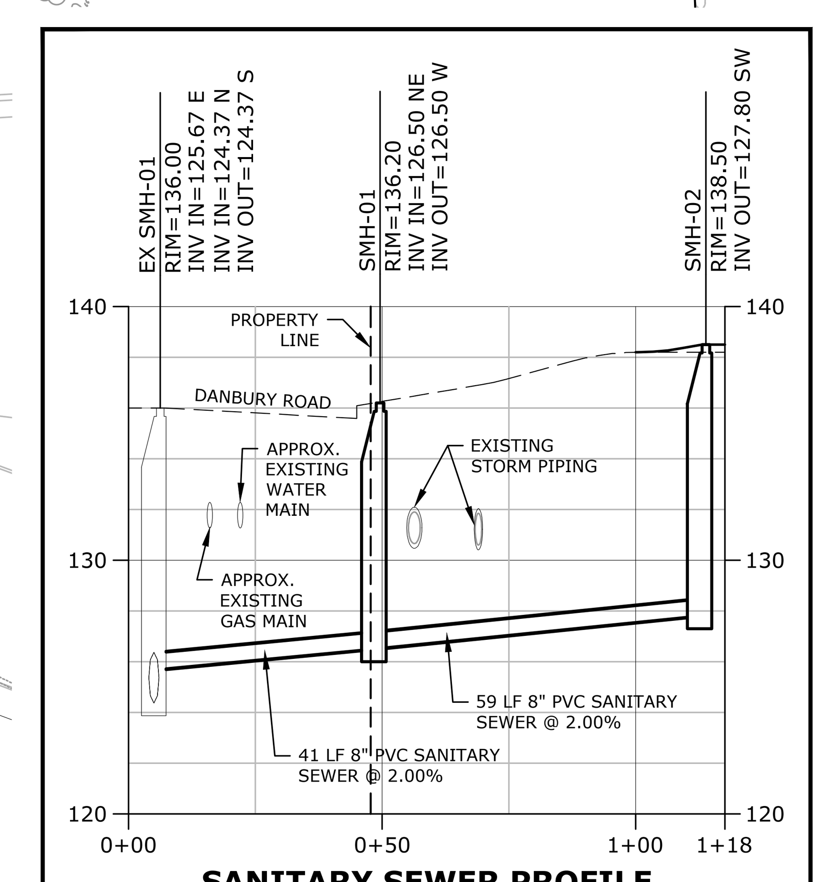
UTILITY PLAN LEGEND

- 100 FT UPLAND REVIEW AREA
- UNIT BOUNDARY LINE
- EASEMENT LINE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER SERVICE
- PROPOSED ELECTRIC SERVICE
- PROPOSED TEL-DATA SERVICE
- PROPOSED WATER SERVICE
- PROPOSED GAS SERVICE
- PROPOSED CATCH BASIN
- PROPOSED YARD DRAIN
- PROPOSED MANHOLE
- PROPOSED TRANSFORMER

SITE UTILITY PLAN NOTES

1. SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.
2. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND ARE SUBJECT TO FINAL SITE SURVEY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL ELEVATIONS, PROPERTY LINES, LOCATION OF UTILITIES AND SITE CONDITIONS IN THE FIELD. IF AN UNFORESEEN INTERFERENCE EXISTS BETWEEN AN EXISTING AND A PROPOSED STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER SO THAT THE APPROPRIATE REVISIONS CAN BE MADE.
3. IT IS THE RESPONSIBILITY OF EACH BIDDER IN EVALUATING THESE PLANS TO MAKE EXAMINATIONS IN THE FIELD BY VARIOUS METHODS AND OBTAIN NECESSARY INFORMATION FROM AVAILABLE RECORDS, UTILITY CORPORATIONS, AND INDIVIDUALS AS TO THE LOCATION OF ALL SUBSURFACE STRUCTURES.
4. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING NEAR OR UNDER OVERHEAD AND UNDERGROUND UTILITIES. THE CONTRACTOR IS TO NOTIFY THE UTILITY COMPANIES OF HIS INTENT PRIOR TO THE COMMENCEMENT OF ANY WORK.
5. LANDSCAPING SHALL NOT BE PLACED ON TOP OF UTILITIES.
6. ELECTRICAL CONDUIT SHALL BE INSTALLED BY AN ELECTRICIAN LICENSED IN THE STATE OF CONNECTICUT
7. SANITARY SEWER AND WATER LINE CROSSINGS SHALL MAINTAIN AN 18 INCH MINIMUM VERTICAL SEPARATION DISTANCE OR PROVIDE A CONCRETE ENCASEMENT AT THE CROSSING.
8. SEWER AND WATER LINE CROSSING ALL OTHER UTILITIES SHALL MAINTAIN A 12 INCH VERTICAL SEPARATION DISTANCE.
9. SANITARY SEWER LINES ARE TO BE INSTALLED USING INVERT ELEVATIONS. PIPE SLOPES SHOWN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY.
10. PROPOSED SANITARY SEWER SERVICES ARE TO MEET THE REQUIREMENTS OF THE TOWN OF WILTON.
11. PROPOSED WATER SERVICES ARE TO MEET THE REQUIREMENTS OF THE STATE PLUMBING CODES AND THE AQUARION WATER COMPANY RULES AND REGULATIONS.





SANITARY SEWER PROFILE

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12/21/23

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-401-UTIL.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

UTILITY PLAN

SCALE: 1" = 30'

C-401

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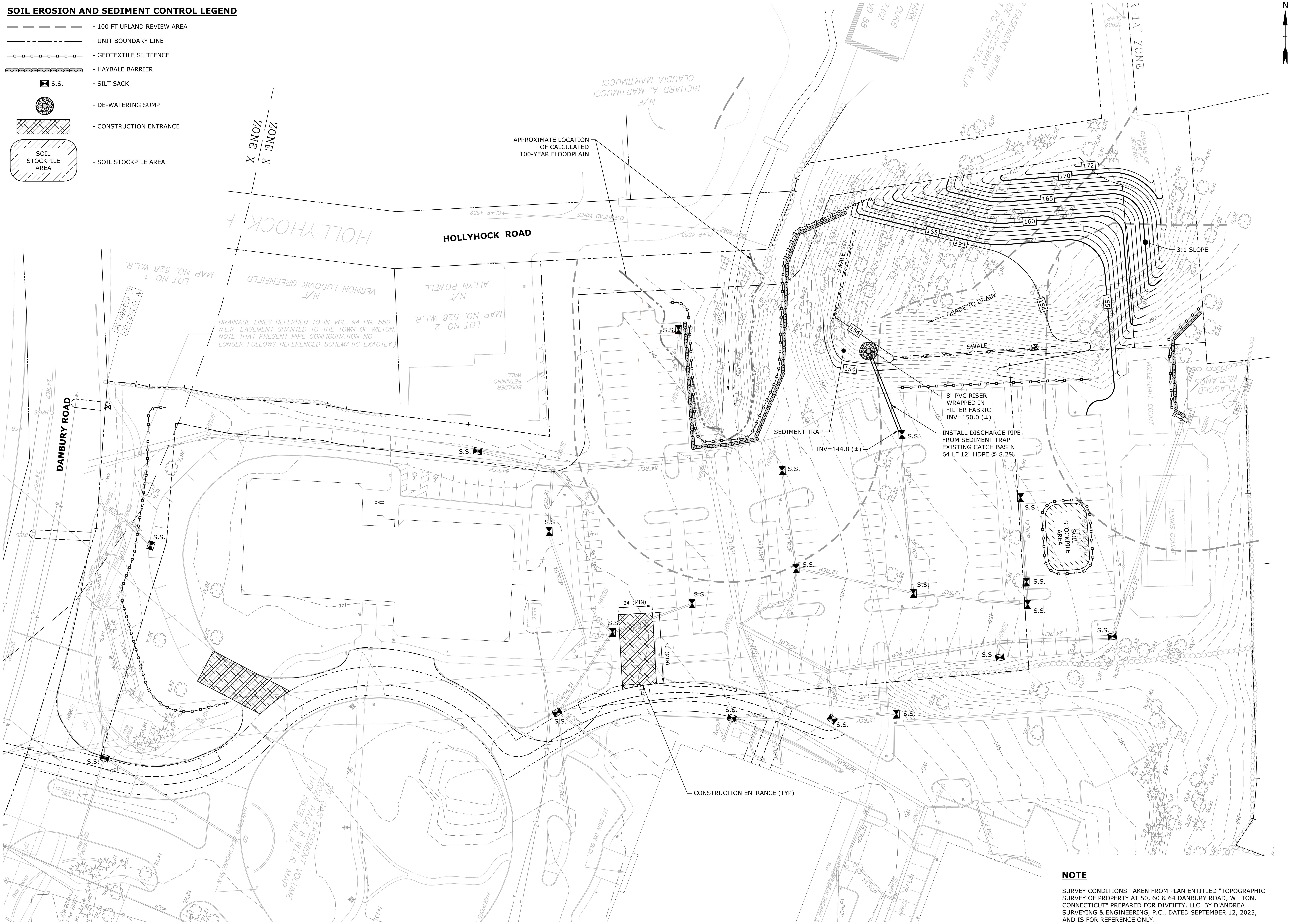

NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

0 30' 60'

SCALE: 1" = 30'

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Shelton, CT 06484
(203) 712-1100

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64 Danbury Road

Fuller Development, LLC

Wilton, CT

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DATE:	12/21/2023
FILE:	F0173-001-C-501-SESC.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

SOIL EROSION AND SEDIMENT CONTROL PLAN INITIAL PHASE

SCALE: 1" = 30'

C-501

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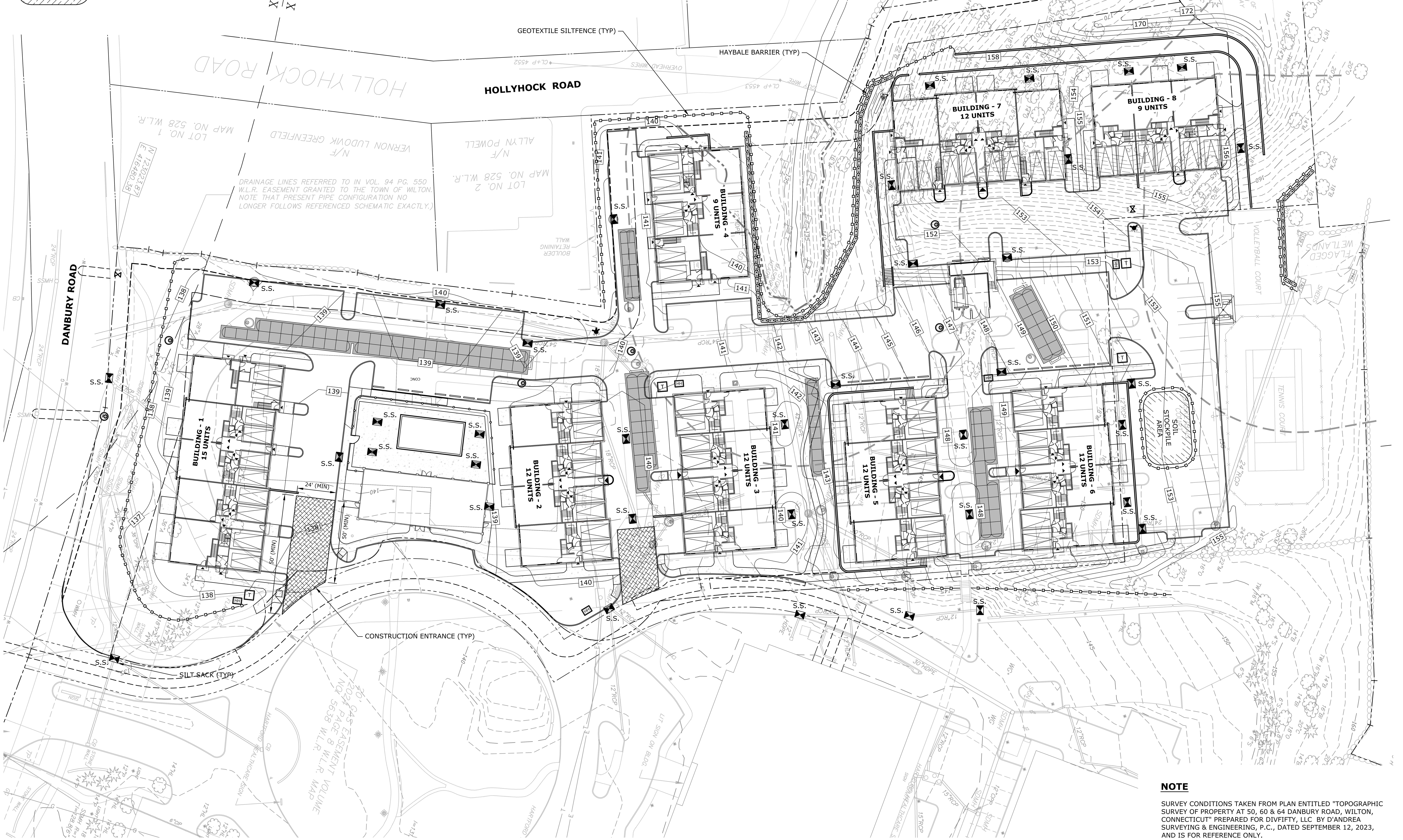
SOIL EROSION AND SEDIMENT CONTROL LEGEND

(dashed line)	- 100 FT UPLAND REVIEW AREA
(dash-dot line)	- UNIT BOUNDARY LINE
(line with circles)	- GEOTEXTILE SILTFENCE
(chain line)	- HAYBALE BARRIER
S.S.	- SILT SACK
(hatched box)	- CONSTRUCTION ENTRANCE
SOIL STOCKPILE AREA	- SOIL STOCKPILE AREA



N

NOTE

SURVEY CONDITIONS TAKEN FROM PLAN ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY AT 50, 60 & 64 DANBURY ROAD, WILTON, CONNECTICUT" PREPARED FOR DIVFIFTY, LLC BY D'ANDREA SURVEYING & ENGINEERING, P.C., DATED SEPTEMBER 12, 2023, AND IS FOR REFERENCE ONLY.

0 30' 60'
SCALE: 1" = 30'

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

12/21/23

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-501-SESC.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

SOIL EROSION AND SEDIMENT CONTROL PLAN FINAL PHASE

SCALE: 1" = 30'

C-502

Last Saved: 12/27/2023
Plotted On:Dec 29, 2023-8:08am By: ELindquist
Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Drawings_Figures\AutoCAD\Sheet\F0173-001-C-501-SESC.dwg

SOIL EROSION AND SEDIMENT CONTROL

THE STORMWATER MANAGEMENT MEASURES WILL ADDRESS THE STORMWATER QUALITY ONCE THE SITE HAS BEEN CONSTRUCTED AND STABILIZED. SEDIMENTATION AND EROSION CONTROL MEASURES WILL BE INSTALLED DURING CONSTRUCTION WHICH WILL MINIMIZE ADVERSE IMPACTS FROM CONSTRUCTION ACTIVITIES.

ALL SEDIMENTATION AND EROSION CONTROL MEASURES PROPOSED FOR THIS DEVELOPMENT HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" AS PUBLISHED BY THE CONNECTICUT COUNCIL ON SOIL EROSION AND WATER CONSERVATION. ADDITIONAL GUIDELINES HAVE ALSO BEEN FOLLOWED THAT ARE AVAILABLE FROM THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION AS RECOMMENDED FOR SEDIMENTATION CONTROL DURING CONSTRUCTION ACTIVITIES.

LISTED BELOW ARE THE EROSION CONTROL NARRATIVE AND THE EROSION CONTROL NOTES.

SOIL EROSION AND SEDIMENT CONTROL NARRATIVE

GENERAL

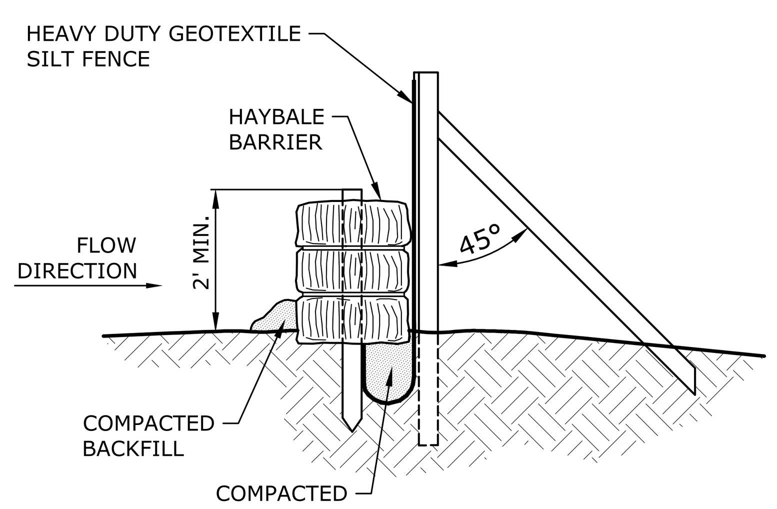
1. THE PROPOSED DEVELOPMENT IS ENTITLED 64 DANBURY ROAD, WILTON, CONNECTICUT.
2. ESTIMATED:
   PROJECT START: SPRING 2024
   PROJECT COMPLETION: SUMMER 2026
3. EROSION CONTROL NARRATIVE REFERS TO DRAWINGS C-501 THROUGH C-504.
4. THE PROPOSED SITE DEVELOPMENT WILL CONSIST OF BUILDING DEMOLITION, CLEARING AND GRUBBING THE EXISTING SITE, EXCAVATION,CONSTRUCTION OF STORMWATER MANAGEMENT, UTILITIES, AND ROUGH GRADING OF BUILDING, PARKING AREAS, SIDEWALKS AND CURBING.
5. THE DEVELOPMENT IS LOCATED ON DANBURY ROAD IN WILTON, CONNECTICUT.

CONSTRUCTION SEQUENCE - INITIAL PHASE

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER OR OWNER'S REPRESENTATIVE, TOWN PLANNER, DESIGN ENGINEER, SITE ENGINEER, CONTRACTOR AND SITE SUPERINTENDENT TO ESTABLISH THE LIMITS OF CONSTRUCTION, CONSTRUCTION PROCEDURES AND MATERIAL STOCKPILE AREAS.
2. FIELD STAKE THE LIMITS OF CONSTRUCTION.
3. INSTALL ALL APPLICABLE SOIL AND EROSION CONTROL MEASURES AROUND THE PERIMETER OF THE SITE TO THE EXTENT POSSIBLE. THIS WILL INCLUDE SILTATION FENCE AROUND THE PROJECT AS SHOWN ON THE PLANS.
4. INSTALL CONSTRUCTION ACCESS ROAD AND ANTI-TRACKING PAVEMENT IN THE AREAS AS SHOWN ON THE PLANS. ALL CONSTRUCTION ACCESS SHALL BE INTO THE SITE THROUGH THE ANTI-TRACKING PADS.
5. ESTABLISH TEMPORARY STAGING AREA.
6. BEGIN BUILDING DEMOLITION AND PAVEMENT REMOVAL.
7. CONSTRUCT THE INITIAL STORM DRAINAGE AS SHOWN ON THE DRAINAGE PLANS.
8. INSTALL WATER QUALITY SYSTEMS AND ASSOCIATED DRAINAGE NETWORK TO THE MAXIMUM EXTENT PRACTICABLE. GRADE THE AREA AROUND THE STORM DRAINAGE SYSTEM AS NECESSARY.
9. BEGIN ROUGH ROADWAY GRADING.
10. INSTALL REMAINING DRAINAGE SYSTEM TO THE EXTENT NECESSARY TO PROVIDE POSITIVE DRAINAGE.
11. BEGIN INSTALLATION OF SANITARY SEWER SYSTEM, WATER AND OTHER UTILITIES TO EXTENT NECESSARY.
12. PROVIDE SILT FENCE/HAYBALE BARRIER AROUND SOIL STOCKPILE AREA. PROVIDE TEMPORARY VEGETATIVE COVER (DEFINED IN EROSION CONTROL NOTES) ON ALL EXPOSED SURFACES.
13. BEGIN BUILDING CONSTRUCTION.
14. PAVE BINDER COURSE ON PARKING AND DRIVEWAYS FOR NON-POROUS PAVEMENT AREAS.
15. ESTABLISH TEMPORARY VEGETATIVE COVER.

CONSTRUCTION SEQUENCE - FINAL PHASE

1. REPAIR PERIMETER SEDIMENT & EROSION CONTROLS AS NEEDED.
2. CLEAN/REPLACE CONTROLS FROM PREVIOUS PHASE AS NEEDED.
3. FINE GRADE SITE.
4. CONTINUE CONSTRUCTION OF BUILDING.
5. COMPLETE CONSTRUCTION OF SIDEWALKS.
6. ESTABLISH FINAL VEGETATIVE COVER AND LANDSCAPING.
7. PAVE SURFACE COURSE ON ROADWAYS.
8. REMOVE EROSION CONTROLS WHEN SITE IS STABILIZED.



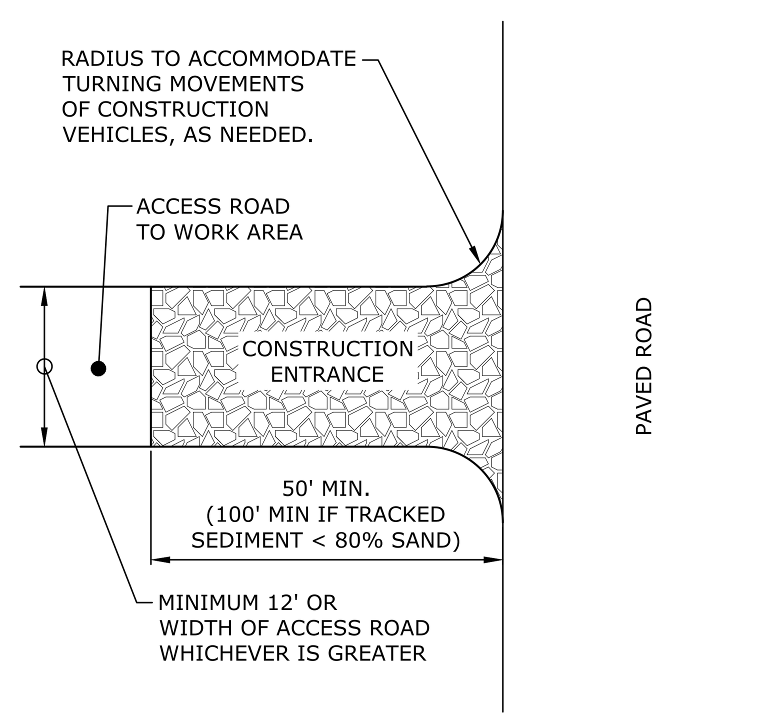
NOTE:

1. BACKFILL AND COMPACT THE EXCAVATED SOIL AS SHOWN ON THE UPHILL SIDE OF THE BARRIER TO PREVENT PIPING.

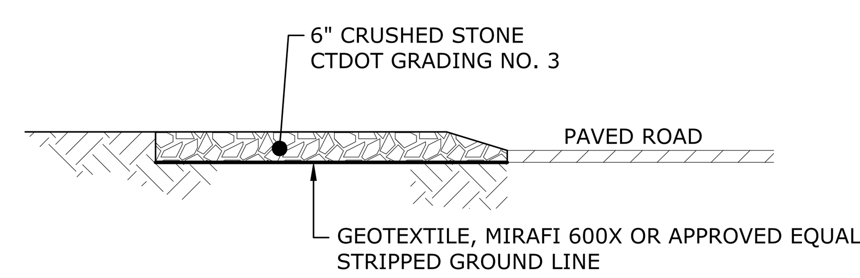
SILT FENCE AND HAYBALE COMBINED BARRIER
NO SCALE

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE "2024 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL", DEP BULLETIN NO. 34, AND ALL AMENDMENTS AND ADDENDA THERETO AS PUBLISHED BY THE CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
2. LAND DISTURBANCE SHALL BE KEPT TO THE MINIMUM NECESSARY FOR CONSTRUCTION OPERATIONS.
3. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE PLAN AND ELSEWHERE AS ORDERED BY THE ENGINEER.
4. ALL CATCH BASINS SHALL BE PROTECTED WITH A SILT SACKS, HAYBALE RING, SILT FENCE OR BLOCK AND STONE INLET PROTECTION THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
5. WHENEVER POSSIBLE, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION. SEE "EROSION CONTROL NARRATIVE".
6. ADDITIONAL CONTROL MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PERIOD AS ORDERED BY THE ENGINEER.
7. ALL SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
8. SEDIMENT REMOVED SHALL BE DISPOSED OF OFF SITE OR IN A MANNER AS REQUIRED BY THE ENGINEER.
9. THE CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION AND MAINTENANCE OF ALL CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PERIOD.
10. ALL DISTURBED AREAS TO BE LEFT EXPOSED FOR MORE THAN 30 DAYS SHALL BE PROTECTED WITH A TEMPORARY VEGETATIVE COVER. SEED THESE AREAS WITH PERENNIAL RYEGRASS AT THE RATE OF 40 LBS. PER ACRE (1 LB. PER 1,000 SQ. FT). APPLY SOIL AMENDMENTS AND MULCH AS REQUIRED TO ESTABLISH A UNIFORM STAND OF VEGETATION OVER ALL DISTURBED AREAS.
11. THE CONSTRUCTION CONTRACTOR SHALL UTILIZE APPROVED METHODS/MATERIALS FOR PREVENTING THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES ONTO ADJACENT PROPERTIES AND SITE AREAS.
12. THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A SUPPLY OF SILT FENCE/HAYBALES AND ANTI-TRACKING CRUSHED STONE ON SITE FOR EMERGENCY REPAIRS.
13. ALL DRAINAGE STRUCTURES SHALL BE PERIODICALLY INSPECTED WEEKLY BY THE CONSTRUCTION CONTRACTOR AND CLEANED TO PREVENT THE BUILD-UP OF SILT.
14. THE CONSTRUCTION CONTRACTOR SHALL CAREFULLY COORDINATE THE PLACEMENT OF EROSION CONTROL MEASURES WITH THE PHASING OF CONSTRUCTION.
15. KEEP ALL PAVED SURFACES CLEAN. SWEEP AND SCRAPE BEFORE FORECASTED STORMS.
16. TREAT ALL UNPAVED SURFACE WITH 4" MINIMUM OF TOPSOIL PRIOR TO FINAL STABILIZATION.
17. HAYBALE BARRIERS AND SILT FENCING SHALL BE INSTALLED ALONG THE TOE OF CRITICAL CUT AND FILL SLOPES.
18. THE CONTRACTOR SHALL NOTIFY THE TOWN OFFICIALS PRIOR TO THE INSTALLATION OF EROSION CONTROLS, CUTTING OF TREES, OR ANY EXCAVATION.
19. ALL TRUCKS LEAVING THE SITE MUST BE COVERED.
20. SOME CONTROL MEASURES ARE PERMANENT. THESE STRUCTURES SHALL BE CLEANED AND REPLENISHED AT THE END OF CONSTRUCTION. LOCATIONS OF THE PERMANENT CONTROL STRUCTURES ARE SHOWN ON THE DRAINAGE PLANS.
21. ALL SEDIMENTATION AND EROSION CONTROLS SHALL BE CHECKED WEEKLY AND/OR AFTER EACH RAIN FALL EVENT. NECESSARY REPAIRS SHALL BE MADE WITHOUT DELAY.
22. PRIOR TO ANY FORECASTED RAINFALL, EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED AND REPAIRED AS NECESSARY.
23. AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED, EROSION CONTROLS MAY BE REMOVED ONCE AUTHORIZATION TO DO SO HAS BEEN SECURED FROM THE OWNER. DISTURBED AREAS SHALL BE SEEDED AND MULCHED.
24. ALL EMBANKMENT SLOPES 3:1 OR GREATER TO BE STABILIZED WITH EROSION CONTROL BLANKET, NORTH AMERICAN GREEN SC150BN OR APPROVED EQUIVALENT, UNLESS OTHERWISE NOTED ON PLANS.

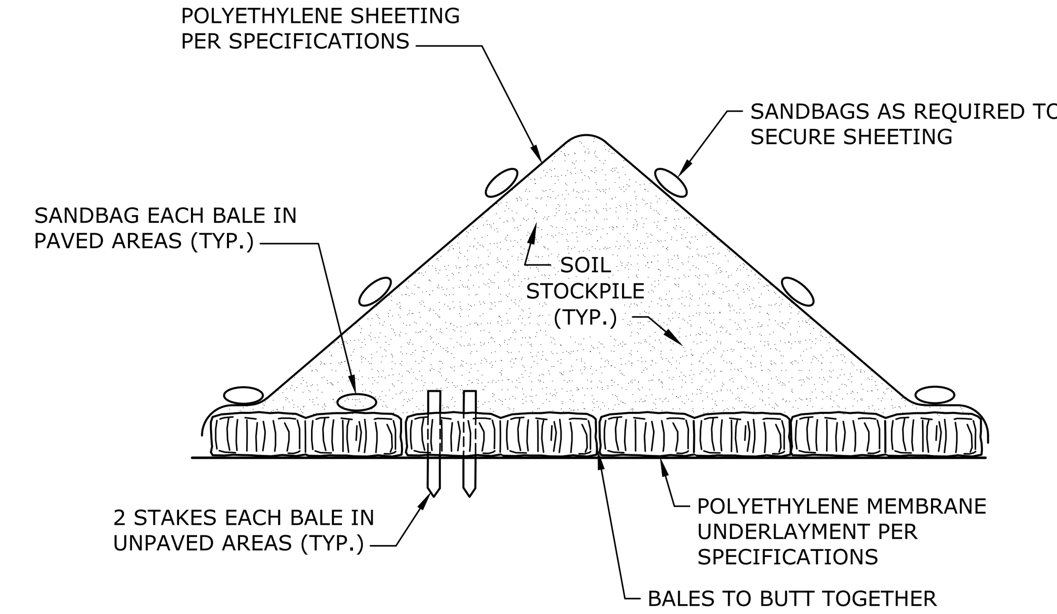


PLAN



ELEVATION

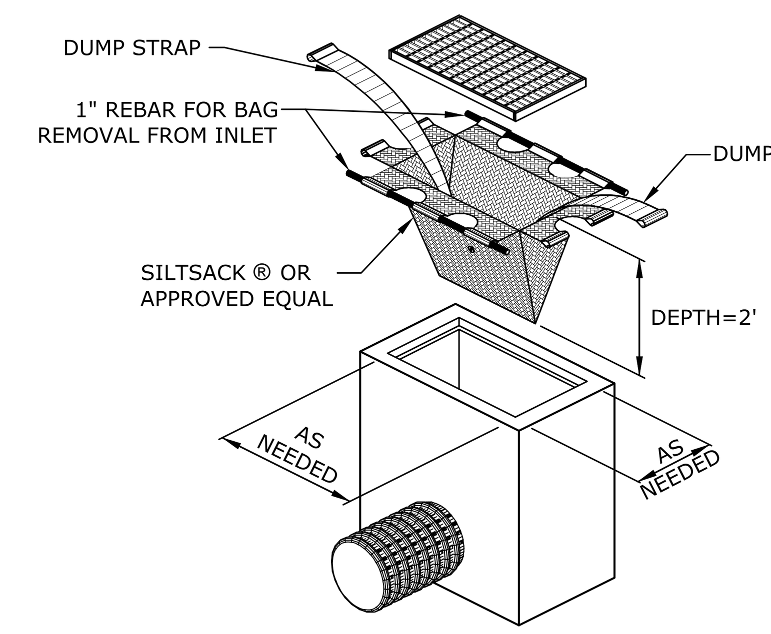
CONSTRUCTION ENTRANCE
NO SCALE



NOTE:

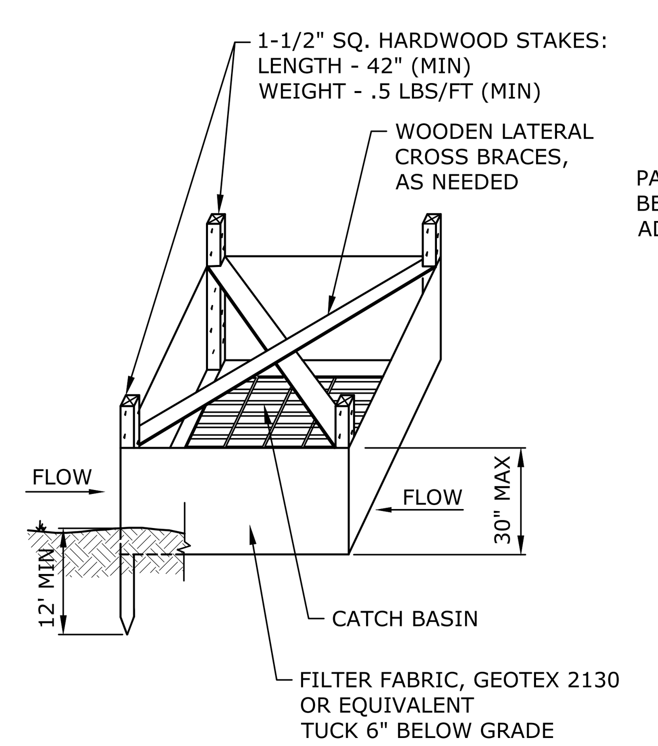
1. DIMENSIONS AS SHOWN ON PLANS

TEMPORARY CONTROLLED STOCKPILE AREA
NO SCALE

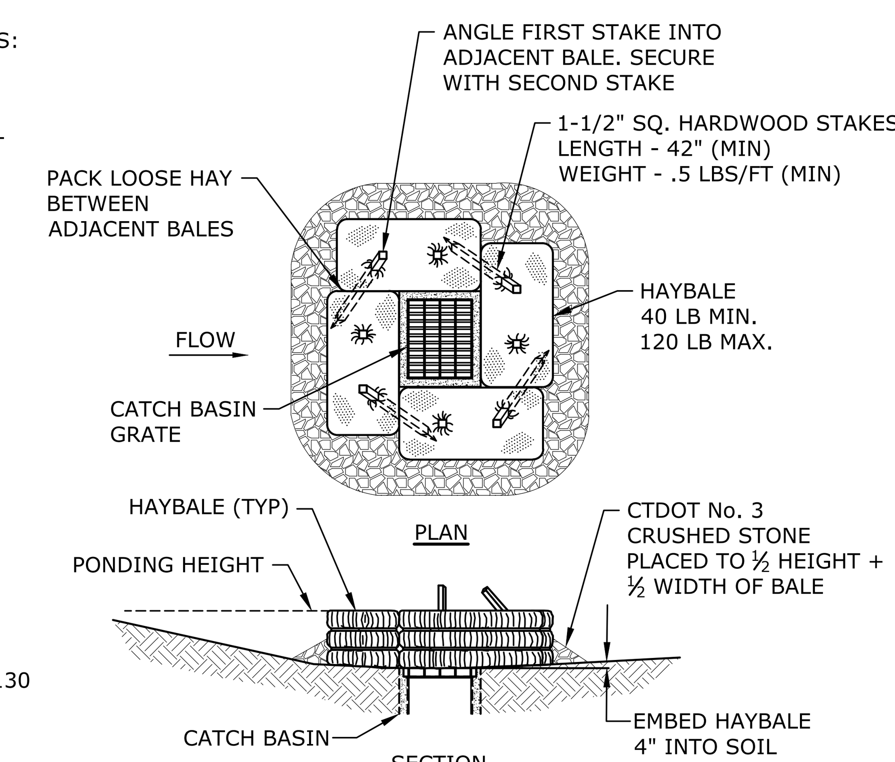


SILTSACK MANUFACTURED BY:
ACF ENFIRONMENTAL
2831 CARDWELL ROAD
RICHMOND, VIRGINIA 23237

SILTSACK®
NO SCALE



SILT FENCE INSTALLATION AT CATCH BASIN AT LOW POINTS



HAYBALE FILTER INSTALLATION AT CATCH BASIN AT LOW POINTS

CATCH BASIN EROSION CONTROL
NO SCALE

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

12/21/25

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
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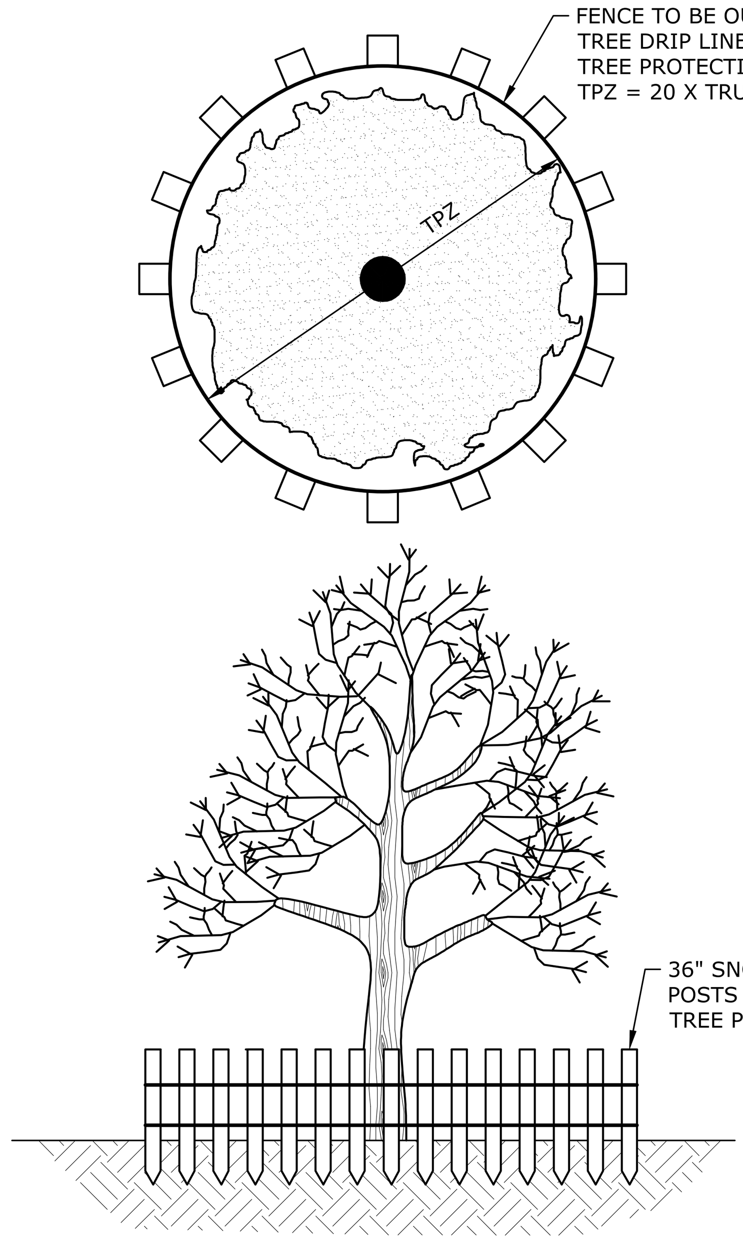
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

SOIL EROSION AND SEDIMENT CONTROL NOTES NARRATIVE AND DETAILS

SCALE: AS SHOWN

C-503

Last Saved: 12/27/2023
Plotted On: Dec 29, 2023 8:09am By: ELindquist
Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Drawings_Figures\AutoCAD\Sheet\F0173-001-C-501-SESC.dwg



TREE PROTECTION
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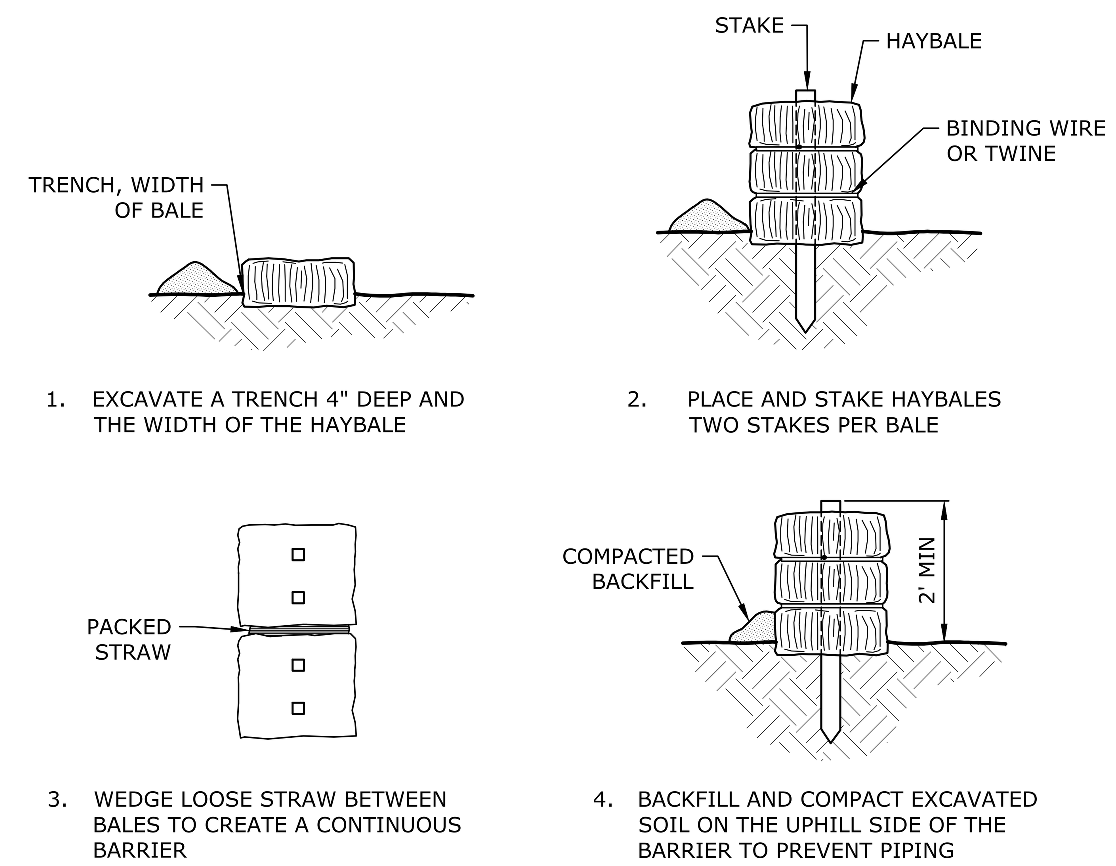

PLACEMENT AND CONSTRUCTION OF HAYBALE BARRIER
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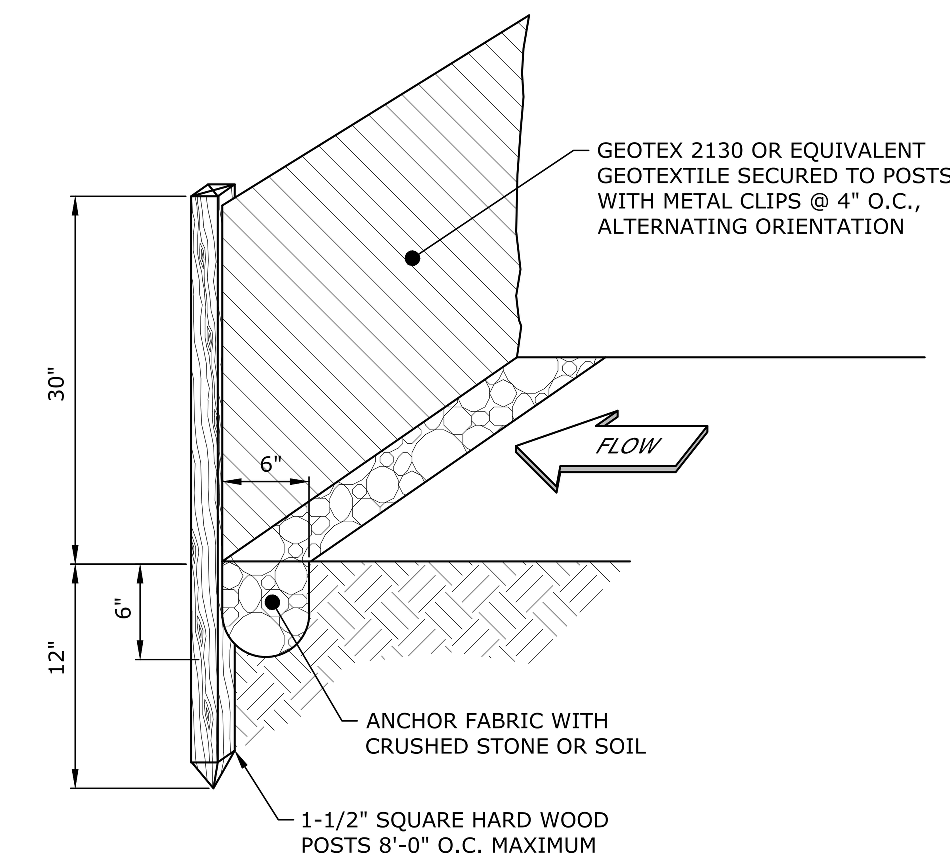

SILT FENCE
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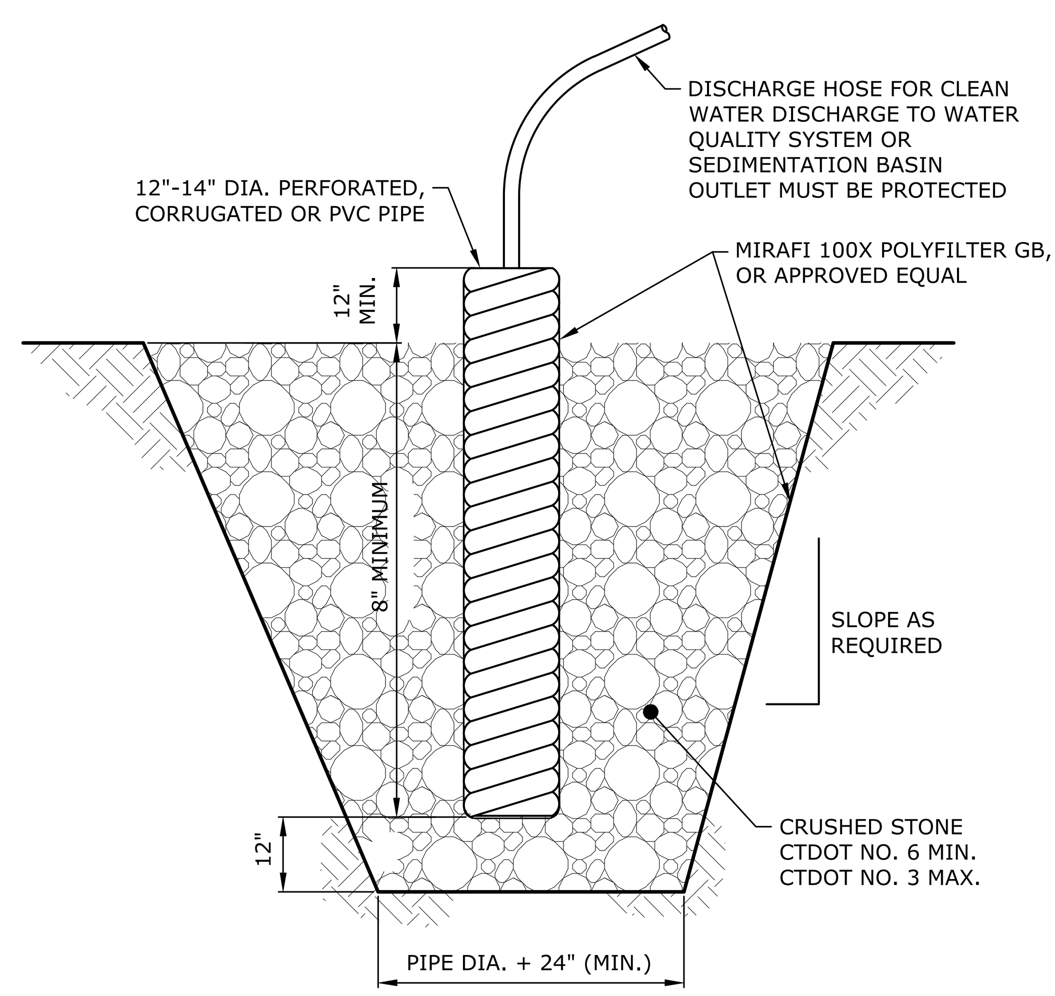
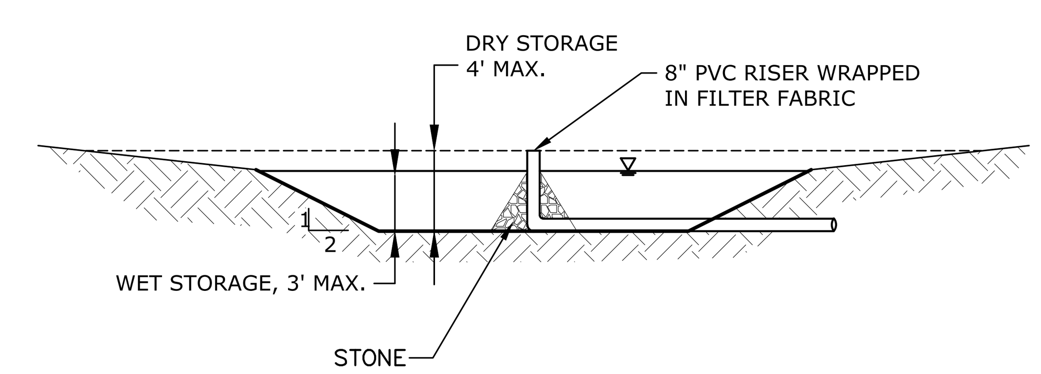


NOTES:

1. PERFORATIONS SHALL BE CIRCULAR OR SLOTS, NOT TO EXCEED 1/2" DIAMETER.
2. SIDE SLOPES TO MEET OSHA TRENCHING REQUIREMENTS.

SUMP PIT DETAIL (IF REQUIRED)
NO SCALE



TEMPORARY SEDIMENT TRAP
NO SCALE

Tighe&Bond

1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

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DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

SOIL EROSION AND SEDIMENT CONTROL DETAILS

SCALE: AS SHOWN

C-504

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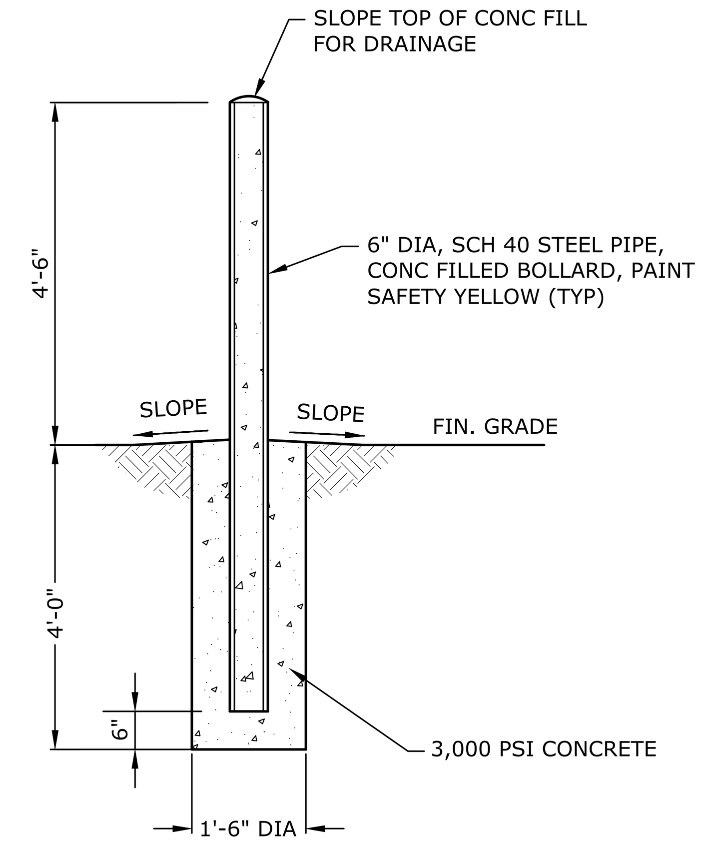

6" DIAMETER STEEL UTILITY BOLLARD
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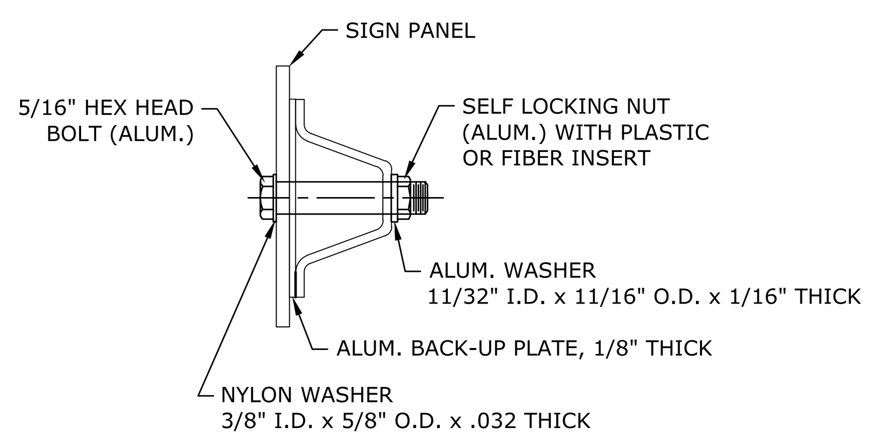

TYPICAL SIGN PANEL ATTACHMENT
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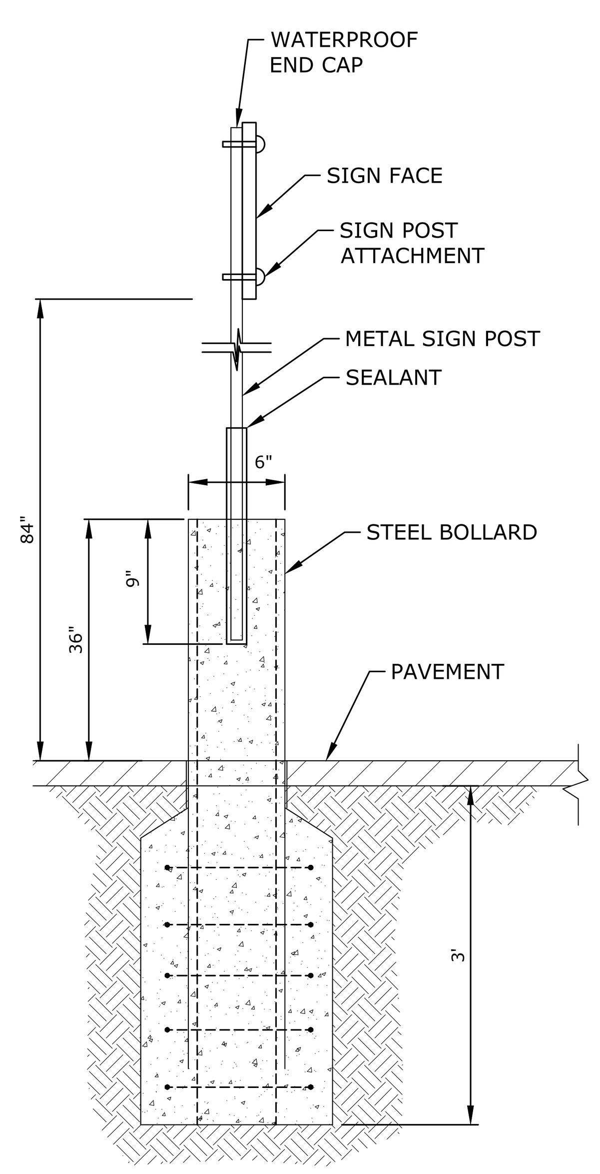
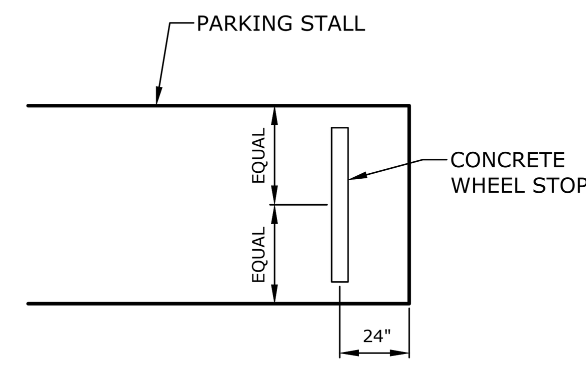
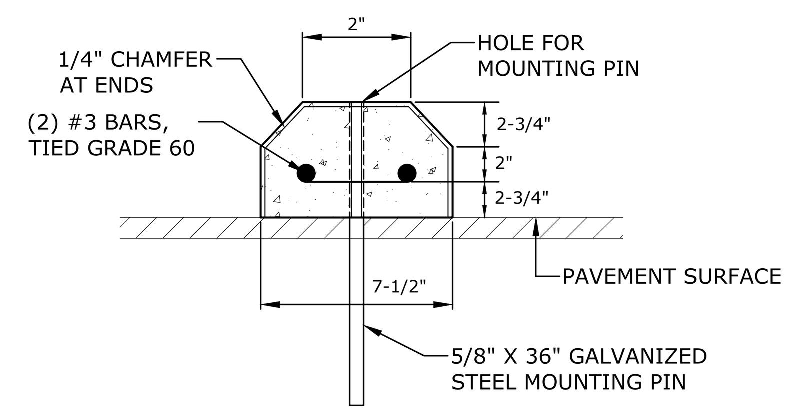


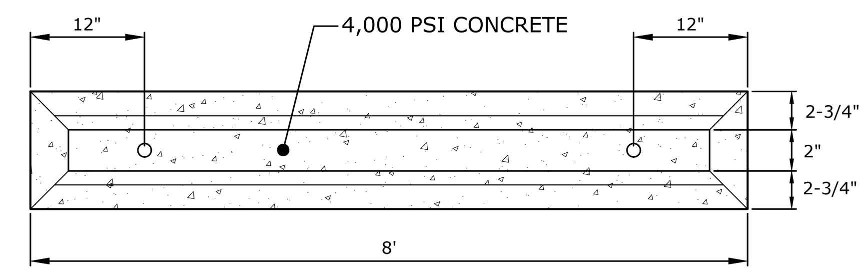
BOLLARD SIGN MOUNTING DETAIL
NO SCALE



PLACEMENT OF WHEEL STOP

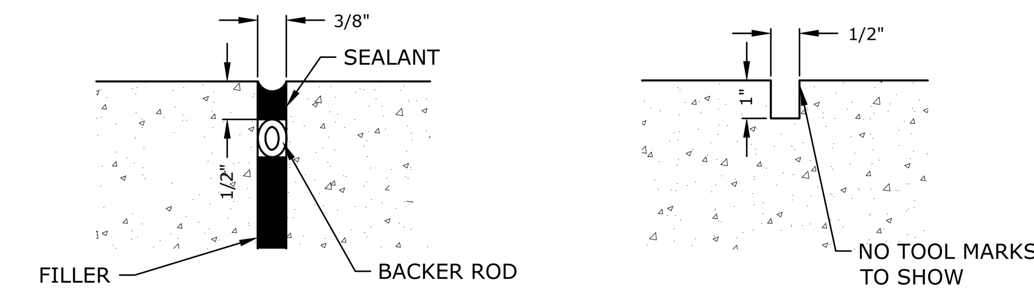


SECTION



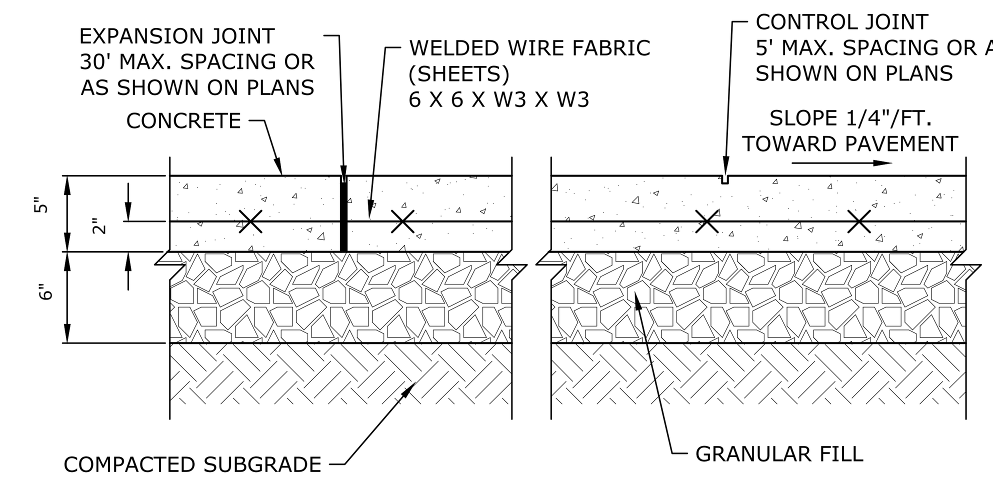
PLAN

CONCRETE WHEEL STOP DETAIL
NO SCALE

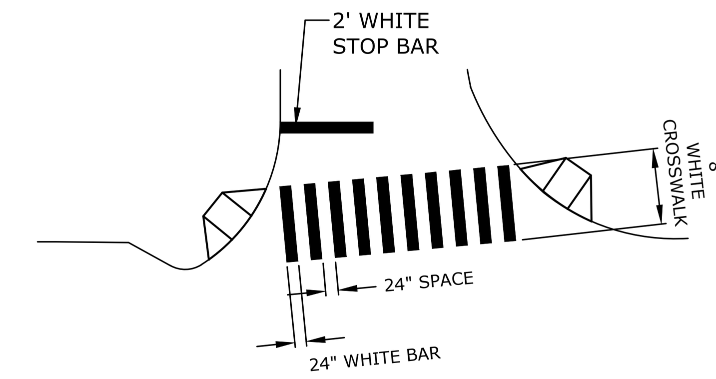


EXPANSION JOINT

CONTROL JOINT

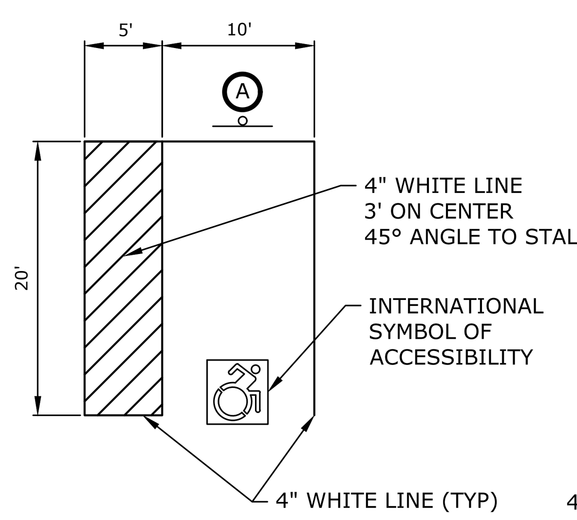


CONCRETE SIDEWALK DETAIL
NO SCALE

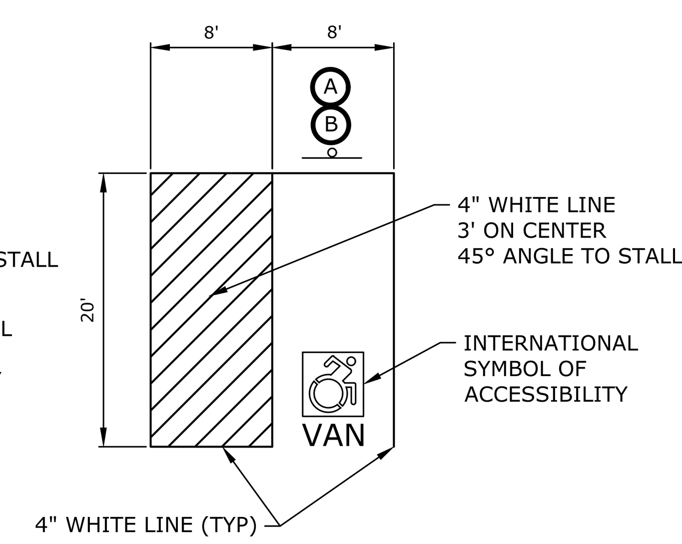


CROSSWALK & STOP BAR

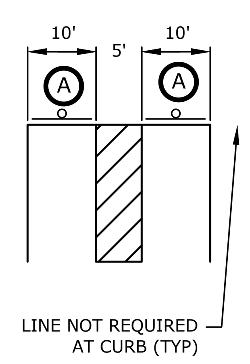
TYPICAL PAVEMENT MARKING DETAILS
NO SCALE



ACCESSIBLE SINGLE

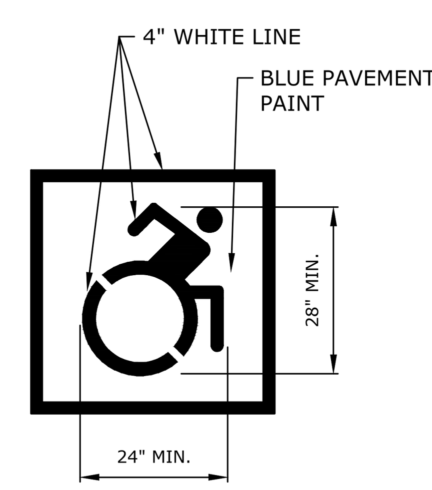


VAN ACCESSIBLE



ACCESSIBLE SHARED

SIGNS

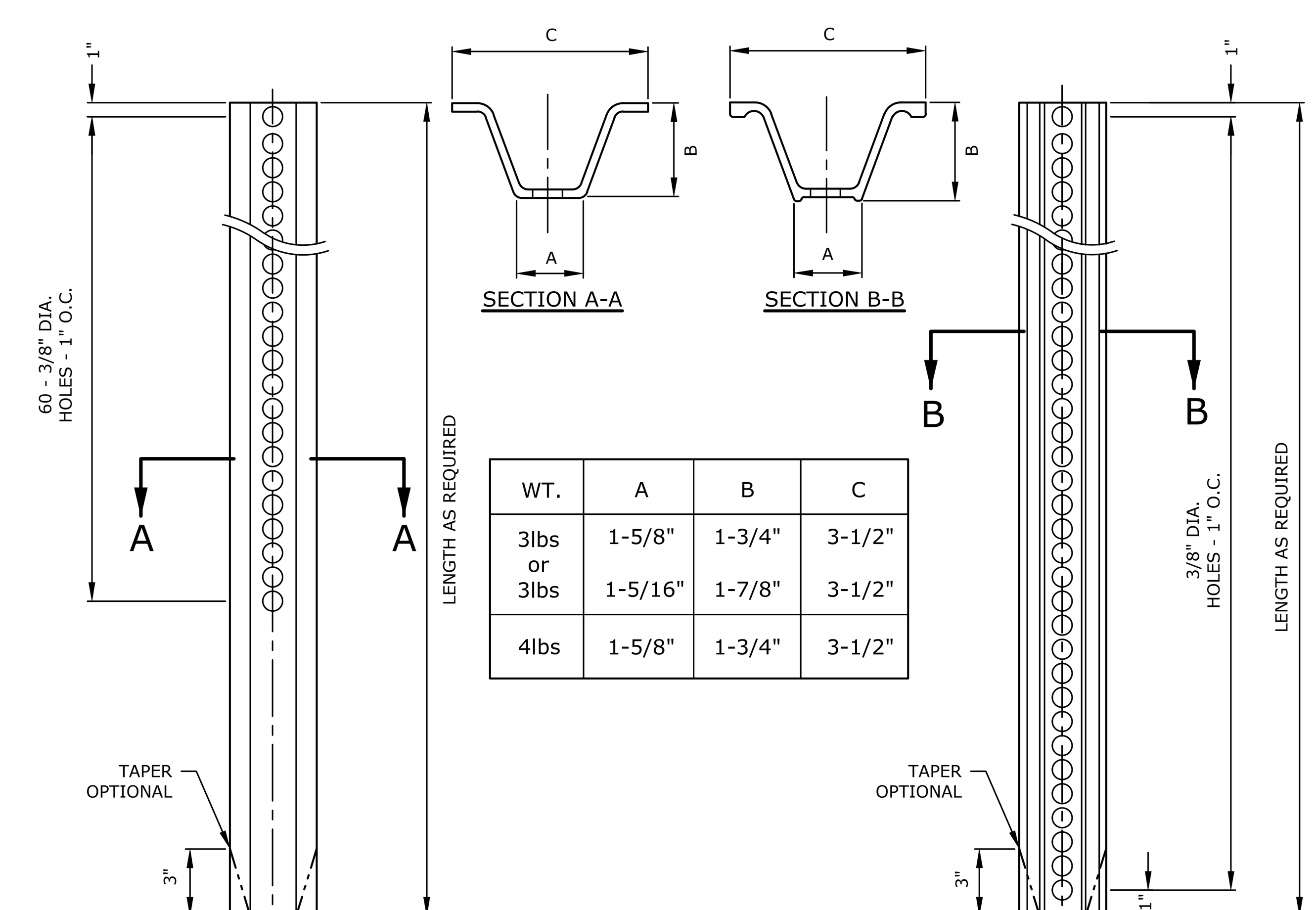


INTERNATIONAL SYMBOL OF ACCESSIBILITY

NOTES:

1. SIGN LOCATED AT ALL HANDICAPPED PARKING SPACES.
2. 18' X 15' D.O.T STANDARD ACCESSIBLE PARKING STALL
3. SIGN BACKGROUND - BLUE REFLECTIVE
4. LETTERS, GRAPHICS & BORDER - WHITE REFLECTIVE

ACCESSIBLE PARKING STRIPING DETAILS
NO SCALE



WT.	A	B	C
3lbs or 3lbs	1-5/8" 1-5/16"	1-3/4" 1-7/8"	3-1/2" 3-1/2"
4lbs	1-5/8"	1-3/4"	3-1/2"

NOTES:

1. STEEL FOR POSTS SHALL CONFORM TO THE MECHANICAL REQUIREMENTS OF ASTM A 499-81 GRADE 60 AND TO THE CHEMICAL REQUIREMENTS OF ASTM A1-76 CARBON STEEL TEE RAIL HAVING NOMINAL WEIGHT OF 91 LBS. OR GREATER PER LINEAR YARD.
2. AFTER FABRICATION, ALL STEEL POSTS SHALL BE GALVANIZED TO MEET THE REQUIREMENTS OF ASTM A 123.
3. ALL SIGN POSTS SHALL HAVE "BREAKAWAY" FEATURES THAT MEET AASHTO REQUIREMENTS CONTAINED IN "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS-1985." THE "BREAKAWAY" FEATURES SHALL BE STRUCTURALLY ADEQUATE TO CARRY THE SIGNS SHOWN IN THE PLANS AT 60 MPH WIND LOADINGS. INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
4. TYPE A POSTS - 3 LB/FT TYPE B POSTS - 4 LB/FT.

TYPICAL METAL SIGN POSTS
NO SCALE

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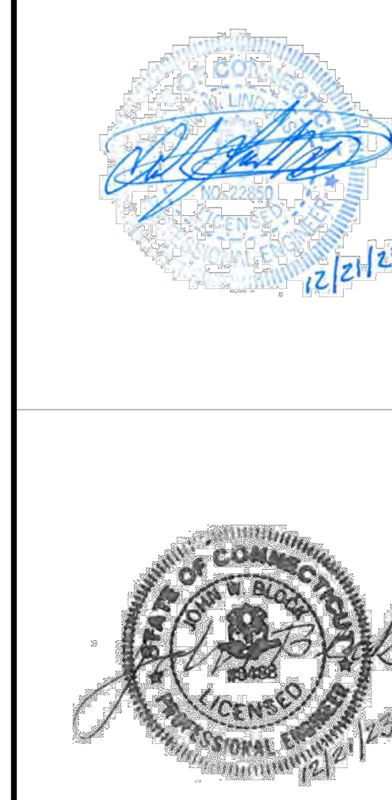
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100



TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-601-DETL.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DETAILS - 1

SCALE: AS SHOWN

C-601

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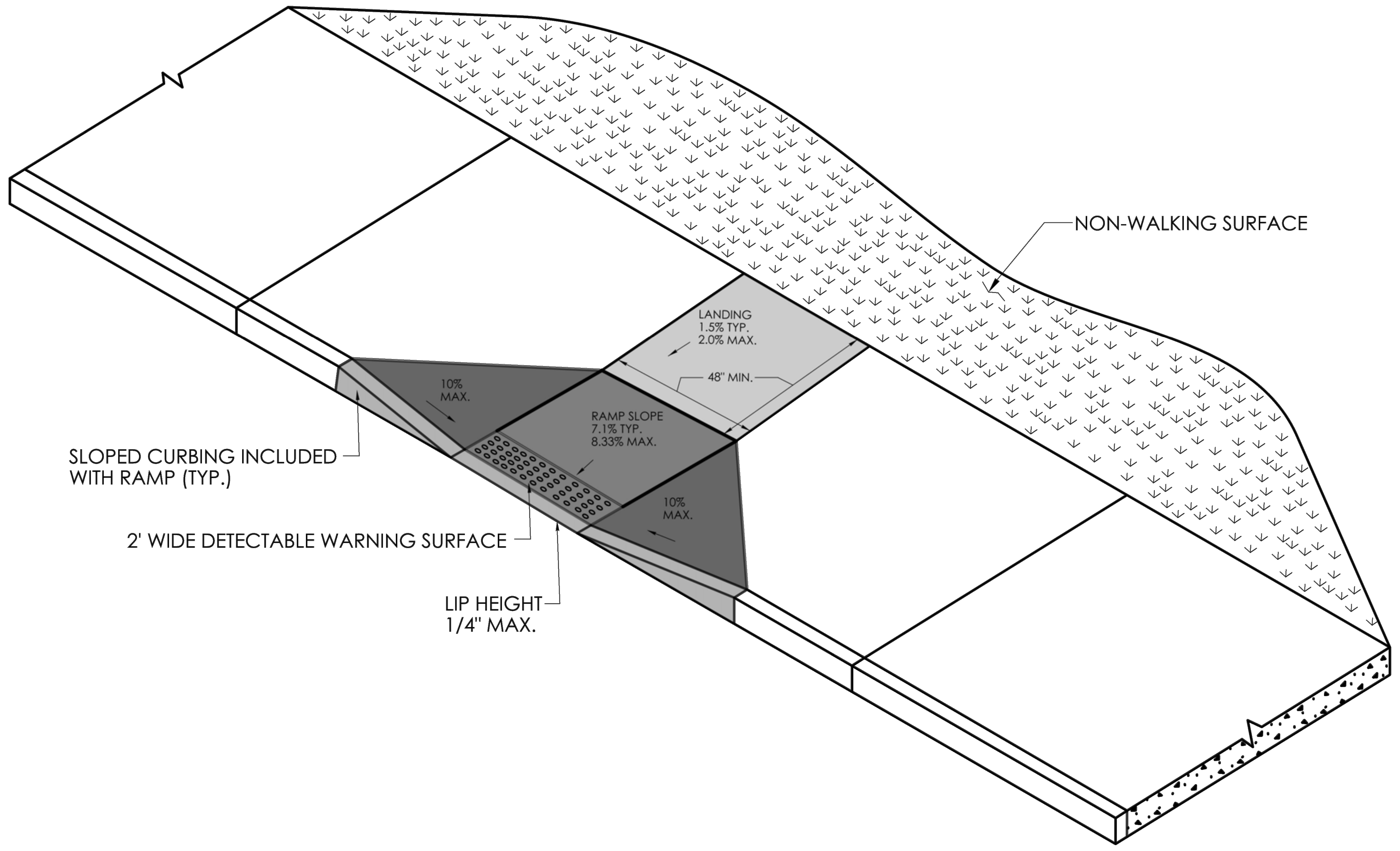

ACCESSIBLE SIDEWALK RAMP - "TYPE 8"
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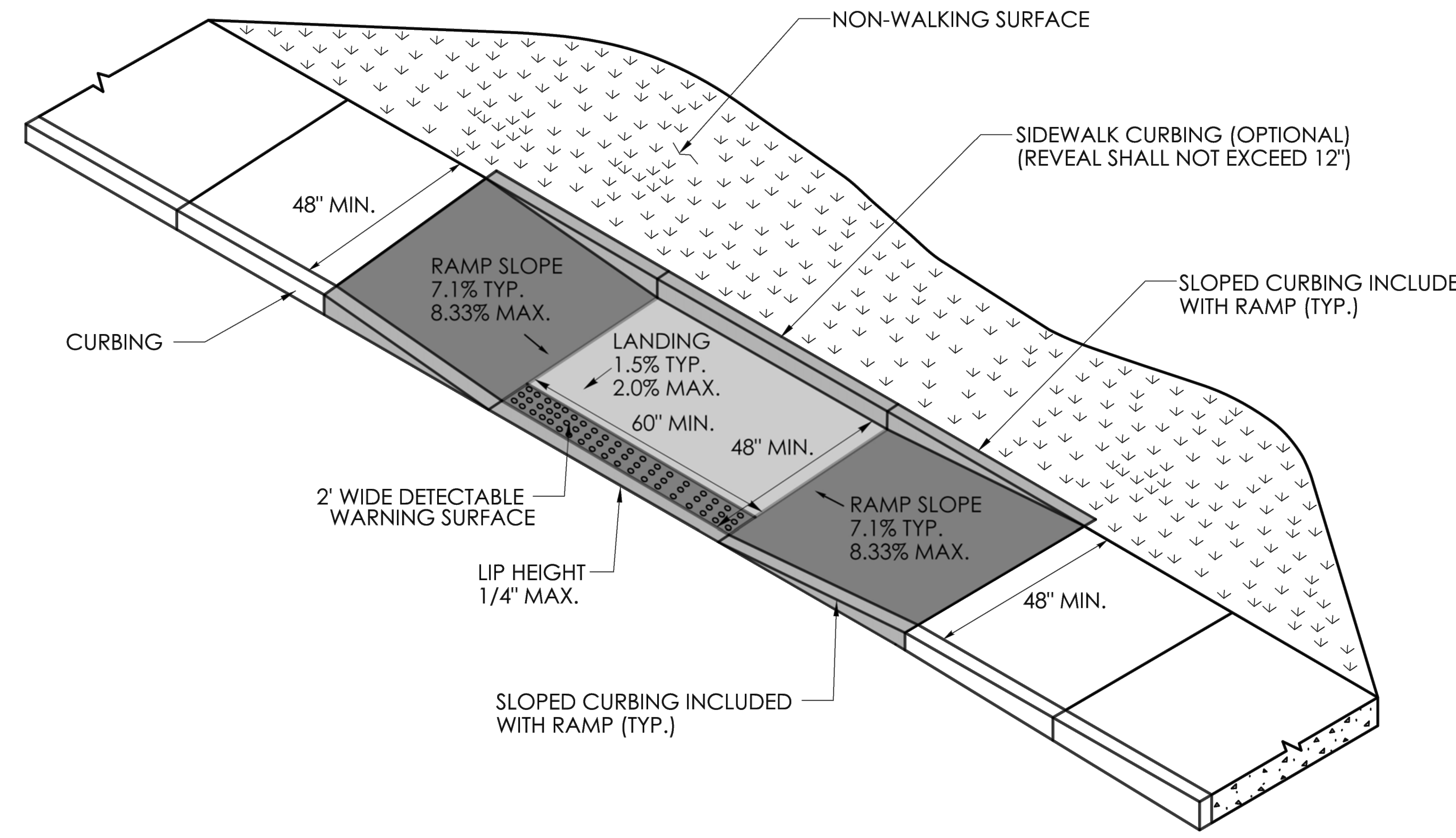

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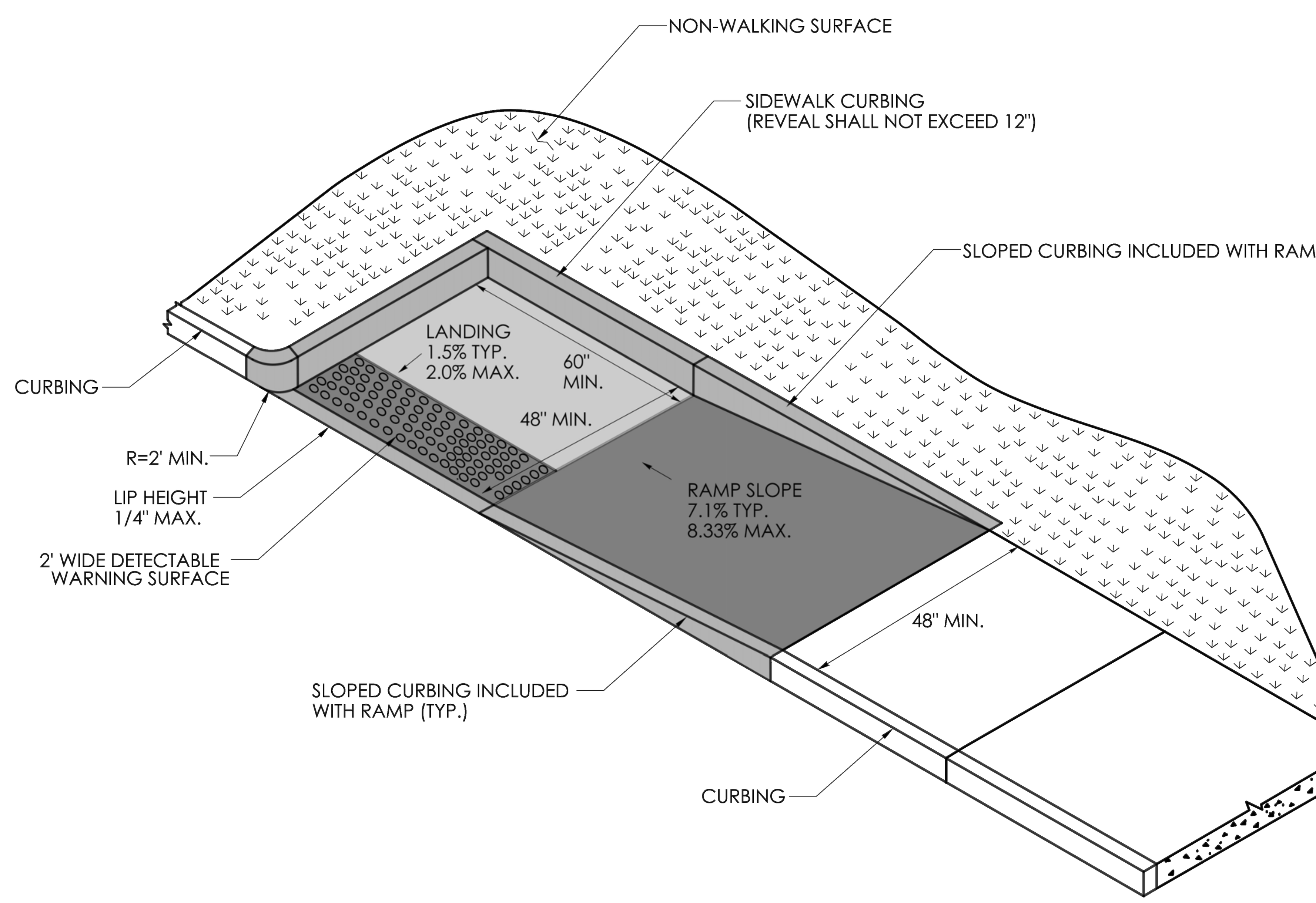

ACCESSIBLE SIDEWALK RAMP - "TYPE 10"
NO SCALE

Tighe&Bond
1000 Bridgeport Avenue
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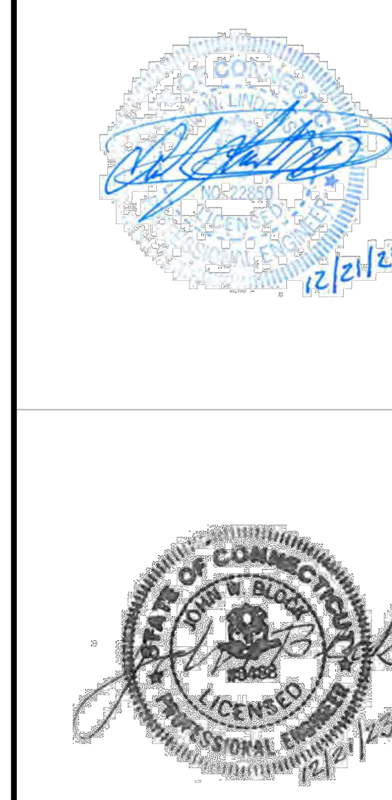
Shelton, CT 06484
(203) 712-1100



TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-601-DETL.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DETAILS - 2

SCALE: AS SHOWN

C-602

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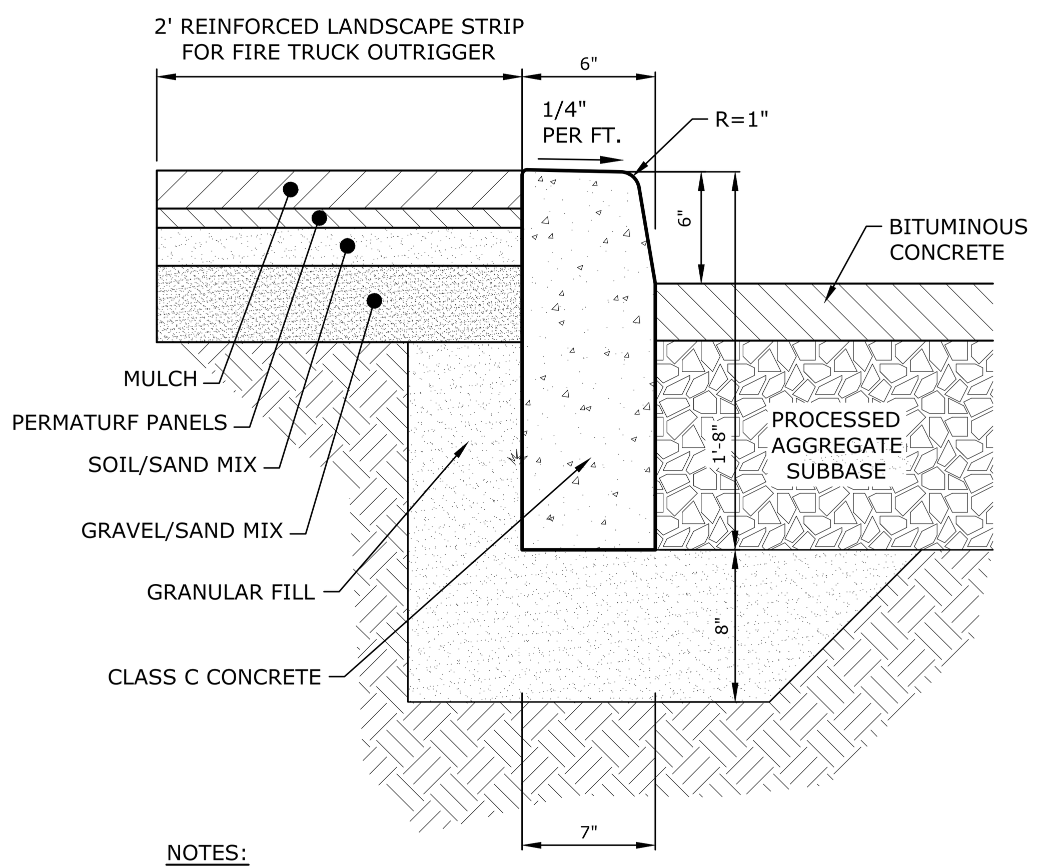
Plotted On:Dec 29, 2023-8:10am By: ELindquist
Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Drawings_Figures\AutoCAD\Sheet\F0173-001-C-601-DETL.dwg

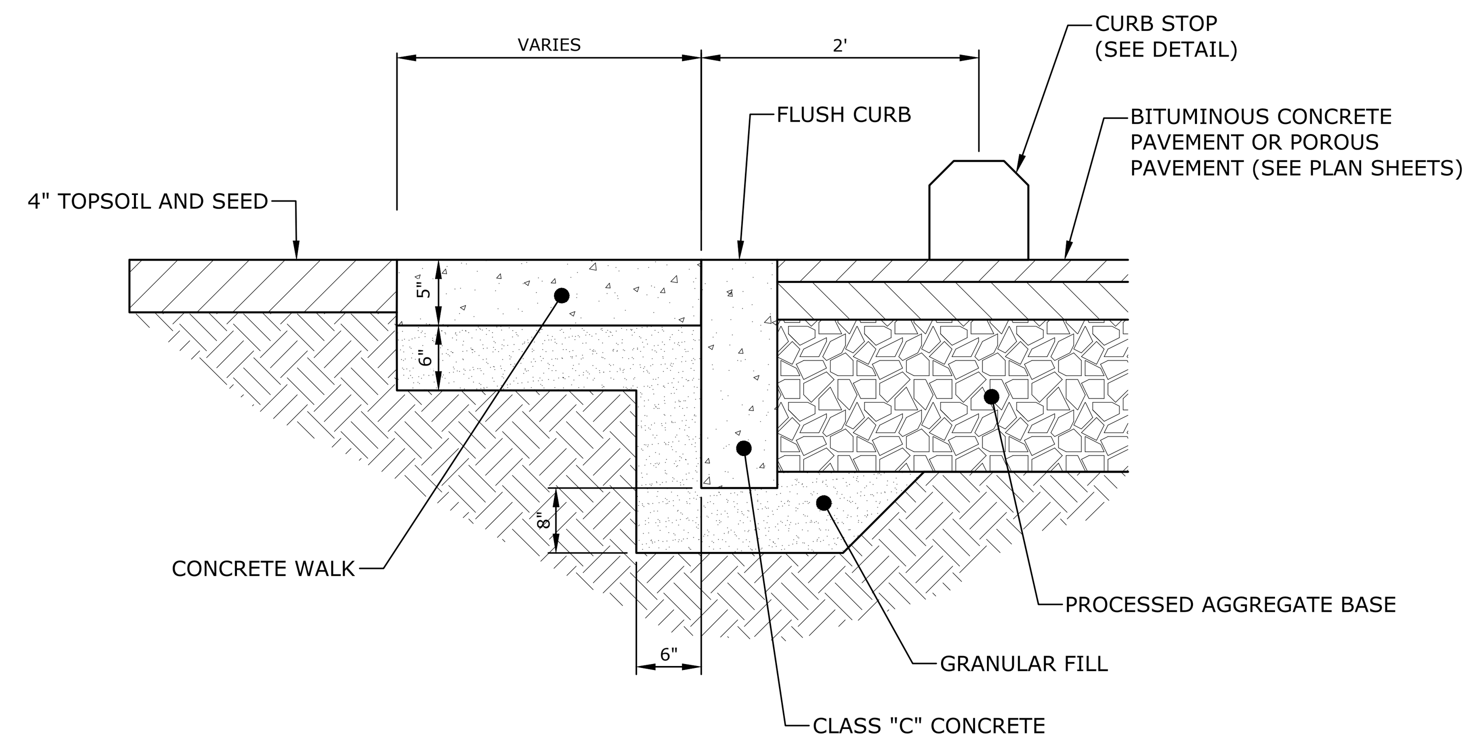


NOTES:

1. CONSTRUCT CURBING IN SECTIONS NOT TO EXCEED 10 FEET IN LENGTH, SUCH THAT THE CURBING JOINTS ALIGN WITH JOINTS IN THE CONCRETE PAVEMENT SLAB. NO SECTION SHALL BE LESS THAN 6 FEET IN LENGTH.

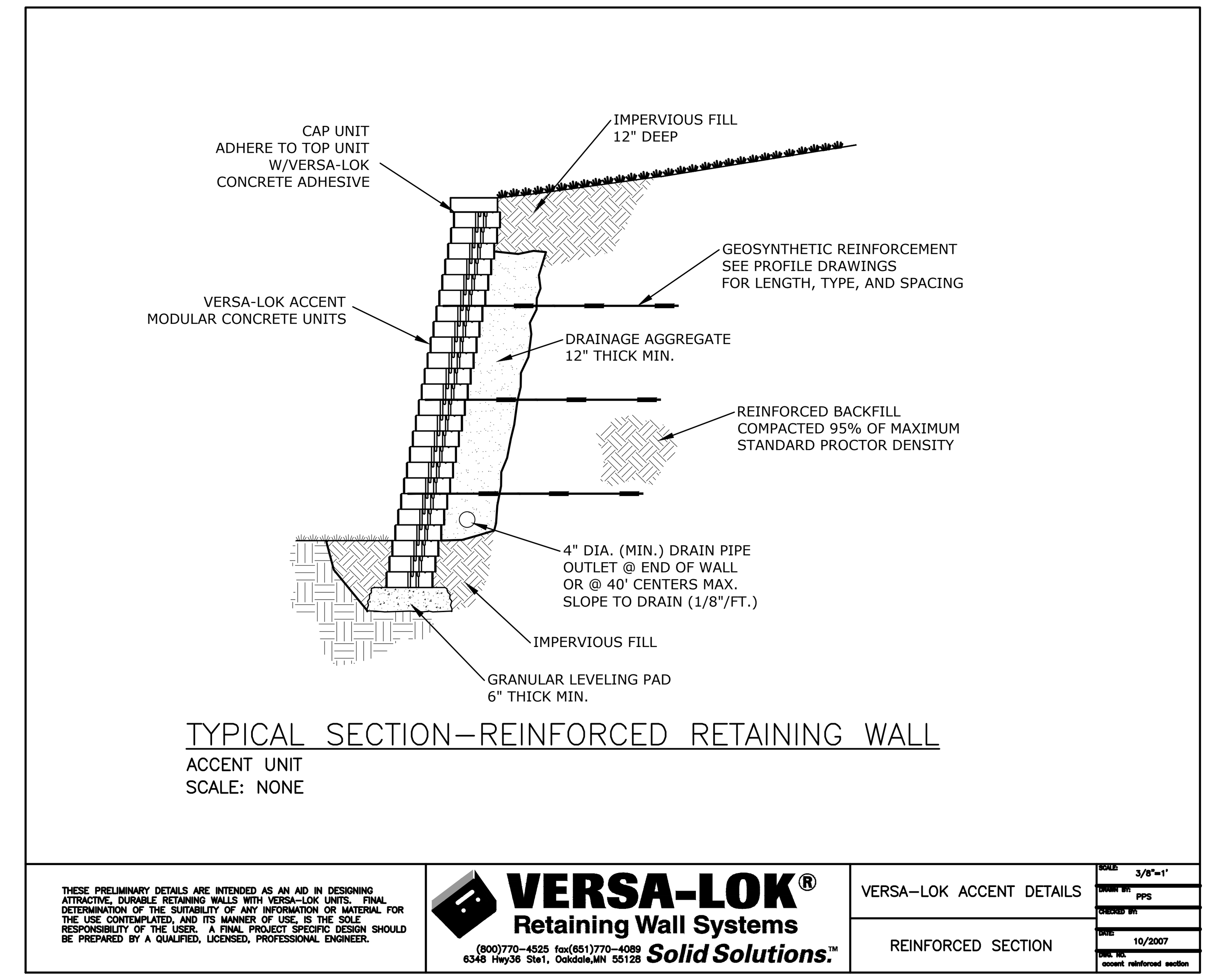
CONCRETE CURB ADJACENT TO REINFORCED LANDSCAPE STRIP

NO SCALE



FLUSH CURB DETAIL

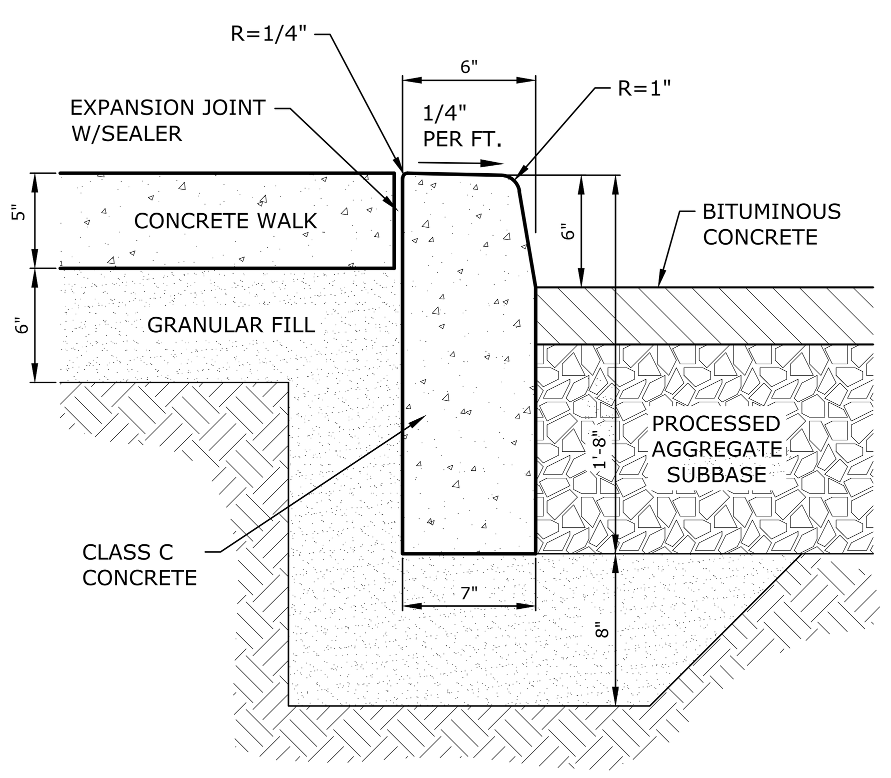
NO SCALE



OR APPROVED EQUAL

MODULAR BLOCK RETAINING WALL

NO SCALE

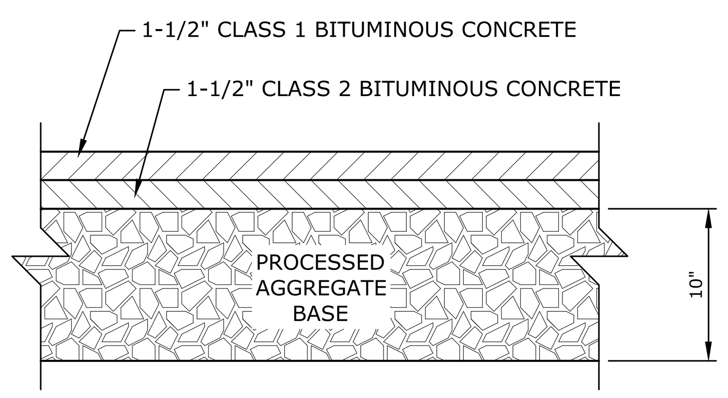


NOTE:

1. CONSTRUCT CURBING IN SECTIONS NOT TO EXCEED 10 FEET IN LENGTH, SUCH THAT THE CURBING JOINTS ALIGN WITH JOINTS IN THE CONCRETE PAVEMENT SLAB. NO SECTION SHALL BE LESS THAN 6 FEET IN LENGTH.

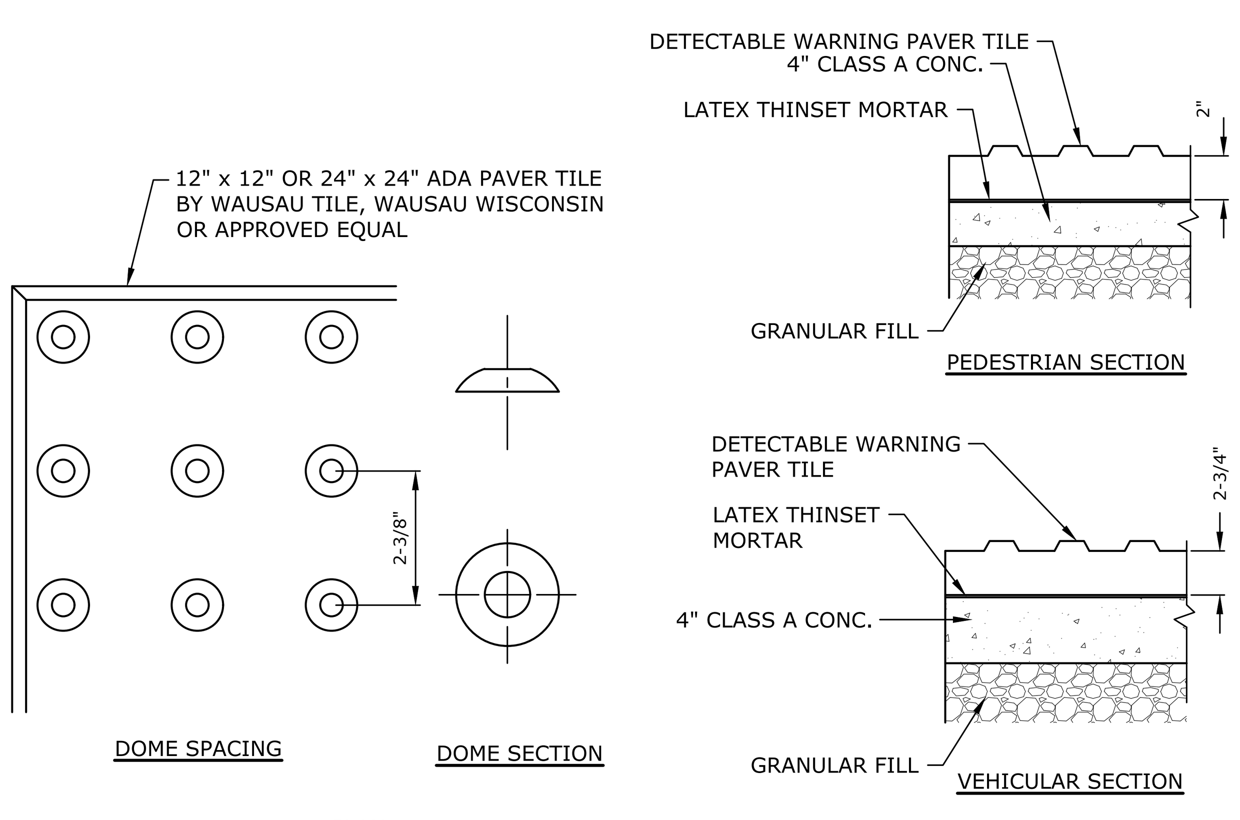
CONCRETE CURB AND CONCRETE SIDEWALK

NO SCALE



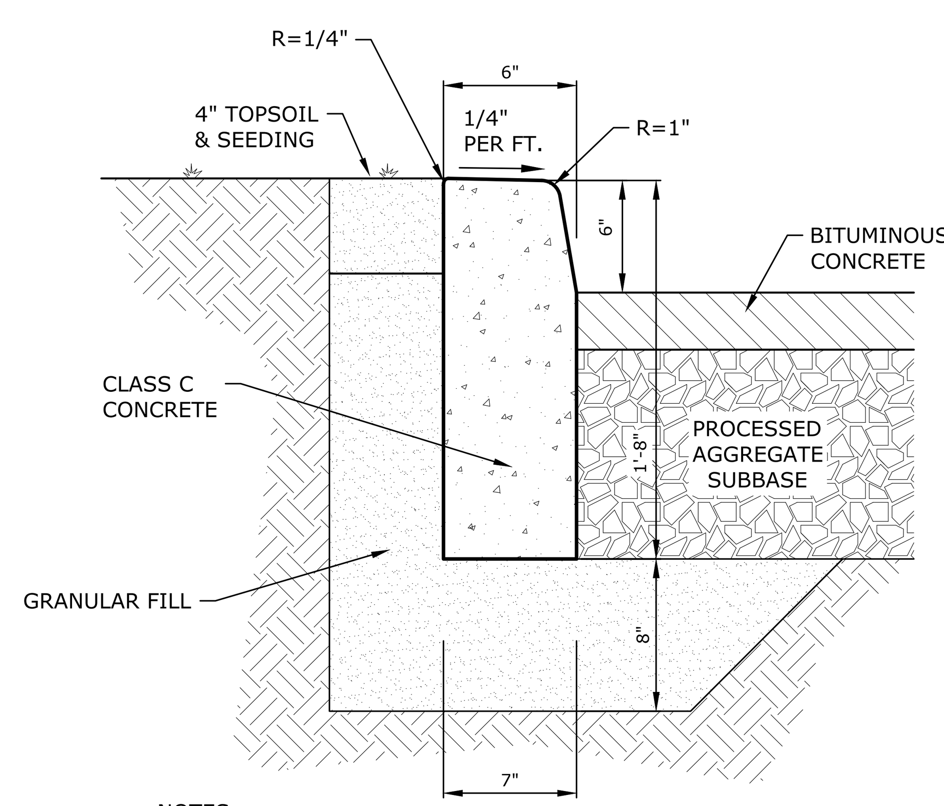
BITUMINOUS CONCRETE PAVEMENT

NO SCALE



DETECTABLE WARNING TILE

NO SCALE

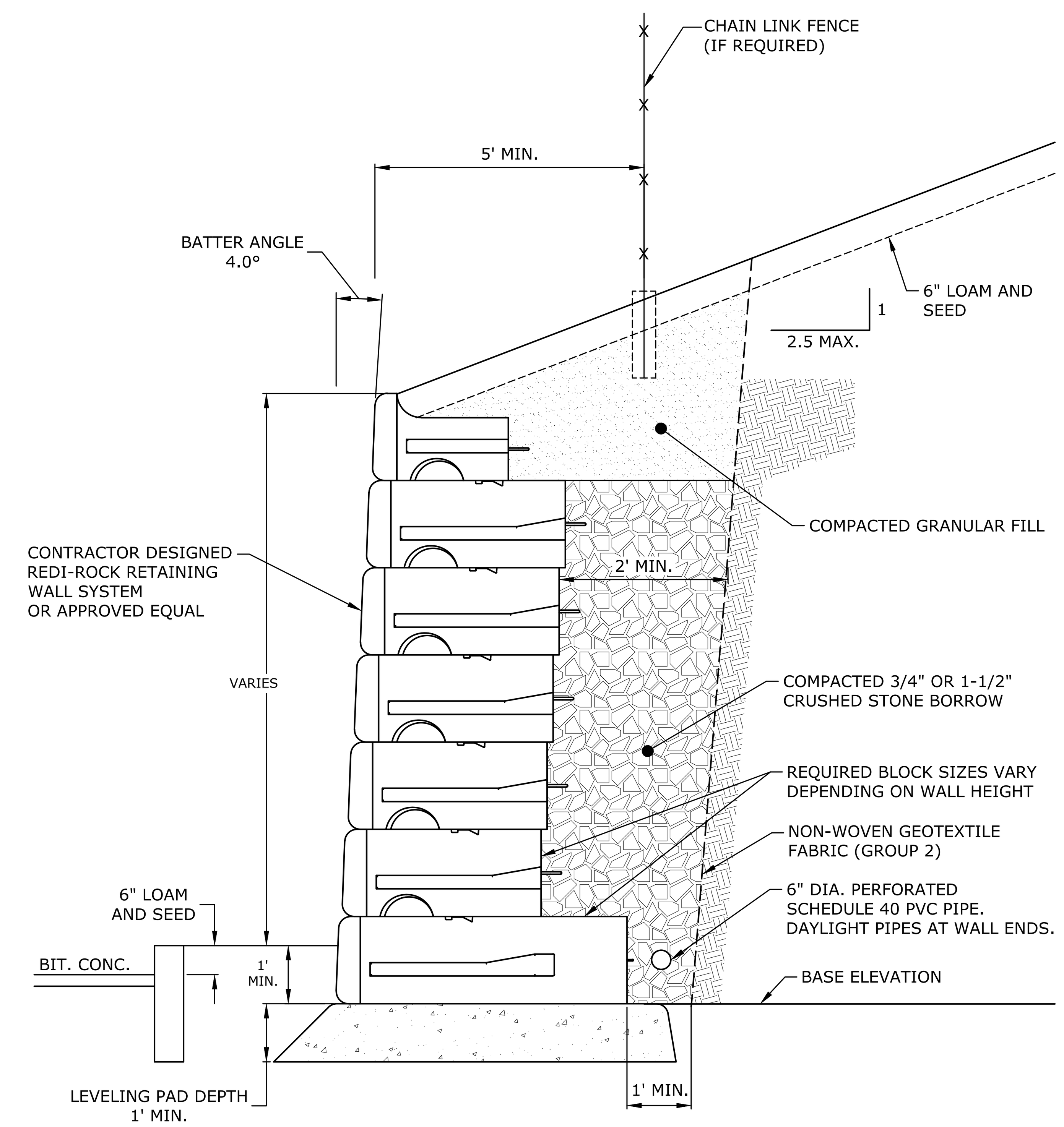


NOTES:

1. CONSTRUCT CURBING IN SECTIONS NOT TO EXCEED 10 FEET IN LENGTH, SUCH THAT THE CURBING JOINTS ALIGN WITH JOINTS IN THE CONCRETE PAVEMENT SLAB. NO SECTION SHALL BE LESS THAN 6 FEET IN LENGTH.

CONCRETE CURB ADJACENT TO GRASS

NO SCALE



NOTE:

1. TEMPORARY EXCAVATIONS FOR WALL AND CRUSHED STONE PLACEMENT SHALL BE IN ACCORDANCE WITH OSHA STANDARDS. ADDITIONAL BACKFILL REQUIRED TO FILL EXCAVATIONS SHALL CONSIST OF COMPACTED GRANULAR FILL OR CRUSHED STONE EXCEPT AS NOTED.

GRAVITY RETAINING WALL DETAIL

NO SCALE

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

12/21/23

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

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DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DETAILS - 3

SCALE: AS SHOWN

C-603

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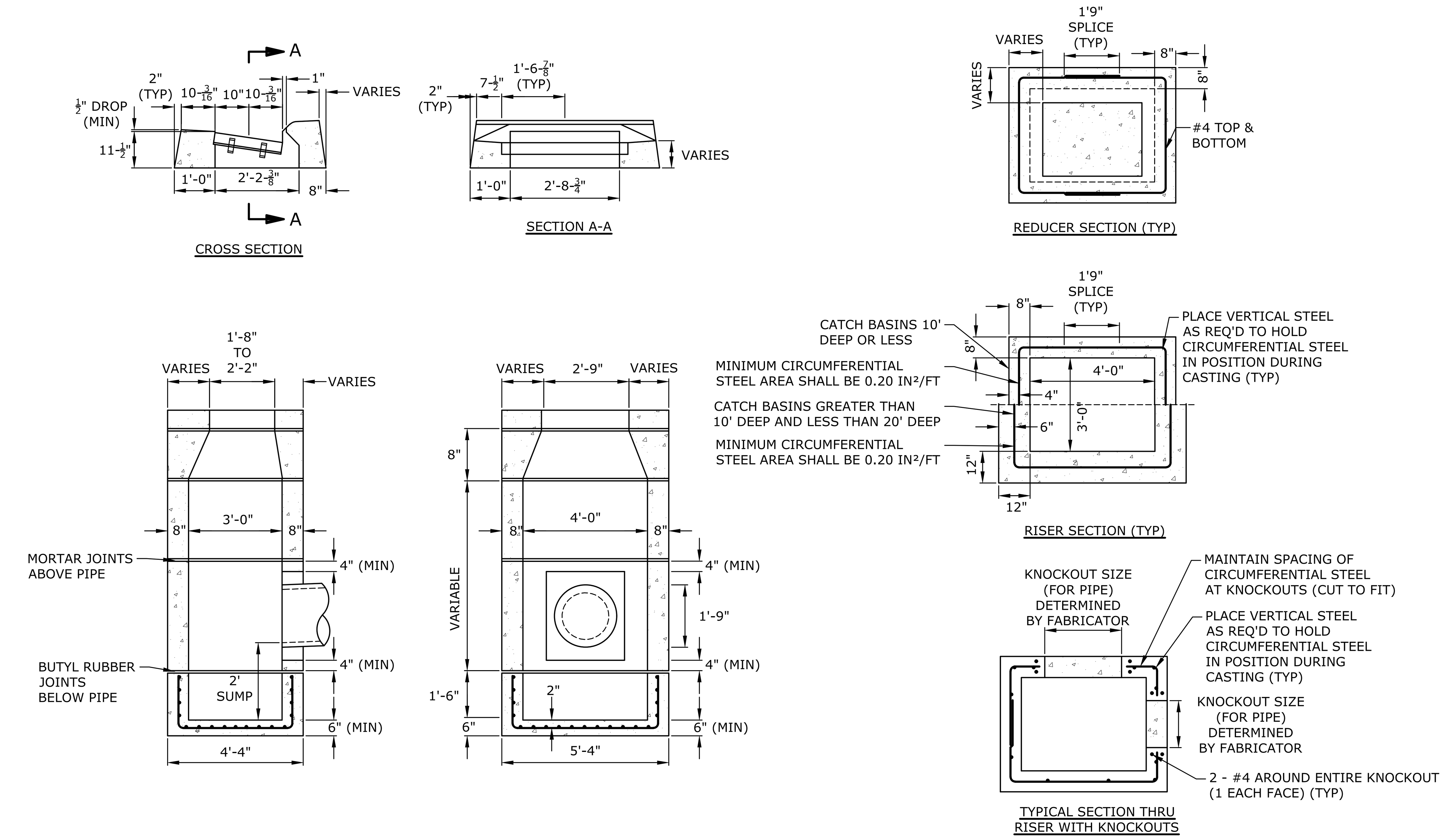
Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Drawings_Figures\AutoCAD\Sheet\F0173-001-C-601-DETL.dwg

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

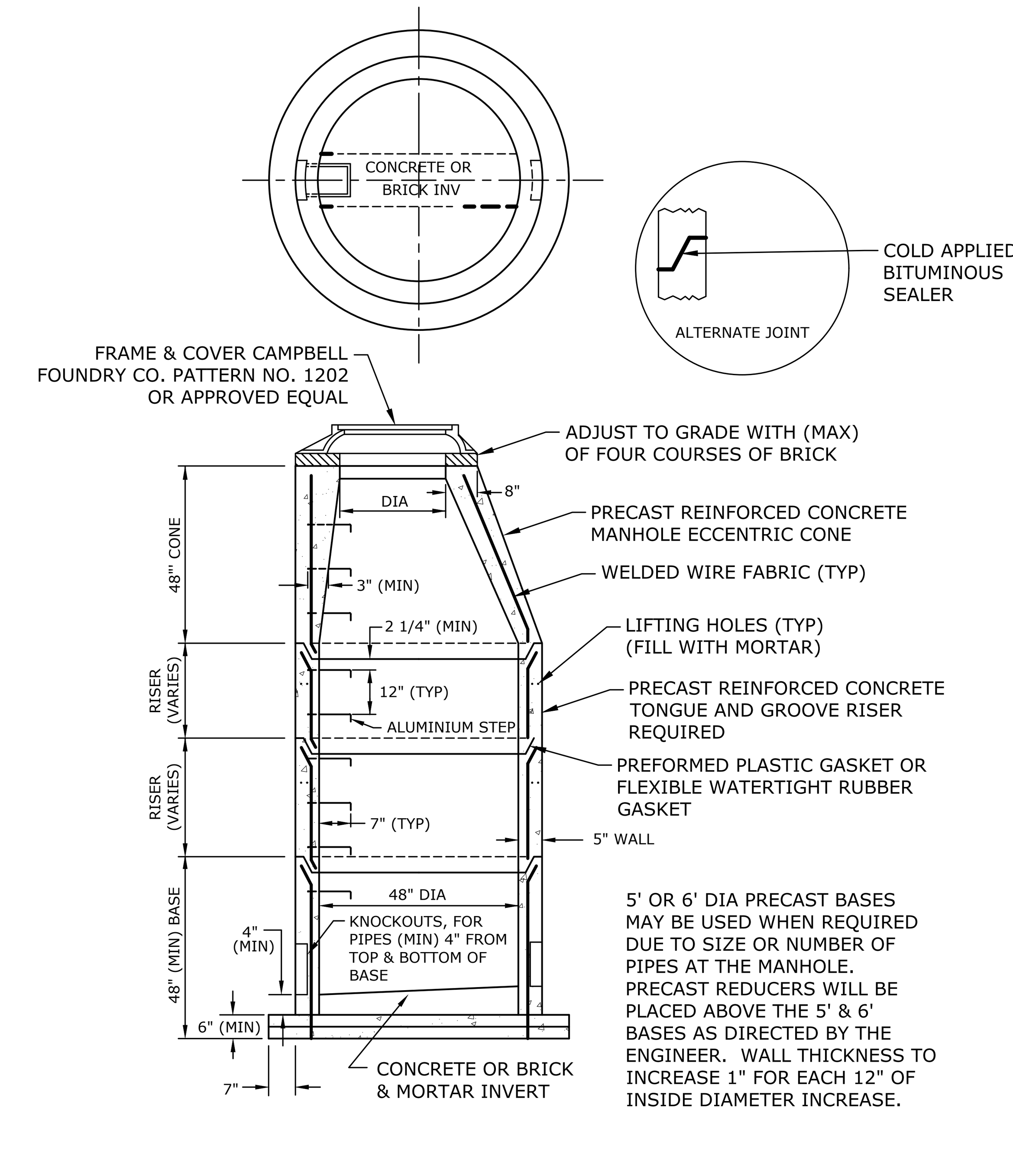


CONNECTICUT DEPARTMENT OF TRANSPORTATION

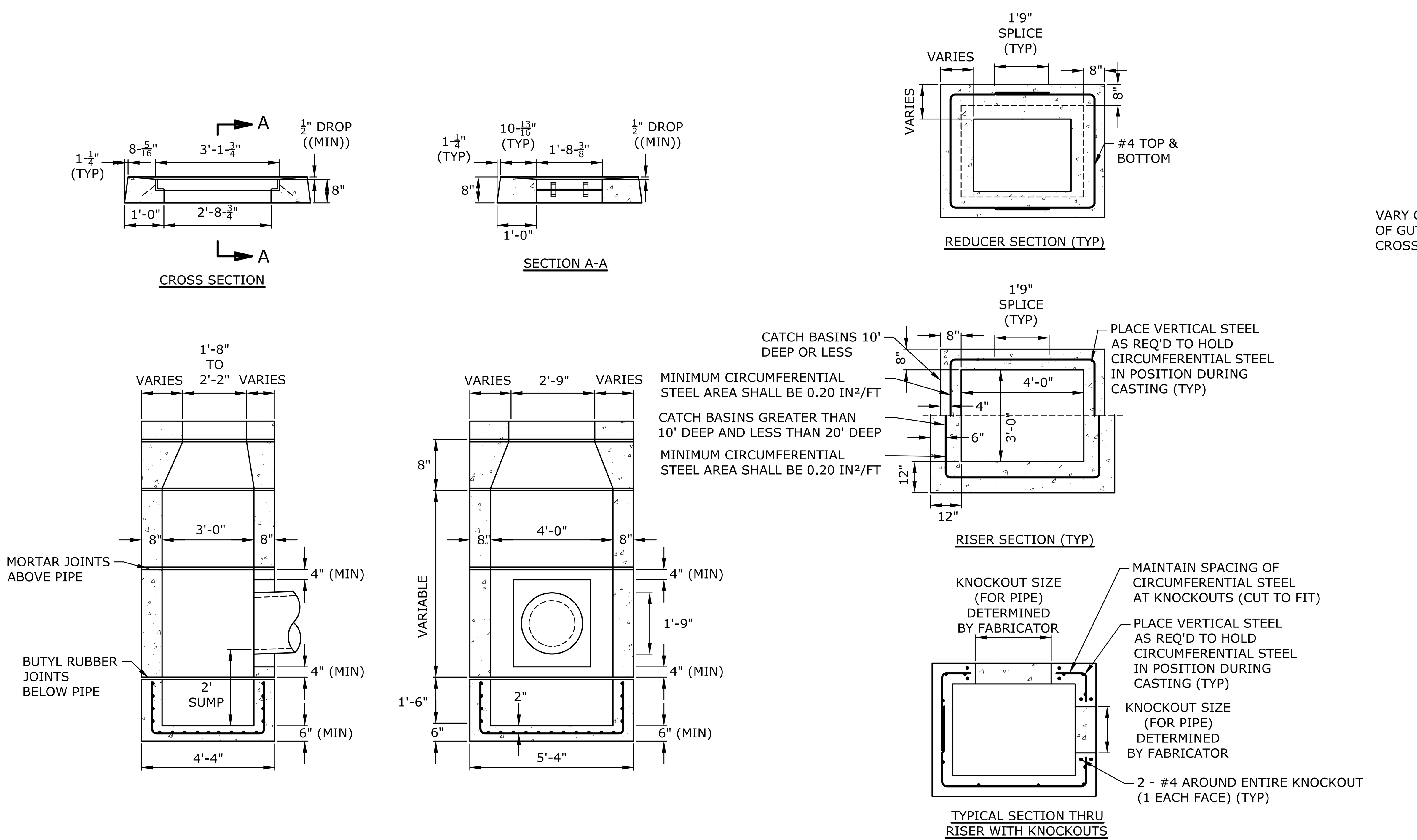
TYPE "C" CATCH BASIN
NO SCALE

NOTES:

1. REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60.
2. DETAILS ON THIS SHEET SHOW STANDARD REINFORCEMENT. WELDED WIRE FABRIC WITH AN AREA EQUAL TO OR GREATER THAN THE REINFORCING SHOWN MAY BE SUBSTITUTED.
3. ALL LAP SPLICES, DEVELOPMENT LENGTHS, BENDS FOR REINFORCEMENT, AND WELDED WIRE FABRIC SHALL CONFORM TO AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES.
4. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 2", EXCEPT FOR BENEATH BOTTOM REINFORCEMENT IN TOP SLABS, WHERE THE MINIMUM MAY BE 1½"
5. MINIMUM CONCRETE COMPRESSIVE STRENGTH FC'=4,000PSI SHALL BE OBTAINED BEFORE SHIPPING.
6. BASES AND RISERS AT A DEPTH OF 20' AND GREATER SHALL BE DESIGNED BY THE CONTRACTOR AND WORKING DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. SEE STANDARD DRAWING 507-K FOR CATCH BASIN FRAMES AND GRATES.
8. FOR DOT MAINTENANCE PERSONNEL, RISERS MAY BE PREFABRICATED WITH PIPE OPENINGS IN ALL FOUR WALLS. ADEQUATE REINFORCING AROUND PIPE OPENINGS TO CONFORMING TO THESE PLANS SHALL BE PROVIDED. ANY RISERS USED WHERE A PIPE OPENING IS TO REMAIN IN PLACE MUST BE FORMED UP WITH BRICK AS DIRECTED BY THE ENGINEER.
9. RISERS SHALL NEVER HAVE CORNER PIPE ENTRIES. WHERE THE ALIGNMENT OF THE PIPE WITH RESPECT TO THE CORNER OF THE CATCH BASIN CANNOT BE CHANGED, A ROUND STRUCTURE CONFORMING TO ASTM C478 SHALL BE USED. REINFORCING FOR THE ROUND TOP SLAB WITH A RECTANGULAR OPENING SHALL CONFORM TO DETAILS SHOWN HERE.
10. ALL PIPE OPENINGS SHALL BE CLOSED USING MATERIALS WHICH CONFORM TO STATE OF CONNECTICUT STANDARD SPECIFICATIONS SECTION M.08.02. IF THE ENGINEER DETERMINES THAT THE CLOSURE OF ANY PIPE OPENING IS UNSATISFACTORY, THE CONTRACTOR SHALL RECLOSE SAID OPENING AT NO ADDITIONAL COST TO THE STATE. KNOCKOUTS FOR PIPE OPENINGS SHALL NOT RESULT IN A REDUCED WALL THICKNESS.
11. THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS AND SUPPLEMENTALS SHALL GOVERN.
12. FOR ADDITIONAL DETAILS, SEE OTHER CATCH BASIN SHEETS.
13. WALL THICKNESS OF ALL CB'S OVER 10' DEEP SHALL BE INCREASED TO 12" THICK. INSIDE DIMENSION SHALL REMAIN THE SAME. (THE 12" THICKNESS SHALL START AFTER THE FIRST 10")
14. BUTYL RUBBER JOINT SEAL SHALL CONFORM TO AASHTO M-198 AND MORTAR SHALL CONFORM TO THE LATEST STATE OF CONNECTICUT STANDARD SPECIFICATIONS MATERIAL SECTION M11.04.
15. SHRINKAGE AND TEMPERATURE REINFORCEMENT SHALL BE PROVIDED IN THE TOPS OF SLABS. THE TOTAL AREA OF REINFORCEMENT PROVIDED SHALL BE AT LEAST 0.125 IN²/FT IN EACH DIRECTION. THE MAXIMUM SPACING OF THIS REINFORCEMENT SHALL NOT EXCEED 18 INCHES.
16. THE DETAILS SHOWN IN THE PLAN VIEW FOR THE PRECAST CONCRETE ROUND STRUCTURES SHALL ALSO BE USED FOR CONVERTING MANHOLES TO CATCH BASINS.

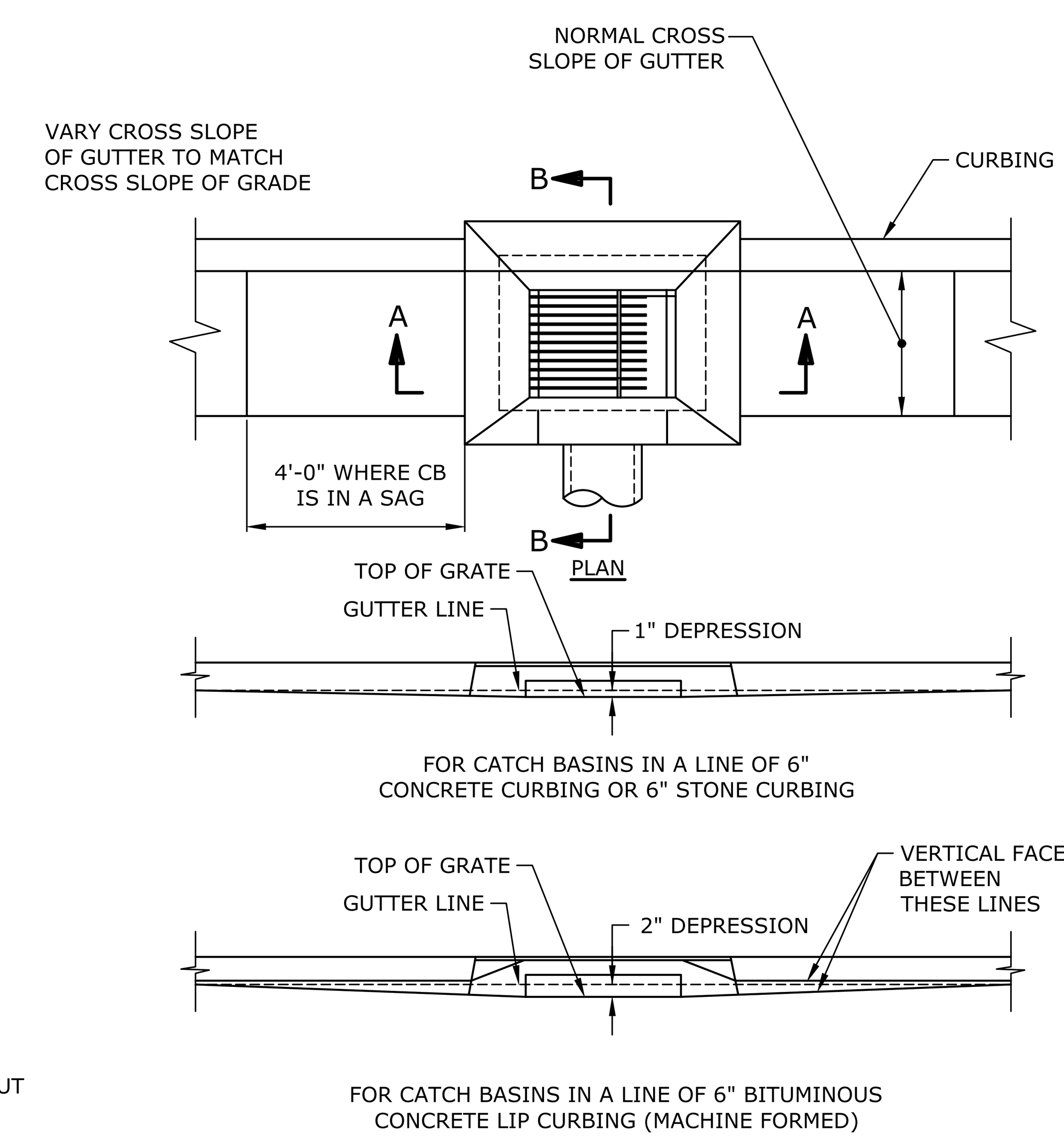


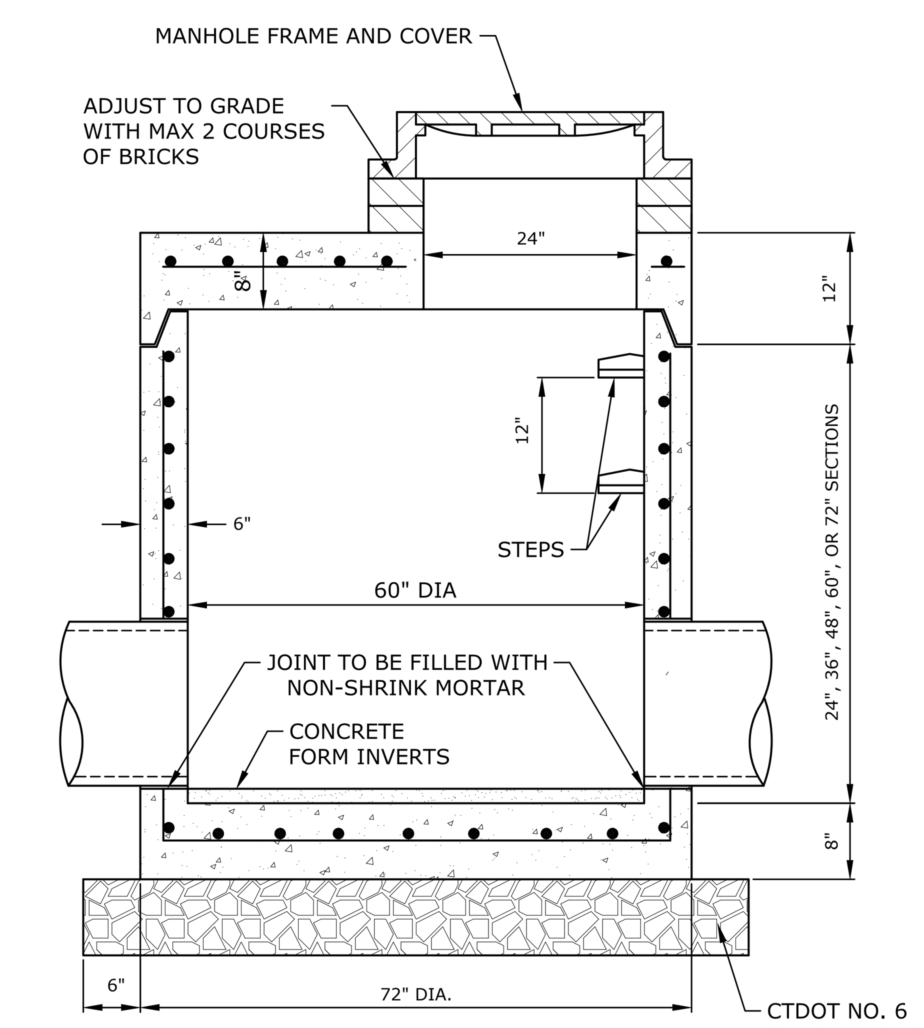
48" PRECAST MANHOLE
NO SCALE



CONNECTICUT DEPARTMENT OF TRANSPORTATION

TYPE "C-L" CATCH BASIN
NO SCALE





NOTES:

1. JOINT SEALANT SHALL BE PREFORMED BUTYL RUBBER MASTIC TYPE SEAL COMPLYING WITH AASHTO M198.
2. REINFORCING ASTM A185, 0.17 IN²/VERT. FT.
3. 5,000 PSI CONCRETE @ 28 DAYS.
4. MANHOLE STEP TO BE USED MEETS OSHA REGULATION 20 CFR 1910.27 AND SECTION 11 ASTM SPECIFICATION C-473.
5. METHOD OF MANUFACTURE: WET CAST.
6. BASE SECTION MONOLITHIC.
7. KNOCKOUTS FOR PIPES 4" MIN. FROM TOP AND BOTTOM OF SECTION.

60" DIA. FLAT TOP MANHOLE
NO SCALE

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

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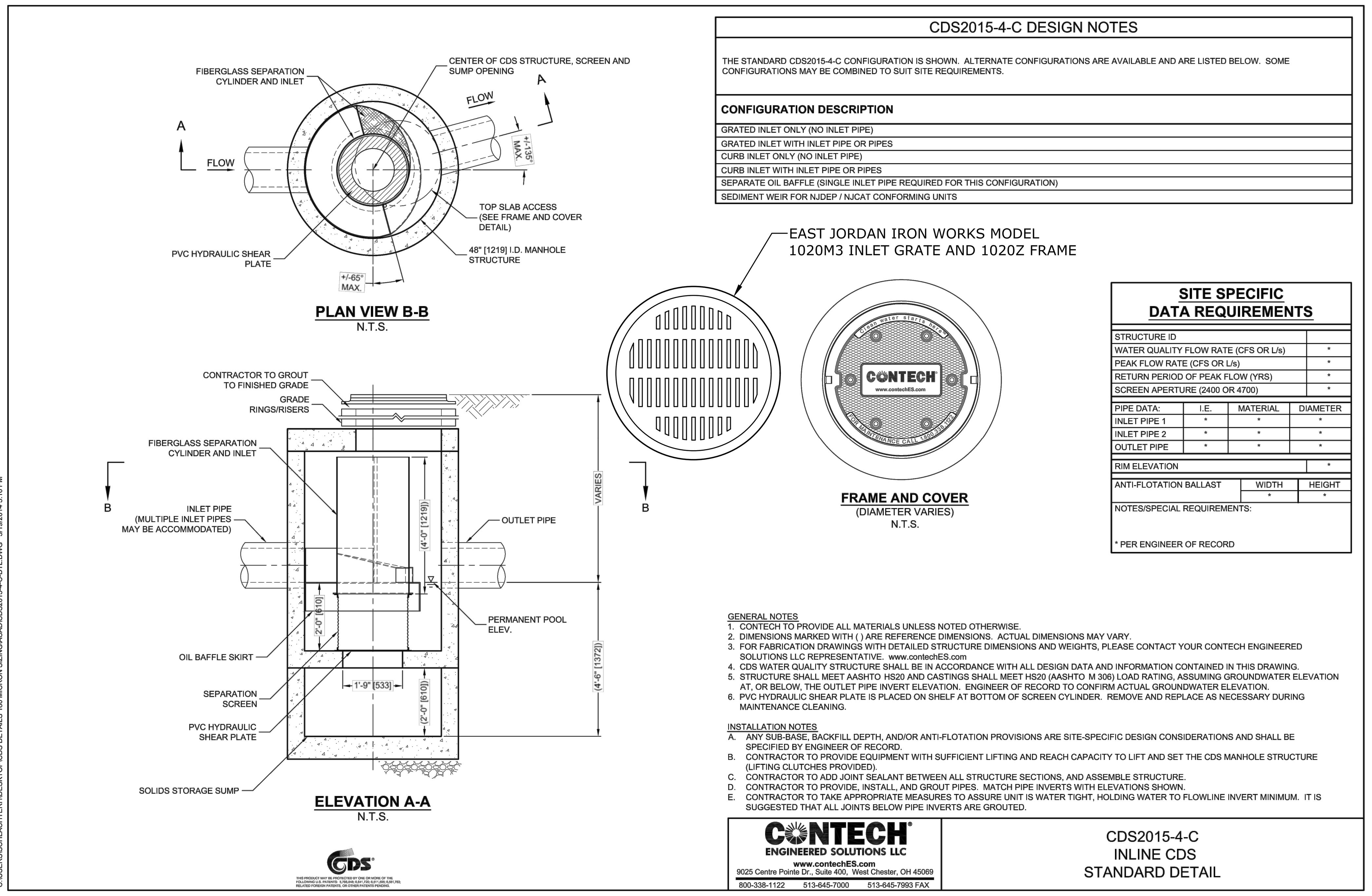
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

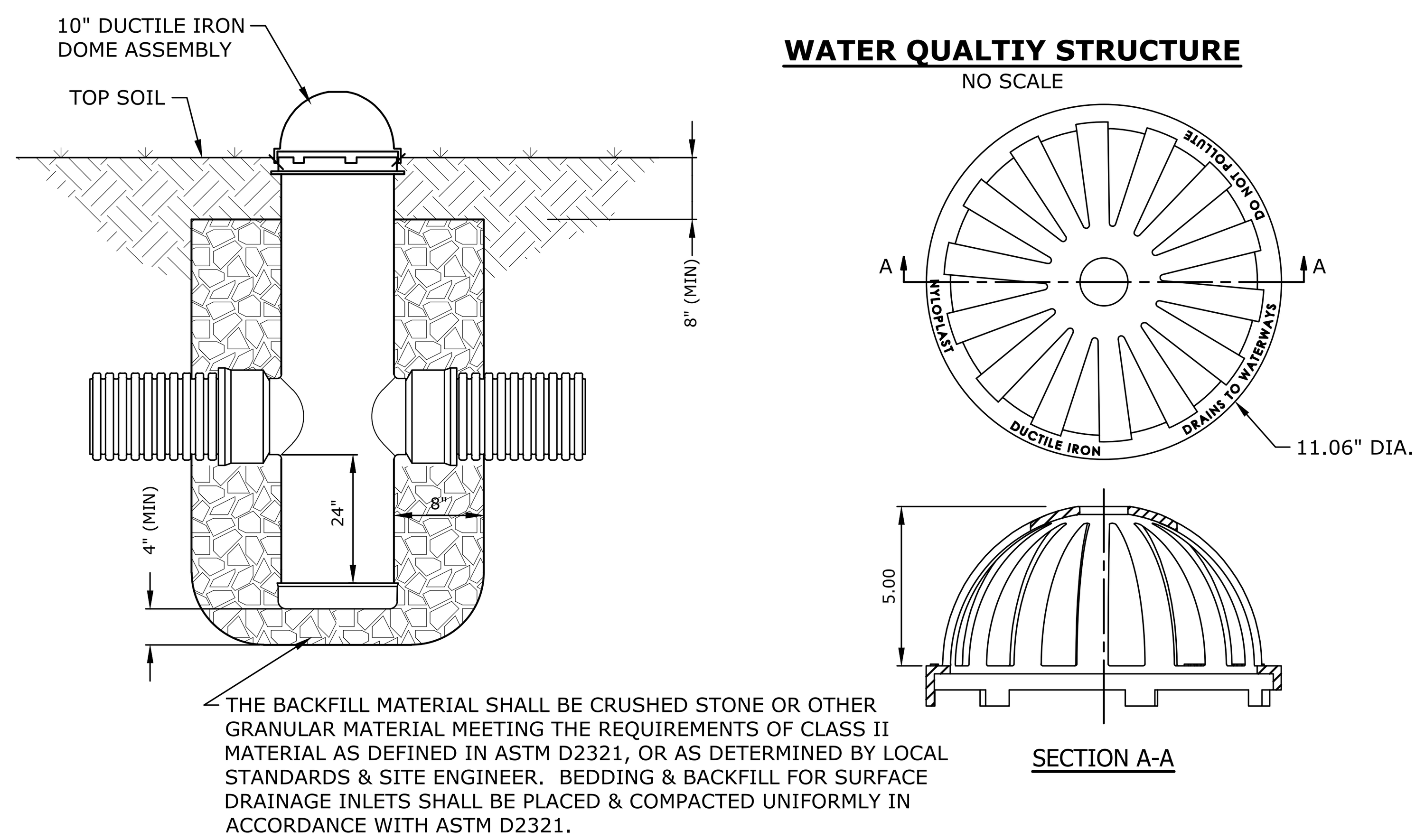
DETAILS - 4

SCALE: AS SHOWN

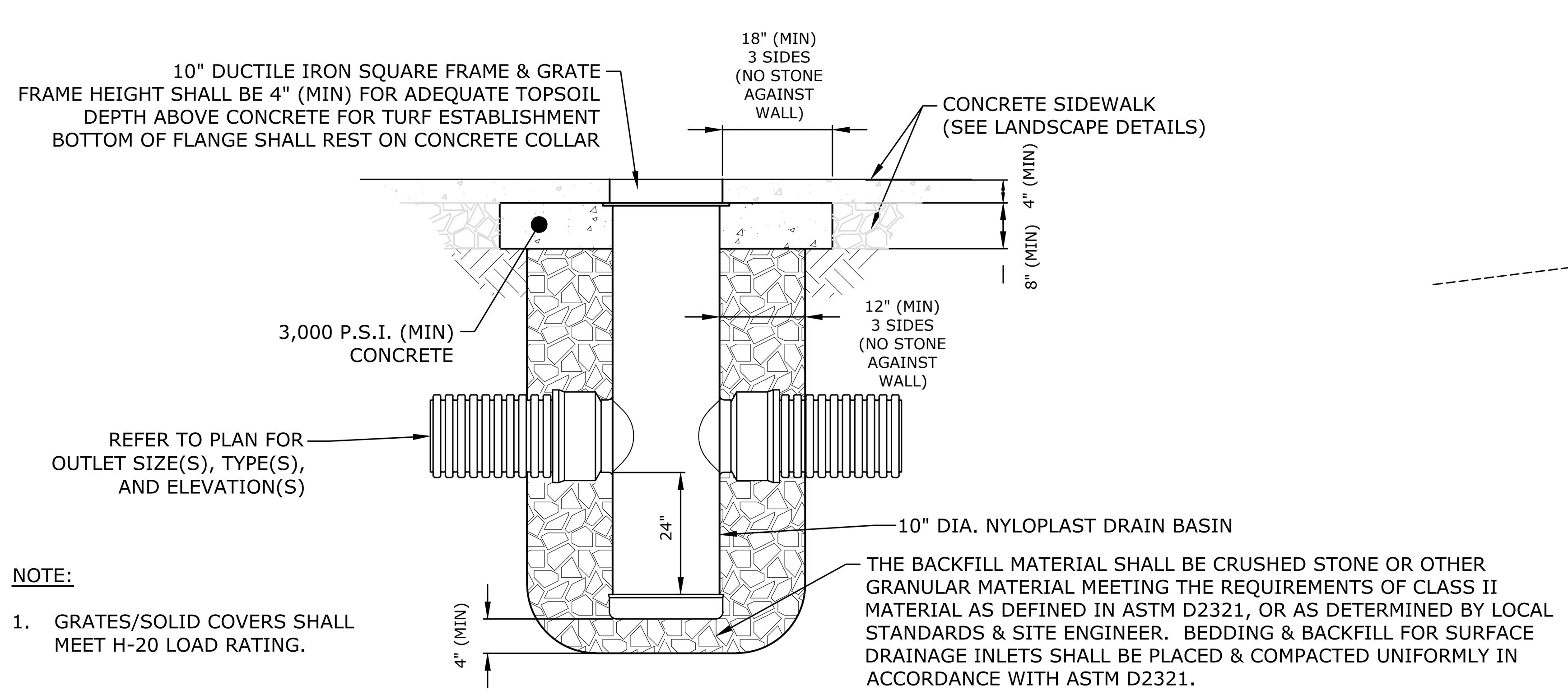
C-604



WATER QUALTIY STRUCTURE
NO SCALE

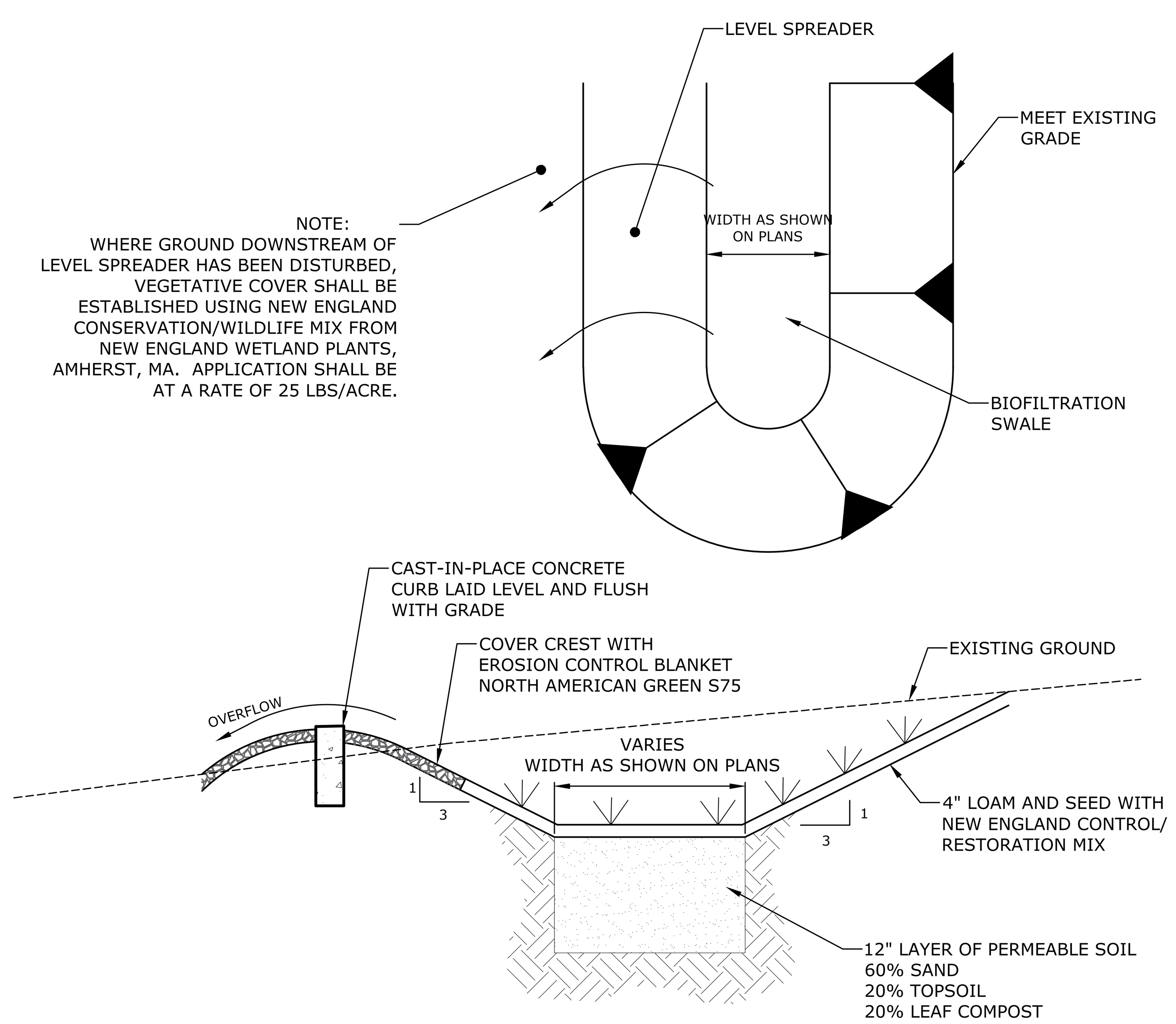


YARD DRAIN AND DOME GRATE DETAIL
NO SCALE

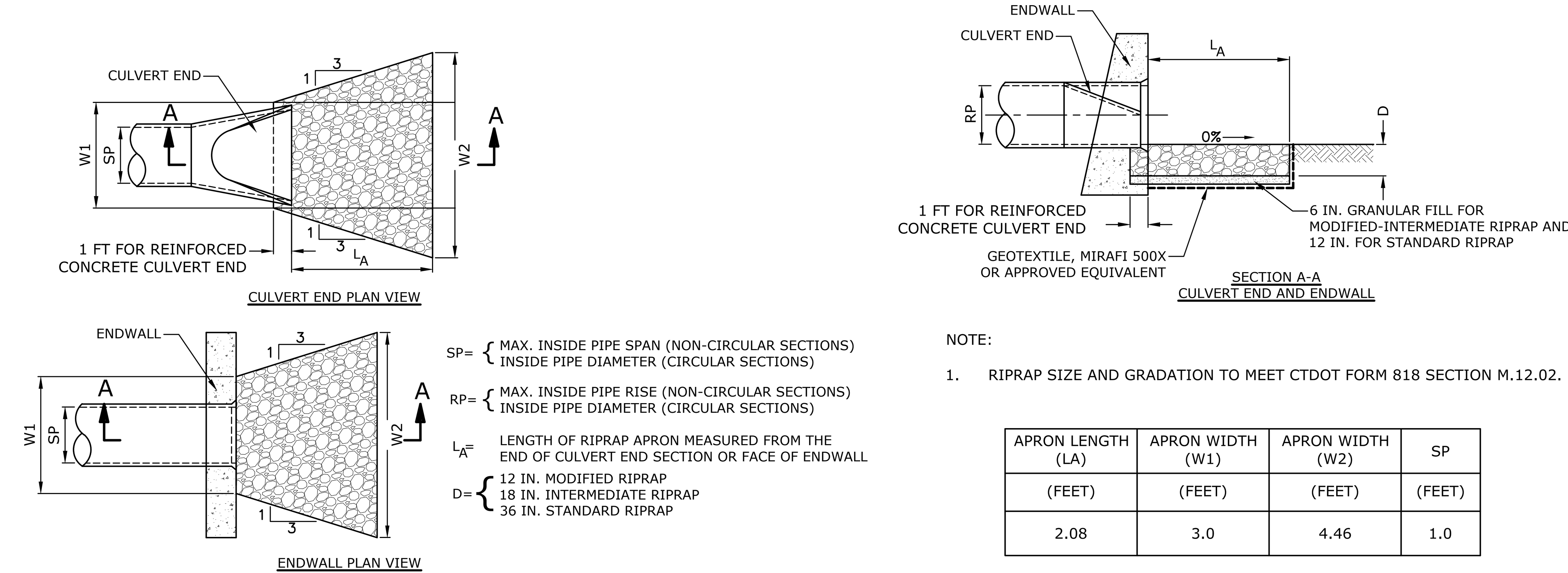


NOTE:
1. GRATES/SOLID COVERS SHALL MEET H-20 LOAD RATING.

AREA DRAIN DETAIL
NO SCALE



LEVEL SPREADER
NO SCALE

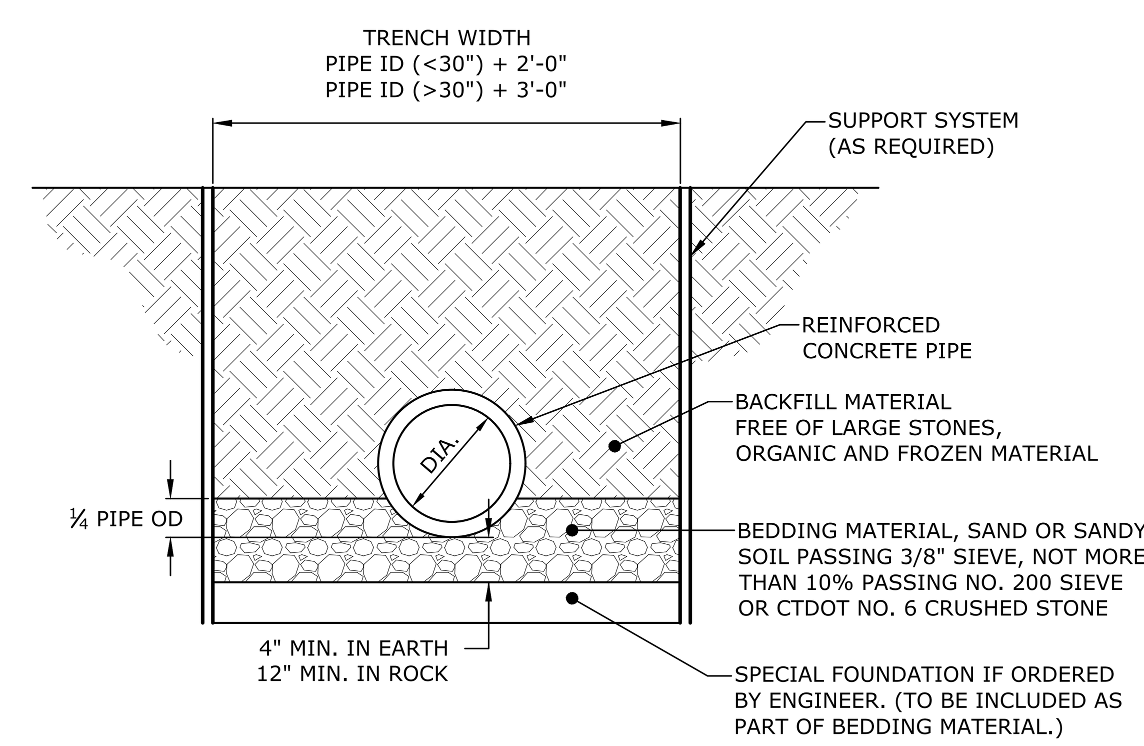


NOTE:

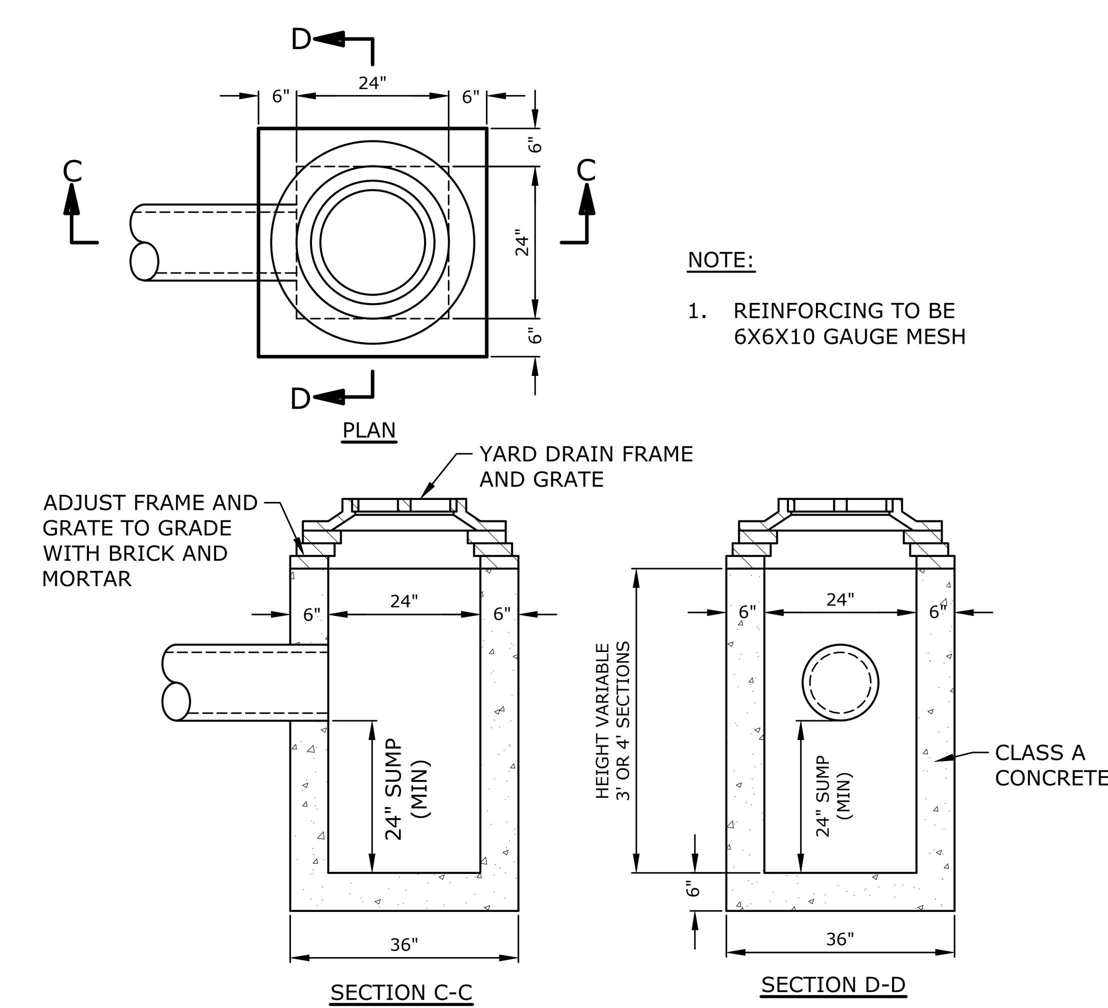
1. RIPRAP SIZE AND GRADATION TO MEET CTDOT FORM 818 SECTION M.12.02.

APRON LENGTH (LA)	APRON WIDTH (W1)	APRON WIDTH (W2)	SP
(FEET)	(FEET)	(FEET)	(FEET)
2.08	3.0	4.46	1.0

TYPE "A" RIPRAP APRON
NO TO SCALE

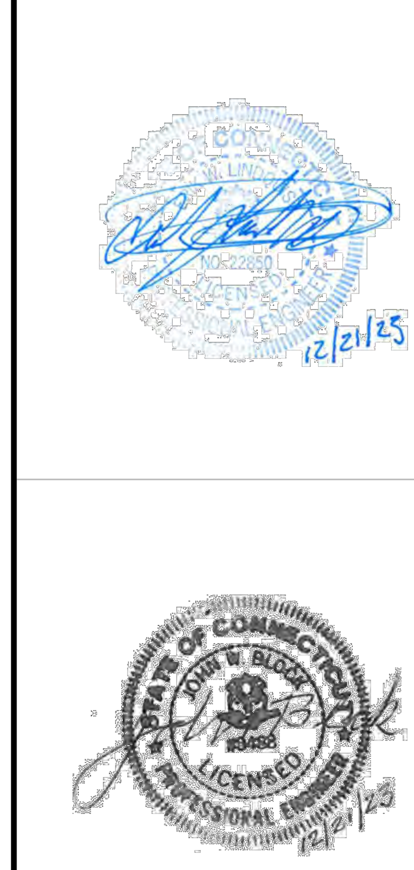


CIRCULAR R.C.P. TRENCH BEDDING
NO SCALE



NOTE:
1. REINFORCING TO BE 6X6X10 GAUGE MESH

YARD DRAIN
NO SCALE



Tighe&Bond
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DETAILS - 5

SCALE: AS SHOWN

C-605

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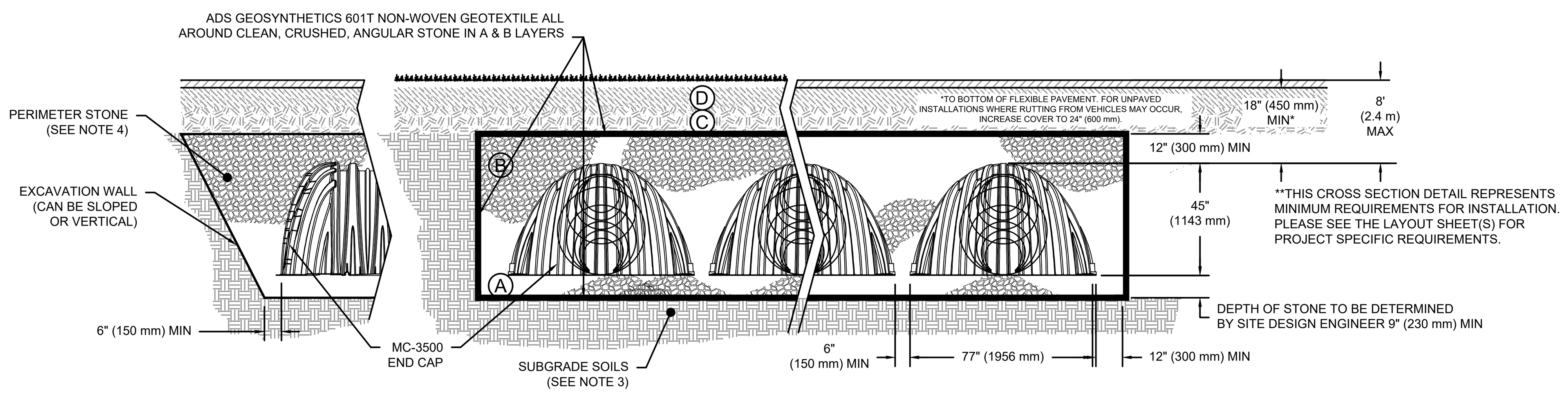
Plotted On:Dec 29, 2023-8:11am By: ELindquist
Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Drawings_Figures\AutoCAD\Sheet\F0173-001-C-601-DETL.dwg

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

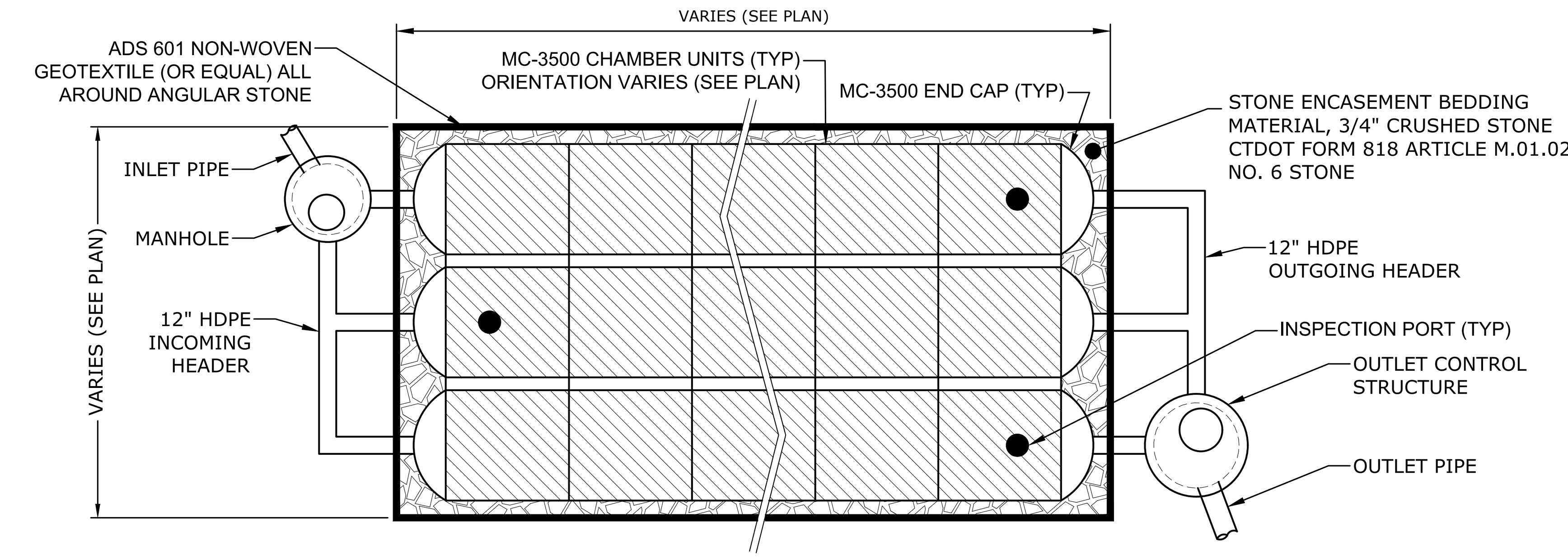


*FOR COVER DEPTHS GREATER THAN 8.0' (2.4 m) PLEASE CONTACT ADS

NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

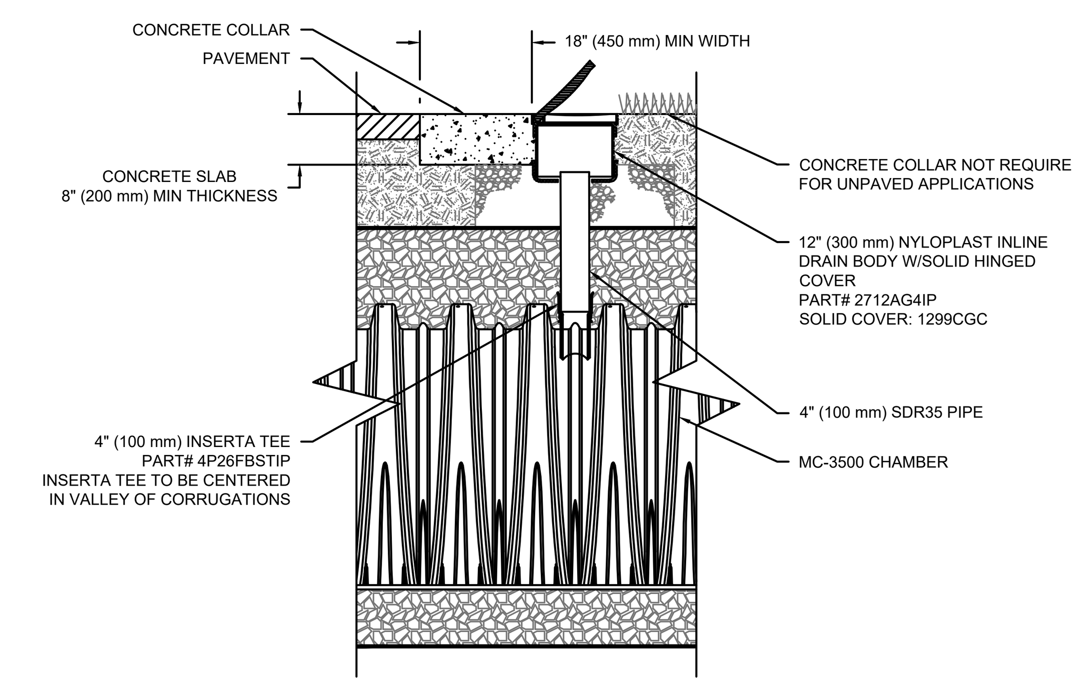
INFILTRATION SYSTEM
ADS, INC STORMTECH® MC-3500 TYPICAL CROSS-SECTION
NO SCALE



NOTES:

1. THE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER'S COVER REQUIREMENTS ARE MET.
2. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT & COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.

MC-3500 UNDERGROUND INFILTRATION SYSTEM
NO SCALE

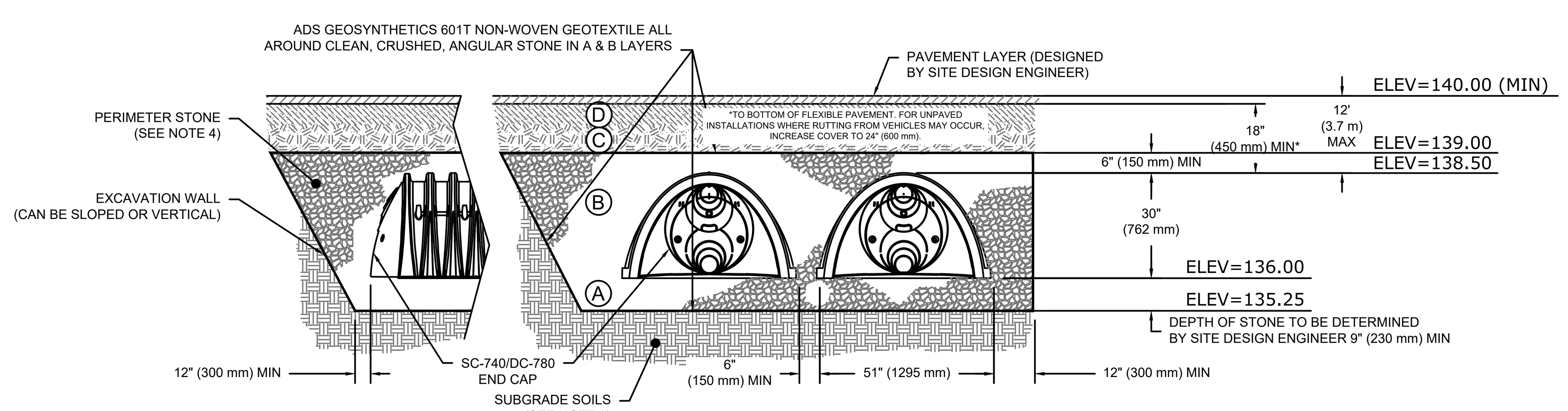


INFILTRATION SYSTEM
ADS, INC STORMTECH® MC-3500 INSPECTION PORT DETAIL
NO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH DC-780 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

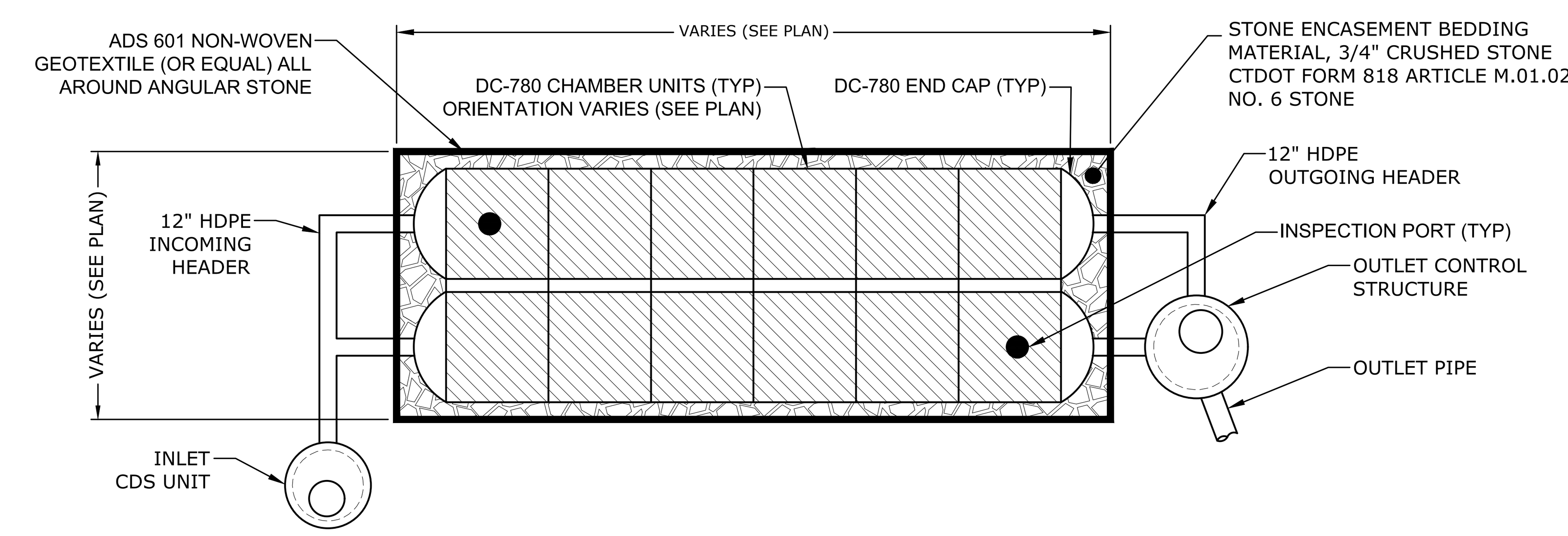
PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
2. DC-780 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 2".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 550 LBS/FT/%. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

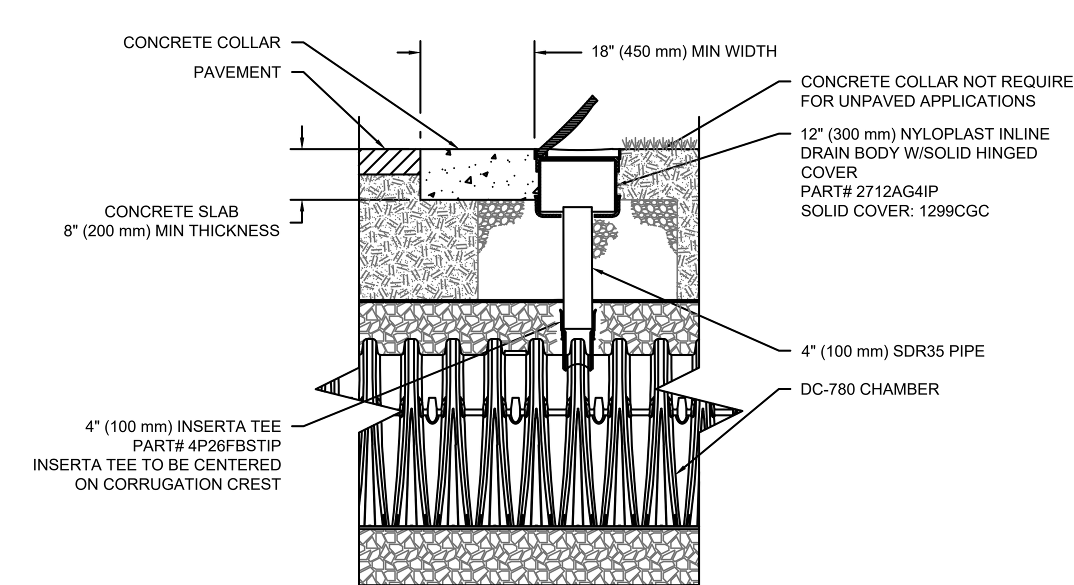
INFILTRATION SYSTEM
ADS, INC STORMTECH® DC-780 TYPICAL CROSS-SECTION
NO SCALE



NOTES:

1. THE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER'S COVER REQUIREMENTS ARE MET.
2. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT & COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.

DC-780 UNDERGROUND INFILTRATION SYSTEM
NO SCALE



INFILTRATION SYSTEM
ADS, INC STORMTECH® DC-780 INSPECTION PORT DETAIL
NO SCALE

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

12/21/25

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-601-DETL.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DETAILS - 6

SCALE: AS SHOWN

C-606

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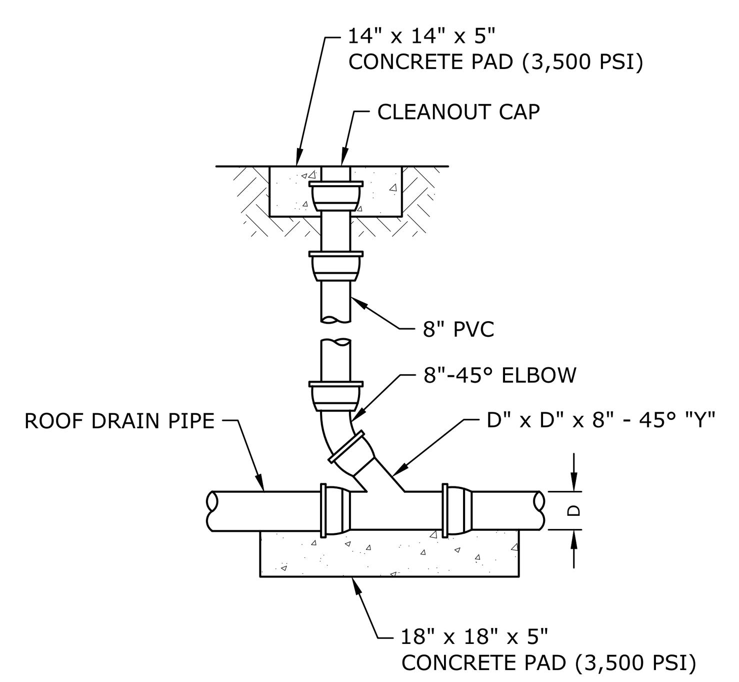
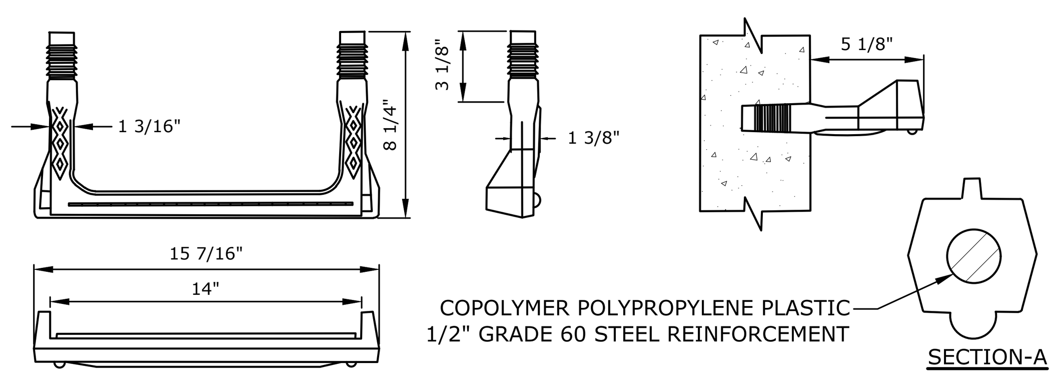
Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Drawings_Figures\AutoCAD\Sheet\F0173-001-C-601-DETL.dwg

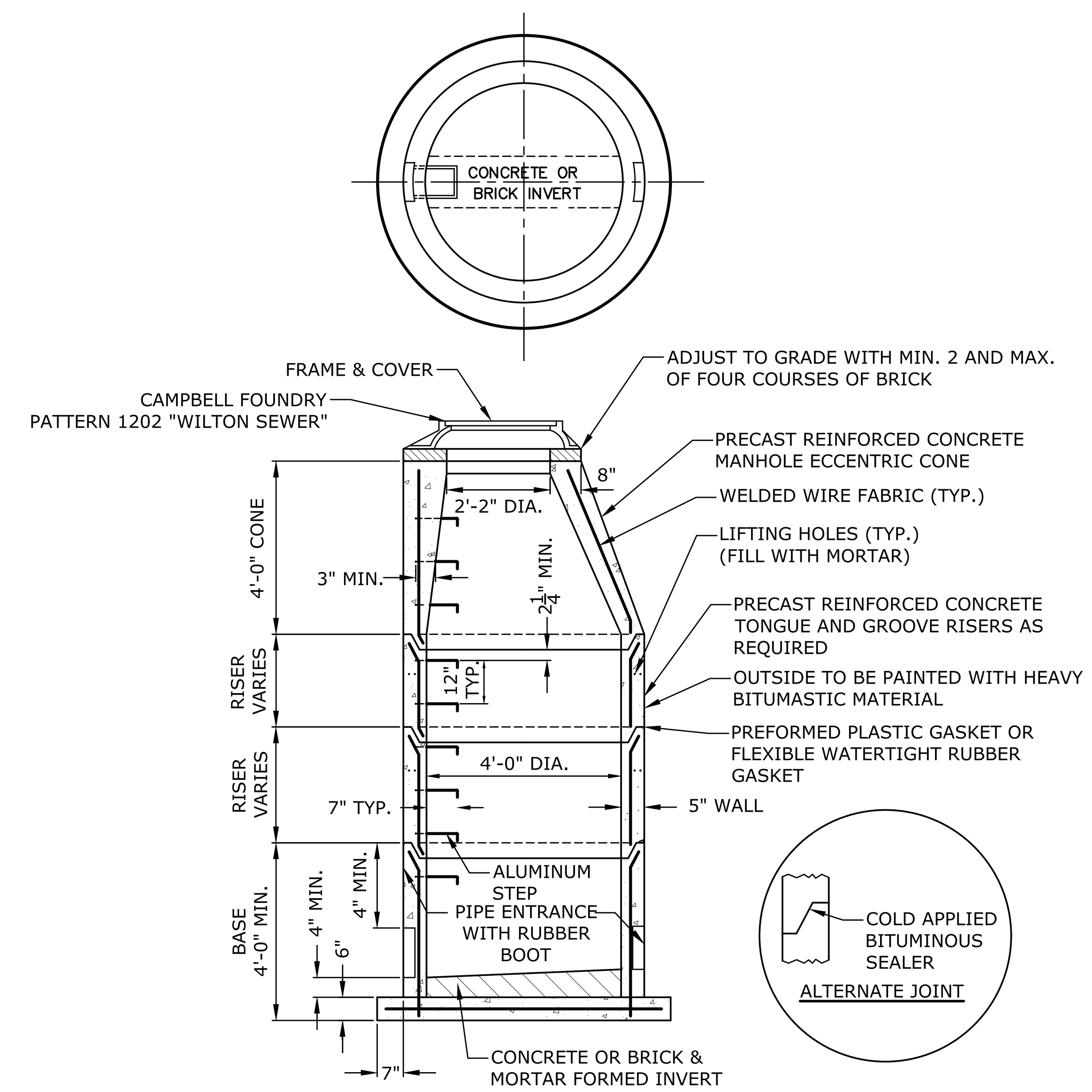


CLEANOUT DETAIL
NO SCALE



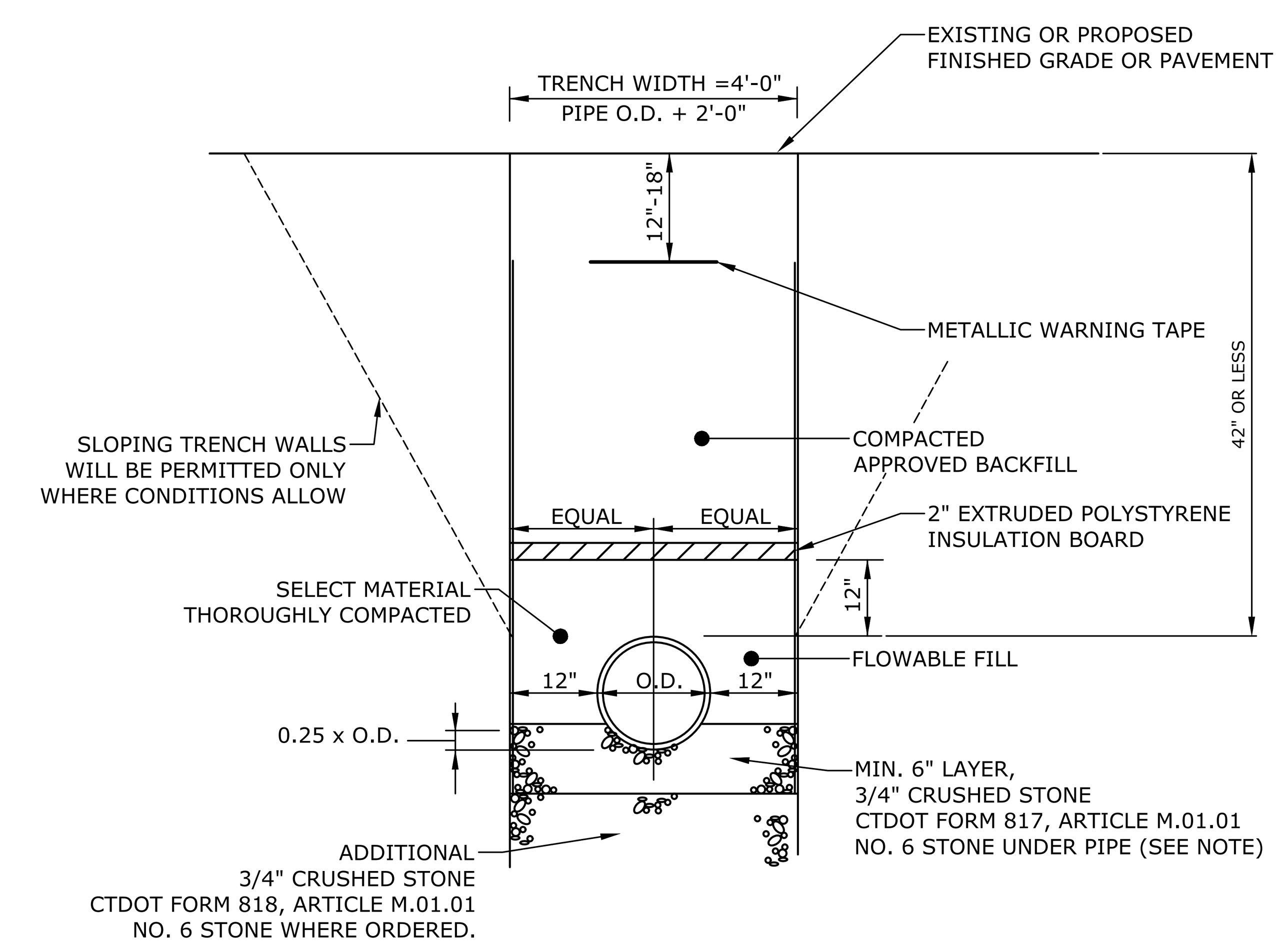
NOTE:
MANHOLE RUNGS ARE TO BE "SAFETY GREEN" PHOSPHORESCENT COPOLYMER POLYPROPYLENE PLASTIC COATED 1/2" GRADE STEEL REINFORCEMENT STEP MODEL No. PS2-PFSL AS MANUFACTURED BY M.A. INDUSTRIES, INC. OR PRESS-SEAL GASKET,STEEL REINFORCED (GRADE 60 STEEL), COPOLYMER POLYPROPYLENE 14" MANHOLE SAFETY STEP PART # P-14850 WITH BUILT-IN REFLECTORS. STEPS ARE TO BE FACTORY INSTALLED BY THE MANUFACTURER OF THE MANHOLES

MANHOLE RUNG
NO SCALE



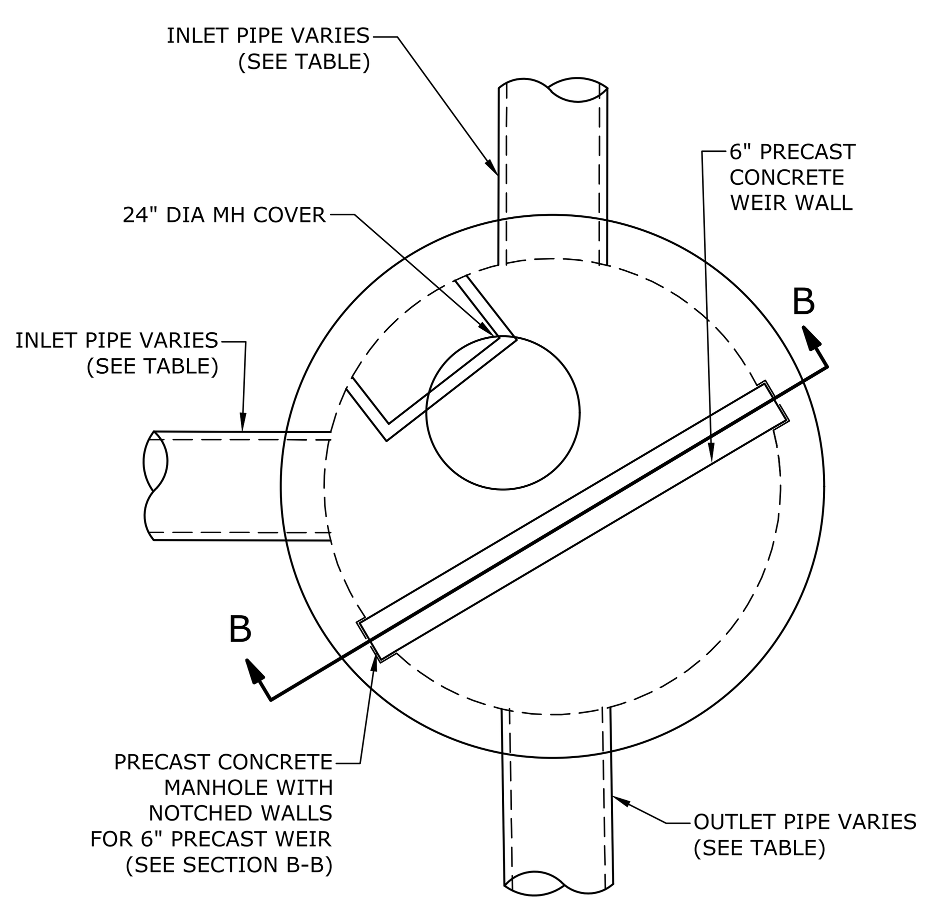
5' OR 6' DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE.
PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' & 6' BASES AS DIRECTED BY THE ENGINEER.
WALL THICKNESS TO INCREASE 1" FOR EACH 1' OF INSIDE DIAMETER INCREASE.

PRECAST SANITARY MANHOLE
NO SCALE

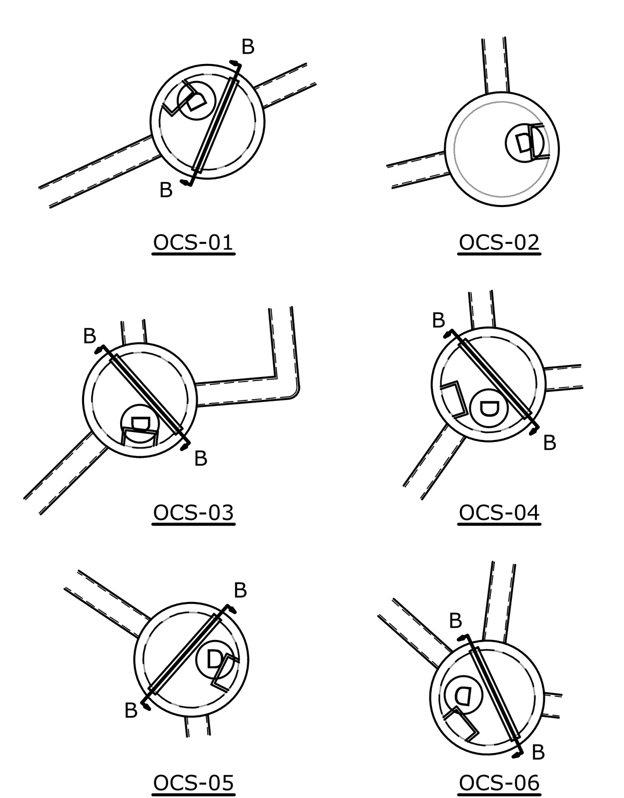


NOTE:
ADJACENT UTILITIES ARE TO BE PROPERLY SUPPORTED AT ALL TIMES
DEAD SAND WATERSTOPS ARE TO BE PLACED AT ALL JOINTS INCLUDING JOINTS AT MANHOLES. THEY ARE TO EXTEND 12" BEYOND EACH PIPE JOINT (IN BOTH DIRECTIONS). THE DEAD SAND IS TO BE PLACED TO THE SAME HEIGHT AS THE BEDDING MATERIAL.

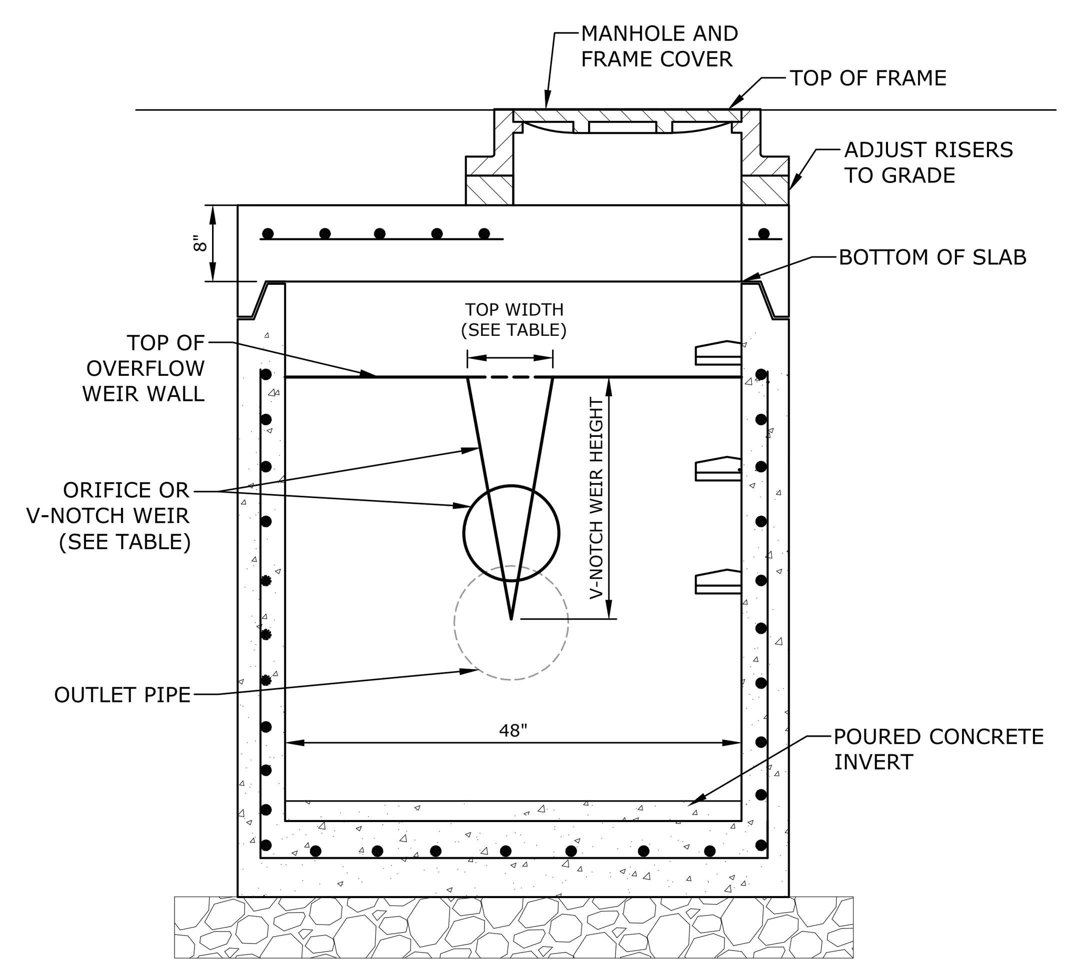
SANITARY SEWER TRENCH
FOR SEWER WITH 42" COVER OR LESS
NO SCALE



TYPICAL VIEW (SEE PLAN VIEWS)



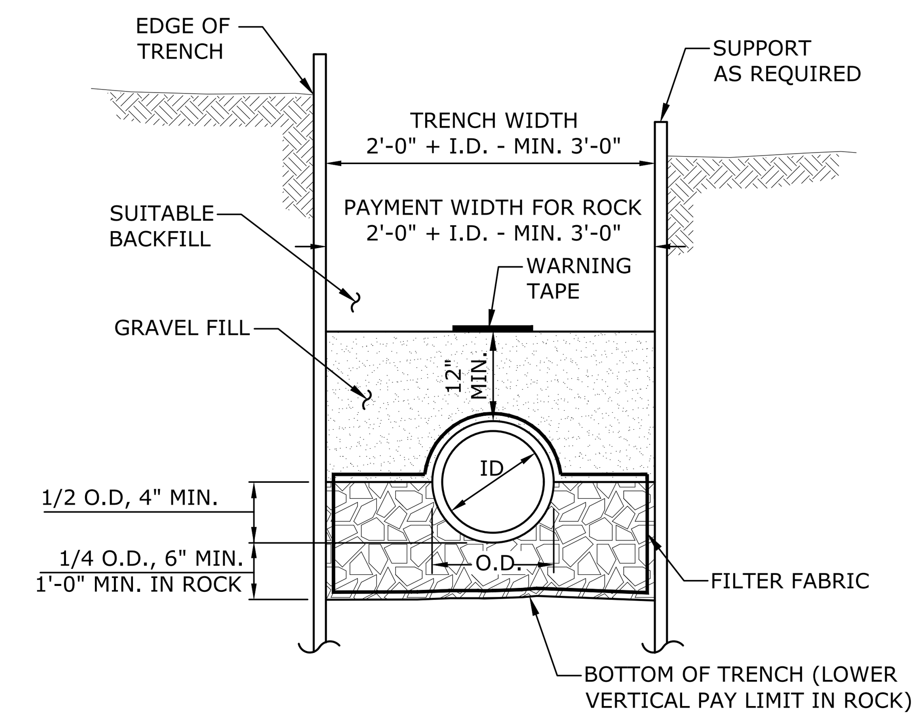
PLAN VIEWS



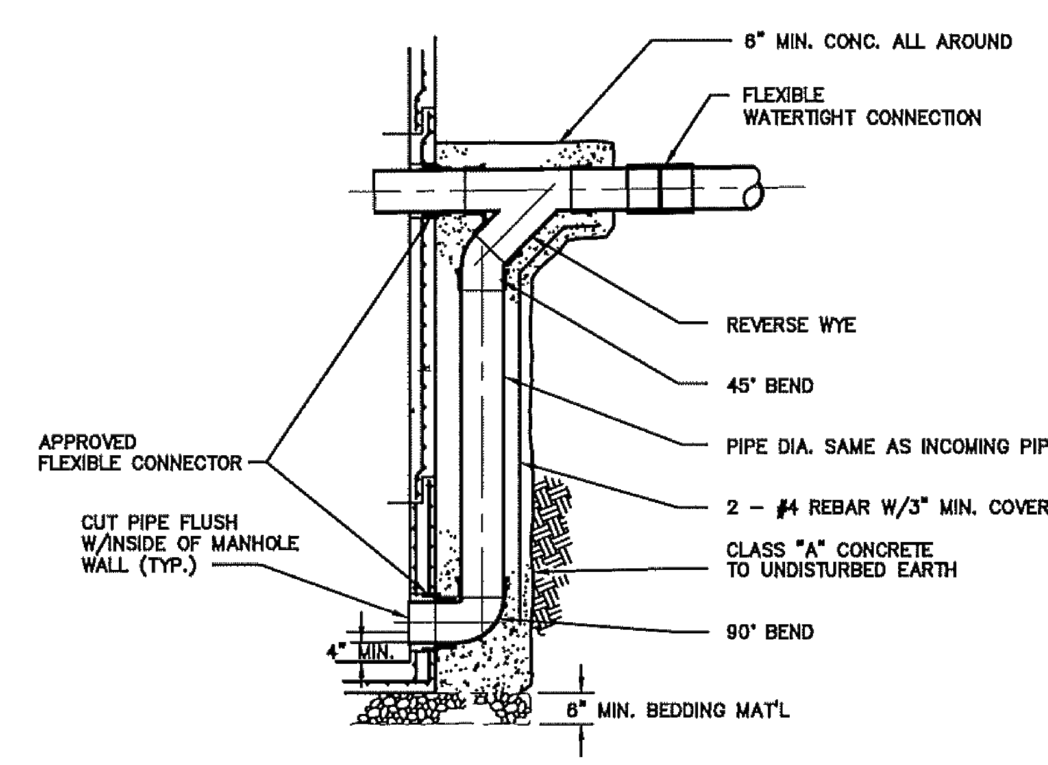
SECTION B-B

	TOP OF FRAME	TOP OF WEIR	LOW LEVEL ORIFICE		V-NOTCH WEIR				INVERT OUT	
	ELEVATION	ELEVATION	SIZE	ELEVATION	HEIGHT (FT)	TOP WIDTH (FT)	ANGLE	INVERT	SIZE/TYPE	ELEVATION
OCS-01	148.90	147.00	8"	144.25					12" HDPE	142.95
OCS-02	141.75	N/A	N/A	N/A					12" HDPE	135.50
OCS-03	148.50	145.50	10"	143.67	N/A	N/A	N/A	N/A	12" HDPE	143.67
OCS-04	140.39	138.67	6"	137.00					12" HDPE	136.45
OCS-05	140.15	138.00	15"	135.08					15" HDPE	135.00
OCS-06	138.50	136.83	N/A	N/A	2.66	1.0	20°	134.17	12" HDPE	132.50

OUTLET CONTROL STRUCTURE
NO SCALE



TYPICAL SANITARY SEWER TRENCH SECTION
NO SCALE



DROP MANHOLE DETAIL
NO SCALE

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

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DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DETAILS - 7

SCALE: AS SHOWN

C-607

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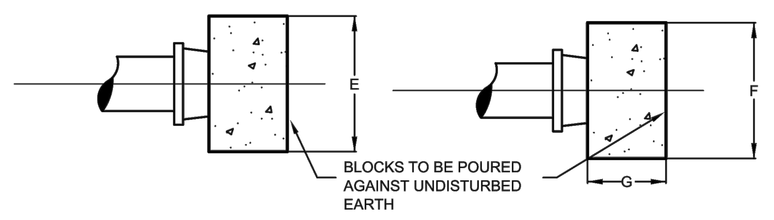


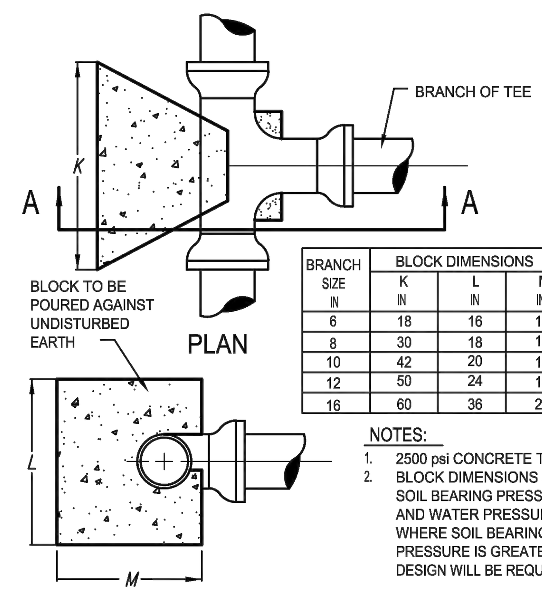
PLAN

ELEVATION

NOTES:
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. FOR USE ON ABANDONED LINES AND DEAD ENDS WHERE NO EXTENSION IS CONTEMPLATED.

PIPE DIAM. IN	BLOCK DIMENSIONS E IN	F IN	G IN	CONCRETE VOLUME CU. YD.
6	20	16	12	0.09
8	28	20	12	0.15
10	30	24	12	0.19
12	42	30	14	0.40
16	52	42	18	0.85

CAPS, PLUGS AND VALVES



PLAN

SECTION AA

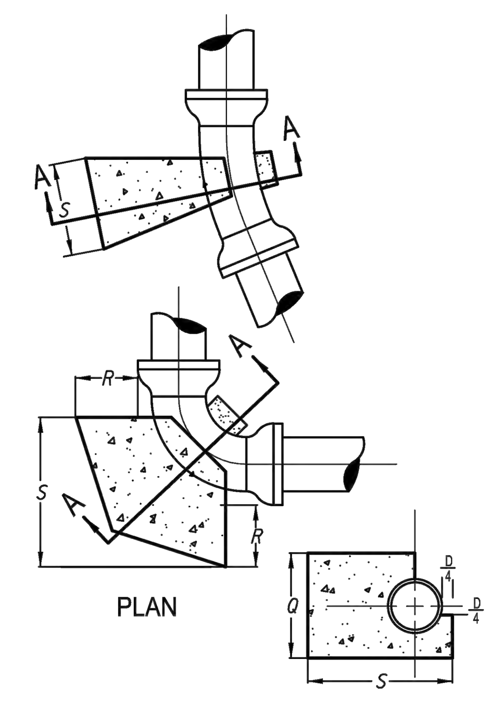
BRANCH SIZE IN	BLOCK DIMENSIONS K IN	L IN	M IN	CONCRETE VOLUME CU. YD.
6	18	16	12	0.09
8	30	18	12	1.15
10	42	20	12	0.24
12	50	24	16	0.42
16	60	36	24	1.12

NOTES:
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.

TEES

AQUARION Water Company
Stewards of the Environment

THRUST BLOCKS
AT TEES, CAPS, PLUGS & VALVES
NOT TO SCALE
SD-14



PLAN

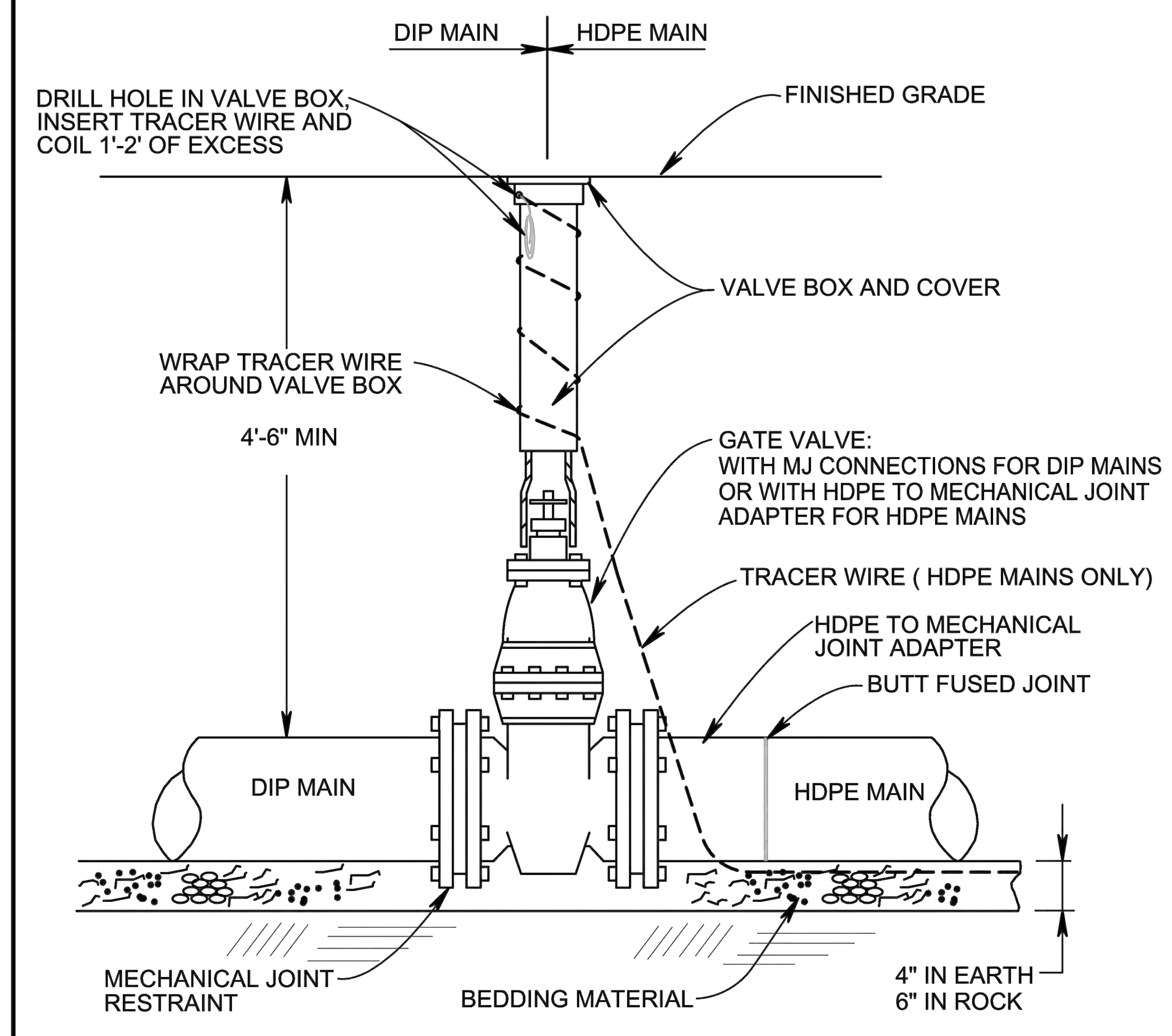
SECTION AA

PIPE DIAM. IN	BLOCK DIMENSIONS BEND	S IN.	Q IN.	R IN.	CONCRETE VOLUME CU. YD.
16	90	48	48	48	2.37
	45	48	34	20	0.70
	22 1/2	42	20	18	0.32
	11 1/4				SEE NOTE 3
12	90	36	36	36	1.00
	45	36	24	18	0.33
	22 1/2	28	18	12	0.13
	11 1/4				SEE NOTE 3
10	90	30	30	30	0.60
	45	30	20	18	0.23
	22 1/2	22	16	12	0.09
	11 1/4				SEE NOTE 3
8	90	24	24	24	0.30
	45	24	16	12	0.20
	22 1/2	18	12	12	0.11
	11 1/4				SEE NOTE 3
6	90	18	18	18	0.25
	45	18	12	12	0.11
	22 1/2	12	12	12	0.07
	11 1/4				SEE NOTE 3

NOTES:
1. 2500 psi CONCRETE TO BE USED
2. BLOCK DIMENSIONS ARE BASED UPON SOIL BEARING PRESSURE OF 2000 psi AND WATER PRESSURE OF 150 psi. WHERE SOIL BEARING IS LESS OR WATER PRESSURE IS GREATER, A SPECIAL DESIGN WILL BE REQUIRED.
3. SEE SAG VERTICAL (ABOVE)

AQUARION Water Company
Stewards of the Environment

THRUST BLOCKS
AT HORIZONTAL BENDS
NOT TO SCALE
SD-15

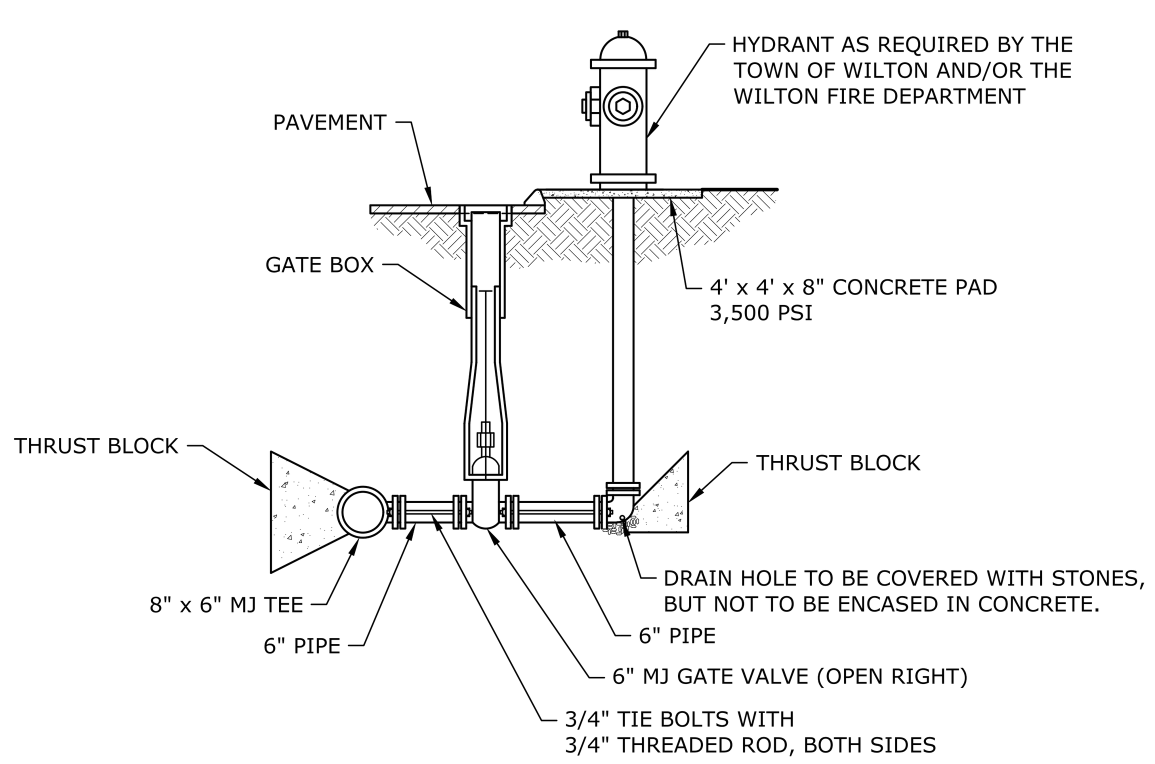


NOTE: ONLY INSTALLED ON MAINS 8" AND SMALLER

NOTE: FOR CONTINUOUS HDPE MAINS, INSTALL TRACER WIRE UNDER ALL VALVES AND FITTINGS. FOR TERMINATION POINTS, INSTALL TRACER WIRE AROUND VALVE BOXES AS SHOWN ABOVE.

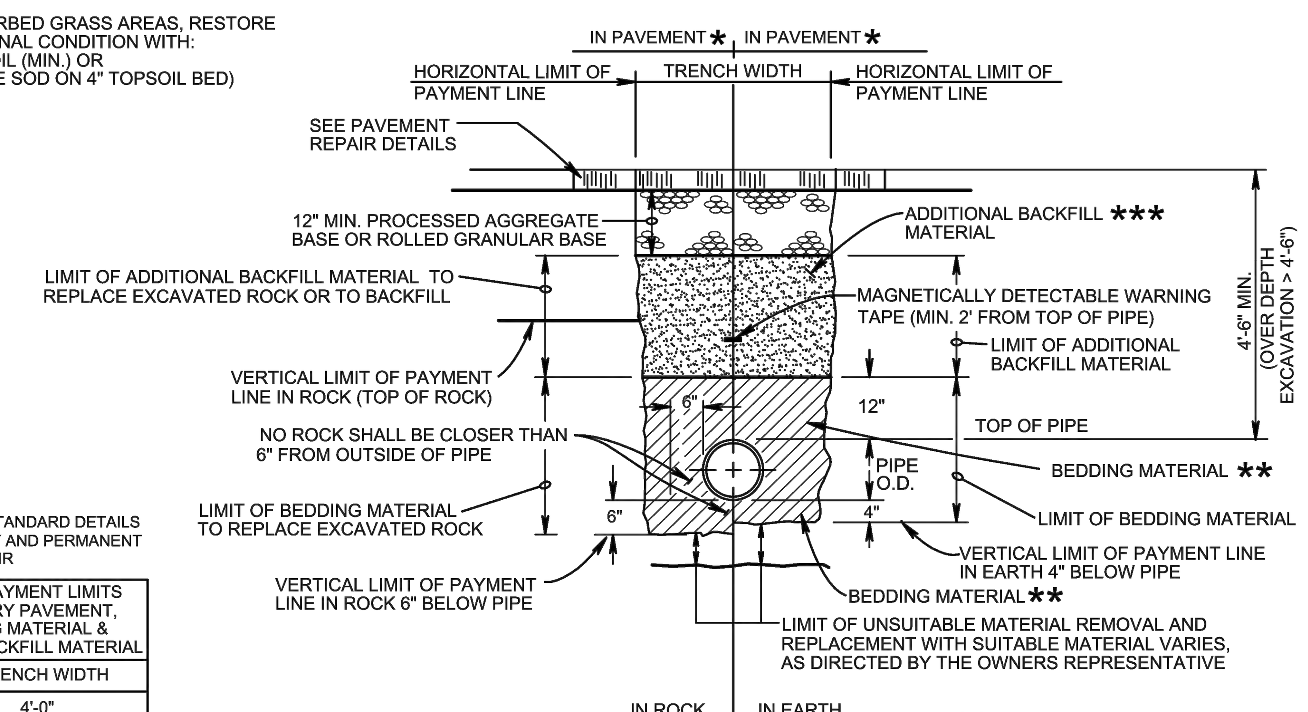
AQUARION Water Company
Stewards of the Environment

GATE VALVE
NOT TO SCALE
SD-2



HYDRANT DETAIL
TOWN OF WILTON
NO SCALE

* IN DISTURBED GRASS AREAS, RESTORE TO ORIGINAL CONDITION WITH: 2" TOPSOIL (MIN.) OR SOD (LIVE SOD ON 4" TOPSOIL BED)



REFER TO THE STANDARD DETAILS FOR TEMPORARY AND PERMANENT PAVEMENT REPAIR

HORIZONTAL PAYMENT LIMITS FOR TEMPORARY PAVEMENT, ROCK, BEDDING MATERIAL & ADDITIONAL BACKFILL MATERIAL	
PIPE SIZE	TRENCH WIDTH
6"	4'-0"
8"	4'-0"
12"	4'-0"
16"	4'-0"
20"	5'-0"
24"	5'-0"
30"	6'-0"
36"	6'-0"

NOTE: IF TRENCH BOXES ARE USED ADD 2' TO ALL TRENCH WIDTHS

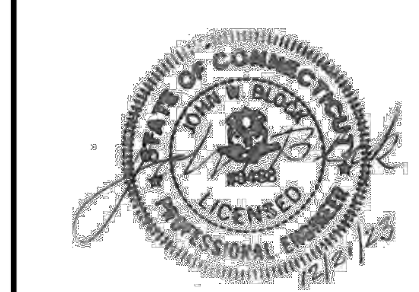
** FOR DIP: NO STONES LARGER THAN 4", NO STONES WITHIN 4" OF PIPE, THOROUGHLY COMPACTED
FOR HDPE: NO STONES LARGER THAN 3/4", NO STONES WITHIN 4" OF PIPE, THOROUGHLY COMPACTED

*** (NO STONES LARGER THAN 12") (COMPACTED IN 12" LIFTS)

AQUARION Water Company
Stewards of the Environment

TYPICAL TRENCH DETAIL
NOT TO SCALE
SD-1

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100



TOWN SUBMISSION

64 Danbury Road

Fuller Development, LLC

Wilton, CT

MARK	DATE	DESCRIPTION

PROJECT NO:	F0173-001
DATE:	12/21/2023
FILE:	F0173-001-C-601-DETL.dwg
DRAWN BY:	MDS
DESIGNED/CHECKED BY:	EWL
APPROVED BY:	JWB

DETAILS - 8

SCALE: AS SHOWN

C-608

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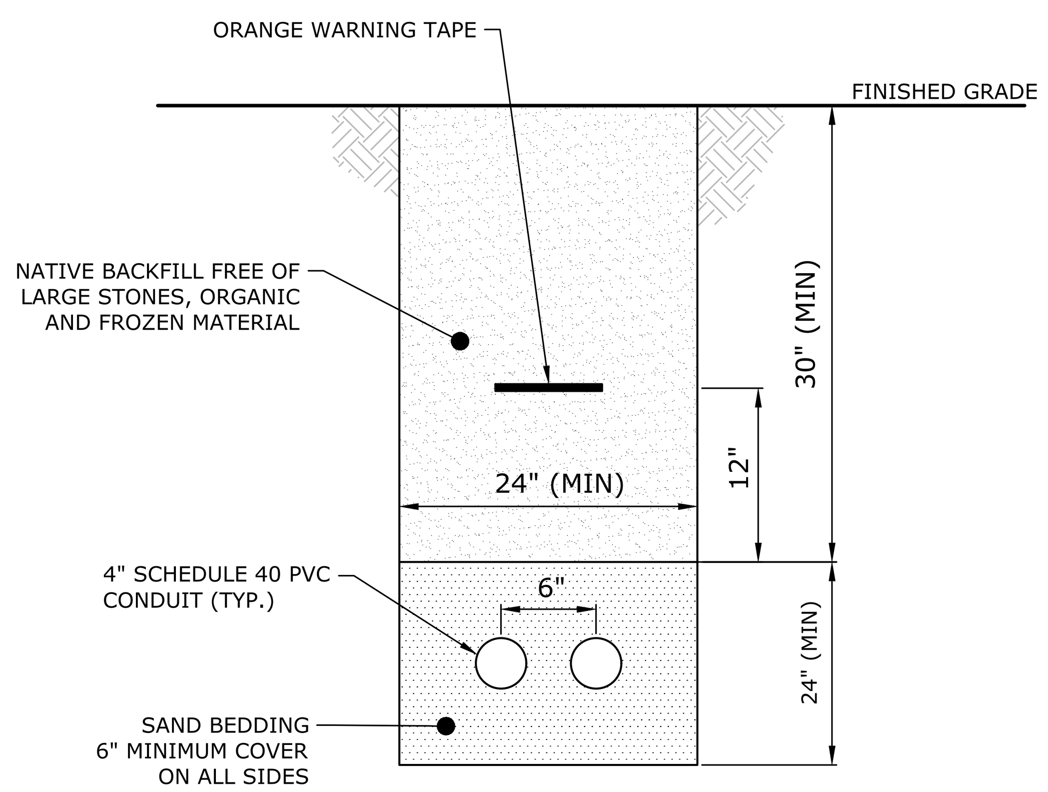


NOTES:

MINIMUM CONDUIT RADIUS TO BE 15'-0".

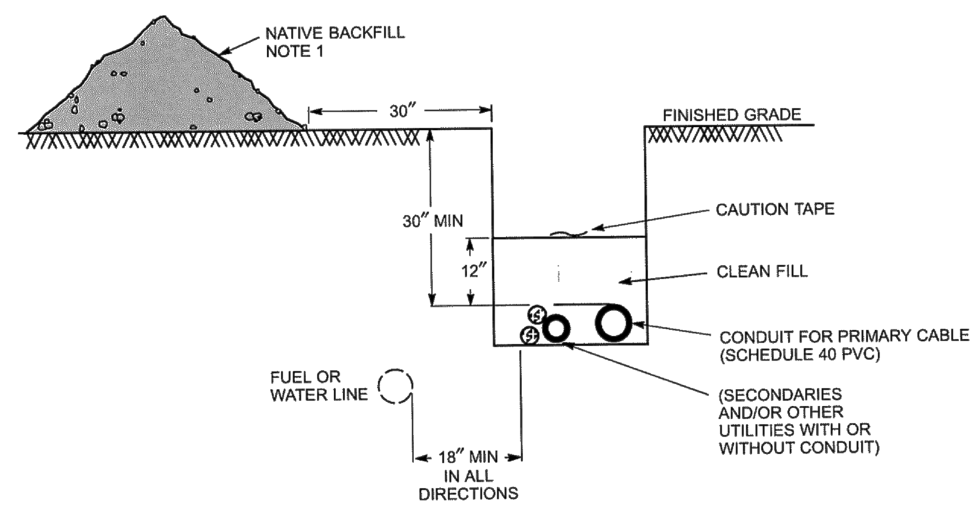
TEL-COM CONDUIT BANK DETAIL

NO SCALE

SCOPE – All direct–buried primary cables shall be of the jacketed type. The cables may be random–laid with the secondaries and other utilities under certain conditions, detailed in **DTR 44.101**.

INSTALLATION IN TRENCH – All direct–buried cables shall be installed at a depth of at least 30 inches in the following order:

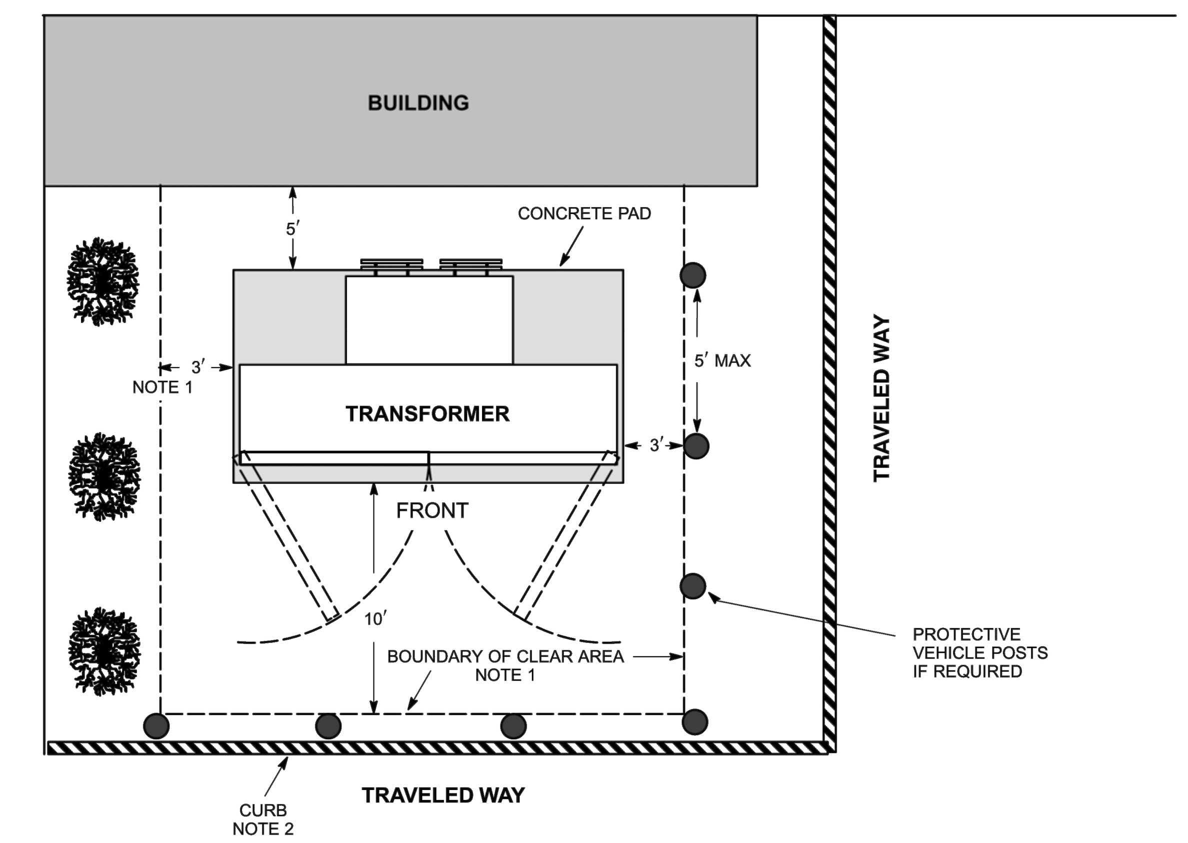
1. Ensure that the bottom of the trench is well–tamped and free of rocks.
2. Install the conduit, gluing all couplings.
3. Install secondaries and other utility cables or conduits in the trench.
4. Backfill with 12 inches clean fill not to contain stones larger than 2 inches in maximum diameter.
5. Install cable warning tape 12 inches over the conduit.
6. Fill in the remainder of the trench with native backfill.
7. Install pull line, including 10 feet of slack, and secure to conduit plug at each end of conduit run.



CROSS SECTION OF JOINT TRENCH

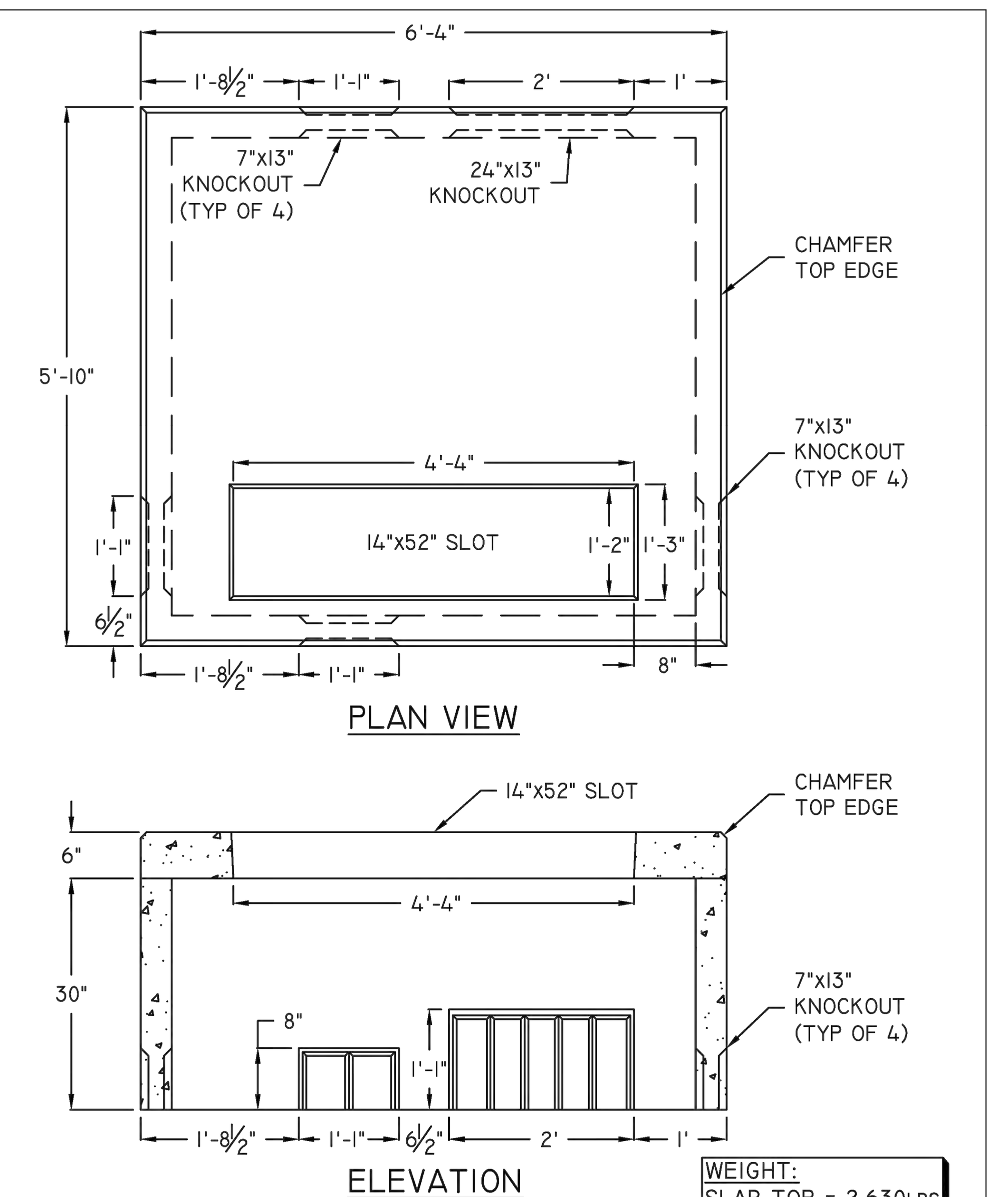
Notes
1. The trench shall be backfilled immediately following placement of the conduit.
2. 1/4–inch–diameter nylon pull line and plastic conduit plugs to be supplied and installed by contractor.

ORIGINAL 6/24/96 APPROVED 12/18/00	SINGLE–PHASE PRIMARY CABLE INSTALLATION DIRECT–BURIED – IN CONDUIT		CT/MA	
	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 50.103	3



Notes
1. To inspect, provide access, operate elbow connectors and ventilate the transformer, the above specified clear area distances to buildings or shrubs shall be maintained. The distance from the building is to the concrete transformer pad. Property line shall be considered an obstruction, since fences, shrubs, etc. may be installed at a future date by adjacent property owners. Because of the possibility of cooling fins overhanging the pad, side clearances to be increased to 5 feet for transformers 1000 kVA and larger.
2. If no curb exists, or transformer is located closer than 10 feet to the traveled way, protective vehicle posts (●) shall be installed as specified in **DTR 42.061**.
3. Top of transformer pad shall be installed 3 inches above final grade.
4. Transformer shall not be located on steep grades where access to or elbow operation is made difficult.
5. Transformer shall meet the minimum distances to doors, windows, fire escapes, air intakes and walls as specified in **DTR 42.061**.
6. Transformer ***is not*** to be located with its doors facing the building.
7. Refer to **DTR 58.301** for specific instructions on the installation of the transformer pad.
8. Refer to **DSEM Section 06.32** for information on environmental considerations.

ORIGINAL 4/10/91 APPROVED 1/25/02	PAD–MOUNTED TRANSFORMERS LOCATION TO BUILDINGS AND ROADWAYS			
	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 42.047	6



WEIGHT:
SLAB TOP = 2,630LBS
BASE = 3,165LBS

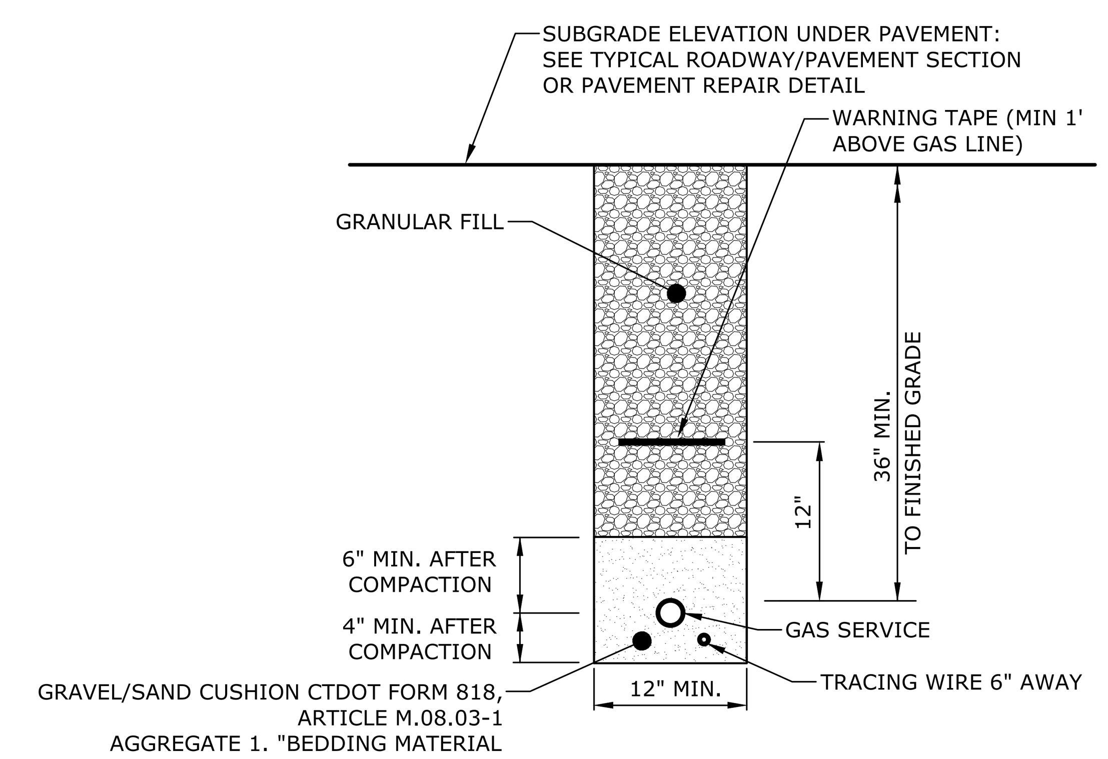
DESIGN NOTES:
1. CONCRETE - 5,000 PSI, 28 DAYS
2. REINFORCING STEEL CONFORMS TO LATEST ASTM A615 GRADE 60
3. H-20 DESIGN LOADING PER AASHTO HS-20-44
4. MEETS ALL PROVISIONS OF NORTHEAST UTILITIES SERVICE DWG NO. P-015

ANY MODIFICATIONS TO THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF ARROW CONCRETE PRODUCTS SHALL RENDER IT INVALID AND UNUSABLE.

APPROVAL:	P-015 TRANSFORMER PAD	SCALE: N.T.S.
SIGNATURE / DATE		WEIGHT: 5,795 LBS

ARROW CONCRETE PRODUCTS
PROGRESS IN PRECAST
560 SALMON BROOK STREET GRANBY, CT 06035 ● (860) 653-5063 ● www.arrow-concrete.com

DATE: 3/31/16 DRAWN: JPW DWG #: -



NOTES:
1. ALL EXCAVATION WORK WILL BE IN ACCORDANCE WITH THE DIRECTION OF THE COMPANY AND IN COMPLIANCE WITH THE REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION OVER THE STREETS, ALLEYS, RIGHT-OF-WAYS, OR PROPERTIES WHERE THE WORK IS TO BE EXECUTED.
2. PRIOR TO THE INSTALLATION OF THE PIPE, SAND PADDING SHALL BE INSTALLED, A MINIMUM OF 4" (MEASURED AFTER COMPACTION.)
3. SAND PADDING ABOVE THE GAS PIPE SHALL BE A MINIMUM OF 6" (MEASURED AFTER COMPACTION).
4. BACKFILL SHALL BE FREE OF LARGE STONES (6" DIAMETER) WITHIN 1' OF THE PIPE. IF THE MATERIAL REMOVED FROM THE TRENCH IS NOT SUITABLE FOR BACKFILL, REPLACEMENT FILL SHALL BE USED.
5. ALL GAS SERVICE INSTALLATIONS SHALL BE COORDINATED WITH EVERSOURCE.
6. ALL GAS SERVICES SHALL BE INSTALLED ACCORDING TO EVERSOURCE STANDARDS AND REQUIREMENTS.

GAS SERVICE TRENCH

NO SCALE

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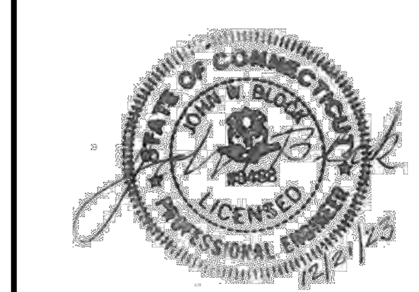
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100



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APPROVED BY:	JWB

DETAILS - 9

SCALE: AS SHOWN

C-609

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PLANT LIST

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
6	AR	ACER RUBRUM	RED MAPLE	3-3.5" CAL.	B&B	FULL
4	AM	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG MAPLE	3-3.5" CAL.	B&B	
2	HL	GLEDITSIA TRIACANTHOS 'SHADEMASTER'	SHADEMASTER HONEY LOCUST	3-3.5" CAL.	B&B	FULL, MATCHING
5	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	3-3.5" CAL.	B&B	
7	QP	QUERCUS PALUSTRIS 'PACIFIC BRILLIANCE'	PIN OAK	3-3.5" CAL.	B&B	FULL12
12	TA	TILIA AMERICANA 'REDMOND'	REDMOND LINDEN	3-3.5" CAL.	B&B	FULL
8	AB	AMELANCHIER 'AUTUMN BRILLIANCE'	AUTUMN BRILLIANCE SHAD	8-10' HT.	B&B	
1	RP	AMELANCHIER CANADENSIS 'RAINBOW PILLAR'	RAINBOW PILLAR SHAD	8-10' HT.	B&B	LIMBED TO 6'
9	AC	AMELANCHIER CANADENSIS	SHAD	5-6' HT.	B&B	MULTI-STEM
5	CF	CORNUS FLORIDA 'CLOUDE NINE'	FLOWERING DOGWOOD	2-2.5" CAL.	B&B	WHITE
7	WK	CRATAEGUS 'WINTER KING'	WINTER KING HAWTHORN	2-2.5" CAL.	B&B	LIMBED TO 6'
7	MA	MALUS X 'ADIRONDACK'	ADIRONDACK CRAB APPLE	2-2.5" CAL.	B&B	LIMBED TO 6'
3	OA	OXYDENDRUM ARBOREUM	SOURWOOD	2-2.5" CAL.	B&B	
5	OV	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2-2.5" CAL.	B&B	
EVERGREENS						
13	AH	ILEX OPACA 'SATYR HILL'	SATYR HILL HOLLY	7-8' HT.	B&B	FEMALE
3	JV	JUNIPERUS VIRGINIANA 'EMERALD SENTINEL'	RED CEDAR	7-8' HT.	B&B	FULL
32	GG	THUJA 'GREEN GIANT'	GREEN GIANT ARBORVITAE	8-9' HT.	B&B	
17	TN	THUGA OCCIDENTALIS 'NIGRA'	DARK ARBORVITAE	7-8' HT.	b&b	
54	TO	THUJA OCCIDENTALIS 'DEGROOT'S SPIRE'	DEGROOT'S SPIRE ARBORVITAE	6-7' HT.	B&B	

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
SHRUBS					
7	AA	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA'	RED CHOKEBERRY	2-3' HT.	CONT.
18	JT	CEANOTHUS AMERICANUS	JERSEY TEA	18-24" HT.	CONT.
36	CA	CLETHRA ALNIFOLIA	CLETHRA	3-4' HT.	CONT.
12	HB	CLETHRA 'HUMMINGBIRD'	HUMMINGBIRD CLETHRA	2-3' HT.	CONT.
10	HA	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	2-3' HT.	CONT.
10	HQ	HYDRANGEA QUERCIFOLIA	OAKLAEF HYDRANGEA	2-3' HT.	CONT.
134	IG	ILEX GLABRA 'SHAMROCK'	COMPACT INKBERRY	2-3' HT.	CONT.
8	IV	ILEX VERTICILLATA 'WINTER RED'	WINTER RED WINTERBERRY	2-3' HT.	CONT.
30	IT	ITEA VIRGINICA	VIRGINIA SWEETSPIRE	2-3' HT.	CONT.
32	JE	JUNIPERUS COMMUNIS 'EFFUSA'	COMMON JUNIPER	18-24' SPR.	CONT.
19	JO	JUNIPERUS 'GREY OWL'	GREY OWL JUNIPER	24-30" HT.	CONT.
35	LA	LEUCOTHOE AXILLARIS 'SARAH'S CHOICE'	LEUCOTHOE	15-18" HT.	CONT.
57	LB	LINDERA BENZION	SPICEBUSH	2-3' HT.	CONT.
40	MP	MYRICA PENSYLVANICA	NORTHERN BAYBERRY	2-3' HT.	CONT.
47	NB	PHYSOCARPUS OPULIFOLIS 'AMBER JUBILEE'	AMBER JUBILEE NINEBARK	3-4' HT	CONT.
22	PO	POTENTILLA 'DAKOTA SUNSPOT'	DAKOTA SUNSPOT CINQUEFOIL	2-3' HT.	CONT.
19	RC	RHODODENDRON CAROLINIANUM	CAROLINA RHODODENDRON	2-3' HT.	CONT.
11	RM	RHODODENDRON MAXIMUM	ROSEBAY RHODODENDRON	3-4' HT.	B&B
11	GL	RHUS AROMATICA 'GRO-LOW'	GRO-LOW SUMAC	2-3' SPR.	CONT.
18	RV	ROSA VIRGINIANA	VIRGINIA ROSE	2-3' HT.	CONT.
10	VA	VIBURNUM ACERFOLIA	MAPLELEAF VIBURNUM	3-4' HT.	B&B
24	VD	VIBURNUM DENTATUM 'BLUE MUFFIN'	BLUE MUFFIN ARROWWOOD	36-42" HT.	CONT.
7	VL	VIBURNUM LENTAGO	NANNYBERRY	3-4' HT.	B&B
24	VN	VIBURNUM NUDUM 'WINTERTHUR'	SMOOTH WITHEROD	3-4' HT.	B&B
34	VR	VIBURNUM RHYTIDOPHYLLUM	LEATHERLEAF VIBURNUM	3-4' HT.	B&B

QTY	KEY	BOTANICAL NAME	COMMON NAME	ROOT
GROUNDCOVERS & PERENNIALS				
5	AU	ARCOTOPHYLOS UVA-URSI	BEARBERRY	1 GAL.
10	BC	AMSONIA 'BLUE ICE' OR 'SHORT STACK'	BLUE ICE AMSONIA	1 QT.
25	CM	CIMIFUGA RACEMOSA	FAIRLYCANDLES	1 GAL.
25	HF	DENNSTAEDTIA PUNCTILOBA	HAYSCENTED FERN	1 QT.
25	PA	PACKERA AUREA	GOLDEN GROUNSEL	1 QRT.
5	SG	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCHGRASS	1 GAL.
25	CF	POLYSTICHUM ACROSTICHOIDES	CHRISTMAS FERN	1 GAL.

LEGEND

- PROPERTY LINE
- WETLAND LINE
- WATERCOURSE LINE
- 100' UPLAND REVIEW AREA
- 62 EXISTING CONTOUR
- 262 PROPOSED CONTOUR (BY OTHERS)
- EX. EVERGREEN/DECIDUOUS TREE TO REMAIN (APPROX. LOCATION)
- NEW EVERGREEN TREE
- NEW DECIDUOUS SHADE TREE
- NEW SMALL FLOWERING TREE
- NEW SHRUB
- NEW / EX. LAWN
- PROPOSED SINGLE HEAD HEAD LIGHT POLE
- PROPOSED WALL MOUNTED LIGHT
- PROPOSED BOLLARD LIGHT

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

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Fuller Development LLC

64 Danbury Road

Wilton, Connecticut

0 30' 60'
SCALE: 1" = 30'

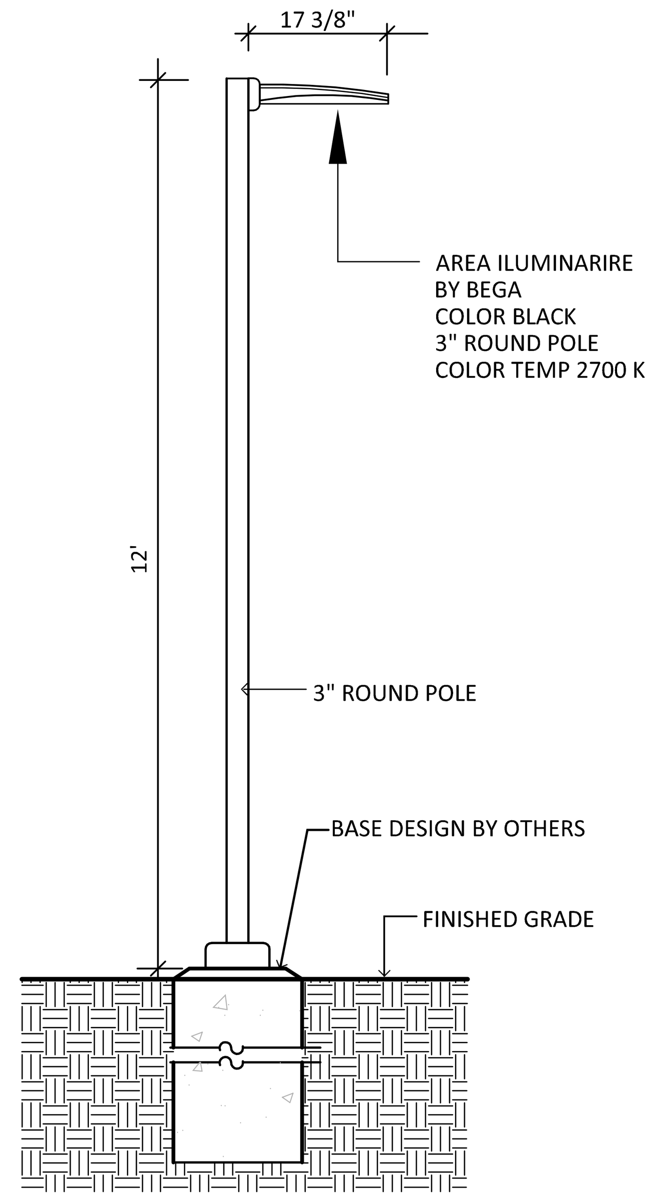
PROJECT NO:	G5081-001
DATE:	1/2/2024
FILE:	Drawing1.dwg
DRAWN BY:	KET
DESIGNED/CHECKED BY:	MEP
APPROVED BY:	KET

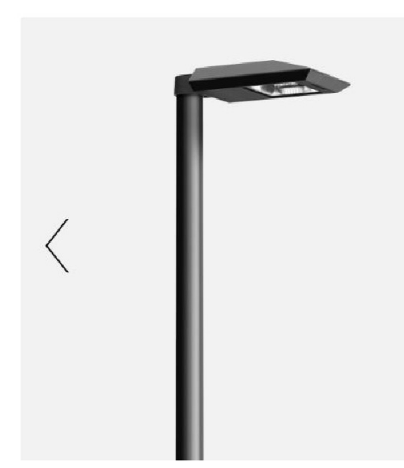
LANDSCAPING & LIGHTING PLAN

SCALE: 1"=30'

LP-1

Last Saved: ----
Tighe & Bond:Drawing1.dwg





NOTE:
1. LIGHT FIXTURE & POLE BY BEGA PRODUCTS.
2. POLE AND FIXTURE COLOR SHALL BE BLACK.
3. INSTALL LIGHT POLE AND FOOTING PER MANUFACTURER'S RECOMMENDATIONS.

POLE LIGHT (TYP.)

SCALE: NOT TO SCALE

LANDSCAPE LIGHTING NOTES (TYP.):

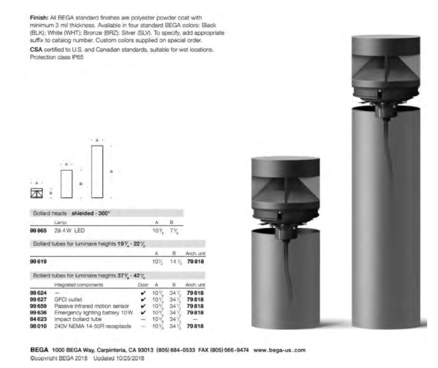
1. FOOTCANDLE LIGHTING LEVELS FOR THIS PROJECT WERE PREPARED BY OTHERS.
2. SITE LIGHTING INFORMATION AND LIGHTING PLANS PREPARED BY ENVIRONMENTAL LAND SOLUTIONS, LLC ARE DESIGNED FOR GENERAL LANDSCAPE AESTHETIC PURPOSES ONLY. LIGHTING INFORMATION SHOWN ON THIS PLAN SHALL NOT BE USED FOR SECURITY OR SAFETY PURPOSES.
3. THIS PLAN ASSUMES THAT THE BUILDING WILL HAVE WALL MOUNTED FIXTURES (BY OTHERS) TO LIGHT THE FACADE AND ADJACENT LANDSCAPE AREAS (INCLUDING WALKS AND DOORS).
4. INSTALL LIGHT FIXTURES AS RECOMMENDED BY THE MANUFACTURER.
5. LIGHT POLES LOCATED WITHIN LANDSCAPE AND PEDESTRIAN AREAS SHALL BE ON A BASE FLUSH WITH GRADE LOCATED A MINIMUM OF 3' FROM THE EDGE OF VEHICLE PAVEMENT IF FEASIBLE.

NOTE:
1. PROVIDE LIGHT # 84510 BY BEGA PRODUCTS.
2. FIXTURE COLOR SHALL BE BLACK.
3. INSTALL LIGHT PER MANUFACTURER'S RECOMMENDATIONS.

SIGN LIGHT (TYP.)

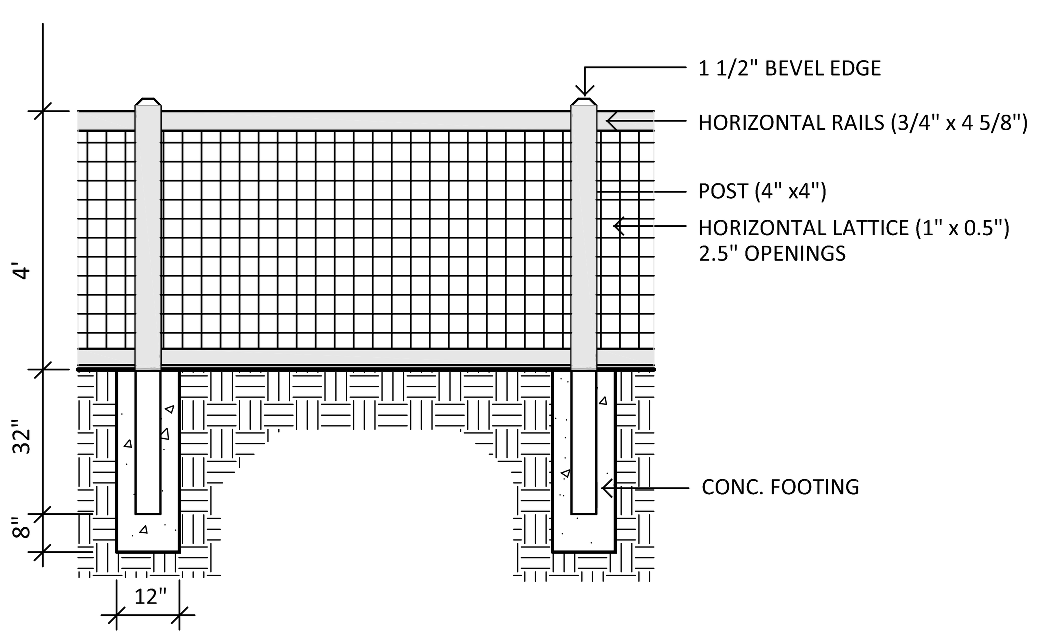
SCALE: NOT TO SCALE

NOTE:
1. LIGHT FIXTURE BY BEGA PRODUCTS # 9986/K3/99619.
2. FIXTURE COLOR SHALL BE BLACK.
3. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.



BOLLARD LIGHT (TYP.)

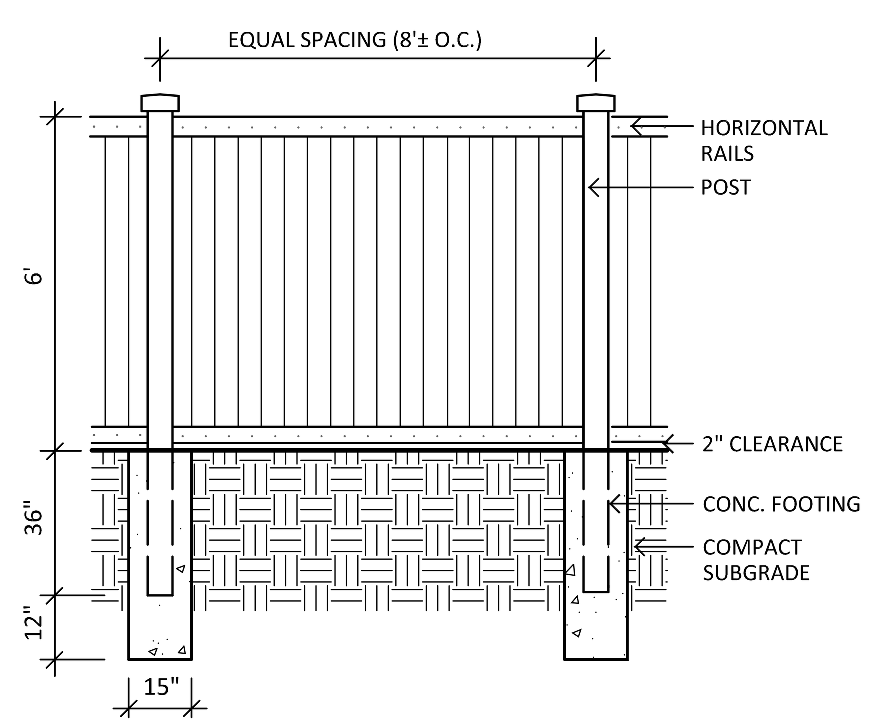
SCALE: NOT TO SCALE



NOTE:
1. FENCE SHALL BE MADE OF VINYL.
2. COLOR SHALL MATCH BUILDING COLOR, "ANTHRACITE GREY".

LATTICE SCREENING FENCE (4' HT.) FOR AIR HANDLERS

SCALE: NOT TO SCALE



NOTE:
1. FENCE COLOR SHALL MATCH BUILDINGS. "ANTHRACITE GREY".

VINYL SCREENING FENCE (TYP.)

SCALE: NOT TO SCALE

NOTES:

1. EXISTING AND PROPOSED SITE INFORMATION TAKEN FROM A DIGITAL AUTOCADD SITE PLAN SUPPLIED BY TIGHE&BOND. REFER TO THESE SITE PLANS FRO ADDITIONAL INFORMATION.
2. CONTACT "CALL BEFORE YOU DIG" AT 1-800-922-4455 TO HAVE UNDERGROUND UTILITY LINES MARKED BY THEM PRIOR TO START OF ANY EXCAVATION WORK.
3. SEED AREAS AT THE METHODS AND 125% THE APPLICATION RATE RECOMMENDED BY THE MANUFACTURER. THE SEED SHALL BE SPREAD ON THE PREPARED SOIL, LIGHTLY RAKED TO ESTABLISH GOOD SOIL CONTACT AFTER SOWING, AND MULCHED WITH A 2 INCH LOOSE LAYER OF CLEAN OAT STRAW OR COMMERCIAL WOOD FIBER PRODUCTS APPLIED BY HAND OR BY HYDROSEEDING ON SLOPES LESS THAN 10%. SEEDED AREAS ON SLOPES ON OR GREATER THAN 10% SHALL BE COVERED WITH A PLASTIC-FREE AND 100% BIODEGRADABLE (INCLUDING ANCHOR STAPLES) EROSION CONTROL BLANKET. A NURSE CROP OF PERENNIAL RYE GRASS AT THE RATE OF 40 LBS./ACRE SHALL BE ADDED TO THE SEED MIX ON SLOPES OF EXCESS OF 10% AND AS SPECIFIED. SEED MIX SUBSTITUTIONS SHALL BE EQUIVALENT TO THAT SPECIFIED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO USE. UNLESS OTHERWISE SPECIFIED, MAINTAIN SEEDED AREAS AS RECOMMENDED BY THE MANUFACTURER. EXCEPT FOR LAWN AREAS, DO NOT FERTILIZE AREAS TO BE SEEDED UNLESS SPECIFIED BY THE MANUFACTURER. SEED AREAS AS PER THE FOLLOWING SCHEDULE:
   A. LAWN: SEED LAWN AREAS WITH "SMART SEED NORTHEAST" MIX BY PENNINGTON SEED, INC. OR APPROVED EQUIVALENT. APPLY SOIL AMENDMENTS AS RECOMMENDED BY THE MANUFACTURER.
   B. WETLAND BUFFERS (UPLAND AREAS):
   SEED THIS AREA WITH "NEW ENGLAND CONSERVATION / WILDLIFE SEED MIX" BY FROM NEW ENGLAND WETLAND PLANTS, INC. (413-548-8000).
4. IF SPECIFIED SEEDING CAN NOT OCCUR DUE TO SEASONAL AND WEATHER CONDITIONS, TEMPORARY SEED DISTURBED UPLAND AREAS WITH A MIXTURE OF ANNUAL RYE AT 20 LBS./ACRE, PERENNIAL RYE AT 20 LBS./ACRE, AND REDTOP AT 2 LBS./ACRE AND DISTURBED WETLAND AREAS WITH ANNUAL RYE AT THE RATE OF 30 LBS./ACRE. MULCHING, WITHOUT SEEDING, MAY BE USED DURING THE NON-GROWING SEASON IN ACCORDANCE WITH THE THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL (2002)".
5. EXACT LOCATION OF PROPOSED PLANTINGS AND SPECIES TYPES MAY VARY FROM THIS PLAN BASED ON ACTUAL FIELD CONDITIONS.
6. SPRAY NEW PLANTINGS IMMEDIATELY AFTER INSTALLATION WITH A WHITE-TAILED DEER REPELLENT AND CONTINUE AS NEEDED TO MAINTAIN PLANTS FREE OF SIGNIFICANT DEER BROWSING.
7 PLANT SPECIES SUBSTITUTIONS MAY BE MADE WITH THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND TOWN OF WILTON PRIOR TO PLANTING. SUBSTITUTED PLANTS SHALL BE AT AN EQUAL OR GREATER SIZE AS NOTED USING A SIMILAR TYPE PLANT.
8. MULCH AREAS AROUND NEW TREES AND SHRUBS WITH A 3" THICK LAYER OF SHREDDED CEDAR BARK MULCH. NEW TREES SHALL EACH HAVE A 5' MIN. DIA. MULCHED BED AND NEW SHRUBS SHALL EACH HAVE A MINIMUM 3' DIAMETER MULCHED BED. AREAS WITHIN 4" OF TREE TRUNKS SHALL BE MAINTAINED FREE OF MULCH.
9. PLANTING METHODS SHALL BE IN ACCORDANCE WITH THE "AMERICAN STANDARDS FOR NURSERY STOCK," LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION.
10. THE CONTRACTOR SHALL VERIFY WITH THE PROJECT ENGINEER THAT THE NEW PLANTINGS DO NOT INTERFERE WITH EXISTING AND/OR PROPOSED UTILITIES, SIGHT LINES, AND/OR STRUCTURES.
11. THIS PLAN FOR PLANTING PURPOSES ONLY. SEE PLANS BY OTHERS FOR ADDITIONAL INFORMATION.
12. NONNATIVE INVASIVE MANAGEMENT: REMOVE JAPANESE BARBERRY, BURNINGBUSH, ASIATIC BITTERSWEET, MULTIFLORA ROSE AND NOTED NORWAY MAPLES UNDER 3" CALIPER FROM WETLAND AND ADJACENT UPLAND AREAS BY HAND PULLING, OR IF NOT PRACTICAL, CUTTING THE PLANTS DOWN TO JUST ABOVE GRADE AND APPLYING AN APPROPRIATE HERBICIDE, SUCH AS ROUNDUP IN UPLAND AREAS AND IMAZAPYR (TRADE NAME: HABITAT) IN WET CONDITIONS, INTO THE STEM WELLS. SEVERAL TREATMENT MAY BE REQUIRED. THE PERIOD BETWEEN JULY AND OCTOBER IS THE PREFERRED TIMING TO APPLY HERBICIDE. NONNATIVE INVASIVE PLANTS SHALL BE MANAGED FOR A MINIMUM OF FIVE YEARS.

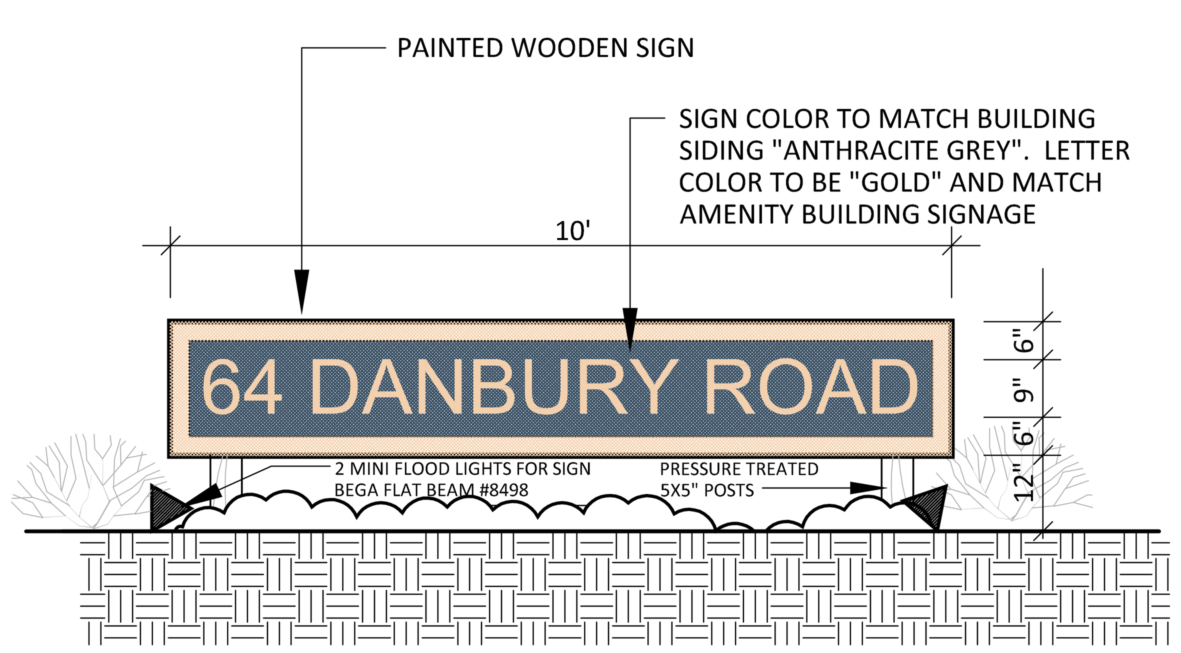
NONNATIVE INVASIVE SPECIES CONTROL NOTES:

1. CONTROL PERIOD OF NONNATIVE INVASIVE PLANTS TO BE ONGOING OVER A FIVE (5) YEAR PERIOD (OR LONGER).
2. THE LANDSCAPE CONTRACTOR SHALL CONTACT THE PROJECT ENVIRONMENTAL CONSULTANT WITH ANY QUESTIONS REGARDING THE CONTROL OR IDENTIFICATION OF INVASIVE NONNATIVE SPECIES.
3. THE LANDSCAPE CONTRACTOR SHALL FOLLOW THE METHODS AND RECOMMENDATIONS RECOMMENDED BY THE HERBICIDE MANUFACTURER AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS. A PERMIT FROM DEEP IS REQUIRED FOR ANY PESTICIDE APPLICATION TO A BODY OF WATER.
4. ALL CUT OR PULLED INVASIVE NONNATIVE PLANT MATERIALS SHALL BE DISPOSED APPROPRIATELY AND COMPLY WITH THE 2004 DEEP / UCONN "GUIDELINES FOR DISPOSAL OF TERRESTRIAL INVASIVE PLANTS." ALL CUTTINGS SHALL BE COLLECTED AND PLACED ONSITE ON A PLASTIC TARP (OR ON AN ASPHALT PAVEMENT AREA) AND SUN DRIED UNTIL DEAD. AVOID CUTTINGS FROM BEING IN CONTACT WITH ANY SOIL. DEAD PLANTS SHALL BE BAGGED AND DEPOSITED AT AN INCINERATOR WASTE FACILITY (NOT A COMPOSTING FACILITY).
5. START CONTROL OF INVASIVE PLANT SPECIES PRIOR TO THE START OF EARTH MOVING ACTIVITIES. CONTROL NONNATIVE INVASIVE SPECIES AS FOLLOWS:
   A. FOR JAPANESE KNOTWEED, EUONYMUS, ASIATIC BITTERSWEET, AND NORWAY MAPLES CONTROL.
   STEP #1 (PRIOR TO HERBICIDE TREATMENT): CUT PLANT DOWN TO GRADE LEVEL DURING THE GROWING SEASON (LATE SUMMER OR EARLY FALL IS PREFERABLE). REMOVE ASIATIC BITTERSWEET ROOTS IF FEASIBLE. DISPOSE OF CUT PLANT MATERIAL AS OUTLINED ABOVE.
   STEP #2: IMMEDIATELY AFTER CUTTING, TREAT CUT STEMS WITH AN APPROPRIATE HERBICIDE (SUCH AS ROUND-UP) AT THE RATE AND METHODS RECOMMENDED BY THE MANUFACTURER. CARE SHALL BE TAKEN TO AVOID HERBICIDE CONTACT WITH NATIVE OR OTHER DESIRABLE VEGETATION.
   STEP #3: CHECK CONTROL AREA MONTHLY DURING THE GROWING SEASON FOR NEW GROWTH. SPOT TREAT NEW GROWTH WITH AN APPROPRIATE HERBICIDE AS NEEDED FOR CONTROL.
6. CARE SHALL BE TAKEN TO AVOID HERBICIDE CONTACT WITH NATIVE OR OTHER DESIRABLE VEGETATION. IN AREAS WHERE NATIVE PLANTS ARE GROWING NEAR PLANTS TO BE CONTROLLED, THE HERBICIDE SHALL NOT BE SPRAYED ONTO THE TARGET PLANTS. IN THESE AREAS THE HERBICIDE SHALL BE APPLIED WITH A BRUSH OR CLOTH.

NONNATIVE INVASIVE DISPOSAL:

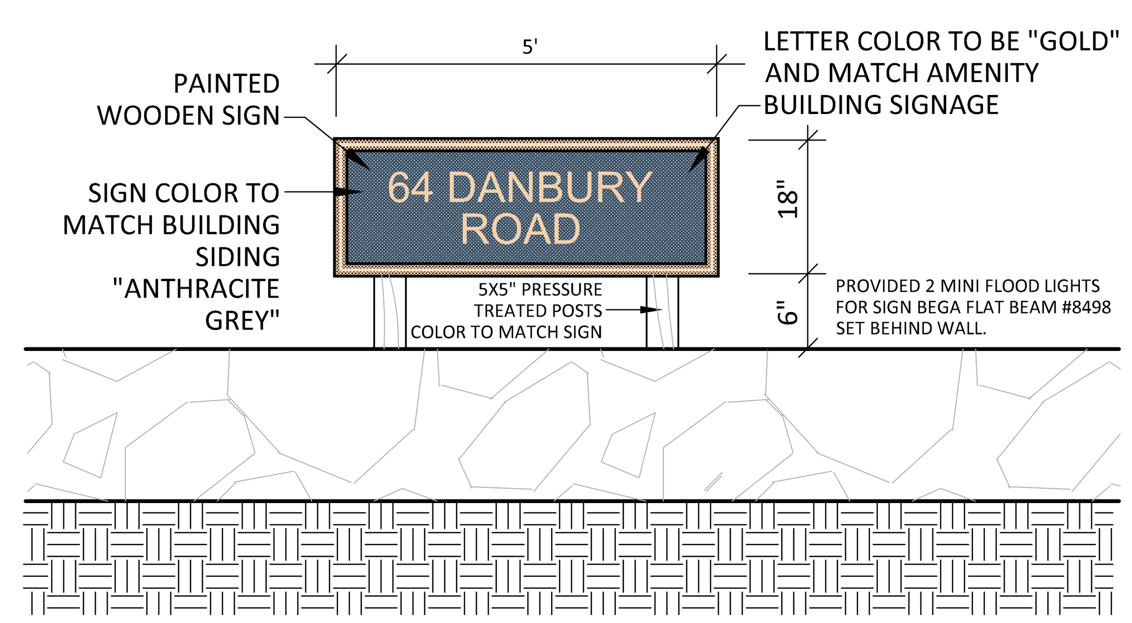
PLANT DISPOSAL

1. ALL CUT OR PULLED INVASIVE NONNATIVE PLANT MATERIALS SHALL BE DISPOSED APPROPRIATELY AND COMPLY WITH THE 2004 DEEP / UCONN "GUIDELINES FOR DISPOSAL OF TERRESTRIAL INVASIVE PLANTS." ALL CUTTINGS SHALL BE COLLECTED AND PLACED ONSITE ON A PLASTIC TARP (OR ON AN ASPHALT PAVEMENT AREA) AND SUN DRIED UNTIL DEAD. AVOID CUTTINGS FROM BEING IN CONTACT WITH ANY SOIL. IF FEASIBLE, DO NOT REMOVE PULLED OR CUT NONNATIVE INVASIVE PLANTS FROM THE SITE UNTIL DEAD. EXCEPT FOR TUBEROUS PLANTS, SUCH AS JAPANESE KNOTWEED AND PHRAGMITES, NONNATIVE INVASIVE PLANTS PULLED OR CUT SHALL BE LEFT ON THE GROUND SURFACE IN A SUNNY LOCATION FOR THEIR ROOTS TO DRY. TUBEROUS WEED PLANTS SHALL BE LEFT SOIL FREE IN THE SUN ON AN IMPERVIOUS BARRIER (SUCH AS BLACK PLASTIC, DRIVEWAYS AND WALKS) UNTIL DEAD SO THAT THEY DO NOT RE-SPROUT.
2. IF PLANTS HAVE TO BE REMOVED FROM THE SITE BEFORE THEY ARE DEAD, THEY SHALL BE BAGGED AND DEPOSITED AT AN INCINERATOR WASTE FACILITY (NOT A COMPOSTING FACILITY).



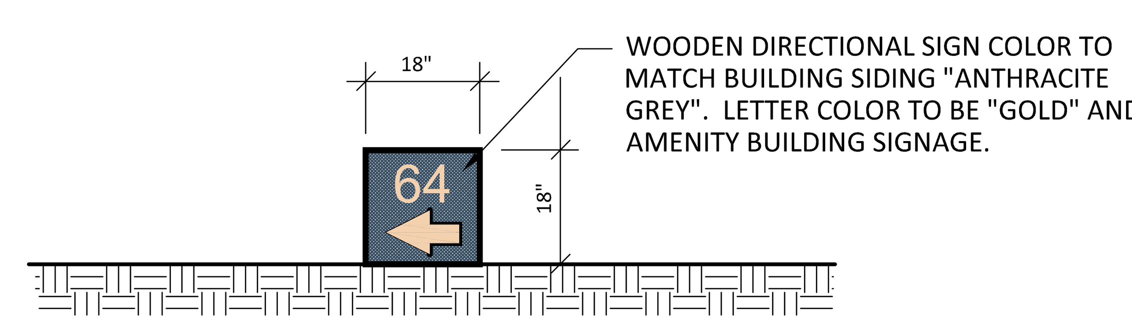
FREE STANDING SIGN (SIGN AREA 17.5 SF)

SCALE: NTS



SIGN BEHIND EXISTING ENTRANCE WALL

SCALE: NTS



DIRECTIONAL SIGN (SIGN AREA 2.25 SF)

SCALE: NTS

Tighe&Bond
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

ENVIRONMENTAL LAND SOLUTIONS, LLC
Landscape Architecture and Environmental Planning
8 KNIGHT STREET, SUITE 203
NORWALK, CONNECTICUT 06851
Tel: (203) 855-7879 Fax: (203) 855-7836
info@elsllc.net www.elsllc.net

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Fuller Development LLC

64 Danbury Road

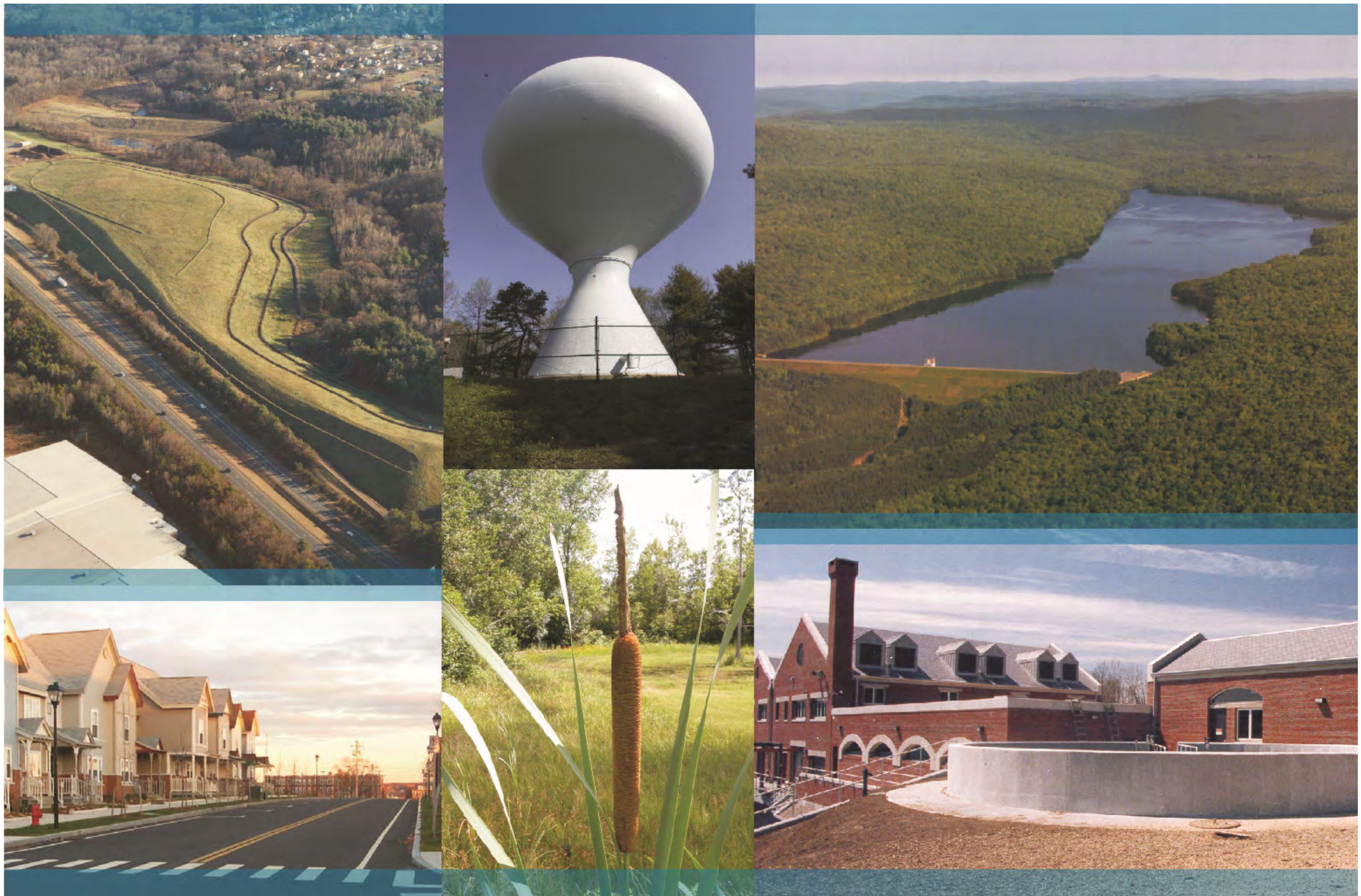
Wilton, Connecticut

PROJECT NO:	G5081-001
DATE:	1-2-24
FILE:	ELS PROJECT # 2130
DRAWN BY:	KET
DESIGNED/CHECKED BY:	MEP
APPROVED BY:	KET

DETAILS AND NOTES

SCALE: AS NOTED

LP-2



STATE OF CONNECTICUT
NO. 22850
LICENSED
PROFESSIONAL ENGINEER
12/21/23

STATE OF CONNECTICUT
JOHN W. BLOCK
#9488
LICENSED
PROFESSIONAL ENGINEER
12/21/23

Tighe&Bond

64 Danbury Road
Wilton, CT 06897

Engineering Report

Prepared For:

Town of Wilton,
Planning and Zoning Commission

December 2023

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Section 1
Introduction and Site Conditions

Tighe & Bond has prepared this report at the request of Fuller Development, LLC ("Applicant"), to support their applications to the Town of Wilton Planning & Zoning Commission and Inlands Wetlands Commission for a proposed 8-building residential development with 93 units.

The 64 Danbury Road site is an approximately 4.84-acre unit located on the northern extents of a larger 22.27-acre parcel of land, the entirety of which is bounded by Danbury Road to the west, wooded area and residential properties to the east, and commercial properties to the north and south. The proposed development consists of the construction of a 93-unit residential development, at-grade parking, stormwater management systems, utility services, lighting, and associated landscaping. Refer to **Figure 1**, Site Location Map, in **Appendix A**.

Tighe & Bond has inspected the property and analyzed available soils, drainage, utility, wetland, and topographic information. Drainage calculations and stormwater management design have been prepared in accordance with the 2000 Connecticut Department of Transportation (CTDOT) Drainage Manual, and the Connecticut Department of Energy and Environmental (DEEP) Protection 2004 Stormwater Quality Manual. The drainage calculations include a hydrologic and hydraulic analysis of the existing conditions and the proposed development. Specifically, the calculations include an analysis of the on-site stormwater management measures and their performance in handling peak flow attenuation and pollutant removals. The report also includes a summary of the site floodplain management for Copts Brook, the available existing and proposed utilities to service the property, and the proposed soil erosion and sedimentation control measures incorporated during construction.

1.1 Existing Conditions

The existing site consists of an office building with a 15,500 square-foot footprint and at-grade parking. The development site is located within Wilton's DE-5R (East) Design Enterprise District Zone. A significant portion of the site is impervious, including paved parking areas, sidewalks, and building roof area, with landscaping and lawns generally around the perimeter of the site. Utility services include underground water, natural gas, electric, and tele-data, which ultimately connect to service mains and overhead lines in Danbury Road.

The site is located on Danbury Road (Route 7) which is a north-south four lane State maintained major arterial roadway, with dedicated left turn lanes for a traffic light at the main entrance. The roadway is generally 50 feet wide and widens to roughly 60-feet along the frontage of the site to accommodate the aforementioned left turn lanes.

The topography of the site slopes primarily from east to west towards Copts Brook and Route 7. There is a series of catch basins and inlet structures on the existing site, which capture runoff and discharges to 54" RCP along the northern end of the site. The front yard of the property partially lies within the 500-year flood plain for the Norwalk River, while a small part of the middle of the property lies within the 100-year floodplain for

Copts Brook. This floodplain and site hydrology will be discussed in greater detail later in this report.

1.2 Project Proposal

The 8-building residential development with 93 units includes driveways and parking areas throughout the site. The development will use the current entry drive and the same point of access to Danbury Road as the other properties at 50 and 60 Danbury Road. A centrally located clubhouse and pool is proposed for the development immediately adjacent to the existing entry loop roadway. The site development plan also includes a network of sidewalks for pedestrian circulation and retaining walls to minimize the overall development footprint and grading impacts, as well as to establish required finished floor elevations. New utility services for the property are proposed including underground water, natural gas, electric, tel-com and sanitary sewer.

Stormwater management will be accommodated on-site. Surface runoff will be collected in catch basins and inlet structures located throughout the site and tie into the existing drainage infrastructure to be maintained. Underground infiltration systems have been designed to reduce peak flows and provide stormwater treatment, prior to discharge. The stormwater management system has been designed to treat the 0.5-inch water quality volume and remove a high level of pollutants. This will be discussed in greater detail later in the report.

1.3 Site Soils

The U.S. Department of Agriculture's National Resource Conservation Service (NRCS) Web Soil Survey indicates the following soil types are present on the site:

Urban Land (307): Urban land is mostly covered by streets, parking lots, buildings, and other structures of urban areas. Slopes range from 0 to 33 percent. No drainage class is assigned, and the complex does not meet hydric criteria.

Udorthents-Urban Land Complex (306): Udorthents is a miscellaneous land type used to denote moderately well to excessively drained earthen material which has been so disturbed by cutting, filling, or grading that the original soil profile can no longer be discerned. Udorthents consist of very deep, moderately well drained to excessively drained soils on uplands, terraces and plains. They are highly disturbed soils commonly associated with construction and building or surface mining. Typically, more than 2 feet of the original soil has been removed or it has been covered with more than 2 feet of earthy fill. Texture to a depth of 60 inches, varies from silt loam to extremely gravelly sand. Slopes range from 0 to 35 percent.

Canton and Charlton Fine Sandy Loams (60C & 61C): The Charlton component is typically found on hills, uplands while the Chatfield component is typically found on bedrock-controlled ridges, uplands, bedrock-controlled hills. The parent material of both soils consists of coarse-loamy melt-out till derived from granite and/or schist and/or gneiss with a natural drainage class of well drained. These soil does not meet hydric criteria. Slope ranges from 8 to 15 percent.

A copy of the NRCS Soil Resource Report is included in **Appendix B** of this report.

Soil permeability for the site was estimated to be 1-inch per hour for the design of the proposed stormwater management systems and are in part based on historic design assumptions used for the site. We believe the estimate is conservative given the soil classifications, furthermore permeability estimates will be field verified at the site prior to the completion of construction documents to confirm the design assumptions are accurate.

1.4 Wetlands

Wetlands soils were delineated and flagged by Otto Theall, professional soil scientist on February and March, 2017 and located in the field by D'Andrea Surveying & Engineering, P.C. Wetland flags and limits are depicted on the project drawing sheets.

Section 2
Stormwater Management

2.1 Existing Site Hydrologic Analysis

To review the impact of the proposed development on the existing site, an existing conditions hydrologic analysis was performed. Under existing conditions, stormwater runoff from the site generally flows from east to west towards Copts Brook and Danbury Road (US Route 7). There are a series of catch basins and inlet structures on the 64 Danbury Road site that capture runoff and discharge to a 54" RCP culvert that crosses Danbury Road and outlets to the Norwalk River. This culvert takes the majority of runoff from 64 Danbury Road as well as from 60 Danbury Road and the recently expanded parking garage. There are three oversized perforated pipes within this existing drainage network that provide nominal storage/infiltration for runoff from the parking areas and one water quality structure that treats a small portion of the parking area as well. In addition, there is an existing subsurface retention system near the site entry from Danbury Road that collects runoff from most of the circular entry drive before discharging it to the 54-inch RCP culvert. Lastly, the culvert also receives flow from Copts Brook and ultimately conveys the aggregate runoff from all these areas to the Norwalk River. The last segment of the 54" RCP culvert along the southern edge of the property has been designated as Design Point B for our analysis.

There are 2 additional design points in the northeastern portion of the site which are used to analyze overland flow to Copts Brook and overland flow offsite to the northeast. These are denoted as Design Points A & C respectively.

The drainage areas for the existing site and contributing areas have been delineated into sub-watershed areas and are shown on the Existing Conditions Watershed Map (Figure EX-WS), which is included in **Appendix C** of this report.

Impervious and pervious areas, weighted curve number, and time of concentration were calculated for each watershed area and developed into hydrologic model to determine the project's peak flow and volume, as part of the comparative hydrology analysis. Precipitation data for the hydrologic modeling were developed from NOAA's Atlas 14 Point Precipitation Frequency Estimates online utility. The site-specific precipitation depths for a 24-hour durations storm are shown in **Table 2-1** below.

Table 2-1
24-hour Duration Precipitation Depth

	2-Year	10-Year	25-Year	50-Year	100-Year
Depth (in)	3.52	5.38	6.54	7.41	8.34

A breakdown of existing watershed areas, existing volumetric hydrographs, and the existing watershed map are included in **Appendix C** of this report.

2.1.1 Floodplain Management

The Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) for Fairfield County, effective June 18, 2010 shows a portion of the site within Zone X (shaded) Norwalk River 500-year floodplain along Danbury Road, and the floodway and Zone A of Copts Brook, as shown in **Figure 2** in **Appendix A**.

Zone A is studied by approximate methods, and therefore does not have established base flood elevations or a regulatory floodway. Since there is no available base flood data for Copt's Brook, we prepared a hydrologic and hydraulic analysis of the Copt's Brook watershed contributing to the drainage inlet on the site to establish a base flood elevation. Please refer to Section 3, Floodplain Management, for more details.

2.2 Proposed Site Hydrologic and Hydraulic Analysis

A stormwater management system has been designed for the proposed development to reduce or maintain existing peak flows and improve water quality for the site. The proposed stormwater management system consists of catch basins and inlets throughout the development site as well as water quality structures, underground infiltration systems, and outlet protection. The stormwater management system will maintain existing drainage piping to maximum extent practical and utilize Best Management Practices for stormwater treatment.

Under proposed conditions, drainage patterns will generally remain the same, largely flowing in a westerly direction and ultimately discharging to the 54" RCP culvert for Copts Brook. Drainage structures have been located throughout the site to collect stormwater runoff from paved and landscaped surfaces. Due to the various locations of the proposed buildings and the need to maintain a significant portion of the existing drainage network, the proposed drainage system has been split into six different sub-systems around the site. Infiltration systems have been designed for each area to promote infiltration and provide treatment of stormwater runoff. The bottom elevation of each system was also designed to be at or above the elevations for the existing infiltration pipes on site to ensure they are above the known ground water table. Ultimately, these systems converge into a single piped location at the western edge of the site. The existing retention system located adjacent to the main entry at Danbury Road will remain in place and unchanged. The contributing area for this system is minimally impacted by the proposed development plan and any changes to discharge flows will be negligible. Likewise, the 42-inch perforated pipe which receives runoff from 60 Danbury Road will remain in place as well and the proposed stormwater management system has been designed around it.

Lastly, a small portion of the site consisting of lawn area and 7 patios behind Buildings 7 and 8 is captured using area drains and discharged directly to the hillside adjacent to Copts Brook. A riprap apron and level spreader have been designed to reduce outlet velocities and provide erosion control prior to this discharge.

2.2.1 Proposed Site Hydrology

The proposed conditions hydrologic analysis consists of sub-watershed areas at each inlet structure of the development property. For each proposed watershed area, weighted curve numbers and times of concentration were calculated and utilized in the proposed conditions hydrologic model. The infiltration systems were also modeled to determine the effectiveness in reducing peak discharges from the site. **Table 2-2** below provides a summary of the peak discharges under existing and proposed conditions for the 2, 10, 25, 50, and 100 year storm events.

Table 2-2
Summary of Stormwater Peak Discharge (cfs)

		Storm Frequency (Years)				
Discharge Location	**Condition**	**2**	**10**	**25**	**50**	**100**
Copts Brook (DP-A)	Existing	1.083	3.109	4.569	5.724	7.011
	Proposed	1.044	2.888	4.203	5.239	6.398
	% Reduction	-3.6%	-7.1%	-8.0%	-8.5%	-8.7%
54” RCP Culvert (DP-B)	Existing	16.45	27.7	36.49	42.76	49.09
	Proposed	15.38	27.64	35.87	42.12	49.08
	% Reduction	-6.5%	-0.2%	-1.7%	-1.5%	0.0%
Offsite Runoff (DP-C)	Existing	0.05	0.199	0.314	0.408	0.513
	Proposed	0.039	0.138	0.212	0.272	0.339
	% Reduction	-22.0%	-30.7%	-32.5%	-33.3%	-33.9%

Table 2-3 provides a summary of the peak volumetric runoff under existing and proposed conditions for the 2, 10, 25, 50, and 100 year storm events.

Table 2-3
Summary of Stormwater Peak Discharge (cfs)

		Storm Frequency (Years)				
Discharge Location	**Condition**	**2**	**10**	**25**	**50**	**100**
Copts Brook (DP-A)	Existing	5,241	13,137	18,910	23,526	28,668
	Proposed	4,941	12,129	17,344	21,499	26,117
	% Reduction	-5.7%	-7.7%	-8.3%	-8.6%	-8.9%
54” RCP Culvert (DP-B)	Existing	59,393	112,913	147,095	172,958	200,754
	Proposed	53,163	105,995	140,665	167,137	195,622
	% Reduction	-10.5%	-6.1%	-4.4%	-3.4%	-2.6%
Offsite Runoff (DP-C)	Existing	288	839	1,264	1,611	2,003
	Proposed	160	442	655	827	1,022
	% Reduction	-44.4%	-47.3%	-48.2%	-48.7%	-49.0%

The proposed conditions watershed map, curve number and time of concentration worksheets, and volumetric hydrographs are included in **Appendix D**.

2.2.2 Water Quality Volume

The design includes capturing and treating one-half inch of rainfall for the water quality volume to remove stormwater pollutants on an average annual basis.

Section 6(B)(i) of the Connecticut DEEP General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems "MS4 General Permit" requires where an existing site exceeds 40 percent directly connected impervious area (DCIA), that one-half of the water quality volume is to be retained onsite. The Town of Wilton is registered under the MS4 General Permit (Registration #GSM000040), and therefore is subject to its provisions and requirements. The project site contains more than 40 percent directly connected impervious area. As a result, the standard for water quality treatment is one half of the water quality volume.

The infiltration systems have been designed to provide the required treatment volume. **Table 2-4** below summarizes the required and provided treatment volume for the site.

Table 2-4

Summary of Treatment Volume (cu ft)

Infiltration System - 1	**Required Treatment Volume**	749
	Provided Treatment Volume	1,370
Infiltration System - 2	**Required Treatment Volume**	704
	Provided Treatment Volume	1,022
Infiltration System - 3	**Required Treatment Volume**	1,265
	Provided Treatment Volume	2,240
Infiltration System - 4	**Required Treatment Volume**	308
	Provided Treatment Volume	520
Infiltration System - 5	**Required Treatment Volume**	1,442
	Provided Treatment Volume	1,450
Infiltration System - 6	**Required Treatment Volume**	1,349
	Provided Treatment Volume	4,069

The water quality volume calculation sheets are included in **Appendix F**.

2.2.3 Hydraulic Capacity and Outlet Velocity

The stormwater collection system has been designed to convey the 25-year storm event as required by the CTDOT 2000 Drainage Manual. The system was designed by analyzing sub-areas corresponding to each inlet structure and calculating weighted runoff coefficients and times of concentration. The discharge from the six infiltration systems as well as the inlet flow for Copts Brook to the culvert are modeled as known constant flows, and do not take into account offsetting peaks between their respective hydrographs. Therefore, the analyzed flows within the piped drainage system are very conservative and the available capacity and hydraulic grade lines would only improve when accounting for the delayed time for flow in Copts Brook to peak. These values were entered into a storm sewers model using Hydraflow Storm Sewers Extension for AutoCAD Civil 3D 2018, Version 2018.3. Based upon this analysis, the proposed storm system has the capacity to convey the 25-year storm event. Hydraulic calculation worksheets and storm sewers output results are included in **Appendix E**.

2.3 Method of Hydrology and Hydraulic Analysis

The following storm drainage design criteria were used for all drainage pipe systems:

1. Design storm rainfall data from NOAA Atlas 14 Point Precipitation Frequency Estimates
2. Piped storm drainage system and the outlets are designed for a 25-year storm event.
3. Minimum time of concentration = 5 minutes
4. For SCS peak flow calculations, Curve Number were as follows:
    a. Impervious (Pavement/Roof Areas) = 98
    b. Landscaped and Lawn Areas (HSG-B) = 69
    c. Landscaped and Lawn Areas (HSG-D) = 84
    d. Wooded Areas (HSG-B) = 55
    e. Wooded Areas (HSG-D) = 77
5. For rational peak flow calculations, runoff coefficients were as follows:
    a. Impervious (Pavement/Roof) areas = 0.90
    b. Landscaped and Lawn Areas = 0.30
6. Minimum diameter of pipes = 12 inches, excluding roof leaders, underdrains, yard drains and foundation drains
7. Minimum pipe slope = 0.5 percent

8. Watershed areas delineated using polylines in AutoCAD Civil 3D 2018.

9. Comparative hydrology analyzed using Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2018, Version 2018.3

10. Storm drainage system analyzed using Hydraflow Storm Sewers Extension for AutoCAD Civil 3D 2018, Version 2018.3

2.4 Best Management Practices

The stormwater management plan for the proposed site uses "Best Management Practices" (BMPs) to remove a high percentage of sediments in accordance with the Connecticut Department of Energy and Environmental Protection "Stormwater General Permit Criteria".

The BMPs include:

<u>Catch Basins and Yard Drains with Sumps and Bell Traps:</u> Catch basins and yard drains with sumps and bell traps collect sediment and prevent discharge of oil and other pollutants into the storm drainage system. All new catch basins and yard drains on-site will have 24-inch sumps with several also maintaining bell traps.

<u>Hydrodynamic Separators:</u> Hydrodynamic separators serve as pretreatment and prevent transport of oils and sediment further downstream. The proposed stormwater management system utilizes Contech CDS units prior to discharge into the underground infiltration systems. The Contech CDS units have been sized in accordance with the 2004 CTDEEP Stormwater Quality Manual. Sizing calculations are provided in **Appendix F.**

<u>Underground Infiltration</u>: Underground Infiltration serves as a primary treatment practice, reduces peak flow rates, and promotes groundwater recharge. The proposed stormwater management system utilizes plastic chambers surrounded by stone and filter fabric and an outlet control structure designed to attenuate peak flows.

<u>Level Spreader</u>: Level Spreaders serve as a secondary treatment practice that are utilized to reduce stormwater discharge velocities to non-erosive levels.

2.5 Pollutant Loading Analysis

Pollutant loadings for the existing and proposed conditions were calculated using the method prescribed by Debo and Reese in "Municipal Stormwater Management", 1995. This method determines the mass of pollutant loading by inputting the fraction of impervious area, the contributing area, the mean annual rainfall, and the event mean concentration of pollutant (EMC). The EMC is based upon the pollutant analyzed and the general characteristic of the contributing area – residential, commercial, or open space.

For the proposed conditions, the contributing area was further broken down into contributing areas to certain best management practices (BMPs). Pollutant loading reductions were taken at certain BMPs, depending upon the removal efficiency of the BMP as stated in the 2003 edition of Debo and Reese. Pollutant removal efficiencies for proprietary products were taken from a report entitled "Final Report: Stormwater Treatment Devices Section 319 Project" submitted to the Connecticut Department of Environmental Protection, Bureau of Water Management by the University of Connecticut Department of Natural Resources Management and Engineering, April 15, 2002. This report provides results of field testing for pollutant removal on different types of proprietary stormwater treatment devices installed throughout the State of Connecticut. Based upon these pollutant reductions, we have determined that pollutant loadings will be less for the proposed conditions, as shown in **Table 2-5** below. The pollutant loading calculation sheets are included in **Appendix F**.

Table 2-5
Pollutant Loading Summary

		Pollutant					
Item	**Units**	**TKN**	**P**	**TSS**	**Pb**	**Cu**	**Zn**
Proposed, Pre-Treatment	lb/yr/1-in	2.534	0.511	134.694	0.192	0.044	0.180
Proposed, Post-Treatment	lb/yr/1-in	1.680	0.224	11.403	0.099	0.021	0.068
Reduction, Pre to Post Treat	---	34%	56%	92%	48%	52%	62%

2.6 Stormwater Maintenance and Inspection Schedule

Stormwater management systems require periodic maintenance to ensure they function as designed. The initial inspection will be made during an intense rainfall to check the adequacy of the catch basins, roof leaders, piping, hydrodynamic separators, underground infiltration systems, and system outlet.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, yard drains, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand, and debris from catch basins as necessary and dispose of legally.

Hydrodynamic Separator: The Contech CDS Units (hydrodynamic separator) will be skimmed and oil and scum removed. In a separate operation, silt, sand, and sediment will be removed. Once the structure is cleaned of debris, the chamber will be refilled with clean water to prevent wash through of debris and oil during next storm event.

Underground Infiltration: The underground infiltration system will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control structure will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

Level Spreader: The level spreader shall be inspected two times annually. Regular maintenance includes removing accumulated debris and sediment, checking for erosion, vegetative bare spots, and removing invasive plant species or tree saplings.

Stormwater System Outfalls: The stormwater system outfalls shall be inspected two times annually as well as after every major storm, for slope integrity, soil moisture, vegetated health, soil stability, soil compaction, soil erosion, ponding and sediment accumulation. If the rip rap has been displaced, undermined or damaged, it should be replaced immediately. The channel immediately below the outlet should be checked to see that erosion is not occurring. The downstream channel will be kept clear of obstructions, such as fallen trees, debris, leaves and sediment that could change flow patterns and/or tail water depths in pipes. Repairs must be carried out immediately to avoid additional damage to the outlet protection apron.

Maintenance & Inspection Forms are included in **Appendix G.**

Section 3
Floodplain Management & Hydraulics

3.0 Background

FEMA studied Copts Brook using approximate methods as a part of the Flood Insurance Study (FIS) for Fairfield County, dated June 18, 2010. Therefore, the entire length of the watercourse was assigned Zone A, with no defined base flood elevation or floodway.

3.1 Basis of Modeling

Since no detailed base flood elevations are available on Copts Brook, Tighe & Bond prepared a hydrologic study of the 435-acre watershed contributory to the 54-inch RCP inlet on the site. We utilized the HEC-HMS hydrologic model, which includes inputs for land coverage, basin area, time of concentration, travel time, and areas of storage. See **Appendix H** for further additional information.

We subdivided the watershed into three watershed subarea, and included two areas of storage. One located on-site immediately upstream of the 54-inch RCP inlet, and the area behind Wilton Acres Road, extending northeasterly to Clover Drive and Westport Road. Storage available on-site was computed using topographic survey data, while storage at Wilton Acres Road was determined using available LiDAR topographic data.

3.2 Flow Rates

Since the FIS did not study Copts Brook using detailed methods, there are no published discharges for the watercourse. The purpose of the hydrologic model was to develop a discharge for the 25- and 100-year events, as well as a corresponding water surface elevation at the inlet to the 54-inch RCP.

Table 3-1
Computed Flow Rates to the 54" RCP Inlet

Return Frequency (years)	Annual Chance Probability	Flow Rate (cfs)
25	4%	120.3
100	1%	163.1

3.3 Water Surface Elevations

We used the storage-discharge feature in concert with the incoming flow rate to develop water surface elevations at the 54-inch RCP inlet for the purposes of creating a base flood elevation for design purposes. **Table 3-2** summarizes the resulting water surface elevations for the 25-year and 100-year events:

Table 3-2
Computed Water Surface Elevations at the 54" RCP Inlet

Return Frequency (years)	Annual Chance Probability	WSEL (NAVD88)
25	4%	137.9
100	1%	139.6

3.4 Compliance with Local Floodplain Regulations

Section 29-9.F.7 of the Wilton Zoning Regulations requires the following:

k. Equal Conveyance: Within the floodplain, except those areas which are tidally influenced, as designated on the Flood Insurance Rate Map (FIRM) for the community, encroachments resulting from filling, new construction or substantial improvements involving an increase in footprint of the structure, are prohibited unless the applicant provides certification by a registered professional engineer demonstrating, with supporting hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that such encroachments shall not result in any (0.00 feet) increase in flood levels (base flood elevation). Work within the floodplain and the land adjacent to the floodplain, including work to provide compensatory storage shall not be constructed in such a way so as to cause an increase in flood stage or flood velocity.

l. Compensatory Storage: The water holding capacity of the floodplain, except those areas which are tidally influenced, shall not be reduced. Any reduction caused by filling, new construction or substantial improvements involving an increase in footprint to the structure, shall be compensated for by deepening and/or widening of the floodplain, storage shall be provided on-site, unless easements have been gained from adjacent property owners; it shall be provided within the same hydraulic reach and a volume not previously used for flood storage; it shall be hydraulically comparable and incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Compensatory storage can be provided off-site if approved by the municipality.

3.4.1 Equal Conveyance

The proposal does not diminish floodplain storage, and therefore base flood elevations will not increase as a result of the proposal. The additional floodplain storage provided would have the effect of reducing base flood elevations by a de minimis amount.

3.4.2 Compensatory Storage

The footprint for Building 4 is proposed to be within the existing paved parking lot immediately west of Copts Brook. This area is also within the calculated floodplain for Copts Brook. In order to mitigate the impacts of the proposed development, the residential portion of the building which extends over the floodplain will be elevated on columns to allow potential floodwaters to go under the building while allowing the garage portion outside the floodplain to remain at grade. Since the placement of building columns and a retaining wall within the floodplain would result in a loss of floodplain storage volume, we have proposed revised grading beneath the building footprint to provide additional flood storage. The grading as proposed results in a net cut of approximately 250 CF within the floodplain boundary, compensating for the approximately 40 CF occupied by the columns and retaining walls of the proposed building. The development plan as proposed would therefore increase floodplain storage on-site. Provided in **Table 3-3** below is a summary of the Compensatory Flood Storage volumes being proposed for Copts Brook.

Table 3-3
Compensatory Flood Storage (NAVD88)

	100-year Water Surface Elevation (NAVD88)		
Elevation (NAVD88)	**Existing (CF)**	**Proposed (CF)**	**Difference (CF)**
134.0	-	-	-
135.0	1,112	1,112	0
136.0	2,707	2,707	0
137.0	4,910	4,910	0
138.0	8,101	8,101	0
139.0	12,633	12,633	0
140.0	19,028	19,278	250

Section 4 Site Utility Services

4.1 Water and Fire Protection Services

Water and fire protection services to the site will be provided by The Aquarion Water Company (Aquarion). Services to the proposed buildings will be fed from the reported 12-inch main located in Danbury Road. An existing hydrant is located just north of the site on Danbury Road and a second hydrant is located just south of the main entry to the site. In addition, two new hydrants are proposed within the site to service the proposed development.

The estimated daily water demand for the proposed residential development is approximately 24,300 gallons per day (GPD). The estimated peak hour demand is 68 gallons per minute (GPM), determined using a maximum-to-average-day ratio of 4.0.

4.2 Electric and Tel-Data Service

Electric service to the site is provided by Eversource Electric Company and telephone and cable are provided by Altice and Frontier. Underground primary service lines are located within the main entry loop driveway with an existing electric vault located near the southeastern corner of the existing building.

4.3 Gas Service

Eversource Gas Company provides natural gas service to the site. Eversource Gas Company maintains a gas main in Danbury Road and a service lateral to 60 Danbury Road thru the easement in the main entry loop. The current development plan shows the replacement of the existing gas service lateral within the Eversource easement; however, once service loads are better understood the existing lateral will be evaluated to determine if it can be re-used to service the entire development area.

Furthermore, once the estimated peak demand for the total project is determined, Eversource Gas Company will provide a letter of service availability.

4.4 Sanitary Sewer Service

The project site is located within the Wilton WPCA Sewershed.

Based on available Town maps, there is a 24-inch gravity sanitary sewer located in Danbury Road. The proposed development will connect to the sewer main at the existing manhole in front of the site. WPCA approval will be required for all sewer connections.

The projected wastewater flows associated with the proposed development were calculated based on the 93 residential units – comprised of 31 one-bedroom units, 55 two-bedroom units, and 7 three-bedroom units – for a total of 162 bedrooms and a flow rate of 150 gallons per day (GPD) per bedroom. A peaking factor of 4 was applied to the average daily flows to estimate peak flows. **Table 4-1** below summarizes the projected average and peak daily sanitary sewer flows for the site.

Table 4-1 - Projected Average and Peak Daily Sanitary Sewer Flows

Wastewater Requirements					
Development		Design Criteria		Average Daily Flow (GPD)	Peak Flow (GPM)*
Use	Units / Bedrooms	GPD	Unit		
Residential	93 / 162	150	Per Bedroom	24,300	68

* Peak factor of 4 was applied to average daily flows to estimate peak flows; New England Interstate Water Pollution Control Commission, 2011.

Section 5
Soil Erosion and Sedimentation Control

5.1 SESC Narrative

General

The proposed development is entitled “64 Danbury Road” in Wilton, Connecticut.

Estimated:
Project Start: Spring 2024
Project Completion: Summer 2026

Erosion Control Narrative refers to drawings C-501 through C-504.

The proposed site development will consist of building demolition, clearing and grubbing the existing site, excavation, construction of stormwater management, utilities, and rough grading of building, parking areas, sidewalks and curbing.

The development is located on Danbury Road in Wilton, Connecticut.

The stormwater management measures will address the stormwater quality once the site has been constructed and stabilized. Sedimentation and erosion control measures will be installed during construction which will minimize adverse impacts from construction activities.

All sedimentation and erosion control measures proposed for this development have been designed in accordance with the "2024 Connecticut Guidelines for Soil Erosion and Sedimentation Control" as published by the Connecticut Council on Soil Erosion and Water Conservation. Additional guidelines have also been followed that are available from the Connecticut Department of Environmental Protection as recommended for sedimentation control during construction activities.

Construction Sequence – Initial Phase

1. Conduct a pre-construction meeting with the Owner or Owner's Representative, Town Engineer, Design Engineer, Site Engineer, Contractor and Site Superintendent to establish the limits of construction, construction procedures and material stockpile areas.

2. Field stake the limits of construction.

3. Install all applicable soil and erosion control measures around the perimeter of the site to the extent possible. this will include siltation fence around the project as shown on the plans.

4. Install construction access road and anti-tracking pavement in the areas as shown on the plans. All construction access shall be into the site through the anti-tracking pads.

5. Establish temporary staging area.

6. Begin building demolition and pavement removal.

7. Construct the initial storm drainage as shown on the drainage plans.

8. Install water quality systems and associated drainage network to the maximum extent practicable. Grade the area around the storm drainage system as necessary.

9. Begin rough roadway grading.

10. Install remaining drainage system to the extent necessary to provide positive drainage.

11. Begin installation of sanitary sewer system, water, and other utilities to extent necessary.

12. Provide silt fence/haybale barrier around soil stockpile area. Provide temporary vegetative cover (defined in erosion control notes) on all exposed surfaces.

13. Begin building construction.

14. Pave binder course on parking and driveways for non-porous pavement areas.

15. Establish temporary vegetative cover.

<u>Construction Sequence – Final Phase</u>

1. Repair perimeter sediment & erosion controls as needed.

2. Clean/replace controls from previous phase as needed.

3. Fine grade site.

4. Continue construction of building.

5. Complete construction of sidewalks.

6. Establish final vegetative cover and landscaping.

7. Pave surface course on roadways.

8. Remove erosion controls when site is stabilized.

5.2 Soil Erosion and Sedimentation Control Notes

1. All sedimentation and erosion control measures shall be constructed in accordance with the standards and specifications of the "2024 Connecticut Guidelines for Soil Erosion and Sediment Control", DEP Bulletin No. 34, and all amendments and addenda thereto as published by the Connecticut Department of Environmental Protection.

2. Land disturbance shall be kept to the minimum necessary for construction operations.

3. All erosion control measures shall be installed as shown on the plan and elsewhere as ordered by the engineer.

4. All catch basins shall be protected with a silt sacks, haybale ring, silt fence or block and stone inlet protection throughout the construction period and until all disturbed areas are thoroughly stabilized.

5. Whenever possible, erosion and sediment control measures shall be installed prior to construction. See "Erosion Control Narrative".

6. Additional control measures shall be installed during the construction period as ordered by the engineer.

7. All sedimentation and erosion control measures shall be maintained in effective condition throughout the construction period.

8. Sediment removed shall be disposed of offsite or in a manner as required by the Engineer.

9. The construction contractor shall be responsible for construction and maintenance of all control measures throughout the construction period.

10. All disturbed areas to be left exposed for more than 30 days shall be protected with a temporary vegetative cover. Seed these areas with perennial ryegrass at the rate of 40 lbs. per acre (1 lb. per 1,000 sq. ft). Apply soil amendments and mulch as required to establish a uniform stand of vegetation over all disturbed areas.

11. The construction contractor shall utilize approved methods/materials for preventing the blowing and movement of dust from exposed soil surfaces onto adjacent properties and site areas.

12. The construction contractor shall maintain a supply of silt fence/haybales and anti-tracking crushed stone on site for emergency repairs.

13. All drainage structures shall be periodically inspected weekly by the construction contractor and cleaned to prevent the build-up of silt.

14. The construction contractor shall carefully coordinate the placement of erosion control measures with the phasing of construction.

15. Keep all paved surfaces clean. Sweep and scrape before forecasted storms.

16. Treat all unpaved surface with 4" minimum of topsoil prior to final stabilization.

17. Haybale barriers and silt fencing shall be installed along the toe of critical cut and fill slopes.

18. The contractor shall notify the Town officials prior to the installation of erosion controls, cutting of trees, or any excavation.

19. All trucks leaving the site must be covered.

20. Some control measures are permanent. These structures shall be cleaned and replenished at the end of construction. locations of the permanent control structures are shown on the drainage plans.

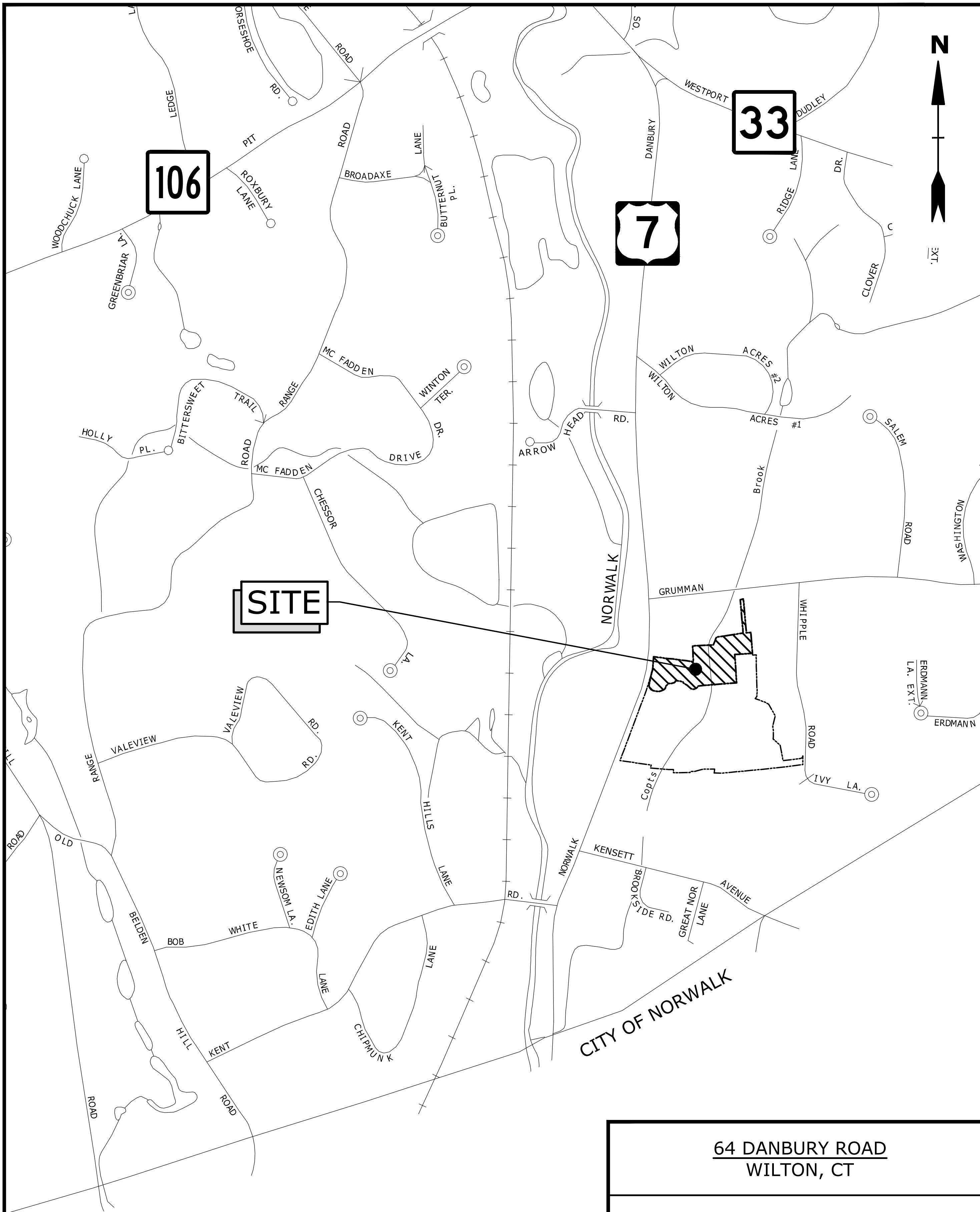
21. All sedimentation and erosion controls shall be checked weekly and/or after each rain fall event. Necessary repairs shall be made without delay.

22. Prior to any forecasted rainfall, erosion and sediment controls shall be inspected and repaired as necessary.

23. After all disturbed areas have been stabilized, erosion controls may be removed once authorization to do so has been secured from the Owner. Disturbed areas shall be seeded and mulched.

24. All embankment slopes 3:1 or greater to be stabilized with erosion control blanket, North American Green SC150BN or approved equivalent, unless otherwise noted on plans.

APPENDIX A



SCALE IN FEET

0 1000' 2000'

GRAPHIC SCALE

64 DANBURY ROAD
WILTON, CT

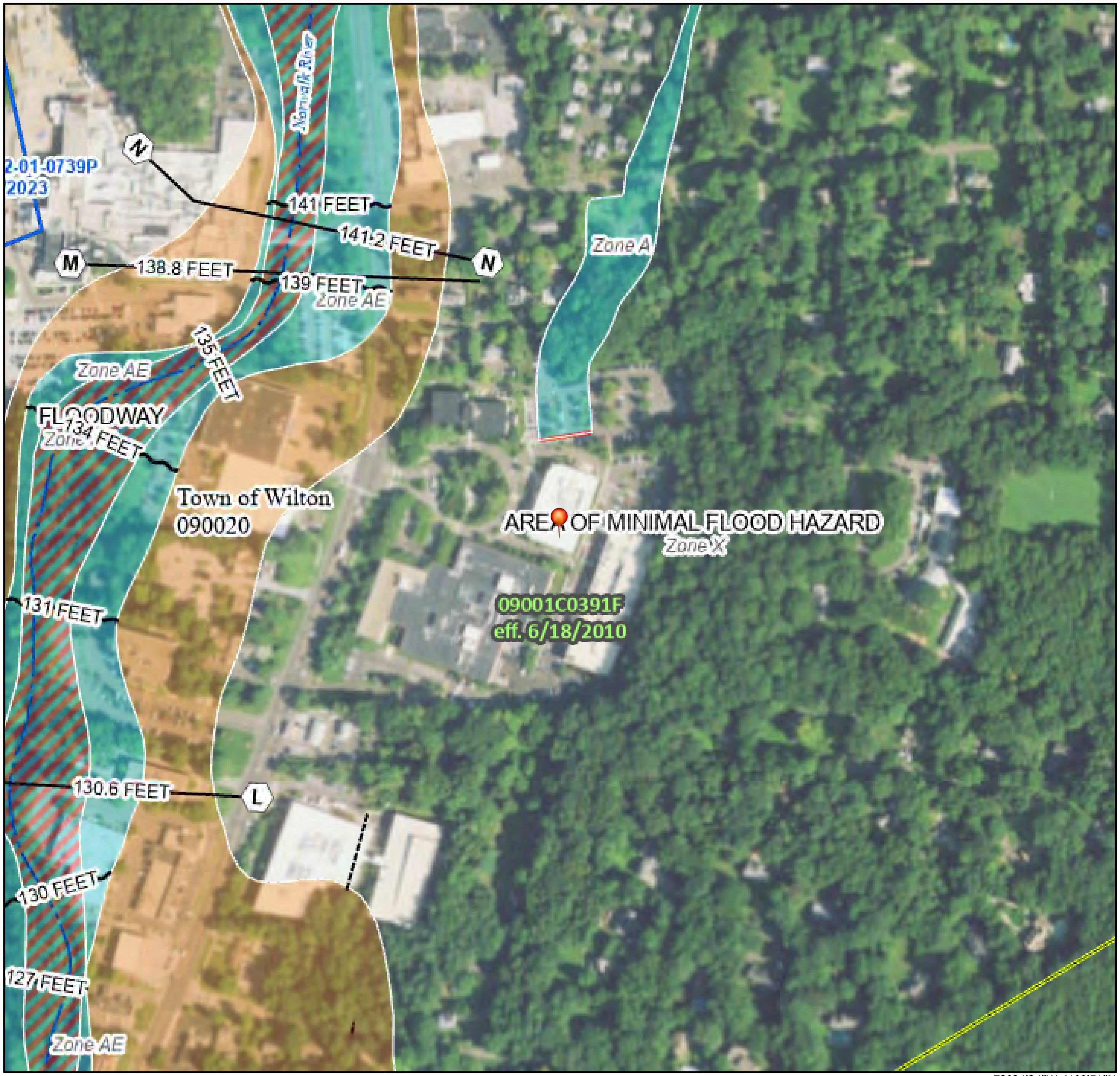
SITE LOCATION MAP

DATE:	12/04/2023	Tighe&Bond
SCALE:	1"=1000'	
FIGURE:	1	

National Flood Hazard Layer FIRMette

FEMA

73°25'11"W 41°10'18"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

73°24'34"W 41°9'51"N

Basemap Imagery Source: USGS National Map 2023

Legend

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

SPECIAL FLOOD HAZARD AREAS

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

OTHER AREAS OF FLOOD HAZARD

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

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

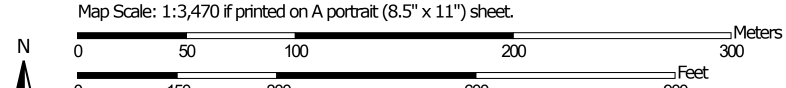
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 12/4/2023 at 12:02 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Tighe&Bond

APPENDIX B

Map Scale: 1:3,470 if printed on A portrait (8.5" x 11") sheet.



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.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: State of Connecticut, Western Part
Survey Area Data: Version 1, Sep 15, 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—Oct 27, 2022

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
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	0.0	0.0%
50B	Sutton fine sandy loam, 3 to 8 percent slopes	B/D	0.4	0.9%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	5.4	10.6%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	B	8.4	16.7%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	3.8	7.4%
102	Pootatuck fine sandy loam	A/D	0.1	0.1%
103	Rippowam fine sandy loam	B/D	0.2	0.5%
232B	Haven-Urban land complex, 0 to 8 percent slopes	B	2.5	4.9%
306	Udorthents-Urban land complex	B	11.3	22.4%
307	Urban land	D	18.4	36.3%
W	Water		0.0	0.1%
Totals for Area of Interest			**50.5**	**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

NOAA Atlas 14, Volume 10, Version 3
Location name: Wilton, Connecticut, USA*
Latitude: 41.1679°, Longitude: -73.4146°
Elevation: 141 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	**0.365** (0.286-0.461)	**0.425** (0.333-0.537)	**0.523** (0.408-0.663)	**0.604** (0.468-0.770)	**0.716** (0.536-0.946)	**0.801** (0.586-1.08)	**0.888** (0.629-1.23)	**0.981** (0.662-1.40)	**1.11** (0.719-1.63)	**1.21** (0.766-1.82)
10-min	**0.518** (0.405-0.654)	**0.602** (0.471-0.761)	**0.740** (0.577-0.938)	**0.855** (0.664-1.09)	**1.01** (0.759-1.34)	**1.14** (0.831-1.53)	**1.26** (0.892-1.75)	**1.39** (0.938-1.98)	**1.57** (1.02-2.31)	**1.71** (1.08-2.57)
15-min	**0.609** (0.477-0.769)	**0.709** (0.555-0.896)	**0.872** (0.680-1.10)	**1.01** (0.781-1.28)	**1.19** (0.894-1.58)	**1.34** (0.977-1.80)	**1.48** (1.05-2.06)	**1.64** (1.10-2.33)	**1.85** (1.20-2.72)	**2.02** (1.28-3.03)
30-min	**0.849** (0.665-1.07)	**0.987** (0.772-1.25)	**1.21** (0.946-1.54)	**1.40** (1.08-1.78)	**1.66** (1.24-2.19)	**1.86** (1.36-2.49)	**2.06** (1.45-2.84)	**2.26** (1.53-3.22)	**2.53** (1.64-3.73)	**2.74** (1.74-4.12)
60-min	**1.09** (0.853-1.38)	**1.26** (0.990-1.60)	**1.55** (1.21-1.97)	**1.79** (1.39-2.28)	**2.12** (1.59-2.80)	**2.38** (1.74-3.19)	**2.63** (1.85-3.63)	**2.88** (1.95-4.11)	**3.22** (2.09-4.73)	**3.47** (2.20-5.20)
2-hr	**1.39** (1.10-1.75)	**1.64** (1.29-2.06)	**2.05** (1.61-2.59)	**2.39** (1.87-3.03)	**2.86** (2.16-3.76)	**3.22** (2.37-4.31)	**3.58** (2.56-4.96)	**3.98** (2.70-5.64)	**4.54** (2.96-6.64)	**4.99** (3.17-7.44)
3-hr	**1.60** (1.26-2.00)	**1.90** (1.50-2.38)	**2.39** (1.88-3.00)	**2.80** (2.20-3.54)	**3.37** (2.55-4.42)	**3.79** (2.81-5.08)	**4.24** (3.04-5.86)	**4.74** (3.21-6.69)	**5.45** (3.55-7.94)	**6.03** (3.84-8.96)
6-hr	**2.01** (1.60-2.50)	**2.41** (1.92-2.99)	**3.06** (2.42-3.81)	**3.60** (2.83-4.51)	**4.34** (3.30-5.67)	**4.90** (3.65-6.52)	**5.48** (3.97-7.57)	**6.16** (4.20-8.65)	**7.15** (4.68-10.4)	**7.98** (5.09-11.8)
12-hr	**2.48** (1.99-3.06)	**2.99** (2.39-3.69)	**3.80** (3.03-4.71)	**4.48** (3.55-5.58)	**5.42** (4.15-7.04)	**6.12** (4.59-8.11)	**6.86** (4.99-9.42)	**7.72** (5.28-10.8)	**8.99** (5.90-12.9)	**10.0** (6.43-14.7)
24-hr	**2.90** (2.34-3.55)	**3.52** (2.84-4.32)	**4.54** (3.64-5.58)	**5.38** (4.29-6.66)	**6.54** (5.05-8.45)	**7.41** (5.59-9.77)	**8.34** (6.11-11.4)	**9.43** (6.47-13.1)	**11.1** (7.28-15.8)	**12.4** (7.99-18.1)
2-day	**3.20** (2.60-3.90)	**3.97** (3.22-4.83)	**5.21** (4.21-6.36)	**6.24** (5.01-7.67)	**7.67** (5.95-9.86)	**8.72** (6.63-11.5)	**9.86** (7.29-13.5)	**11.2** (7.74-15.5)	**13.4** (8.83-19.0)	**15.2** (9.78-22.0)
3-day	**3.44** (2.80-4.17)	**4.28** (3.48-5.19)	**5.65** (4.58-6.87)	**6.78** (5.46-8.29)	**8.34** (6.50-10.7)	**9.50** (7.24-12.4)	**10.8** (7.98-14.7)	**12.3** (8.47-16.8)	**14.6** (9.68-20.7)	**16.7** (10.7-24.0)
4-day	**3.67** (3.00-4.44)	**4.56** (3.72-5.51)	**6.00** (4.88-7.28)	**7.20** (5.81-8.78)	**8.85** (6.91-11.3)	**10.1** (7.70-13.1)	**11.4** (8.46-15.5)	**13.0** (8.98-17.8)	**15.5** (10.2-21.8)	**17.6** (11.3-25.2)
7-day	**4.36** (3.58-5.24)	**5.33** (4.37-6.41)	**6.90** (5.64-8.32)	**8.20** (6.66-9.94)	**10.0** (7.83-12.7)	**11.3** (8.68-14.7)	**12.8** (9.48-17.1)	**14.5** (10.0-19.6)	**17.0** (11.3-23.8)	**19.1** (12.4-27.3)
10-day	**5.05** (4.16-6.04)	**6.06** (4.99-7.26)	**7.71** (6.32-9.27)	**9.09** (7.40-11.0)	**11.0** (8.61-13.8)	**12.4** (9.50-15.9)	**13.9** (10.3-18.5)	**15.6** (10.9-21.1)	**18.1** (12.1-25.3)	**20.2** (13.1-28.8)
20-day	**7.12** (5.91-8.47)	**8.26** (6.84-9.82)	**10.1** (8.34-12.1)	**11.6** (9.54-14.0)	**13.8** (10.8-17.1)	**15.4** (11.8-19.5)	**17.0** (12.6-22.3)	**18.8** (13.2-25.2)	**21.2** (14.2-29.4)	**23.2** (15.1-32.7)
30-day	**8.85** (7.36-10.5)	**10.1** (8.37-11.9)	**12.1** (9.99-14.3)	**13.7** (11.3-16.4)	**16.0** (12.6-19.8)	**17.8** (13.7-22.3)	**19.5** (14.4-25.3)	**21.3** (15.0-28.5)	**23.7** (15.9-32.7)	**25.5** (16.6-36.0)
45-day	**11.0** (9.18-13.0)	**12.3** (10.3-14.5)	**14.5** (12.0-17.1)	**16.3** (13.4-19.4)	**18.7** (14.8-23.0)	**20.7** (15.9-25.8)	**22.6** (16.7-29.0)	**24.4** (17.2-32.4)	**26.8** (18.0-36.8)	**28.5** (18.6-39.9)
60-day	**12.8** (10.7-15.0)	**14.2** (11.9-16.7)	**16.5** (13.7-19.5)	**18.4** (15.2-21.8)	**21.0** (16.7-25.7)	**23.1** (17.8-28.7)	**25.0** (18.5-32.0)	**26.9** (19.0-35.7)	**29.3** (19.8-40.1)	**31.0** (20.3-43.3)

[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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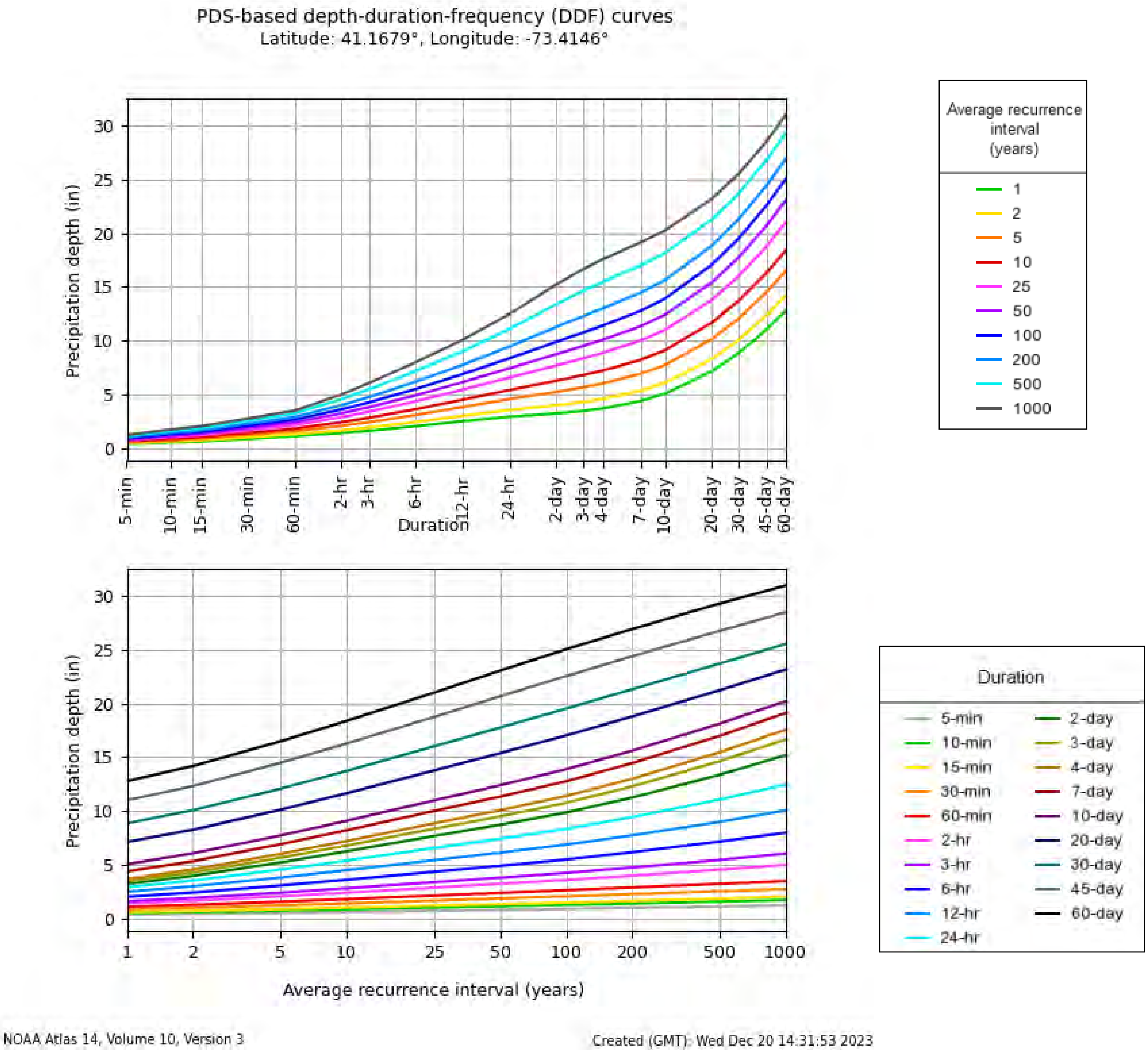
PF graphical



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Maps & aerials

Small scale terrain

NOAA Atlas 14, Volume 10, Version 3
Location name: Wilton, Connecticut, USA*
Latitude: 41.1679°, Longitude: -73.4146°
Elevation: 141 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/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**4.38** (3.43-5.53)	**5.10** (4.00-6.44)	**6.28** (4.90-7.96)	**7.25** (5.62-9.24)	**8.59** (6.43-11.4)	**9.61** (7.03-12.9)	**10.7** (7.55-14.8)	**11.8** (7.94-16.8)	**13.3** (8.63-19.6)	**14.5** (9.19-21.8)
10-min	**3.11** (2.43-3.92)	**3.61** (2.83-4.57)	**4.44** (3.46-5.63)	**5.13** (3.98-6.54)	**6.08** (4.55-8.04)	**6.81** (4.99-9.16)	**7.55** (5.35-10.5)	**8.34** (5.63-11.9)	**9.43** (6.11-13.9)	**10.3** (6.51-15.4)
15-min	**2.44** (1.91-3.08)	**2.84** (2.22-3.58)	**3.49** (2.72-4.42)	**4.03** (3.12-5.13)	**4.77** (3.58-6.31)	**5.34** (3.91-7.18)	**5.92** (4.20-8.22)	**6.54** (4.42-9.32)	**7.39** (4.80-10.9)	**8.07** (5.10-12.1)
30-min	**1.70** (1.33-2.14)	**1.97** (1.54-2.50)	**2.42** (1.89-3.07)	**2.80** (2.17-3.57)	**3.31** (2.48-4.37)	**3.71** (2.71-4.98)	**4.11** (2.90-5.68)	**4.52** (3.05-6.44)	**5.07** (3.29-7.46)	**5.48** (3.47-8.23)
60-min	**1.09** (0.853-1.38)	**1.26** (0.990-1.60)	**1.55** (1.21-1.97)	**1.79** (1.39-2.28)	**2.12** (1.59-2.80)	**2.38** (1.74-3.19)	**2.63** (1.85-3.63)	**2.88** (1.95-4.11)	**3.22** (2.09-4.73)	**3.47** (2.20-5.20)
2-hr	**0.696** (0.549-0.873)	**0.821** (0.647-1.03)	**1.03** (0.805-1.29)	**1.20** (0.933-1.52)	**1.43** (1.08-1.88)	**1.61** (1.18-2.16)	**1.79** (1.28-2.48)	**1.99** (1.35-2.82)	**2.27** (1.48-3.32)	**2.49** (1.58-3.72)
3-hr	**0.532** (0.421-0.665)	**0.632** (0.500-0.791)	**0.797** (0.627-1.00)	**0.933** (0.730-1.18)	**1.12** (0.848-1.47)	**1.26** (0.935-1.69)	**1.41** (1.01-1.95)	**1.58** (1.07-2.23)	**1.81** (1.18-2.64)	**2.01** (1.28-2.98)
6-hr	**0.335** (0.267-0.416)	**0.402** (0.319-0.499)	**0.510** (0.404-0.636)	**0.600** (0.473-0.752)	**0.724** (0.551-0.946)	**0.817** (0.609-1.09)	**0.915** (0.662-1.26)	**1.03** (0.701-1.44)	**1.19** (0.781-1.73)	**1.33** (0.849-1.96)
12-hr	**0.206** (0.165-0.254)	**0.247** (0.198-0.305)	**0.315** (0.251-0.391)	**0.372** (0.294-0.463)	**0.449** (0.344-0.583)	**0.507** (0.380-0.672)	**0.569** (0.414-0.782)	**0.641** (0.438-0.893)	**0.746** (0.489-1.07)	**0.834** (0.533-1.22)
24-hr	**0.120** (0.097-0.148)	**0.146** (0.118-0.180)	**0.189** (0.151-0.232)	**0.224** (0.178-0.277)	**0.272** (0.210-0.352)	**0.308** (0.233-0.407)	**0.347** (0.254-0.475)	**0.392** (0.269-0.544)	**0.461** (0.303-0.659)	**0.518** (0.332-0.755)
2-day	**0.066** (0.054-0.081)	**0.082** (0.066-0.100)	**0.108** (0.087-0.132)	**0.130** (0.104-0.159)	**0.159** (0.123-0.205)	**0.181** (0.138-0.238)	**0.205** (0.151-0.280)	**0.234** (0.161-0.322)	**0.278** (0.183-0.395)	**0.316** (0.203-0.457)
3-day	**0.047** (0.038-0.057)	**0.059** (0.048-0.072)	**0.078** (0.063-0.095)	**0.094** (0.075-0.115)	**0.115** (0.090-0.148)	**0.131** (0.100-0.172)	**0.149** (0.110-0.203)	**0.170** (0.117-0.233)	**0.203** (0.134-0.287)	**0.231** (0.149-0.333)
4-day	**0.038** (0.031-0.046)	**0.047** (0.038-0.057)	**0.062** (0.050-0.075)	**0.075** (0.060-0.091)	**0.092** (0.071-0.117)	**0.104** (0.080-0.136)	**0.118** (0.088-0.161)	**0.135** (0.093-0.185)	**0.161** (0.106-0.227)	**0.183** (0.118-0.262)
7-day	**0.025** (0.021-0.031)	**0.031** (0.025-0.038)	**0.041** (0.033-0.049)	**0.048** (0.039-0.059)	**0.059** (0.046-0.075)	**0.067** (0.051-0.087)	**0.075** (0.056-0.102)	**0.086** (0.059-0.116)	**0.101** (0.067-0.141)	**0.113** (0.073-0.162)
10-day	**0.021** (0.017-0.025)	**0.025** (0.020-0.030)	**0.032** (0.026-0.038)	**0.037** (0.030-0.045)	**0.045** (0.035-0.057)	**0.051** (0.039-0.066)	**0.057** (0.042-0.077)	**0.065** (0.045-0.088)	**0.075** (0.050-0.105)	**0.084** (0.054-0.119)
20-day	**0.014** (0.012-0.017)	**0.017** (0.014-0.020)	**0.021** (0.017-0.025)	**0.024** (0.019-0.029)	**0.028** (0.022-0.035)	**0.032** (0.024-0.040)	**0.035** (0.026-0.046)	**0.039** (0.027-0.052)	**0.044** (0.029-0.061)	**0.048** (0.031-0.068)
30-day	**0.012** (0.010-0.014)	**0.013** (0.011-0.016)	**0.016** (0.013-0.019)	**0.019** (0.015-0.022)	**0.022** (0.017-0.027)	**0.024** (0.018-0.031)	**0.027** (0.020-0.035)	**0.029** (0.020-0.039)	**0.032** (0.022-0.045)	**0.035** (0.023-0.049)
45-day	**0.010** (0.008-0.011)	**0.011** (0.009-0.013)	**0.013** (0.011-0.015)	**0.015** (0.012-0.017)	**0.017** (0.013-0.021)	**0.019** (0.014-0.023)	**0.020** (0.015-0.026)	**0.022** (0.015-0.030)	**0.024** (0.016-0.034)	**0.026** (0.017-0.036)
60-day	**0.008** (0.007-0.010)	**0.009** (0.008-0.011)	**0.011** (0.009-0.013)	**0.012** (0.010-0.015)	**0.014** (0.011-0.017)	**0.016** (0.012-0.019)	**0.017** (0.012-0.022)	**0.018** (0.013-0.024)	**0.020** (0.013-0.027)	**0.021** (0.014-0.030)

[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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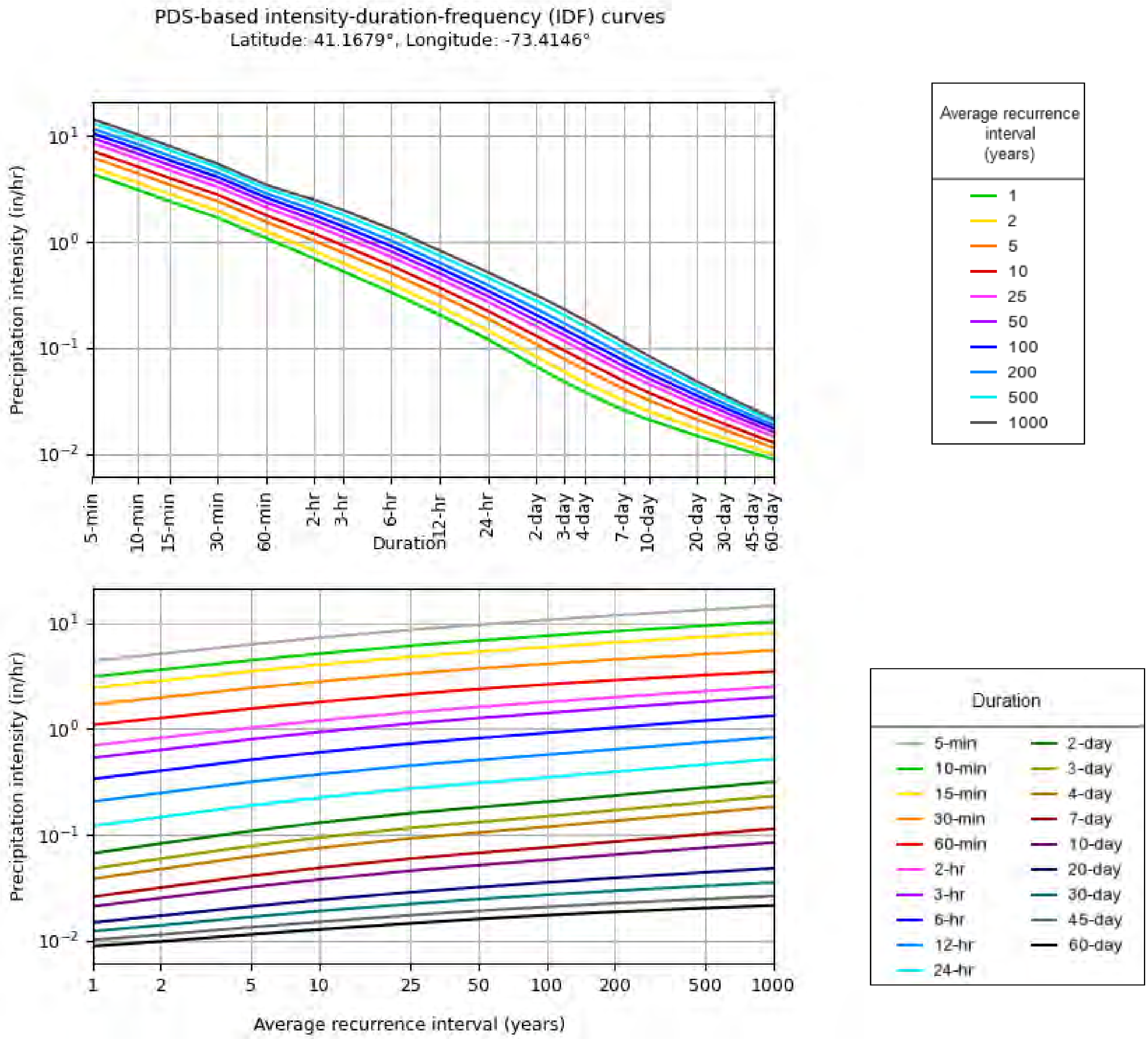
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Tue Nov 7 15:29:56 2023

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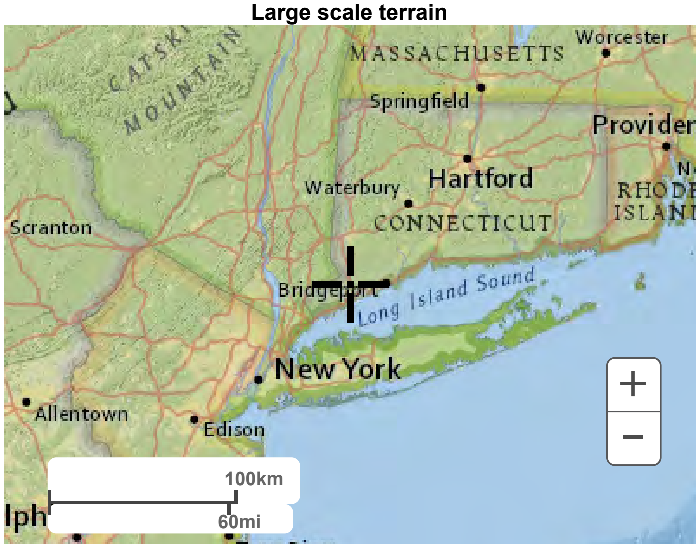
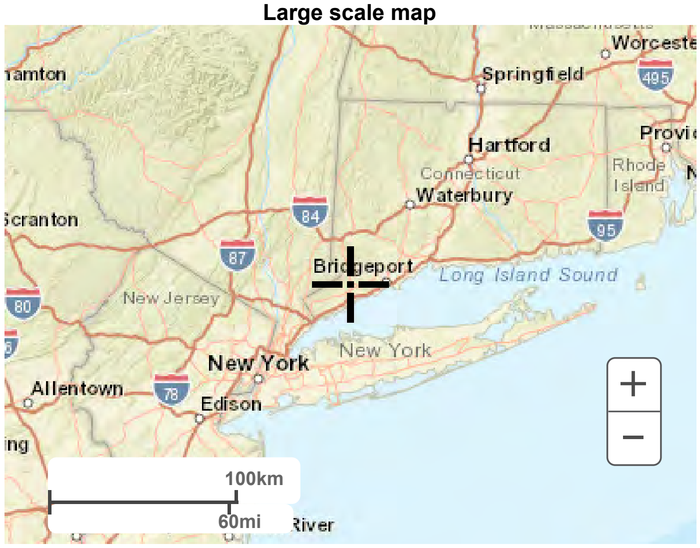
Maps & aerials

Small scale terrain

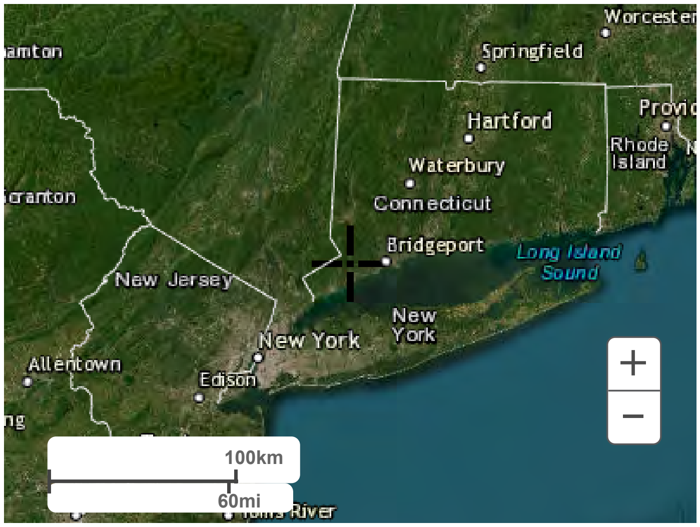
Large scale terrain



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 C

LEGEND

WATERSHED BOUNDARY	
TIME OF CONCENTRATION	
PAVEMENT/ROOF	
LANDSCAPED AND LAWNS	
WOODED	

64 DANBURY ROAD
WILTON, CT

EXISTING WATERSHED FIGURE

DATE: 12/04/2023
SCALE: 1"=100'
FIGURE EX-WS

Tighe&Bond

Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Calculations\Stormwater\Figures\F0173-001-EX-WS-FIGURE.dwg

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX WS-01**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.091	98	8.8866
Landscaped and Lawns (HSG-B)	0.622	69	42.8858
Landscaped and Lawns (HSG-D)	0.080	84	6.6818
Wooded (HSG-B)	0.916	55	50.3750
Wooded (HSG-D)	0.235	77	18.0621
	1.942		126.891

Weighted CN: **65**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	225	0.2	16.11

Total Tc = 16.1 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-02A**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.906	98	88.7872
Landscaped and Lawns (HSG-B)	0.154	69	10.6367
Landscaped and Lawns (HSG-D)	0.138	84	11.5895
Wooded (HSG-B)	0.350	55	19.2753
Wooded (HSG-D)	0.129	77	9.9414
	1.678		140.230

Weighted CN: **84**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	10	0.02	3.35
Segment B - C	0.24	84	0.02	12.22
Segment C - D	0.015	67	0.033	0.91

Total Tc = 16.5 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-02B**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.006	98	0.5917
Landscaped and Lawns (HSG-B)	0.005	69	0.3738
Landscaped and Lawns (HSG-D)	0.120	84	10.0545
Wooded (HSG-B)	0.029	55	1.6061
Wooded (HSG-D)	0.025	77	1.9604
	0.186		14.586

Weighted CN: 79

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	84	0.072	11.02

Total Tc = 11.0 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-02C**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.391	98	38.3293
Landscaped and Lawns (HSG-D)	0.199	84	16.7287
	0.590		55.058

Weighted CN: 93

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	108	0.08	8.58
Segment B - C	0.015	82	0.067	0.80

Total Tc = 9.4 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX WS-02D**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	1.683	98	164.9397
Landscaped and Lawns (HSG-D)	0.313	84	26.3300
Wooded (HSG-B)	0.231	55	12.7096
Wooded (HSG-D)	0.018	77	1.3823
	2.246		205.362

Weighted CN: 91

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	52	0.11	6.34
Segment B - C	0.24	65	0.17	4.23
Segment C - D	0.015	43	0.045	0.56

Total Tc = 11.1 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-02E**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.126	98	12.3580
Landscaped and Lawns (HSG-D)	0.020	84	1.6430
	0.146		14.001

Weighted CN: 96

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	6	0.02	1.48
Segment B - C	0.015	94	0.01	1.92

Total Tc = 3.4 Min.
USE 5.0 Min. (MIN)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Existing CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX WS-02F**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.704	98	68.9667
Landscaped and Lawns (HSG-D)	0.274	84	23.0229
Wooded (HSG-D)	0.034	77	2.6356
	1.012		94.625

Weighted CN: 93

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	35	0.025	5.55

Total Tc = 5.5 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-02G**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.159	98	15.5459
Landscaped and Lawns (HSG-D)	0.124	84	10.3997
	0.282		25.946

Weighted CN: 92

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	46	0.025	6.91

Total Tc = 6.9 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Existing CN & Tc Calculations** Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX WS-02H**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.166	98	16.2591
Landscaped and Lawns (HSG-D)	0.450	84	37.8309
	0.616		54.090

Weighted CN: **88**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	65	0.025	9.11
Segment B - C	0.015	6	0.02	0.16
Segment C - D	0.25	53	0.025	7.99

Total Tc = 17.3 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-02I**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.577	98	56.5165
Landscaped and Lawns (HSG-D)	0.810	84	68.0311
	1.387		124.548

Weighted CN: **90**

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	82	0.06	7.73
Segment B - C	0.015	6	0.02	0.16
Segment C - D	0.25	97	0.04	10.74

Total Tc = 18.6 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Existing CN & Tc Calculations** Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX WS-02J**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.343	98	33.5756
	0.343		33.576

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	75	0.02	1.21

Total Tc = 1.2 Min.

USE 5.0 Min. (MIN)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **EX WS-03**
Location:

Cover Type	Area, ac	CN	A x CN
Landscaped and Lawns (HSG-B)	0.043	69	2.9542
Wooded (HSG-B)	0.111	55	6.0909
	0.154		9.045

Weighted CN: 59

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

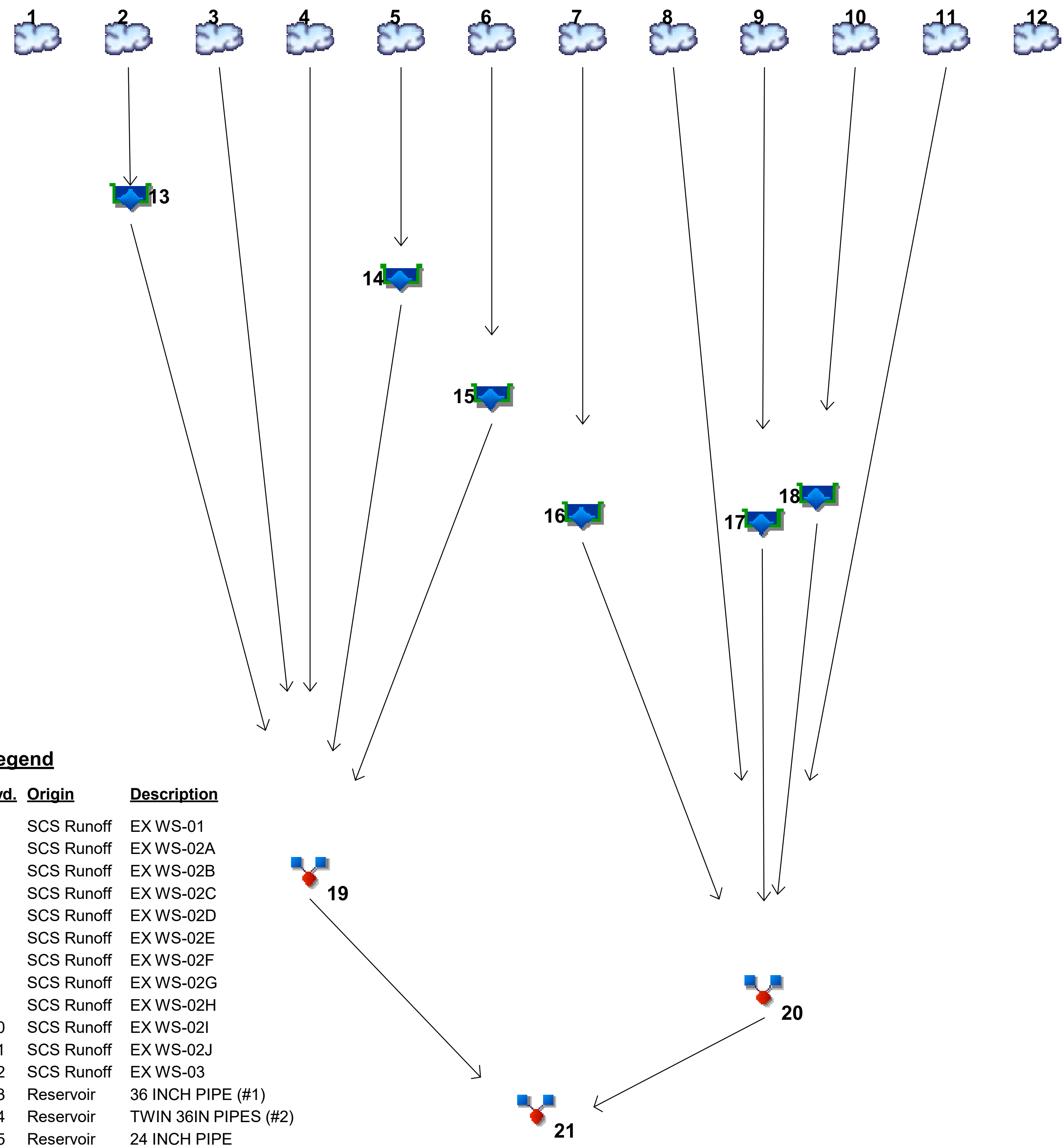
Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	25	0.08	4.01
Segment B - C	0.24	60	0.05	6.47

Total Tc = 10.5 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021



Legend

Hyd.	Origin	Description
1	SCS Runoff	EX WS-01
2	SCS Runoff	EX WS-02A
3	SCS Runoff	EX WS-02B
4	SCS Runoff	EX WS-02C
5	SCS Runoff	EX WS-02D
6	SCS Runoff	EX WS-02E
7	SCS Runoff	EX WS-02F
8	SCS Runoff	EX WS-02G
9	SCS Runoff	EX WS-02H
10	SCS Runoff	EX WS-02I
11	SCS Runoff	EX WS-02J
12	SCS Runoff	EX WS-03
13	Reservoir	36 INCH PIPE (#1)
14	Reservoir	TWIN 36IN PIPES (#2)
15	Reservoir	24 INCH PIPE
16	Reservoir	36 INCH PIPE (#2)
17	Reservoir	36 INCH PIPE (#3)
18	Reservoir	TWO 36 INCH PIPES
19	Combine	<no description>
20	Combine	<no description>
21	Combine	Design Point B

Project: Existing-Hydraflow.gpw

Monday, 12 / 4 / 2023

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	------	-------	1.083	-------	-------	3.109	4.569	5.724	7.011	EX WS-01
2	SCS Runoff	------	-------	2.850	-------	-------	5.245	6.758	7.893	9.103	EX WS-02A
3	SCS Runoff	------	-------	0.283	-------	-------	0.569	0.755	0.895	1.046	EX WS-02B
4	SCS Runoff	------	-------	1.664	-------	-------	2.685	3.315	3.785	4.285	EX WS-02C
5	SCS Runoff	------	-------	5.519	-------	-------	9.148	11.39	13.06	14.84	EX WS-02D
6	SCS Runoff	------	-------	0.468	-------	-------	0.731	0.894	1.015	1.145	EX WS-02E
7	SCS Runoff	------	-------	3.039	-------	-------	4.896	6.042	6.897	7.807	EX WS-02F
8	SCS Runoff	------	-------	0.774	-------	-------	1.265	1.567	1.793	2.033	EX WS-02G
9	SCS Runoff	------	-------	1.152	-------	-------	1.996	2.521	2.913	3.330	EX WS-02H
10	SCS Runoff	------	-------	2.779	-------	-------	4.677	5.852	6.727	7.659	EX WS-02I
11	SCS Runoff	------	-------	1.132	-------	-------	1.741	2.120	2.404	2.707	EX WS-02J
12	SCS Runoff	------	-------	0.050	-------	-------	0.199	0.314	0.408	0.513	EX WS-03
13	Reservoir	2	-------	2.833	-------	-------	5.228	6.739	7.874	8.866	36 INCH PIPE (#1)
14	Reservoir	5	-------	5.358	-------	-------	8.916	11.13	12.78	14.56	TWIN 36IN PIPES (#2)
15	Reservoir	6	-------	0.449	-------	-------	0.704	0.908	1.042	1.129	24 INCH PIPE
16	Reservoir	7	-------	2.993	-------	-------	4.822	5.901	6.741	7.332	36 INCH PIPE (#2)
17	Reservoir	9	-------	0.105	-------	-------	2.300	2.826	2.899	3.311	36 INCH PIPE (#3)
18	Reservoir	10	-------	2.761	-------	-------	4.647	5.822	6.701	7.629	TWO 36 INCH PIPES
19	Combine	3, 4, 13, 14, 15,	-------	10.17	-------	-------	17.43	21.96	25.35	28.95	<no description>
20	Combine	8, 11, 16, 17, 18,	-------	6.802	-------	-------	11.11	14.53	18.18	20.65	<no description>
21	Combine	19, 20	-------	16.45	-------	-------	27.70	36.49	42.76	49.09	Design Point B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	1.083	2	734	5,241	------	------	------	EX WS-01
2	SCS Runoff	2.850	2	730	11,602	------	------	------	EX WS-02A
3	SCS Runoff	0.283	2	730	1,101	------	------	------	EX WS-02B
4	SCS Runoff	1.664	2	726	5,899	------	------	------	EX WS-02C
5	SCS Runoff	5.519	2	728	21,524	------	------	------	EX WS-02D
6	SCS Runoff	0.468	2	724	1,523	------	------	------	EX WS-02E
7	SCS Runoff	3.039	2	724	9,485	------	------	------	EX WS-02F
8	SCS Runoff	0.774	2	726	2,719	------	------	------	EX WS-02G
9	SCS Runoff	1.152	2	732	5,114	------	------	------	EX WS-02H
10	SCS Runoff	2.779	2	732	12,419	------	------	------	EX WS-02I
11	SCS Runoff	1.132	2	724	3,836	------	------	------	EX WS-02J
12	SCS Runoff	0.050	2	734	288	------	------	------	EX WS-03
13	Reservoir	2.833	2	732	9,516	2	143.56	1,493	36 INCH PIPE (#1)
14	Reservoir	5.358	2	730	16,803	5	139.02	3,243	TWIN 36IN PIPES (#2)
15	Reservoir	0.449	2	724	891	6	139.60	475	24 INCH PIPE
16	Reservoir	2.993	2	724	8,038	7	139.42	1,181	36 INCH PIPE (#2)
17	Reservoir	0.105	2	848	1,259	9	137.46	3,651	36 INCH PIPE (#3)
18	Reservoir	2.761	2	734	9,331	10	135.68	2,406	TWO 36 INCH PIPES
19	Combine	10.17	2	730	34,210	3, 4, 13, 14, 15,	------	------	<no description>
20	Combine	6.802	2	726	25,182	8, 11, 16, 17, 18,	------	------	<no description>
21	Combine	16.45	2	728	59,393	19, 20	------	------	Design Point B

Existing-Hydraflow.gpw	Return Period: 2 Year	Monday, 12 / 4 / 2023

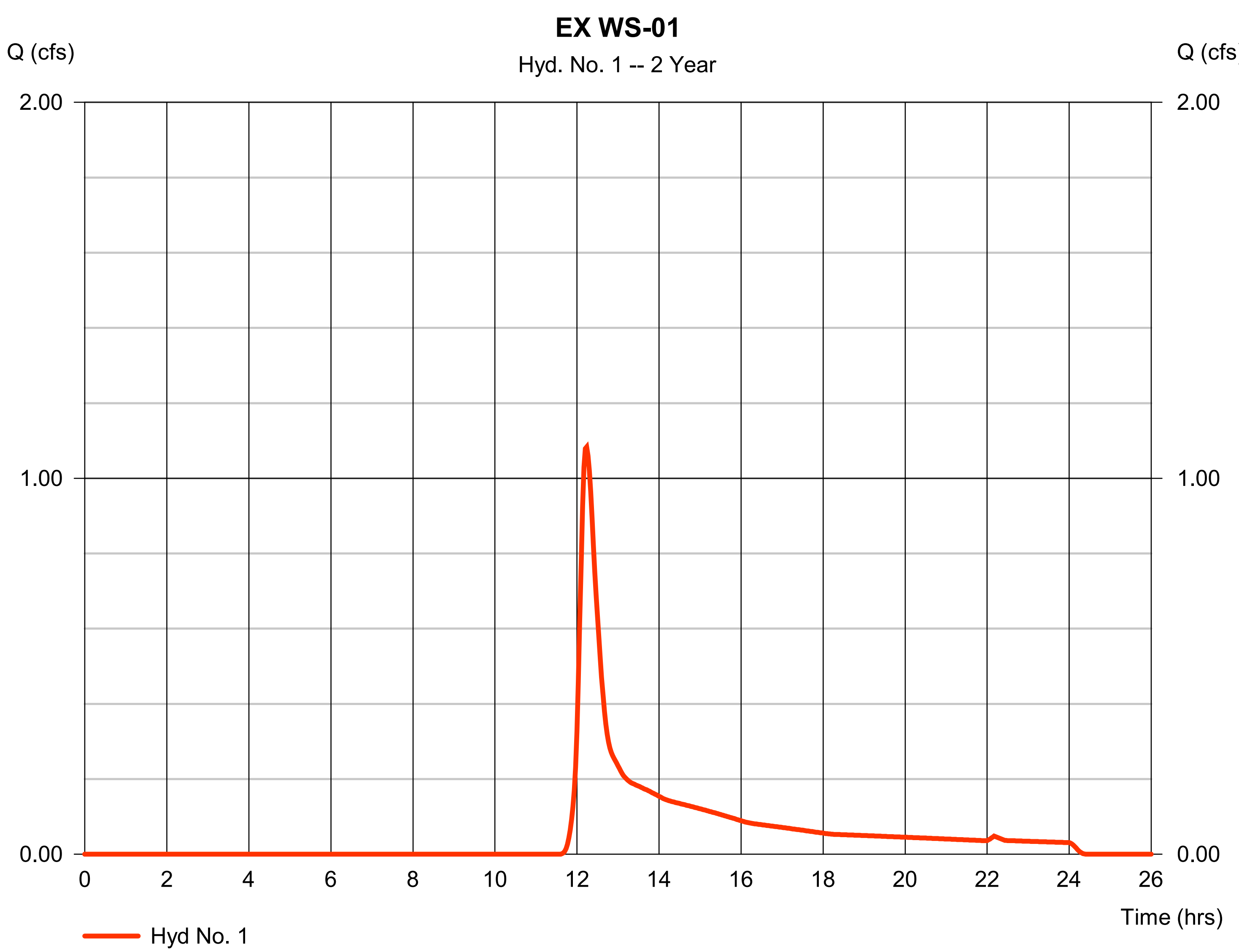
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 1

EX WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 1.083 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 5,241 cuft
Drainage area	= 1.942 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.10 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

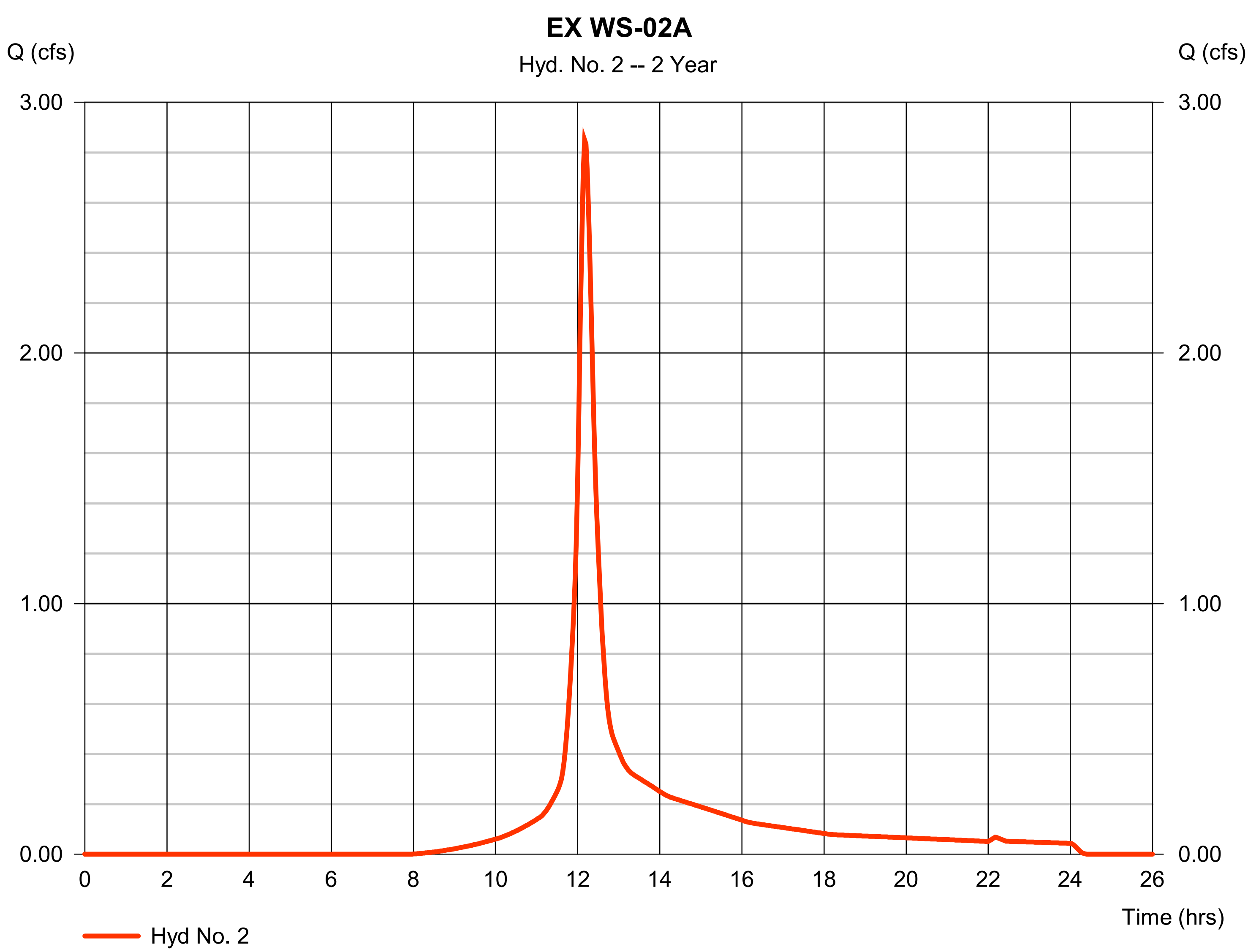


Hydrograph Report

Hyd. No. 2

EX WS-02A

Hydrograph type	= SCS Runoff	Peak discharge	= 2.850 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 11,602 cuft
Drainage area	= 1.678 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.50 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



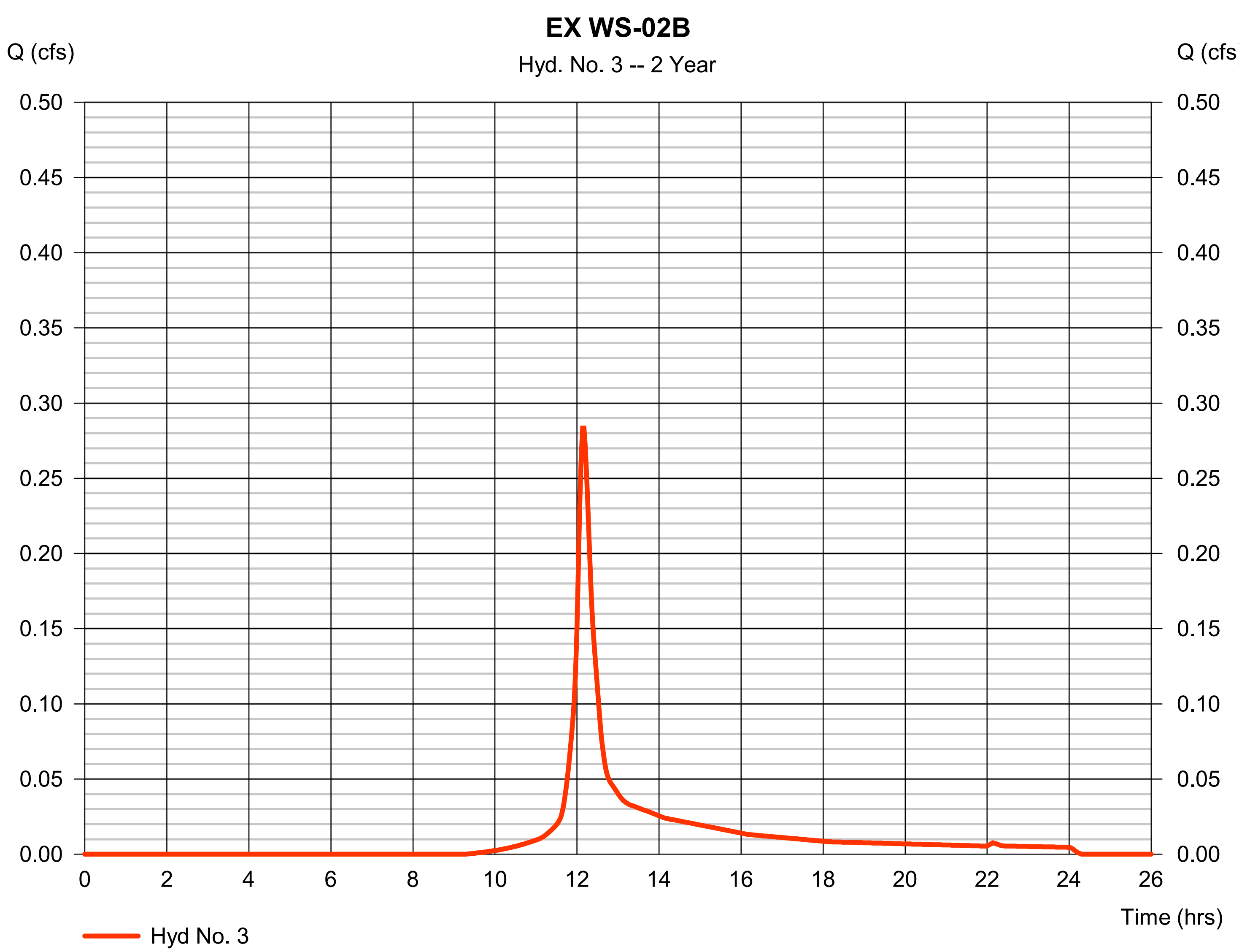
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 3

EX WS-02B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.283 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 1,101 cuft
Drainage area	= 0.186 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



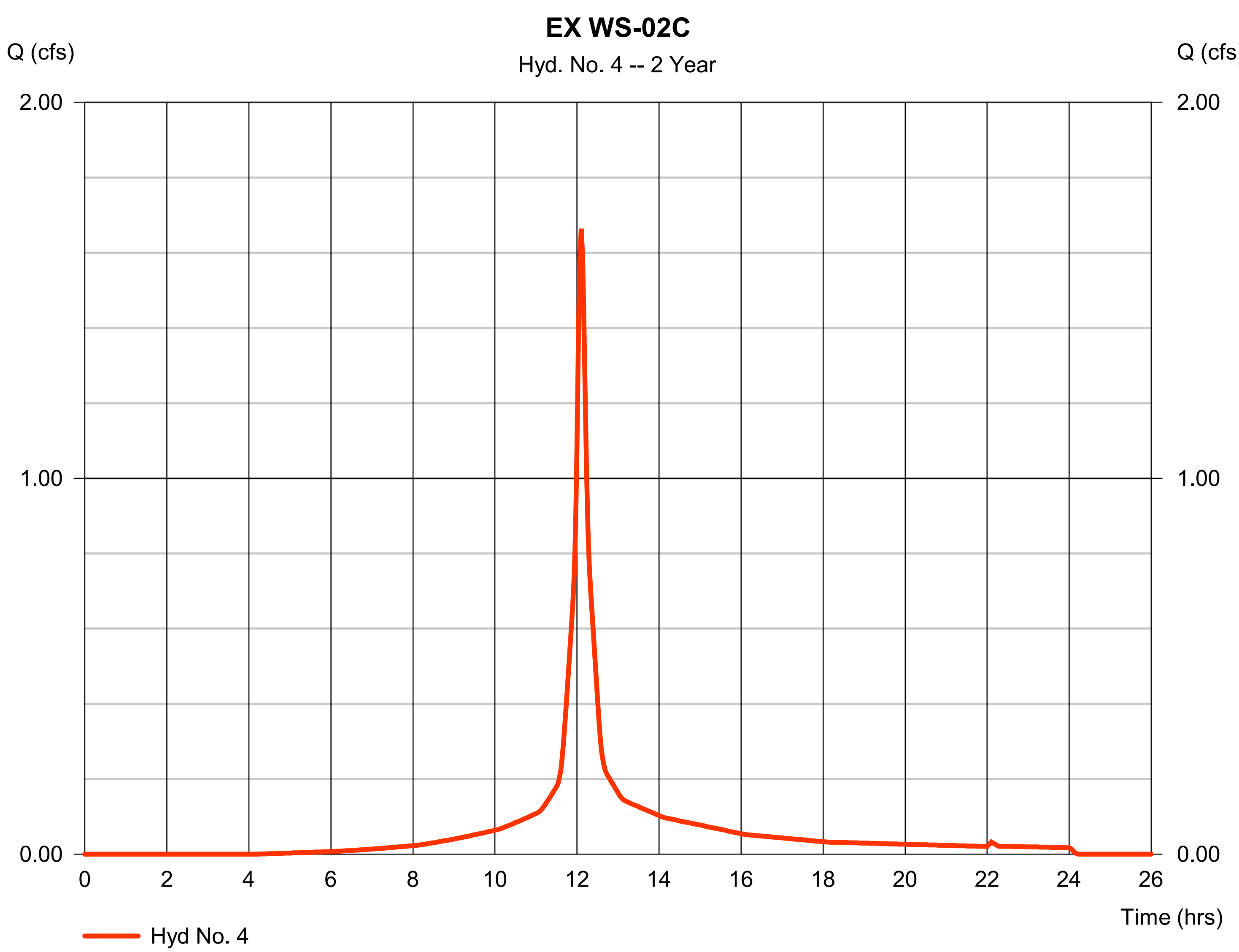
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 4

EX WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.664 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 5,899 cuft
Drainage area	= 0.590 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



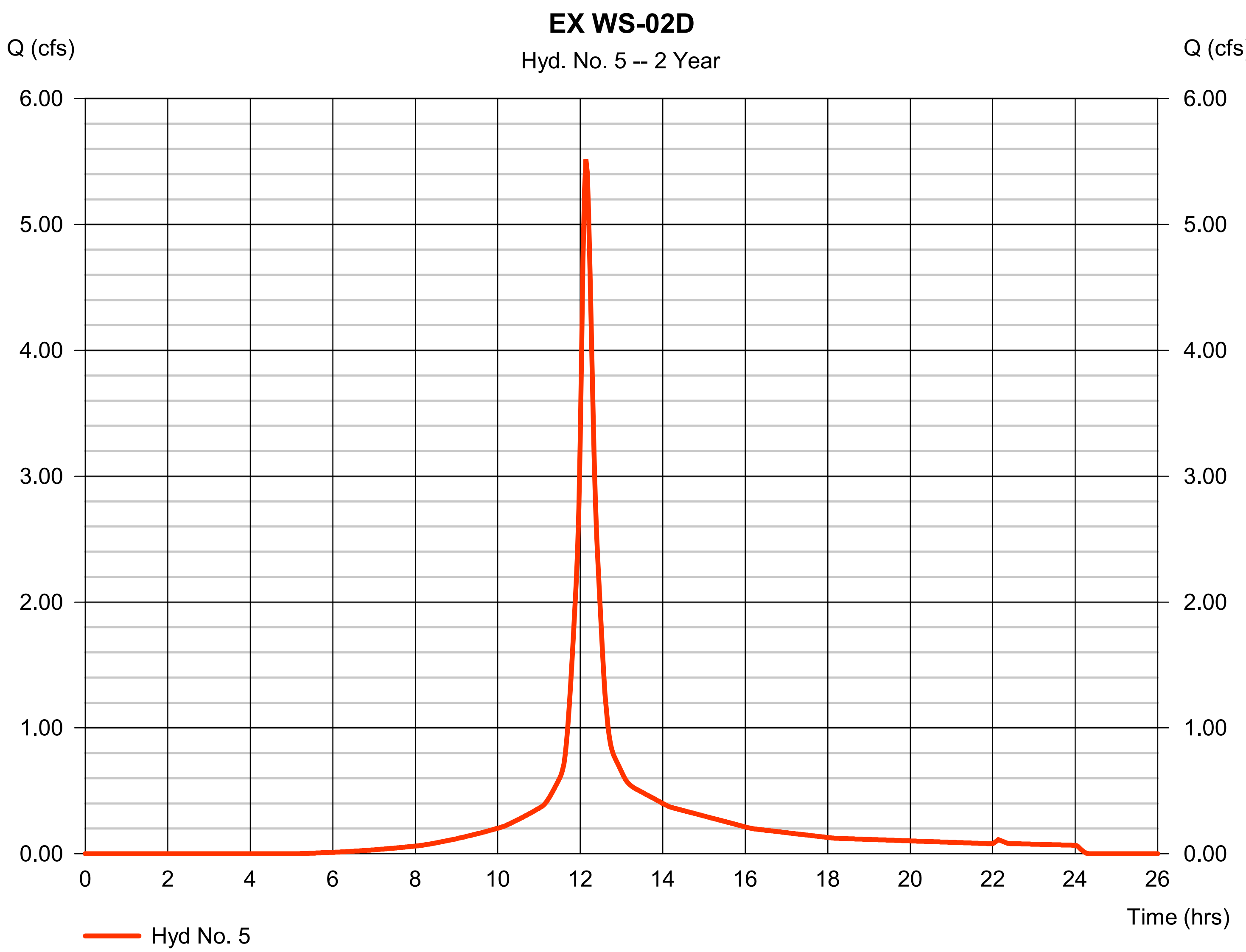
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 5

EX WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 5.519 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 21,524 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



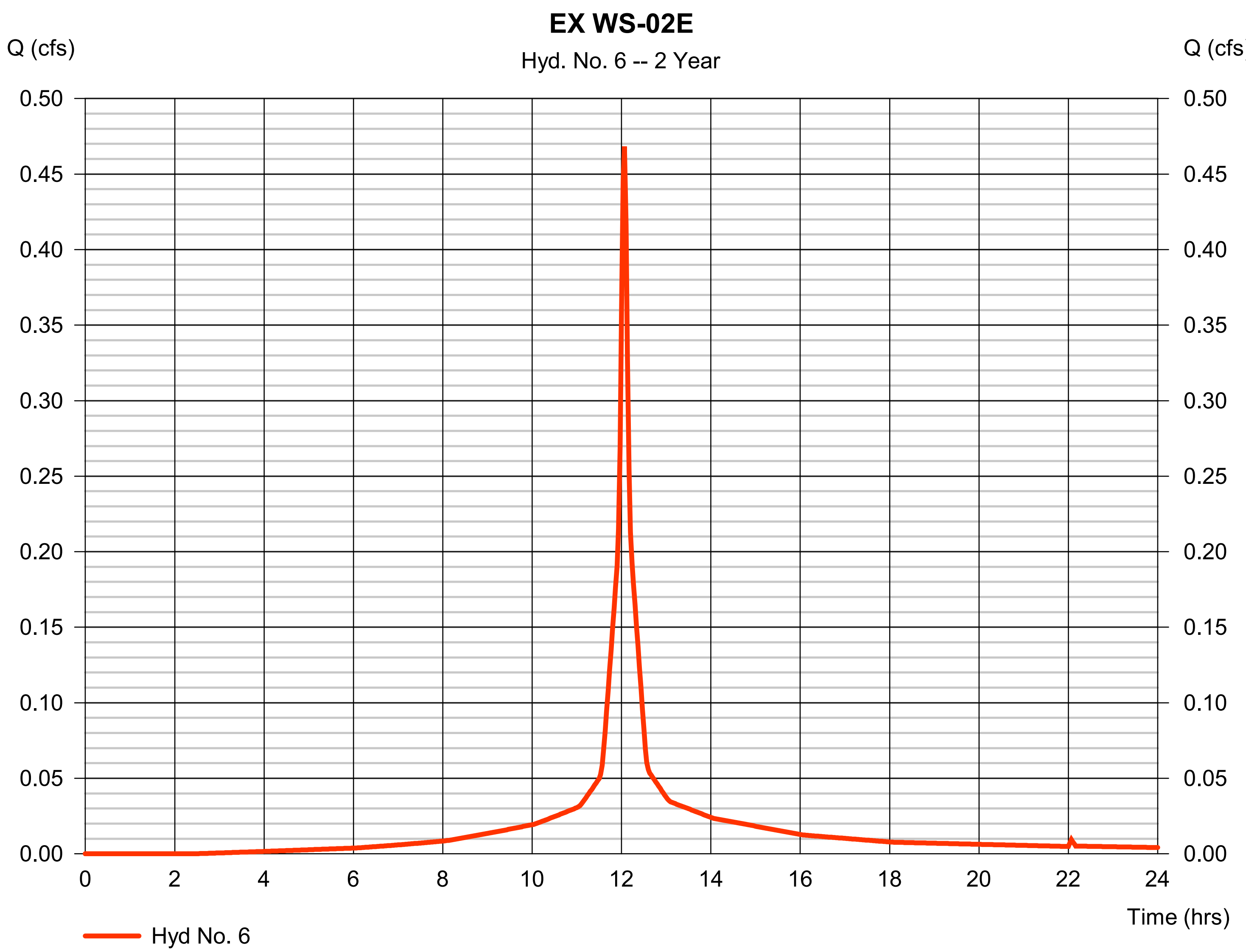
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 6

EX WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 0.468 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,523 cuft
Drainage area	= 0.146 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



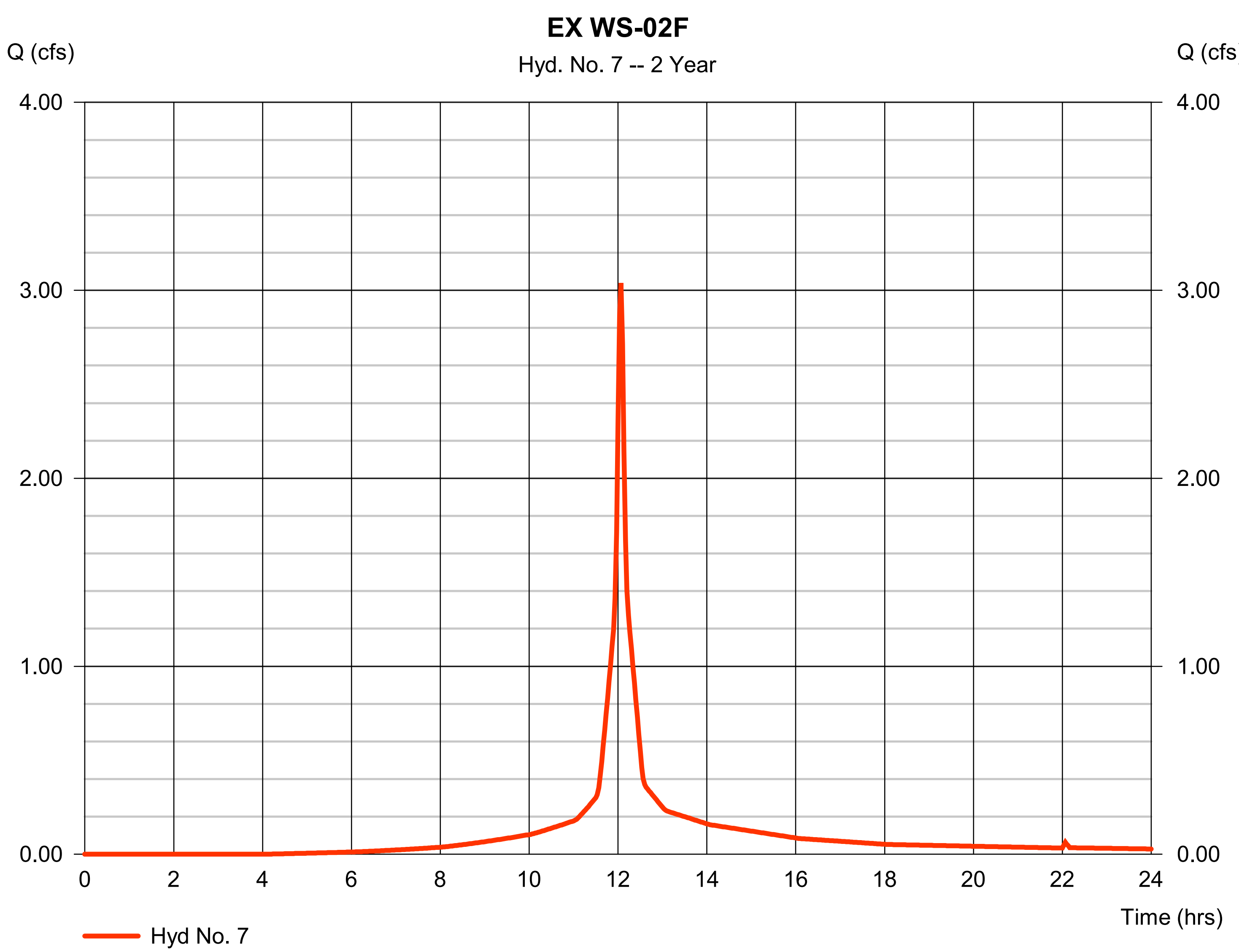
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 7

EX WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 3.039 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 9,485 cuft
Drainage area	= 1.012 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.50 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



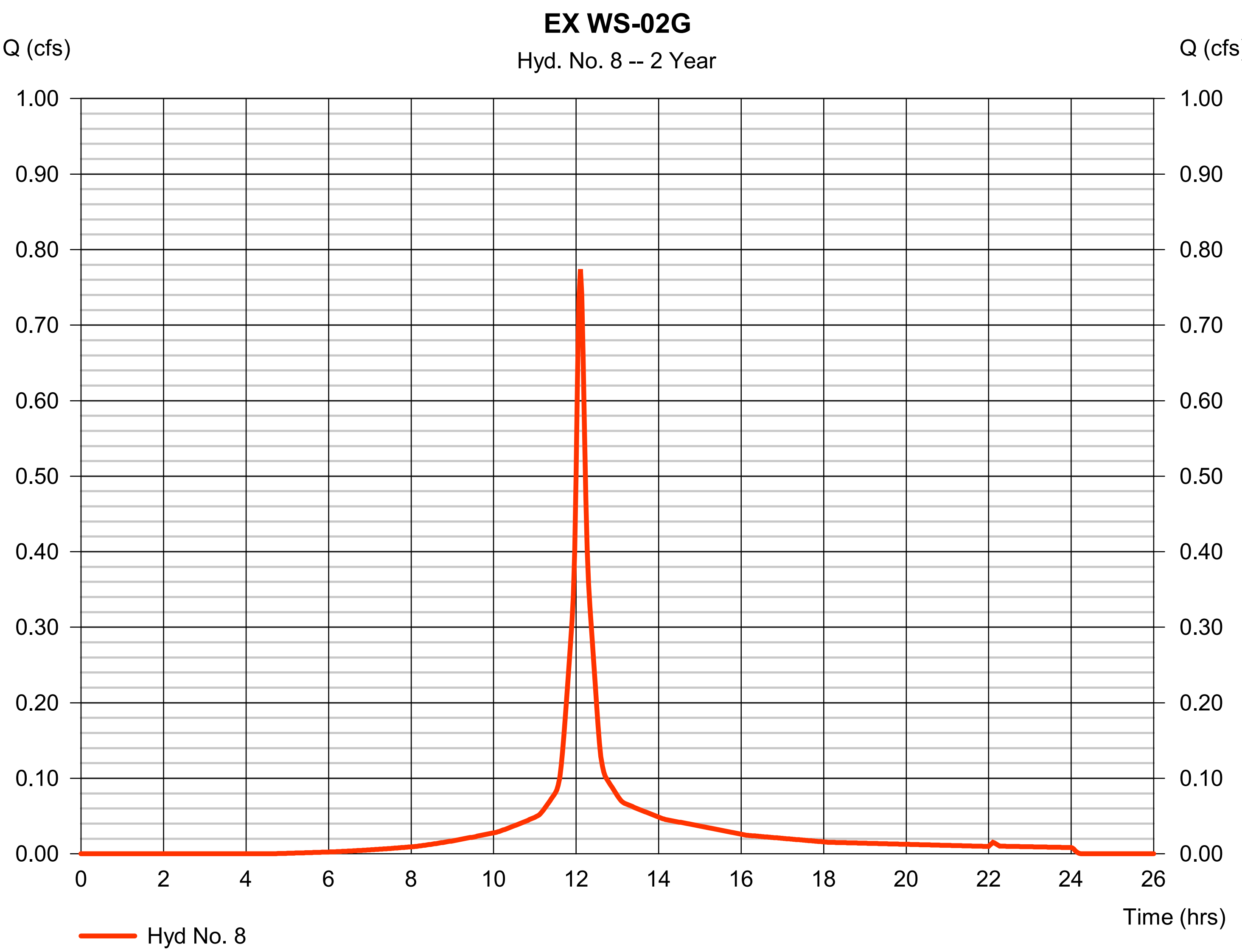
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 8

EX WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 0.774 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 2,719 cuft
Drainage area	= 0.282 ac	Curve number	= 92
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.90 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



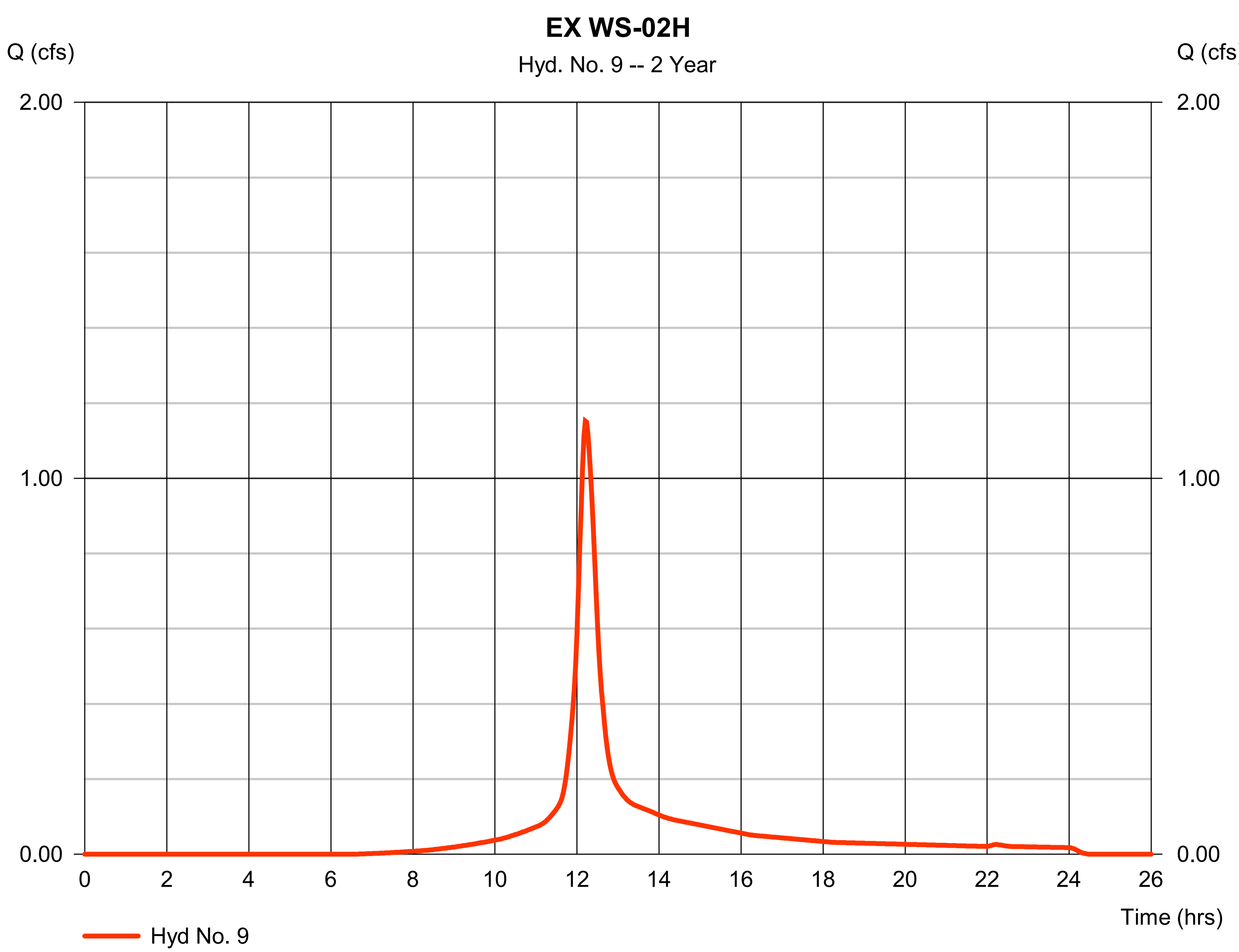
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 9

EX WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 1.152 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 5,114 cuft
Drainage area	= 0.616 ac	Curve number	= 88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.30 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



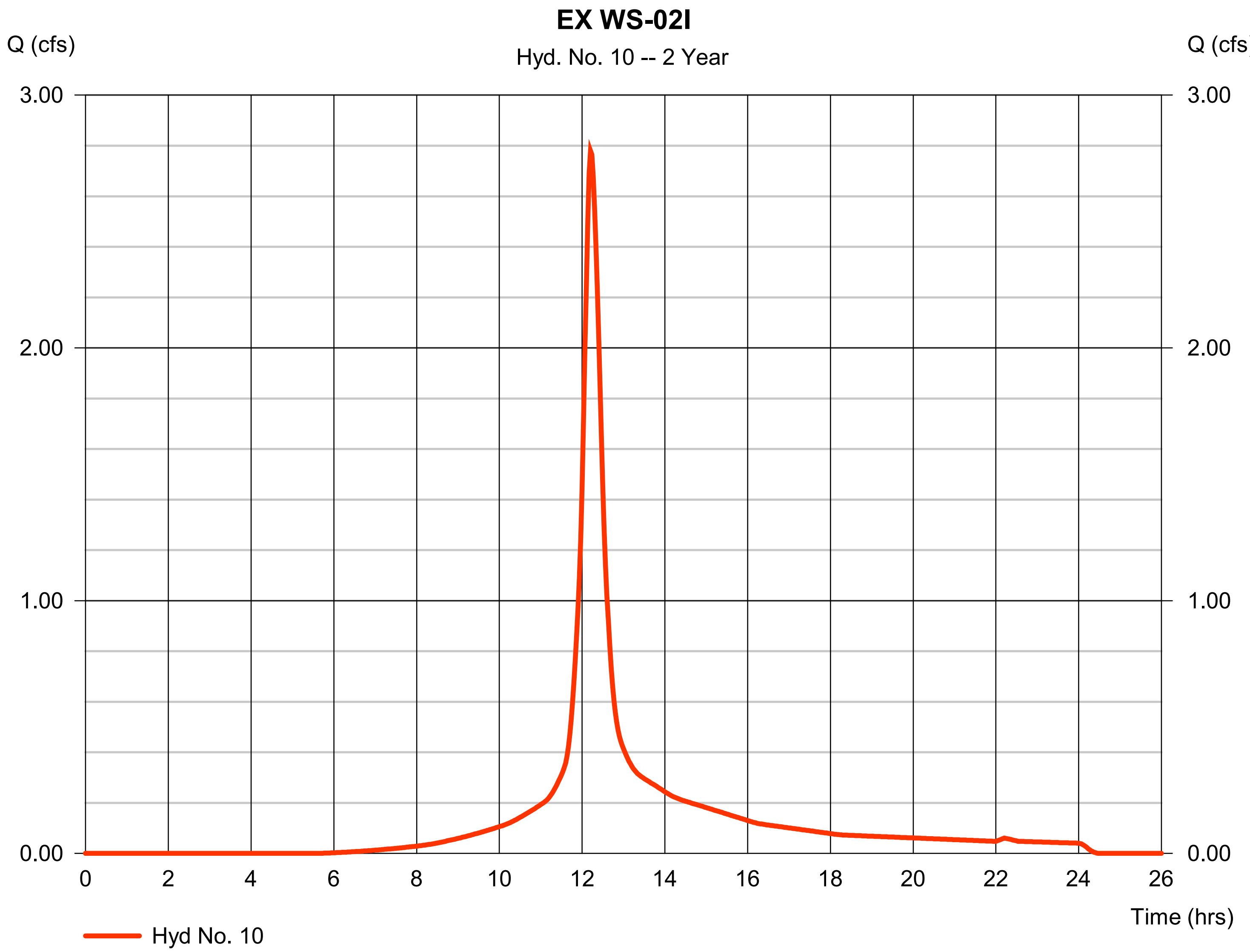
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 10

EX WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 2.779 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 12,419 cuft
Drainage area	= 1.387 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



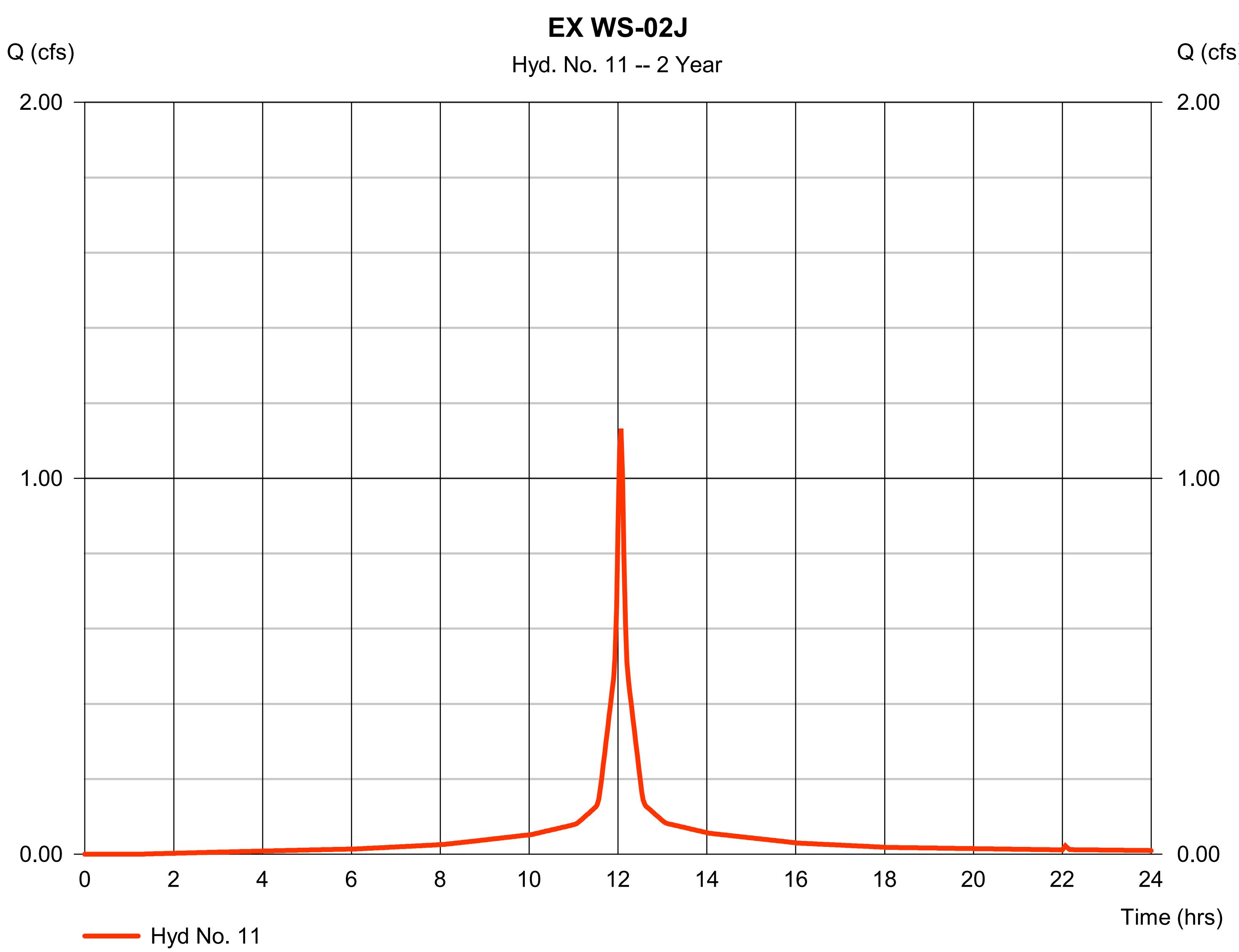
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 11

EX WS-02J

Hydrograph type	= SCS Runoff	Peak discharge	= 1.132 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,836 cuft
Drainage area	= 0.343 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



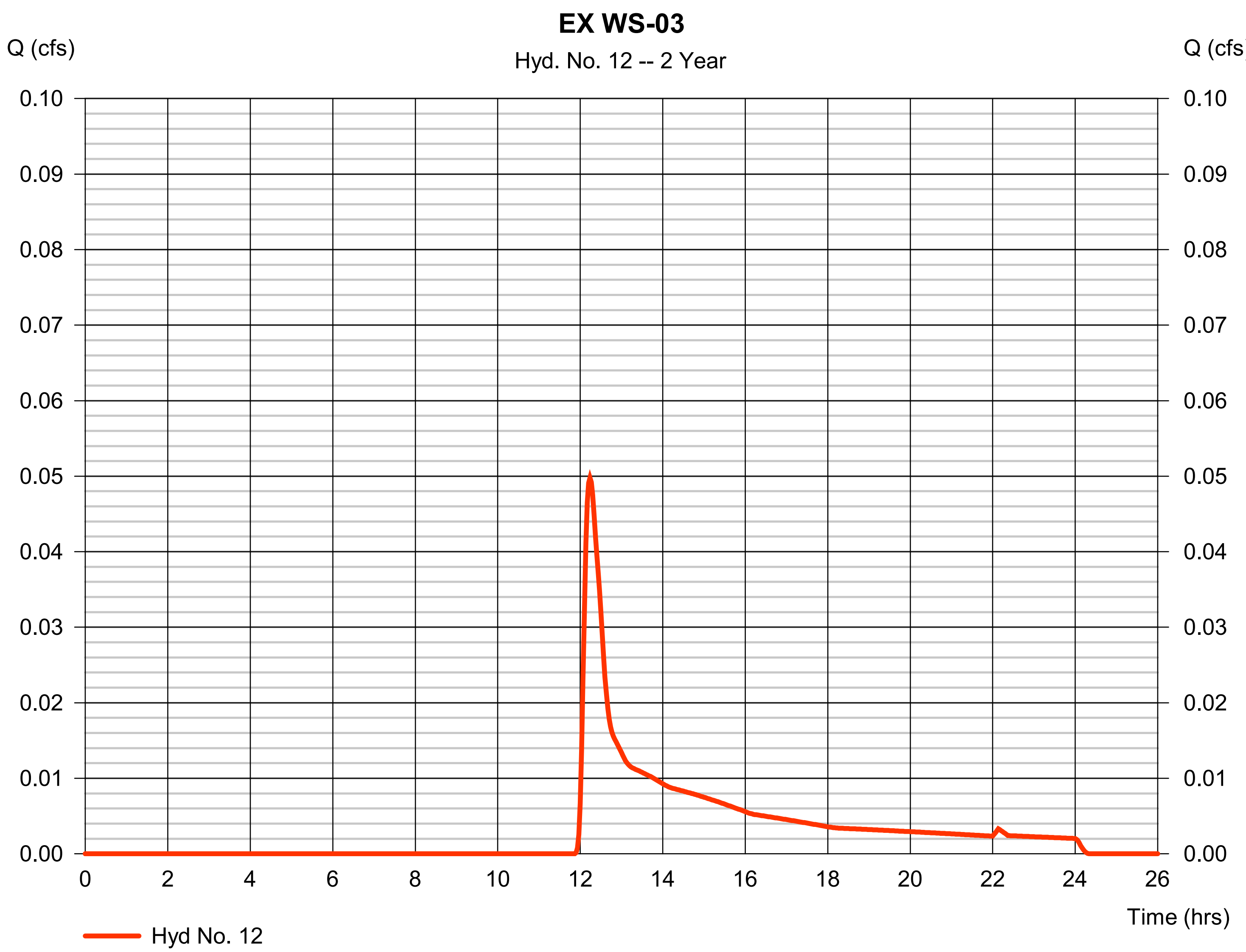
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 12

EX WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.050 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 288 cuft
Drainage area	= 0.154 ac	Curve number	= 59
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.50 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

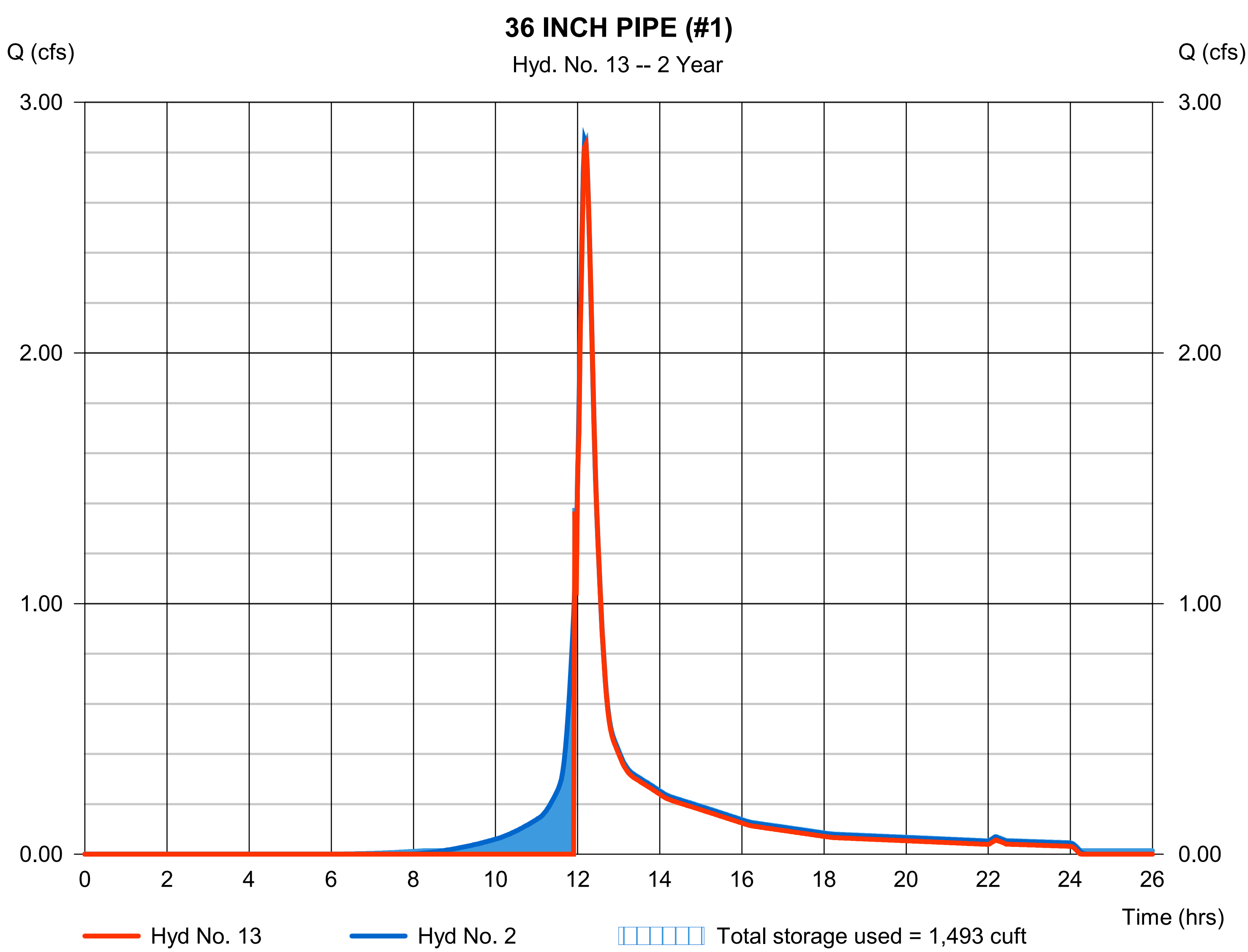
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 13

36 INCH PIPE (#1)

Hydrograph type	= Reservoir	Peak discharge	= 2.833 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 9,516 cuft
Inflow hyd. No.	= 2 - EX WS-02A	Max. Elevation	= 143.56 ft
Reservoir name	= 36IN - 1	Max. Storage	= 1,493 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Pond No. 4 - 36IN - 1

Pond Data

UG Chambers -Invert elev. = 134.30 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 102.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No

Encasement -Invert elev. = 133.80 ft, Width = 5.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours -User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 142.90 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	133.80	n/a	0	0
0.35	134.15	n/a	71	71
0.70	134.50	n/a	84	155
1.05	134.85	n/a	113	269
1.40	135.20	n/a	126	395
1.75	135.55	n/a	133	528
2.10	135.90	n/a	136	663
2.45	136.25	n/a	134	798
2.80	136.60	n/a	130	927
3.15	136.95	n/a	120	1,047
3.50	137.30	n/a	100	1,147
9.10	142.90	00	0	1,147
10.20	144.00	1,055	580	1,727

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	Inactive	Inactive	Inactive
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 137.70	0.00	0.00	0.00
Length (ft)	= 26.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

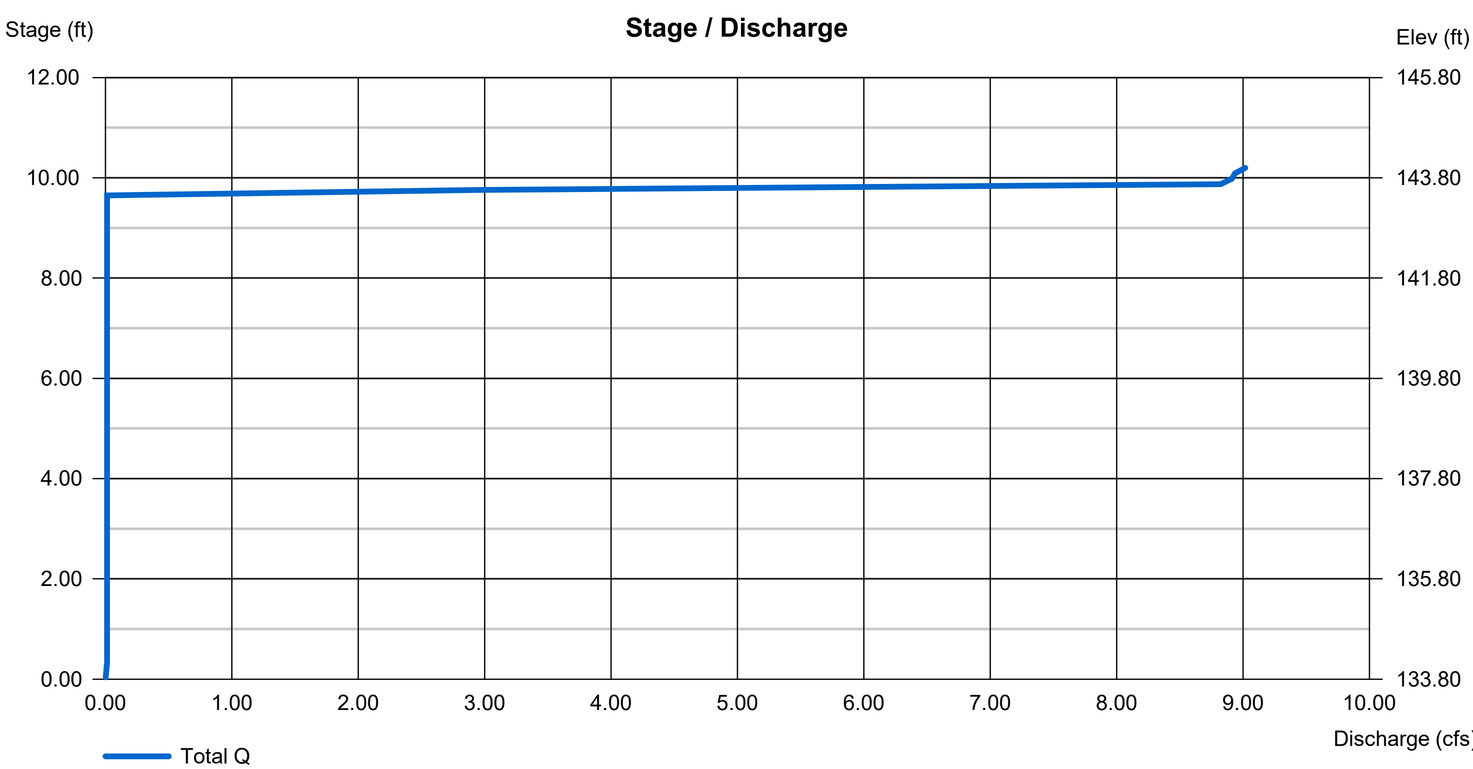
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 60.00	Inactive	Inactive	Inactive
Crest El. (ft)	= 143.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

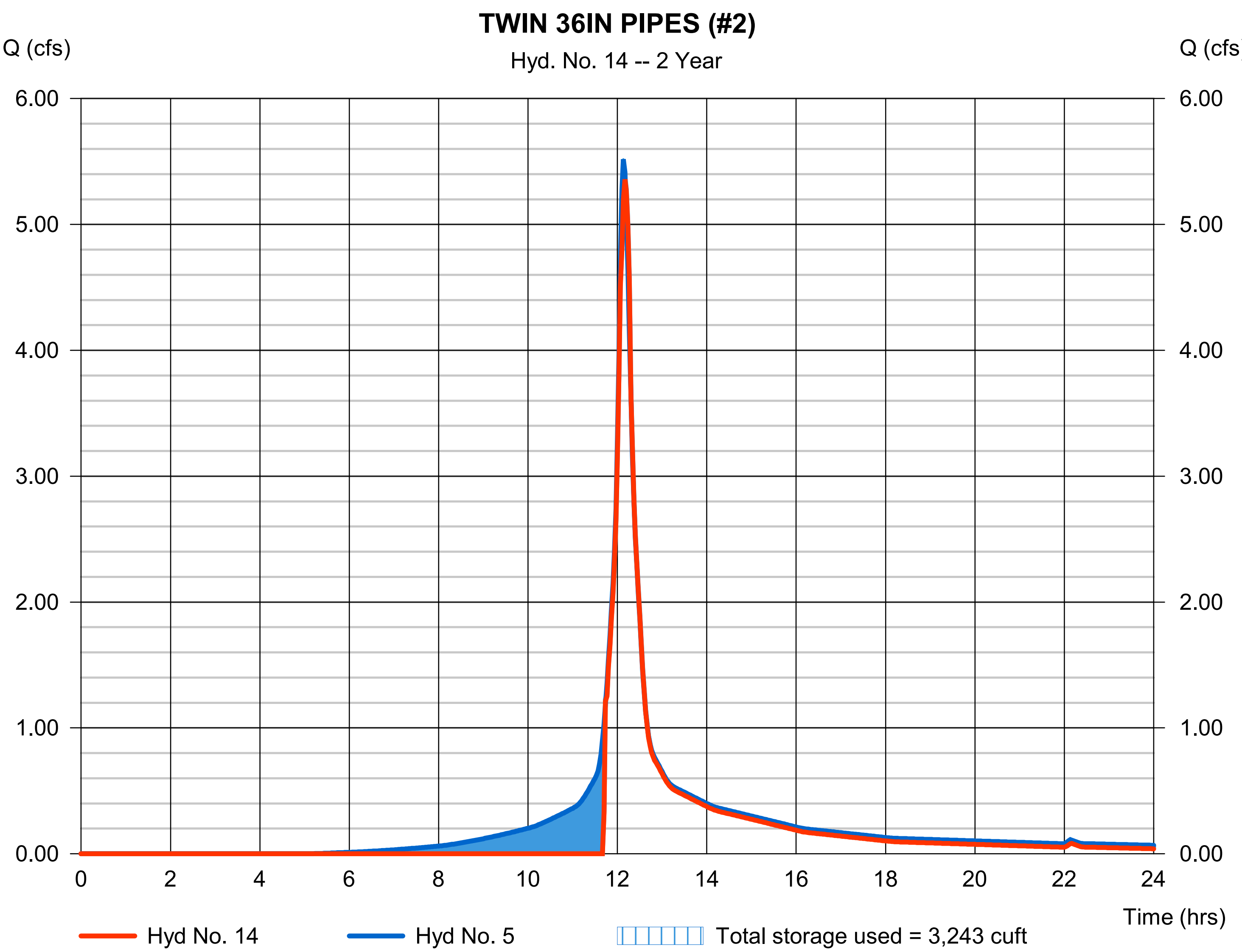
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 14

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 5.358 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 16,803 cuft
Inflow hyd. No.	= 5 - EX WS-02D	Max. Elevation	= 139.02 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 3,243 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Pond No. 6 - Northern Twin 36IN

Pond Data

UG Chambers - Invert elev. = 131.00 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 120.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 130.50 ft, Width = 6.00 ft, Height = 3.50 ft, Voids = 40.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 138.30 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	130.50	n/a	0	0
0.35	130.85	n/a	168	168
0.70	131.20	n/a	197	365
1.05	131.55	n/a	267	632
1.40	131.90	n/a	297	929
1.75	132.25	n/a	313	1,242
2.10	132.60	n/a	319	1,561
2.45	132.95	n/a	316	1,877
2.80	133.30	n/a	305	2,182
3.15	133.65	n/a	282	2,464
3.50	134.00	n/a	234	2,698
7.80	138.30	01	2	2,701
8.50	139.00	1,250	438	3,138
9.50	140.00	7,570	4,410	7,548

Culvert / Orifice Structures

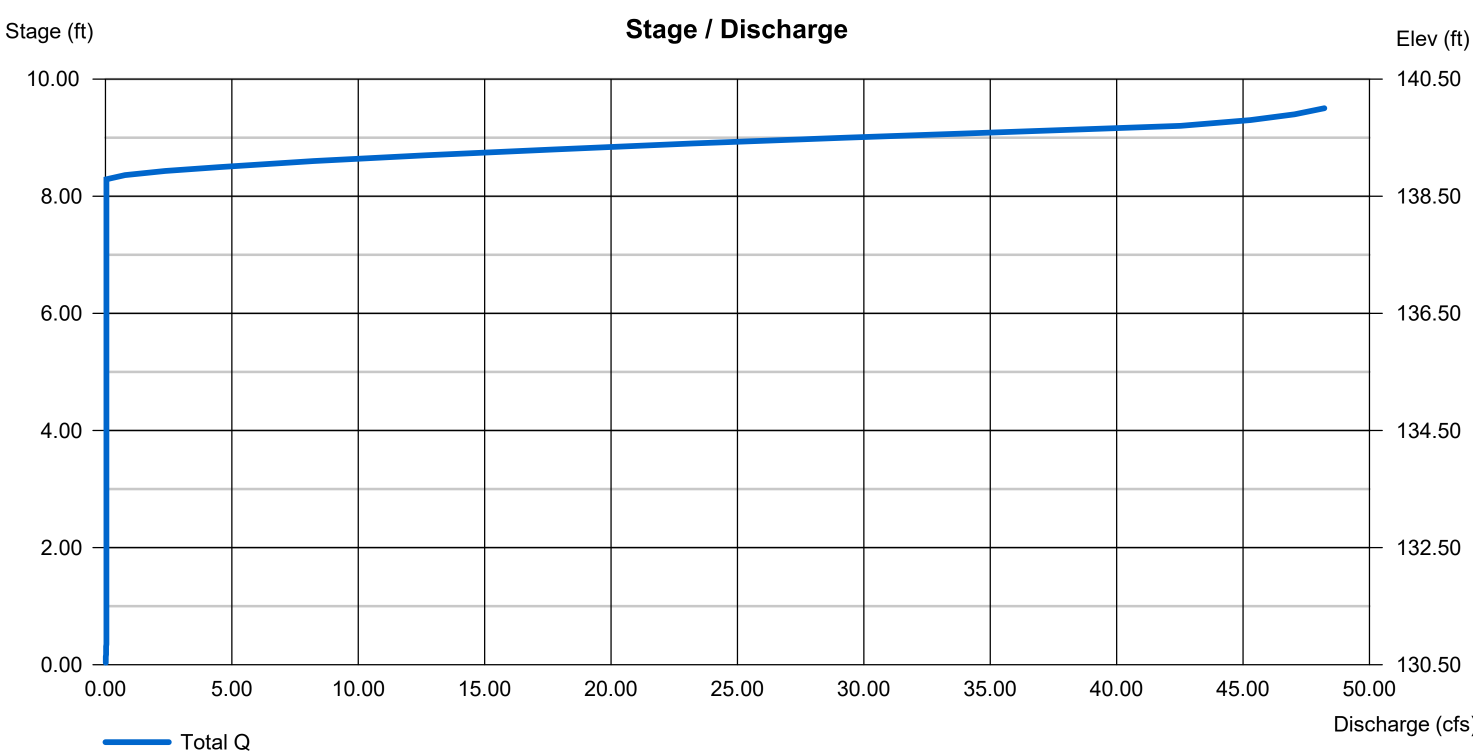
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 30.00	0.00	0.00	0.00
Span (in)	= 30.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 134.20	0.00	0.00	0.00
Length (ft)	= 69.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 15.00	0.00	0.00	0.00
Crest El. (ft)	= 138.80	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

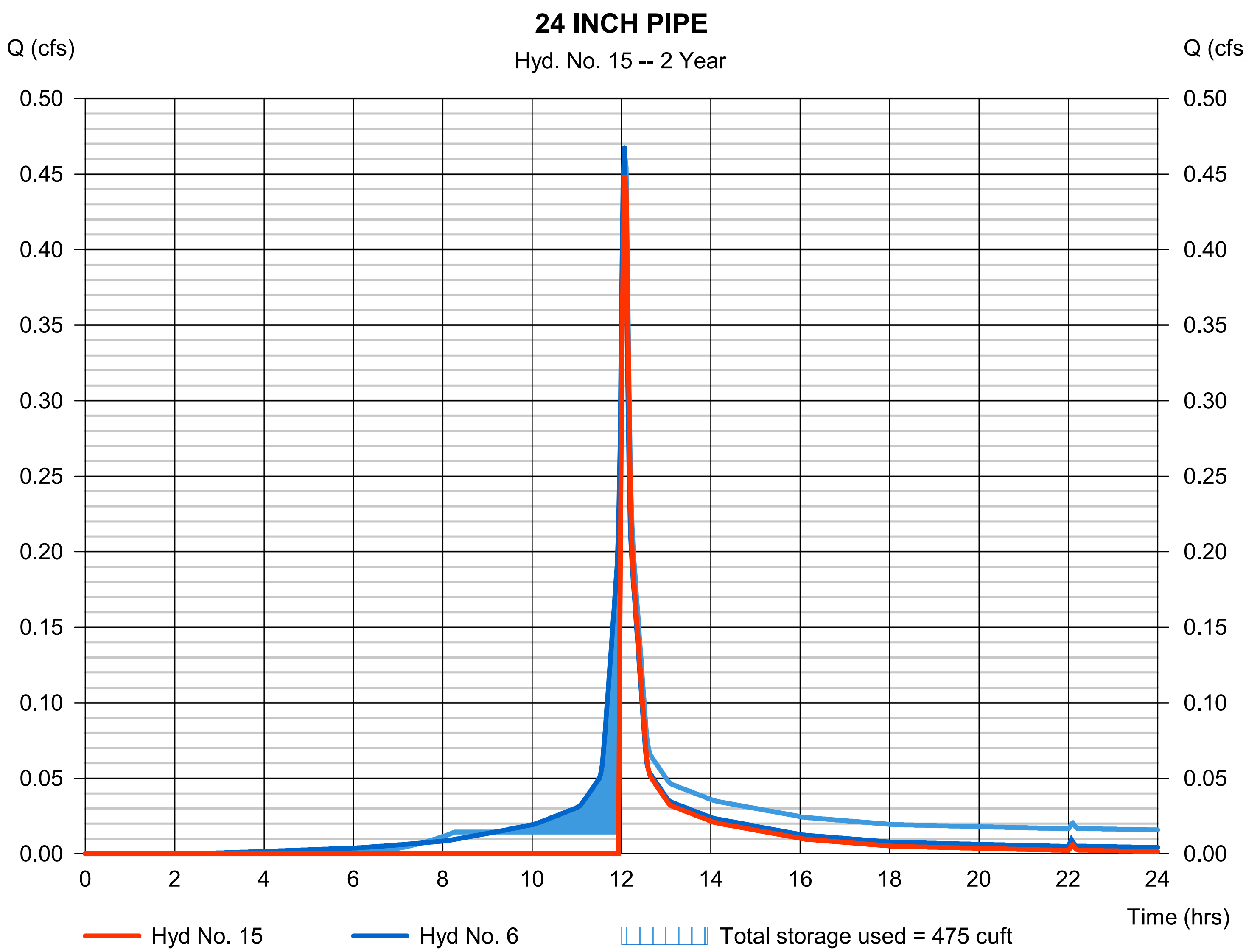
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 15

24 INCH PIPE

Hydrograph type	= Reservoir	Peak discharge	= 0.449 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 891 cuft
Inflow hyd. No.	= 6 - EX WS-02E	Max. Elevation	= 139.60 ft
Reservoir name	= 24IN	Max. Storage	= 475 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Pond No. 5 - 24IN

Pond Data

UG Chambers - Invert elev. = 135.00 ft, Rise x Span = 2.00 x 2.00 ft, Barrel Len = 29.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 134.50 ft, Width = 4.00 ft, Height = 2.50 ft, Voids = 40.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 139.10 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	134.50	n/a	0	0
0.25	134.75	n/a	12	12
0.50	135.00	n/a	12	23
0.75	135.25	n/a	16	39
1.00	135.50	n/a	18	57
1.25	135.75	n/a	20	77
1.50	136.00	n/a	20	97
1.75	136.25	n/a	20	117
2.00	136.50	n/a	20	137
2.25	136.75	n/a	18	155
2.50	137.00	n/a	16	171
4.60	139.10	01	1	172
5.50	140.00	1,212	546	718

Culvert / Orifice Structures

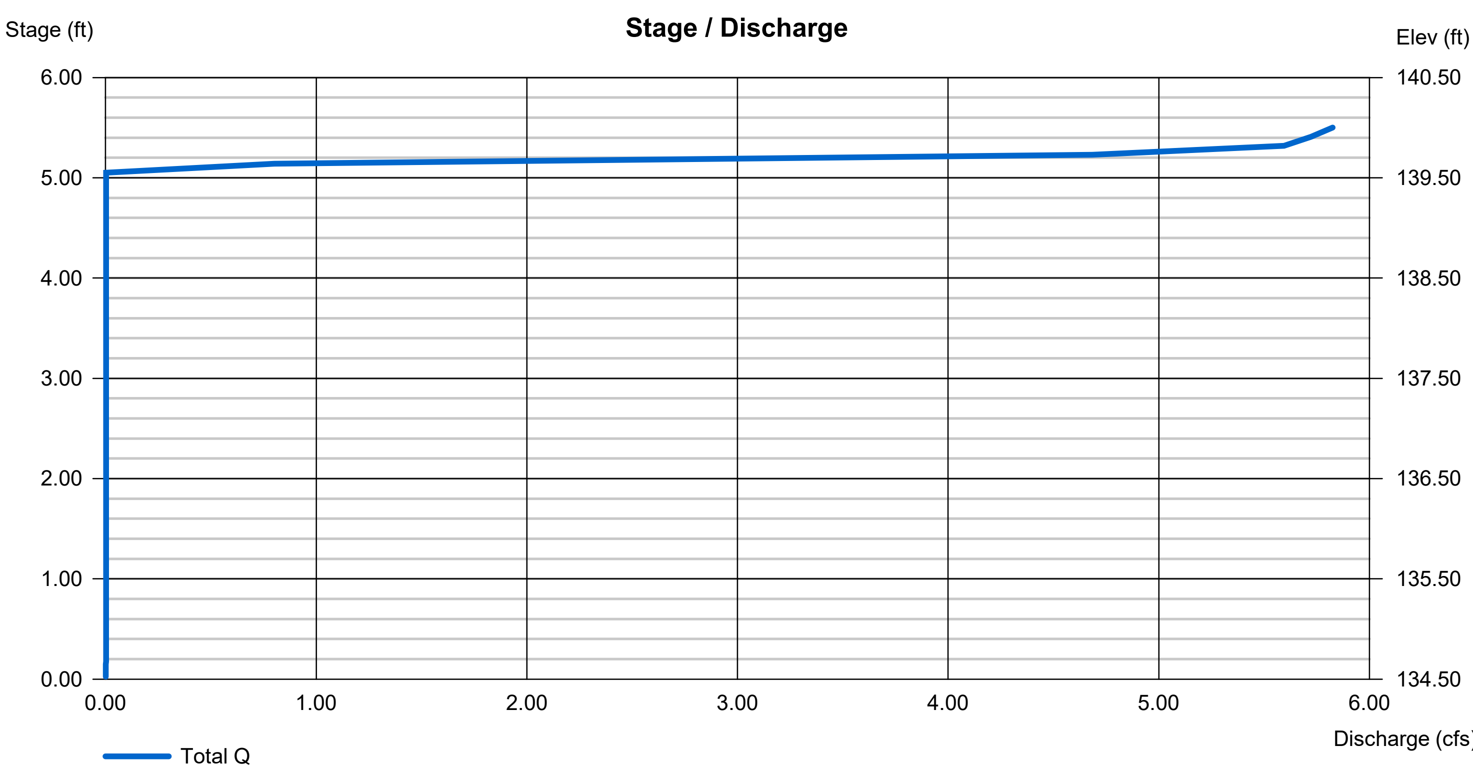
		[A]	[B]	[C]	[PrfRsr]
Rise (in)	=	12.00	Inactive	Inactive	Inactive
Span (in)	=	12.00	0.00	0.00	0.00
No. Barrels	=	1	0	0	0
Invert El. (ft)	=	137.10	0.00	0.00	0.00
Length (ft)	=	55.00	0.00	0.00	0.00
Slope (%)	=	2.00	0.00	0.00	n/a
N-Value	=	.013	.013	.013	n/a
Orifice Coeff.	=	0.60	0.60	0.60	0.60
Multi-Stage	=	n/a	No	No	No

Weir Structures

		[A]	[B]	[C]	[D]
Crest Len (ft)	=	30.00	Inactive	Inactive	Inactive
Crest El. (ft)	=	139.60	0.00	0.00	0.00
Weir Coeff.	=	3.33	3.33	3.33	3.33
Weir Type	=	Broad	---	---	---
Multi-Stage	=	Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

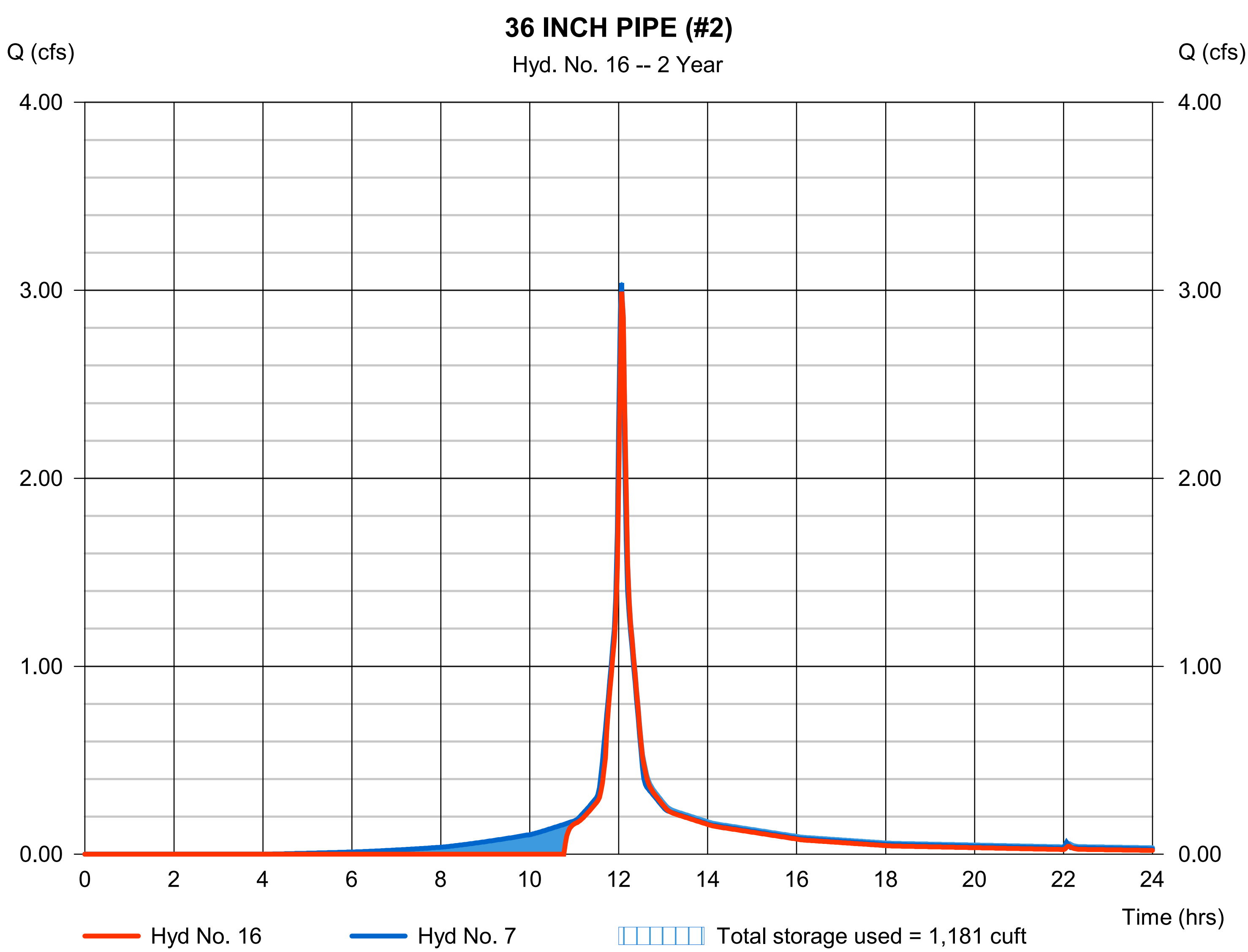
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 16

36 INCH PIPE (#2)

Hydrograph type	= Reservoir	Peak discharge	= 2.993 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 8,038 cuft
Inflow hyd. No.	= 7 - EX WS-02F	Max. Elevation	= 139.42 ft
Reservoir name	= 36in - 2	Max. Storage	= 1,181 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Pond No. 1 - 36in - 2

Pond Data

UG Chambers - Invert elev. = 133.00 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 70.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No

Encasement - Invert elev. = 132.50 ft, Width = 5.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 139.20 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	132.50	n/a	0	0
0.35	132.85	n/a	49	49
0.70	133.20	n/a	58	107
1.05	133.55	n/a	78	184
1.40	133.90	n/a	87	271
1.75	134.25	n/a	91	362
2.10	134.60	n/a	93	455
2.45	134.95	n/a	92	547
2.80	135.30	n/a	89	636
3.15	135.65	n/a	82	719
3.50	136.00	n/a	68	787
6.70	139.20	01	2	789
7.40	139.90	3,493	1,223	2,012

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	Inactive	Inactive	Inactive
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 135.20	0.00	0.00	0.00
Length (ft)	= 30.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

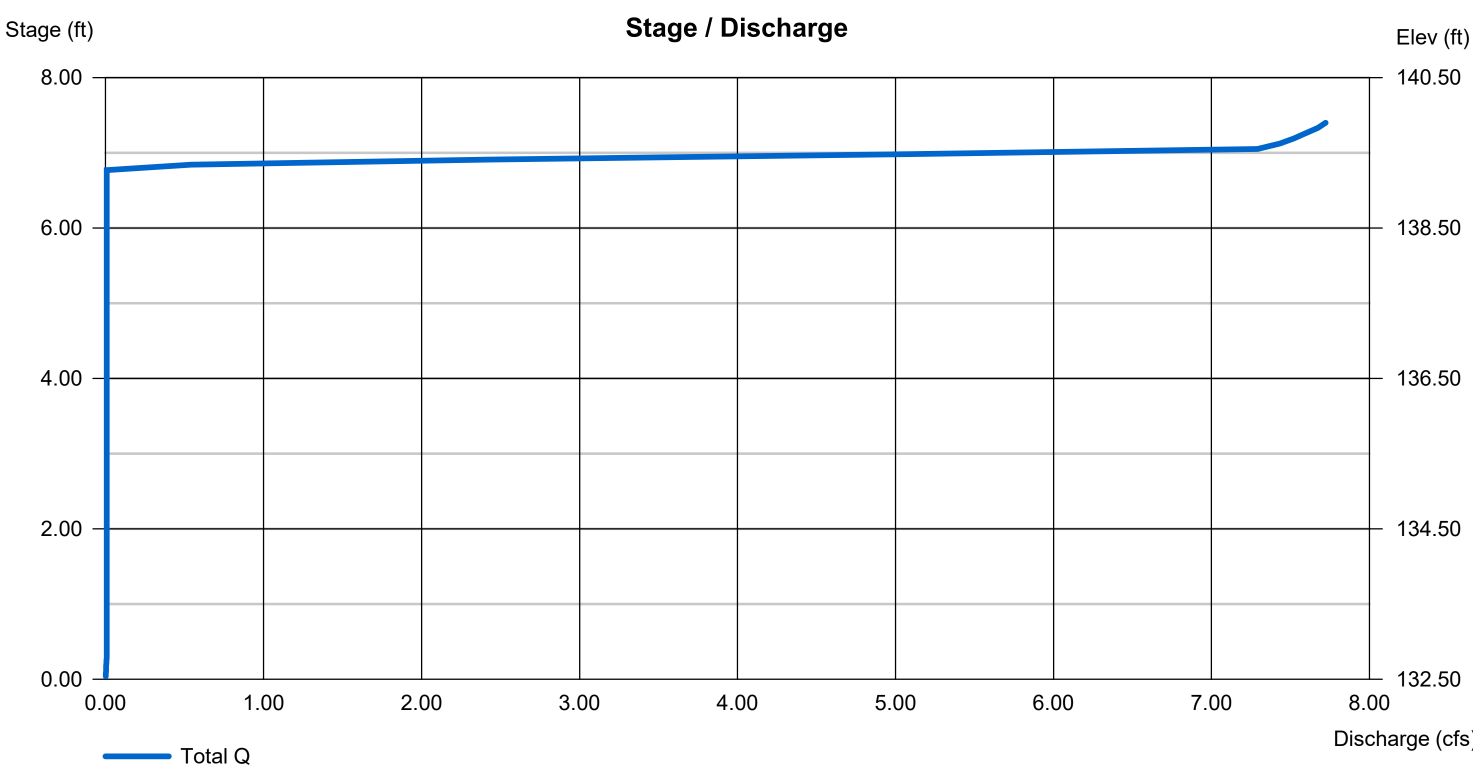
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 20.00	Inactive	Inactive	Inactive
Crest El. (ft)	= 139.30	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

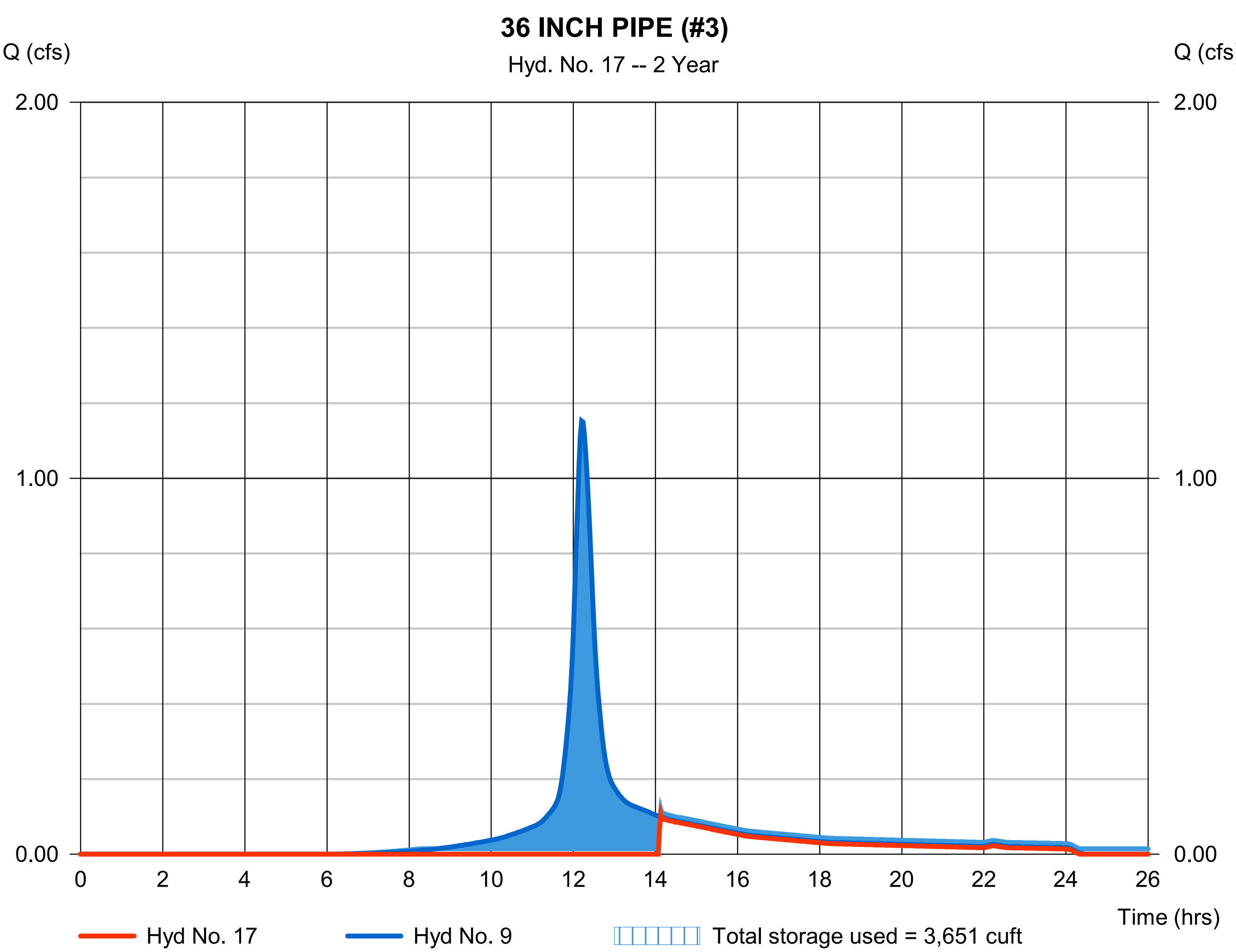
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 17

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 0.105 cfs
Storm frequency	= 2 yrs	Time to peak	= 14.13 hrs
Time interval	= 2 min	Hyd. volume	= 1,259 cuft
Inflow hyd. No.	= 9 - EX WS-02H	Max. Elevation	= 137.46 ft
Reservoir name	= 36in - 3	Max. Storage	= 3,651 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Pond No. 3 - 36in - 3

Pond Data

UG Chambers - Invert elev. = 129.00 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 30.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No

Encasement - Invert elev. = 128.50 ft, Width = 5.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 136.20 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	128.50	n/a	0	0
0.35	128.85	n/a	21	21
0.70	129.20	n/a	25	46
1.05	129.55	n/a	33	79
1.40	129.90	n/a	37	116
1.75	130.25	n/a	39	155
2.10	130.60	n/a	40	195
2.45	130.95	n/a	40	235
2.80	131.30	n/a	38	273
3.15	131.65	n/a	35	308
3.50	132.00	n/a	29	337
7.20	136.20	01	2	339
9.00	138.00	5,250	4,726	5,065

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	Inactive	Inactive	Inactive
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 130.90	0.00	0.00	0.00
Length (ft)	= 13.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

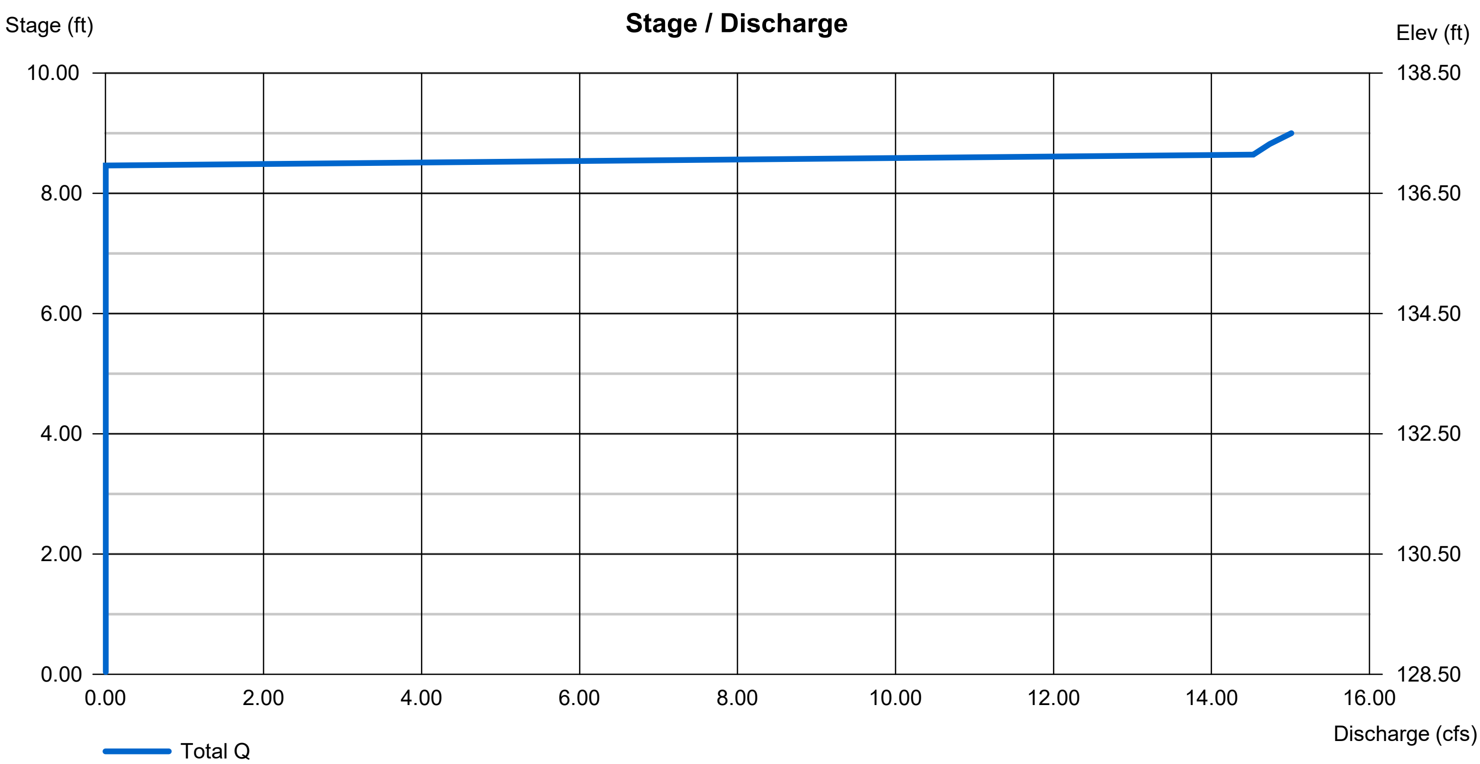
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 100.00	Inactive	Inactive	Inactive
Crest El. (ft)	= 137.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

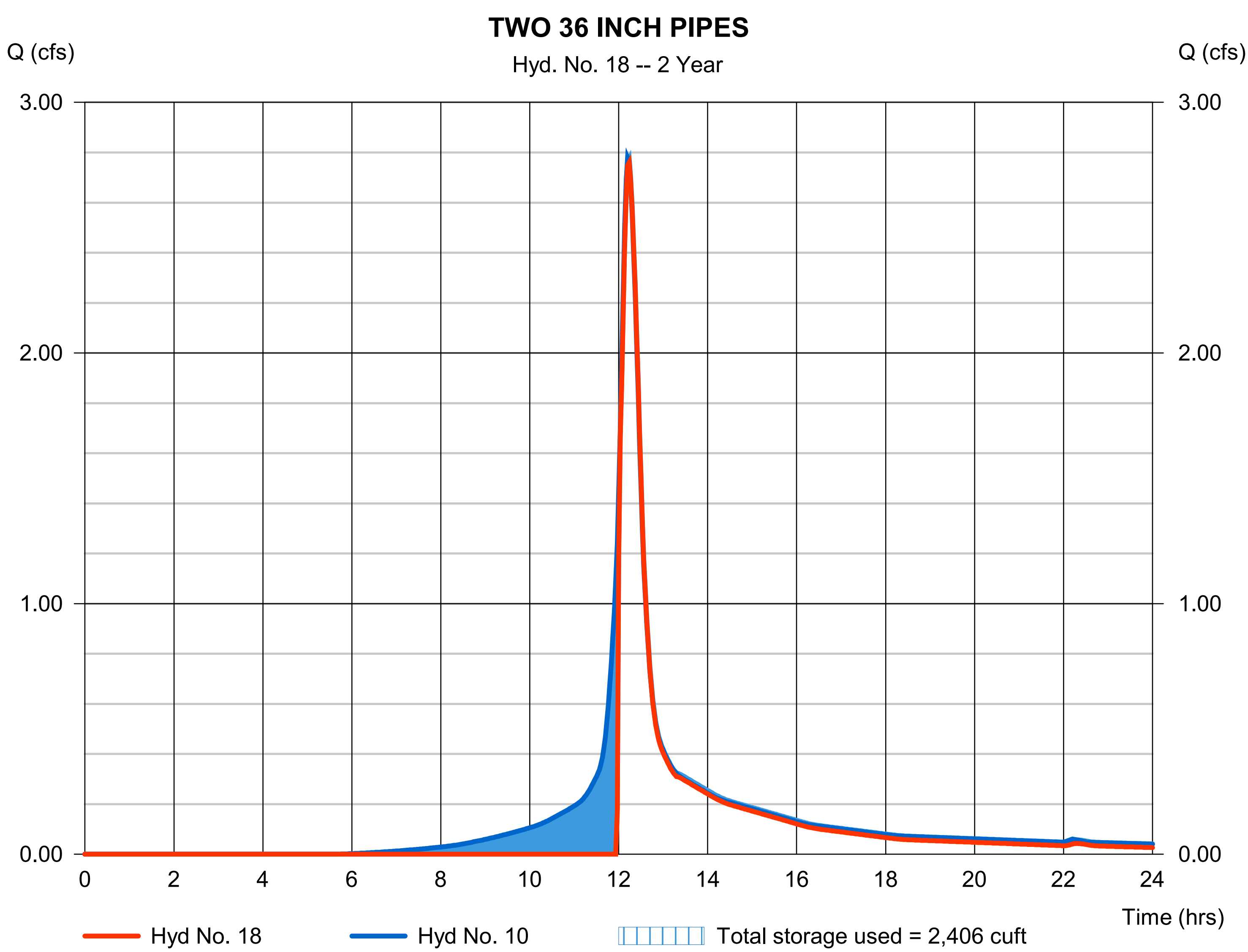
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 18

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 2.761 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 9,331 cuft
Inflow hyd. No.	= 10 - EX WS-02I	Max. Elevation	= 135.68 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,406 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Pond No. 2 - TWIN 36IN

Pond Data

UG Chambers - Invert elev. = 127.50 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 62.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No

Encasement - Invert elev. = 127.00 ft, Width = 5.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 134.90 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	127.00	n/a	0	0
0.35	127.35	n/a	87	87
0.70	127.70	n/a	102	189
1.05	128.05	n/a	138	327
1.40	128.40	n/a	153	480
1.75	128.75	n/a	162	642
2.10	129.10	n/a	165	806
2.45	129.45	n/a	163	970
2.80	129.80	n/a	157	1,127
3.15	130.15	n/a	146	1,273
3.50	130.50	n/a	121	1,394
7.90	134.90	01	2	1,396
8.80	135.80	2,590	1,166	2,562

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	Inactive	Inactive	Inactive
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 129.60	0.00	0.00	0.00
Length (ft)	= 70.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

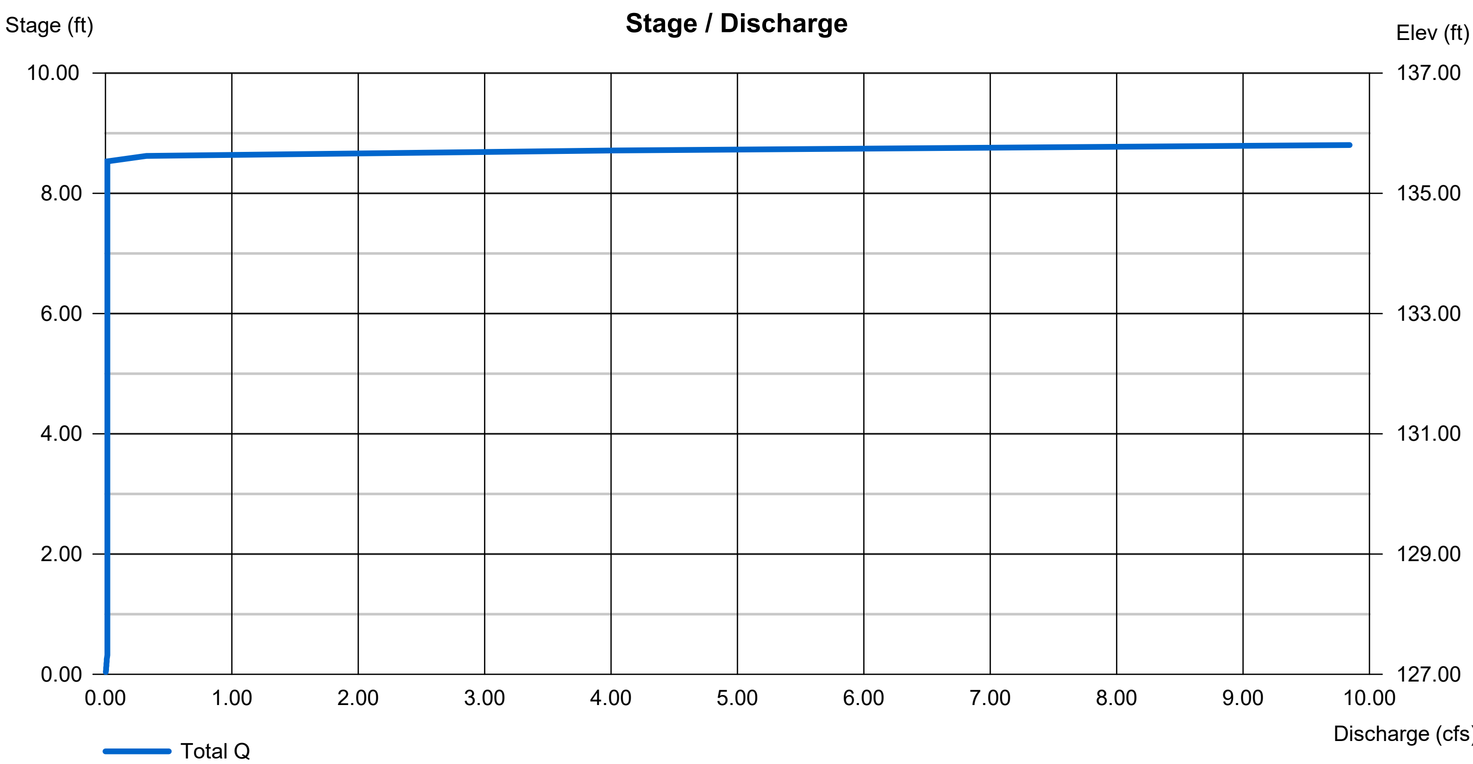
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 33.00	Inactive	Inactive	Inactive
Crest El. (ft)	= 135.60	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



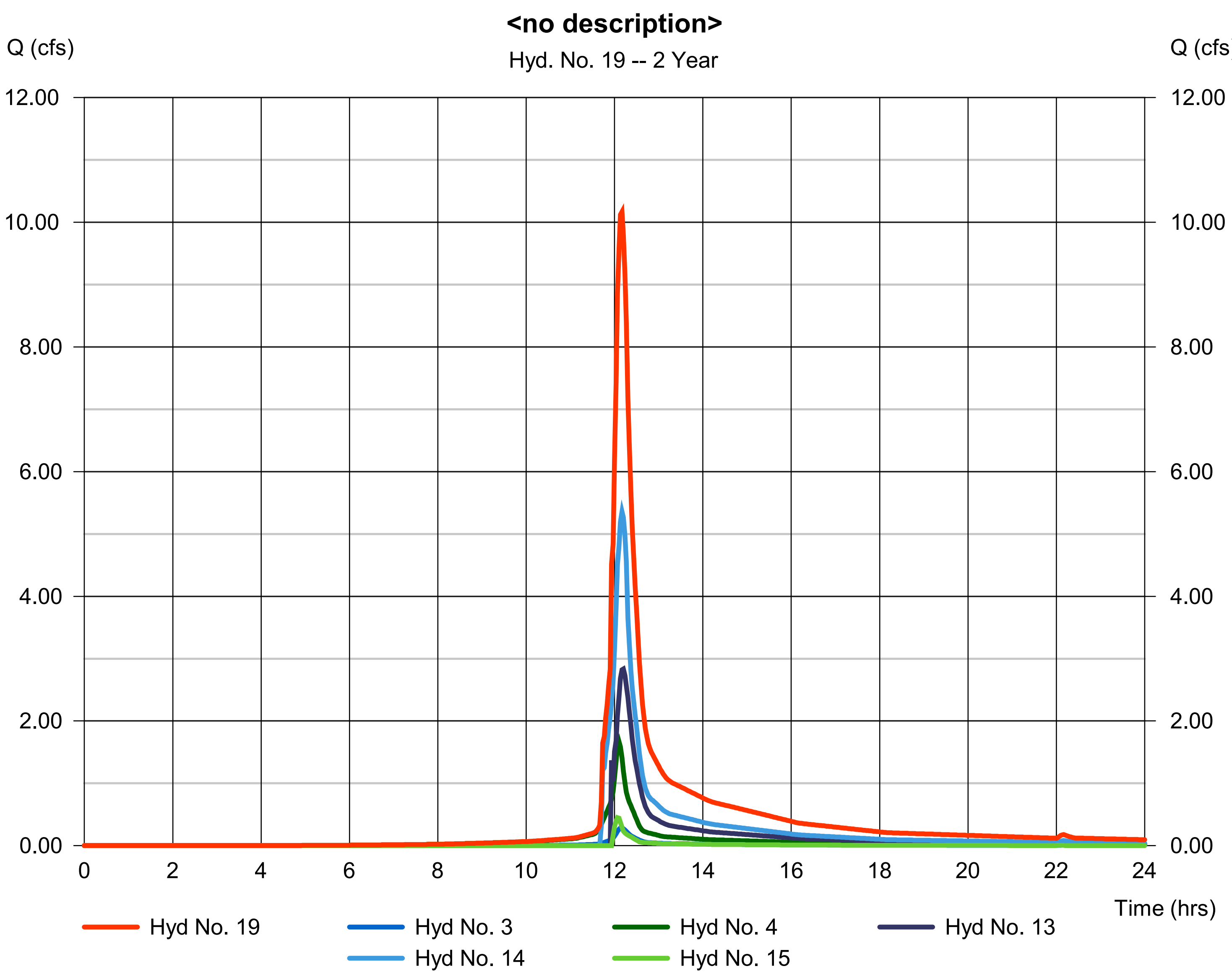
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 19

<no description>

Hydrograph type	= Combine	Peak discharge	= 10.17 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 34,210 cuft
Inflow hyds.	= 3, 4, 13, 14, 15	Contrib. drain. area	= 0.776 ac



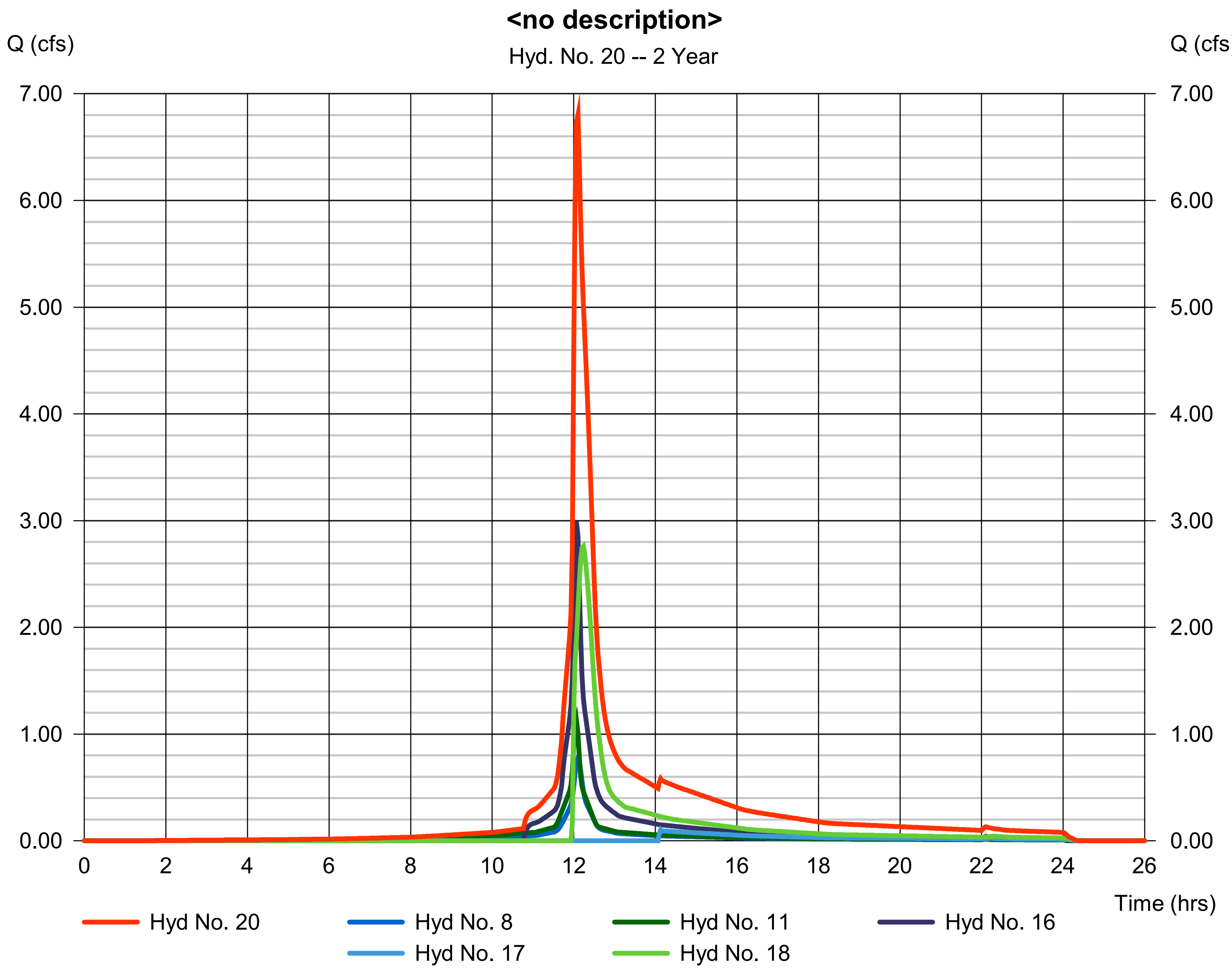
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 20

<no description>

Hydrograph type	= Combine	Peak discharge	= 6.802 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 25,182 cuft
Inflow hyds.	= 8, 11, 16, 17, 18	Contrib. drain. area	= 0.625 ac



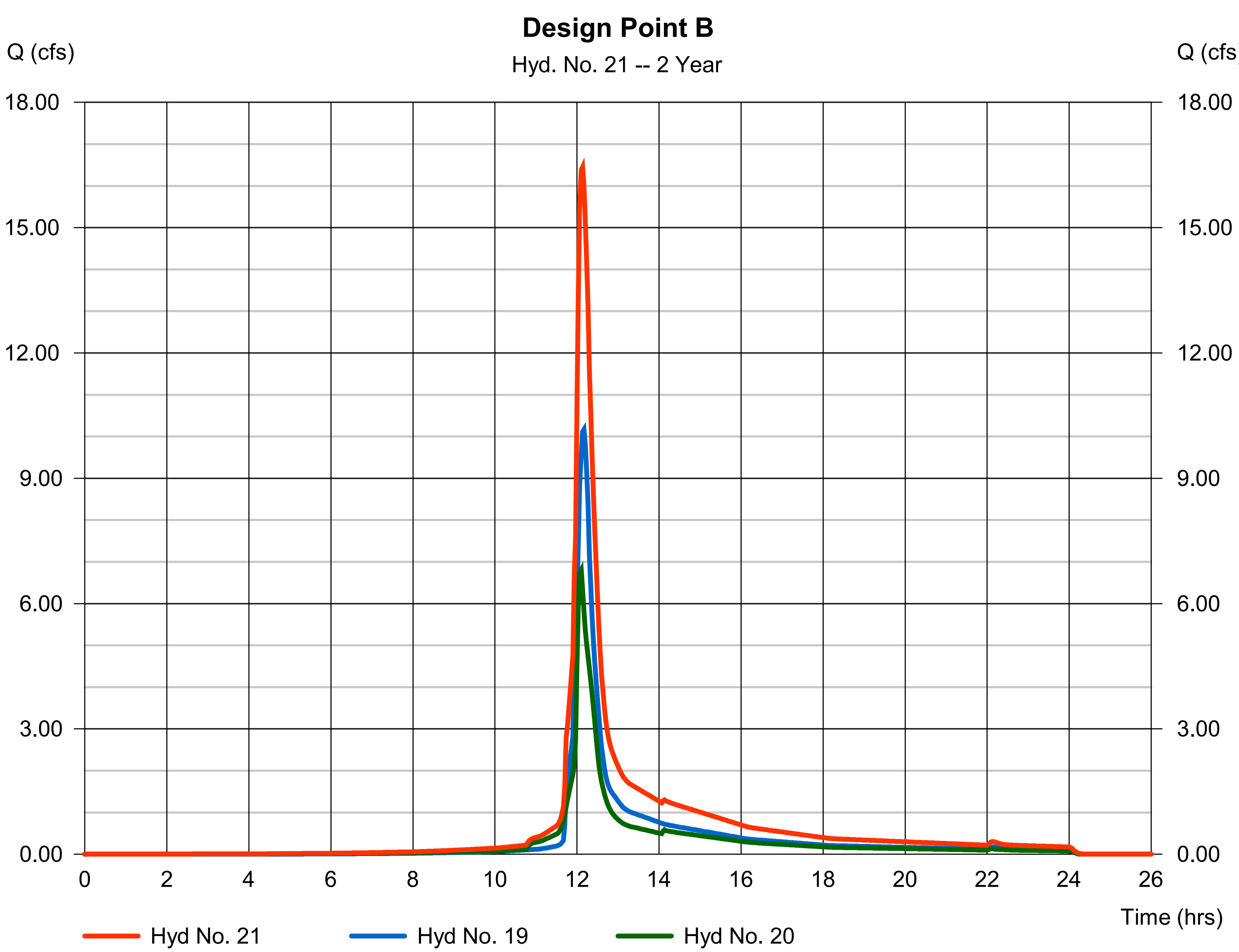
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 21

Design Point B

Hydrograph type	= Combine	Peak discharge	= 16.45 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 59,393 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	3.109	2	732	13,137	------	------	------	EX WS-01
2	SCS Runoff	5.245	2	730	21,498	------	------	------	EX WS-02A
3	SCS Runoff	0.569	2	728	2,180	------	------	------	EX WS-02B
4	SCS Runoff	2.685	2	726	9,791	------	------	------	EX WS-02C
5	SCS Runoff	9.148	2	728	36,588	------	------	------	EX WS-02D
6	SCS Runoff	0.731	2	724	2,440	------	------	------	EX WS-02E
7	SCS Runoff	4.896	2	724	15,744	------	------	------	EX WS-02F
8	SCS Runoff	1.265	2	726	4,567	------	------	------	EX WS-02G
9	SCS Runoff	1.996	2	732	9,014	------	------	------	EX WS-02H
10	SCS Runoff	4.677	2	732	21,366	------	------	------	EX WS-02I
11	SCS Runoff	1.741	2	724	6,003	------	------	------	EX WS-02J
12	SCS Runoff	0.199	2	730	839	------	------	------	EX WS-03
13	Reservoir	5.228	2	730	19,335	2	143.60	1,518	36 INCH PIPE (#1)
14	Reservoir	8.916	2	730	31,682	5	139.12	3,650	TWIN 36IN PIPES (#2)
15	Reservoir	0.704	2	724	1,793	6	139.63	493	24 INCH PIPE
16	Reservoir	4.822	2	724	14,247	7	139.47	1,266	36 INCH PIPE (#2)
17	Reservoir	2.300	2	738	5,135	9	137.49	3,722	36 INCH PIPE (#3)
18	Reservoir	4.647	2	732	18,180	10	135.72	2,459	TWO 36 INCH PIPES
19	Combine	17.43	2	730	64,781	3, 4, 13, 14, 15,	------	------	<no description>
20	Combine	11.11	2	726	48,132	8, 11, 16, 17, 18,	------	------	<no description>
21	Combine	27.70	2	728	112,913	19, 20	------	------	Design Point B

Existing-Hydraflow.gpw | Return Period: 10 Year | Monday, 12 / 4 / 2023

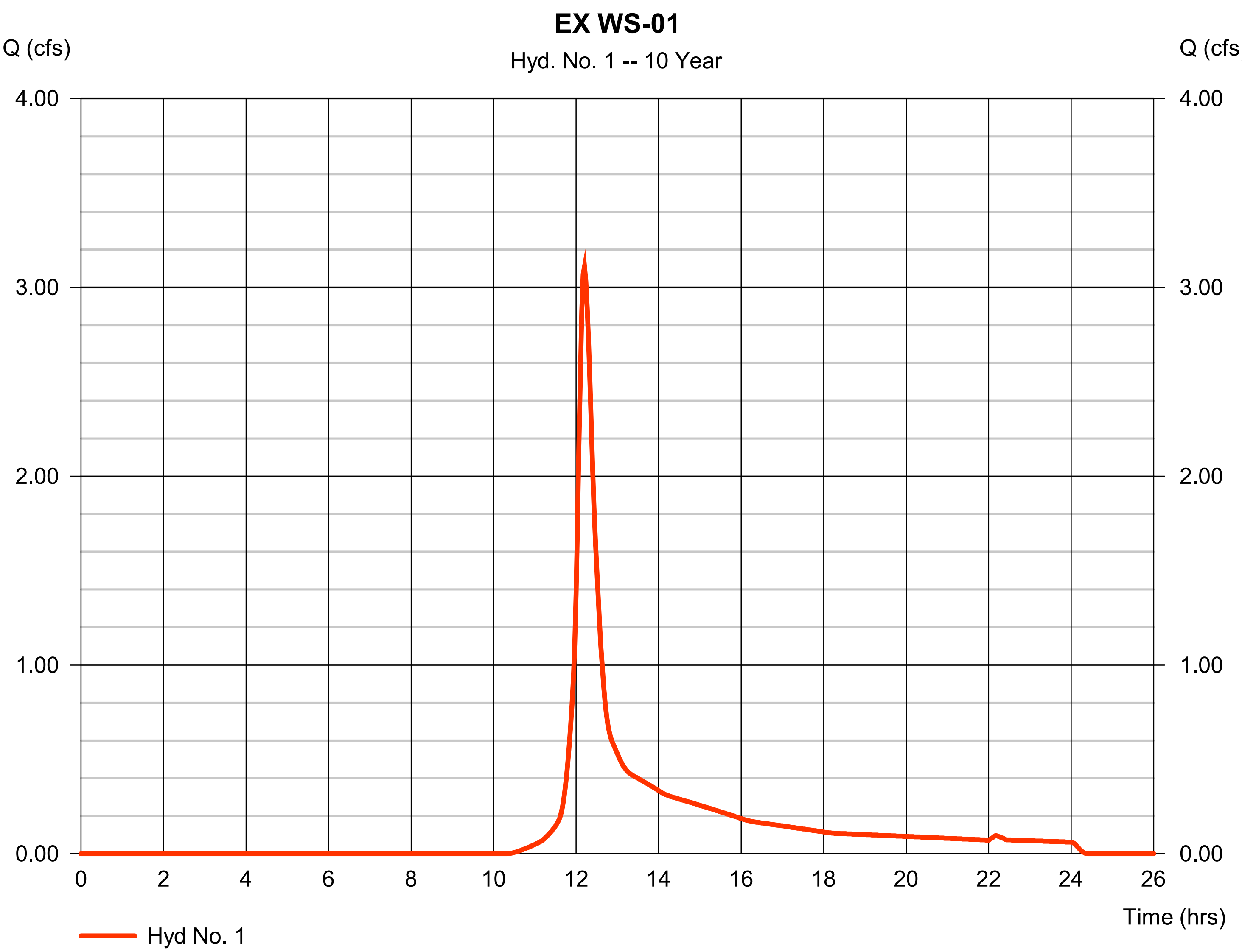
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 1

EX WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 3.109 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 13,137 cuft
Drainage area	= 1.942 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.10 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

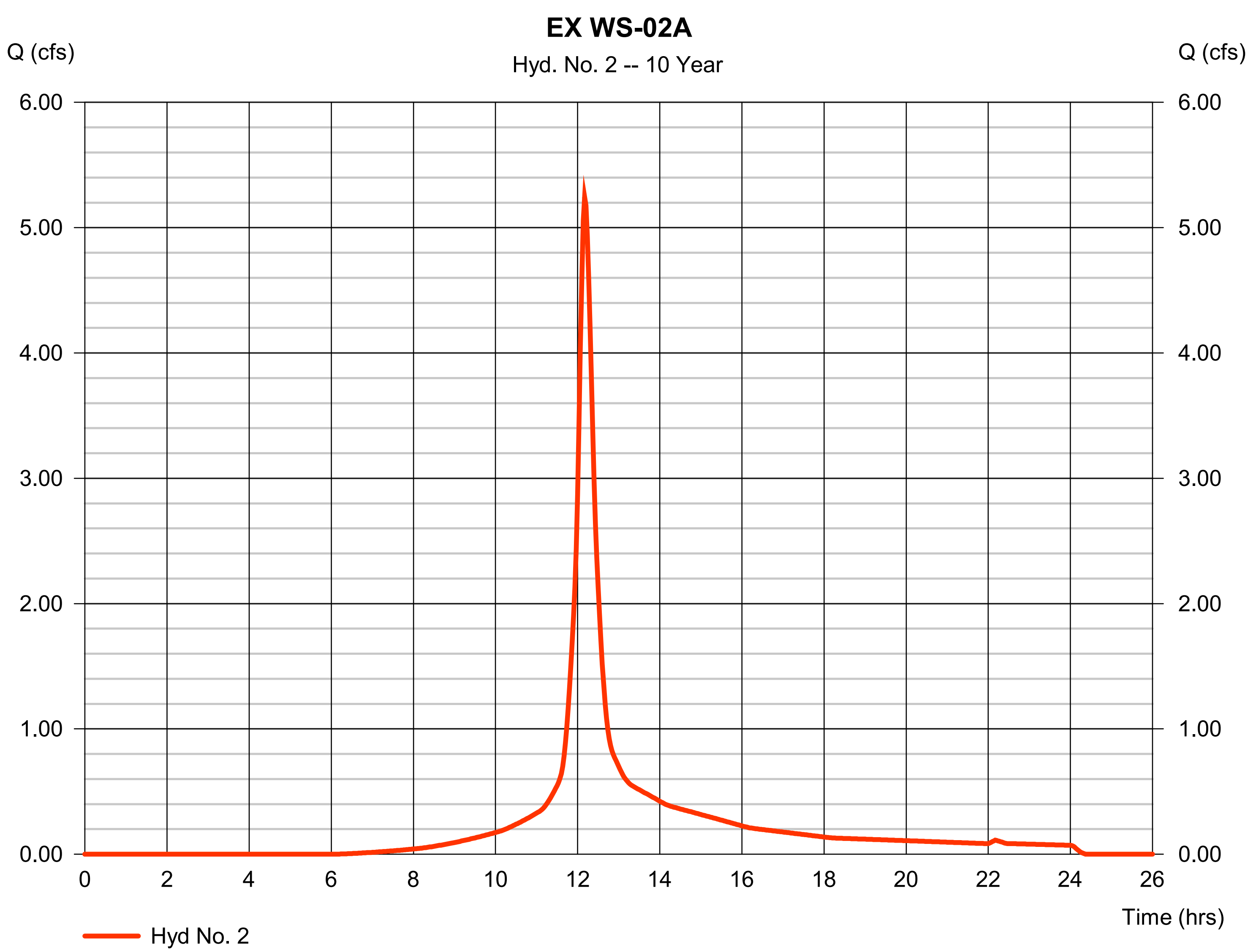


Hydrograph Report

Hyd. No. 2

EX WS-02A

Hydrograph type	= SCS Runoff	Peak discharge	= 5.245 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 21,498 cuft
Drainage area	= 1.678 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



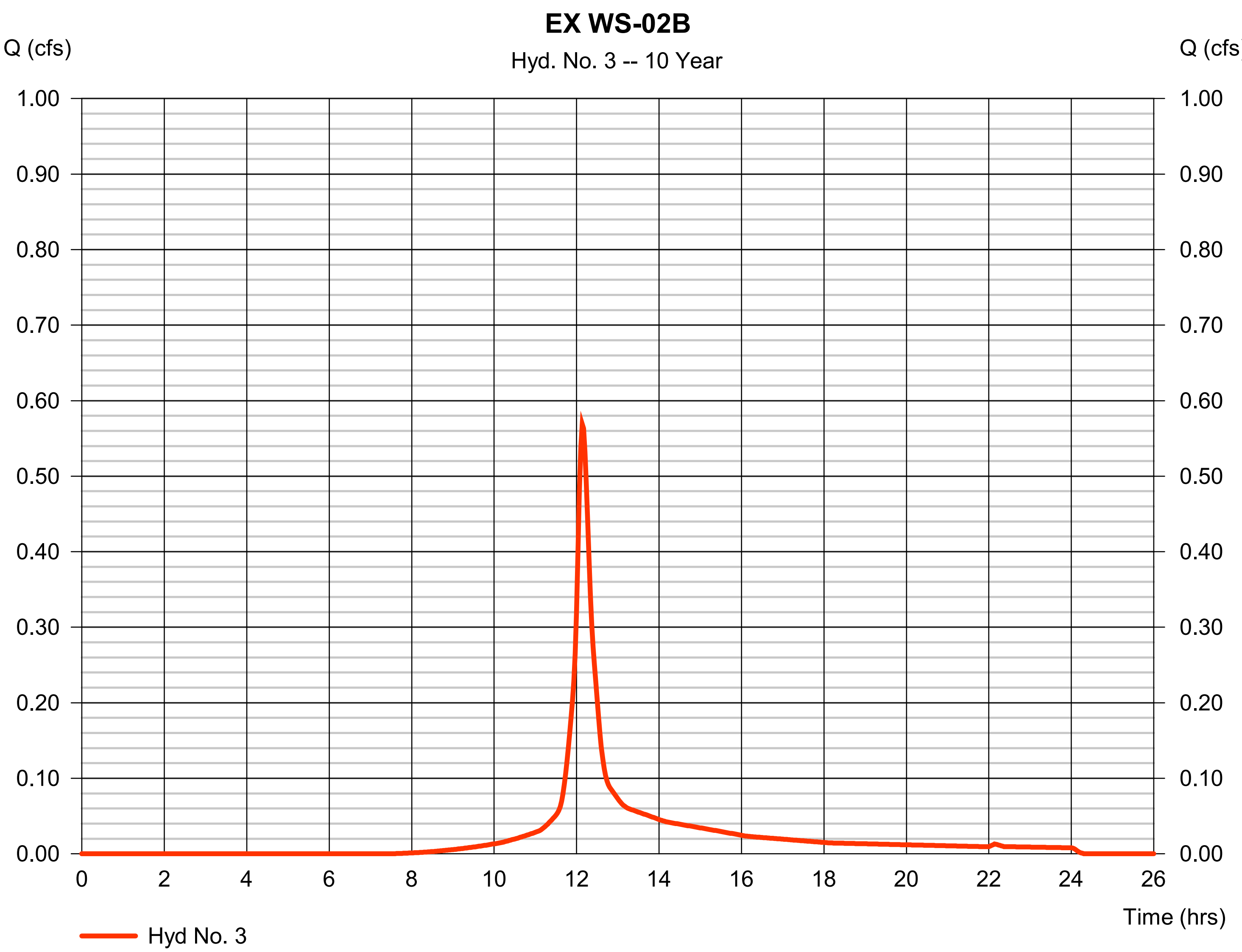
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 3

EX WS-02B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.569 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 2,180 cuft
Drainage area	= 0.186 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.00 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

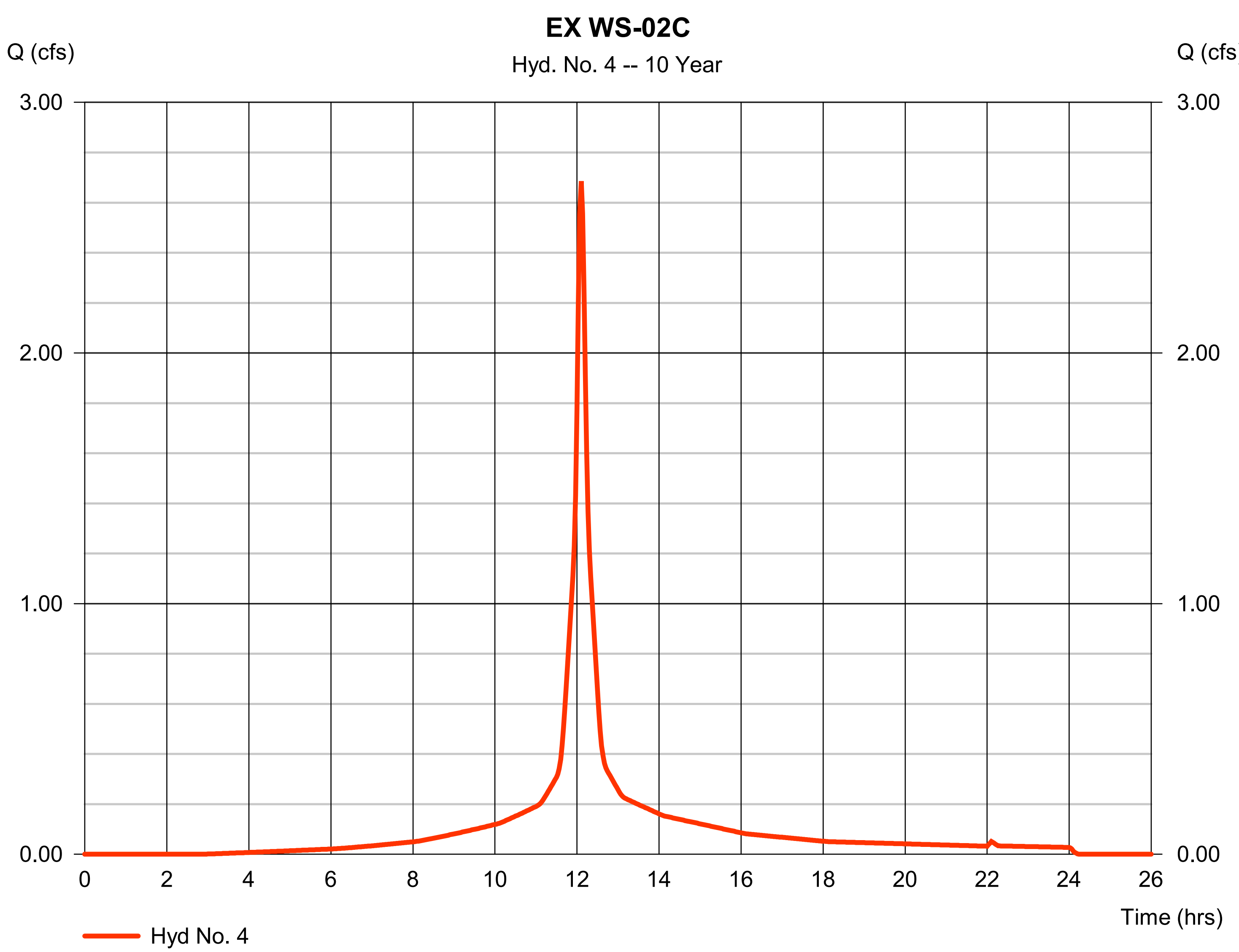


Hydrograph Report

Hyd. No. 4

EX WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.685 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 9,791 cuft
Drainage area	= 0.590 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



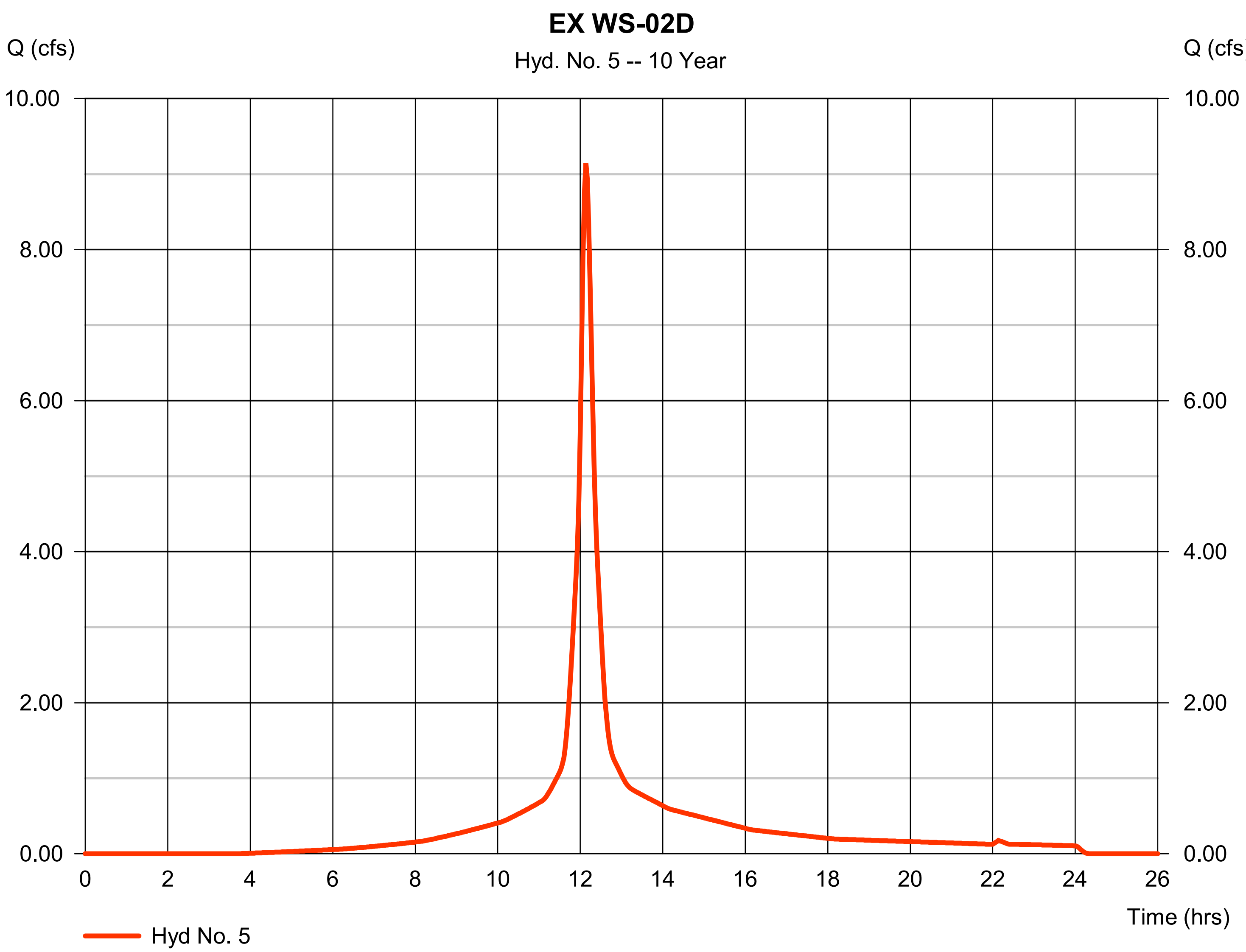
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 5

EX WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 9.148 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 36,588 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



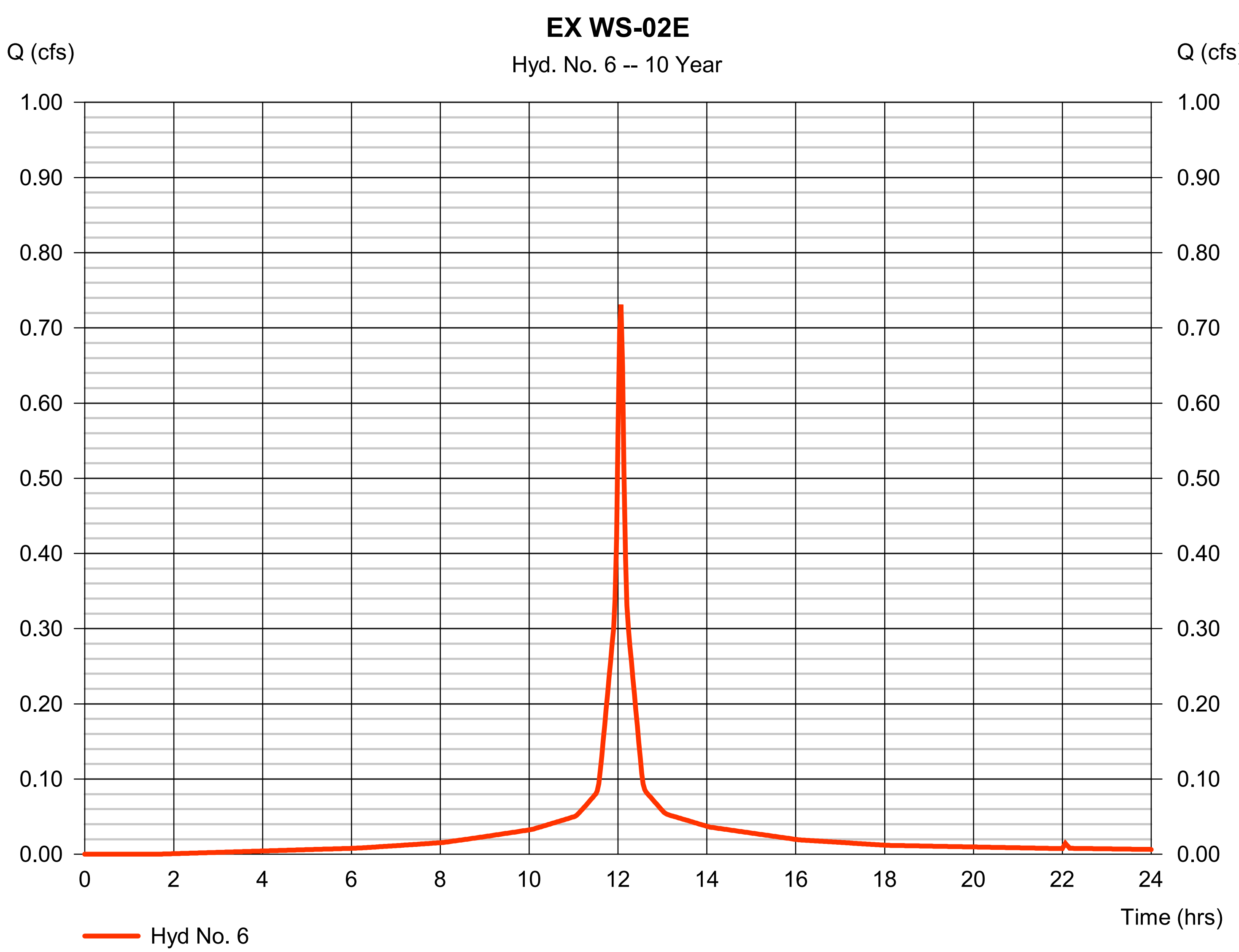
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 6

EX WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 0.731 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 2,440 cuft
Drainage area	= 0.146 ac	Curve number	= 96
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



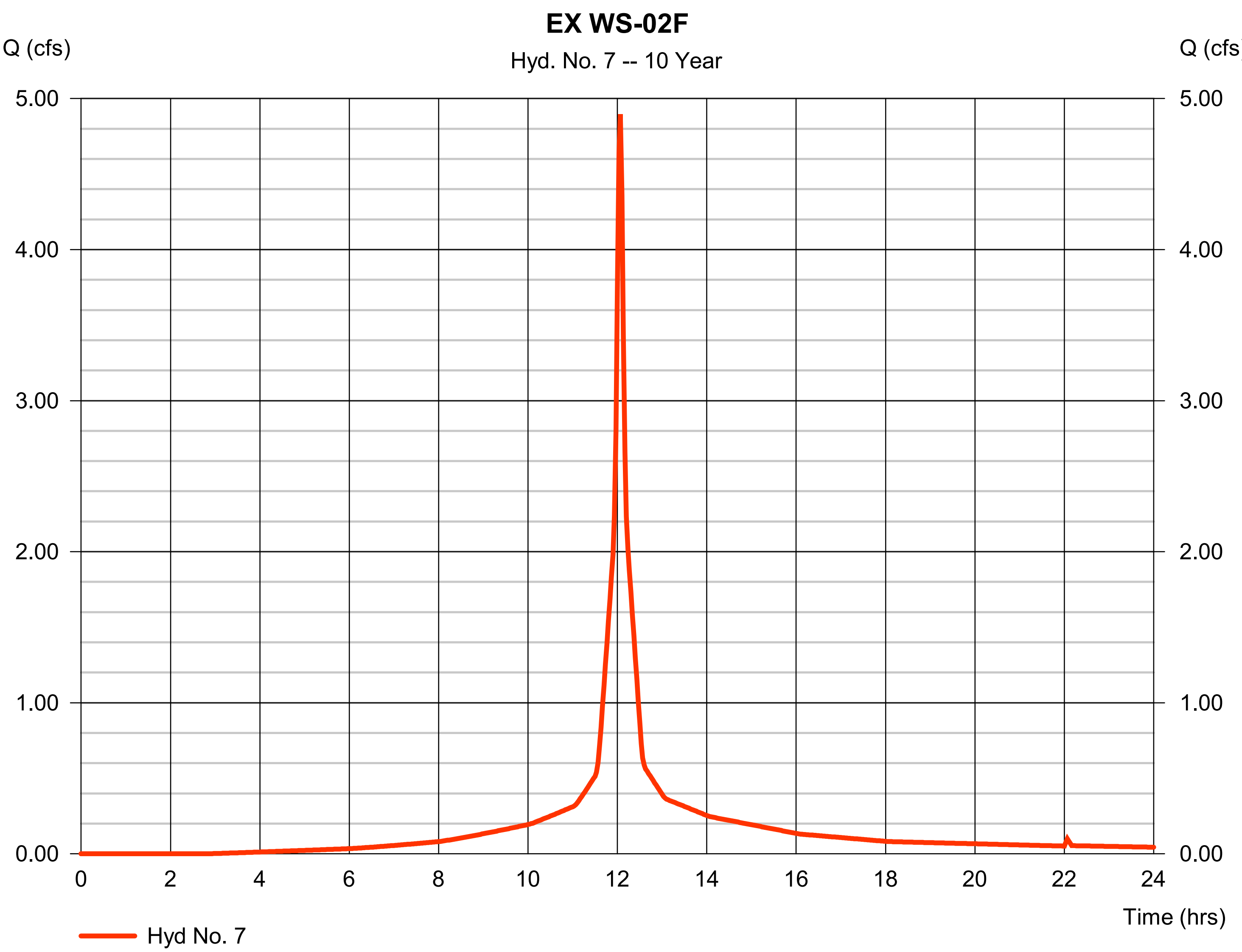
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 7

EX WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 4.896 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 15,744 cuft
Drainage area	= 1.012 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

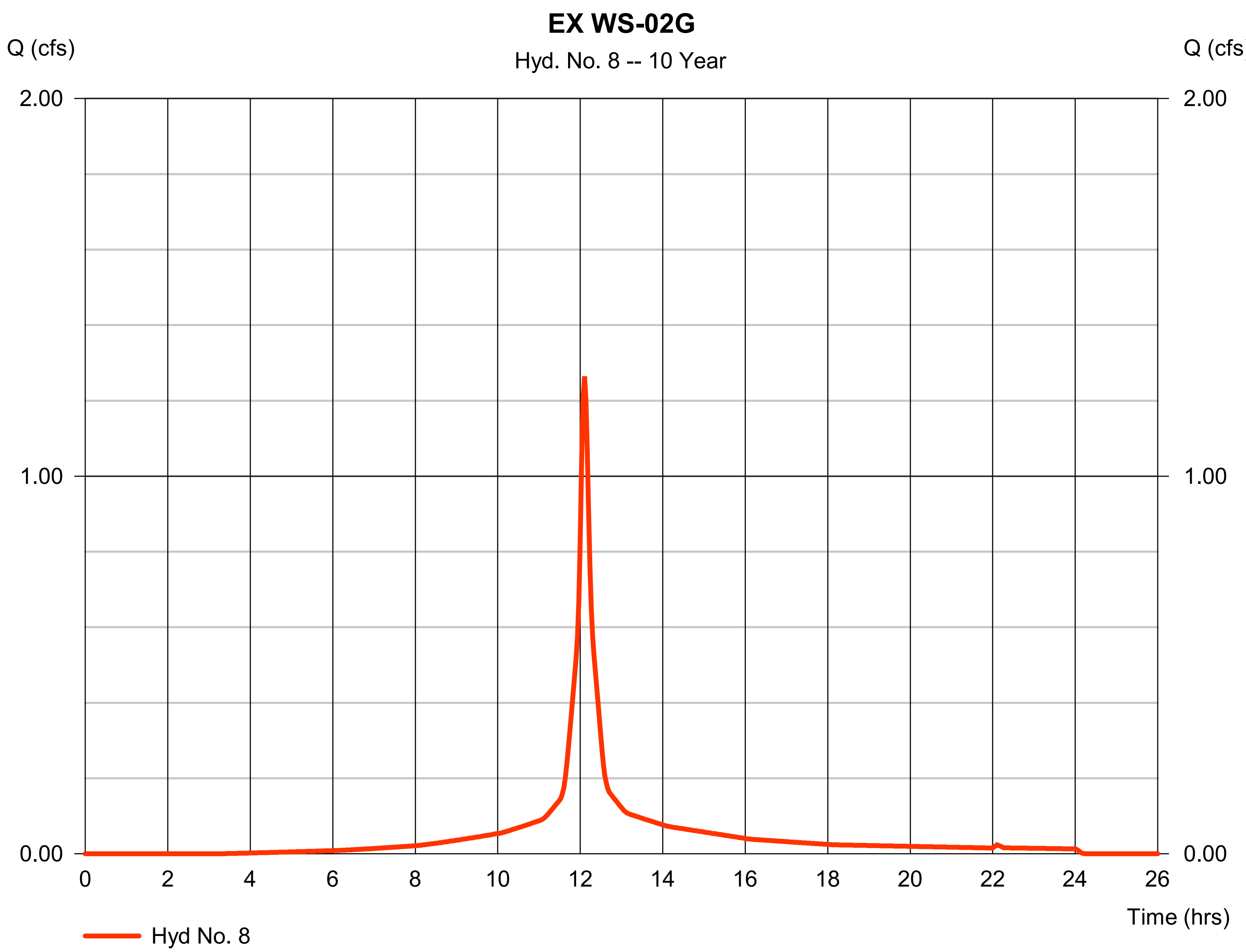


Hydrograph Report

Hyd. No. 8

EX WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 1.265 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 4,567 cuft
Drainage area	= 0.282 ac	Curve number	= 92
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.90 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



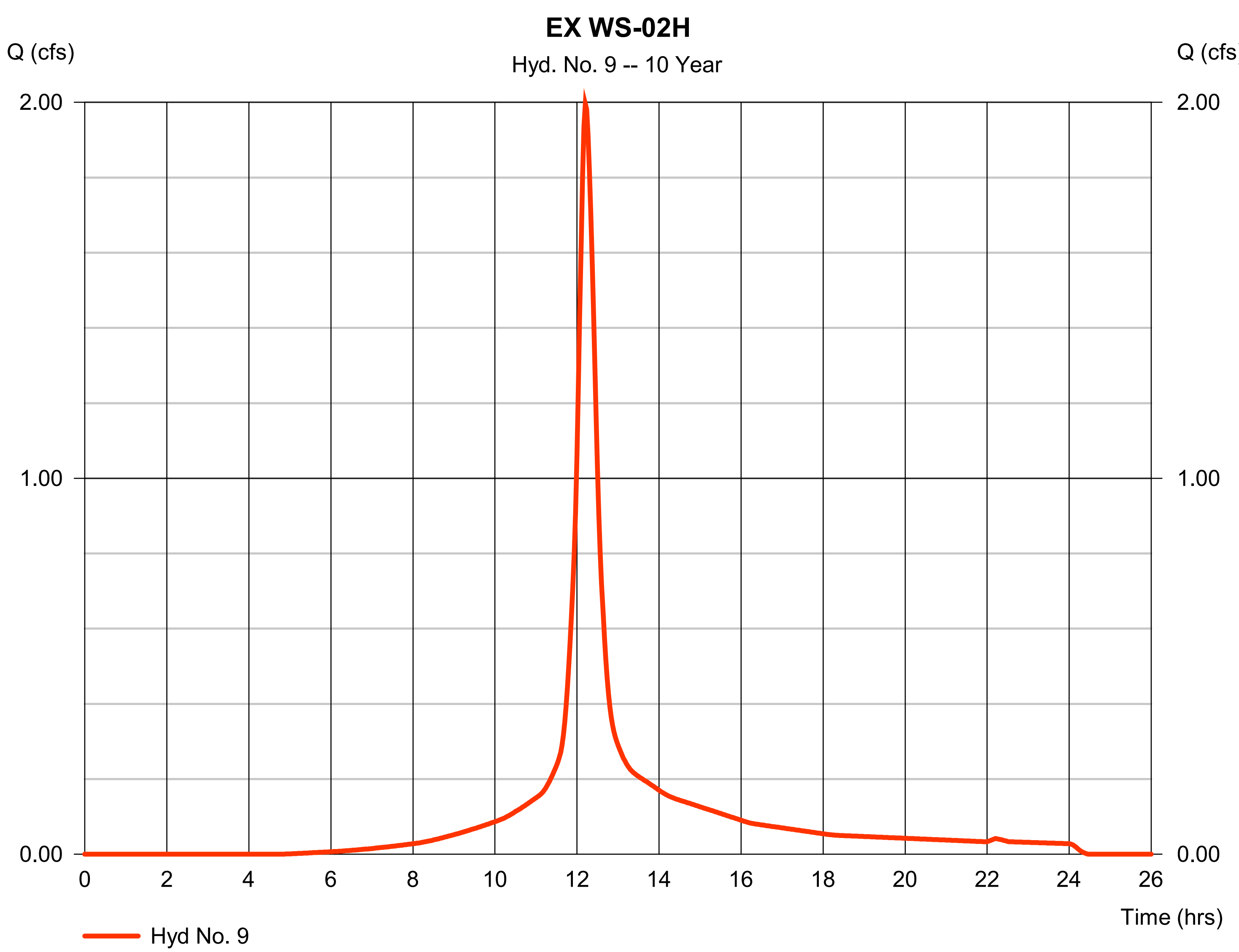
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 9

EX WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 1.996 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 9,014 cuft
Drainage area	= 0.616 ac	Curve number	= 88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.30 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



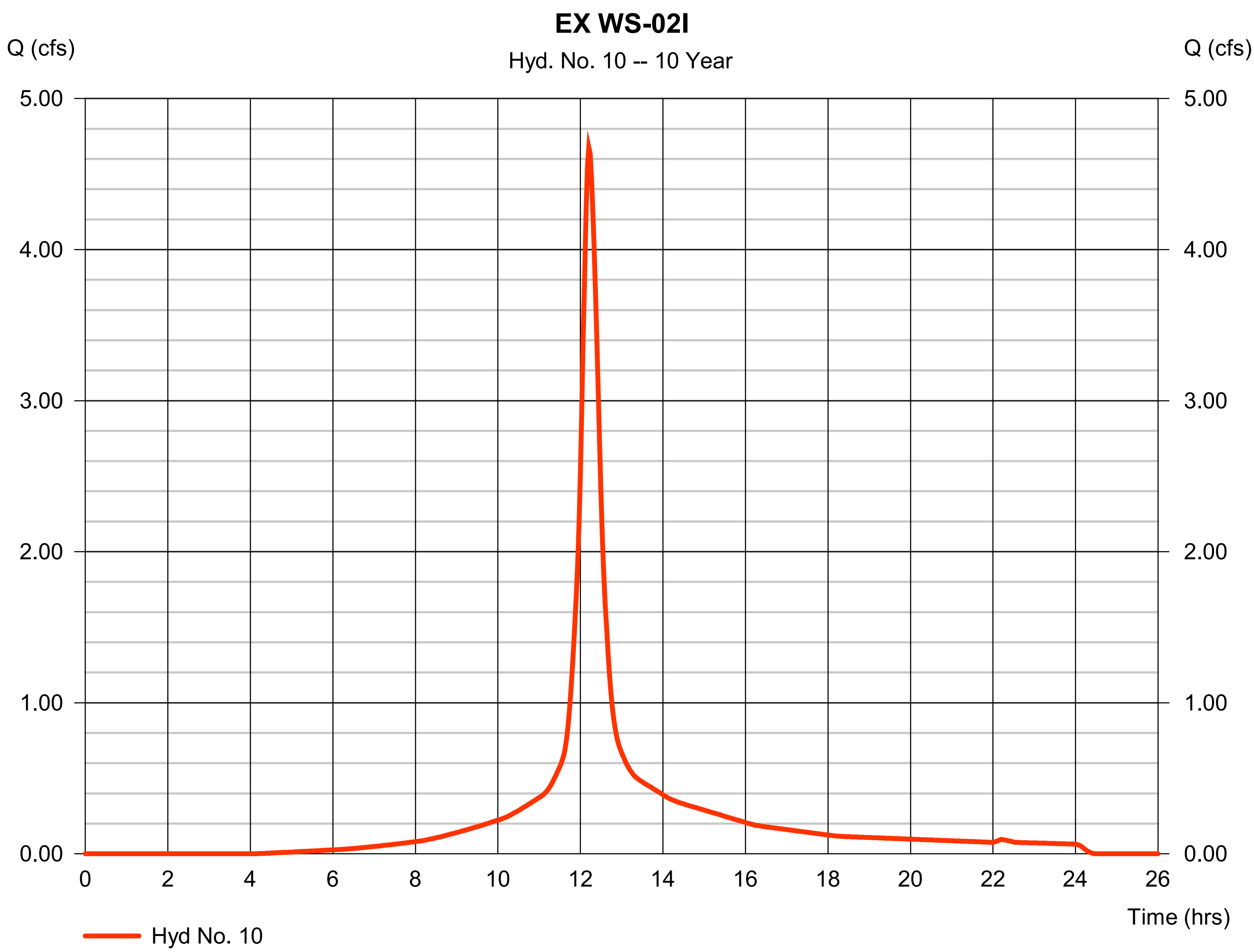
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 10

EX WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 4.677 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 21,366 cuft
Drainage area	= 1.387 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



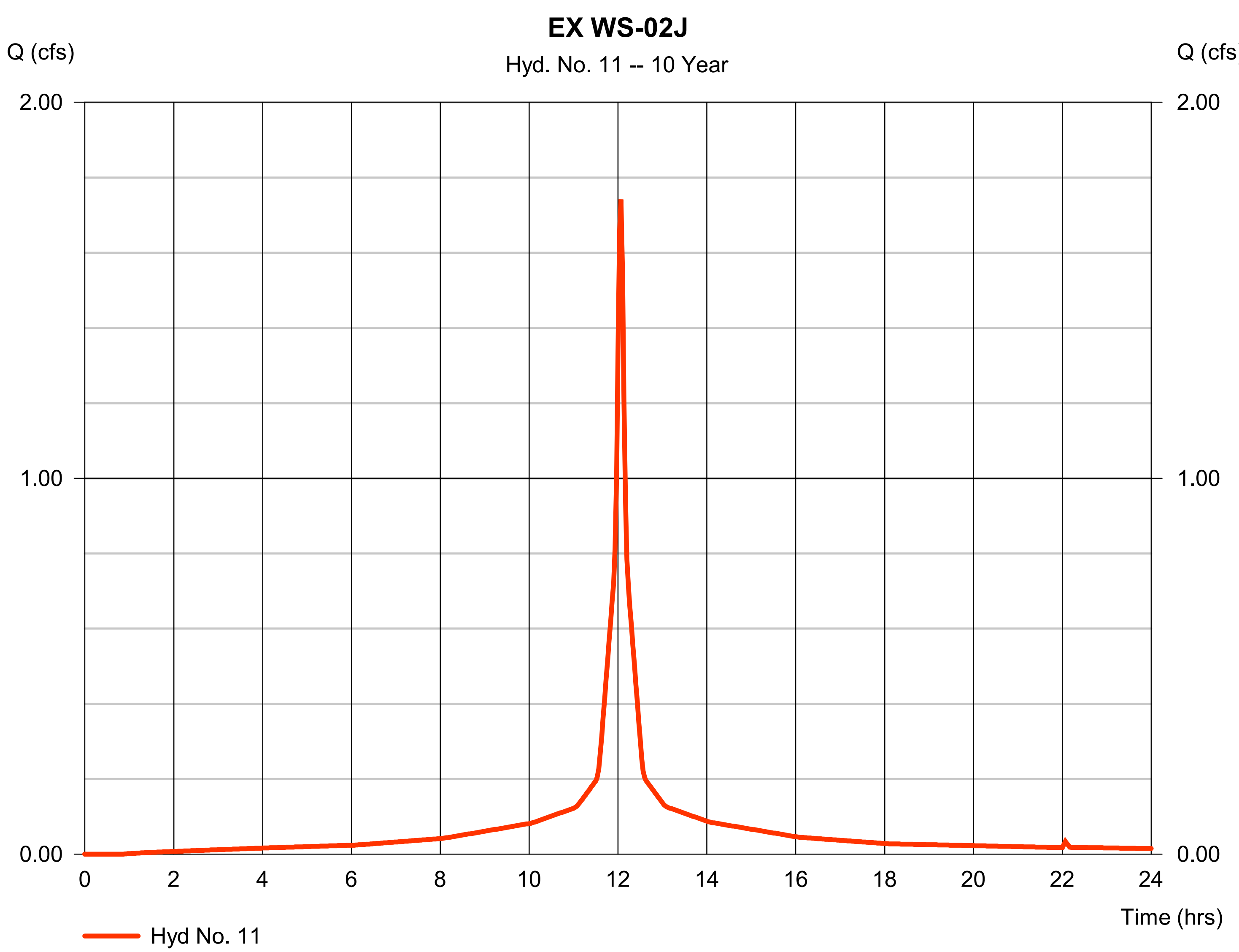
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 11

EX WS-02J

Hydrograph type	= SCS Runoff	Peak discharge	= 1.741 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 6,003 cuft
Drainage area	= 0.343 ac	Curve number	= 98
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



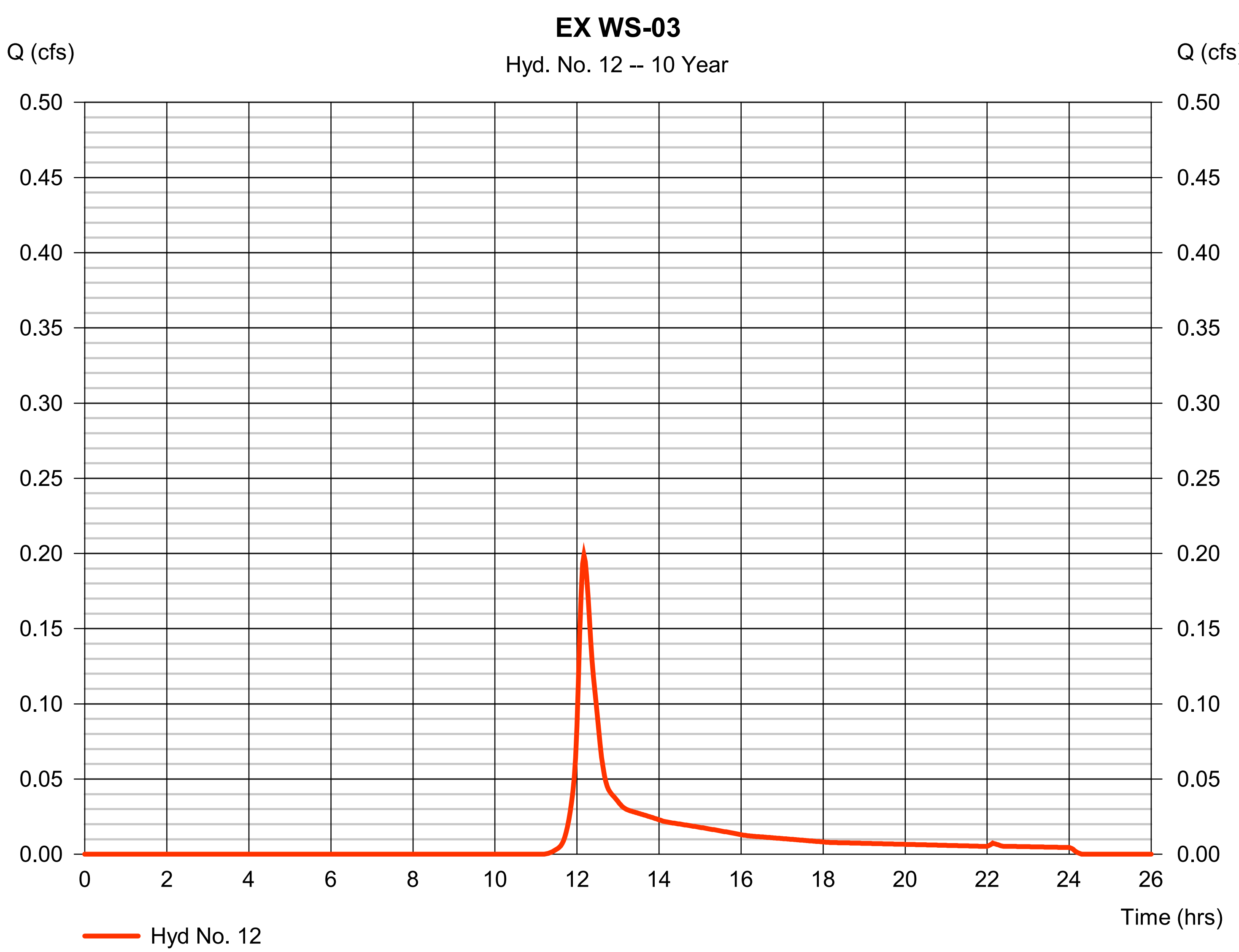
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 12

EX WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.199 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 839 cuft
Drainage area	= 0.154 ac	Curve number	= 59
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

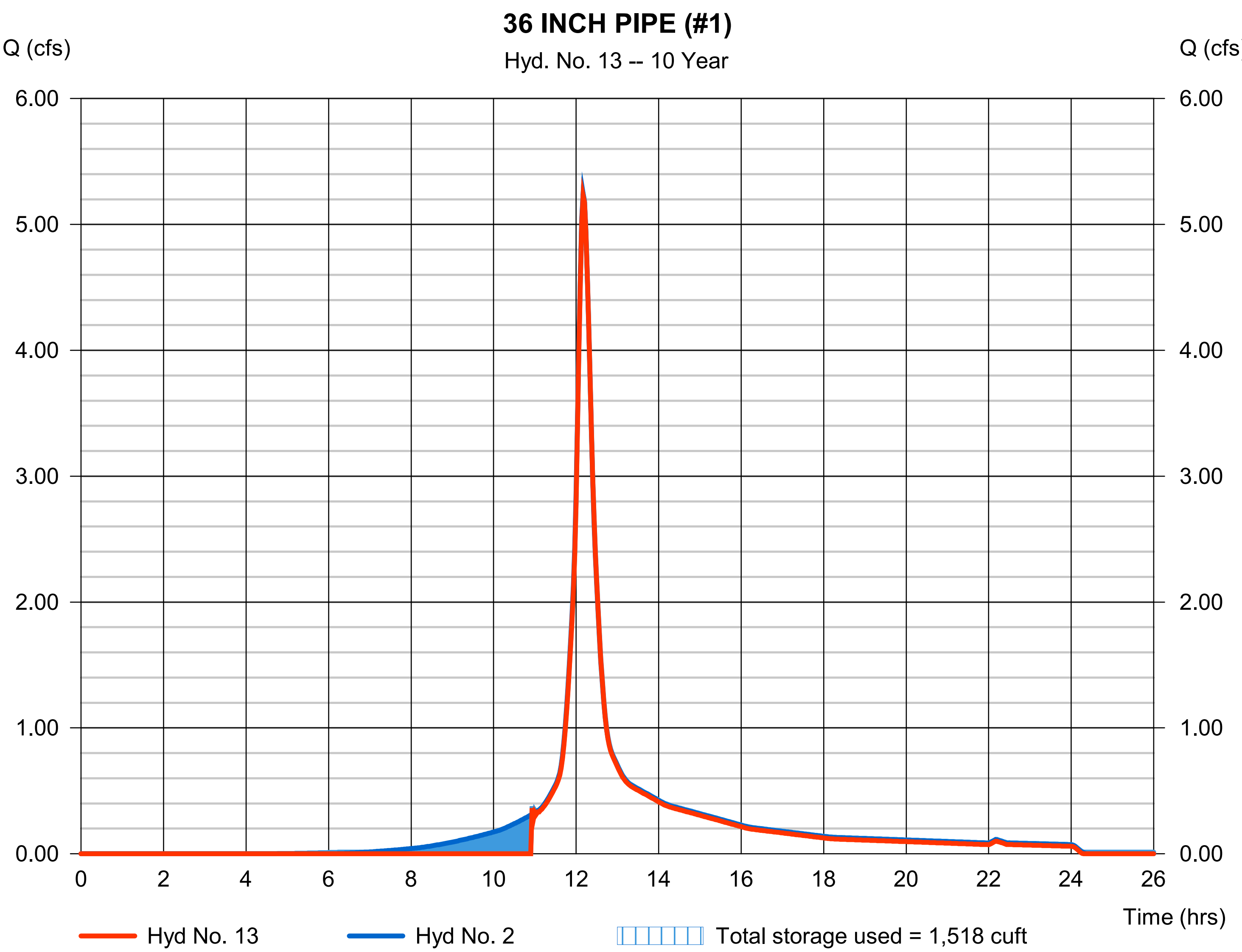
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 13

36 INCH PIPE (#1)

Hydrograph type	= Reservoir	Peak discharge	= 5.228 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 19,335 cuft
Inflow hyd. No.	= 2 - EX WS-02A	Max. Elevation	= 143.60 ft
Reservoir name	= 36IN - 1	Max. Storage	= 1,518 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

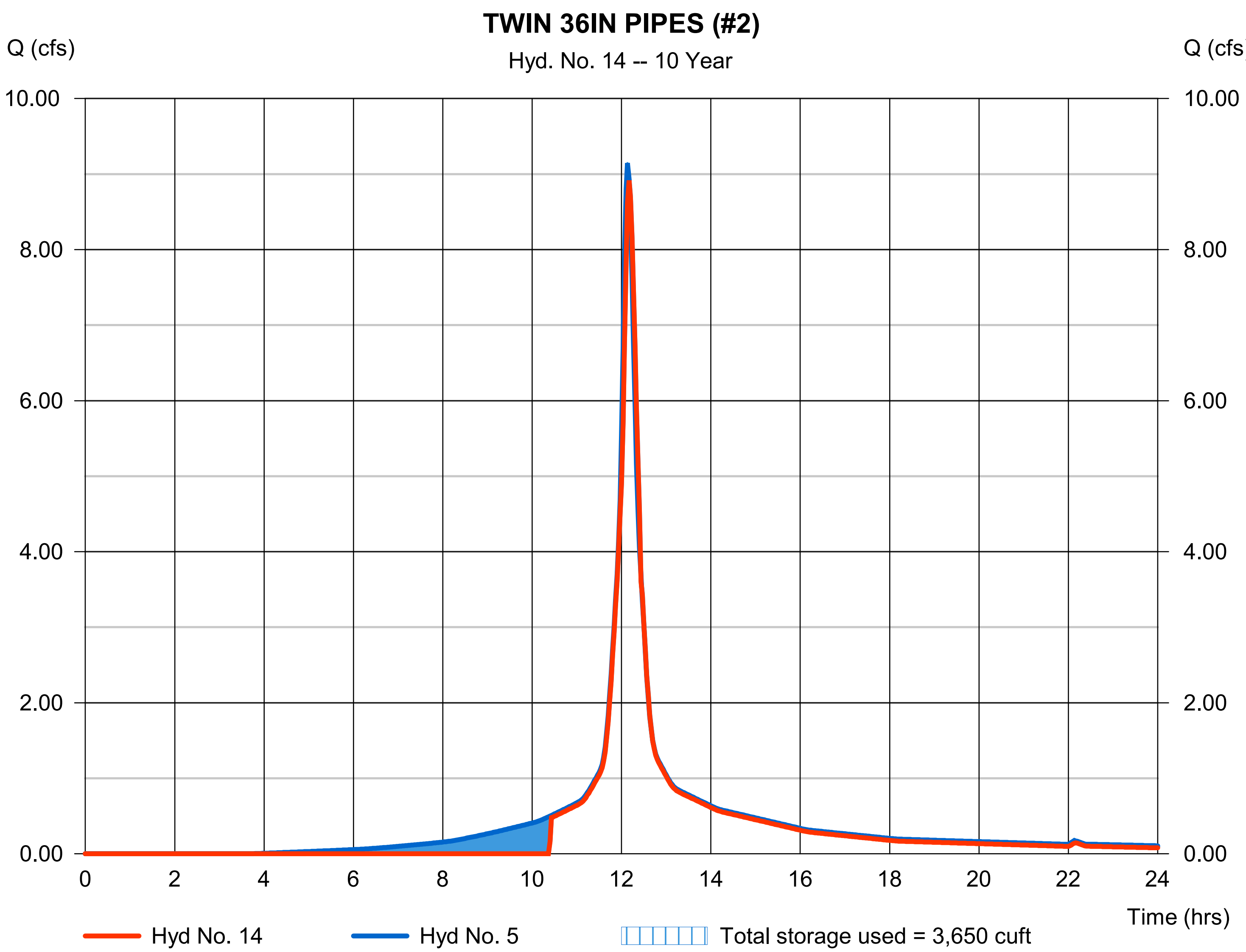
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 14

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 8.916 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 31,682 cuft
Inflow hyd. No.	= 5 - EX WS-02D	Max. Elevation	= 139.12 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 3,650 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

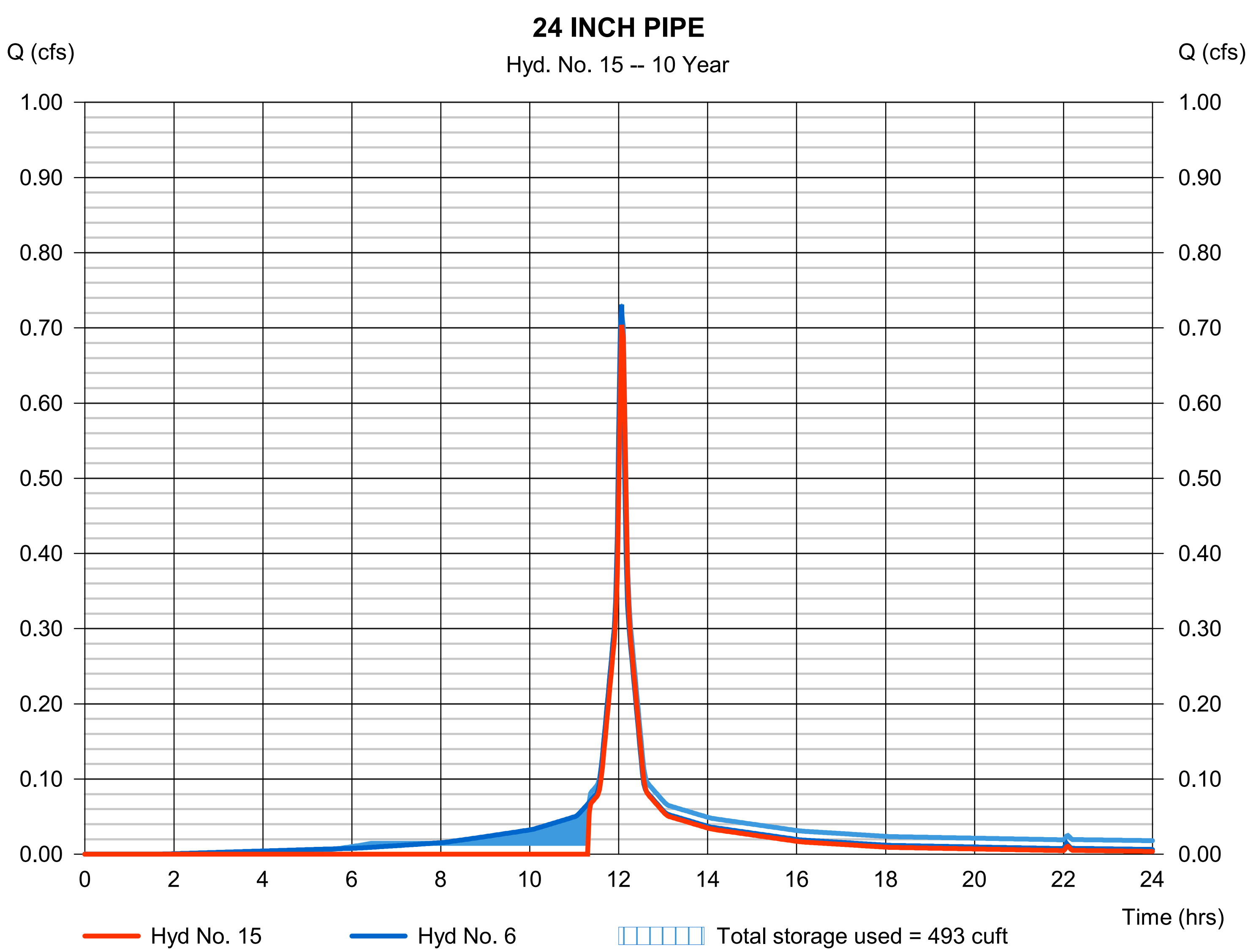
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 15

24 INCH PIPE

Hydrograph type	= Reservoir	Peak discharge	= 0.704 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,793 cuft
Inflow hyd. No.	= 6 - EX WS-02E	Max. Elevation	= 139.63 ft
Reservoir name	= 24IN	Max. Storage	= 493 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

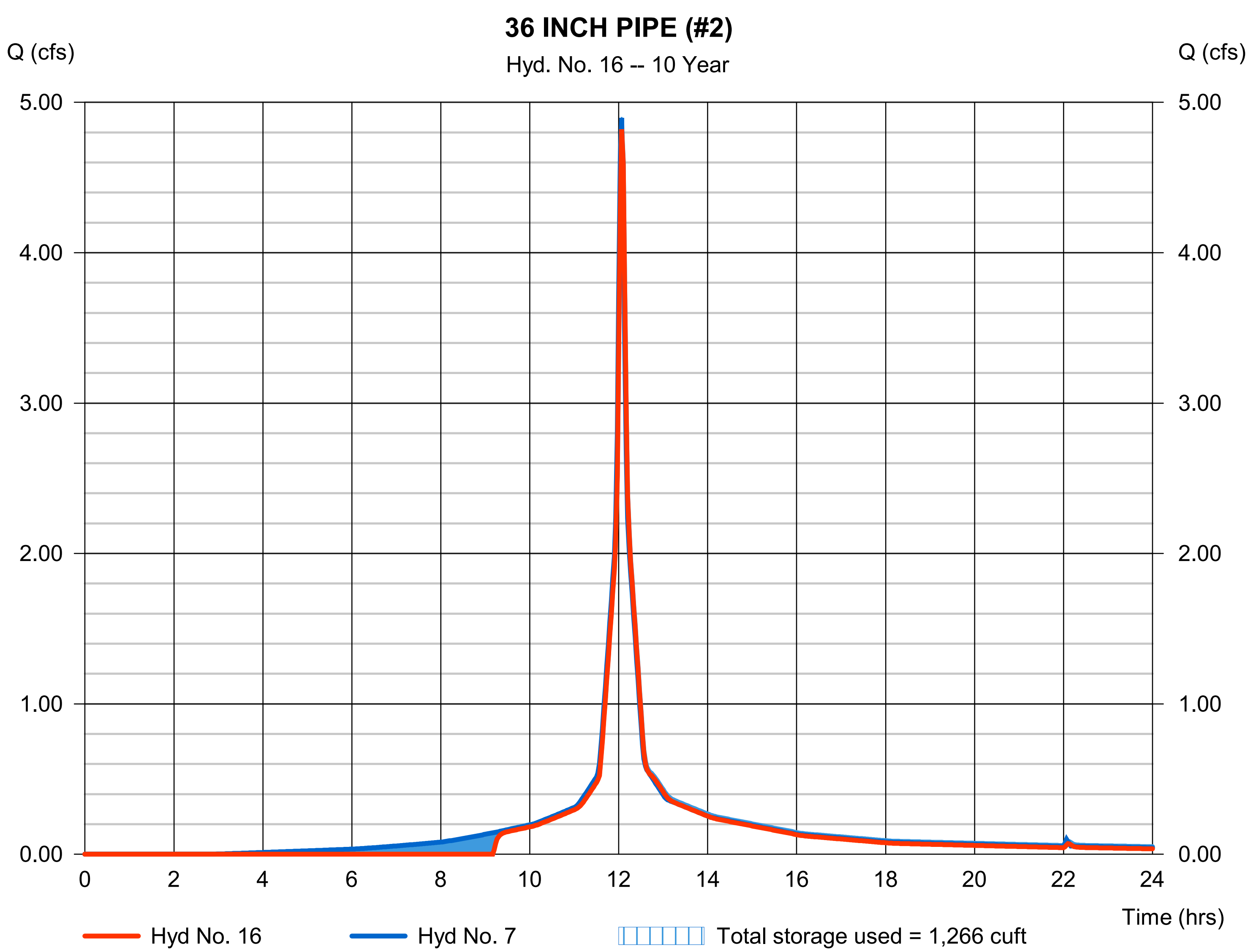
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 16

36 INCH PIPE (#2)

Hydrograph type	= Reservoir	Peak discharge	= 4.822 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 14,247 cuft
Inflow hyd. No.	= 7 - EX WS-02F	Max. Elevation	= 139.47 ft
Reservoir name	= 36in - 2	Max. Storage	= 1,266 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

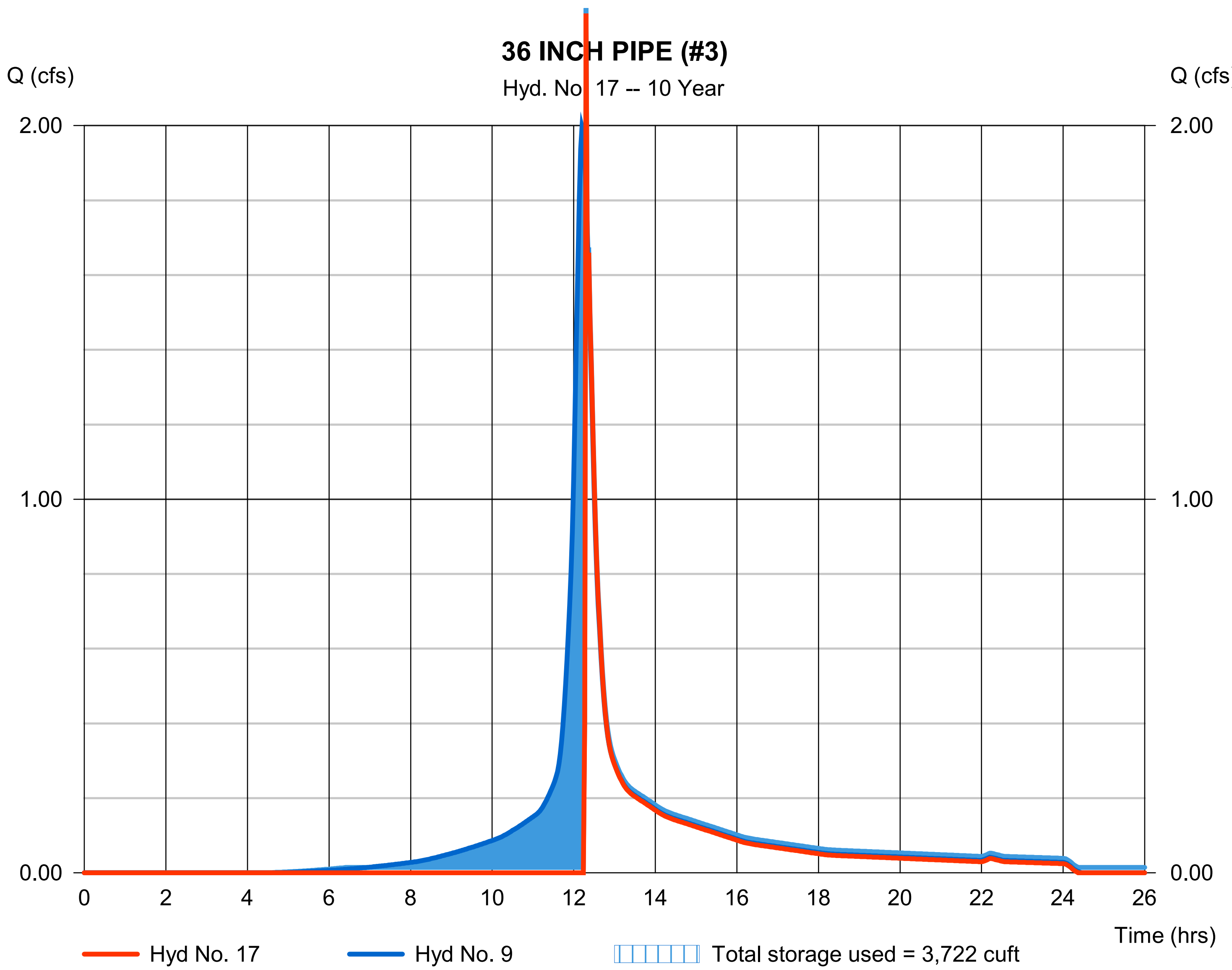
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 17

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 2.300 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.30 hrs
Time interval	= 2 min	Hyd. volume	= 5,135 cuft
Inflow hyd. No.	= 9 - EX WS-02H	Max. Elevation	= 137.49 ft
Reservoir name	= 36in - 3	Max. Storage	= 3,722 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

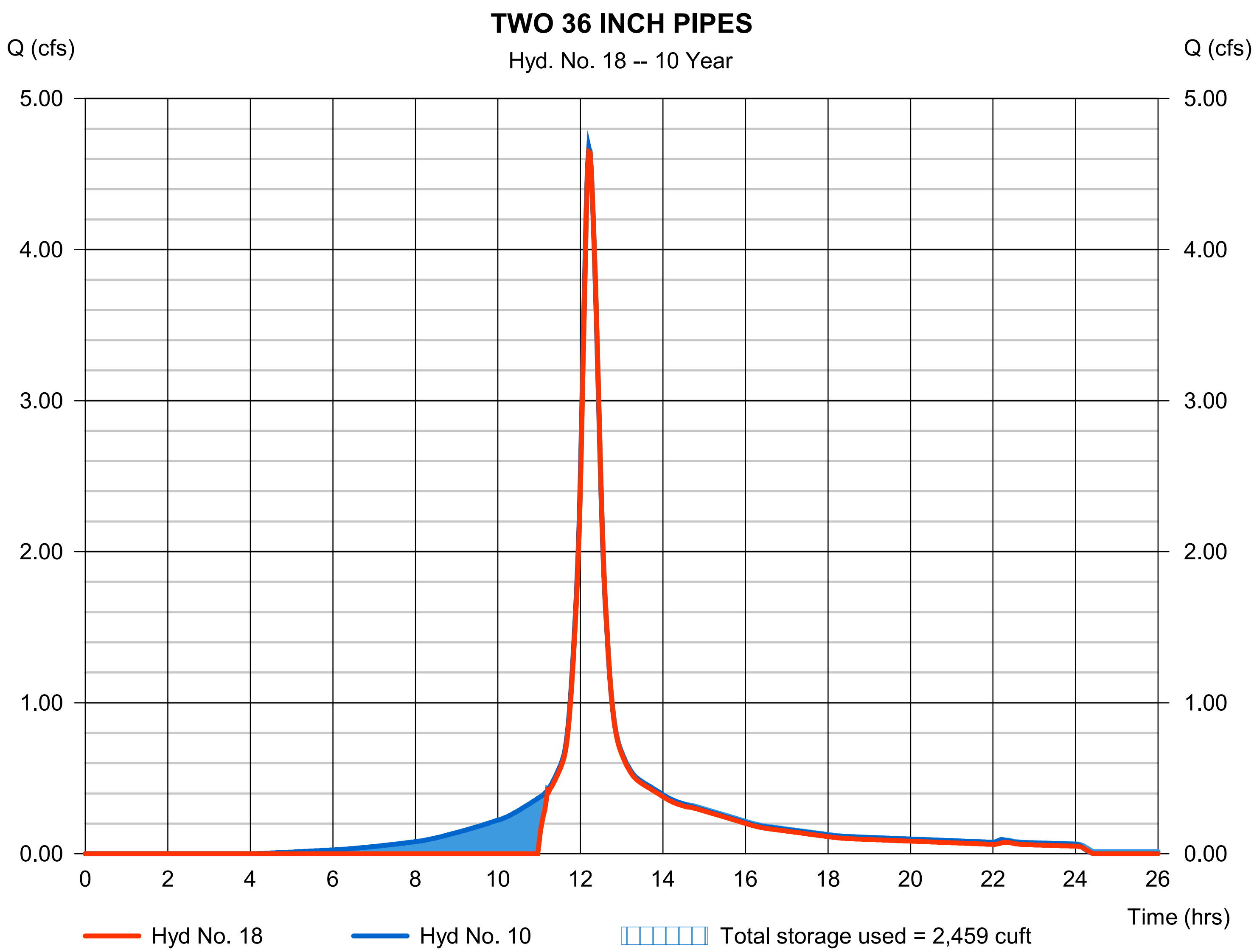
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 18

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 4.647 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 18,180 cuft
Inflow hyd. No.	= 10 - EX WS-02I	Max. Elevation	= 135.72 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,459 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



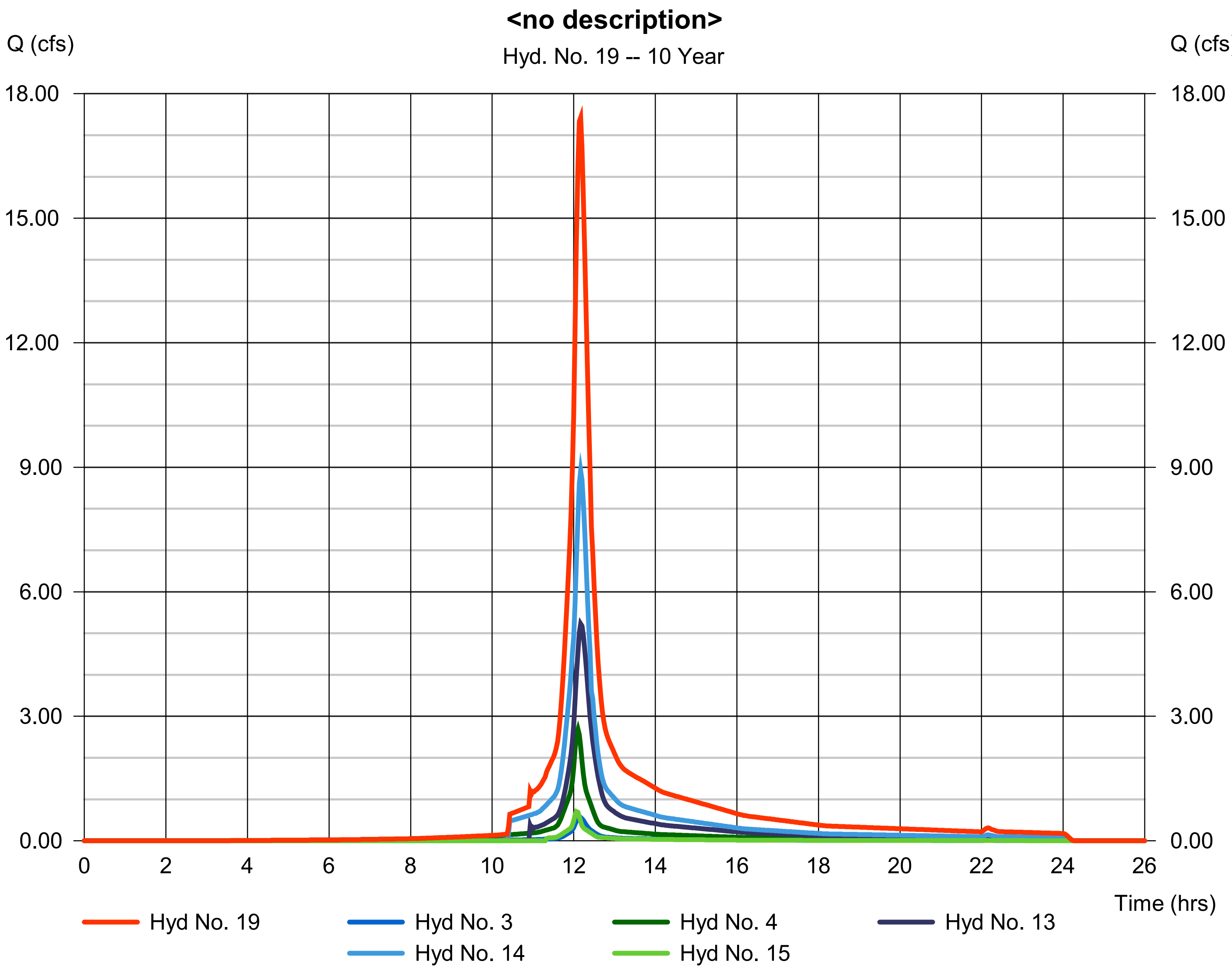
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 19

<no description>

Hydrograph type	= Combine	Peak discharge	= 17.43 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 64,781 cuft
Inflow hyds.	= 3, 4, 13, 14, 15	Contrib. drain. area	= 0.776 ac



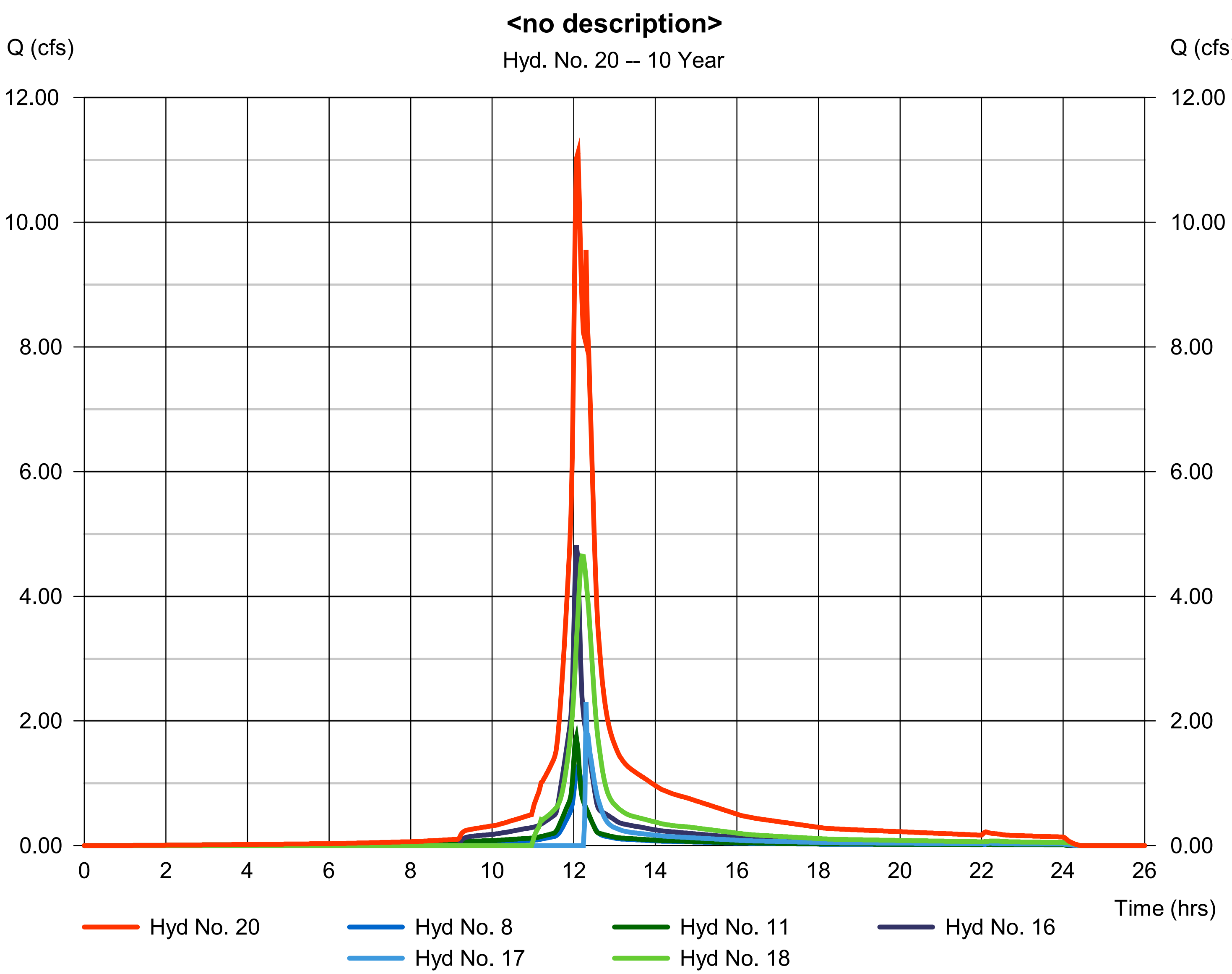
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 20

<no description>

Hydrograph type	= Combine	Peak discharge	= 11.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 48,132 cuft
Inflow hyds.	= 8, 11, 16, 17, 18	Contrib. drain. area	= 0.625 ac



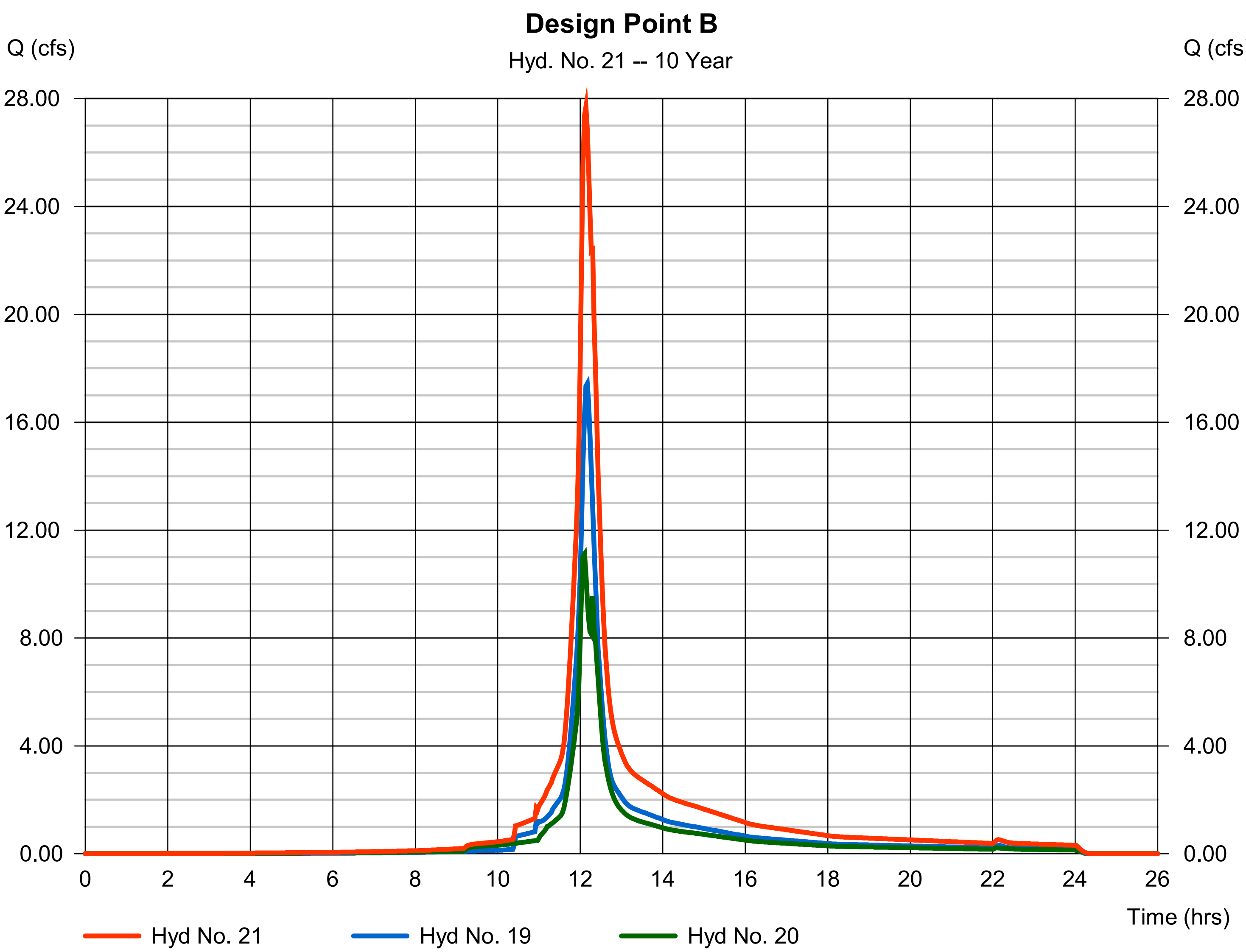
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 21

Design Point B

Hydrograph type	= Combine	Peak discharge	= 27.70 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 112,913 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	4.569	2	732	18,910	------	------	------	EX WS-01
2	SCS Runoff	6.758	2	730	27,938	------	------	------	EX WS-02A
3	SCS Runoff	0.755	2	728	2,900	------	------	------	EX WS-02B
4	SCS Runoff	3.315	2	726	12,242	------	------	------	EX WS-02C
5	SCS Runoff	11.39	2	728	46,130	------	------	------	EX WS-02D
6	SCS Runoff	0.894	2	724	3,014	------	------	------	EX WS-02E
7	SCS Runoff	6.042	2	724	19,686	------	------	------	EX WS-02F
8	SCS Runoff	1.567	2	726	5,734	------	------	------	EX WS-02G
9	SCS Runoff	2.521	2	732	11,510	------	------	------	EX WS-02H
10	SCS Runoff	5.852	2	732	27,051	------	------	------	EX WS-02I
11	SCS Runoff	2.120	2	724	7,355	------	------	------	EX WS-02J
12	SCS Runoff	0.314	2	730	1,264	------	------	------	EX WS-03
13	Reservoir	6.739	2	730	25,739	2	143.63	1,533	36 INCH PIPE (#1)
14	Reservoir	11.13	2	730	41,147	5	139.17	3,870	TWIN 36IN PIPES (#2)
15	Reservoir	0.908	2	724	2,362	6	139.64	501	24 INCH PIPE
16	Reservoir	5.901	2	724	18,171	7	139.51	1,323	36 INCH PIPE (#2)
17	Reservoir	2.826	2	730	7,621	9	137.50	3,739	36 INCH PIPE (#3)
18	Reservoir	5.822	2	732	23,823	10	135.74	2,482	TWO 36 INCH PIPES
19	Combine	21.96	2	730	84,390	3, 4, 13, 14, 15,	------	------	<no description>
20	Combine	14.53	2	730	62,704	8, 11, 16, 17, 18,	------	------	<no description>
21	Combine	36.49	2	730	147,095	19, 20	------	------	Design Point B

Existing-Hydraflow.gpw | Return Period: 25 Year | Monday, 12 / 4 / 2023

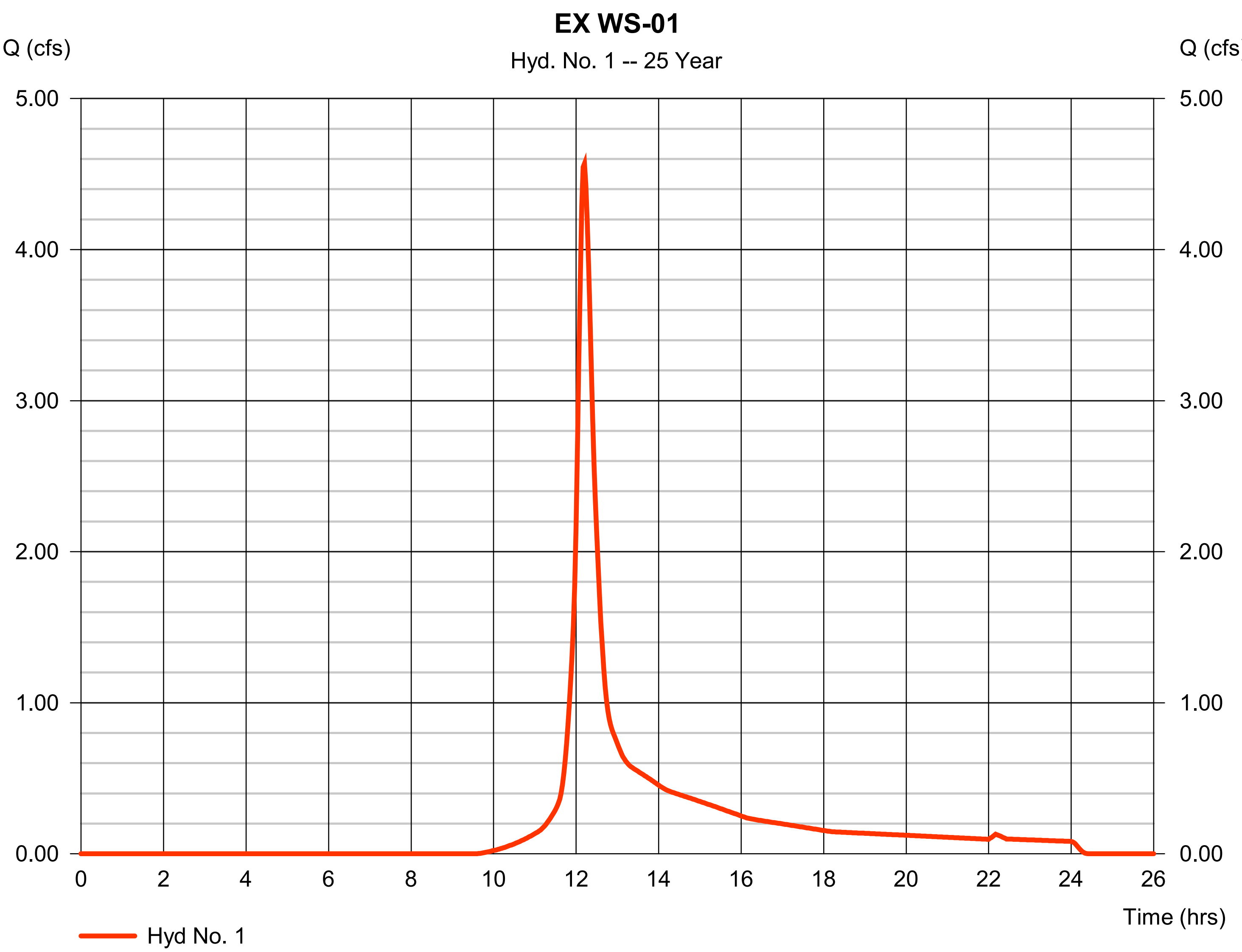
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 1

EX WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 4.569 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 18,910 cuft
Drainage area	= 1.942 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.10 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



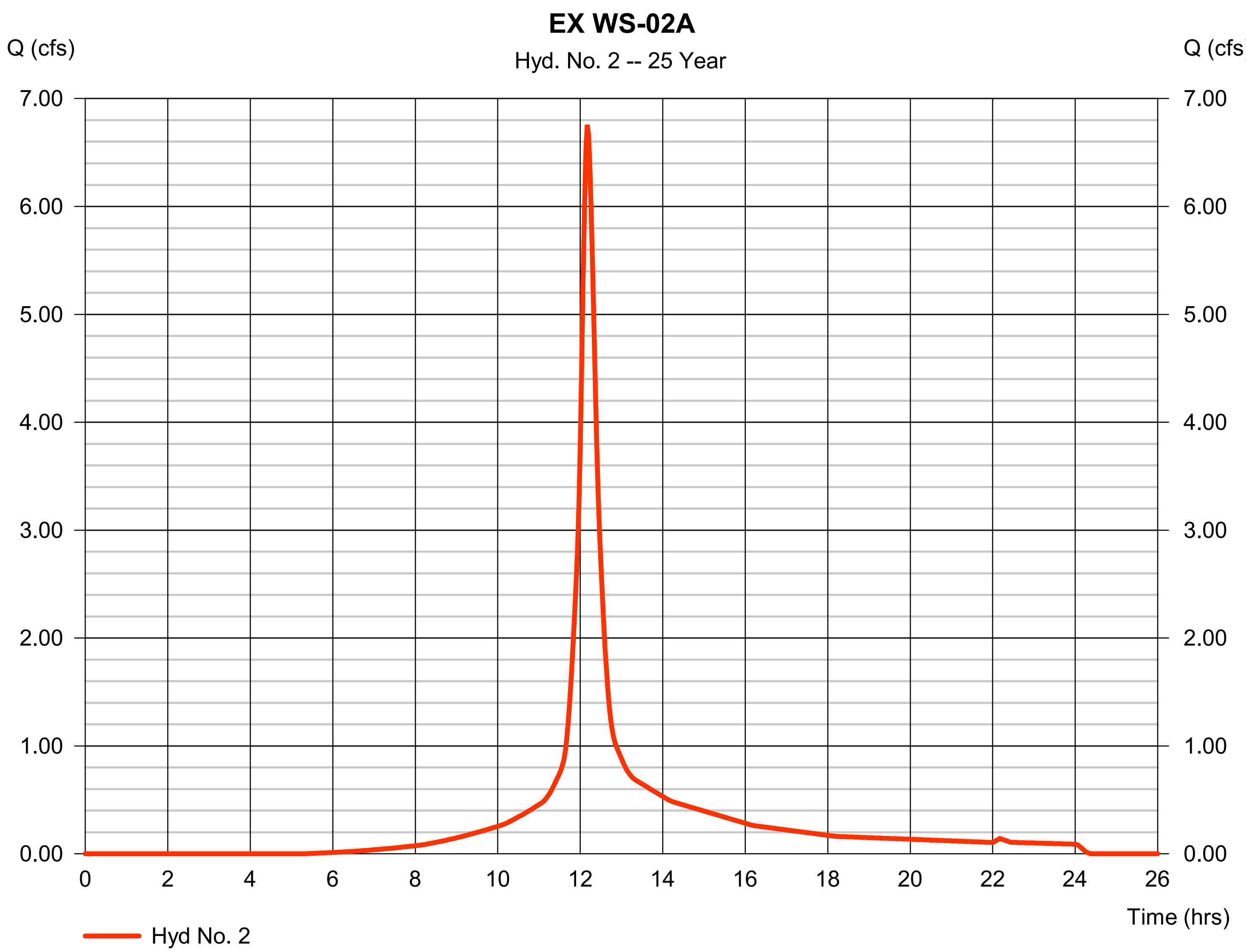
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 2

EX WS-02A

Hydrograph type	= SCS Runoff	Peak discharge	= 6.758 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 27,938 cuft
Drainage area	= 1.678 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.50 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



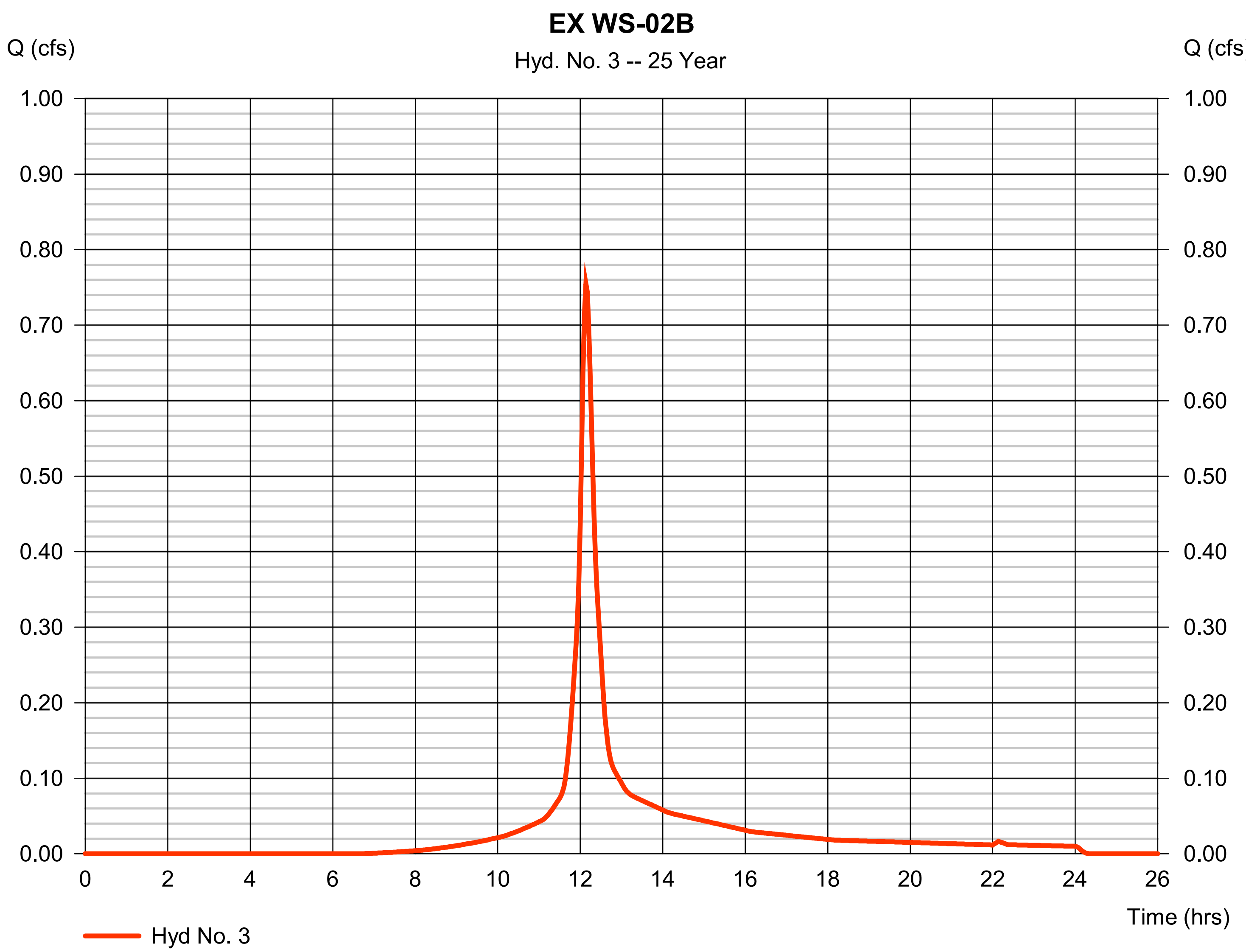
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 3

EX WS-02B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.755 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 2,900 cuft
Drainage area	= 0.186 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



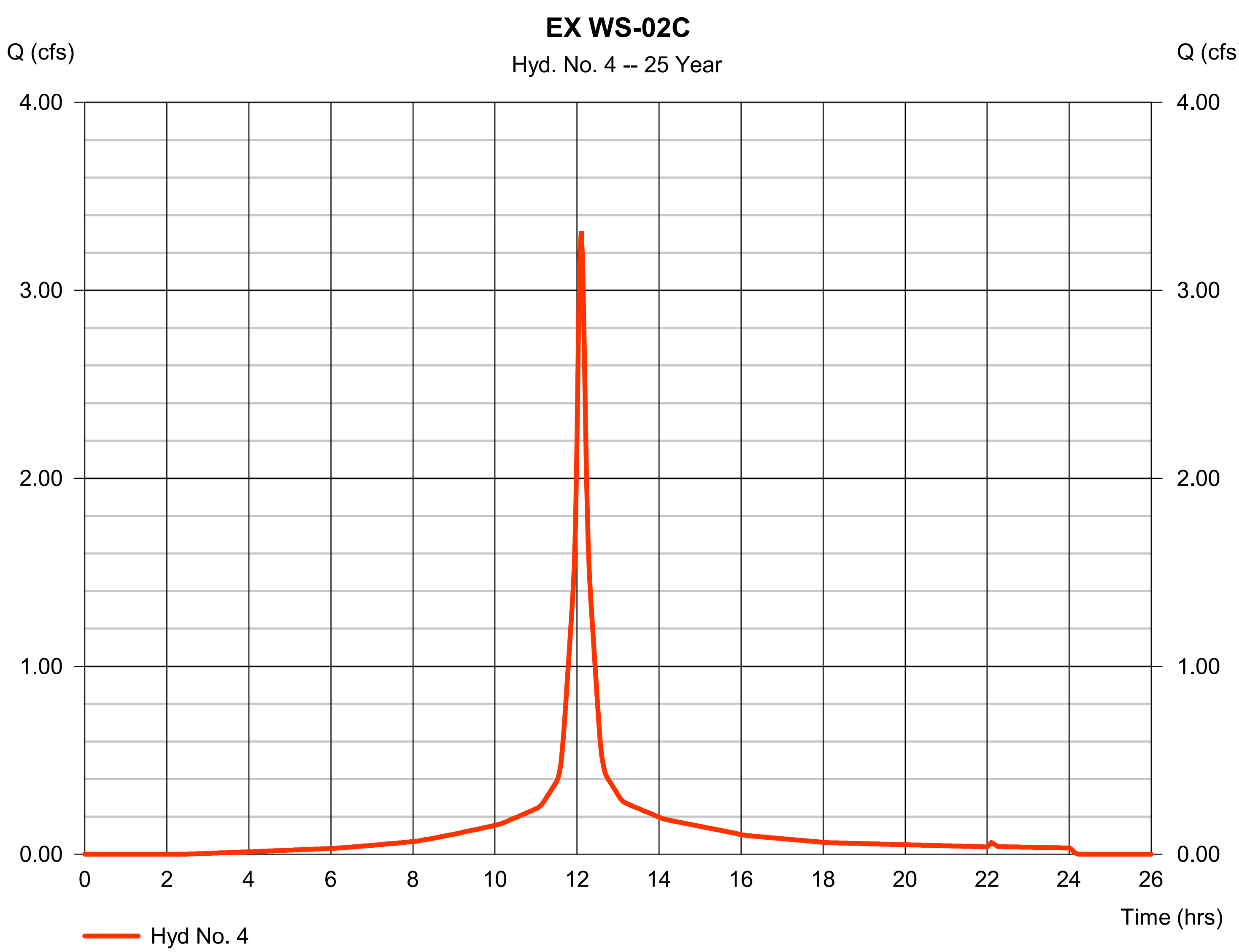
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 4

EX WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.315 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 12,242 cuft
Drainage area	= 0.590 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



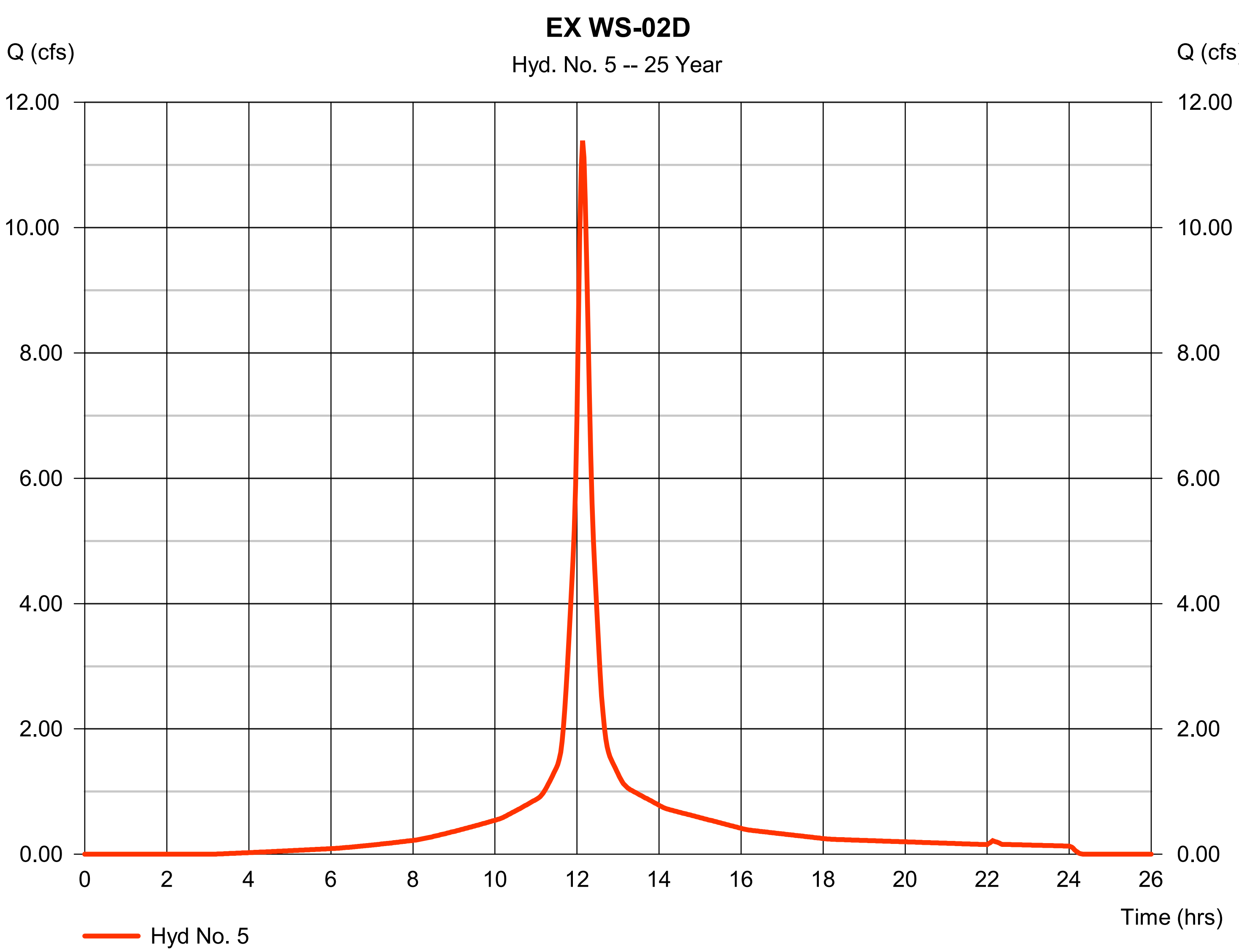
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 5

EX WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 11.39 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 46,130 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



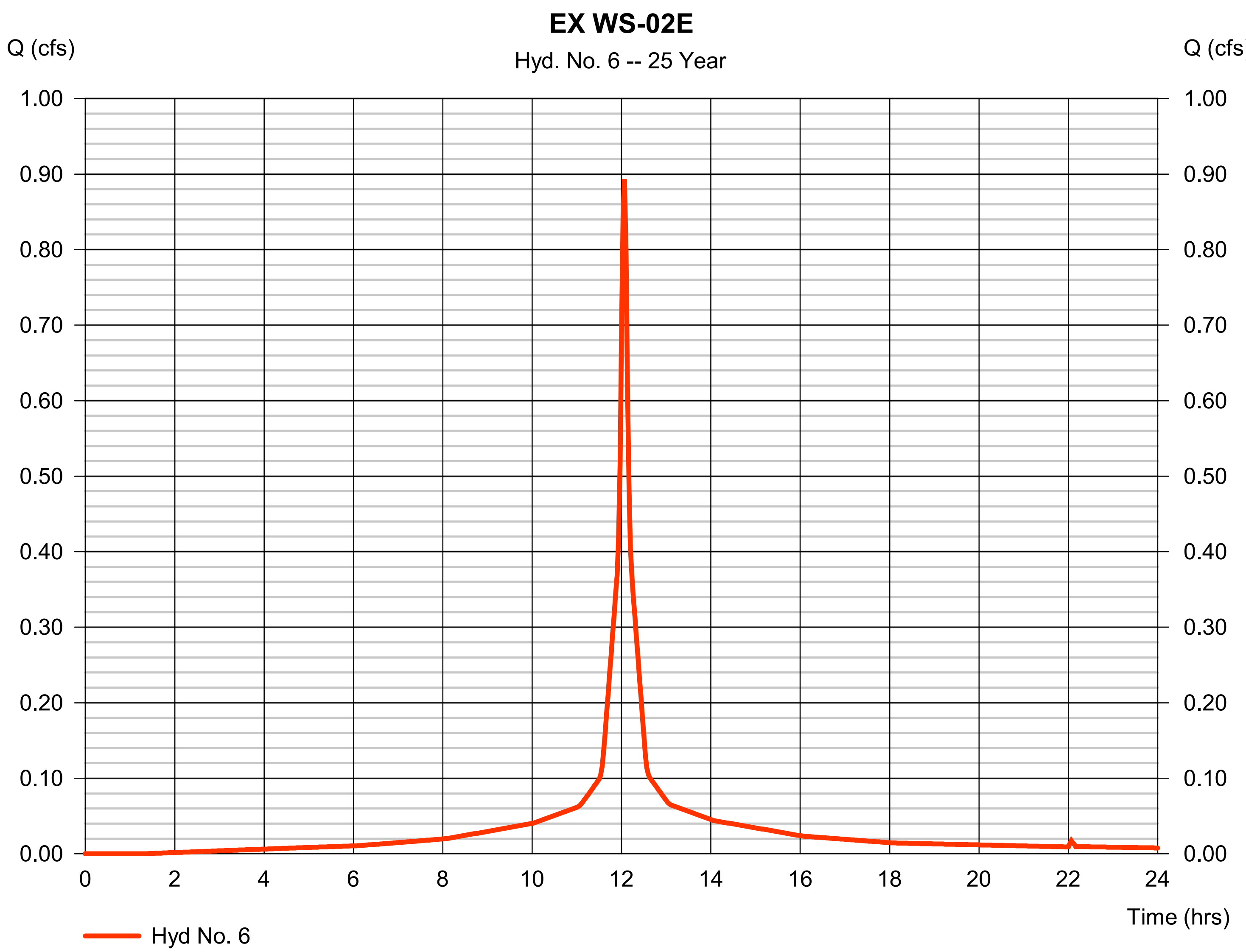
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 6

EX WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 0.894 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,014 cuft
Drainage area	= 0.146 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



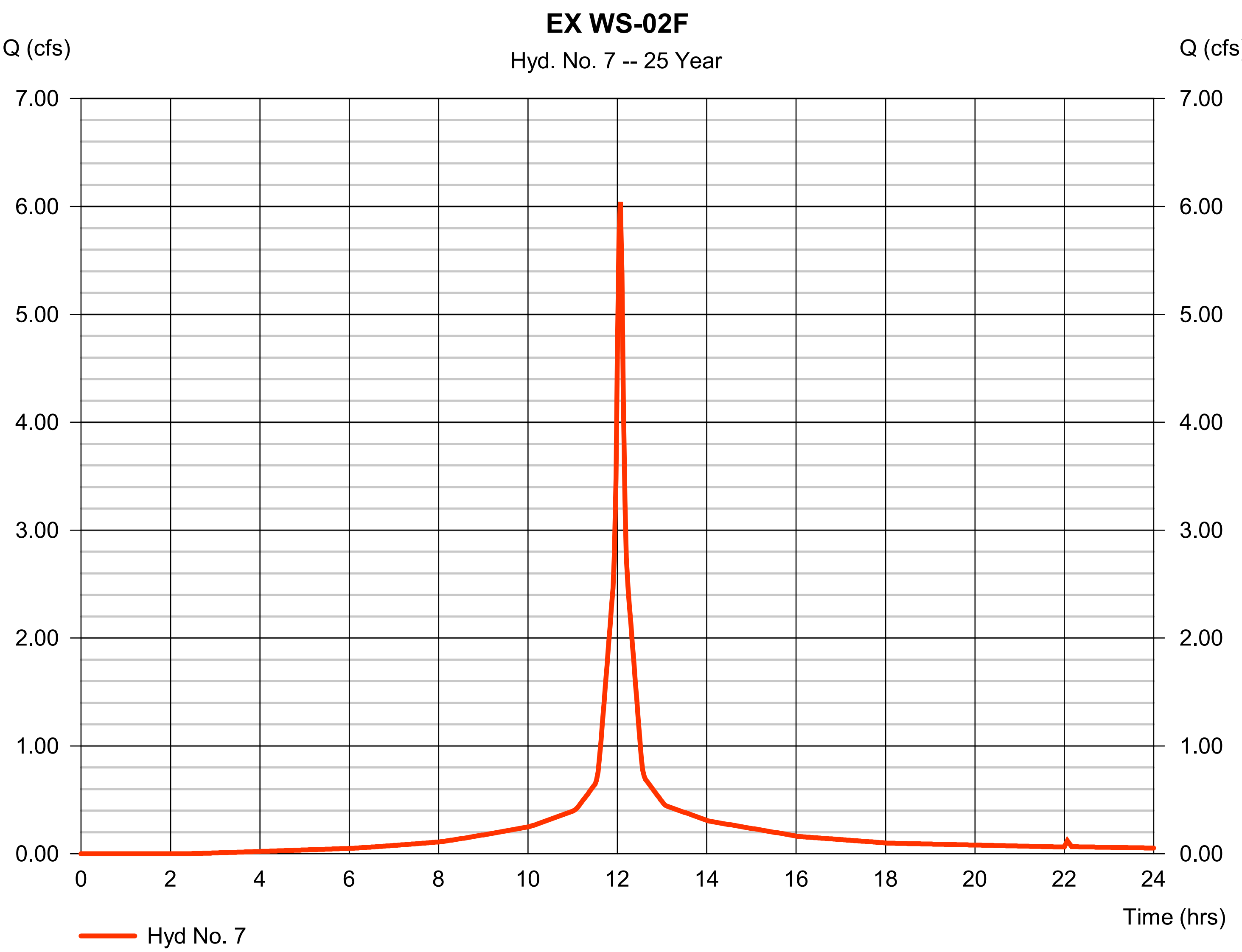
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 7

EX WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 6.042 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 19,686 cuft
Drainage area	= 1.012 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.50 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



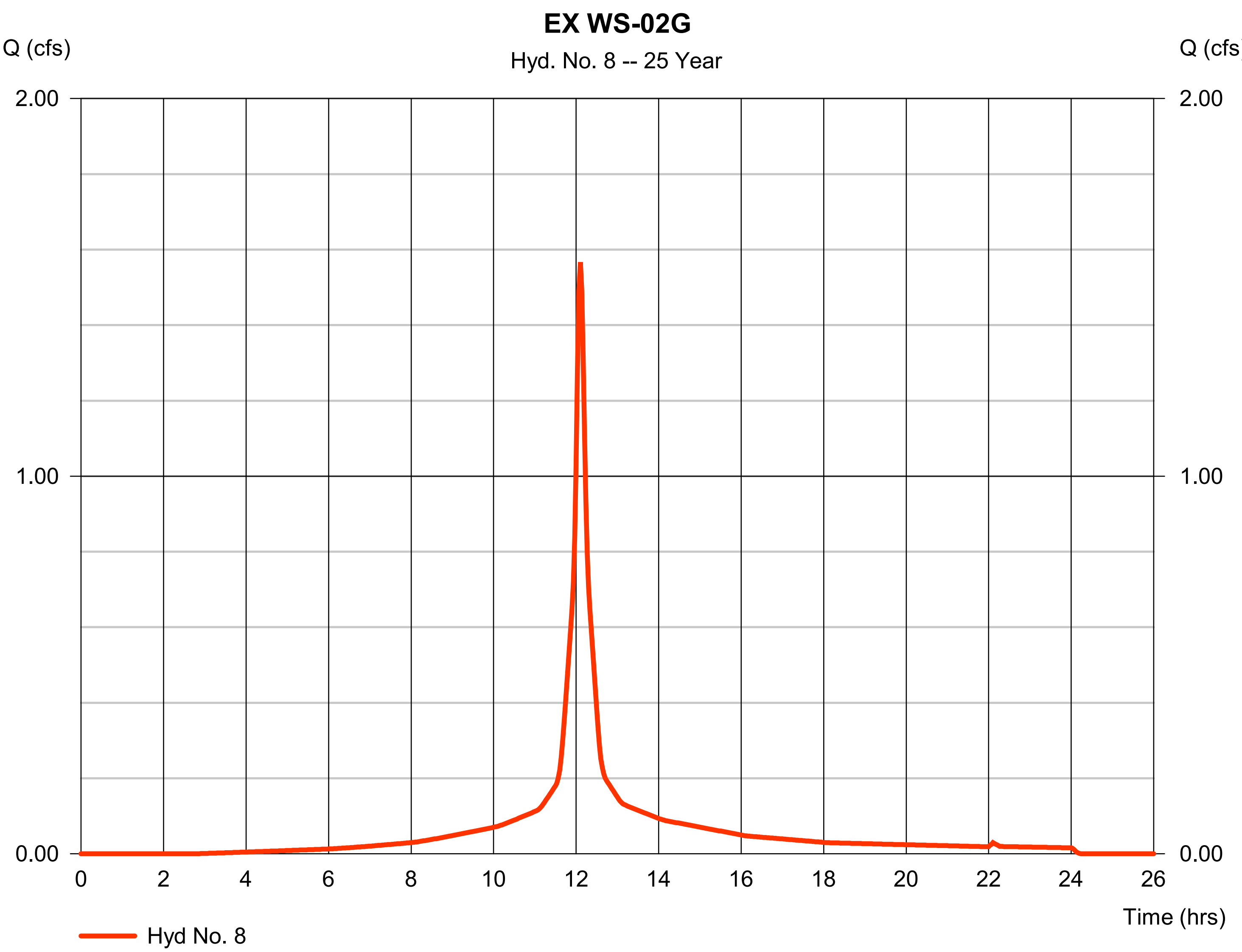
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 8

EX WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 1.567 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 5,734 cuft
Drainage area	= 0.282 ac	Curve number	= 92
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.90 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

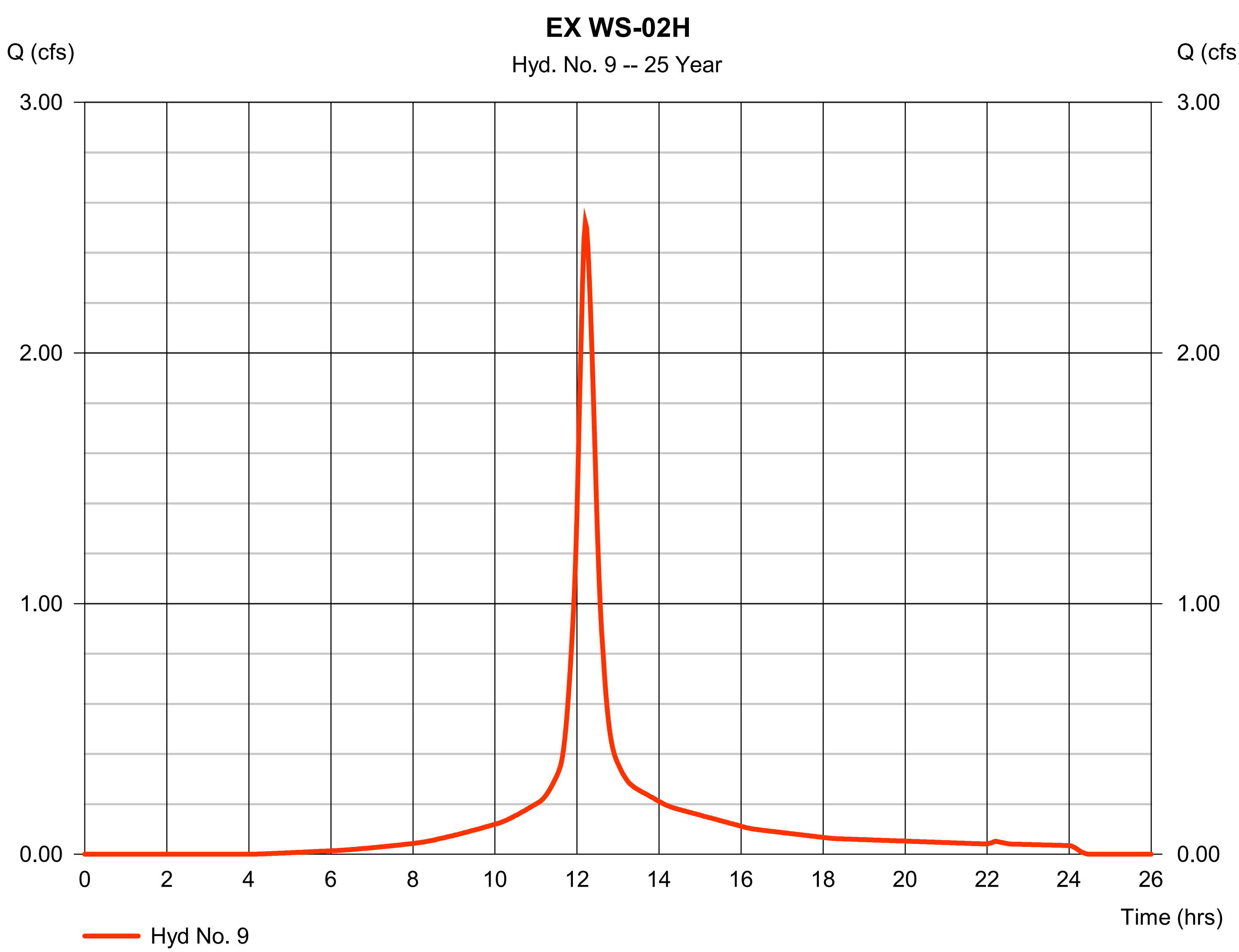


Hydrograph Report

Hyd. No. 9

EX WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 2.521 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 11,510 cuft
Drainage area	= 0.616 ac	Curve number	= 88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.30 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



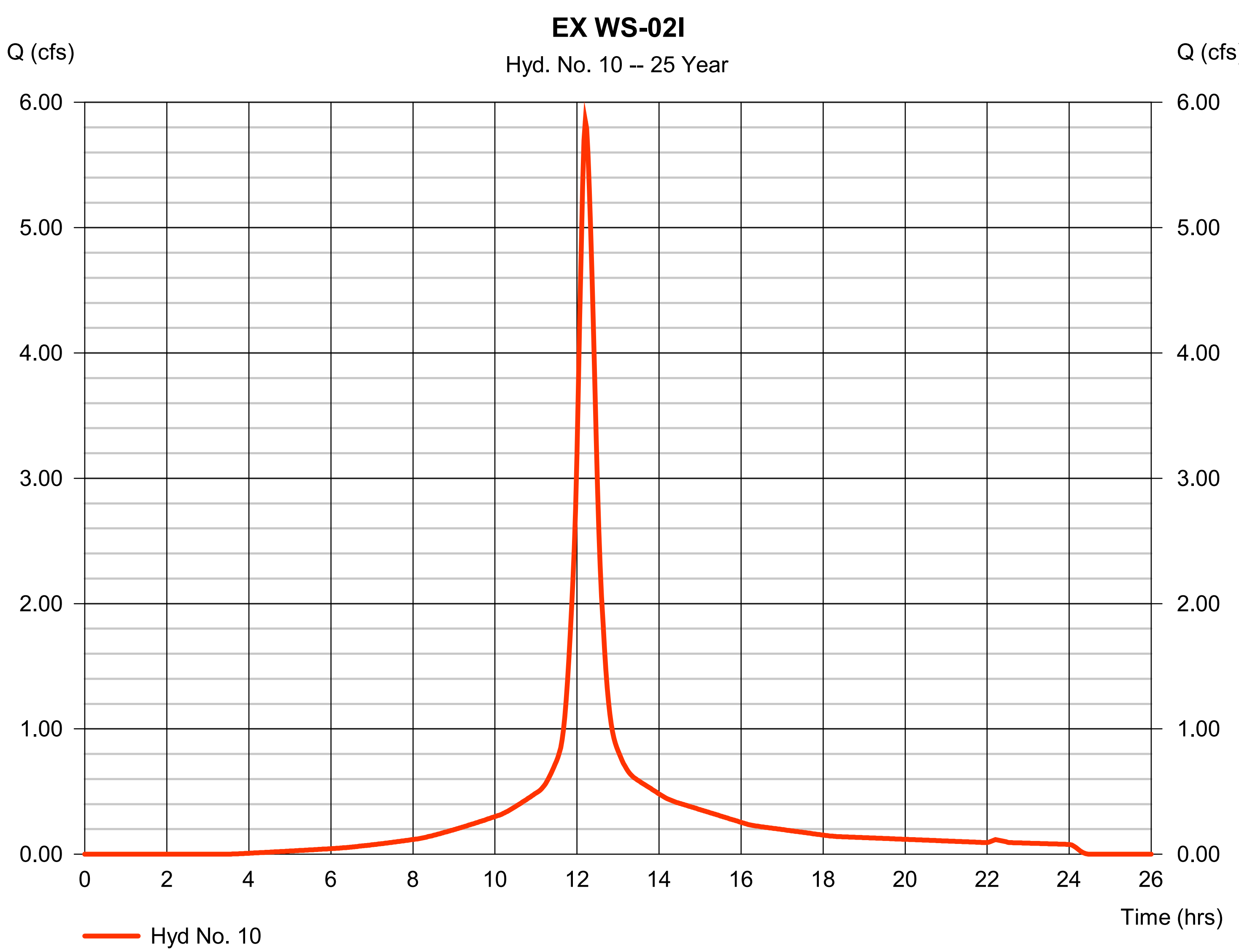
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 10

EX WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 5.852 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 27,051 cuft
Drainage area	= 1.387 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



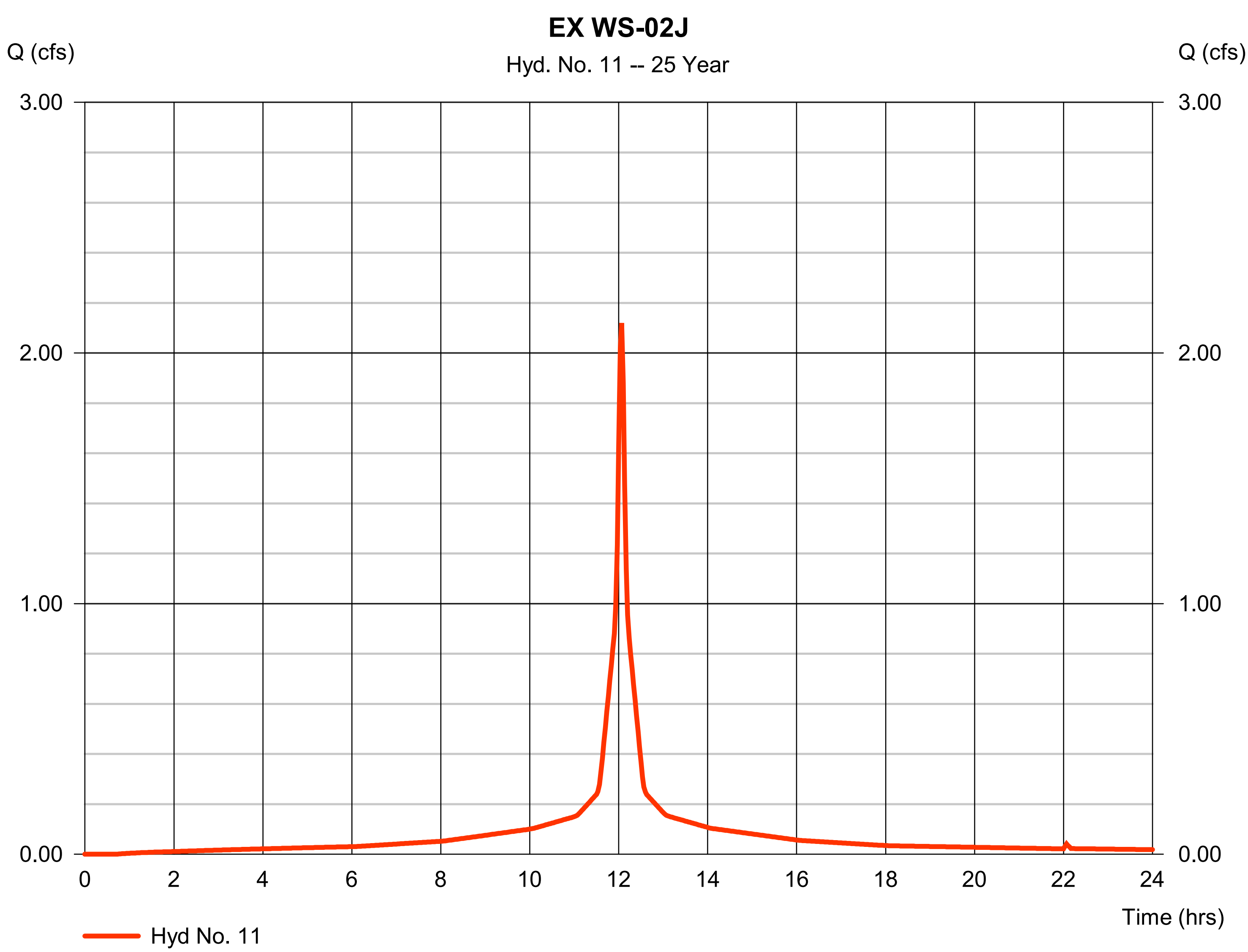
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 11

EX WS-02J

Hydrograph type	= SCS Runoff	Peak discharge	= 2.120 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 7,355 cuft
Drainage area	= 0.343 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



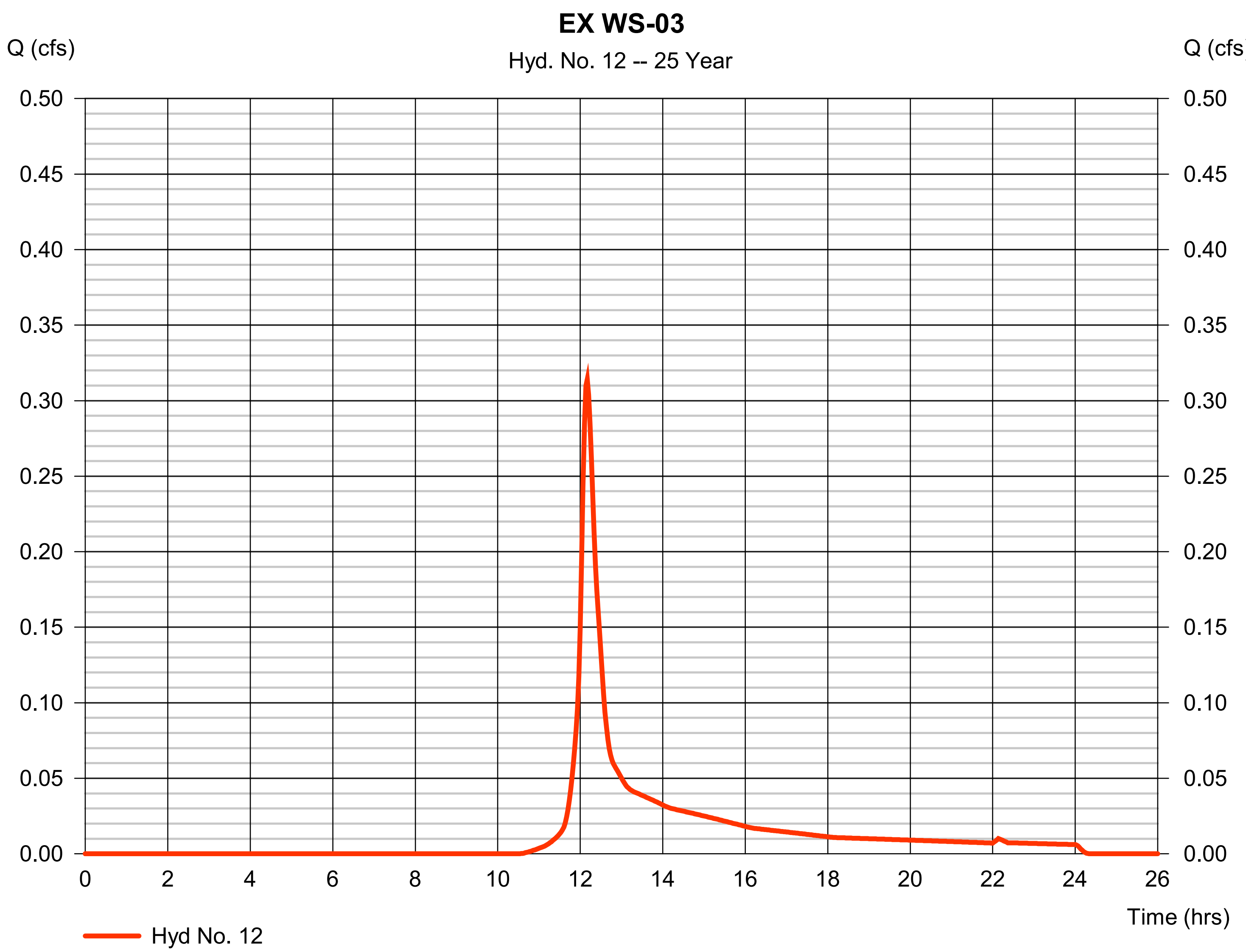
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 12

EX WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.314 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 1,264 cuft
Drainage area	= 0.154 ac	Curve number	= 59
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.50 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

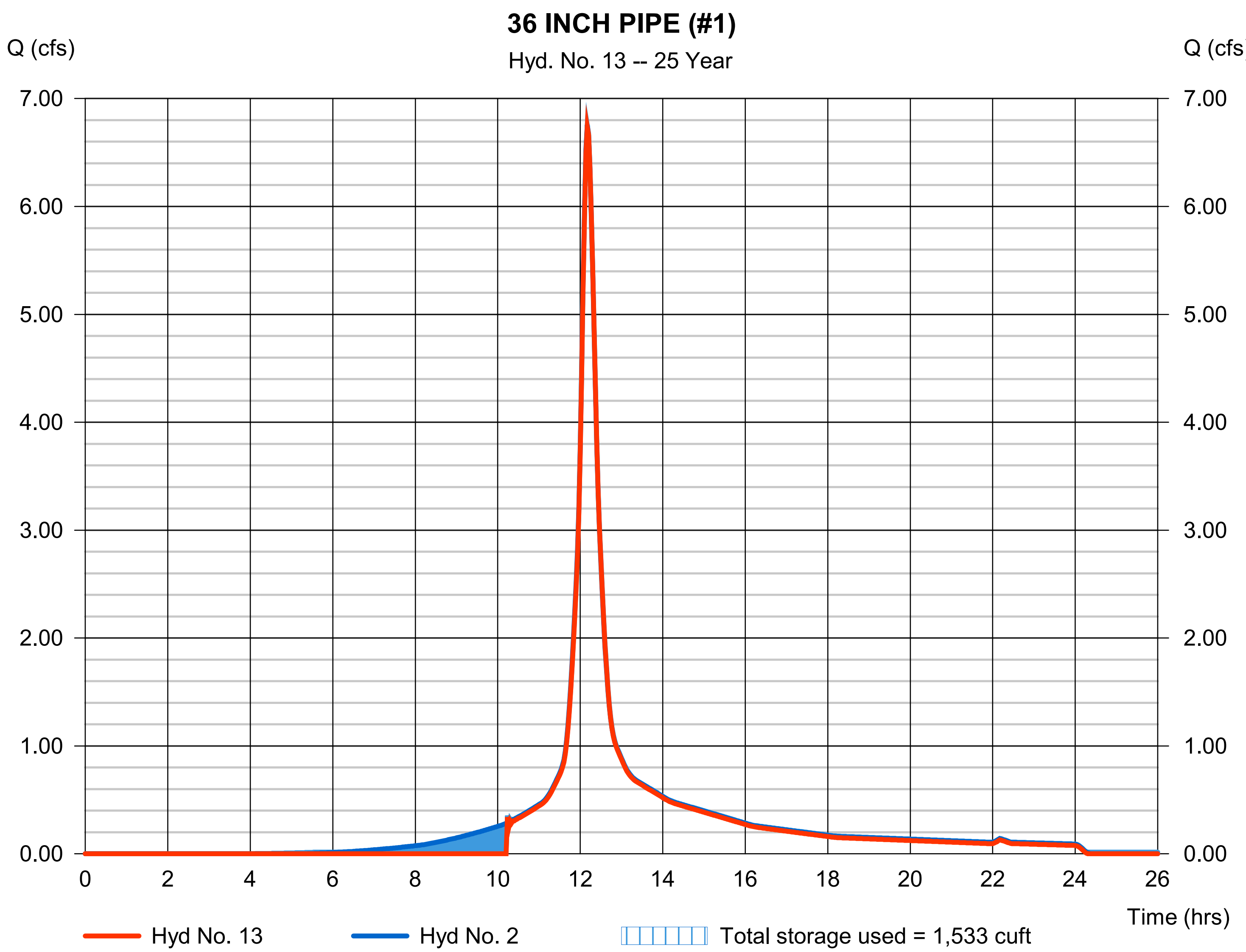
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 13

36 INCH PIPE (#1)

Hydrograph type	= Reservoir	Peak discharge	= 6.739 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 25,739 cuft
Inflow hyd. No.	= 2 - EX WS-02A	Max. Elevation	= 143.63 ft
Reservoir name	= 36IN - 1	Max. Storage	= 1,533 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

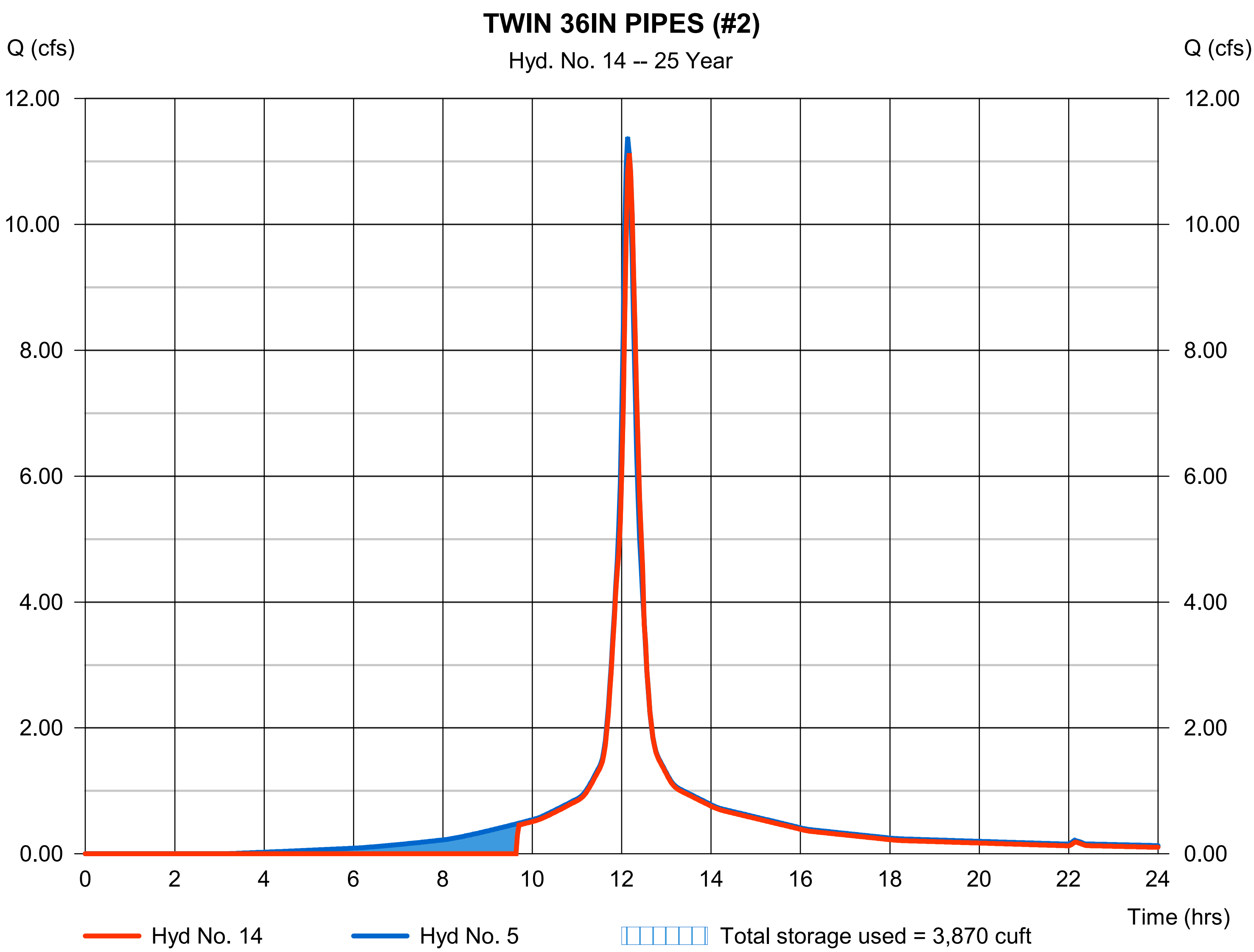
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 14

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 11.13 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 41,147 cuft
Inflow hyd. No.	= 5 - EX WS-02D	Max. Elevation	= 139.17 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 3,870 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

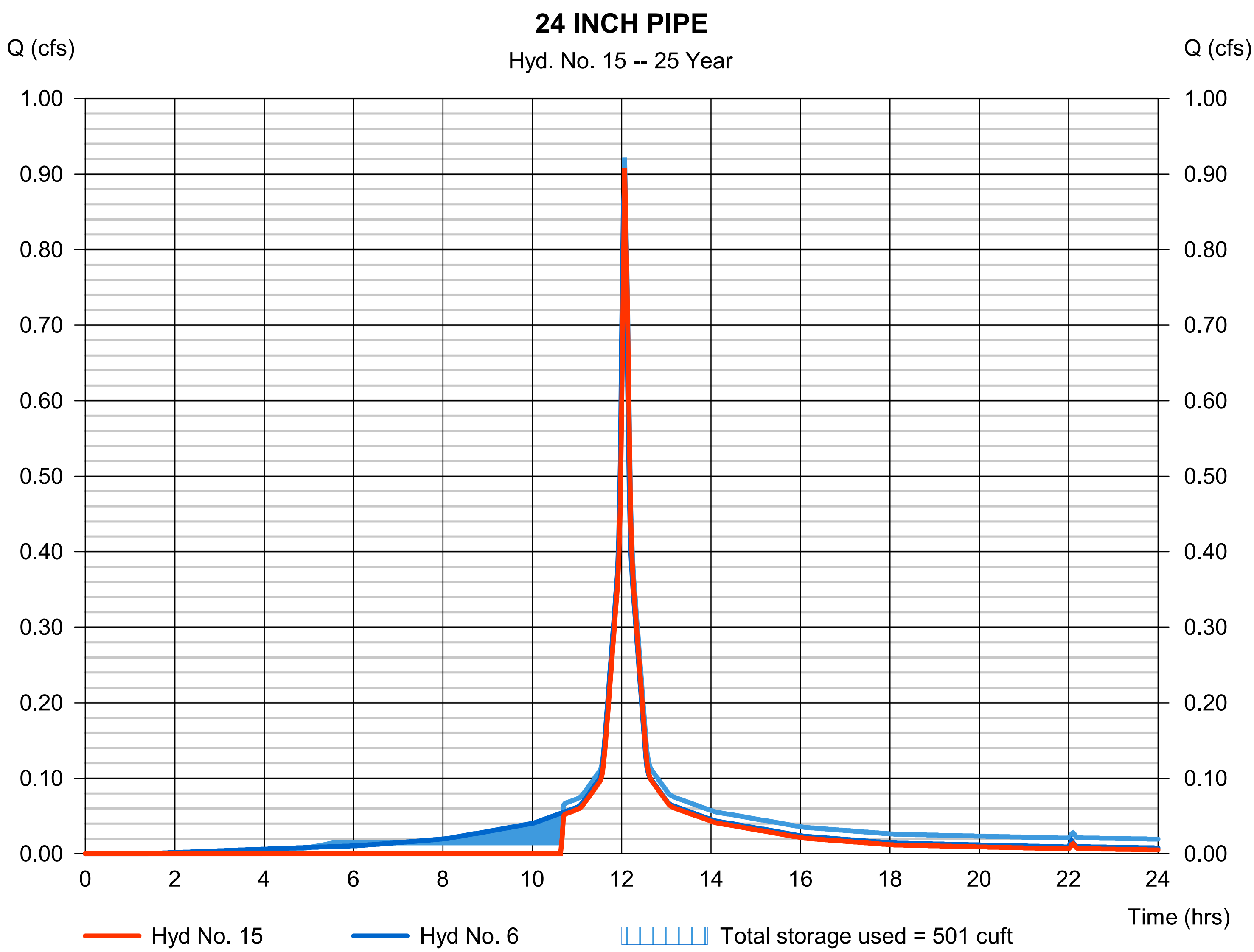
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 15

24 INCH PIPE

Hydrograph type	= Reservoir	Peak discharge	= 0.908 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 2,362 cuft
Inflow hyd. No.	= 6 - EX WS-02E	Max. Elevation	= 139.64 ft
Reservoir name	= 24IN	Max. Storage	= 501 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

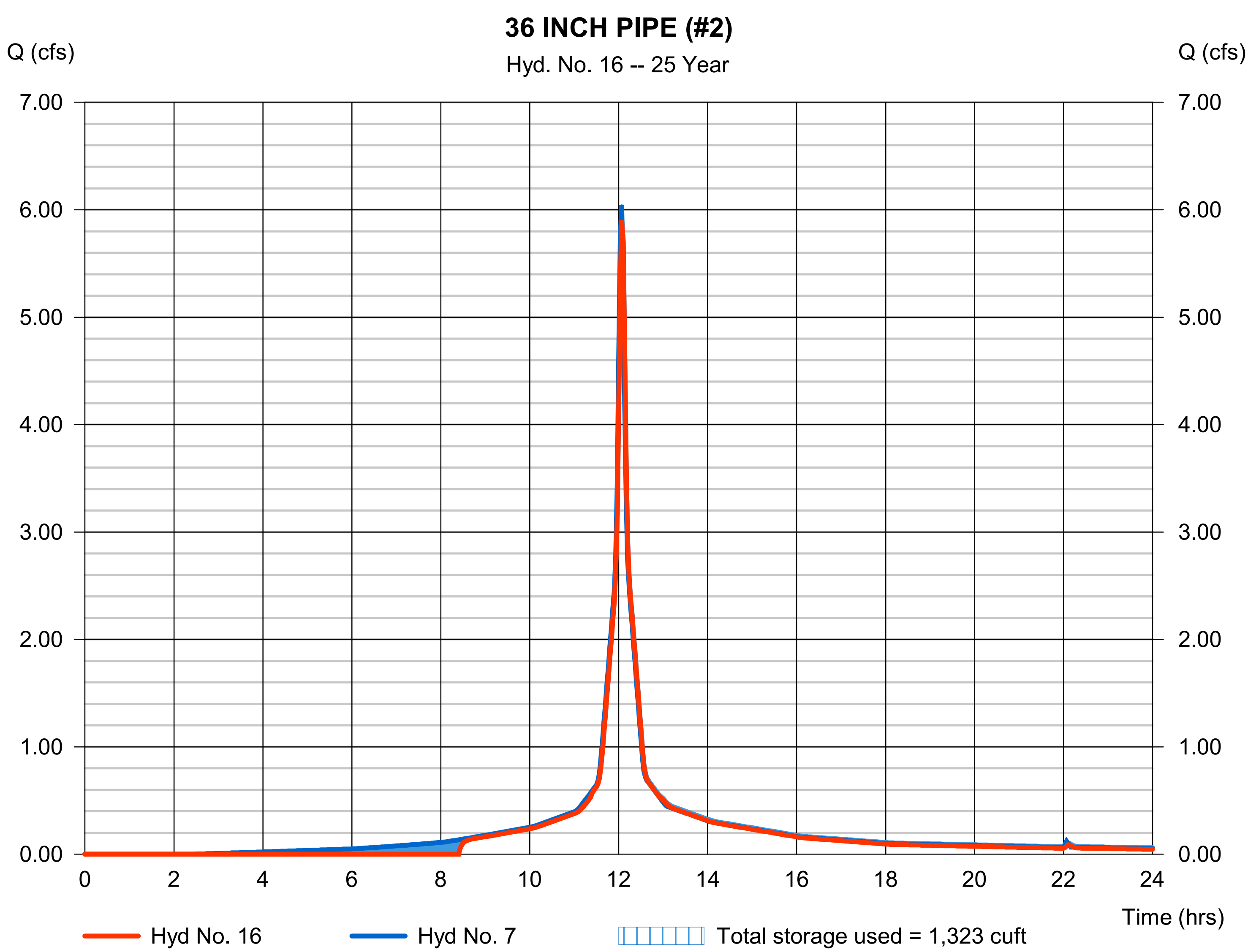
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 16

36 INCH PIPE (#2)

Hydrograph type	= Reservoir	Peak discharge	= 5.901 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 18,171 cuft
Inflow hyd. No.	= 7 - EX WS-02F	Max. Elevation	= 139.51 ft
Reservoir name	= 36in - 2	Max. Storage	= 1,323 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

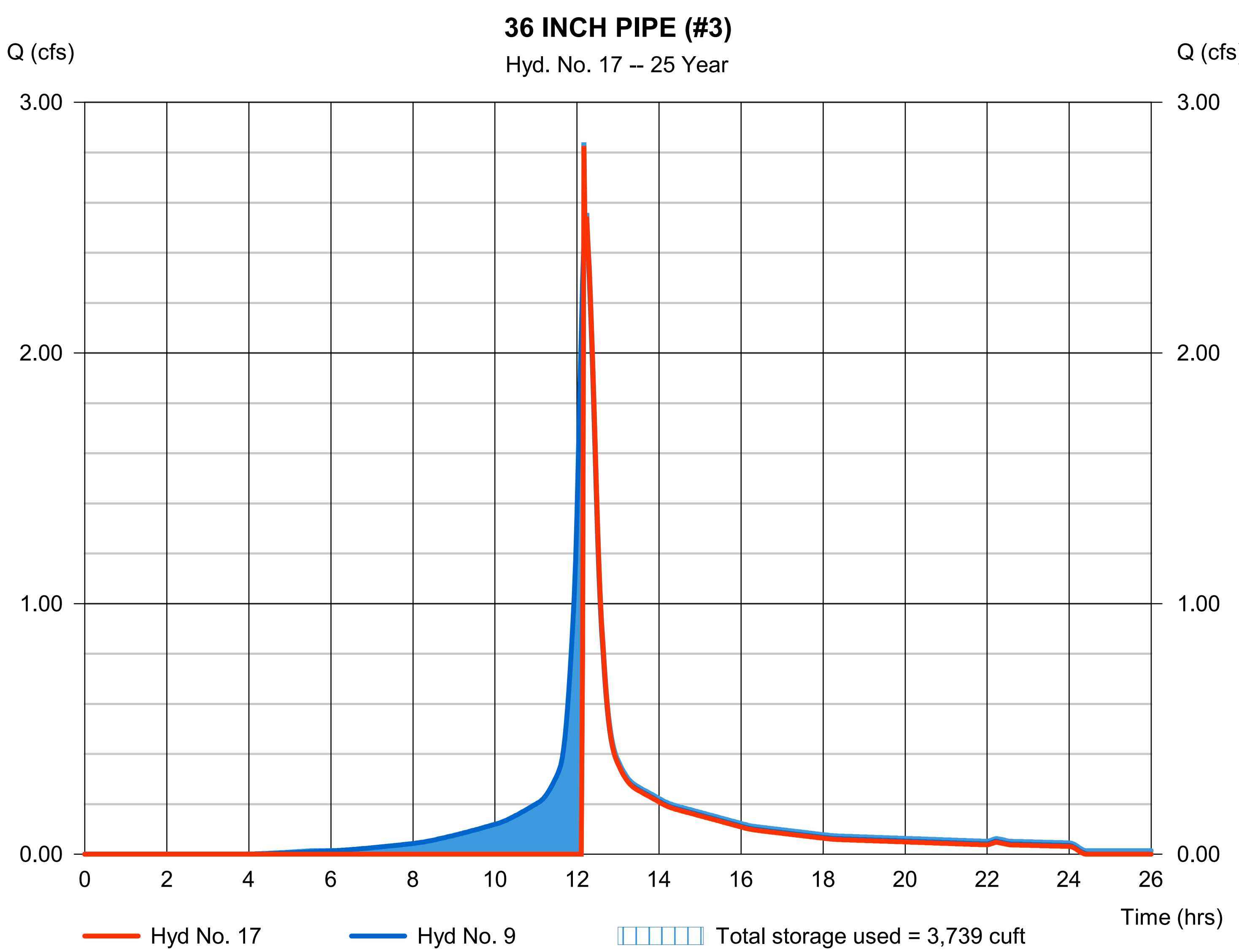
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 17

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 2.826 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 7,621 cuft
Inflow hyd. No.	= 9 - EX WS-02H	Max. Elevation	= 137.50 ft
Reservoir name	= 36in - 3	Max. Storage	= 3,739 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

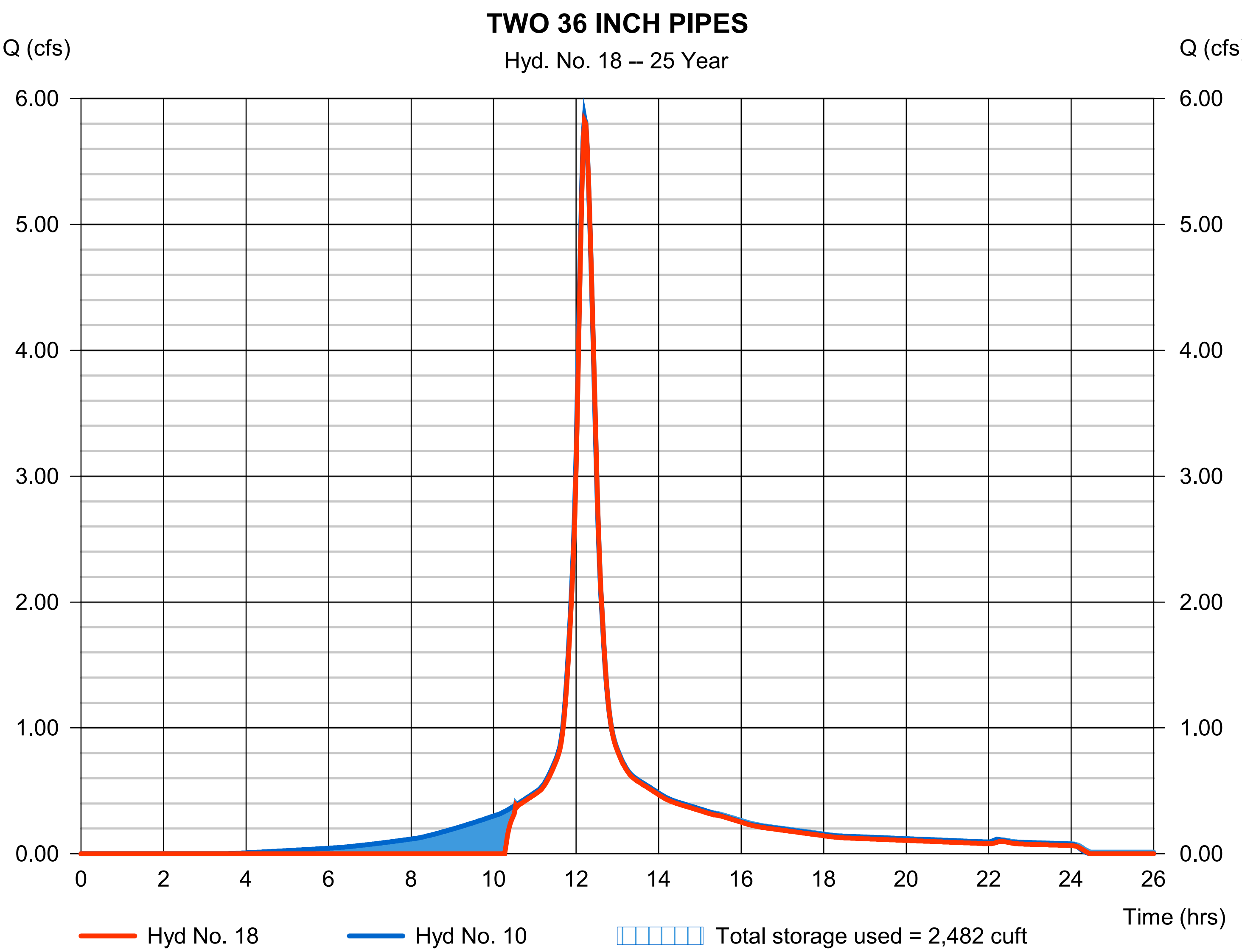
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 18

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 5.822 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 23,823 cuft
Inflow hyd. No.	= 10 - EX WS-02I	Max. Elevation	= 135.74 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,482 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



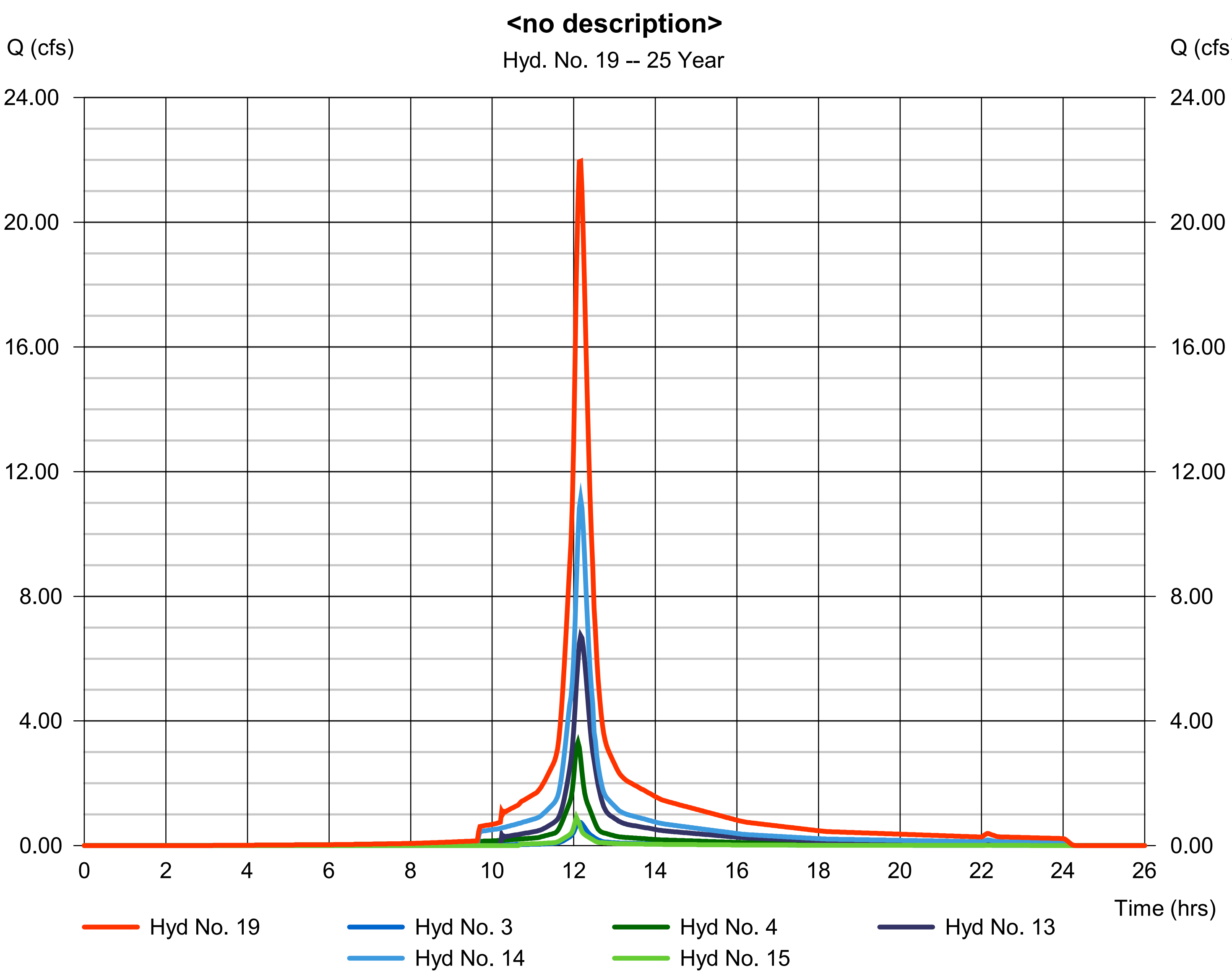
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 19

<no description>

Hydrograph type	= Combine	Peak discharge	= 21.96 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 84,390 cuft
Inflow hyds.	= 3, 4, 13, 14, 15	Contrib. drain. area	= 0.776 ac



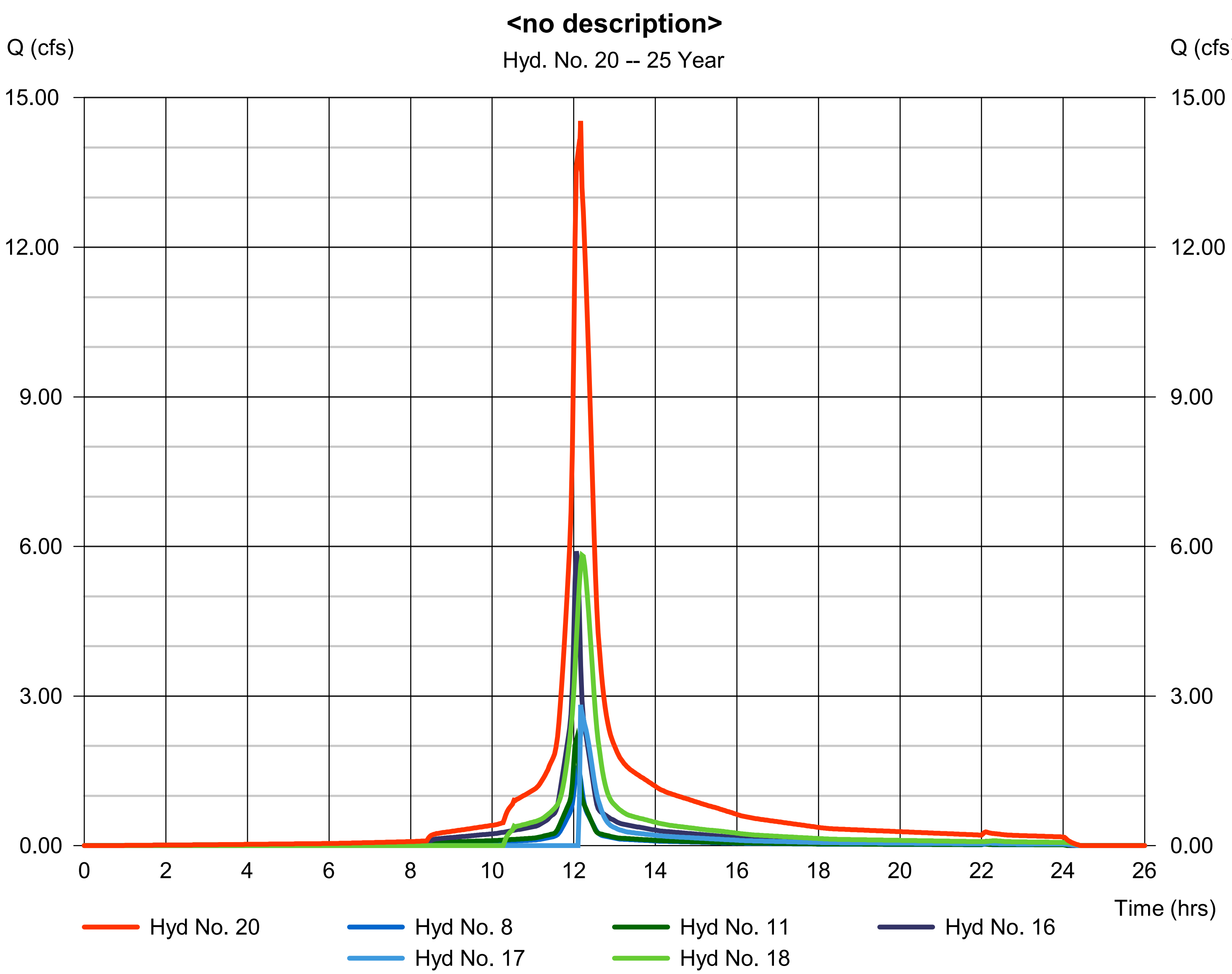
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 20

<no description>

Hydrograph type	= Combine	Peak discharge	= 14.53 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 62,704 cuft
Inflow hyds.	= 8, 11, 16, 17, 18	Contrib. drain. area	= 0.625 ac



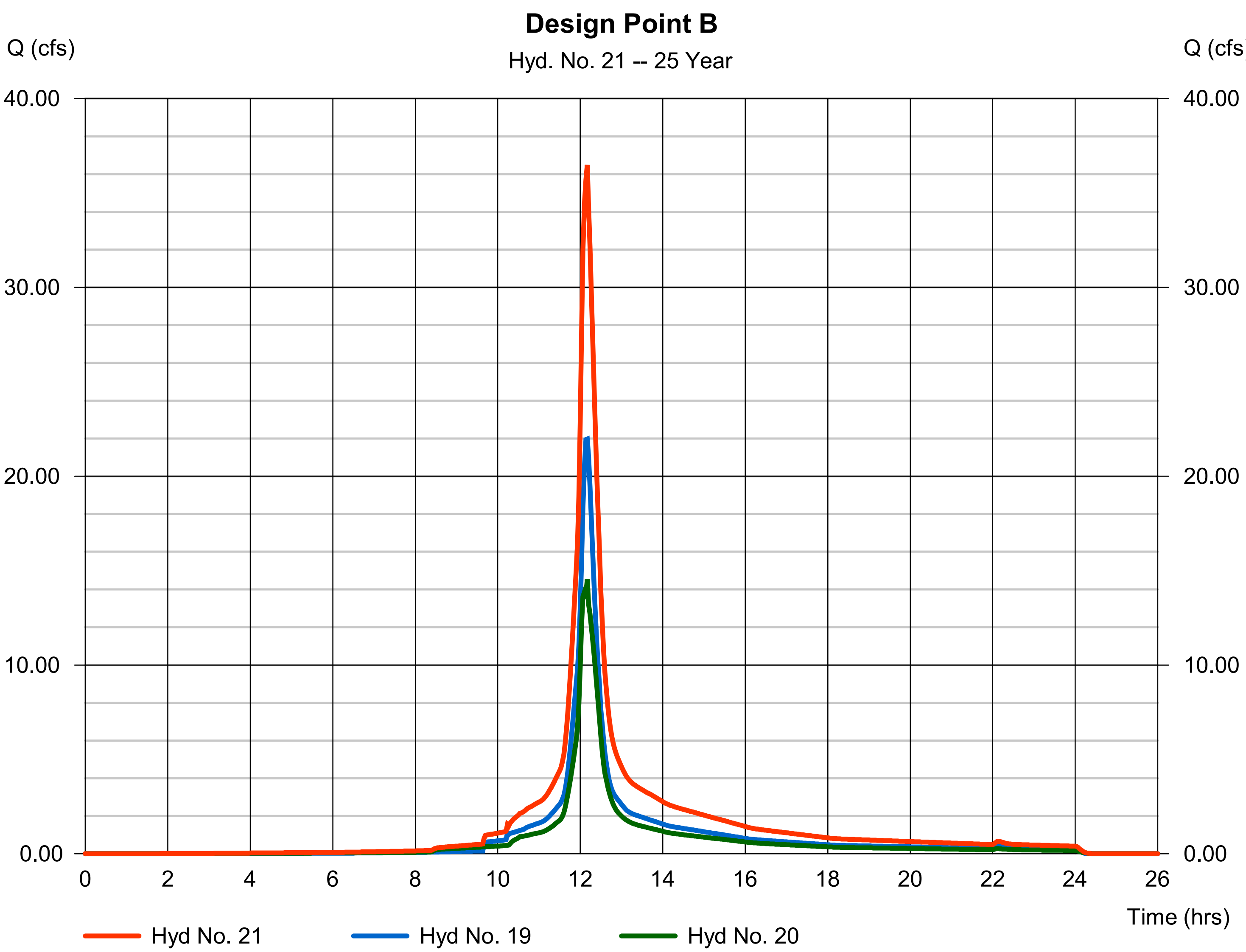
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 21

Design Point B

Hydrograph type	= Combine	Peak discharge	= 36.49 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 147,095 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	5.724	2	732	23,526	------	------	------	EX WS-01
2	SCS Runoff	7.893	2	730	32,844	------	------	------	EX WS-02A
3	SCS Runoff	0.895	2	728	3,454	------	------	------	EX WS-02B
4	SCS Runoff	3.785	2	726	14,087	------	------	------	EX WS-02C
5	SCS Runoff	13.06	2	728	53,326	------	------	------	EX WS-02D
6	SCS Runoff	1.015	2	724	3,444	------	------	------	EX WS-02E
7	SCS Runoff	6.897	2	724	22,653	------	------	------	EX WS-02F
8	SCS Runoff	1.793	2	726	6,613	------	------	------	EX WS-02G
9	SCS Runoff	2.913	2	732	13,399	------	------	------	EX WS-02H
10	SCS Runoff	6.727	2	732	31,344	------	------	------	EX WS-02I
11	SCS Runoff	2.404	2	724	8,370	------	------	------	EX WS-02J
12	SCS Runoff	0.408	2	730	1,611	------	------	------	EX WS-03
13	Reservoir	7.874	2	730	30,622	2	143.65	1,544	36 INCH PIPE (#1)
14	Reservoir	12.78	2	730	48,298	5	139.20	4,033	TWIN 36IN PIPES (#2)
15	Reservoir	1.042	2	724	2,790	6	139.65	503	24 INCH PIPE
16	Reservoir	6.741	2	724	21,127	7	139.53	1,370	36 INCH PIPE (#2)
17	Reservoir	2.899	2	732	9,505	9	137.50	3,742	36 INCH PIPE (#3)
18	Reservoir	6.701	2	732	28,092	10	135.75	2,500	TWO 36 INCH PIPES
19	Combine	25.35	2	730	99,252	3, 4, 13, 14, 15,	------	------	<no description>
20	Combine	18.18	2	724	73,706	8, 11, 16, 17, 18,	------	------	<no description>
21	Combine	42.76	2	728	172,958	19, 20	------	------	Design Point B

Existing-Hydraflow.gpw	Return Period: 50 Year	Monday, 12 / 4 / 2023

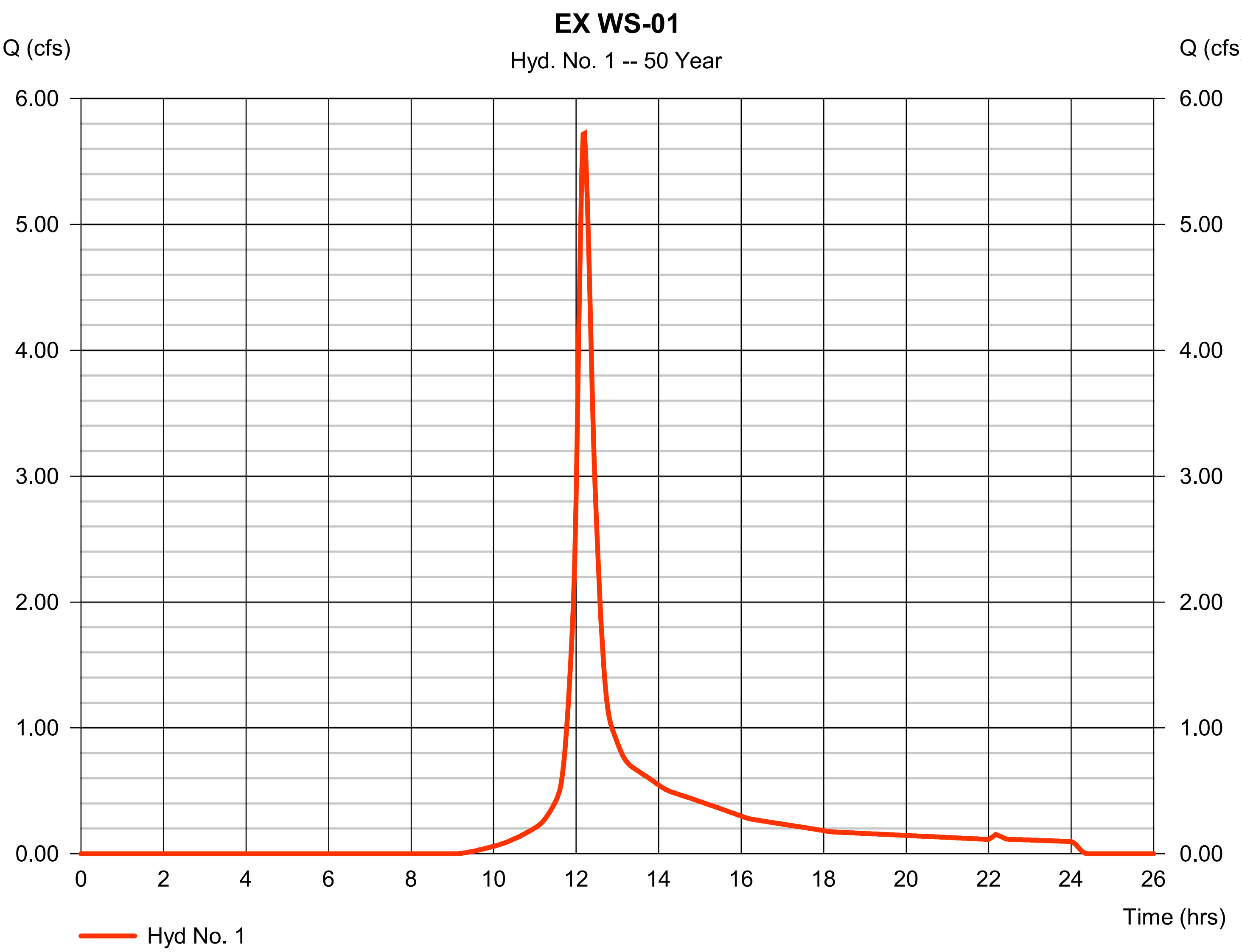
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 1

EX WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 5.724 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 23,526 cuft
Drainage area	= 1.942 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.10 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



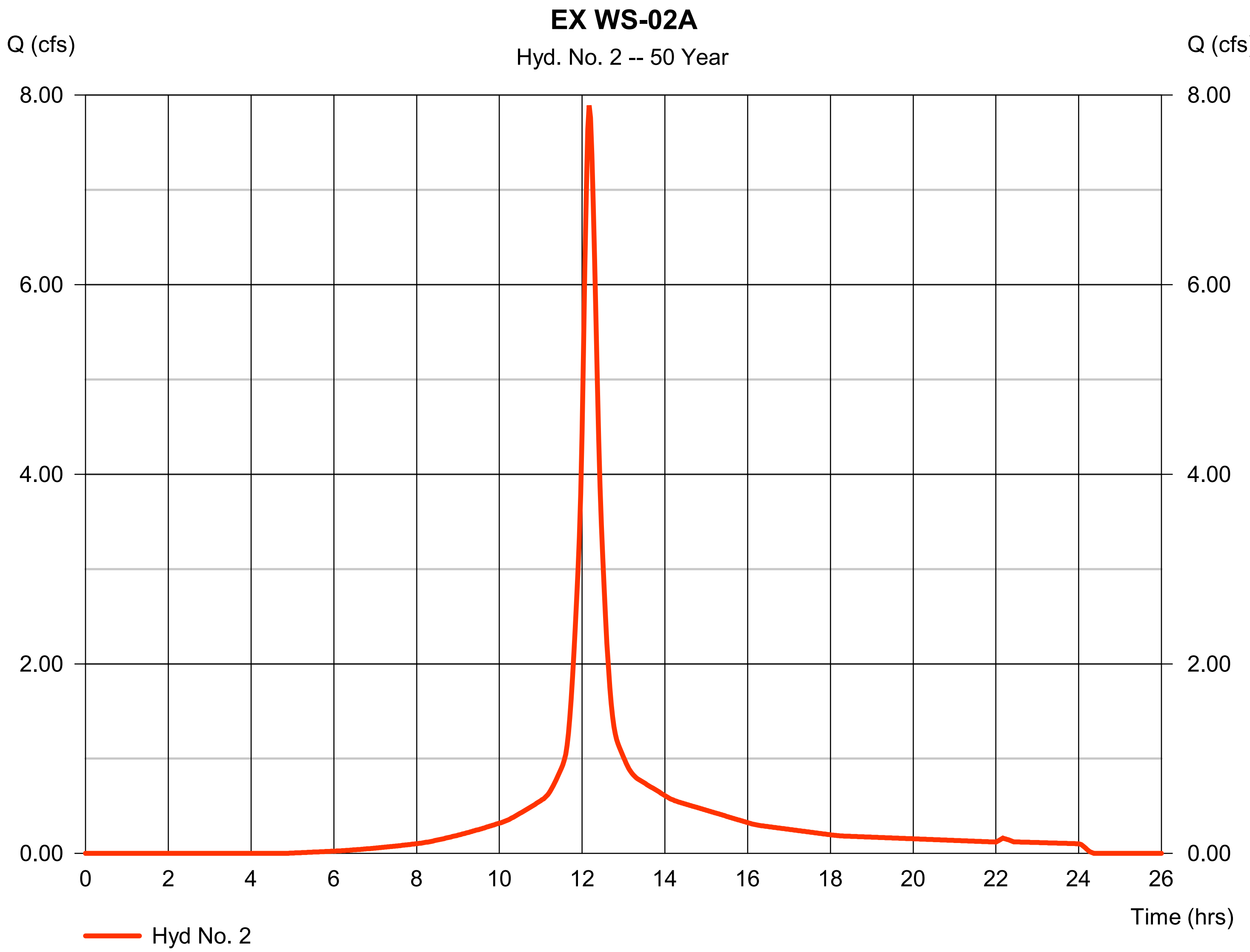
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 2

EX WS-02A

Hydrograph type	= SCS Runoff	Peak discharge	= 7.893 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 32,844 cuft
Drainage area	= 1.678 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.50 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



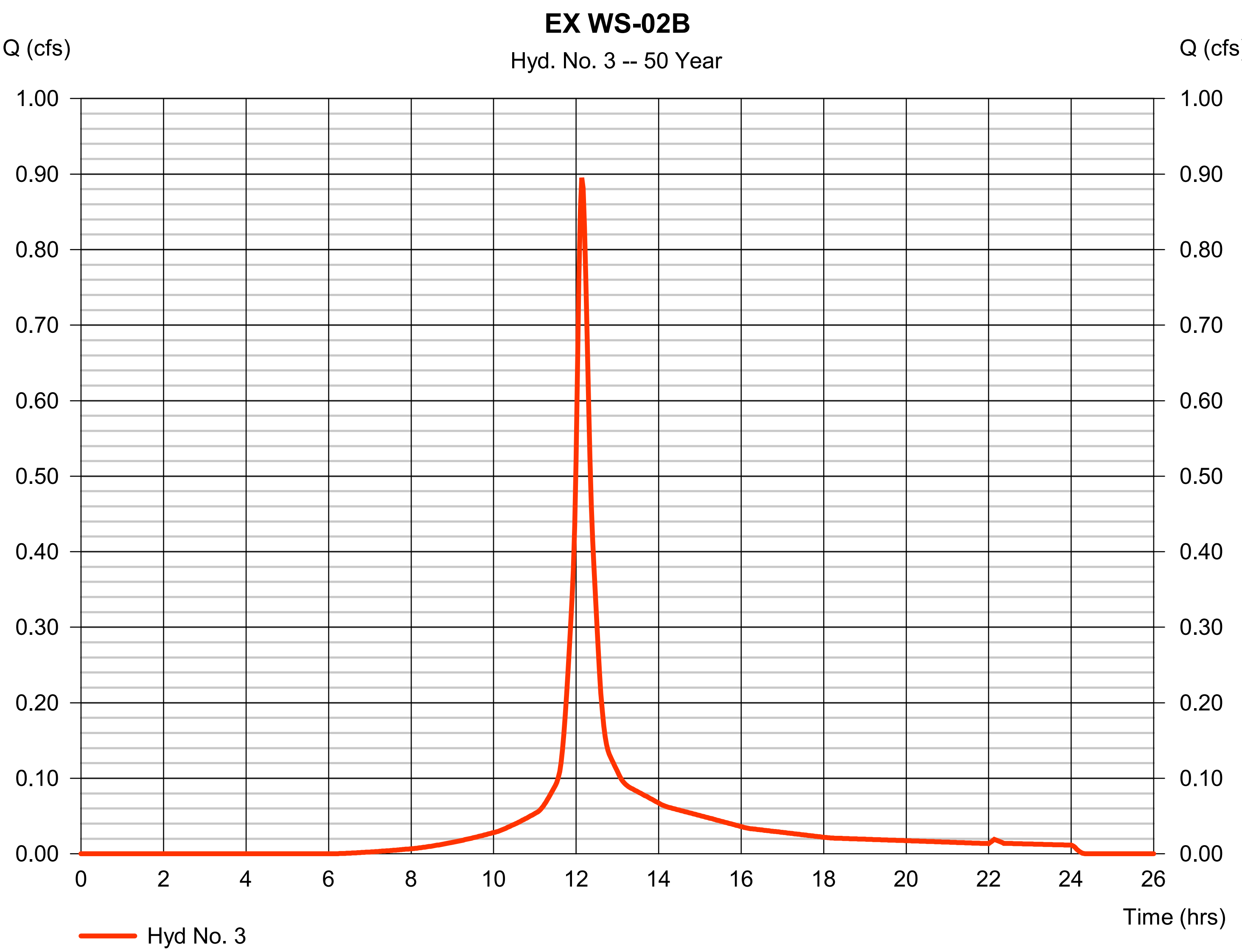
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 3

EX WS-02B

Hydrograph type	= SCS Runoff	Peak discharge	= 0.895 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 3,454 cuft
Drainage area	= 0.186 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



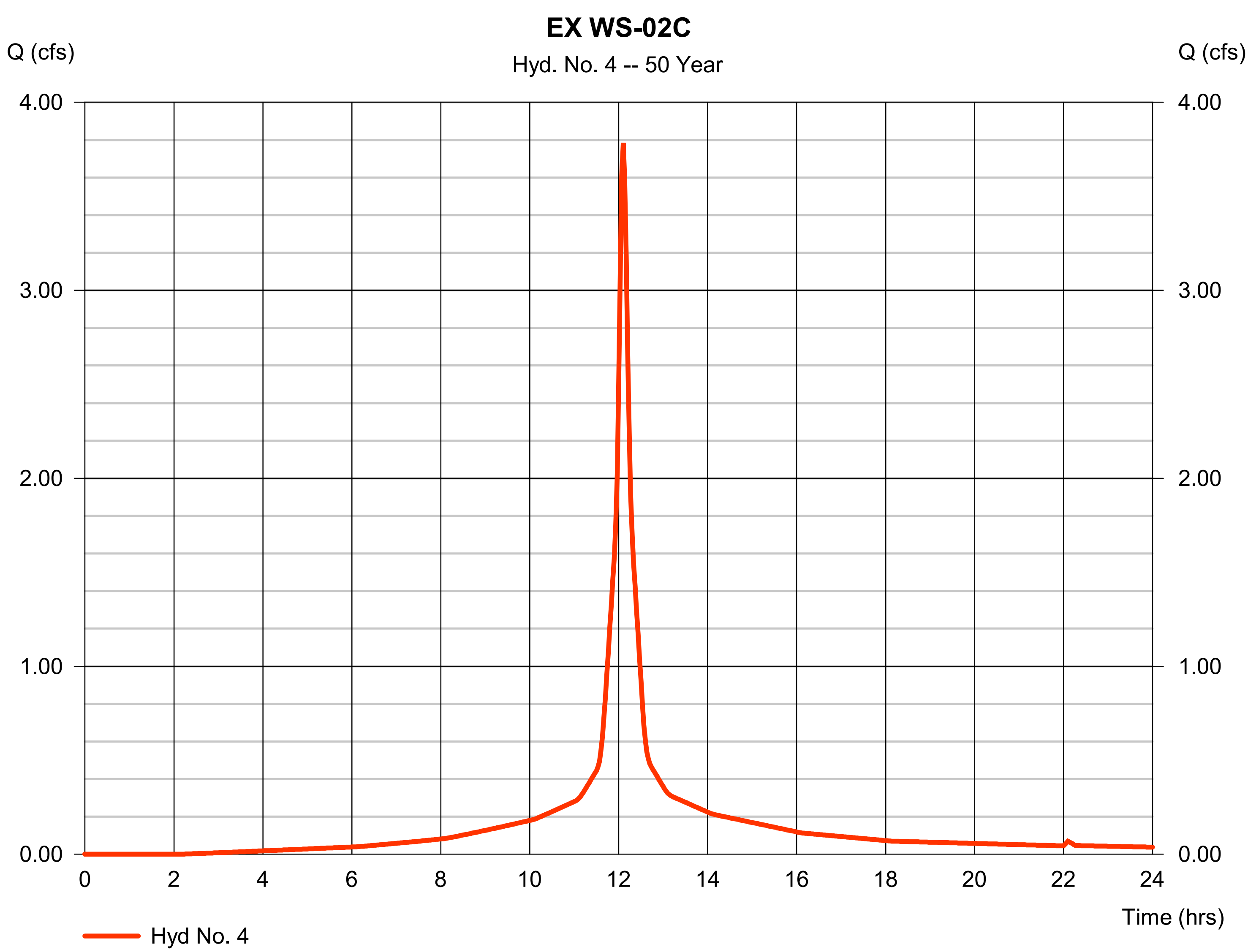
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 4

EX WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.785 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 14,087 cuft
Drainage area	= 0.590 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



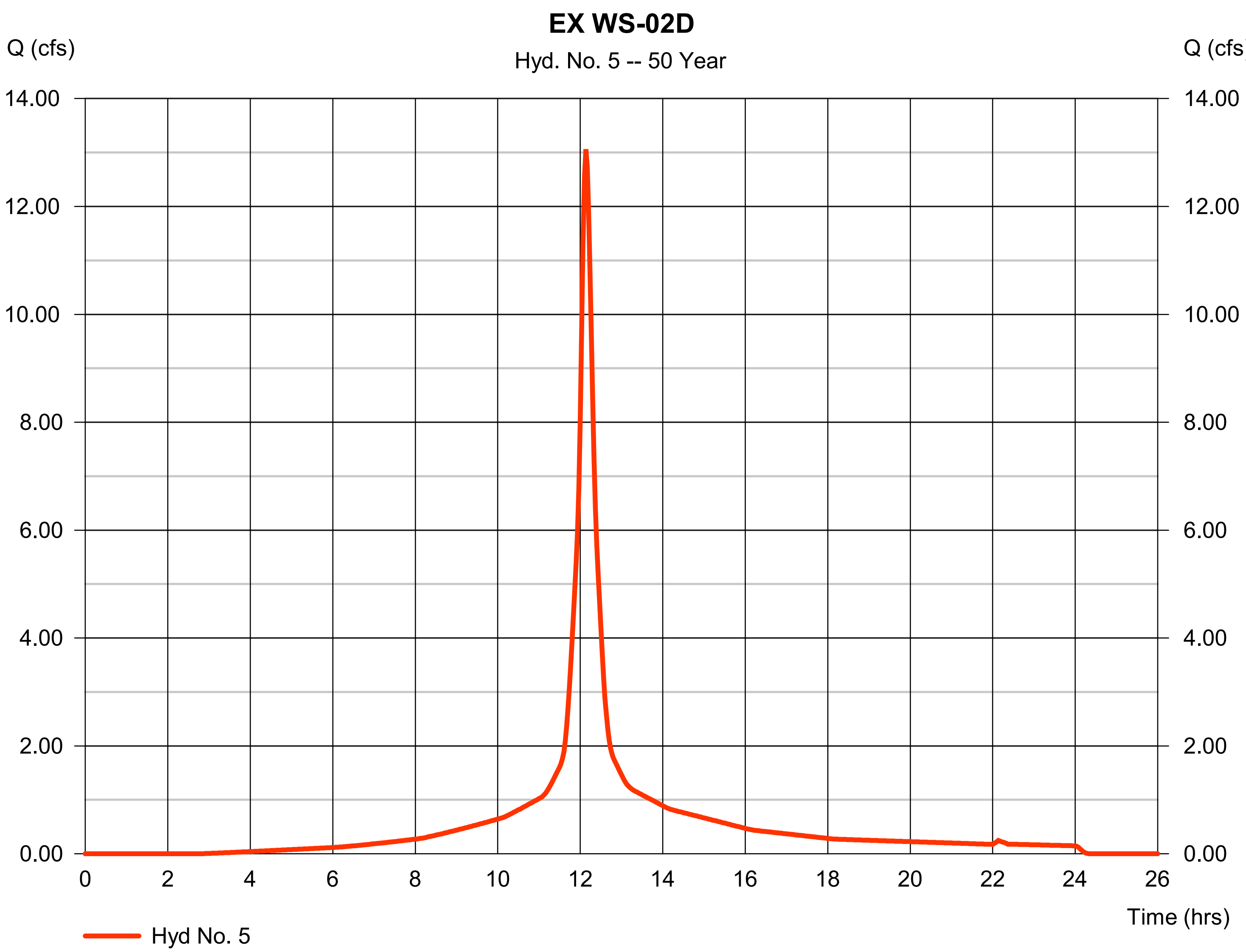
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 5

EX WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 13.06 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 53,326 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



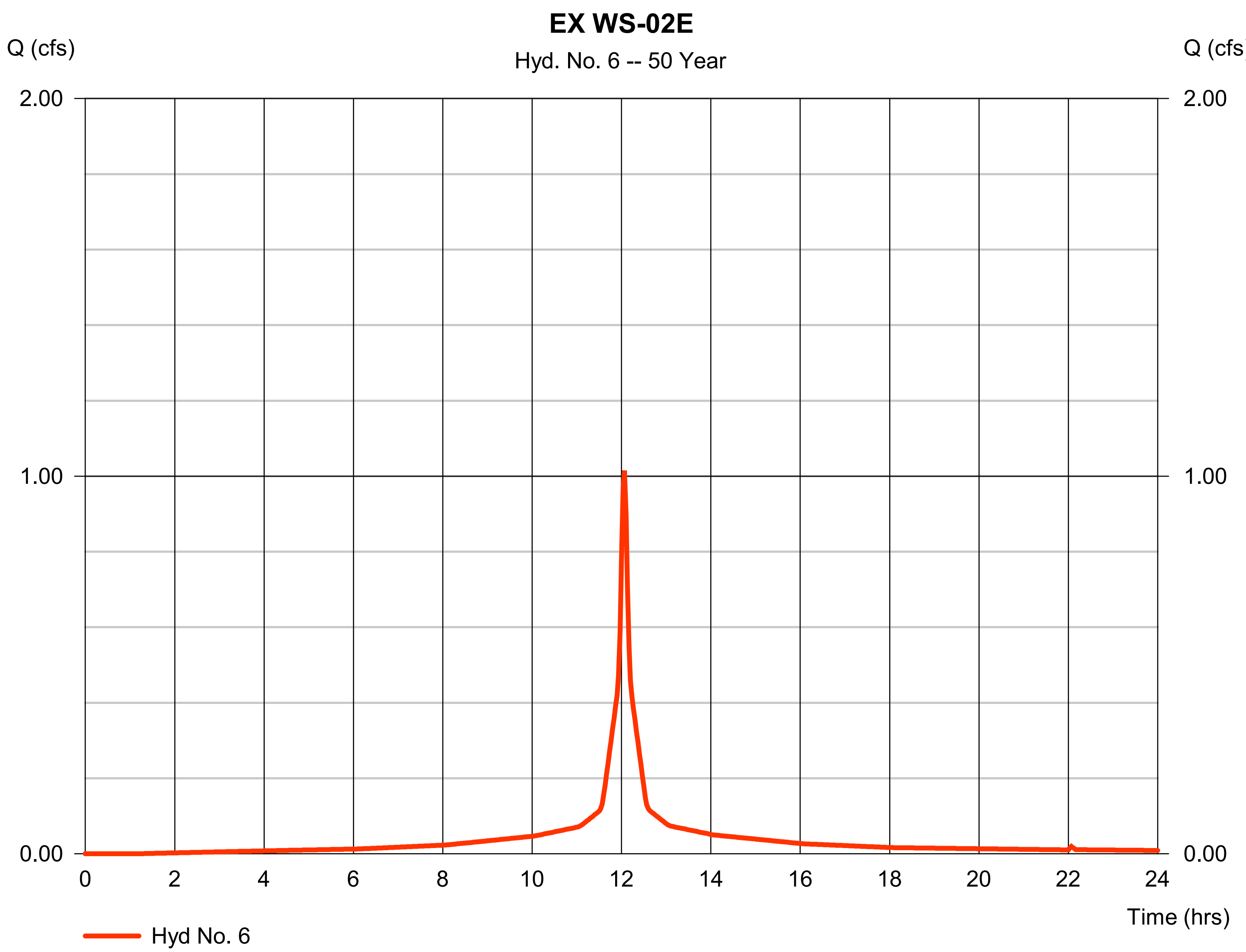
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 6

EX WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 1.015 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,444 cuft
Drainage area	= 0.146 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



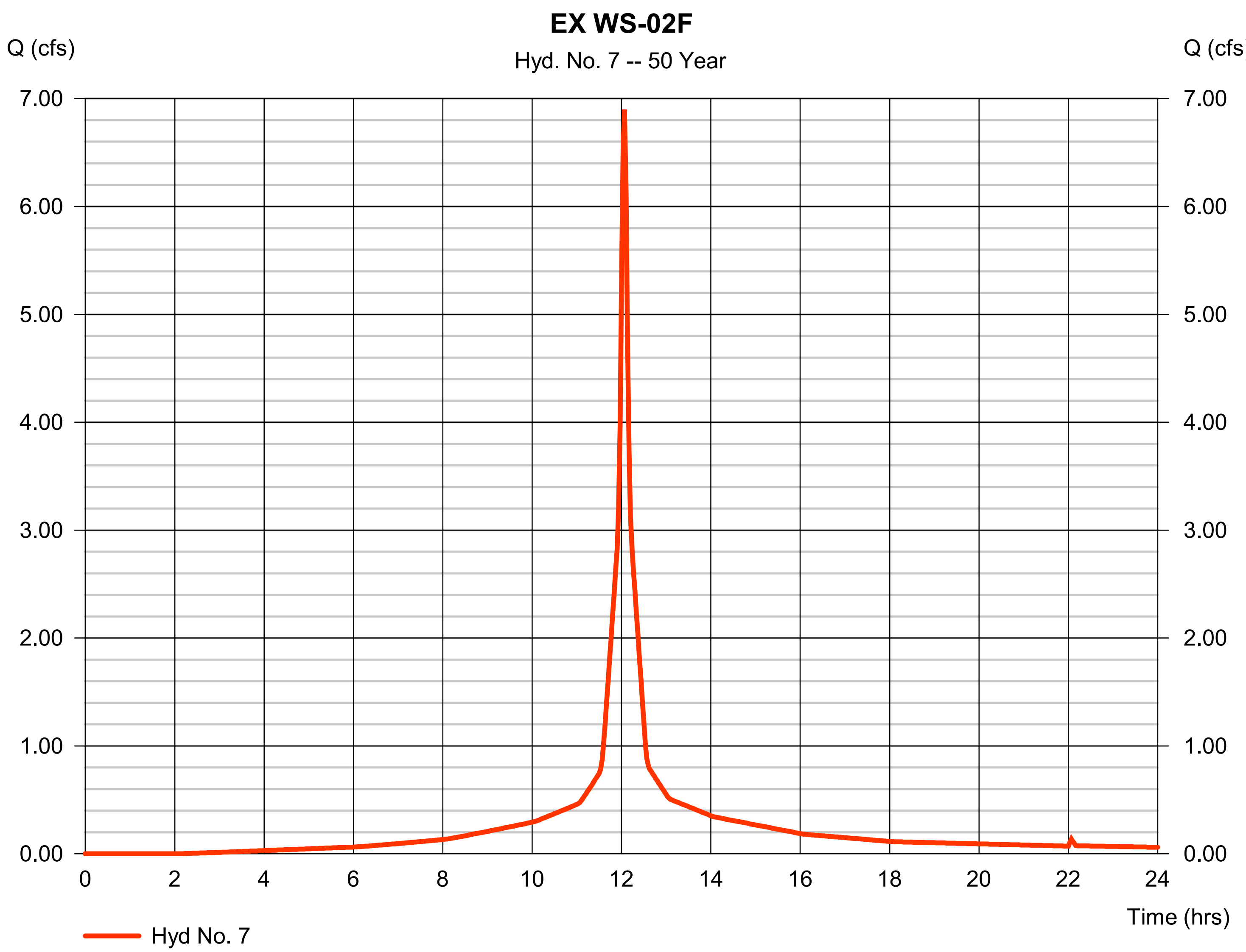
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 7

EX WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 6.897 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 22,653 cuft
Drainage area	= 1.012 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.50 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



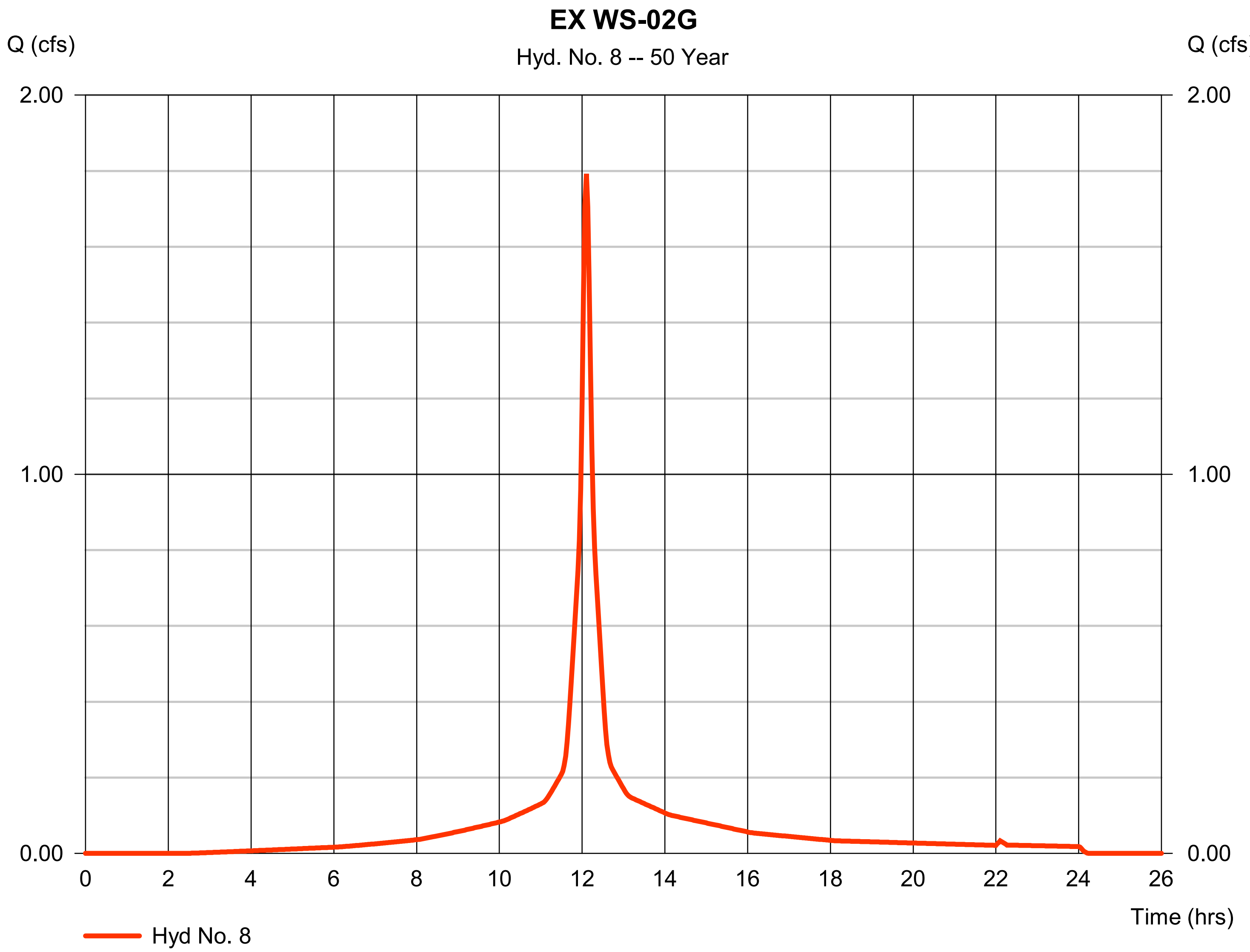
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 8

EX WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 1.793 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 6,613 cuft
Drainage area	= 0.282 ac	Curve number	= 92
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.90 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



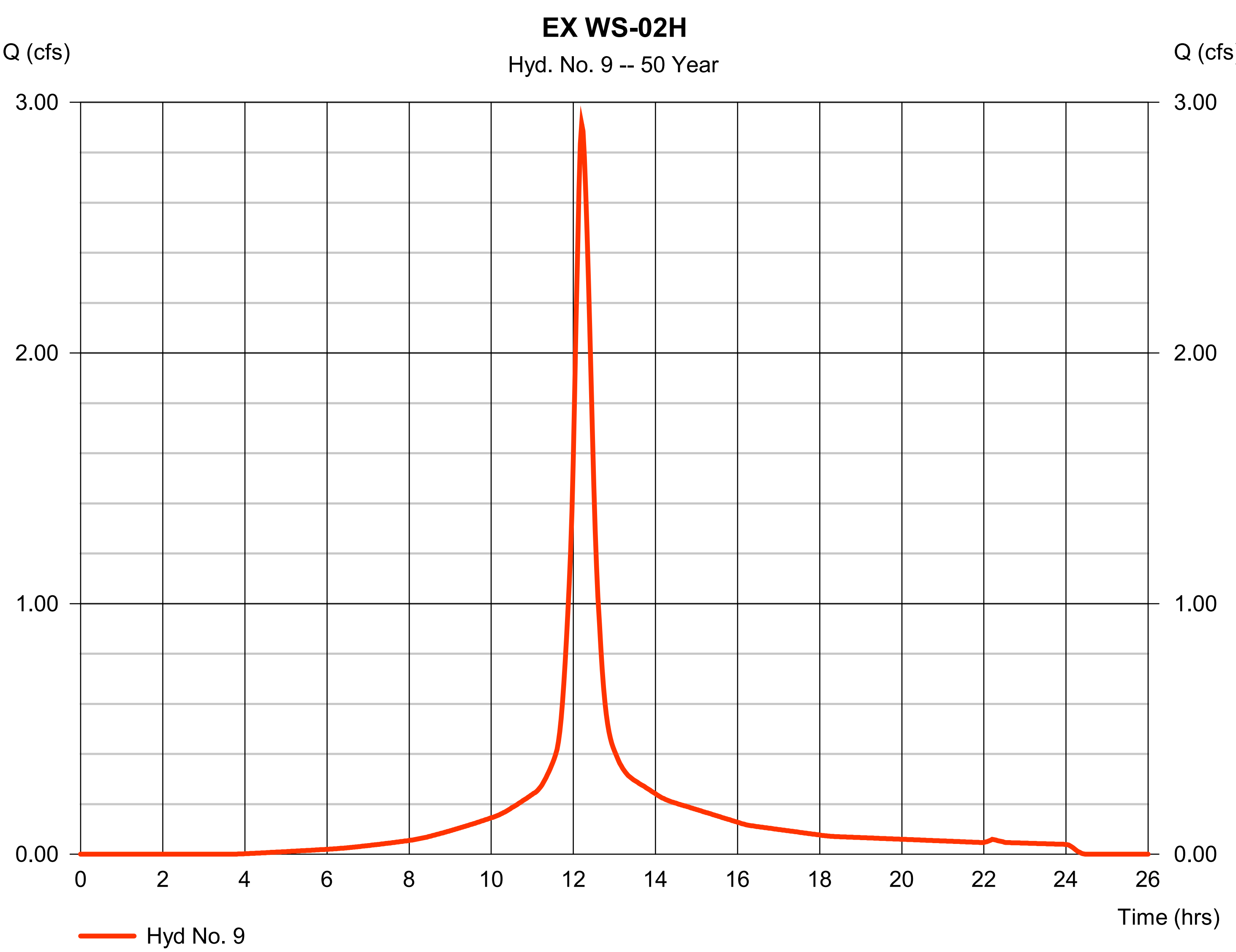
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 9

EX WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 2.913 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 13,399 cuft
Drainage area	= 0.616 ac	Curve number	= 88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.30 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



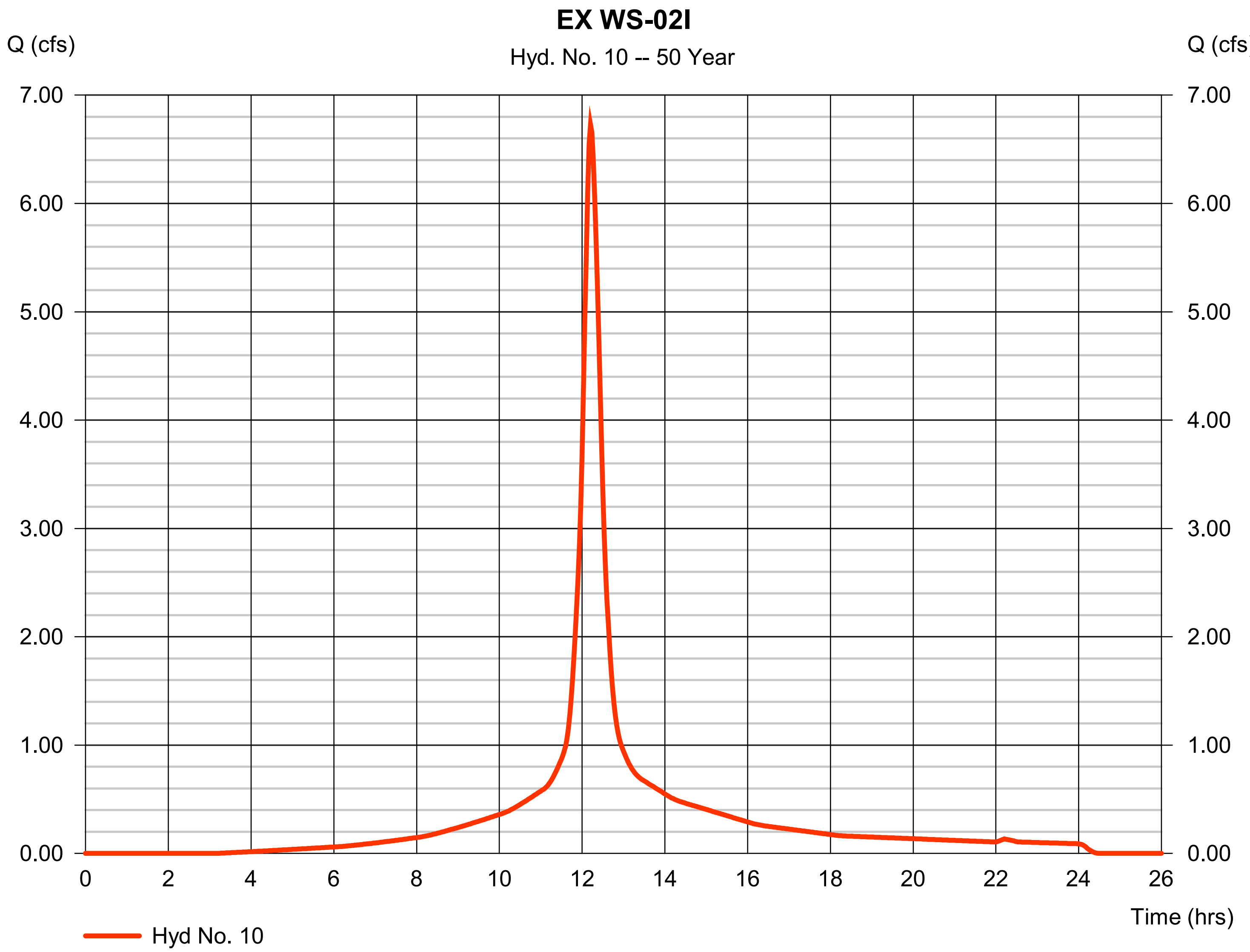
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 10

EX WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 6.727 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 31,344 cuft
Drainage area	= 1.387 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



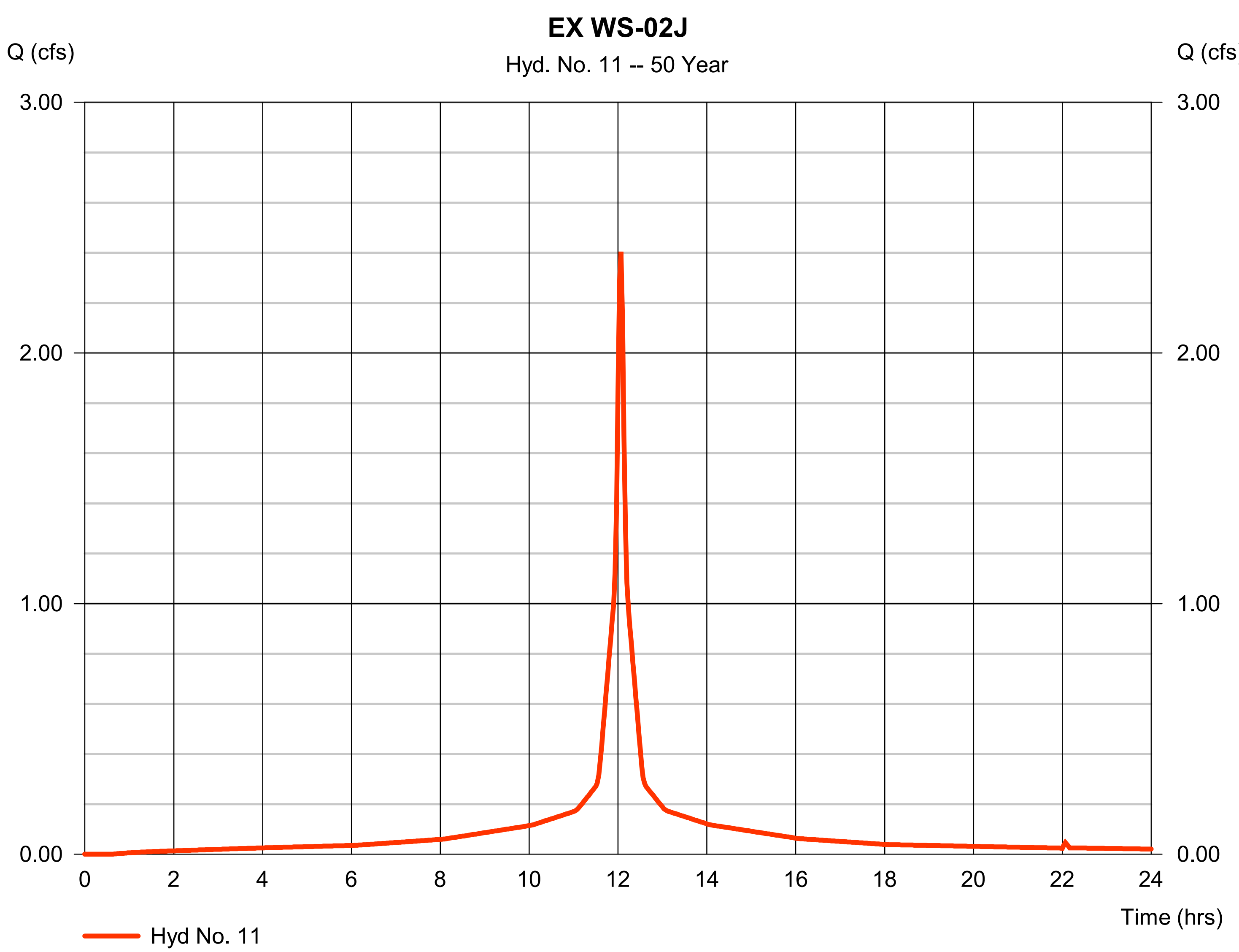
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 11

EX WS-02J

Hydrograph type	= SCS Runoff	Peak discharge	= 2.404 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 8,370 cuft
Drainage area	= 0.343 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



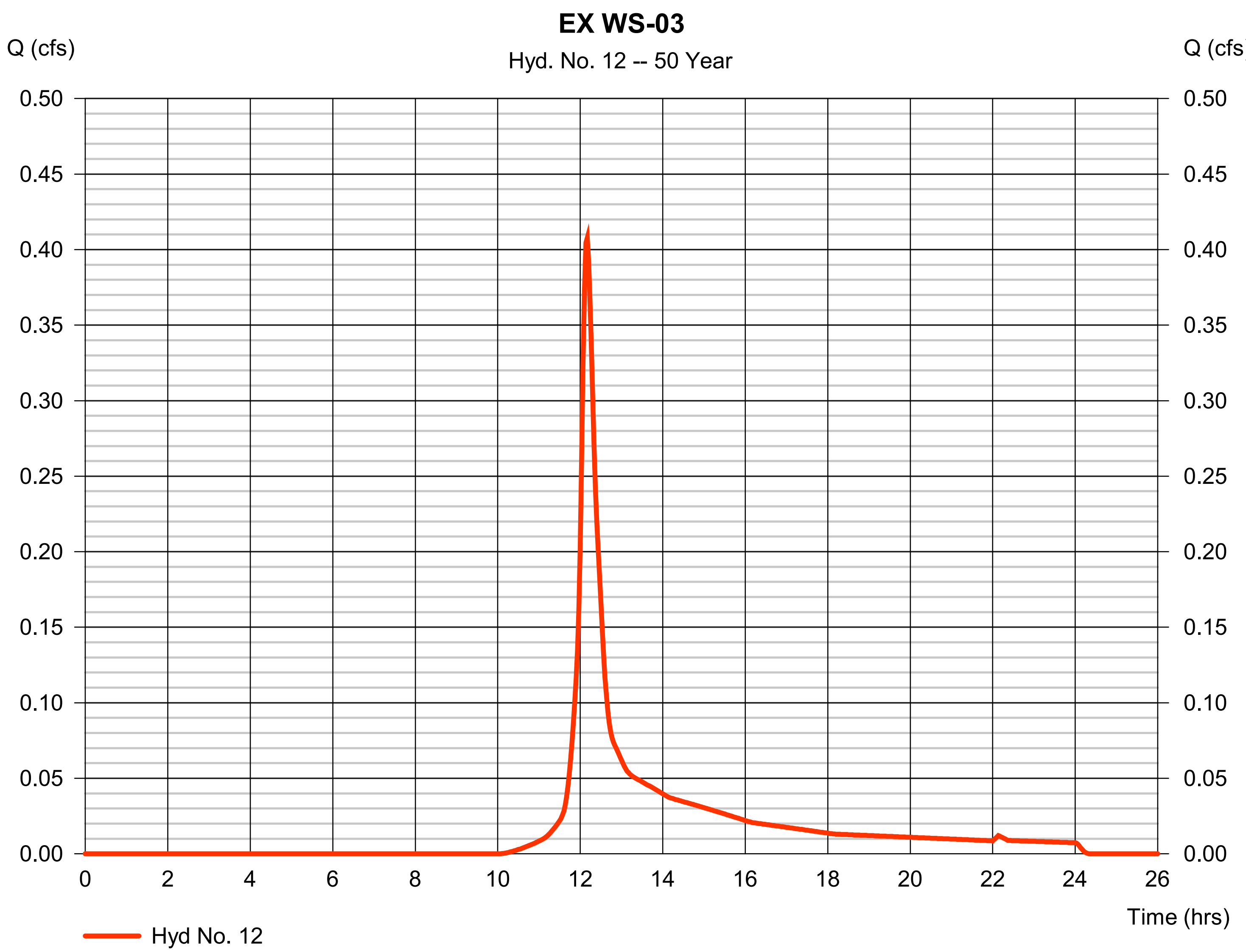
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 12

EX WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.408 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 1,611 cuft
Drainage area	= 0.154 ac	Curve number	= 59
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.50 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

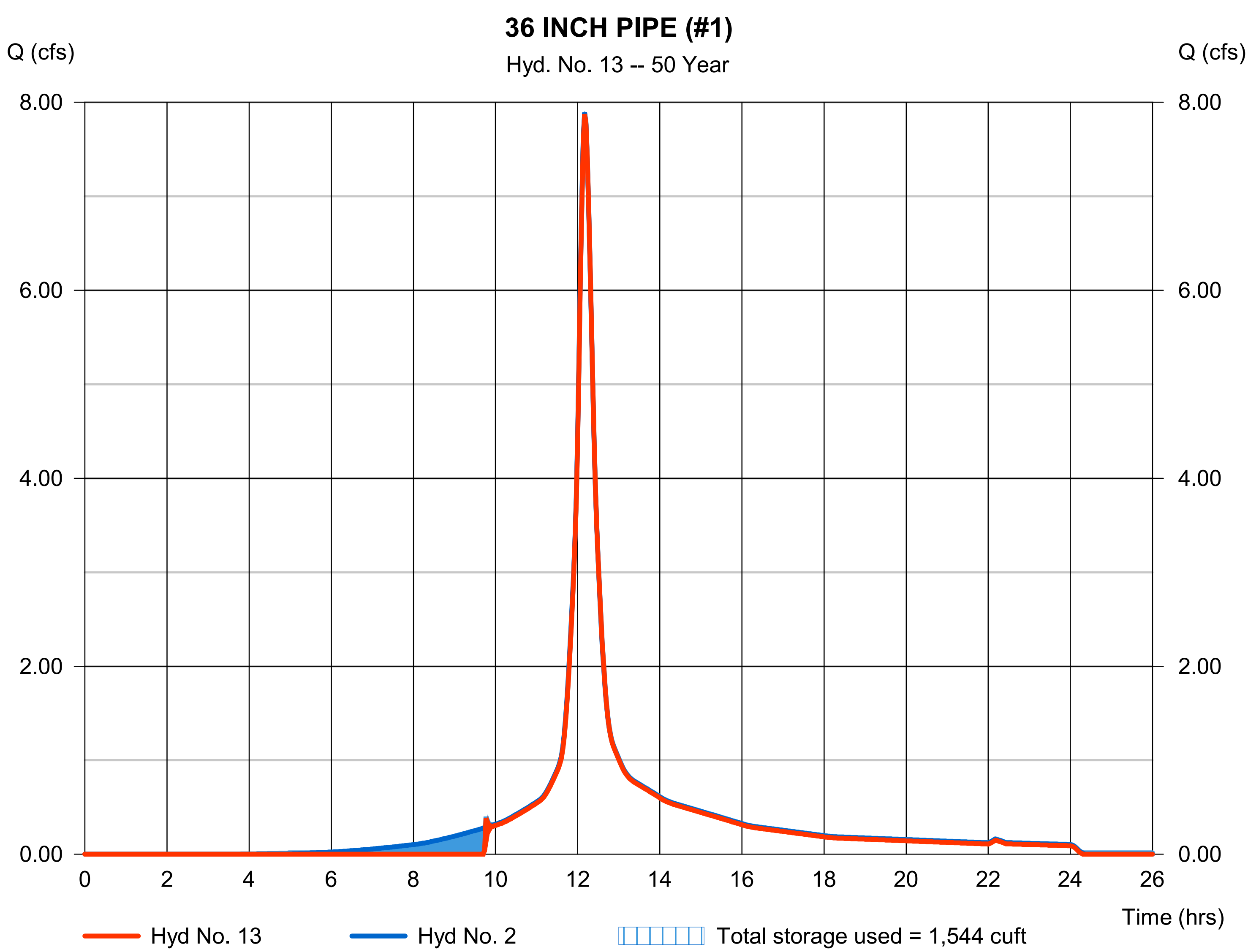
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 13

36 INCH PIPE (#1)

Hydrograph type	= Reservoir	Peak discharge	= 7.874 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 30,622 cuft
Inflow hyd. No.	= 2 - EX WS-02A	Max. Elevation	= 143.65 ft
Reservoir name	= 36IN - 1	Max. Storage	= 1,544 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

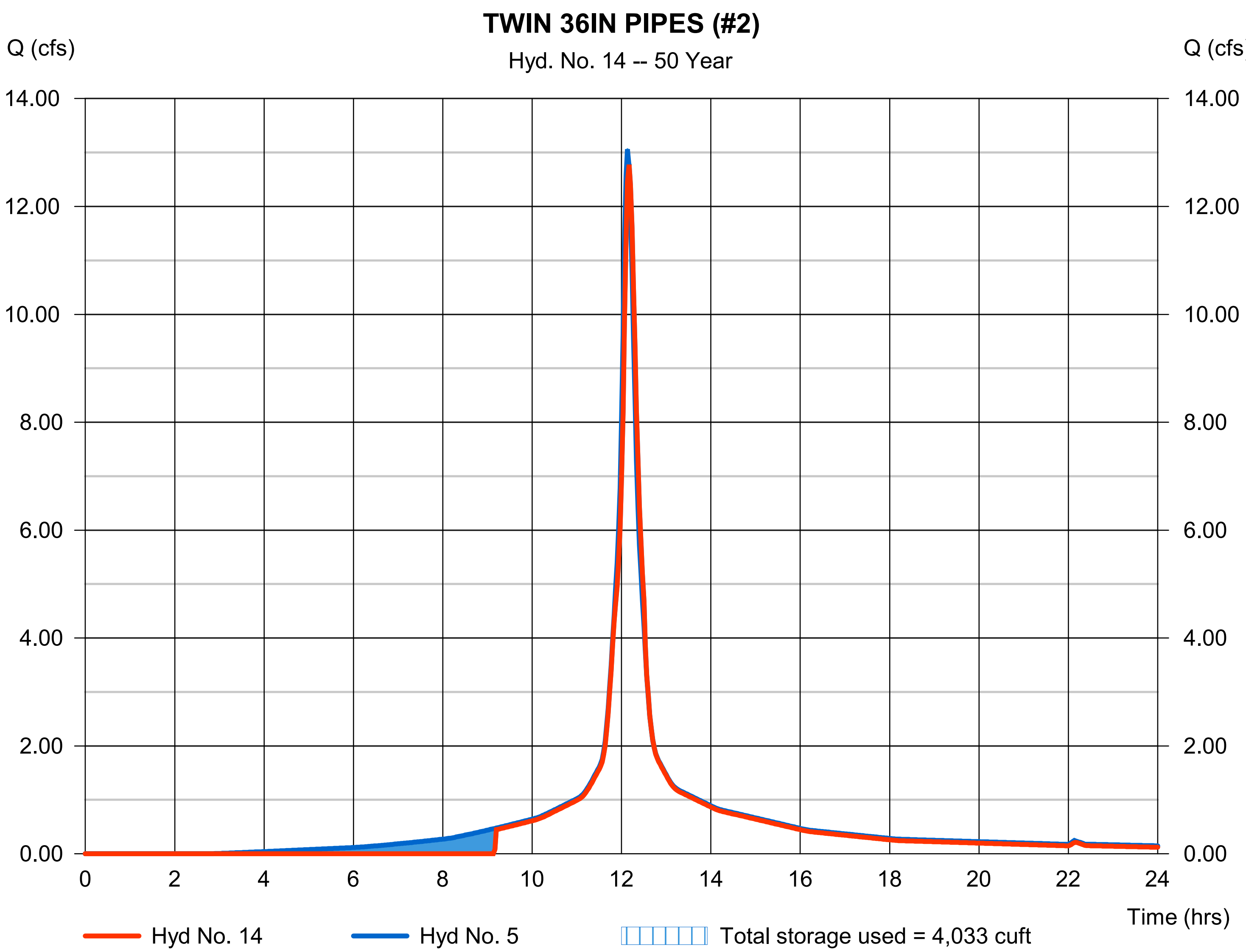
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 14

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 12.78 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 48,298 cuft
Inflow hyd. No.	= 5 - EX WS-02D	Max. Elevation	= 139.20 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 4,033 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

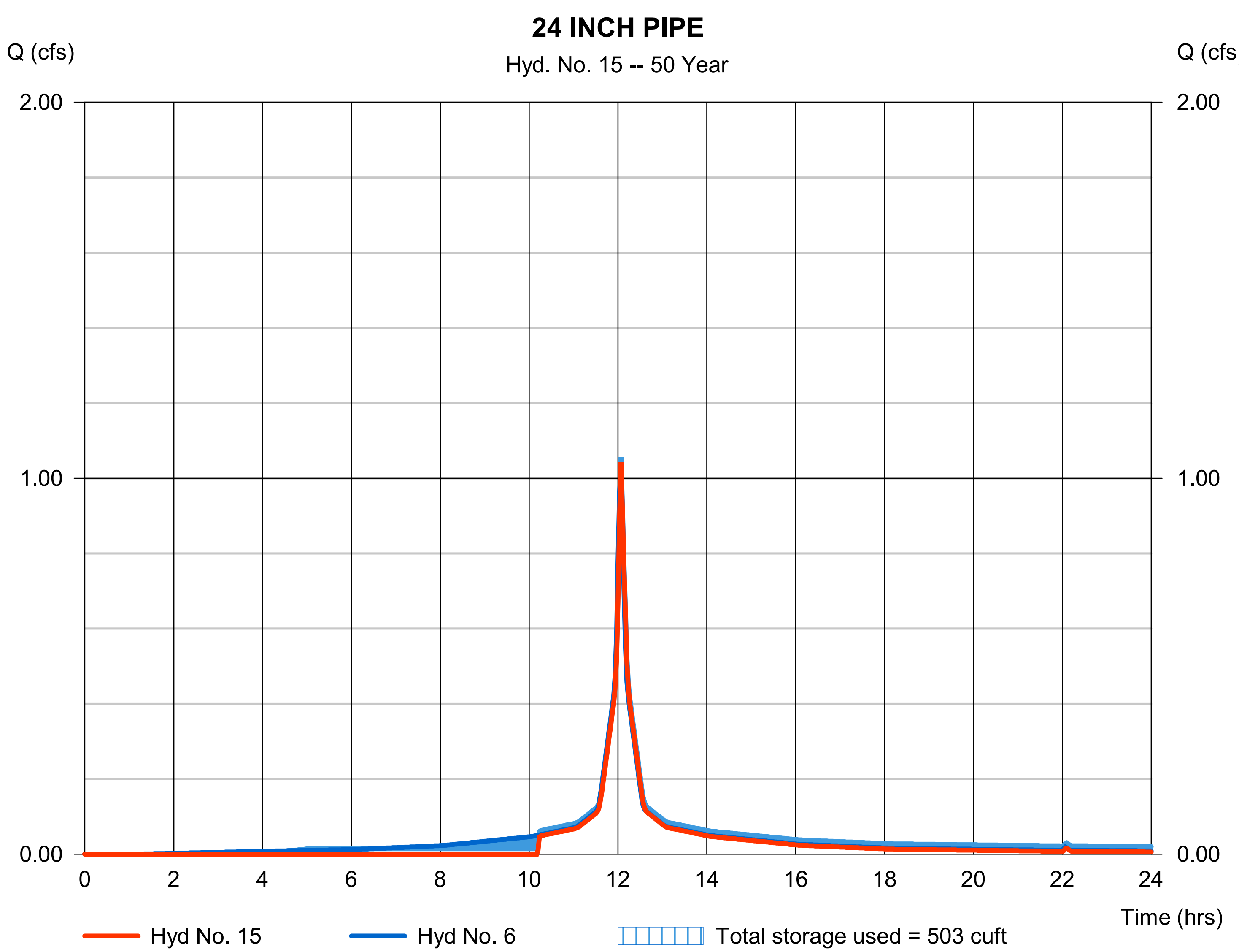
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 15

24 INCH PIPE

Hydrograph type	= Reservoir	Peak discharge	= 1.042 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 2,790 cuft
Inflow hyd. No.	= 6 - EX WS-02E	Max. Elevation	= 139.65 ft
Reservoir name	= 24IN	Max. Storage	= 503 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

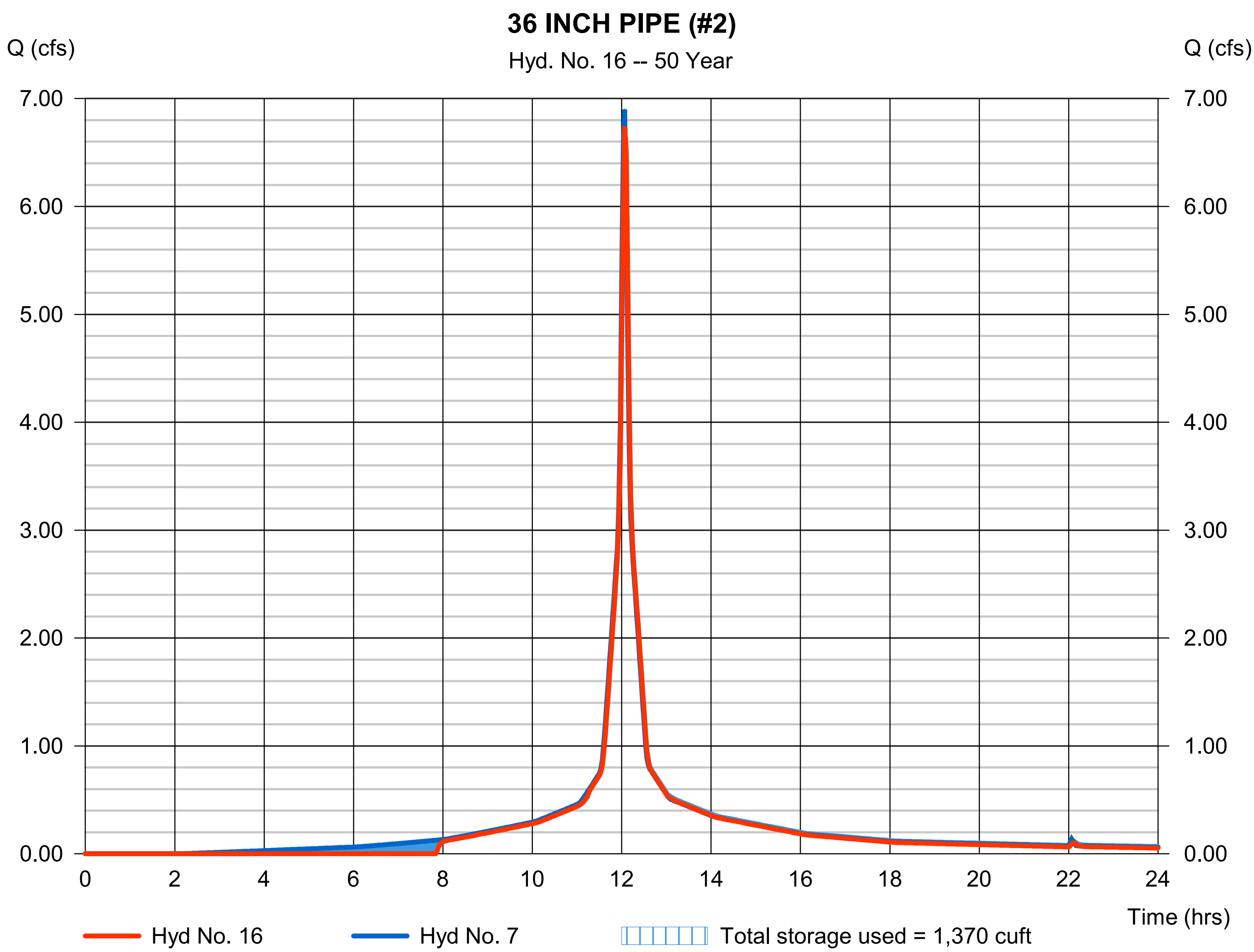
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 16

36 INCH PIPE (#2)

Hydrograph type	= Reservoir	Peak discharge	= 6.741 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 21,127 cuft
Inflow hyd. No.	= 7 - EX WS-02F	Max. Elevation	= 139.53 ft
Reservoir name	= 36in - 2	Max. Storage	= 1,370 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

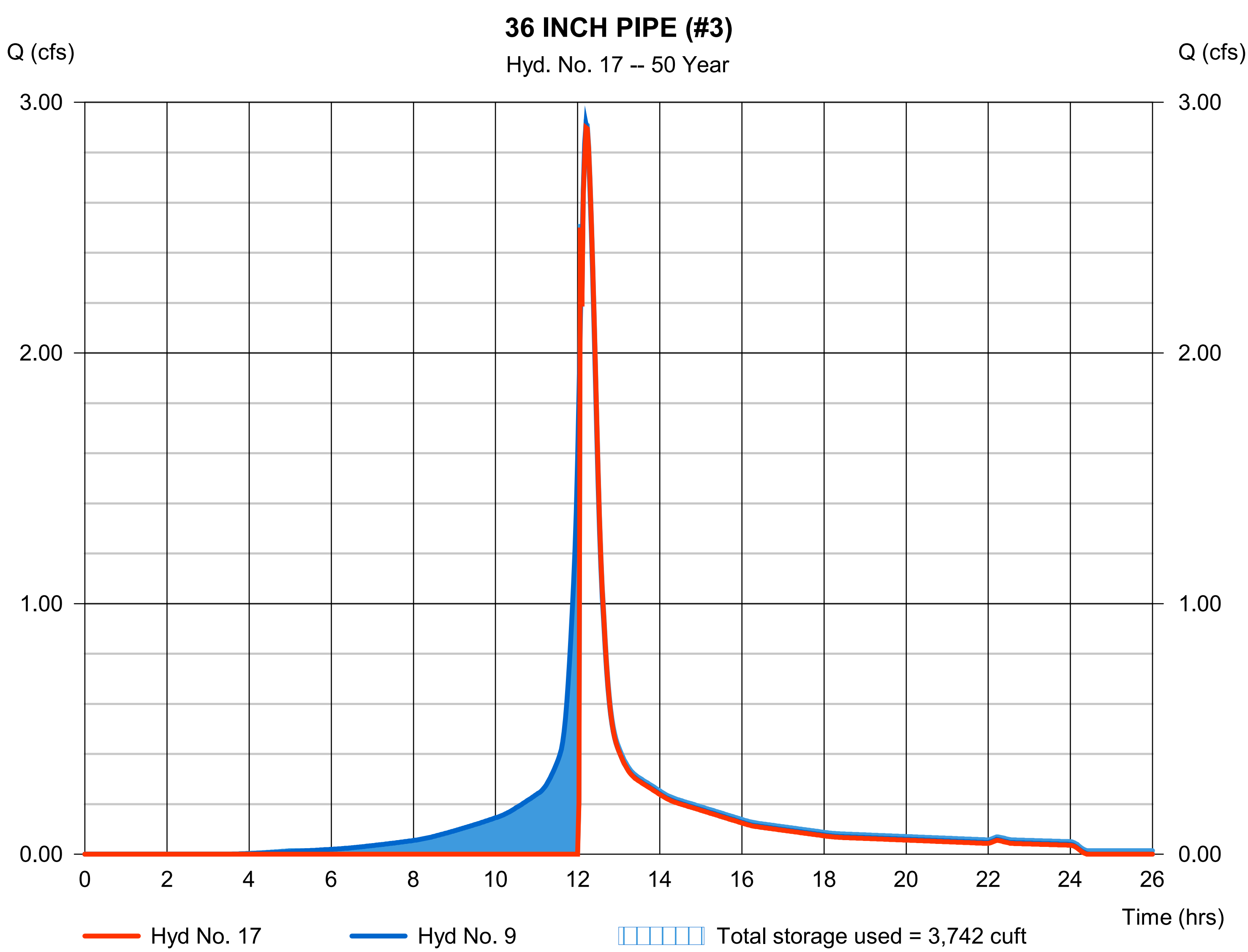
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 17

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 2.899 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 9,505 cuft
Inflow hyd. No.	= 9 - EX WS-02H	Max. Elevation	= 137.50 ft
Reservoir name	= 36in - 3	Max. Storage	= 3,742 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

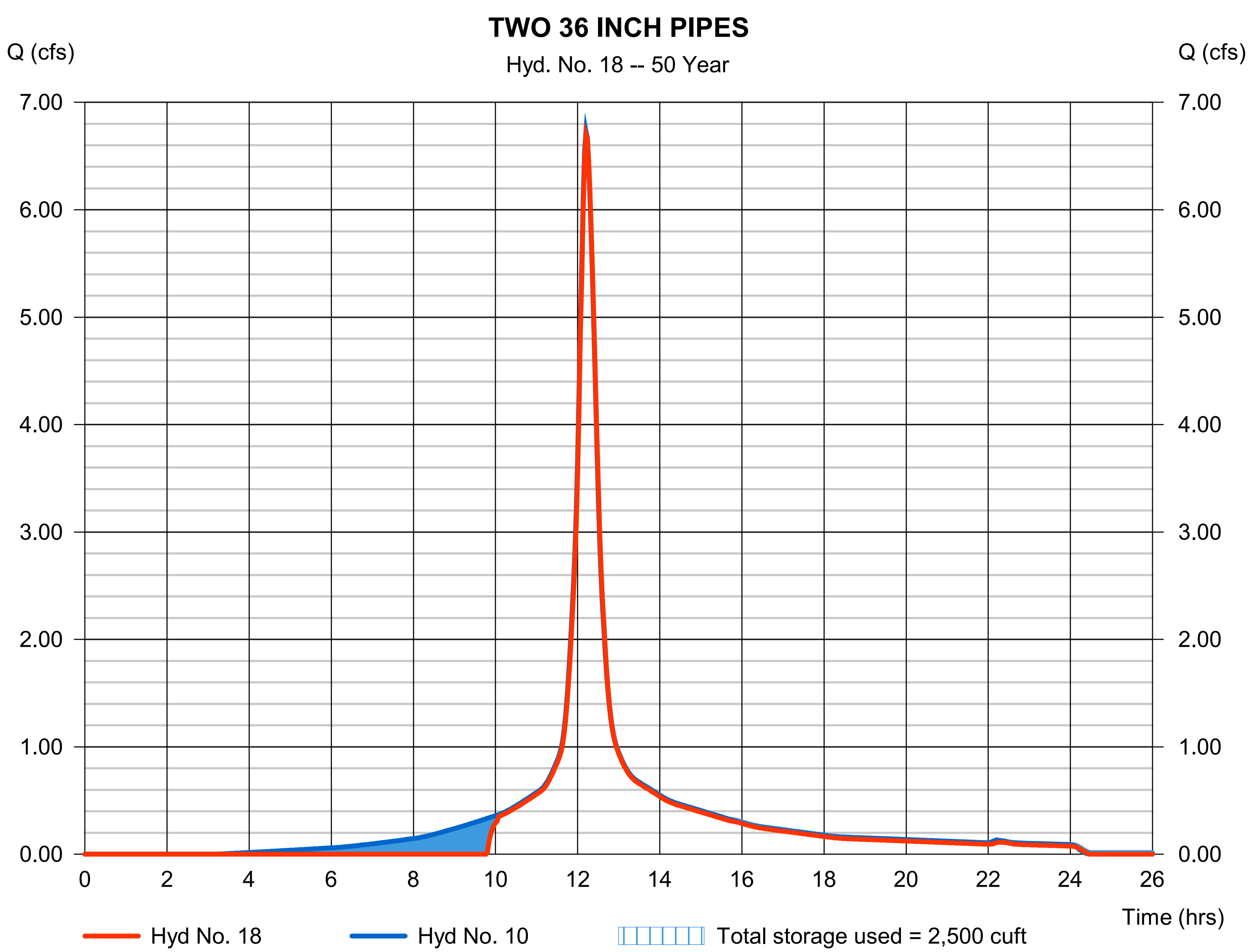
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 18

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 6.701 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 28,092 cuft
Inflow hyd. No.	= 10 - EX WS-02I	Max. Elevation	= 135.75 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,500 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



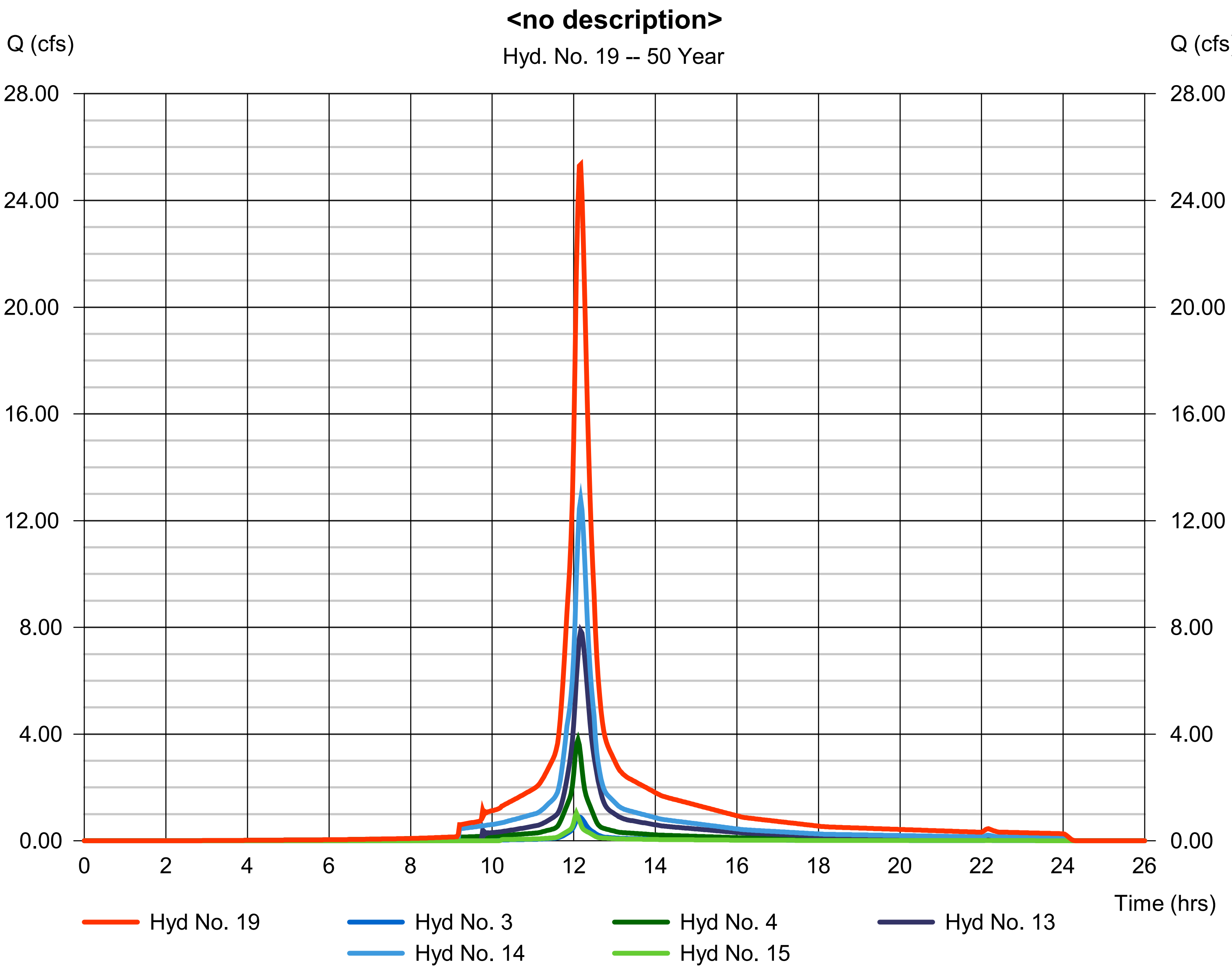
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 19

<no description>

Hydrograph type	= Combine	Peak discharge	= 25.35 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 99,252 cuft
Inflow hyds.	= 3, 4, 13, 14, 15	Contrib. drain. area	= 0.776 ac



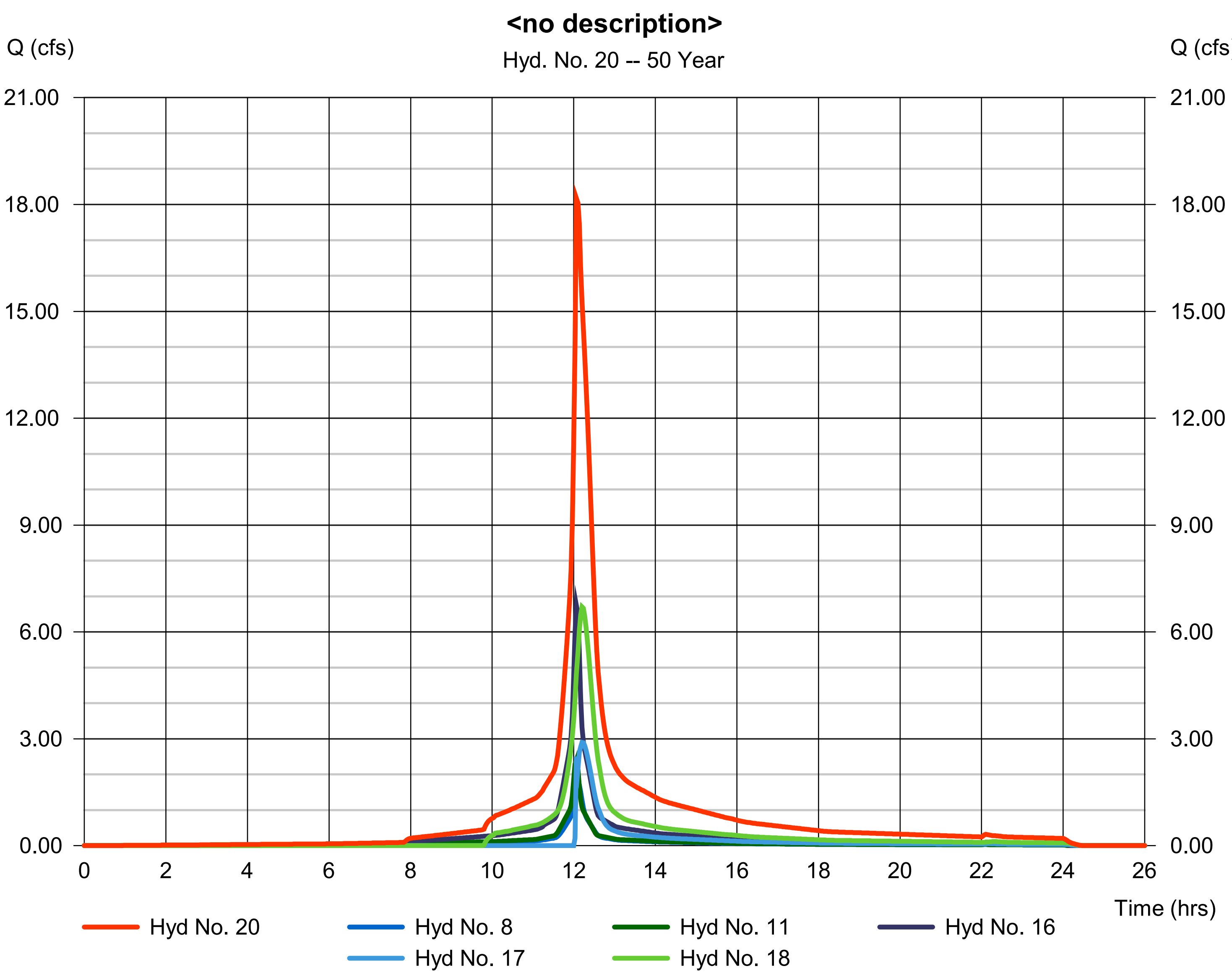
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 20

<no description>

Hydrograph type	= Combine	Peak discharge	= 18.18 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 73,706 cuft
Inflow hyds.	= 8, 11, 16, 17, 18	Contrib. drain. area	= 0.625 ac



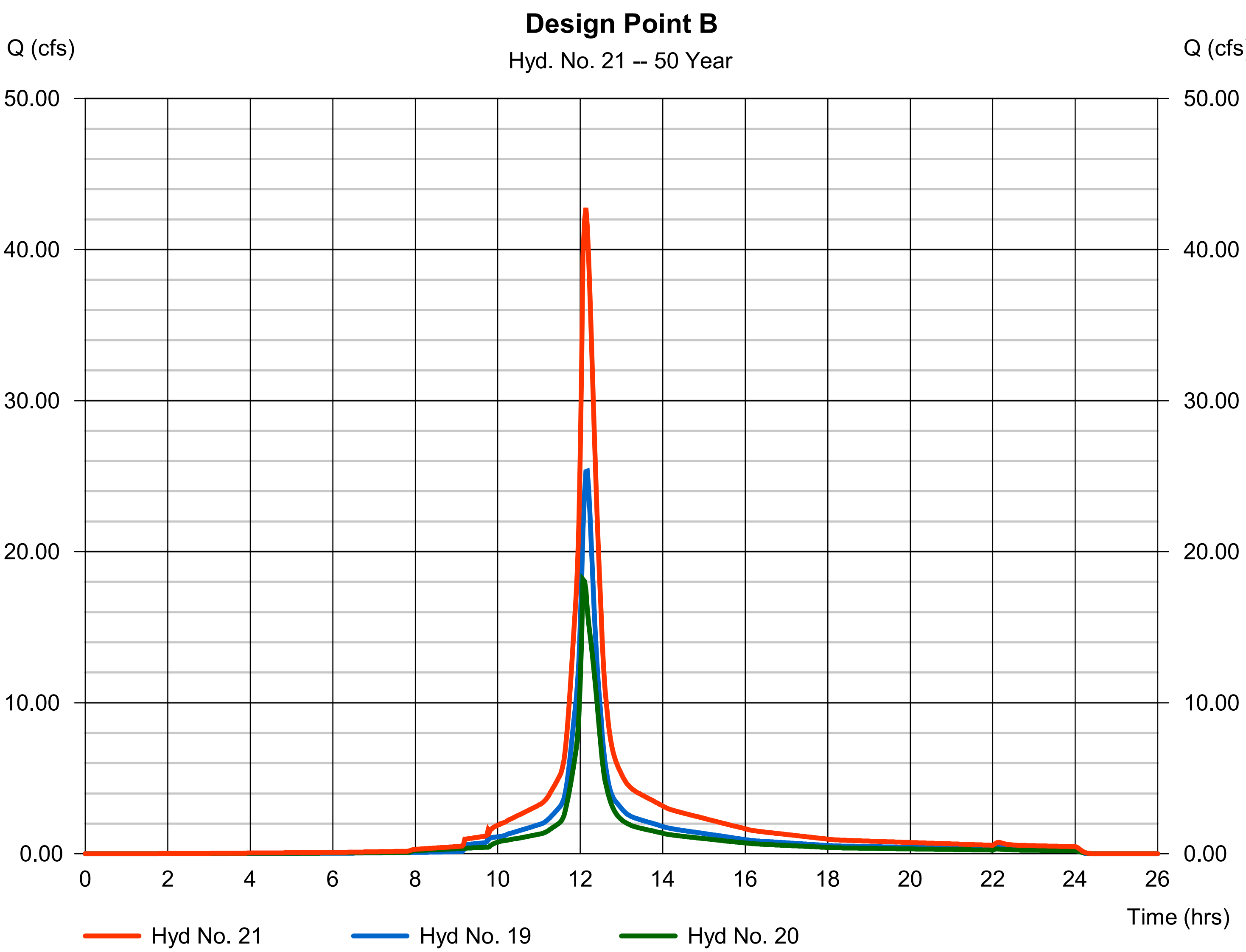
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 21

Design Point B

Hydrograph type	= Combine	Peak discharge	= 42.76 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 172,958 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	7.011	2	730	28,668	------	------	------	EX WS-01
2	SCS Runoff	9.103	2	730	38,140	------	------	------	EX WS-02A
3	SCS Runoff	1.046	2	728	4,056	------	------	------	EX WS-02B
4	SCS Runoff	4.285	2	726	16,063	------	------	------	EX WS-02C
5	SCS Runoff	14.84	2	728	61,043	------	------	------	EX WS-02D
6	SCS Runoff	1.145	2	724	3,905	------	------	------	EX WS-02E
7	SCS Runoff	7.807	2	724	25,830	------	------	------	EX WS-02F
8	SCS Runoff	2.033	2	726	7,555	------	------	------	EX WS-02G
9	SCS Runoff	3.330	2	732	15,431	------	------	------	EX WS-02H
10	SCS Runoff	7.659	2	732	35,951	------	------	------	EX WS-02I
11	SCS Runoff	2.707	2	724	9,455	------	------	------	EX WS-02J
12	SCS Runoff	0.513	2	730	2,003	------	------	------	EX WS-03
13	Reservoir	8.866	2	732	35,896	2	143.74	1,590	36 INCH PIPE (#1)
14	Reservoir	14.56	2	730	55,977	5	139.24	4,189	TWIN 36IN PIPES (#2)
15	Reservoir	1.129	2	724	3,248	6	139.65	504	24 INCH PIPE
16	Reservoir	7.332	2	726	24,295	7	139.57	1,442	36 INCH PIPE (#2)
17	Reservoir	3.311	2	732	11,531	9	137.50	3,755	36 INCH PIPE (#3)
18	Reservoir	7.629	2	732	32,678	10	135.77	2,518	TWO 36 INCH PIPES
19	Combine	28.95	2	728	115,241	3, 4, 13, 14, 15,	------	------	<no description>
20	Combine	20.65	2	726	85,513	8, 11, 16, 17, 18,	------	------	<no description>
21	Combine	49.09	2	728	200,754	19, 20	------	------	Design Point B

Existing-Hydraflow.gpw | Return Period: 100 Year | Monday, 12 / 4 / 2023

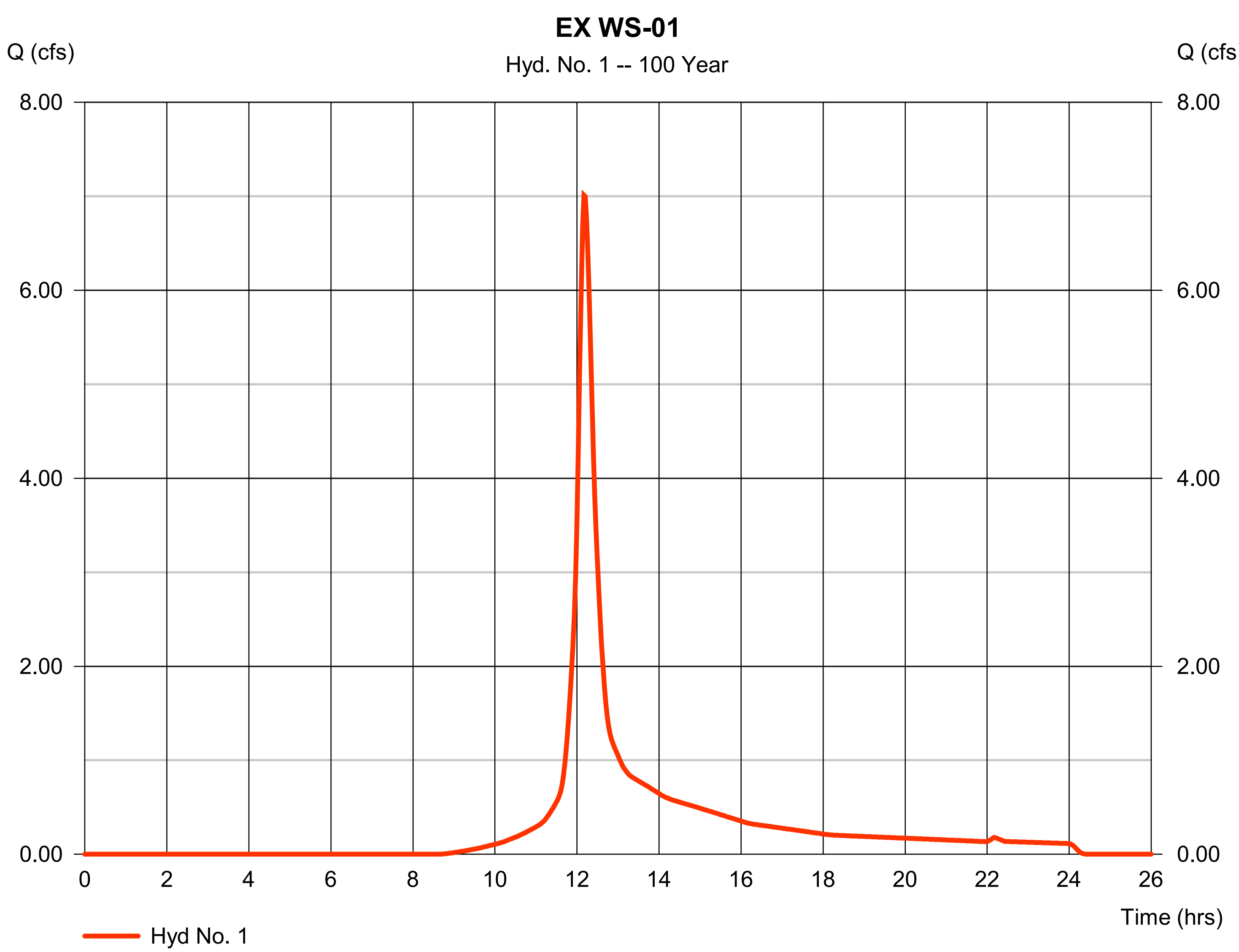
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 1

EX WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 7.011 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 28,668 cuft
Drainage area	= 1.942 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.10 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



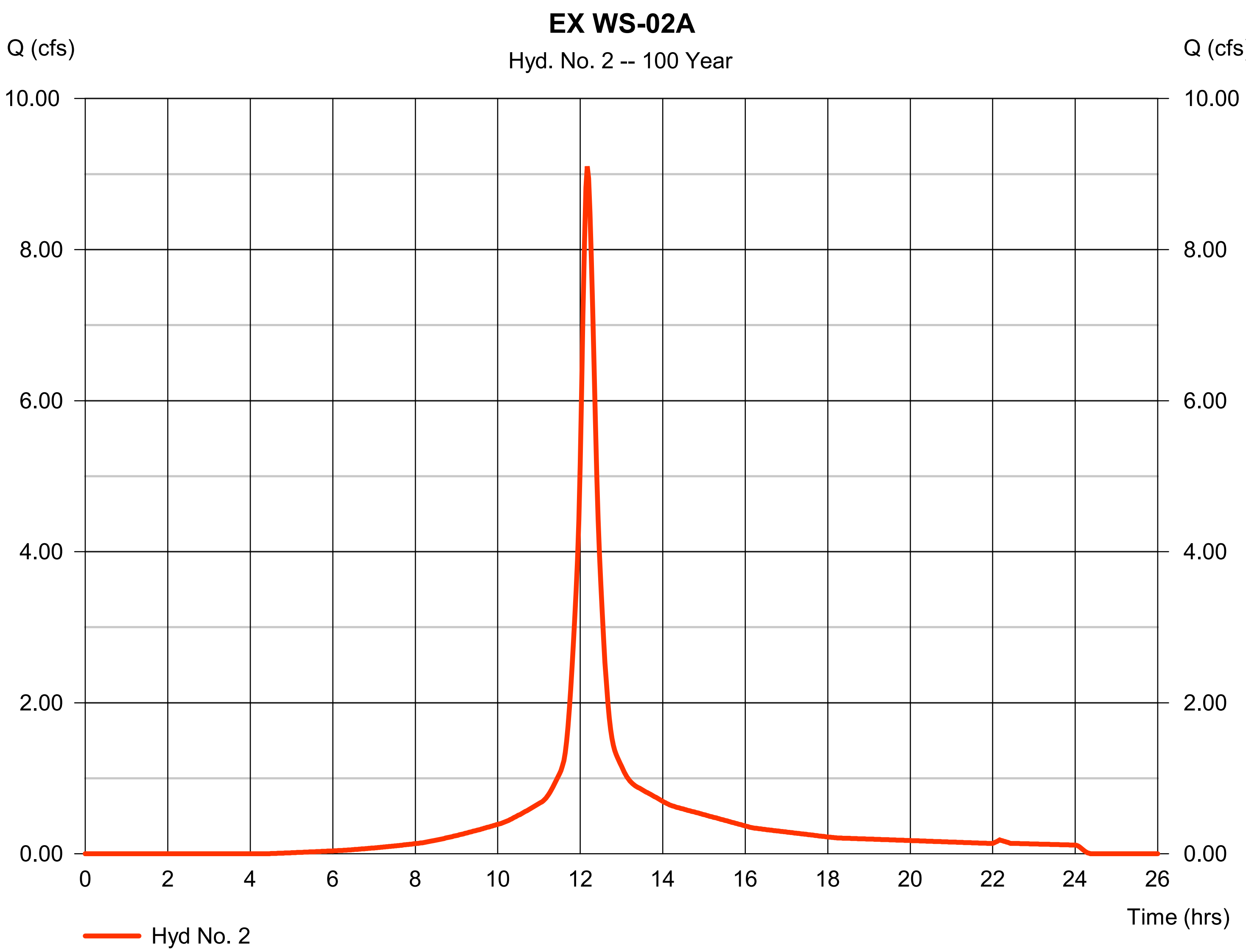
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 2

EX WS-02A

Hydrograph type	= SCS Runoff	Peak discharge	= 9.103 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 38,140 cuft
Drainage area	= 1.678 ac	Curve number	= 84
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 16.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



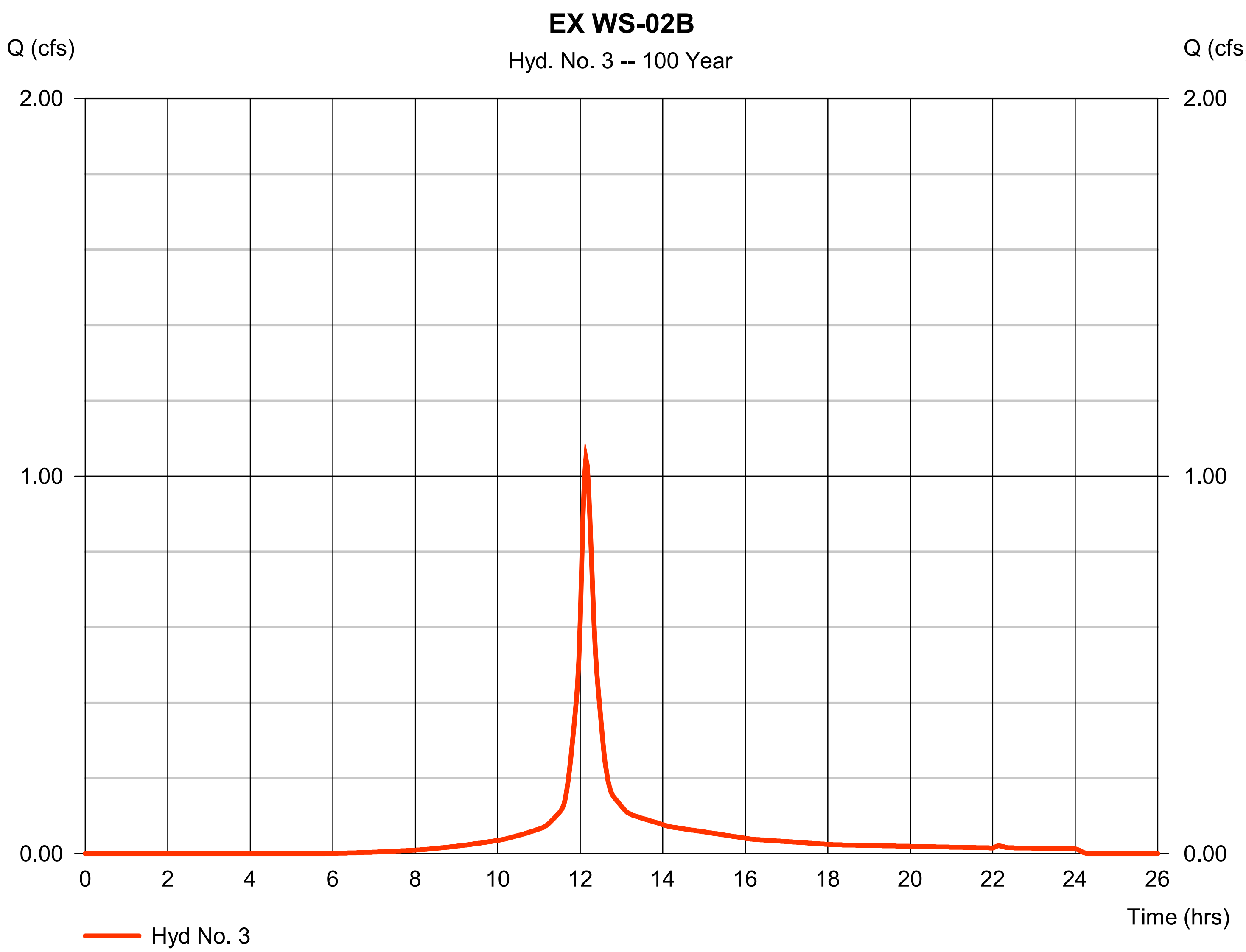
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 3

EX WS-02B

Hydrograph type	= SCS Runoff	Peak discharge	= 1.046 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 4,056 cuft
Drainage area	= 0.186 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.00 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



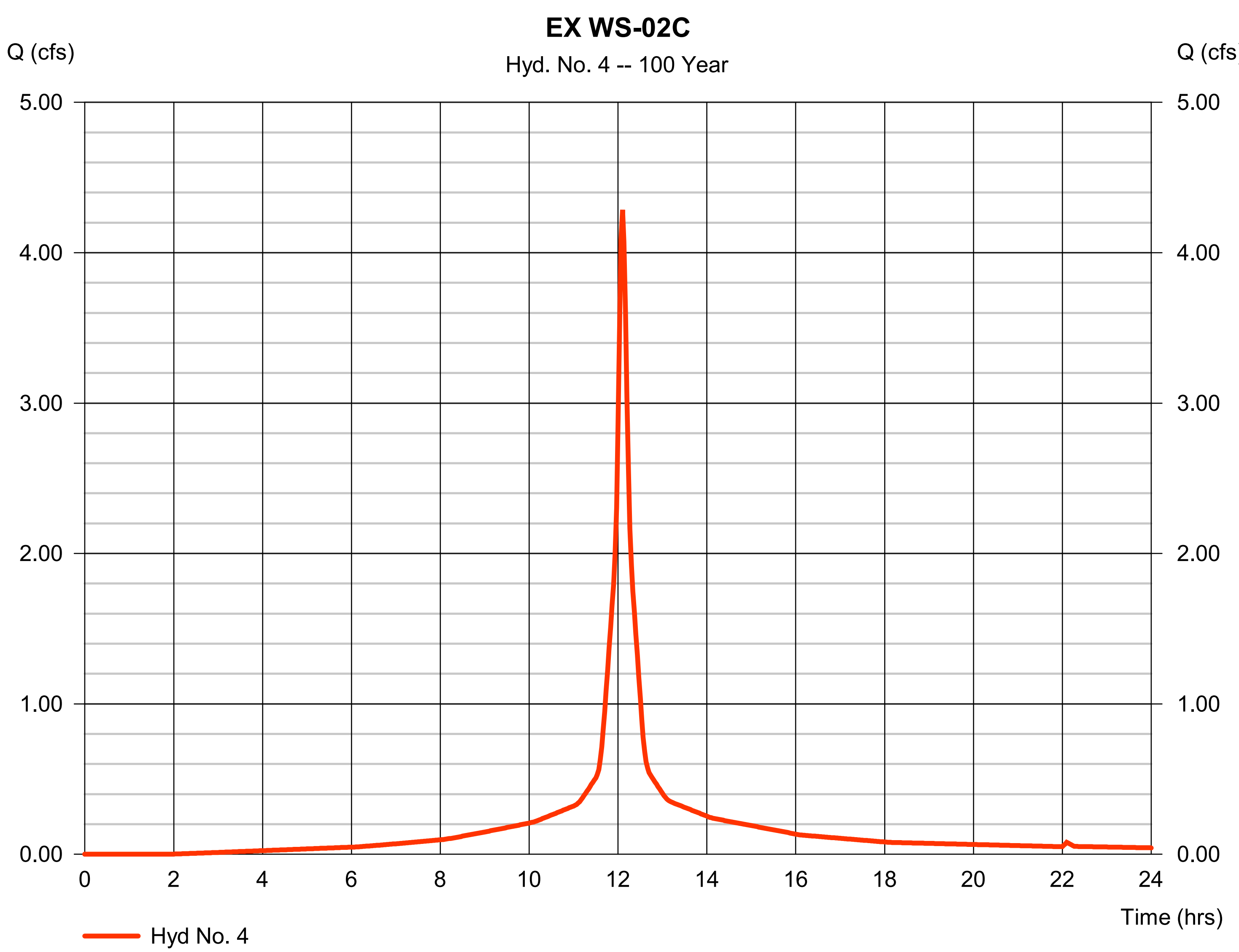
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 4

EX WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 4.285 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 16,063 cuft
Drainage area	= 0.590 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

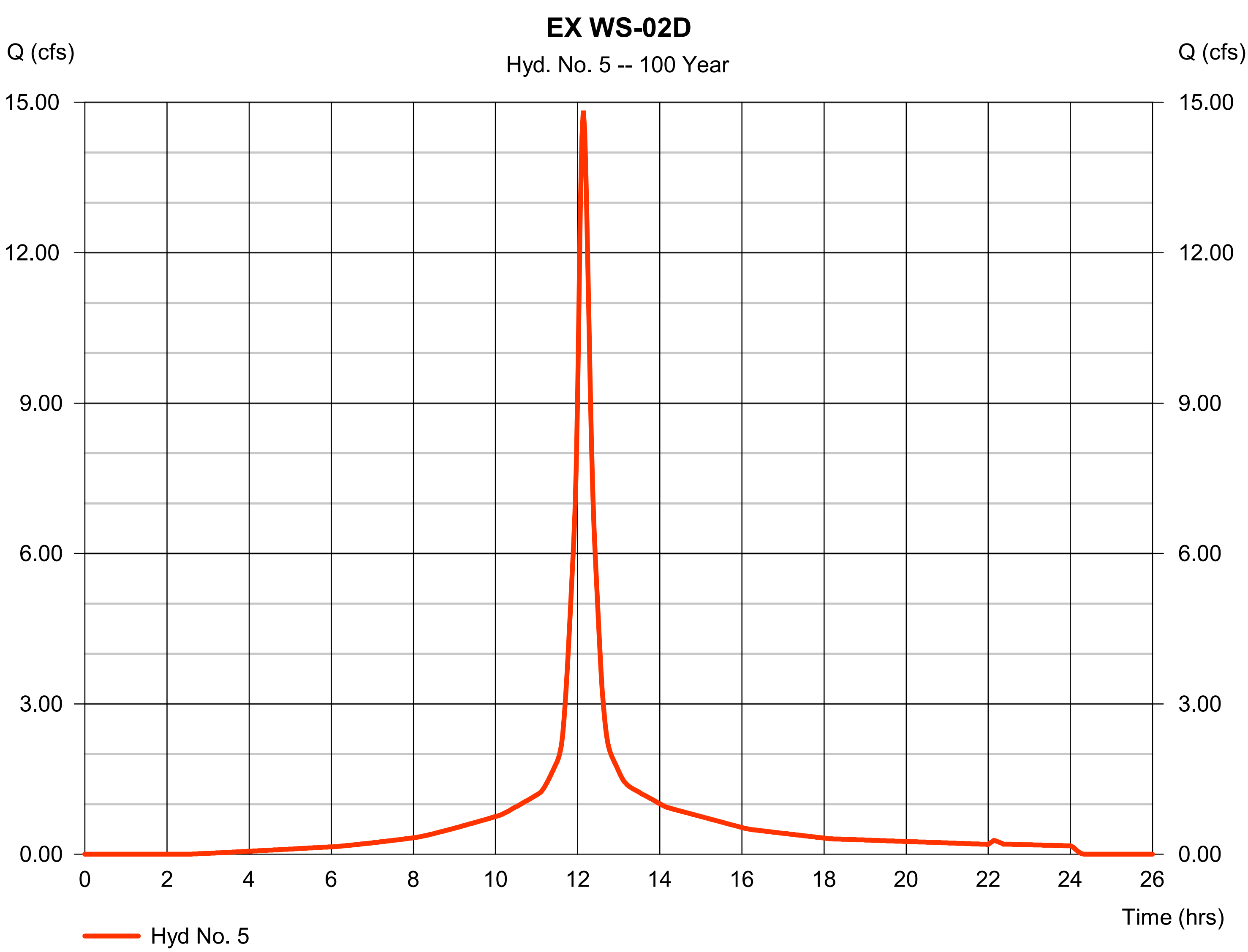


Hydrograph Report

Hyd. No. 5

EX WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 14.84 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 61,043 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



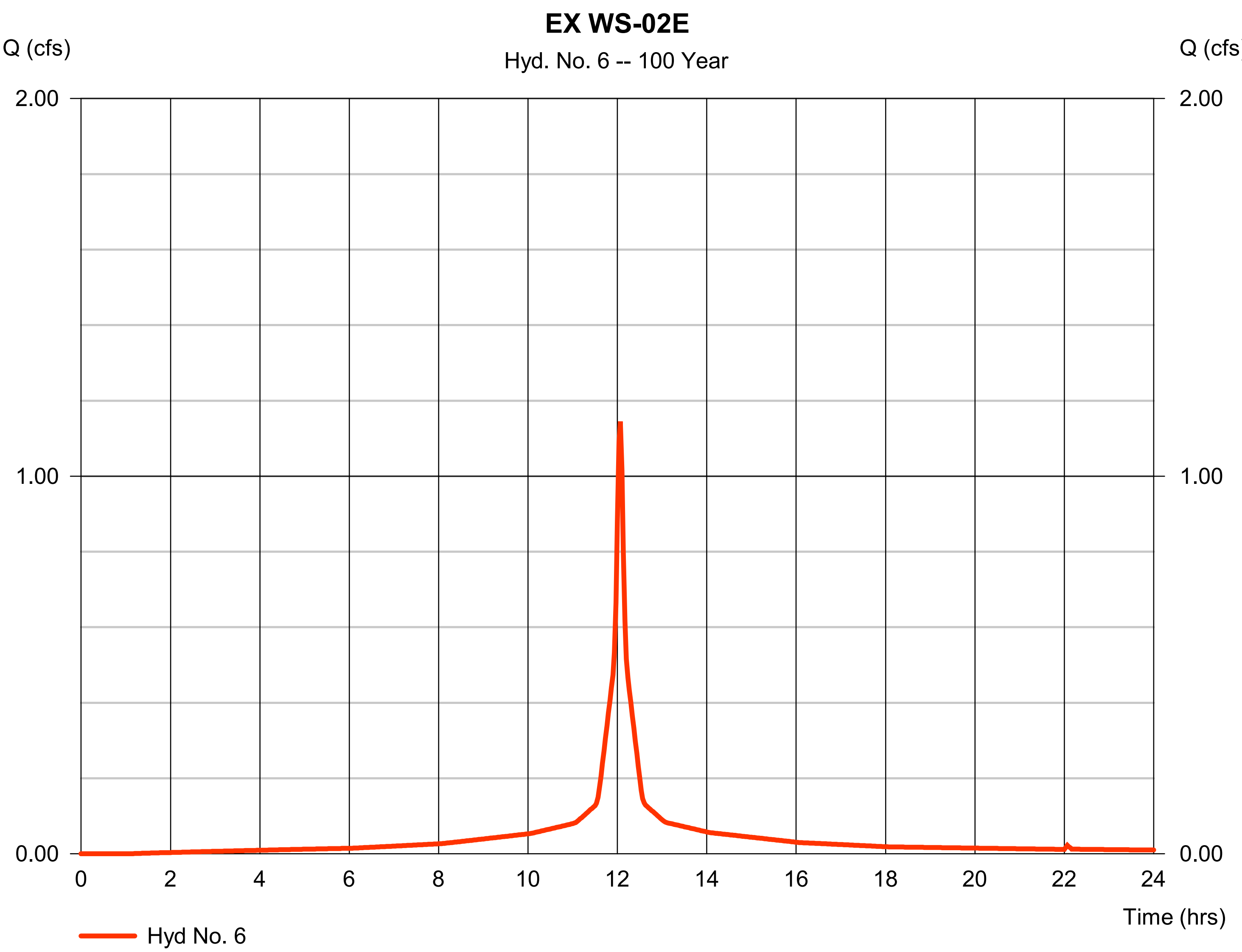
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 6

EX WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 1.145 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,905 cuft
Drainage area	= 0.146 ac	Curve number	= 96
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



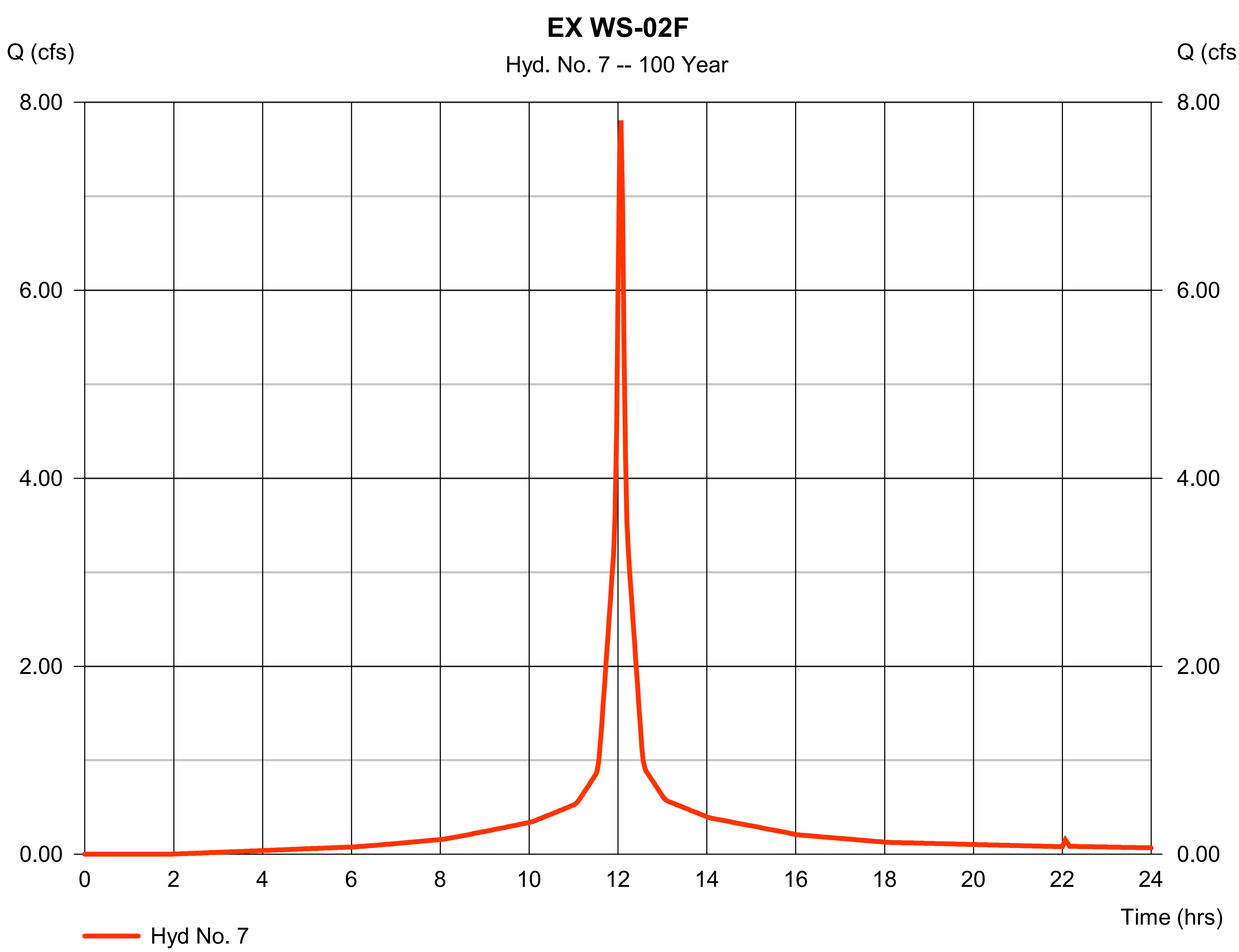
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 7

EX WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 7.807 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 25,830 cuft
Drainage area	= 1.012 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



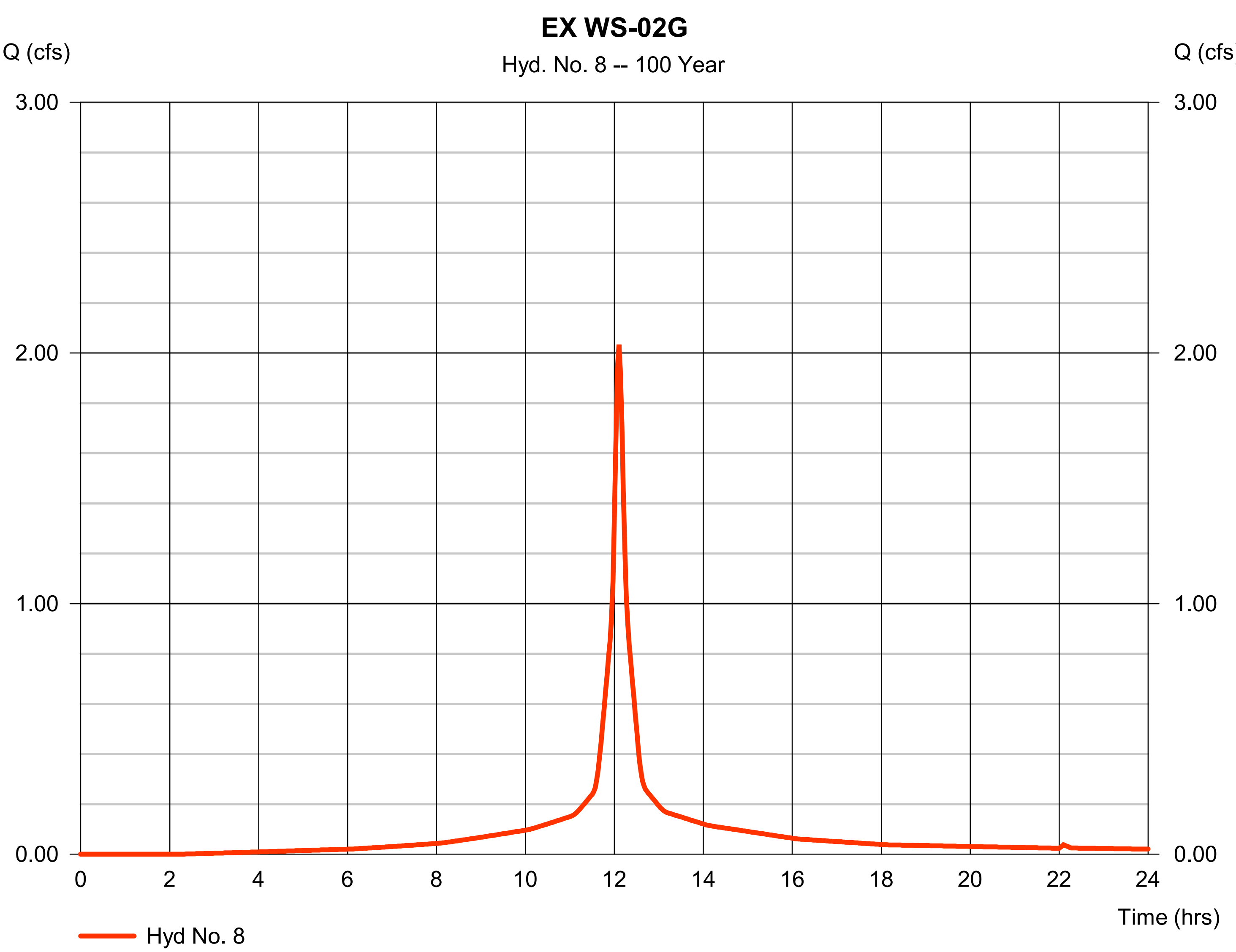
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 8

EX WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 2.033 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 7,555 cuft
Drainage area	= 0.282 ac	Curve number	= 92
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.90 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



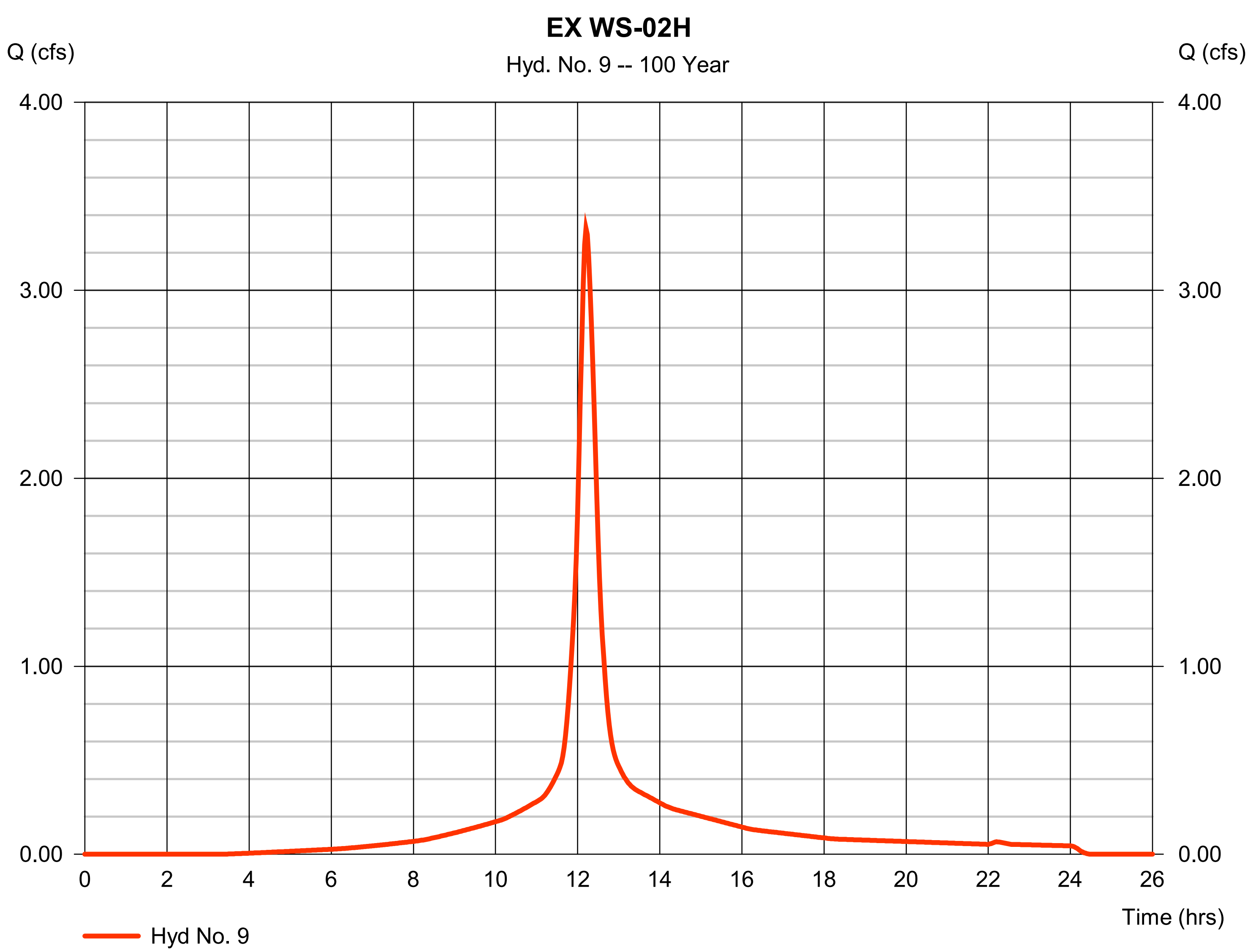
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Monday, 12 / 4 / 2023

Hyd. No. 9

EX WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 3.330 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 15,431 cuft
Drainage area	= 0.616 ac	Curve number	= 88
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.30 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



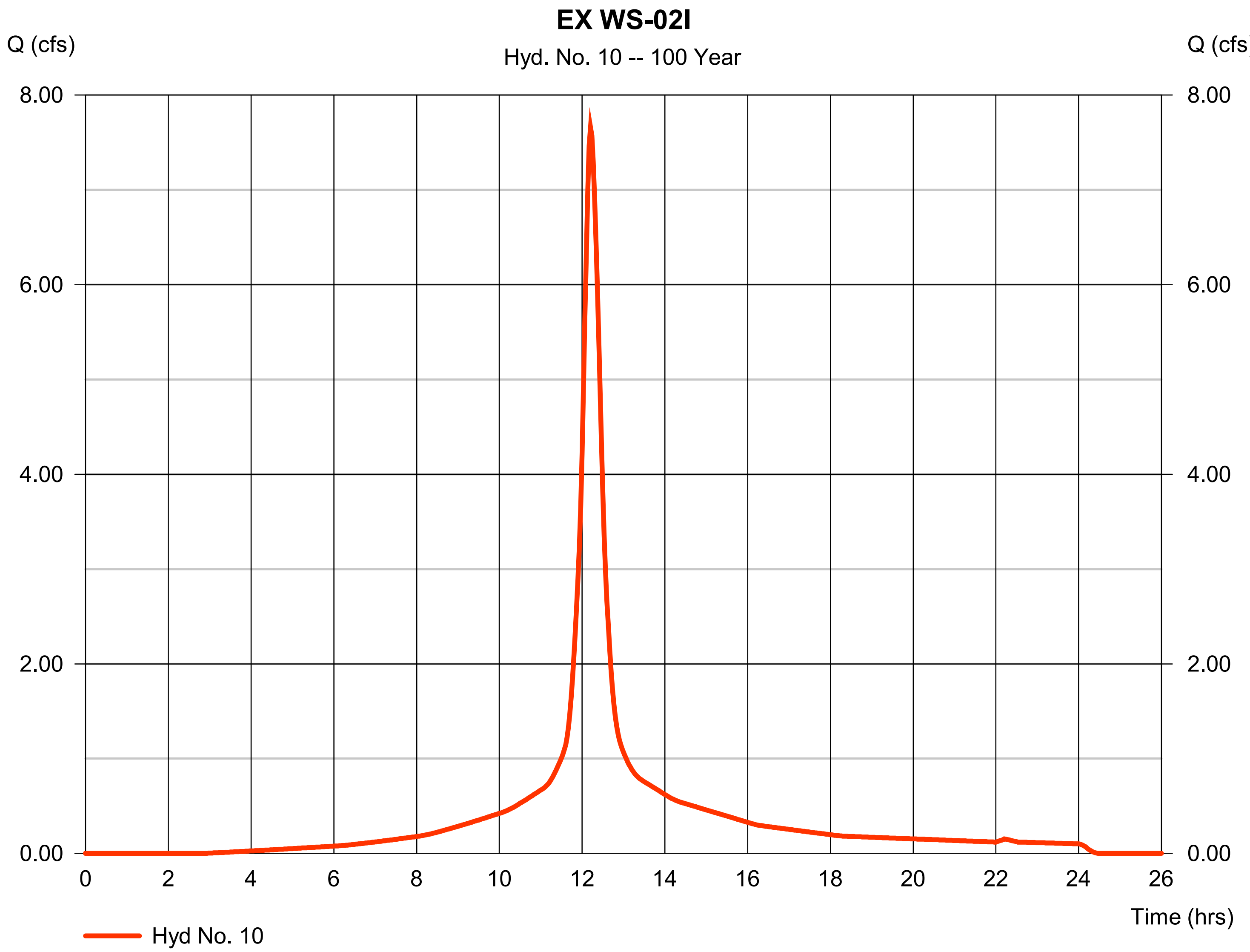
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 10

EX WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 7.659 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 35,951 cuft
Drainage area	= 1.387 ac	Curve number	= 90
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



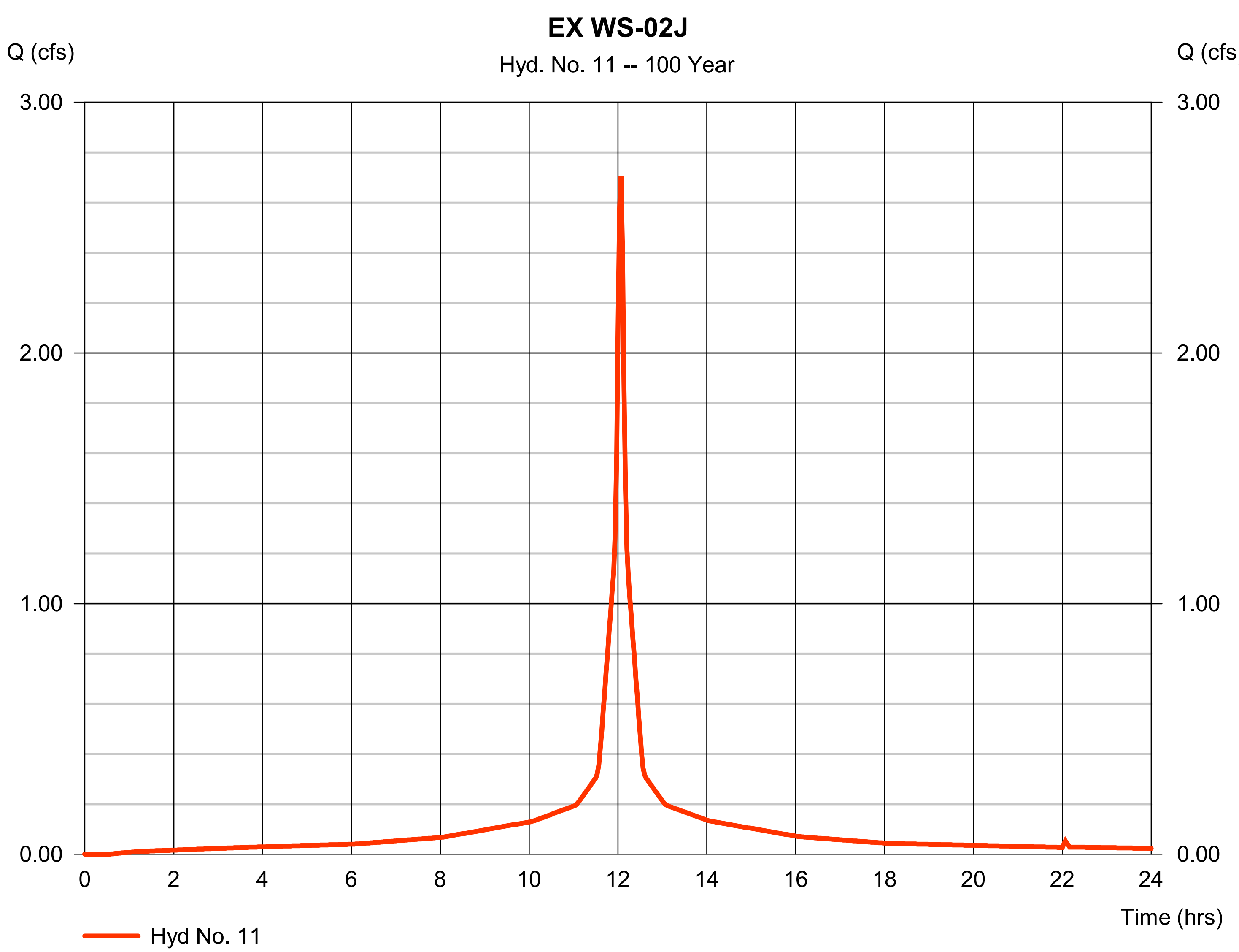
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 11

EX WS-02J

Hydrograph type	= SCS Runoff	Peak discharge	= 2.707 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 9,455 cuft
Drainage area	= 0.343 ac	Curve number	= 98
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



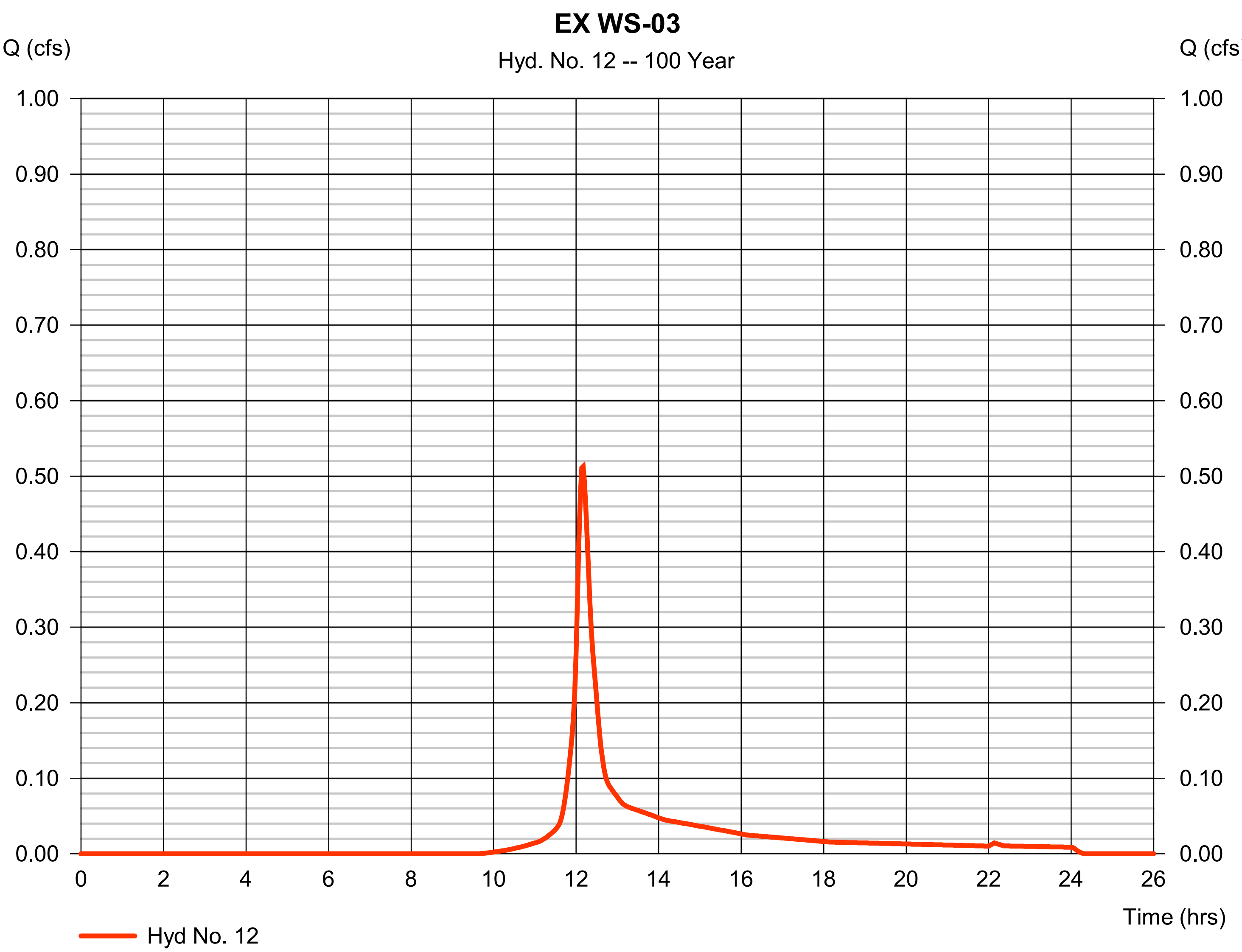
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 12

EX WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.513 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 2,003 cuft
Drainage area	= 0.154 ac	Curve number	= 59
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

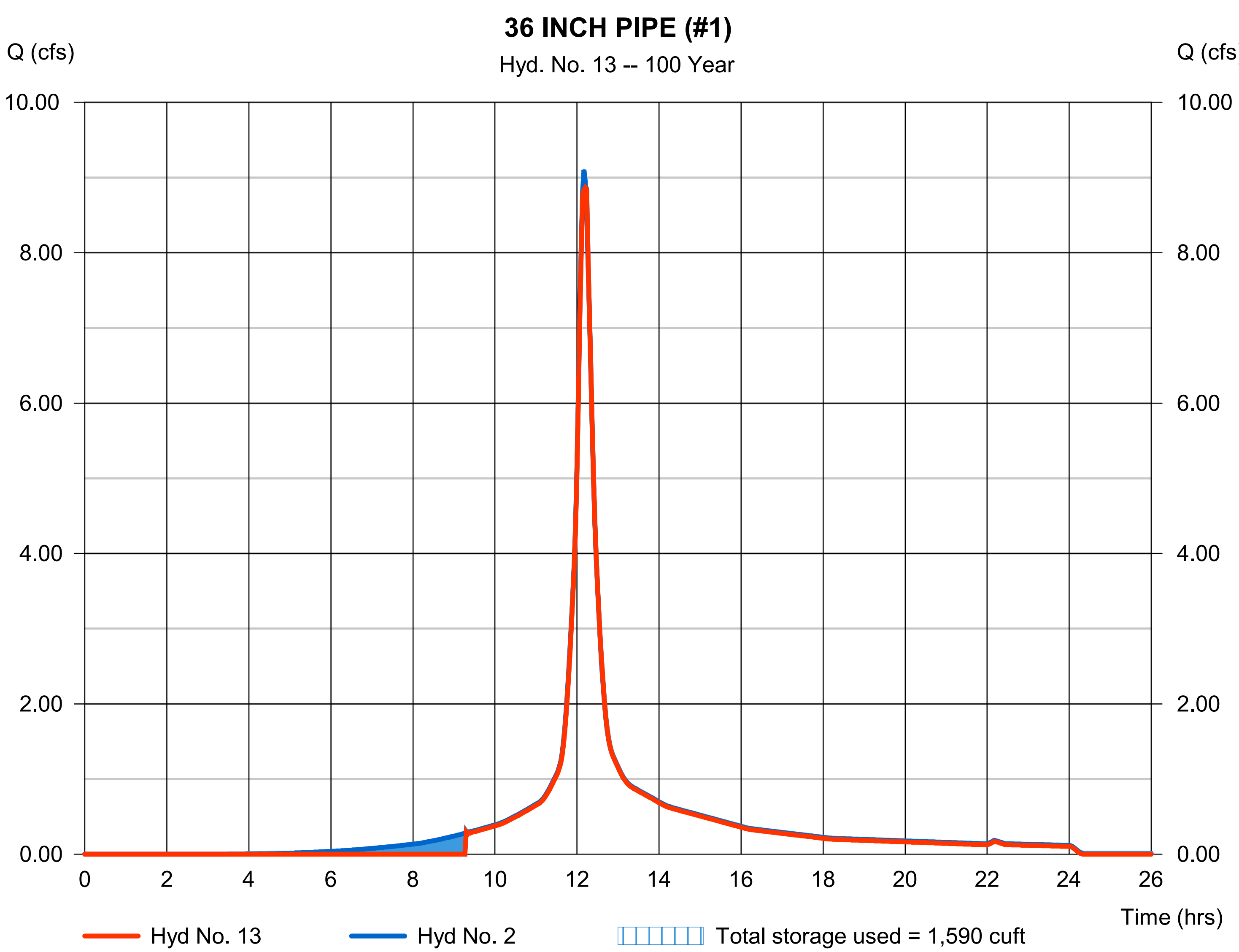
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 13

36 INCH PIPE (#1)

Hydrograph type	= Reservoir	Peak discharge	= 8.866 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 35,896 cuft
Inflow hyd. No.	= 2 - EX WS-02A	Max. Elevation	= 143.74 ft
Reservoir name	= 36IN - 1	Max. Storage	= 1,590 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

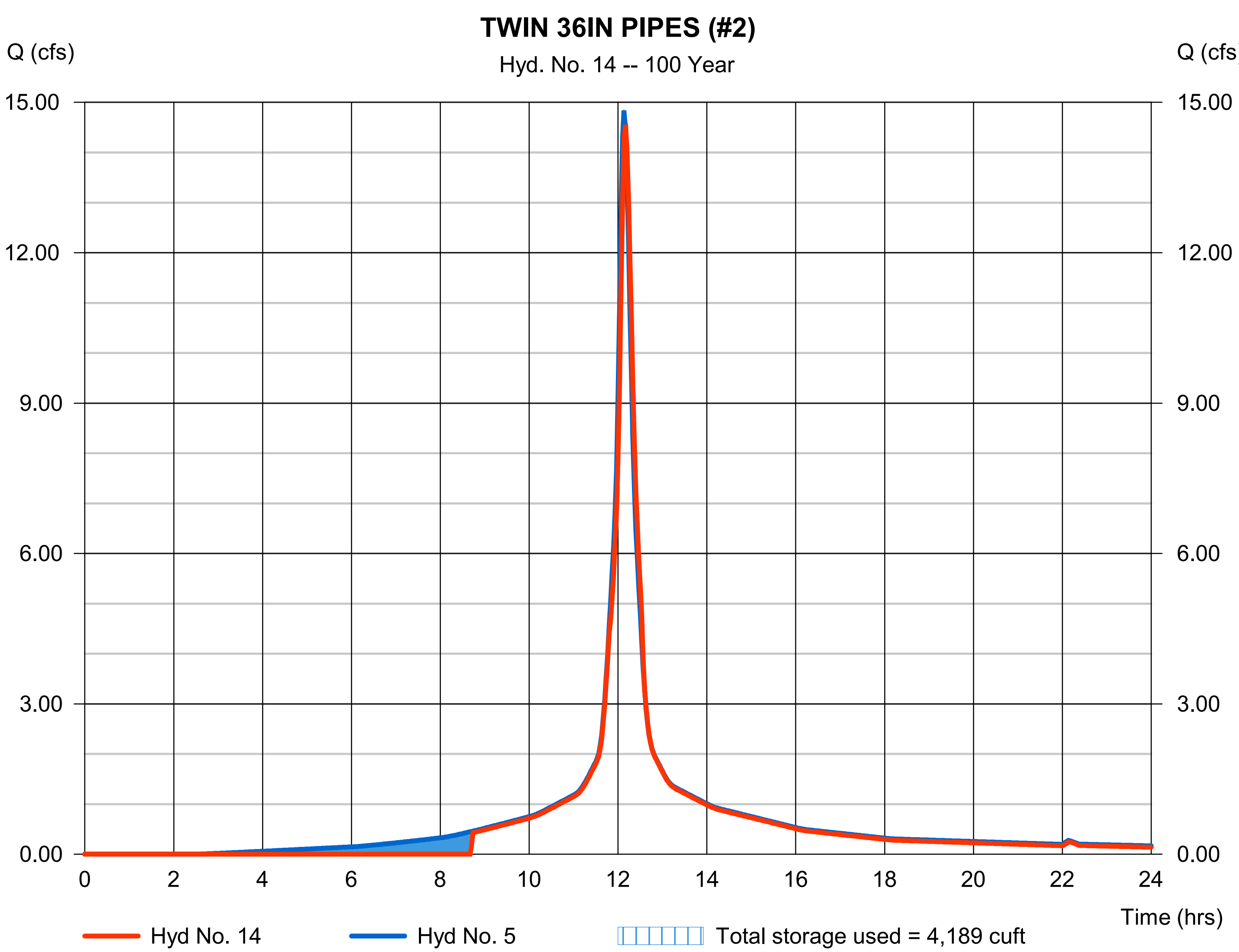
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 14

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 14.56 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 55,977 cuft
Inflow hyd. No.	= 5 - EX WS-02D	Max. Elevation	= 139.24 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 4,189 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

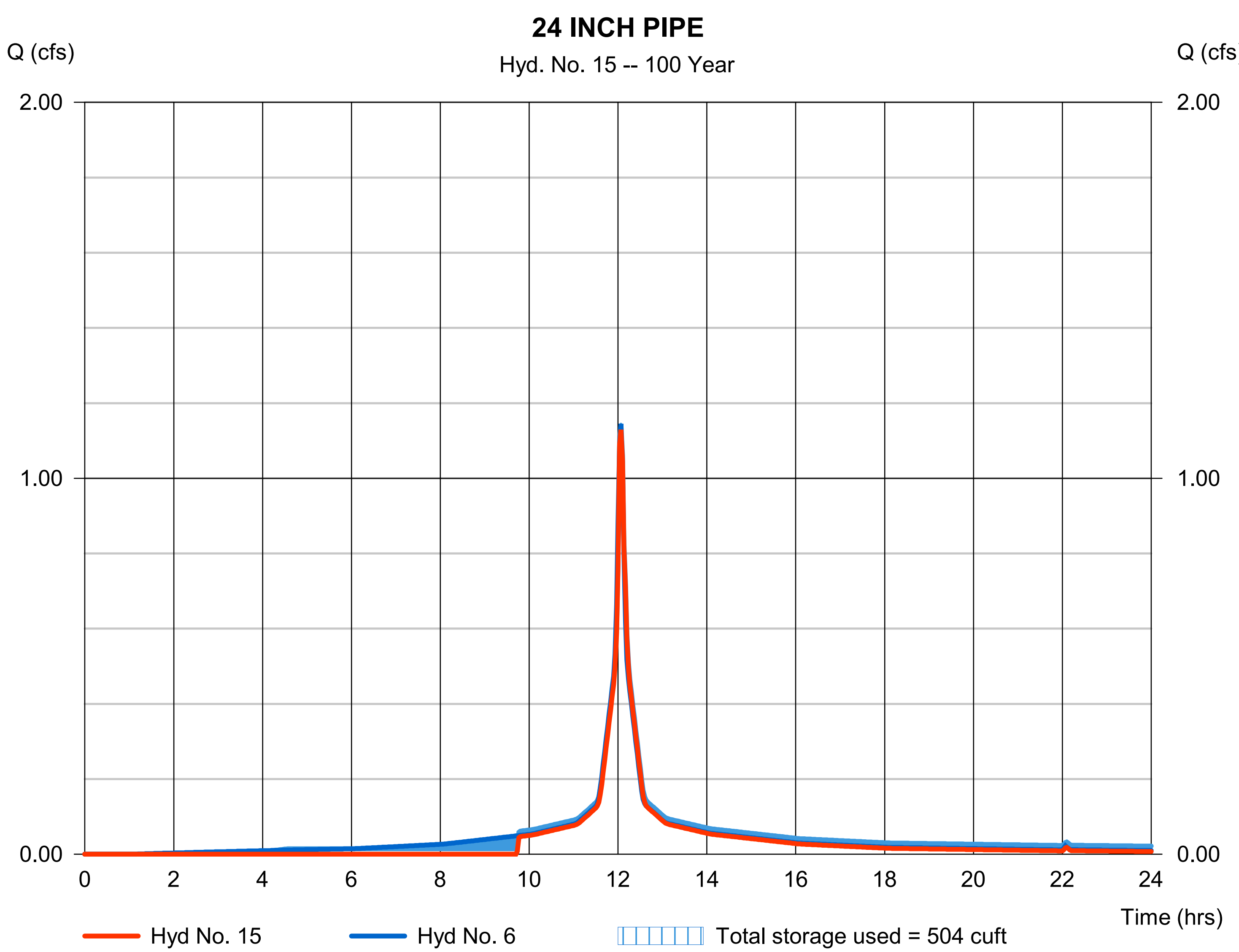
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 15

24 INCH PIPE

Hydrograph type	=	Reservoir	Peak discharge	=	1.129 cfs
Storm frequency	=	100 yrs	Time to peak	=	12.07 hrs
Time interval	=	2 min	Hyd. volume	=	3,248 cuft
Inflow hyd. No.	=	6 - EX WS-02E	Max. Elevation	=	139.65 ft
Reservoir name	=	24IN	Max. Storage	=	504 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

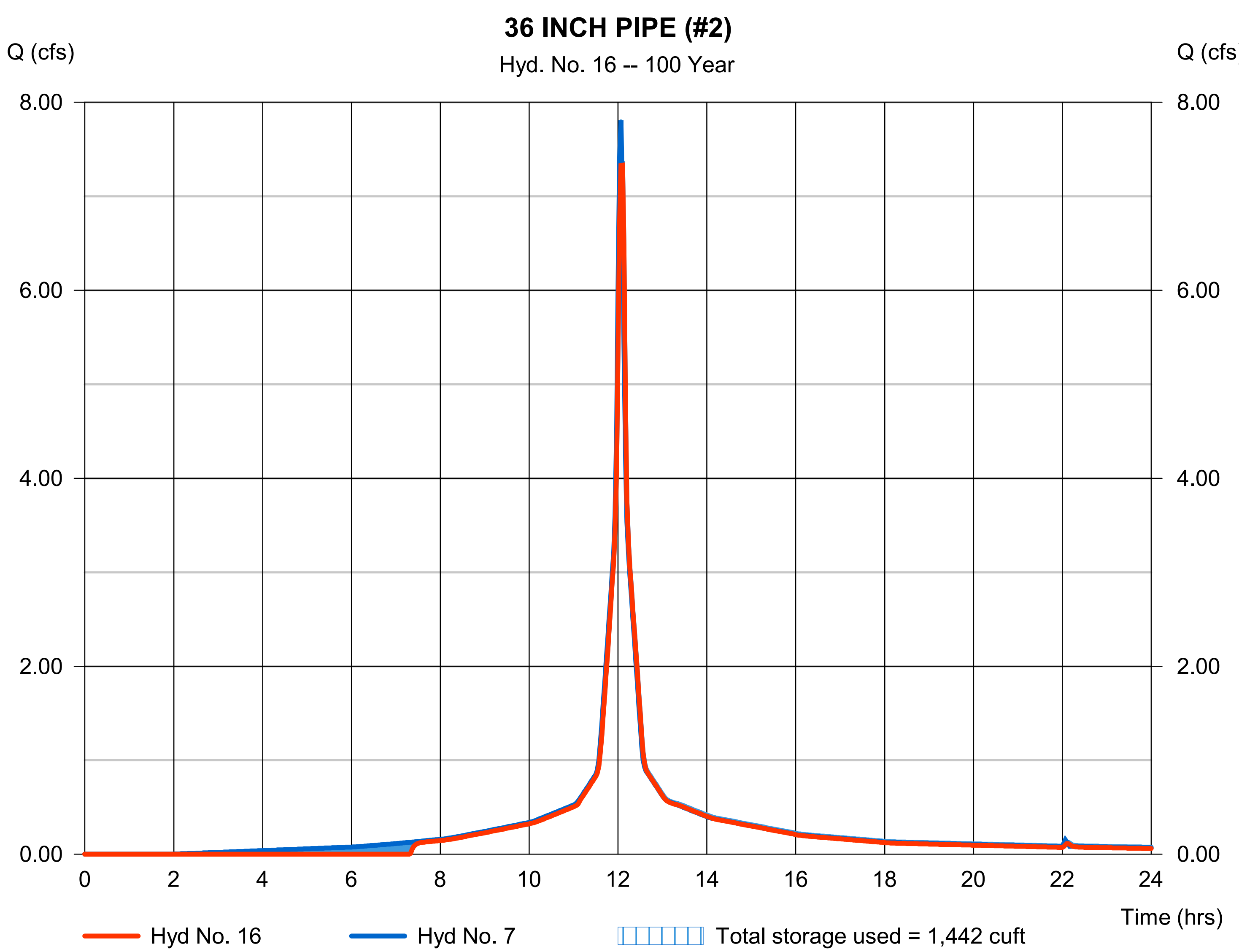
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 16

36 INCH PIPE (#2)

Hydrograph type	= Reservoir	Peak discharge	= 7.332 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 24,295 cuft
Inflow hyd. No.	= 7 - EX WS-02F	Max. Elevation	= 139.57 ft
Reservoir name	= 36in - 2	Max. Storage	= 1,442 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

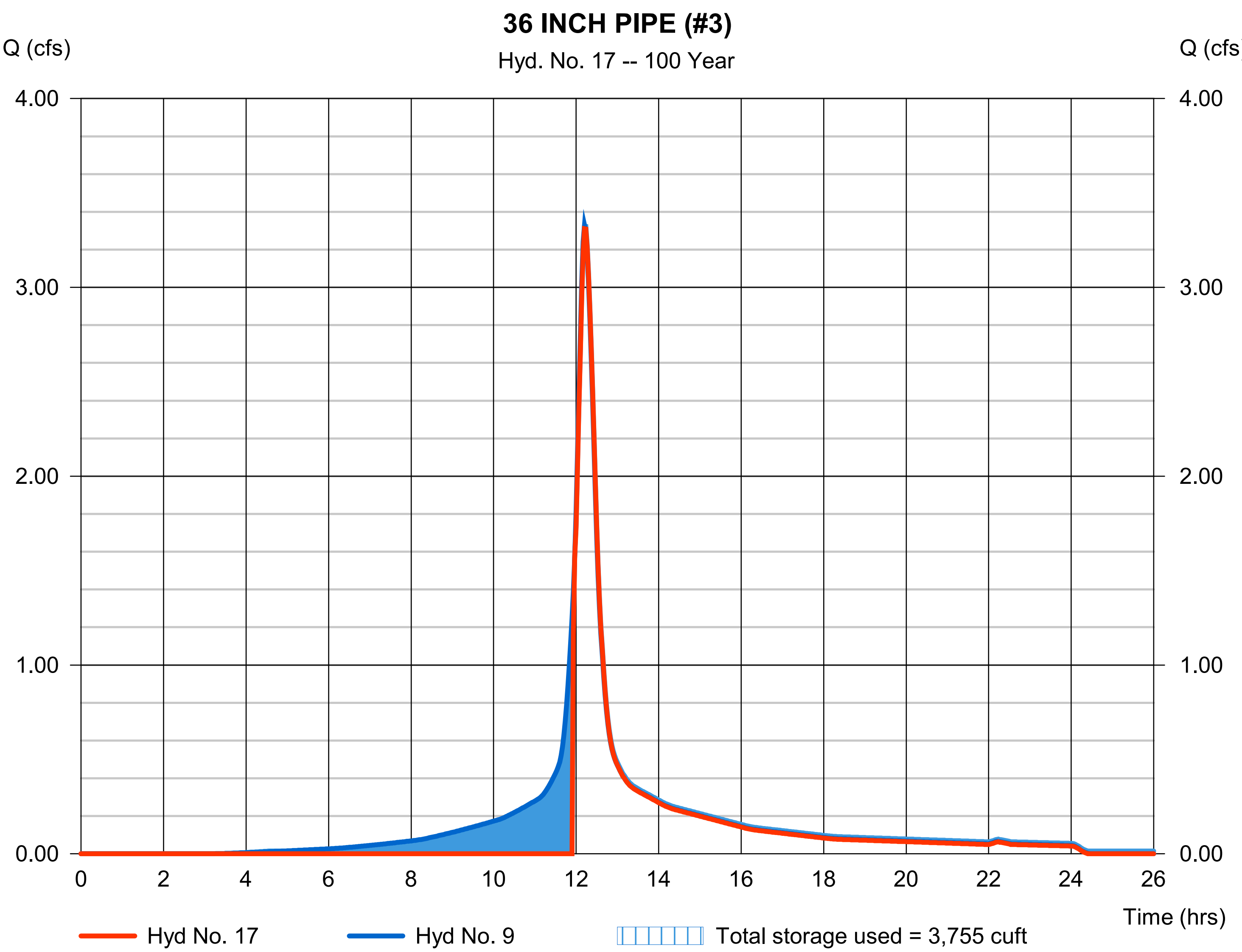
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 17

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 3.311 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 11,531 cuft
Inflow hyd. No.	= 9 - EX WS-02H	Max. Elevation	= 137.50 ft
Reservoir name	= 36in - 3	Max. Storage	= 3,755 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

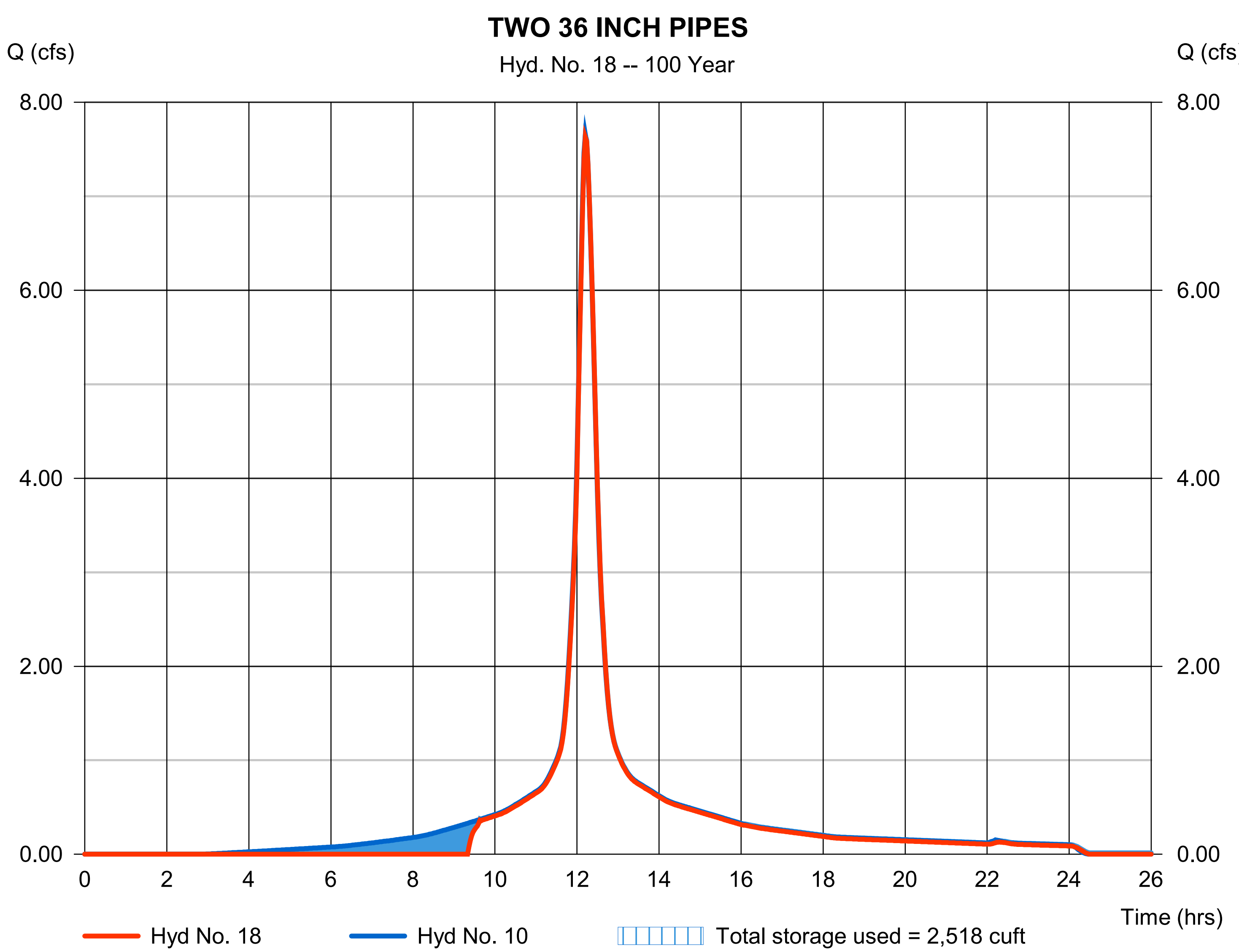
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 18

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 7.629 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 32,678 cuft
Inflow hyd. No.	= 10 - EX WS-02I	Max. Elevation	= 135.77 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,518 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



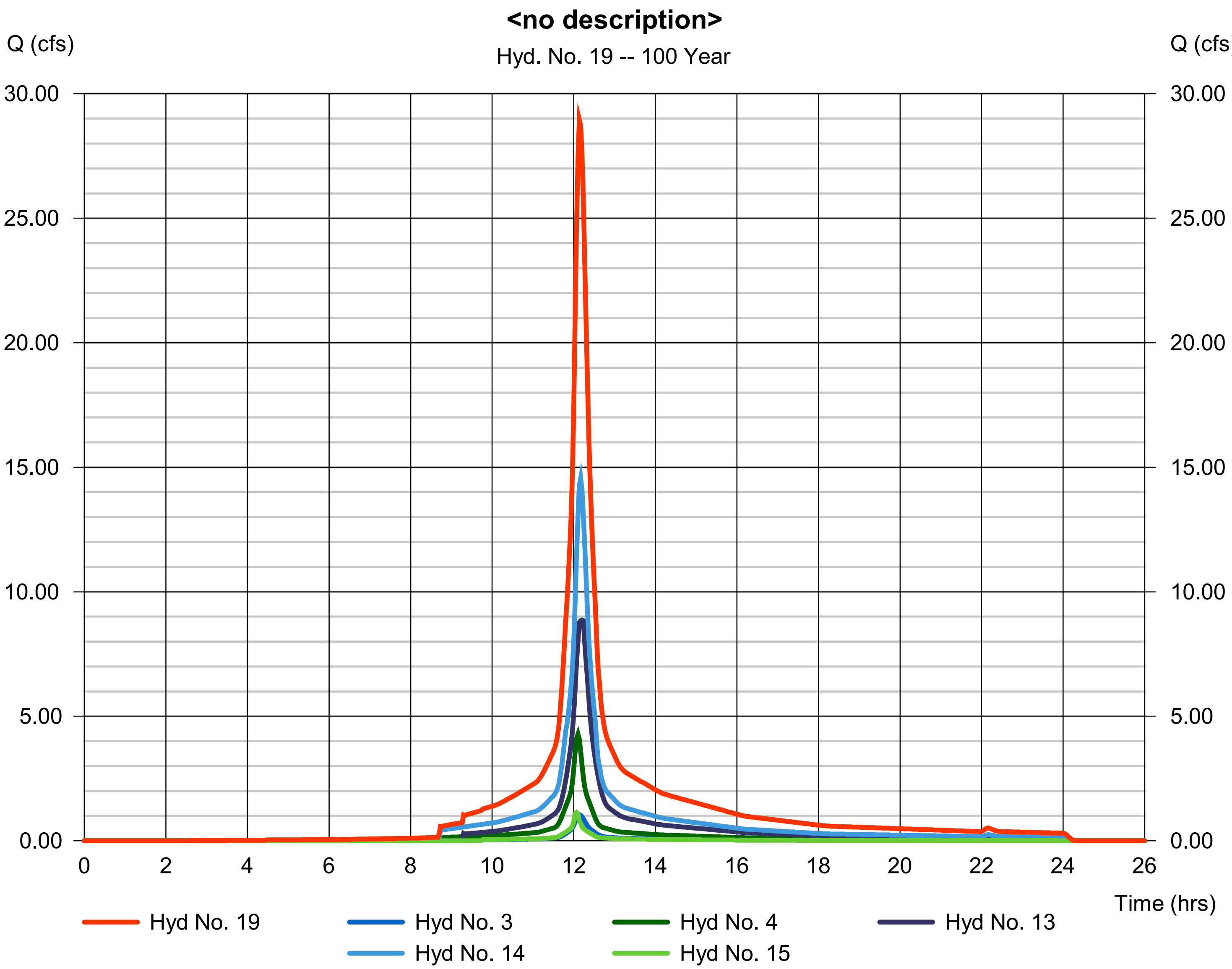
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Monday, 12 / 4 / 2023

Hyd. No. 19

<no description>

Hydrograph type	= Combine	Peak discharge	= 28.95 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 115,241 cuft
Inflow hyds.	= 3, 4, 13, 14, 15	Contrib. drain. area	= 0.776 ac

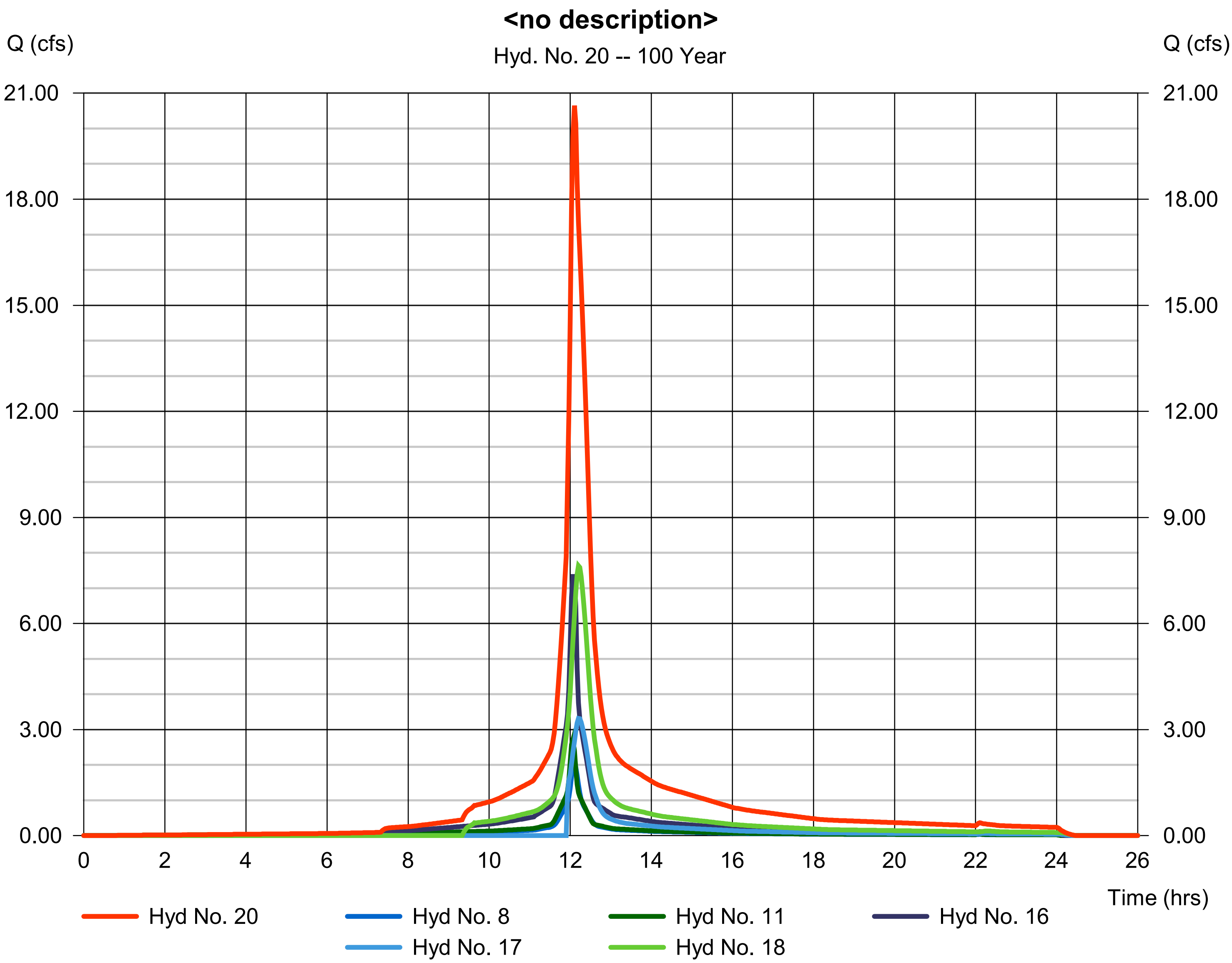


Hydrograph Report

Hyd. No. 20

<no description>

Hydrograph type	= Combine	Peak discharge	= 20.65 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 85,513 cuft
Inflow hyds.	= 8, 11, 16, 17, 18	Contrib. drain. area	= 0.625 ac



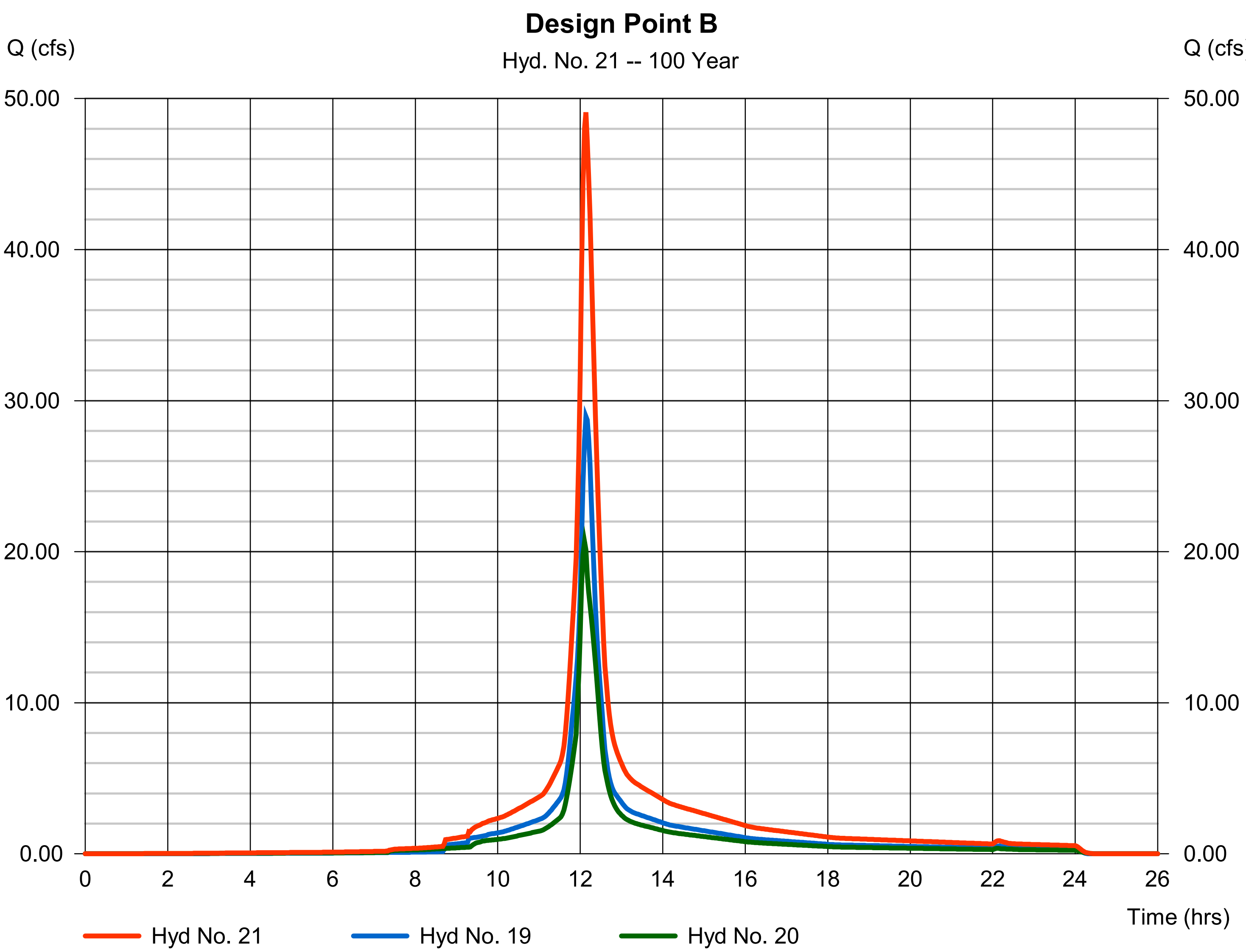
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Hyd. No. 21

Design Point B

Hydrograph type	= Combine	Peak discharge	= 49.09 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 200,754 cuft
Inflow hyds.	= 19, 20	Contrib. drain. area	= 0.000 ac



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Monday, 12 / 4 / 2023

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	23.2694	3.7000	0.7019	--------
3	0.0000	0.0000	0.0000	--------
5	28.1517	3.6000	0.6982	--------
10	33.4115	3.8000	0.7042	--------
25	38.5092	3.6000	0.6982	--------
50	42.7840	3.6000	0.6957	--------
100	48.0560	3.6000	0.6997	--------

File name: WILTON.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	5.10	3.71	2.98	2.52	2.21	1.97	1.79	1.64	1.52	1.42	1.33	1.26
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	6.27	4.55	3.66	3.10	2.71	2.42	2.20	2.02	1.87	1.75	1.64	1.55
10	7.22	5.26	4.23	3.58	3.13	2.80	2.54	2.33	2.16	2.02	1.90	1.79
25	8.57	6.22	5.00	4.24	3.70	3.31	3.00	2.76	2.56	2.39	2.24	2.12
50	9.57	6.96	5.60	4.74	4.15	3.71	3.37	3.09	2.87	2.68	2.52	2.38
100	10.66	7.74	6.22	5.26	4.60	4.11	3.73	3.43	3.17	2.96	2.79	2.63

Tc = time in minutes. Values may exceed 60.

Precip. file name: J:\T\T5000 Toll Brothers\012 Woodbridge Village\Calculations\Stormwater\WOODBRIDGE.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	2.95	3.52	0.00	4.65	5.38	6.54	7.41	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

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APPENDIX D


PR-WS-2B(I)
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PR-WS-2A(I)
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DESIGN POINT - C
(OVERLAND FLOW OFFSITE)
COPTS BROOK
PR WS-1
PR WS-2D
PR-WS-2C
PR-WS-2B(III)
PR-WS-2B(II)
PR-WS-2F
DESIGN POINT - A
(OVERLAND FLOW TO COPTS BROOK)
GRUMMAN HILL ROAD
PR-WS-2E
PR-WS-2G
HOLLYHOCK ROAD
PR WS-2I
DANBURY ROAD
(ROUTE 7)
DESIGN POINT - B
(EXISTING 54" RCP)
PR-WS-2H
N
0
100'
200'
SCALE: 1" = 100'
LEGEND
WATERSHED BOUNDARY
TIME OF CONCENTRATION
PAVEMENT/ROOF
LANDSCAPED AND LAWNS
WOODED
64 DANBURY ROAD
WILTON, CT
PROPOSED WATERSHED FIGURE
DATE: 12/04/2023
SCALE: 1"=100'
FIGURE PR-WS
Tighe&Bond
Tighe & Bond: J:\F\F0173 Fuller\001 64 Danbury Rd\Calculations\Stormwater\Figures\F0173-001-PR-WS-FIGURE.dwg

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **PR WS-01**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.132	98	12.9317
Landscaped and Lawns (HSG-B)	0.702	69	48.4236
Landscaped and Lawns (HSG-D)	0.049	84	4.1441
Wooded (HSG-B)	0.712	55	39.1338
Wooded (HSG-D)	0.127	77	9.7682
	1.721		114.401

Weighted CN: 66

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	180	0.2	13.47

Total Tc = 13.5 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02A(I)**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.433	98	42.4712
Landscaped and Lawns (HSG-B)	0.010	69	0.6621
Landscaped and Lawns (HSG-D)	0.015	84	1.3017
Wooded (HSG-B)	0.000	55	0.0000
	0.458		44.435

Weighted CN: 97

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	10	0.020	2.1
Segment B - C	0.015	15	0.020	0.3
Segment C - D	0.24	6	0.020	1.5

Total Tc = 4.0 Min.
Minimum Tc = 5.0 (MIN)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **PR WS-02A(II)**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.393	98	38.4756
Landscaped and Lawns (HSG-B)	0.126	69	8.7280
Landscaped and Lawns (HSG-D)	0.061	84	5.1372
Wooded (HSG-B)	0.103	55	5.6465
	0.683		57.987

Weighted CN: 85

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	10	0.02	3.35
Segment B - C	0.24	84	0.02	12.22
Segment C - D	0.015	143	0.04	1.54

Total Tc = 17.1 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02B(I)**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.281	98	27.5462
Landscaped and Lawns (HSG-B)	0.022	69	1.5302
Landscaped and Lawns (HSG-D)	0.166	84	13.9653
Wooded (HSG-B)	0.064	55	3.5341
Wooded (HSG-D)	0.023	77	1.7535
	0.557		48.329

Weighted CN: 87

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	52	0.11	6.34
Segment B - C	0.24	3	0.11	0.43
Segment C - D	0.015	43	0.04	0.59

Total Tc = 7.4 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **PR WS-02B(II)**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.402	98	39.4115
Landscaped and Lawns (HSG-D)	0.001	84	0.0964
	0.403		39.508

Weighted CN: 98

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	35	0.045	0.5

Total Tc = 0.5 Min.
Minimum Tc = 5.0 (MIN)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02B(III)**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.031	98	3.0777
Landscaped and Lawns (HSG-D)	0.101	84	8.4887
	0.132		11.566

Weighted CN: 87

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	15	0.1	1.62

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.045	3.42	125	0.6
Segment C - D	unpaved	0.150	6.25	125	0.3

Total Tc = 2.6 Min.
USE 5.0 Min. (MIN)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Consulting Engineers
Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed CN & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **PR WS-02C**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.391	98	38.3293
Landscaped and Lawns (HSG-D)	0.185	84	15.5697
	0.576		53.899

Weighted CN: 93

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	108	0.08	8.58
Segment B - C	0.015	82	0.067	0.80

Total Tc = 9.4 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02D**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	1.683	98	164.9397
Landscaped and Lawns (HSG-D)	0.313	84	26.3281
Wooded (HSG-B)	0.231	55	12.7096
Wooded (HSG-D)	0.018	77	1.3823
	2.246		205.360

Weighted CN: 91

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	52	0.11	6.34
Segment B - C	0.24	65	0.17	4.23
Segment C - D	0.015	43	0.045	0.56

Total Tc = 11.1 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02E**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.177	98	17.3030
Landscaped and Lawns (HSG-B)	0.011	69	0.7793
Landscaped and Lawns (HSG-D)	0.015	84	1.2322
	0.203		19.315

Weighted CN: 95

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	22	0.02	4.18
Segment B - C	0.015	44	0.02	0.79

Total Tc = 5.0 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02F**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.826	98	80.9512
Landscaped and Lawns (HSG-D)	0.197	84	16.5686
	1.023		97.520

Weighted CN: 95

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	31	0.025	5.04

Total Tc = 5.0 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Proposed CN & Tc Calculations** Prepared By: **AVC** Date: **December 4, 2023**

Designation: **PR WS-02G**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.774	98	75.8520
Landscaped and Lawns (HSG-D)	0.156	84	13.1380
	0.930		88.990

Weighted CN: 96

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	20	0.05	2.69
Segment B - C	0.015	32	0.04	0.47

Total Tc = 3.2 Min.
USE 5.0 Min. (MIN)

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-02H**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.037	98	3.6260
Landscaped and Lawns (HSG-D)	0.230	84	19.3358
	0.267		22.962

Weighted CN: 86

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	45	0.04	5.62
Segment B - C	0.015	6	0.02	0.16
Segment C - D	0.25	53	0.025	7.99

Total Tc = 13.8 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond Consulting Engineers Environmental Specialists	
	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Proposed CN & Tc Calculations** Prepared By: **AVC** Date: **December 4, 2023**

Designation: **PR WS-02I**
Location:

Cover Type	Area, ac	CN	A x CN
Pavement/Roof	0.613	98	60.0329
Landscaped and Lawns (HSG-D)	0.684	84	57.4270
	1.296		117.460

Weighted CN: 91

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	82	0.06	7.73
Segment B - C	0.015	6	0.02	0.16
Segment C - D	0.25	97	0.04	10.74

Total Tc = 18.6 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **PR WS-03**
Location:

Cover Type	Area, ac	CN	A x CN
Landscaped and Lawns (HSG-B)	0.035	69	2.4315
Wooded (HSG-B)	0.046	55	2.5366
	0.081		4.968

Weighted CN: 61

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

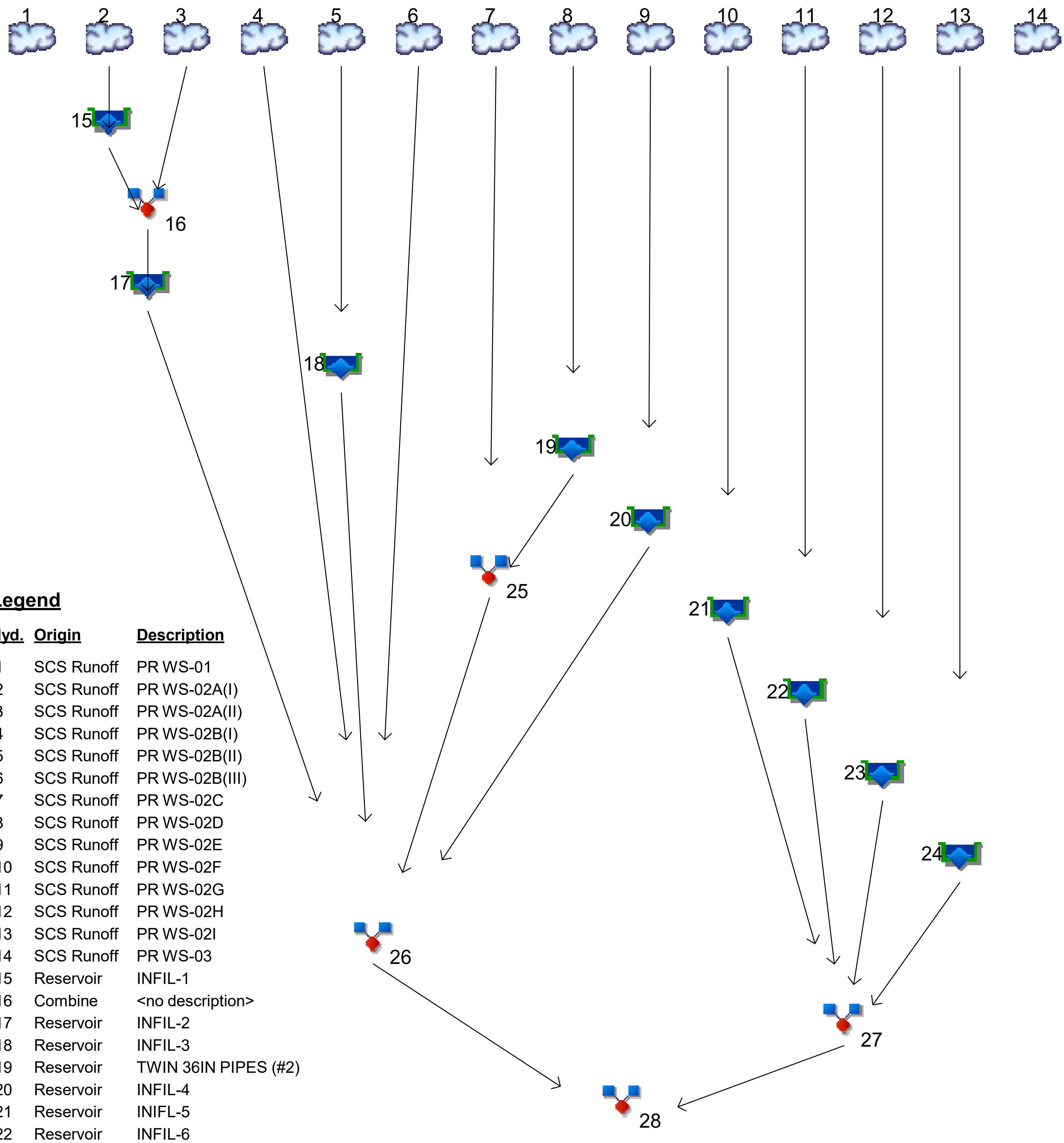
Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	44	0.05	5.05

Total Tc = 5.1 Min.

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021



Legend

Hyd.	Origin	Description
1	SCS Runoff	PR WS-01
2	SCS Runoff	PR WS-02A(I)
3	SCS Runoff	PR WS-02A(II)
4	SCS Runoff	PR WS-02B(I)
5	SCS Runoff	PR WS-02B(II)
6	SCS Runoff	PR WS-02B(III)
7	SCS Runoff	PR WS-02C
8	SCS Runoff	PR WS-02D
9	SCS Runoff	PR WS-02E
10	SCS Runoff	PR WS-02F
11	SCS Runoff	PR WS-02G
12	SCS Runoff	PR WS-02H
13	SCS Runoff	PR WS-02I
14	SCS Runoff	PR WS-03
15	Reservoir	INFIL-1
16	Combine	<no description>
17	Reservoir	INFIL-2
18	Reservoir	INFIL-3
19	Reservoir	TWIN 36IN PIPES (#2)
20	Reservoir	INFIL-4
21	Reservoir	INIFL-5
22	Reservoir	INFIL-6
23	Reservoir	36 INCH PIPE (#3)
24	Reservoir	TWO 36 INCH PIPES
25	Combine	<no description>
26	Combine	<no description>
27	Combine	<no description>
28	Combine	Design Point B

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	------	-------	1.044	-------	-------	2.888	4.203	5.239	6.398	PR WS-01
2	SCS Runoff	------	-------	1.493	-------	-------	2.311	2.819	3.199	3.605	PR WS-02A(I)
3	SCS Runoff	------	-------	1.141	-------	-------	2.068	2.652	3.089	3.556	PR WS-02A(II)
4	SCS Runoff	------	-------	1.343	-------	-------	2.352	2.982	3.451	3.952	PR WS-02B(I)
5	SCS Runoff	------	-------	1.330	-------	-------	2.046	2.491	2.824	3.181	PR WS-02B(II)
6	SCS Runoff	------	-------	0.329	-------	-------	0.575	0.728	0.842	0.964	PR WS-02B(III)
7	SCS Runoff	------	-------	1.625	-------	-------	2.622	3.236	3.695	4.184	PR WS-02C
8	SCS Runoff	------	-------	5.519	-------	-------	9.148	11.39	13.06	14.84	PR WS-02D
9	SCS Runoff	------	-------	0.639	-------	-------	1.006	1.234	1.404	1.585	PR WS-02E
10	SCS Runoff	------	-------	3.218	-------	-------	5.072	6.217	7.074	7.986	PR WS-02F
11	SCS Runoff	------	-------	2.983	-------	-------	4.656	5.692	6.467	7.294	PR WS-02G
12	SCS Runoff	------	-------	0.491	-------	-------	0.876	1.116	1.296	1.488	PR WS-02H
13	SCS Runoff	------	-------	2.681	-------	-------	4.450	5.543	6.358	7.225	PR WS-02I
14	SCS Runoff	------	-------	0.039	-------	-------	0.138	0.212	0.272	0.339	PR WS-03
15	Reservoir	2	-------	1.056	-------	-------	1.706	2.043	2.310	2.580	INFIL-1
16	Combine	3, 15	-------	2.109	-------	-------	3.643	4.539	5.234	5.963	<no description>
17	Reservoir	16	-------	2.076	-------	-------	3.595	4.408	5.080	5.776	INFIL-2
18	Reservoir	5	-------	0.099	-------	-------	1.133	1.687	1.927	2.266	INFIL-3
19	Reservoir	8	-------	5.358	-------	-------	8.916	11.13	12.78	14.56	TWIN 36IN PIPES (#2)
20	Reservoir	9	-------	0.408	-------	-------	0.739	0.882	0.989	1.107	INFIL-4
21	Reservoir	10	-------	2.783	-------	-------	4.208	4.987	5.575	6.323	INIFL-5
22	Reservoir	11	-------	0.109	-------	-------	1.183	2.355	3.607	4.990	INFIL-6
23	Reservoir	12	-------	0.000	-------	-------	0.000	0.070	0.167	0.704	36 INCH PIPE (#3)
24	Reservoir	13	-------	2.660	-------	-------	4.422	5.516	6.332	7.197	TWO 36 INCH PIPES
25	Combine	7, 19,	-------	6.742	-------	-------	11.13	13.91	15.96	18.23	<no description>
26	Combine	4, 6, 17, 18, 20, 25	-------	10.48	-------	-------	18.99	23.97	27.38	31.28	<no description>
27	Combine	21, 22, 23, 24,	-------	5.018	-------	-------	8.793	12.22	14.97	17.81	<no description>
28	Combine	26, 27	-------	15.38	-------	-------	27.64	35.87	42.12	49.08	Design Point B

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	1.044	2	732	4,941	------	------	------	PR WS-01
2	SCS Runoff	1.493	2	724	4,947	------	------	------	PR WS-02A(I)
3	SCS Runoff	1.141	2	734	5,042	------	------	------	PR WS-02A(II)
4	SCS Runoff	1.343	2	726	4,598	------	------	------	PR WS-02B(I)
5	SCS Runoff	1.330	2	724	4,507	------	------	------	PR WS-02B(II)
6	SCS Runoff	0.329	2	724	988	------	------	------	PR WS-02B(III)
7	SCS Runoff	1.625	2	726	5,759	------	------	------	PR WS-02C
8	SCS Runoff	5.519	2	728	21,524	------	------	------	PR WS-02D
9	SCS Runoff	0.639	2	724	2,044	------	------	------	PR WS-02E
10	SCS Runoff	3.218	2	724	10,300	------	------	------	PR WS-02F
11	SCS Runoff	2.983	2	724	9,701	------	------	------	PR WS-02G
12	SCS Runoff	0.491	2	730	2,000	------	------	------	PR WS-02H
13	SCS Runoff	2.681	2	732	12,044	------	------	------	PR WS-02I
14	SCS Runoff	0.039	2	726	160	------	------	------	PR WS-03
15	Reservoir	1.056	2	728	2,364	2	144.98	1,745	INFIL-1
16	Combine	2.109	2	730	7,406	3, 15	------	------	<no description>
17	Reservoir	2.076	2	732	5,871	16	136.61	1,233	INFIL-2
18	Reservoir	0.099	2	770	711	5	143.86	2,387	INFIL-3
19	Reservoir	5.358	2	730	16,803	8	139.02	3,243	TWIN 36IN PIPES (#2)
20	Reservoir	0.408	2	728	858	9	137.44	675	INFIL-4
21	Reservoir	2.783	2	726	7,104	10	136.12	2,281	INIFL-5
22	Reservoir	0.109	2	822	1,534	11	134.74	5,293	INFIL-6
23	Reservoir	0.000	2	720	0	12	132.37	1,808	36 INCH PIPE (#3)
24	Reservoir	2.660	2	734	8,938	13	135.68	2,403	TWO 36 INCH PIPES
25	Combine	6.742	2	728	22,562	7, 19,	------	------	<no description>
26	Combine	10.48	2	730	35,588	4, 6, 17, 18, 20, 25	------	------	<no description>
27	Combine	5.018	2	728	17,576	21, 22, 23, 24,	------	------	<no description>
28	Combine	15.38	2	730	53,163	26, 27	------	------	Design Point B

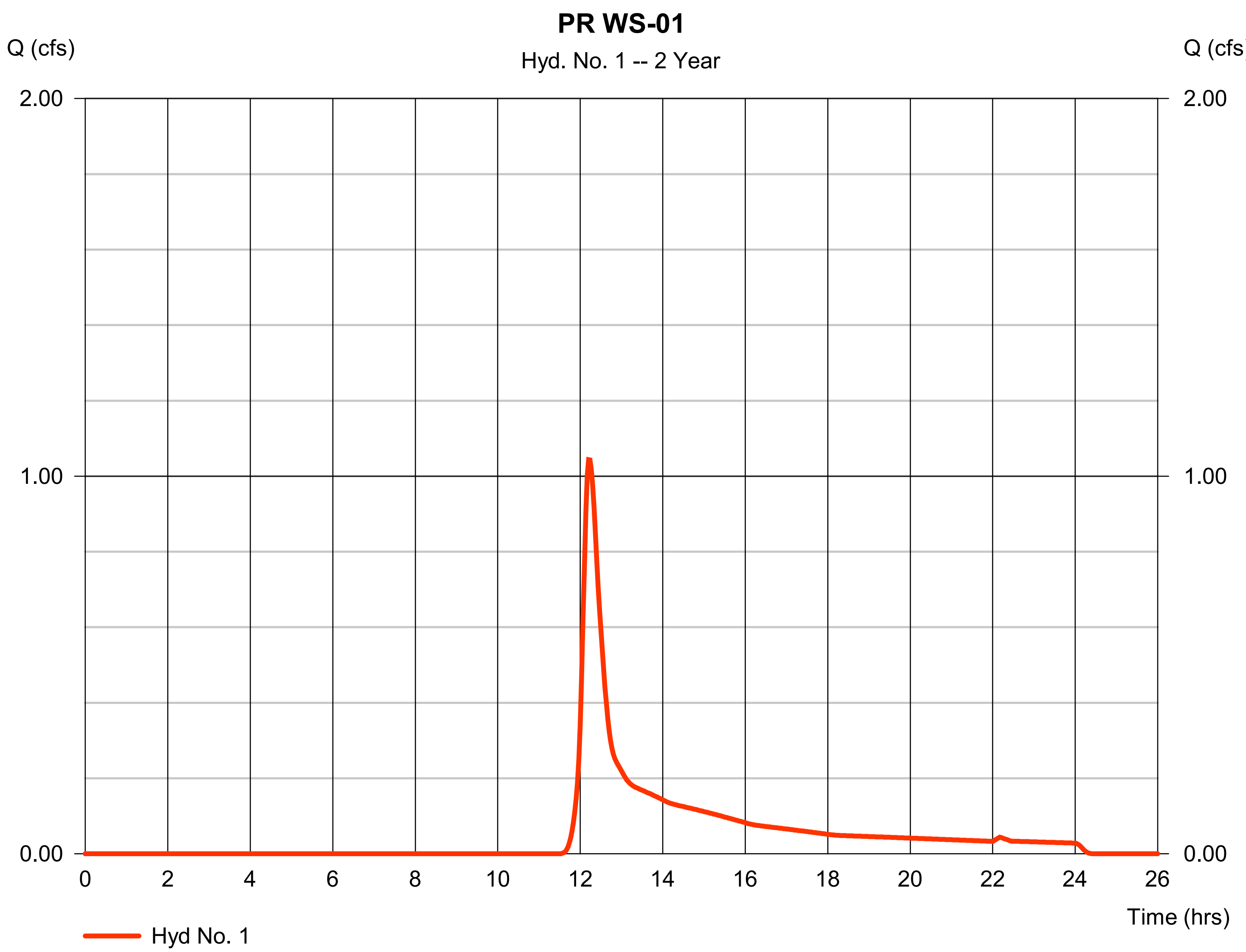
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 1

PR WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 1.044 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 4,941 cuft
Drainage area	= 1.721 ac	Curve number	= 66
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.50 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



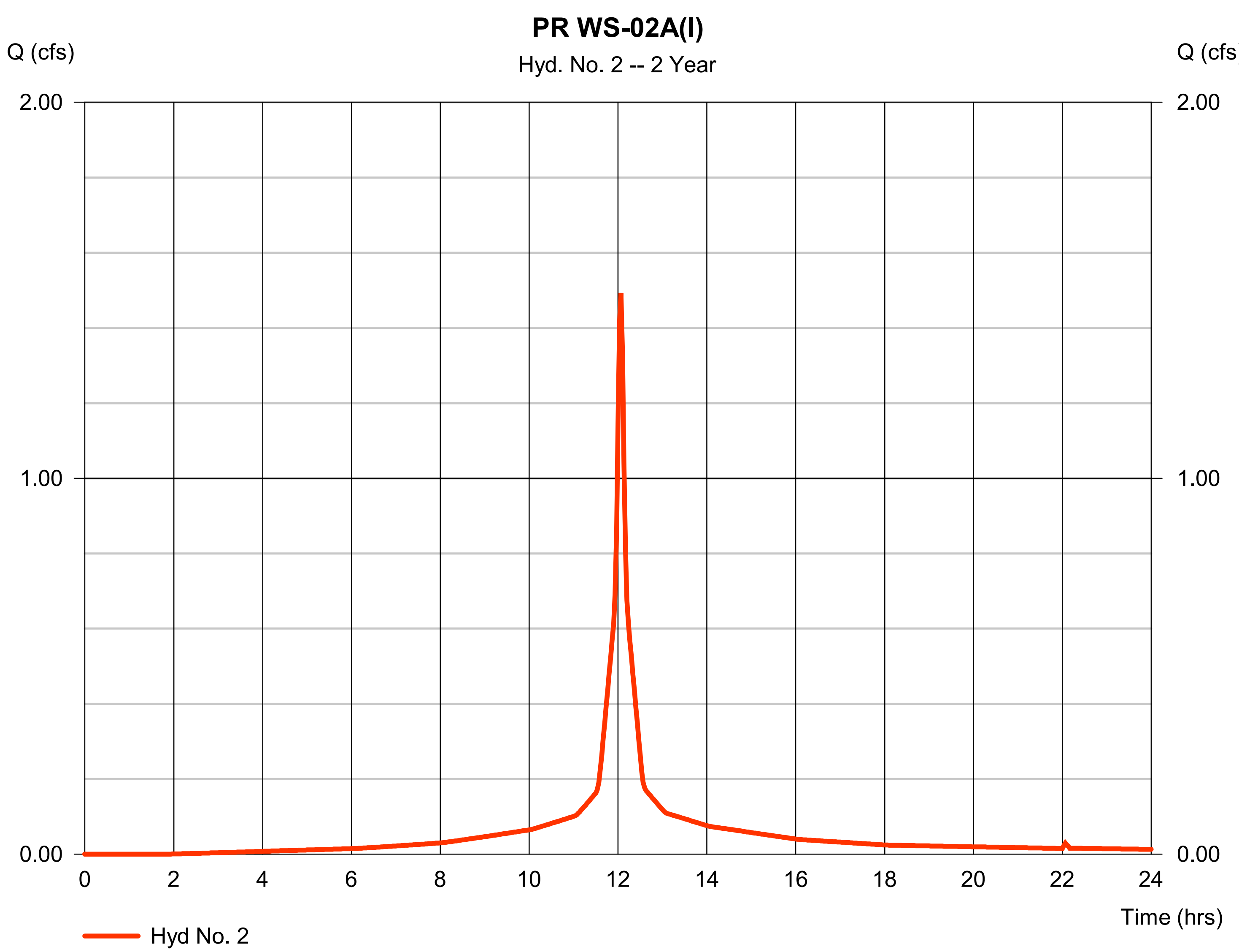
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 2

PR WS-02A(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.493 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 4,947 cuft
Drainage area	= 0.458 ac	Curve number	= 97
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



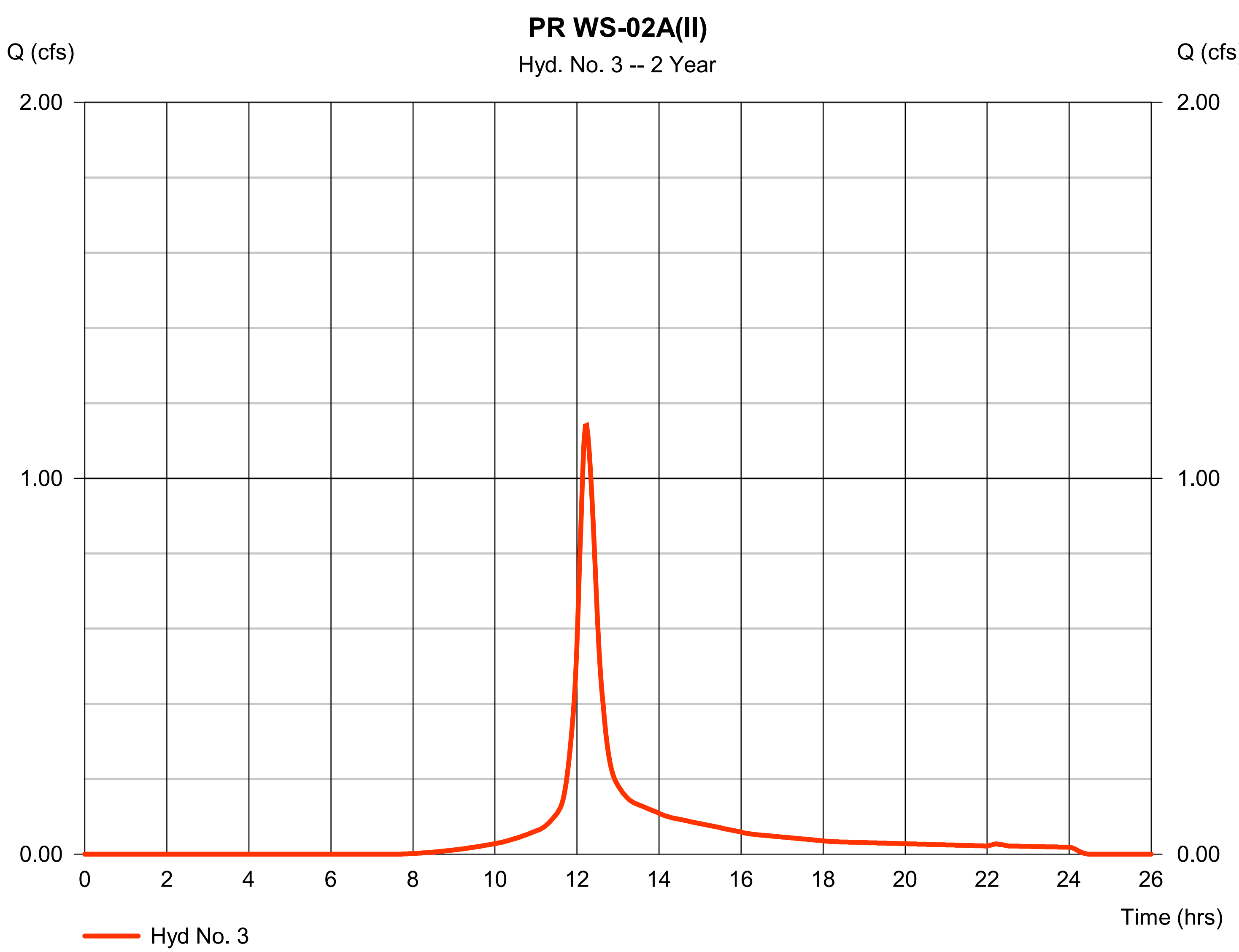
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 3

PR WS-02A(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.141 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 5,042 cuft
Drainage area	= 0.683 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



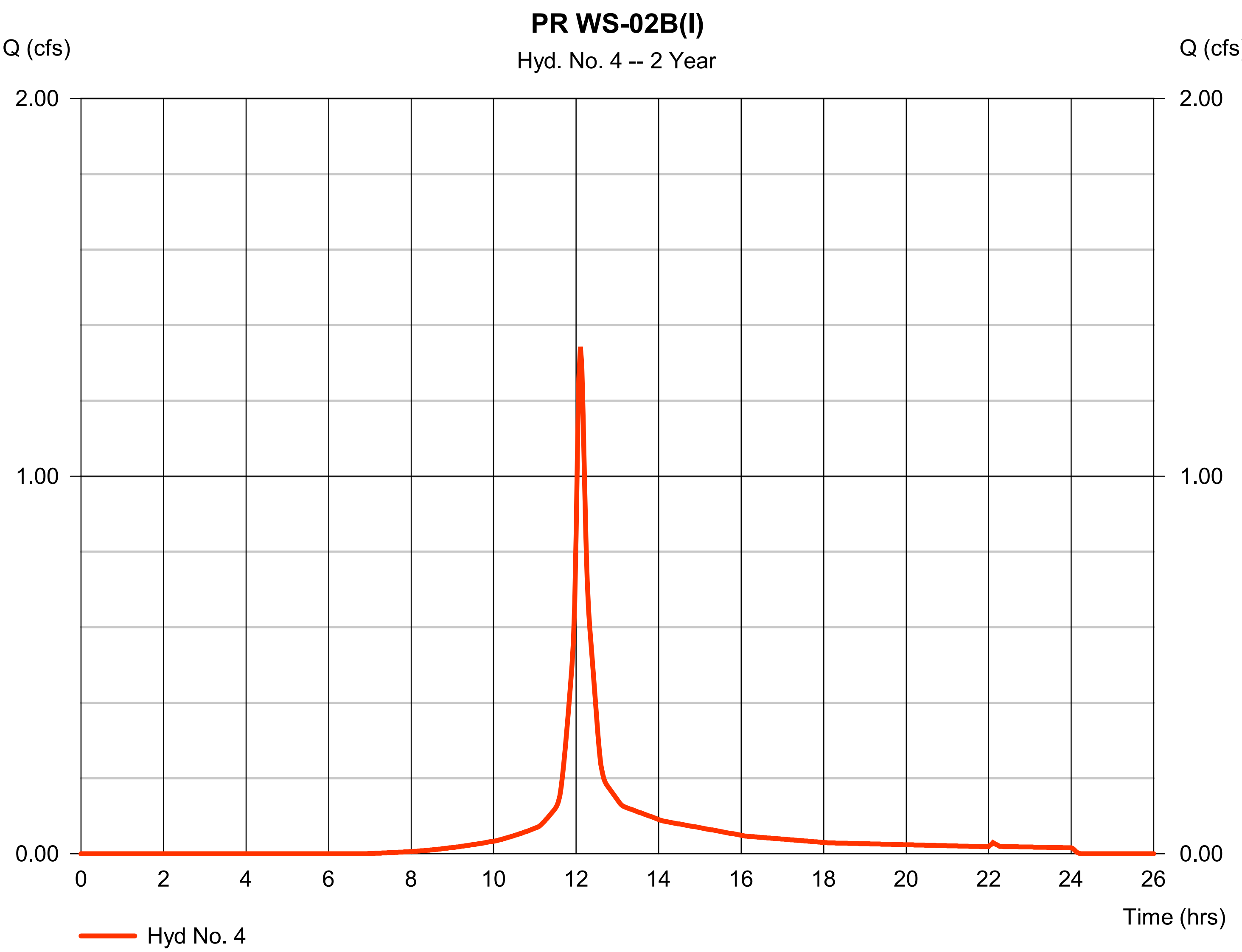
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 4

PR WS-02B(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.343 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 4,598 cuft
Drainage area	= 0.576 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



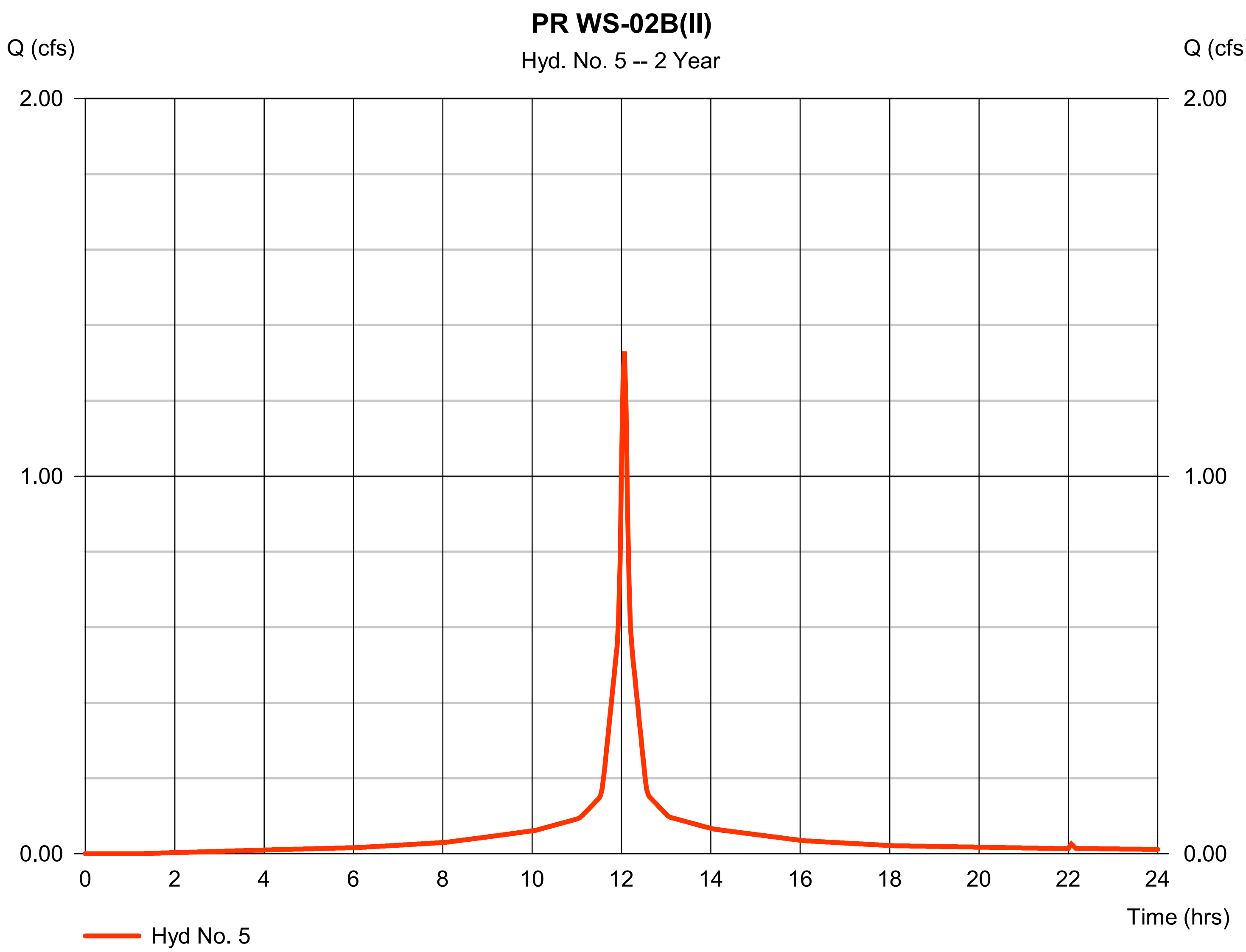
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 5

PR WS-02B(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 1.330 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 4,507 cuft
Drainage area	= 0.403 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



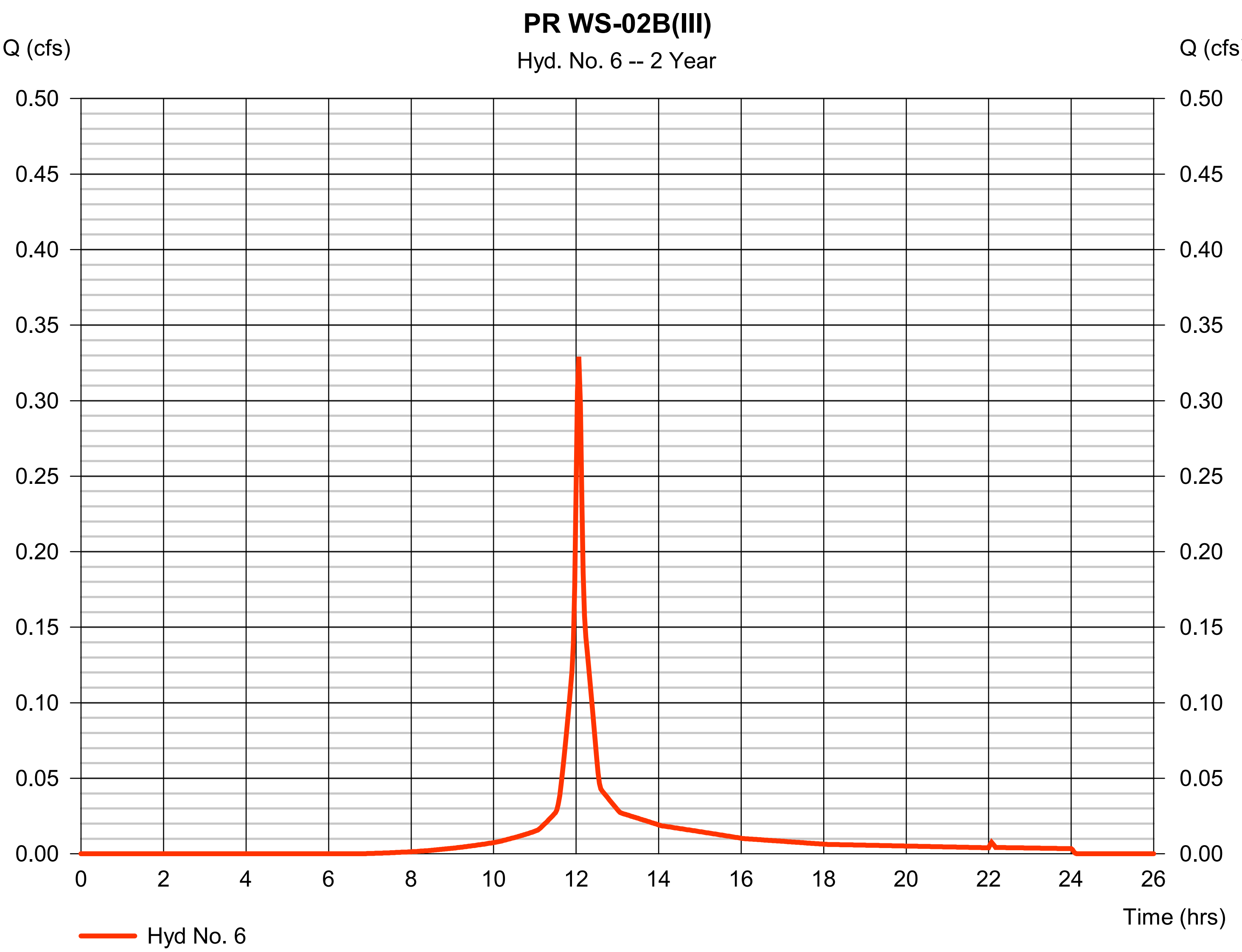
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 6

PR WS-02B(III)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.329 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 988 cuft
Drainage area	= 0.132 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



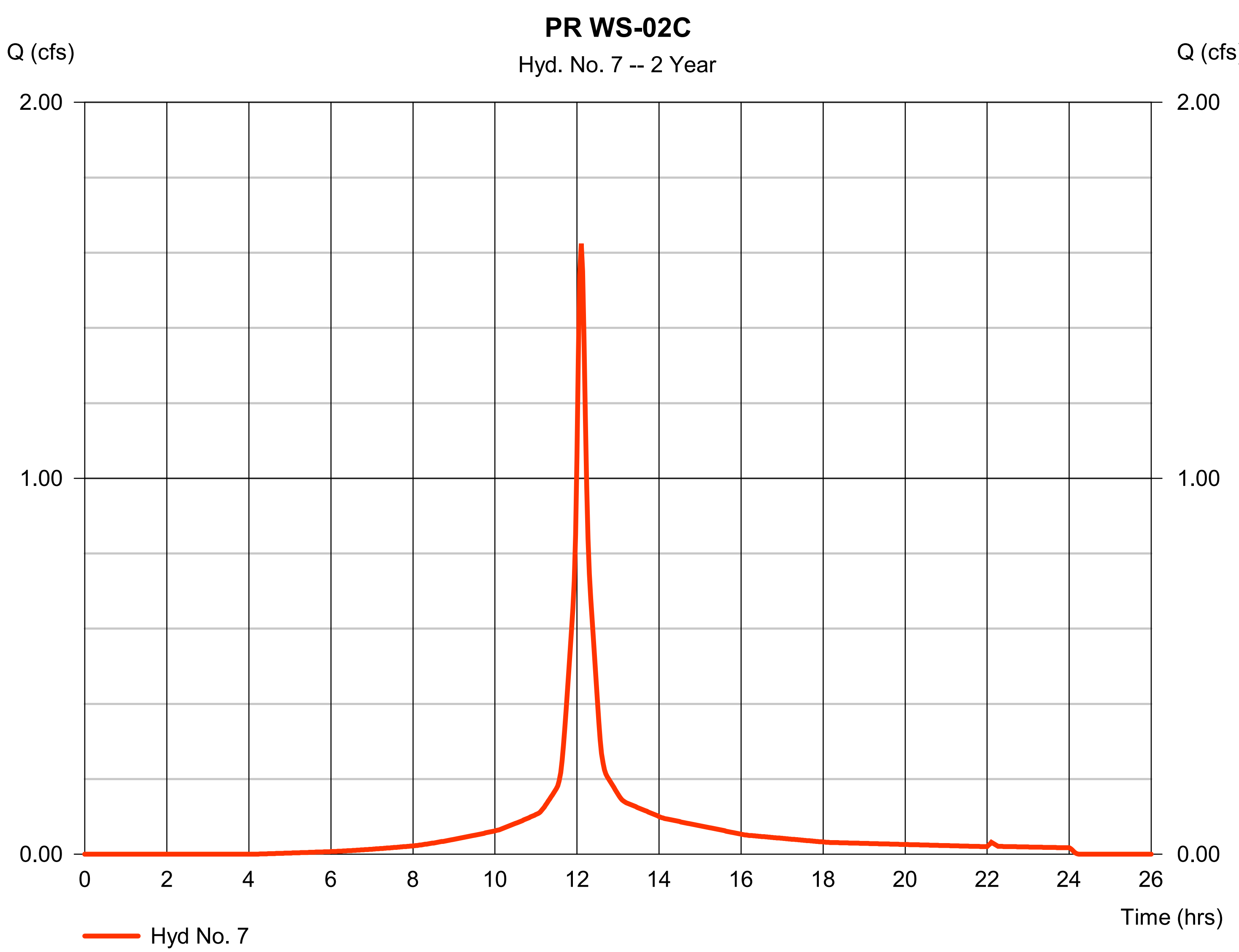
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 7

PR WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 1.625 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 5,759 cuft
Drainage area	= 0.576 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



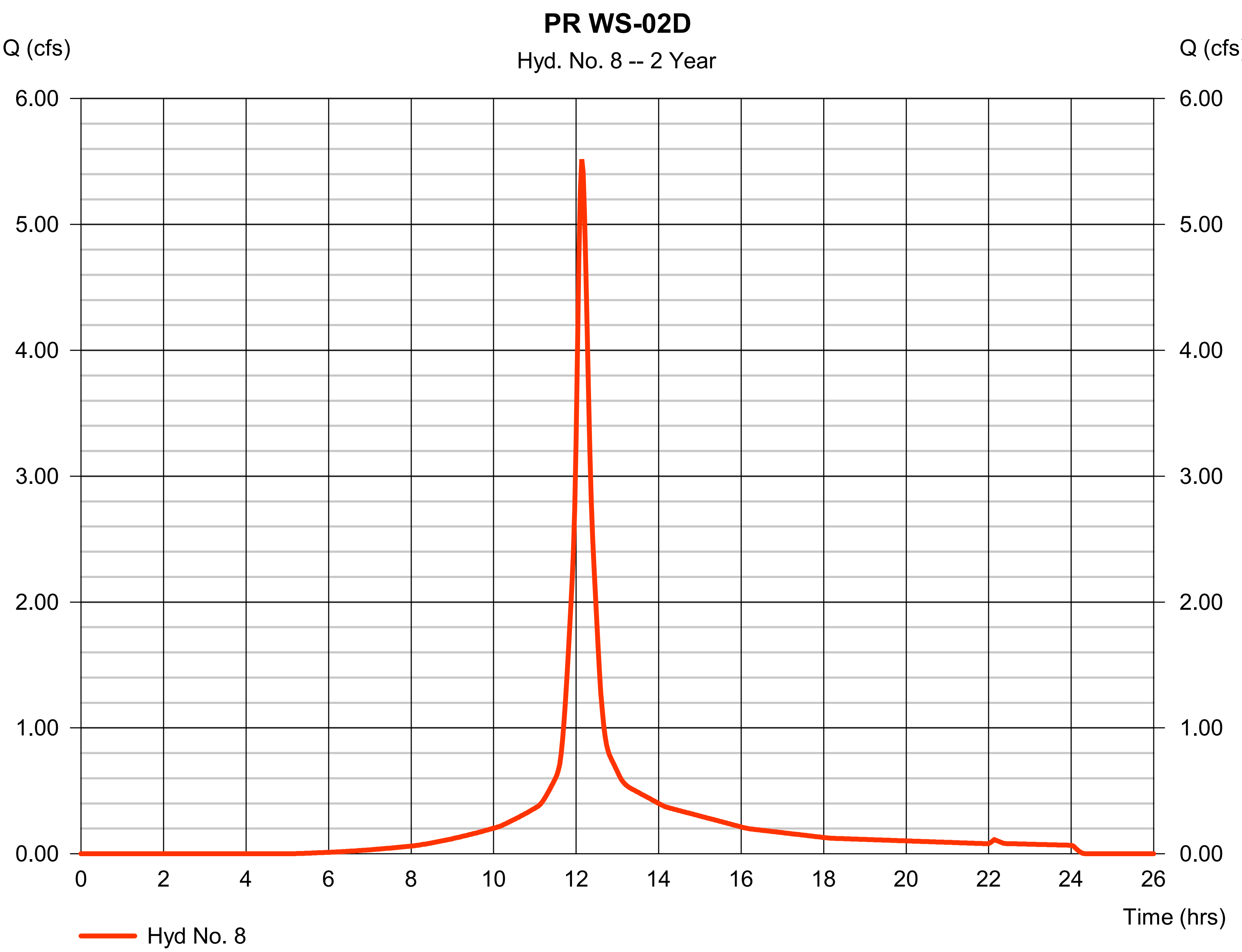
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 8

PR WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 5.519 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 21,524 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



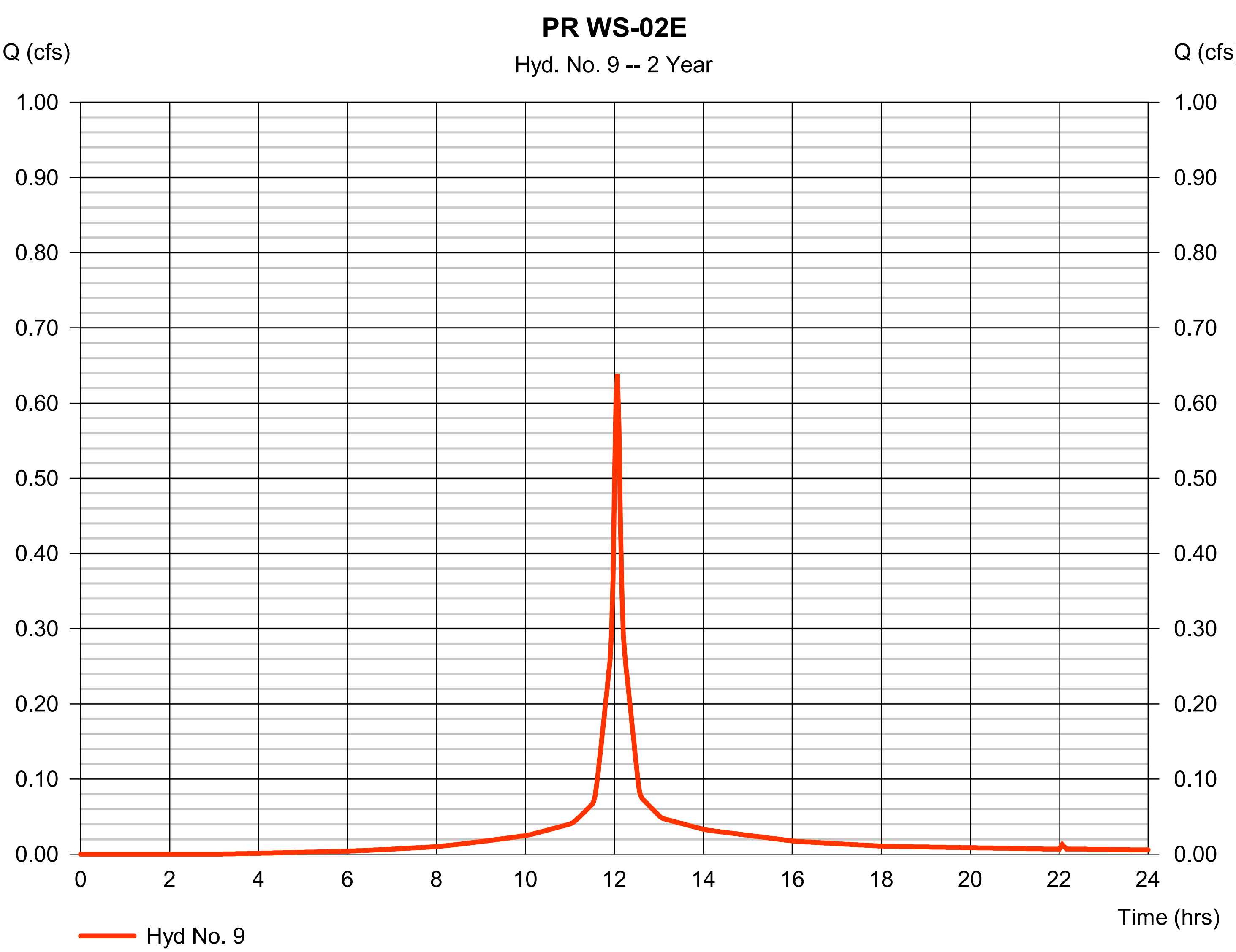
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 9

PR WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 0.639 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 2,044 cuft
Drainage area	= 0.203 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



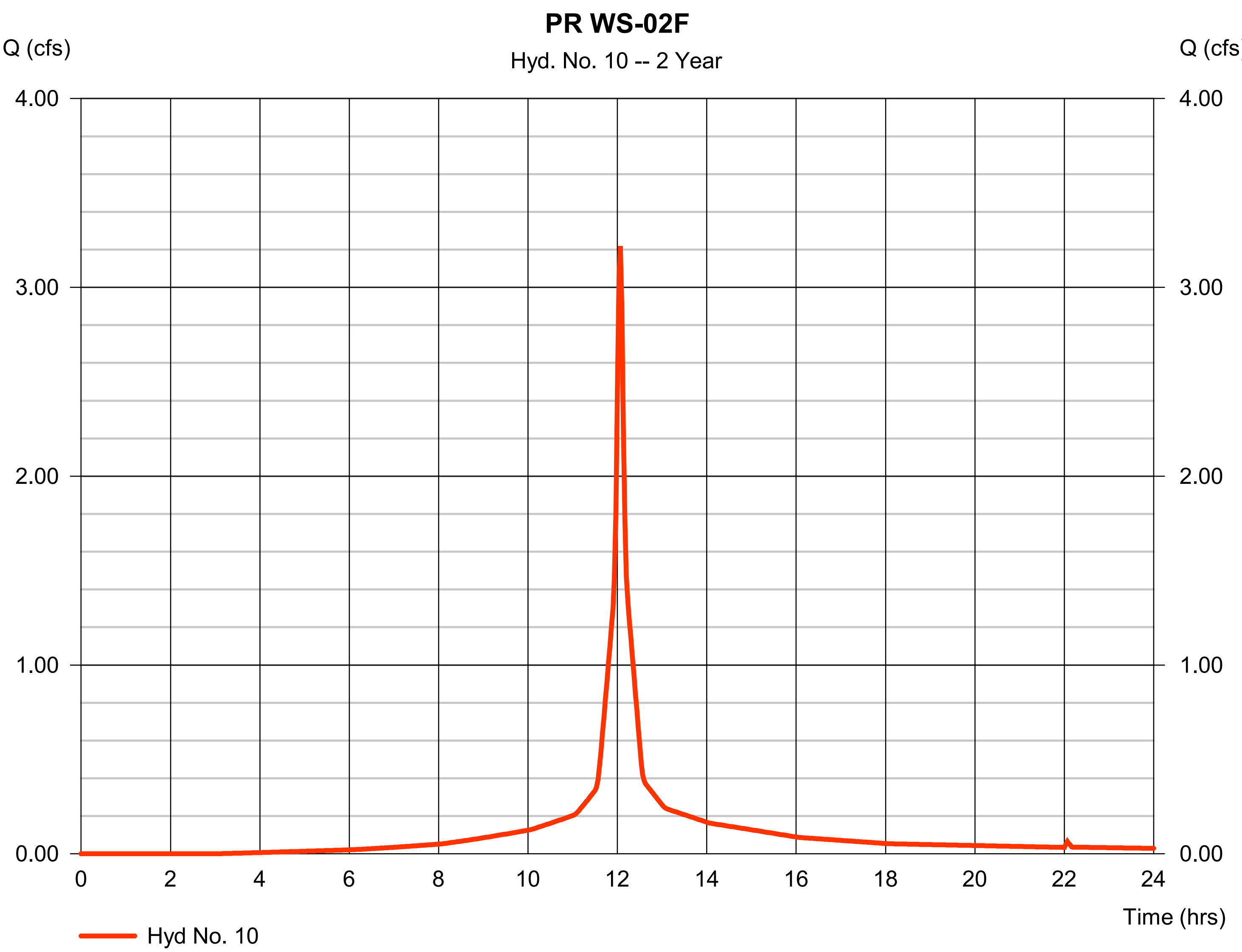
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 10

PR WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 3.218 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 10,300 cuft
Drainage area	= 1.023 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



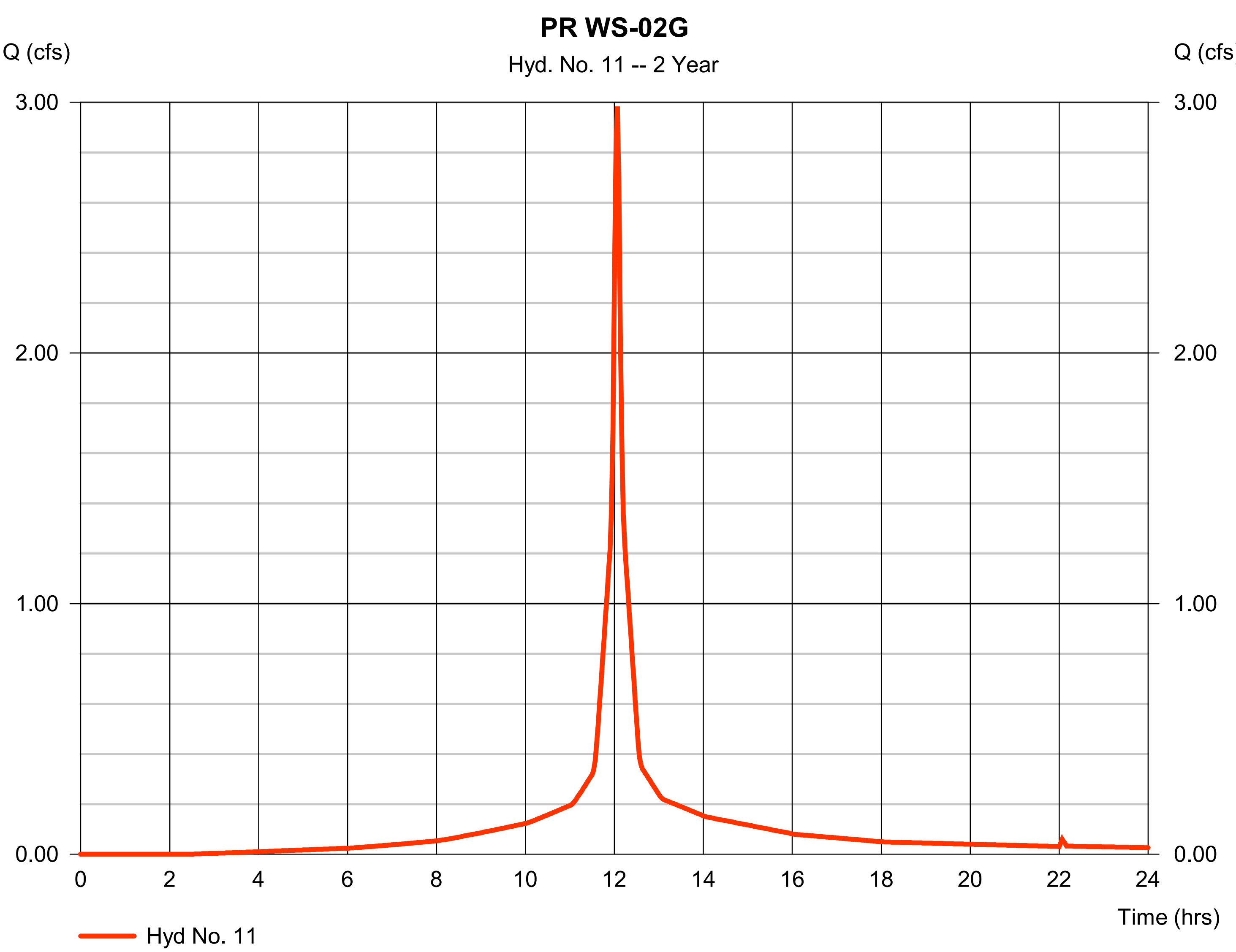
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 11

PR WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 2.983 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 9,701 cuft
Drainage area	= 0.930 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



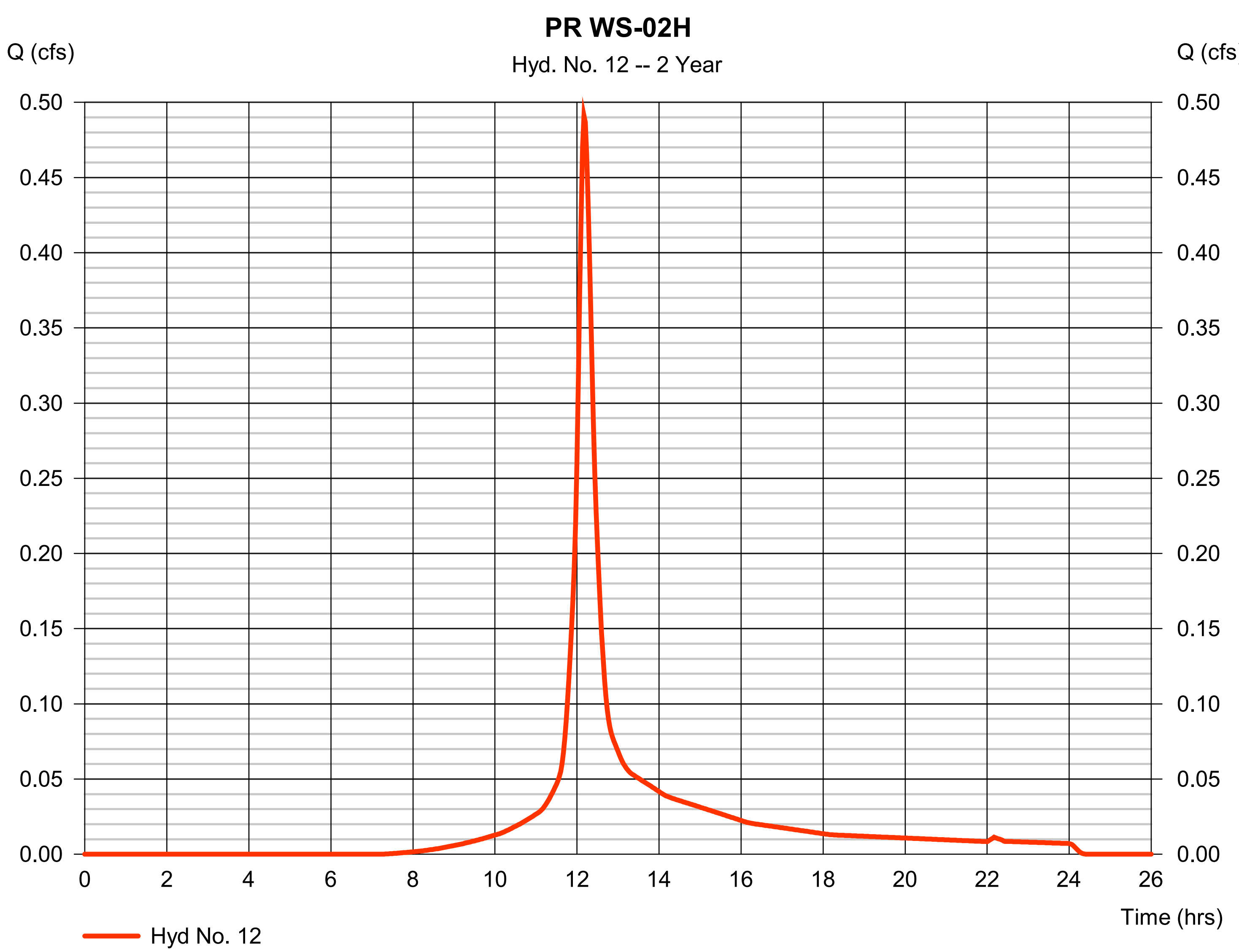
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 12

PR WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 0.491 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 2,000 cuft
Drainage area	= 0.267 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



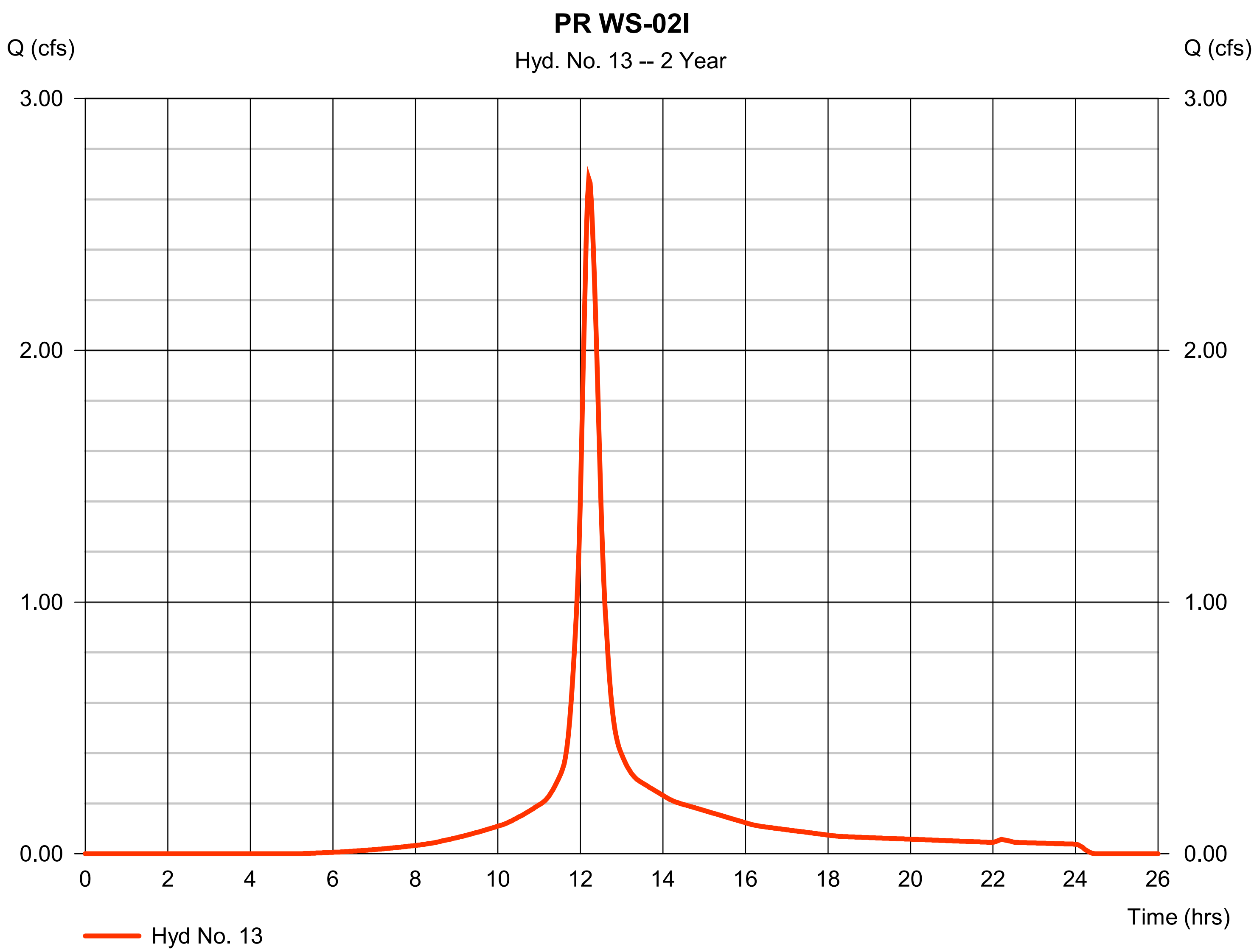
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 13

PR WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 2.681 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 12,044 cuft
Drainage area	= 1.296 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



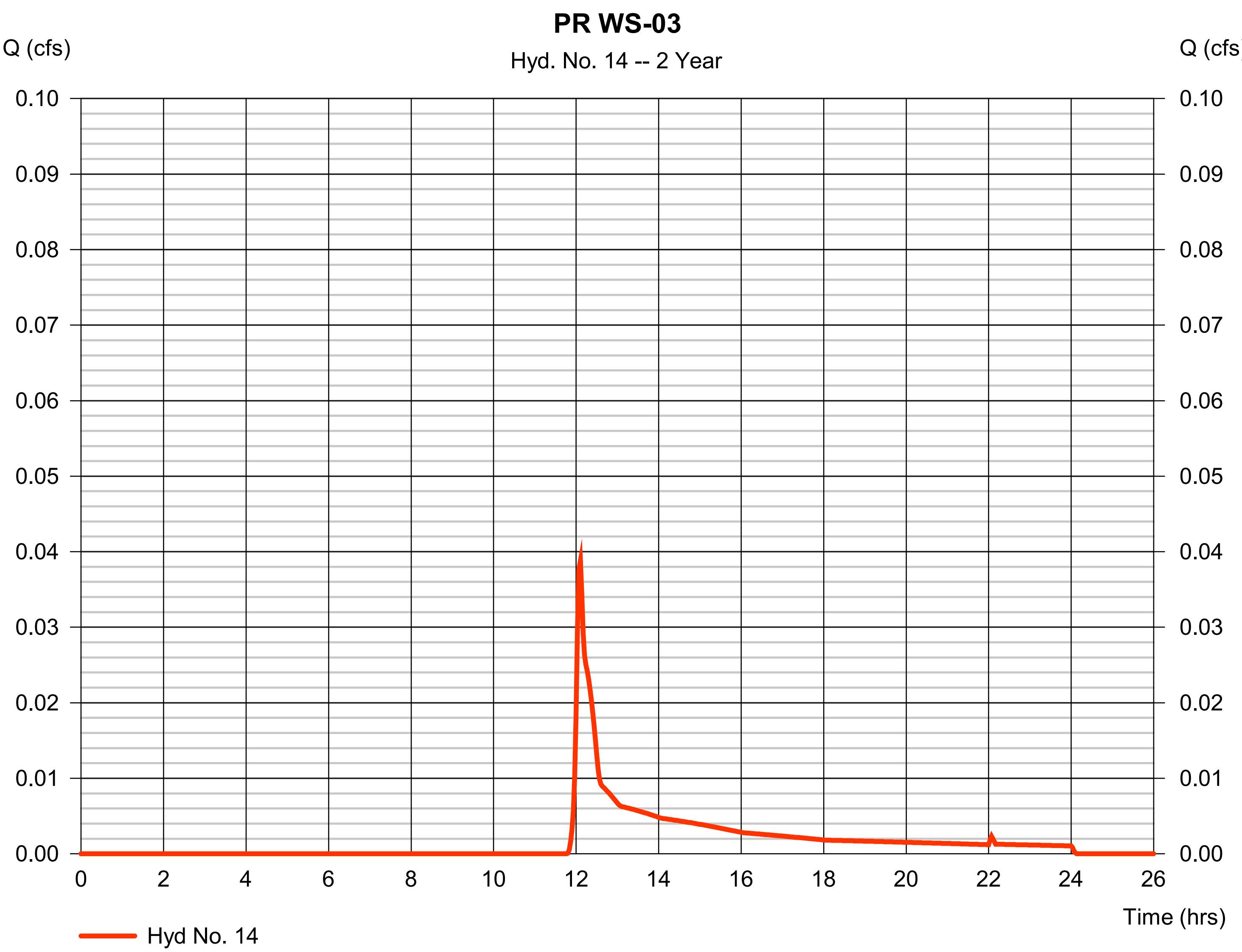
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 14

PR WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.039 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 160 cuft
Drainage area	= 0.081 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.10 min
Total precip.	= 3.52 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

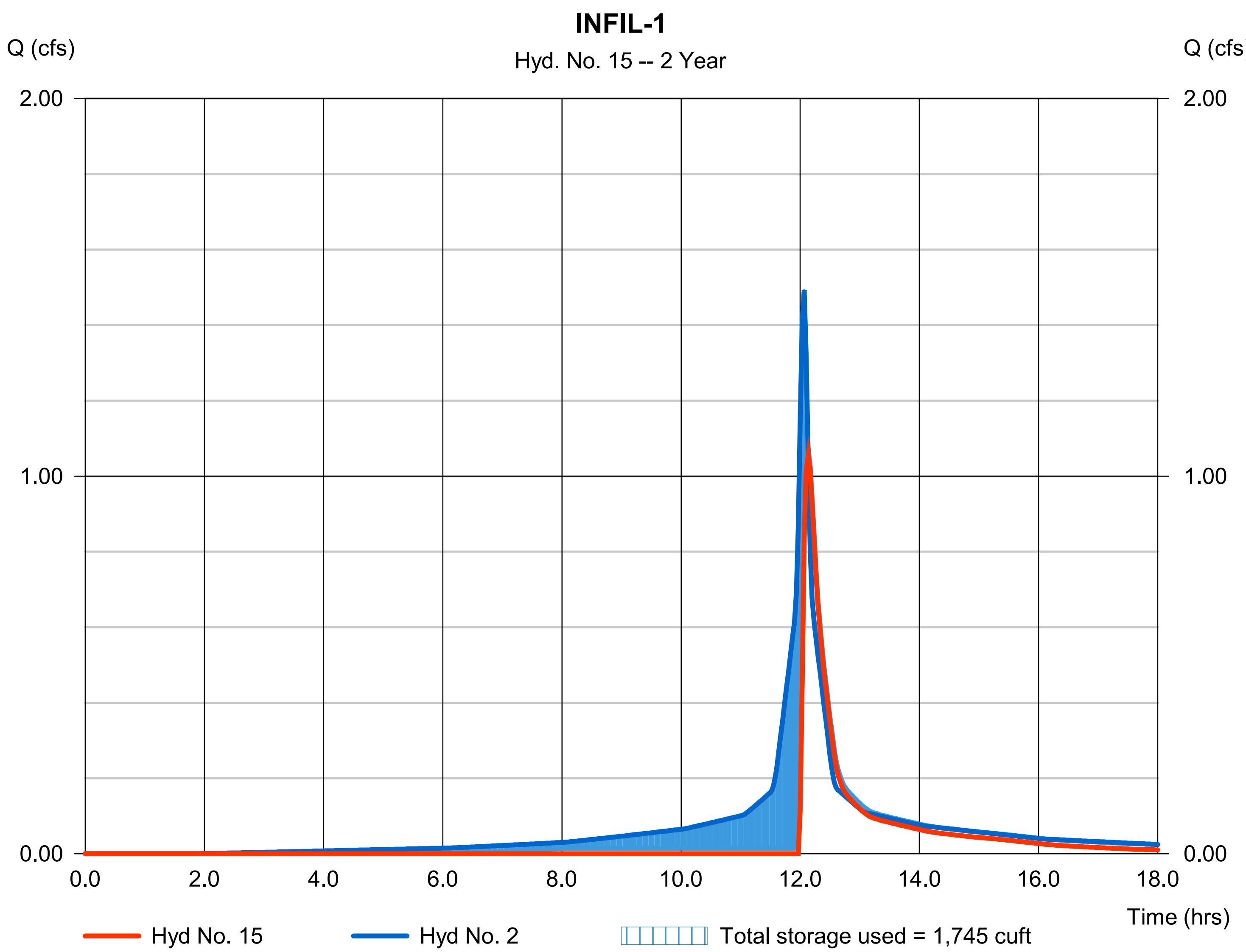
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 15

INFIL-1

Hydrograph type	= Reservoir	Peak discharge	= 1.056 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 2,364 cuft
Inflow hyd. No.	= 2 - PR WS-02A(I)	Max. Elevation	= 144.98 ft
Reservoir name	= INFIL-1	Max. Storage	= 1,745 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Pond No. 10 - INFIL-1

Pond Data

UG Chambers -Invert elev. = 142.25 ft, Rise x Span = 3.75 x 4.80 ft, Barrel Len = 48.72 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 141.50 ft, Width = 7.79 ft, Height = 5.50 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	141.50	n/a	0	0
0.55	142.05	n/a	167	167
1.10	142.60	n/a	265	432
1.65	143.15	n/a	319	751
2.20	143.70	n/a	313	1,065
2.75	144.25	n/a	304	1,369
3.30	144.80	n/a	289	1,658
3.85	145.35	n/a	268	1,926
4.40	145.90	n/a	232	2,159
4.95	146.45	n/a	171	2,330
5.50	147.00	n/a	167	2,497

Culvert / Orifice Structures

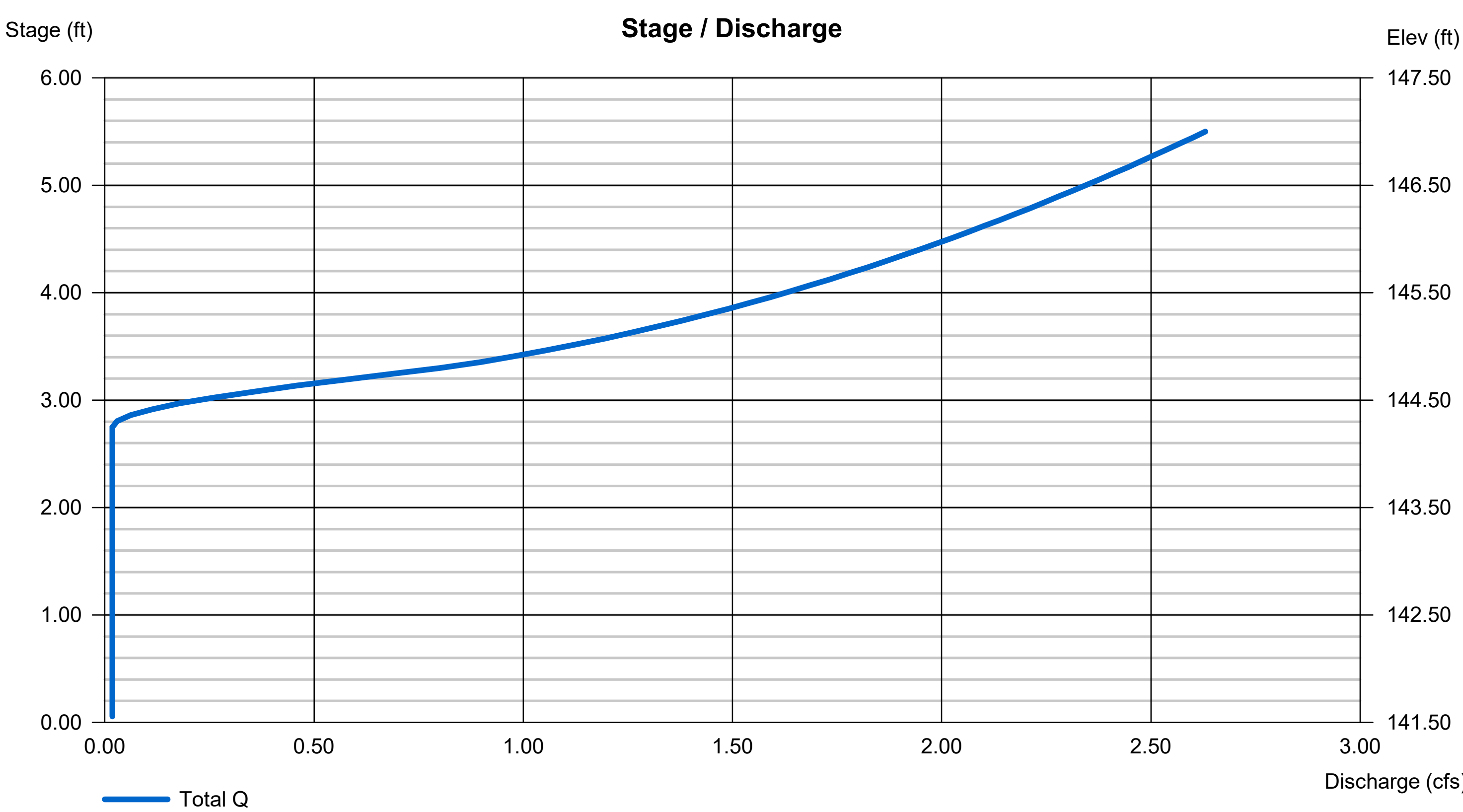
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	8.00	0.00	0.00
Span (in)	= 12.00	8.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 142.95	144.25	0.00	0.00
Length (ft)	= 20.00	0.50	0.00	0.00
Slope (%)	= 1.00	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.000 (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).



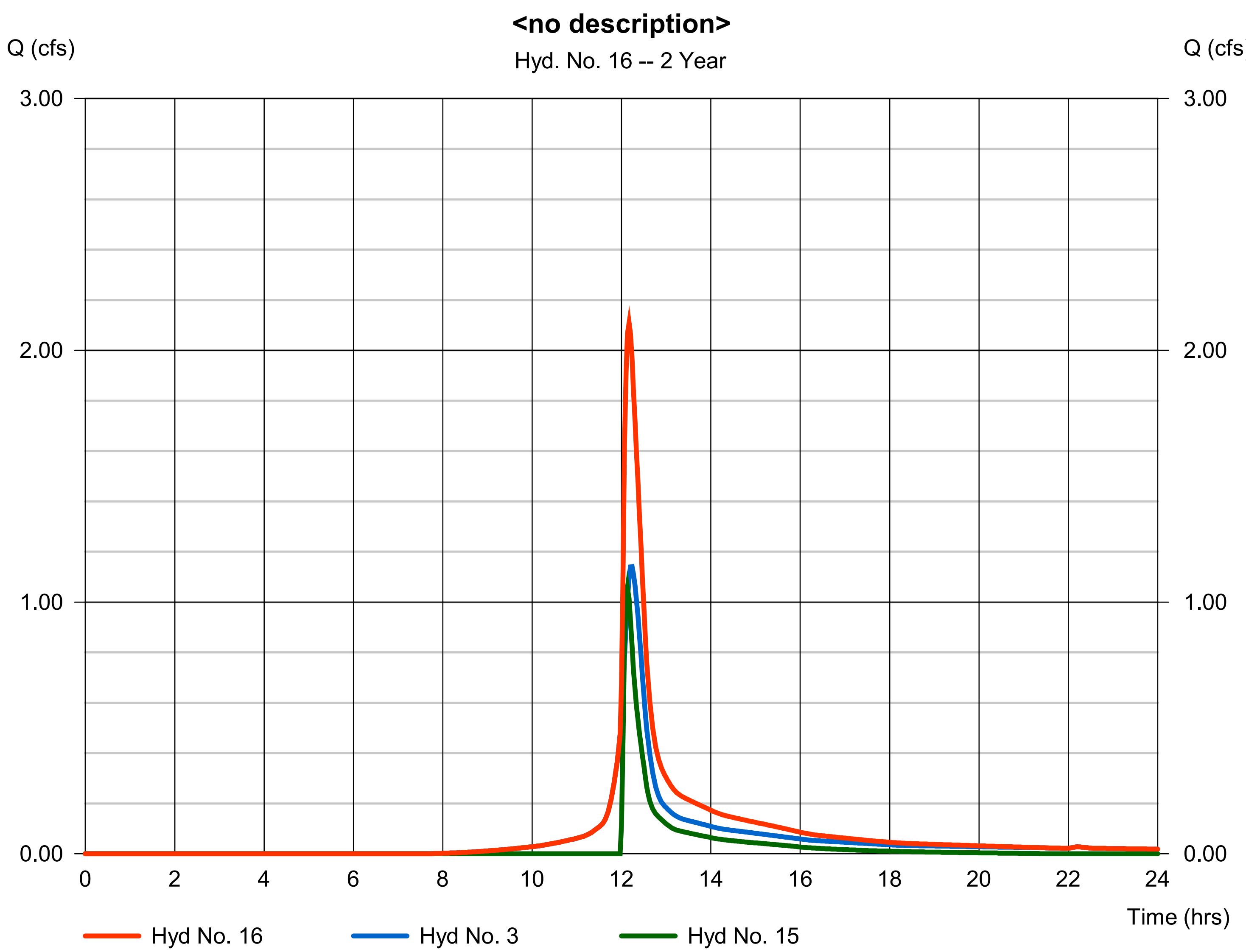
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 16

<no description>

Hydrograph type	= Combine	Peak discharge	= 2.109 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 7,406 cuft
Inflow hyds.	= 3, 15	Contrib. drain. area	= 0.683 ac



Hydrograph Report

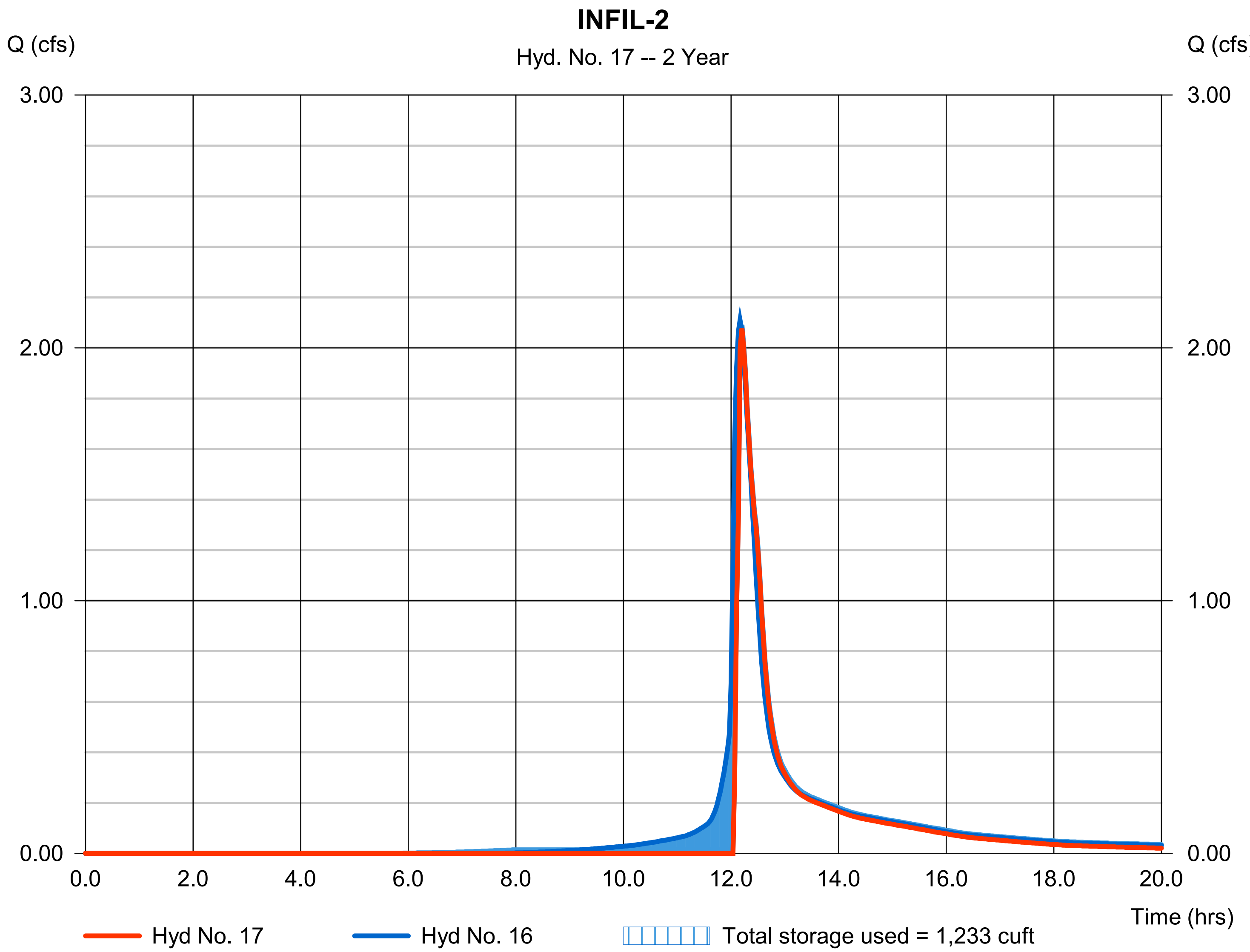
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 17

INFIL-2

Hydrograph type	= Reservoir	Peak discharge	= 2.076 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 5,871 cuft
Inflow hyd. No.	= 16 - <no description>	Max. Elevation	= 136.61 ft
Reservoir name	= INFIL-2	Max. Storage	= 1,233 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Pond No. 1 - INFIL-2

Pond Data

UG Chambers -Invert elev. = 133.75 ft, Rise x Span = 3.75 x 4.85 ft, Barrel Len = 63.06 ft, No. Barrels = 1, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 133.00 ft, Width = 8.42 ft, Height = 5.50 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	133.00	n/a	0	0
0.55	133.55	n/a	117	117
1.10	134.10	n/a	181	298
1.65	134.65	n/a	216	514
2.20	135.20	n/a	213	727
2.75	135.75	n/a	206	933
3.30	136.30	n/a	197	1,130
3.85	136.85	n/a	183	1,313
4.40	137.40	n/a	160	1,472
4.95	137.95	n/a	120	1,592
5.50	138.50	n/a	117	1,709

Culvert / Orifice Structures

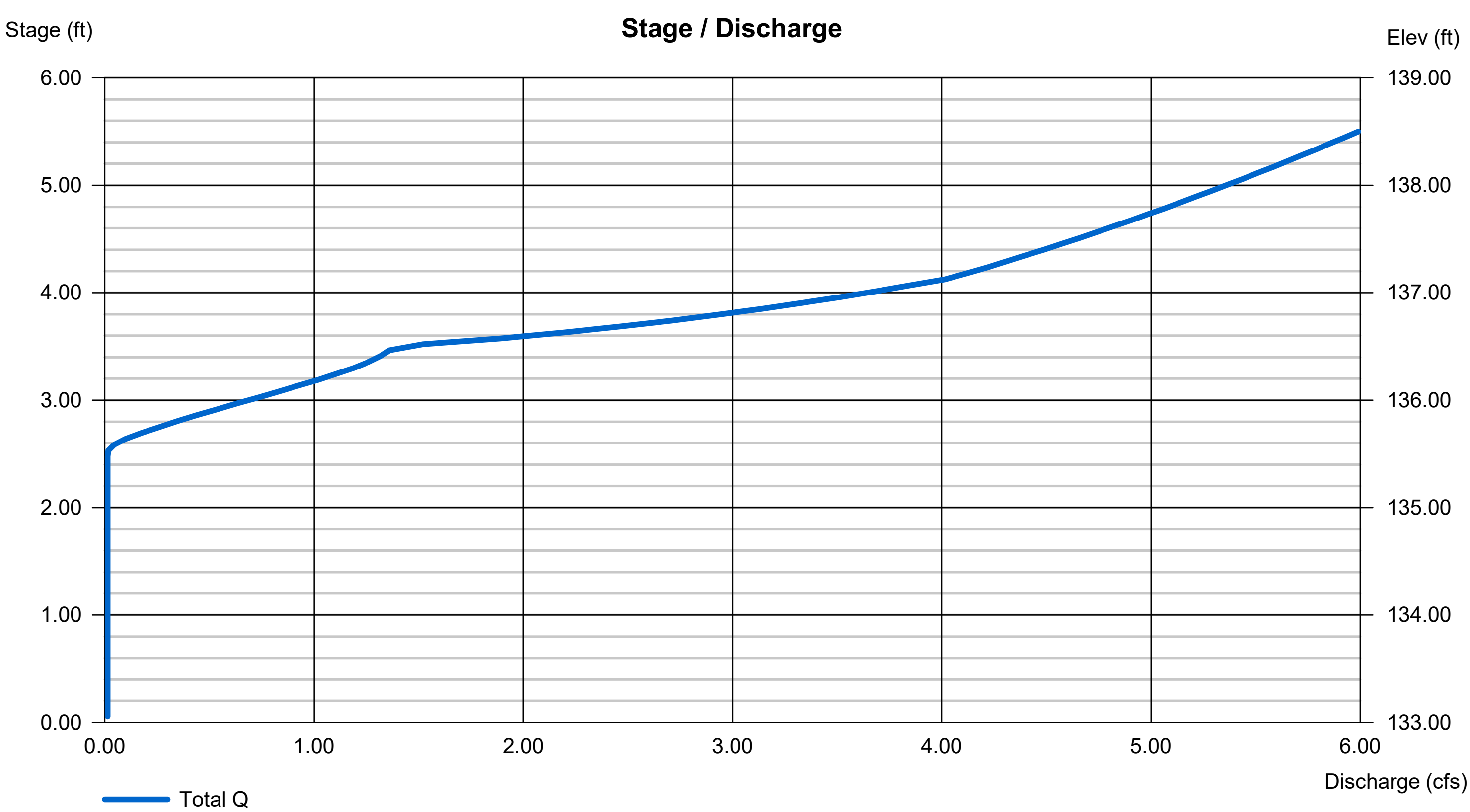
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	Inactive	Inactive	Inactive
Span (in)	= 12.00	10.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 135.50	136.00	0.00	0.00
Length (ft)	= 8.00	0.50	0.00	0.00
Slope (%)	= 1.00	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	Inactive
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 2.60	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

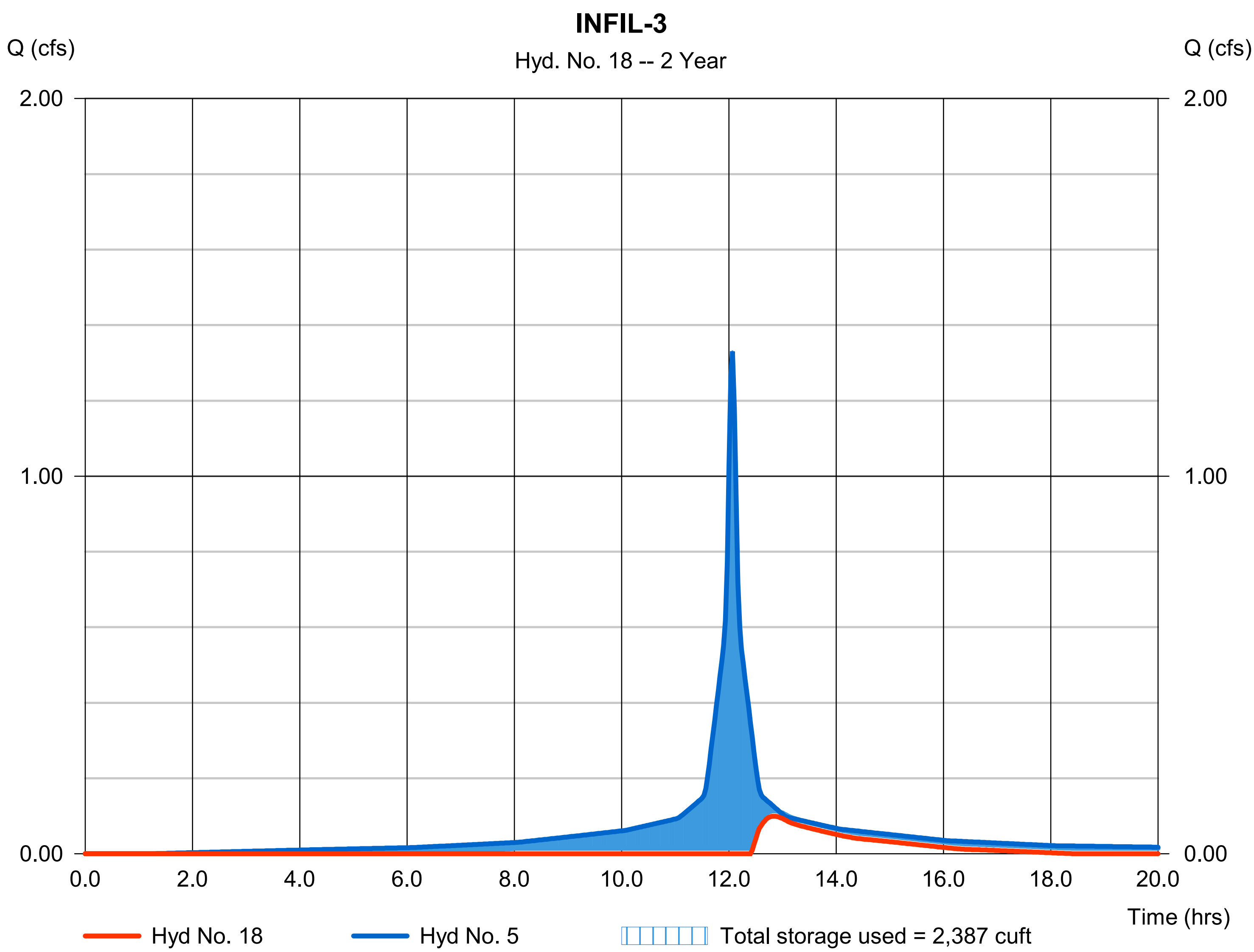
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 18

INFIL-3

Hydrograph type	= Reservoir	Peak discharge	= 0.099 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.83 hrs
Time interval	= 2 min	Hyd. volume	= 711 cuft
Inflow hyd. No.	= 5 - PR WS-02B(II)	Max. Elevation	= 143.86 ft
Reservoir name	= INFIL-3	Max. Storage	= 2,387 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Pond No. 9 - INFIL-3

Pond Data

UG Chambers -Invert elev. = 141.35 ft, Rise x Span = 3.75 x 4.93 ft, Barrel Len = 70.23 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 140.60 ft, Width = 7.79 ft, Height = 5.50 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	140.60	n/a	0	0
0.55	141.15	n/a	241	241
1.10	141.70	n/a	386	627
1.65	142.25	n/a	466	1,093
2.20	142.80	n/a	458	1,550
2.75	143.35	n/a	443	1,994
3.30	143.90	n/a	422	2,416
3.85	144.45	n/a	390	2,806
4.40	145.00	n/a	338	3,144
4.95	145.55	n/a	247	3,391
5.50	146.10	n/a	241	3,632

Culvert / Orifice Structures

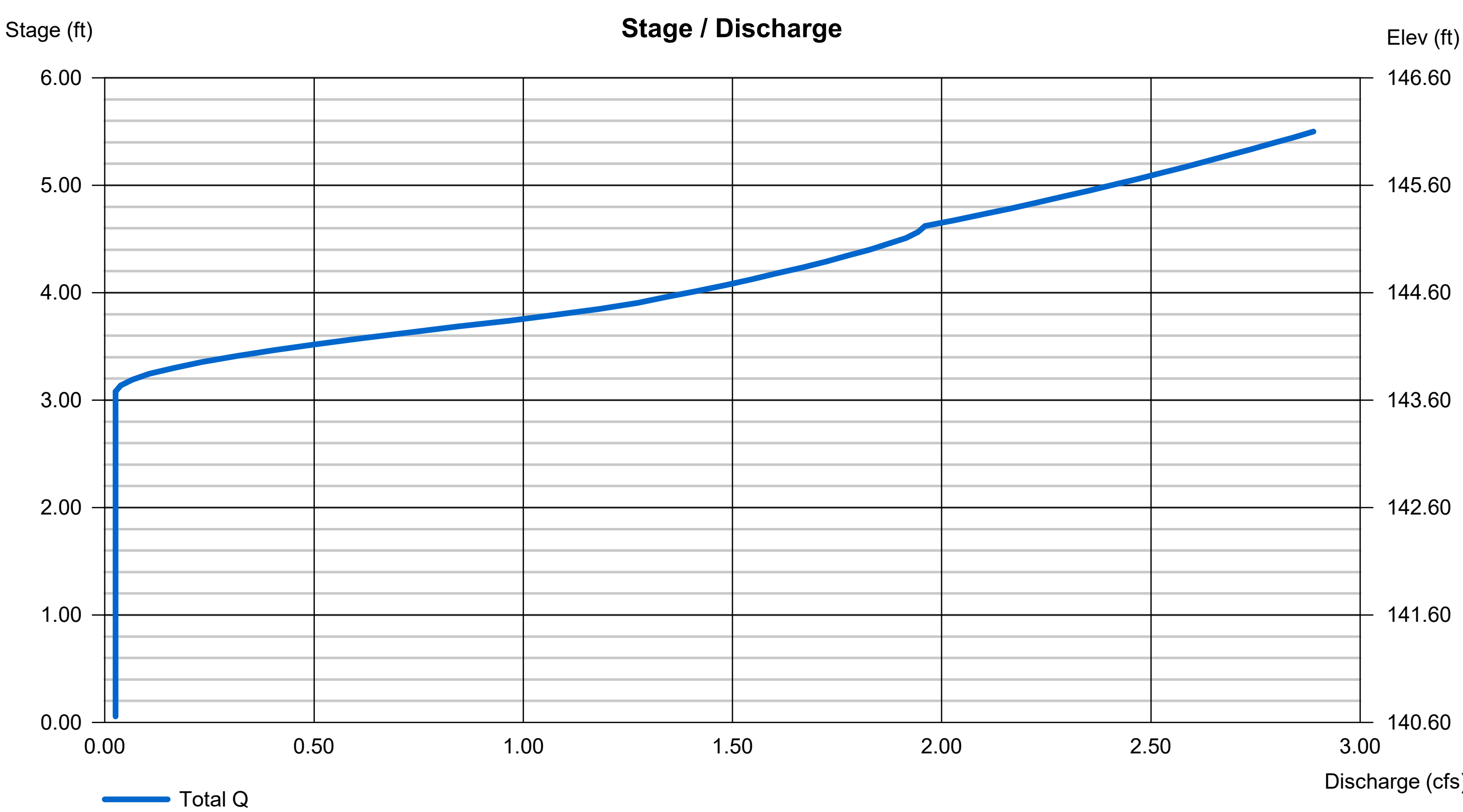
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	10.00	0.00	0.00
Span (in)	= 12.00	10.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 143.67	143.67	0.00	0.00
Length (ft)	= 19.00	0.50	0.00	0.00
Slope (%)	= 1.00	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

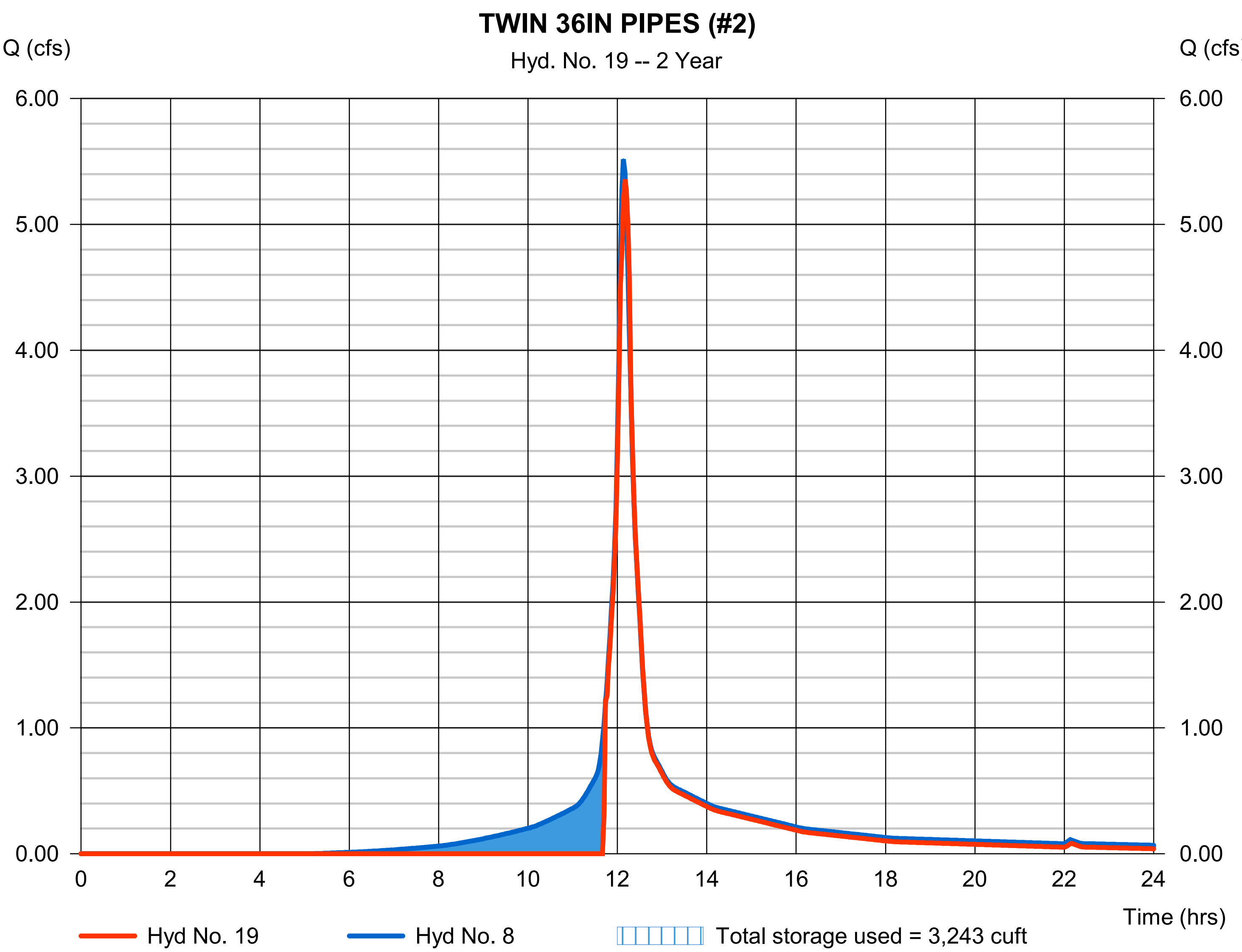
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 19

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 5.358 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 16,803 cuft
Inflow hyd. No.	= 8 - PR WS-02D	Max. Elevation	= 139.02 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 3,243 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Pond No. 6 - Northern Twin 36IN

Pond Data

UG Chambers - Invert elev. = 131.00 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 120.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No

Encasement - Invert elev. = 130.50 ft, Width = 6.00 ft, Height = 3.50 ft, Voids = 40.00%

Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 138.30 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	130.50	n/a	0	0
0.35	130.85	n/a	168	168
0.70	131.20	n/a	197	365
1.05	131.55	n/a	267	632
1.40	131.90	n/a	297	929
1.75	132.25	n/a	313	1,242
2.10	132.60	n/a	319	1,561
2.45	132.95	n/a	316	1,877
2.80	133.30	n/a	305	2,182
3.15	133.65	n/a	282	2,464
3.50	134.00	n/a	234	2,698
7.80	138.30	01	2	2,701
8.50	139.00	1,250	438	3,138
9.50	140.00	7,570	4,410	7,548

Culvert / Orifice Structures

		[A]	[B]	[C]	[PrfRsr]
Rise (in)	=	30.00	Inactive	Inactive	Inactive
Span (in)	=	30.00	0.00	0.00	0.00
No. Barrels	=	1	0	0	0
Invert El. (ft)	=	134.20	0.00	0.00	0.00
Length (ft)	=	69.00	0.00	0.00	0.00
Slope (%)	=	0.50	0.00	0.00	n/a
N-Value	=	.013	.013	.013	n/a
Orifice Coeff.	=	0.60	0.60	0.60	0.60
Multi-Stage	=	n/a	No	No	No

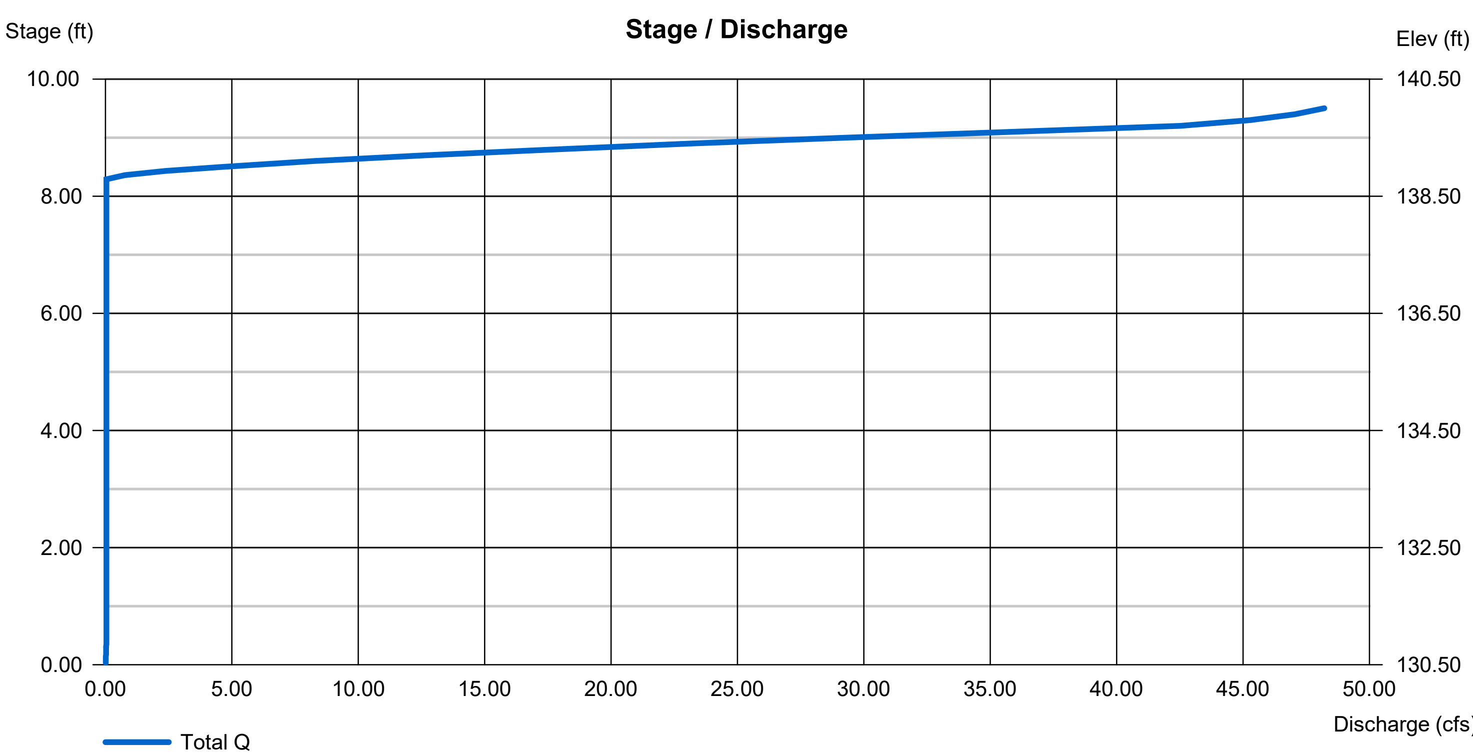
Weir Structures

		[A]	[B]	[C]	[D]
Crest Len (ft)	=	15.00	Inactive	Inactive	Inactive
Crest El. (ft)	=	138.80	0.00	0.00	0.00
Weir Coeff.	=	3.33	3.33	3.33	3.33
Weir Type	=	Broad	---	---	---
Multi-Stage	=	Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

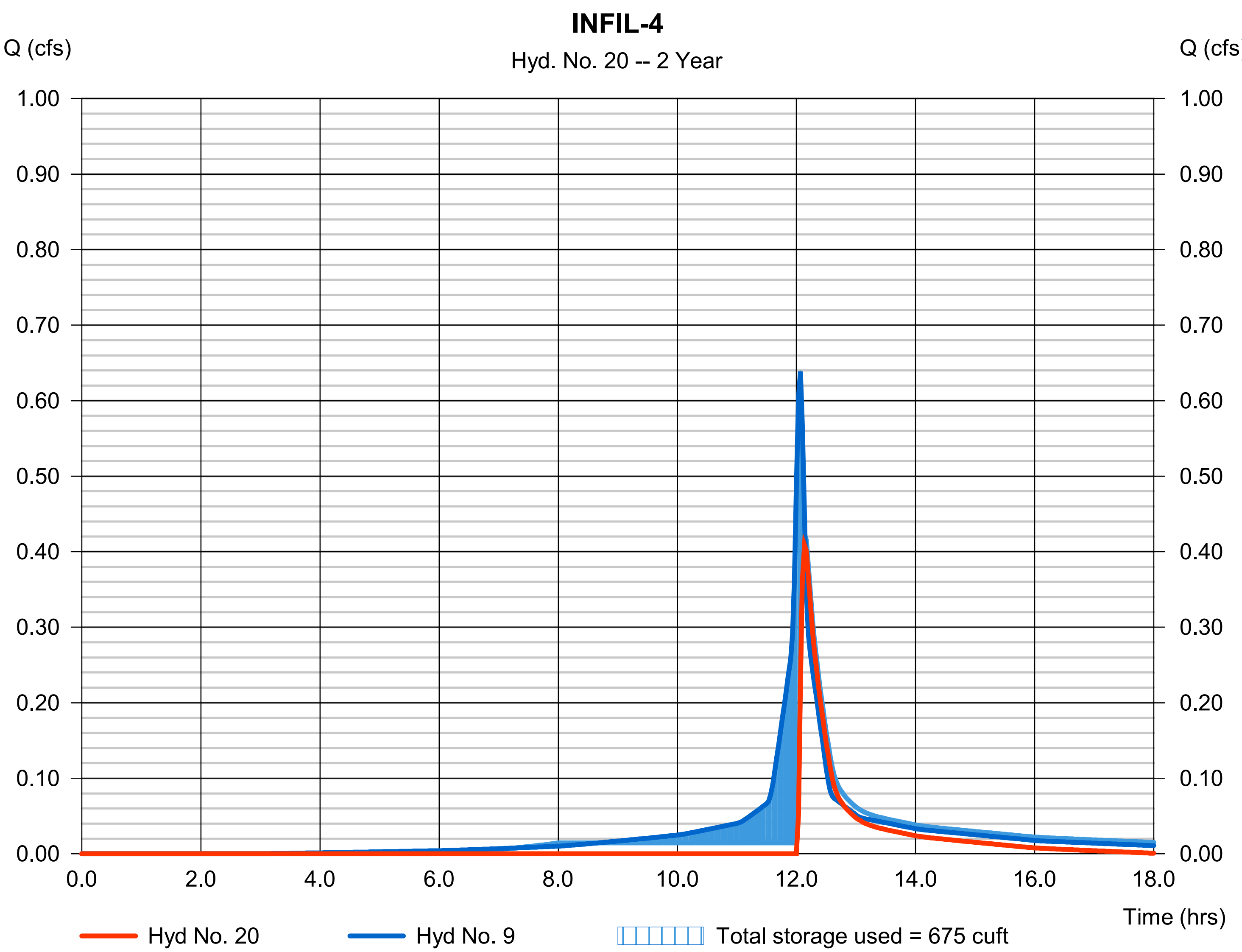
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 20

INFIL-4

Hydrograph type	= Reservoir	Peak discharge	= 0.408 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 858 cuft
Inflow hyd. No.	= 9 - PR WS-02E	Max. Elevation	= 137.44 ft
Reservoir name	= INFIL-4	Max. Storage	= 675 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Pond No. 2 - INFIL-4

Pond Data

UG Chambers -Invert elev. = 136.00 ft, Rise x Span = 2.50 x 3.05 ft, Barrel Len = 46.34 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 135.25 ft, Width = 5.50 ft, Height = 3.75 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	135.25	n/a	0	0
0.38	135.63	n/a	76	76
0.75	136.00	n/a	76	153
1.13	136.38	n/a	140	293
1.50	136.75	n/a	138	431
1.88	137.13	n/a	135	567
2.25	137.50	n/a	131	697
2.63	137.88	n/a	123	820
3.00	138.25	n/a	112	932
3.38	138.63	n/a	89	1,021
3.75	139.00	n/a	76	1,098

Culvert / Orifice Structures

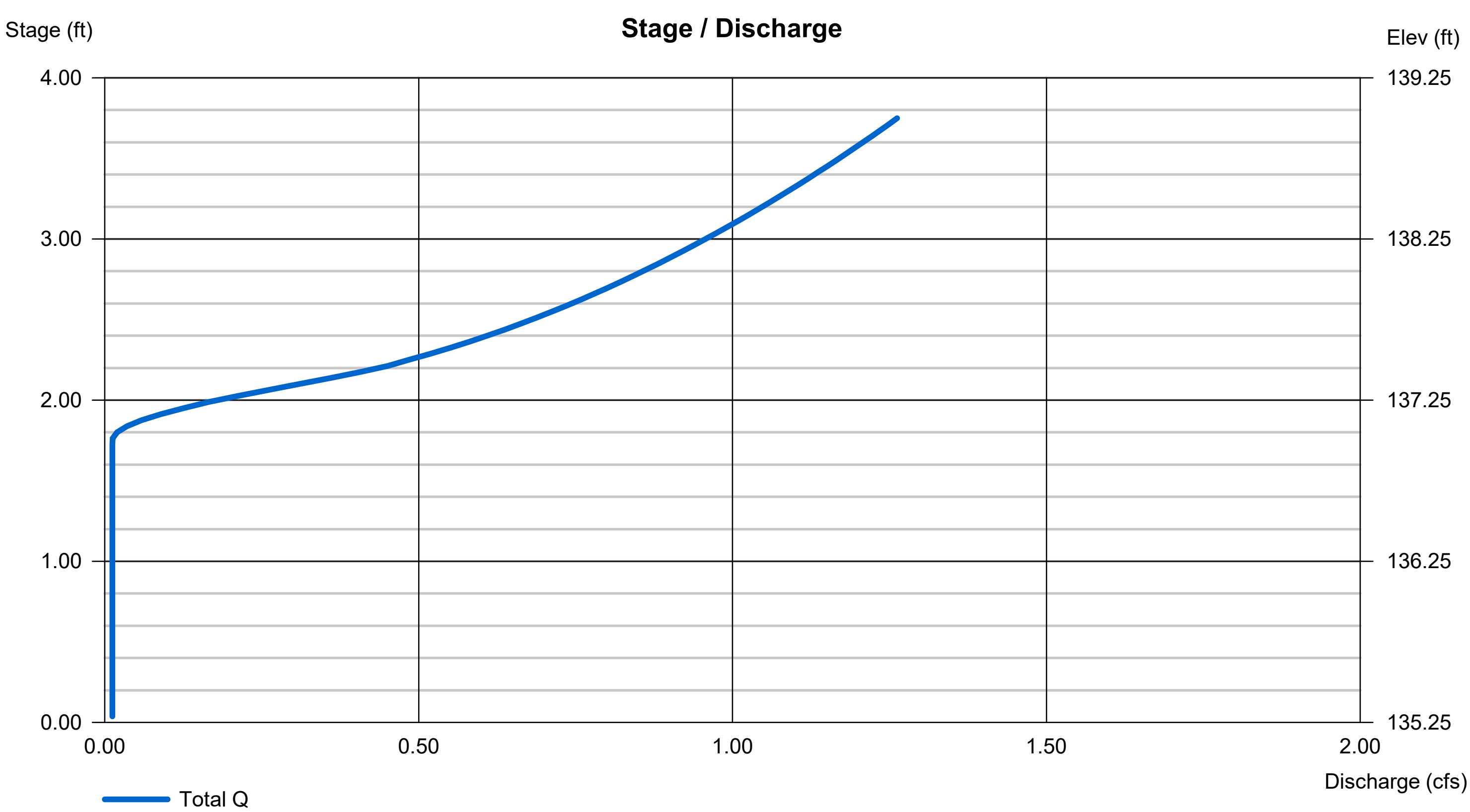
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	6.00	Inactive	Inactive
Span (in)	= 12.00	6.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 136.45	137.00	0.00	0.00
Length (ft)	= 28.00	0.50	0.00	0.00
Slope (%)	= 1.00	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	Inactive	Inactive	Inactive
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

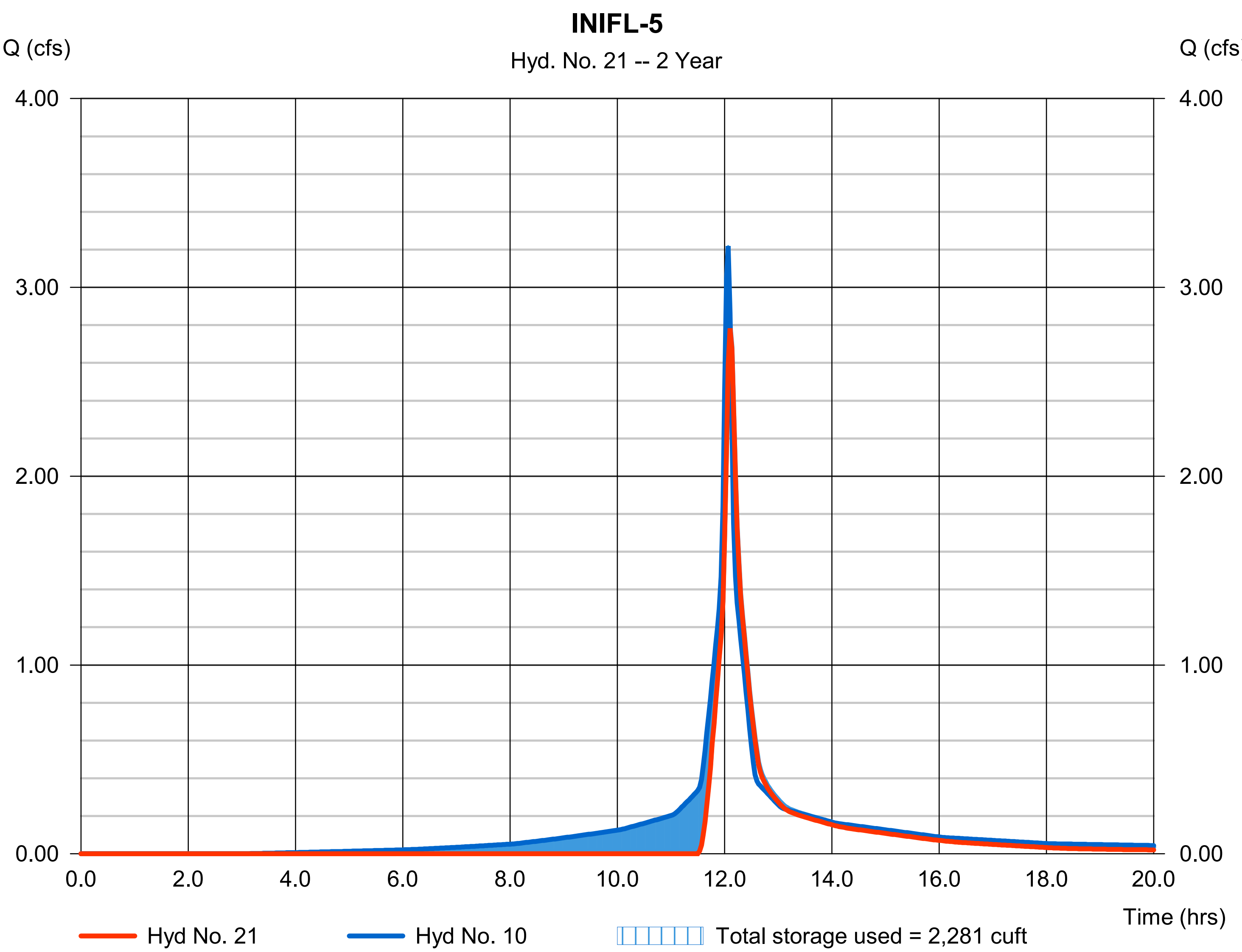
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 21

INIFL-5

Hydrograph type	= Reservoir	Peak discharge	= 2.783 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 7,104 cuft
Inflow hyd. No.	= 10 - PR WS-02F	Max. Elevation	= 136.12 ft
Reservoir name	= INIFL-5	Max. Storage	= 2,281 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Pond No. 3 - INIFL-5

Pond Data

UG Chambers -Invert elev. = 133.75 ft, Rise x Span = 3.75 x 4.93 ft, Barrel Len = 70.23 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 133.00 ft, Width = 7.79 ft, Height = 5.50 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	133.00	n/a	0	0
0.55	133.55	n/a	241	241
1.10	134.10	n/a	386	627
1.65	134.65	n/a	466	1,093
2.20	135.20	n/a	458	1,550
2.75	135.75	n/a	443	1,994
3.30	136.30	n/a	422	2,416
3.85	136.85	n/a	390	2,806
4.40	137.40	n/a	338	3,144
4.95	137.95	n/a	247	3,391
5.50	138.50	n/a	241	3,632

Culvert / Orifice Structures

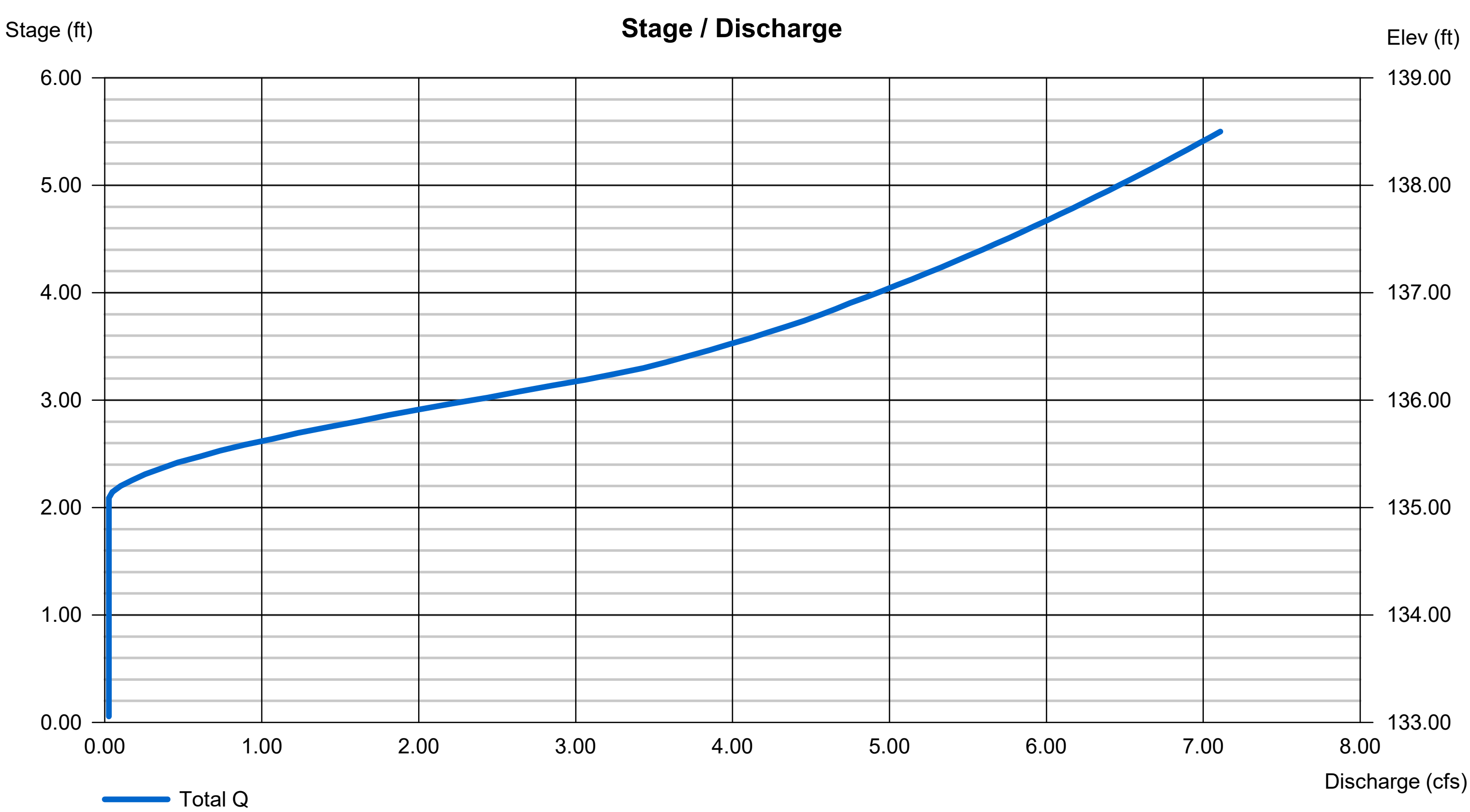
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	15.00	0.00	0.00
Span (in)	= 15.00	15.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 135.00	135.08	0.00	0.00
Length (ft)	= 29.00	0.50	0.00	0.00
Slope (%)	= 2.40	1.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	Inactive	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

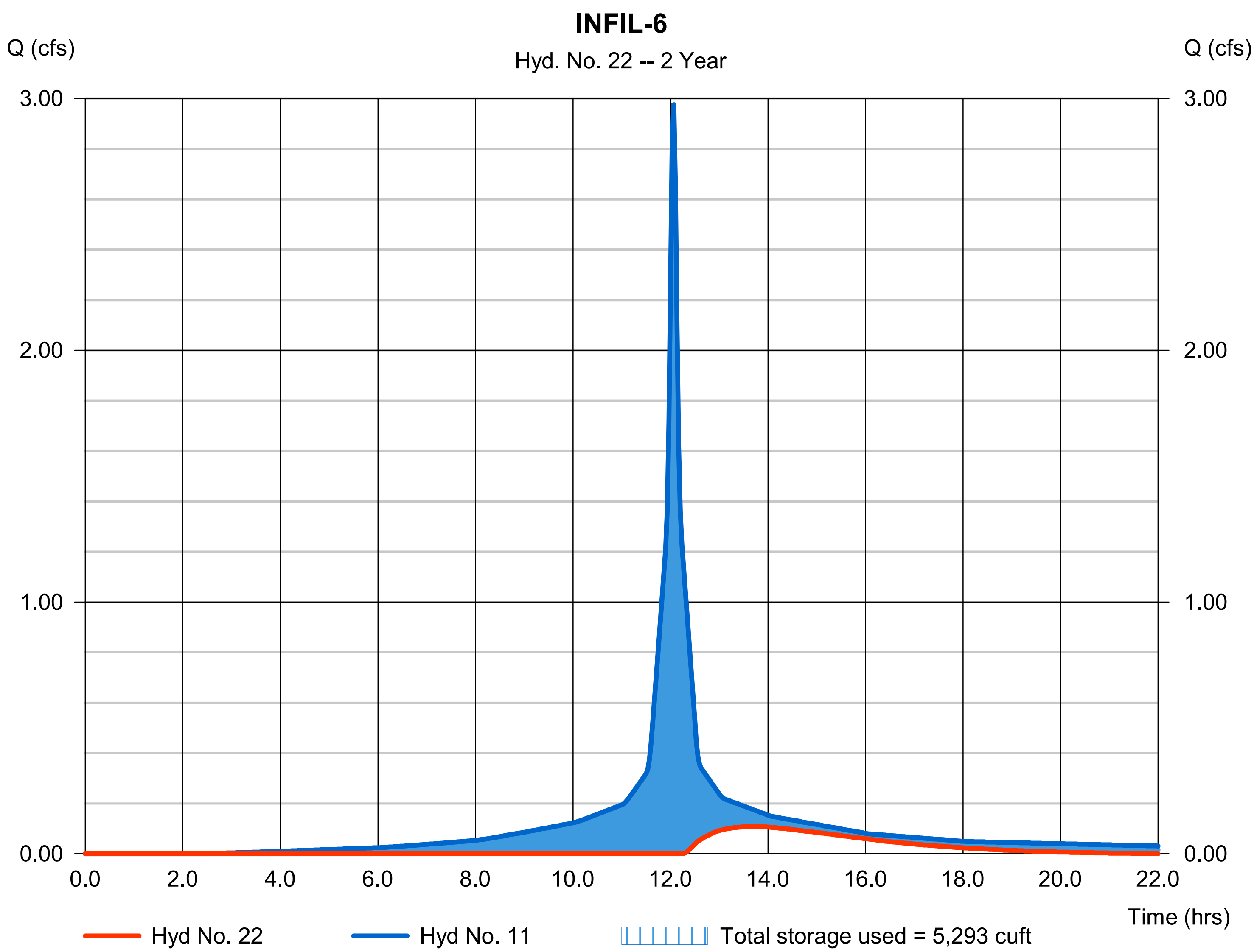
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 22

INFIL-6

Hydrograph type	= Reservoir	Peak discharge	= 0.109 cfs
Storm frequency	= 2 yrs	Time to peak	= 13.70 hrs
Time interval	= 2 min	Hyd. volume	= 1,534 cuft
Inflow hyd. No.	= 11 - PR WS-02G	Max. Elevation	= 134.74 ft
Reservoir name	= INFIL-6	Max. Storage	= 5,293 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Pond No. 7 - INFIL-6

Pond Data

UG Chambers -Invert elev. = 132.75 ft, Rise x Span = 3.75 x 5.10 ft, Barrel Len = 184.95 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement -Invert elev. = 132.00 ft, Width = 7.79 ft, Height = 5.50 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	132.00	n/a	0	0
0.55	132.55	n/a	634	634
1.10	133.10	n/a	1,030	1,664
1.65	133.65	n/a	1,247	2,911
2.20	134.20	n/a	1,225	4,136
2.75	134.75	n/a	1,186	5,322
3.30	135.30	n/a	1,128	6,450
3.85	135.85	n/a	1,042	7,492
4.40	136.40	n/a	898	8,389
4.95	136.95	n/a	651	9,041
5.50	137.50	n/a	634	9,675

Culvert / Orifice Structures

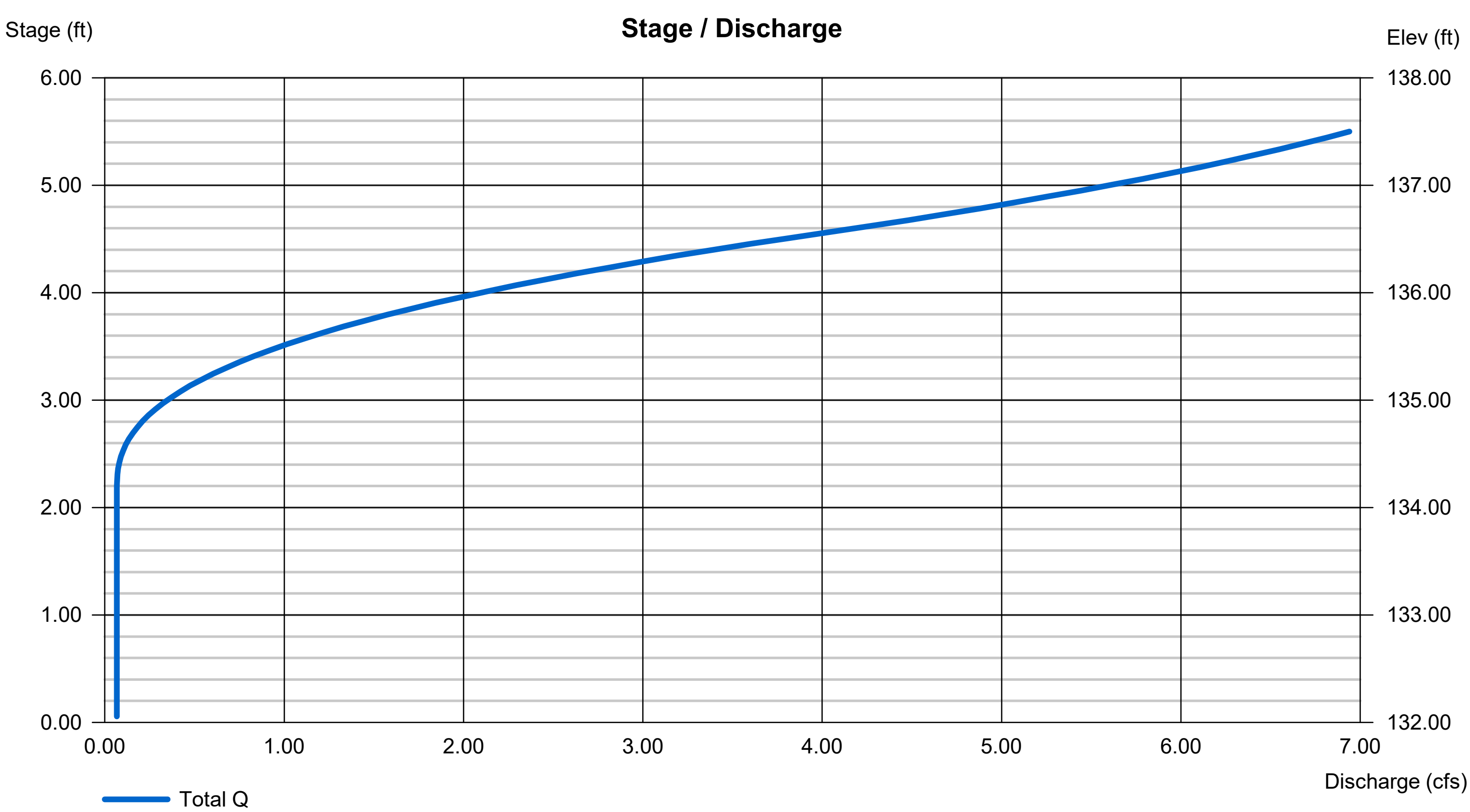
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	Inactive	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 132.50	0.00	0.00	0.00
Length (ft)	= 10.00	0.00	0.00	0.00
Slope (%)	= 4.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 134.17	0.00	0.00	0.00
Weir Coeff.	= 0.45	3.33	3.33	3.33
Weir Type	= 20 degV	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

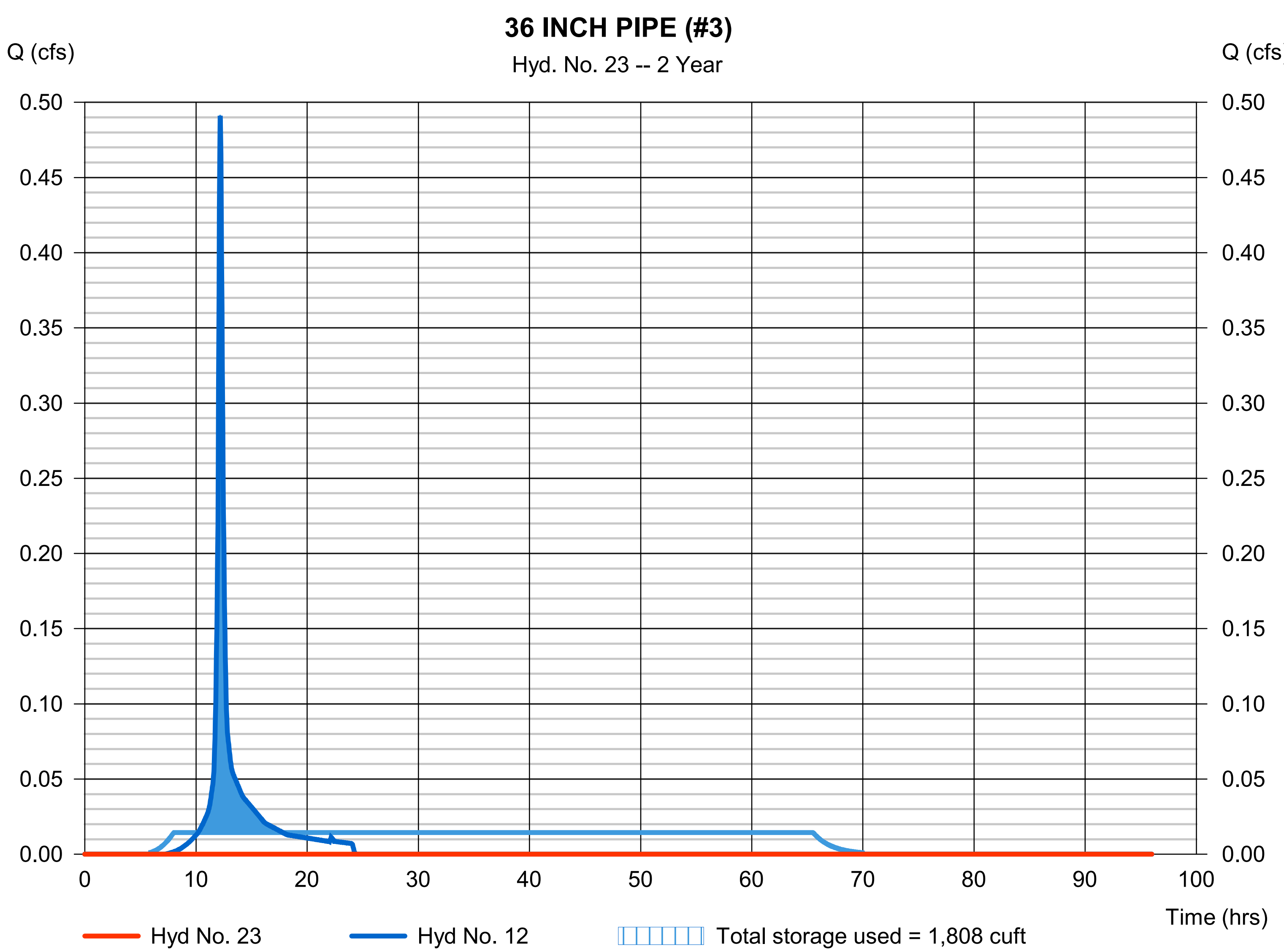
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 23

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 12 - PR WS-02H	Max. Elevation	= 132.37 ft
Reservoir name	= 36IN - 3	Max. Storage	= 1,808 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Pond No. 4 - 36IN - 3

Pond Data

UG Chambers - Invert elev. = 129.00 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 30.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 128.50 ft, Width = 5.00 ft, Height = 3.50 ft, Voids = 40.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 136.20 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	128.50	n/a	0	0
0.35	128.85	n/a	21	21
0.70	129.20	n/a	25	46
1.05	129.55	n/a	33	79
1.40	129.90	n/a	37	116
1.75	130.25	n/a	39	155
2.10	130.60	n/a	40	195
2.45	130.95	n/a	40	235
2.80	131.30	n/a	38	273
3.15	131.65	n/a	35	308
3.50	132.00	n/a	29	337
7.20	136.20	01	2	339
9.00	137.50	5,250	4,726	5,065

Culvert / Orifice Structures

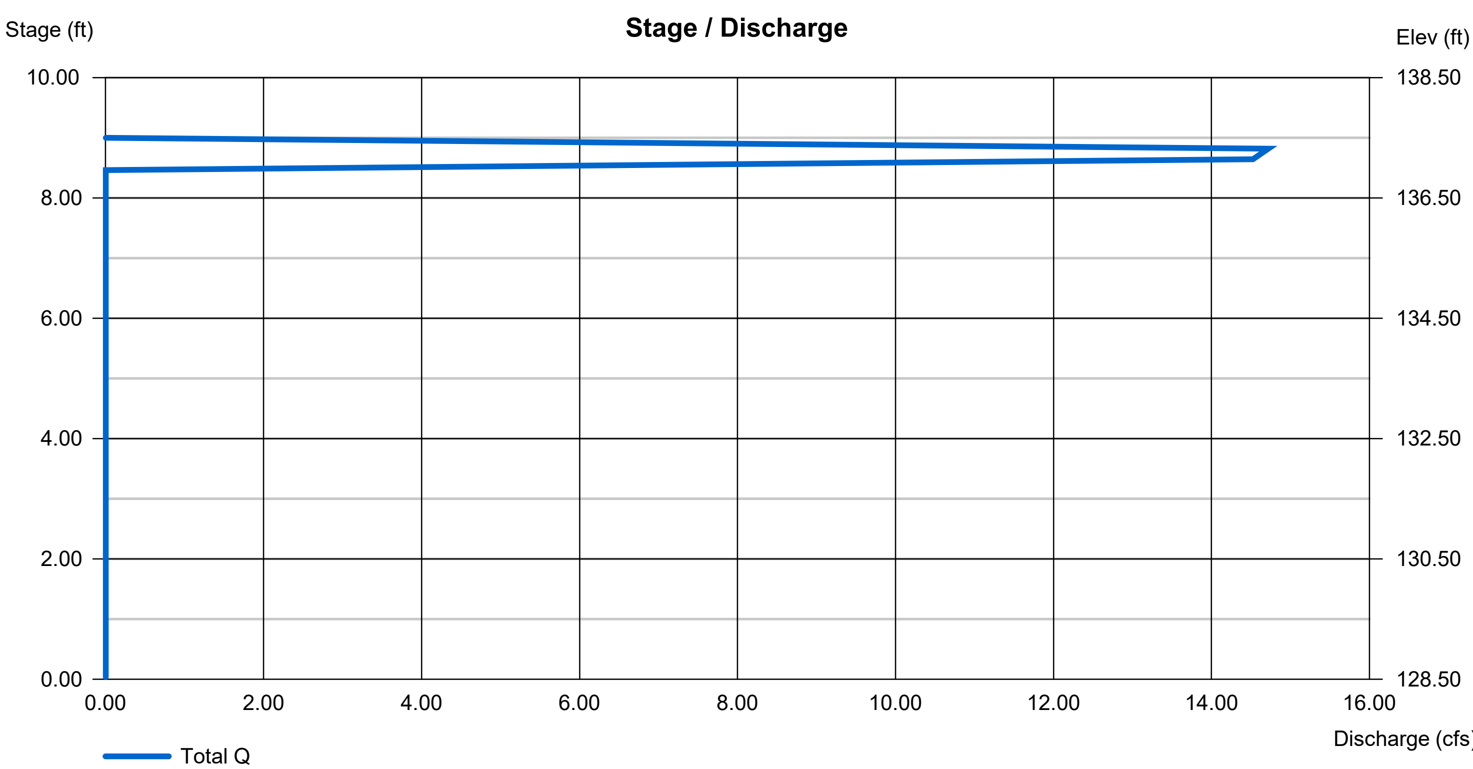
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	Inactive	Inactive	Inactive
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 130.90	0.00	0.00	0.00
Length (ft)	= 13.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 100.00	Inactive	Inactive	Inactive
Crest El. (ft)	= 137.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



Hydrograph Report

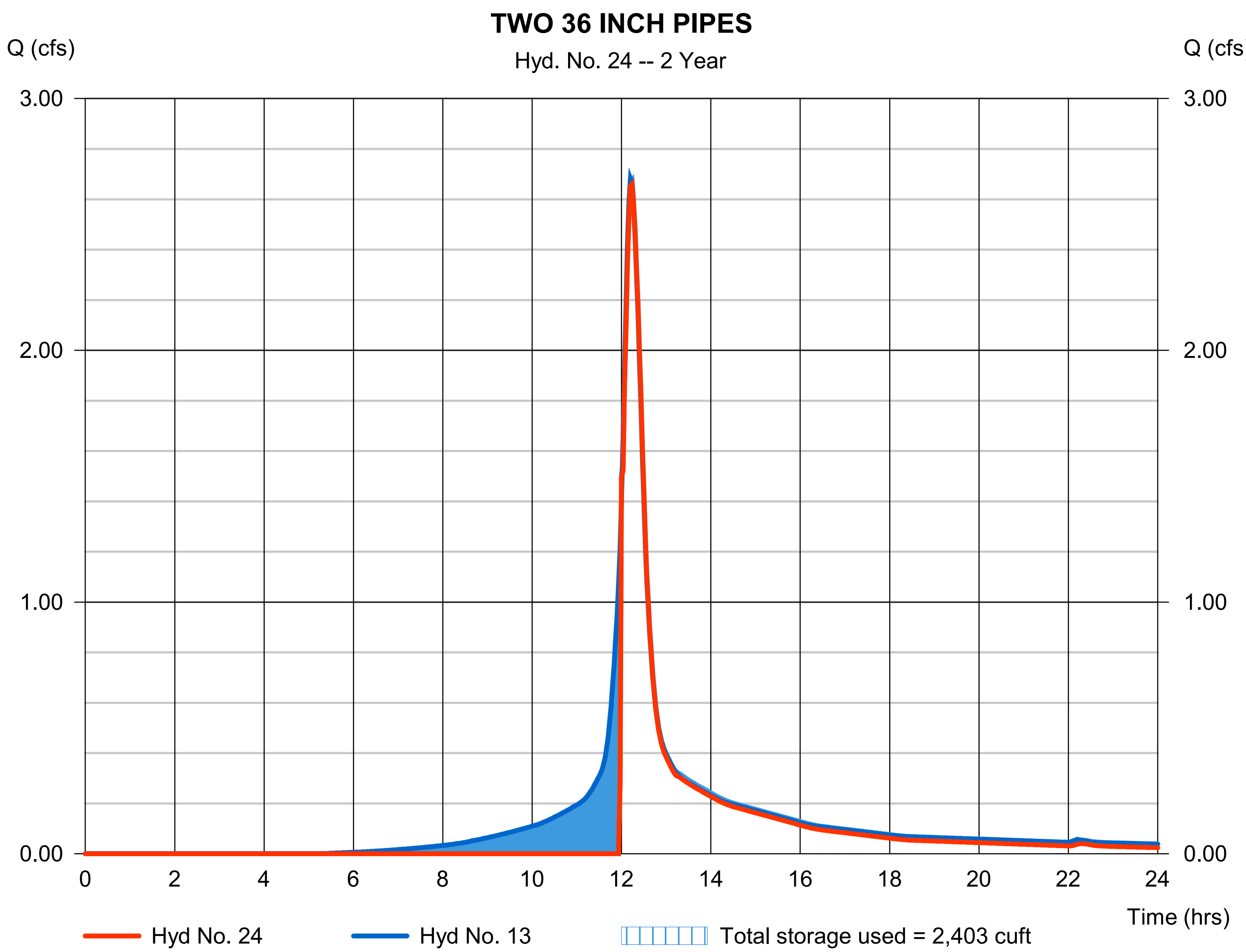
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 24

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 2.660 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 8,938 cuft
Inflow hyd. No.	= 13 - PR WS-02I	Max. Elevation	= 135.68 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,403 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Pond No. 5 - TWIN 36IN

Pond Data

UG Chambers - Invert elev. = 127.50 ft, Rise x Span = 3.00 x 3.00 ft, Barrel Len = 62.00 ft, No. Barrels = 2, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 127.00 ft, Width = 6.00 ft, Height = 3.50 ft, Voids = 40.00%
Contours - User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 134.90 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	127.00	n/a	0	0
0.35	127.35	n/a	87	87
0.70	127.70	n/a	102	189
1.05	128.05	n/a	138	327
1.40	128.40	n/a	153	480
1.75	128.75	n/a	162	642
2.10	129.10	n/a	165	806
2.45	129.45	n/a	163	970
2.80	129.80	n/a	157	1,127
3.15	130.15	n/a	146	1,273
3.50	130.50	n/a	121	1,394
7.90	134.90	01	2	1,396
8.80	135.80	2,590	1,166	2,562

Culvert / Orifice Structures

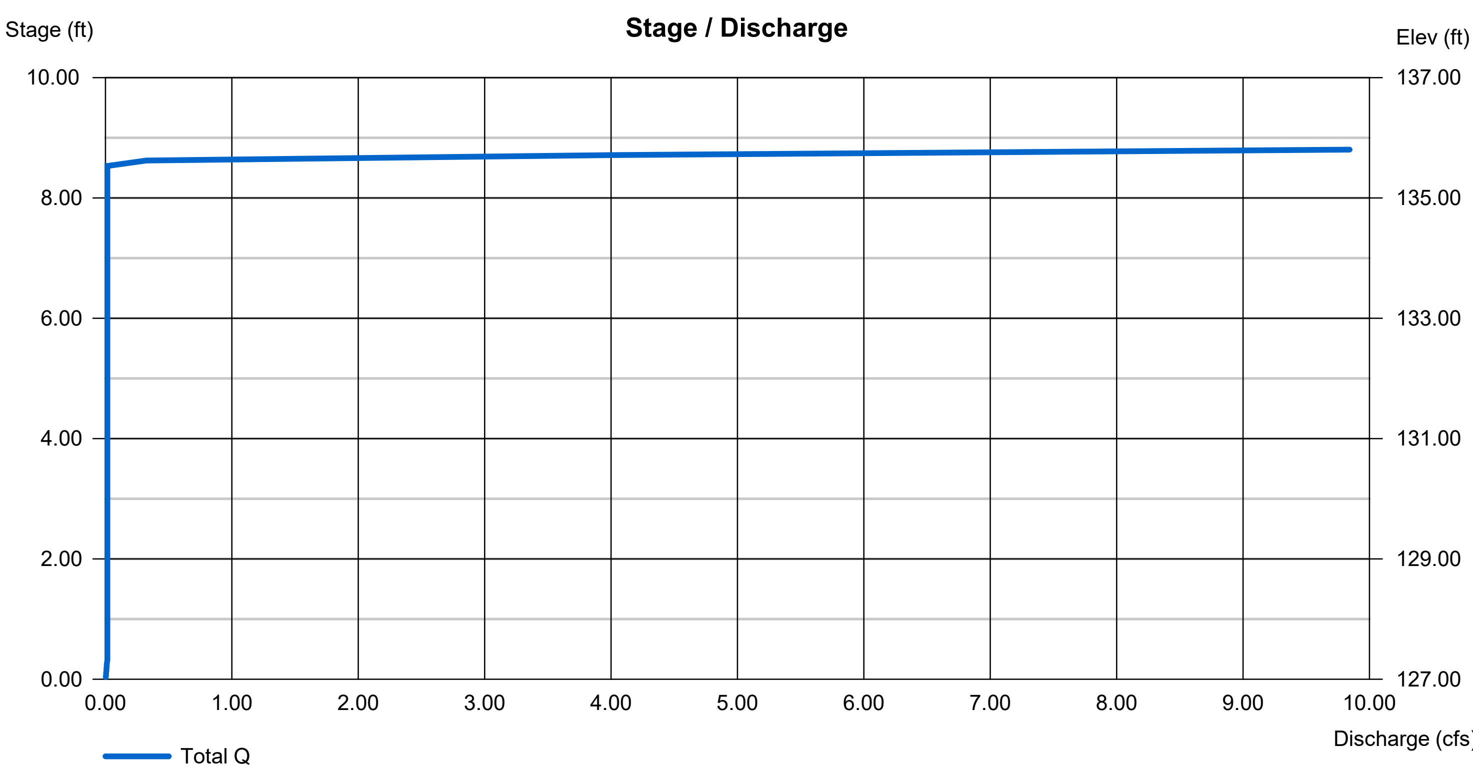
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	Inactive	Inactive	Inactive
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 129.60	0.00	0.00	0.00
Length (ft)	= 70.00	0.00	0.00	0.00
Slope (%)	= 2.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 33.00	Inactive	Inactive	Inactive
Crest El. (ft)	= 135.60	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Broad	---	---	---
Multi-Stage	= Yes	No	No	No

Exfil.(in/hr) = 1.000 (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).



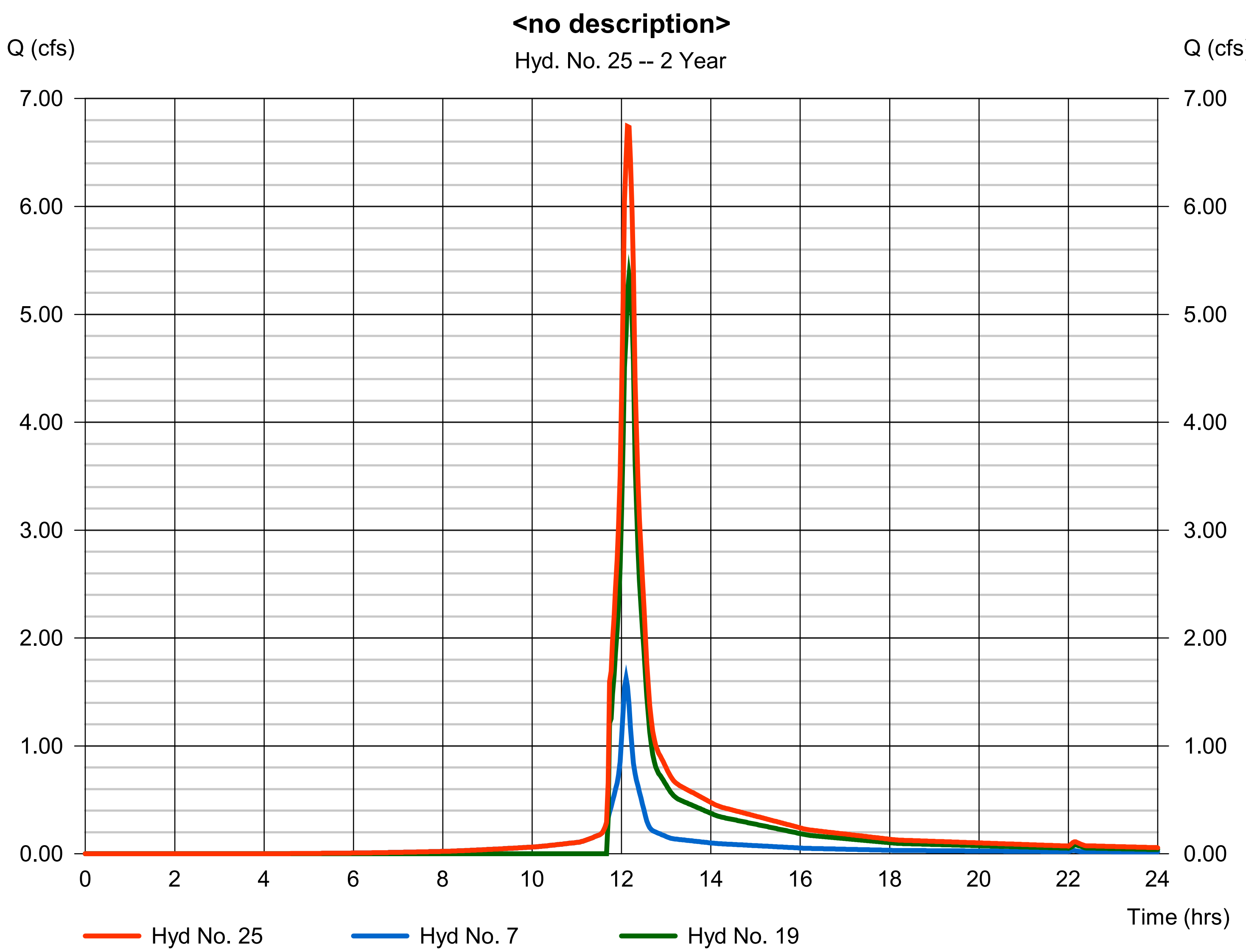
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 25

<no description>

Hydrograph type	= Combine	Peak discharge	= 6.742 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 22,562 cuft
Inflow hyds.	= 7, 19	Contrib. drain. area	= 0.576 ac



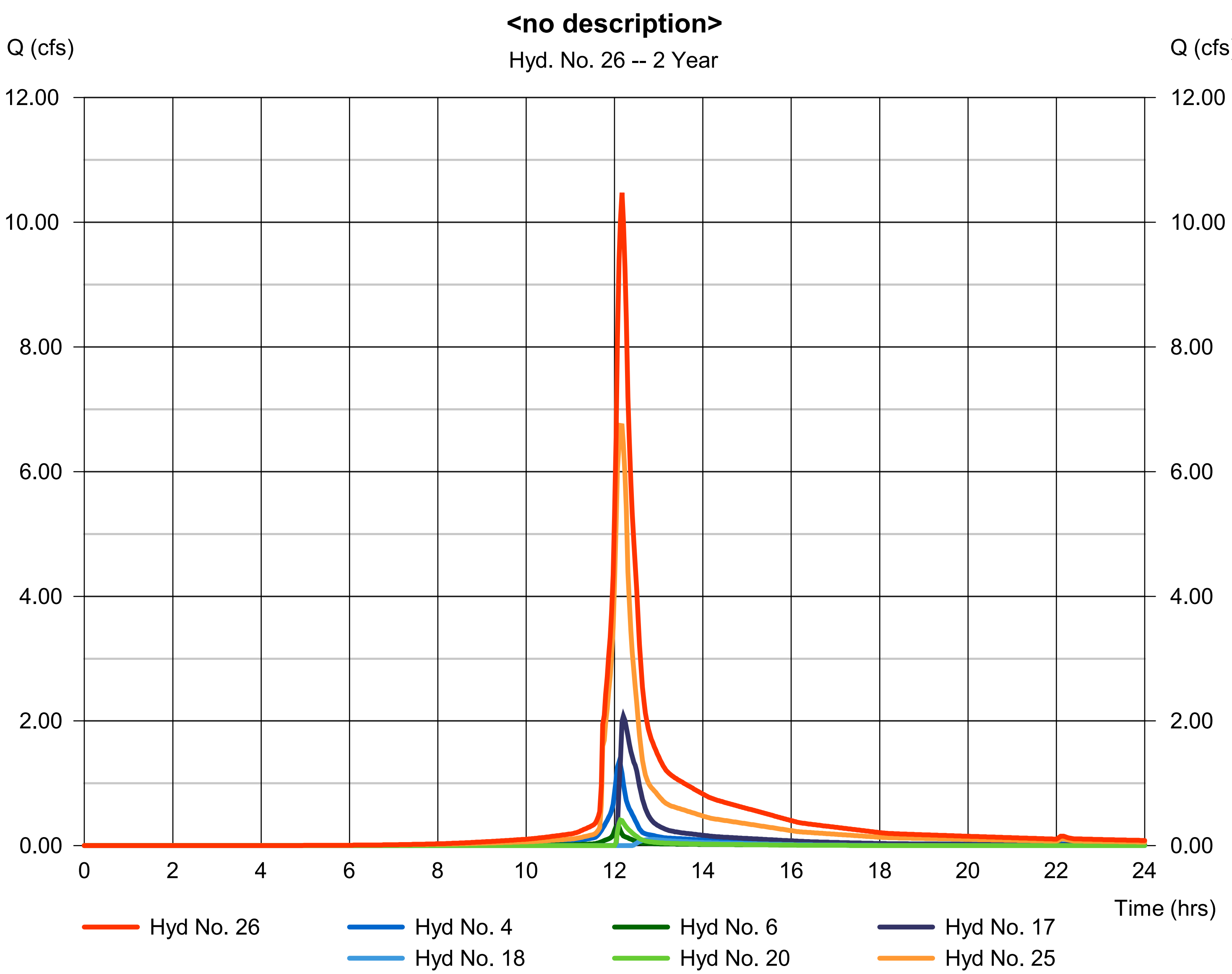
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 26

<no description>

Hydrograph type	= Combine	Peak discharge	= 10.48 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 35,588 cuft
Inflow hyds.	= 4, 6, 17, 18, 20, 25	Contrib. drain. area	= 0.708 ac



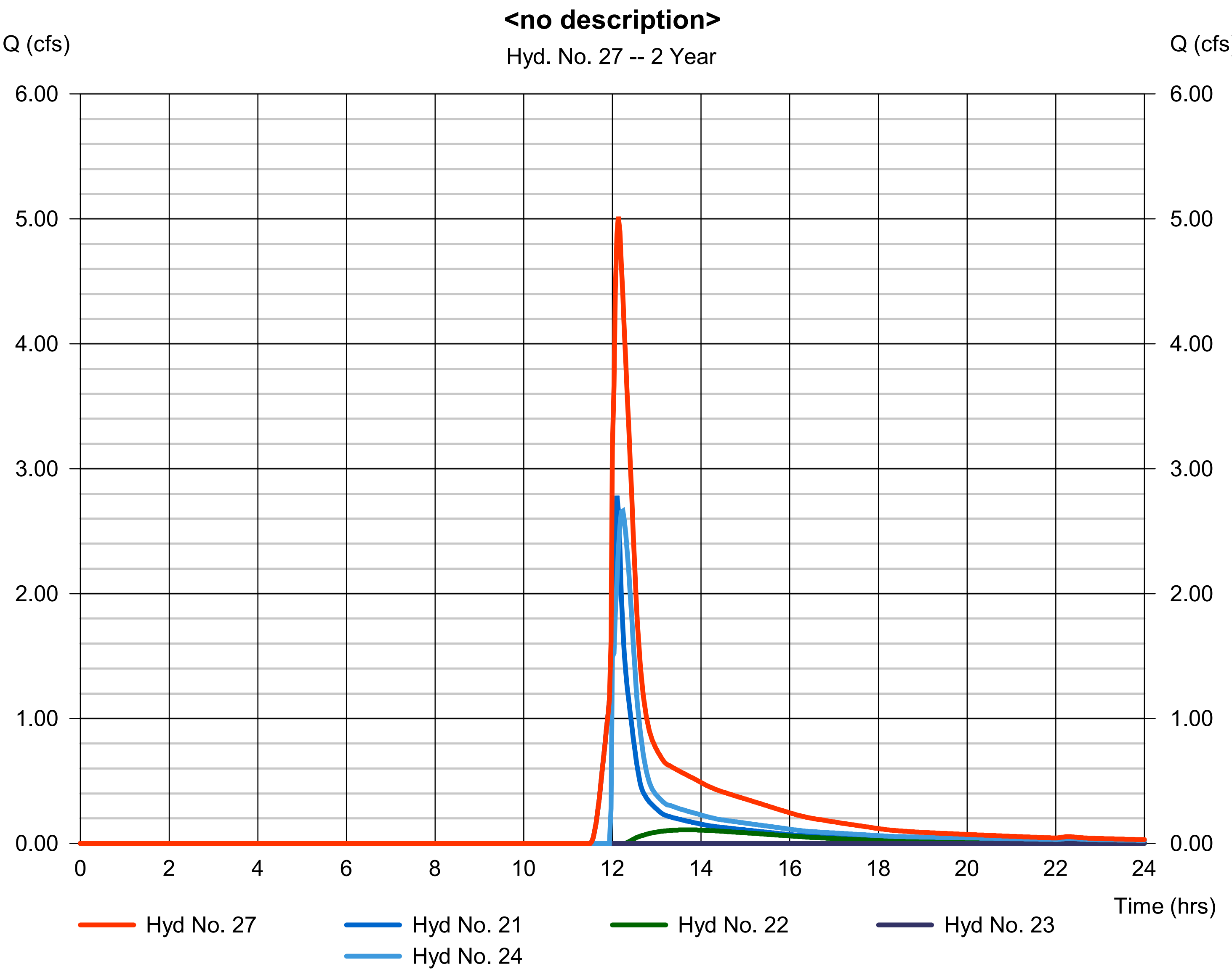
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 27

<no description>

Hydrograph type	= Combine	Peak discharge	= 5.018 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 17,576 cuft
Inflow hyds.	= 21, 22, 23, 24	Contrib. drain. area	= 0.000 ac



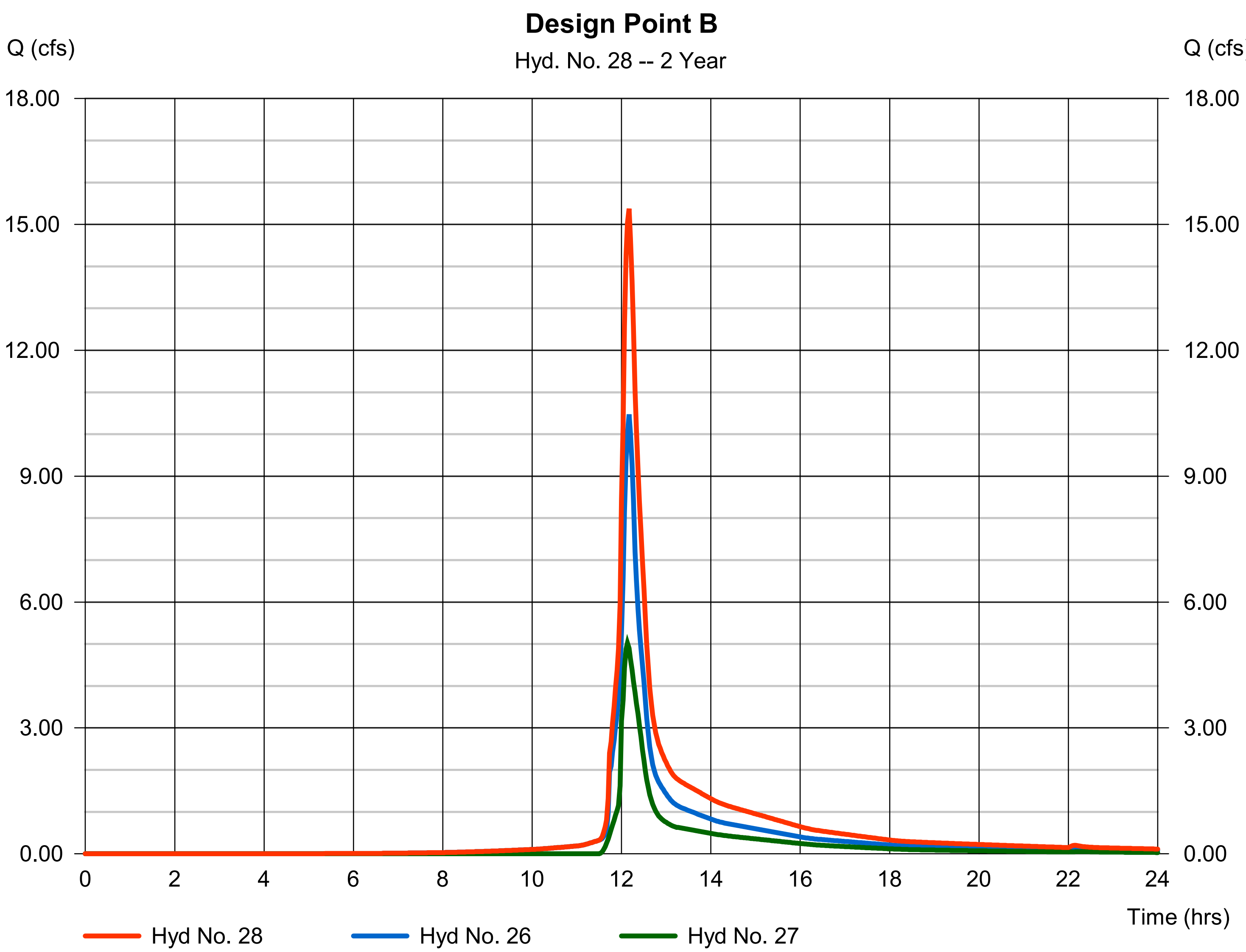
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 28

Design Point B

Hydrograph type	= Combine	Peak discharge	= 15.38 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 53,163 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	2.888	2	732	12,129	------	------	------	PR WS-01
2	SCS Runoff	2.311	2	724	7,833	------	------	------	PR WS-02A(I)
3	SCS Runoff	2.068	2	732	9,225	------	------	------	PR WS-02A(II)
4	SCS Runoff	2.352	2	726	8,205	------	------	------	PR WS-02B(I)
5	SCS Runoff	2.046	2	724	7,053	------	------	------	PR WS-02B(II)
6	SCS Runoff	0.575	2	724	1,764	------	------	------	PR WS-02B(III)
7	SCS Runoff	2.622	2	726	9,558	------	------	------	PR WS-02C
8	SCS Runoff	9.148	2	728	36,588	------	------	------	PR WS-02D
9	SCS Runoff	1.006	2	724	3,313	------	------	------	PR WS-02E
10	SCS Runoff	5.072	2	724	16,697	------	------	------	PR WS-02F
11	SCS Runoff	4.656	2	724	15,541	------	------	------	PR WS-02G
12	SCS Runoff	0.876	2	730	3,613	------	------	------	PR WS-02H
13	SCS Runoff	4.450	2	732	20,472	------	------	------	PR WS-02I
14	SCS Runoff	0.138	2	724	442	------	------	------	PR WS-03
15	Reservoir	1.706	2	728	5,113	2	145.61	2,038	INFIL-1
16	Combine	3.643	2	730	14,338	3, 15	------	------	<no description>
17	Reservoir	3.595	2	732	12,718	16	136.99	1,353	INFIL-2
18	Reservoir	1.133	2	730	2,939	5	144.44	2,797	INFIL-3
19	Reservoir	8.916	2	730	31,682	8	139.12	3,650	TWIN 36IN PIPES (#2)
20	Reservoir	0.739	2	728	1,981	9	137.86	816	INFIL-4
21	Reservoir	4.208	2	726	13,323	10	136.63	2,653	INIFL-5
22	Reservoir	1.183	2	744	6,554	11	135.64	7,102	INFIL-6
23	Reservoir	0.000	2	676	0	12	132.37	3,398	36 INCH PIPE (#3)
24	Reservoir	4.422	2	732	17,270	13	135.72	2,454	TWO 36 INCH PIPES
25	Combine	11.13	2	730	41,240	7, 19,	------	------	<no description>
26	Combine	18.99	2	728	68,848	4, 6, 17, 18, 20, 25	------	------	<no description>
27	Combine	8.793	2	730	37,147	21, 22, 23, 24,	------	------	<no description>
28	Combine	27.64	2	730	105,995	26, 27	------	------	Design Point B

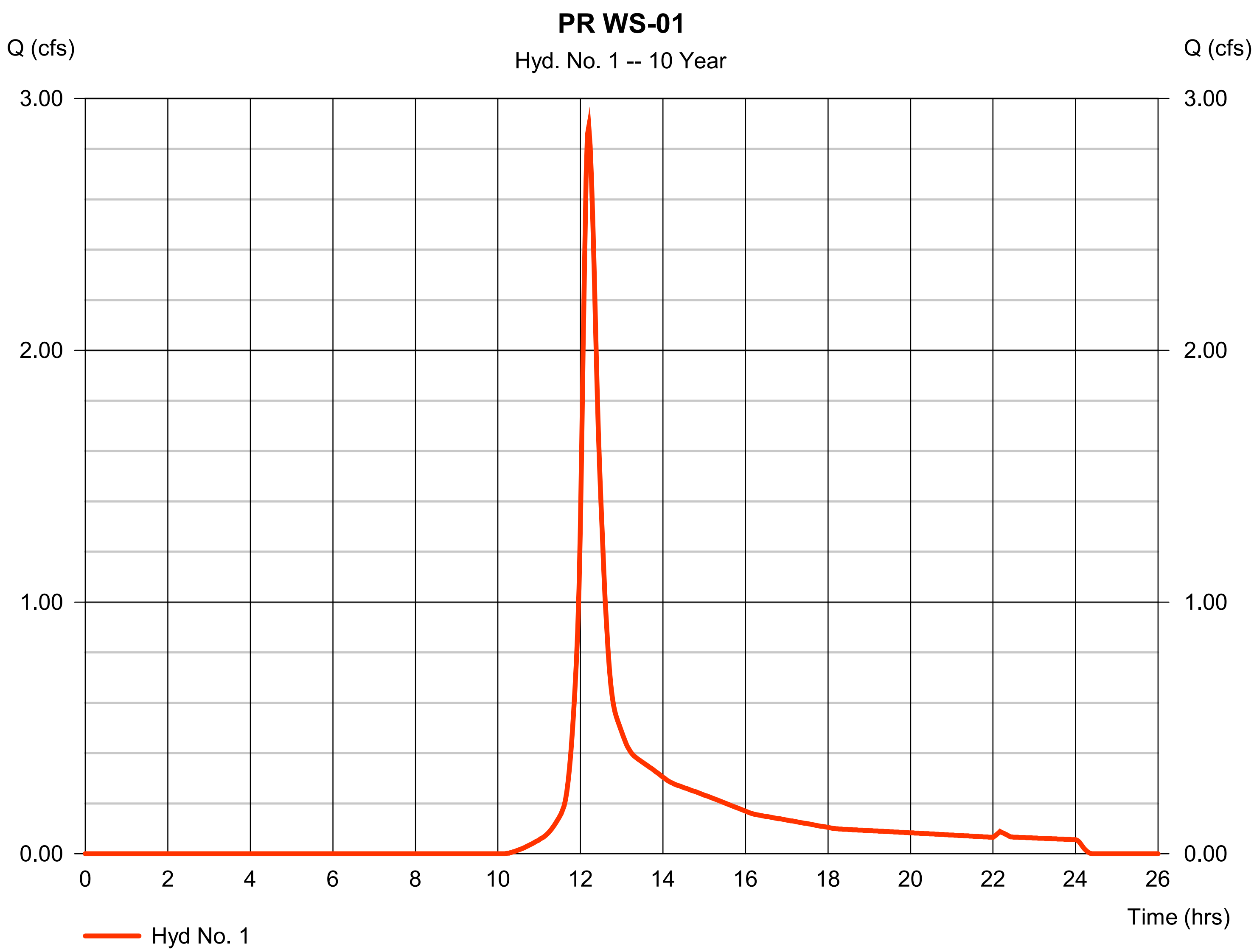
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 1

PR WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 2.888 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 12,129 cuft
Drainage area	= 1.721 ac	Curve number	= 66
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.50 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



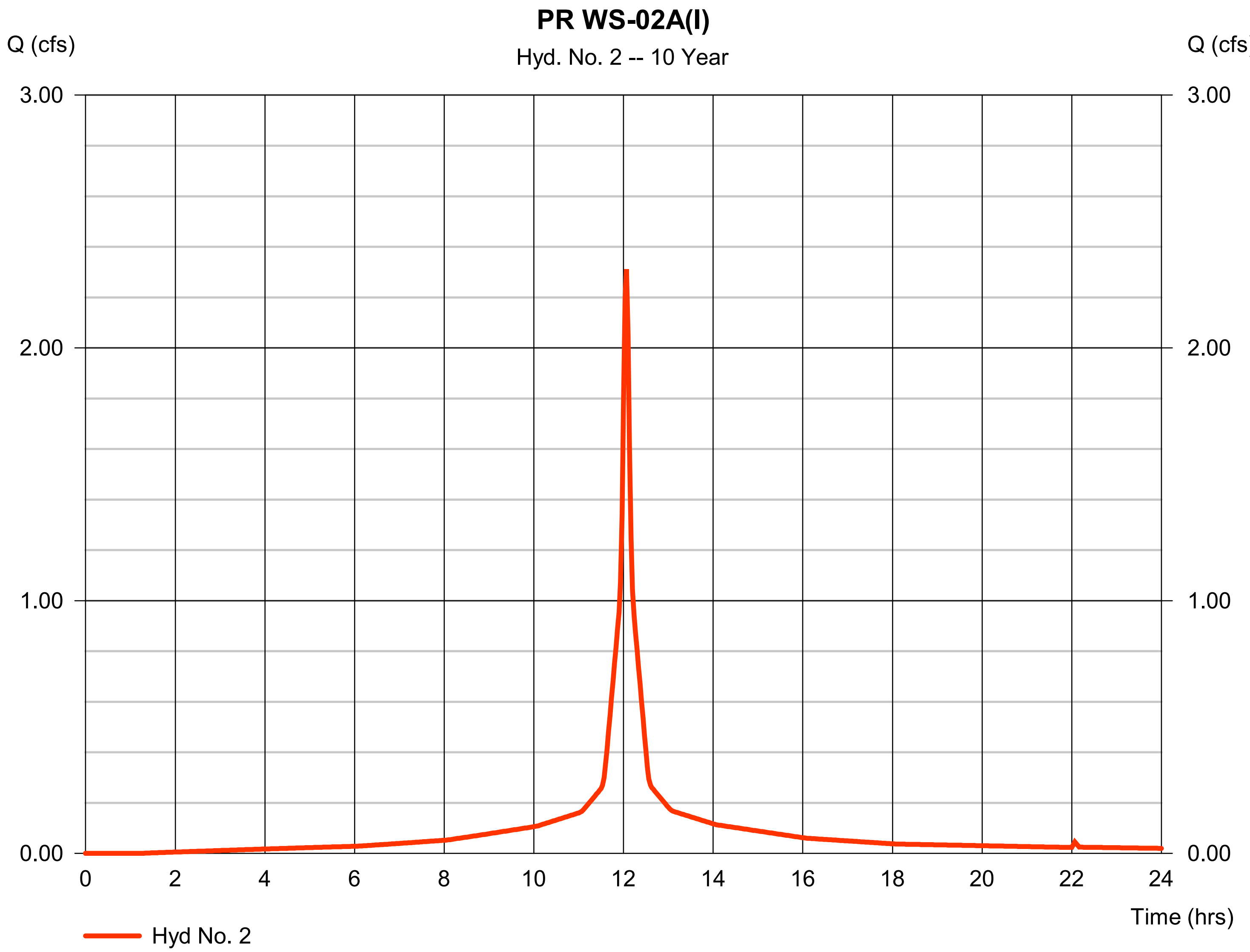
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 2

PR WS-02A(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.311 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 7,833 cuft
Drainage area	= 0.458 ac	Curve number	= 97
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

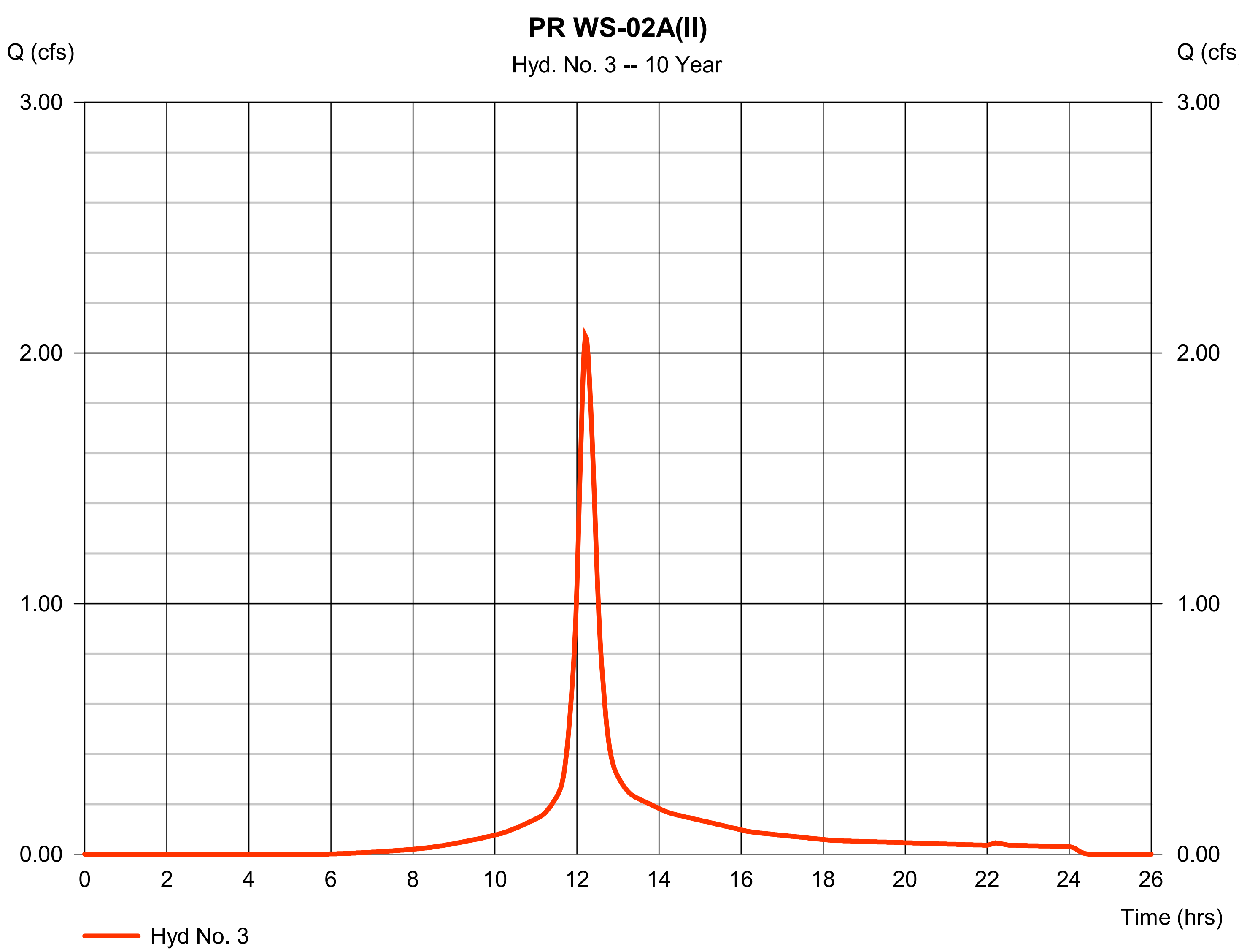


Hydrograph Report

Hyd. No. 3

PR WS-02A(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.068 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 9,225 cuft
Drainage area	= 0.683 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



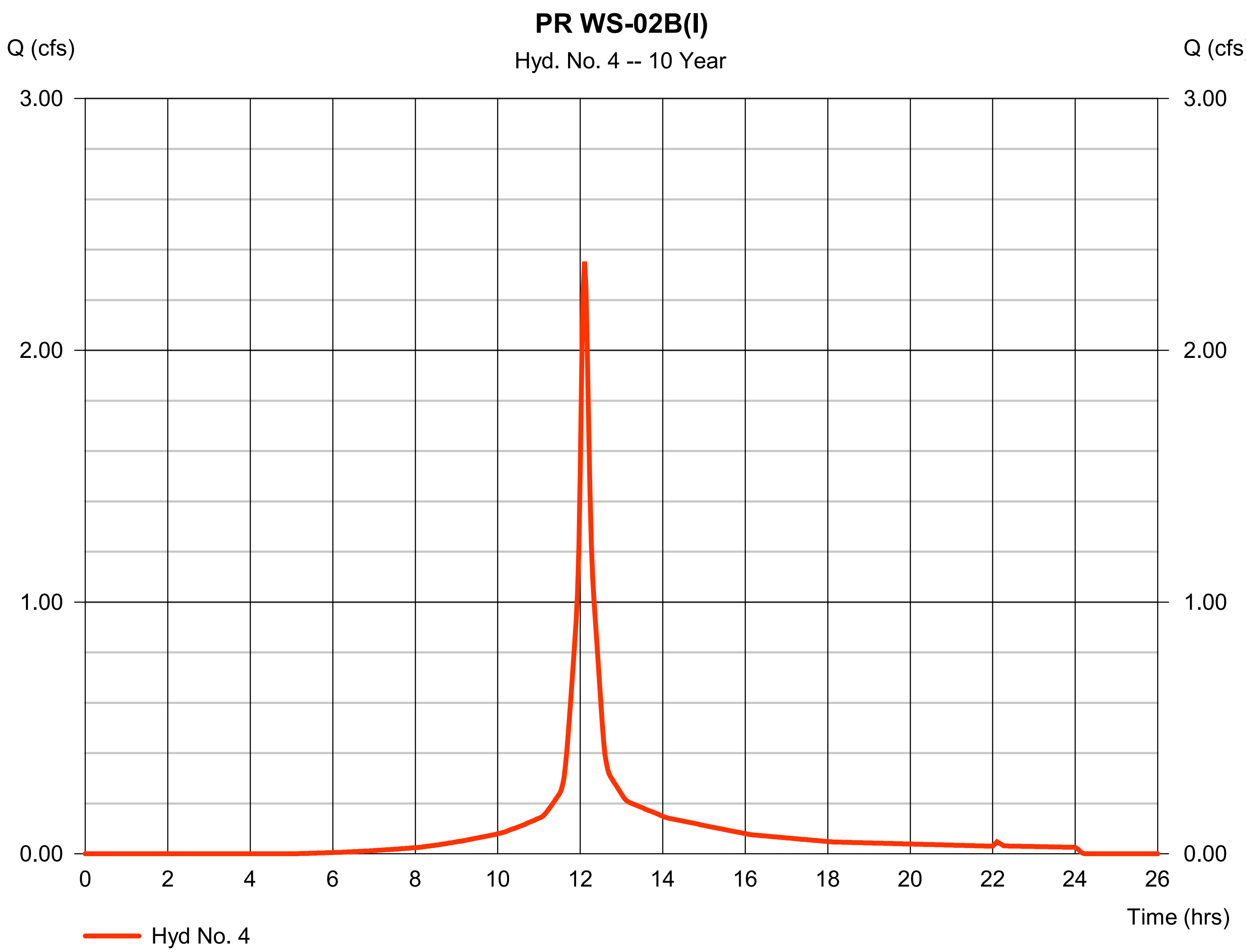
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 4

PR WS-02B(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.352 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 8,205 cuft
Drainage area	= 0.576 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



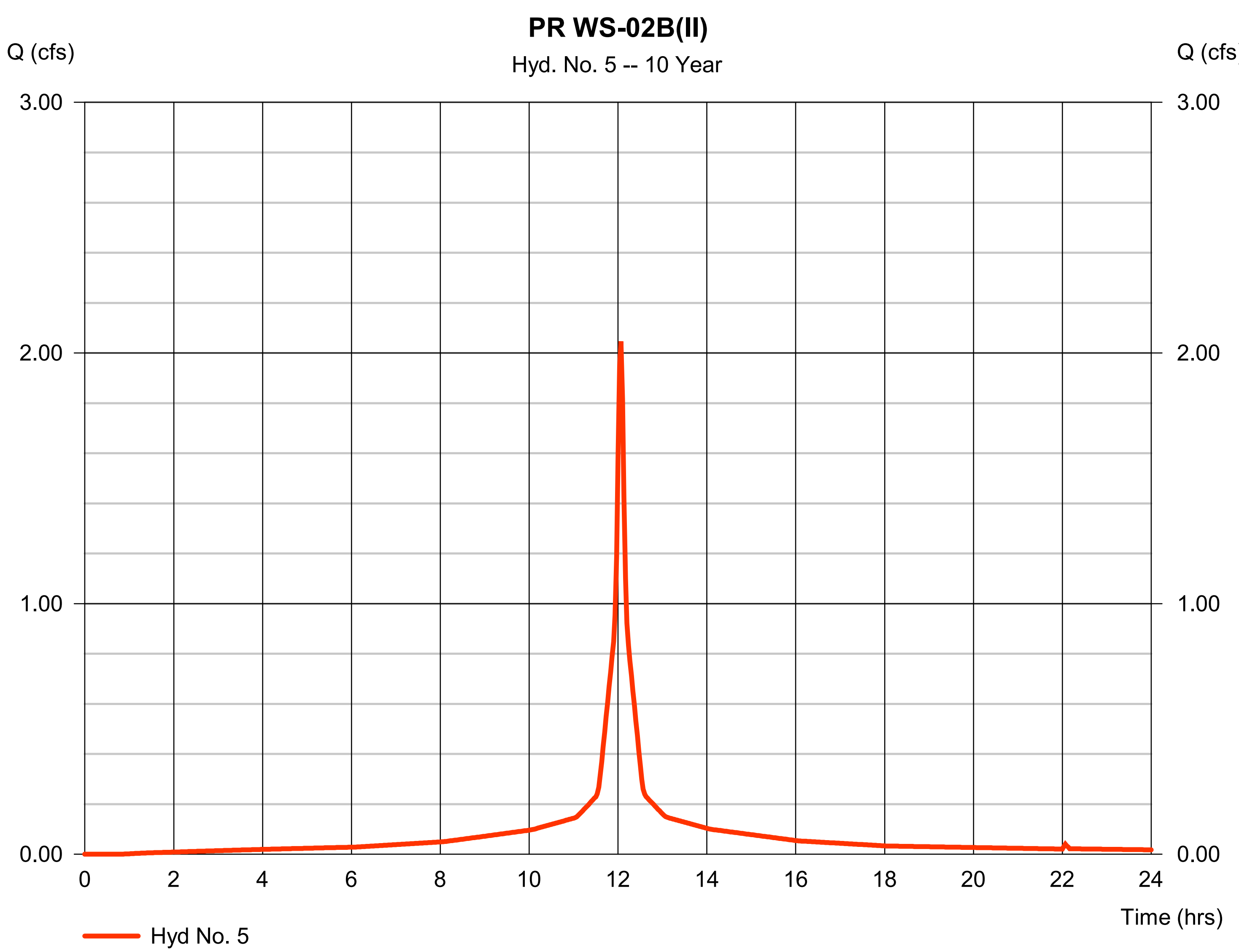
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 5

PR WS-02B(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.046 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 7,053 cuft
Drainage area	= 0.403 ac	Curve number	= 98
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



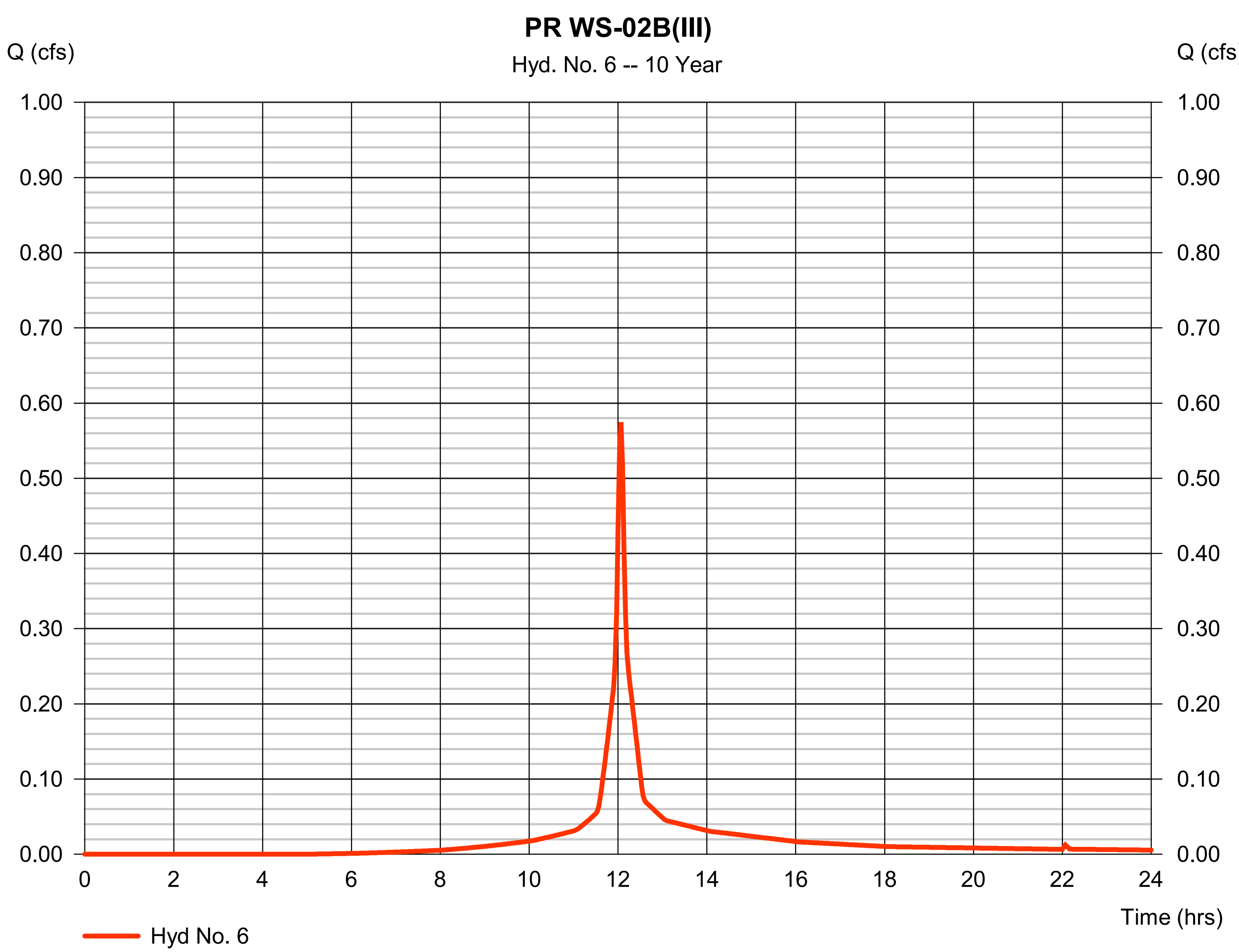
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 6

PR WS-02B(III)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.575 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,764 cuft
Drainage area	= 0.132 ac	Curve number	= 87
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



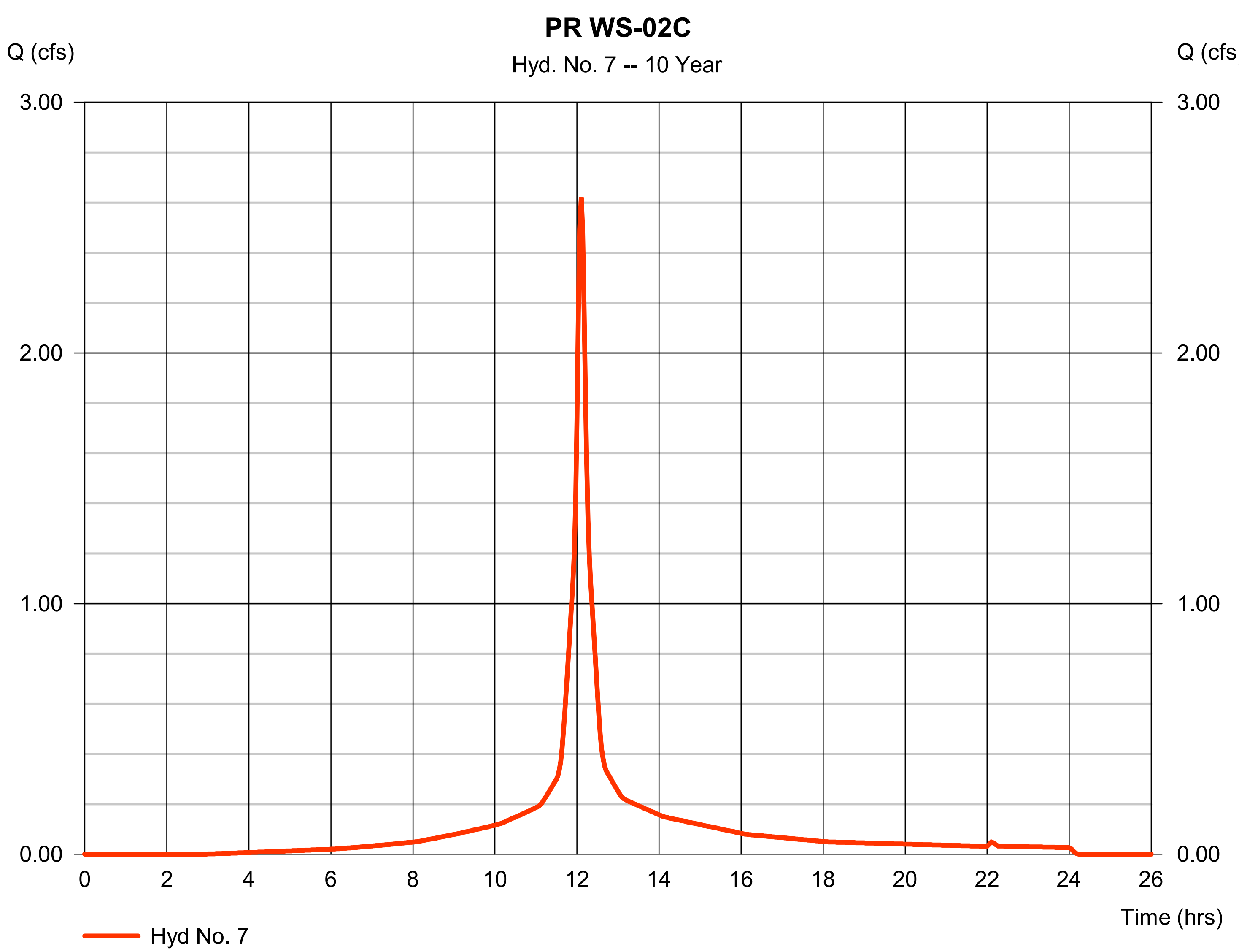
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 7

PR WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 2.622 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 9,558 cuft
Drainage area	= 0.576 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



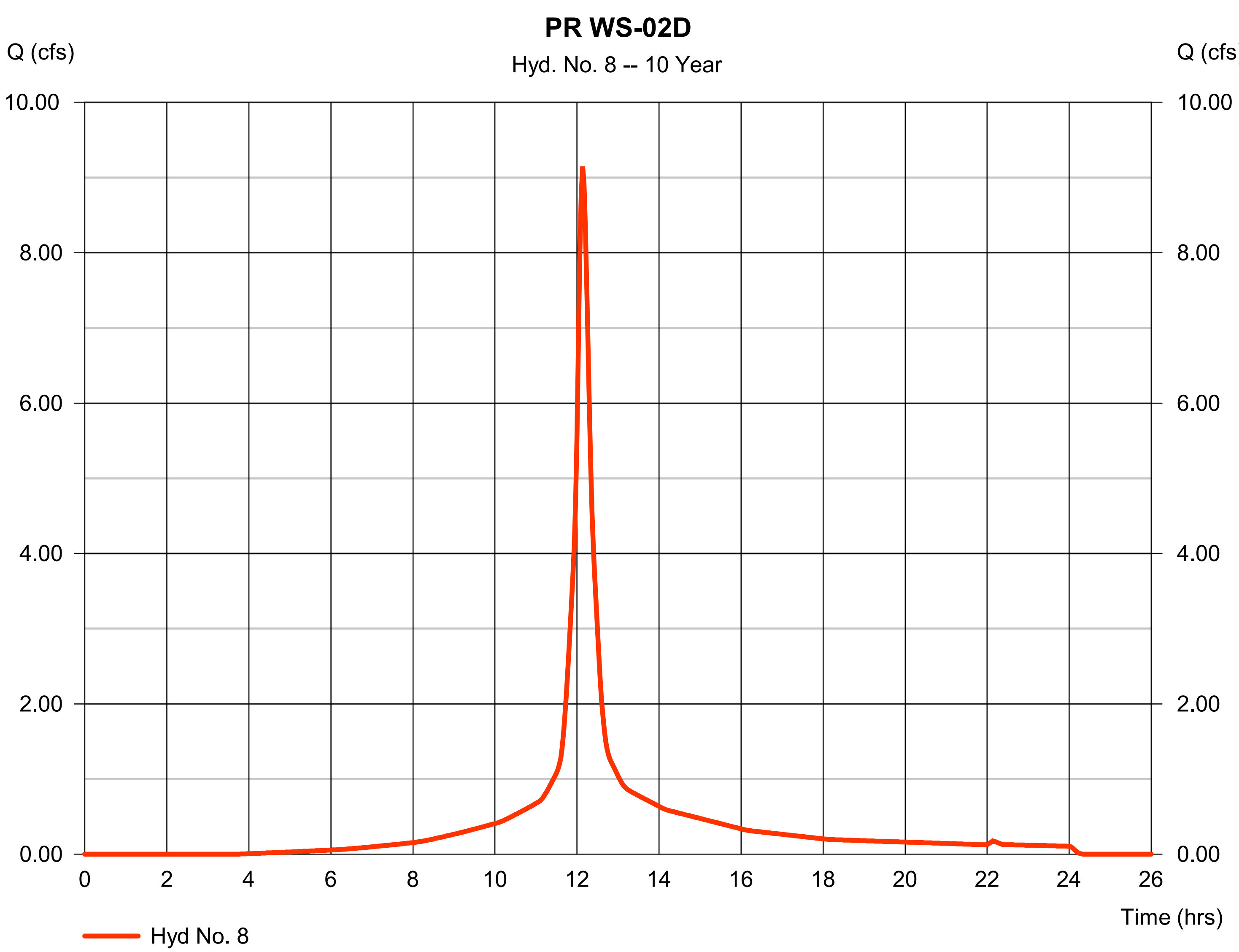
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 8

PR WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 9.148 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 36,588 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



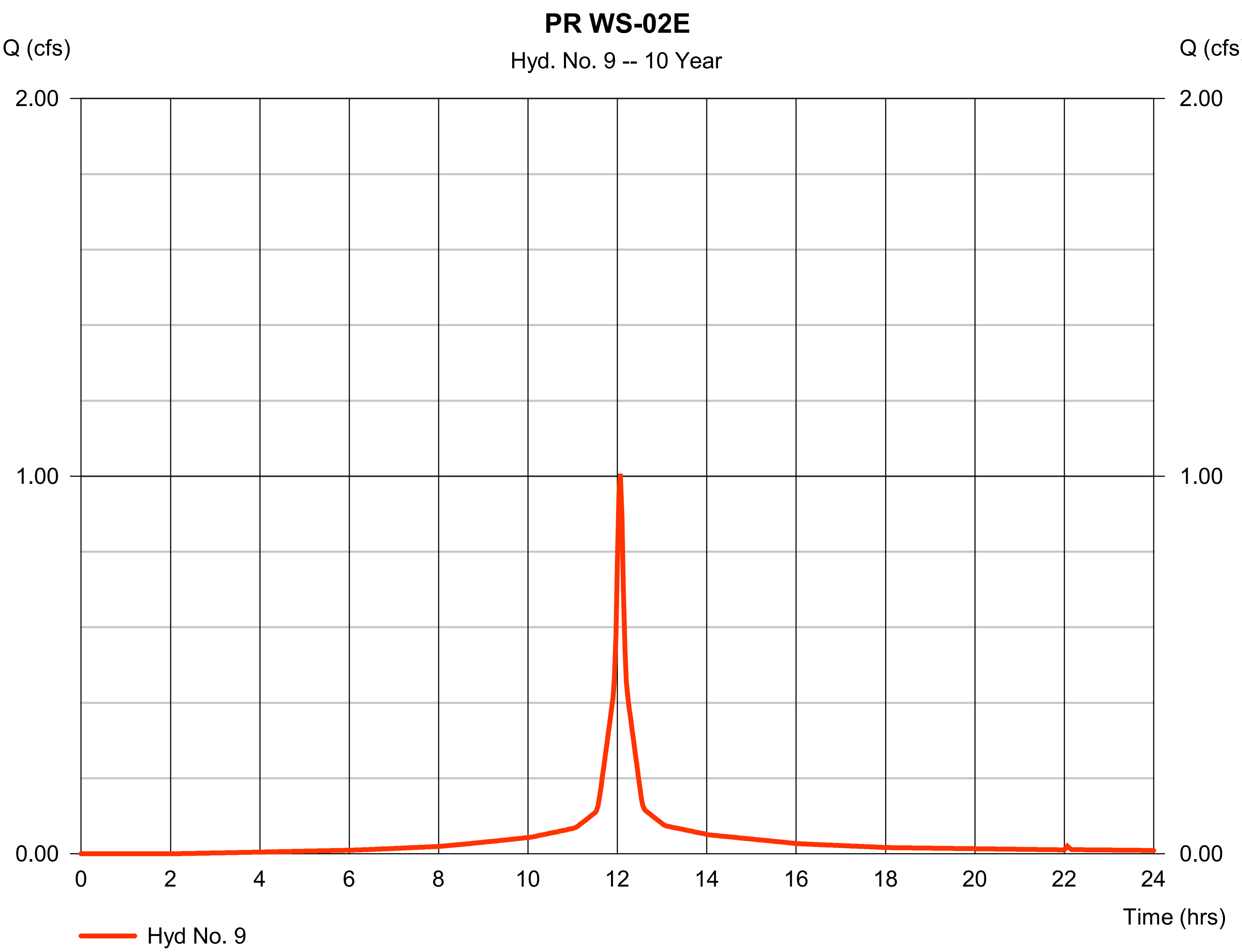
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 9

PR WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 1.006 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,313 cuft
Drainage area	= 0.203 ac	Curve number	= 95
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



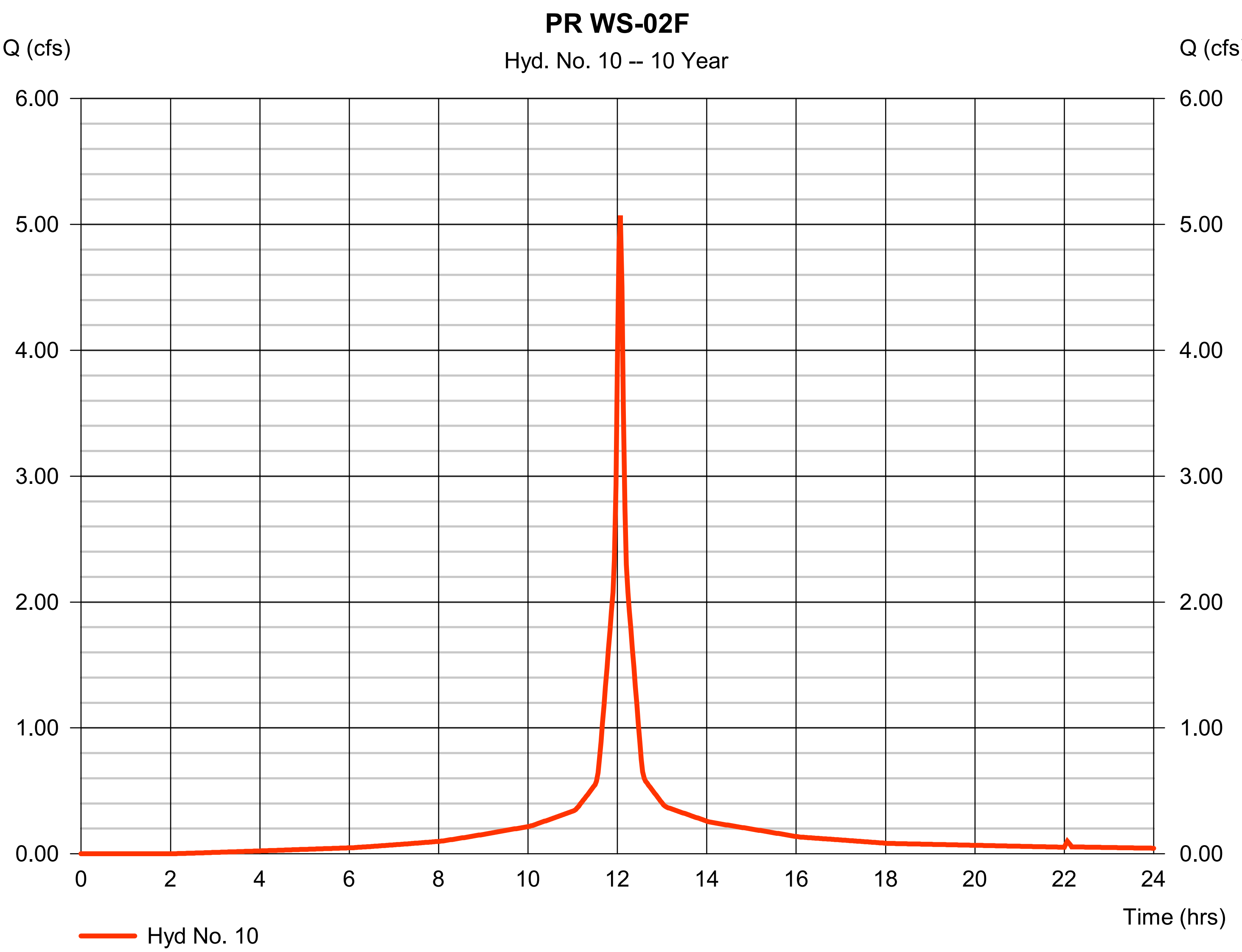
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 10

PR WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 5.072 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 16,697 cuft
Drainage area	= 1.023 ac	Curve number	= 95
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



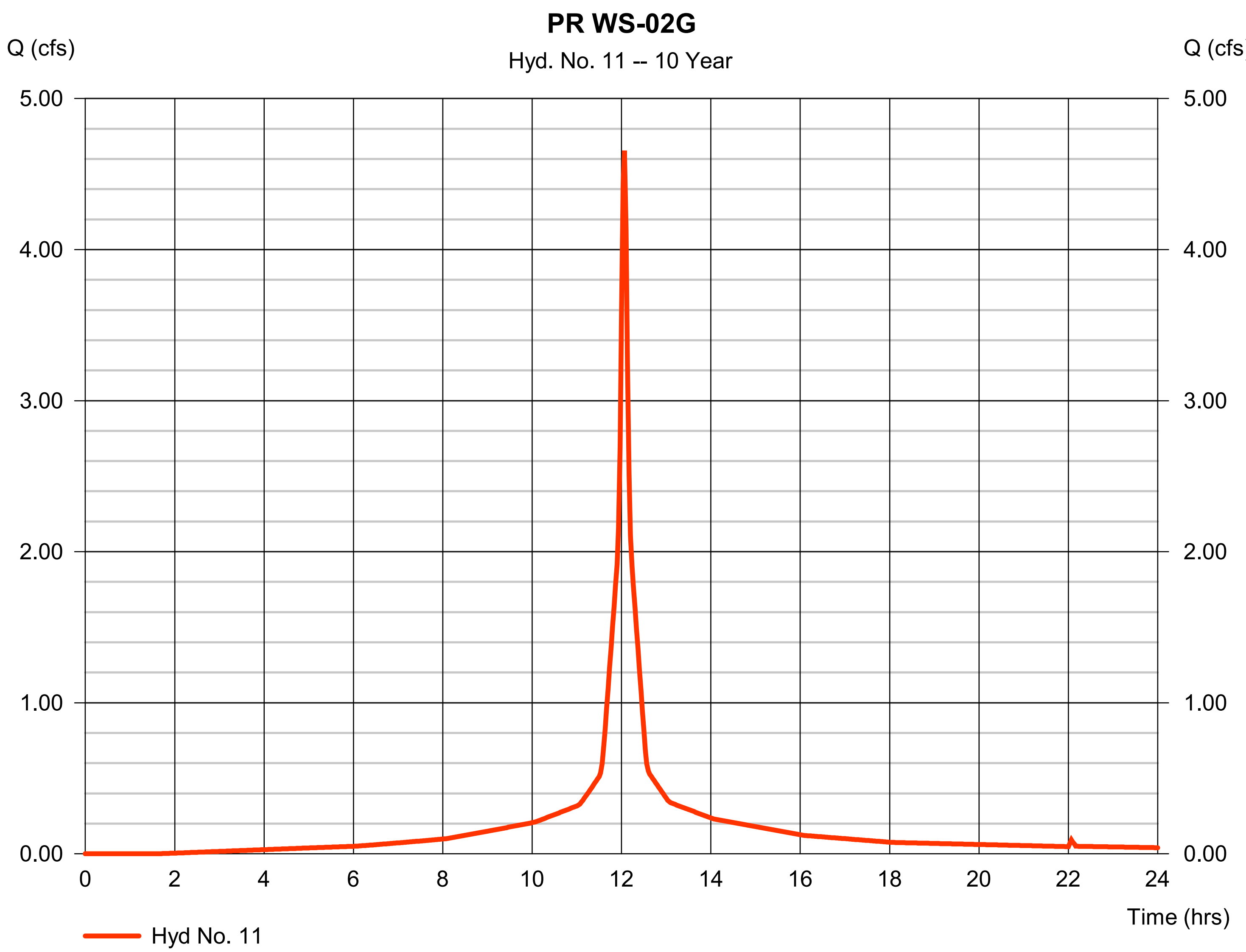
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 11

PR WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 4.656 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 15,541 cuft
Drainage area	= 0.930 ac	Curve number	= 96
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

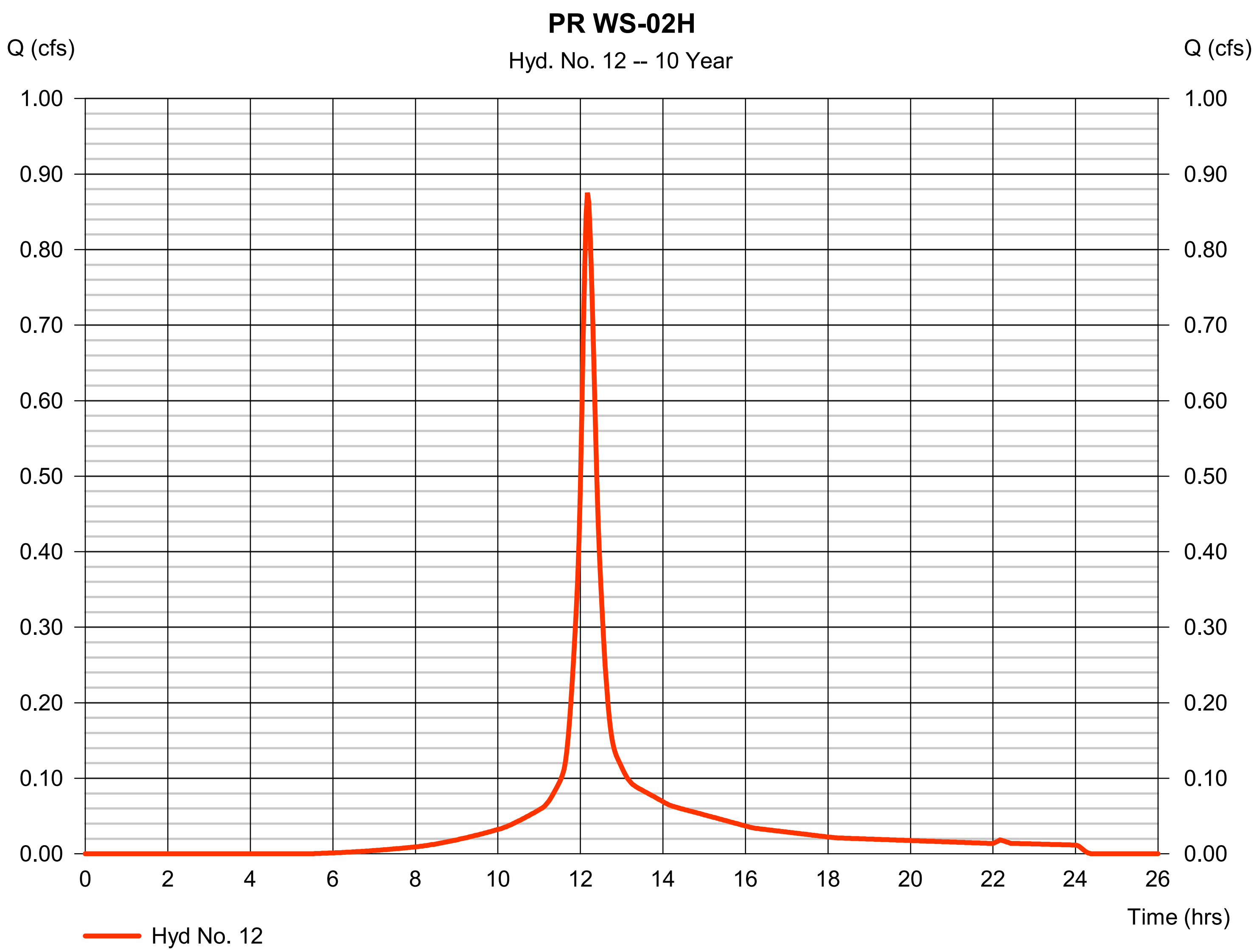


Hydrograph Report

Hyd. No. 12

PR WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 0.876 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 3,613 cuft
Drainage area	= 0.267 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



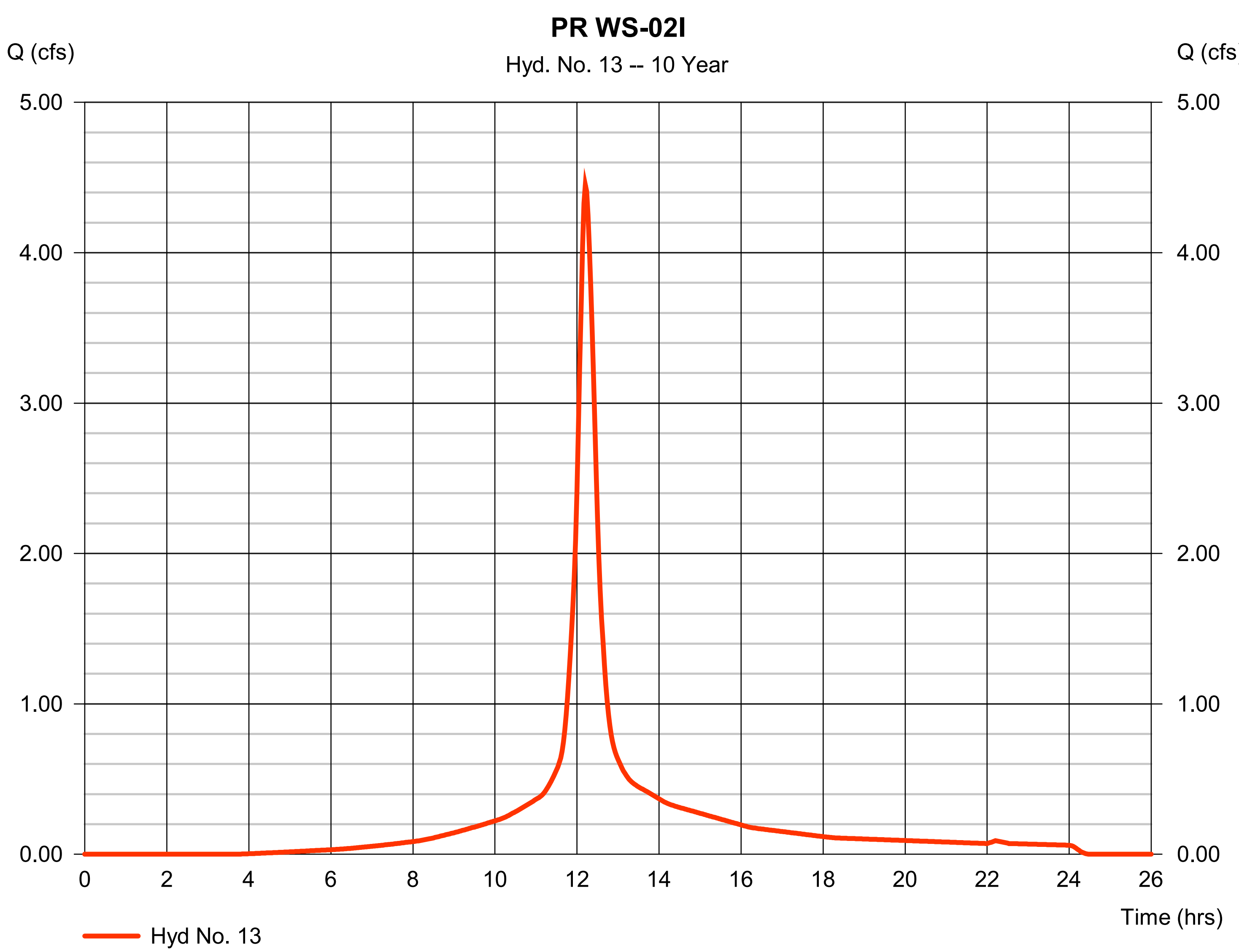
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 13

PR WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 4.450 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 20,472 cuft
Drainage area	= 1.296 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

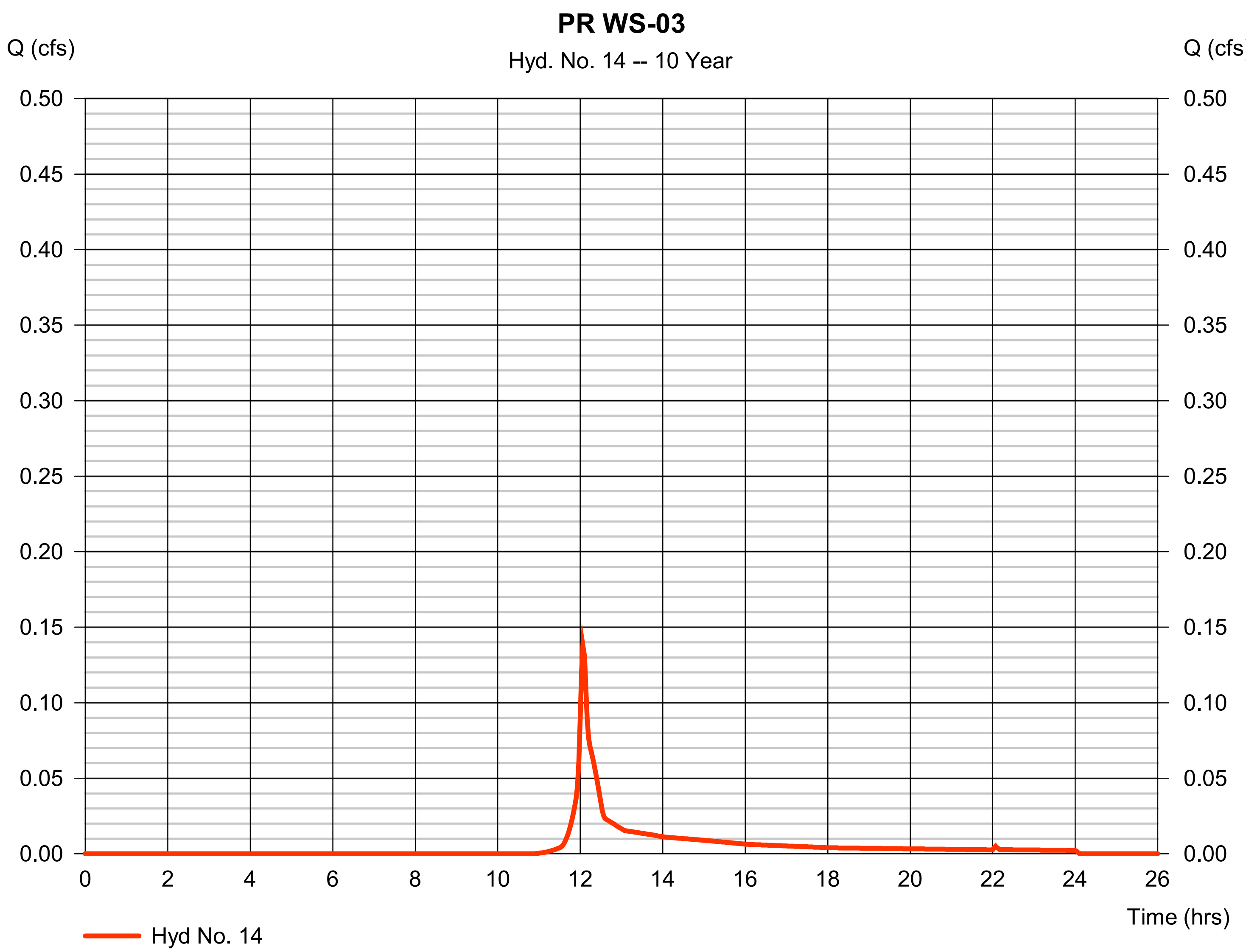


Hydrograph Report

Hyd. No. 14

PR WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.138 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 442 cuft
Drainage area	= 0.081 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.10 min
Total precip.	= 5.38 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

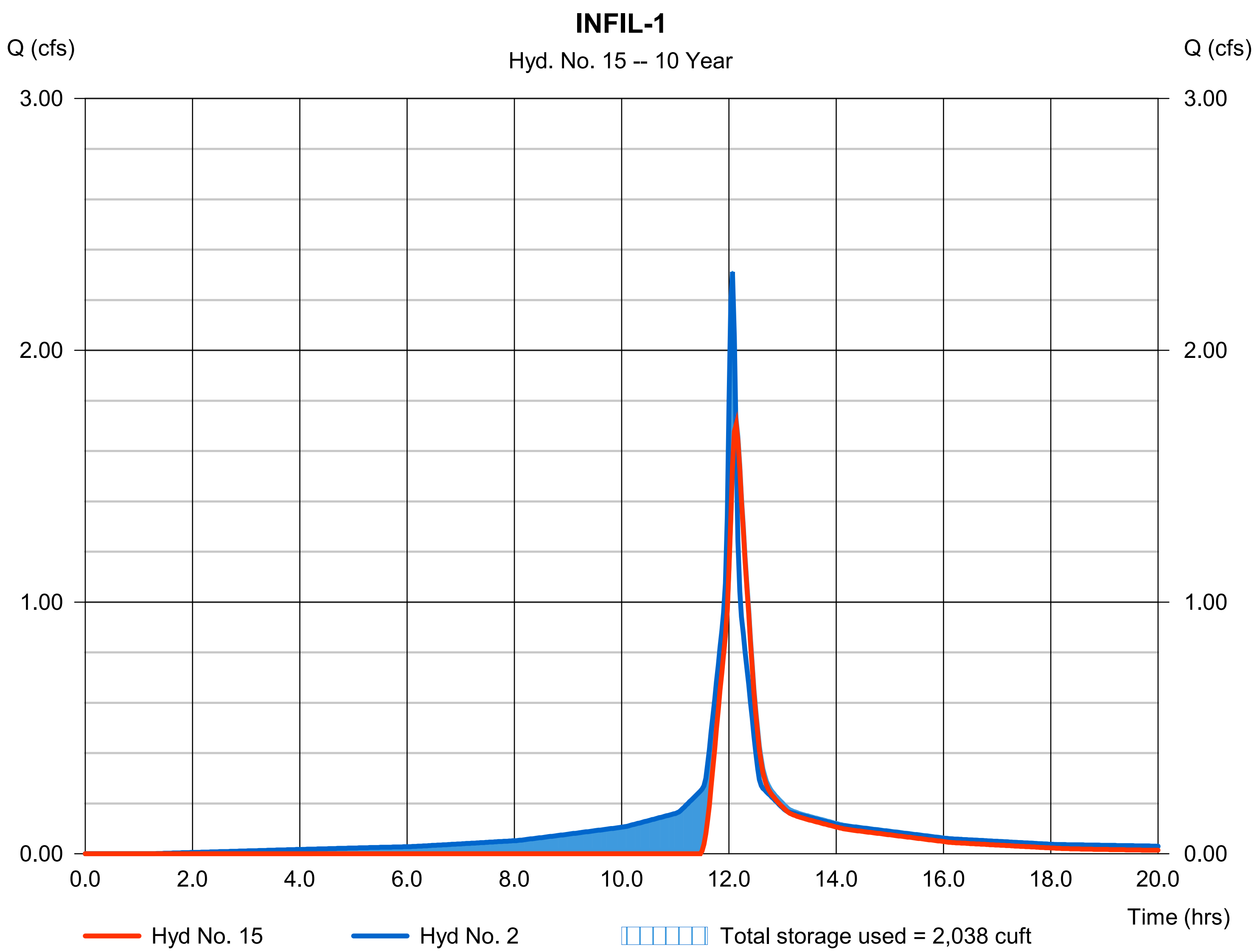
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 15

INFIL-1

Hydrograph type	= Reservoir	Peak discharge	= 1.706 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 5,113 cuft
Inflow hyd. No.	= 2 - PR WS-02A(I)	Max. Elevation	= 145.61 ft
Reservoir name	= INFIL-1	Max. Storage	= 2,038 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



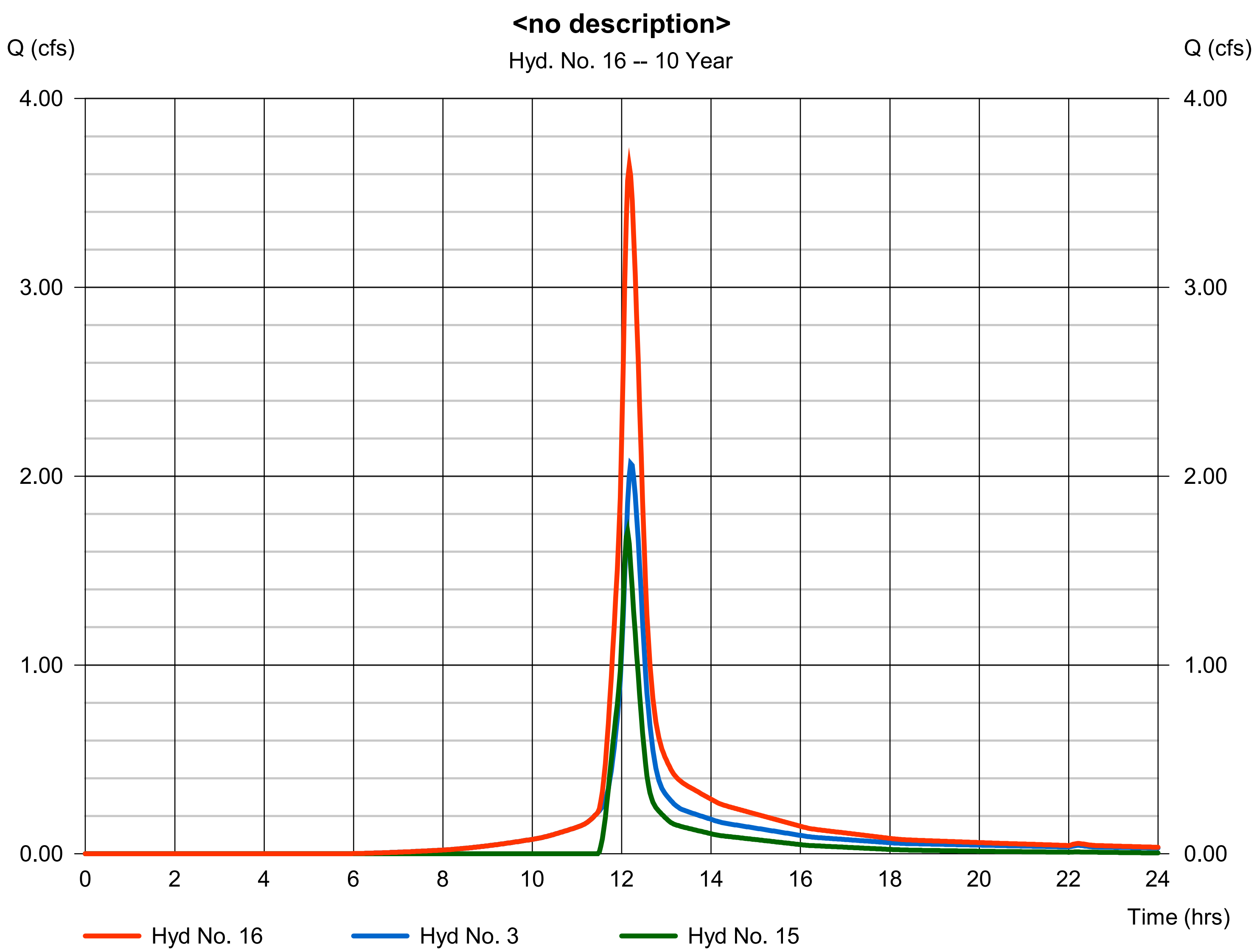
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 16

<no description>

Hydrograph type	= Combine	Peak discharge	= 3.643 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 14,338 cuft
Inflow hyds.	= 3, 15	Contrib. drain. area	= 0.683 ac



Hydrograph Report

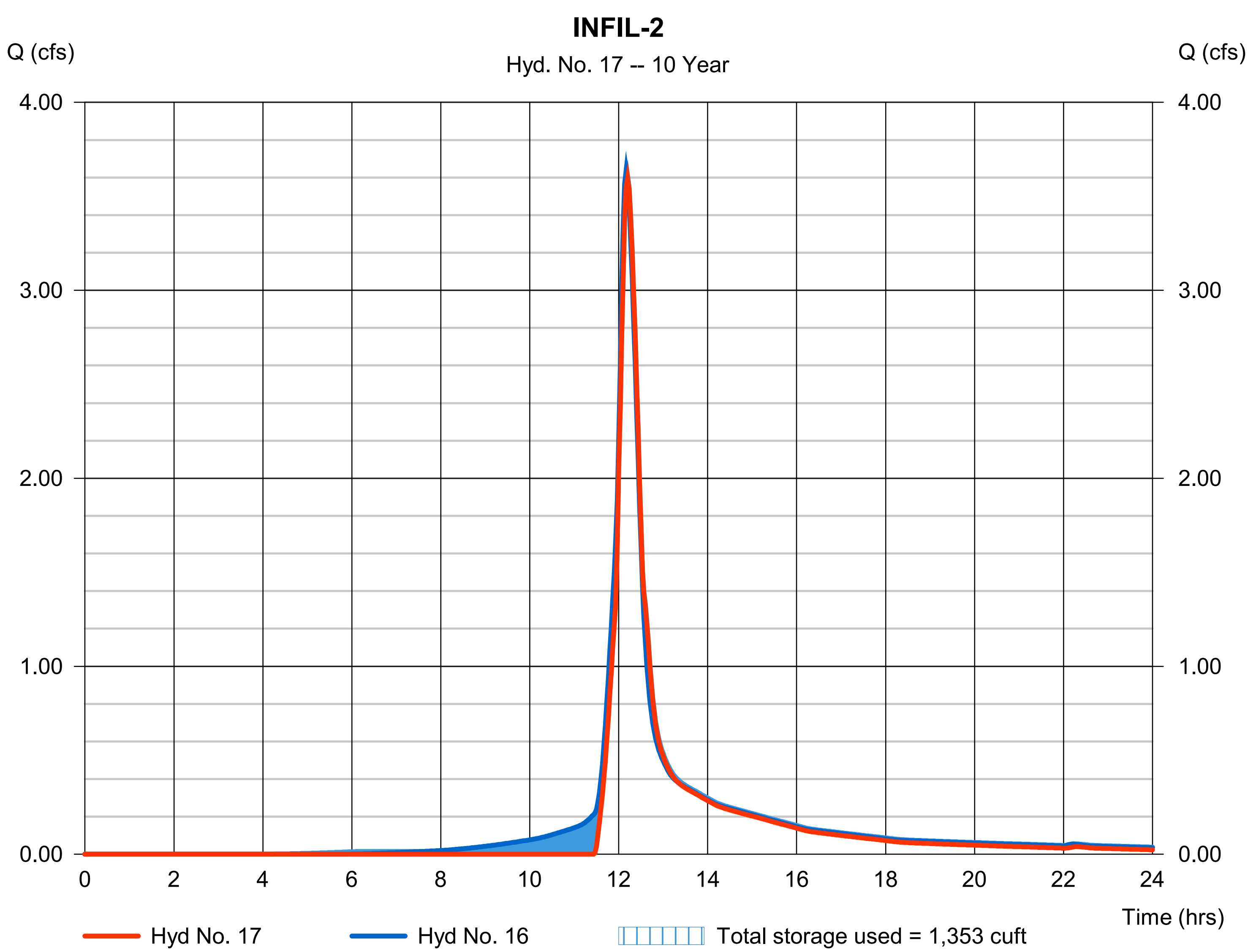
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 17

INFIL-2

Hydrograph type	= Reservoir	Peak discharge	= 3.595 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 12,718 cuft
Inflow hyd. No.	= 16 - <no description>	Max. Elevation	= 136.99 ft
Reservoir name	= INFIL-2	Max. Storage	= 1,353 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

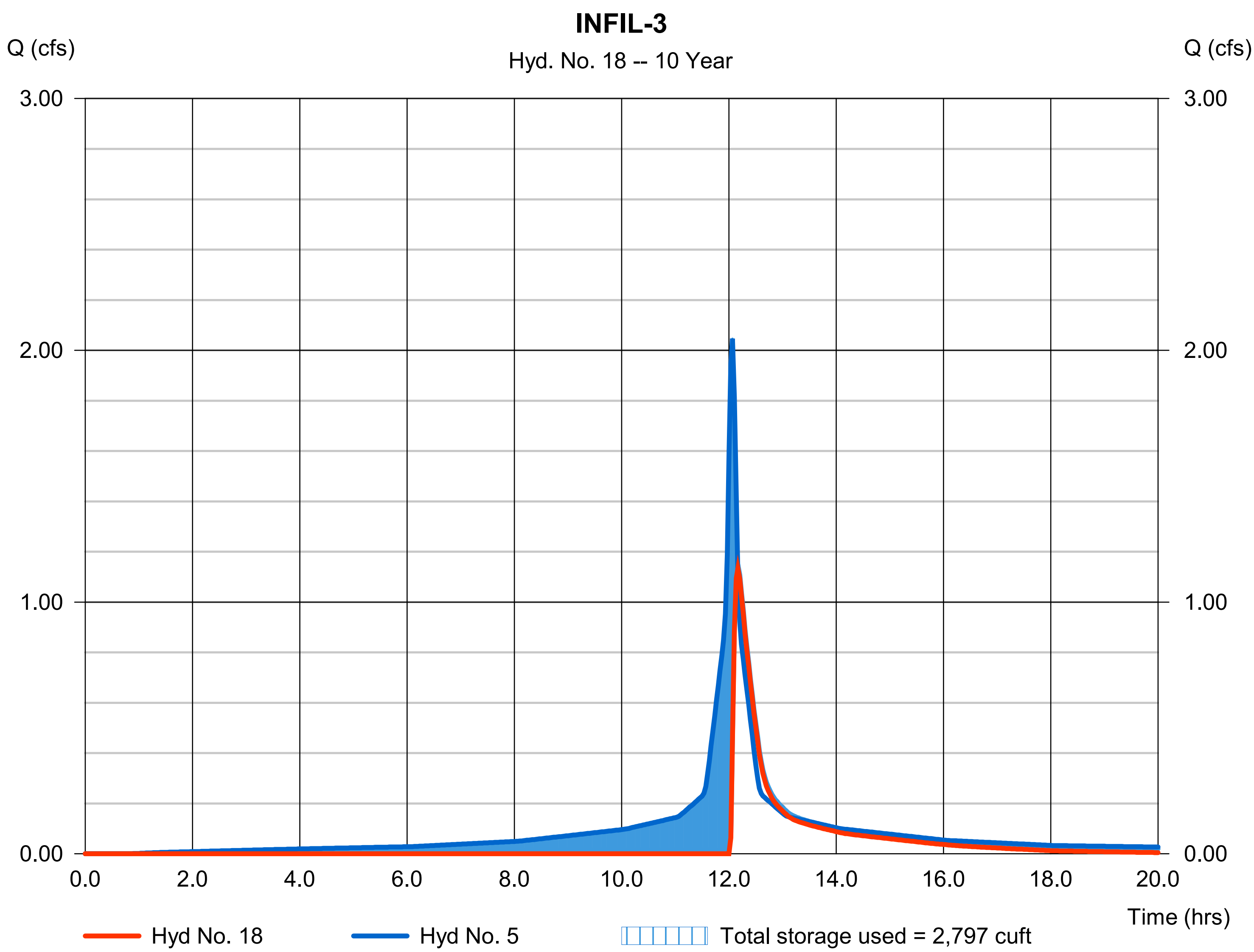
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 18

INFIL-3

Hydrograph type	= Reservoir	Peak discharge	= 1.133 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 2,939 cuft
Inflow hyd. No.	= 5 - PR WS-02B(II)	Max. Elevation	= 144.44 ft
Reservoir name	= INFIL-3	Max. Storage	= 2,797 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

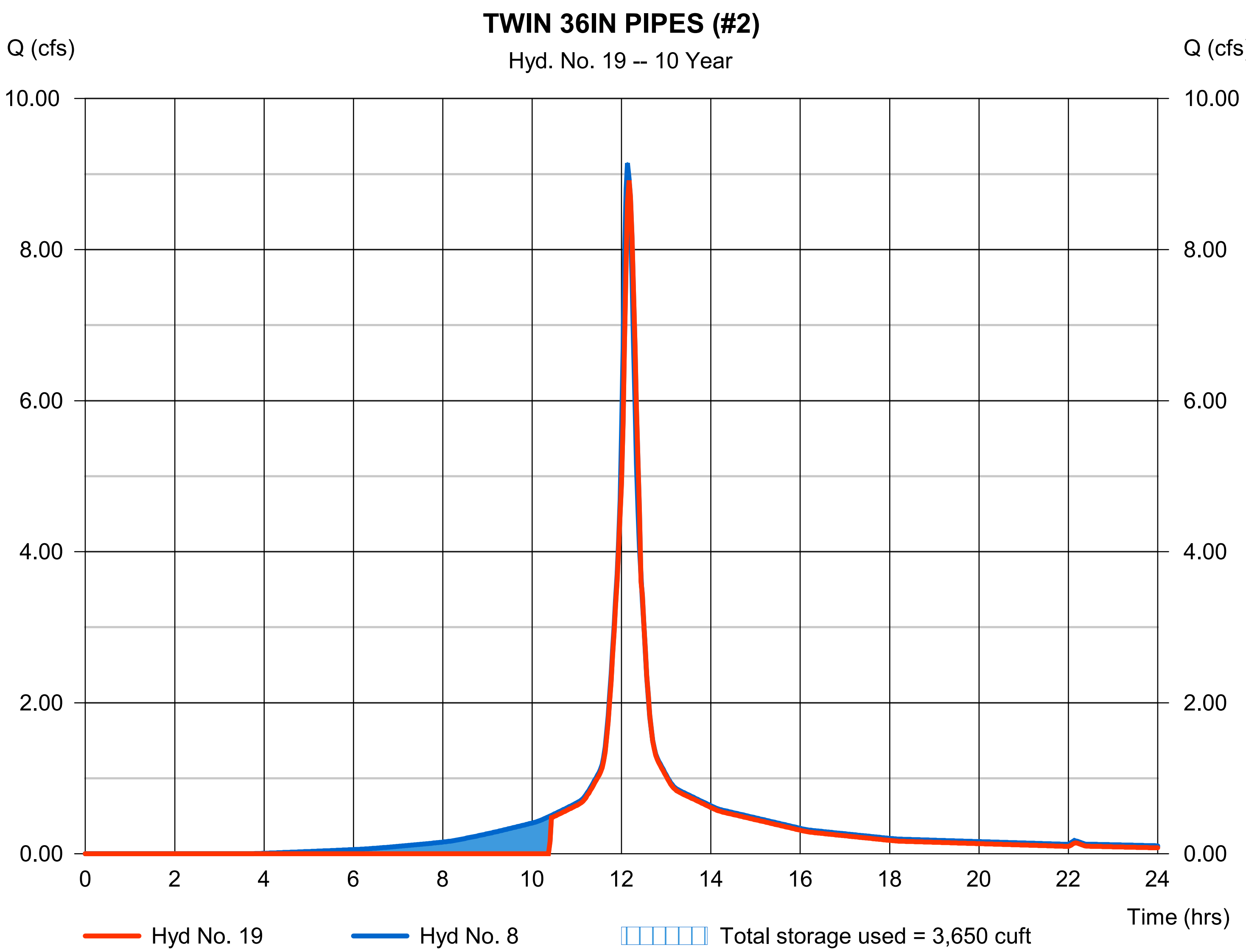
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 19

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 8.916 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 31,682 cuft
Inflow hyd. No.	= 8 - PR WS-02D	Max. Elevation	= 139.12 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 3,650 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

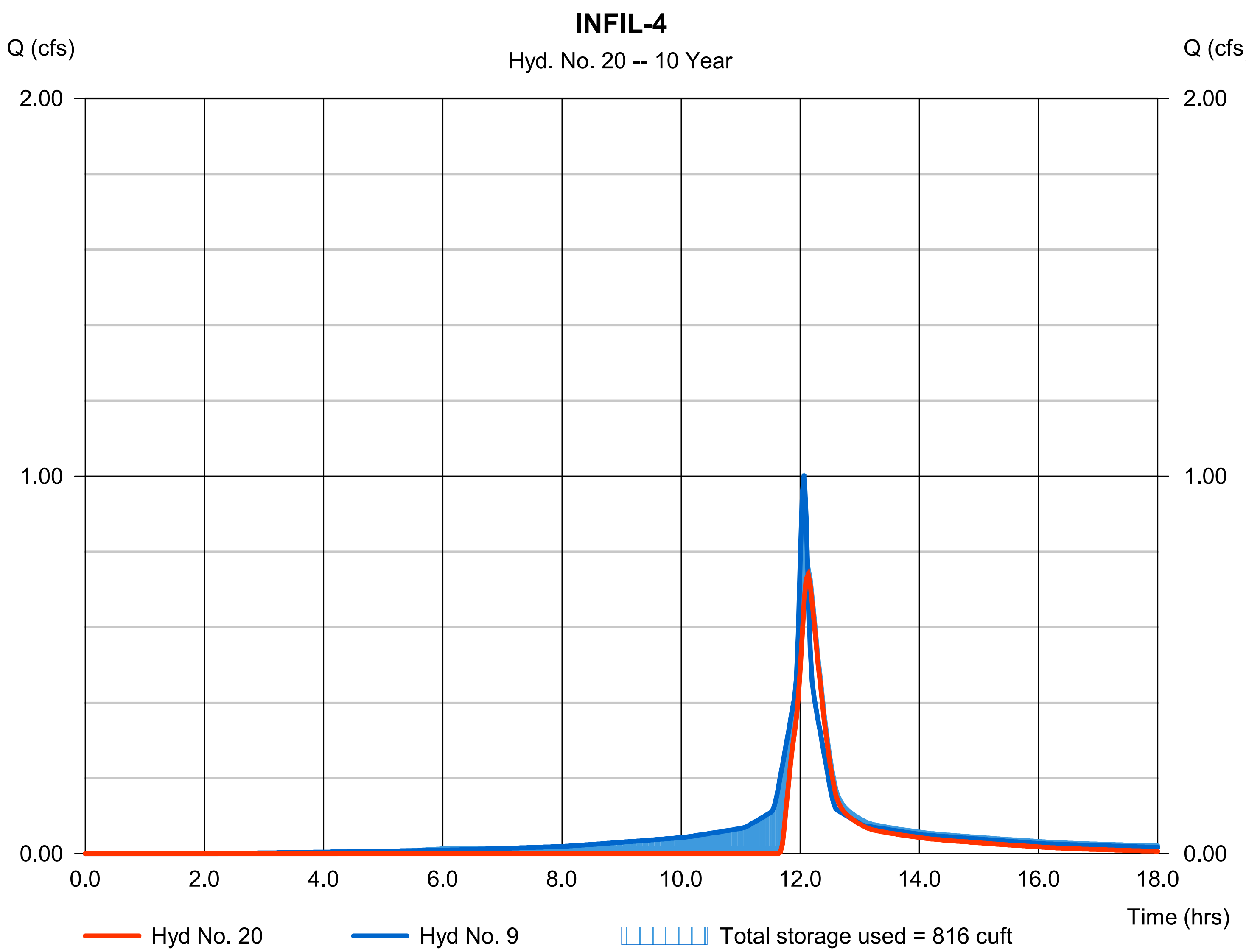
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 20

INFIL-4

Hydrograph type	= Reservoir	Peak discharge	= 0.739 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 1,981 cuft
Inflow hyd. No.	= 9 - PR WS-02E	Max. Elevation	= 137.86 ft
Reservoir name	= INFIL-4	Max. Storage	= 816 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

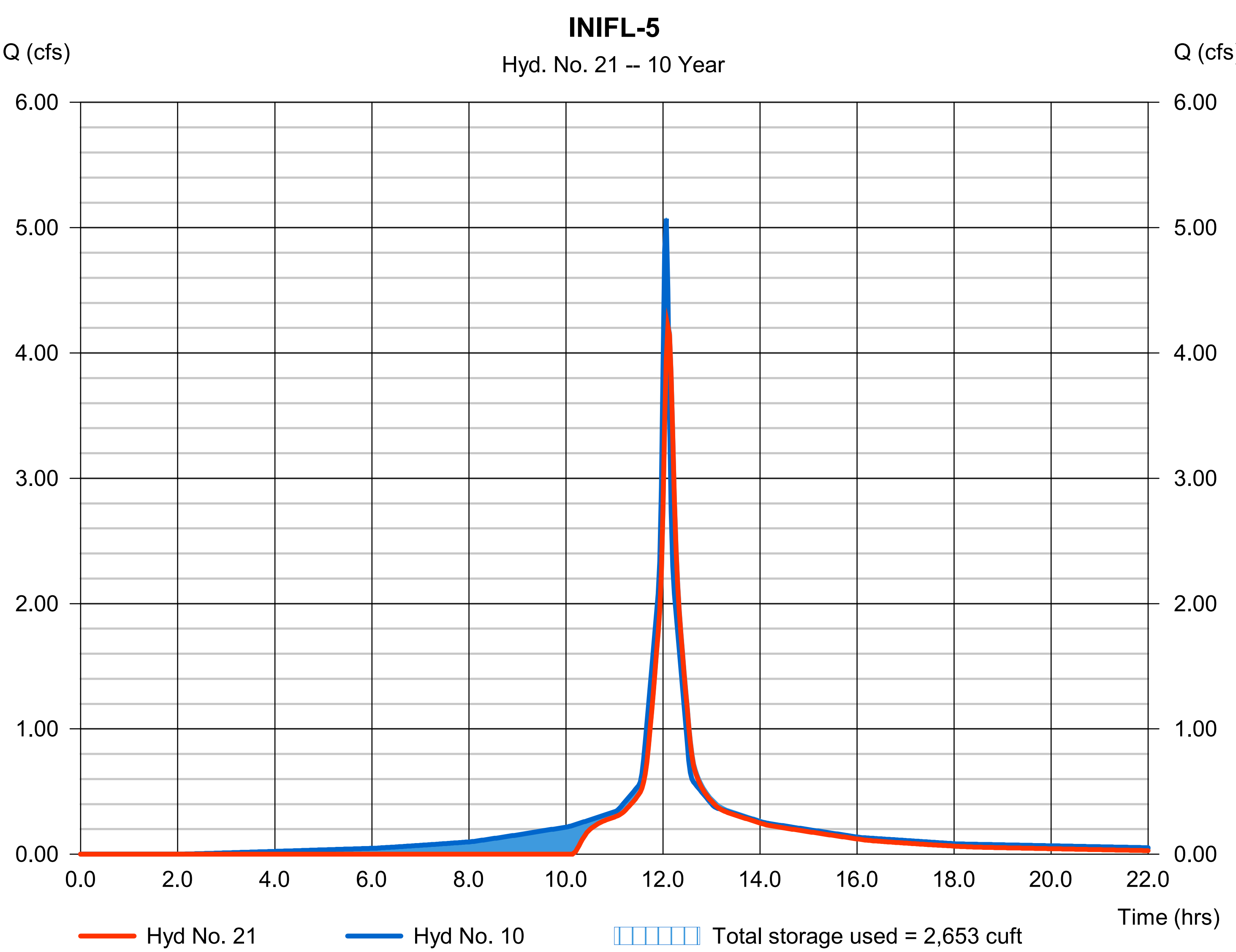
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 21

INIFL-5

Hydrograph type	= Reservoir	Peak discharge	= 4.208 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 13,323 cuft
Inflow hyd. No.	= 10 - PR WS-02F	Max. Elevation	= 136.63 ft
Reservoir name	= INIFL-5	Max. Storage	= 2,653 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

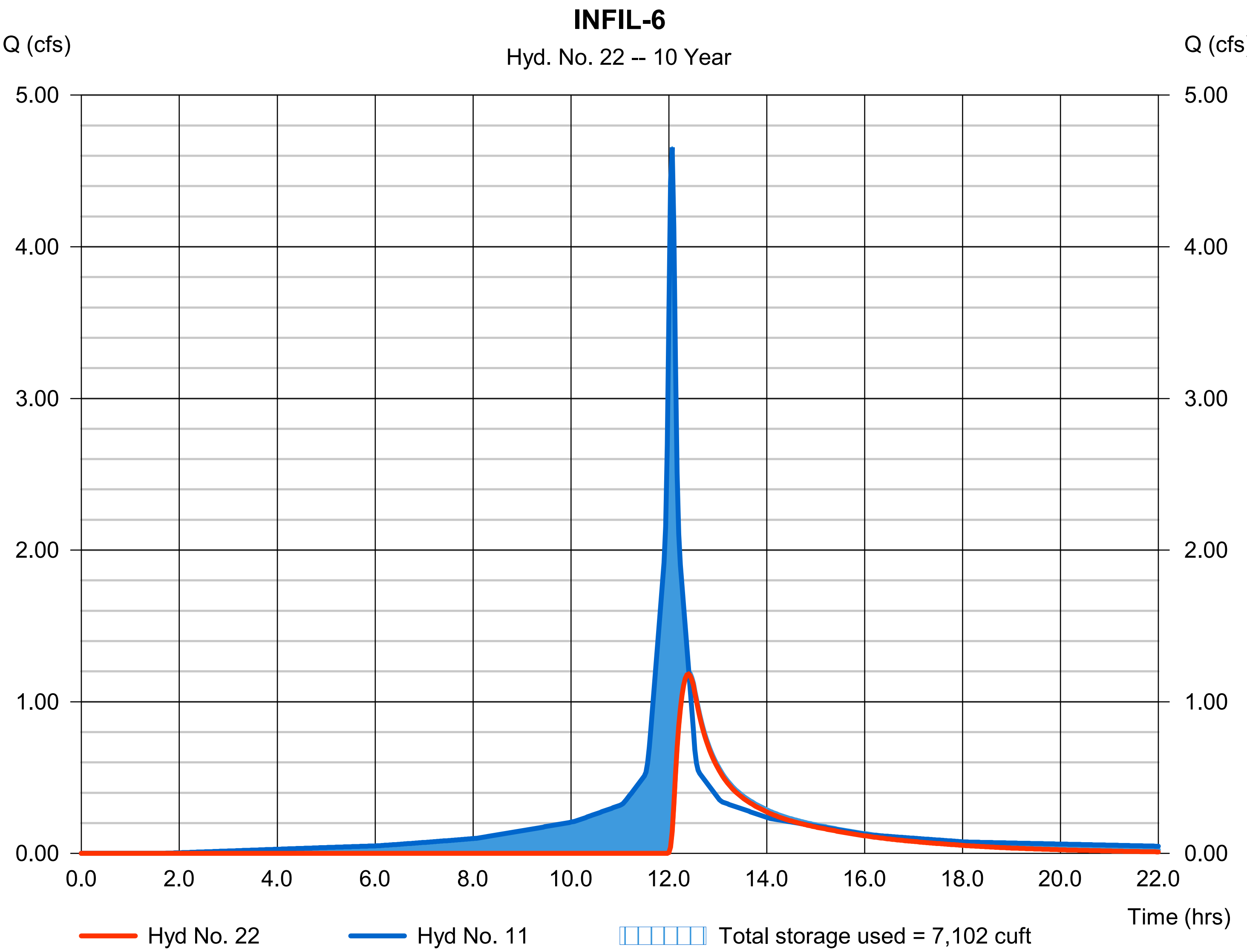
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 22

INFIL-6

Hydrograph type	= Reservoir	Peak discharge	= 1.183 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.40 hrs
Time interval	= 2 min	Hyd. volume	= 6,554 cuft
Inflow hyd. No.	= 11 - PR WS-02G	Max. Elevation	= 135.64 ft
Reservoir name	= INFIL-6	Max. Storage	= 7,102 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

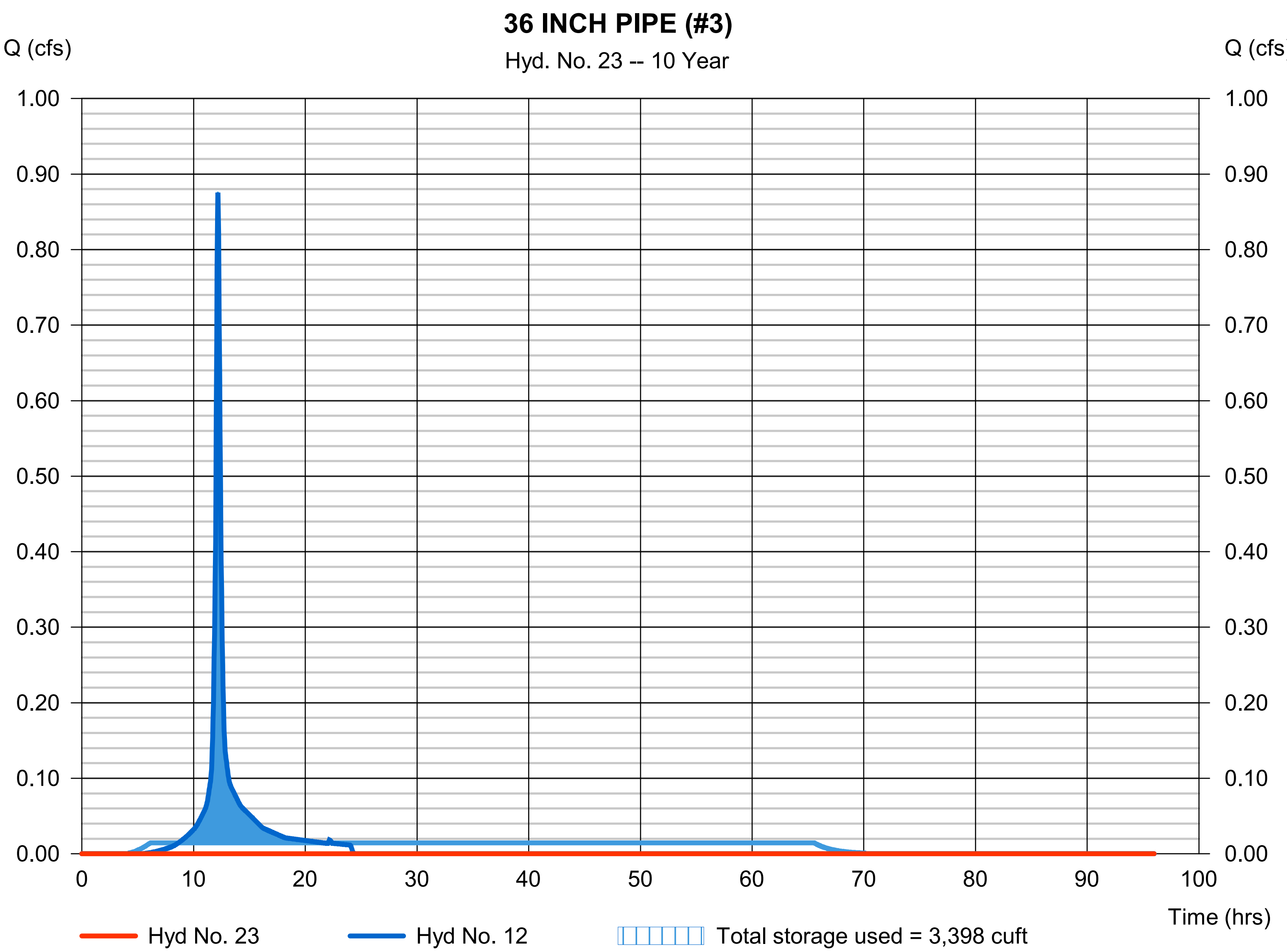
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 23

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.27 hrs
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 12 - PR WS-02H	Max. Elevation	= 132.37 ft
Reservoir name	= 36IN - 3	Max. Storage	= 3,398 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

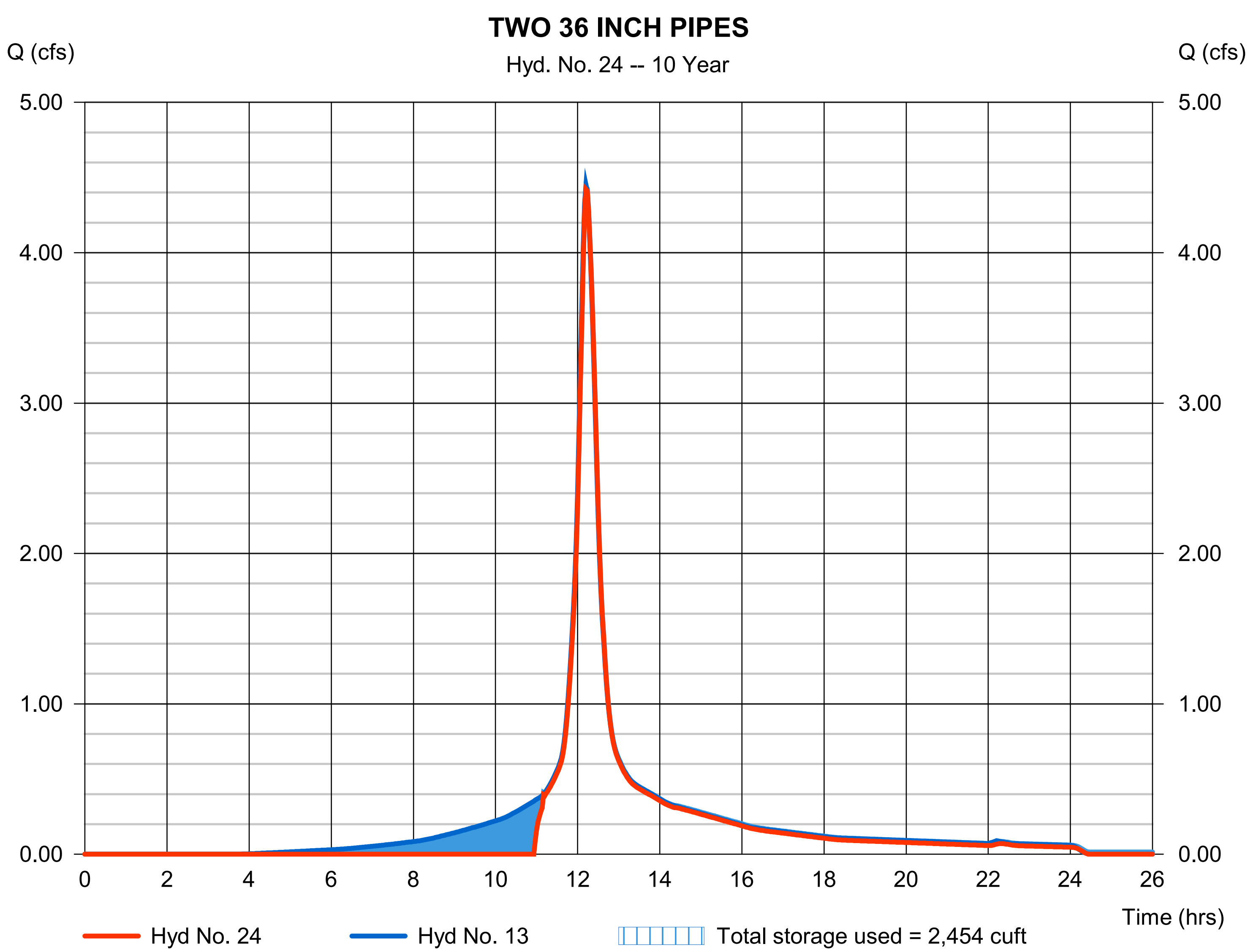
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 24

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 4.422 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 17,270 cuft
Inflow hyd. No.	= 13 - PR WS-02I	Max. Elevation	= 135.72 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,454 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



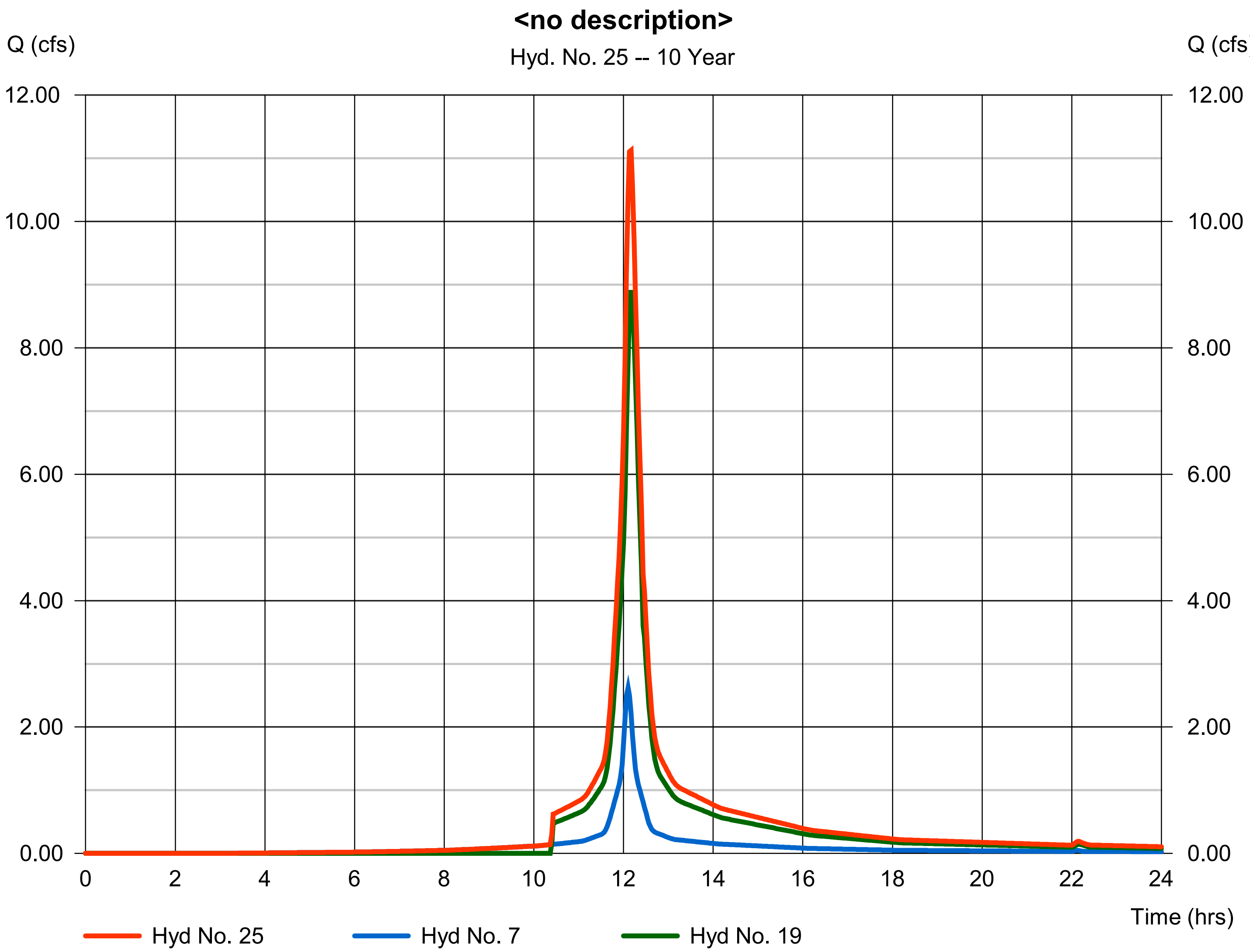
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 25

<no description>

Hydrograph type	= Combine	Peak discharge	= 11.13 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 41,240 cuft
Inflow hyds.	= 7, 19	Contrib. drain. area	= 0.576 ac



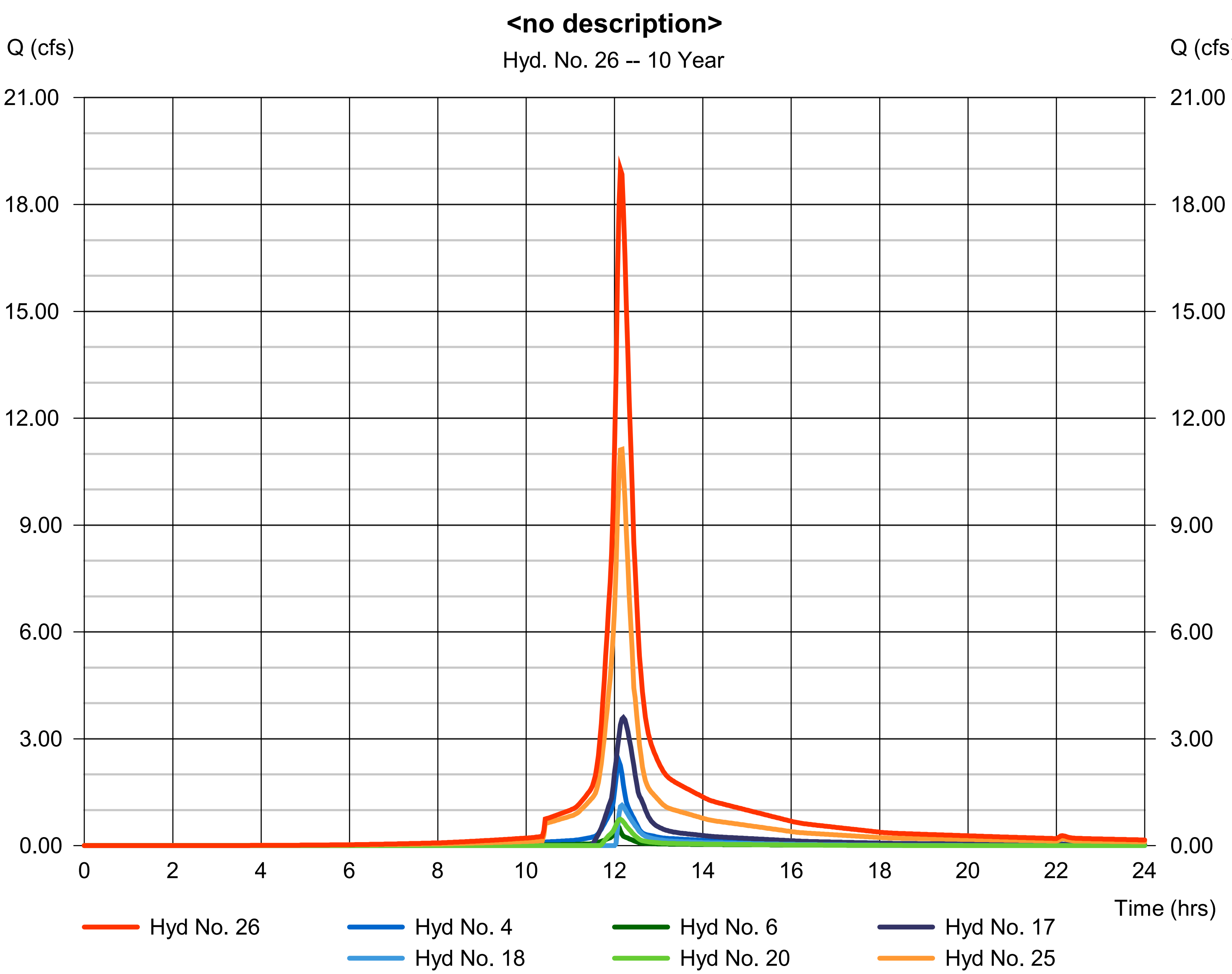
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 26

<no description>

Hydrograph type	= Combine	Peak discharge	= 18.99 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 68,848 cuft
Inflow hyds.	= 4, 6, 17, 18, 20, 25	Contrib. drain. area	= 0.708 ac



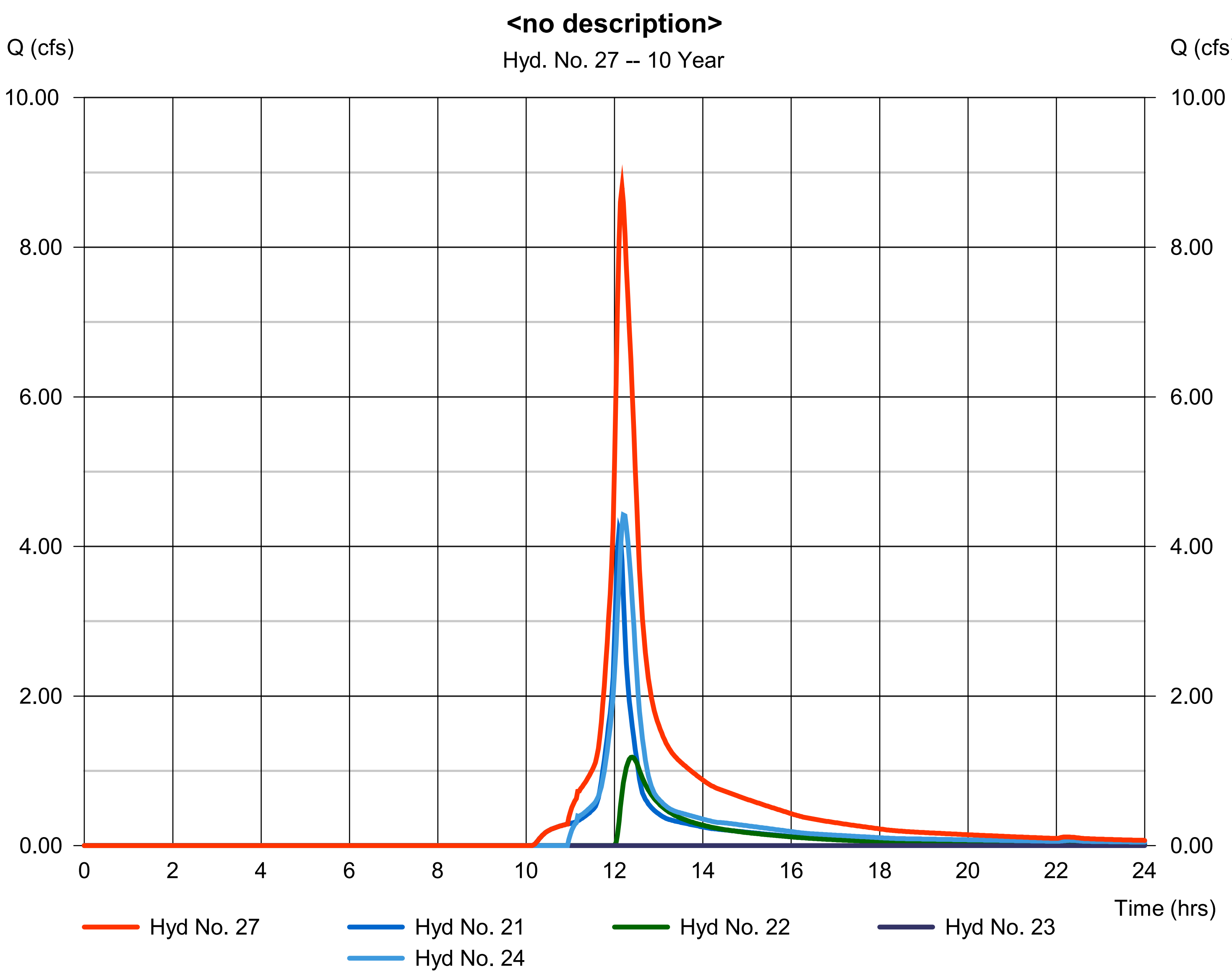
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 27

<no description>

Hydrograph type	= Combine	Peak discharge	= 8.793 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 37,147 cuft
Inflow hyds.	= 21, 22, 23, 24	Contrib. drain. area	= 0.000 ac



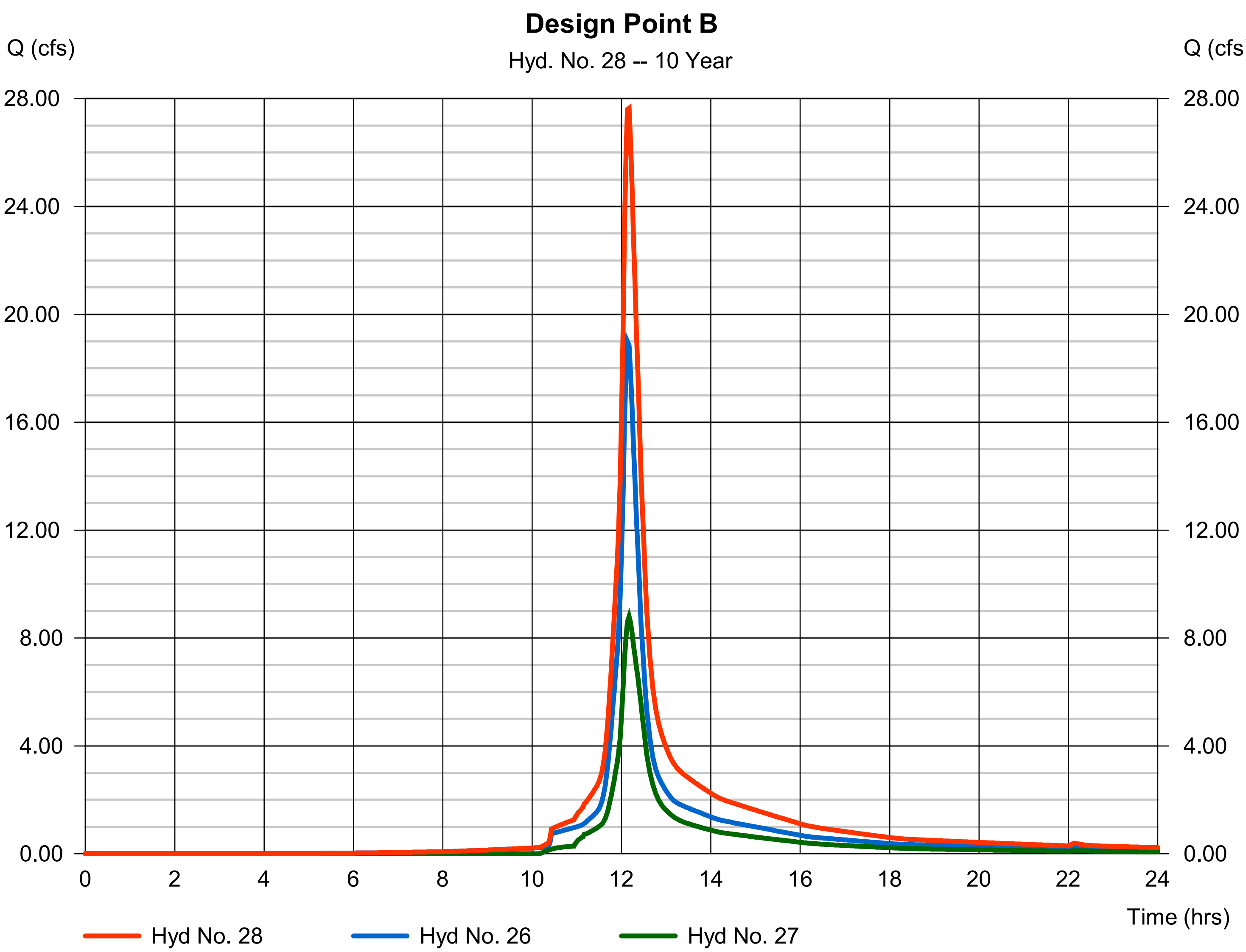
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 28

Design Point B

Hydrograph type	= Combine	Peak discharge	= 27.64 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 105,995 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	4.203	2	732	17,344	------	------	------	PR WS-01
2	SCS Runoff	2.819	2	724	9,637	------	------	------	PR WS-02A(I)
3	SCS Runoff	2.652	2	732	11,935	------	------	------	PR WS-02A(II)
4	SCS Runoff	2.982	2	726	10,523	------	------	------	PR WS-02B(I)
5	SCS Runoff	2.491	2	724	8,642	------	------	------	PR WS-02B(II)
6	SCS Runoff	0.728	2	724	2,262	------	------	------	PR WS-02B(III)
7	SCS Runoff	3.236	2	726	11,952	------	------	------	PR WS-02C
8	SCS Runoff	11.39	2	728	46,130	------	------	------	PR WS-02D
9	SCS Runoff	1.234	2	724	4,109	------	------	------	PR WS-02E
10	SCS Runoff	6.217	2	724	20,708	------	------	------	PR WS-02F
11	SCS Runoff	5.692	2	724	19,196	------	------	------	PR WS-02G
12	SCS Runoff	1.116	2	730	4,653	------	------	------	PR WS-02H
13	SCS Runoff	5.543	2	732	25,812	------	------	------	PR WS-02I
14	SCS Runoff	0.212	2	724	655	------	------	------	PR WS-03
15	Reservoir	2.043	2	728	6,871	2	146.06	2,209	INFIL-1
16	Combine	4.539	2	730	18,807	3, 15	------	------	<no description>
17	Reservoir	4.408	2	734	17,146	16	137.36	1,461	INFIL-2
18	Reservoir	1.687	2	728	4,424	5	144.88	3,070	INFIL-3
19	Reservoir	11.13	2	730	41,147	8	139.17	3,870	TWIN 36IN PIPES (#2)
20	Reservoir	0.882	2	728	2,727	9	138.12	894	INFIL-4
21	Reservoir	4.987	2	726	17,273	10	137.05	2,929	INIFL-5
22	Reservoir	2.355	2	734	9,861	11	136.11	7,919	INFIL-6
23	Reservoir	0.070	2	902	781	12	137.46	3,650	36 INCH PIPE (#3)
24	Reservoir	5.516	2	732	22,569	13	135.73	2,476	TWO 36 INCH PIPES
25	Combine	13.91	2	728	53,099	7, 19,	------	------	<no description>
26	Combine	23.97	2	728	90,181	4, 6, 17, 18, 20, 25	------	------	<no description>
27	Combine	12.22	2	730	50,484	21, 22, 23, 24,	------	------	<no description>
28	Combine	35.87	2	728	140,665	26, 27	------	------	Design Point B

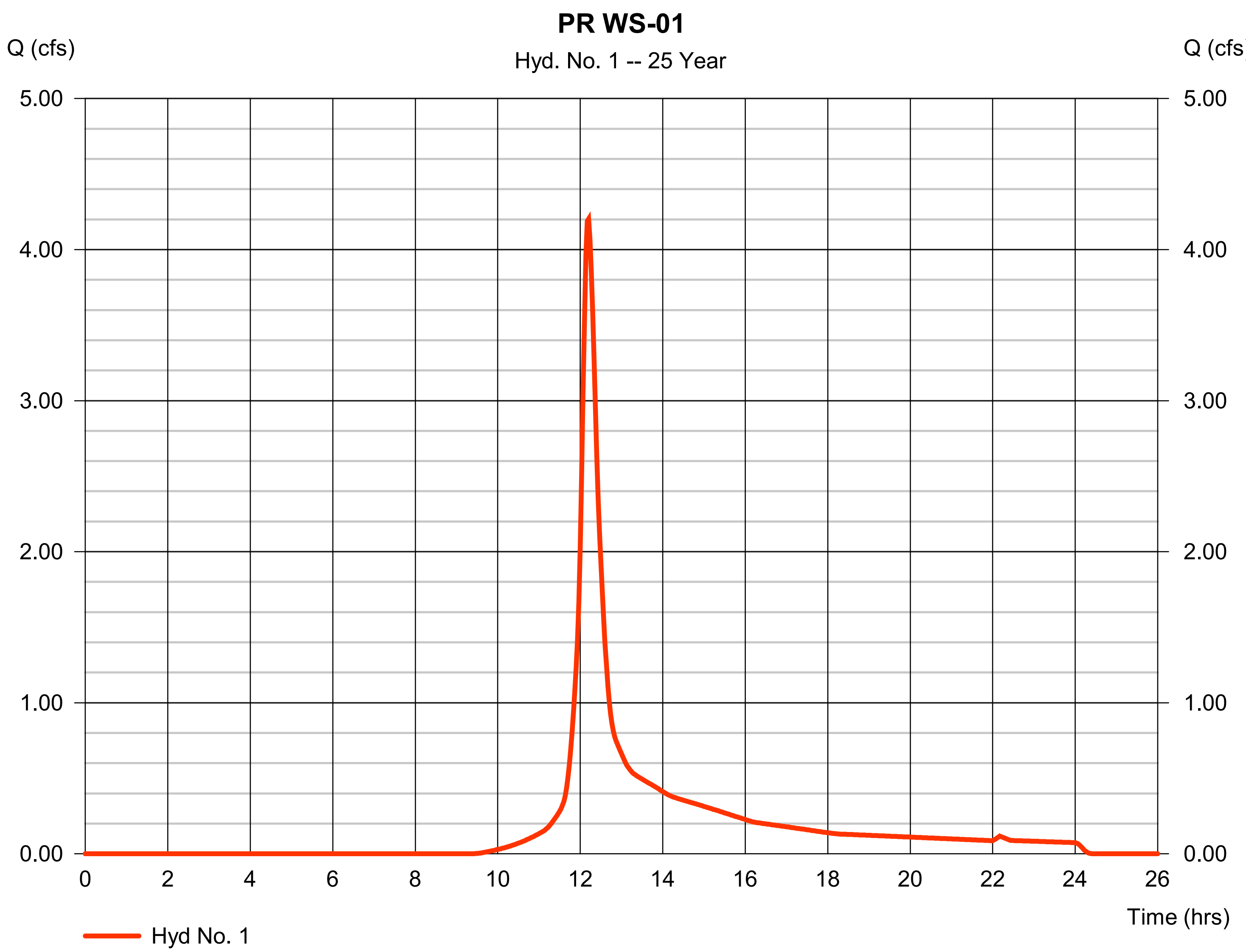
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 1

PR WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 4.203 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 17,344 cuft
Drainage area	= 1.721 ac	Curve number	= 66
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.50 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



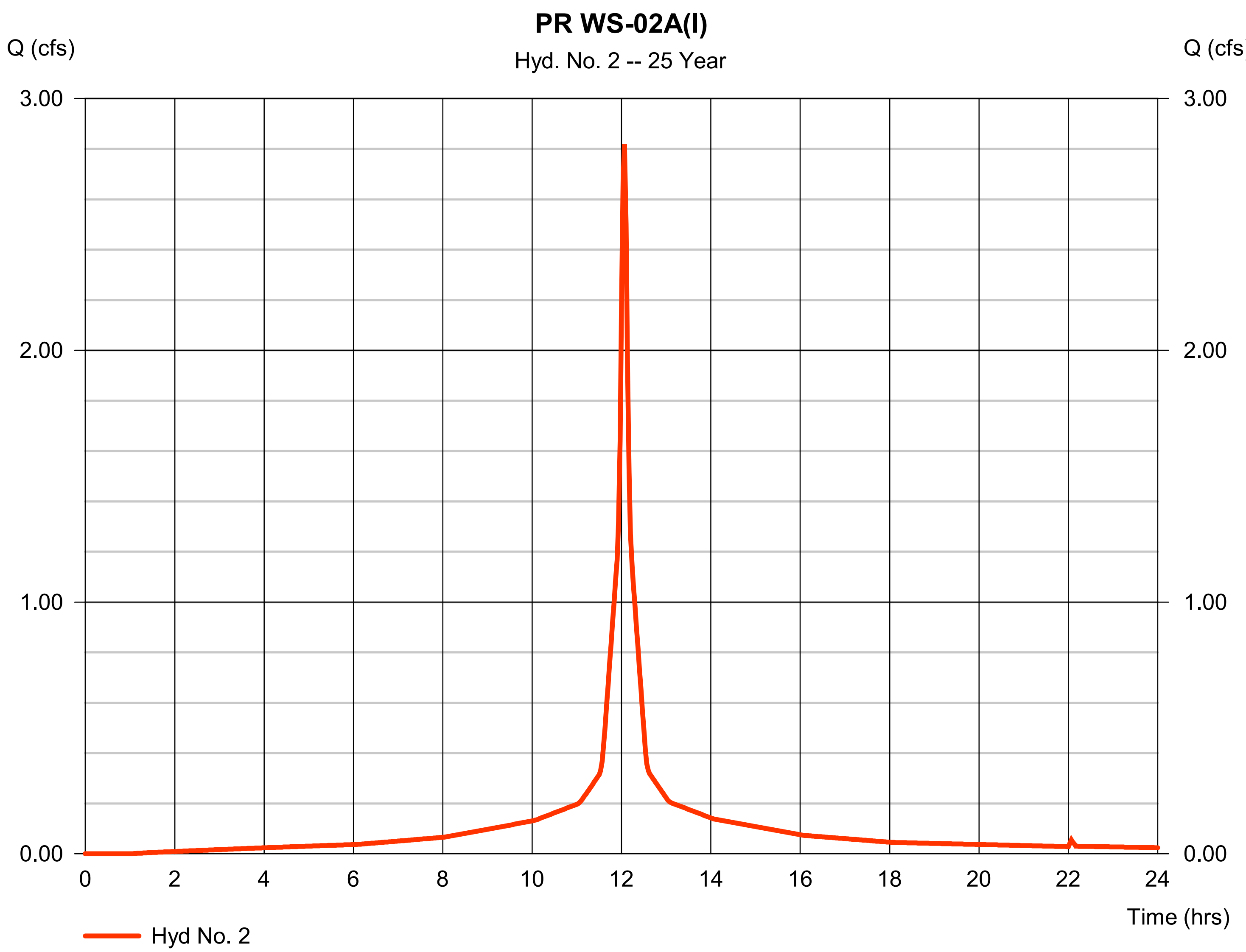
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 2

PR WS-02A(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.819 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 9,637 cuft
Drainage area	= 0.458 ac	Curve number	= 97
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



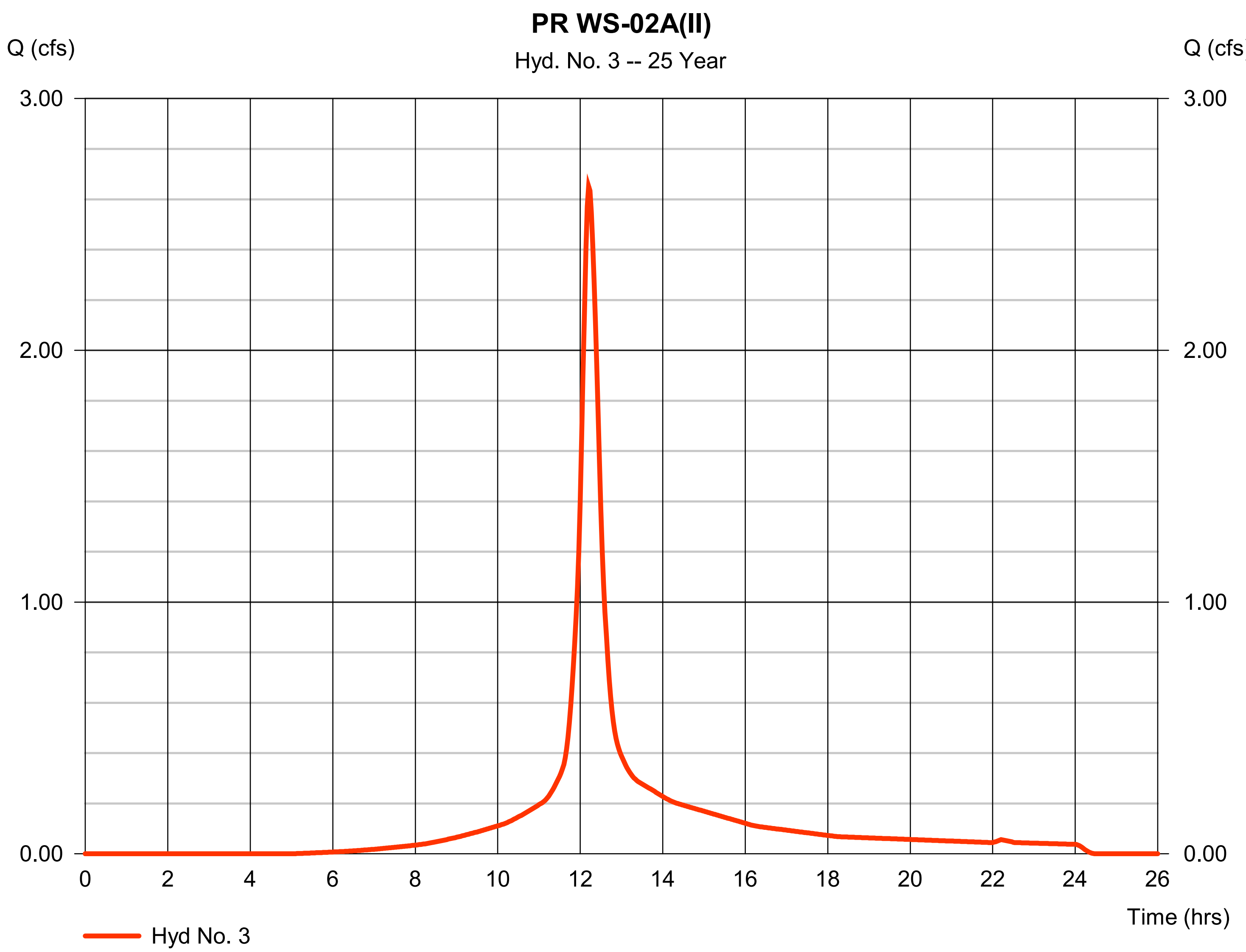
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 3

PR WS-02A(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.652 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 11,935 cuft
Drainage area	= 0.683 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



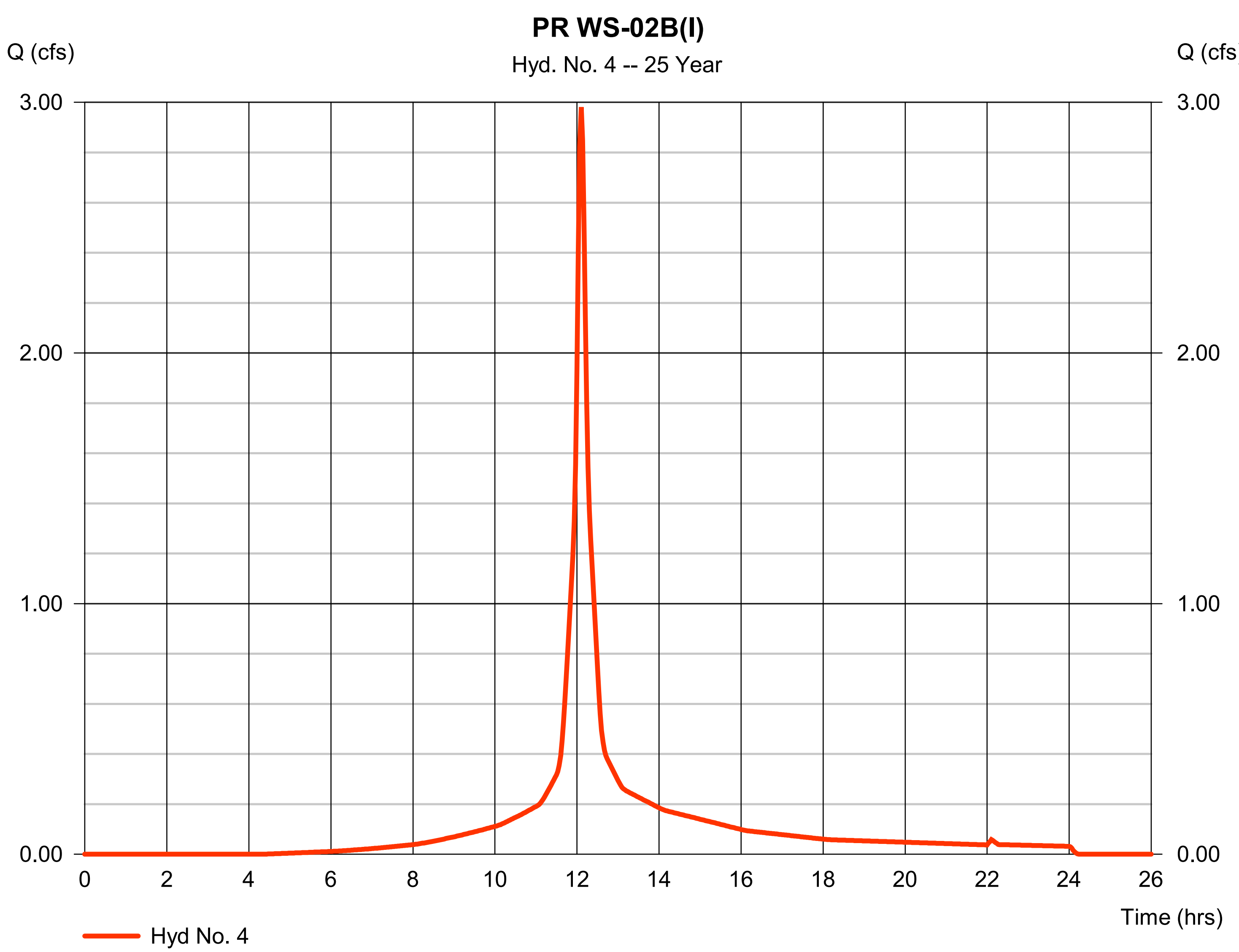
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 4

PR WS-02B(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.982 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 10,523 cuft
Drainage area	= 0.576 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



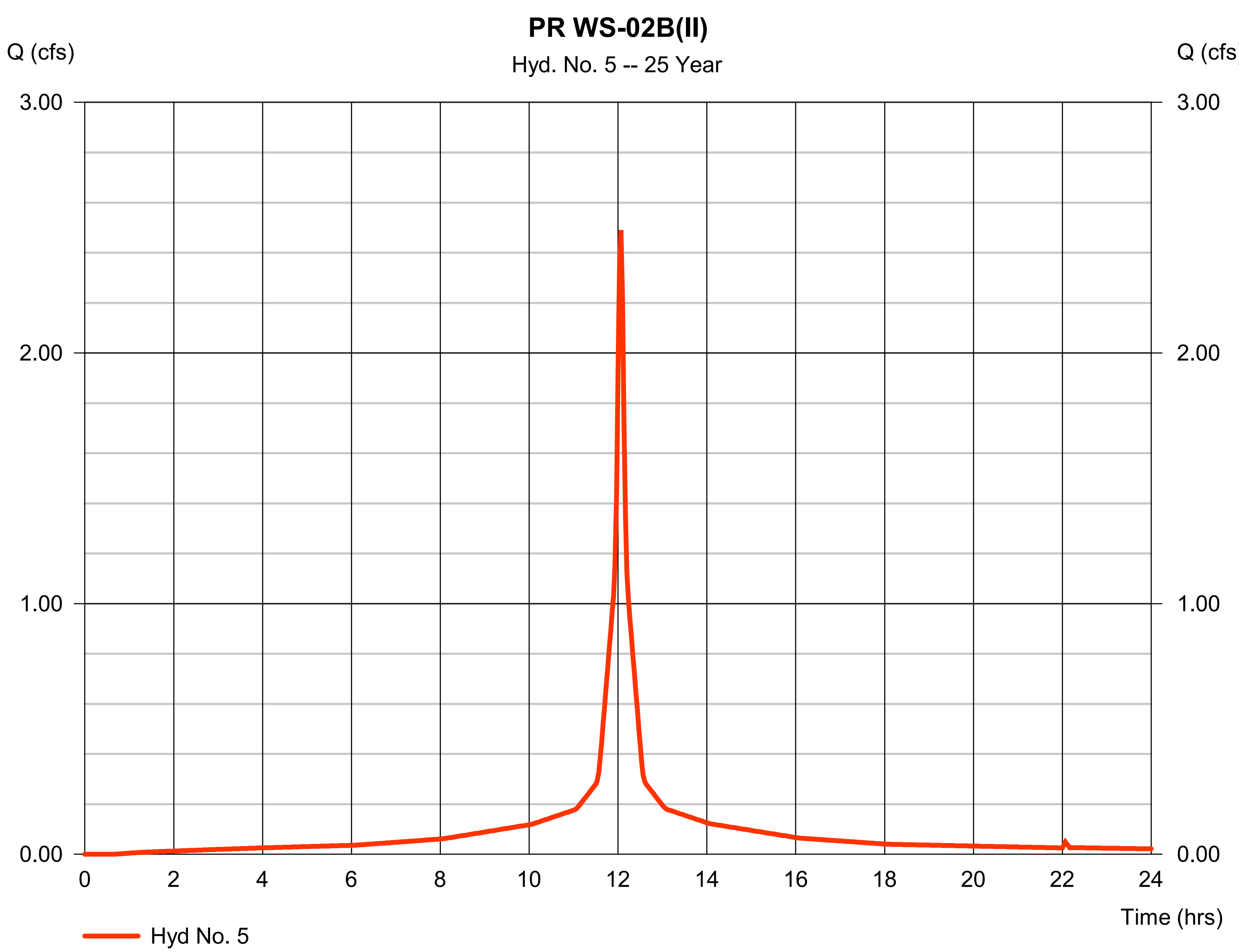
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 5

PR WS-02B(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.491 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 8,642 cuft
Drainage area	= 0.403 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



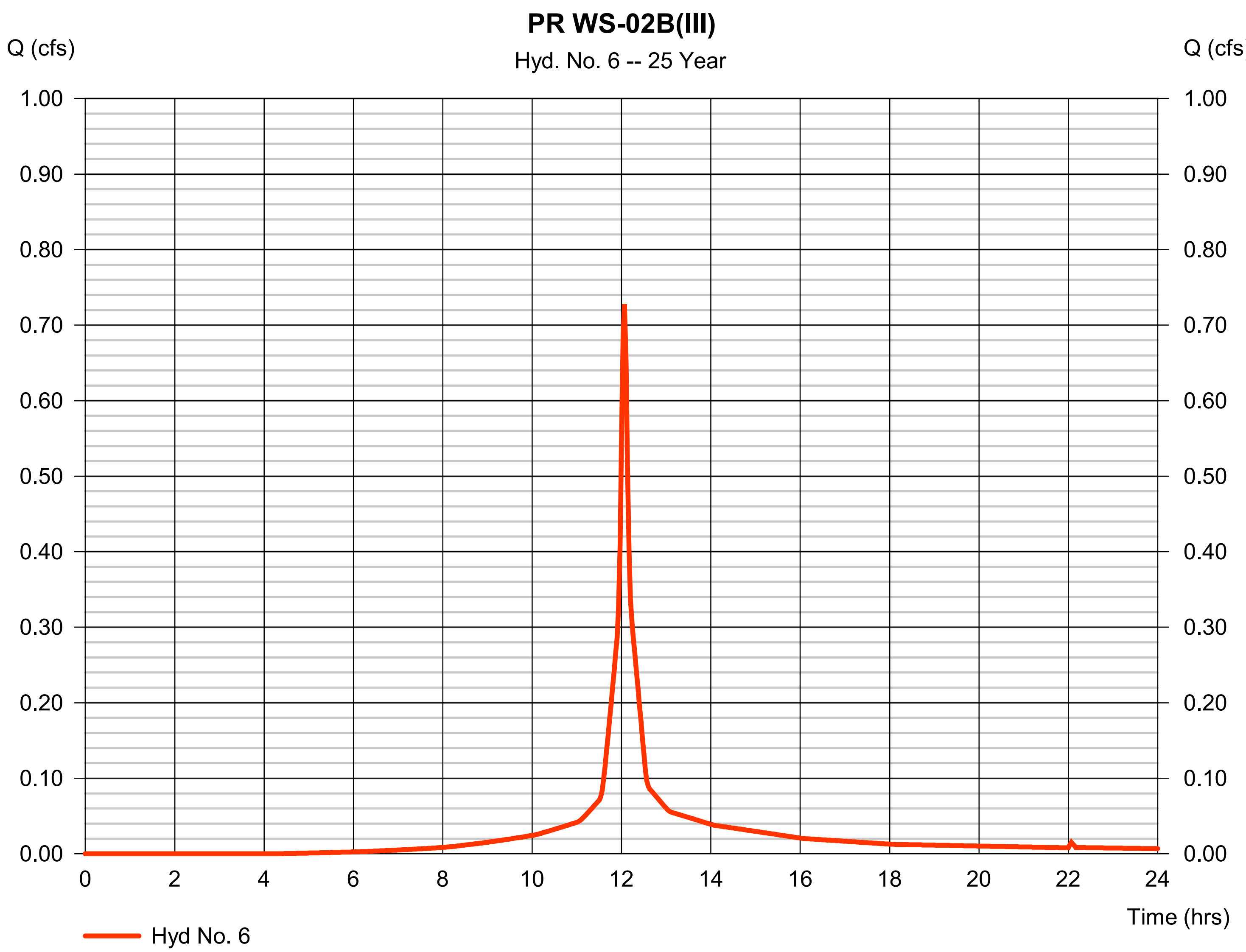
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 6

PR WS-02B(III)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.728 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 2,262 cuft
Drainage area	= 0.132 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

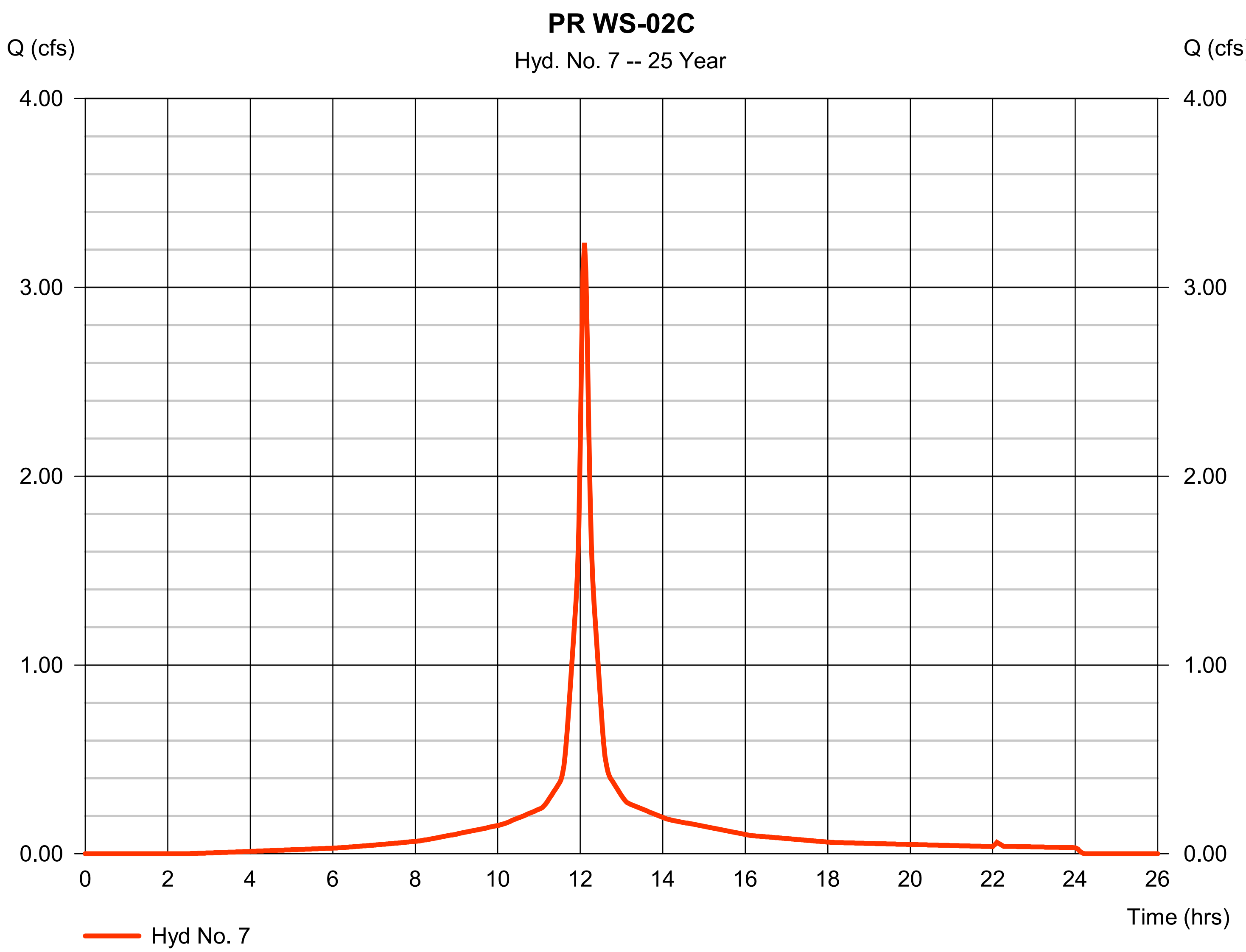


Hydrograph Report

Hyd. No. 7

PR WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.236 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 11,952 cuft
Drainage area	= 0.576 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



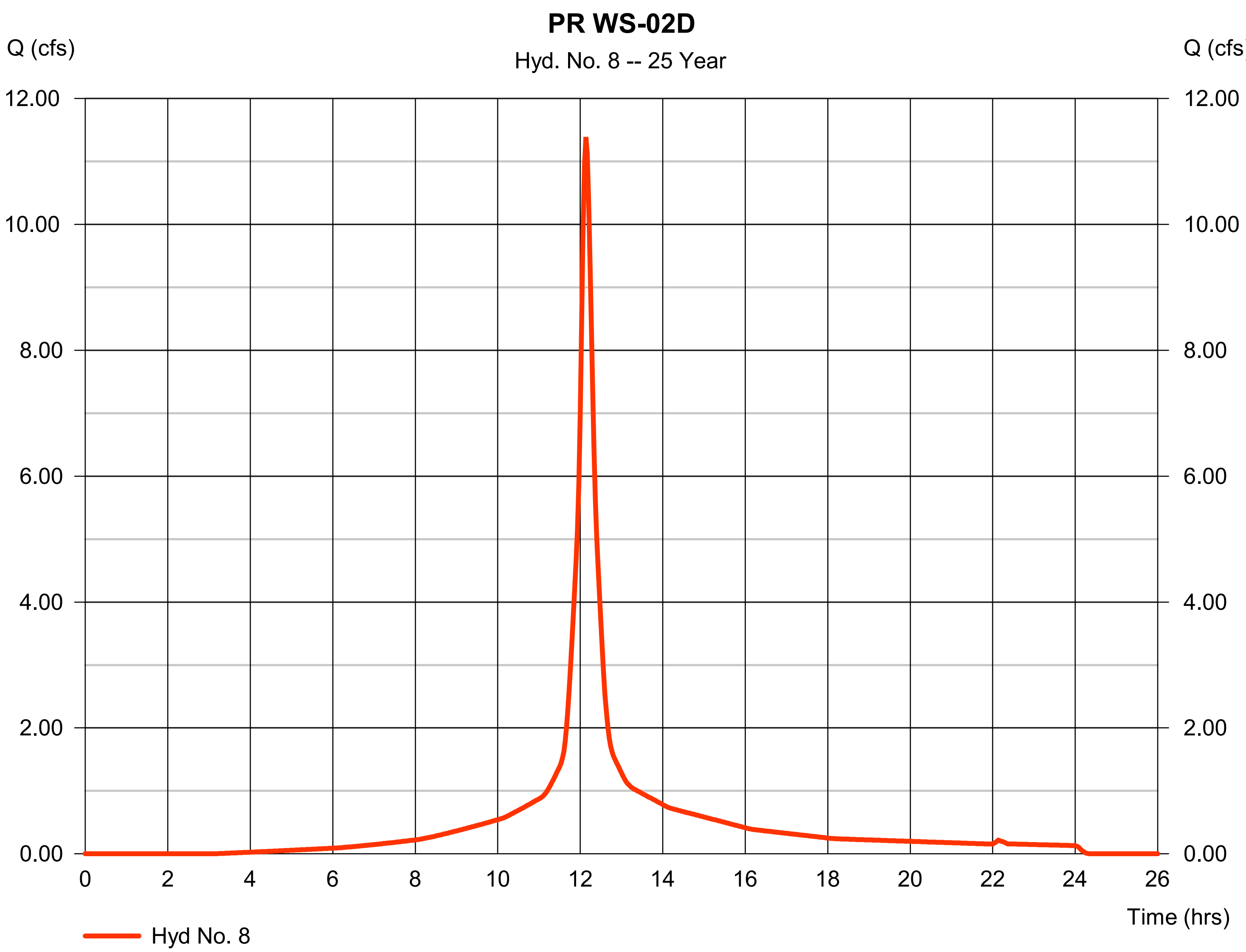
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 8

PR WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 11.39 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 46,130 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



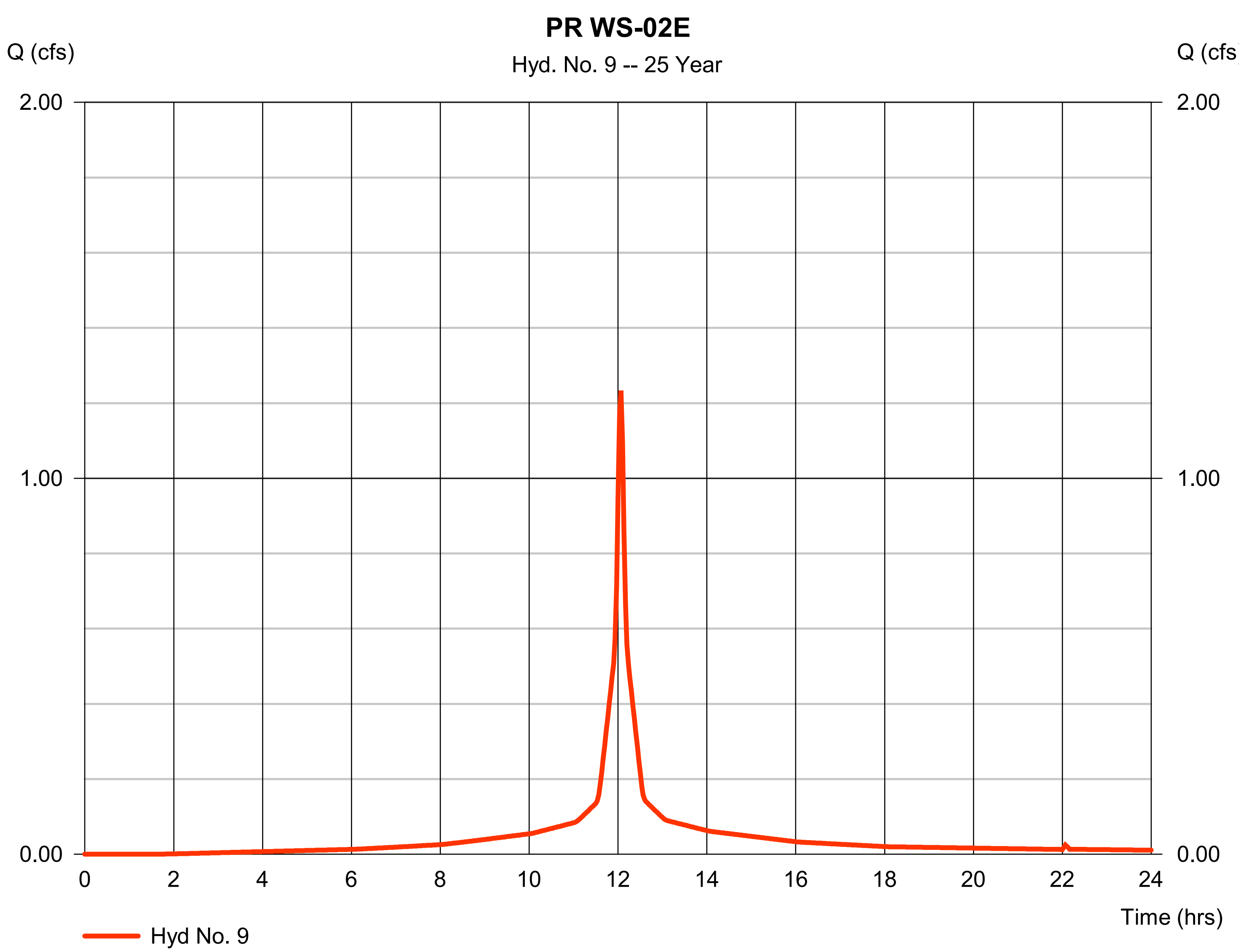
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 9

PR WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 1.234 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 4,109 cuft
Drainage area	= 0.203 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



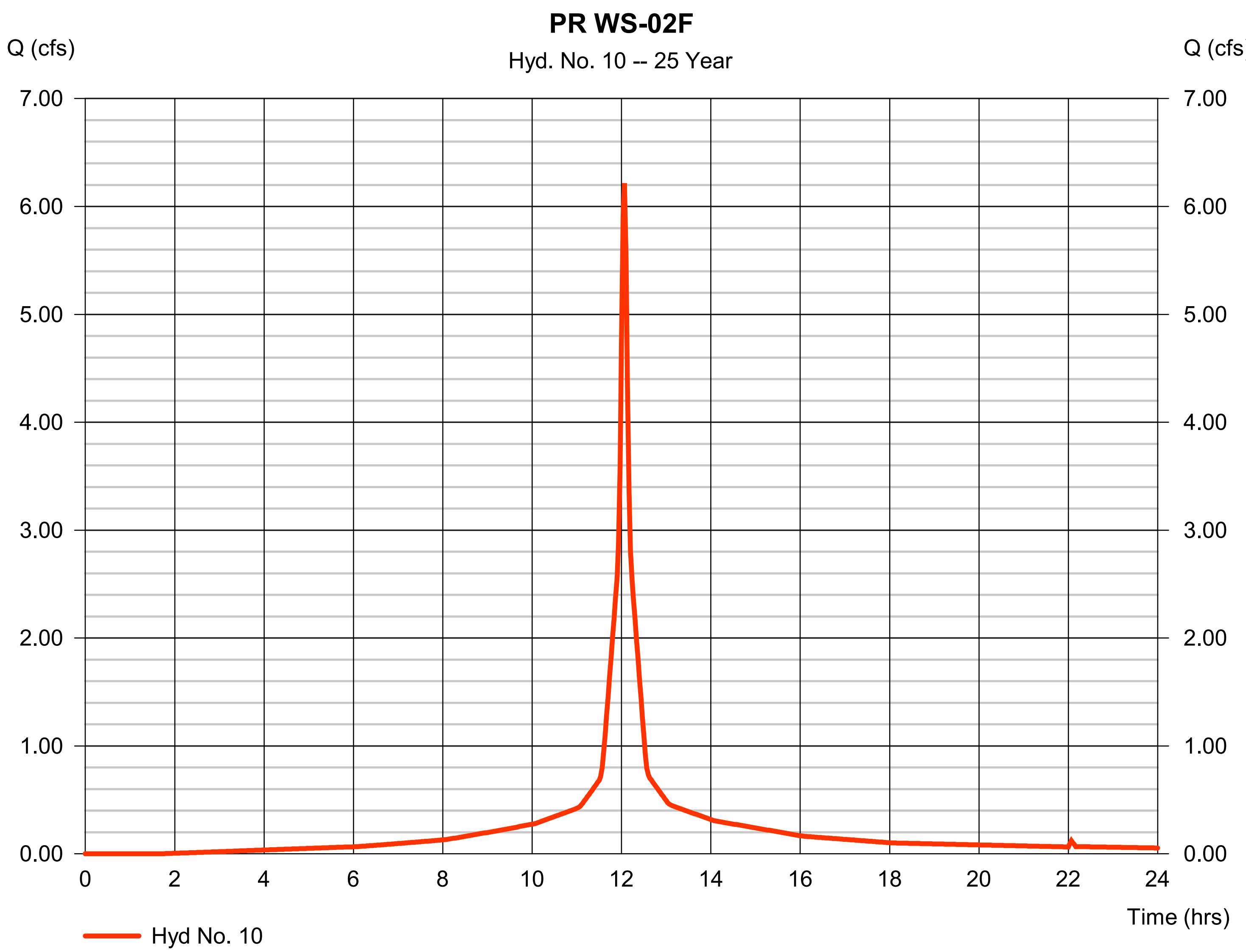
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 10

PR WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 6.217 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 20,708 cuft
Drainage area	= 1.023 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



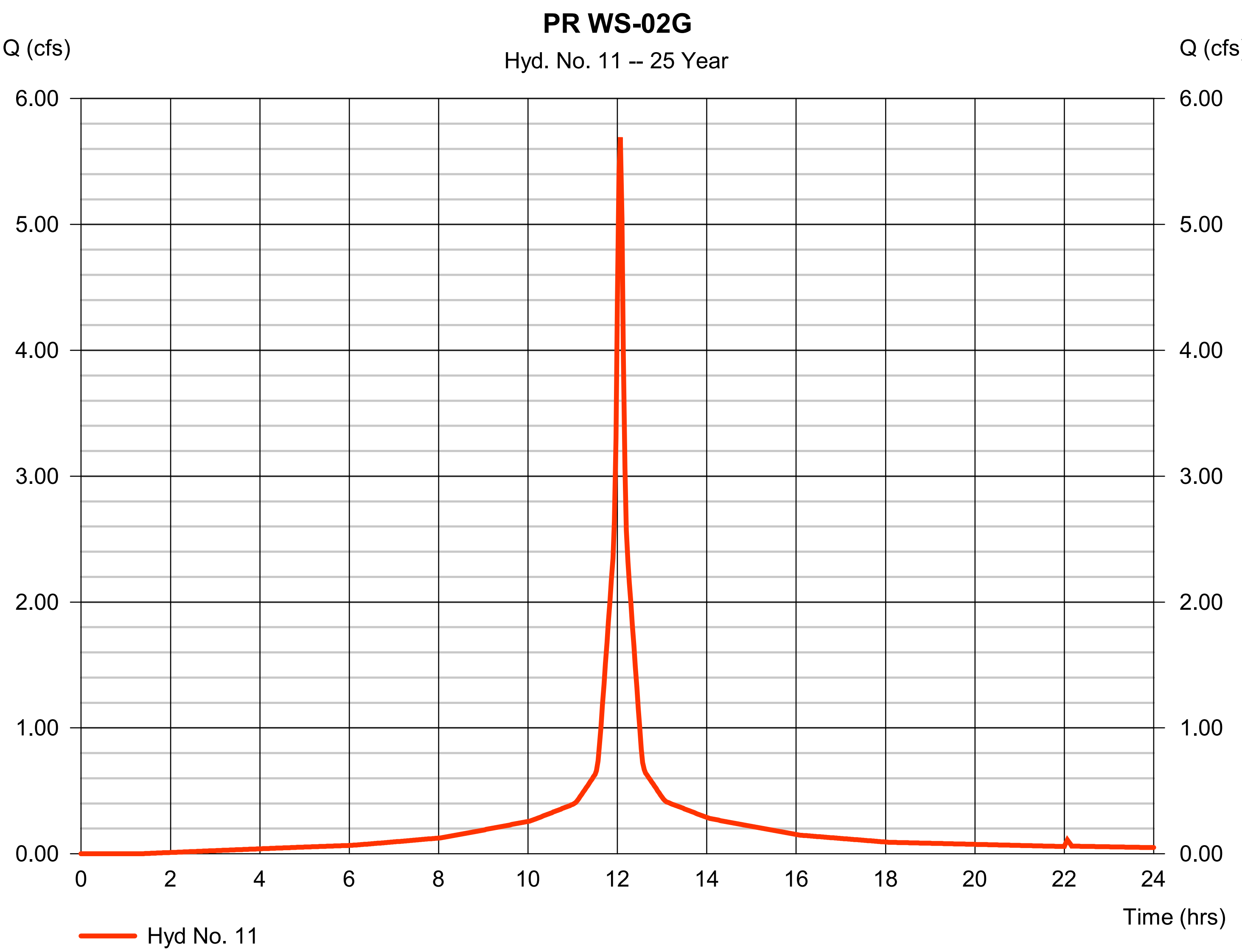
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 11

PR WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 5.692 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 19,196 cuft
Drainage area	= 0.930 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



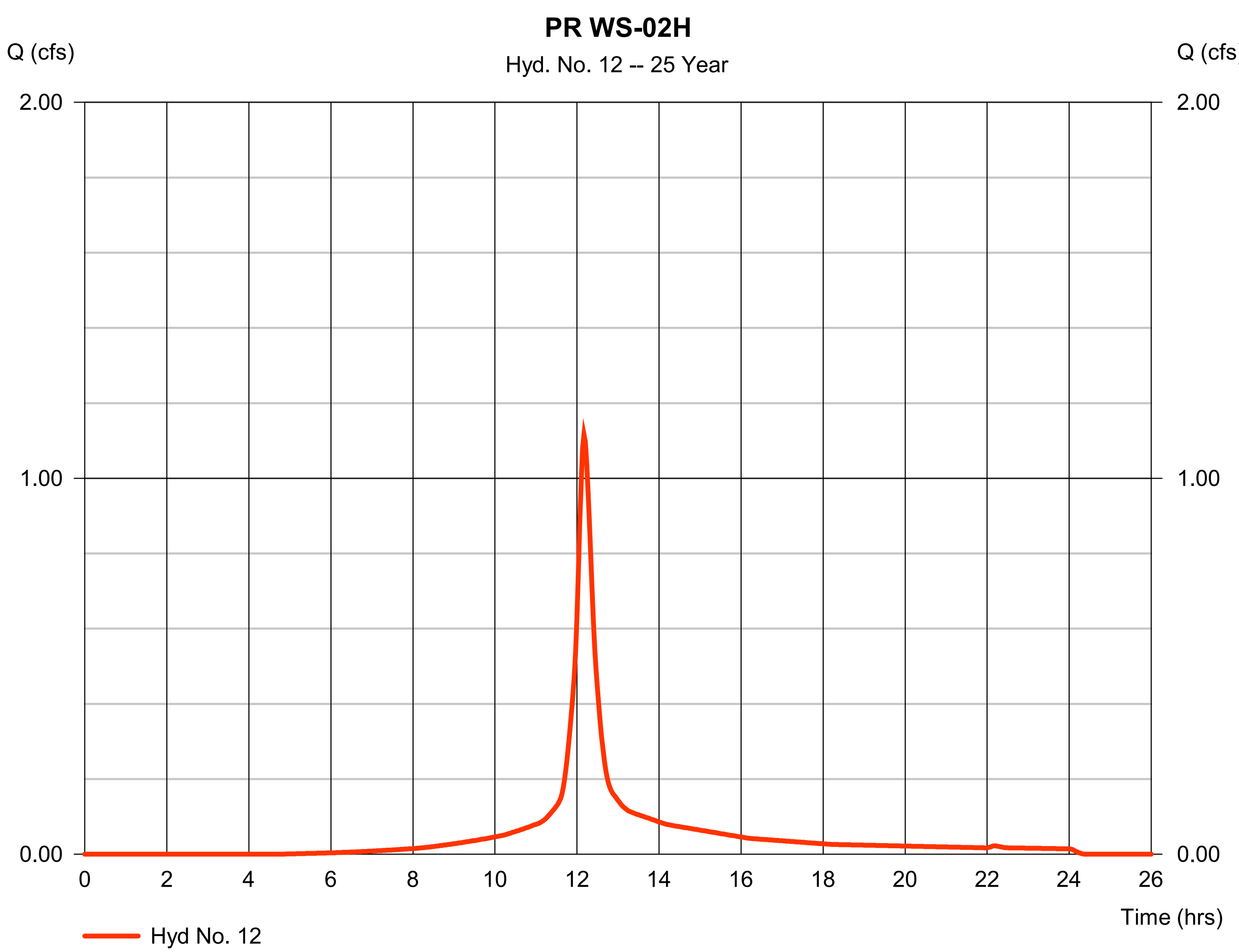
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 12

PR WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 1.116 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 4,653 cuft
Drainage area	= 0.267 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



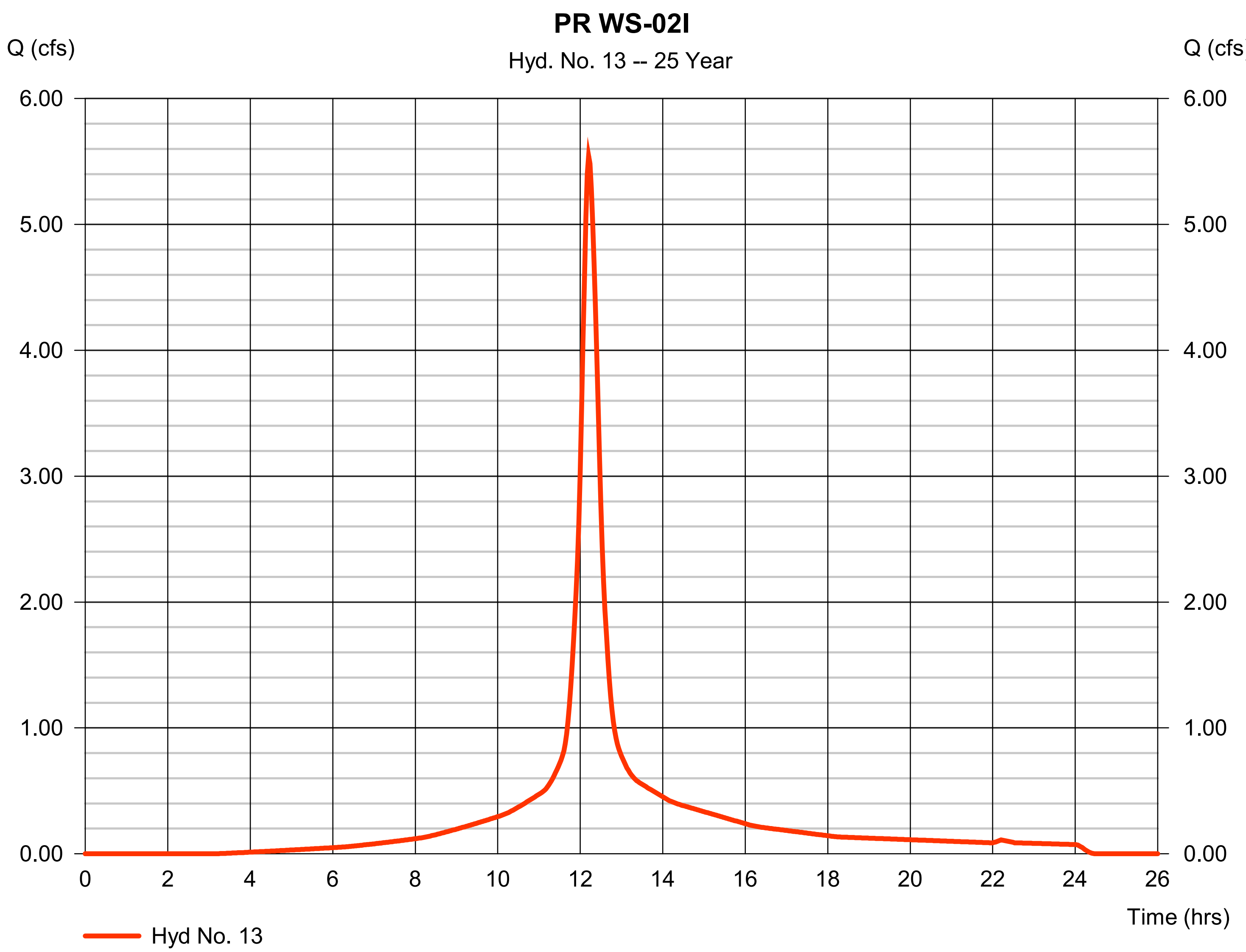
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 13

PR WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 5.543 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 25,812 cuft
Drainage area	= 1.296 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

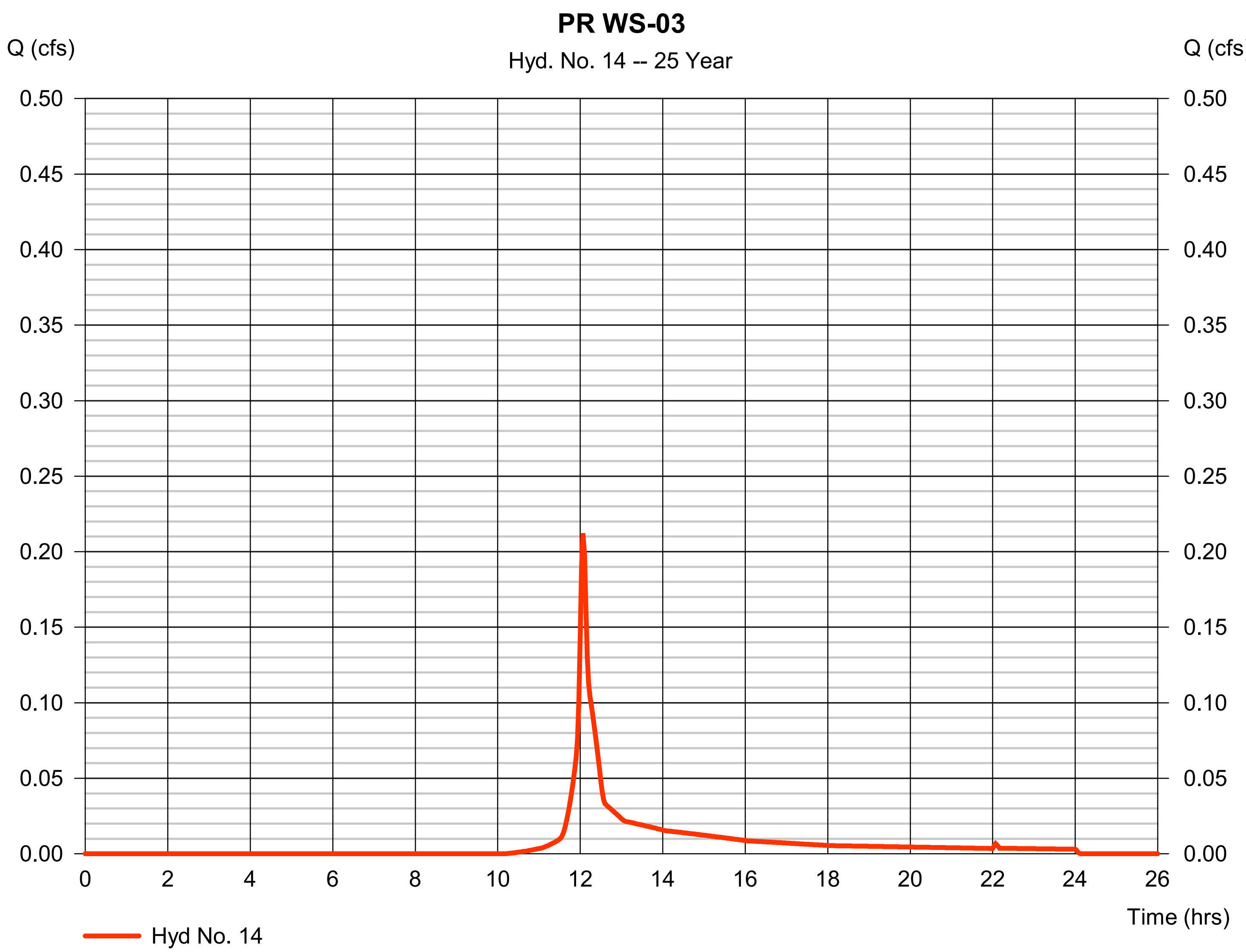


Hydrograph Report

Hyd. No. 14

PR WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.212 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 655 cuft
Drainage area	= 0.081 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.10 min
Total precip.	= 6.54 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

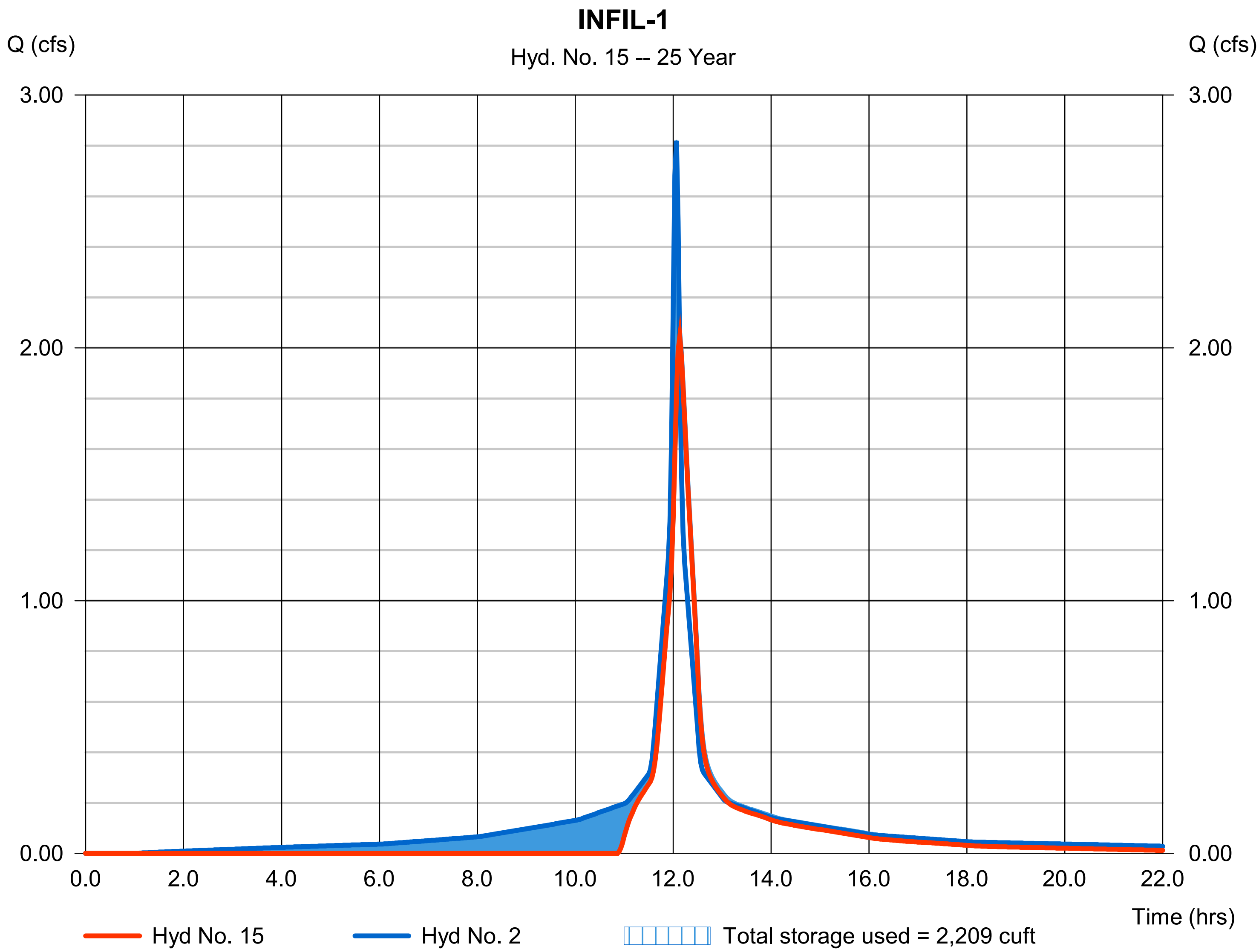
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 15

INFIL-1

Hydrograph type	= Reservoir	Peak discharge	= 2.043 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 6,871 cuft
Inflow hyd. No.	= 2 - PR WS-02A(I)	Max. Elevation	= 146.06 ft
Reservoir name	= INFIL-1	Max. Storage	= 2,209 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



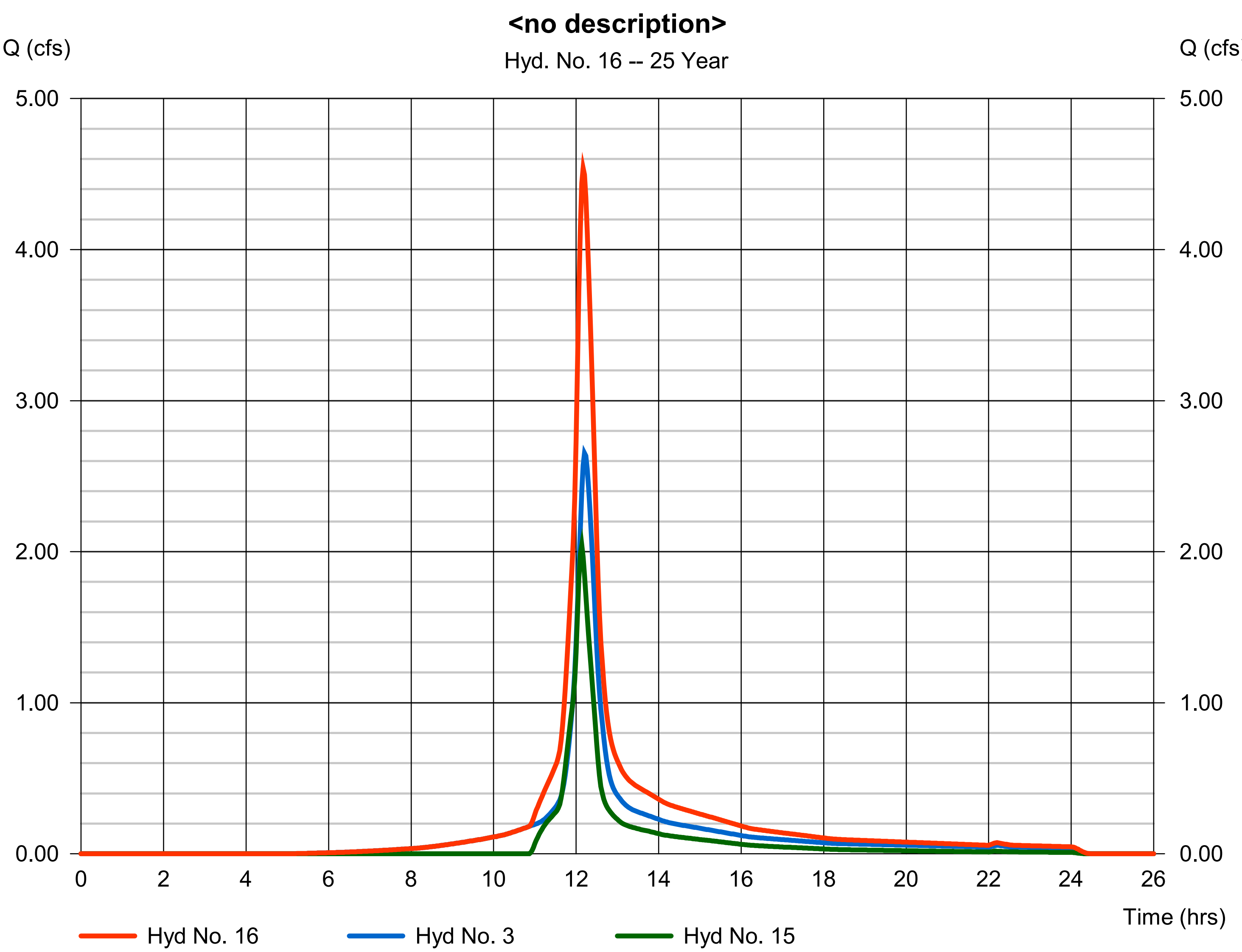
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 16

<no description>

Hydrograph type	= Combine	Peak discharge	= 4.539 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 18,807 cuft
Inflow hyds.	= 3, 15	Contrib. drain. area	= 0.683 ac



Hydrograph Report

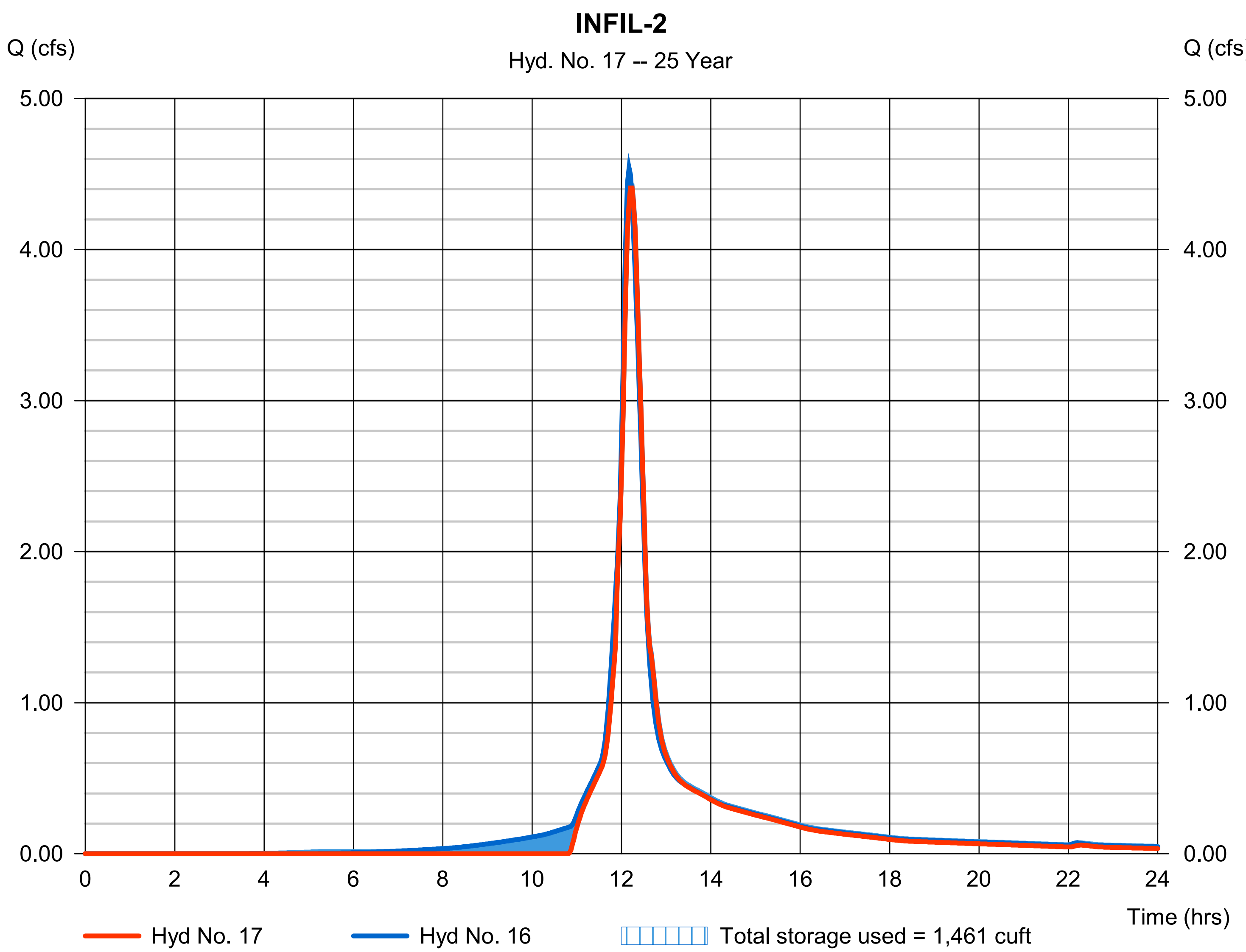
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 17

INFIL-2

Hydrograph type	= Reservoir	Peak discharge	= 4.408 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 17,146 cuft
Inflow hyd. No.	= 16 - <no description>	Max. Elevation	= 137.36 ft
Reservoir name	= INFIL-2	Max. Storage	= 1,461 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

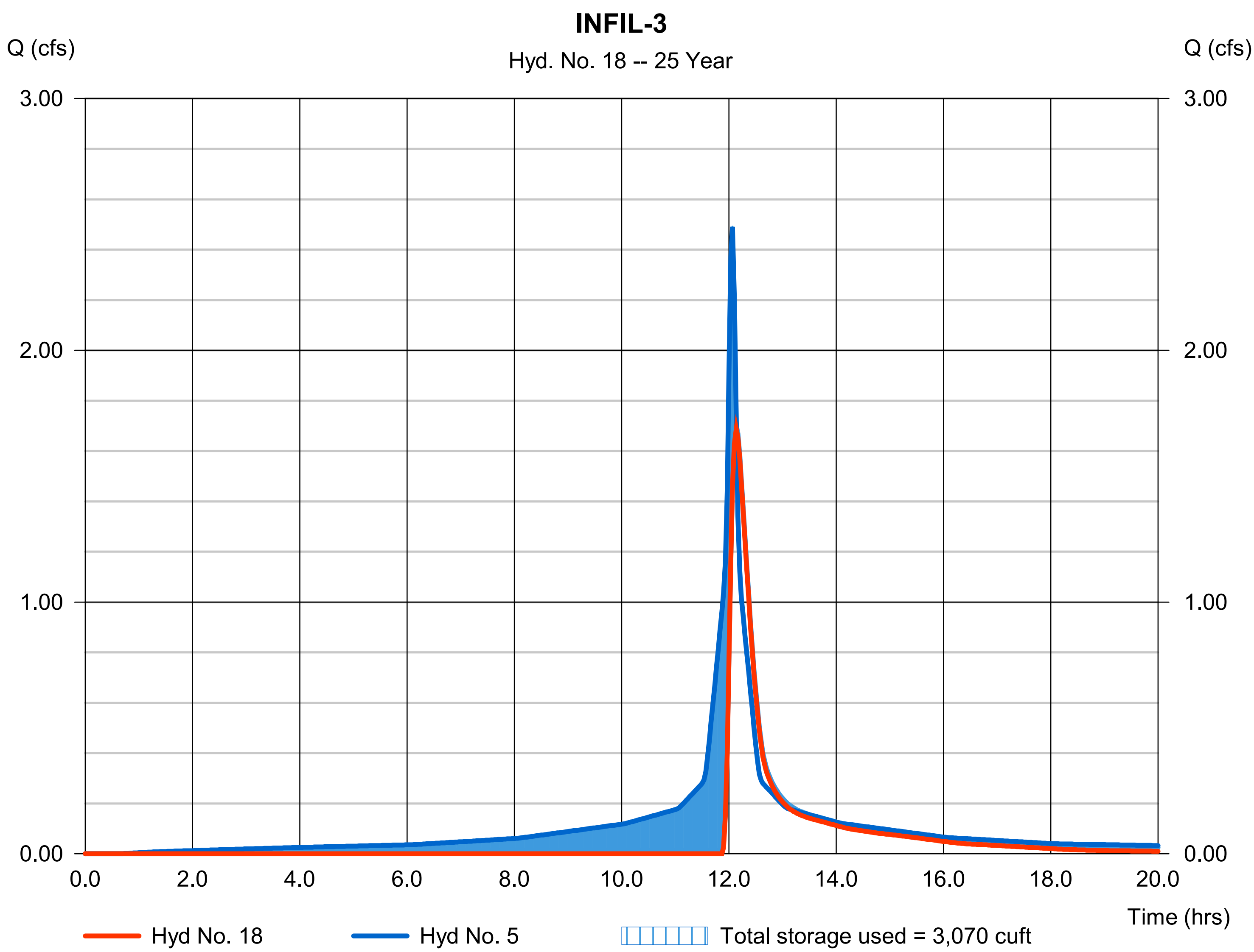
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 18

INFIL-3

Hydrograph type	= Reservoir	Peak discharge	= 1.687 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 4,424 cuft
Inflow hyd. No.	= 5 - PR WS-02B(II)	Max. Elevation	= 144.88 ft
Reservoir name	= INFIL-3	Max. Storage	= 3,070 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

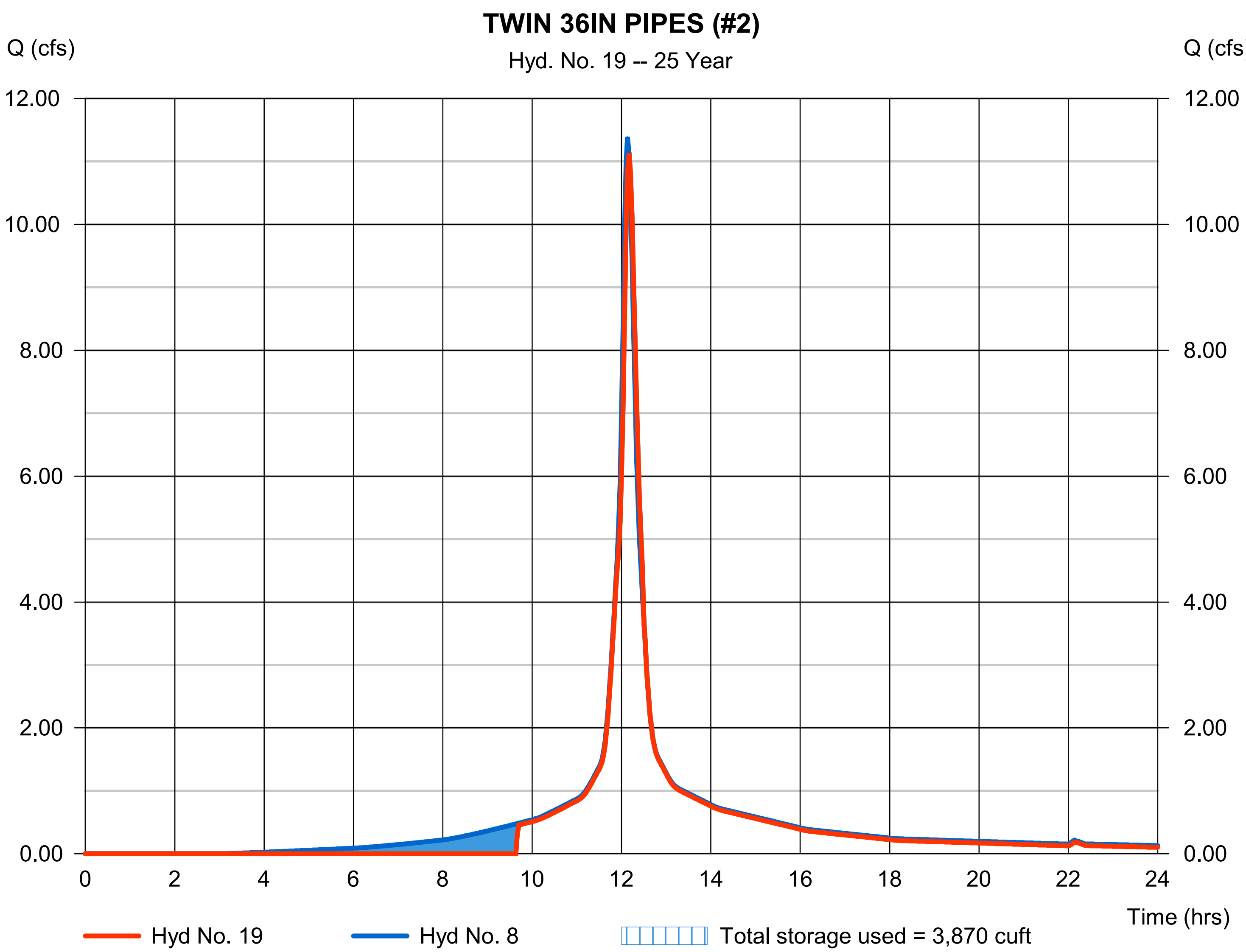
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 19

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 11.13 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 41,147 cuft
Inflow hyd. No.	= 8 - PR WS-02D	Max. Elevation	= 139.17 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 3,870 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

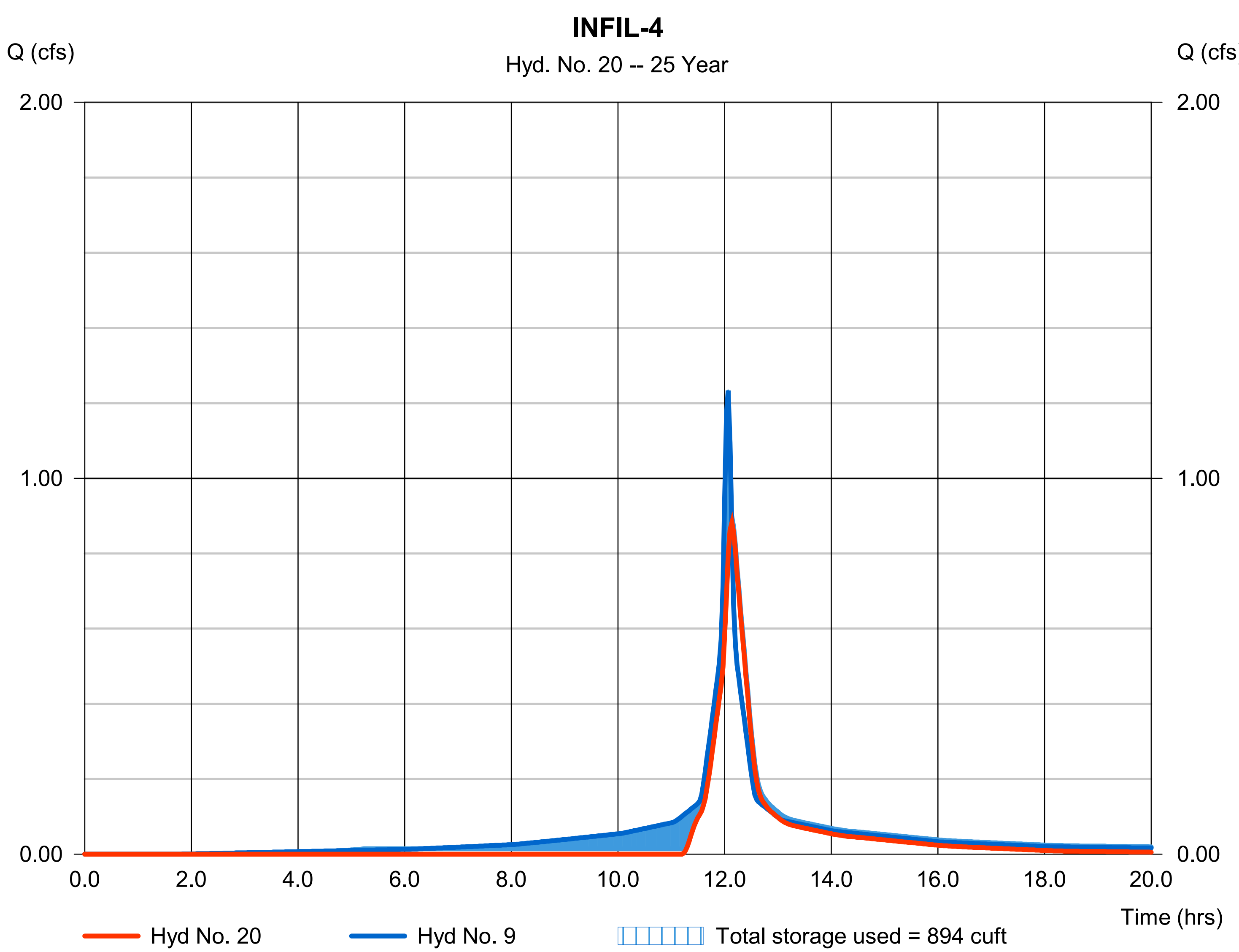
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 20

INFIL-4

Hydrograph type	= Reservoir	Peak discharge	= 0.882 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 2,727 cuft
Inflow hyd. No.	= 9 - PR WS-02E	Max. Elevation	= 138.12 ft
Reservoir name	= INFIL-4	Max. Storage	= 894 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

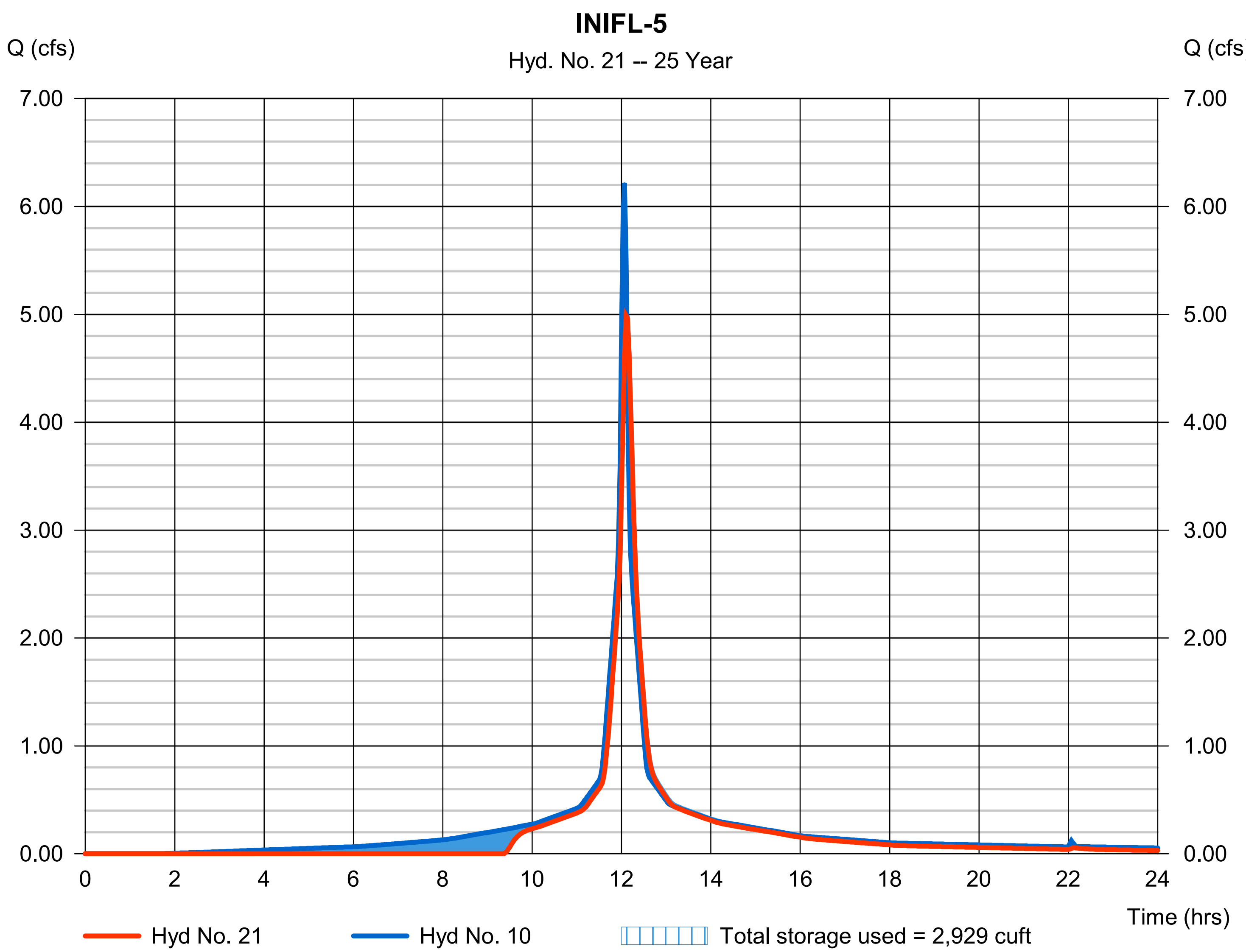
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 21

INIFL-5

Hydrograph type	= Reservoir	Peak discharge	= 4.987 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 17,273 cuft
Inflow hyd. No.	= 10 - PR WS-02F	Max. Elevation	= 137.05 ft
Reservoir name	= INIFL-5	Max. Storage	= 2,929 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

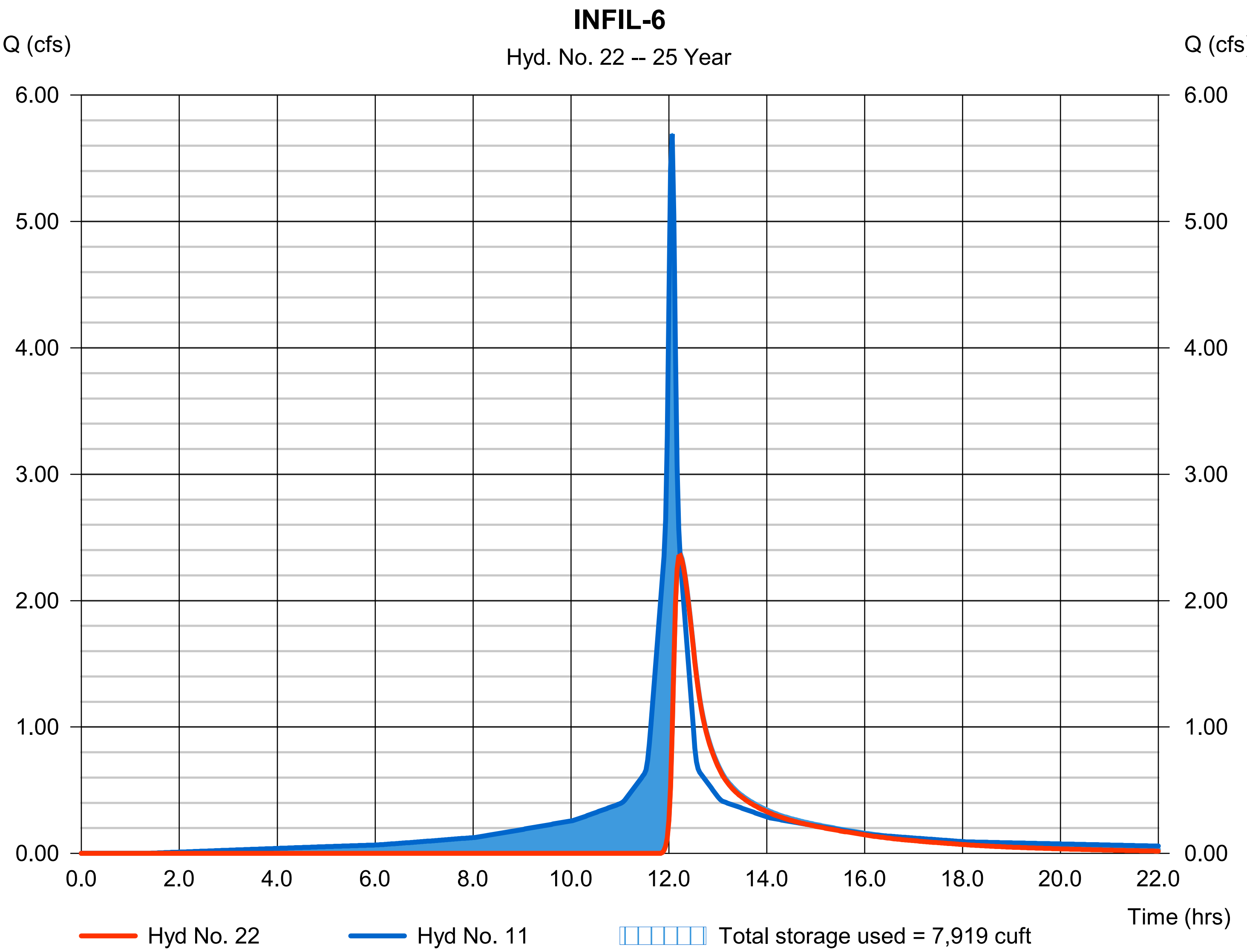
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 22

INFIL-6

Hydrograph type	= Reservoir	Peak discharge	= 2.355 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 9,861 cuft
Inflow hyd. No.	= 11 - PR WS-02G	Max. Elevation	= 136.11 ft
Reservoir name	= INFIL-6	Max. Storage	= 7,919 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

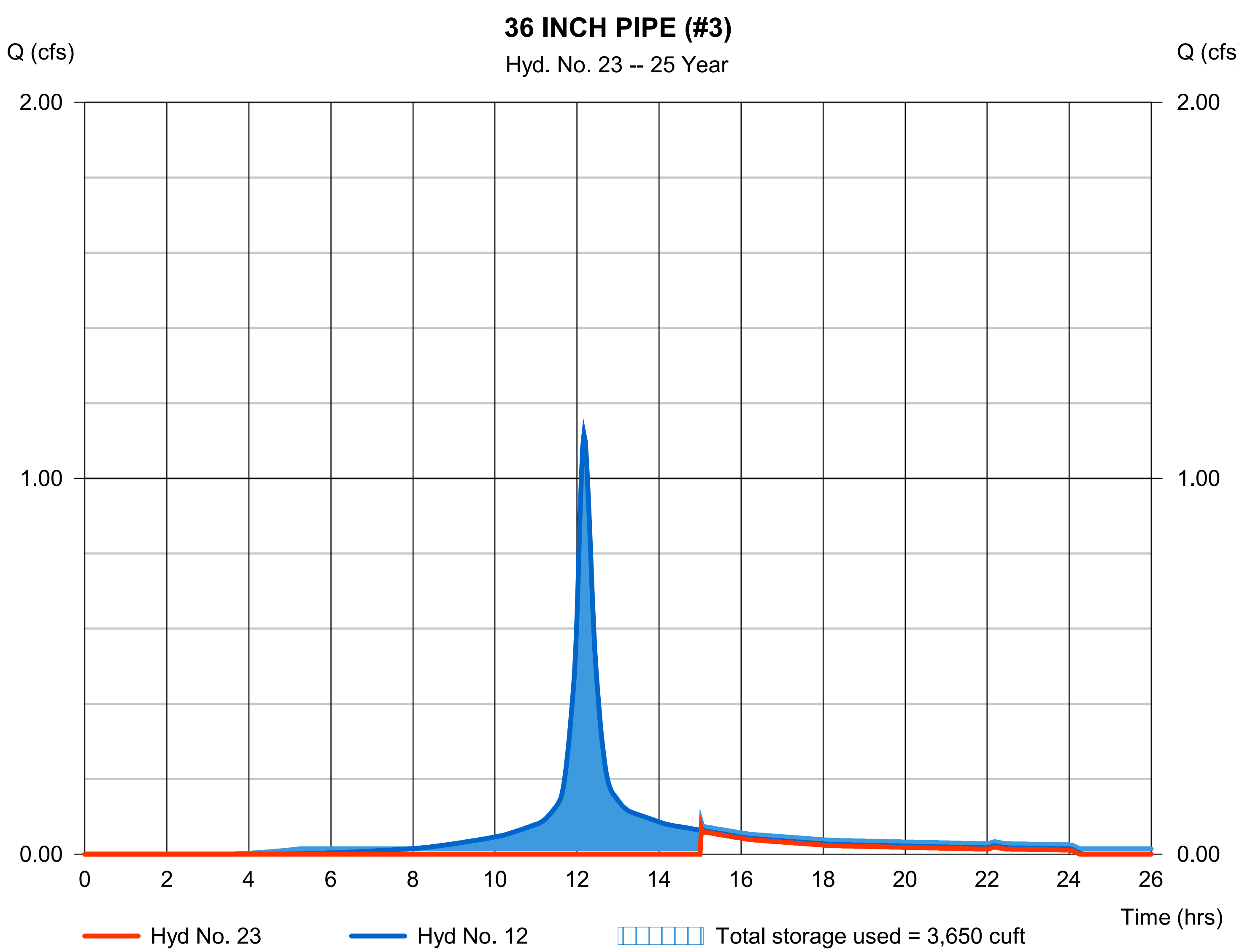
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 23

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 0.070 cfs
Storm frequency	= 25 yrs	Time to peak	= 15.03 hrs
Time interval	= 2 min	Hyd. volume	= 781 cuft
Inflow hyd. No.	= 12 - PR WS-02H	Max. Elevation	= 137.46 ft
Reservoir name	= 36IN - 3	Max. Storage	= 3,650 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

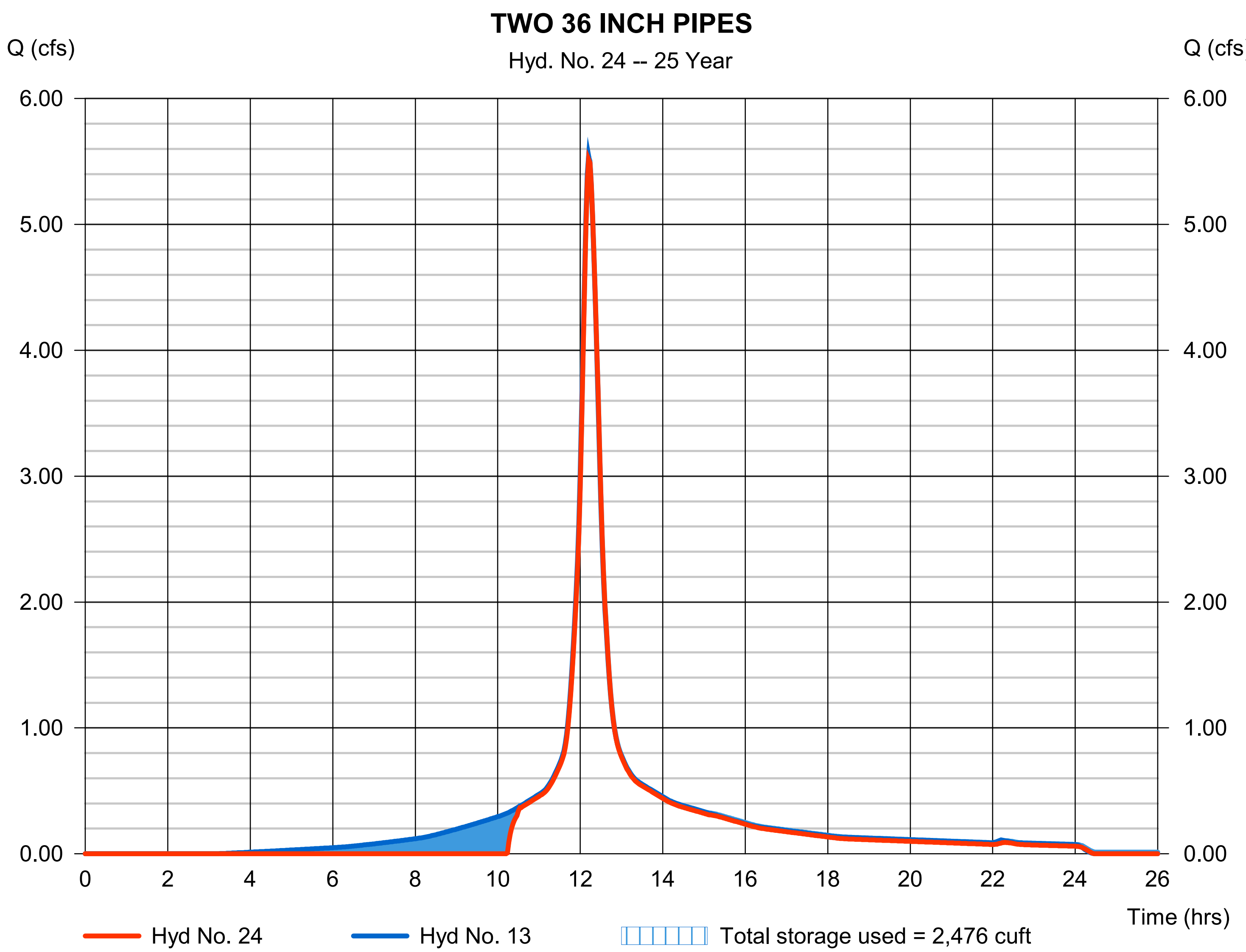
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 24

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 5.516 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 22,569 cuft
Inflow hyd. No.	= 13 - PR WS-02I	Max. Elevation	= 135.73 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,476 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



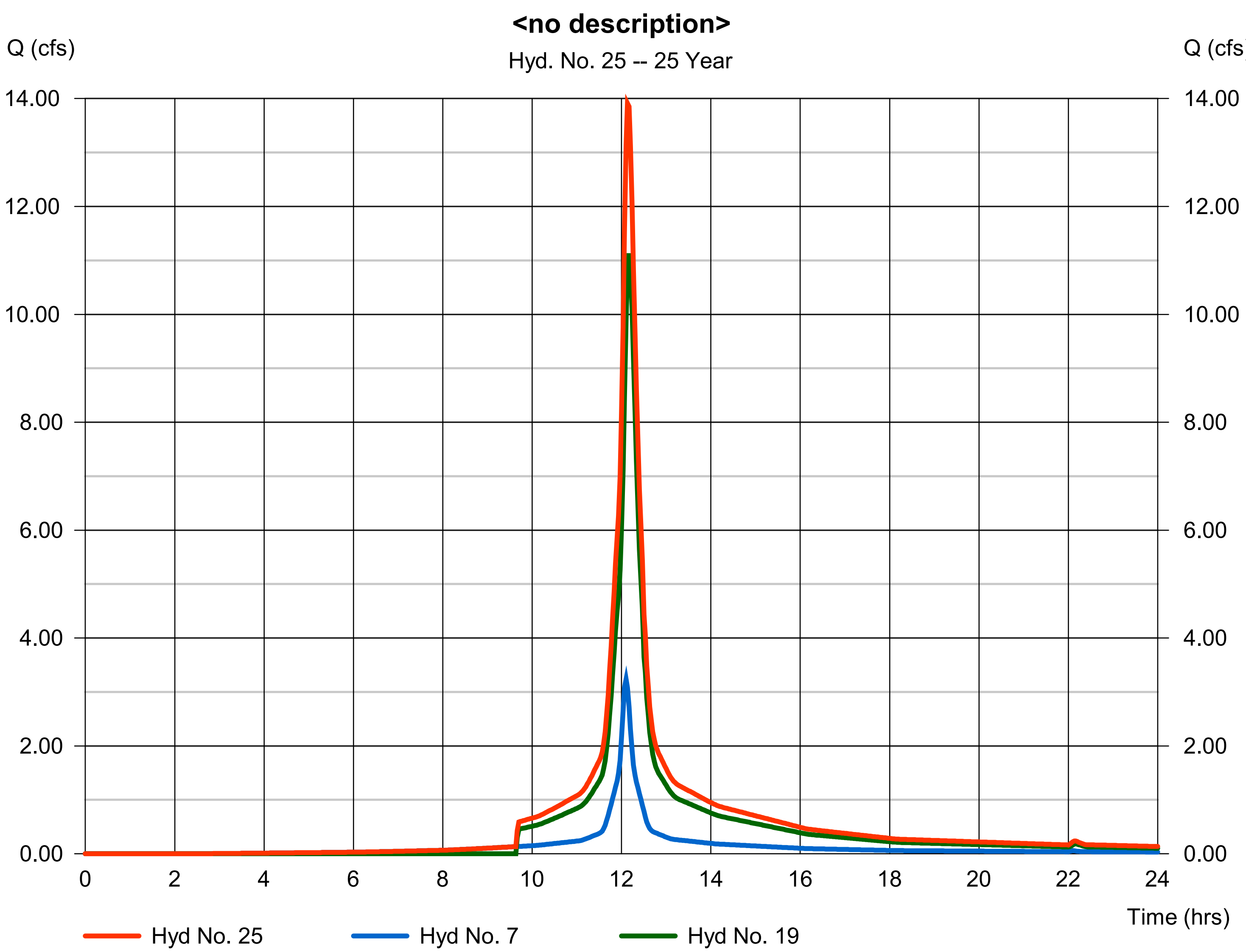
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 25

<no description>

Hydrograph type	= Combine	Peak discharge	= 13.91 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 53,099 cuft
Inflow hyds.	= 7, 19	Contrib. drain. area	= 0.576 ac



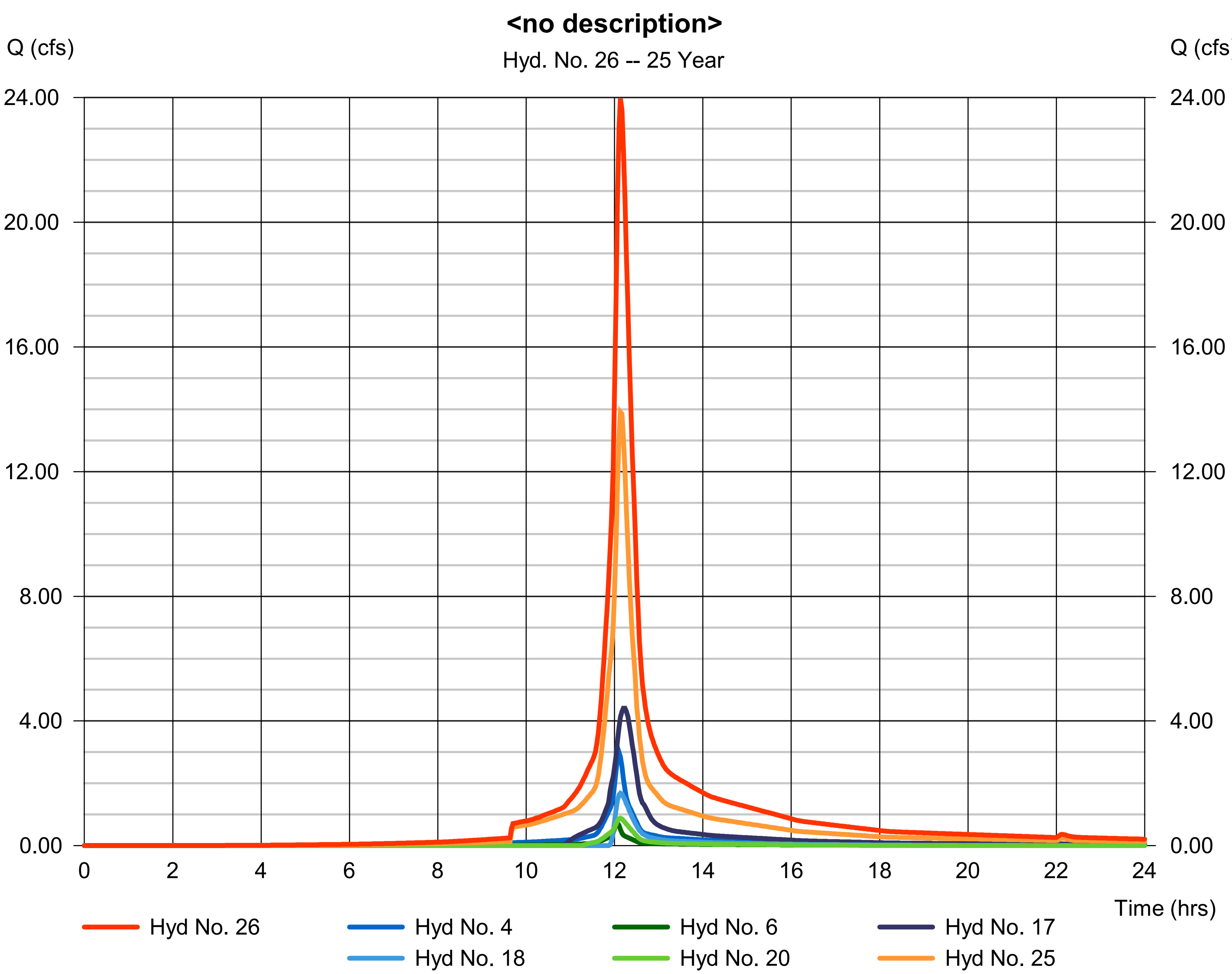
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 26

<no description>

Hydrograph type	= Combine	Peak discharge	= 23.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 90,181 cuft
Inflow hyds.	= 4, 6, 17, 18, 20, 25	Contrib. drain. area	= 0.708 ac



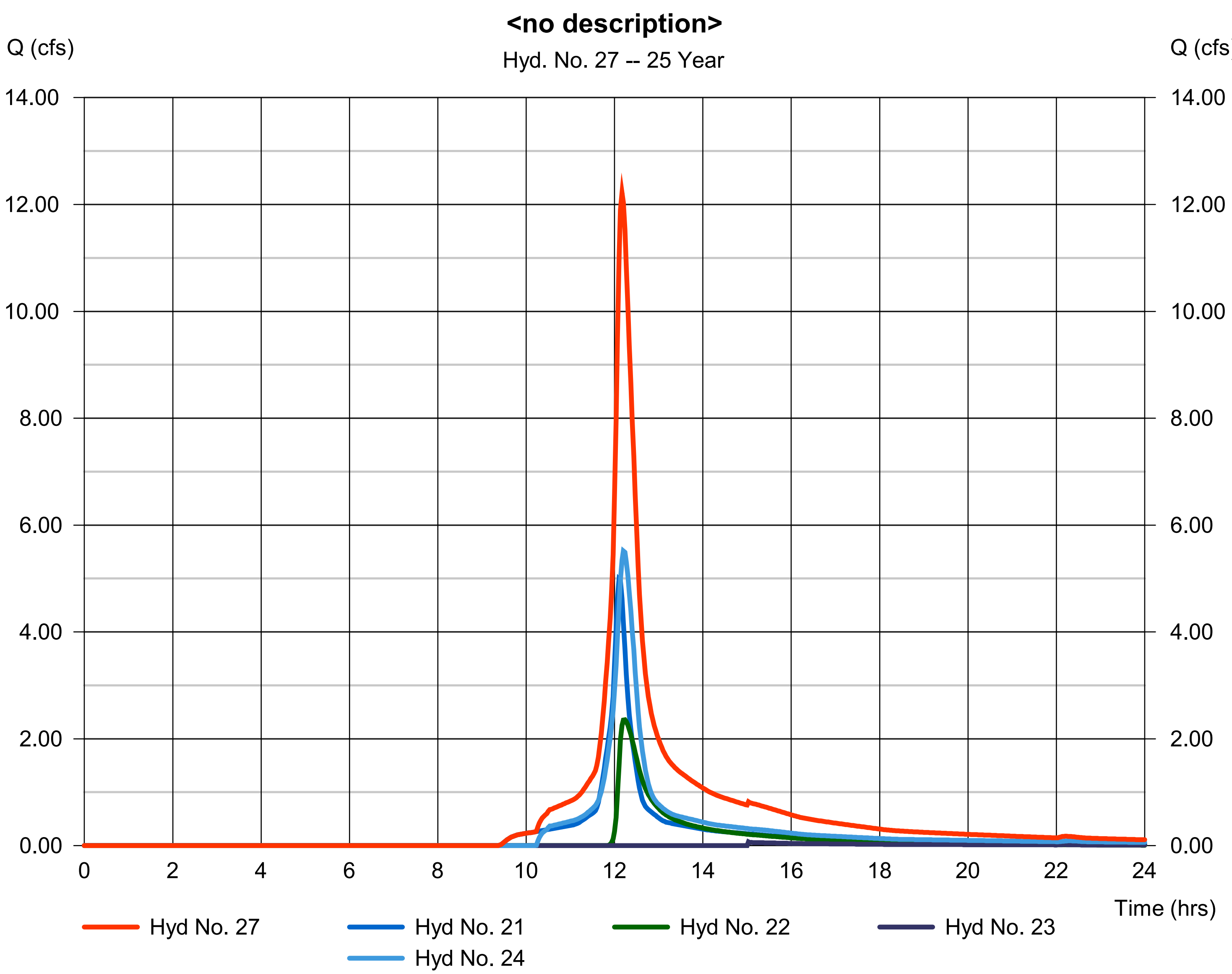
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 27

<no description>

Hydrograph type	= Combine	Peak discharge	= 12.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 50,484 cuft
Inflow hyds.	= 21, 22, 23, 24	Contrib. drain. area	= 0.000 ac



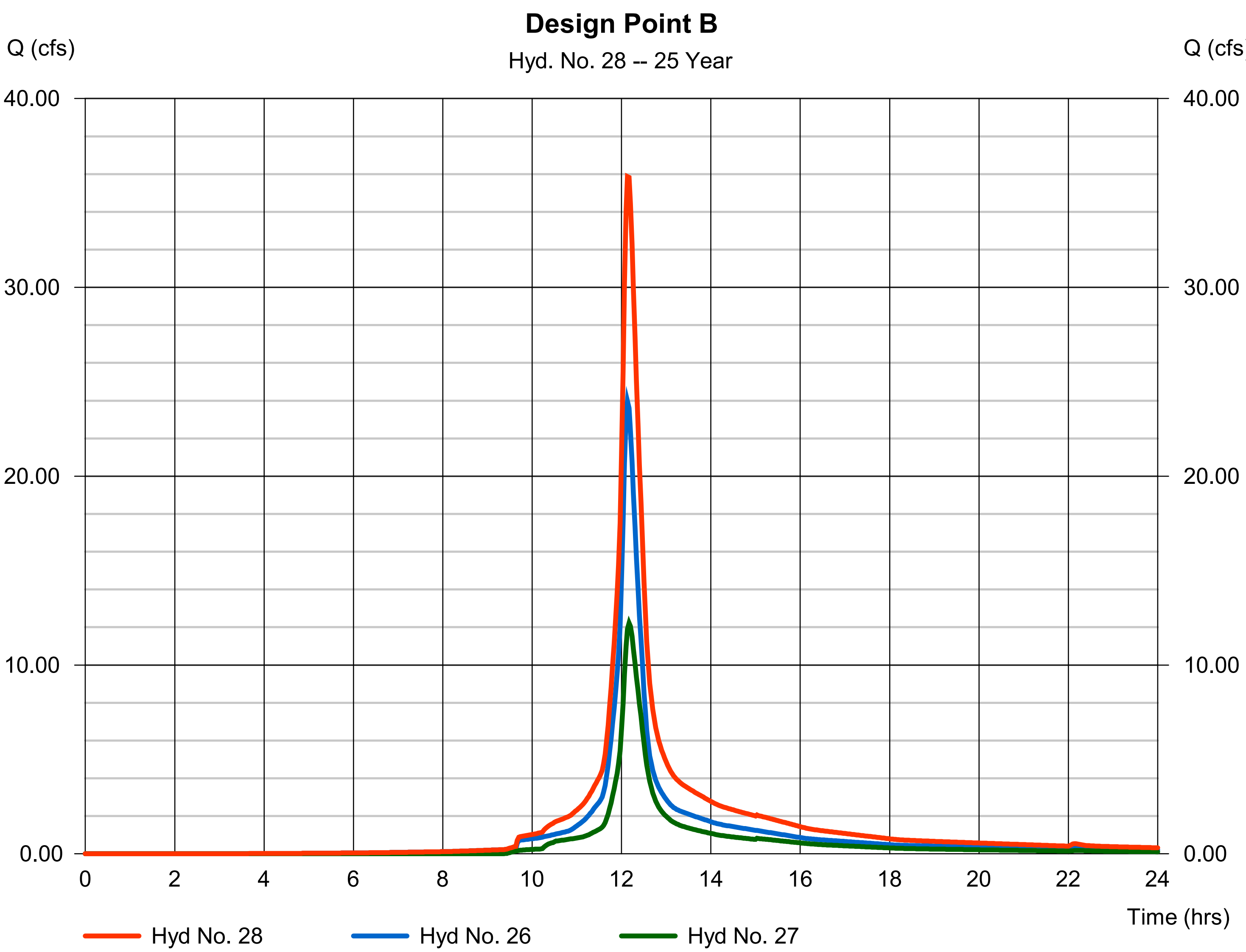
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 28

Design Point B

Hydrograph type	= Combine	Peak discharge	= 35.87 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 140,665 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	5.239	2	730	21,499	------	------	------	PR WS-01
2	SCS Runoff	3.199	2	724	10,990	------	------	------	PR WS-02A(I)
3	SCS Runoff	3.089	2	732	13,997	------	------	------	PR WS-02A(II)
4	SCS Runoff	3.451	2	726	12,280	------	------	------	PR WS-02B(I)
5	SCS Runoff	2.824	2	724	9,834	------	------	------	PR WS-02B(II)
6	SCS Runoff	0.842	2	724	2,640	------	------	------	PR WS-02B(III)
7	SCS Runoff	3.695	2	726	13,753	------	------	------	PR WS-02C
8	SCS Runoff	13.06	2	728	53,326	------	------	------	PR WS-02D
9	SCS Runoff	1.404	2	724	4,707	------	------	------	PR WS-02E
10	SCS Runoff	7.074	2	724	23,722	------	------	------	PR WS-02F
11	SCS Runoff	6.467	2	724	21,940	------	------	------	PR WS-02G
12	SCS Runoff	1.296	2	730	5,444	------	------	------	PR WS-02H
13	SCS Runoff	6.358	2	732	29,838	------	------	------	PR WS-02I
14	SCS Runoff	0.272	2	724	827	------	------	------	PR WS-03
15	Reservoir	2.310	2	728	8,200	2	146.47	2,337	INFIL-1
16	Combine	5.234	2	730	22,197	3, 15	------	------	<no description>
17	Reservoir	5.080	2	732	20,511	16	137.80	1,561	INFIL-2
18	Reservoir	1.927	2	728	5,568	5	145.20	3,232	INFIL-3
19	Reservoir	12.78	2	730	48,298	8	139.20	4,033	TWIN 36IN PIPES (#2)
20	Reservoir	0.989	2	728	3,300	9	138.34	955	INFIL-4
21	Reservoir	5.575	2	728	20,252	10	137.41	3,146	INIFL-5
22	Reservoir	3.607	2	730	12,398	11	136.47	8,476	INFIL-6
23	Reservoir	0.167	2	790	1,564	12	137.46	3,653	36 INCH PIPE (#3)
24	Reservoir	6.332	2	732	26,572	13	135.75	2,492	TWO 36 INCH PIPES
25	Combine	15.96	2	728	62,051	7, 19,	------	------	<no description>
26	Combine	27.38	2	728	106,350	4, 6, 17, 18, 20, 25	------	------	<no description>
27	Combine	14.97	2	730	60,787	21, 22, 23, 24,	------	------	<no description>
28	Combine	42.12	2	728	167,137	26, 27	------	------	Design Point B

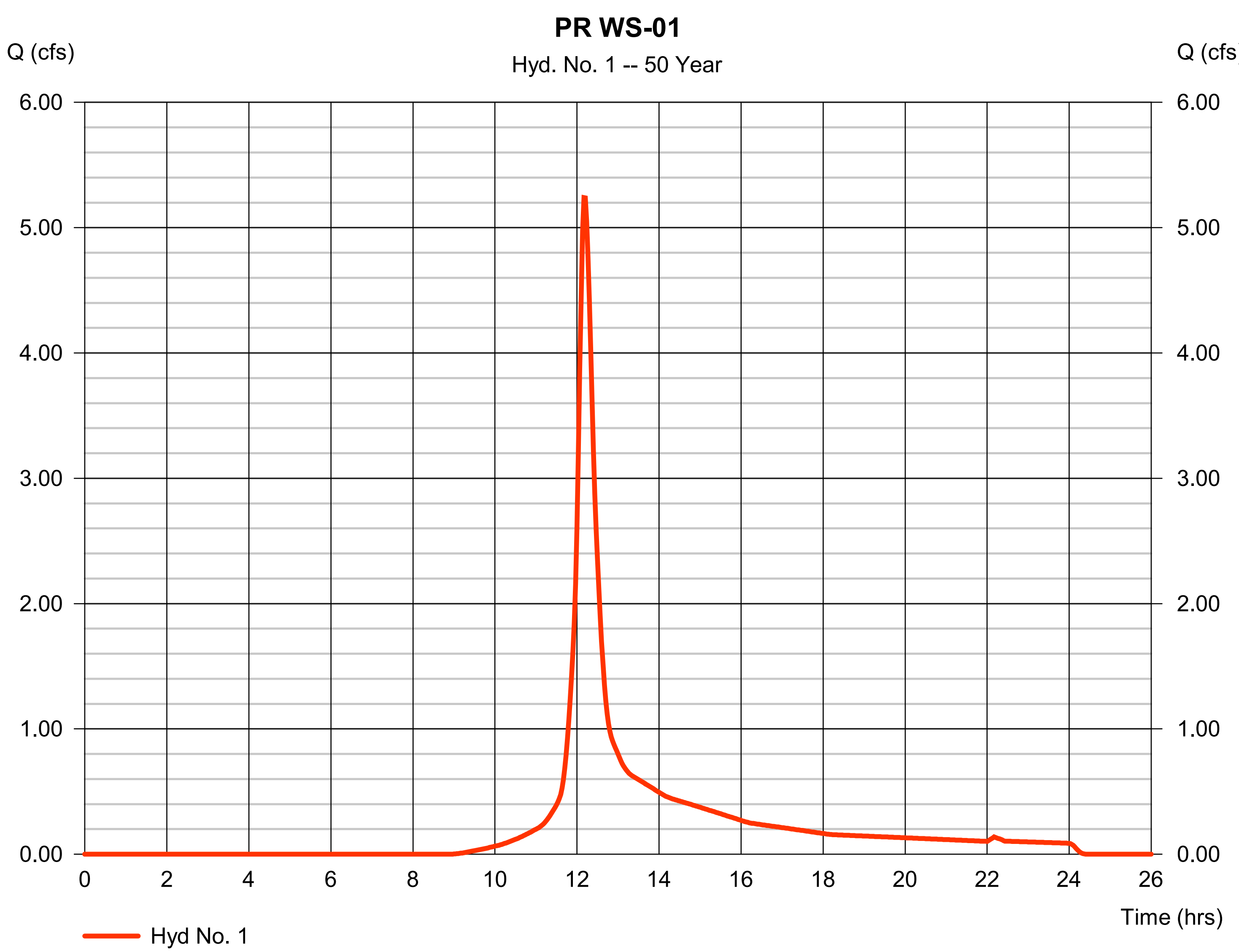
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 1

PR WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 5.239 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 21,499 cuft
Drainage area	= 1.721 ac	Curve number	= 66
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.50 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



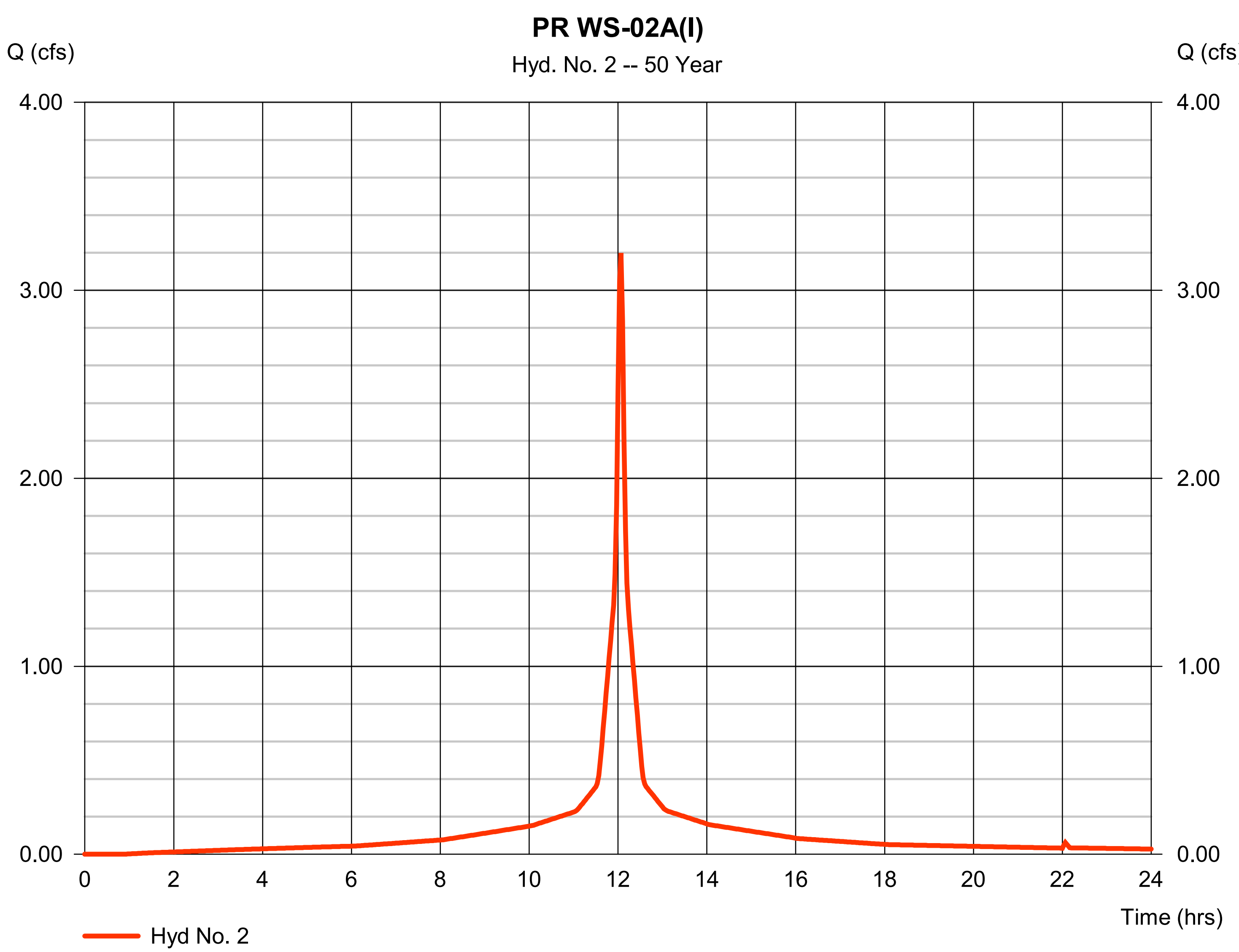
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 2

PR WS-02A(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.199 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 10,990 cuft
Drainage area	= 0.458 ac	Curve number	= 97
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



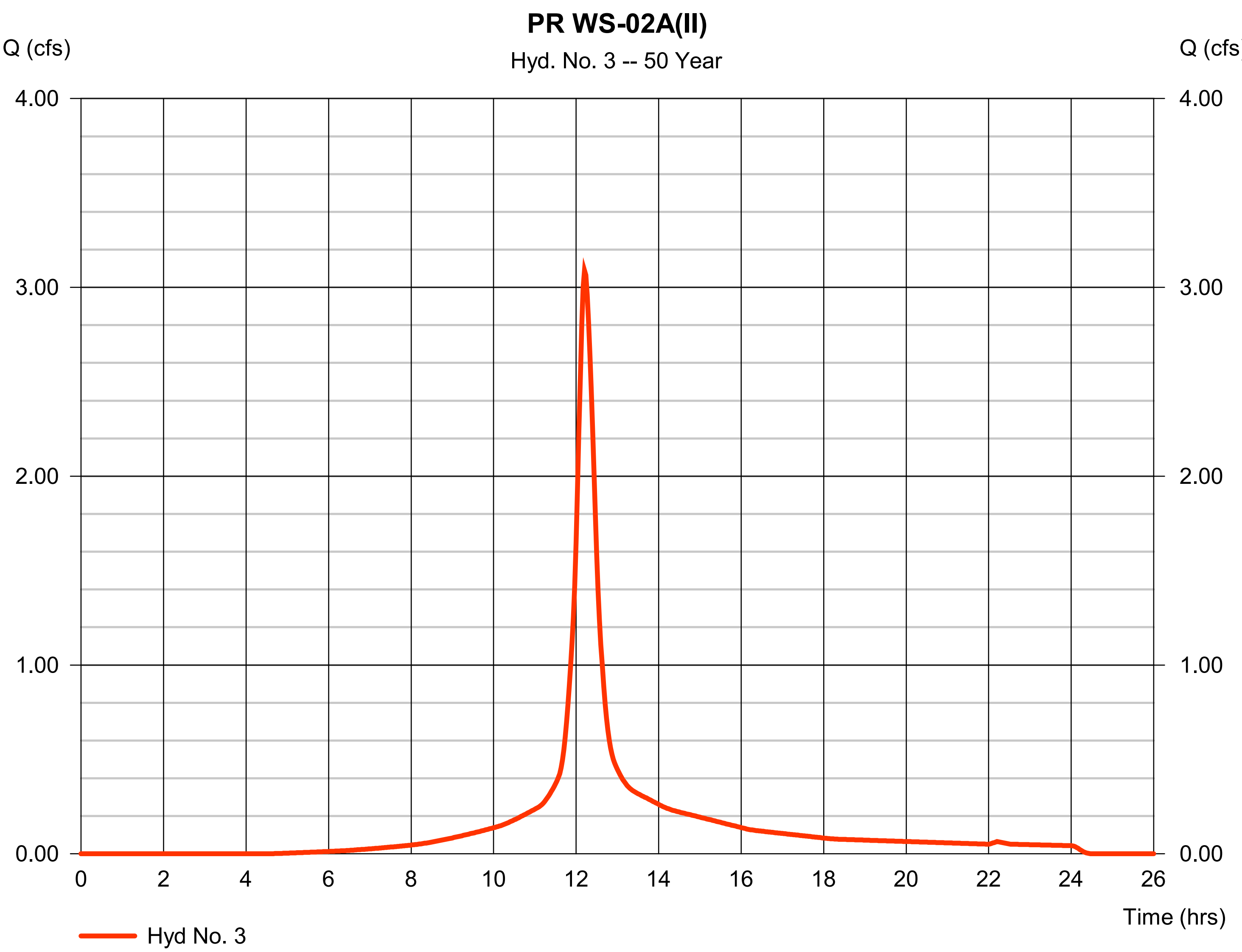
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 3

PR WS-02A(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.089 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 13,997 cuft
Drainage area	= 0.683 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



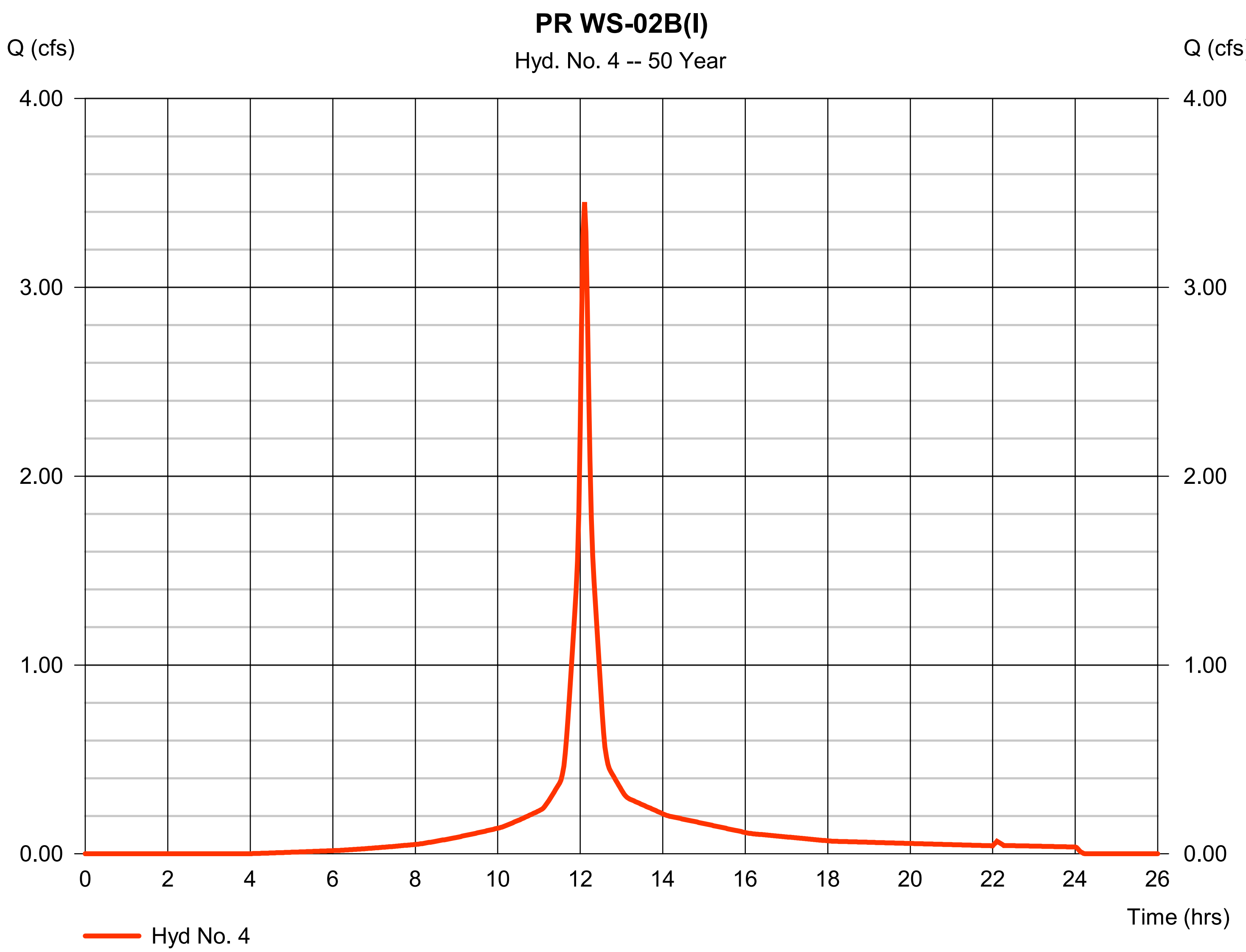
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 4

PR WS-02B(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.451 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 12,280 cuft
Drainage area	= 0.576 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



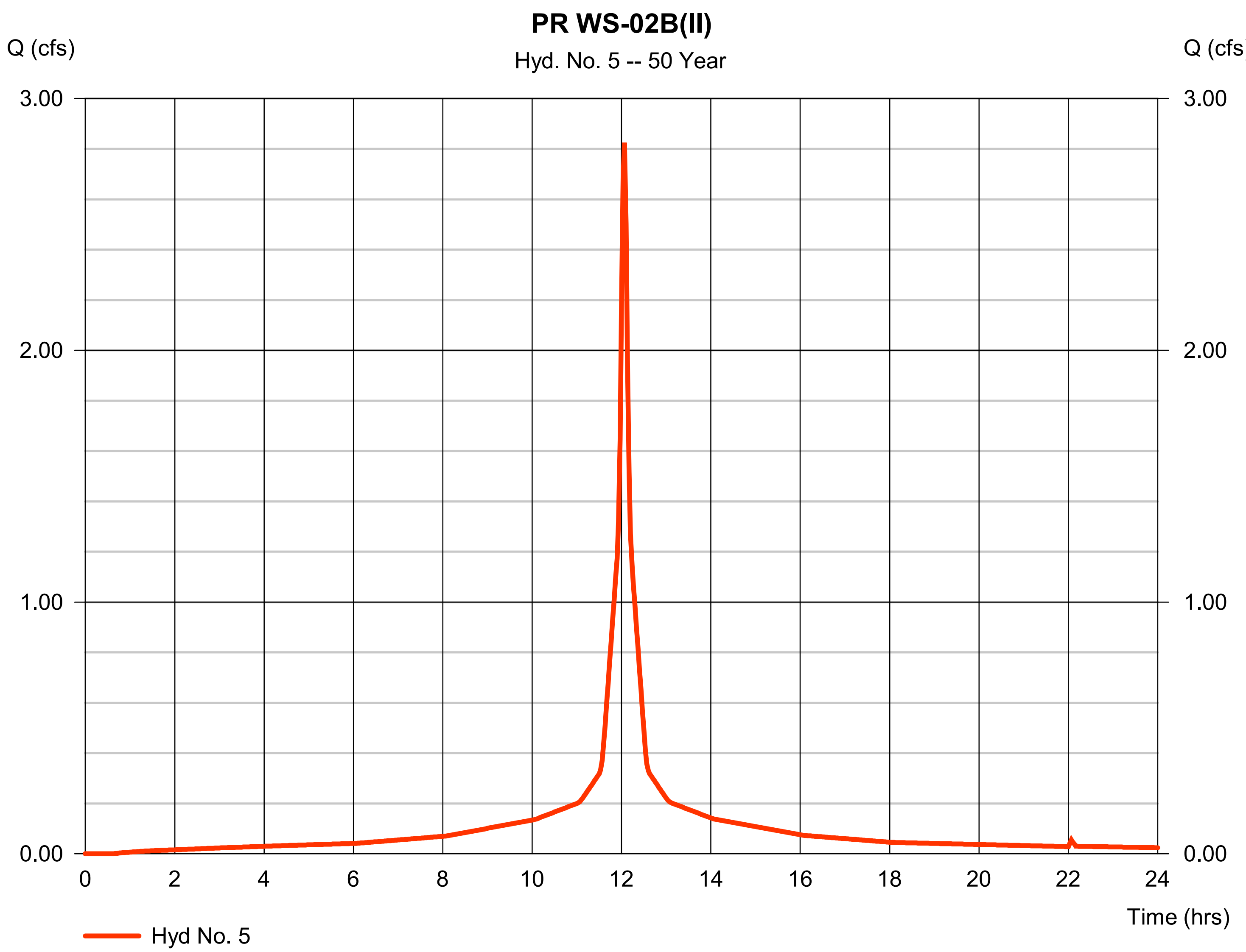
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 5

PR WS-02B(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 2.824 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 9,834 cuft
Drainage area	= 0.403 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

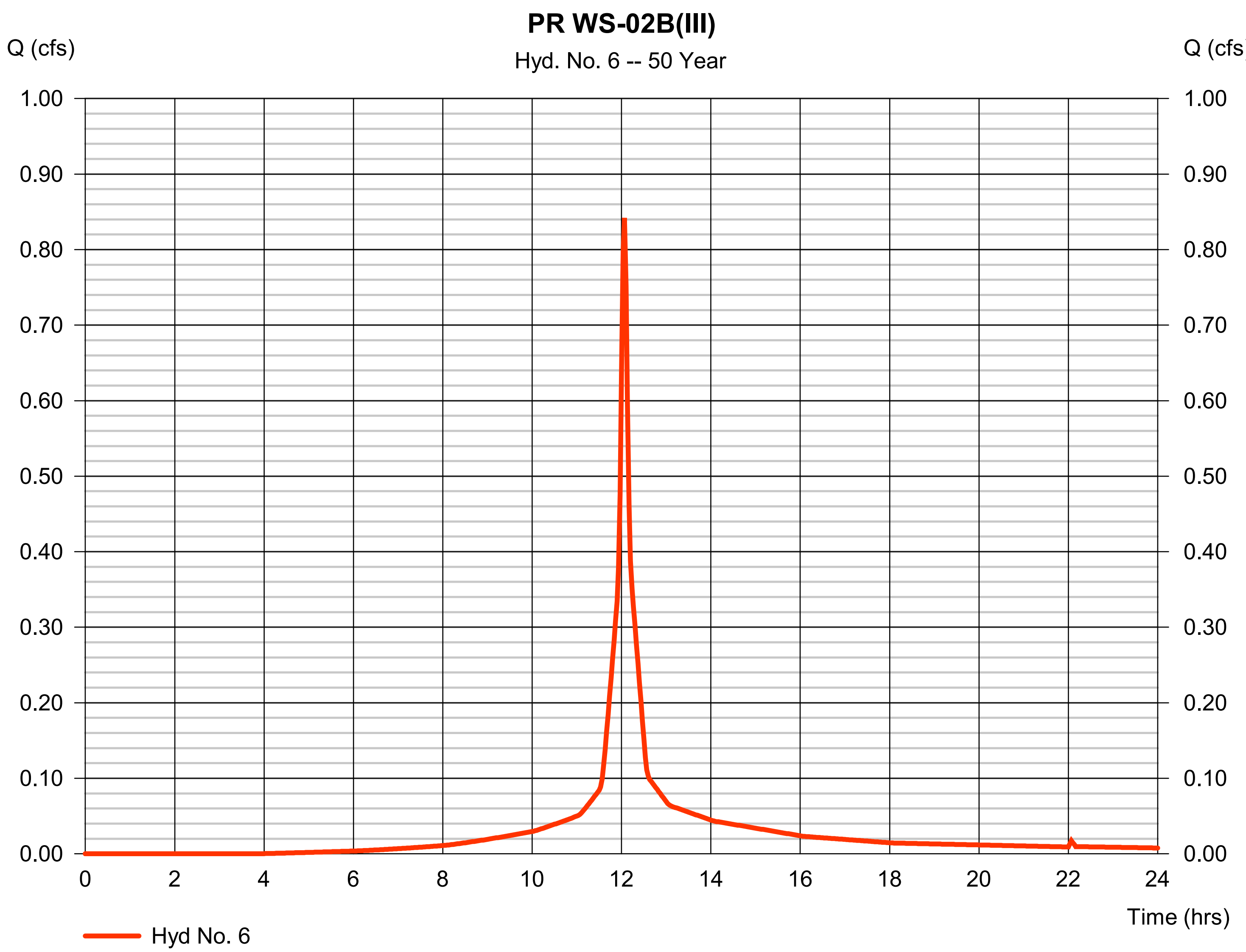


Hydrograph Report

Hyd. No. 6

PR WS-02B(III)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.842 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 2,640 cuft
Drainage area	= 0.132 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

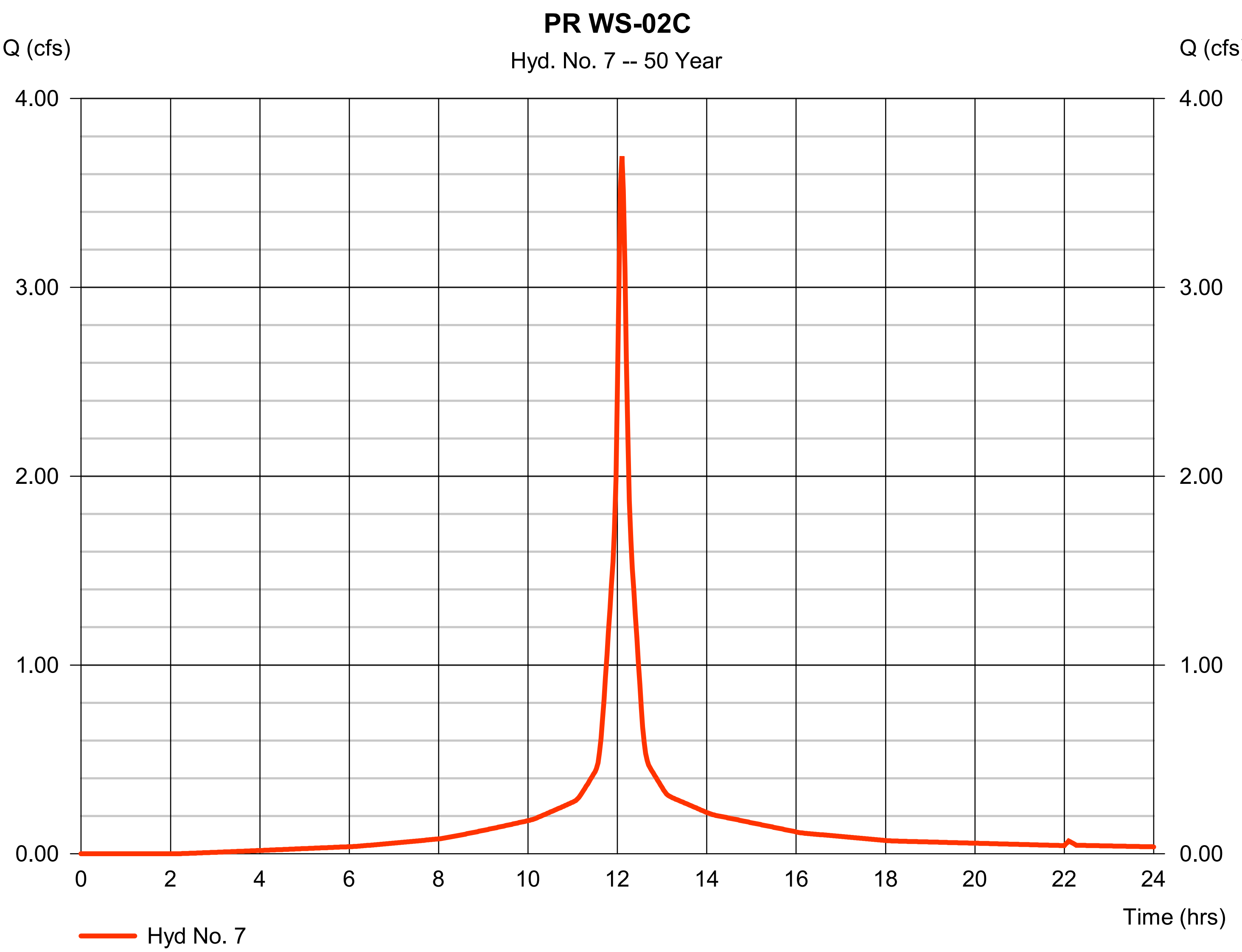


Hydrograph Report

Hyd. No. 7

PR WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 3.695 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 13,753 cuft
Drainage area	= 0.576 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

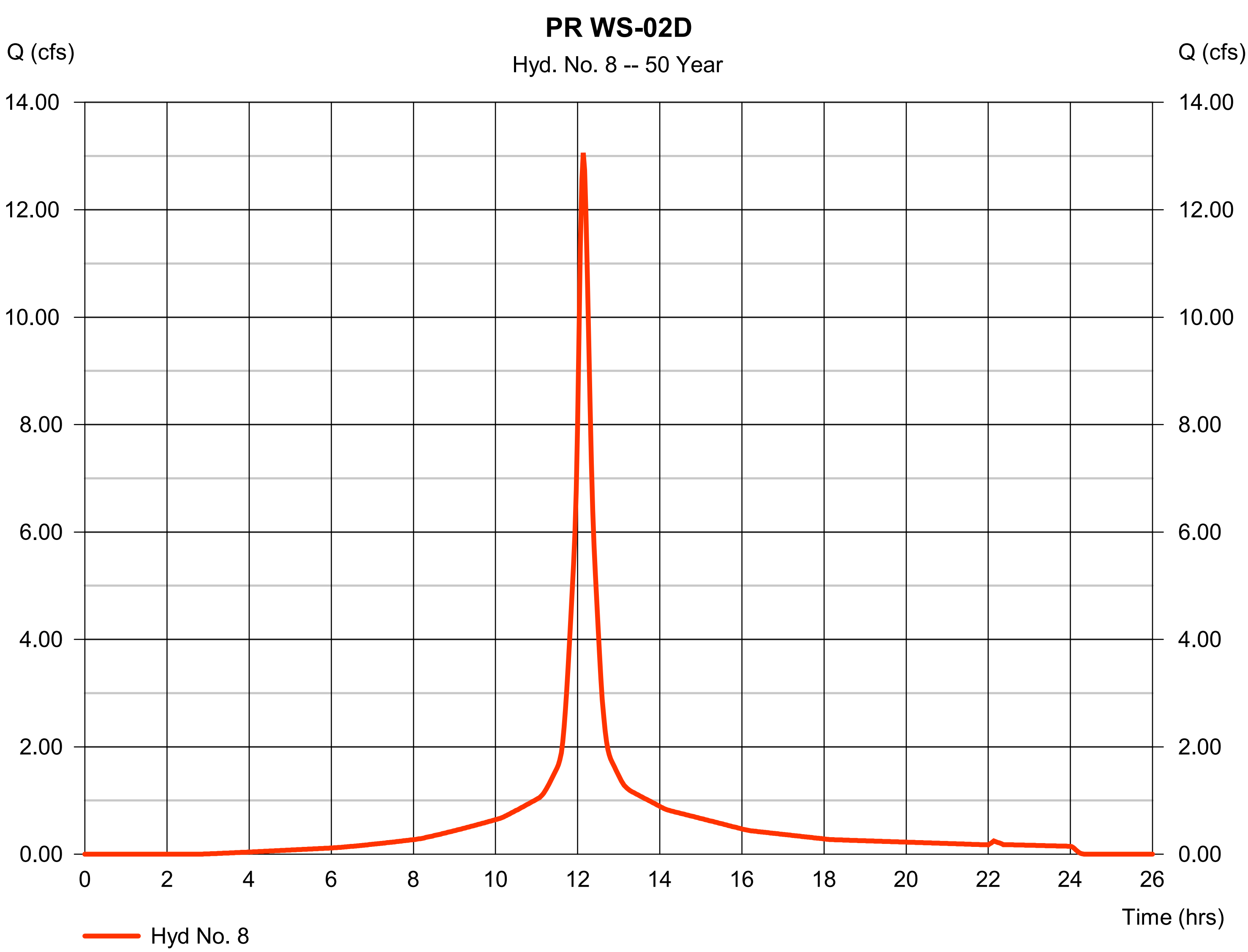


Hydrograph Report

Hyd. No. 8

PR WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 13.06 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 53,326 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



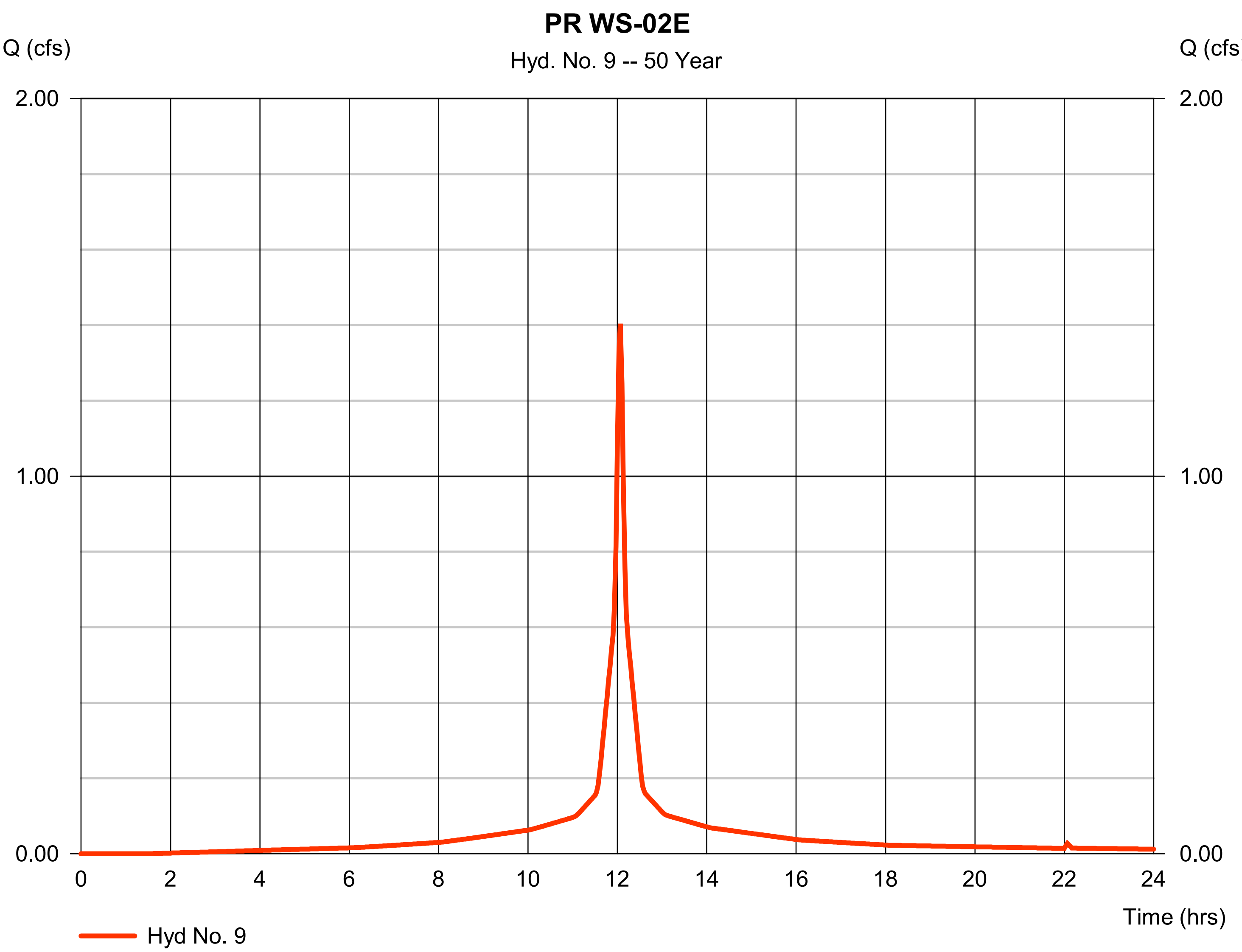
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 9

PR WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 1.404 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 4,707 cuft
Drainage area	= 0.203 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



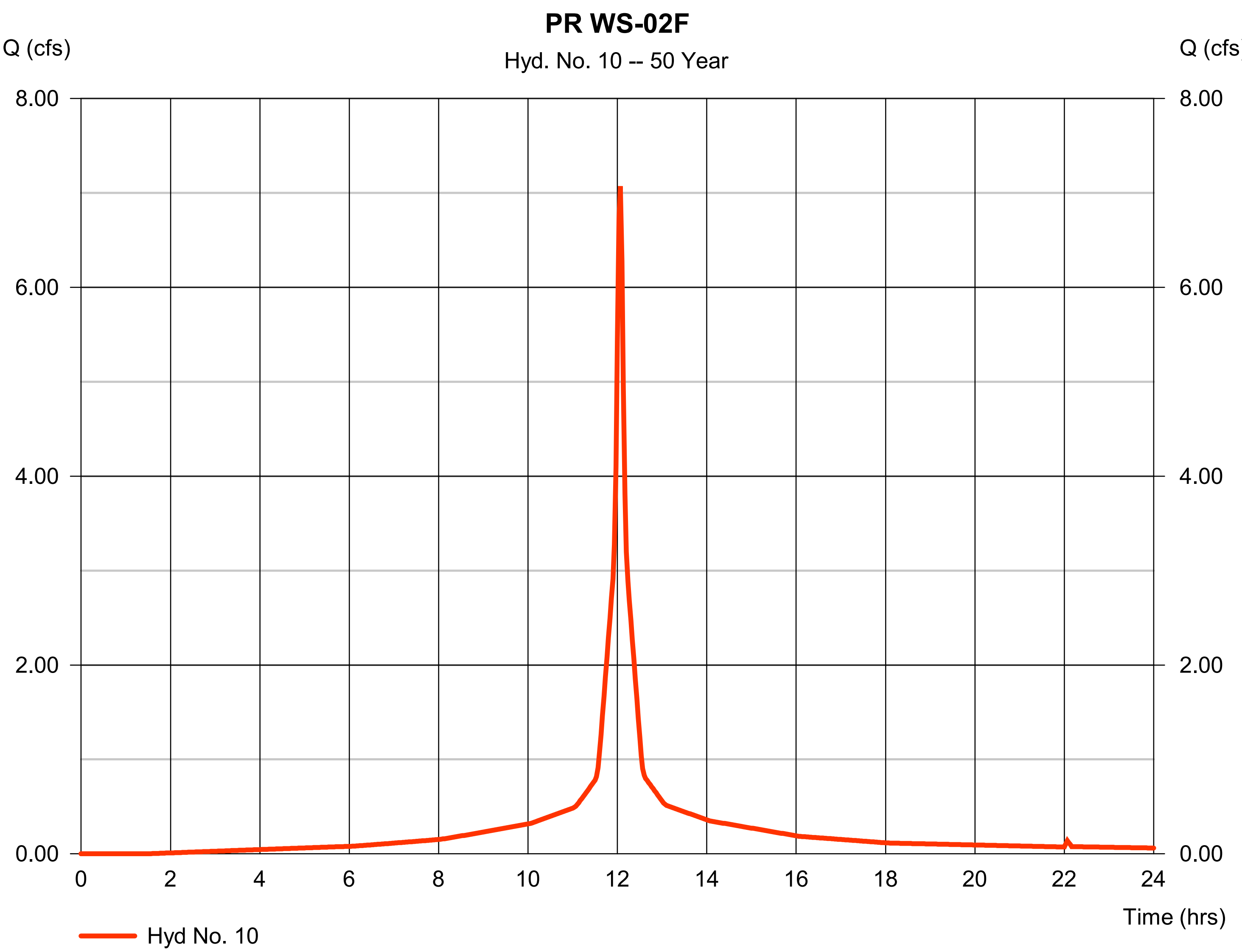
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 10

PR WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 7.074 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 23,722 cuft
Drainage area	= 1.023 ac	Curve number	= 95
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



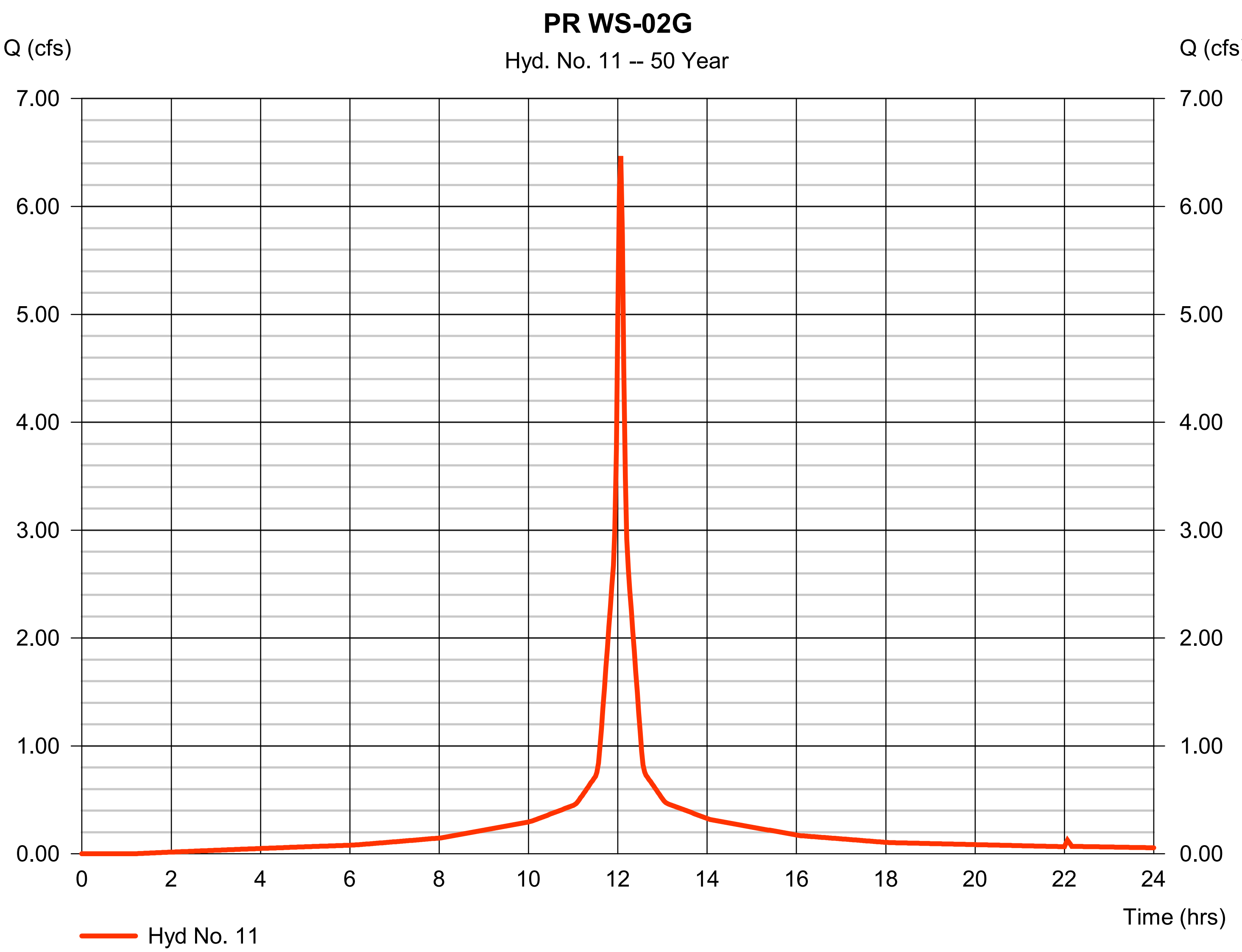
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 11

PR WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 6.467 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 21,940 cuft
Drainage area	= 0.930 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



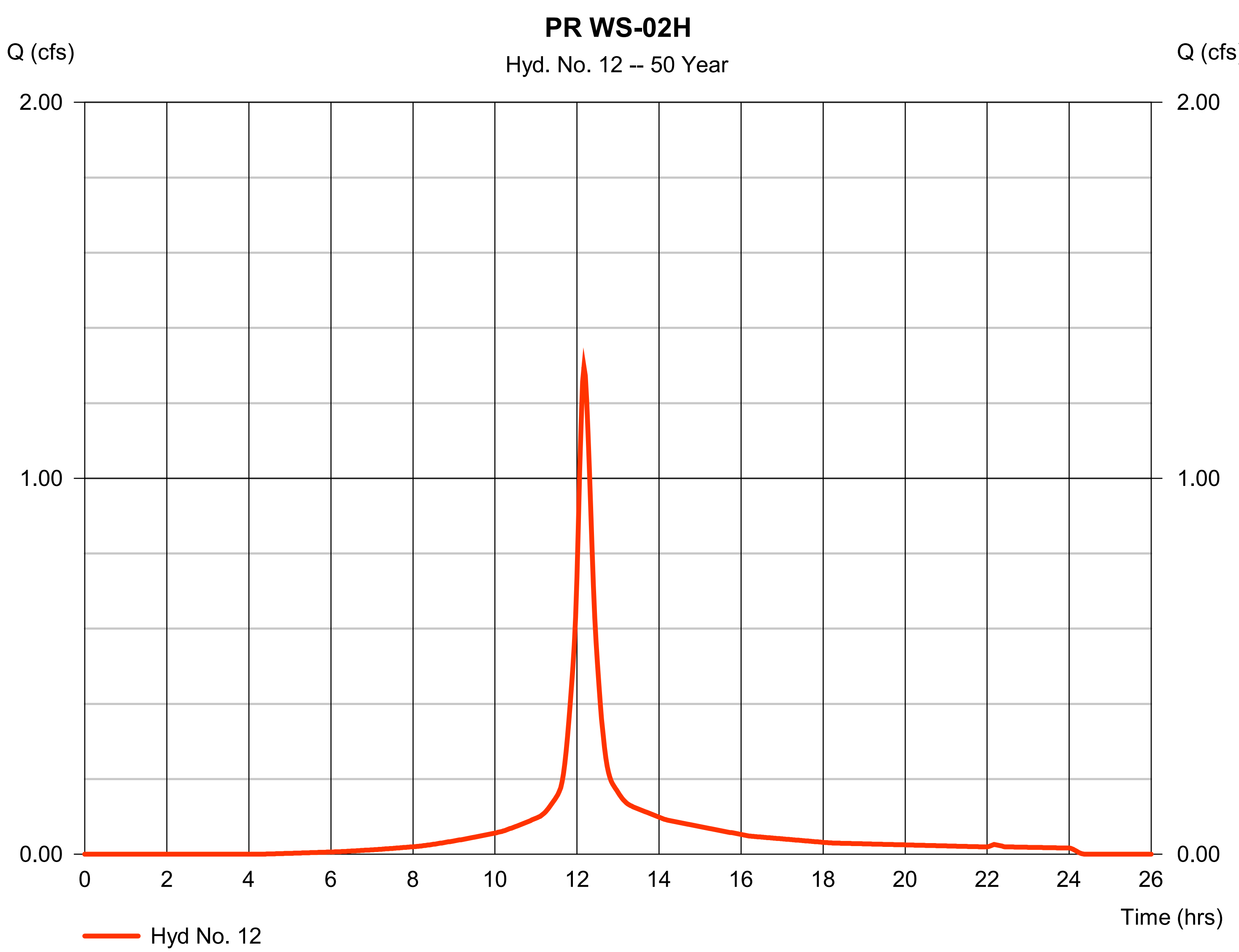
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 12

PR WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 1.296 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 5,444 cuft
Drainage area	= 0.267 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



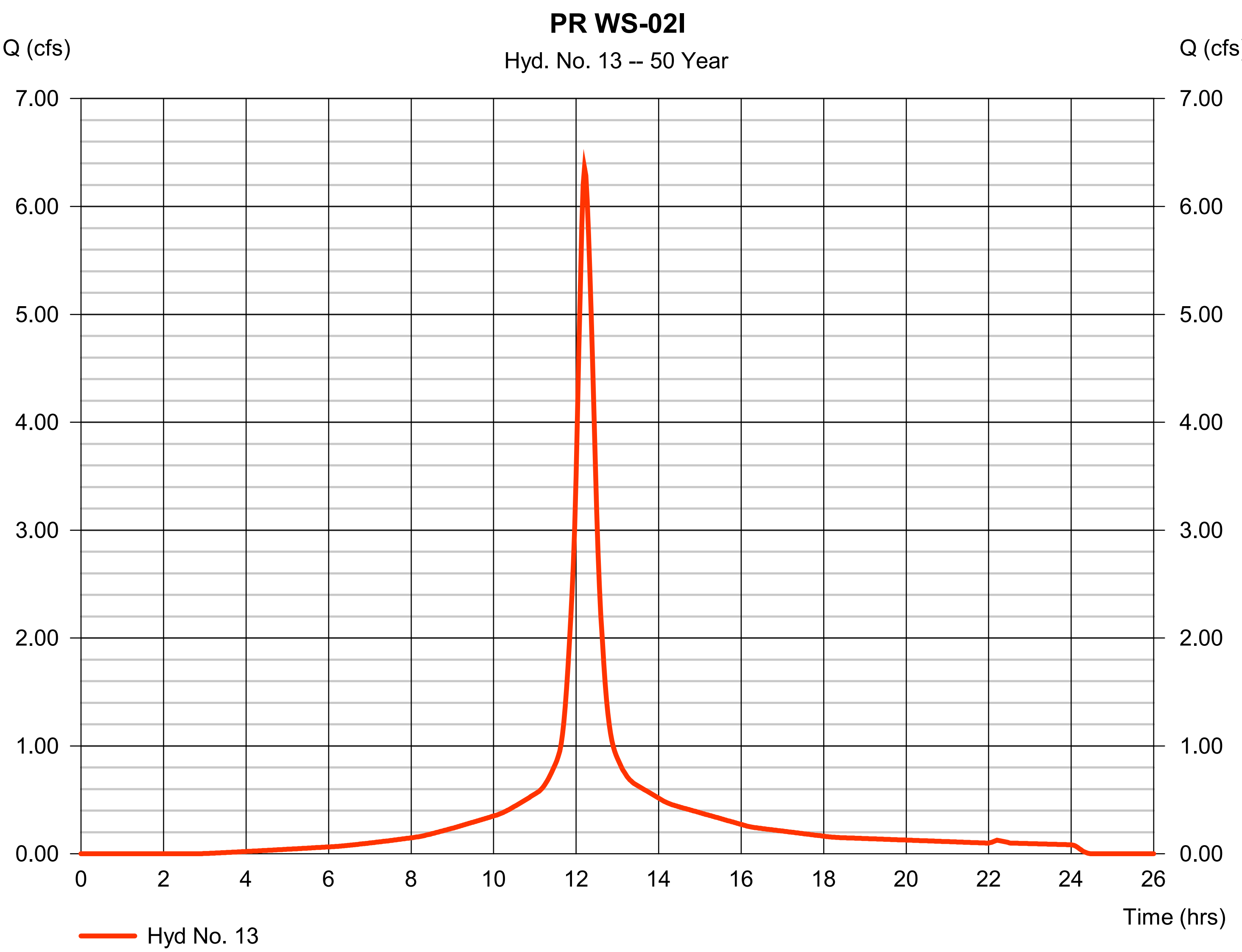
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 13

PR WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 6.358 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 29,838 cuft
Drainage area	= 1.296 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



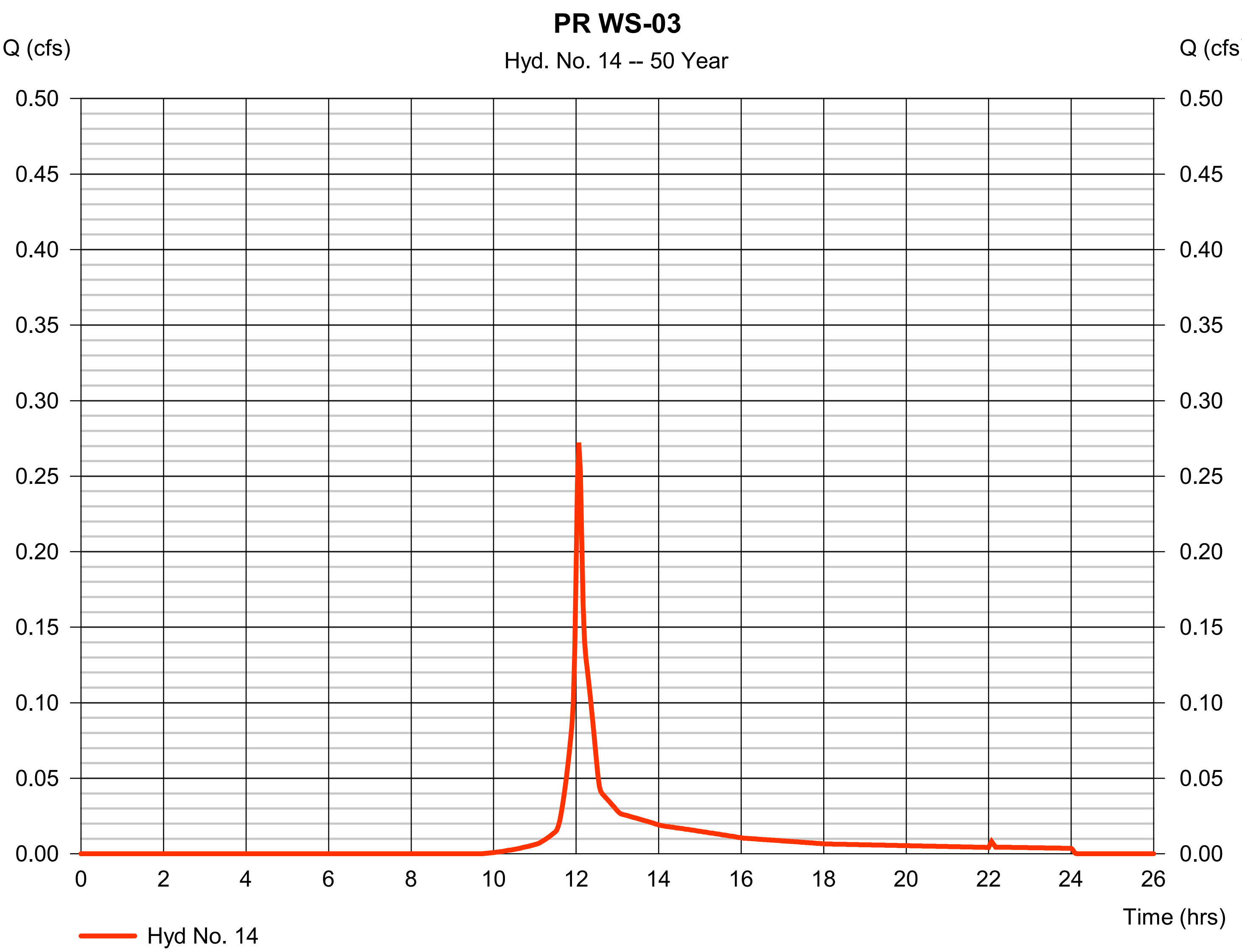
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 14

PR WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.272 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 827 cuft
Drainage area	= 0.081 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.10 min
Total precip.	= 7.41 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

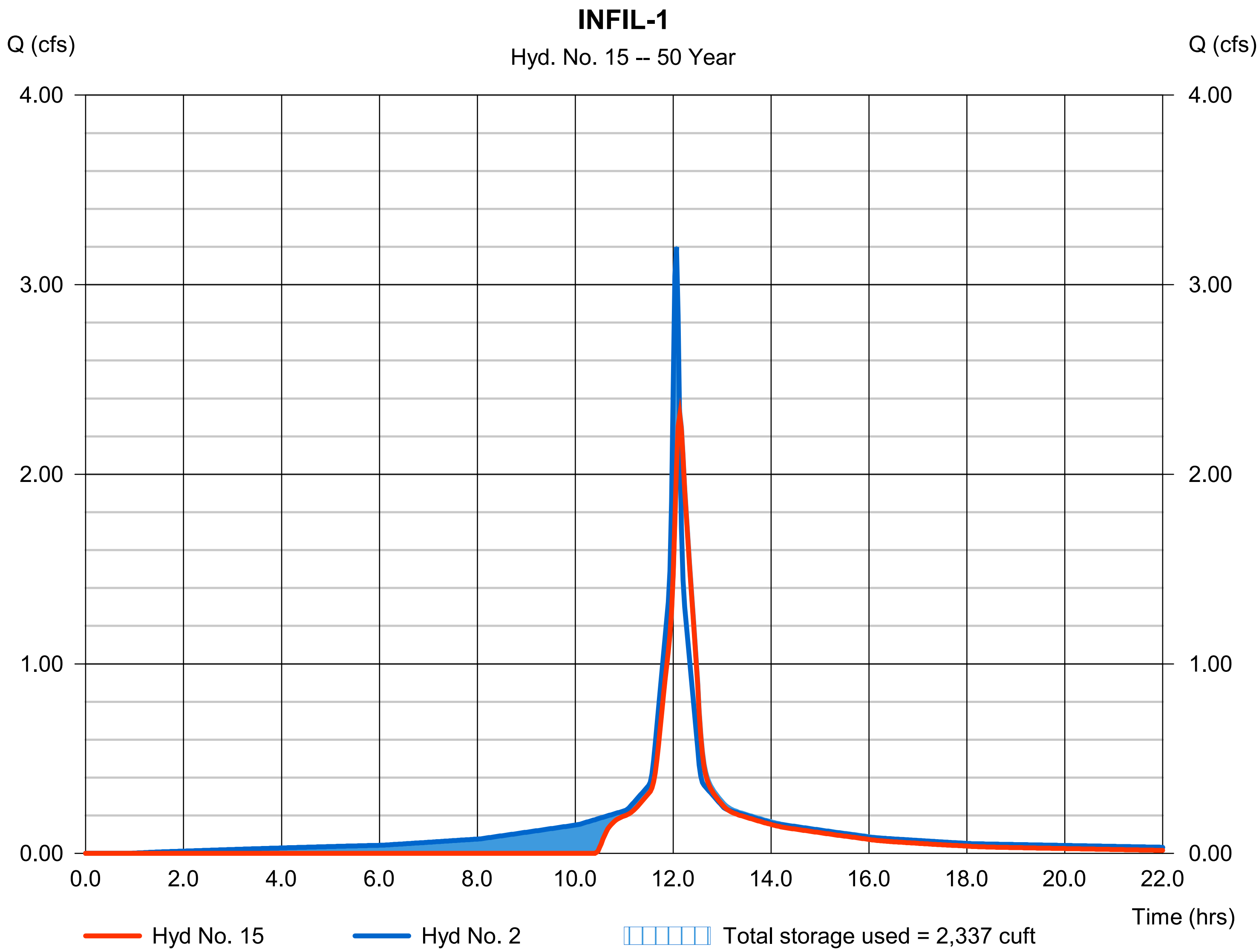
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 15

INFIL-1

Hydrograph type	= Reservoir	Peak discharge	= 2.310 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 8,200 cuft
Inflow hyd. No.	= 2 - PR WS-02A(I)	Max. Elevation	= 146.47 ft
Reservoir name	= INFIL-1	Max. Storage	= 2,337 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



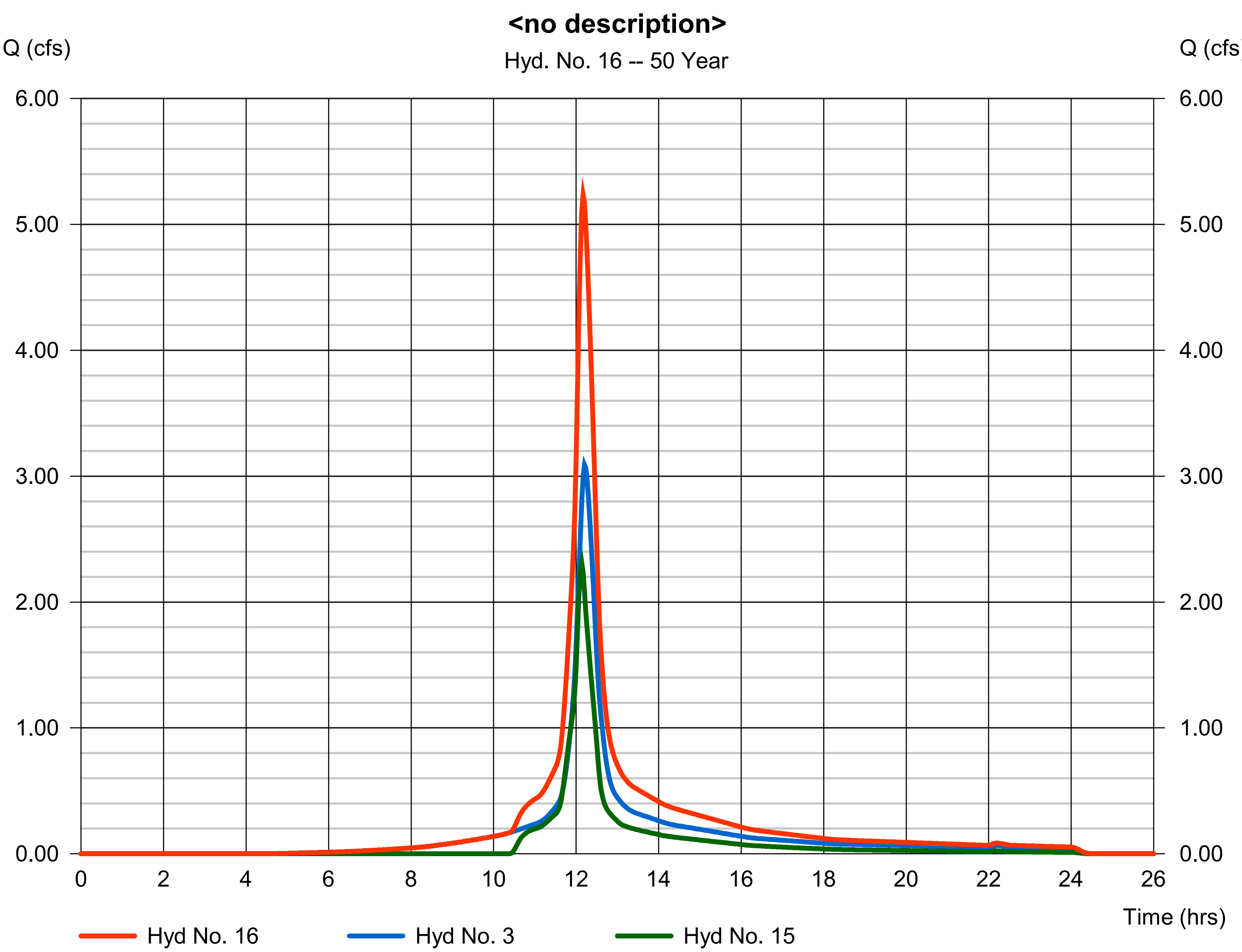
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 16

<no description>

Hydrograph type	= Combine	Peak discharge	= 5.234 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 22,197 cuft
Inflow hyds.	= 3, 15	Contrib. drain. area	= 0.683 ac



Hydrograph Report

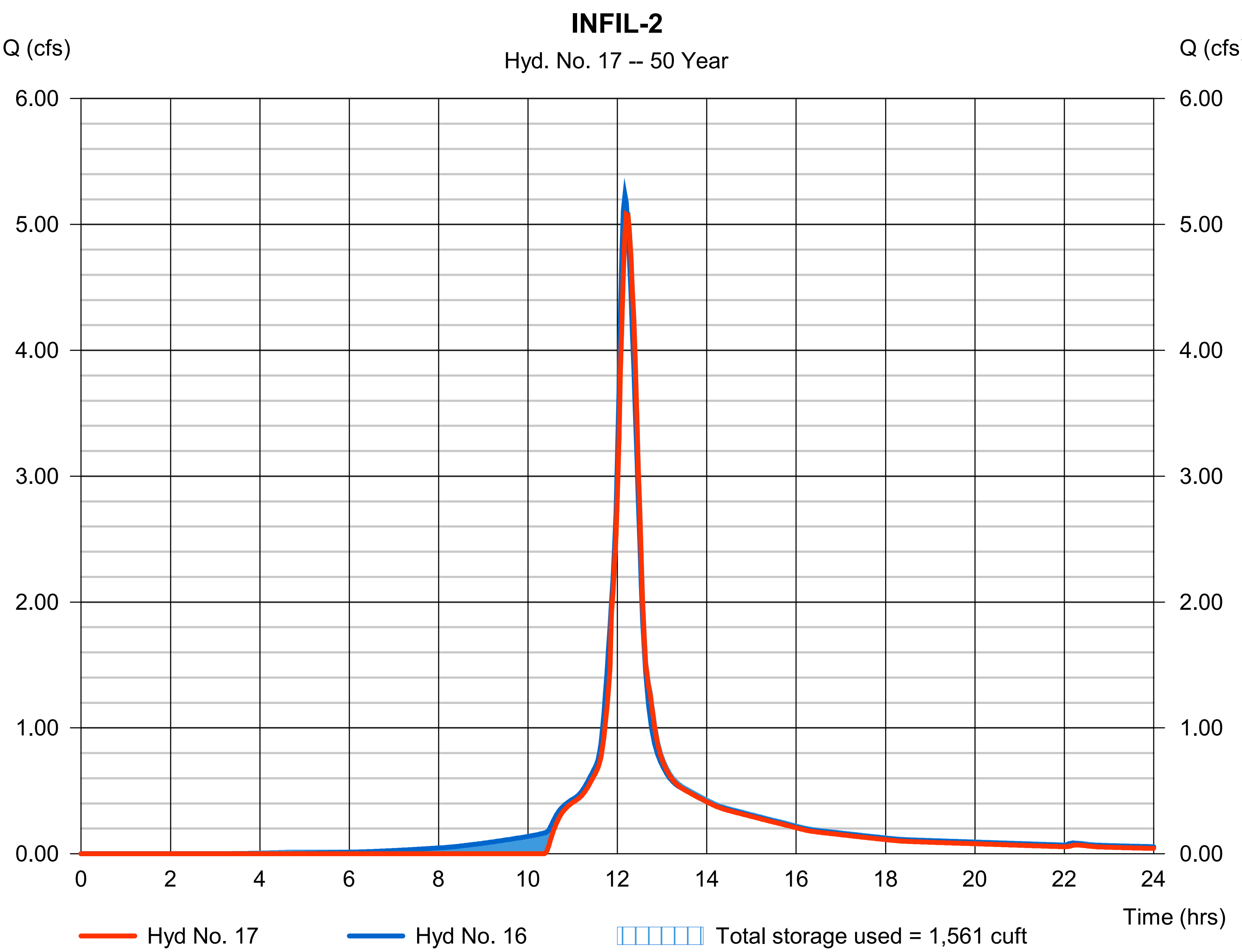
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 17

INFIL-2

Hydrograph type	= Reservoir	Peak discharge	= 5.080 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 20,511 cuft
Inflow hyd. No.	= 16 - <no description>	Max. Elevation	= 137.80 ft
Reservoir name	= INFIL-2	Max. Storage	= 1,561 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

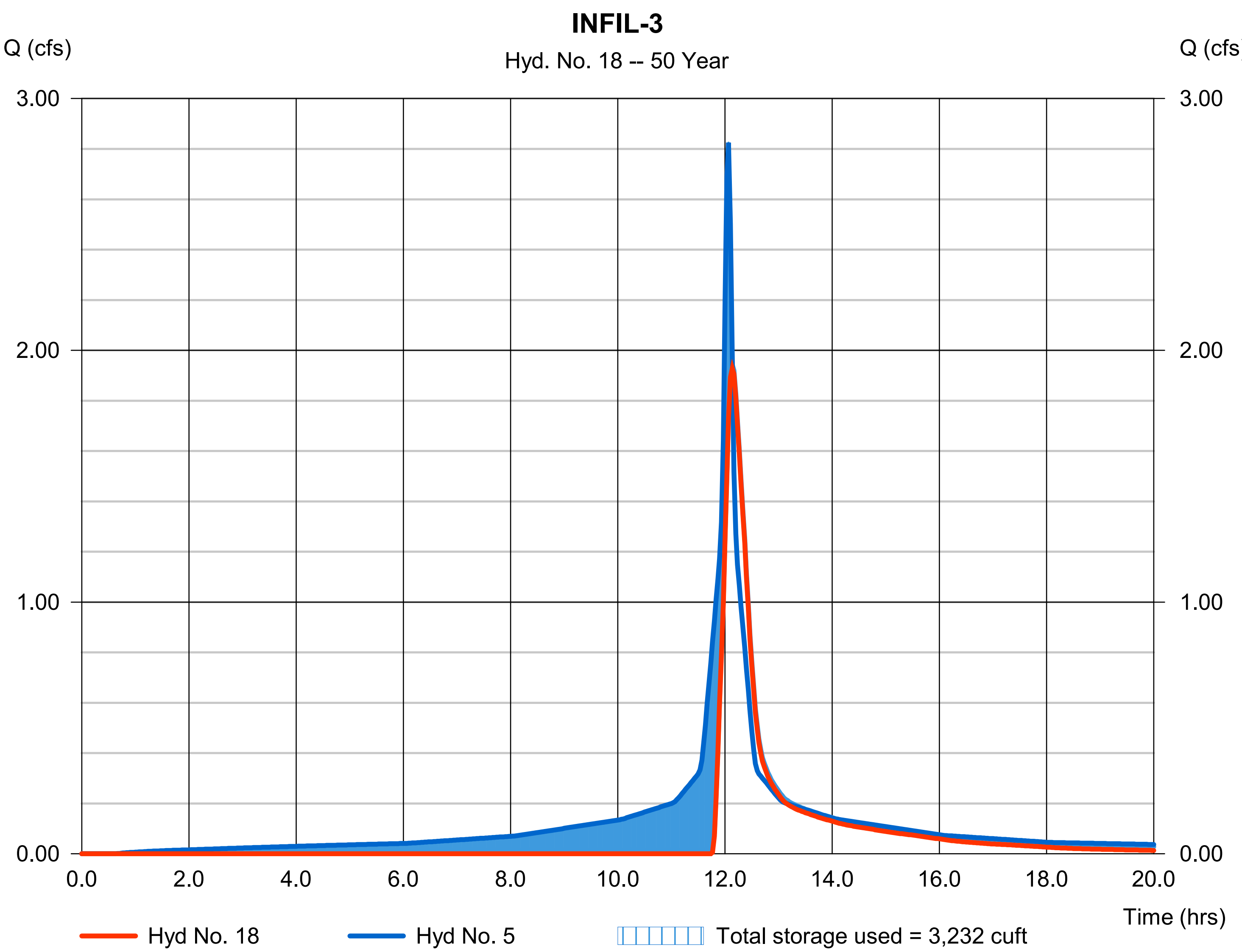
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 18

INFIL-3

Hydrograph type	= Reservoir	Peak discharge	= 1.927 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 5,568 cuft
Inflow hyd. No.	= 5 - PR WS-02B(II)	Max. Elevation	= 145.20 ft
Reservoir name	= INFIL-3	Max. Storage	= 3,232 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

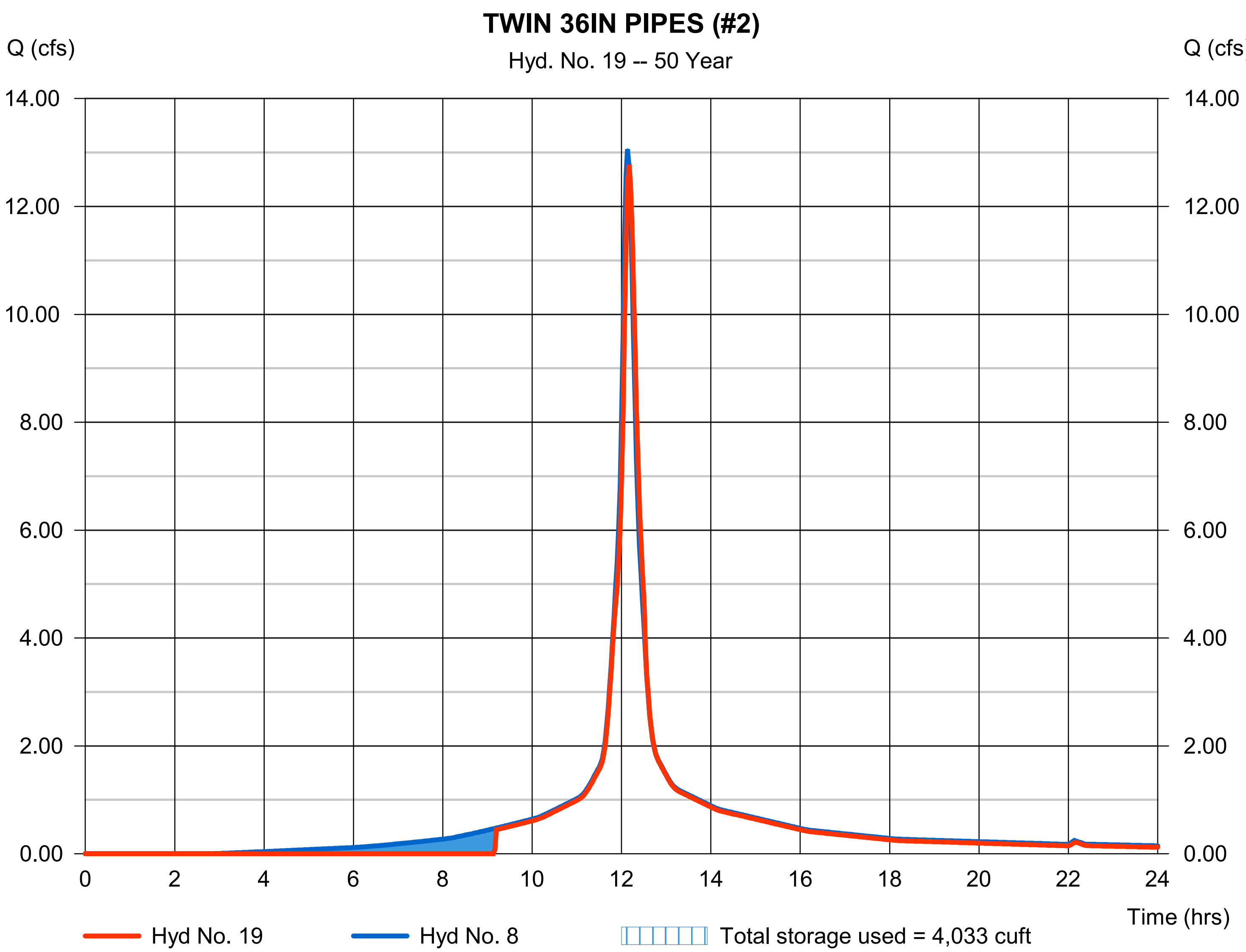
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 19

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 12.78 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 48,298 cuft
Inflow hyd. No.	= 8 - PR WS-02D	Max. Elevation	= 139.20 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 4,033 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

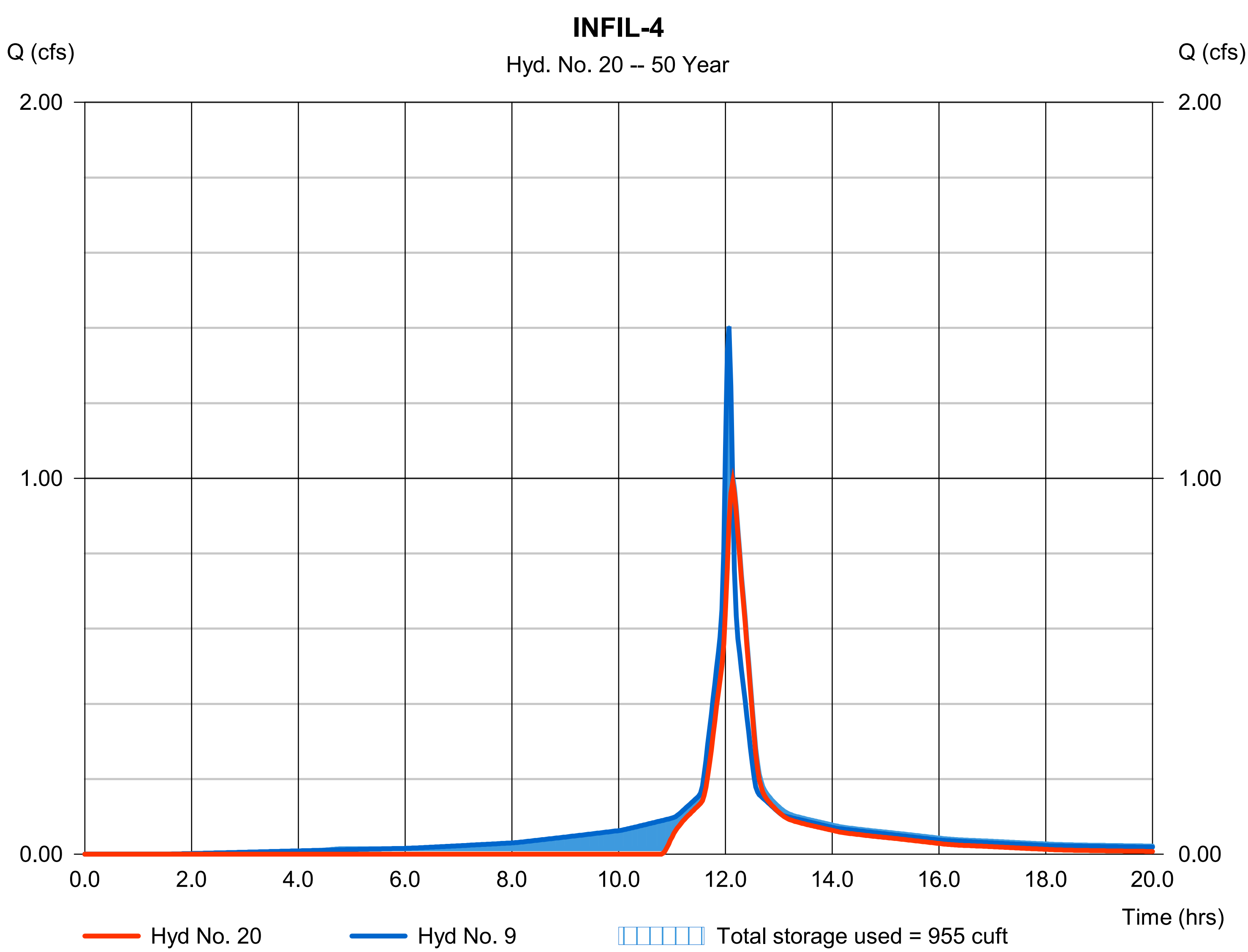
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 20

INFIL-4

Hydrograph type	= Reservoir	Peak discharge	= 0.989 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 3,300 cuft
Inflow hyd. No.	= 9 - PR WS-02E	Max. Elevation	= 138.34 ft
Reservoir name	= INFIL-4	Max. Storage	= 955 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

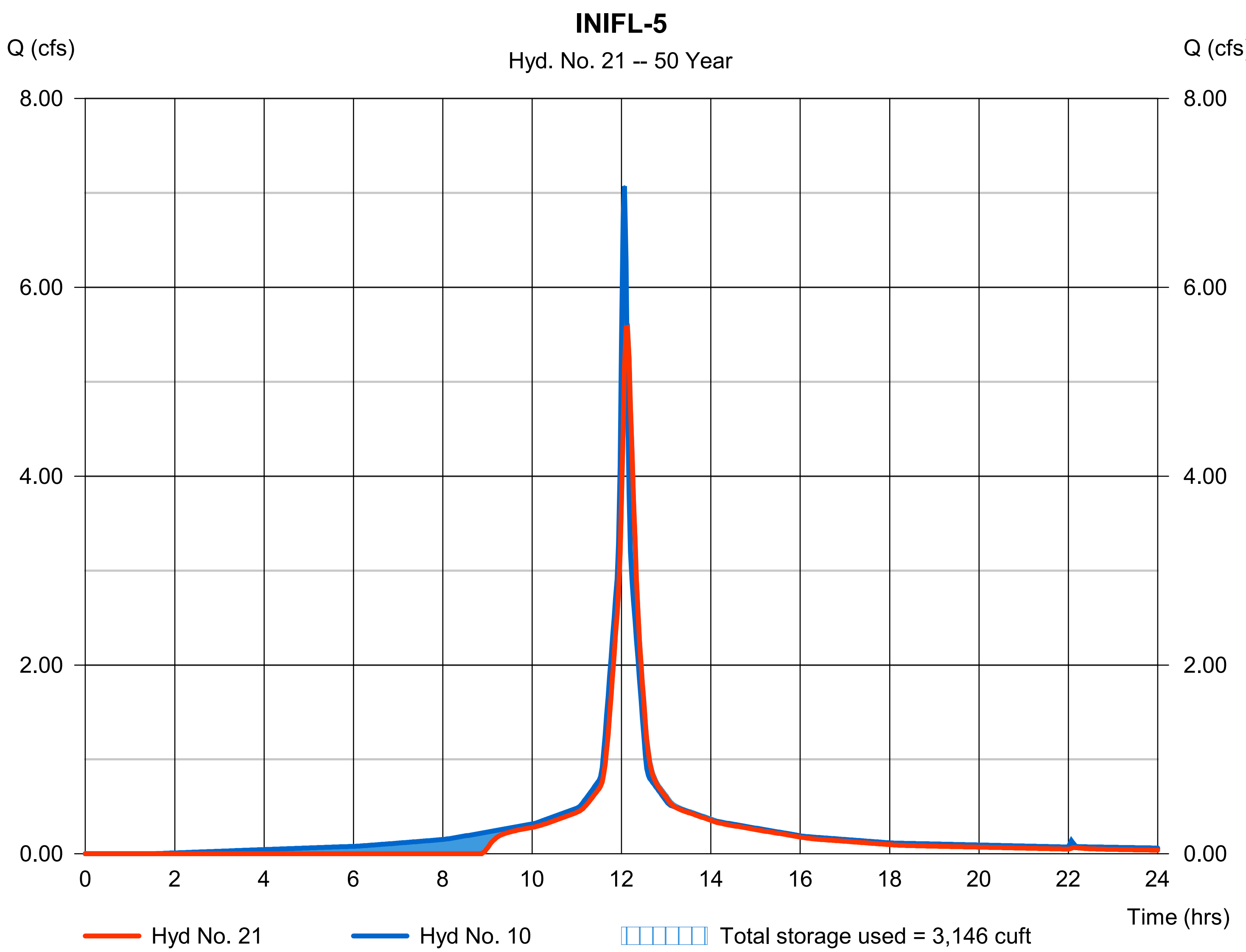
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 21

INIFL-5

Hydrograph type	= Reservoir	Peak discharge	= 5.575 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 20,252 cuft
Inflow hyd. No.	= 10 - PR WS-02F	Max. Elevation	= 137.41 ft
Reservoir name	= INIFL-5	Max. Storage	= 3,146 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

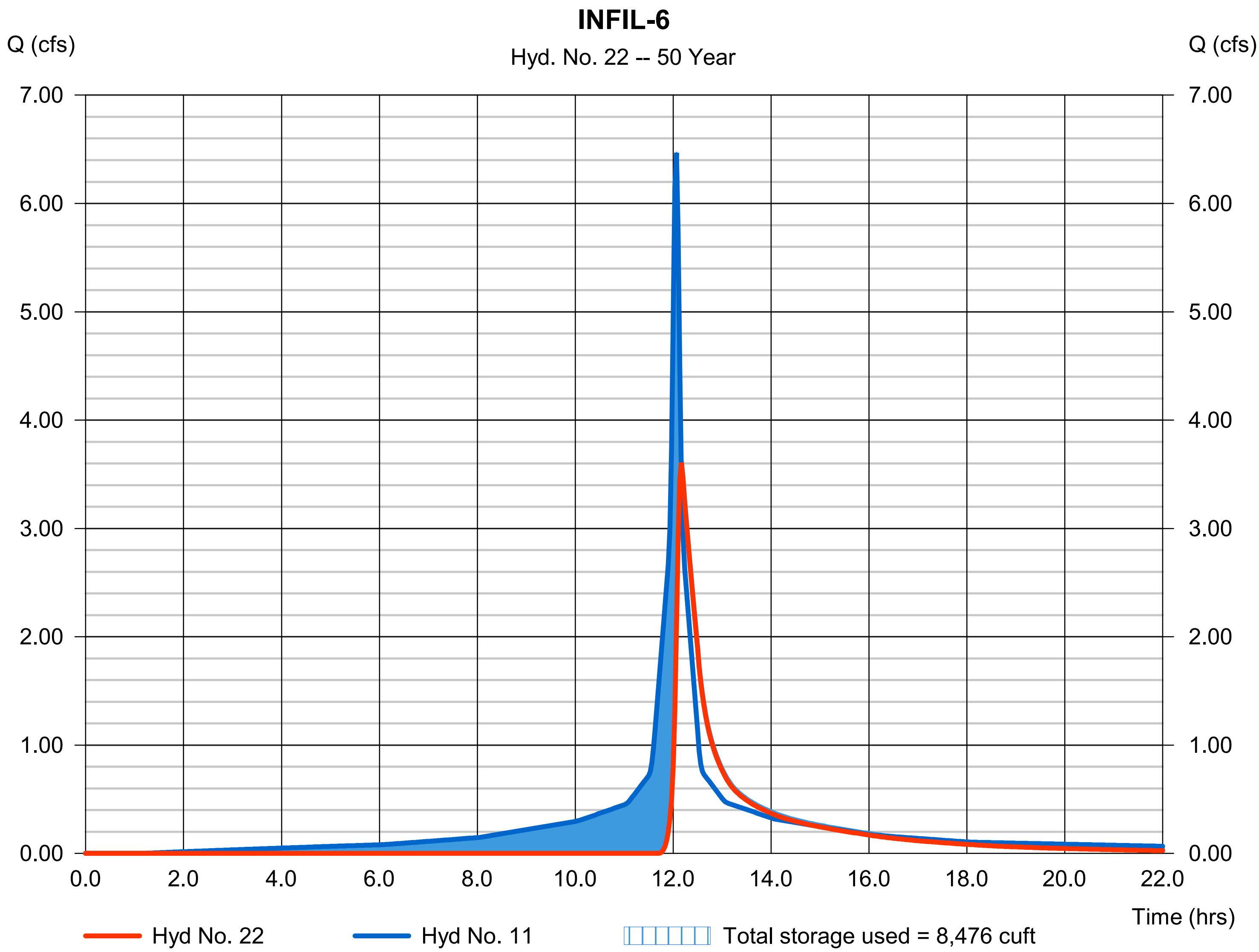
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 22

INFIL-6

Hydrograph type	= Reservoir	Peak discharge	= 3.607 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 12,398 cuft
Inflow hyd. No.	= 11 - PR WS-02G	Max. Elevation	= 136.47 ft
Reservoir name	= INFIL-6	Max. Storage	= 8,476 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

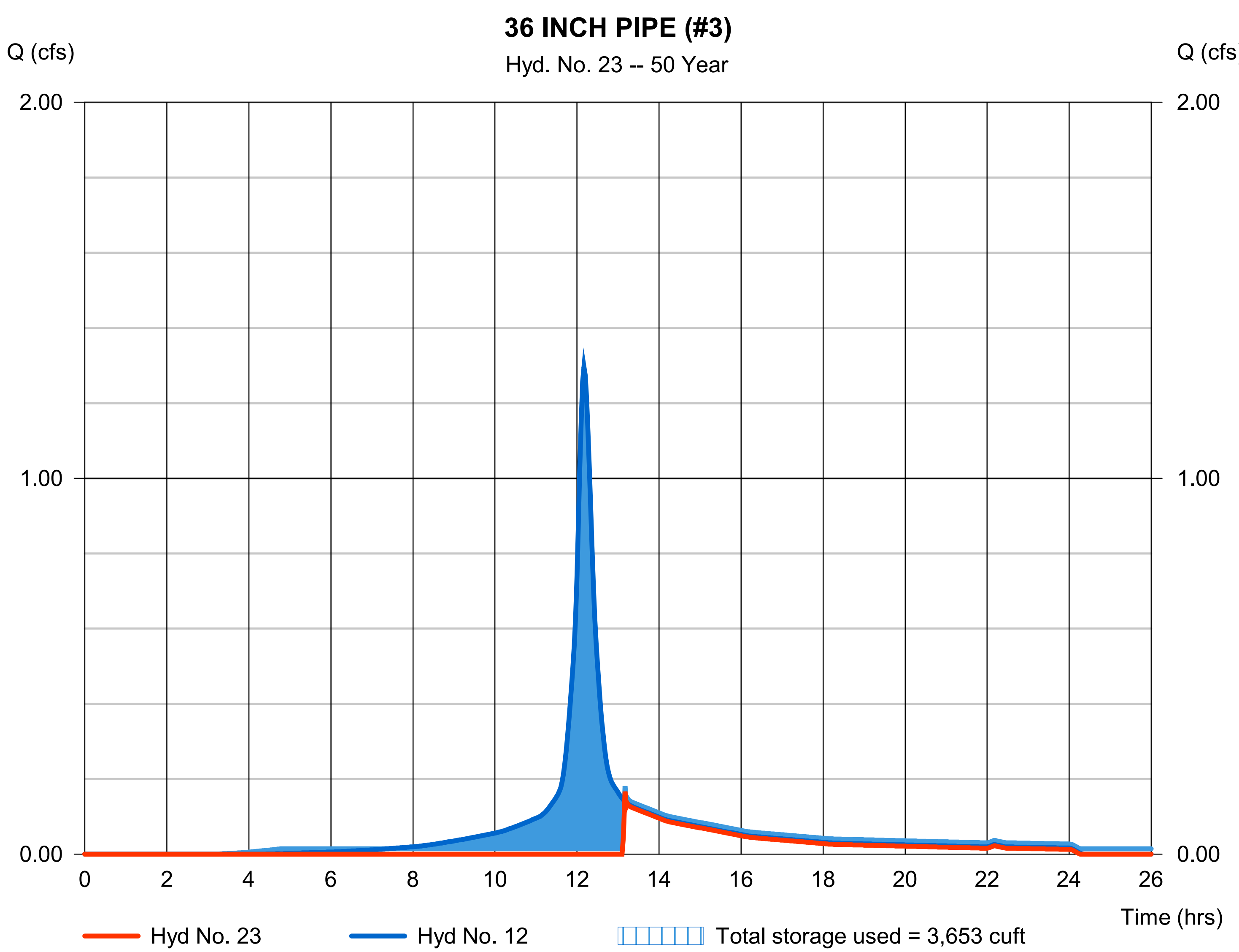
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 23

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 0.167 cfs
Storm frequency	= 50 yrs	Time to peak	= 13.17 hrs
Time interval	= 2 min	Hyd. volume	= 1,564 cuft
Inflow hyd. No.	= 12 - PR WS-02H	Max. Elevation	= 137.46 ft
Reservoir name	= 36IN - 3	Max. Storage	= 3,653 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

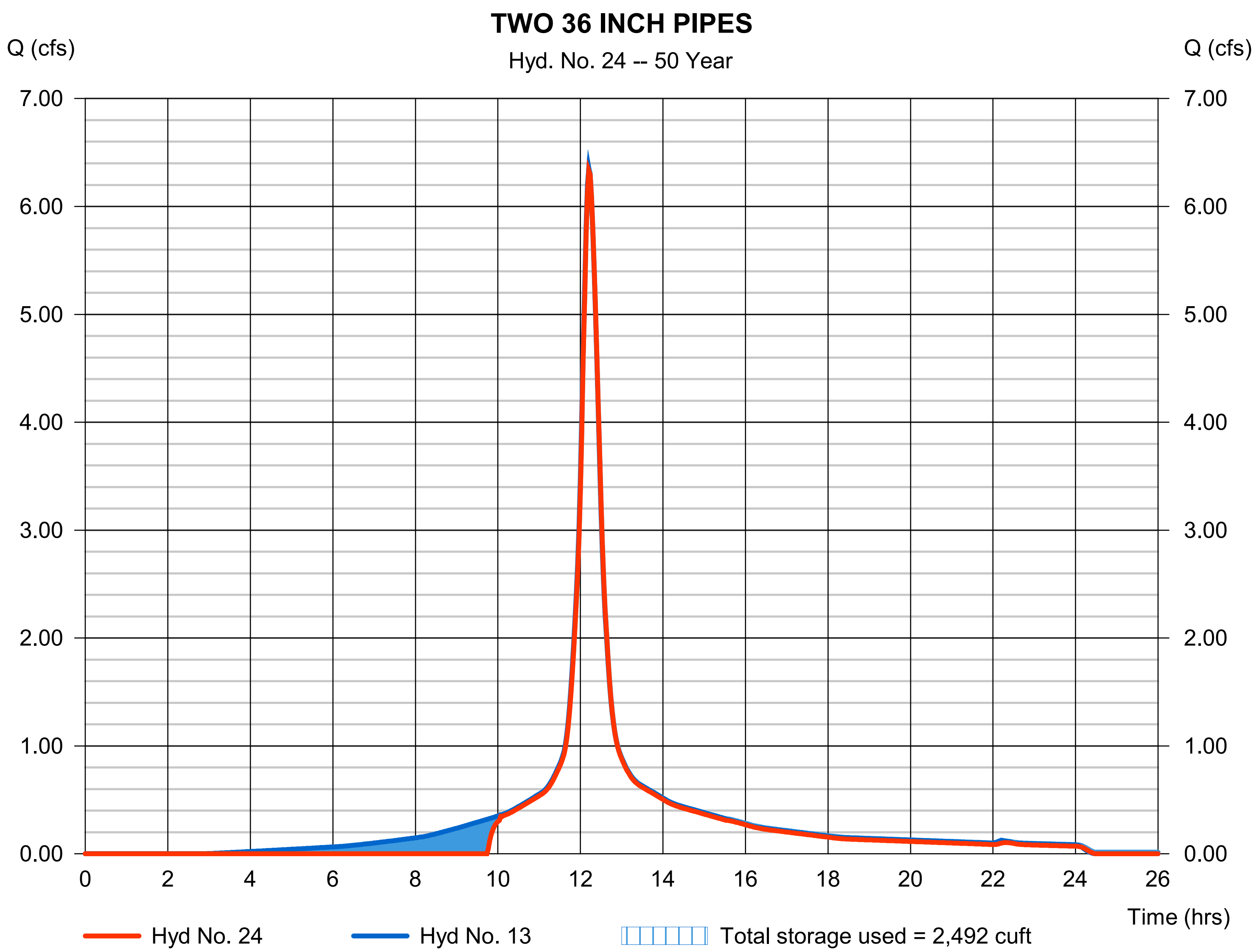
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 24

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 6.332 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 26,572 cuft
Inflow hyd. No.	= 13 - PR WS-02I	Max. Elevation	= 135.75 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,492 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



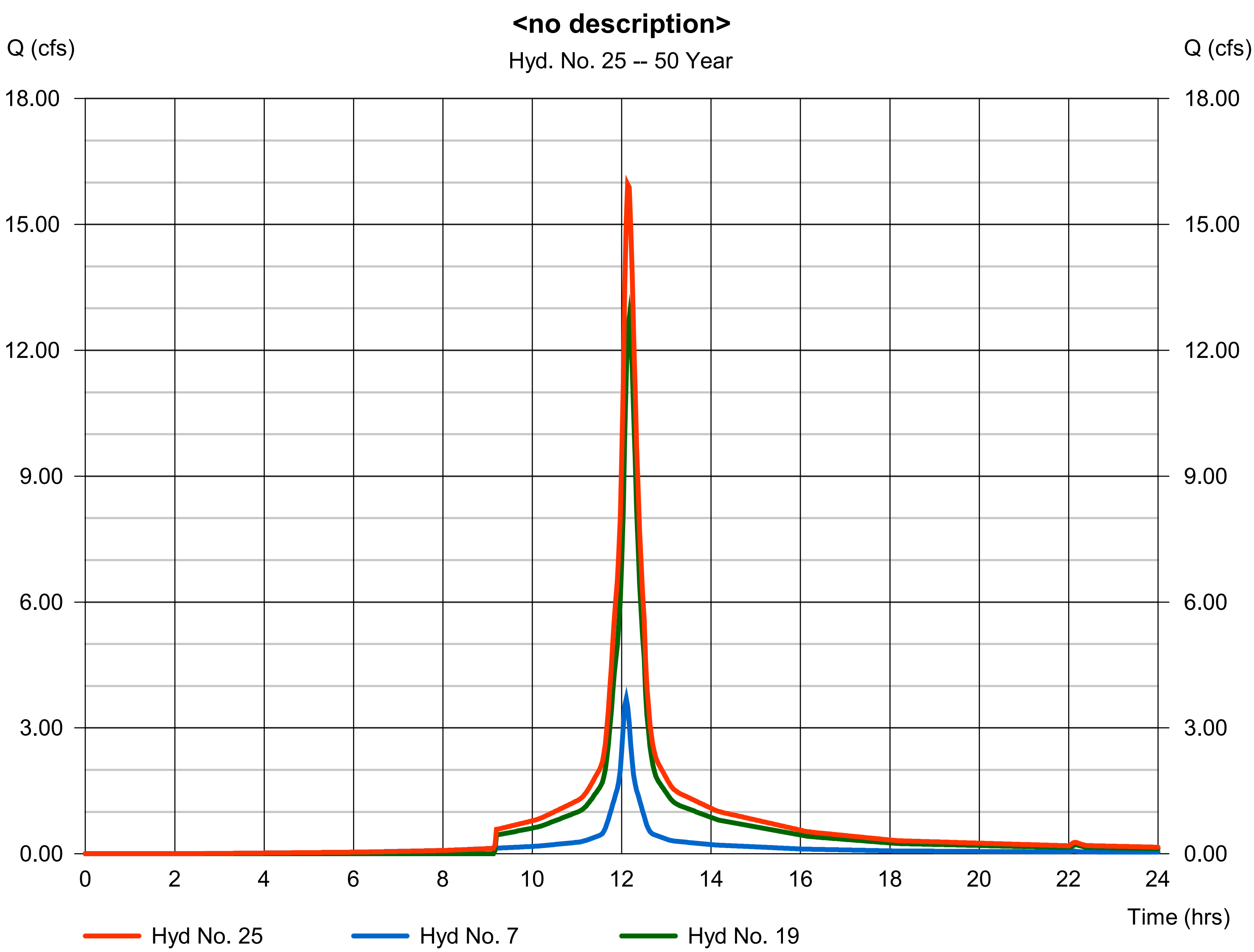
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 25

<no description>

Hydrograph type	= Combine	Peak discharge	= 15.96 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 62,051 cuft
Inflow hyds.	= 7, 19	Contrib. drain. area	= 0.576 ac



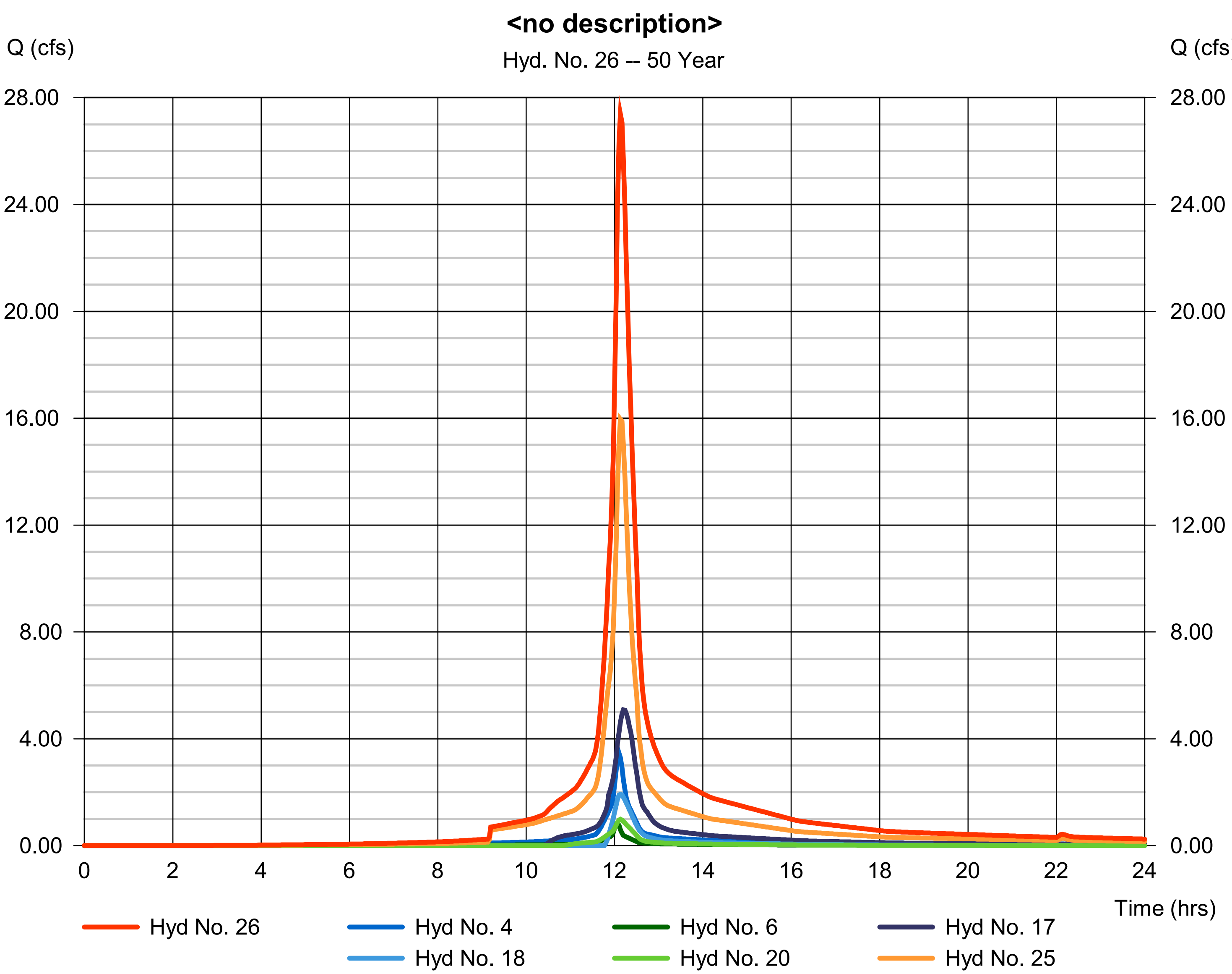
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 26

<no description>

Hydrograph type	= Combine	Peak discharge	= 27.38 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 106,350 cuft
Inflow hyds.	= 4, 6, 17, 18, 20, 25	Contrib. drain. area	= 0.708 ac



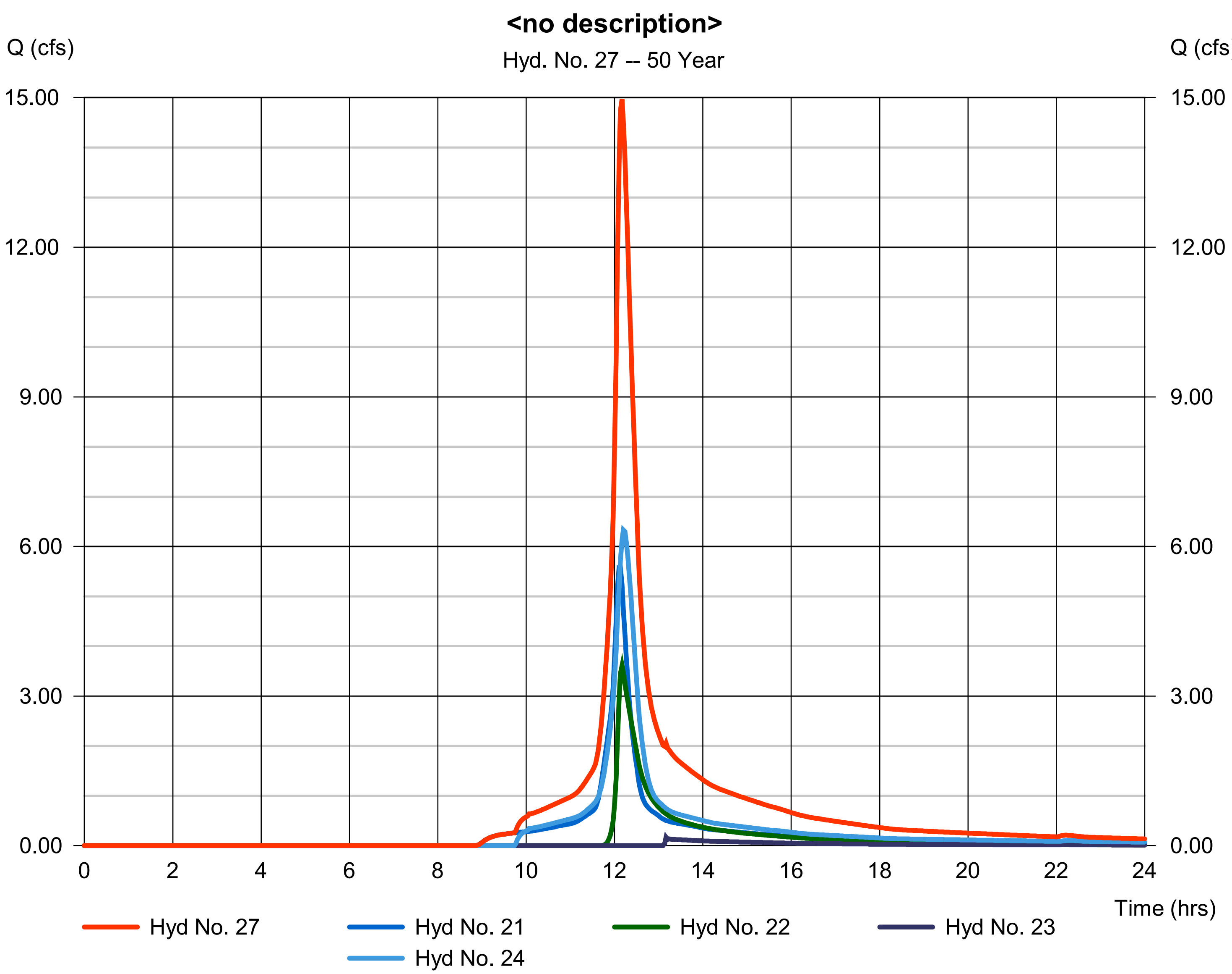
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 27

<no description>

Hydrograph type	= Combine	Peak discharge	= 14.97 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 60,787 cuft
Inflow hyds.	= 21, 22, 23, 24	Contrib. drain. area	= 0.000 ac



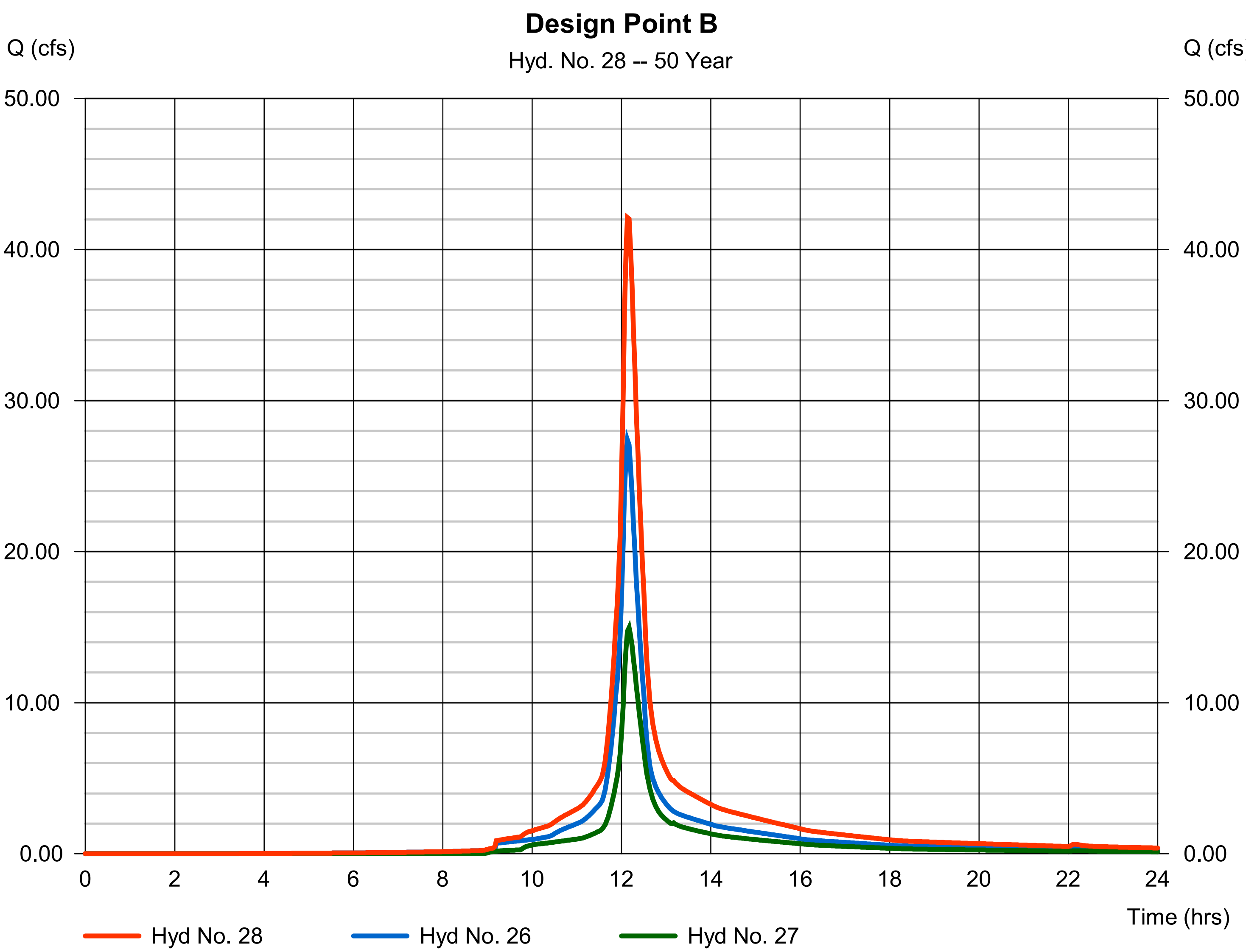
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 28

Design Point B

Hydrograph type	= Combine	Peak discharge	= 42.12 cfs
Storm frequency	= 50 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 167,137 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 0.000 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	6.398	2	730	26,117	------	------	------	PR WS-01
2	SCS Runoff	3.605	2	724	12,438	------	------	------	PR WS-02A(I)
3	SCS Runoff	3.556	2	732	16,219	------	------	------	PR WS-02A(II)
4	SCS Runoff	3.952	2	726	14,171	------	------	------	PR WS-02B(I)
5	SCS Runoff	3.181	2	724	11,109	------	------	------	PR WS-02B(II)
6	SCS Runoff	0.964	2	724	3,046	------	------	------	PR WS-02B(III)
7	SCS Runoff	4.184	2	726	15,682	------	------	------	PR WS-02C
8	SCS Runoff	14.84	2	728	61,043	------	------	------	PR WS-02D
9	SCS Runoff	1.585	2	724	5,347	------	------	------	PR WS-02E
10	SCS Runoff	7.986	2	724	26,946	------	------	------	PR WS-02F
11	SCS Runoff	7.294	2	724	24,876	------	------	------	PR WS-02G
12	SCS Runoff	1.488	2	730	6,295	------	------	------	PR WS-02H
13	SCS Runoff	7.225	2	732	34,156	------	------	------	PR WS-02I
14	SCS Runoff	0.339	2	724	1,022	------	------	------	PR WS-03
15	Reservoir	2.580	2	728	9,629	2	146.94	2,479	INFIL-1
16	Combine	5.963	2	730	25,847	3, 15	------	------	<no description>
17	Reservoir	5.776	2	734	24,138	16	138.33	1,674	INFIL-2
18	Reservoir	2.266	2	728	6,804	5	145.49	3,366	INFIL-3
19	Reservoir	14.56	2	730	55,977	8	139.24	4,189	TWIN 36IN PIPES (#2)
20	Reservoir	1.107	2	728	3,919	9	138.62	1,020	INFIL-4
21	Reservoir	6.323	2	726	23,447	10	137.92	3,376	INIFL-5
22	Reservoir	4.990	2	728	15,158	11	136.84	8,905	INFIL-6
23	Reservoir	0.704	2	752	2,409	12	137.47	3,670	36 INCH PIPE (#3)
24	Reservoir	7.197	2	732	30,870	13	135.76	2,510	TWO 36 INCH PIPES
25	Combine	18.23	2	728	71,659	7, 19,	------	------	<no description>
26	Combine	31.28	2	728	123,737	4, 6, 17, 18, 20, 25	------	------	<no description>
27	Combine	17.81	2	728	71,885	21, 22, 23, 24,	------	------	<no description>
28	Combine	49.08	2	728	195,622	26, 27	------	------	Design Point B

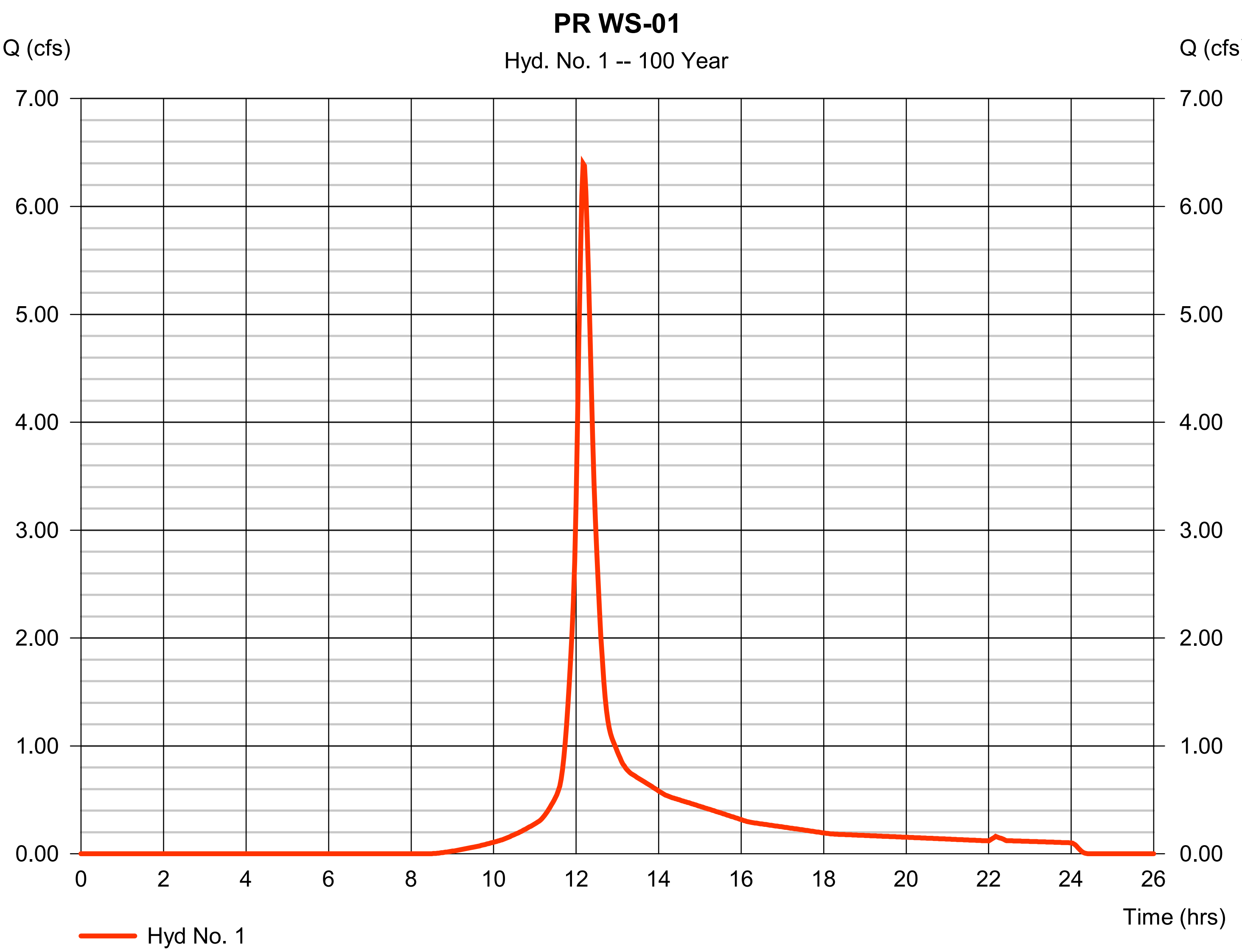
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 1

PR WS-01

Hydrograph type	= SCS Runoff	Peak discharge	= 6.398 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 26,117 cuft
Drainage area	= 1.721 ac	Curve number	= 66
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.50 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



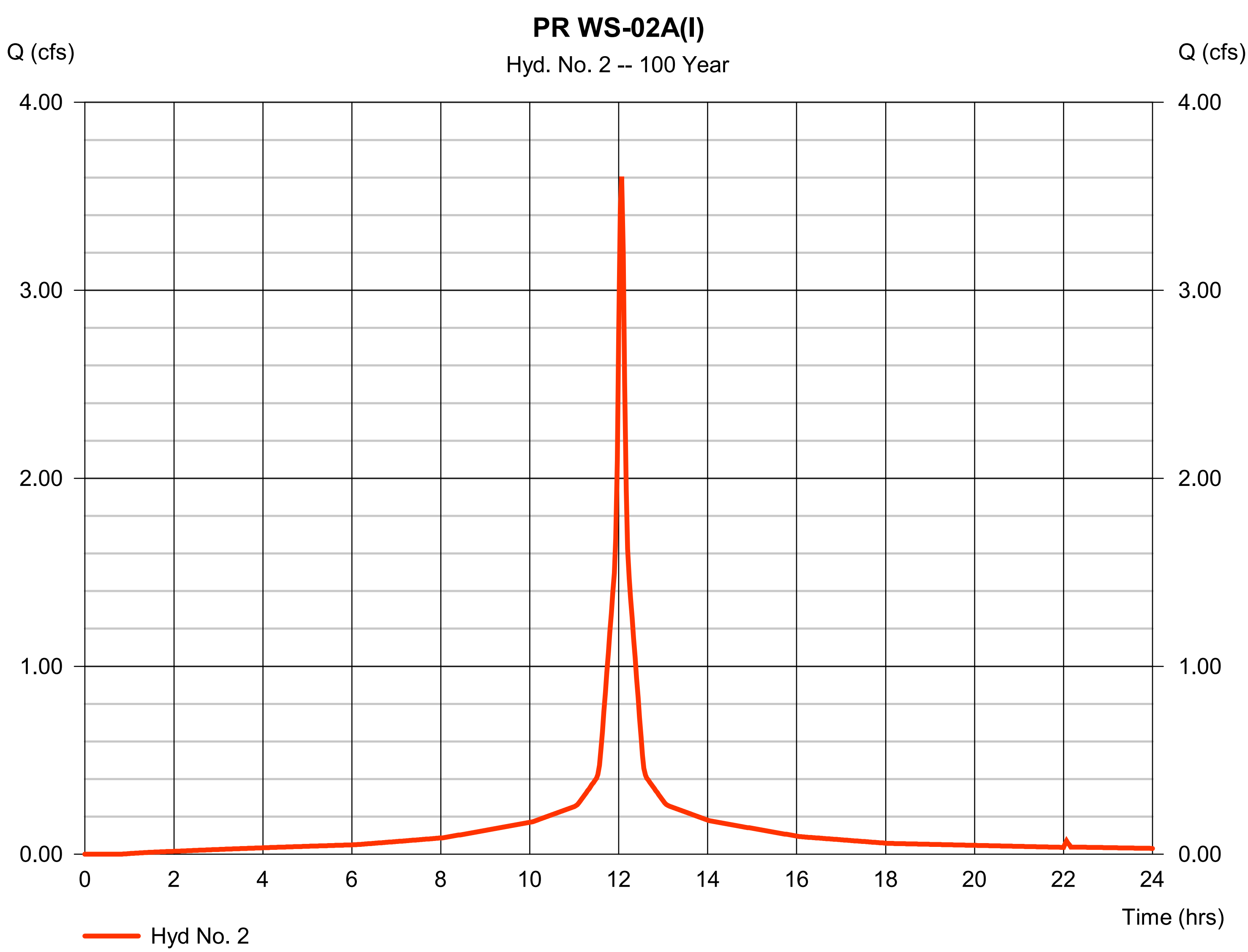
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 2

PR WS-02A(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.605 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 12,438 cuft
Drainage area	= 0.458 ac	Curve number	= 97
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

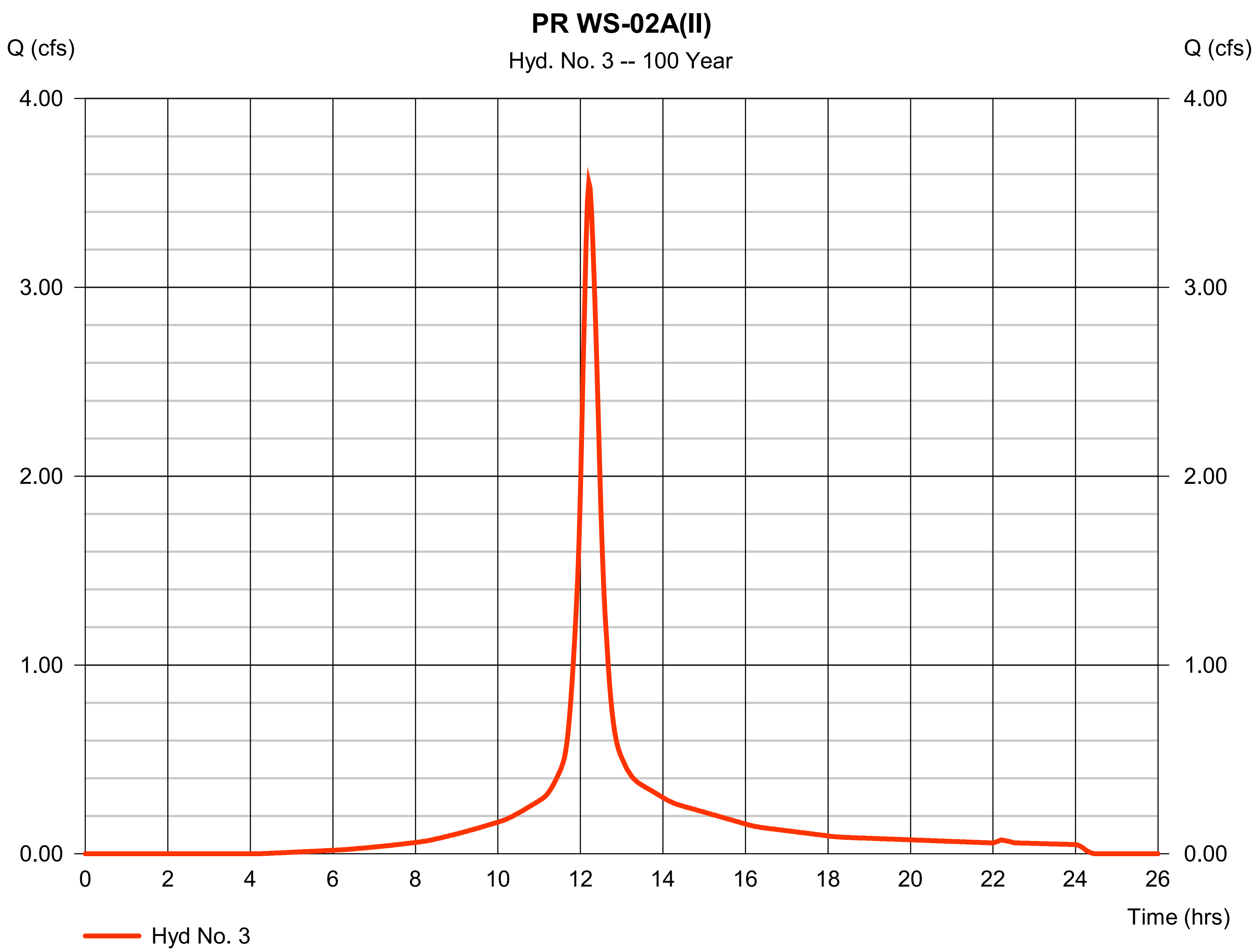


Hydrograph Report

Hyd. No. 3

PR WS-02A(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.556 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 16,219 cuft
Drainage area	= 0.683 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 17.10 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



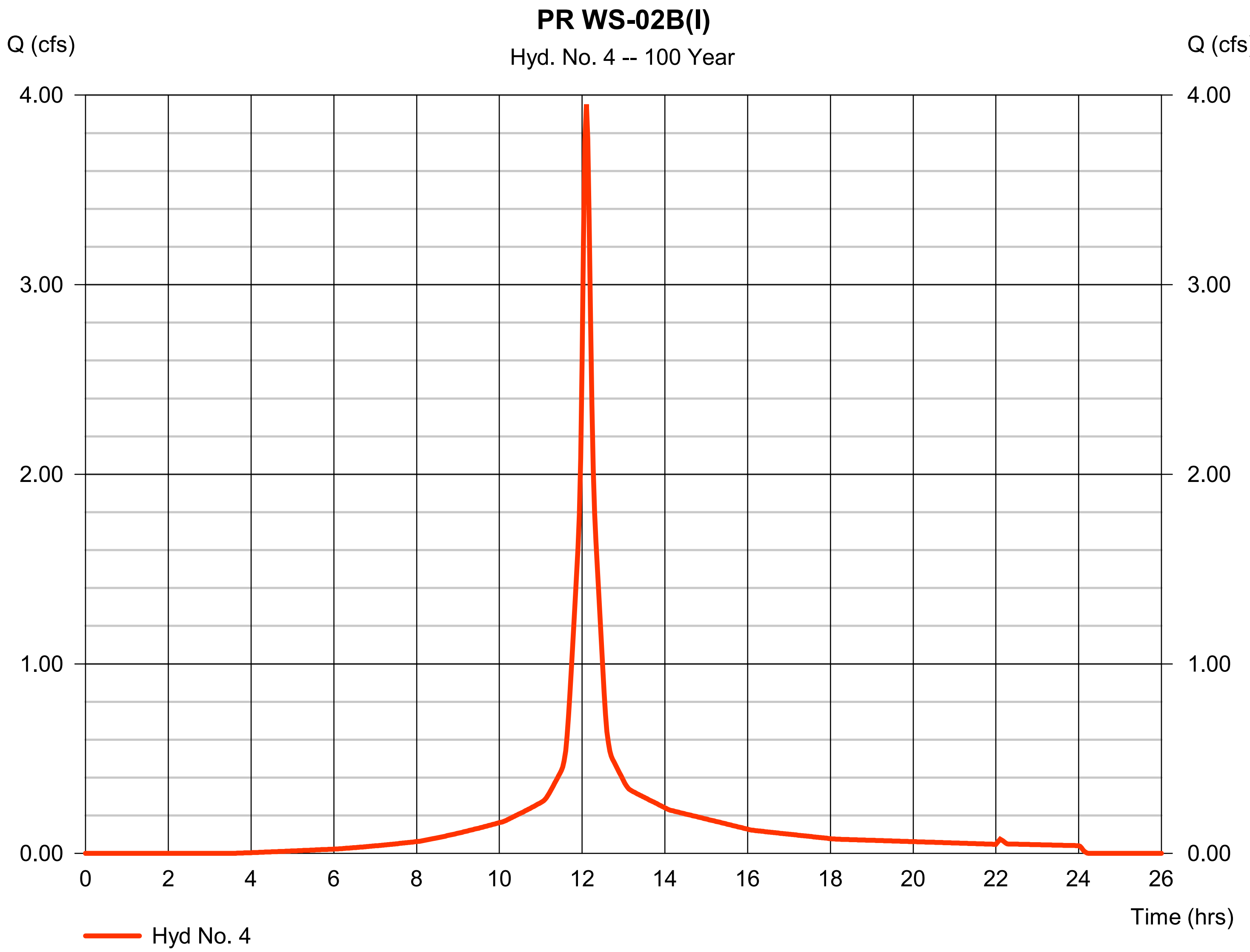
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 4

PR WS-02B(I)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.952 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 14,171 cuft
Drainage area	= 0.576 ac	Curve number	= 87
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 7.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



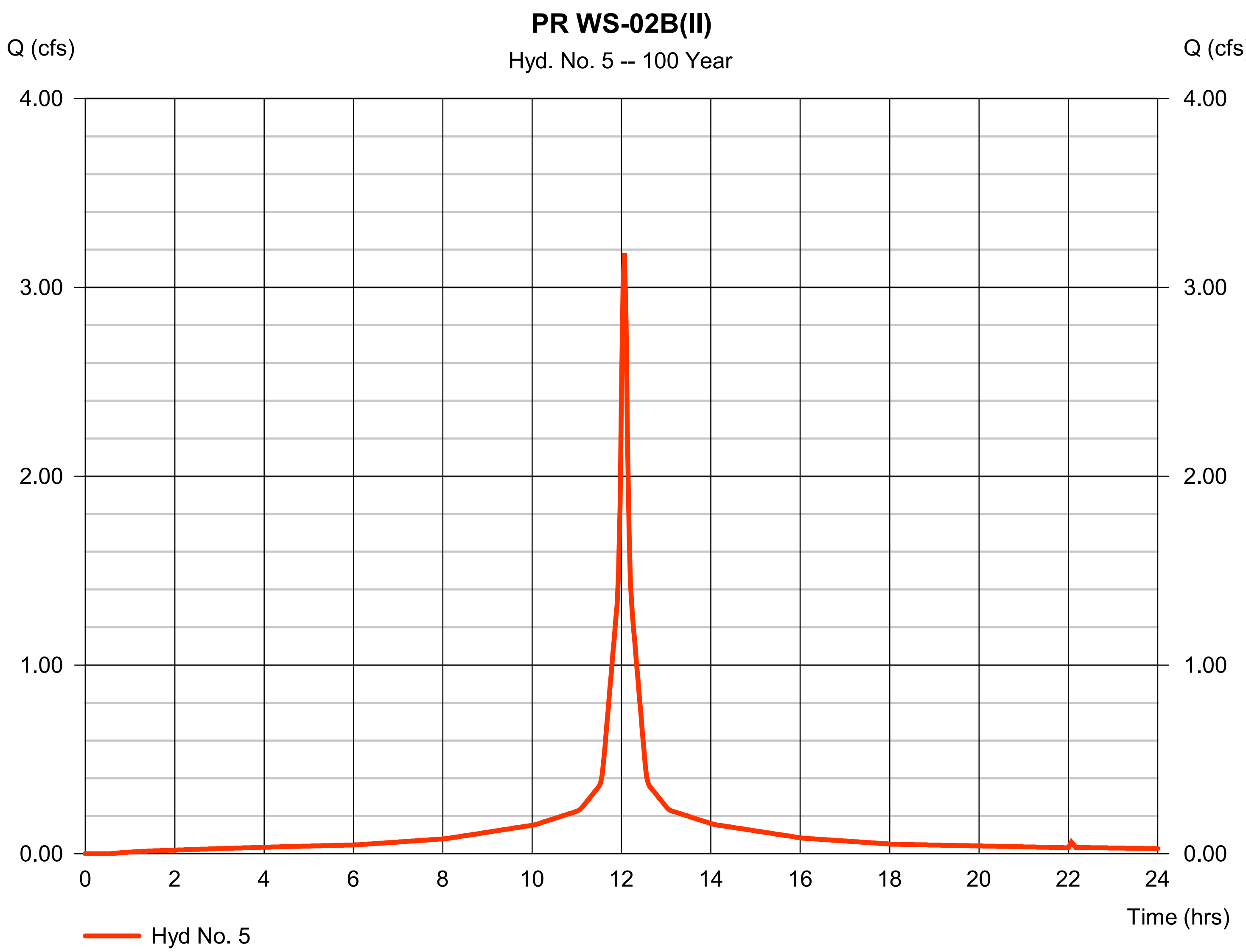
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 5

PR WS-02B(II)

Hydrograph type	= SCS Runoff	Peak discharge	= 3.181 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 11,109 cuft
Drainage area	= 0.403 ac	Curve number	= 98
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



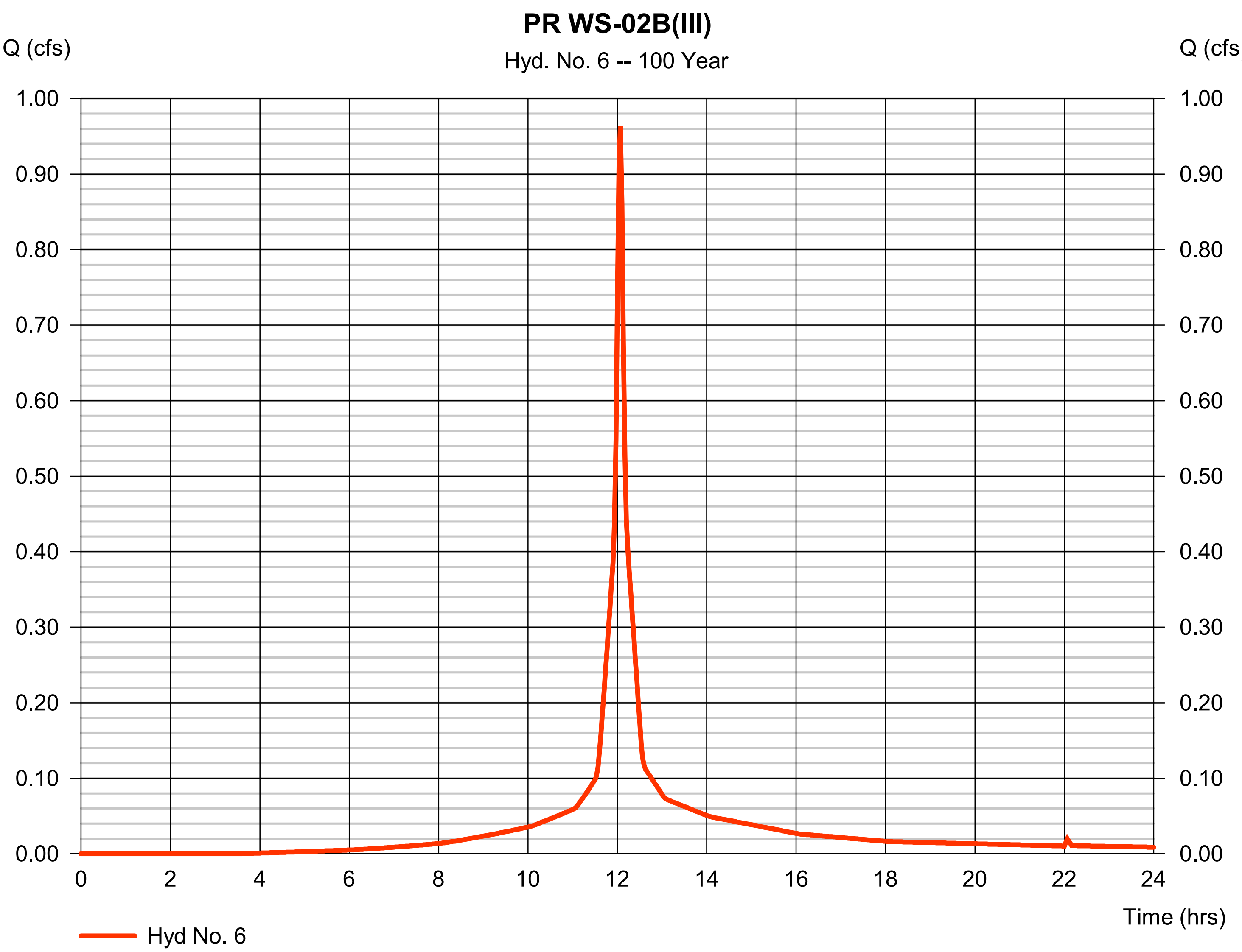
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 6

PR WS-02B(III)

Hydrograph type	= SCS Runoff	Peak discharge	= 0.964 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 3,046 cuft
Drainage area	= 0.132 ac	Curve number	= 87
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



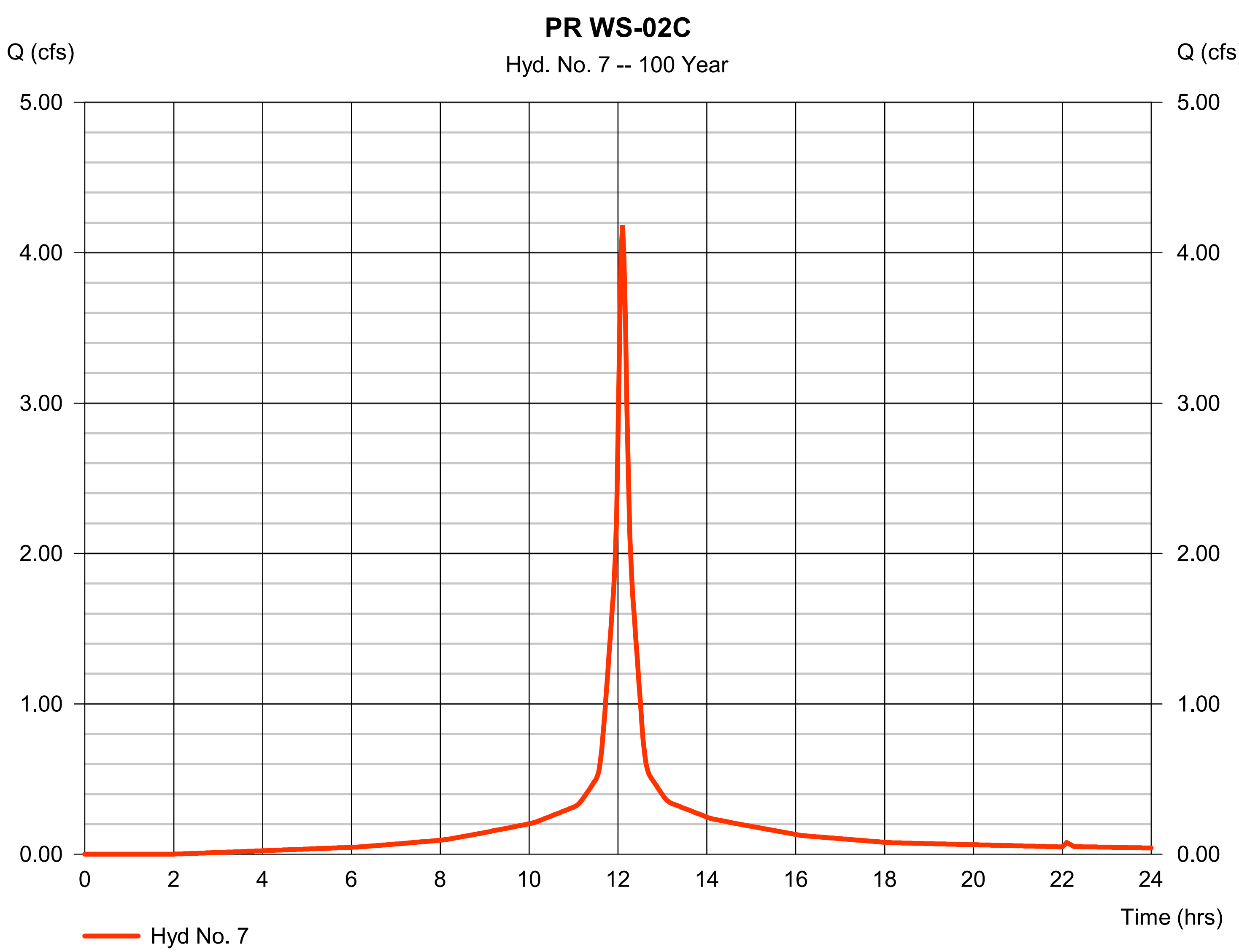
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 7

PR WS-02C

Hydrograph type	= SCS Runoff	Peak discharge	= 4.184 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 15,682 cuft
Drainage area	= 0.576 ac	Curve number	= 93
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 9.40 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



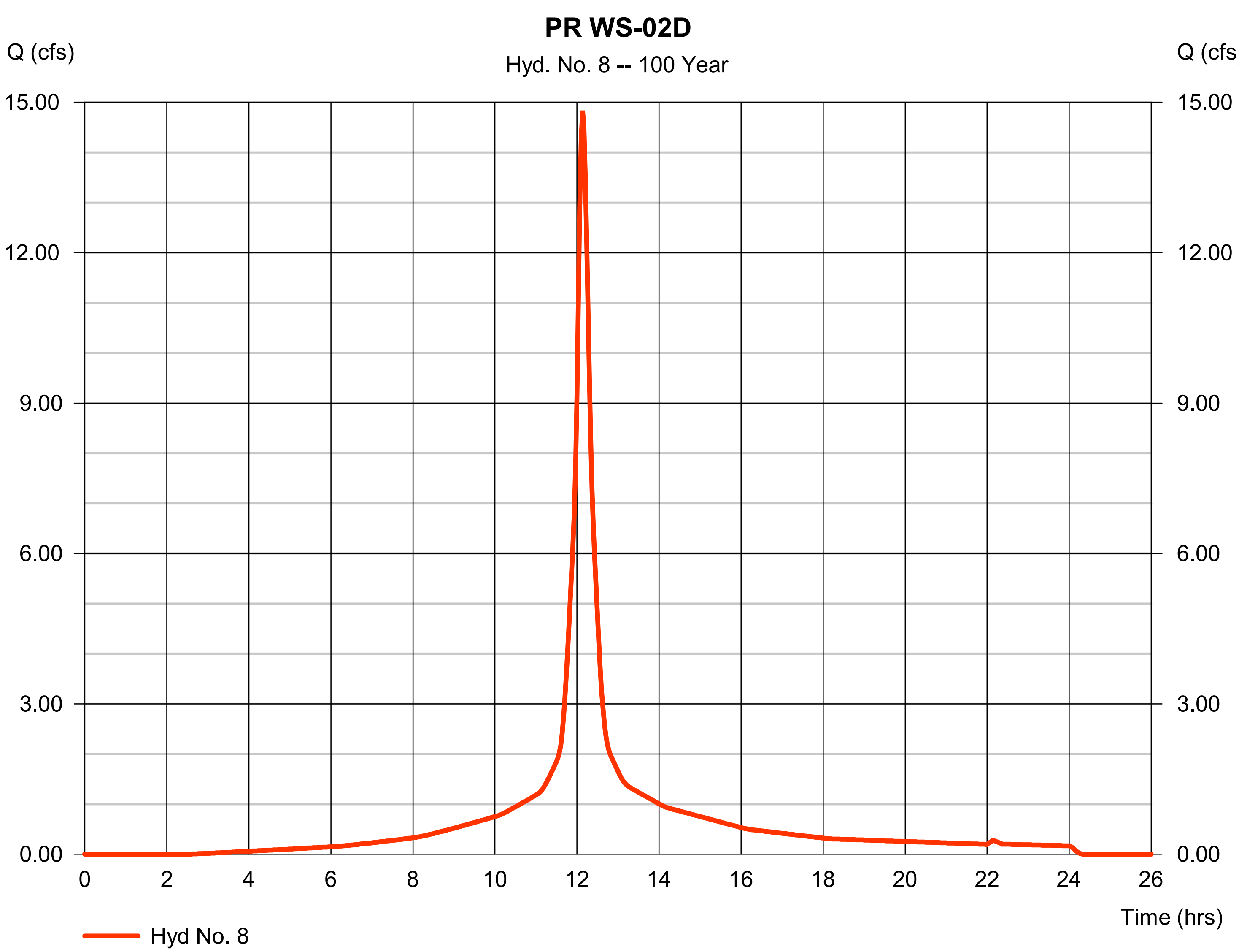
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 8

PR WS-02D

Hydrograph type	= SCS Runoff	Peak discharge	= 14.84 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 61,043 cuft
Drainage area	= 2.246 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 11.10 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



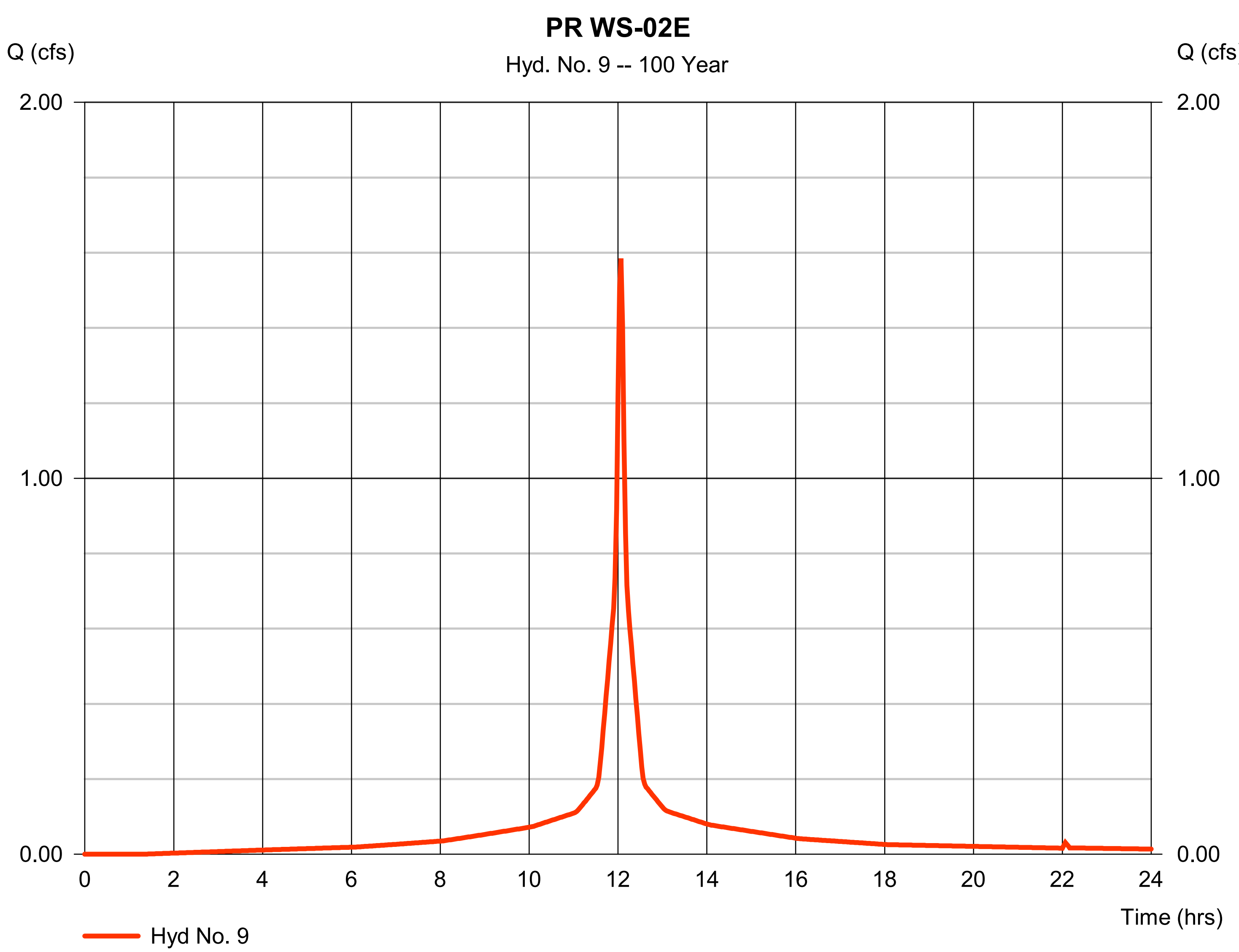
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 9

PR WS-02E

Hydrograph type	= SCS Runoff	Peak discharge	= 1.585 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 5,347 cuft
Drainage area	= 0.203 ac	Curve number	= 95
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



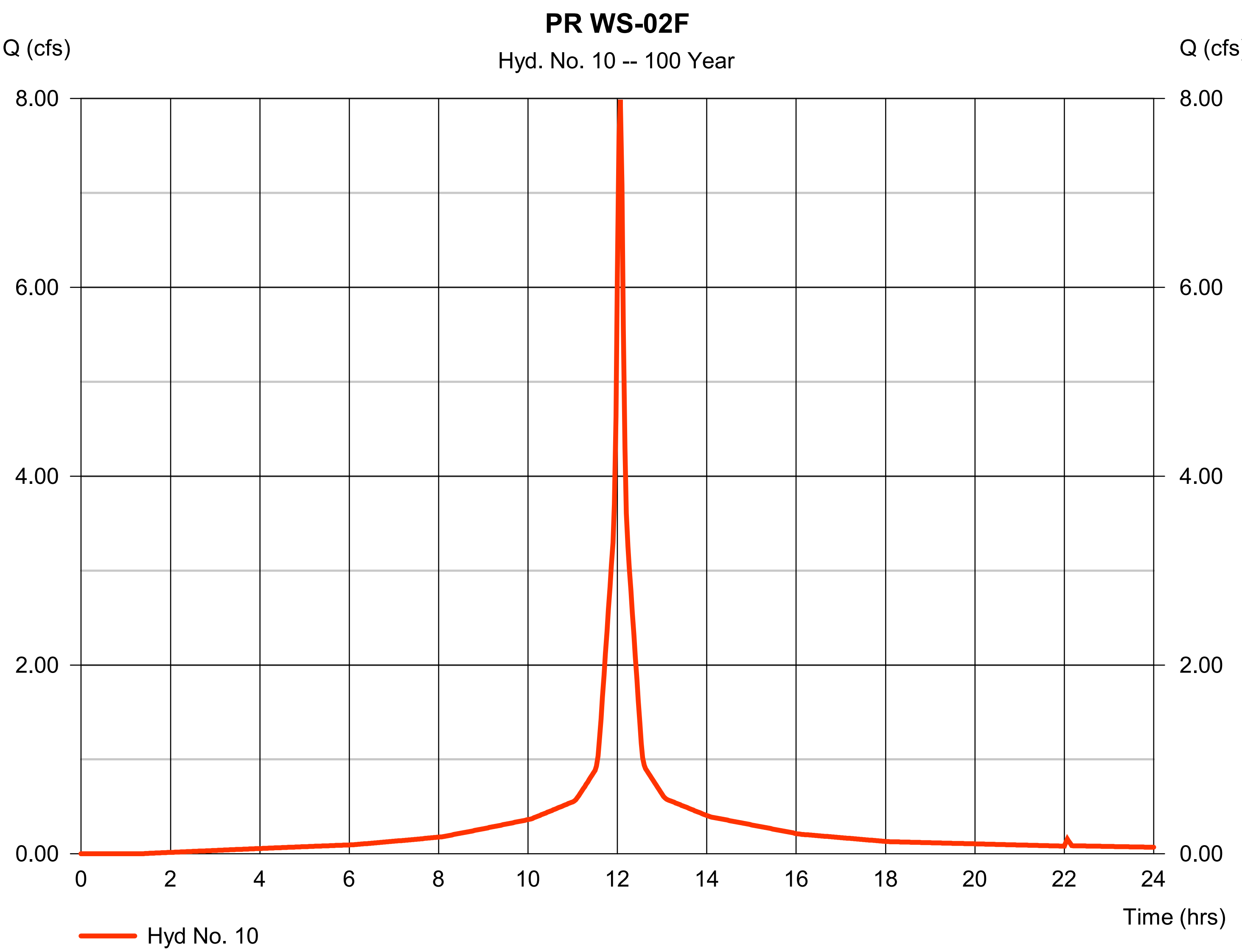
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 10

PR WS-02F

Hydrograph type	= SCS Runoff	Peak discharge	= 7.986 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 26,946 cuft
Drainage area	= 1.023 ac	Curve number	= 95
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



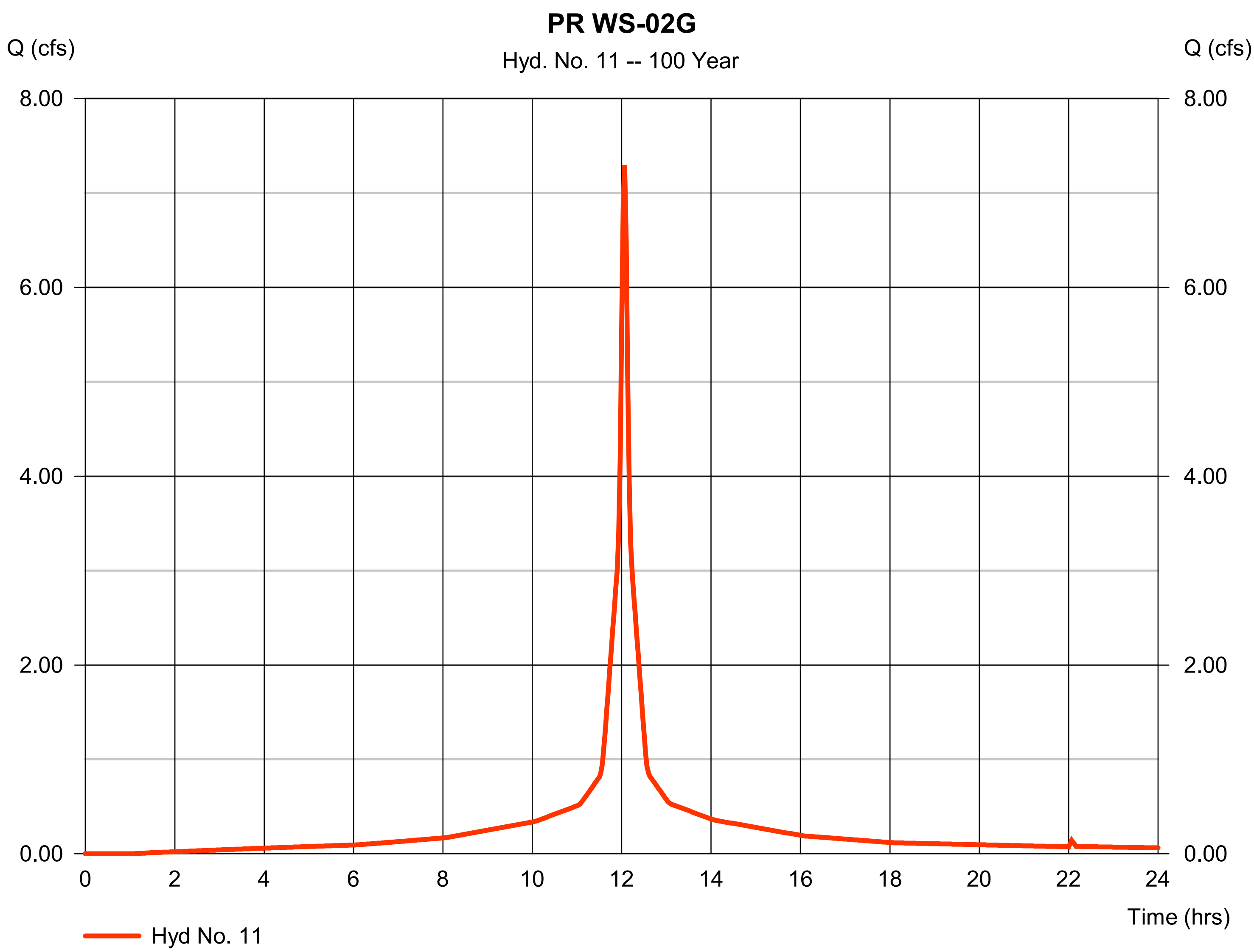
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 11

PR WS-02G

Hydrograph type	= SCS Runoff	Peak discharge	= 7.294 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 24,876 cuft
Drainage area	= 0.930 ac	Curve number	= 96
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



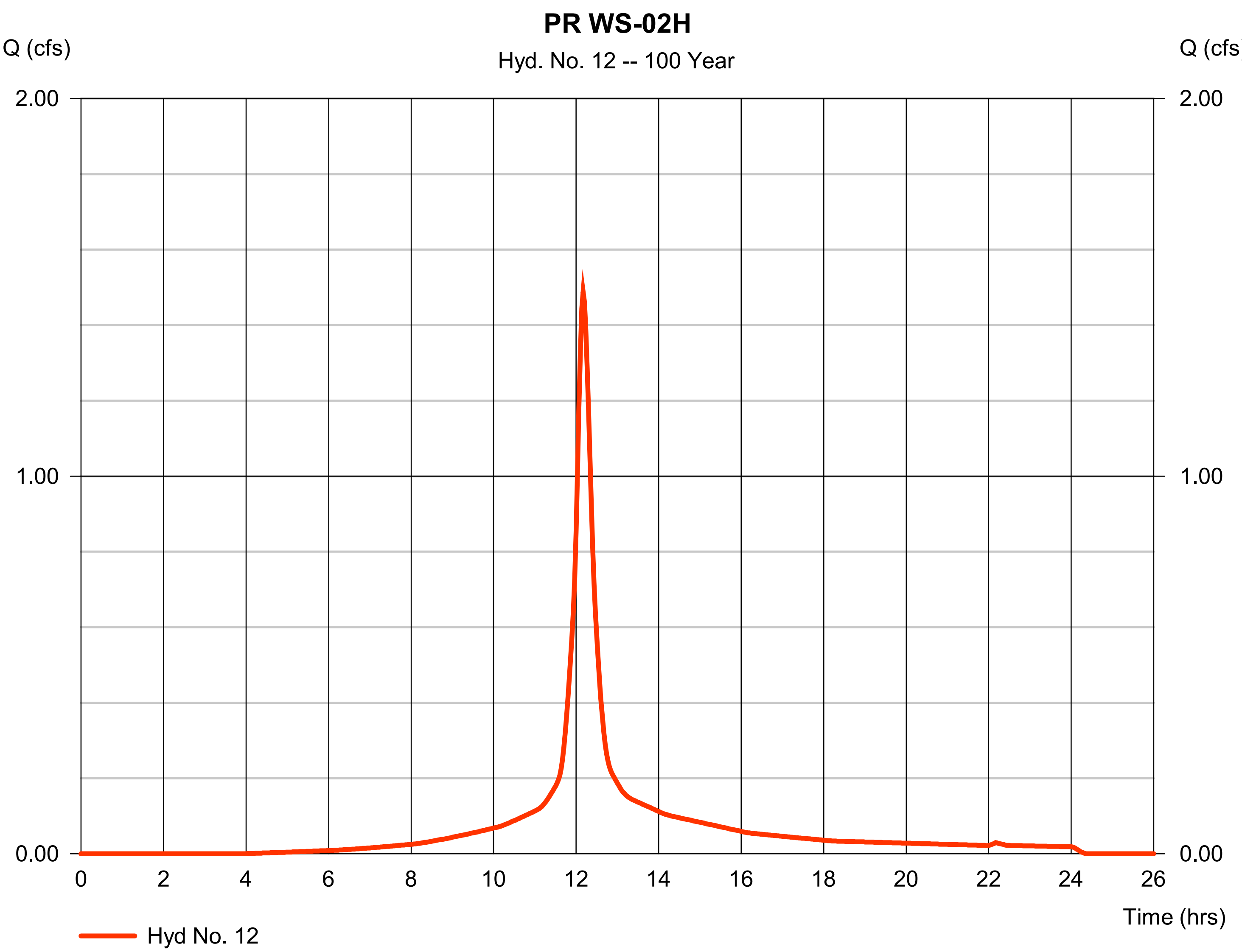
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 12

PR WS-02H

Hydrograph type	= SCS Runoff	Peak discharge	= 1.488 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 6,295 cuft
Drainage area	= 0.267 ac	Curve number	= 86
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 13.80 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



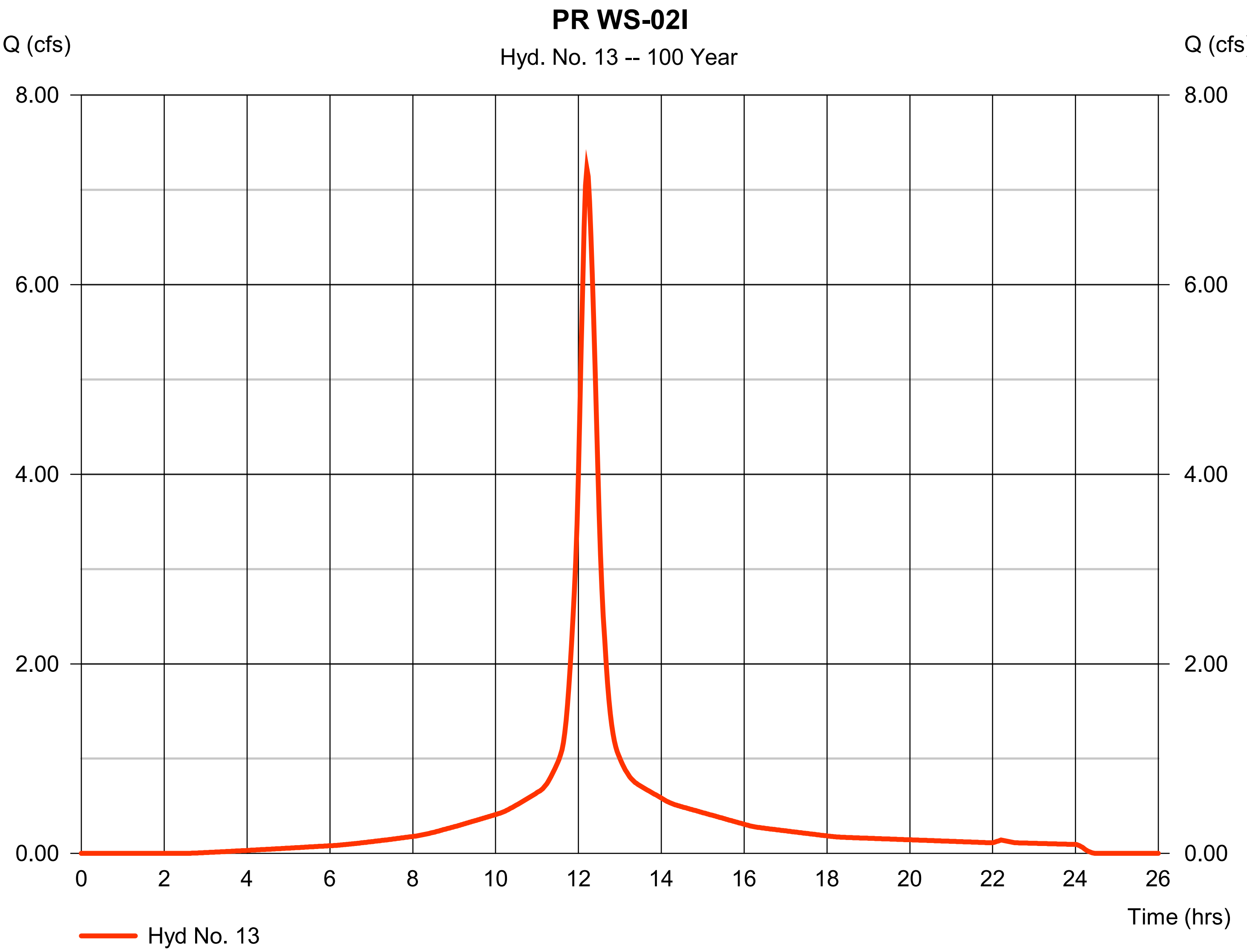
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 13

PR WS-02I

Hydrograph type	= SCS Runoff	Peak discharge	= 7.225 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 34,156 cuft
Drainage area	= 1.296 ac	Curve number	= 91
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 18.60 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



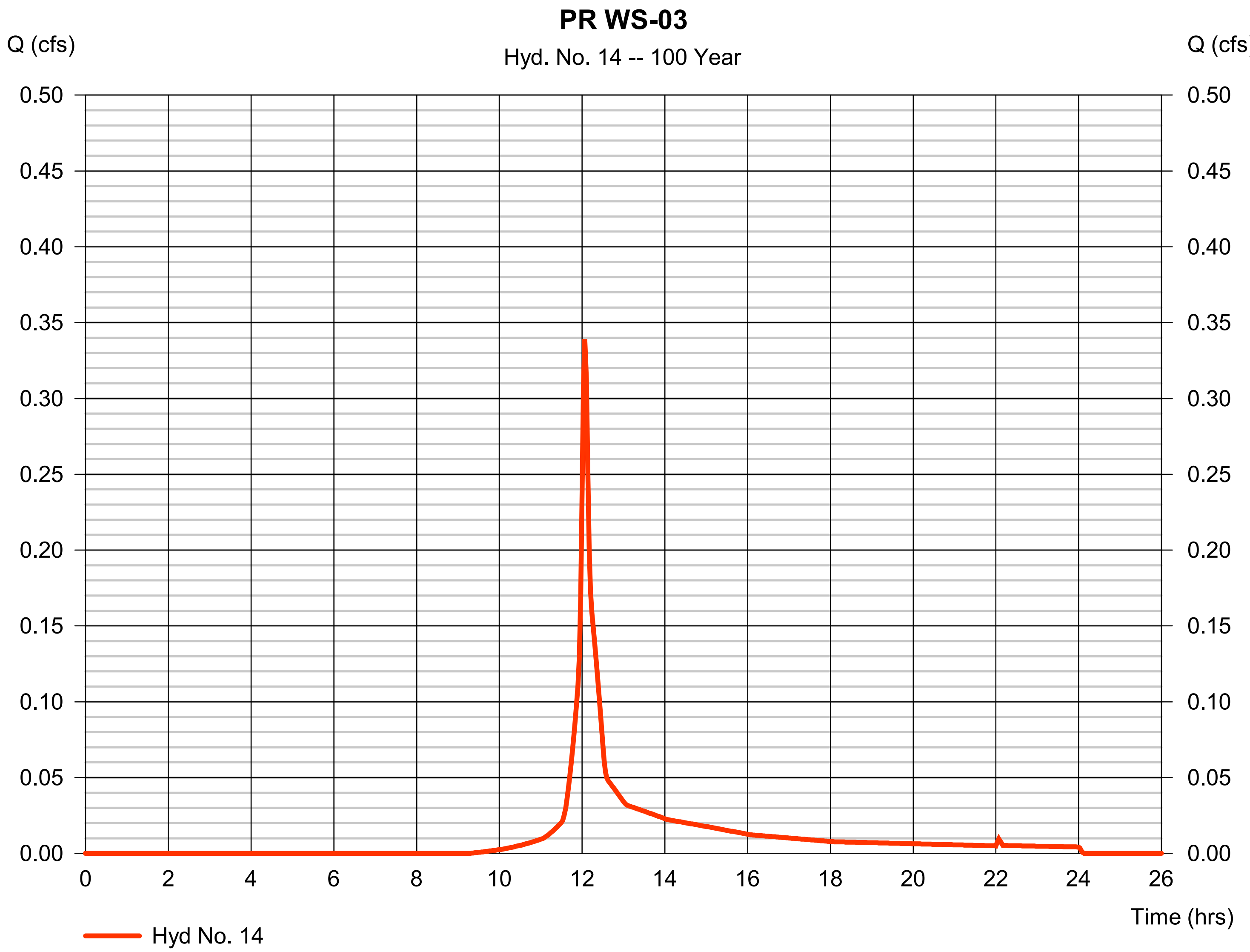
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 14

PR WS-03

Hydrograph type	= SCS Runoff	Peak discharge	= 0.339 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,022 cuft
Drainage area	= 0.081 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.10 min
Total precip.	= 8.34 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

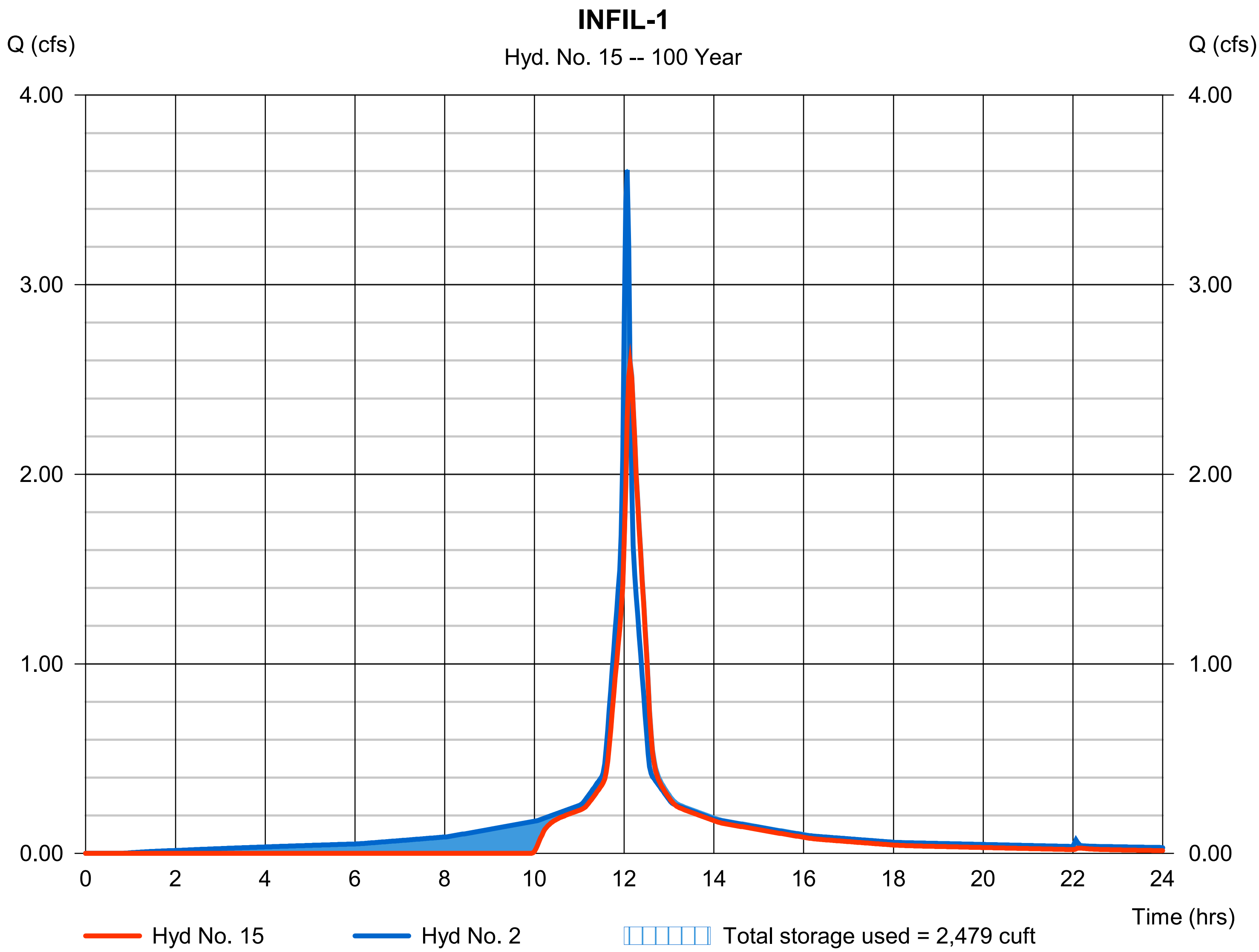
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 15

INFIL-1

Hydrograph type	= Reservoir	Peak discharge	= 2.580 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 9,629 cuft
Inflow hyd. No.	= 2 - PR WS-02A(I)	Max. Elevation	= 146.94 ft
Reservoir name	= INFIL-1	Max. Storage	= 2,479 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



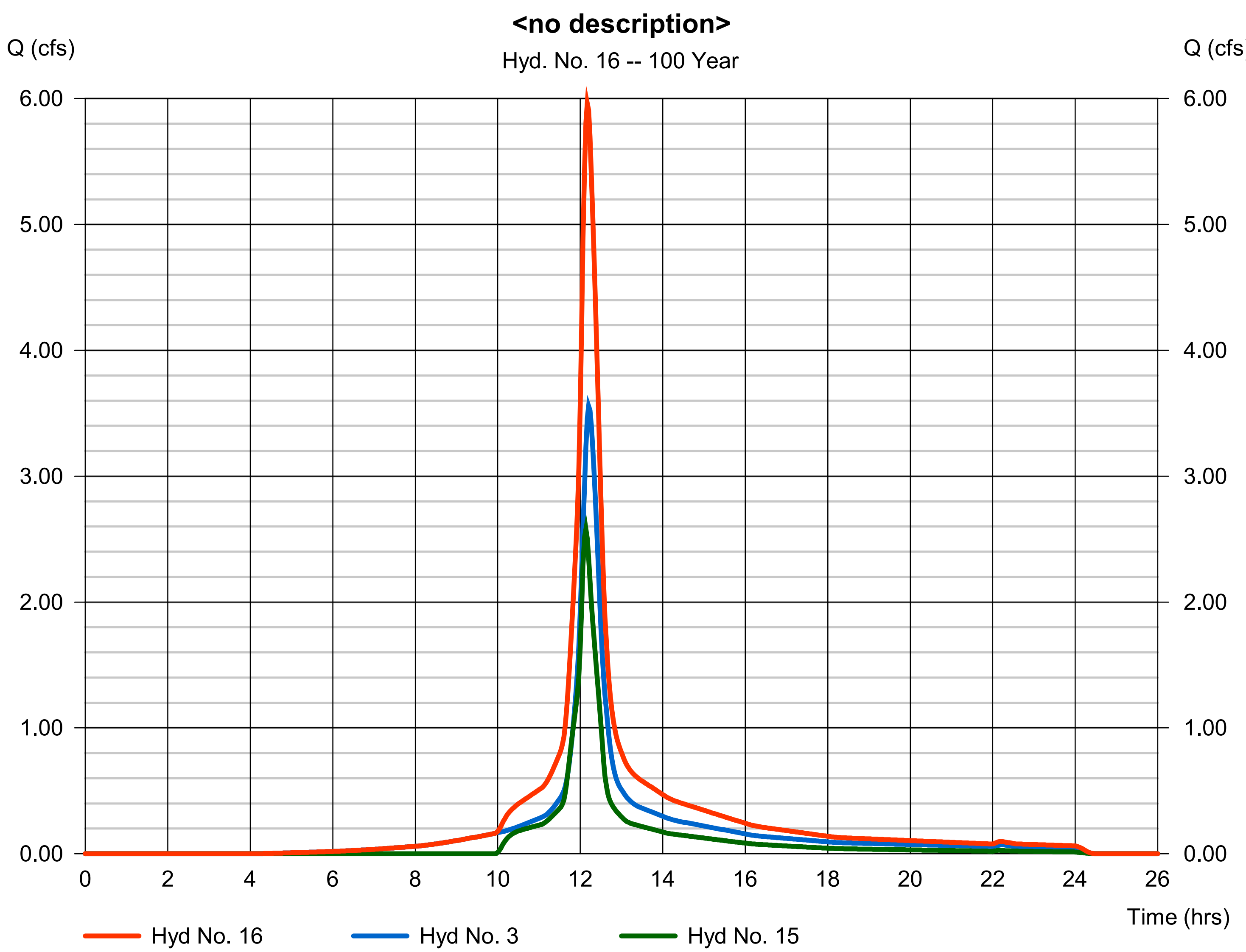
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 16

<no description>

Hydrograph type	= Combine	Peak discharge	= 5.963 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 25,847 cuft
Inflow hyds.	= 3, 15	Contrib. drain. area	= 0.683 ac



Hydrograph Report

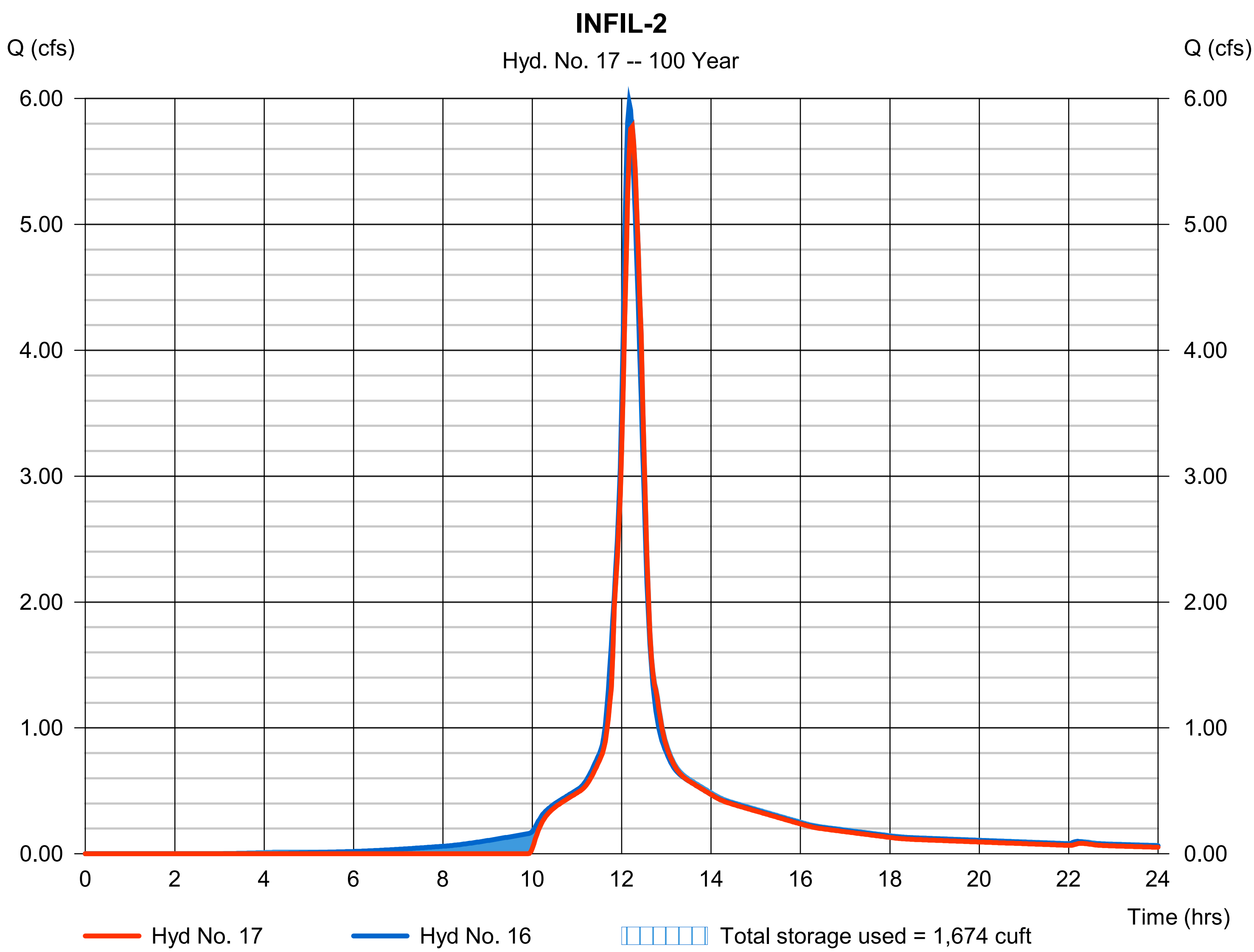
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 17

INFIL-2

Hydrograph type	= Reservoir	Peak discharge	= 5.776 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 24,138 cuft
Inflow hyd. No.	= 16 - <no description>	Max. Elevation	= 138.33 ft
Reservoir name	= INFIL-2	Max. Storage	= 1,674 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

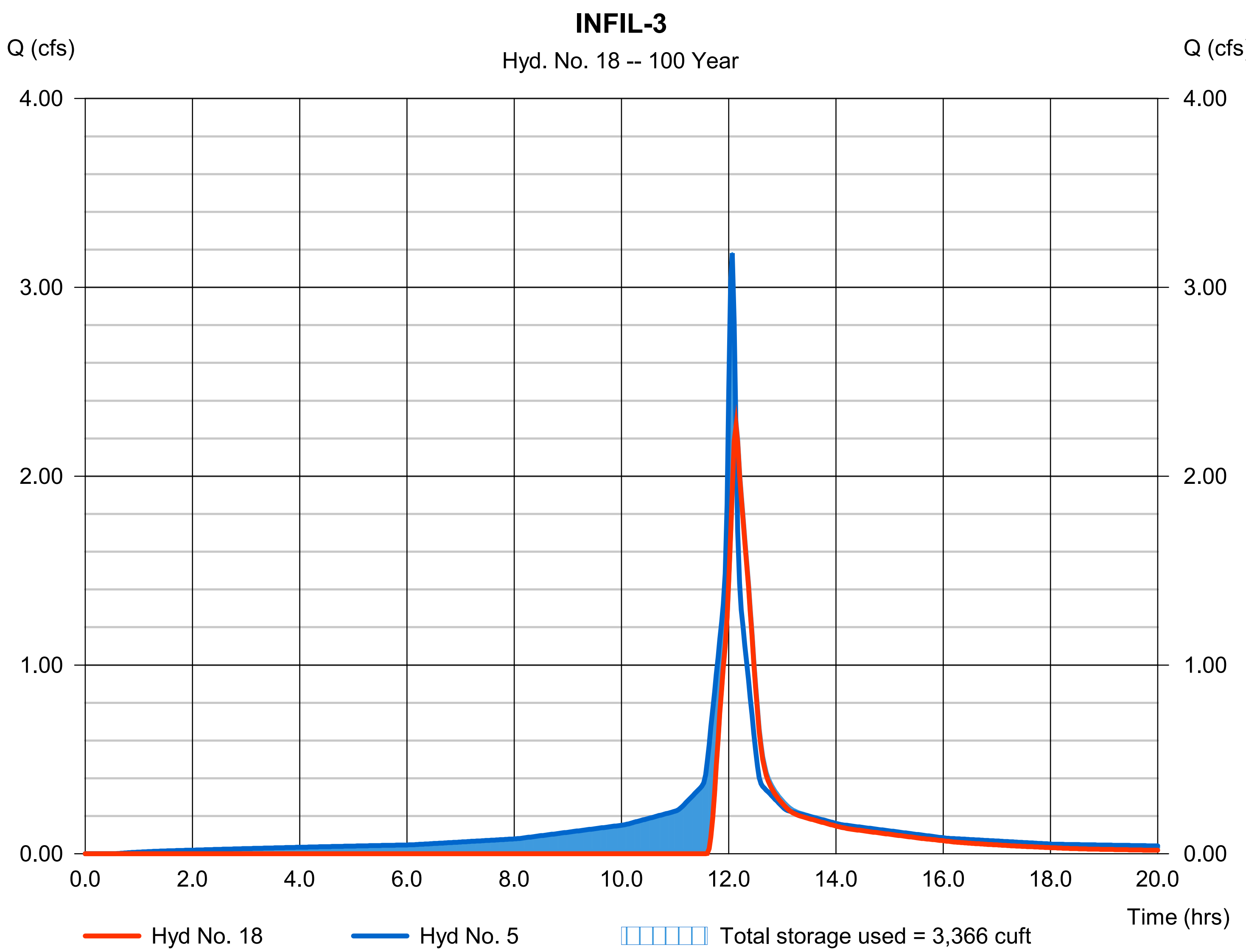
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 18

INFIL-3

Hydrograph type	= Reservoir	Peak discharge	= 2.266 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 6,804 cuft
Inflow hyd. No.	= 5 - PR WS-02B(II)	Max. Elevation	= 145.49 ft
Reservoir name	= INFIL-3	Max. Storage	= 3,366 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

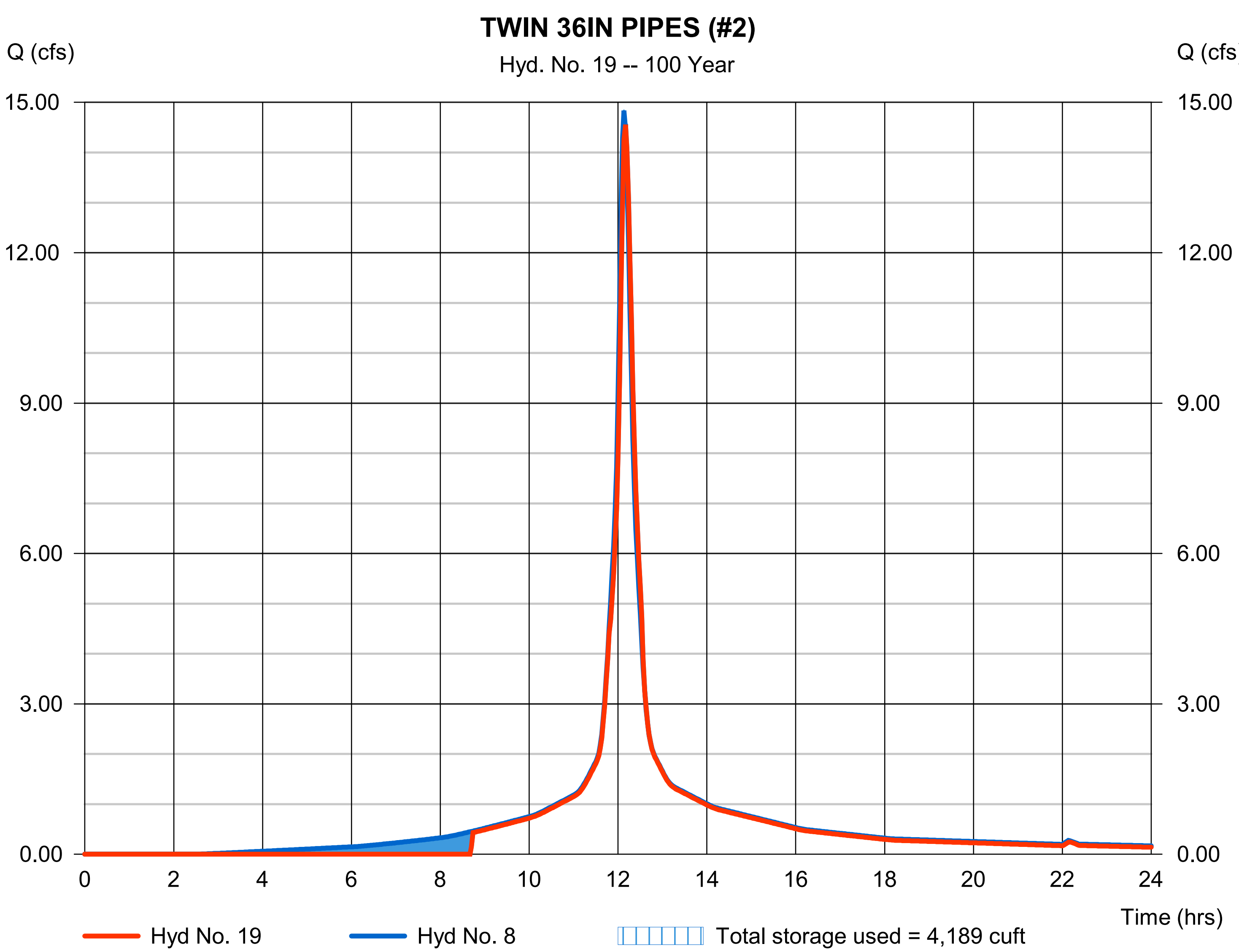
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 19

TWIN 36IN PIPES (#2)

Hydrograph type	= Reservoir	Peak discharge	= 14.56 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.17 hrs
Time interval	= 2 min	Hyd. volume	= 55,977 cuft
Inflow hyd. No.	= 8 - PR WS-02D	Max. Elevation	= 139.24 ft
Reservoir name	= Northern Twin 36IN	Max. Storage	= 4,189 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

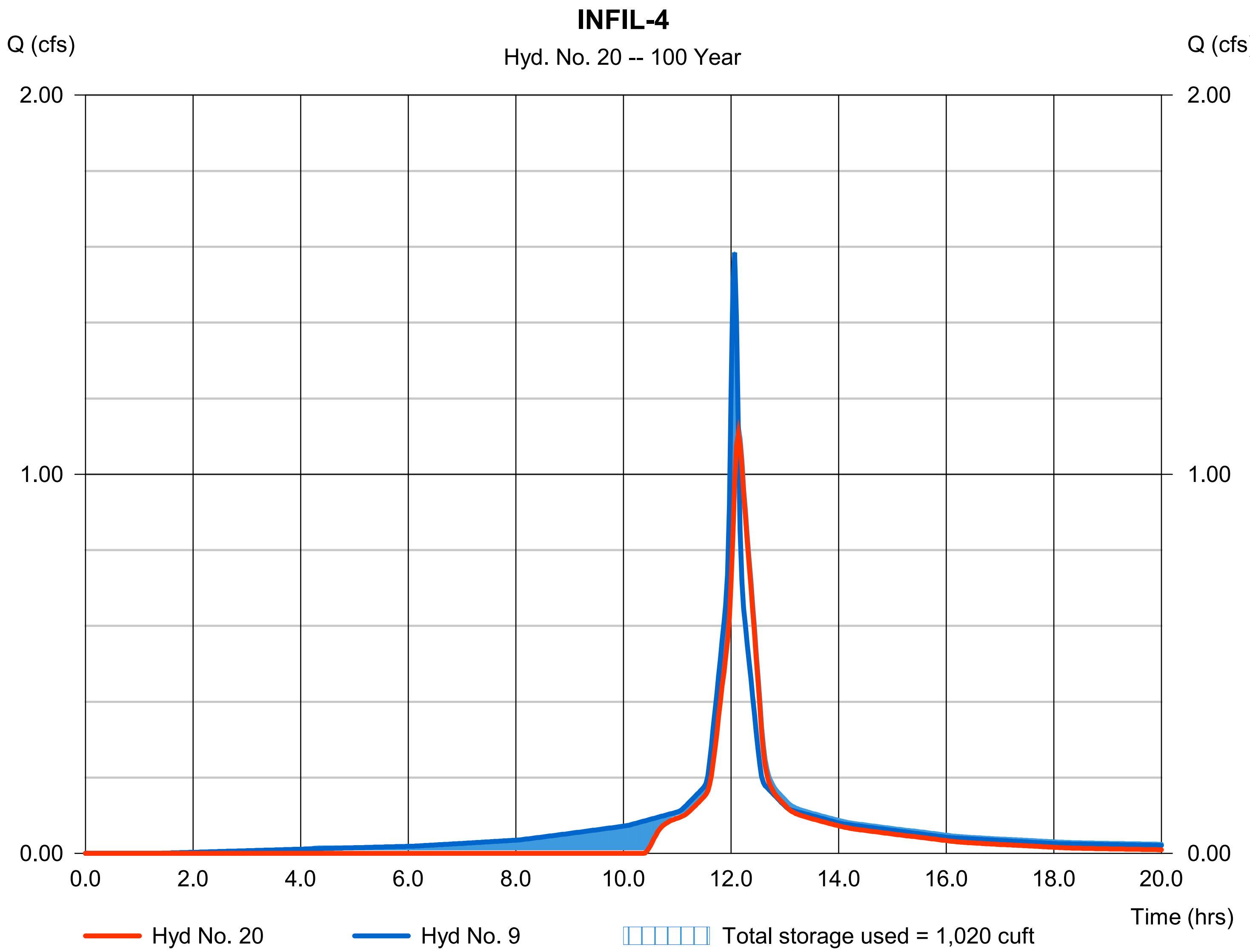
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 20

INFIL-4

Hydrograph type	= Reservoir	Peak discharge	= 1.107 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 3,919 cuft
Inflow hyd. No.	= 9 - PR WS-02E	Max. Elevation	= 138.62 ft
Reservoir name	= INFIL-4	Max. Storage	= 1,020 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

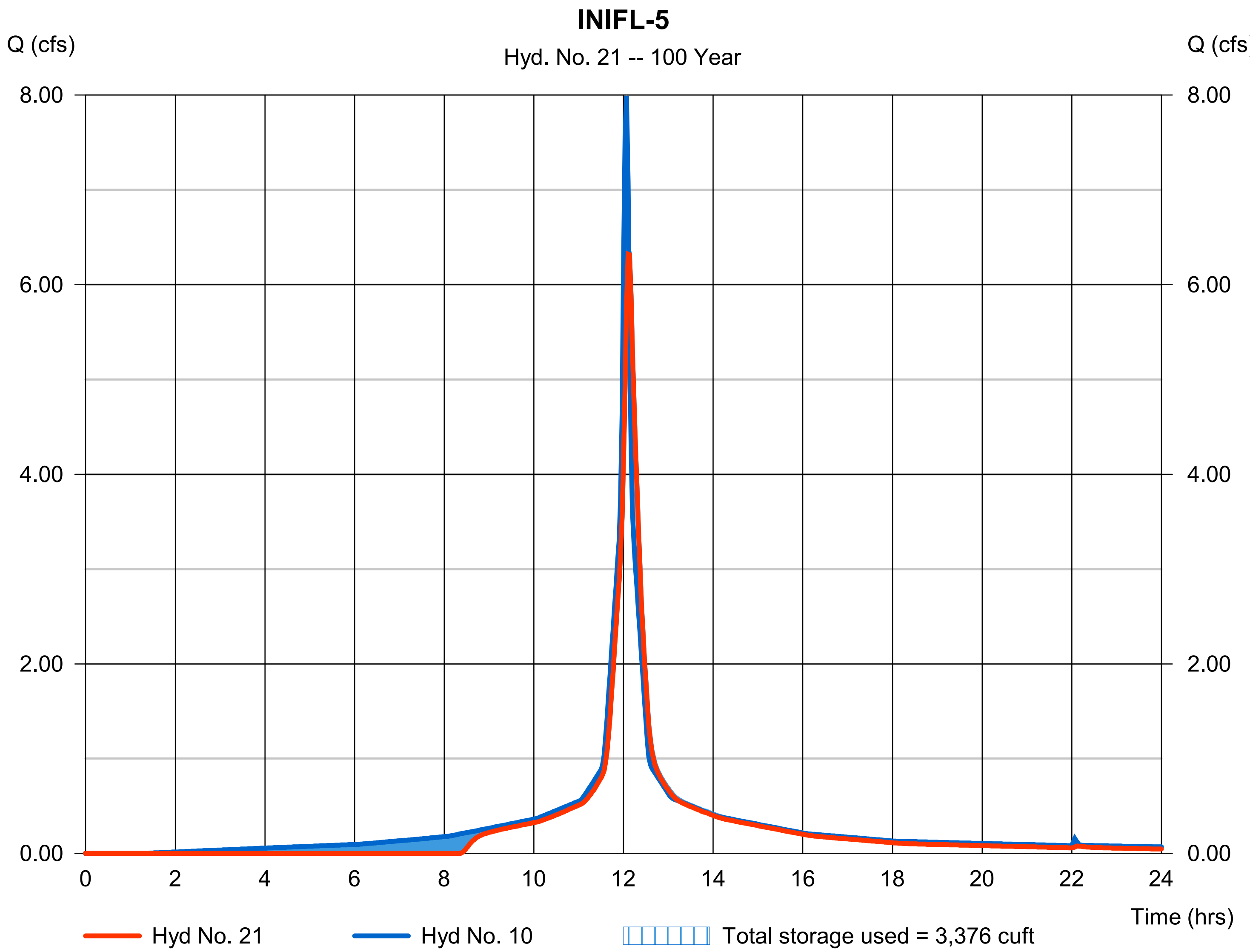
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 21

INIFL-5

Hydrograph type	= Reservoir	Peak discharge	= 6.323 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.10 hrs
Time interval	= 2 min	Hyd. volume	= 23,447 cuft
Inflow hyd. No.	= 10 - PR WS-02F	Max. Elevation	= 137.92 ft
Reservoir name	= INIFL-5	Max. Storage	= 3,376 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

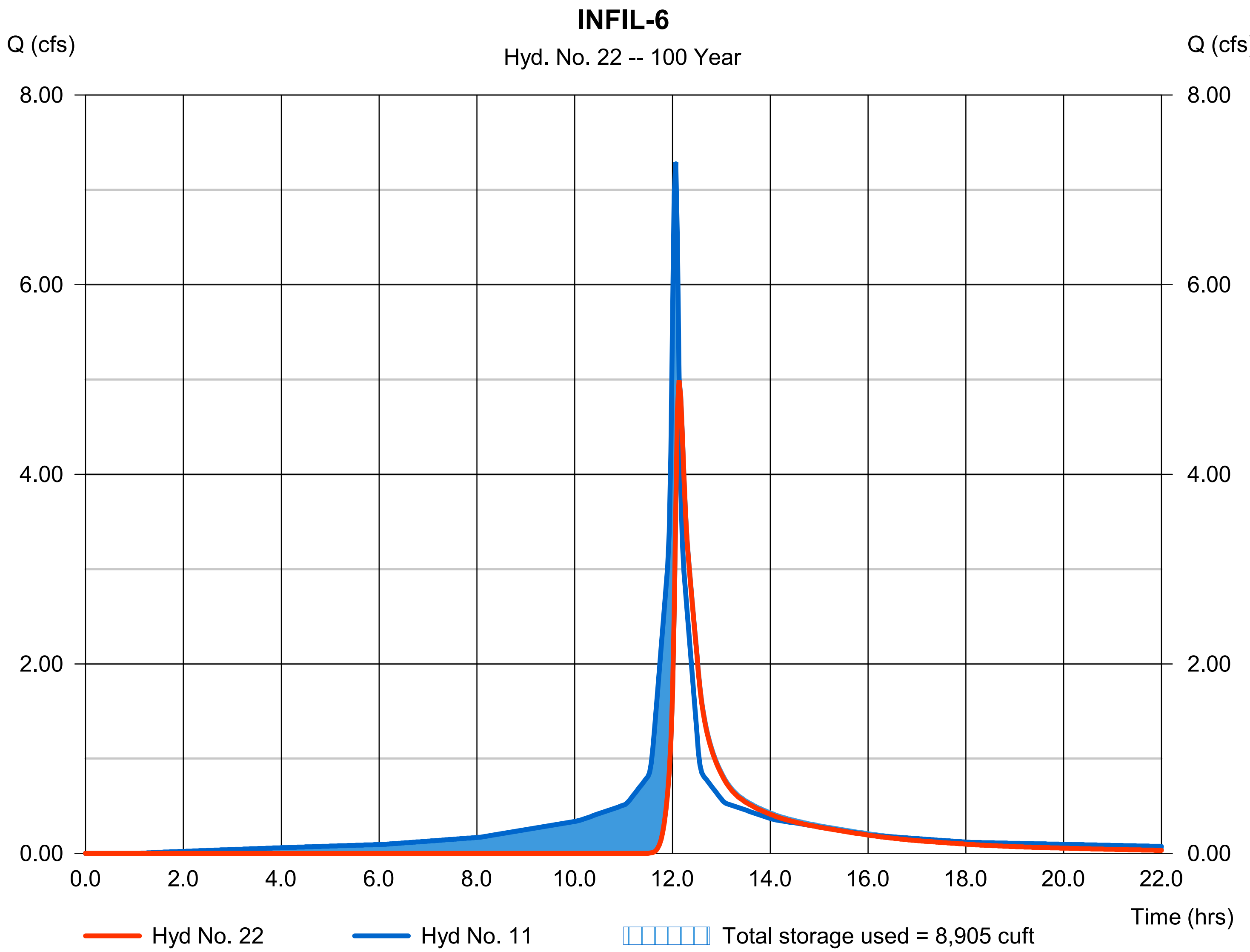
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 22

INFIL-6

Hydrograph type	= Reservoir	Peak discharge	= 4.990 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 15,158 cuft
Inflow hyd. No.	= 11 - PR WS-02G	Max. Elevation	= 136.84 ft
Reservoir name	= INFIL-6	Max. Storage	= 8,905 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

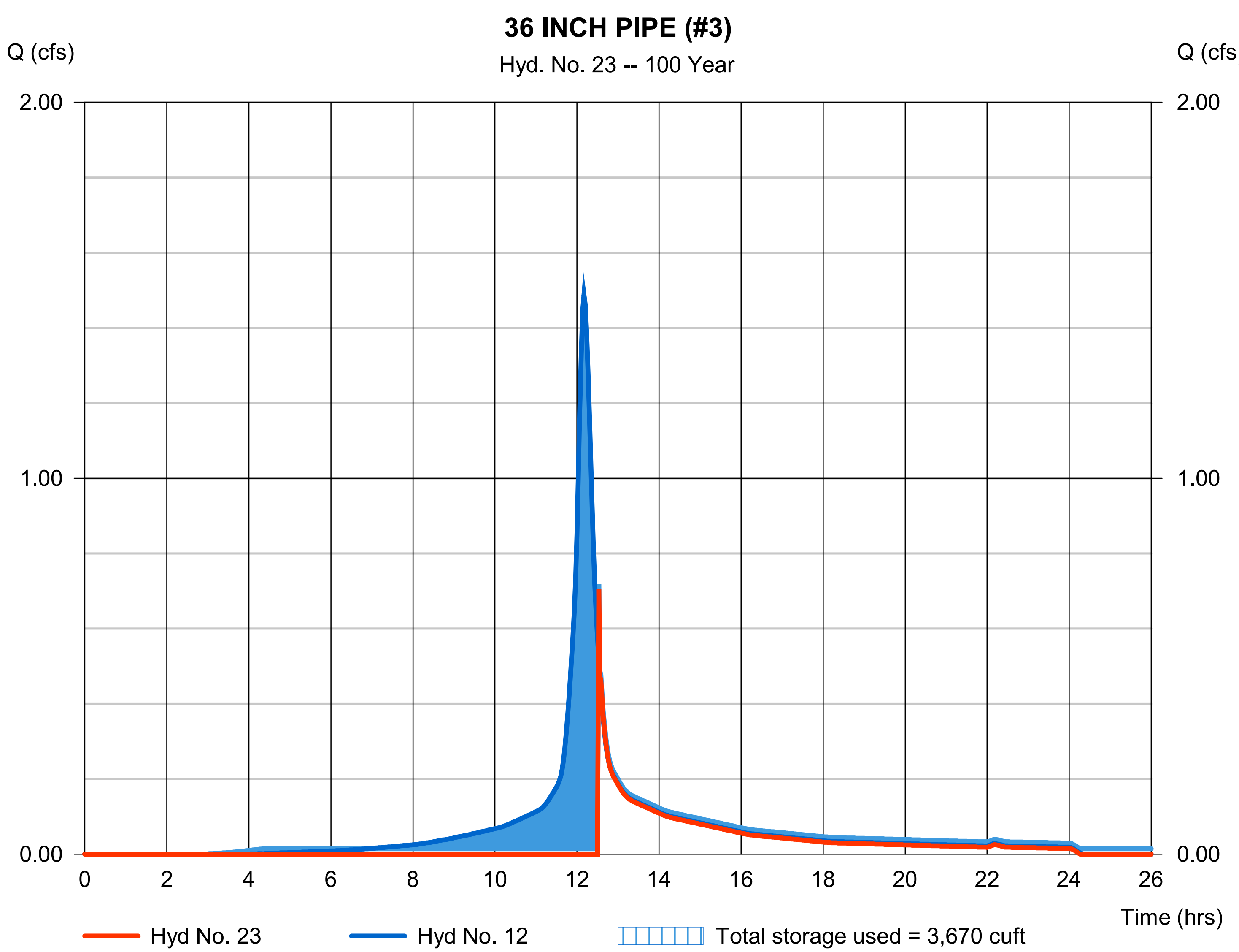
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 23

36 INCH PIPE (#3)

Hydrograph type	= Reservoir	Peak discharge	= 0.704 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.53 hrs
Time interval	= 2 min	Hyd. volume	= 2,409 cuft
Inflow hyd. No.	= 12 - PR WS-02H	Max. Elevation	= 137.47 ft
Reservoir name	= 36IN - 3	Max. Storage	= 3,670 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



Hydrograph Report

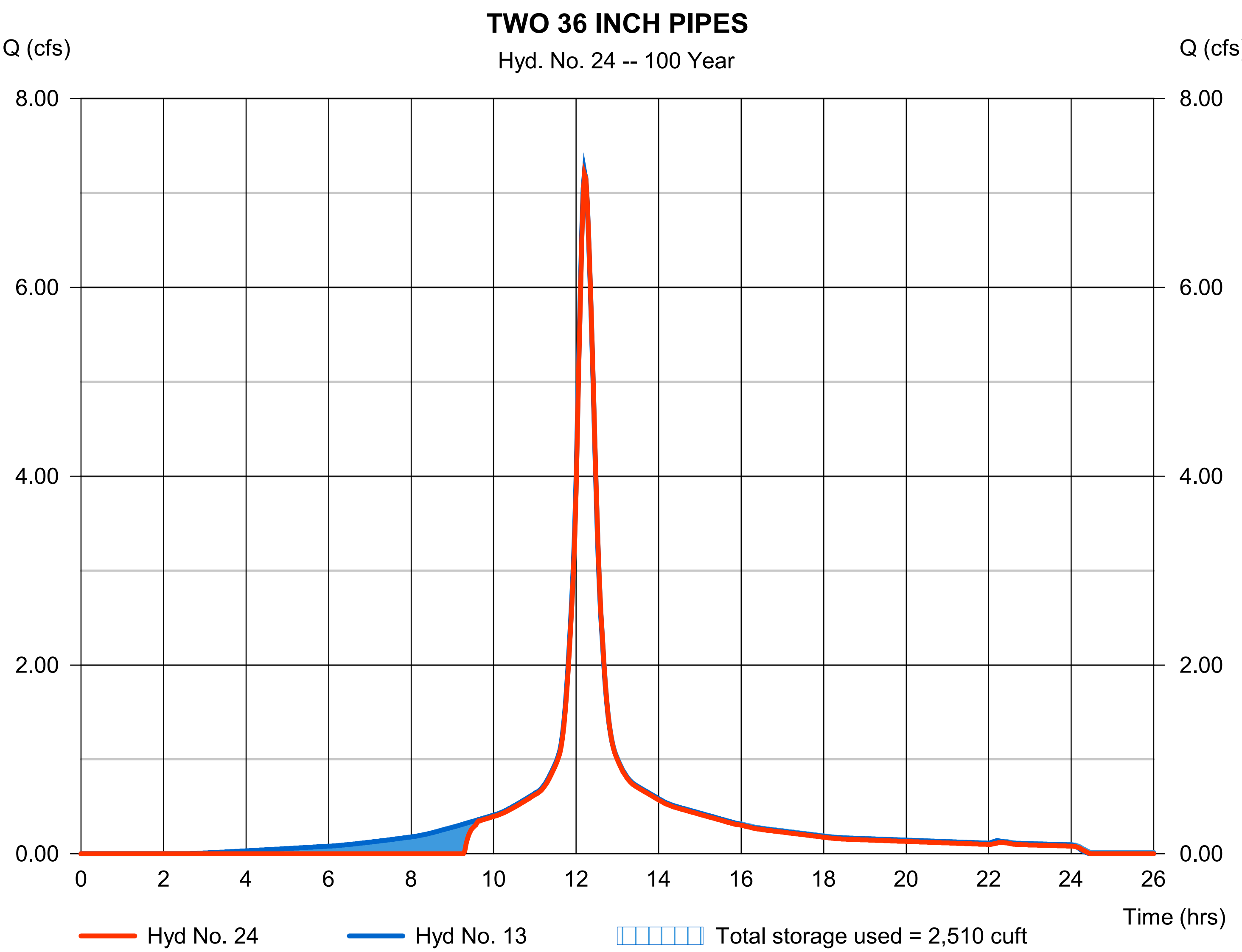
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 24

TWO 36 INCH PIPES

Hydrograph type	= Reservoir	Peak discharge	= 7.197 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 30,870 cuft
Inflow hyd. No.	= 13 - PR WS-02I	Max. Elevation	= 135.76 ft
Reservoir name	= TWIN 36IN	Max. Storage	= 2,510 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



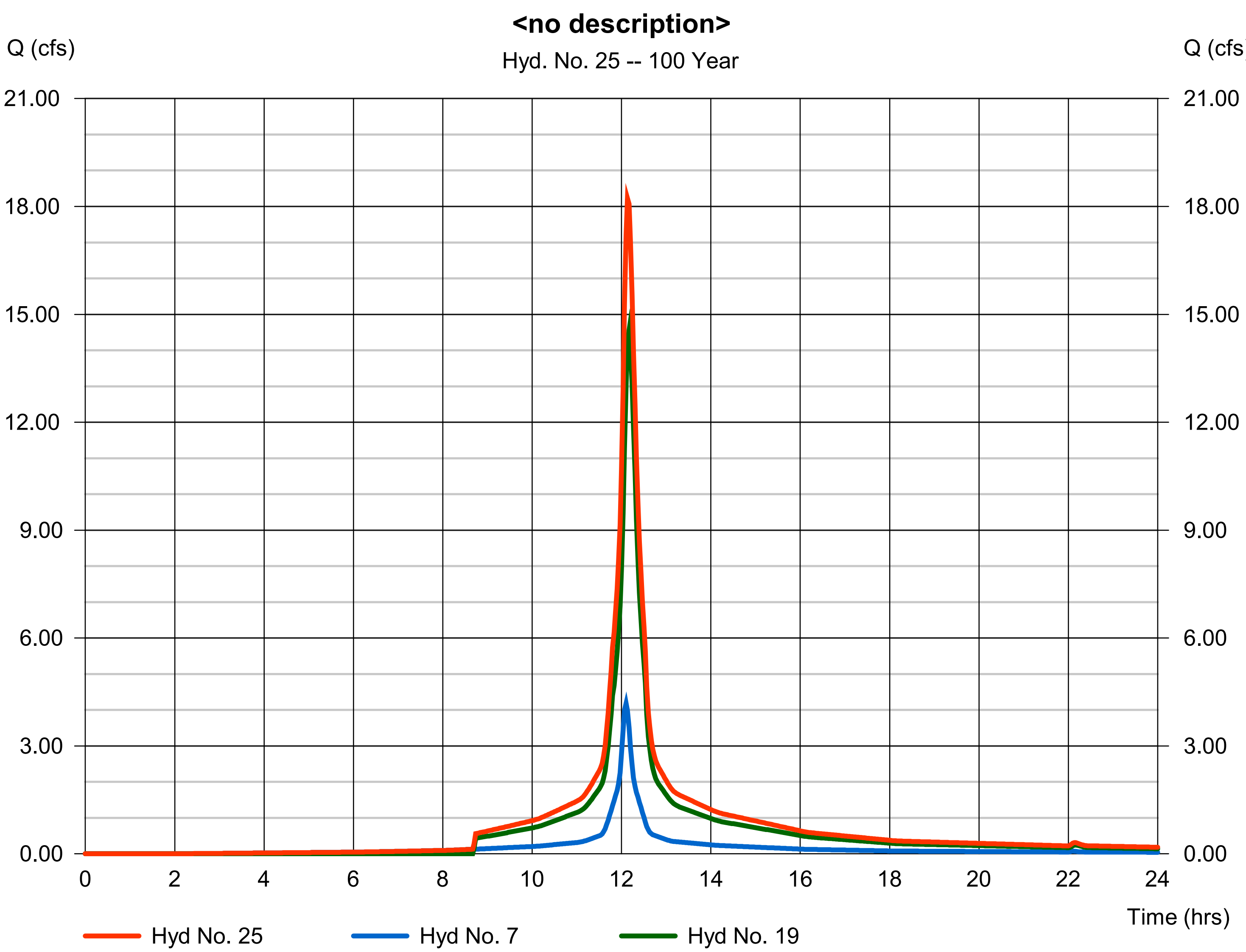
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 25

<no description>

Hydrograph type	= Combine	Peak discharge	= 18.23 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 71,659 cuft
Inflow hyds.	= 7, 19	Contrib. drain. area	= 0.576 ac



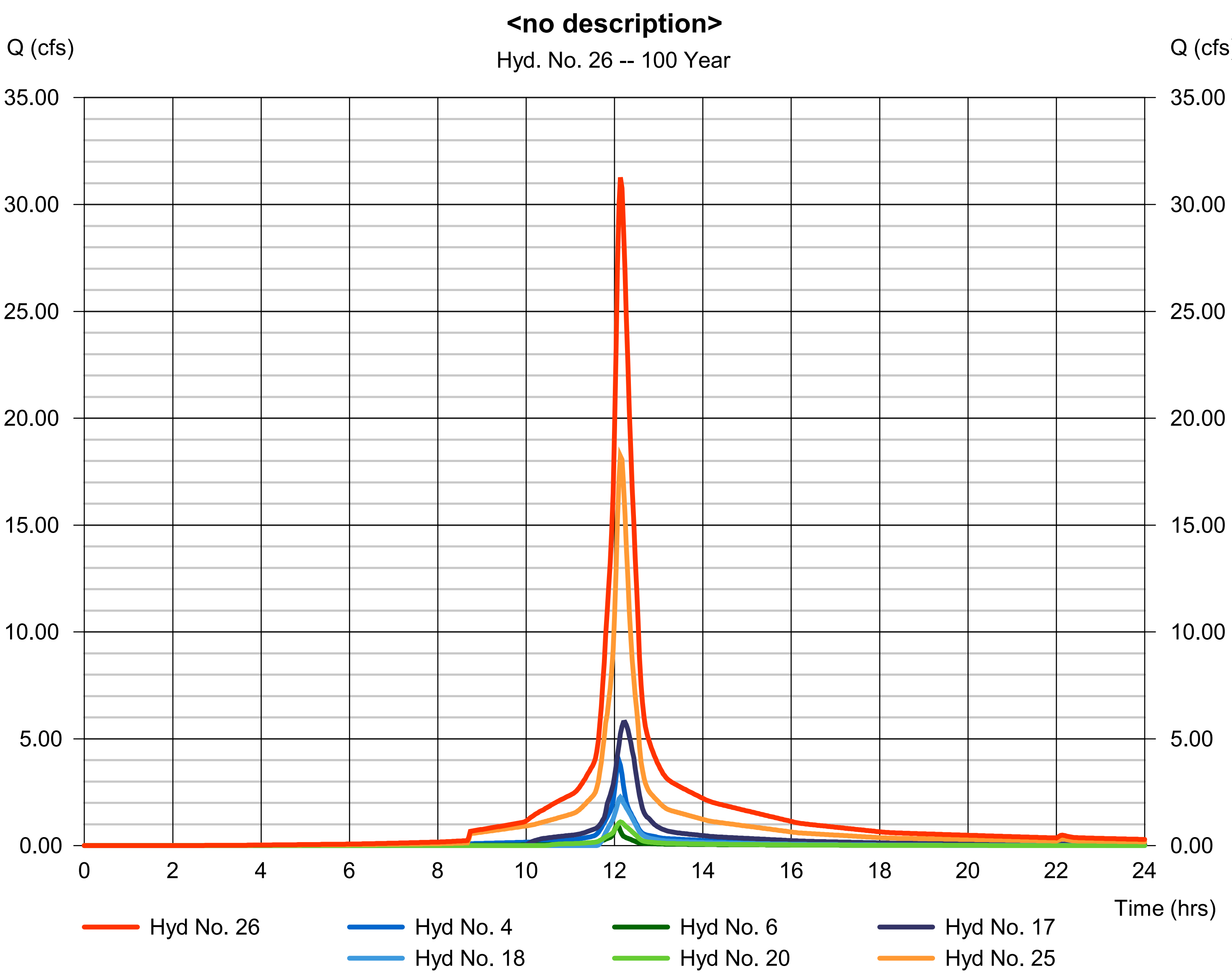
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Hyd. No. 26

<no description>

Hydrograph type	= Combine	Peak discharge	= 31.28 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 123,737 cuft
Inflow hyds.	= 4, 6, 17, 18, 20, 25	Contrib. drain. area	= 0.708 ac



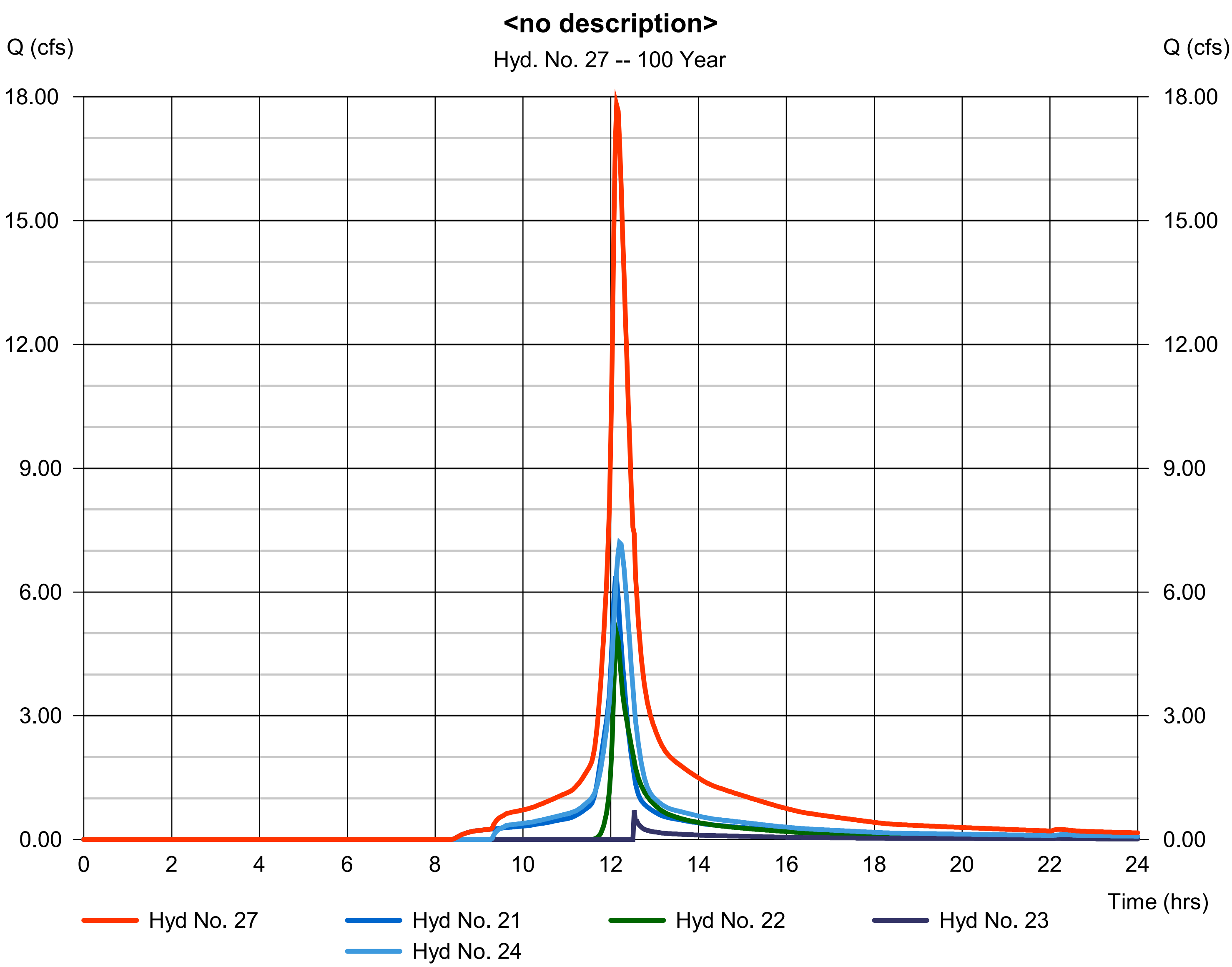
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Tuesday, 12 / 5 / 2023

Hyd. No. 27

<no description>

Hydrograph type	= Combine	Peak discharge	= 17.81 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 71,885 cuft
Inflow hyds.	= 21, 22, 23, 24	Contrib. drain. area	= 0.000 ac



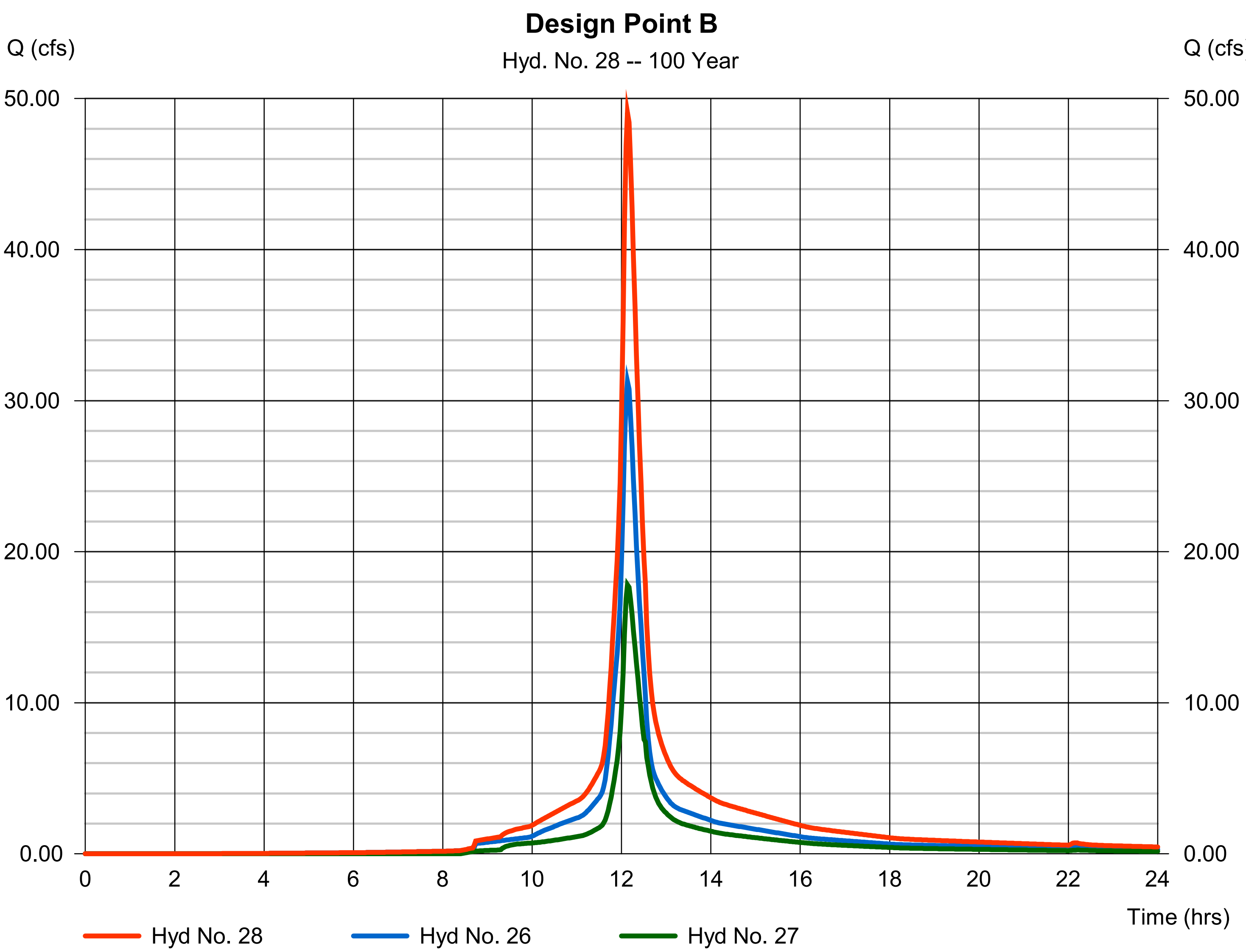
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 — Tuesday, 12 / 5 / 2023

Hyd. No. 28

Design Point B

Hydrograph type	= Combine	Peak discharge	= 49.08 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 195,622 cuft
Inflow hyds.	= 26, 27	Contrib. drain. area	= 0.000 ac



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 | Tuesday, 12 / 5 / 2023

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	23.2694	3.7000	0.7019	--------
3	0.0000	0.0000	0.0000	--------
5	28.1517	3.6000	0.6982	--------
10	33.4115	3.8000	0.7042	--------
25	38.5092	3.6000	0.6982	--------
50	42.7840	3.6000	0.6957	--------
100	48.0560	3.6000	0.6997	--------

File name: WILTON.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	5.10	3.71	2.98	2.52	2.21	1.97	1.79	1.64	1.52	1.42	1.33	1.26
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	6.27	4.55	3.66	3.10	2.71	2.42	2.20	2.02	1.87	1.75	1.64	1.55
10	7.22	5.26	4.23	3.58	3.13	2.80	2.54	2.33	2.16	2.02	1.90	1.79
25	8.57	6.22	5.00	4.24	3.70	3.31	3.00	2.76	2.56	2.39	2.24	2.12
50	9.57	6.96	5.60	4.74	4.15	3.71	3.37	3.09	2.87	2.68	2.52	2.38
100	10.66	7.74	6.22	5.26	4.60	4.11	3.73	3.43	3.17	2.96	2.79	2.63

Tc = time in minutes. Values may exceed 60.

Precip. file name: J:\T\T5000 Toll Brothers\012 Woodbridge Village\Calculations\Stormwater\WOODBRIDGE.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	2.95	3.52	0.00	4.65	5.38	6.54	7.41	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

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APPENDIX E

LEGEND

WATERSHED BOUNDARY

TIME OF CONCENTRATION

PAVEMENT/ROOF

LANDSCAPED AND LAWNS

WOODED

64 DANBURY ROAD
WILTON, CT

INLET WATERSHED FIGURE

DATE: 12/04/2023
SCALE: 1"=100'
FIGURE INLET-WS

Tighe&Bond

Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Calculations\Stormwater\Figures\F0173-001-INLET-WS-FIGURE.dwg

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **CB-01**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.070	0.90	0.063
Landscaped / Lawns	0.003	0.30	0.001
	0.073		0.064

Weighted C: 0.87

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	75	0.020	1.2

Total Tc = 1.2
Minimum Tc = 5.0

Designation: **CB-02**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.274	0.90	0.247
Landscaped / Lawns	0.249	0.30	0.075
	0.524		0.322

Weighted C: 0.61

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	10	0.02	3.35
Segment B - C	0.24	84	0.02	12.22
Segment C - D	0.015	143	0.04	1.54

Total Tc = 17.1

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **CB-03**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.133	0.90	0.120
Landscaped / Lawns	0.033	0.30	0.010
	0.166		0.130

Weighted C: 0.78

Time of Concentration
(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	10	0.02	3.35
Segment B - C	0.24	10	0.02	2.23
Segment C - D	0.015	135	0.03	1.65

Total Tc = 7.2

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **CB-04**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.113	0.90	0.102
Landscaped / Lawns	0.102	0.30	0.030
	0.214		0.132

Weighted C: 0.62

Time of Concentration
(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.4	52	0.11	6.34
Segment B - C	0.24	3	0.11	0.43
Segment C - D	0.015	43	0.04	0.59

Total Tc = 7.4

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **CB-05**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.132	0.90	0.119
Landscaped / Lawns	0.001	0.30	0.000
	0.133		0.119

Weighted C: 0.90

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	35	0.045	0.5

Total Tc = 0.5
Minimum Tc = 5.0

Designation: **CB-06**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.346	0.90	0.312
Landscaped / Lawns	0.045	0.30	0.013
	0.391		0.325

Weighted C: 0.83

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	95	0.065	0.9
Segment B - C	0.015	35	0.020	0.7

Total Tc = 1.6
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **CB-07**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.270	0.90	0.243
Landscaped / Lawns	0.001	0.30	0.000
	0.270		0.243

Weighted C: 0.90

Time of Concentration
(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	35	0.020	0.7

Total Tc = 0.7
Minimum Tc = 5.0

Designation: **CB-08**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.342	0.90	0.308
Landscaped / Lawns	0.004	0.30	0.001
	0.346		0.309

Weighted C: 0.89

Time of Concentration
(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	60	0.020	1.0

Total Tc = 1.0
Minimum Tc = 5.0

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **CB-09**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.101	0.90	0.091
Landscaped / Lawns	0.056	0.30	0.017
	0.158		0.108

Weighted C: 0.69

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	20	0.05	2.69
Segment B - C	0.015	32	0.04	0.47

Total Tc = 3.2
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **CB-10**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.132	0.90	0.119
Landscaped / Lawns	0.034	0.30	0.010
	0.165		0.129

Weighted C: 0.78

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	13	0.020	2.7
Segment B - C	0.015	55	0.020	0.9

Total Tc = 3.7
Minimum Tc = 5.0

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **WQS-01**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.088	0.90	0.079
Landscaped / Lawns	0.003	0.30	0.001
	0.092		0.080

Weighted C: 0.88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	105	0.025	1.5

Total Tc = 1.5
Minimum Tc = 5.0

Designation: **WQS-02**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.120	0.90	0.108
Landscaped / Lawns	0.035	0.30	0.010
	0.155		0.118

Weighted C: 0.77

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	185	0.065	1.6

Total Tc = 1.6
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **WQS-03**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.271	0.90	0.244
Landscaped / Lawns	0.000	0.30	0.000
	0.271		0.244

Weighted C: 0.90

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	35	0.045	0.5

Total Tc = 0.5
Minimum Tc = 5.0

Designation: **WQS-04**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.178	0.90	0.160
Landscaped / Lawns	0.024	0.30	0.007
	0.203		0.168

Weighted C: 0.83

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	22	0.02	4.18
Segment B - C	0.015	44	0.02	0.79

Total Tc = 5.0
Minimum Tc = 5.0

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Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **WQS-05**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.107	0.90	0.096
Landscaped / Lawns	0.042	0.30	0.012
	0.148		0.109

Weighted C: 0.73

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	7	0.020	1.7
Segment B - C	0.015	49	0.020	0.9

Total Tc = 2.5
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **AD-01**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.084	0.90	0.075
Landscaped / Lawns	0.005	0.30	0.002
	0.089		0.077

Weighted C: 0.87

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	13	7.600	0.3

Total Tc = 0.3
Minimum Tc = 5.0

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-02**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.195	0.90	0.175
Landscaped / Lawns	0.008	0.30	0.002
	0.203		0.178

Weighted C: 0.88

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	10	0.020	2.1
Segment B - C	0.015	15	0.020	0.3
Segment C - D	0.24	6	0.020	1.5

Total Tc = 4.0
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **AD-03**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.005	0.90	0.004
Landscaped / Lawns	0.012	0.30	0.003
	0.016		0.008

Weighted C: 0.47

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	25	0.020	4.6

Total Tc = 4.6
Minimum Tc = 5.0

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-04**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.005	0.90	0.004
Landscaped / Lawns	0.012	0.30	0.004
	0.017		0.008

Weighted C: 0.47

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	25	0.020	4.6

Total Tc = 4.6
Minimum Tc = 5.0

Designation: **AD-05**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.000	0.90	0.000
Landscaped / Lawns	0.006	0.30	0.002
	0.006		0.002

Weighted C: 0.30

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	20	0.050	2.7

Total Tc = 2.7
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-06**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.015	0.90	0.013
Landscaped / Lawns	0.042	0.30	0.013
	0.057		0.026

Weighted C: 0.46

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	25	0.075	2.7

Total Tc = 2.7
Minimum Tc = 5.0

Designation: **AD-07**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.015	0.90	0.014
Landscaped / Lawns	0.053	0.30	0.016
	0.068		0.029

Weighted C: 0.43

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	25	0.075	2.7

Total Tc = 2.7
Minimum Tc = 5.0

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-08**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.003	0.90	0.002
Landscaped / Lawns	0.011	0.30	0.003
	0.013		0.006

Weighted C: 0.42

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	18	0.020	3.6

Total Tc = 3.6
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **AD-09**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.019	0.90	0.017
Landscaped / Lawns	0.006	0.30	0.002
	0.025		0.019

Weighted C: 0.76

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	10	0.020	2.2
Segment B - C	0.015	13	0.020	0.3

Total Tc = 2.5
Minimum Tc = 5.0

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-10**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.011	0.90	0.010
Landscaped / Lawns	0.008	0.30	0.002
	0.019		0.012

Weighted C: 0.65

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	13	0.020	2.7
Segment B - C	0.015	6	0.020	0.2

Total Tc = 2.9
Minimum Tc = 5.0

Designation: **AD-11**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.025	0.90	0.022
Landscaped / Lawns	0.002	0.30	0.000
	0.026		0.023

Weighted C: 0.86

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	35	0.020	0.7

Total Tc = 0.7
Minimum Tc = 5.0

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-12**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.014	0.90	0.013
Landscaped / Lawns	0.006	0.30	0.002
	0.020		0.014

Weighted C: 0.72

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.015	14	0.020	0.3

Total Tc = 0.3
Minimum Tc = 5.0

Designation: **AD-13**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.006	0.90	0.006
Landscaped / Lawns	0.024	0.30	0.007
	0.030		0.013

Weighted C: 0.43

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	34	0.020	5.9

Total Tc = 5.9

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-14**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.008	0.90	0.007
Landscaped / Lawns	0.076	0.30	0.023
	0.084		0.030

Weighted C: 0.36

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	61	0.020	9.5

Total Tc = 9.5

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Designation: **AD-15**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.004	0.90	0.004
Landscaped / Lawns	0.033	0.30	0.010
	0.037		0.013

Weighted C: 0.37

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	21	0.020	4.0

Total Tc = 4.0
Minimum Tc = 5.0

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Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **AD-16**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.007	0.90	0.006
Landscaped / Lawns	0.048	0.30	0.014
	0.055		0.021

Weighted C: 0.38

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	47	0.040	5.8

Total Tc = 5.8

Designation: **AD-17**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.010	0.90	0.009
Landscaped / Lawns	0.035	0.30	0.010
	0.045		0.019

Weighted C: 0.43

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	50	0.020	8.1

Total Tc = 8.1

Note: Overland time of concentration computed using "Kinematic Wave" equation
Gutter and pipe time of concentration computed using Manning's equation

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX-CB-01**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.052	0.90	0.047
Landscaped / Lawns	0.013	0.30	0.004
	0.064		0.050

Weighted C: 0.78

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	13	0.020	2.7
Segment B - C	0.015	35	0.020	0.7

Total Tc = 3.4
Minimum Tc = 5.0

Designation: **EX-CB-02**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.149	0.90	0.134
Landscaped / Lawns	0.087	0.30	0.026
	0.236		0.160

Weighted C: 0.68

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	31	0.025	5.04

Total Tc = 5.0

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX-CB-03**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.010	0.90	0.009
Landscaped / Lawns	0.048	0.30	0.014
	0.058		0.023

Weighted C: 0.40

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	45	0.133	3.48

Total Tc = 3.5
Minimum Tc = 5.0

Designation: **EX-CB-04**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.013	0.90	0.012
Landscaped / Lawns	0.070	0.30	0.021
	0.084		0.033

Weighted C: 0.40

Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	15	0.1	1.62

Shallow Concentrated Flow					
Segment		**Slope (ft/ft)**	**V (ft/s)**	**Length (ft)**	**Time (min.)**
Segment B - C	unpaved	0.045	3.42	125	0.6
Segment C - D	unpaved	0.150	6.25	125	0.3

Total Tc = 2.6
Minimum Tc = 5.0

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Proposed C & Tc Calculations**
Prepared By: **AVC** Date: **December 4, 2023**

Designation: **EX-AD**

Cover Type	Area, ac	Coef.	A x C
Hardscape / Roof	0.009	0.90	0.009
Landscaped / Lawns	0.047	0.30	0.014
	0.057		0.023

Weighted C: 0.40

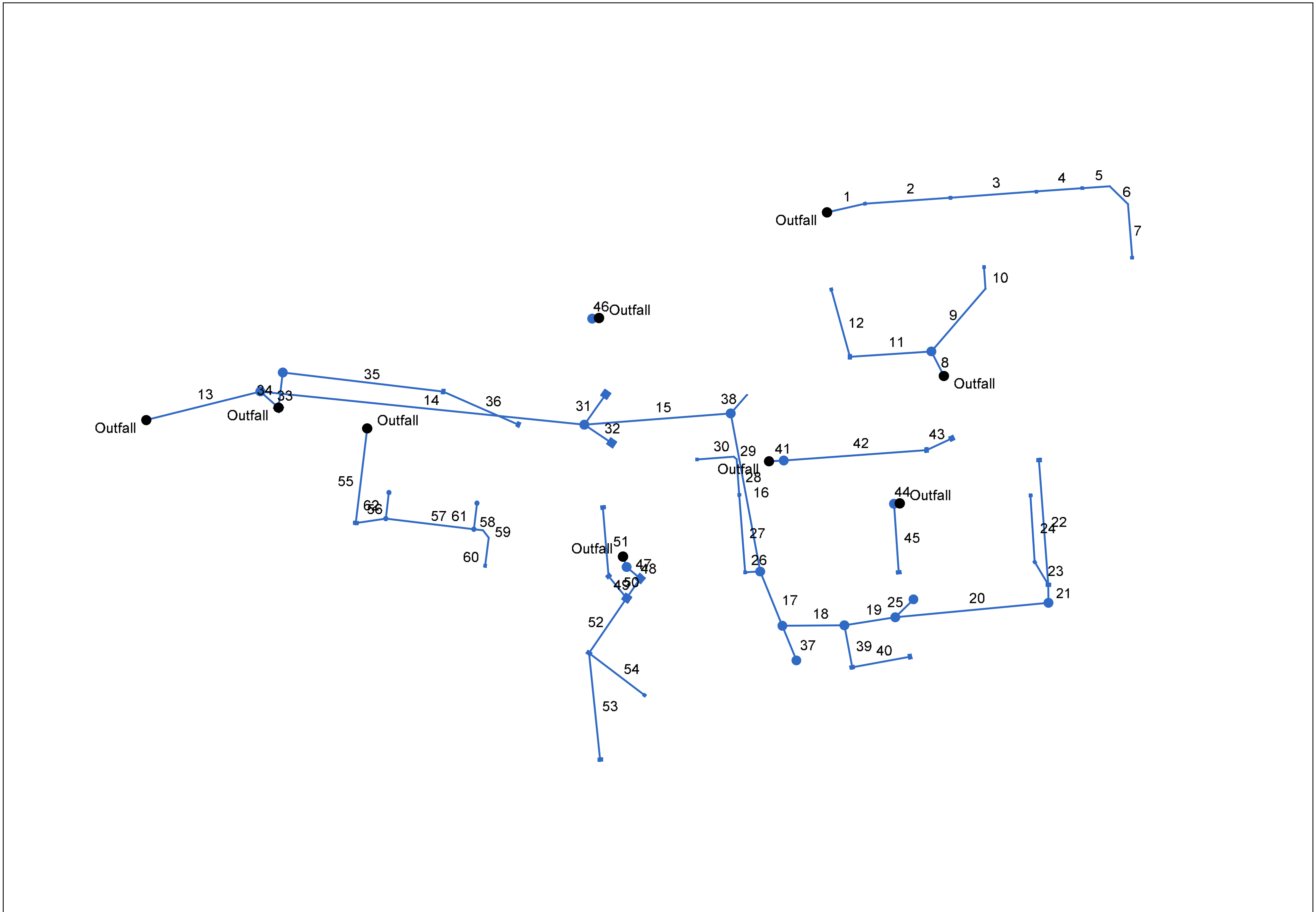
Time of Concentration

(computed in accordance with ConnDOT Drainage Manual, Sec. 6C)

Overland				
Segment	**Surface "n"**	**Flow Length (ft.)**	**Slope (ft/ft)**	**Time (min.)**
Segment A - B	0.24	40	0.020	6.8

Total Tc = 6.8

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: F0173-001-Stormsewers.stm	Number of lines: 62	Date: 12/12/2023

Storm Sewers v2021.00

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	29.111	0.05	0.26	0.43	0.02	0.10	8.1	10.7	6.0	0.60	13.05	2.74	12	11.44	146.00	149.33	146.32	149.65	147.00	153.44	Pipe - (58)
2	1	64.080	0.06	0.21	0.38	0.02	0.08	5.8	10.3	6.1	0.48	3.86	2.38	12	1.00	149.33	149.97	149.65	150.26	153.44	154.55	Pipe - (57)
3	2	64.196	0.04	0.15	0.37	0.01	0.06	5.0	9.8	6.3	0.36	5.47	2.15	12	2.01	149.97	151.26	150.26	151.51	154.55	155.20	Pipe - (56)
4	3	34.280	0.08	0.11	0.36	0.03	0.04	9.5	9.5	6.4	0.28	3.84	2.02	12	0.99	151.26	151.60	151.51	151.82	155.20	155.54	Pipe - (55)
5	4	20.718	0.00	0.03	0.00	0.00	0.01	0.0	6.5	7.7	0.10	3.88	1.24	12	1.01	151.60	151.81	151.82	151.94	155.54	156.00	Pipe - (115)
6	5	19.047	0.00	0.03	0.00	0.00	0.01	0.0	6.3	7.8	0.10	3.85	1.70	12	1.00	151.81	152.00	151.94	152.13	156.00	156.00	Pipe - (114)
7	6	40.198	0.03	0.03	0.43	0.01	0.01	5.9	5.9	8.0	0.10	3.85	1.72	12	1.00	152.00	152.40	152.13	152.53	156.00	155.90	Pipe - (113)
8	End	20.612	0.09	0.45	0.88	0.08	0.40	5.0	5.8	8.1	3.21	11.68	4.53	12	9.17	145.00	146.89	146.29	147.66	149.67	152.40	Pipe - (06)
9	8	61.889	0.00	0.20	0.00	0.00	0.18	0.0	5.1	8.5	1.50	6.69	5.25	12	3.01	148.78	150.64	149.10	151.16	152.40	154.67	Pipe - (71)
10	9	16.371	0.20	0.20	0.88	0.18	0.18	5.0	5.0	8.6	1.51	3.81	3.66	12	0.98	150.64	150.80	151.16	151.32	154.67	154.30	Pipe - (70)
11	8	60.997	0.07	0.16	0.87	0.06	0.14	5.0	5.4	8.3	1.18	3.86	2.60	12	1.00	146.89	147.50	147.66	147.96	152.40	151.00	Pipe - (05)
12	11	52.306	0.09	0.09	0.87	0.08	0.08	5.0	5.0	8.6	0.67	7.71	2.38	12	4.00	147.50	149.59	147.96	149.93	151.00	153.10	Pipe - (04)
13	End	87.828	0.00	0.69	0.00	0.00	0.39	0.0	21.4	4.1	147.2	150.8	9.52	54	0.50	127.96	128.40	132.24	132.55	135.80	138.10	Pipe - (121)
14	13	243.249	0.00	0.69	0.00	0.00	0.39	0.0	21.0	4.1	143.4	149.6	9.02	54	0.49	128.80	130.00	133.78	134.89	138.10	139.90	Pipe - (120)
15	14	109.653	0.00	0.69	0.00	0.00	0.39	0.0	20.8	4.1	137.5	128.7	8.65	54	0.36	130.20	130.60	136.02	136.48	139.90	142.00	Pipe - (119)
16	15	120.483	0.00	0.69	0.00	0.00	0.39	0.0	19.7	4.3	17.27	108.8	1.80	42	1.00	131.80	133.00	137.64	137.67	142.00	140.19	Pipe - (118)
17	16	43.869	0.00	0.55	0.00	0.00	0.33	0.0	19.2	4.3	17.05	83.91	1.77	42	0.59	133.00	133.26	137.72	137.73	140.19	142.33	Pipe - (117)
18	17	46.296	0.00	0.55	0.00	0.00	0.33	0.0	18.5	4.4	3.17	52.06	1.01	24	4.51	133.41	135.50	137.78	137.79	142.33	145.00	Pipe - (26)
19	18	38.468	0.00	0.41	0.00	0.00	0.28	0.0	8.4	6.8	3.57	51.96	2.54	24	4.50	135.50	137.23	137.80	137.89	145.00	147.80	Pipe - (25)
20	19	115.000	0.00	0.41	0.00	0.00	0.28	0.0	7.7	7.1	1.97	51.90	2.75	24	4.49	137.23	142.39	137.89	142.88	147.80	152.20	Pipe - (24)
21	20	13.578	0.21	0.41	0.62	0.13	0.28	7.4	7.6	7.1	1.98	51.93	3.34	24	4.49	142.39	143.00	142.88	143.49	152.20	152.00	Pipe - (23)
22	21	93.648	0.17	0.17	0.78	0.13	0.13	7.2	7.2	7.3	0.95	3.87	3.60	12	1.00	147.56	148.50	147.90	148.91	152.00	152.00	Pipe - (22)

Project File: F0173-001-Stormsewers.stm | Number of lines: 62 | Run Date: 12/12/2023

NOTES: Intensity = 38.51 / (Inlet time + 3.60) ^ 0.70; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
23	21	19.814	0.02	0.03	0.47	0.01	0.02	5.0	5.7	8.1	0.13	3.88	2.03	12	1.01	144.80	145.00	144.92	145.14	152.00	149.00	Pipe - (28)
24	23	49.936	0.02	0.02	0.47	0.01	0.01	5.0	5.0	8.6	0.06	3.86	1.21	12	1.00	145.00	145.50	145.14	145.60	149.00	149.00	Pipe - (27)
25	19	19.145	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.69	3.84	4.27	12	0.99	143.48	143.67	143.94	144.22	147.80	148.50	Pipe - (30)
26	16	11.297	0.07	0.13	0.43	0.03	0.06	5.0	8.3	6.8	0.39	3.98	0.50	12	1.06	136.25	136.37	137.72	137.72	140.19	139.90	Pipe - (106)
27	26	58.106	0.06	0.06	0.46	0.03	0.03	5.0	6.4	7.7	0.22	4.96	0.50	12	1.65	136.37	137.33	137.73	137.73	139.90	140.90	Pipe - (59)
28	27	26.816	0.00	0.01	0.00	0.00	0.00	0.0	5.5	8.2	0.01	5.11	0.54	12	1.75	137.33	137.80	137.74	137.85	140.90	142.00	Pipe - (72)
29	28	2.804	0.00	0.01	0.00	0.00	0.00	0.0	5.5	8.2	0.01	3.99	1.04	12	1.07	137.80	137.83	137.85	137.88	142.00	142.00	Pipe - (73)
30	29	27.512	0.01	0.01	0.30	0.00	0.00	5.0	5.0	8.6	0.02	3.89	0.93	12	1.02	137.82	138.10	137.88	138.15	142.00	141.60	Pipe - (62)
31	14	27.900	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.88	3.86	3.53	12	1.00	136.17	136.45	136.49	136.84	139.90	140.39	Pipe - (46)
32	14	24.525	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	4.99	5.98	6.35	12	2.41	134.41	135.00	136.02	136.43	139.90	140.15	Pipe - (98)
33	13	18.166	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.94	6.00	2.47	12	2.42	132.06	132.50	133.78	133.83	138.10	138.50	Pipe - (86)
34	End	26.508	0.15	0.47	0.73	0.11	0.35	5.0	6.0	7.9	2.76	3.89	5.00	12	1.02	133.93	134.20	134.55	134.91	138.50	137.70	Pipe - (82)
35	34	120.556	0.17	0.32	0.78	0.13	0.24	5.0	5.4	8.3	1.97	2.72	3.64	12	0.50	134.20	134.80	134.91	135.40	137.70	138.30	Pipe - (48)
36	35	61.456	0.16	0.16	0.69	0.11	0.11	5.0	5.0	8.6	0.93	3.48	2.33	12	0.81	134.80	135.30	135.53	135.71	138.30	138.80	Pipe - (47)
37	17	27.974	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	13.91	77.10	1.45	42	0.50	133.26	133.40	137.78	137.78	142.33	141.20	Pipe - (116)
38	15	18.394	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	120.3	149.0	7.56	54	0.49	131.80	131.89	137.64	137.70	142.00	142.20	Pipe - (122)
39	18	32.000	0.06	0.14	0.40	0.02	0.06	5.0	15.1	5.0	0.28	14.22	0.16	18	1.56	134.50	135.00	137.80	137.80	145.00	141.00	
40	39	44.000	0.08	0.08	0.40	0.03	0.03	12.1	12.1	5.6	0.19	4.11	0.24	12	1.14	135.10	135.60	137.80	137.81	141.00	141.30	
41	End	11.015	0.16	0.68	0.77	0.12	0.44	5.0	17.5	4.6	4.05	19.38	5.69	12	25.24	136.62	139.40	137.47	140.25	143.00	142.90	Pipe - (107)
42	41	107.009	0.52	0.52	0.61	0.32	0.32	17.1	17.1	4.6	3.52	6.82	5.08	12	3.12	139.40	142.74	140.25	143.54	142.90	147.90	Pipe - (12)
43	42	20.730	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.05	3.88	3.56	12	1.01	142.74	142.95	143.54	143.56	147.90	148.90	Pipe - (11)
44	End	4.387	0.27	0.40	0.90	0.24	0.36	5.0	5.4	8.3	3.03	4.12	4.81	12	1.14	143.54	143.59	144.29	144.34	148.00	147.60	Pipe - (93)
45	44	51.421	0.13	0.13	0.90	0.12	0.12	5.0	5.0	8.6	1.03	3.84	2.43	12	0.99	143.59	144.10	144.34	144.53	147.60	147.60	Pipe - (17)

Project File: F0173-001-Stormsewers.stm | Number of lines: 62 | Run Date: 12/12/2023

NOTES:Intensity = 38.51 / (Inlet time + 3.60) ^ 0.70; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
46	End	5.195	0.20	0.20	0.83	0.17	0.17	5.0	5.0	8.6	1.44	3.78	3.59	12	0.96	136.45	136.50	136.96	137.01	140.50	140.00	Pipe - (76)
47	End	8.312	0.00	1.02	0.00	0.00	0.80	0.0	8.8	6.6	5.31	6.28	7.05	12	2.65	134.20	134.42	135.10	135.35	140.00	140.00	Pipe - (128)
48	47	13.266	0.00	1.02	0.00	0.00	0.80	0.0	8.8	6.6	5.32	6.18	7.09	12	2.56	134.46	134.80	135.35	135.73	140.00	140.20	Pipe - (127)
49	48	17.753	0.00	1.02	0.00	0.00	0.80	0.0	8.7	6.7	5.34	7.64	4.64	18	0.45	134.80	134.88	135.73	135.81	140.20	140.00	Pipe - (126)
50	49	21.322	0.27	0.66	0.90	0.24	0.57	5.0	5.2	8.4	4.79	6.89	6.25	12	3.19	134.90	135.58	136.14	136.48	140.00	139.60	Pipe - (32)
51	50	51.579	0.39	0.39	0.83	0.32	0.32	5.0	5.0	8.6	2.78	3.87	4.18	12	1.01	135.58	136.10	136.48	136.81	139.60	139.60	Pipe - (31)
52	49	49.833	0.24	0.36	0.68	0.16	0.23	5.0	8.3	6.8	1.59	2.56	2.03	12	0.44	134.88	135.10	136.14	136.23	140.00	138.60	Pipe - (125)
53	52	80.288	0.06	0.06	0.78	0.05	0.05	5.0	5.0	8.6	0.43	3.60	0.77	12	0.87	135.10	135.80	136.32	136.33	138.60	138.60	Pipe - (123)
54	52	52.042	0.06	0.06	0.40	0.02	0.02	6.8	6.8	7.5	0.17	5.07	0.49	12	1.73	135.10	136.00	136.32	136.33	138.60	139.10	Pipe - (124)
55	End	71.365	0.35	0.45	0.89	0.31	0.38	5.0	6.3	7.8	2.97	3.88	4.77	12	1.01	133.20	133.92	133.94	134.66	139.40	138.00	Pipe - (38)
56	55	22.641	0.03	0.10	0.86	0.02	0.07	5.0	6.1	7.9	0.58	3.89	1.82	12	1.02	133.91	134.14	134.66	134.46	138.00	138.74	Pipe - (37)
57	56	66.235	0.03	0.06	0.76	0.02	0.04	5.0	5.5	8.3	0.30	3.85	1.85	12	1.00	134.14	134.80	134.46	135.03	138.74	138.79	Pipe - (36)
58	57	6.823	0.00	0.01	0.00	0.00	0.01	0.0	5.3	8.3	0.05	3.91	0.93	12	1.03	134.85	134.92	135.03	135.01	138.79	138.80	Pipe - (92)
59	58	7.053	0.00	0.01	0.00	0.00	0.01	0.0	5.3	8.4	0.05	3.84	1.38	12	0.99	134.92	134.99	135.01	135.08	138.80	138.80	Pipe - (91)
60	59	21.252	0.01	0.01	0.42	0.01	0.01	5.0	5.0	8.6	0.05	3.83	1.40	12	0.99	134.99	135.20	135.08	135.29	138.80	138.70	Pipe - (90)
61	57	19.655	0.02	0.02	0.65	0.01	0.01	5.0	5.0	8.6	0.11	3.89	1.25	12	1.02	134.80	135.00	135.03	135.13	138.79	138.50	Pipe - (39)
62	56	19.655	0.02	0.02	0.72	0.01	0.01	5.0	5.0	8.6	0.12	3.89	2.02	12	1.02	134.80	135.00	134.92	135.14	138.74	138.50	Pipe - (40)

Project File: F0173-001-Stormsewers.stm | Number of lines: 62 | Run Date: 12/12/2023

NOTES:Intensity = 38.51 / (Inlet time + 3.60) ^ 0.70; Return period =Yrs. 25 ; c = cir e = ellip b = box

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Riprap Apron Calculation**
Prepared By: **AVC** Date: **December 4, 2023**

Riprap Apron

Invert Elevation =	146.00	ft	
Tailwater Elevation =	146.33	ft	
Tailwater Depth (TW) =	0.33	ft	
Inside Pipe Diameter (S_p) =	1.00	ft	
Pipe Discharge (Q) =	0.60	cfs	(From Hydraflow Model)
Outlet Velocity (V) =	2.74	ft/s	(From Hydraflow Model)

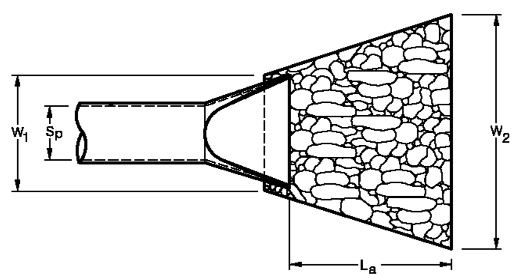
Apron Type

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

Type B Riprap Apron (Maximum Tailwater Condition) TW ≥ $0.5R_p$

TW = 146.33 < $0.5R_p$

Use Type A Apron



Apron Length

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$L_a = (1.8(Q-5.0)/Sp^{1.5})+10.0$

L_a = 2.08 ft

Apron Width

Type A Riprap Apron (Minimum Tailwater Condition) TW < $0.5R_p$

$W_1 = 3*S_p$

$W_2 = 3*S_p+0.7L_a$

W_1 = 3.00 ft

W_2 = 4.46 ft

Riprap Specification

Outlet Velocity (V)=	0-8 ft/s	Modified
Outlet Velocity (V)=	8-10 ft/s	Intermediate
Outlet Velocity (V)=	10-14 ft/s	Standard

Outlet Velocity (V)= 2.740 ft/s Use Modified Riprap

Outlet protection has been designed in accordance with the Section 11.13 of the ConnDOT Drainage Manual

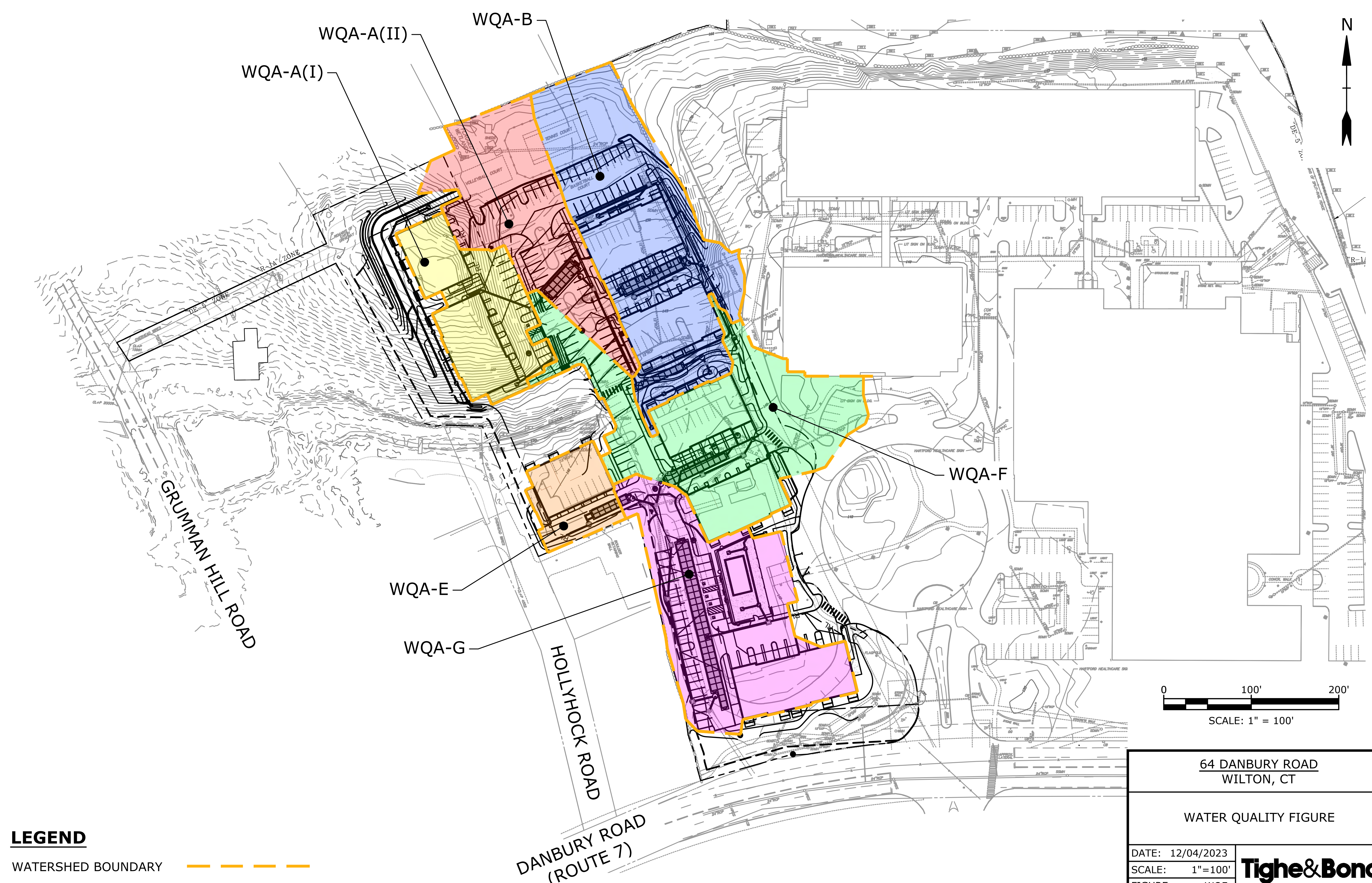
Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Level Spreader Calculation** Prepared By: **AVC** Date: **December 4, 2023**

Level Spreader

Flow for 10 Yr Storm=	0.6	CFS
Depth=	0.33	FT
Max Allowable Velocity	**0.5**	FPS
Length=	**3.636364**	FT
Proposed Length	**10**	FT

Calculated in accordence with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control Section 5-11

APPENDIX F



64 DANBURY ROAD
WILTON, CT

WATER QUALITY FIGURE

DATE: 12/04/2023
SCALE: 1"=100'
FIGURE WQF

Tighe&Bond

LEGEND

WATERSHED BOUNDARY

Tighe & Bond:J:\F\F0173 Fuller\001 64 Danbury Rd\Calculations\Stormwater\Figures\F0173-001-WQ-FIGURE.dwg

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Water Quality Calculations** Prepared By: **AVC** Date: **December 4, 2023**

WQA-A(I)

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	0.458
Impervious Area in acres	=	0.433
Pecenct of Impervious Area (I)	=	95
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.901

WQv = $\frac{(0.5")(R)(A)}{12}$ = **0.0172 ac*ft**

= $\boxed{\textbf{749 cf}}$

1,370 CF PROVIDED

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0172
Drainage Area (Ac)	=	0.458

Q= WQv*12 / DA = **0.450 in**

Runoff Depth in inches (Q)	=	**0.450**	**in**
Design Precipitation in inches (P)	=	**1**	**in**

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}$ = **93 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.151 in**

I_a / P = **0.151**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **633 csm/in**

Unit peak discharge in csm/in (q_u)	=	**633**
Area in square miles (A)	=	**0.001**
Runoff Depth in inches (Q)	=	**0.450**

WQF=q_u*A*Q = **0.204 cfs**

CDS 2015-4-C Treatment Capacity = **1.2 cfs Provided**

Calculated in accordence with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Water Quality Calculations** Prepared By: **AVC** Date: **December 4, 2023**

WQA-A(II)

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	0.683
Impervious Area in acres	=	0.393
Pecenct of Impervious Area (I)	=	58
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.568

WQv = $\frac{(0.5")(R)(A)}{12}$ = **0.0162 ac*ft**

= **704 cf**

1,022 CF PROVIDED

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0162
Drainage Area (Ac)	=	0.683

Q= WQv*12 / DA = **0.284 in**

Runoff Depth in inches (Q)	=	**0.284**	**in**
Design Precipitation in inches (P)	=	**1**	**in**

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}$ = **89 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.247 in**

I_a / P = **0.247**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **585 csm/in**

Unit peak discharge in csm/in (q_u)	=	**585**
Area in square miles (A)	=	**0.001**
Runoff Depth in inches (Q)	=	**0.284**

WQF=q_u*A*Q = **0.177 cfs**

CDS 2015-4-C Treatment Capacity = 1.2 cfs Provided

Calculated in accordence with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Water Quality Calculations** Prepared By: **AVC** Date: **December 4, 2023**

WQA-B (TOTAL)

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	1.092
Impervious Area in acres	=	0.714
Pecenct of Impervious Area (I)	=	65
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.638

WQv = (0.5")(R)(A) / 12 = **0.0291 ac*ft**

= **1265 cf**

2,240 CF PROVIDED

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0291
Drainage Area (Ac)	=	1.092

Q= WQv*12 / DA = **0.319 in**

Runoff Depth in inches (Q)	=	**0.319**	**in**
Design Precipitation in inches (P)	=	**1**	**in**

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}]$ = **90 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.222 in**

I_a / P = **0.222**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **625 csm/in**

Unit peak discharge in csm/in (q_u)	=	**625**
Area in square miles (A)	=	**0.002**
Runoff Depth in inches (Q)	=	**0.319**

WQF=q_u*A*Q = **0.340 cfs**

CDS 2015-4-C Treatment Capacity = 1.2 cfs Provided

Calculated in accordence with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Water Quality Calculations** Prepared By: **AVC** Date: **December 4, 2023**

WQA-E

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	0.203
Impervious Area in acres	=	0.177
Pecenct of Impervious Area (I)	=	87
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.835

WQv = (0.5")(R)(A) / 12 = **0.0071 ac*ft**

= **308 cf**

520 CF PROVIDED

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0071
Drainage Area (Ac)	=	0.203

Q= WQv*12 / DA = **0.417 in**

Runoff Depth in inches (Q)	=	**0.417**	**in**
Design Precipitation in inches (P)	=	**1**	**in**

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}$ = **92 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.174 in**

I_a / P = **0.174**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **630 csm/in**

Unit peak discharge in csm/in (q_u)	=	**630**
Area in square miles (A)	=	**0.000**
Runoff Depth in inches (Q)	=	**0.417**

$WQF=q_u*A*Q$ = **0.083 cfs**

CDS 2015-4-C Treatment Capacity = **1.2 cfs Provided**

Calculated in accordence with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Water Quality Calculations** Prepared By: **AVC** Date: **December 4, 2023**

WQA-F

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	1.023
Impervious Area in acres	=	0.826
Pecenct of Impervious Area (I)	=	81
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.777

WQv = $\frac{(0.5")(R)(A)}{12}$ = **0.0331 ac*ft** = **1442 cf**

1,450 CF PROVIDED

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0331
Drainage Area (Ac)	=	1.023

Q= WQv*12 / DA = **0.388 in**

Runoff Depth in inches (Q)	=	**0.388**	**in**
Design Precipitation in inches (P)	=	**1**	**in**

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}$ = **92 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.174 in**

I_a / P = **0.174**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **630 csm/in**

Unit peak discharge in csm/in (q_u)	=	**630**
Area in square miles (A)	=	**0.002**
Runoff Depth in inches (Q)	=	**0.388**

WQF=q_u*A*Q = **0.391 cfs**

CDS 2015-4-C Treatment Capacity = **1.2 cfs Provided**

Calculated in accordence with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond Consulting Engineers Environmental Specialists	Project Name: **64 Danbury Road** Project Number: **F0173-001** Project Location: **Wilton, CT** Description: **Water Quality Calculations** Prepared By: **AVC** Date: **December 4, 2023**

WQA-G

Required Water Quality Volume (WQv)

Total Area in acres (A)	=	0.930
Impervious Area in acres	=	0.774
Pecenct of Impervious Area (I)	=	83
Volumetric Runoff Coefficient (R)		

R = 0.05+0.009(I) = 0.799

WQv = $\frac{(0.5")(R)(A)}{12}$ = **0.0310 ac*ft**

= $\boxed{\textbf{1349 cf}}$

4,069 CF PROVIDED

Required Water Quality Flow (WQf)

WQv (Ac*ft)	=	0.0310
Drainage Area (Ac)	=	0.930

Q= WQv*12 / DA = **0.400 in**

Runoff Depth in inches (Q)	=	**0.400**	**in**
Design Precipitation in inches (P)	=	**1**	**in**

$CN=1000/[10+5*P+10Q-10*(Q^2+1.25QP)^{1/2}$ = **92 CN**

From table 4-1 in chapter 4, TR-55

I_a = **0.174 in**

I_a / P = **0.174**

From Exhibit 4-11 in chapter 4, TR-55

q_u = **630 csm/in**

Unit peak discharge in csm/in (q_u)	=	**630**
Area in square miles (A)	=	**0.001**
Runoff Depth in inches (Q)	=	**0.400**

$WQF=q_u*A*Q$ = **0.366 cfs**

CDS 2015-4-C Treatment Capacity = 1.2 cfs Provided

Calculated in accordence with the 2004 Connecticut Stormwater Quality Manual Sections 7.4.1 and 7.4.2

Tighe&Bond
Engineers | Environmental Specialists

Project Name: **64 Danbury Road**
Project Number: **F0173-001**
Project Location: **Wilton, CT**
Description: **Stormwater BMP Pollutant Removal Estimate**
Prepared By: **AVC** Date: **December 4, 2023**

Water Quality Area A(I)

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.170	0.034	9.041	0.013	0.003	0.012
Proposed, Post Treatment	lb/yr/1-in	0.101	0.008	0.429	0.005	0.001	0.001
Reduction, Pre to Post Treat	---	40%	78%	95%	64%	70%	90%

Water Quality Area A(II)

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.155	0.031	8.253	0.012	0.003	0.011
Proposed, Post Treatment	lb/yr/1-in	0.093	0.007	0.392	0.004	0.001	0.001
Reduction, Pre to Post Treat	---	40%	78%	95%	64%	70%	90%

Water Quality Area B

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.299	0.060	15.889	0.023	0.005	0.021
Proposed, Post Treatment	lb/yr/1-in	0.178	0.013	0.755	0.008	0.002	0.002
Reduction, Pre to Post Treat	---	40%	78%	95%	64%	70%	90%

Water Quality Area E

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.070	0.014	3.728	0.005	0.001	0.005
Proposed, Post Treatment	lb/yr/1-in	0.042	0.003	0.177	0.002	0.000	0.000
Reduction, Pre to Post Treat	---	40%	78%	95%	64%	70%	90%

Water Quality Area F

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.334	0.067	17.735	0.025	0.006	0.024
Proposed, Post Treatment	lb/yr/1-in	0.199	0.015	0.842	0.009	0.002	0.002
Reduction, Pre to Post Treat	---	40%	78%	95%	64%	70%	90%

Water Quality Area G

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.310	0.062	16.474	0.023	0.005	0.022
Proposed, Post Treatment	lb/yr/1-in	0.185	0.014	0.783	0.009	0.002	0.002
Reduction, Pre to Post Treat	---	40%	78%	95%	64%	70%	90%

Northeast Portion to Area Drains

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	0.035	0.007	1.853	0.003	0.001	0.002
Proposed, Post Treatment	lb/yr/1-in	0.035	0.007	1.853	0.003	0.001	0.002
Reduction, Pre to Post Treat	---	0%	0%	0%	0%	0%	0%

Areas to Existing Infiltration Systems

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	1.161	0.234	61.720	0.088	0.020	0.082
Proposed, Post Treatment	lb/yr/1-in	0.848	0.157	6.172	0.060	0.014	0.056
Reduction, Pre to Post Treat	---	27%	33%	90%	32%	32%	32%

Total Site

Item	Units	Pollutant					
		TKN	P	TSS	Pb	Cu	Zn
Proposed, Pre Treatment	lb/yr/1-in	2.534	0.511	134.694	0.192	0.044	0.180
Proposed, Post Treatment	lb/yr/1-in	1.680	0.224	11.403	0.099	0.021	0.068
Reduction, Pre to Post Treat	---	34%	56%	92%	48%	52%	62%

Loading Calculation

Location: **Area A(I)** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.95 Total Area = 0.458 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	0.458	1.900	1.900	0.170
Total Phosphorus (P)	0.458	0.383	0.383	0.034
Total Suspended Solids	0.458	101.0	101.0	9.0
Lead	0.458	0.144	0.144	0.013
Copper	0.458	0.033	0.033	0.003
Zinc	0.458	0.135	0.135	0.012

$$L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A$$

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location: **Area A(I)** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.95 Total Area = 0.458 acres
BMP: **Deep Sump Catch Basins**

Pollutant	L_{in} 1 (lbs)	Sum L (lbs)	RR (%)	$L_{removed}$ (lbs)	L_{out} (lbs)
Total Nitrogen (N)	0.170	0.170	0	0.00	0.170
Total Phosphorus (P)	0.034	0.034	0	0.00	0.034
Total Suspended Solids	9.041	9.0	5	0.45	8.6
Lead	0.013	0.013	0	0.00	0.013
Copper	0.003	0.003	0	0.00	0.003
Zinc	0.012	0.012	0	0.00	0.012

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
L_{out}	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location: **Area A(I)** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.95 Total Area = 0.458 acres
BMP: **Water Quality Structure**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.170	0.170	18.3	0.03	0.139
Total Phosphorus (P)	0.034	0.034	66.9	0.02	0.011
Total Suspended Solids	8.589	8.6	50	4.29	4.3
Lead	0.013	0.013	46.5	0.01	0.007
Copper	0.003	0.003	56.2	0.00	0.001
Zinc	0.012	0.012	85.3	0.01	0.002
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
Lout	Pollutant Load out of BMP				

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location: **Area A(I)** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.95 Total Area = 0.458 acres
BMP: **Infiltration System**

Pollutant	L_{in} 1 (lbs)	Sum L (lbs)	RR (-)	$L_{removed}$ (lbs)	L_{out} (lbs)
Total Nitrogen (N)	0.139	0.139	27	0.04	0.101
Total Phosphorus (P)	0.011	0.011	33	0.00	0.008
Total Suspended Solids	4.294	4.3	90	3.86	0.429
Lead	0.007	0.007	32	0.00	0.005
Copper	0.001	0.001	32	0.00	0.001
Zinc	0.002	0.002	32	0.00	0.001
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
L_{out}	Pollutant Load out of BMP				

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Loading Calculation

Location: **Area A(II)** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.50 Total Area = 0.683 acres

Pollutant	Residential		Weighted	
	A (acres)	EMC (mg/L)	EMC (mg/L)	L (lbs/yr)
Total Nitrogen (N)	0.683	1.900	1.900	0.155
Total Phosphorus (P)	0.683	0.383	0.383	0.031
Total Suspended Solids	0.683	101.0	101.0	8.3
Lead	0.683	0.144	0.144	0.012
Copper	0.683	0.033	0.033	0.003
Zinc	0.683	0.135	0.135	0.011

L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location:	**Area A(II)**	Condition:	**Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.50	Total Area =	0.683 acres
BMP:	**Deep Sump Catch Basins**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.155	0.155	0	0.00	0.155
Total Phosphorus (P)	0.031	0.031	0	0.00	0.031
Total Suspended Solids	8.253	8.3	5	0.41	7.8
Lead	0.012	0.012	0	0.00	0.012
Copper	0.003	0.003	0	0.00	0.003
Zinc	0.011	0.011	0	0.00	0.011

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:

1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location:	**Area A(II)**		Condition:	**Proposed**
Rainfall:	1	inches		
Impervious Fraction:	0.50		Total Area =	0.683 acres
BMP:	**Water Quality Structure**			

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.155	0.155	18.3	0.03	0.127
Total Phosphorus (P)	0.031	0.031	66.9	0.02	0.010
Total Suspended Solids	7.841	7.8	50	3.92	3.9
Lead	0.012	0.012	46.5	0.01	0.006
Copper	0.003	0.003	56.2	0.00	0.001
Zinc	0.011	0.011	85.3	0.01	0.002
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
Lout	Pollutant Load out of BMP				

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location:	**Area A(II)**		Condition: **Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.50		Total Area = 0.683 acres
BMP:	**Infiltration System**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (-)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.127	0.127	27	0.03	0.093
Total Phosphorus (P)	0.010	0.010	33	0.00	0.007
Total Suspended Solids	3.920	3.9	90	3.53	0.4
Lead	0.006	0.006	32	0.00	0.004
Copper	0.001	0.001	32	0.00	0.001
Zinc	0.002	0.002	32	0.00	0.001

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

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3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Loading Calculation

Location: **Area B** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.65 Total Area = 1.089 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	1.089	1.900	1.900	0.299
Total Phosphorus (P)	1.089	0.383	0.383	0.060
Total Suspended Solids	1.089	101.0	101.0	15.9
Lead	1.089	0.144	0.144	0.023
Copper	1.089	0.033	0.033	0.005
Zinc	1.089	0.135	0.135	0.021

L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location: **Area B** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.65 Total Area = 1.089 acres
BMP: **Deep Sump Catch Basins**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.299	0.299	0	0.00	0.299
Total Phosphorus (P)	0.060	0.060	0	0.00	0.060
Total Suspended Solids	15.889	15.9	5	0.79	15.1
Lead	0.023	0.023	0	0.00	0.023
Copper	0.005	0.005	0	0.00	0.005
Zinc	0.021	0.021	0	0.00	0.021

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location:	**Area B**	Condition:	**Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.65	Total Area =	1.089 acres
BMP:	**Water Quality Structure**		

Pollutant	L_{in} 1 (lbs)	Sum L (lbs)	RR (%)	$L_{removed}$ (lbs)	L_{out} (lbs)
Total Nitrogen (N)	0.299	0.299	18.3	0.05	0.244
Total Phosphorus (P)	0.060	0.060	66.9	0.04	0.020
Total Suspended Solids	15.094	15.1	50	7.55	7.5
Lead	0.023	0.023	46.5	0.01	0.012
Copper	0.005	0.005	56.2	0.00	0.002
Zinc	0.021	0.021	85.3	0.02	0.003

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
L_{out}	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location:	**Area B**		Condition: **Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.65		Total Area = 1.089 acres
BMP:	**Infiltration System**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (-)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.244	0.244	27	0.07	0.178
Total Phosphorus (P)	0.020	0.020	33	0.01	0.013
Total Suspended Solids	7.547	7.5	90	6.79	0.8
Lead	0.012	0.012	32	0.00	0.008
Copper	0.002	0.002	32	0.00	0.002
Zinc	0.003	0.003	32	0.00	0.002

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Loading Calculation

Location:	**Area E**		Condition: **Proposed**
Rainfall:	1	inches	
Impervious Fraction:	0.87		Total Area = 0.203 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	0.203	1.900	1.900	0.070
Total Phosphorus (P)	0.203	0.383	0.383	0.014
Total Suspended Solids	0.203	101.0	101.0	3.7
Lead	0.203	0.144	0.144	0.005
Copper	0.203	0.033	0.033	0.001
Zinc	0.203	0.135	0.135	0.005

L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location: **Area E** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.87 Total Area = 0.203 acres
BMP: **Deep Sump Catch Basins**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.070	0.070	0	0.00	0.070
Total Phosphorus (P)	0.014	0.014	0	0.00	0.014
Total Suspended Solids	3.728	3.7	5	0.19	3.5
Lead	0.005	0.005	0	0.00	0.005
Copper	0.001	0.001	0	0.00	0.001
Zinc	0.005	0.005	0	0.00	0.005
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
Lout	Pollutant Load out of BMP				

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location: **Area E** Condition: **Proposed**

Rainfall: 1 inches

Impervious Fraction: 0.87 Total Area = 0.203 acres

BMP: **Water Quality Structure**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.070	0.070	18.3	0.01	0.057
Total Phosphorus (P)	0.014	0.014	66.9	0.01	0.005
Total Suspended Solids	3.542	3.5	50	1.77	1.8
Lead	0.005	0.005	46.5	0.00	0.003
Copper	0.001	0.001	56.2	0.00	0.001
Zinc	0.005	0.005	85.3	0.00	0.001

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:

1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

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4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location: **Area E** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.87 Total Area = 0.203 acres
BMP: **Infiltration System**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (-)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.057	0.057	27	0.02	0.042
Total Phosphorus (P)	0.005	0.005	33	0.00	0.003
Total Suspended Solids	1.771	1.8	90	1.59	0.2
Lead	0.003	0.003	32	0.00	0.002
Copper	0.001	0.001	32	0.00	0.000
Zinc	0.001	0.001	32	0.00	0.000

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Loading Calculation

Location: **Area F** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.81 Total Area = 1.023 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	1.023	1.900	1.900	0.334
Total Phosphorus (P)	1.023	0.383	0.383	0.067
Total Suspended Solids	1.023	101.0	101.0	17.7
Lead	1.023	0.144	0.144	0.025
Copper	1.023	0.033	0.033	0.006
Zinc	1.023	0.135	0.135	0.024

L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location:	**Area F**		Condition: **Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.81	Total Area =	1.023 acres
BMP:	**Deep Sump Catch Basins**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.334	0.334	0	0.00	0.334
Total Phosphorus (P)	0.067	0.067	0	0.00	0.067
Total Suspended Solids	17.735	17.7	5	0.89	16.8
Lead	0.025	0.025	0	0.00	0.025
Copper	0.006	0.006	0	0.00	0.006
Zinc	0.024	0.024	0	0.00	0.024
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
Lout	Pollutant Load out of BMP				

Notes:

1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location: **Area F** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.81 Total Area = 1.023 acres
BMP: **Water Quality Structure**

Pollutant	L_{in} 1 (lbs)	Sum L (lbs)	RR (%)	$L_{removed}$ (lbs)	L_{out} (lbs)
Total Nitrogen (N)	0.334	0.334	18.3	0.06	0.273
Total Phosphorus (P)	0.067	0.067	66.9	0.04	0.022
Total Suspended Solids	16.849	16.8	50	8.42	8.4
Lead	0.025	0.025	46.5	0.01	0.014
Copper	0.006	0.006	56.2	0.00	0.003
Zinc	0.024	0.024	85.3	0.02	0.003

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
L_{out}	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location:	**Area F**	Condition:	**Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.81	Total Area =	1.023 acres
BMP:	**Infiltration System**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (-)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.273	0.273	27	0.07	0.199
Total Phosphorus (P)	0.022	0.022	33	0.01	0.015
Total Suspended Solids	8.424	8.4	90	7.58	0.8
Lead	0.014	0.014	32	0.00	0.009
Copper	0.003	0.003	32	0.00	0.002
Zinc	0.003	0.003	32	0.00	0.002

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Loading Calculation

Location:	**Area G**	Condition:	**Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.83	Total Area =	0.930 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	0.930	1.900	1.900	0.310
Total Phosphorus (P)	0.930	0.383	0.383	0.062
Total Suspended Solids	0.930	101.0	101.0	16.5
Lead	0.930	0.144	0.144	0.023
Copper	0.930	0.033	0.033	0.005
Zinc	0.930	0.135	0.135	0.022

L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location:	**Area G**		Condition: **Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.83	Total Area =	0.930 acres
BMP:	**Deep Sump Catch Basins**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.310	0.310	0	0.00	0.310
Total Phosphorus (P)	0.062	0.062	0	0.00	0.062
Total Suspended Solids	16.474	16.5	5	0.82	15.7
Lead	0.023	0.023	0	0.00	0.023
Copper	0.005	0.005	0	0.00	0.005
Zinc	0.022	0.022	0	0.00	0.022

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:

1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location:	**Area G**		Condition: **Proposed**
Rainfall:	1 inches		
Impervious Fraction:	0.83	Total Area =	0.930 acres
BMP:	**Water Quality Structure**		

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (%)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.310	0.310	18.3	0.06	0.253
Total Phosphorus (P)	0.062	0.062	66.9	0.04	0.021
Total Suspended Solids	15.651	15.7	50	7.83	7.8
Lead	0.023	0.023	46.5	0.01	0.013
Copper	0.005	0.005	56.2	0.00	0.002
Zinc	0.022	0.022	85.3	0.02	0.003
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
Lout	Pollutant Load out of BMP				

Notes:

1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Location: **Area G** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.83 Total Area = 0.930 acres
BMP: **Infiltration System**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (-)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	0.253	0.253	27	0.07	0.185
Total Phosphorus (P)	0.021	0.021	33	0.01	0.014
Total Suspended Solids	7.825	7.8	90	7.04	0.8
Lead	0.013	0.013	32	0.00	0.009
Copper	0.002	0.002	32	0.00	0.002
Zinc	0.003	0.003	32	0.00	0.002

Lin 1	Pollutant Load In
Sum L	Sum of Pollutant Load to this BMP
RR	Removal rate in percentage
Lout	Pollutant Load out of BMP

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Loading Calculation

Location: **Northwest Portion to Area Drains** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.23 Total Area = 0.251 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	0.251	1.900	1.900	0.035
Total Phosphorus (P)	0.251	0.383	0.383	0.007
Total Suspended Solids	0.251	101.0	101.0	1.9
Lead	0.251	0.144	0.144	0.003
Copper	0.251	0.033	0.033	0.001
Zinc	0.251	0.135	0.135	0.002

$$L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A$$

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Loading Calculation

Location: **Areas to Existing Infiltration Systems** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.62 Total Area = 4.385 acres

Pollutant	Residential A (acres)	Residential EMC (mg/L)	Weighted EMC (mg/L)	Weighted L (lbs/yr)
Total Nitrogen (N)	4.385	1.900	1.900	1.161
Total Phosphorus (P)	4.385	0.383	0.383	0.234
Total Suspended Solids	4.385	101.0	101.0	61.7
Lead	4.385	0.144	0.144	0.088
Copper	4.385	0.033	0.033	0.020
Zinc	4.385	0.135	0.135	0.082

$$L = 0.2266 * EMC * [0.15 + 0.75*I] * P *A$$

L	Pollution Loading (lbs/year)
EMC	Mean Event Mean Concentration (mg/L)
I	Fraction of Impervious Acres (acres)
P	Annual Rainfall (in)
A	Watershed Area (acres)

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

Location: **Areas to Existing Infiltration Systems** Condition: **Proposed**
Rainfall: 1 inches
Impervious Fraction: 0.62 Total Area = 4.385 acres
BMP: **Infiltration System**

Pollutant	Lin 1 (lbs)	Sum L (lbs)	RR (-)	Lremoved (lbs)	Lout (lbs)
Total Nitrogen (N)	1.161	1.161	27	0.31	0.848
Total Phosphorus (P)	0.234	0.234	33	0.08	0.157
Total Suspended Solids	61.720	61.7	90	55.55	6.2
Lead	0.088	0.088	32	0.03	0.060
Copper	0.020	0.020	32	0.01	0.014
Zinc	0.082	0.082	32	0.03	0.056
Lin 1	Pollutant Load In				
Sum L	Sum of Pollutant Load to this BMP				
RR	Removal rate in percentage				
Lout	Pollutant Load out of BMP				

Notes:
1. Pollution loading calculated using *Municipal Stormwater Management* by Debo & Reese

2. Pollutant removal rates for Infiltration Practices taken from *Municipal Stormwater Management* by Debo & Reese, Table 13-13

3. Pollutant removal rates for Contechs CDS Unit water quality structure taken from NJCAT TSS Approval letter, January 9, 2015

4. Pollutant removal rates for Deep Sump Catch Basins taken from MassDEP Stormwater Handbook Volume 2 - Structural BMP Specifications

Available Models

CDS Model	Treatment Capacity[3] (cfs)	Maximum Sediment Storage Capacity (CF)
1515	1.0	26
w/ 1' added sump	1.0	33
w/ 2' added sump	1.0	40
w/ 3' added sump	1.0	47
2015_4	1.4	50
w/ 1' added sump	1.4	63
w/ 2' added sump	1.4	75
w/ 3' added sump	1.4	88
2015	1.4	79
w/ 1' added sump	1.4	98
w/ 2' added sump	1.4	118
2020	2.2	90
w/ 1' added sump	2.2	110
w/ 2' added sump	2.2	129
2025	3.2	97
w/ 1' added sump	3.2	117
w/ 2' added sump	3.2	136
3020	3.9	134
w/ 1' added sump	3.9	163
w/ 2' added sump	3.9	191
3030	6.1	157
w/ 1' added sump	6.1	185
w/ 2' added sump	6.1	213
4030	7.9	329
w/ 1' added sump	7.9	379
w/ 2' added sump	7.9	429
4040	12.4	381
w/ 1' added sump	12.4	431
w/ 2' added sump	12.4	482

1. Structure diameter represents the typical inside dimension of the concrete structure. Offline systems will require additional concrete diversion components
2. Depth below pipe can vary to accommodate site specific design. Depth below pipe invert represents the depth from the pipe invert to the inside bottom of concrete structure.
3. Treatment Capacity is based on laboratory testing using OK-110 (average d50 particle size of approximately 100 microns) and a 2400 micron screen.

Sediment Depths Indicating Required Servicing*

CDS Model	Standard Sediment Depth (in.)	w/ 1' added Sump Sediment Depth (in.)	w/ 2' added Sump Sediment Depth (in.)
1515	18	27	36
2015_4	18	30	42
2015	18	30	42
2020	18	30	42
2025	18	30	42
3020	18	30	42
3030	18	39	42
4030	27	39	51
4040	27	39	51

* Based on 75% capacity of isolated sump.

APPENDIX G

64 Danbury Road

Wilton, Connecticut

Maintenance and Inspection Plan

December 2023

The initial inspection will be made during an intense rainfall to check the adequacy of the yard drains, catch basins, roof leaders, piping, hydrodynamic separator, infiltration systems, and system outlet.

The following is a checklist of items that will be checked and maintained during scheduled maintenance operations.

Drainage Structures: The Owner will be responsible for cleaning the catch basins, yard drains, manholes, piping, and outlet protection on their property. A Connecticut licensed hauler shall clean the sumps, and legally dispose of removed sand at an off-site location. The road sand may not be reused or stored on-site. As part of the hauling contract, the hauler shall notify the Owner in writing where the material is being disposed.

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand and debris from catch basins as necessary and dispose of legally.

Hydrodynamic Separator: The Contech CDS units (hydrodynamic separator) will be skimmed and oil and scum removed. In a separate operation, silt, sand and sediment will be removed. Once the structure is cleaned of debris, the chamber will be refilled with clean water to prevent wash through of debris and oil during next storm event.

Underground Infiltration: The underground infiltration systems will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control structure will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

Level Spreader: The level spreader shall be inspected two times annually. Regular maintenance includes removing accumulated debris and sediment, checking for erosion, vegetative bare spots, and removing invasive plant species or tree saplings.

Stormwater System Outfalls: The stormwater system outfalls shall be inspected two times annually as well as after every major storm, for slope integrity, soil moisture, vegetated health, soil stability, soil compaction, soil erosion, ponding and sediment accumulation. If the rip rap has been displaced, undermined or damaged, it should be replaced immediately. The channel immediately below the outlet should be checked to see that erosion is not occurring. The downstream channel will be kept clear of obstructions, such as fallen trees, debris, leaves and sediment that could change flow patterns and/or tail water depths in pipes. Repairs must be carried out immediately to avoid additional damage to the outlet protection apron.

Drainage Structures Inspection

Each catch basin and yard drain shall be inspected every four months, with one inspection occurring during the month of April. Any debris occurring within one foot from the bottom of each sump shall be removed by Vacuum "Vactor" type of maintenance equipment. Maintain a log of inspections. Remove organic matter, sand and debris from catch basins as necessary and dispose of legally.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Hydrodynamic Separator

The Contech CDS units (hydrodynamic separator) will be skimmed and oil and scum removed. In a separate operation, silt, sand and sediment will be removed. Once the structure is cleaned of debris, the chamber will be refilled with clean water to prevent wash through of debris and oil during next storm event.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Underground Infiltration

The underground infiltration system shall be inspected annually and will be cleaned of all silt, debris and sediment from the inlet structure, outlet structure and the chamber lengths. The outlet control structure will be inspected and cleaned to make sure nothing is clogging the discharge pipe.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Level Spreader

The level spreader shall be inspected two times annually. Regular maintenance includes removing accumulated debris and sediment, checking for erosion, vegetative bare spots, and removing invasive plant species or tree saplings.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

Stormwater System Outfalls

The stormwater system outfalls shall be inspected two times annually as well as after every major storm, for slope integrity, soil moisture, vegetated health, soil stability, soil compaction, soil erosion, ponding and sediment accumulation. If the rip rap has been displaced, undermined or damaged, it should be replaced immediately. The channel immediately below the outlet should be checked to see that erosion is not occurring. The downstream channel will be kept clear of obstructions, such as fallen trees, debris, leaves and sediment that could change flow patterns and/or tail water depths in pipes. Repairs must be carried out immediately to avoid additional damage to the outlet protection apron.

Date (MM/DD/YY)	Company/Person	Supervising Team Member	Comments

APPENDIX H

Tighe&Bond
Engineers | Environmental Specialists

64 Danbury Road

December 22, 2023

Contents

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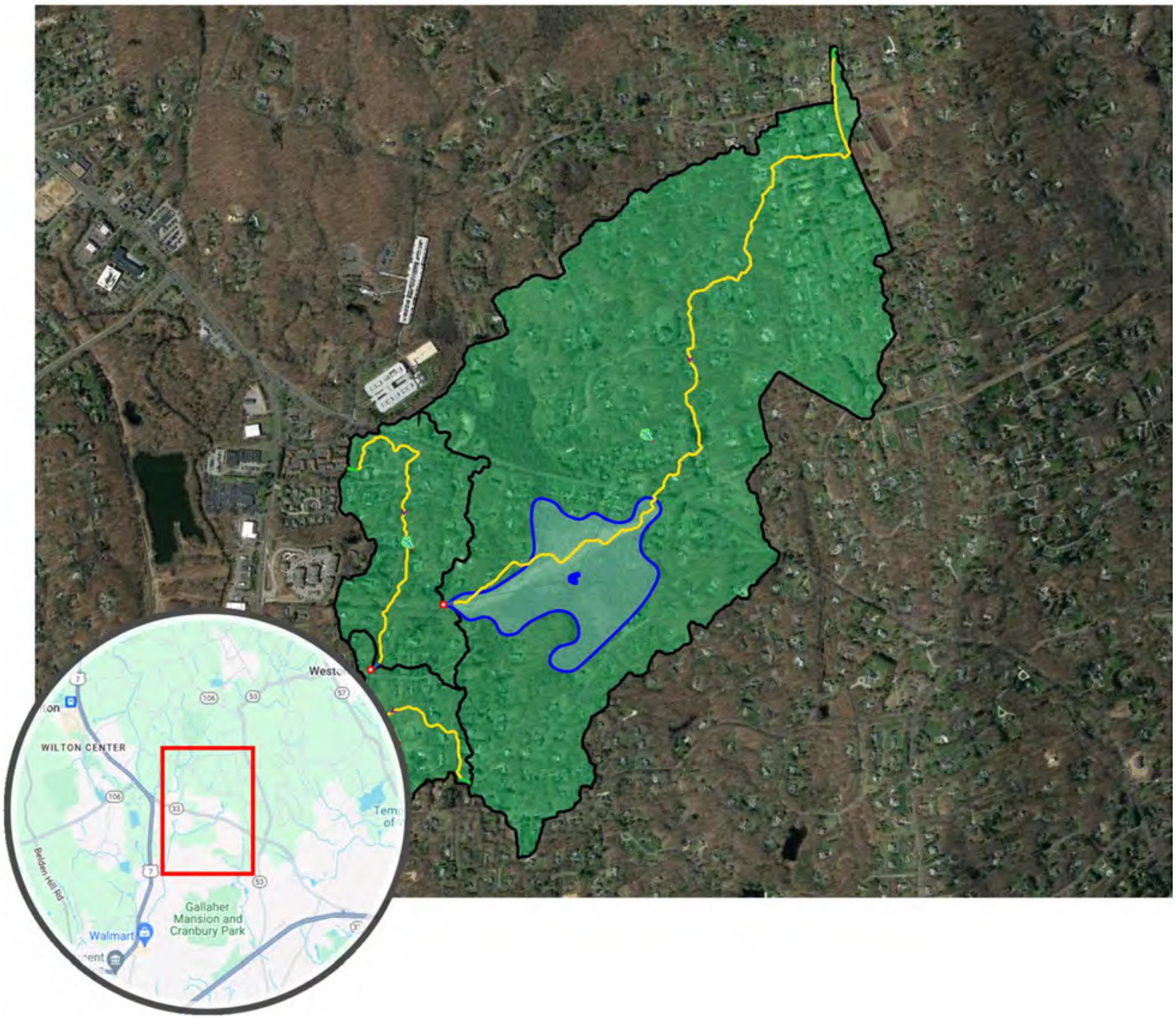
Default Scenario.. 3
Watershed Routing Diagram.. 3

Project Description

The project is located at **14 Wilton Hunt Rd, Wilton, CT 06897.** The site is 435.005 acres in size.



Purpose

The purpose of this hydrology study is to determine the peak runoff rates for pre-development and post-development conditions.

Methodology Used

The HEC-HMS version 4.5 computer software was used in this hydrology study. The **SCS Curve Number** infiltration (loss) method and **SCS Unit Hydrograph** runoff (transform) method was used for determining the stormwater runoff**.** Multiple routing method were used for routing the stormwater**.**

The following scenarios were analyzed in this hydrology study:

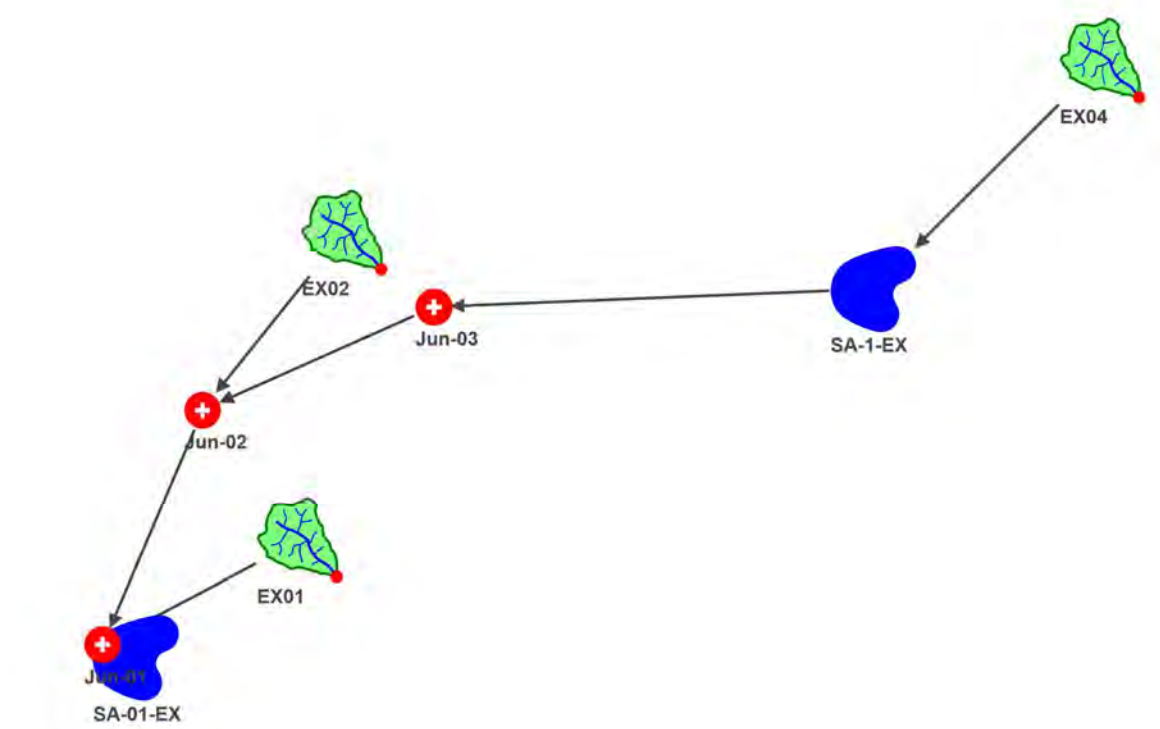
Default Scenario

This scenario contains:

- 3 delineated subbasin areas and corresponding lag time flow paths.
- 3 connecting junctions.
- 2 storage areas.

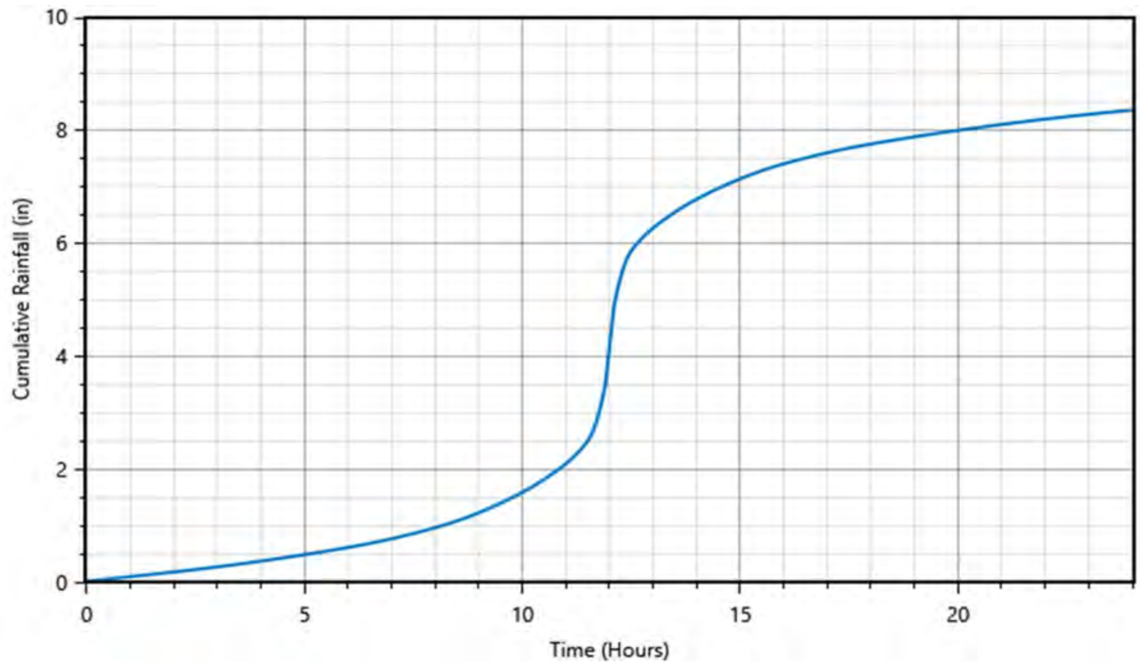
Default Scenario

Watershed Routing Diagram



Design Storm

Precipitation type: SCS Storm
SCS storm distribution: Type III
Rainfall depth: 8.35 in



Watershed Summary

Subbasin ID	Drainage Area (acres)	Initial Abstraction (in)	Curve Number	Impervious Surface (%)	Lag Time (minutes)	Peak Discharge (cfs)
EX01	32.493	0.65	75.53	18.32	19.01	123.43
EX02	51.222	0.74	73.10	9.77	38.76	126.93
EX04	351.290	0.68	74.63	9.77	46.12	810.02

Subbasins

Subbasin ID:	EX01			
Scenario:	**Default Scenario**		**Depth**	**Volume**
Peak discharge:	97.2 cfs	**Time of peak:**	31 Oct 2023, 12:16	
Drainage area:	32.493 acres	**Total rainfall:**	8.35 in	22.62293 ac-ft
Initial abstraction:	0.65 in	**Losses:**	4.18 in	6.48476 ac-ft
Curve Number:	75.53	**Precip excess:**	4.17 in	16.13817 ac-ft
Impervious surface:	18.32%	**Direct runoff:**	4.17 in	16.06 ac-ft
Peaking factor:	484	**Baseflow:**	0.00 in	0.00 ac-ft
Lag time:	19.01 minutes	**Total runoff:**	4.17 in	16.06 ac-ft

Weighted Curve Number Calculations

Area (acres)	Area (%)	CN	Description
1.082	3.33	55.00	Undeveloped, Deciduous Forest
3.723	11.46	85.83	Developed, Medium Density
4.817	14.82	79.26	Developed, Low Density
0.333	1.03	55.00	Undeveloped, Mixed Forest
22.539	69.36	74.32	Developed, Open Space
32.493	**100.00**	**75.53**	**Weighted Average**

Time of Concentration (TOC) / Lag time Calculations

TOC (min)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	Description
18.49	100.00	0.02572	0.5958	Sheet Flow
12.65	2,326.81	0.03610	6.2743	Shallow Concentrated Flow
0.54	100.00	0.00854	3.0524	Channel Flow
31.68	**2,526.81**	**Total**	**Lag Time = 19.01 minutes**	

Subbasin ID:	**EX02**			
Scenario:	**Default Scenario**		**Depth**	**Volume**
Peak discharge:	57.7 cfs	**Time of peak:**	31 Oct 2023, 13:20	
Drainage area:	51.222 acres	**Total rainfall:**	8.35 in	35.62667 ac-ft
Initial abstraction:	0.74 in	**Losses:**	3.63 in	12.39812 ac-ft
Curve Number:	73.10	**Precip excess:**	4.72 in	23.22855 ac-ft
Impervious surface:	9.77%	**Direct runoff:**	4.72 in	22.98 ac-ft
Peaking factor:	484	**Baseflow:**	0.00 in	0.00 ac-ft
Lag time:	38.76 minutes	**Total runoff:**	4.72 in	22.98 ac-ft

Weighted Curve Number Calculations

Area (acres)	Area (%)	CN	Description
5.369	10.48	100.00	Wetlands, Forested
4.067	7.94	56.83	Undeveloped, Deciduous Forest
0.201	0.39	85.00	Developed, Medium Density
7.076	13.82	76.28	Developed, Low Density
0.024	0.05	92.00	Developed, High Density
7.278	14.21	59.16	Undeveloped, Mixed Forest
27.207	53.12	73.02	Developed, Open Space
51.222	**100.00**	**73.10**	**Weighted Average**

Time of Concentration (TOC) / Lag time Calculations

TOC (min)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	Description
13.98	100.00	0.05172	0.8448	Sheet Flow
34.69	3,047.55	0.00824	2.9982	Shallow Concentrated Flow
15.92	100.00	0.00001	0.1044	Channel Flow
64.59	**3,247.55**	**Total**	**Lag Time = 38.76 minutes**	

Subbasin ID:	**EX04**			
Scenario:	**Default Scenario**		**Depth**	**Volume**
Peak discharge:	349.6 cfs	**Time of peak:**	31 Oct 2023, 13:40	
Drainage area:	351.290 acres	**Total rainfall:**	8.35 in	244.44346 ac-ft
Initial abstraction:	0.68 in	**Losses:**	3.75 in	80.18041 ac-ft
Curve Number:	74.63	**Precip excess:**	4.60 in	164.26305 ac-ft
Impervious surface:	9.77%	**Direct runoff:**	4.54 in	162.21 ac-ft
Peaking factor:	484	**Baseflow:**	0.00 in	0.00 ac-ft
Lag time:	46.12 minutes	**Total runoff:**	4.54 in	162.21 ac-ft

Weighted Curve Number Calculations

Area (acres)	Area (%)	CN	Description
54.559	15.53	100.00	Wetlands, Forested
67.639	19.25	57.74	Undeveloped, Deciduous Forest
8.570	2.44	87.94	Developed, Medium Density
0.537	0.15	74.00	Agricultural, Pasture/Hay
0.241	0.07	100.00	Wetlands, Non-Forested
55.533	15.81	79.00	Developed, Low Density
30.628	8.72	58.95	Undeveloped, Mixed Forest
133.584	38.03	73.70	Developed, Open Space
351.290	**100.00**	**74.63**	**Weighted Average**

Time of Concentration (TOC) / Lag time Calculations

TOC (min)	Length (ft)	Slope (ft/ft)	Velocity (ft/s)	Description
19.54	100.00	0.02239	0.5559	Sheet Flow
56.39	8,099.02	0.02202	4.9003	Shallow Concentrated Flow
0.93	100.00	0.00292	1.7833	Channel Flow
76.86	**8,299.02**	**Total**	**Lag Time = 46.12 minutes**	

Global Summary Results for Run "25-year"

Project: 64danburyrd Simulation Run: 25-year

Start of Run: 31Oct2023, 00:00 Basin Model: Default Basin
End of Run: 01Nov2023, 00:00 Meteorologic Model: 25-year
Compute Time: 19Dec2023, 21:43:56 Control Specifications: Default Control

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
EX04	0.5489	349.6	31Oct2023, 13:40	3.75
SA-1-EX	0.5489	37.8	31Oct2023, 19:36	1.23
Jun-03	0.5489	37.8	31Oct2023, 19:36	1.23
Jun-02	0.6289	80.3	31Oct2023, 13:30	1.53
Jun-01	0.6797	124.4	31Oct2023, 12:18	1.73
SA-2-EX	0.6797	120.2	31Oct2023, 12:22	1.73
EX02	0.0800	57.7	31Oct2023, 13:20	3.63
EX01	0.0508	97.2	31Oct2023, 12:16	4.17

Summary Results for Reservoir "SA-2-EX"

Project: 64danburyrd Simulation Run: 25-year
Reservoir: SA-2-EX

Start of Run: 31Oct2023, 00:00 Basin Model: Default Basin
End of Run: 01Nov2023, 00:00 Meteorologic Model: 25-year
Compute Time: 19Dec2023, 21:43:56 Control Specifications: Default Control

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow: 124.4 (CFS) Date/Time of Peak Inflow: 31Oct2023, 12:18
Peak Discharge: 120.2 (CFS) Date/Time of Peak Discharge: 31Oct2023, 12:22
Inflow Volume: 1.73 (IN) Peak Storage: 0.4 (ACRE-FT)
Discharge Volume: 1.73 (IN) Peak Elevation: 137.9 (FT)

Global Summary Results for Run "100-year"

Project: 64danburyrd Simulation Run: 100-year

Start of Run: 31Oct2023, 00:00 Basin Model: Default Basin
End of Run: 01Nov2023, 00:00 Meteorologic Model: 100-year
Compute Time: 19Dec2023, 21:45:06 Control Specifications: Default Control

Show Elements: All Elements Volume Units: IN ACRE-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
EX04	0.5489	496.7	31Oct2023, 13:40	5.30
SA-1-EX	0.5489	43.7	31Oct2023, 20:20	1.45
Jun-03	0.5489	43.7	31Oct2023, 20:20	1.45
Jun-02	0.6289	110.5	31Oct2023, 13:24	1.92
Jun-01	0.6797	174.8	31Oct2023, 12:18	2.21
SA-2-EX	0.6797	163.1	31Oct2023, 12:24	2.21
EX02	0.0800	82.6	31Oct2023, 13:18	5.17
EX01	0.0508	135.3	31Oct2023, 12:16	5.79

Summary Results for Reservoir "SA-2-EX"

Project: 64danburyrd Simulation Run: 100-year
Reservoir: SA-2-EX

Start of Run: 31Oct2023, 00:00 Basin Model: Default Basin
End of Run: 01Nov2023, 00:00 Meteorologic Model: 100-year
Compute Time: 19Dec2023, 21:45:06 Control Specifications: Default Control

Volume Units: IN ACRE-FT

Computed Results

Peak Inflow:	174.8 (CFS)	Date/Time of Peak Inflow:	31Oct2023, 12:18
Peak Discharge:	163.1 (CFS)	Date/Time of Peak Discharge:	31Oct2023, 12:24
Inflow Volume:	2.21 (IN)	Peak Storage:	0.8 (ACRE-FT)
Discharge Volume:	2.21 (IN)	Peak Elevation:	139.6 (FT)

Environmental Land Solutions, LLC
Environmental Analysis, Landscape Architecture & Planning

January 2, 2024

Inlands Wetlands Commission
Town of Wilton
238 Danbury Road
Wilton, CT 06897

Re: Fuller Development LLC
Application for Significant - Regulated Activity Permit – Biological Evaluation
50, 60 & 64 Danbury Road, Wilton, CT

Dear Commission Members:

Environmental Land Solutions, LLC (ELS) has been retained by Fuller Development LLC to prepare this biological evaluation for their Application for a Significant Regulated Activity to construct 93-units of housing in 8 new buildings. This evaluation, per Section 7.6.c of the Wilton regulations, includes the review of the following documents:

1. "Topographic Survey" of property at 50, 60 & 64 Danbury Road, Wilton, Connecticut, prepared for DIVFifty, LLC, prepared by D'Andrea Surveying and Engineering, PC, dated September 12, 2023.

2. Site plans and reports prepared by Tighe & Bond, dated December 21, 2023, for Fuller Development LLC:

   - Site Plan Set (22 sheets).
   - Drainage Report.

3. Plans prepared by Environmental Land Solutions, LLC, dated January 2, 2024.

   - Landscape and Lighting Plans (LP-1).
   - Landscape Details & Notes (LP-2).

4. Footcandle Plan prepared by Illuminate.
   - Photometric Calculation Plan (L-1) Average of 1.0-Footcandle, dated 1/2/24.
   - Photometric Calculation Plan (L-1) Average of 2.5-Footcandle, dated 1/2/24.

5. Soil Investigation Report prepared by Otto Theall, dated April 10, 2017.

8 Knight Street, Suite 203, Norwalk, Connecticut 06851 Tel. (203) 855-7879 Fax. (203) 855-7836

This evaluation will focus on the existing conditions of the wetland resources and the effects of the proposed development on these resources. The proposed development is restricted to the northern 4.8±acres of the site, known as 64 Danbury Road. Recent site inspections were conducted by ELS on November 7, 16 and December 19, 2023. The property contains inland wetlands and watercourses, flagged by Otto Theall, Soil Scientist on April 10, 2017. The wetland boundary areas are shown on the "Topographic Survey" submitted with the wetland application. The proposed development will involve the deposition and removal of more than 100 cubic yards of material within the 100' upland review area and grade in excess of 20% with the 100' upland review area. The existing complex received approval in 2001 and 2007 from your commission to construct new buildings with associated parking garages, roadways, drainage improvements, and landscaping in the southern half of the site.

EXISTING CONDITIONS:

The total site area is 22.2± acres. The parcel fronts on Danbury Road to the west, with an office park owned by Wilton 40 LLC to the south boundary, Holly Hock Lane and Grumman Hill Road to the north, with residential properties off Whipple Road to the east. This property contains several office buildings, a parking garage, parking lots, maintenance sheds, a tennis and volleyball court, and landscaping. The land within the northeastern and southeastern corners of the site is undeveloped and wooded and partially protected with "conservation restrictions".

The front or western portion of the site is developed with a fairly level to gently sloping grade. The eastern portion of the parcel consists of wooded slopes which rise to the east toward Whipple Road. This woodland community is established with a second growth forest canopy that includes Sugar, Red and Norway Maple, Red and White Oak, Shagbark Hickory, and American Elm. The understory is dense and includes Euonymus, with groundcovers of Garlic Mustard and Aster.

<u>Inland Wetlands and Watercourses</u>

The inland wetlands and watercourses are found at three areas of the site and constitute approximately 0.59± acres (2%) of the properties. Copt's Brook, in the north, is a tributary to the Norwalk River, and historically flowed through the property in a southerly direction. However, this watercourse was diverted and piped through the western portion of the site to the Norwalk River through a 54" reinforced concrete pipe (RCP) during the office building development in the 1960's.

Stormwater runoff from portions of the northern surface areas are collected and directed to this 54" RCP, while the southern areas of the site are collected in storm drains and discharged just off the site to the south into a stone-lined swale and associated wetlands. The open portion of Copt's Brook runs 130'± within the site and parallels an existing paved parking area located 20'± from its western bank. This open channel discharges into a headwall at its the southern end. The channel is lined with large stone, with naturalized deciduous woods at the top of its banks. The tree cover in this area includes Oak, Maple and Black Birch with a dense understory of Euonymus.

A small pocket wetland (500± sf) was flagged at the northeastern corner of the site. This wetland is a collection point for stormwater from the slope above and area between the volleyball and tennis courts. This wetland has a tree canopy of Red Maples and groundcover of herbaceous species such as Jewelweed, sedges, and Rice Cutgrass. A small patch of nonnative and invasive Japanese Knotweed has established in the northeastern area between the Volleyball court and the wetland. Water in the wetland is discharged through a 24" pipe into the drainage network of the site.

A third wooded wetland corridor is found at the high point of the site within the sloping wooded area in the easternmost section of the property. This system flows in a southwestern direction into the wetland at 40 Danbury Road, to the south. The understory vegetation within this wetland is primarily Winged Euonymus which is not a wetland indicator plant and considered to be an invasive species. The tree canopy includes Red Maple, American Elm and White Oak, averaging 24" diameter breast height (DBH). The formation of this wetland was probably influenced by the historic construction of an earthen/stone berm along the western edge of this area which guides stormwater runoff in a southerly direction. In the past pipes were installed perpendicular to the slopes from this wetland which collect flows and discharge into catch basins located at the bottom of the slopes and immediate east of the existing garage structure. A few drainage ditches were dug within this wetland to guide runoff flows downslope in a southwesterly direction to the flatter elevations. The proposed site work is not within is regulated area.

The property survey prepared by D'Andrea, Surveying and Engineering, PC show areas associated with Copt's Brook lie within Federal Emergency Management Act (FEMA) flood zones. The section is designated as Zones A and X.

Wildlife

Wildlife usage of the site will be mainly by species adapted to suburban residential habitats, small woodland tracts, and woodland edges. Due to the limited size of the onsite wetland and lack of a prolonged open water source, it is unlike that the site provides habitvat for any wetland dependent wildlife species. Based on calls, tracks, or sightings, the following wildlife species were observed using the site during the time of the site visit: American Robin, American Crow, Grey Catbird, White-tailed Deer, Grey Squirrel, Chipmunk, Cabbage White and the Least Skipper. A review of the online CT DEEP NDDB map (June 2023) indicates that the site lies outside of any delineated "State and Federal Listed Species & Significant Natural Communities" area. In addition, ELS staff observed no species of special concern, threatened species, or endangered species on or near the site during the site visits.

Wetland and Watercourse Functions:

The following wetland/watercourse evaluations are based on, field experience and reference to the suggested criteria cited in the publication "The Highway Methodology Workbook, *Supplement,* Wetland Functions and Values, *A Descriptive Approach",* by the U.S. Army Corps of Engineers, NEDEP-360-1-30A, dated, September 1999. Using this publication, the primary functions provided by the wetlands is groundwater recharge. Other wetland values and functions are diminished or not present on this developed commercial site.

Copt's Brook, a 130'± onsite intermittent watercourse, found entering at the northern property functions to convey surface runoff. To a lesser degree this intermittent watercourse provides seasonal aquatic habitat. Copt's Brook and its associated wetland. are expected to have a primary function of groundwater discharge/recharge.

The isolated pocket wetland at the base of this slope provides a small seasonal ponding area, that may be used to a lesser degree by seasonal aquatic habitat for insects and small birds and mammals. Since the area is sloped, small and adjacent to catch basins within the parking lot, it is expected that water quality renovation is not a significant contributing component of this small, isolated wetland. Based on the location of the wetland near the bottom of a slope the site's wetland and watercourse systems lend themselves to being a source of groundwater recharge / discharge.

This hillside wetland receives surface and groundwater runoff from the upper slopes within this watershed. These flows are conveyed through this corridor by piping and disperse downslope. This corridor lacks a diverse plant community (the dominant vegetative species consists of Winged Euonymus which is an invasive plant).

PROPOSED CONDITIONS:

The proposed site plan reflects redevelopment of 4.8± acres in the northern portion of the site. The existing northern building and associated parking areas will be razed and redeveloped with eight new multifamily buildings, as well as a club house and pool.

The new buildings and their development areas will be developed primarily over the existing parking areas, except for buildings 7 & 8 which will partially extend into the undeveloped portion of the site, and the 100' upland review areas of Copts' Brook and the northern pocket wetland. Buildings #1, #2, and #6 are outside of the upland review areas. Buildings #4 and a portion of buildings #3, #5, #7 and #7 are within the upland review area of Copt's Brook. Building #8 is also within the upland review areas of the pocket wetland. No work is proposed within the upland review of the hillside wetland at the southeastern area of the site. This proposed development will increase the impervious surfaces on the site by approximately 1 acre or 4.5% of the total site. The existing on-site stormwater treatment system will be expanded for the new development. The proposed stormwater treatment system will capture and infiltrate the first 0.5" of rain to comply with the Water Quality Volume guidelines for this site. In addition, infiltrator galleries are designed to attenuate peak flows and volumes from existing flows. This will maintain the capacity flow from the brook into the existing 54" culvert. The development area will be provided with new landscaping primarily consisting of native trees and shrubs (refer to plans prepared by ELS).

In general, the proposed site earthwork will create a net export of soil material from the site. Therefore, no soil import is anticipated for this project, beyond clean topsoil to complete the landscaping and install the proposed trees and shrubs.

Regulated Activities:

No sitework is proposed within the wetland areas. The site construction will occur primarily within developed parking areas in the north and east areas of the site. The following site work is proposed within the 100' upland review area to construct the buildings #3, #4, #5, #7 and #8 and their associated site improvements:

1. Building #3, #4 and 5: These buildings are located within the existing parking area over existing paved surfaces.

2. Building #4: Disturbances to construct Building #4 will be within the paved areas. The existing strip of lawn will be temporarily disturbed and reestablished to provide narrow access around the building. The existing woody buffer along Copt's Brook is proposed to be enhanced by removing the nonnative invasive Norway Maples and Euonymus and substantially replanted with native species. The area will be managed for invasive plant species for 5 years as the new plants establish.

3. Building #7: This building is located 50± from the east bank of Copt's Brook. A retaining wall is proposed to be constructed along the western edge of construction to protect and maintain grades around the building. The existing wooded buffer will be enhanced by removing perimeter invasive nonnative plants and reestablishing a native wooded buffer 50' from the paved parking lot. The area will then be managed for invasive plant species for 5 years as the new plants establish.

4. Building #8: The building will be within the 100' upland review area of the pocket wetland, however the wetland will be separated from the development by the existing volleyball and tennis court. The immediate buffer around the wetland will be enhanced by removal and management of nonnative invasive species (Japanese Knotweed) and densely replanting this area. The area will be managed for invasive plant species for 5 years as the new plants establish.

5. The site's existing stormwater collection system will be expanded and upgraded. The expanded drainage system includes 6 new infiltrator galleries system, each with a hydrodynamic separator.

6. Proposed replanting of native trees and shrubs throughout the site and the upland review area.

IMPACTS AND MITIGATION MEASURES:

The project includes several layers of mitigation measures and Best Management Practices (BMPs) to minimize developments impacts. The following mitigation measures and BMPs are utilized for this project.

1. Potential impacts from vegetation removal and earthwork adjacent to wetland resources, can result of in a reduction of shading, reduced food source for wildlife, increased stormwater runoff, reduced capacity to remove nutrients, and soil erosion and sedimentation. These potential impacts will be minimized by the following enhancements.

   a. Maintaining a 50' wooded buffer to Copt's Brook along the eastern bank.

   b. Maintaining and enhancing the existing 20' wide vegetated buffer along the western bank of Copt's Brook.

   c. Replanting native trees, shrubs, and perennials to restore lost vegetation and reduce nonnative invasive plants and expand native plants in the buffers.

   d. Planting a mix of trees throughout the site to reduce thermal pollution.

   e. Implementing and maintaining proper sedimentation and erosion controls and construction sequence throughout construction period.

2. Potential impacts from new impervious areas of building and pavements; increased stormwater runoff/discharge, decreased groundwater recharge, and increased non-point source of water pollution. The site's impervious area will increase by 4.5% site wide. The following are the proposed methods to mitigate these changes.

   a. Stormwater Treatments: The existing stormwater collection system on this portion of the site does not have any meaningful stormwater treatment. The existing runoff is collected in a series of catch basins and pipes which discharge into the existing system that is split into the west side flowing under Route 7 toward the Norwalk River. The existing system has been utilized where feasible, with peak flows maintained to the existing infrastructure.

   b. The new drainage system will provide expanded water quality treatment by incorporating six new infiltration galleries that will provide the Water Quality

Volume within the DEEP guidelines for urban sites and maintain peak flows to offsite areas.

c. New infiltration galleries have been dispersed throughout the site; each is fitted with a hydrodynamic separator. One existing hydrodynamic unit will be maintained. Most of the collected stormwater will be discharged to the existing storm drain that leaves the site, except for the small landscape area behind building #7 & 8. The proposed lawn drains will collect and release stormflows to a level spreader at the northwest corner of building #7, 45'± from Copt's Brook. This overland flow, over wooded naturalized area will aid in trapping sediments, uptake of nutrient by plants, and provide soil infiltration.

d. The expanded stormwater treatments will help compensate for the increase in site coverage, treat the first 0.5" of runoff from the new development, and maintain peak flows to off site areas. The new infiltrators will provide groundwater recharge, cool surface water temperatures and attenuate peak flows from impervious surface on the site.

ALTERNATIVES:

As part of the application for a Significant Regulated Activity, the applicant has included two alternative site plan alternatives as required by Section 7.5-c of the Inland Wetlands and Watercourses Regulations for the Town of Wilton (the "Regulations"). Two preliminary site analysis plans ("Illustrative Site Plan" (A.01), dated 1/21/21 and Site Plan" (A.4) dated 2/6/21) both prepared by Lessard Design, are included as alternative plans that were explored, discussed, and ultimately discarded during the design process. These layouts were developed in closer proximity to Copt's Brook and expand into undeveloped areas.

These alternative plans were eliminated after review and further discussion with the design team, town staff and the Architectural Review Board (during a pre-application review). During this review the applicant was encouraged to increase pedestrian connections and reduce site work in the wetland buffer areas, maintain existing green space along long Route 7, and expand landscape buffer adjacent to the brook. These inputs were all considered as the plan was refined into the submitted site plan.

The final site plan maintains more green space and increases buffers to wetland resources than the previous site layouts provided. These changes make this submitted site plan superior to these earlier plans, as it relates to protection and enhancements to the brook and wetland resources.

SUMMARY:

The proposed site redevelopment occurs primarily on existing developed (paved parking lot) land, and within the upland review area of two onsite wetlands in the northern half of the site.

The redevelopment will maintain developed distances from a wetland where existing development occurs and maintain a 50' minimum naturalized buffer within new disturbance areas within the upland review areas.

The dense replanting in the existing buffer and expanded stormwater drainage system will contribute to maintaining stormwater infiltration and treat stormwater runoff from new impervious areas. These mitigation measures and BMP's will prevent additional impacts to the wetland resources and ensure water quality within the stormwater runoff.

Sincerely,

Kate Throckmorton, ASLA
Registered Landscape Architect, RLA
Certification in Erosion and Sedimentation Control
NOFA Certified Professional

Danbury Road 64-Wilton ea

SOIL & WETLAND SCIENCE, LLC
OTTO R. THEALL
PROFESSIONAL SOIL SCIENTIST
PROFESSIONAL WETLAND SCIENTIST
2 LLOYD ROAD
NORWALK, CONNECTICUT 06850
OFFICE (203) 845-0278
CELL (203) 247-0650
FAX (203) 354-4881
EMAIL: soilwetlandsci@aol.com

SOIL INVESTIGATION REPORT
40, 50-60 DANBURY ROAD
WILTON, CONNECTICUT
APRIL 10, 2017

I conducted an on-site investigation of the soils on the Perkin-Elmer Corporation properties located 40, 50-60 Danbury Road in Wilton, Connecticut on February 23 and 24, March 9 and April 10, 2017. The examination for wetland soils was conducted in the field by inspection of approximately 300 soil samples taken with spade and auger.

Inland wetlands in Connecticut, according to the Connecticut General Statutes, are lands, including submerged lands, which consist of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey of the NRCS. Watercourses include rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent. Intermittent watercourses are to be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation.

The wetland boundary was marked in the field with red flags numbered 1 through 10, 11 through 40, 47 through 77, 78 through 87, 88 through 141, 139 through 142 and 146 through 150. The wetland soils consist of Aquents (1), Ridgebury, Leicester and Whitman soils, extremely stony (3) and Raypol silt loam (12). The non-wetland soils consist of Haven and Enfield soils (32), Sutton fine sandy loam (50), Canton and Charlton soils (60), Canton and Charlton soils, very stony (61), Udorthents-Urban land complex (306), Urban land (307) and Udorthents, smoothed (308). The soil map units contain inclusions of other soil types. The results of this investigation are subject to change until accepted by the Inland Wetland Commission of the Town of Wilton.

Respectfully submitted:

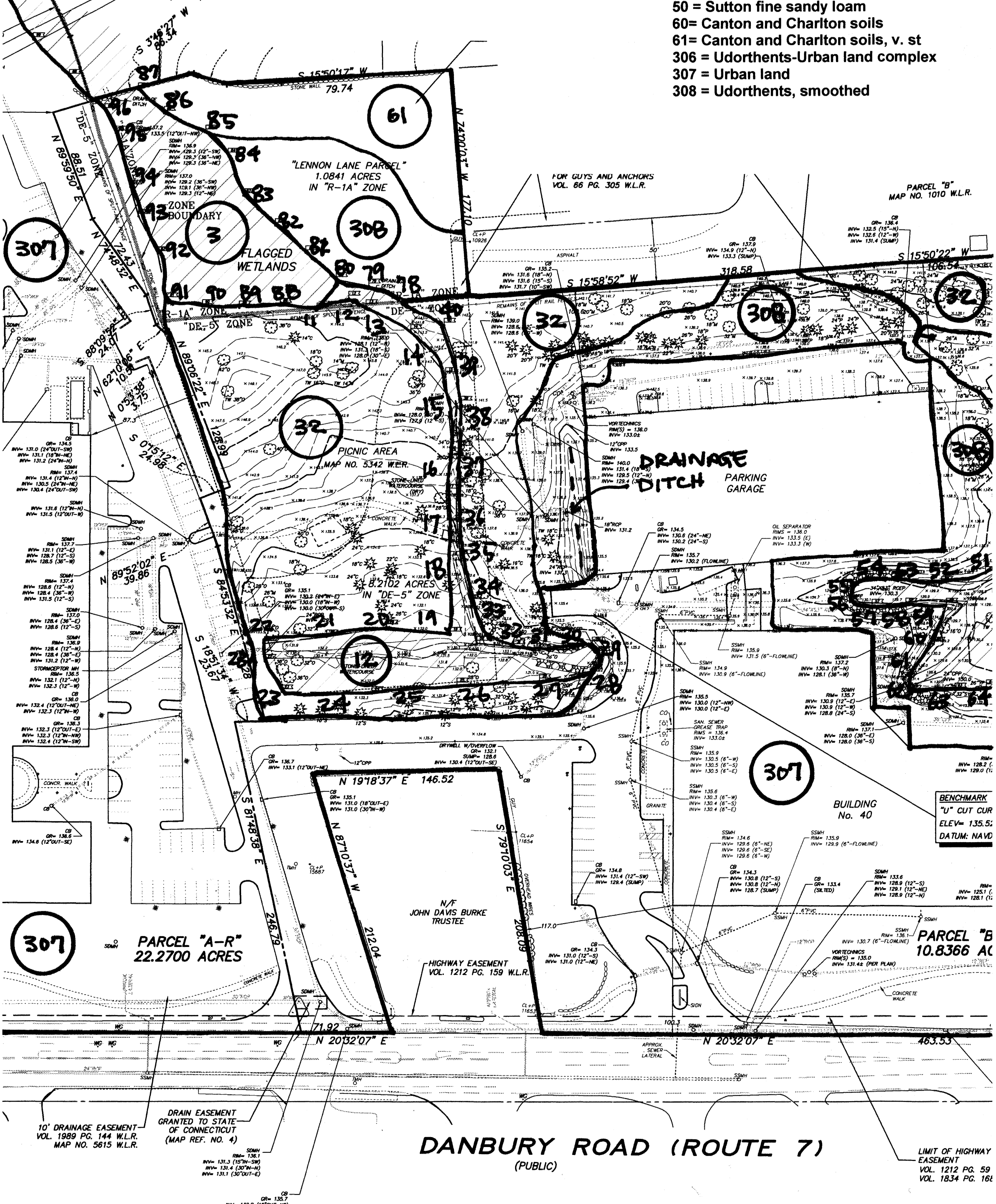
Otto R. Theall

Otto R. Theall
Professional Soil Scientist

{S7539038}

SOIL SURVEY SKETCH MAP
40, 50-60 DANBURY ROAD
WILTON, CONNECTICUT
SOIL & WETLAND SCIENCE, LLC
OTTO R. THEALL
PROFESSIONAL SOIL SCIENTIST
APRIL 10, 2017

SOIL LEGEND:
Wetland Soils:
1 = Aquents
3 = Ridgebury, Leicester & Whitman
12 = Raypol silt loam
Non-wetland Soils:
32 = Haven and Enfield soils
50 = Sutton fine sandy loam
60= Canton and Charlton soils
61= Canton and Charlton soils, v. st
306 = Udorthents-Urban land complex
307 = Urban land
308 = Udorthents, smoothed



SOIL SURVEY SKETCH MAP
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WILTON, CONNECTICUT
SOIL & WETLAND SCIENCE, LLC
OTTO R. THEALL
PROFESSIONAL SOIL SCIENTIST
APRIL 10, 2017

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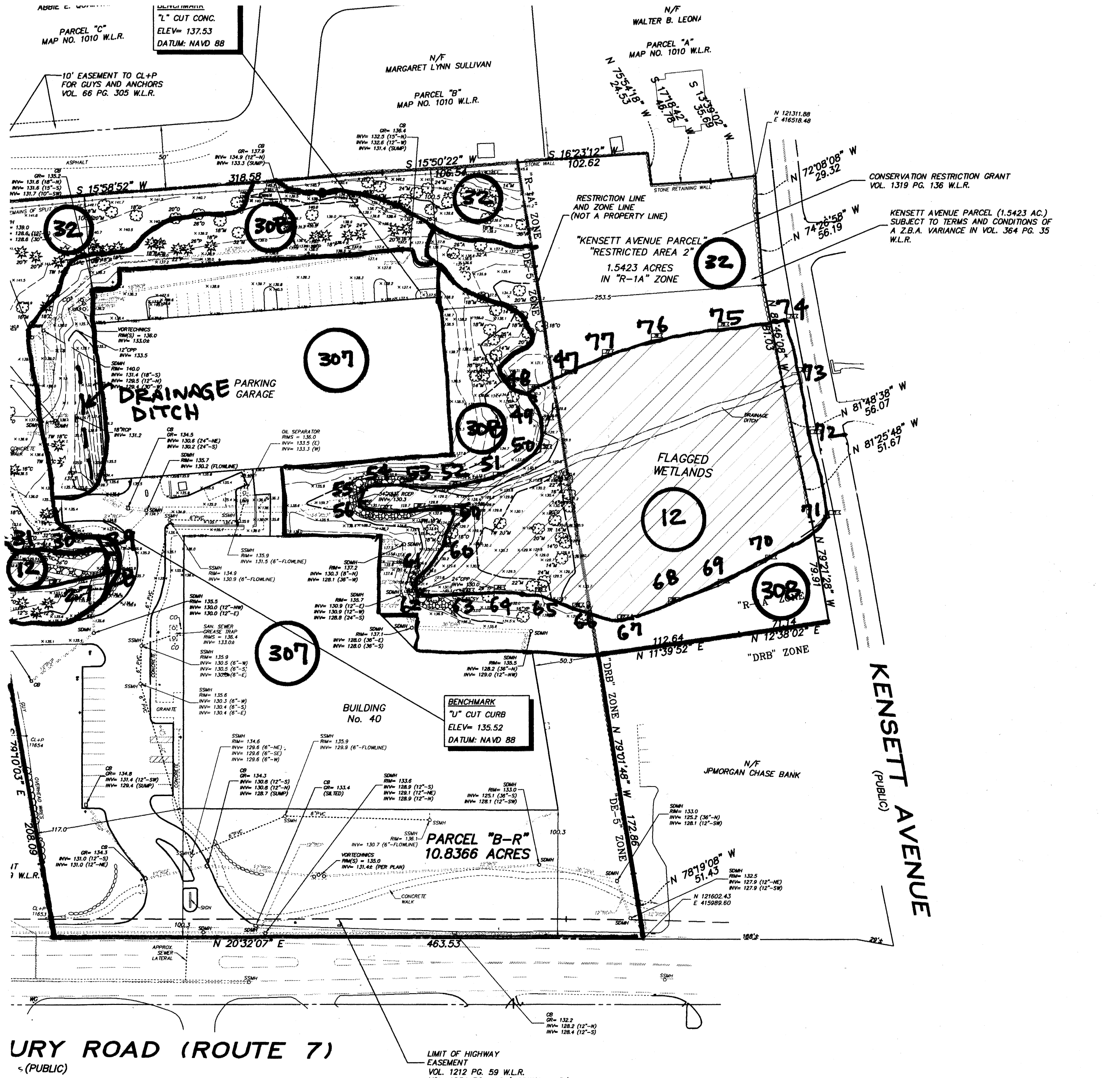

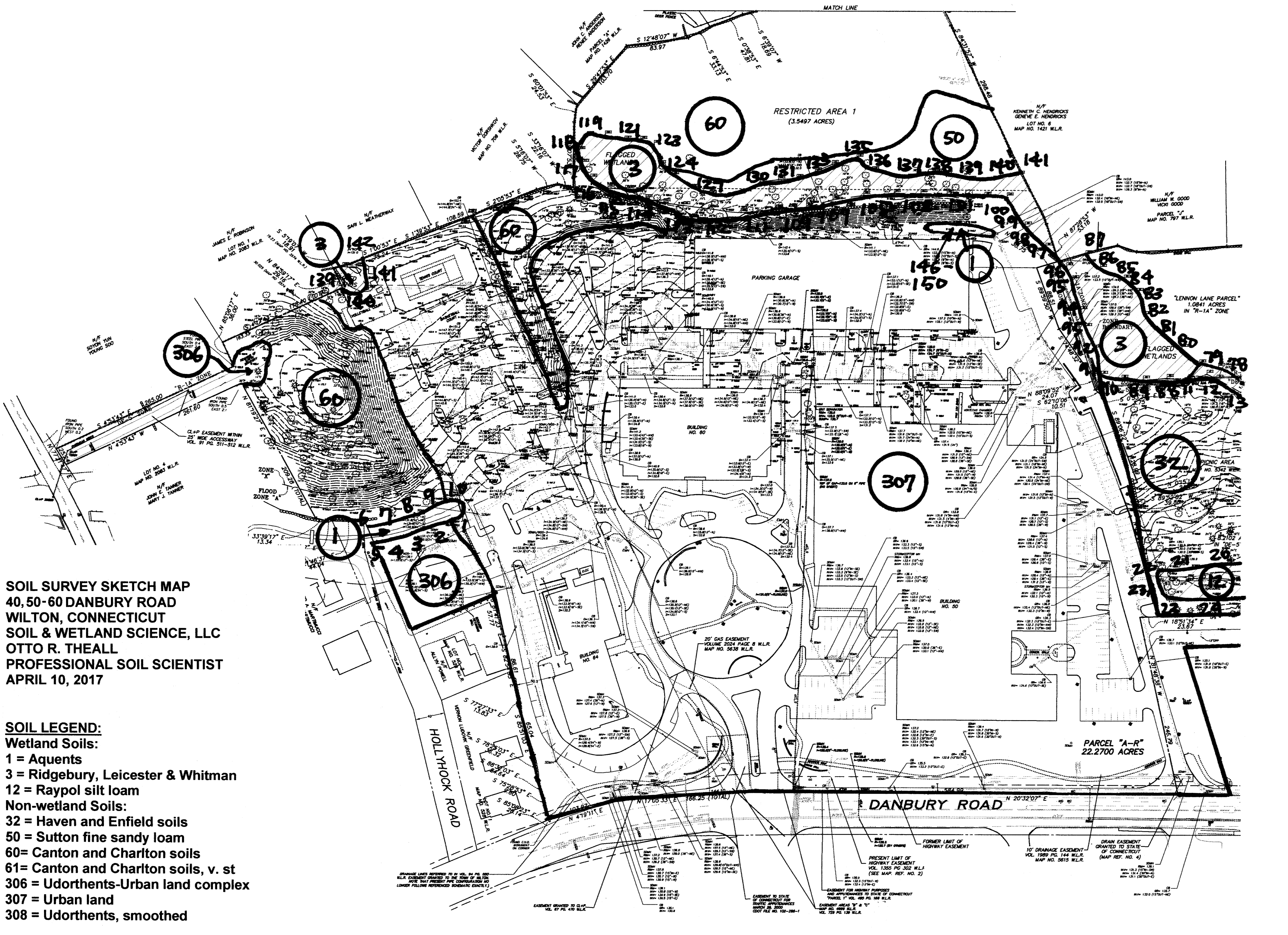

SOIL SURVEY SKETCH MAP
40, 50-60 DANBURY ROAD
WILTON, CONNECTICUT
SOIL & WETLAND SCIENCE, LLC
OTTO R. THEALL
PROFESSIONAL SOIL SCIENTIST
APRIL 10, 2017

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61= Canton and Charlton soils, v. st
306 = Udorthents-Urban land complex
307 = Urban land
308 = Udorthents, smoothed

List of Project Professionals

1. Contract Purchaser: Samuel Fuller – Fuller Development
2. Project Architects: Ulises Montes De Oca, Juhi Bhardwaj – Lessard Design
3. Landscape Architect: Kate Throckmorton – Environmental Land Solutions
4. Site Engineer: Erik Lindquist, Senior Project Manager – Tighe & Bond
5. Traffic Consultant: Craig Yannes – Tighe & Bond
6. Surveyors: Leonard D'Andrea, Edwin Rhodes - RVDI
7. Planner: Raymond Mazzeo - Redniss & Mead
8. Land Use Attorneys: Lisa Feinberg & Daniel Conant - Carmody Torrance Sandak Hennessey

ULISES MONTES DE OCA

VICE PRESIDENT | ASSOCIATE AIA

Ulises Montes De Oca has been with Lessard Design since 2004 with a career spanning over 25 years. As Vice President, Ulises plays a key role as head of the Design Studio by providing the overall design direction of the firm. The depth of Ulises's experience makes him a firm-wide resource on planning, design and project management, which has been recognized in major awards for design excellence on projects located all over the nation.

EDUCATION

MASTER OF ARCHITECTURE
Southern California Institute of Architecture

BACHELOR OF ARCHITECTURE
La Salle University, Mexico City

ORGANIZATIONS

AIA
NCARB
NMHC
ULI
HBAB
NAHB
NVBIA
WBC

AWARDS

2023 MFE AWARDS
Canter Green

2019 THE BEST IN AMERICAN LIVING AWARD (BALA)- PLATINUM
The Copley at Crown

2009 INNOVATIVE INFILL LAND PLANNING
Arthur Capper/Carrollsburg

2009 GREEN COMMUNITY ENERGY EFFICIENCY
Arthur Capper/Carrollsburg

RELEVANT EXPERIENCE

DoNo - Parcel C
Hartford, CT

Munson Hill
New Haven, CT

Coliseum Phase I
New Haven, CT

9 Tower Lane
New Haven, CT

Lafayette St.
New Haven, CT

Atlantic Station North & South Tower
Stamford, CT

Trump Parc Residences
Stamford, CT

Broad St. & Greyrock Pl.
Stamford, CT

885 Washington Boulevard
Stamford, CT

Summer House
Stamford, CT

777 Summer Street
Stamford, CT

545 Bedford
Stamford, CT

East Side Commons
Stamford, CT

St. John's Mixed Use
Stamford, CT

The Pearl Lofts SoNo
Norwalk, CT

The Mitchell
White Plains, NY

1 Water St
White Plains, NY

51 South Broadway
White Plains, NY

247 North Ave,
New Rochelle, NY

Trump Plaza
New Rochelle, NY

Huguenot Center North & South
New Rochelle, NY

Ritz-Carlton Residences
Long Island, NY

Tarry Lighthouse
Port Chester, NY

Lighthouse, Hudson Harbor
Tarrytown, NY

Lookout North & South Hudson Harbor
Tarrytown, NY

Eastern Mirage
Queens, NY

Residences / Henley on the Hudson
Weehawken, NJ

1100 Riverhouse
Weehawken, NJ

Riverhouse 9
Weehawken, NJ

Park Apartments
Weehawken, NJ

Glasshouse
Edgewater, NJ

Canter Green/Libery Place
Union, NJ

The Upton
Short Hills, NJ

2 Campus
Parsippany, NJ

3 Campus
Parsippany, NJ

Livingston Multifamily
Livingston, NJ

lessard DESIGN

JUHI BHARDWAJ

MANAGER, SENIOR DESIGNER

Juhi Bhardwaj has been with Lessard Design for five years, leading the design team with a focus on clients in mixed-use and multi-family development. As a Senior Designer, Juhi is responsible for the design development of multiple projects, project production, and consultant coordination from the Conceptual Design phase through Design Development.

EDUCATION

BACHELOR OF ARCHITECTURE
Shantaben Manubhai Patel School of Studies and Research in Architecture and Interior Design (SMAID)
Gujarat, India

RELEVANT EXPERIENCE

51 South Broadway
White Plains, CT

100 Clinton
Stamford, CT

275 Windsor St.
Hartford, CT

3 Landmark Square
Stamford, CT

Alexandria Crossing
Alexandria, VA

Anova at UCity Square
Philadelphia, PA

Astoria Condos
McLean, VA

Broad St. and Greyrock
Stamford, CT

Canter Green/Liberty Place
Union, NJ

Frazer Lane
Malvern, PA

North Crossing - Parcel B and C
Hartford, CT

Pierpont at City Crossing
New Haven, CT

The Mitchell
White Plains, NY

The Smyth
Stamford, CT

West Hartford
West Hartford, CT

KATHERINE THROCKMORTON
Landscape Architect

PROFESSIONAL HISTORY:

1999 to Present	Principal / Landscape Architect / Environmental Analyst Environmental Land Solutions, LLC, Norwalk, CT
1992 to 1999	Assistant Planner Town of Wilton, CT
1987 to 1992	Landscape Architect Environmental Design Associates, P.C., Wilton CT
1984 to 1987	Landscape Designer Richard Bennett and Associates-Civil Engineers, Westport, CT
1983 to 1984	Landscape Designer Wesley E. Lent, Landscape Architect, Ridgefield, CT

EDUCATION:

1983	The University of Connecticut, Storrs Bachelors of Science in Landscape Design

PROFESSIONAL AFFILIATION:

Member (1986 to present):	American Society of Landscape Architects
Member (2007 to 2018):	Wilton Tree Committee - Chairman (2012 to 2018),
Member (1999-2010):	Conservation Commission, Town of Wilton, CT
Member (1992-1999):	Connecticut Trust for Historic Preservation
Member (1992-1999):	American Planners Association
Completed:	Northeast Organic Farming Association's (NOFA) Organic Land Care
Volunteer (2018 to present):	Wilton Land Conservation Trust, Trail Development
Broad Member (2020 to present)	Friends of Norwalk River Valley Trail (NRVT)

REGISTRATION:

Landscape Architect, Connecticut (#635)
Certified Professional in Soil Erosion and Sediment Control (#1216)
NOFA Accredited Organic Land Care Professional

EXPERIENCE:

Preparation of preliminary site drawings through construction documents for a range of project types including parks, athletic fields, commercial developments, single family residential and wetlands restoration and mitigation.

Site evaluations and inventorying of inland wetlands and wildlife communities. Preparation of environmental assessments reports with mitigation recommendations and alternative analysis for projects subject to local, state and federal review. Environmental monitoring of projects as required for regulatory compliance. Presentations at public hearing, meetings and court testimony. Site monitoring for permit compliance with regulatory permit conditions including erosion control and wildlife monitoring.

ERIK LINDQUIST, PE, LEED AP

SENIOR PROJECT MANAGER

Erik Lindquist is a senior project manager who has expertise in various civil engineering disciplines, including: land development, subsurface sewage disposal, roadway design and stormwater management. He is skilled in all phases of project execution from preliminary planning through design, approvals, and construction. He is a LEED Accredited Professional and a licensed engineer in both Connecticut and New York.

EXPERIENCE

22 Years

SPECIALTIES

Land Development

Stormwater Management

Soil Erosion & Sediment Control

Subsurface Sewage Disposal

EDUCATION

Bachelor of Science
Civil Engineering
University of Massachusetts Amherst

LICENSES & REGISTRATIONS

Professional Engineer
CT (22850)
NY (88632)

Leadership in Energy and Environmental Design Accredited Professional (LEED AP)

CIVIL/SITE

CORBIN BLOCK DEVELOPMENT—DARIEN, CT

Currently serving as the project manager for the Corbin Block mixed-use development project in Darien, CT. When completed the development will consist of 100,000+/- SF of retail and restaurant space, 81,000+/- SF of office space, and 116 residential units spread across approximately 7-acres in downtown Darien within walking distance to the metro north rail station. Design services included site/civil engineering, traffic and parking consulting, and wetlands delineation and assessment services. Improvements will include streetscape, traffic signal, and roadway upgrades to both the Boston Post Road and Corbin Drive, and the construction of three parking garages. The project underwent extensive permitting at the Federal, State, and local levels including an OSTA MTG Certificate, a CTDEEP Diversion Permit and 401 Water Quality Certification, a USACOE Individual Permit, as well as local Planning and Zoning and Wetlands approvals.

BRANSON ULTRASONICS CORPORATE HEADQUARTERS—BROOKFIELD, CT

Currently serving as the project manager for the new Branson Ultrasonics Corporate Headquarters in Brookfield, CT. Responsibilities are ongoing and currently include the design of a 142,000+/- SF office and manufacturing building, site parking and access drives, utility services, and storm drainage, including two retention systems and modifications to an off-site detention pond. Efforts also included the coordination of the approval and permitting process through both the Towns of Brookfield and Bethel for Planning and Zoning and Wetlands.

THE SUMMIT MASTER PLAN—DANBURY, CT

Currently serving as the project manager for the development of The Summit Master Plan in Danbury, CT. Responsibilities are ongoing and currently include the phased re-development of the 99.5-acre campus for the former Union Carbide world headquarters. Coordinating the approval and permitting for the adaptive re-use of the existing building and the future development of the balance of the site.

BRIDGEPORT HOSPITAL PARKWAY CAMPUS EXPANSION—TRUMBULL, CT

Served as the project manager for the expansion of the existing Trumbull campus to include both a 120,000+/- SF outpatient center to interconnect the existing MOB and radiology buildings, and a 5-level parking garage. The project required a complex enabling package to facilitate pedestrian and vehicular circulation throughout construction. In addition, off-site improvements at the site entrance on Park Avenue, and the intersections for the north and south bound off-ramps for the Merritt Parkway at Park Avenue were required.

THE RESERVE DEVELOPMENT—DANBURY, CT
Currently serving as the project manager for The Reserve planned neighborhood development project in Danbury, CT. Responsibilities are ongoing and currently include the phased development of various residential communities and commercial sites located within the 545-acre site. Coordinated the approval and permitting of 685 residential units through the Environmental Impact Commission and city site plan review.

WASHINGTON VILLAGE—SOUTH NORWALK, CT
Served as the project manager for the redevelopment of the Washington Village Housing development in South Norwalk. The existing Washington Village site is the oldest public-housing complex in the state and consists of 136 residential units with limited on-site parking. The proposed project will replace the existing development with 5 buildings and 272 total units across three separate parcels along Day and Raymond Streets. In addition, the project will include over 500 vehicular parking spaces, many of which will be located beneath pedestal buildings. The site is adjacent to the Norwalk River, within the 100-year flood plain, and experienced significant flooding during Hurricane Sandy. As part of the permitting for the project CTDEEP Floodplain Management Certification was required.

HARBOR BLUFF SUBDIVISION—ROWAYTON, CT
Served as the project manager for this subdivision in Rowayton, CT for the creation of twelve luxury homes. Services included the layout and design of on-site utilities and the storm drainage system, including an underground stormwater retention system and improvements to the City's storm sewer in Bluff Avenue to accommodate the proposed development.

HILLWOOD DEVELOPMENT—NORTH HAVEN, CT
Served as the project manager for a new fulfilment center in North Haven, CT. The project included the design of an 855,000+/- SF fulfillment center, 2500 parking spaces, and over 200 trailer loading spaces at the former Pratt and Whitney manufacturing site off Washington Avenue. The site has various environmental concerns that were incorporated into the site design in a creative and cost-effective manner. This was a multi-discipline design project, and responsibilities included the management of survey preparation, as well as site/civil, traffic, landscape architecture, and geotechnical design tasks.

CANAL DOCK BOATHOUSE—NEW HAVEN, CT
Served as the project manager for the design and construction of a new boathouse and platform that extend into New Haven Harbor. This City of New Haven project is State and Federally funded and will incorporate various elements of the historic Yale (Adee) Boathouse that was demolished as part of the I-95 New Haven Crossing Corridor Improvement Program. The project will include exterior features such as a waterfront promenade, transient slips, and an accessible rowing dock. In addition, the community boat house facility will include boat storage, office and support space, locker rooms, meeting space, and a marine science center for the University of New Haven. Environmental, cultural, and historical education will be a key component of programming at the boathouse, which will incorporate various interpretive design elements to narrate the City of New Haven and Long Wharf's rich nautical history.

FORTIS DATACENTER—NORWALK, CT
Served as the project manager for the construction of 168,000+/- SF of Class A office, and data center and disaster recovery center space. The project is located in the Norden Park development and included the integration with existing office, and residential uses on site.

CRAIG D. YANNES, PE, PTOE, RSP1

PROJECT MANAGER

Craig Yannes utilizes his experience in transportation and traffic engineering to develop transportation systems that balance effective traffic operations, mobility, and safety, not only for vehicular traffic, but all modes of transportation. His technical specialties include traffic analysis & modeling, transportation planning, traffic safety engineering, and traffic calming & signal design. Serving as a Project Manager in Tighe & Bond's Transportation business line, Craig has been involved with and led successful projects from design through construction for private, Municipal, and State clients. Through his work, Craig has become a trusted advisor to our clients, utilizing his relationships and expertise in analysis, design, and permitting to streamline project delivery.

WILTON COPORPATE PARK OSTA APPLICATIONS—WILTON, CT
Prepared OSTA AD applications for several projects at the Wilton Corporate Park on Danbury Road (U.S. Route 7) in Wilton. The projects included the expansion of parking and land use conversions to allow medical office within the park.

141 DANBURY ROAD RESIDENTIAL DEVELOPMENT—WILTON, CT
Prepared the traffic study and OSTA AD applications for the 173-unit residential development at 141 Danbury Road in Wilton.

372 DANBURY ROAD PARKING STUDY & EXPANSION—WILTON, CT
Performed parking studies for 372 Danbury Road (U.S. Route 7) in Wilton. The 92,000 square foot building includes a mix of commercial, medical office, and child care facilities. Services included parking inventory counts, parking demand projections and shared parking calculations to assess and permit land use changes within the building. The parking studies supported approval of a parking expansion to allow for increased medical office space in the building.

KENT CENTER & GATEWAY CENTER PARKING STUDIES—WILTON, CT
Performed parking studies for Kent Center and Gateway Center in Wilton. The studies projected parking demand and supported land use conversions and new tenants in the centers.

OX RIDGE ELEMENTARY SCHOOL REPLACEMENT—DARIEN, CT
Project manager for the traffic impact study and Town and OSTA approvals for the replacement of Ox Ridge Elementary School in Darien.

HHR ELEMENTARY SCHOOL EXPANSIONS—DARIEN, CT
Project manager for the traffic impact study and Town approvals for the expansion of Hindley, Holmes, and Royle Elementary Schools in Darien.

YNHH BED TOWER REPLACEMENT—NEW HAVEN, CT
Lead traffic engineer on the traffic impact study and parking study analyses for the Yale New Haven Health (YNHH) Saint Raphael's Bed Tower Replacement in New Haven.

CTDOT TRAFFIC & SAFETY ON-CALL, STATEWIDE, CT
Lead transportation engineer for the 16 traffic safety tasks performed for CTDOT over two contracts.

EXPERIENCE
13 Years

SPECIALTIES
Traffic Signal Design

Transportation Planning & Feasibility Studies

Traffic Impact & Parking Studies

Roadway Design

Traffic Calming Planning & Design

EDUCATION
Master of Science
Civil Engineering
University of Connecticut

Bachelor of Science
Civil Engineering
University of Connecticut

LICENSES & REGISTRATIONS
Professional Engineer
CT #29075
RI #12796

Professional Traffic Operations Engineer #3567

Roadway Safety Professional 1 #301

PROFESSIONAL AFFILIATIONS
Institute of Transportation Engineers (Past President of the Connecticut Chapter)

American Society of Civil Engineers

January 2, 2024

64 Danbury Road, Wilton, CT – Adjacent Property Owners

No.	Map-Lot-Unit	Name/Address of neighboring property owners	Mailing Address (If Different)
1.	68-33-1	CIG DRWLT DE LLC 40 DANBURY RD Wilton, CT 06897- 0000	CIG DRWLT DE LLC PO BOX 631 POMONA, NY 10970- 0000
2.	68-33-50	WILTON 50 DANBURY ROAD OWNER LLC 50 DANBURY RD Wilton, CT 06897- 0000	WILTON 50 DANBURY ROAD OWNER LLC 280 PARK AVE 5TH FL NEW YORK, NY 10017- 0000
3.	68-33-60	WILTON MEDICAL REALTY LLC 60 DANBURY RD Wilton, CT 06897- 0000	WILTON MEDICAL REALTY LLC 100 AVON MEADOW LN AVON, CT 06001- 0000
4.	68-33-64	WILTON 64 DANBURY ROAD OWNER LLC 64 DANBURY RD Wilton, CT 06897- 0000	WILTON 64 DANBURY ROAD OWNER LLC 280 PARK AVE 5TH FL NEW YORK, NY 10017- 0000
5.	68-11	VALK J LANSING & BARBARA B 43 WHIPPLE RD Wilton, CT 06897- 0000	
6.	68-12	JEEPY JANUAR & 33 WHIPPLE RD Wilton, CT 06897- 0000	
7.	68-13	GORSHKOV VICTOR 23 WHIPPLE RD Wilton, CT 06897- 0000	
8.	68-14	WEATHERWAX SARI L 19 WHIPPLE RD Wilton, CT 06897- 0000	
9.	68-15	MURIN MICHAEL 15 WHIPPLE RD Wilton, CT 06897- 0000	
10.	68-18	YUN SOYON & 27 GRUMMAN HILL RD Wilton, CT 06897- 0000	
11.	68-20	JONAN OLSI H 21 GRUMMAN HILL RD Wilton, CT 06897- 0000	
12.	68-27	9 HOLLYHOCK LLC 9 HOLLYHOCK RD Wilton, CT 06897- 0000	
13.	68-29	HOLLYHOCK ASSOCIATES LLC 6 HOLLYHOCK RD Wilton, CT 06897- 0000	HOLLYHOCK ASSOCIATES LLC 10 CLIFF AVE DARIEN, CT 06820- 0000
14.	68-30	CLARK HOLDINGS LLC 2 HOLLYHOCK RD Wilton, CT 06897- 0000	CLARK HOLDINGS LLC 245 NEWTOWN TPKE WESTON, CT 06883- 0000